Litter report 2017

A report on littering in Sweden from Håll Sverige Rent (Keep Sweden Tidy Foundation)

About the Keep Sweden Tidy Foundation

Litter is everywhere – in the cities, out in nature, and in the ocean. The Keep Sweden Tidy Foundation works to prevent and discourage littering. We collect information, impact public opinion, develop concrete tools and solutions for stopping littering.

Ke0989

ep Sweden Tidy is an independent non-profit foundation. Our work is financed by contributions and project funding from private businesses and public authorities, and through contributions to Swedish 90-accounts. Keep Sweden Tidy is a member of FRII (Volunteer Organisations (NGOs) Donation Council) and Svensk Insamlingskontroll (Swedish Fund-raising Control).

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Feel free to cite the report but make sure to reference the source.

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Foreword

Plastic in the ocean has become a political hot potato. In June, New York will host the UN Ocean Conference, which will address plastic pollution as a priority issue. And there is no time to lose. The ocean is filling up with more plastic pollution and research shows that this plastic can actually end up in our food – and, finally in us. Measurements made by Keep Sweden Tidy show that most of the litter pollution in the ocean is plastic and that much of this is consumer packaging that has a short useful life.

The issue of pollution gets people involved. 82% of Swedish people think this is a problem. In addition, many people are actually doing something about it. Every year hundreds of thousands people take part in our litter pick-up activities and nearly every municipality in Sweden joins in to help in what is likely the largest environmental campaign in the country: We Keep Tidy.

The private sector is also involved. This year, the Keep Sweden Tidy Foundation has organised the Keep the Ocean Clean network, which includes many companies and other organisations. The idea behind the network is to discuss strategies and solutions for the problems of litter pollution and jointly to put a stop to marine litter pollution.

I feel hopeful about the future. I believe that together we can stop this pattern and that our children and grandchildren will not ingest plastic when they eat ocean fish. But we must act now.

Johanna Ragnartz
CEO of the Keep Sweden Tidy Foundation

Plastic

With its many excellent properties, plastic has contributed to a better life in many ways for many and it is now a given part of our daily life. But it has also caused significant environmental problems. The ocean is full of plastic pollution – and even more is being added.

Plastic is made of polymers, which are chemical compounds with a chain of repeated smaller units. Different types of plastics have different polymers. This in turn can be modified by adding certain substances to make the plastic relatively soft, adding various colours or making it inflammable, etc.

Plastics are manufactured to be more or less strong. Some plastics are manufactured to resist heavy strains, others to be soluble under certain conditions.

Neither oil-based plastics nor newer plastics based on renewable material will disappear if they end up in the ocean. Biodegradable and compostable plastics require special conditions, including oxygen and micro-organisms, to degrade. This process takes much longer in the ocean.

The many types of plastics

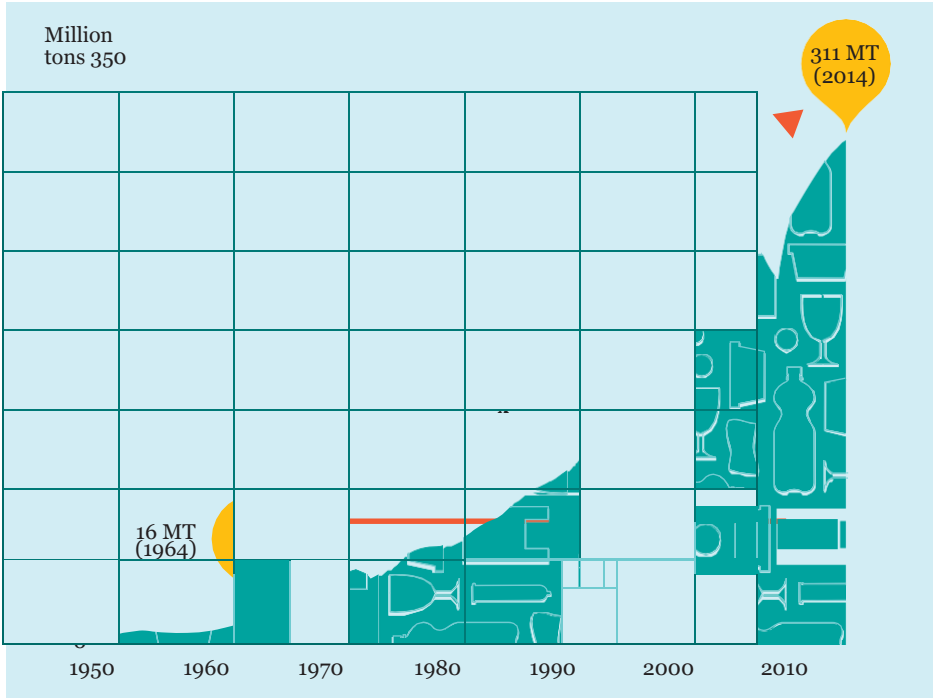
Traditional plastics
Traditional plastics are primarily made from fossil fuels. These plastics most likely will never disappear if they end up as litter pollution in nature. They simply fragmentise into ever smaller pieces, called microplastics. The microplastics are then spread throughout the food chain, where you ultimately ingest them. Read more about microplastics on page 10.

Bioplastics
Bioplastics is a collective term for plastics made from biological substances and biodegradable and compostable plastics. Note that biodegradable plastics can be made from fossil fuels.

Bio-based plastics
Bio-based plastics are plastics that instead of being produced from oil, are made wholly or in part from renewable raw materials (feedstock), such as sugar cane, corn, soy, peas or wheat. Bio-based plastics fragmentise just a slowly as oil-based plastics – they will likely never disappear if they wind up in nature. There is no fully agreed certification for when a plastic can be called 'bioplastic', which means that many plastics containing large portions of fossil fuels are still designated as bioplastic.

