



ENVIRONMENTAL REPORT

OCEAN INITIATIVES 2020



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PHOTO CREDITS: Surfrider Foundation Europe, Natacha Cagnard, Vishal Banik, Samara Doole, Ishan see from the sky, Oliver Sjostrom, Almos Bechtold, Anabam, Michaël Opsomer, Pierre-Ange Rogliano, Surfrider Paris, Brian Yurasits, Noaa_Crep.

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EDITORIAL

Thank you.

Twenty-six years ago, Surfrider Foundation Europe launched the Ocean Initiatives program. The aim was to raise awareness and collect information on marine litter to put in place a long-term strategy to tackle this pollution at its source. Despite consensus about the negative impact on the environment, litter is still an important issue. Today more than ever, there needs to be a groundswell of change to protect the ocean.

The year 2020 was marked by a pandemic which has notably resulted in the wide-spread use of single-use plastics. At the same time, the lockdown imposed to contain the epidemic didn't allow us to go out into the field as much as in previous years, to collect valuable information on the litter in the environment. This information is essential for us to be able to bring to light the reality in the field.

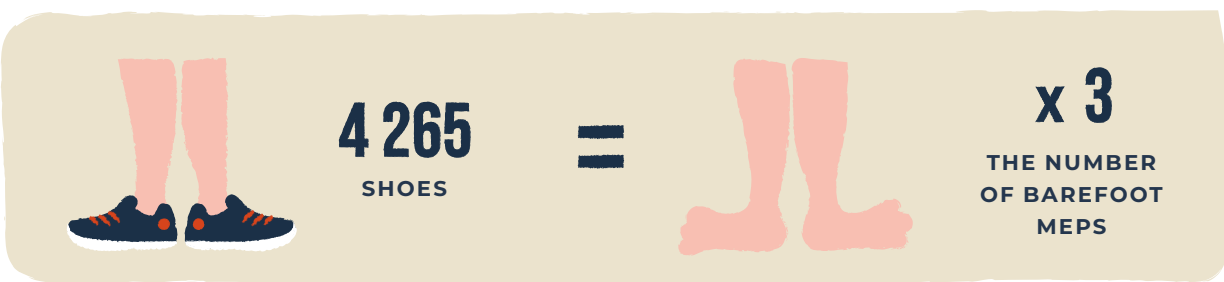
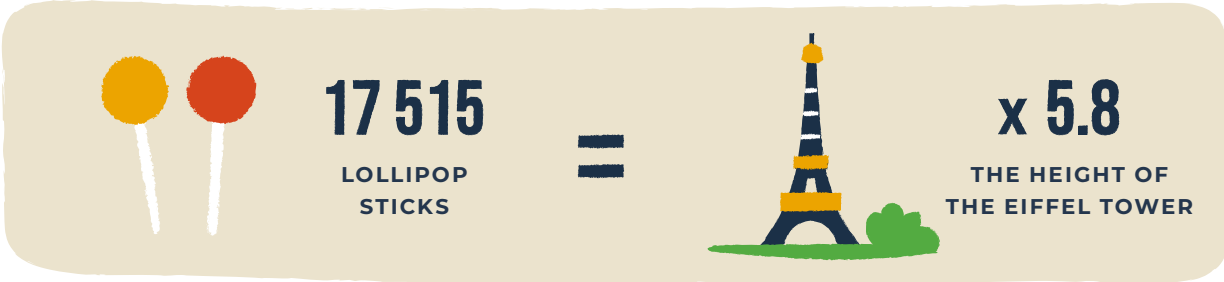
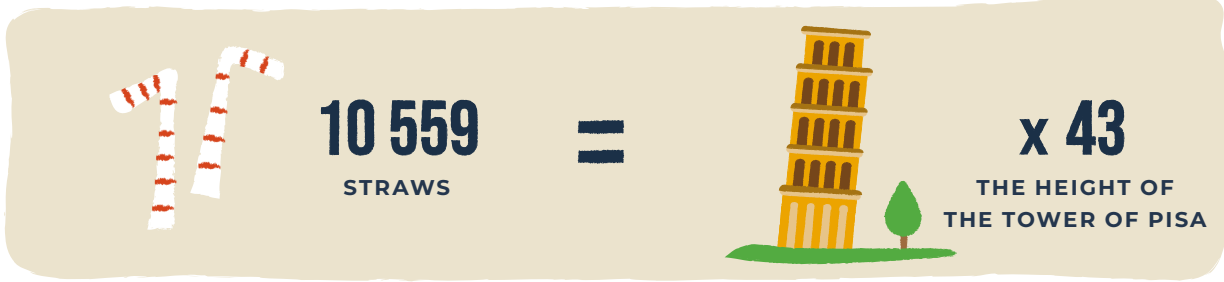
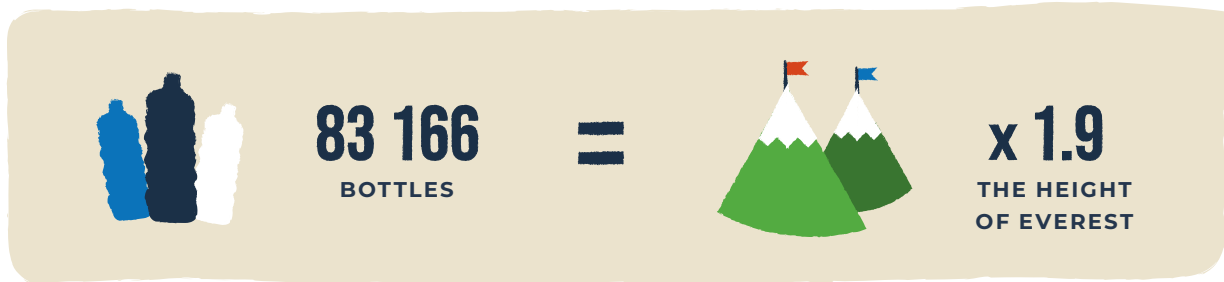
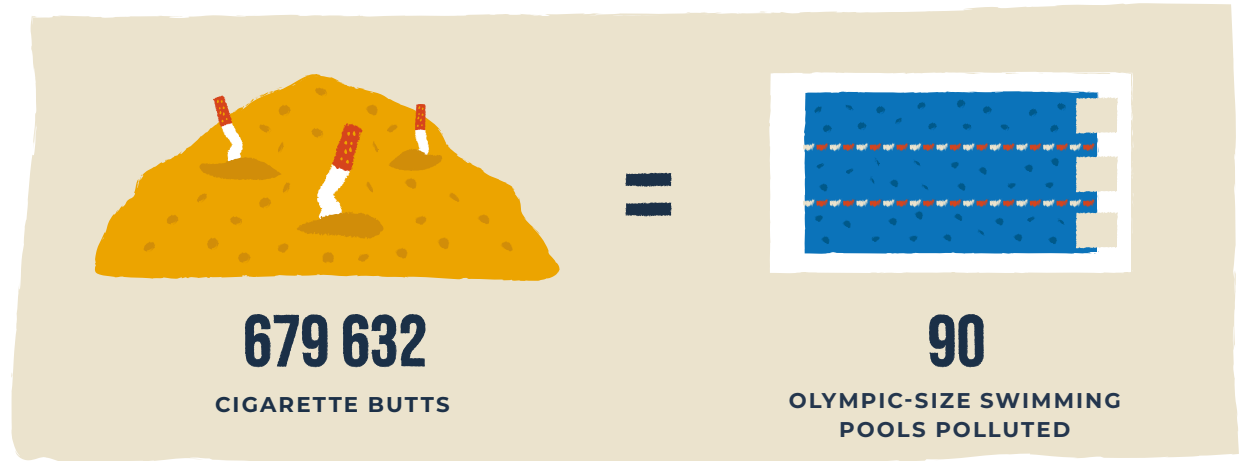
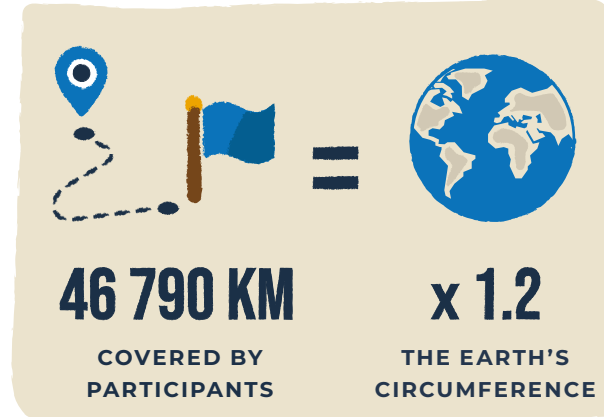
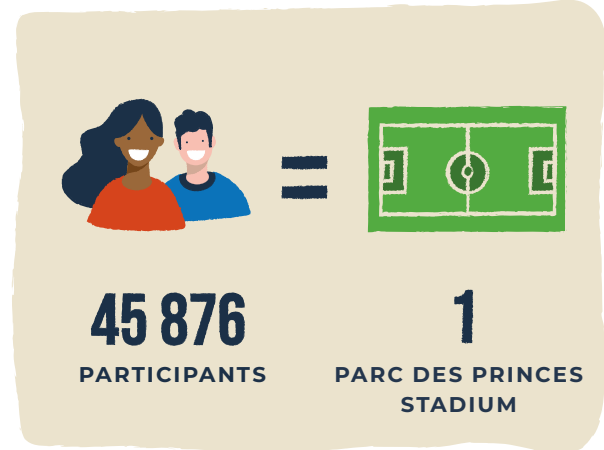
Despite this challenging period, you have continued to get involved in our fight to ensure the ocean can once again breathe through this tidal wave of plastic. It's a commitment for today and tomorrow, so that future generations will have the chance to enjoy the marine environment.

All your collective actions do have a substantial impact since they have the power, which mean that you do to, to change things. It's thanks to your determination and your commitment that we can progress a little more each day. The data from your ocean initiatives are used to compile this report which is a powerful tool for communicating with policy makers and manufacturers as well as demanding permanent changes.

The ocean is the last place where waste resulting from human activity accumulates, to different degrees of visibility. 100% of pollution is generated by humans. We are responsible for it, but we can also lead the way to reduce this pollution and change people's habits.

Without you, none of this would be possible, and because your commitment and motivation is such an inspiration to us, we want to say a big thank you to you all! Thank you for working alongside us for the past 25 years!

OCEAN INITIATIVES 2020 IN FIGURES





01 GENERAL REPORT

THREE TYPES OF REPORT FORMS IN 2020



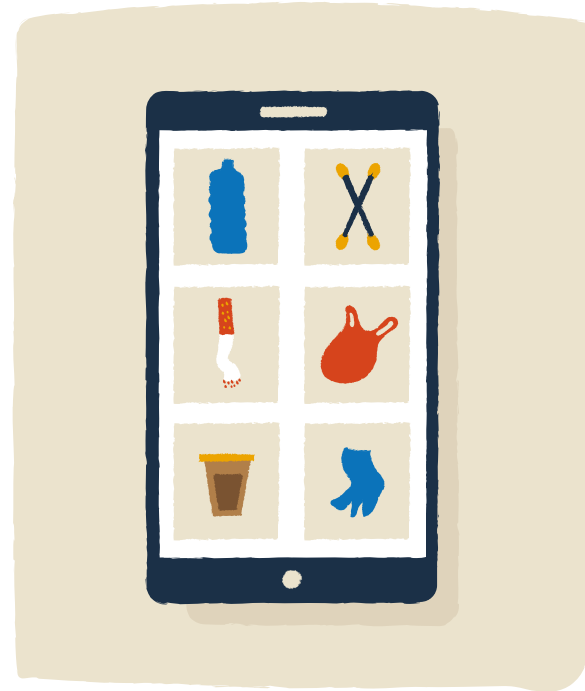
Simplified report form

The organiser fills in the information about the operation itself and the number of cigarette butts counted during their collection.



Intermediary report form

The organiser sends us general information about the operation and quantifies 35 types of waste broken down by material and use. The data enable us to monitor for example the application of directives such as the one banning single-use plastics.

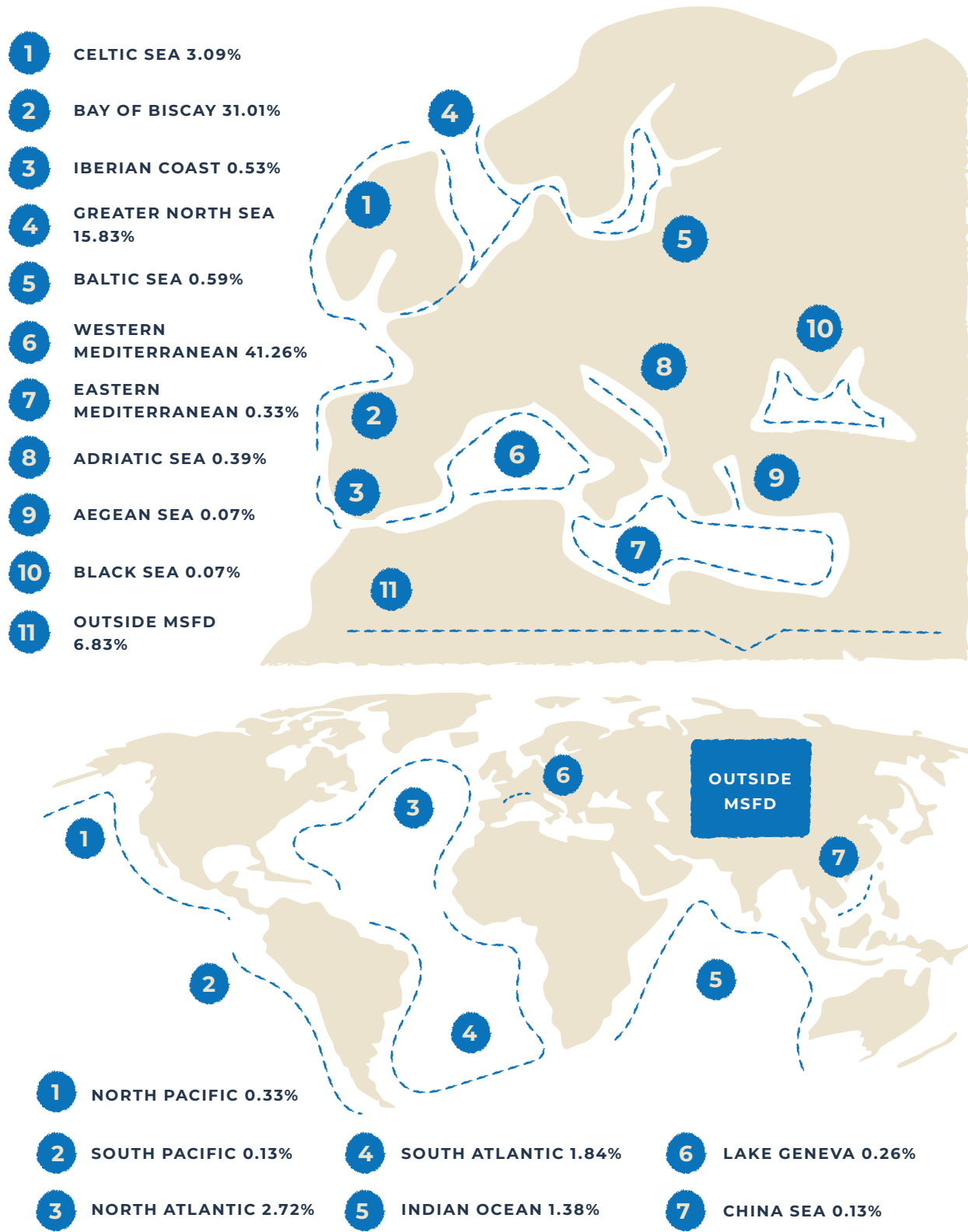


The Marine Litter Watch app

Surfrider Foundation Europe teamed up with the European Environment Agency to share data from the Ocean Initiatives collections and enter them into a European database. More experienced organisers or those wanting to invest more time in collecting and reporting information thereby have the opportunity to take part in a comprehensive quantification operation. They can do that in line with the standard European protocol, thanks to the Marine Litter Watch application.

WHERE DID LITTER COLLECTIONS TAKE PLACE?

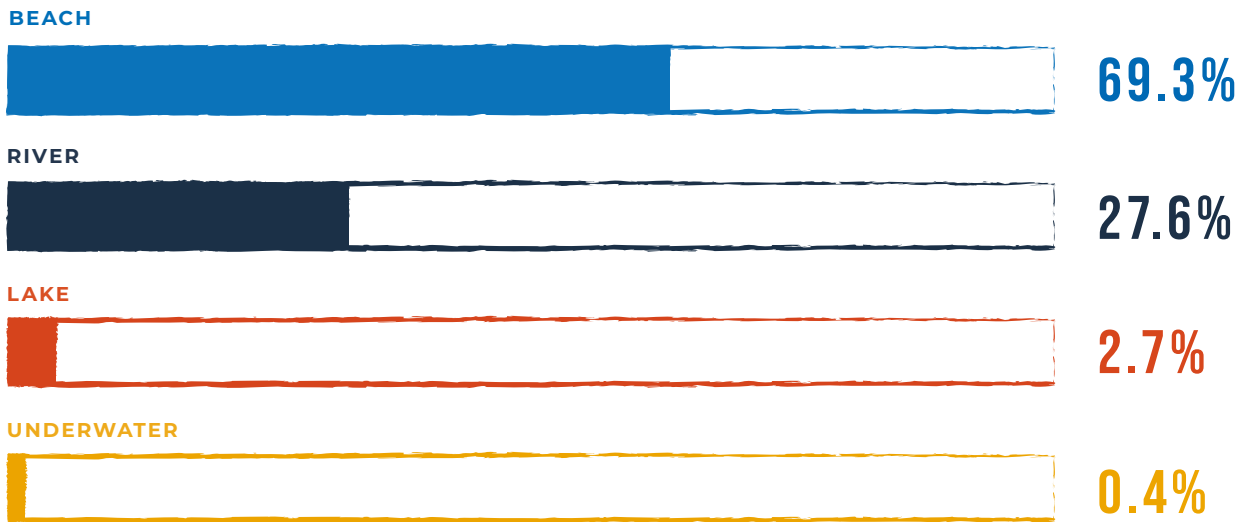
For the purposes of this report, the regions where collections took place were divided into two: the major maritime areas in Europe as defined by the Marine Strategy Framework Directive (MSFD), and the regions outside the MSFD.



KEY FIGURES

The figures marked by an asterisk are based on a total of **482 report forms (179 simplified and 303 intermediaries).**

Types of collection



TOTAL LITTER COLLECTED

For several years we have been asking Ocean Initiatives participants to take part in a community science operation by filling in an intermediary report form to help us improve knowledge about the state of European and world coastlines concerning marine litter pollution. To do this, we asked them to answer questions about the location of their collection location and to quantify **35 types of litter categorised by material and use.**

This list of litter types is based on the master list of the European harmonised protocol and on the kinds of litter most commonly found on European beaches. **303 organisers accompanied by 5 537 people took part in this exercise. A total of 373 554 litter items were collected during these operations representing a total volume of 149 413 m³.**

TOP 10 LITTER ITEMS



DISTRIBUTION OF LITTER COLLECTED BY USE

We grouped together the different types of litter by broad category of use. The eight categories are:

SMOKING-RELATED: smoking-related litter (e.g. cigarette packets, cigarette butts).

NON-IDENTIFIABLE LITTER: pieces of plastic, polystyrene.

FOOD PACKAGING: food packaging and containers (e.g. food wrappers, cups, cutlery).

FISHING: litter from professional and amateur fishing (e.g. ropes, fishing lines).

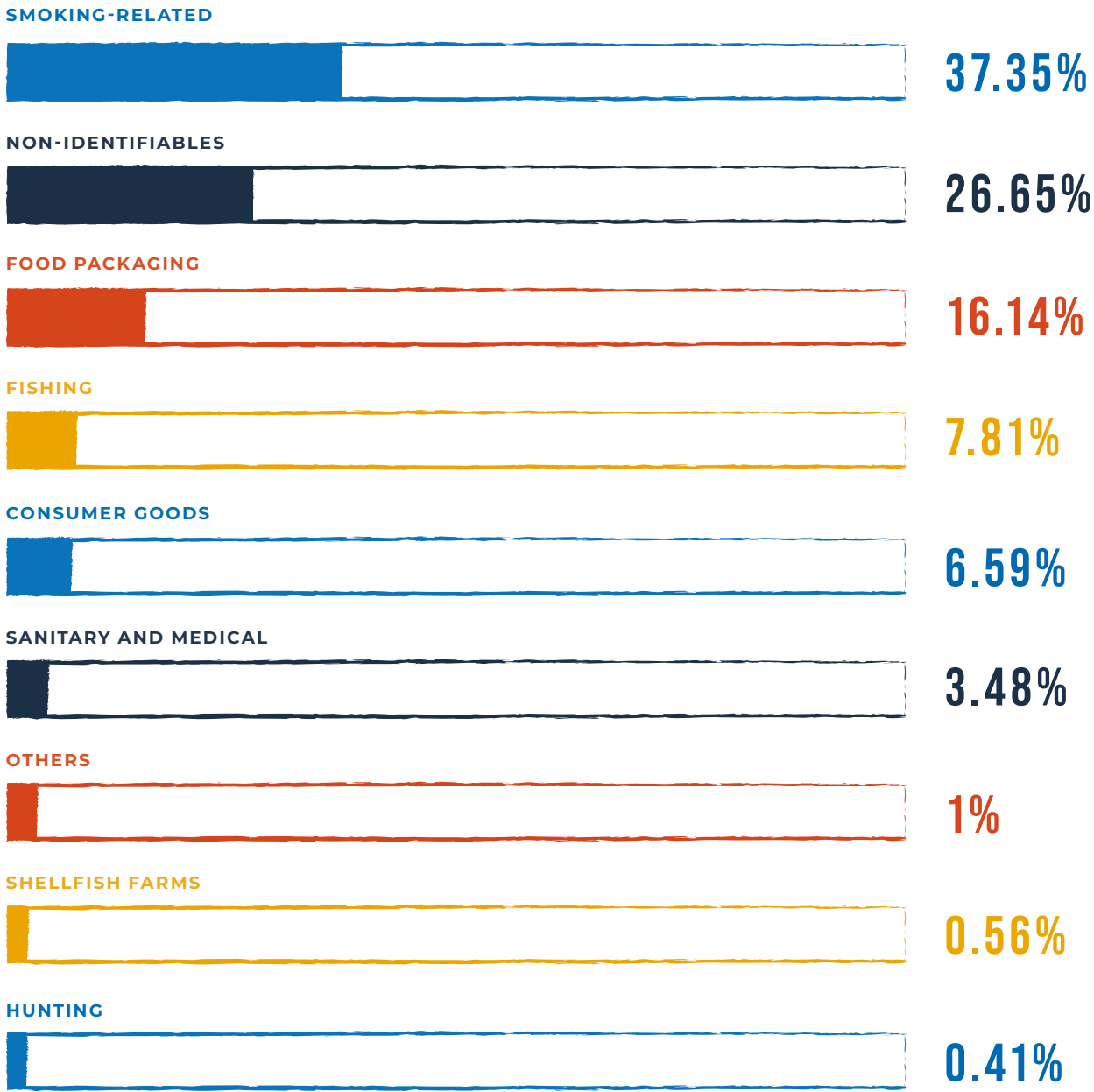
CONSUMER GOODS: litter from everyday consumer goods (e.g. plastic bags, toys, shoes, clothes).

SANITARY AND MEDICAL: e.g. medicine packaging, tampons and applicators).

OTHER LITTER: identifiable litter but which doesn't fit into the other categories, e.g. car parts, biomedica.

SHELLFISH FARMS: litter from shellfish farms.

HUNTING: litter from hunting activities (shotgun cartridges).



TOTAL LITTER ITEMS COLLECTED

The total number of items collected in 303 operations: 373 554 quantified items.

Plastic



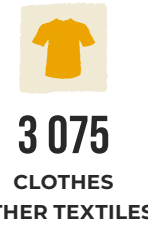
Glass



Metal



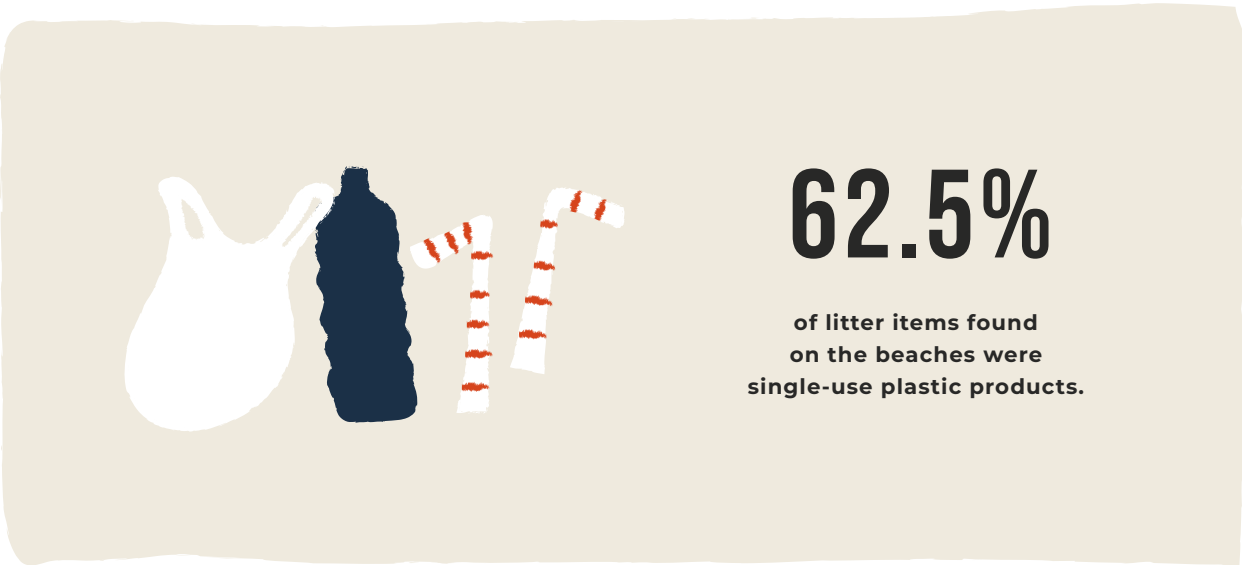
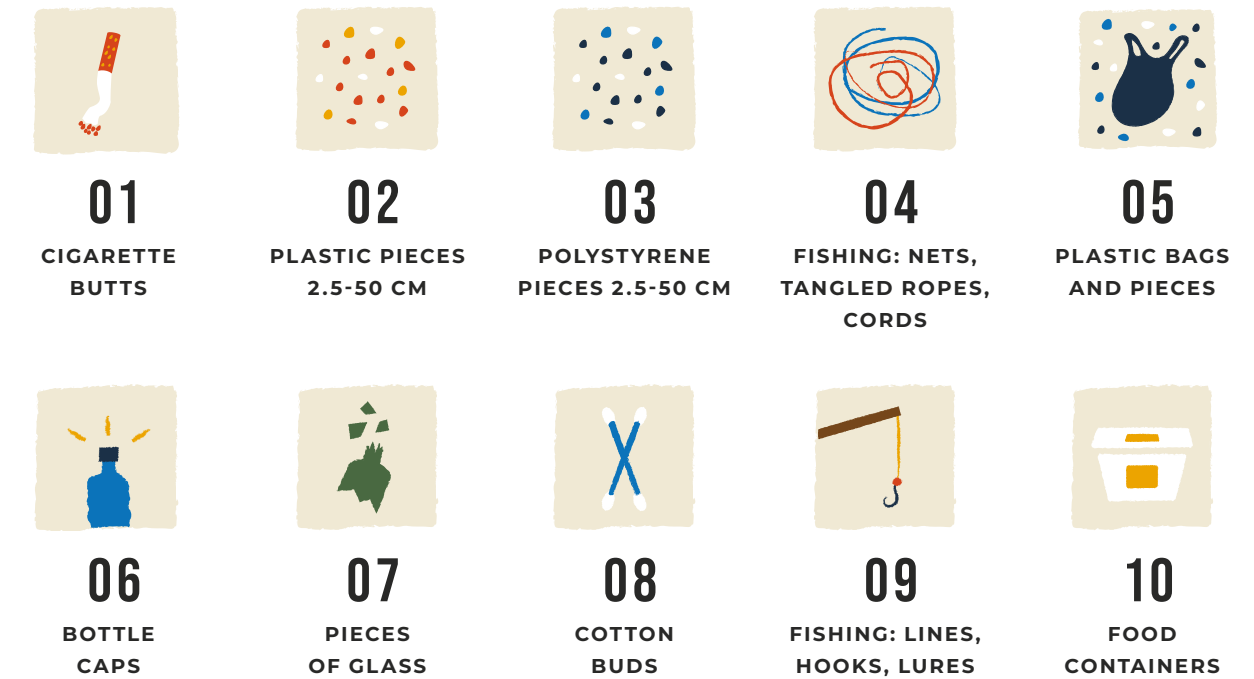
Textiles





FOCUS ON THE MARINE ENVIRONMENT: BEACHES AND SEABEDS

TOP 10 LITTER ITEMS



TOTAL ITEMS COLLECTED IN THE MARINE ENVIRONMENT

Total number of items collected from 217 operations: 368 749 quantified items.

Plastic



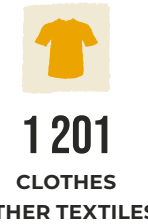
Glass



Metal



Textiles





FOCUS ON WATERCOURSES: RIVERS AND LAKES

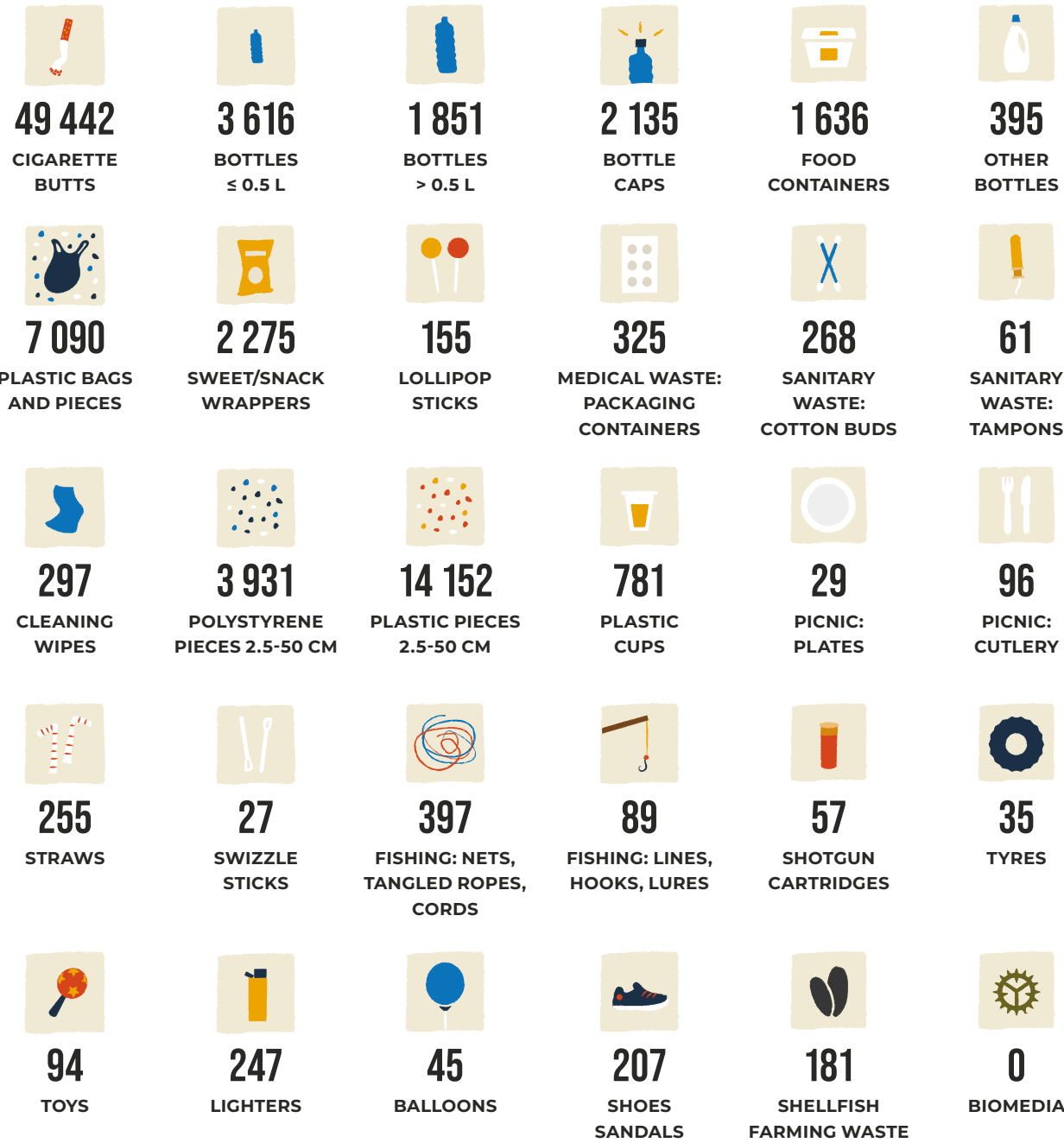
TOP 10 LITTER ITEMS



TOTAL ITEMS COLLECTED IN WATERCOURSES

Total number of items collected in 86 operations: 99 597 quantified items.