Biodegradable plastic
Biodegradable plastic or compostable plastic is the designation for plastics made to last a shorter time – so that these can be degraded more easily than traditional plastics.
Biodegradable plastic can be made from either renewable raw materials or from fossil fuels. The biological break down of these plastics requires special conditions. They are broken down by micro-organisms that can be found in composts, and only in the presence of oxygen. Biodegradable plastic is a problem in the recycling process, because the quality of the recycled plastic declines.

Recycled plastics
Recycled plastic reduces the use of raw materials from either finite or renewable resources. However, recycled plastic can have a somewhat lower quality and it can also include undesirable substances.



The production of plastic has increased dramatically since the 1960's. (PlasticsEurope, Plastics – the facts)
Illustration: Johnny Dyrander

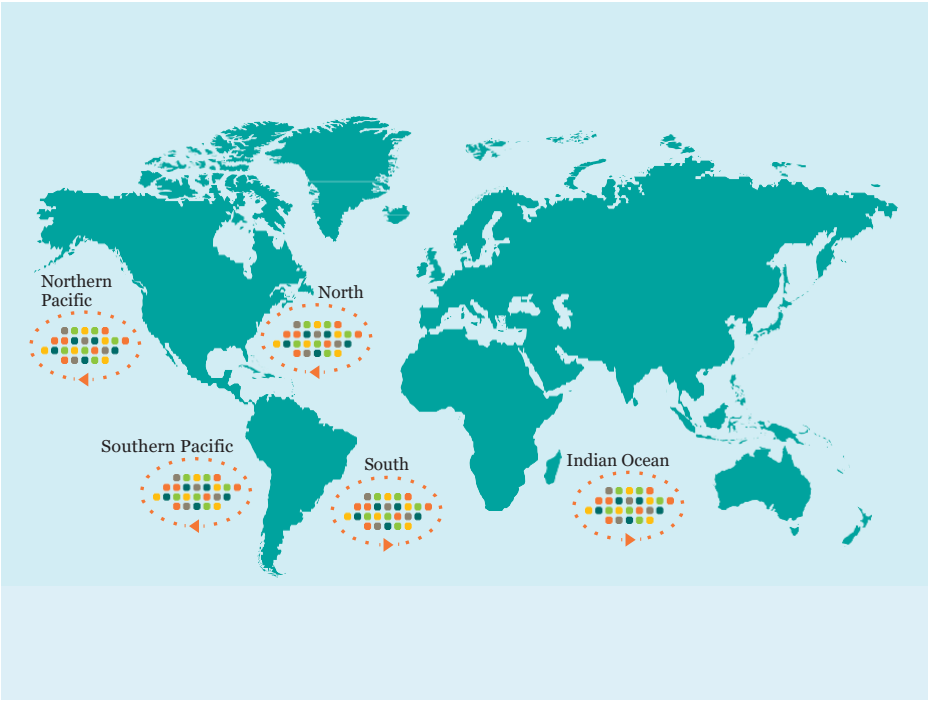
Plastic in the oceans – a Gigantic Problem

Every year, around 8 million ton of plastic ends up in the ocean and we estimate that now nearly 150 million ton of plastic is floating in the ocean; in other words, 580,000 pieces of plastic per square kilometre and 51 trillion particles of microplastics.[1] And we simply continue to add . Production of plastic has grown exponentially since the 1950's when it all started. Today, 9,500 kg of plastic is produced every second. In 2014, over 311 million tons of plastic were produced.

40% of this plastic production is used for once-only disposable packaging.

It is these disposable packaging that rank high on the top-ten list of the most common plastic litter in the ocean. Disposable packaging is cheap, practical and lightweight, but it is also of little value to consumers. The recycling rate of plastics is low in Sweden; 45% of all plastic packaging is recycled.[2]

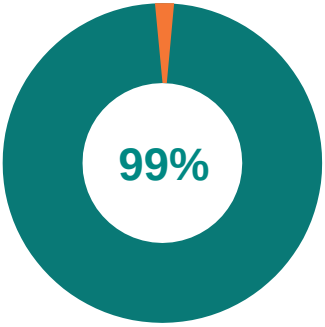
The lack of understanding related to marine plastic pollution is great and researchers across the world are working hard to find out more about the environmental catastrophe created by ocean litter pollution. But we know a little.



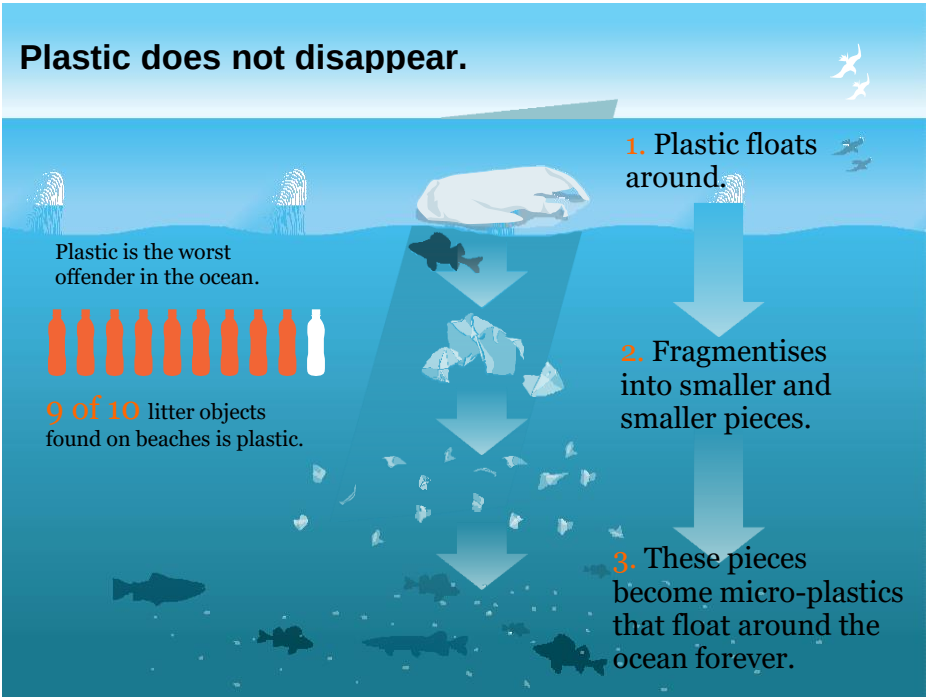
Litter accumulates in huge plastic continents. Illustration: Johnny Dyrander

A well-known estimate is that there will be more plastic than fish in the ocean by 2050 if nothing is done.[3] Most of the plastic in the ocean cannot be seen – only 5% of all the litter is washed ashore – the rest is still in the oceans. There, most of this litter pollution ends up at the bottom – just 1% of all the plastic that enters the ocean remains in the water column.[4] Some of this litter accumulates in huge plastic continents; one of these is called the Great Pacific Garbage Patch.

Marine litter harms over 600 marine species. One estimate is that if current trends continue, 99% of all sea birds will have eaten plastic by 2050.[5]



of all sea birds will have eaten plastic by 2050.



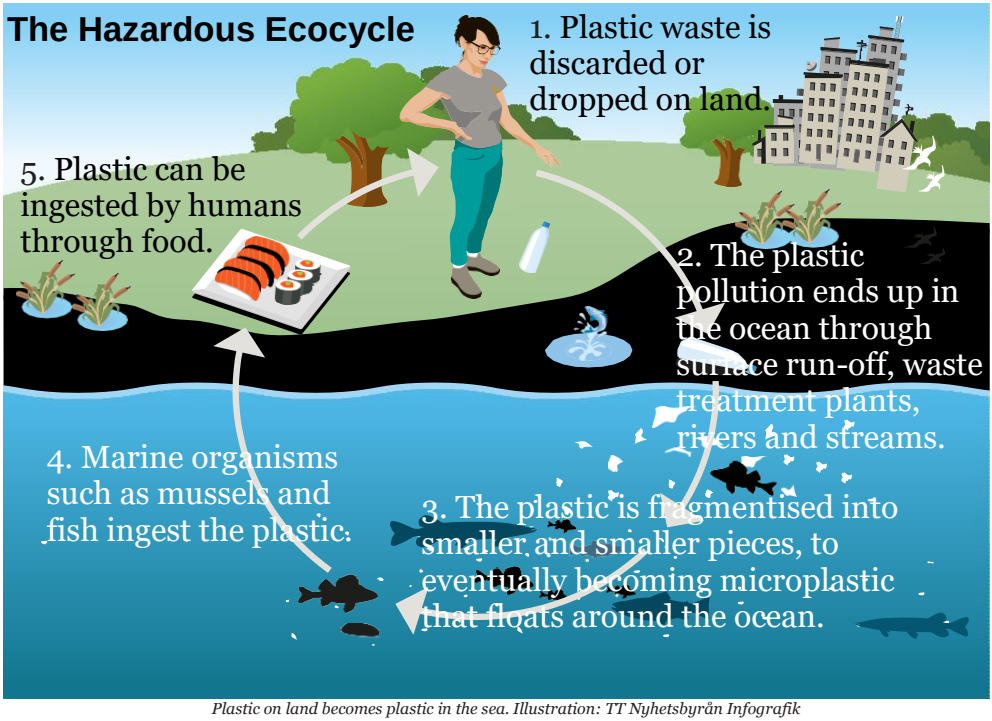
Plastic never disappears; it breaks into smaller and smaller pieces. Illustration: TT Nyhetsbyrån Infografik

80% of the litter in the ocean comes from land-based sources and most of this is plastic packaging and other plastic items. Marine traffic and other sea-related activities contribute the remaining 20% cent of this litter.[6]

The plastic that enters the ocean never disappears, it simply fragmentises into microplastics. One source of microplastics in the ocean is plastic discarded on land, which is then carried to sea through surface water run-off, water treatment plants and via rivers.[7]

Microplastics in cosmetic products, clothing, artificial grass fields and from tyre wear also contribute to filling the sea with microplastics.[8]

The microplastics in the ocean then enter sea life and eventually you ingest it in food. Research shows that many animals eat microplastic particles and that these are then transmitted up through the food chain. Researchers have also shown that particles can enter an animal's body through its intestinal tract. We also know that the microplastics act as a kind of magnet that binds chemicals into higher concentrations.



Plastic on land becomes plastic in the sea. Illustration: TT Nyhetsbyrån Infografik

Chemicals that accumulate on plastics can be stored in the animal tissues and subsequently transmitted along the food chain.[9]

The impact that plastic litter pollution has on marine life is enormous. Large plastic objects harm marine animals such as seals and seabirds, because they become entangled in the litter. Seabirds and other marine animals mistake the plastic for food and then starve to death when their stomachs fill with plastic.

Cleaning this litter from the shores also costs enormous sums. Sweden has a hot-spot on its west coast where large quantities of litter lands every year. The local municipalities there struggle endlessly to clear away this litter.

Strong measures are needed to put an end to the littering of our marine environments by all stakeholders in our society.

Indicators for sources of marine litter covered in the study 'Plug the marine litter tap.'