Plastic



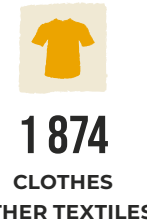
Glass



Metal



Textiles



COLLECTION SITES



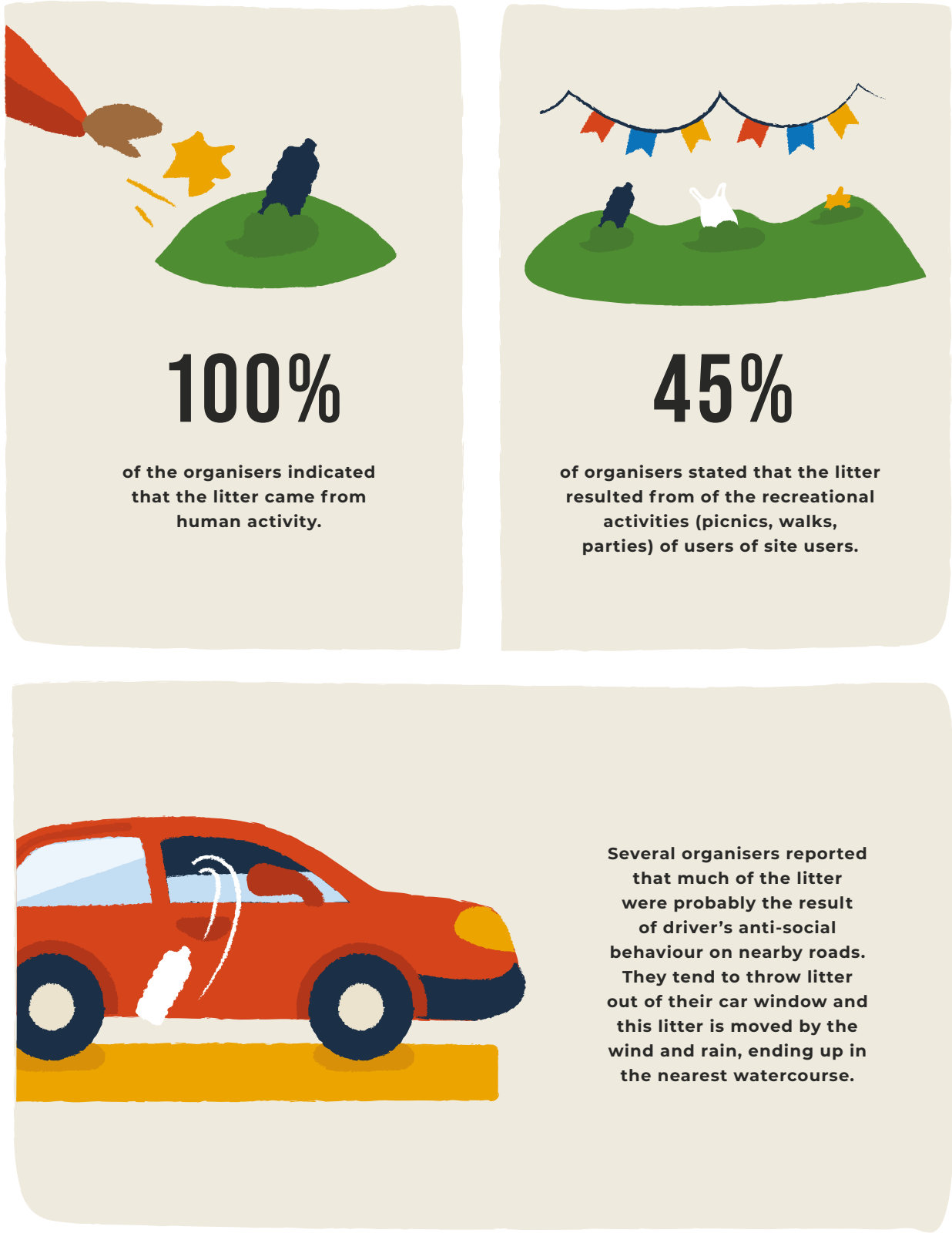
INFORMATION ON THE COLLECTION SITES

Types of activities taking place on the watercourses where the collections took place. Several types of activities can take place in the same area. The percentages are given for reference only.



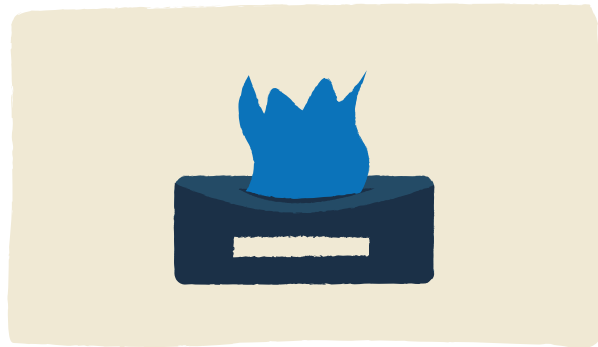
PERCEPTION OF THE ORIGIN OF THE LITTER

We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:



OTHER LITTER ITEMS COLLECTED IN LARGE NUMBERS

52% of organisers reported finding large quantities of other litter items during their quantification operations (items not included in the list).

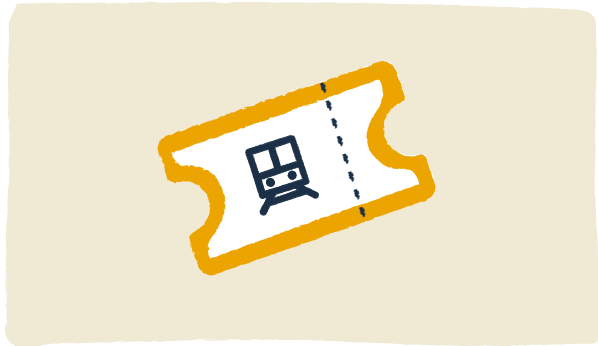


Wet wipes

Many people still throw these synthetic single-use products in the toilet, damaging the wastewater systems across the European Union. The European Directive regarding single-use plastic, adopted in early 2019, set out several measures ranging from labelling on packaging to the implementation of extended producer responsibility practices to restrict this type of pollution.

Cigarette packets

In addition to cigarette butts, organisers picked up numerous other types of smoking-related litter such as cigarette packets or plastic wrappers. 51 cigarette packets were collected in a single clean-up along a river downstream of Paris.



Parking/Metro tickets

Many organisers informed us of the presence of parking/ metro tickets. During various Ocean Initiatives near towns, hundreds of tickets were counted.

Metal bottle caps

Ocean Initiatives organisers frequently report finding metal bottle caps. During one collection along Bordeaux's quays, no fewer than 1103 caps were picked up.



THE BANKS OF THE RHONE: AN AREA OF HIGH ACCUMULATION OF LITTER



22 800 cigarette butts

Several organisers reported that the Rhone and its banks are regularly polluted by various types of litter mainly resulting from anti-social behaviour. Organisers picked up huge quantities of cans, cigarette butts, glass bottles and food containers during their collections. For example, during one them in Lyon, which covered 1 200 m, 22 800 cigarette butts were quantified.

ALSO,





UNUSUAL ITEMS

RIVERS AND OCEANS: A HUGE DUMPING GROUND OF HUMAN ACTIVITY

More than 260 large or unusual items were found by participants during the 2020 Ocean Initiatives.



1 VIDEO RECORDER



1 ARTILLERY SHELL



1 SAFE



46 NITROUS
OXIDE CARTRIDGE



1 GUTTER



2 GAS CYLINDER



2 PARASOL



3 BROOM

FROM THE HOUSE



1 SHOWER TRAY



2 MATTRESS



1 TOILET



1 BED



1 WASHING MACHINE



1 WINDOW

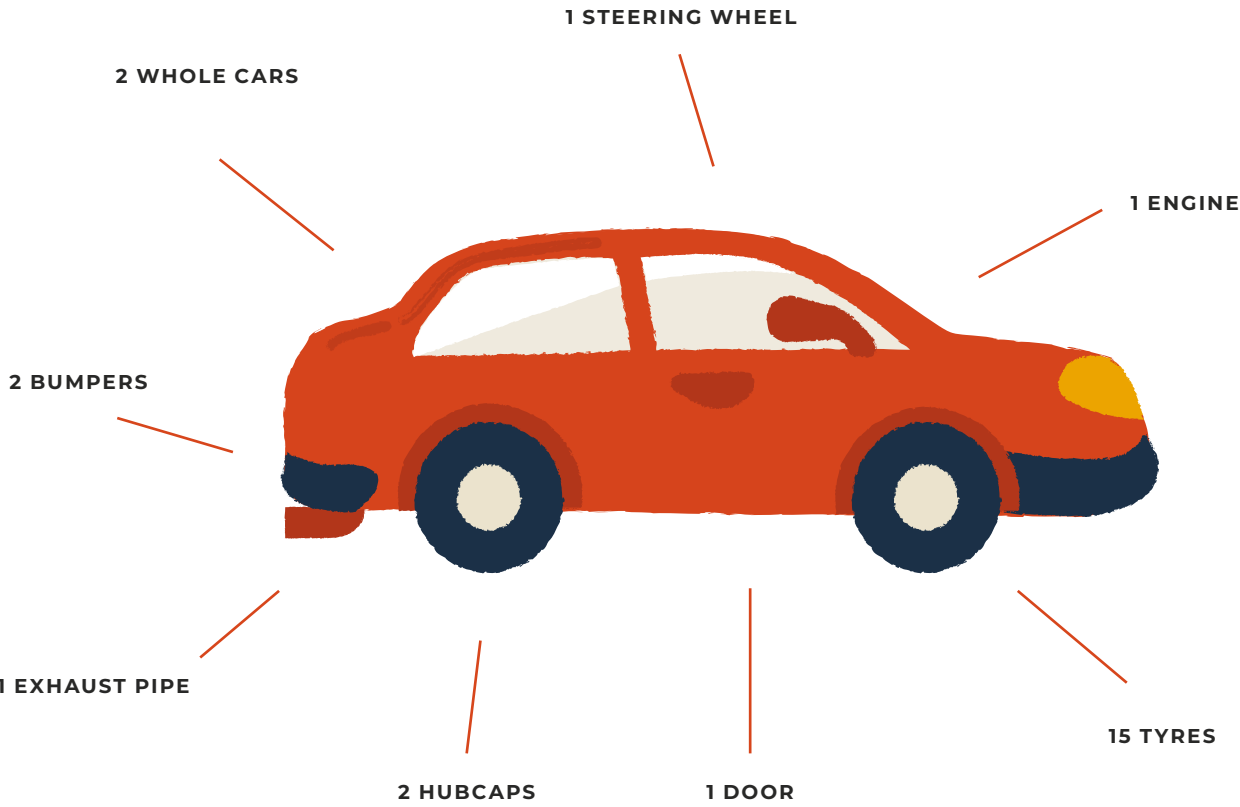


1 REFRIGERATOR



2 CHAIRS

CAR SECTION



NOT FORGETTING THE USUAL SUSPECTS



2 SCOOTERS



5 TRAFFIC SIGNS



33 PALLETS



4 MOPED



3 FLIPPERS



80 FIREWORKS



02 REPORT BY SEA AREAS



BAY OF BISCAY

FROM AUDIERNE BAY (FRANCE)
TO CAPE ORTEGAL (SPAIN)

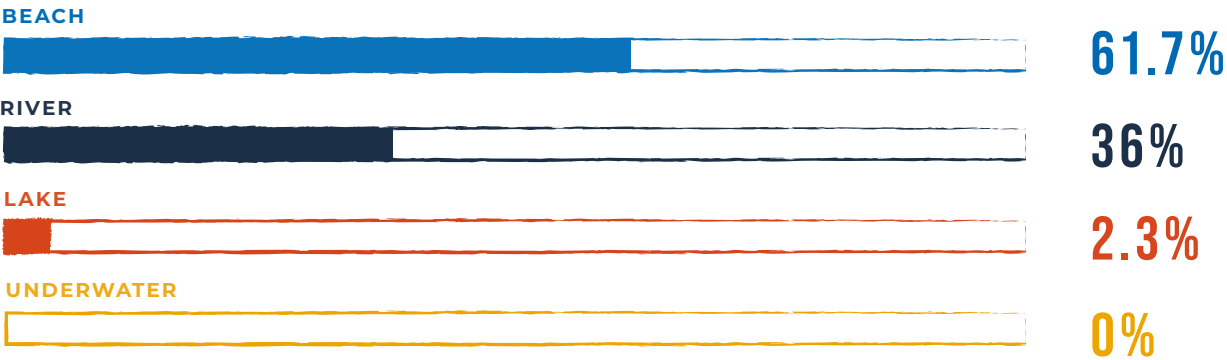
GENERAL DATA FOR THE WHOLE SEA AREA

Extrapolation based on a total of 472 operations that took place in this sea area.



RESULTS FROM THE LITTER QUANTIFICATION

Types of collection



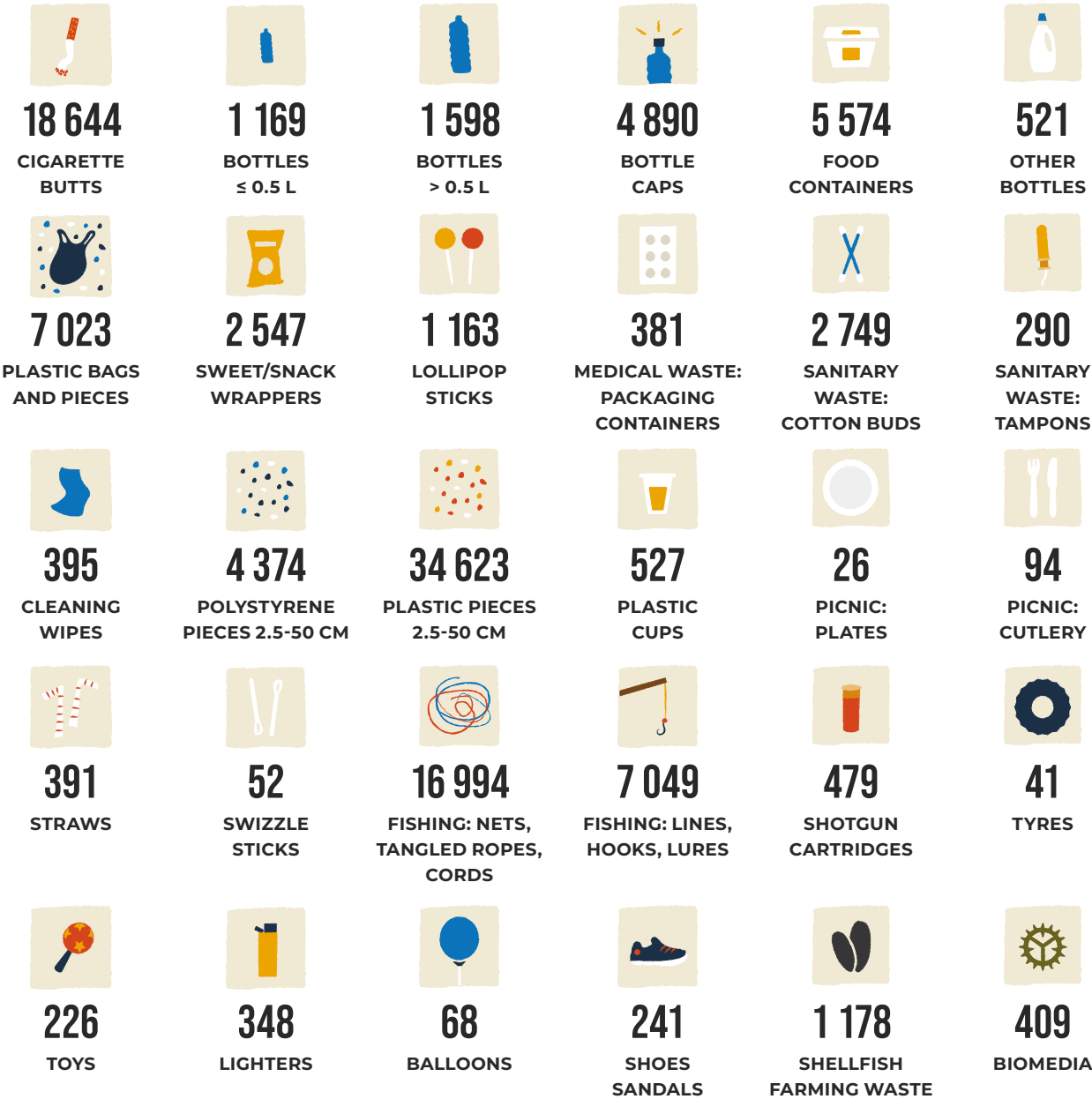
Top 5 litter items



TOTAL LITTER ITEMS FOUND IN THE MARINE ENVIRONMENT AND WATERCOURSES

174 quantification operations bringing together 3 358 people took place in Spain (10 collections) and in France (165 collections). 123 076 items were picked up and quantified over a distance of 160 450 metres. The total volume of litter collected is 97.4 m³.