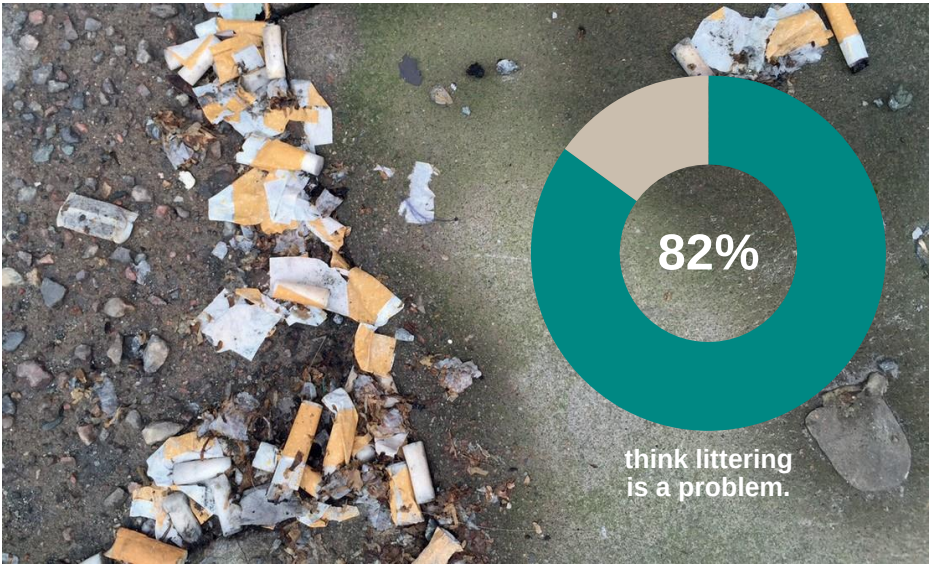
Municipalities can contribute by trying to stop the littering at source. Keep Sweden Tidy has provided information about the sources that municipalities can study more closely. The illustration above shows the sources of marine littering covered in the study '*Plug the Marine Litter Tap*' that Keep Sweden Tidy conducted with funding from the Nordic Council of Ministers.[10]

Producers can help by making packaging that is easier to recycle or which stays attached and doesn't have loose parts. One example is bottle tops that are attached to the bottle. These producers can assume a larger role in the effort to reduce littering from plastic packaging. Read more on page 39.

Consumers can contribute by never littering, joining groups that pick up trash, and by avoiding unnecessary plastic packaging.

Marine littering is definitely an international issue and many initiatives are underway across the globe to reduce the debris. Read more on page 38.

Facts about litter

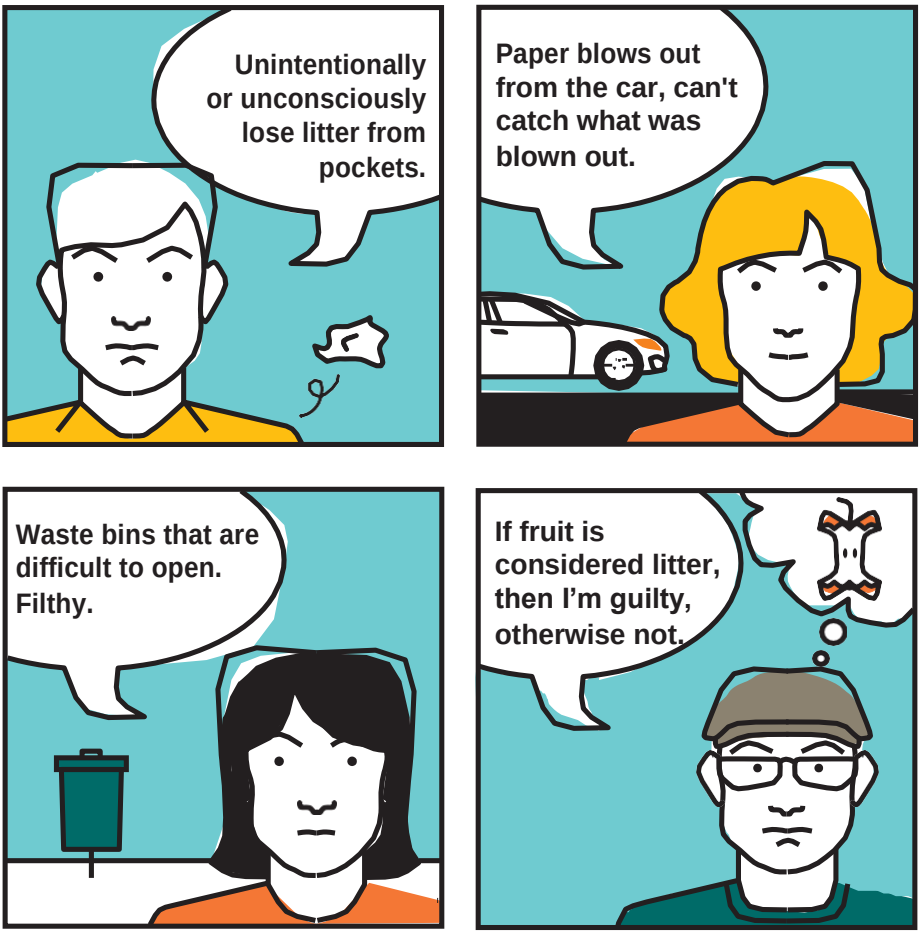


82% of all Swedes think that littering is a problem.
Of these, 32% think that littering is a very significant problem.

Littering has many negative consequences. Besides being ugly, disturbing and harmful to animals and nature, littering causes huge costs. Littering is a waste of resources; it is lost waste – waste that could be recycled. We also know that litter causes more litter and that it causes insecurity. Read more on the consequences of marine litter on page 11.

A survey conducted by researchers from Sifo, on assignment from Keep Sweden Tidy, shows that 82% of Swedes think that littering is a problem. Of these, 32% think that littering is a very significant problem.[11] Most people think that streets and sidewalks are littered, but nearly as many think that roads and recycling stations are also littered.[12] Only 3% of Swedes think there is no litter, and only 3% think that littering has become less in recent years. 40% think that litter has increased and 53% think that littering has remained approximately the same over the last year.[13]

Quotes from the Keep Sweden Tidy survey



Sifo survey conducted on assignment from Keep Sweden Tidy 2017. Illustration: Johnny Dyrander

Who is actually littering? It's hard to tell, because very few people admit to littering. Only 3% state that they litter a few times per week.