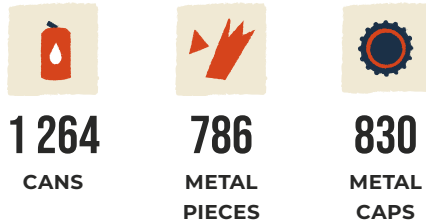
Plastic



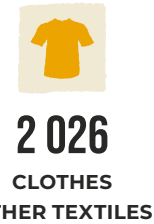
Glass



Metal



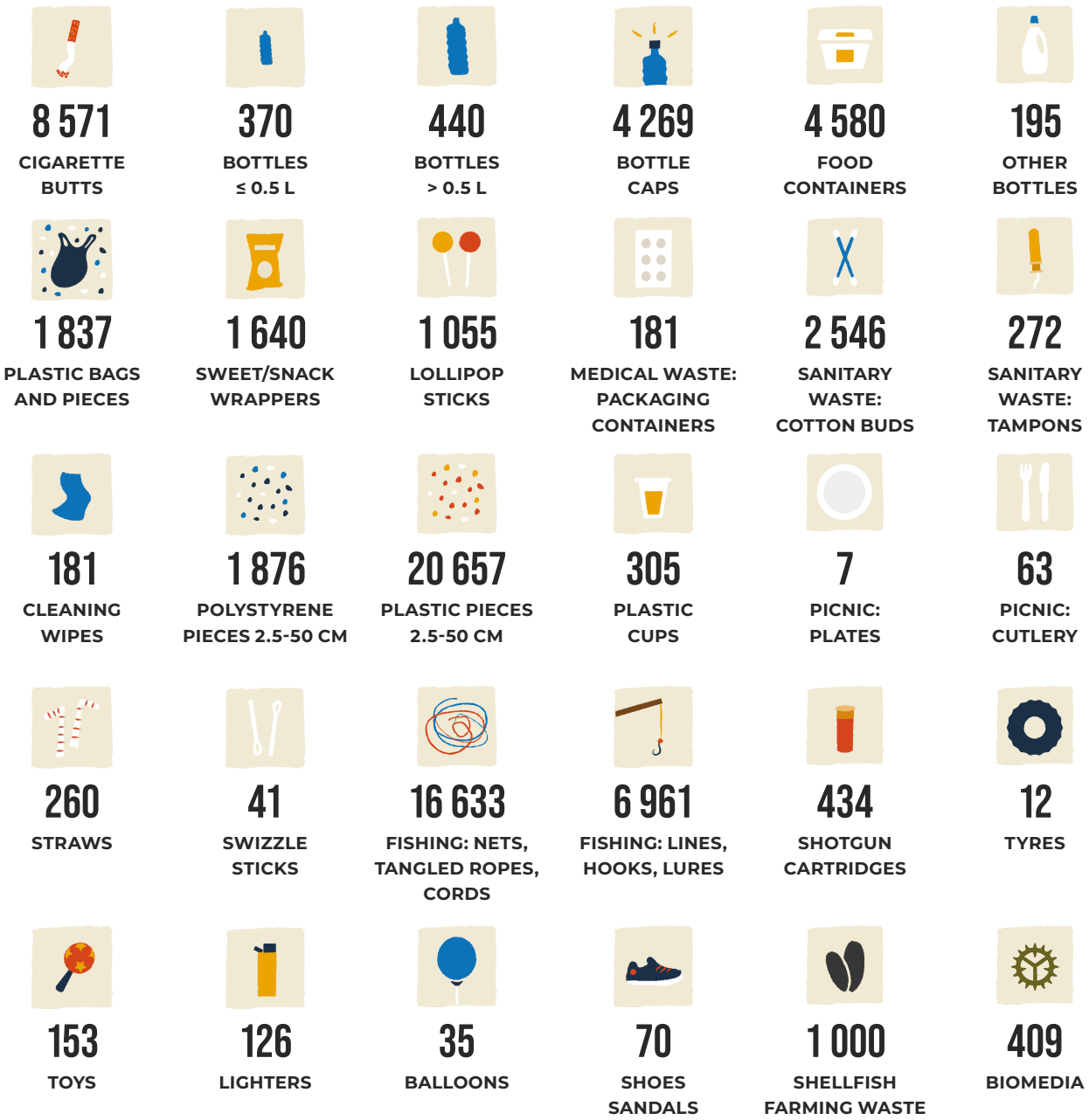
Textiles



TOTAL ITEMS COLLECTED IN THE MARINE ENVIRONMENT

78 006 items were picked up and quantified during 66 operations (1 in Spain and 65 in France) carried out on this area's beaches and seabeds over a total distance of 40 050 metres. The total volume of collected litter was 19.3 m³.

Plastic



Glass



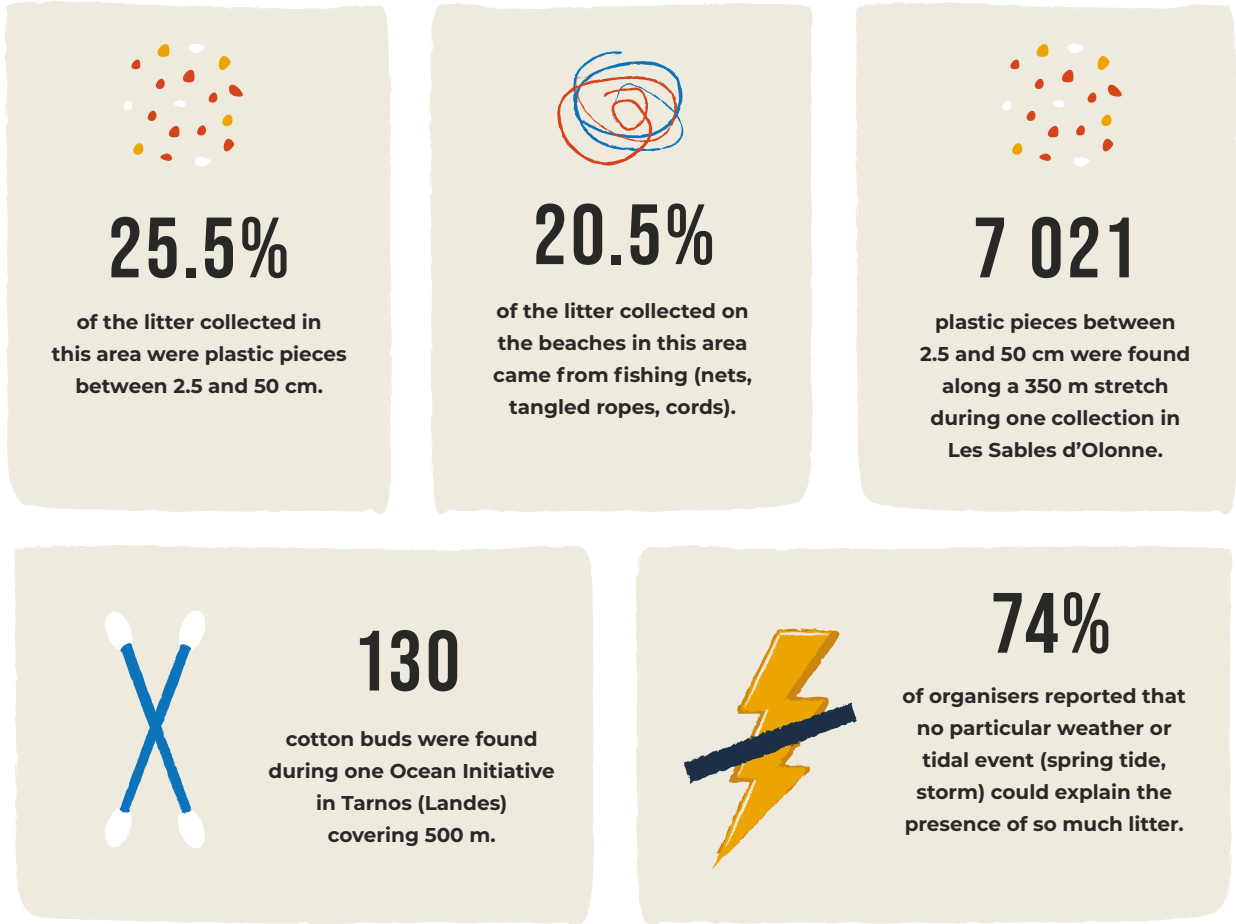
Metal



Textiles



FACTS AND FIGURES



TYPES OF ACTIVITIES

We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:



TOTAL ITEMS COLLECTED IN WATERCOURSES

426 people picked up and quantified 45 076 items during 52 operations in France carried out around rivers and lakes in this area, over a total distance of 86 350 metres. The total volume of litter collected was 49.158 m³.

Plastic



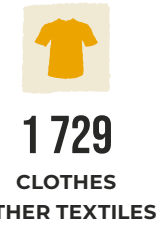
Glass



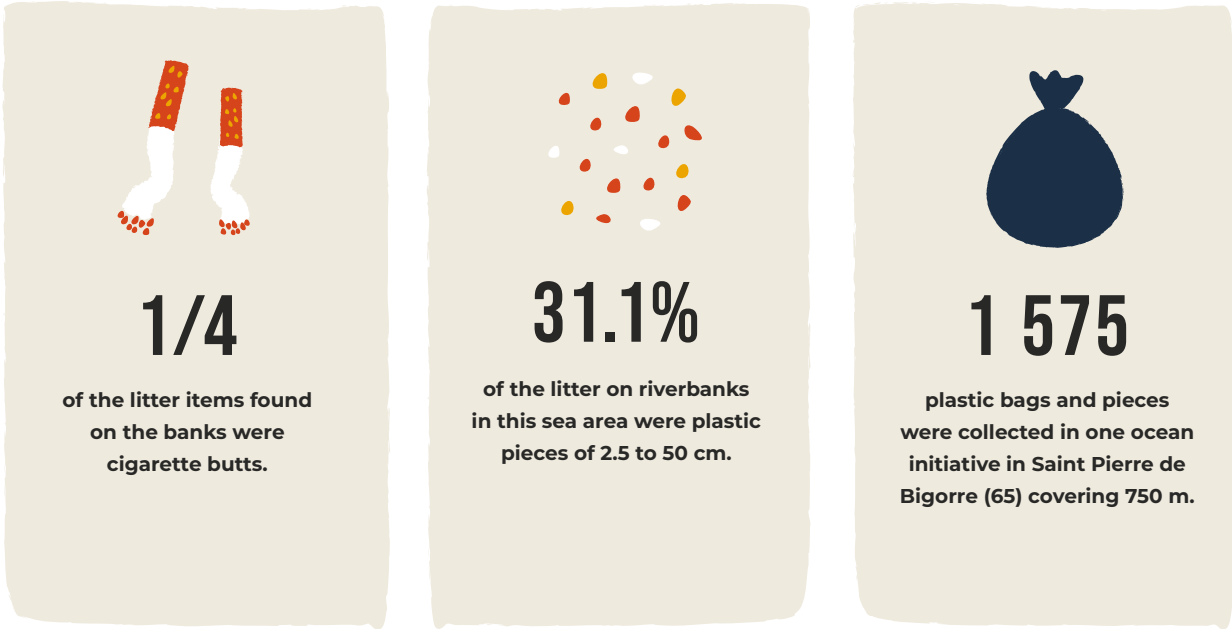
Metal



Textiles

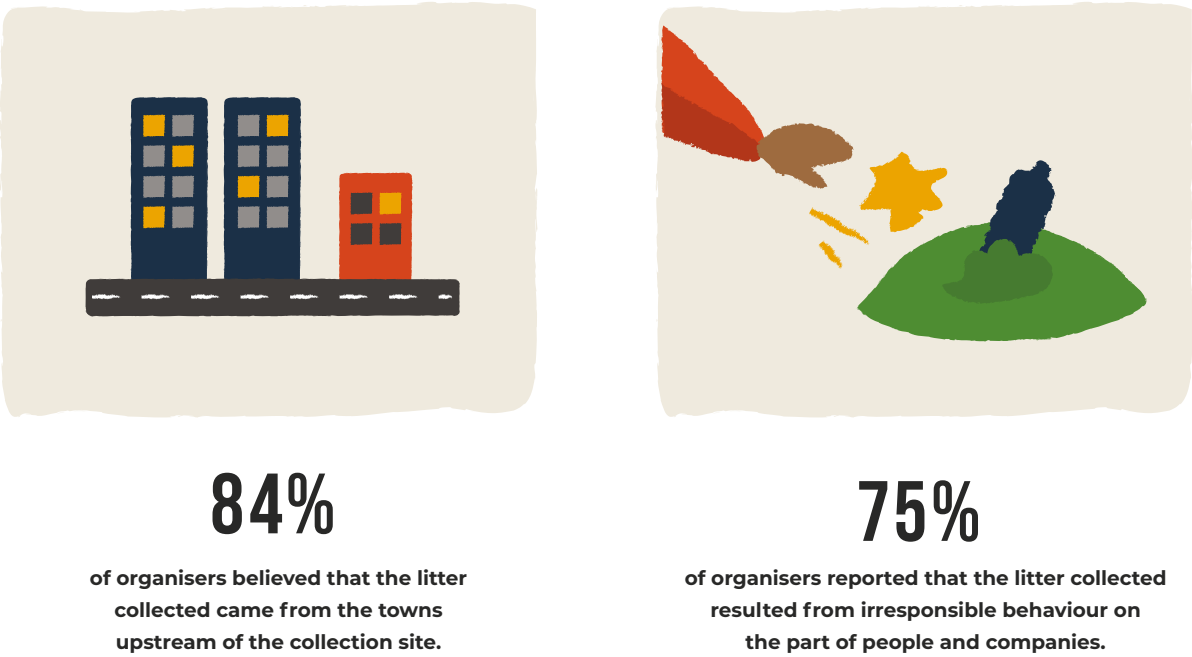


FACTS AND FIGURES



TYPES OF ACTIVITIES

We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:





TESTIMONIAL

SABRINA NEVEU

MOUTIERS EN RETZ - FRANCE

Some of our pupils get involved in a year-long class project as part of the «young reporters for the environment» contest. We decided to investigate how our daily life in Nantes impacts the oceans (via the Loire).

We organised this Ocean Initiative in order to find out more about the pollution on one of our beaches: What type of litter? Where does it come from? How much? Is there a link with oyster farms? We were helped by the Hironde association and they told us about the Ocean Initiatives. The ultimate goal was to organise an event at our school in Nantes to get as many people as possible involved: to raise awareness among the other pupils about this pollution, to further explore the issues with a round table and finally take action with workshops to make things out of old clothes, such as market bags.

On the beach, we mainly collected plastic pieces (683). It was Moutiers en Retz beach, near an aquaculture area. So we found lots of waste related to oyster farming (219), lots of fishing nets pieces (873), plastic bags lumps (107) and food wrappers (193). However, there were very few mermaid tears and biomedica.

We didn't find any unusual litter items, but the pupils were surprised by two things:

Firstly, they initially thought that in half a day, 35 of us could cover (and therefore clean), one kilometre of beach in half a day. In the end, after 2 hours, we had only covered 150 metres. Between the macroscopic scale and everything there was to discover along the foreshore as well as the microplastics, you soon realise that it's never-ending.

Secondly, they struggled to categorise certain types of waste and often mistook them for seaweed, eggs, etc. (One student even thought a feather was false because he thought it looked plastic). Having to follow a strict protocol enabled them to understand that they needed specific knowledge of the foreshore and of the waste itself (e.g. shotgun cartridges) to then be able to understand the origin of this pollution and take appropriate action.

No other type of experience could raise so much awareness!!





WESTERN MEDITERRANEAN

FRANCE, SPAIN, ITALY, MOROCCO, TUNISIA, ALGERIA

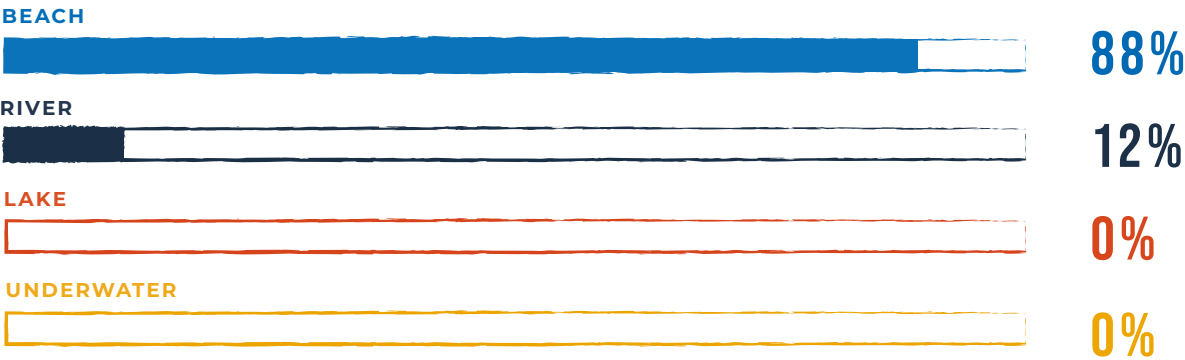
GENERAL DATA FOR THE WHOLE SEA AREA

Extrapolation based on a total of 628 operations that took place in this sea area.



RESULTS FROM THE LITTER QUANTIFICATION

Types of collection



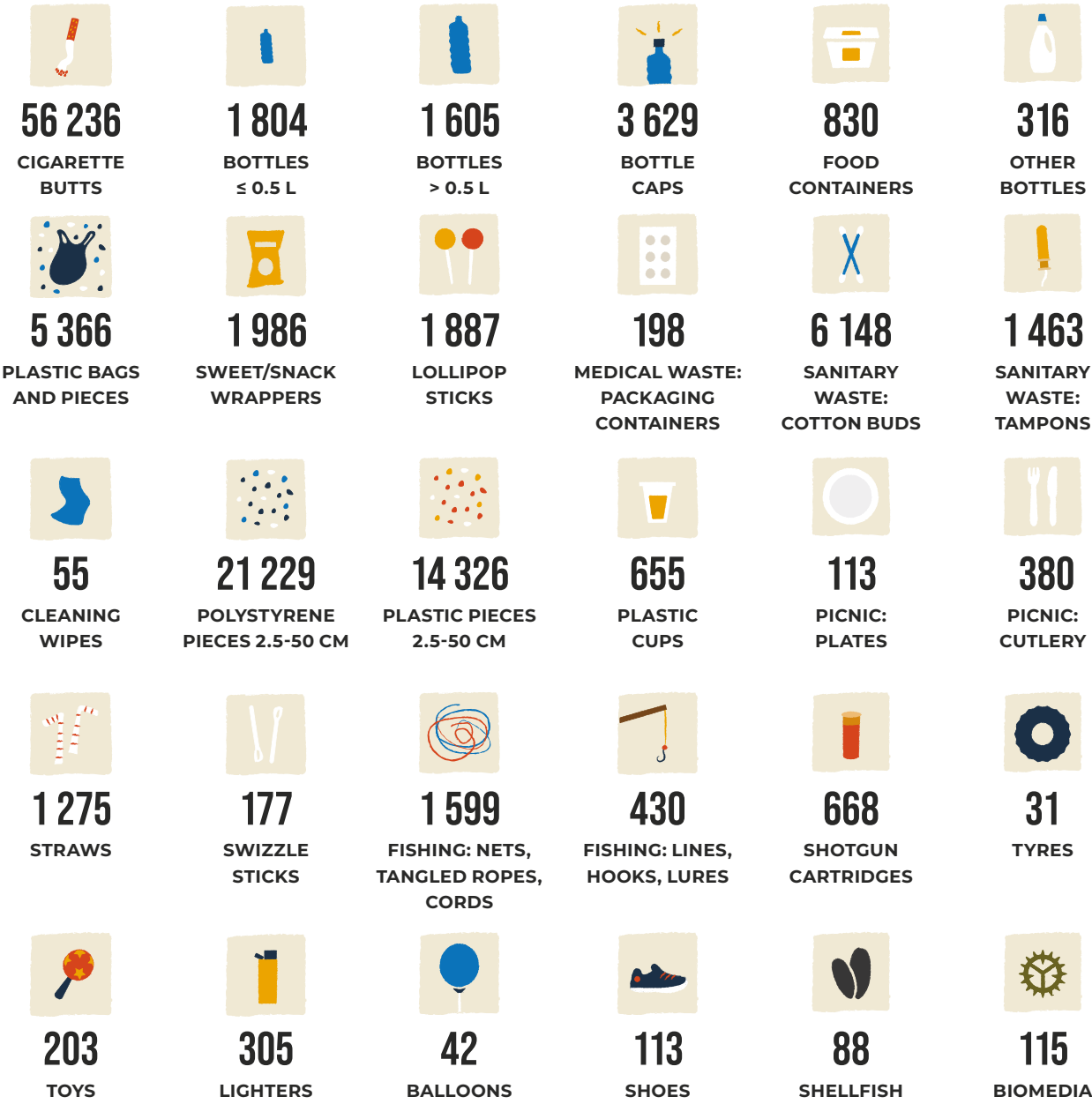
Top 5 litter items



TOTAL LITTER ITEMS FOUND IN THE MARINE ENVIRONMENT AND WATERCOURSES

The 107 quantification operations involving 2 084 people took place in Spain (24), France (55) and Italy (19). 132 530 items were collected and counted over a distance of 47 650 m distance. The total volume of waste collected was 45.86 m³.

Plastic



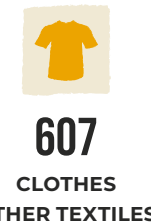
Glass



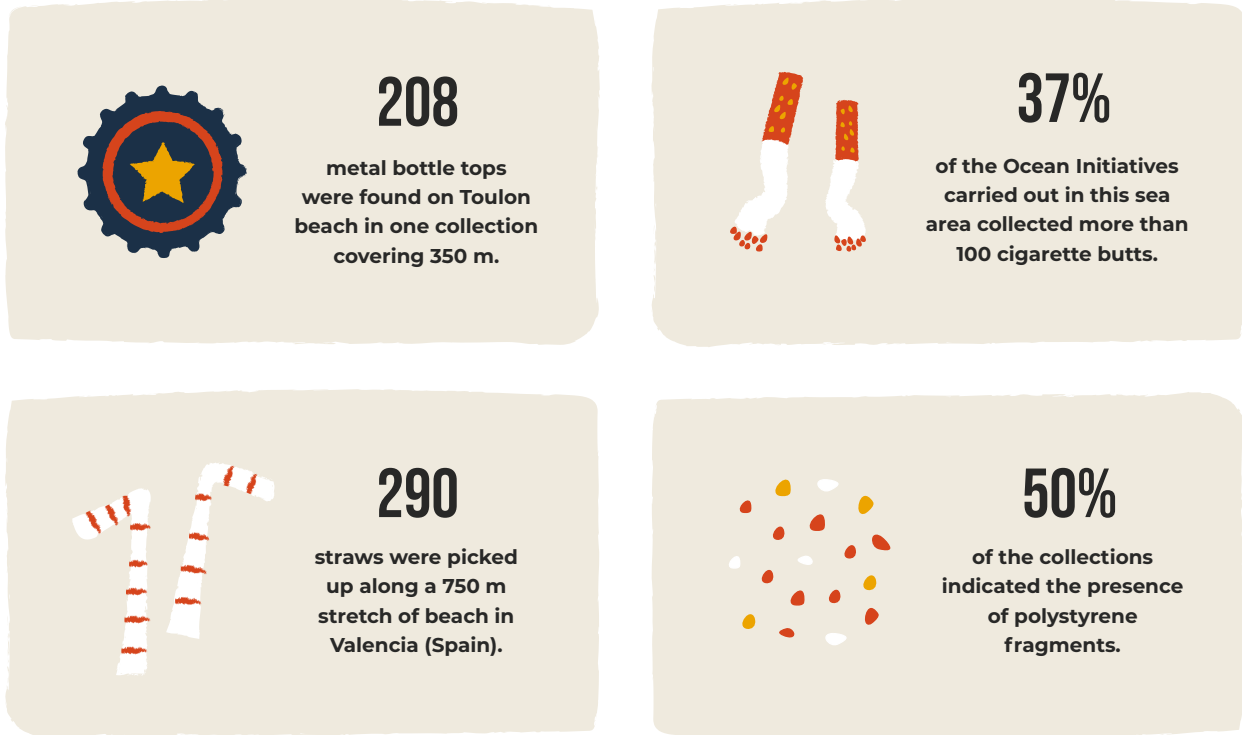
Metal



Textiles

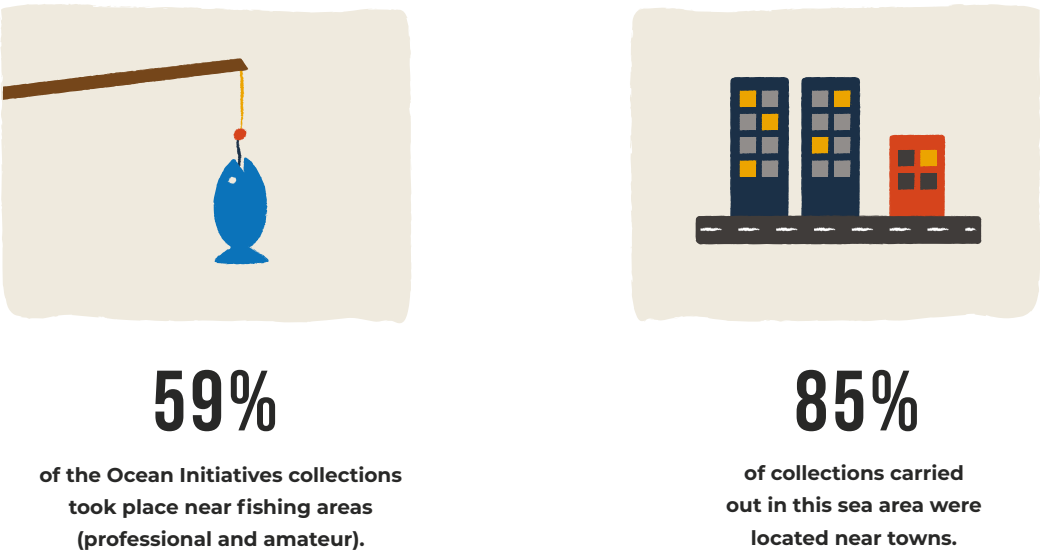


FACTS AND FIGURES



TYPES OF ACTIVITIES

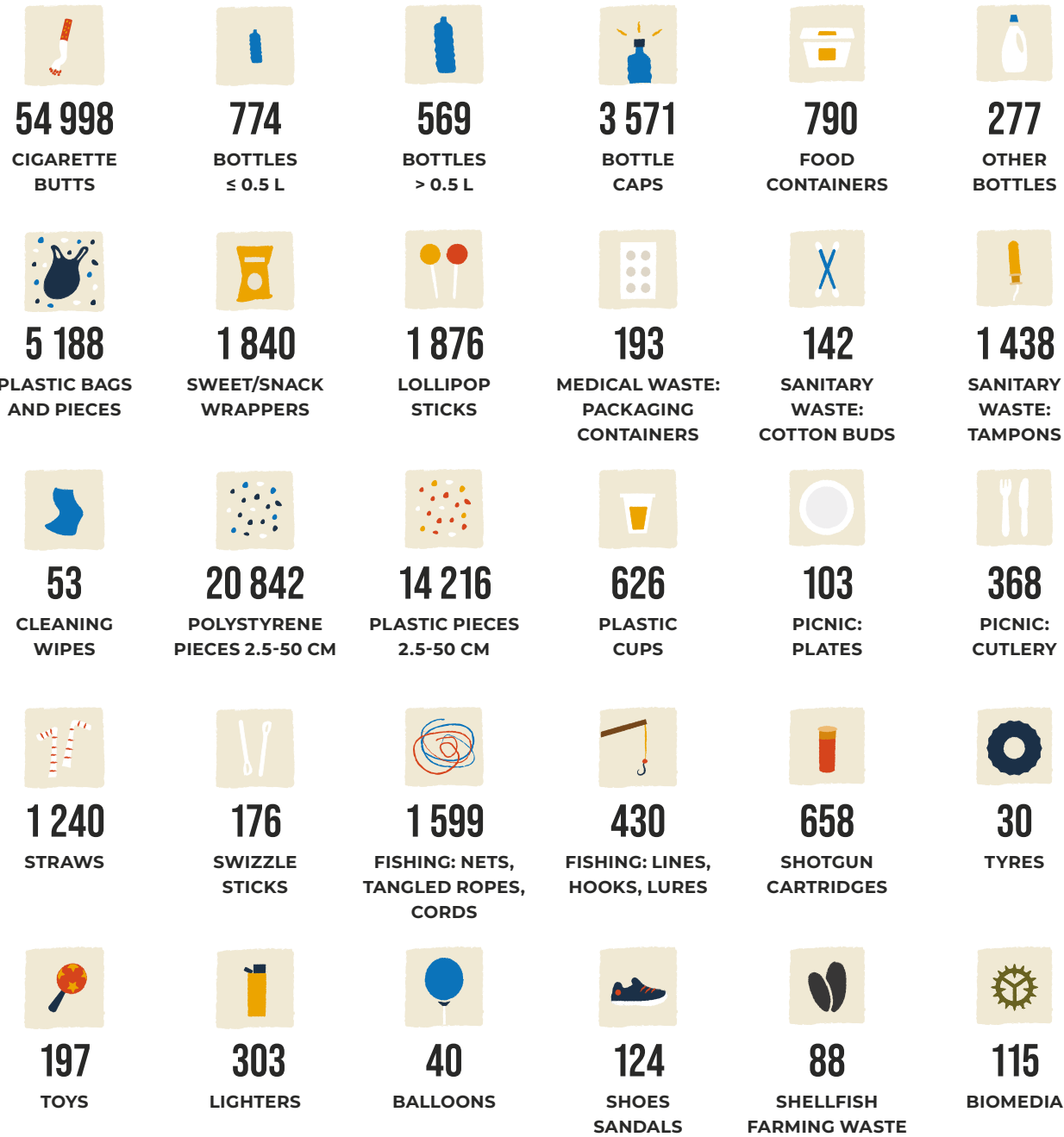
We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:



TOTAL ITEMS COLLECTED IN THE MARINE ENVIRONMENT

129 554 items were picked up and counted through 95 collections over a distance of 38 000 metres.
The total volume of waste collected was 43.3 m³.

Plastic



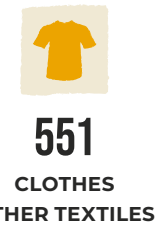
Glass



Metal



Textiles



FACTS AND FIGURES



TOTAL WASTE FOUND IN WATERCOURSES AND LAKES

2 976 items were collected and counted by 97 people over a distance of 9 650 metres.
The total volume of waste collected was 2.47 m³.

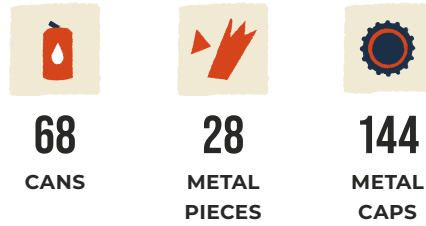
Plastic



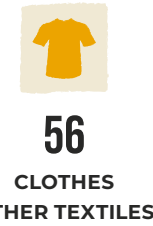
Glass



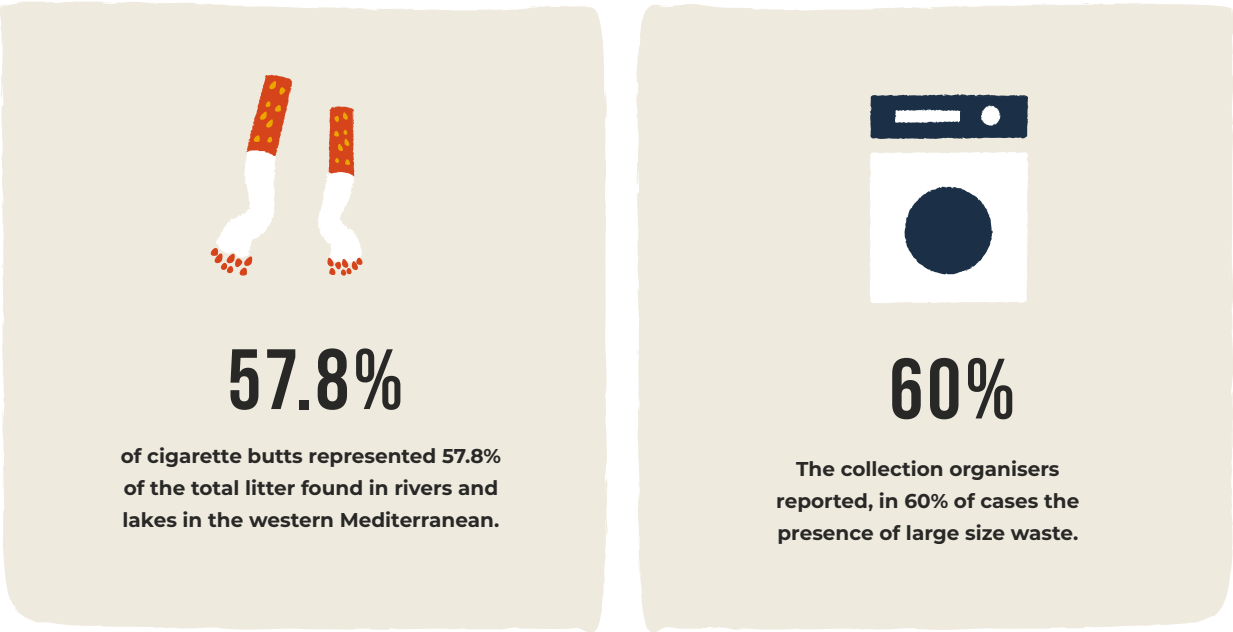
Metal



Textiles



FACTS AND FIGURES





TESTIMONIAL

ISABEL ARMADA

ALICANTE - SPAIN

We discovered Ocean Initiatives thanks to one of our volunteers. The idea of having a tool enabling us to log the information from a collection and to contact participants quickly, is great.