The majority, 58%, state that they never litter.[14] Those who admit to occasional littering, usually state that this concerns compostable litter or that they couldn't find a rubbish bin.[15]

The amount of litter 10 m in urban environments

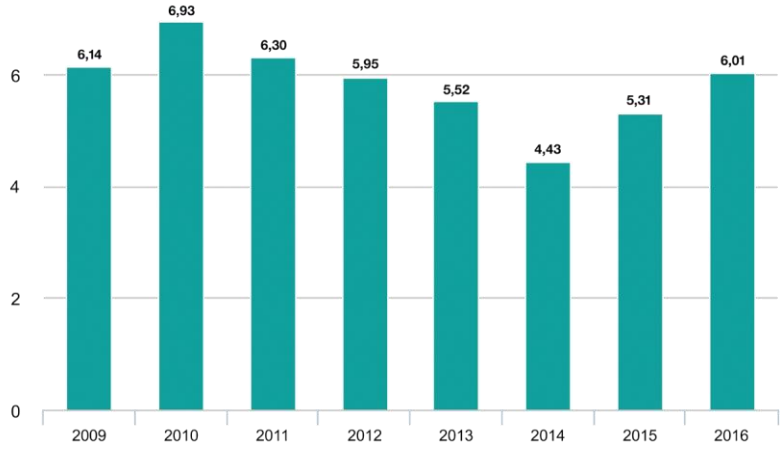


Figure 1 - Mean value of the results from municipalities that measured litter from 2009-2016, Keep Sweden Tidy and Statistics Sweden. Number of urban areas that took part in measuring has varied from year to year, so this data is not entirely comparable.

Litter in the city

Littering in Sweden continues to increase, as shown in surveys conducted by Keep Sweden Tidy. The opposite should be occurring, because the municipalities that measure litter are also active in preventive efforts. Keep Sweden Tidy therefore fears that littering in the municipalities that do not measure their litter is increasing significantly.

Analysing why littering is increasing is difficult due to the current perception of the problem. One reason may be due to the trend towards more fast-food packaging, combined with the psychological mechanism that litter leads to litter. If an area is already full of litter, people tend to litter even more.

Fictive sidewalks 100 m long

If you walked on 100 m of sidewalk, according to our findings, you would pass a total of 179 different types of litter. Illustration: Johnny Dyrander

Litter in urban areas

The average number of litter objects per ten square metres in urban areas has increased in recent years, according to the litter measured in municipalities by Keep Sweden Tidy and Statistics Sweden.

On average, there are six pieces of litter every ten square metres in towns that measure littering. Imagine walking along a sidewalk that is 2-metre wide and 100-metre long. According to these findings, you would pass a total of 179 pieces of litter or 77 cigarette butts, 66 pieces of chewing gum, 16 pieces of discarded snuff, 10 pieces of paper and 7 pieces of plastic, including some other type of litter.[16]

The type of litter that has increased the most is also the most common litter: cigarette butts. On average, there is nearly four cigarette butts for every square metre in urban environments.

Cigarette butts represent 65% of all litter and together with other tobacco related litter (cigarette packages, snuff, and snuff boxes), these add up to 80% of all litter.

Cigarette filters are made of a type of plastic: cellulose acetate that takes a long time to disappear if it is discarded in nature.

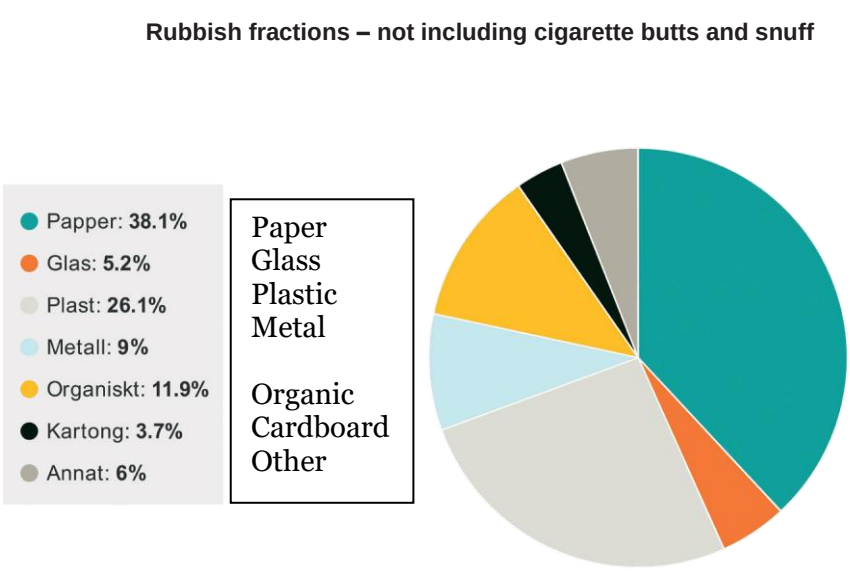


Figure 2 – Rubbish fractions in urban areas excluding cigarette butts and snuff, 2016, The Keep Sweden Tidy Foundation and Statistics Sweden.

The greatest cigarette butt density point that was measured contained 150 butts. The randomly selected point was found in Gothenburg and it is a mystery why so many butts were found exactly there.

Paper and plastic are the fractions that dominate in rubbish if we exclude cigarette butts and snuff from the statistics. Glass is a rather rare kind of rubbish.

Since 2013, The Keep Sweden Tidy Foundation and Statistics Sweden have been measuring littering which has occurred. The study confirms that littering has been growing significantly.