The help for the equipment and the support during the collection is a real plus that helps us organise our events aimed at combatting marine litter. The most common litter items we found during our collections were drink cans and drink bottles, plastic bags and food wrappers. But we were surprised to find a lot of wet wipes, cotton buds and tampon applicators. This clearly reveals the saturation of waste in wastewater treatment plants.

The most surprising litter item we found was, without a doubt, a soda can with a best by date of 2000. This means the can must have spent at least 20 years in the environment. But the strangest find was a tiger print rug on a beach in Alicante.

During our ocean initiatives, we had lots of participants of all ages (children, parents, grandparents). Local authorities gave us varying degrees of support, but we caught the eye of local media and even national television!

We can't wait to be able to return safely to the field. Thank you for your help.



CRISTINA CAMARENA

VALENCIA - SPAIN

Over recent months we have carried out numerous collections on beaches and riverbanks. It's been an unforgettable experience.

While we picked up a large quantity of waste during these collections (around 25 000 pieces of plastic and more than 10 000 cigarette butts), that it is not what impressed us the most. Although it was satisfying to leave a clean natural environment behind us, the most amazing thing was to see the number of people willing to roll their sleeves up and get stuck in for the environment. Around 700 people took part in our collections. We've received dozens of messages over the last few months from people telling us that since the Ocean Initiative, they can't help but pick up litter on the beach when they see it since the Ocean Initiative. Once you start to see cigarette butts in the sand, you see them everywhere! So, it's not so much that we picked up a lot of litter during the

collections, but it is more about the participants who keep taking action after, in a sustainable manner. The impact is therefore even greater than we could imagined. We've had many memorable experiences during these collections, but for me personally there's one image I'll never forget. On February 15, we organised a collection on Malvarrosa Beach here in Valencia, and a group of 12-year-olds went out of their way to dig up some tyres wedged in the sand. They didn't hesitate, and all got stuck in together. Their parents joined in too. For me, this scene represents what we want to encourage with this type of initiative.

To conclude, I would like to say that, if it has been possible, it is through you. Thank you for your amazing association which gave us the tools and the possibility to organise these collections. All the waste we collected is no longer in the sea or abandoned on riverbanks, and it is all thanks to you.





TESTIMONIAL

HÉLÈNE HATTRY

LA SEYNE-SUR-MER - FRANCE

Some of the «eco-delegates» from our secondary school organised this collection on the beach because they were concerned about marine pollution and found it unacceptable to leave the sea in this state. They wanted to do something to make things change.

Along a 200m stretch of beach, we picked up a lot of plastic waste: wrappers, plastic bags, cigarette butts and fishing cord. Under the rocks of the dyke there was a lot of waste (nets, beach chairs, flip flops) which we couldn't reach, as if the rocks had been placed on top of them.

What shocked us the most was the noise of the countless pieces of plastic when we touched the seagrass on the foreshore. We realised then that nature was really affected by plastic, that it has found its way everywhere.

We also found biomedica from wastewater treatment plants, a type of pollution not many people know about. What also shocked us was that when we arrived, the beach looked clean when we arrived, yet waste was hiding in all the little nooks and crannies of the rocks. .





GREATER NORTH SEA

UNITED KINGDOM, NORTHERN FRANCE, BELGIUM,
NETHERLANDS, DENMARK, WESTERN GERMANY, NORWAY, SWEDEN

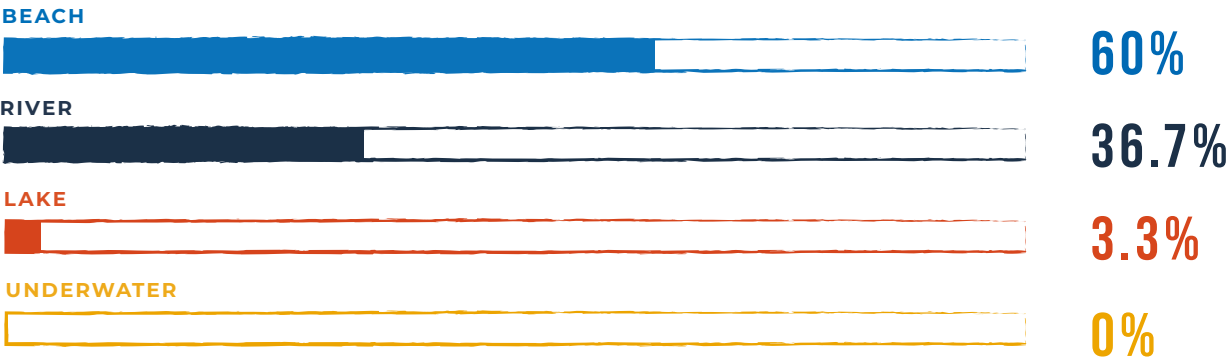
GENERAL DATA FOR THE WHOLE SEA AREA

Extrapolation based on a total of 241 operations that were carried out in this sea area.



RESULTS FROM THE LITTER QUANTIFICATION

Types of collection



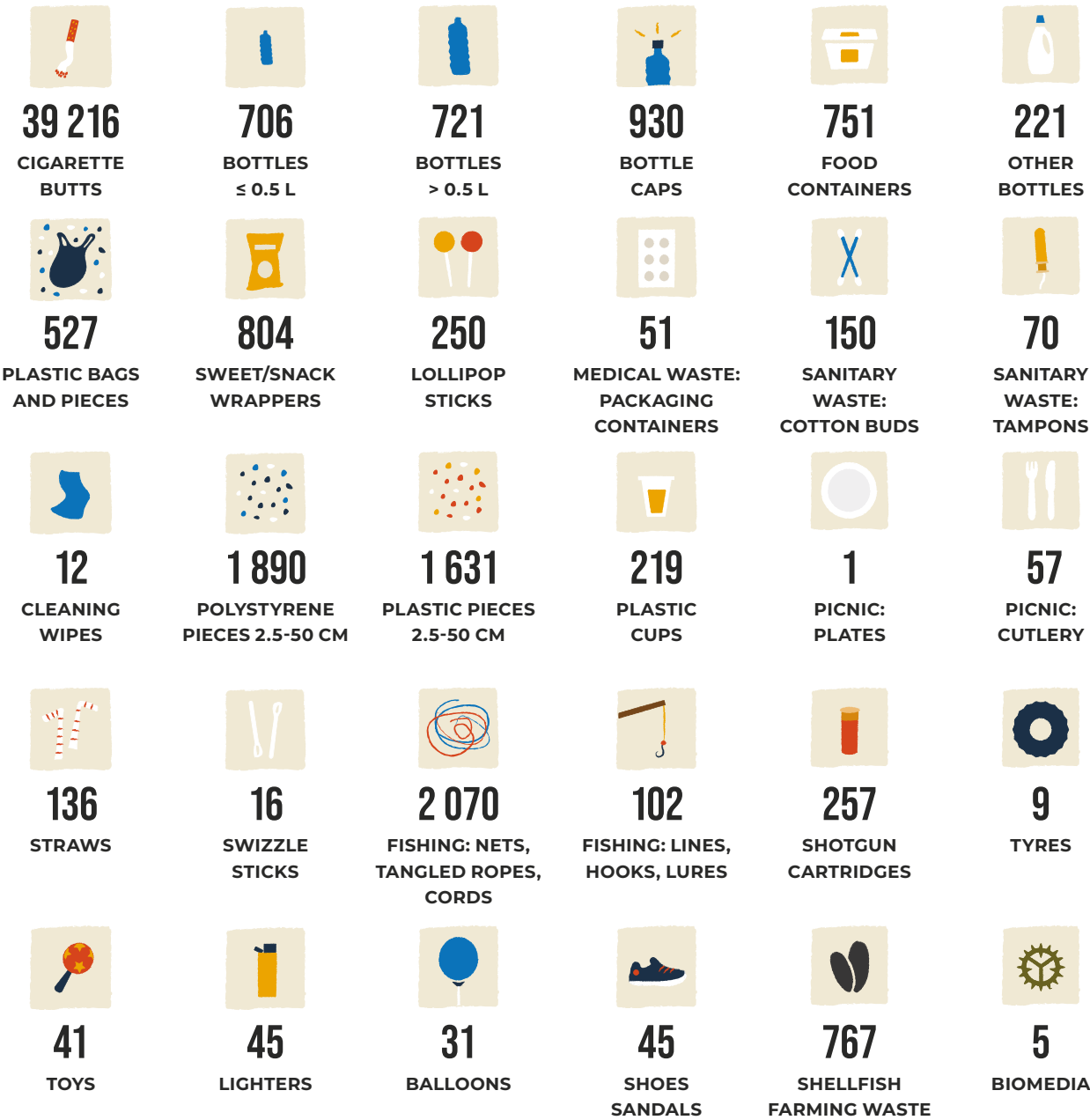
Top 5 litter items



TOTAL LITTER ITEMS FOUND IN THE MARINE ENVIRONMENT AND WATERCOURSES

38 quantification operations bringing together 542 people took place in France (35) and Germany (3).
55 656 items were collected and quantified over a distance of 36 900 m. The total volume of waste collected was 16.7 m³.

Plastic



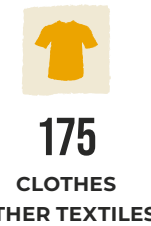
Glass



Metal



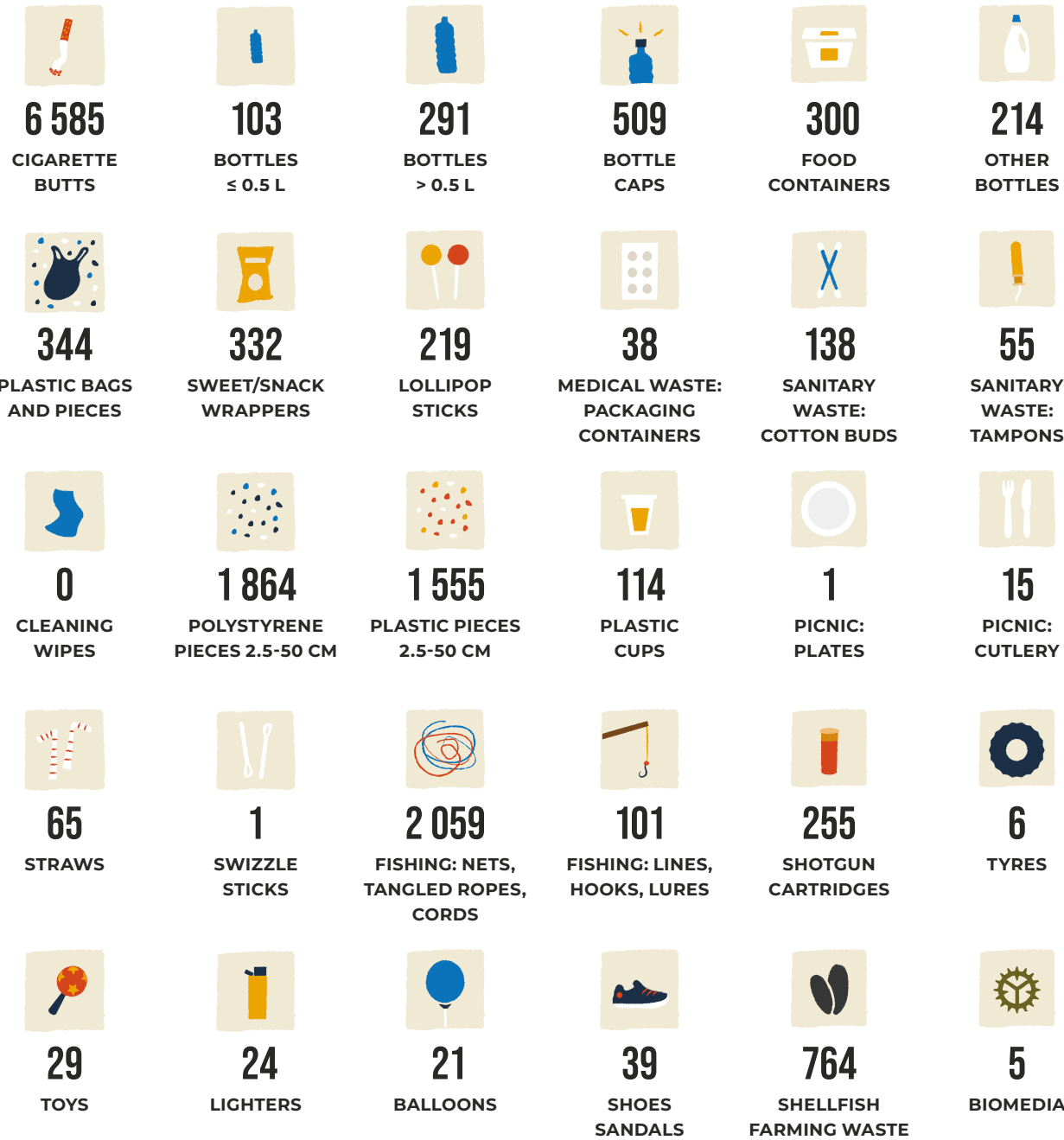
Textiles



TOTAL ITEMS COLLECTED IN THE MARINE ENVIRONMENT

207 bags containing 17 968 items were collected and counted during 22 operations carried out over a total distance of 24 250 metres. The total volume of waste collected was 12.7 m³.

Plastic



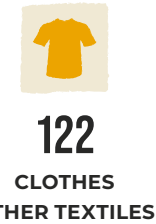
Glass



Metal



Textiles

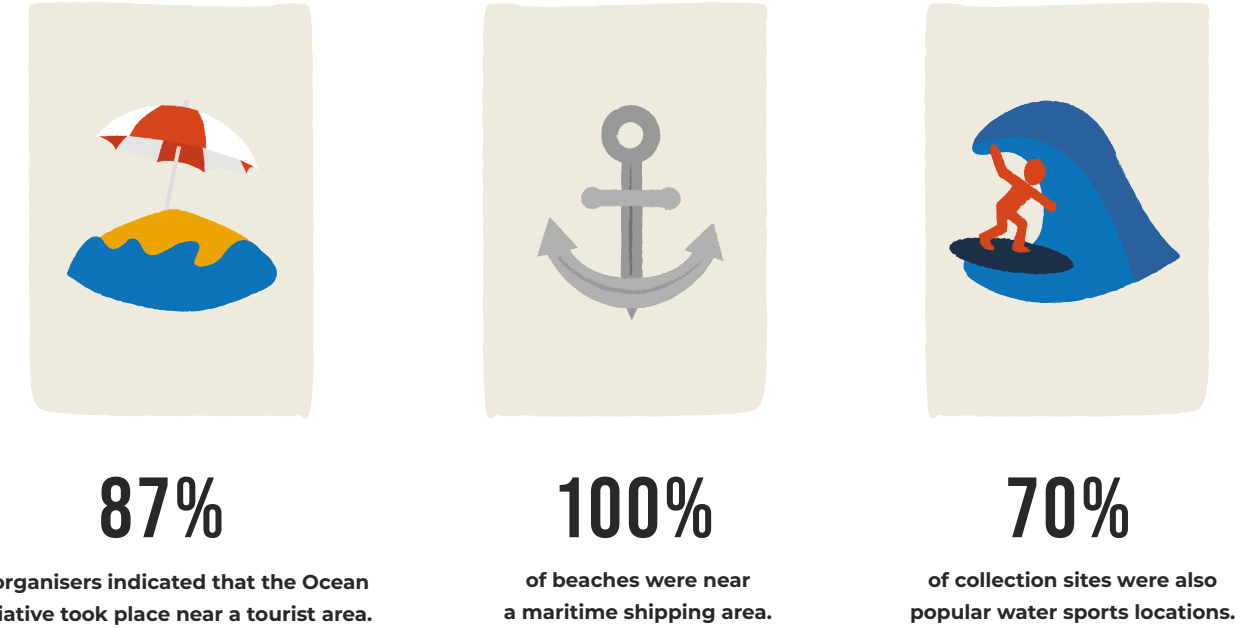


FACTS AND FIGURES



TYPES OF ACTIVITIES

We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:



TOTAL WASTE FOUND IN WATERCOURSES AND LAKES

16 collections with 37 688 items were organised around watercourses in this sea area, over a total distance of 12 650 metres. The total volume of waste collected was 4 m³.

Plastic



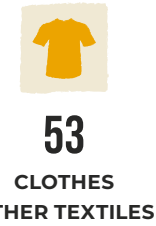
Glass



Metal



Textiles

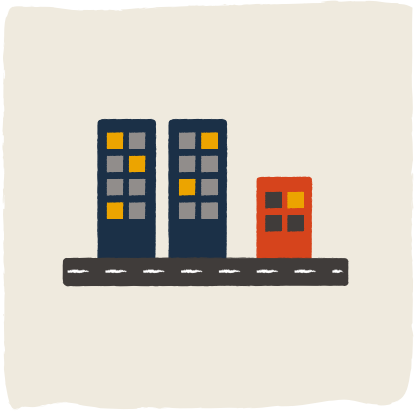


FACTS AND FIGURES



TYPES OF ACTIVITIES

We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:





TESTIMONIAL

MARIE JOURDAIN

PARIS - FRANCE

I'm from the Landes region of France and became aware of the need to protect the oceans at a very young age. I really started to get involved by taking the time to clean the beaches, in summer and winter, whenever I went walking there.

I joined the volunteer branch of Surfrider Foundation Paris in 2020 to carry on this type of action and I organised my very first Ocean Initiative in September. For me, it's essential to get involved in towns and cities to fight against plastic pollution in our oceans. It's also important to raise people awareness.

This is what I liked about my Ocean Initiative because we talked about these issues. We picked up a huge number of cigarette butts (4000 in one hour). It was the most common litter item we found. We also picked up plastic litter (cups, cutlery, wrappers, etc.).

The event went really well, with a good atmosphere and a lovely sunset. At first we were a bit saddened when we saw the area to be cleaned (Les Invalides and the quays) but it just motivated us even more!





CELTIC SEA

IRELAND, GREAT BRITAIN, FRANCE.

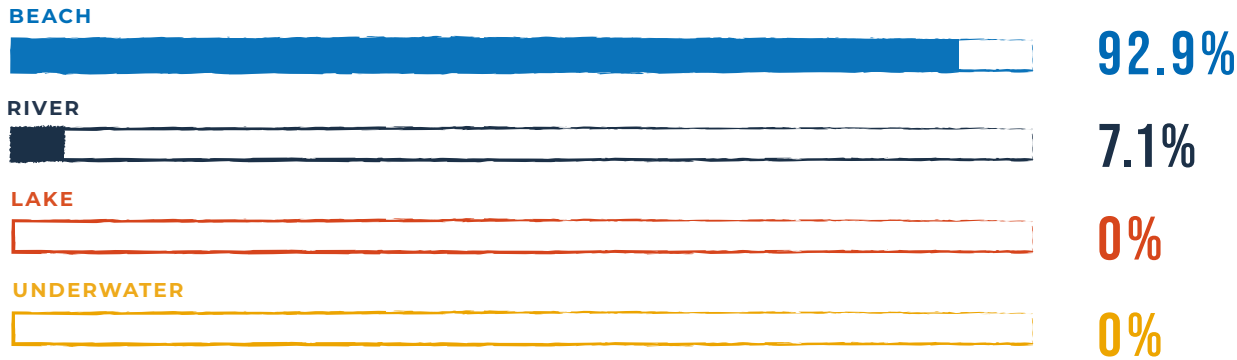
GENERAL DATA FOR THE WHOLE SEA AREA

Extrapolation based on a total of 47 operations that took place in this sea area.



RESULTS FROM THE LITTER QUANTIFICATION

Types of collection



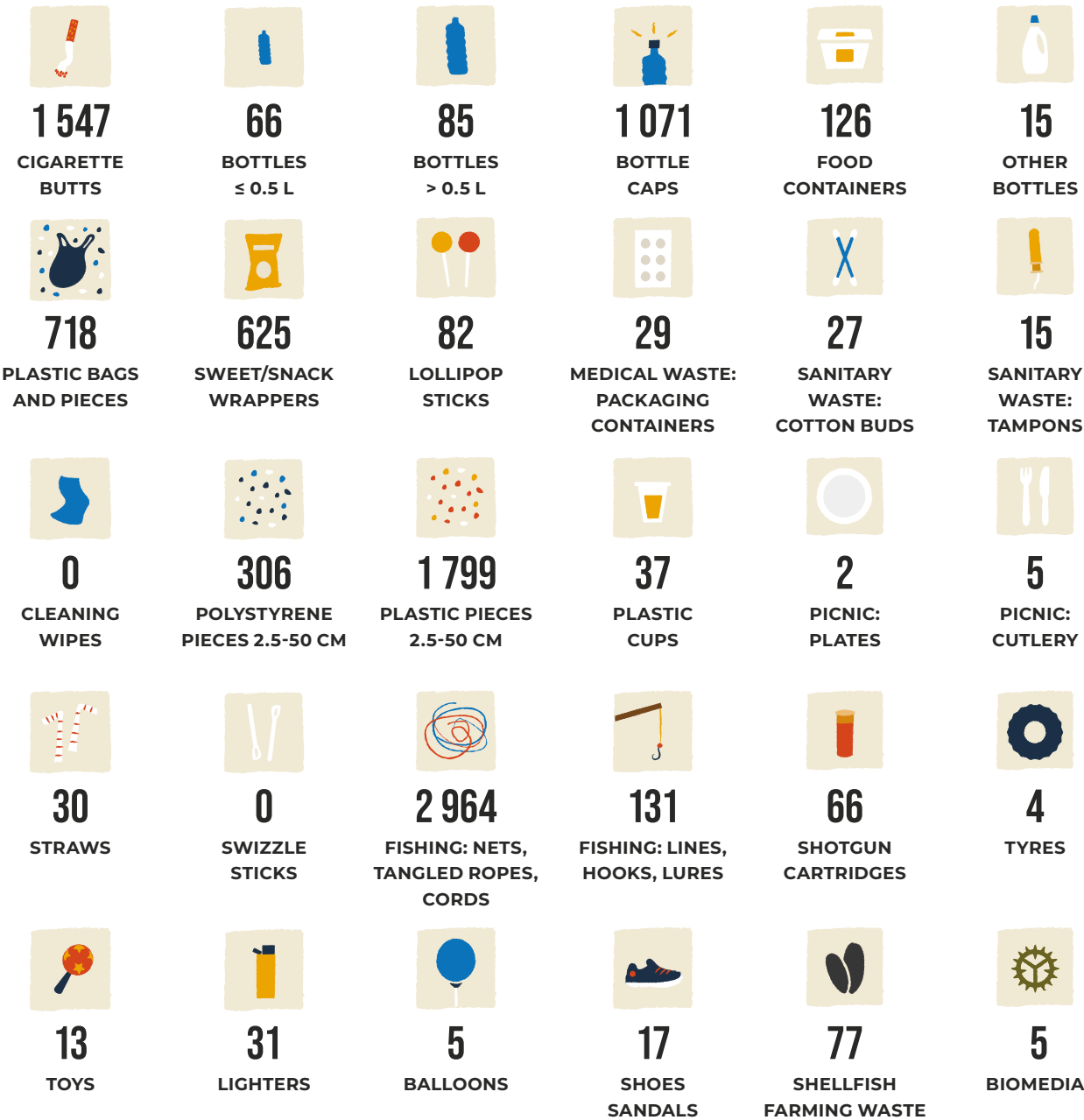
Top 5 litter items



TOTAL LITTER ITEMS FOUND IN THE MARINE ENVIRONMENT AND WATERCOURSES

98 bags filled with 14 065 items were collected and quantified during 14 operations, bringing together 289 people, over a total distance of 11 050 metres. The total volume of waste collected was 4.7 m³.

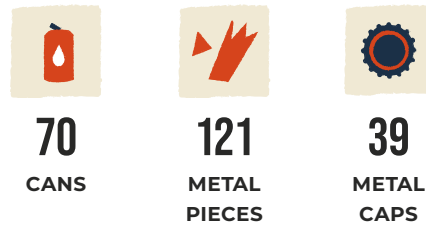
Plastic



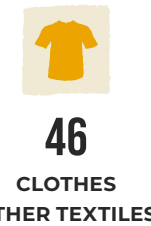
Glass



Metal



Textiles

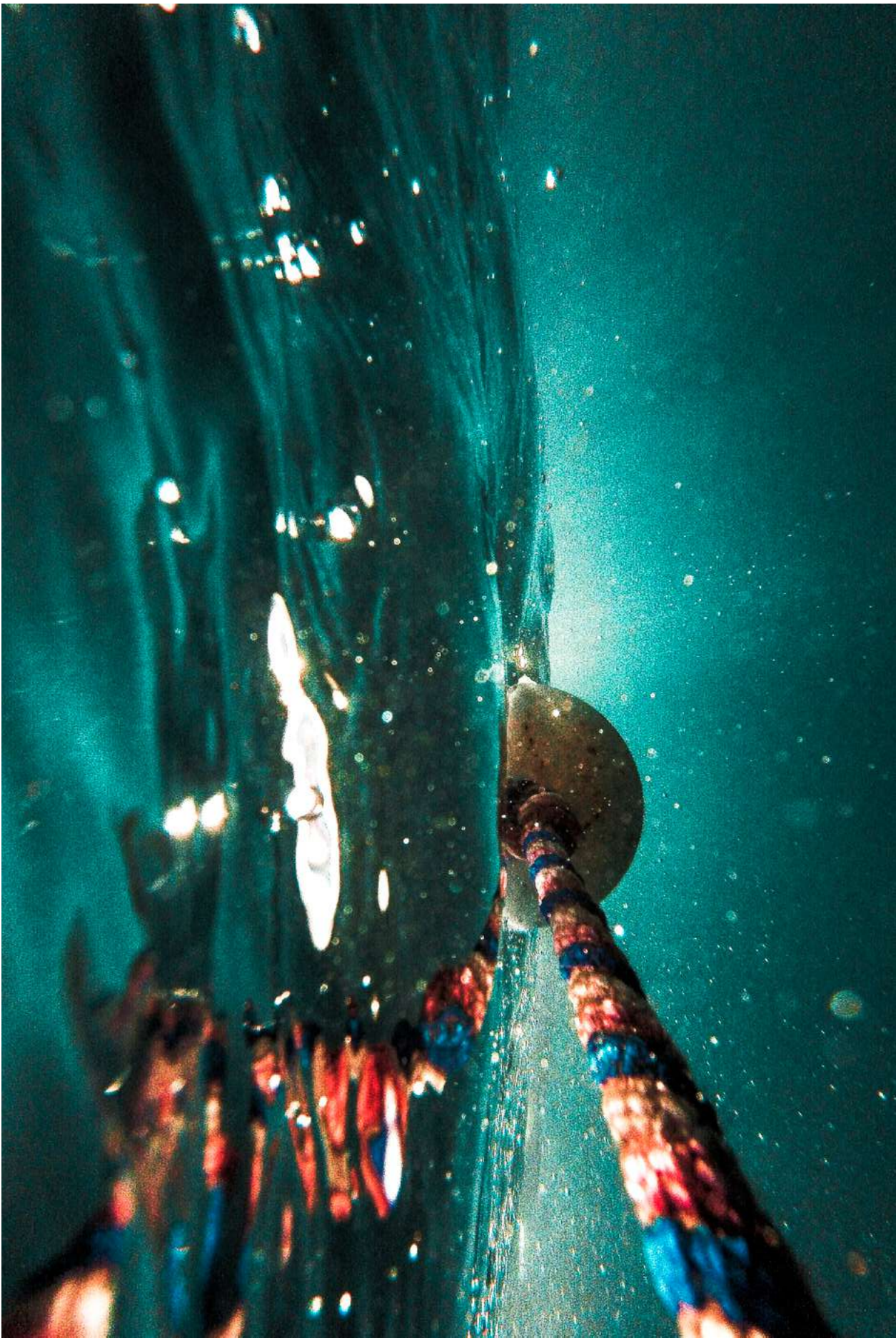
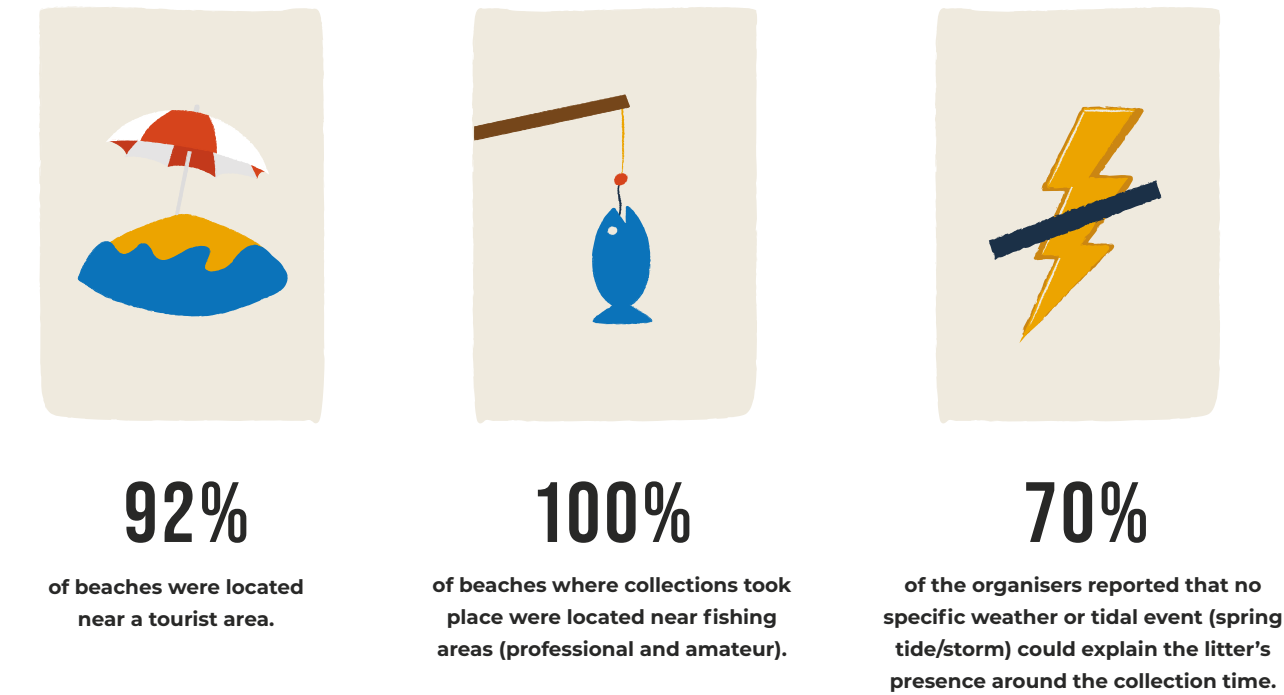


FACTS AND FIGURES



TYPES OF ACTIVITIES

We asked participants to tell us where they thought the litter found during their collections came from. Here are their answers:





OTHER SEA AREAS

In this report, we present the results of community science projects for each sea area. To do this, we need a minimum number of completed report forms to ensure that the data is representative of the pollution in each sea area. Organisers were involved in counts across Europe but we don't always have enough data to present them separately. It is why we've decided to let them speak for themselves so they can share their work and experience of pollution.



NORTH ATLANTIC

CHARLY PUAUD

CANARY ISLANDS - SPAIN

We are Ecovoyage d'Arvik, a sailboat Atlantic tour to raise awareness of plastic pollution. Along our way, we organise beach clean-ups in isolated places which are not easy to access by land.

The Ocean Initiatives enable us to transfer the data from our beach clean-ups to the Surfrider Foundation so they can be used to fight against plastic pollution. Our operation took place in a pebble cove full of litter on a sparsely populated island in the Canaries.

We found huge amounts of hard plastic pieces which had spent time in the sea, a lot of bottle tops as well as fishing ropes and nets. Under the pebbles on the beach, we also discovered lots of small pieces of hard plastic less than 2cm which were very difficult to pick up. During our clean-up, the waves kept bringing in other plastic waste. I should just point out that the island is actually a natural reserve! And all the waste obviously came from the sea. Since our bags were full, we had to stop the clean-up and we had to walk 3k to the recycling bins on the other side of the island.



BALTIC SEA

JORGEN SECHER

SWEDEN

I've always loved the sea and sea-based activities, like surfing, kitesurfing and swimming. The ocean has given me so much, so it was high time I returned the favour! A litter collection seemed like a useful action in which I could get other inhabitants of the island involved.

We found all sorts of plastic - from abandoned fishing nets to bottles and plastic wrappers. We also found tyres and other waste items which must have been thrown directly on the ground and not washed up by the ocean.