Figure 3 - heatmap Gothenburg, 2016, The Keep Sweden Tidy Foundation and Statistics Sweden. The colours provide an overview of how scrap was distributed at the time of measurement. The scale goes from green (little rubbish) to red (a lot of rubbish). There are several heatmaps at The Keep Sweden Tidy Foundation and Statistics Sweden website.

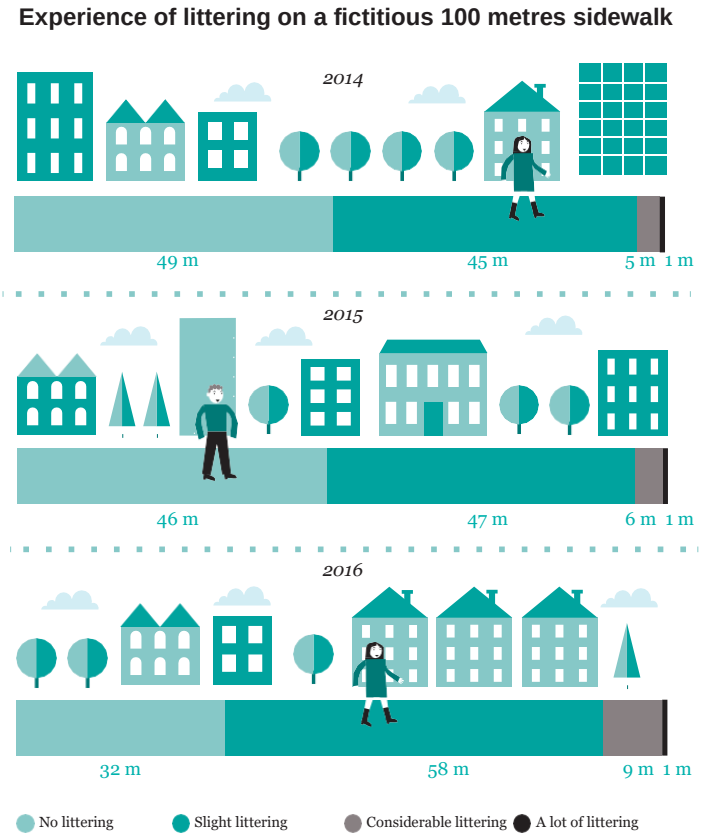


Figure 4 – Littering situation experienced in urban areas in 2014-2016, The Keep Sweden Tidy Foundation and Statistics Sweden.

Illustration: Johnny Dyrander

No littering

Slight littering

Considerable littering

A lot of littering

Where does littering occur?

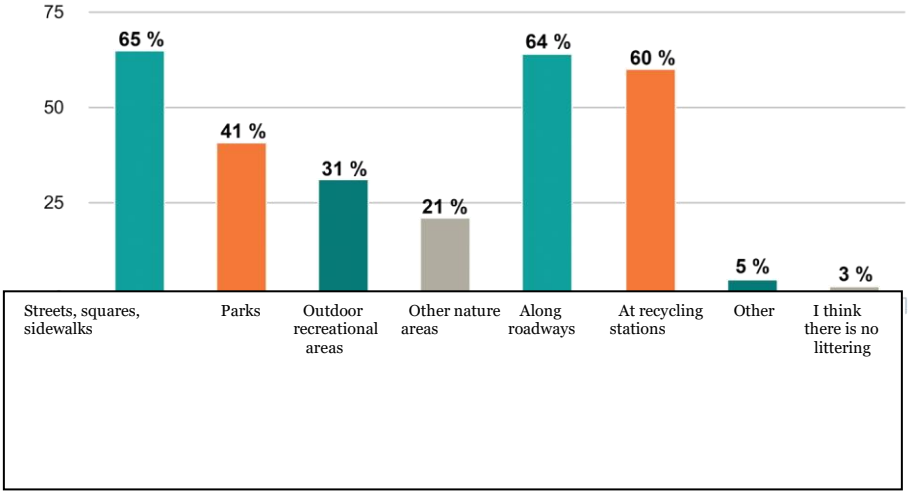


Figure 5

- In a Sifo study, Swedes answered whether they think there is littering somewhere (several alternatives could be selected).

In 2015, 54% of all surfaces were considered to be littered. For 2016, the figure was almost 70%. It can be illustrated on a fictitious sidewalk where 32 metres would be considered clean, 58 metres slightly littered, 9 metres quite littered and the last metre very littered.

Swedes also believe that the most littered areas are on the streets: squares and sidewalks. 65% believe that there is litter there. It shows a Sifo study that The Keep Sweden Tidy Foundation has carried out.[17]

Photo: shutterstock.com /Tupungato.

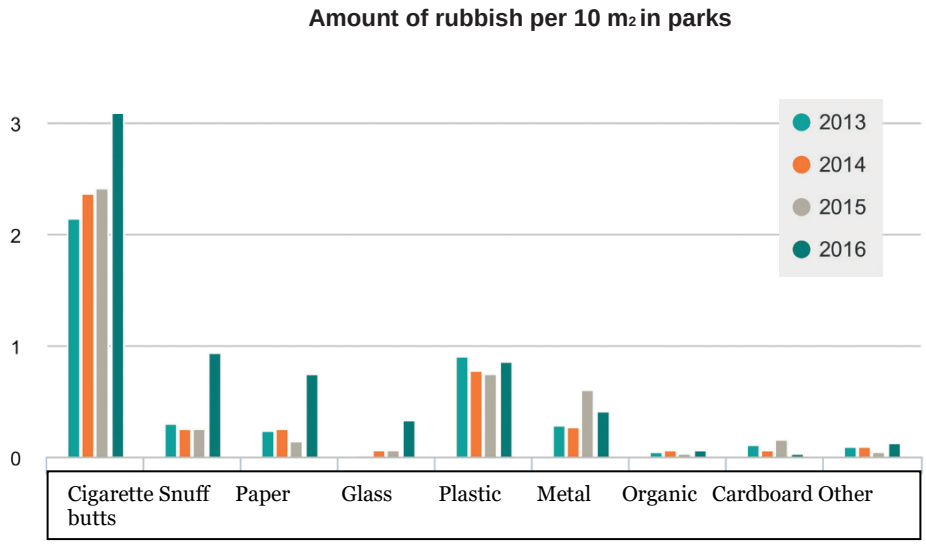


Figure 6 – Mean value from the parks that participated in litter measurements, 2013-2016, The Keep Sweden Tidy Foundation and Statistics Sweden. The number of parks participating in the measurement has varied from year to year, which makes the data not entirely comparable.