At first it was a bit difficult to organise a collection on the island when I wasn't a resident. The island's inhabitants thought that a litter collection wasn't necessary as the locals

were already picking it up «all the time». They didn't need help from mainland. When I looked for local businesses to sponsor the collection by providing hot dogs and coffee, no one was interested. So I provided it all myself. At the end of the first collection, we were all chatting and eating together when an elderly local man came over and asked if the pile of litter had really all just been collected on that one beach in one day. When we told him it had, he admitted that the collection was a good idea after all.

This year, we organised the second collection in collaboration with the local association «Plogga» and local businesses fully sponsored us. It was great fun and we collected a lot of waste together!





03 BIOMEDIA

POLLUTION OF WATERCOURSES AND BEACHES BY BIOMEDIA

From the field to the creation of guidelines for professionals

Since 2008 Surfrider Foundation Europe has been monitoring the pollution generated by biomedias, also known as biofilm carriers. These are small round pieces of plastic with holes which are found in high numbers on beaches or riverbanks across the world. Biomedias are used as a medium for bacteria during the biological water treatment phase in collective and industrial water treatment plants as well as in the fish farming sector to break down organic matter.

During extreme weather conditions, heavy water flow can lead to a saturation of a plant's treatment capacity of plants leading to discharges into the environment. Biomedias can then be found in rivers and on the coast. The poor condition of some fish farms as well as extreme weather events can also result in the loss of biomedias within these facilities.

Surfrider is calling for strict regulations for the use, processing and management of bacterial media to reduce the environmental pollution resulting from their loss.

To combat this specific source of plastic pollution, Surfrider Foundation Europe is carrying out investigations aimed at improving understanding of the process, identifying the manufacturers as well as the users and tracing the source of the waste.

Over the course of the 2020 Ocean Initiatives, **533 biomedias were found during 37 clean-up operations on beaches, lakes and rivers** (all areas and all shapes combined). Biocarriers are found in 1 out of 10 collections. **More than 76.7% of the biocarriers picked up by our organisers were found on beaches in the Bay of Biscay. 21.6% were found in the Western Mediterranean Sea area.**

NUMBER OF BIOMEDIA FOUND OVER 1000 METRES PER SEA AREA

In total 37 collections recorded the presence of biomedias along a linear distance of 39.35 km. Participants collected on average 14 biomedias every 1 000 m.

TYPES OF BIOMEDIA PER SEA AREA



17 different models of biomedias were observed on the Bay of Biscay coast during the 2020 Ocean Initiatives. Unsurprisingly, models 5 and 9 were the most common on this coastline. We suspect that two accidents that occurred in 2009 and 2010 in industrial treatment plants (paper mills) in Northern Spain are behind the pollution of the Bay of Biscay beaches

by these two biomedias models. To our knowledge, it's the most significant pollution we've found in terms of time and quantity on the entire Atlantic coastline. Models 10 and 13 were mostly collected on the shores of the Mediterranean, and in smaller numbers, on the Bay of Biscay beaches.

FAÇADE / FORME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	TOTAL
Golfe de Gascogne	10	3	12		37	54		33	181	14	5		3	1	1	2					5	12	30	6		409
Manche Mer du Nord			1																				4			5
Méditerranée Occidentale		1	2	4	34				3	43		2	19						2	3				1	1	115
Mers Celtiques										2						1	1							1		5
TOTAL	10	4	15	4	70	54	0	33	184	59	5	2	22	1	1	3	1	0	2	3	5	12	30	12	1	533

STUDY ON THE POLLUTION OF WATERWAYS BY BIOMEDIA

Many cases of the presence of and pollution by biomedica have been reported back to us across Europe through Ocean Initiatives as well as by citizens concerned about the health of their beaches and their waterways. Thanks to all these reports, we have been able to carry out a full investigation that allows us to compile valuable information on biocarriers and to trace some sources of this pollution. In order to prevent the pollution of the aquatic environment, we have shared the results of our research with professionals from the water sector.

The study carried out allowed us to draw up an overview of the global functioning of water treatment systems and the specific processes relating to biomedica. We also studied the use of biomedica and the primary forms of pollution observed in order to understand the origin. By using these observed cases of malfunctions within the system and thanks to the collaboration of industry professionals, that we have been able to draw up guidelines to reduce the emission of biomedica into the environment.



For more information on biomedica:

<https://surfrider.eu/en/our-missions/marine-litter/biomedica-70164.html>
<https://youtu.be/fiHoHjpkiv10>

By publishing this report, we hope to share our observations in a first place, with elected leaders and environmental professionals in order to encourage a change of habits and to limit pollution risks. Then, in a second place with Ocean Initiatives participants, who have enabled us to gather valuable information to understand this form of pollution.

In 2020, Surfrider continued to assess the different areas where biomedica were found. This is essential information to present to public decision-makers and in particular the newly elected members of the European Parliament to draw their attention to the issue.

This battle is not over, and pollution continues. So, if you have seen biomedica pollution, do not forget to let us know through the Ocean Initiatives intermediary report form or directly using this form. Every case we resolve brings us one step closer to ending pollution!





04 FOCUS ON CIGARETTE BUTTS

CIGARETTE BUTTS, THE BIGGEST SOURCE OF OCEAN POLLUTION

Since 2020, cigarette butts have become the litter item that we are monitoring with all the report forms provided to Ocean Initiatives organisers. Huge quantities of cigarette butts are found in the ocean. It is estimated that 4 500 billion cigarette butts are thrown into the environment across the world every year. 40% of them are thought to end up in the ocean. A high number, especially when we know that cigarette butts have a double impact on pollution.

Plastic pollution

Two-thirds of the weight of a cigarette is the filter. This is the part of the cigarette is made from plastic, specifically cellulose acetate. The filter is very light and when it's thrown on the ground, the rain and wind will carry it to the drains and watercourses which then act as a highway transporting the cigarette butts to the ocean. Once in the water, the butts gradually break down into microplastics.

Chemical pollution

As well as plastic, cigarette butts contain up to 4000 different chemical substances. These include heavy metals such as mercury, cadmium and lead as well as pesticides, phenols, nicotine and tar. These substances mean cigarette butts are classified as toxic waste. Indeed, 1 cigarette butt can pollute up to 500 litres of water and make it unsuitable for consumption and harm local plants, as well as wildlife and the food chain.



WHERE CIGARETTE BUTTS WERE FOUND

BEACH



39.7%

RIVER



59.1%

LAKE



0.1%

UNDERWATER



1.1%

FACTS AND FIGURES



286

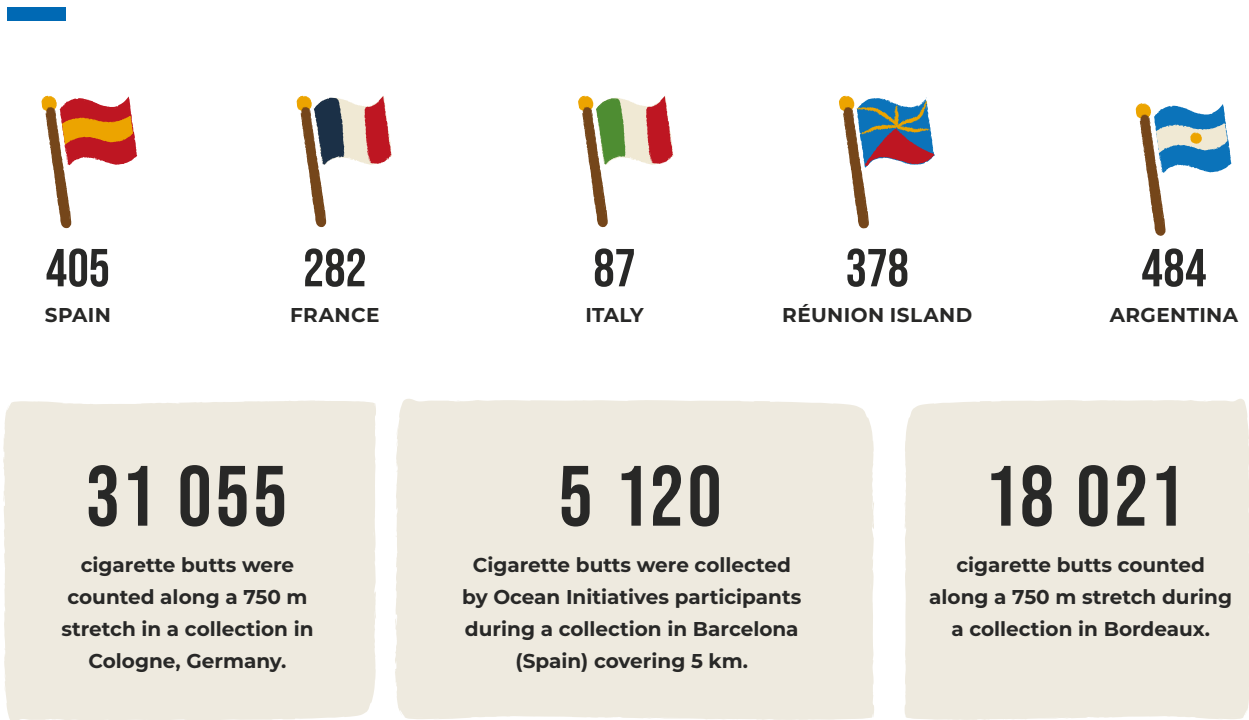
the average number of cigarette butts counted per collection.



100%

in every country where Ocean Initiatives took place, cigarette butts were found.

AVERAGE NUMBER OF CIGARETTE BUTTS COLLECTED PER COUNTRY



PROPORTION OF COLLECTIONS WITH CIGARETTE BUTTS BY SEA AREA



Regulations relating to cigarette butts

Cigarette butts are not subject to any particular measures, despite their undeniable environmental impact. They are collected along with regular household waste across the European Union even though they are classified as toxic waste. Private collection systems are slowly being put in place to try to re-use cigarette butts, notably in the energy sector.

Over recent years, the principles of the «polluter pays» and extended producer responsibility have been increasingly advocated as a means of halting this pollution and making companies responsible for the end-of-life of the products they sell.

Therefore, in 2019, through the European directive on single-use plastics, it was made mandatory for every member state to put in place for 2023 an extended producer responsibility scheme to collect and treat cigarette butts.

In real terms, tobacco manufacturers must pay for: the collection of cigarette butts through a dedicated channel, the transport, cleaning and treatment of cigarette butts littering public spaces as well as campaigns to raise people's awareness.

The recommendations of Surfrider Foundation Europe

Surfrider Foundation Europe is fully committed to support the implementation of new cigarette butt prevention and management measures within the European Union.

Thanks to the feedback from your actions in the field, we can use the data as a basis for the recommendations we make to policy makers and manufacturers. We are continuing to act and demand the reinforcement of companies' extended responsibility of companies and for it to go further by including, for example, an eco-contribution imposed on tobacco-producing industries to counter generated pollution.

Transparency concerning the data on the number of products sold and collected is also necessary in order to have a clear vision of the extent of the pollution. This must be accompanied by the proper transposition of the 2019 European directive by member states. However, the measures will not be effective in reducing cigarette butt pollution if there is no incentive to make cigarettes more ecological, for example by radically reducing the number of chemical pollutants they contain. This approach requires improved scientific knowledge on the impact of cigarette butts on the environment in order to put forward suitable solutions. On the local level, the putting in place of smoke-free places and campaigns to raise awareness of the environmental impact of cigarette butts must be escalated so that all citizens are aware of the issues.



05 FOCUS ON MERMAID TEARS



THE MERMAID TEARS, AN UNNOTICED POLLUTION

Mermaid tears, also called pre-production plastic pellets (PPPs), are small plastic cylindrical beads or pellets the size of a lentil. They are the raw materials used by manufacturers to make plastic objects by melting, moulding or extruding them.

However, mermaid tears are extremely volatile objects. Each year, millions end up in our waterways and the sea affecting marine life in addition of the coast. The pollution may arise during the handling of the PPPs, their transport or their storage. Their small size means they are not always visible and are regularly mistaken for sediment.

Surfrider Foundation Europe is particularly interested in this type of pollution. PPPs have therefore been included in Ocean Initiatives operations since 2018 in order to identify the

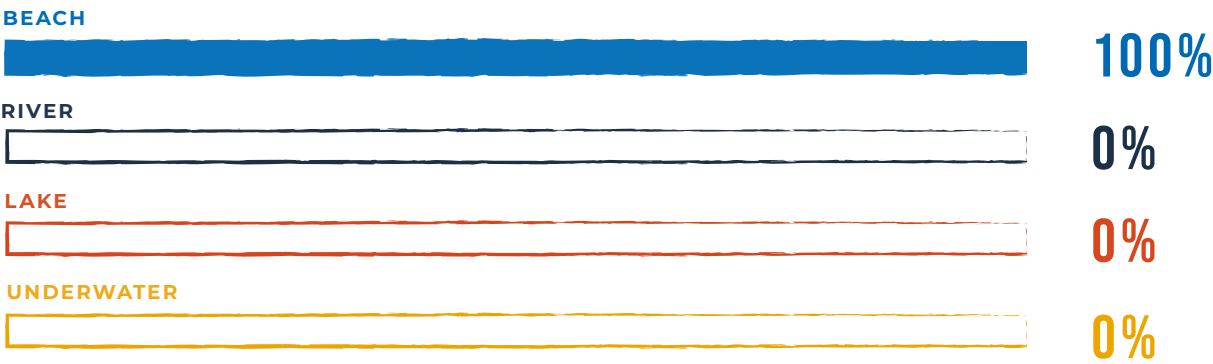
location and quantity present in the environment. Collection organisers and participants are asked to look out for them during their event and to report back to us if any are found.

The observations which are transferred to us are analysed and shared with specialist associations, scientists and public authorities. We want to warn policy makers about this microplastic pollution, which most of the time goes unnoticed and for which there are currently no regulations. We want concrete measures aimed at those producing, transforming and transporting plastic pellets to limit their discharge into aquatic environments.



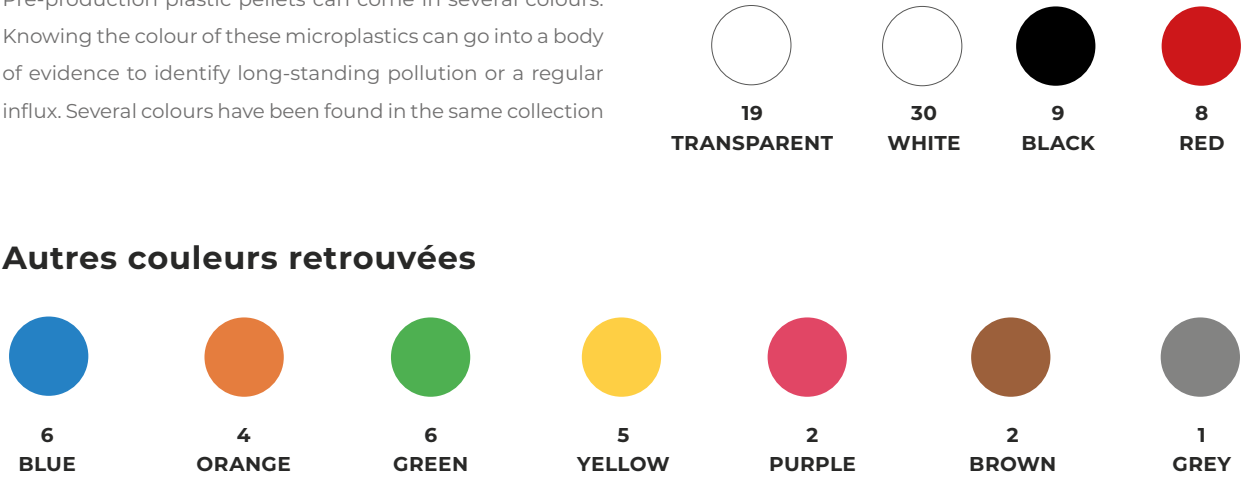
For more information on mermaid tears:
<https://surfrider.eu/wp-content/uploads/2020/11/report-pellet-pollution-2020.pdf>

PLACES WHERE PRE-PRODUCTION PLASTIC PELLETS (PPPS) HAVE BEEN FOUND



COLOURS FOUND DURING THE COLLECTIONS

Pre-production plastic pellets can come in several colours. Knowing the colour of these microplastics can go into a body of evidence to identify long-standing pollution or a regular influx. Several colours have been found in the same collection





OCEAN INITIATIVES

Ocean Initiatives is a programme aimed at reducing marine litter at its source. Through local litter collections around rivers, lakes, beaches and seabeds, Surfrider Foundation Europe aims to bring about a societal change. The data collected during these operations also enable us to produce status reports to push for the adaptation of the European regulatory framework.

www.oceaninitiatives.org