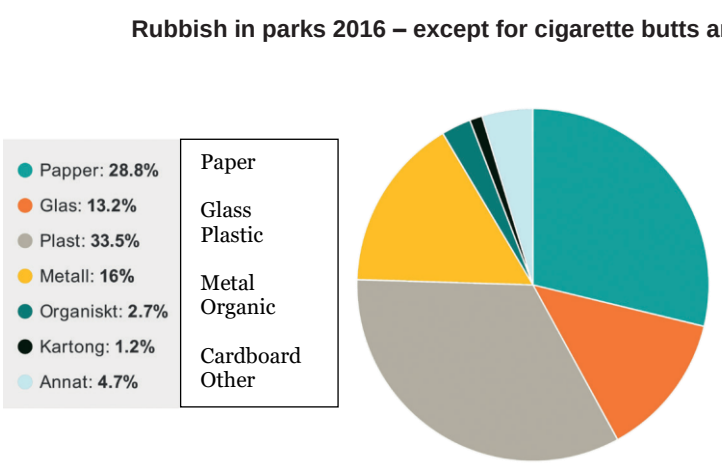


Figure 7 -Refuse fractions in parks, with the exception of cigarette butts and snuff, 2016, Skräpfraktioner i parker exklusive fimpar och snuff, 2016, The Keep Sweden Tidy Foundation and Statistics Sweden.

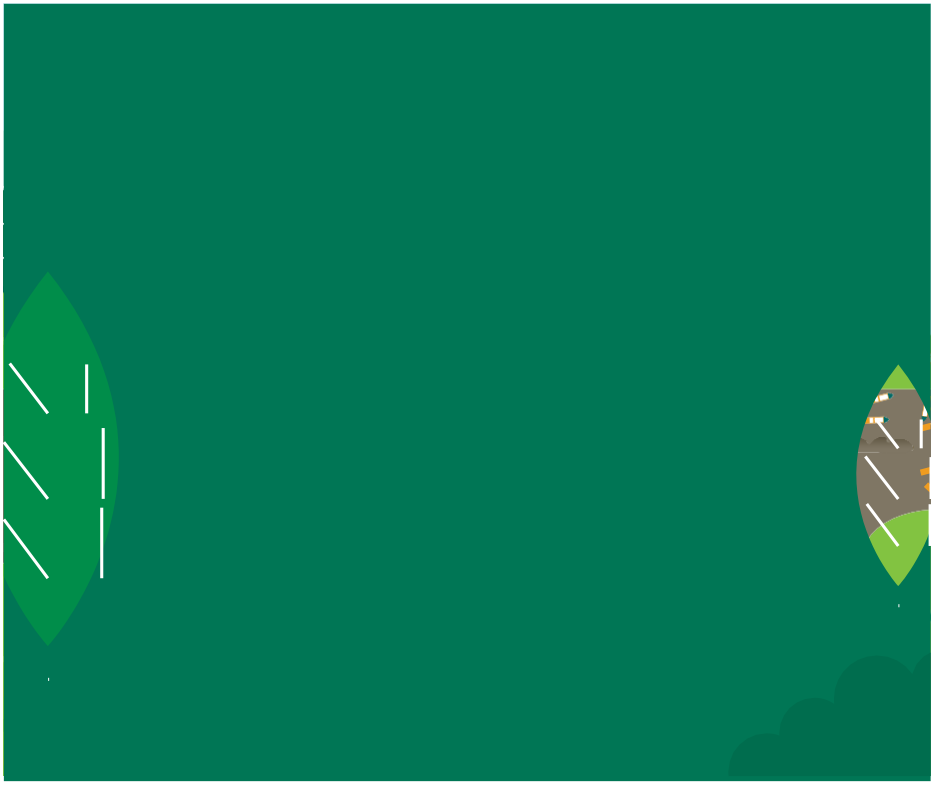


Illustration: Johnny Dyrander.

Rubbish in parks

Rubbish in parks seems to have increased over the last year. The average increased from 4.46 rubbish objects per 10 square metres to 6.88 rubbish objects. However, the figures are not fully comparable as the number of parks that measure rubbish varies from year to year.

Some of the parks where rubbish was measured last year were quite littered. In a park in Stockholm, Drakenbergsparken, there were over 17 pieces of rubbish per 10 square metres.

The most common rubbish in parks is cigarette butts, followed by snuff and plastic. And indeed there are a lot of butts. On a typical summer day, you will find 25,000 cigarette butts in Drakensbergsparken in Stockholm![18]

If cigarette butts and snuff are excluded from the statistics, 34% of rubbish consists of plastic.

Around 45% of the surfaces measured last year were considered to be littered by measuring personnel.

Skärholm's city district administration, 2016. From ground to basket – a LIFT for 127.

Rubbish in suburbs

In the suburbs, where littering was measured last year, littering declined in contrast to urban areas and parks. Skärholmen, a suburb to Stockholm, accounts for the greatest share in the decline.

It is obvious that the efforts which Skärholmen carried out with the Lyft 127 project have had a payoff. The project worked with the community and young people on holiday in the district and created fun activities around picking up rubbish.

The suburbs also have a lower average compared to the other areas where rubbish was measured and the number of cigarette butts is lower. [19]

Foto: shutterstock.com / Rachapong.

Rubbish in nature

The Keep Sweden Tidy Foundation has found that littering in certain areas in nature is increasing. The Foundation often receives reports from landowners, municipalities and organisations that rubbish is left behind in woods and in the countryside. Unfortunately, facts and statistics are lacking about the extent of the problem.

A picture of the extent to which nature is littered is confirmed by the perception of the Swedes. In a new Sifo survey, 21% of Swedes questioned believe that Sweden is littered in the woods and in the countryside; in other words, in nature! And 31% believe that it is littered in recreational areas, such as floodlit running tracks, beaches, and so forth. .[20]

In cases where someone has dumped a large amount of rubbish in the woods or countryside, it is often difficult to find the perpetrator. In such cases, it is often the municipality who has to clean up. In case of a more gross type of littering offence (that is not a littering offence which leads to a fine, see page 35), the number of reported crimes has decreased since 2015. However, it is difficult to know whether littering has been reduced or whether this is due to a reduction in the number of police notifications of reported crimes since 2015.

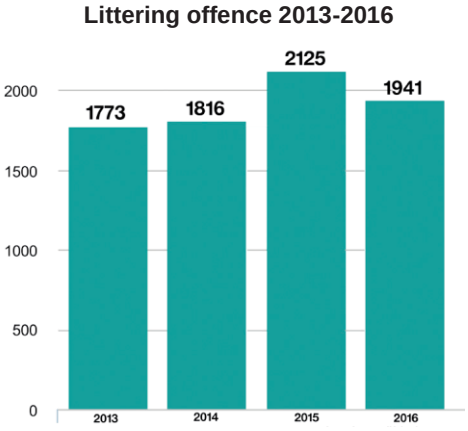
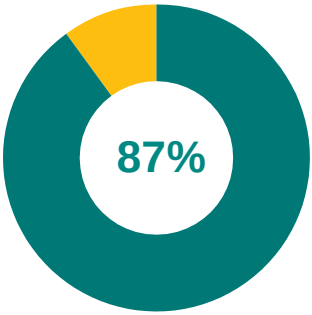
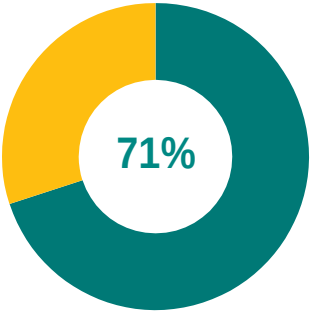


Figure 8 – Reporting littering offences 2013- 2016, Crime Prevention Council



Believe that littering in nature is a problem



Consider that they themselves are responsible for rubbish

87% of young people between the ages of 16 and 25 believe that littering in nature is a problem while 71% believe that they themselves are responsible for that.

Our fantastic right to public access also results in some littering in nature. In a study carried out in 2016 by The Keep Sweden Tidy Foundation, 87% of young people between the age of 16 and 25 felt that littering in nature is a problem.
But not everyone feels responsible for ensuring that there is no littering. Among 16-20 year-olds in large cities, only 71% feel that they are responsible.[21]

Most common litter in Kebnekaise

1. 
Portioned snuff

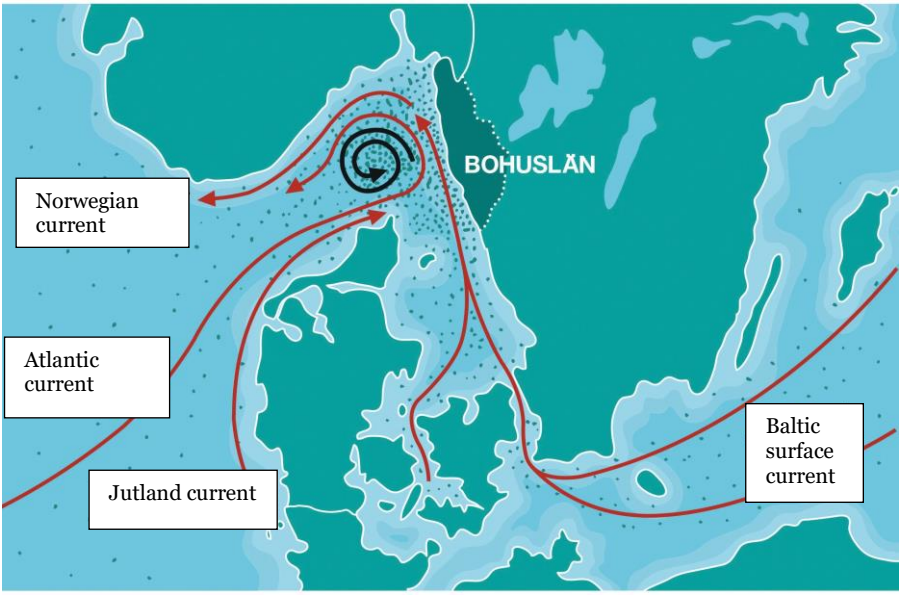
2. 
Candy wrappers

3. 
Toilet paper

4. 
Bandages and tape

5. 
Bottles and cans

När The Keep Sweden Tidy Foundation concluded its campaign "Keep the Mountain World clean" 2016 a lot of rubbish was found.



The Jutland current brings debris that lands on the Bohulän coast. Illustration: Johnny Dyrander

Rubbish in the sea

Marine litter is a major problem. Along the Bohuslän coast, the problem of debris from the sea is very real – around 8000 cubic metres of debris lands each year along this coast. This is an enormous amount of debris. According to measurements made at the Bohuslän coast, the number of pieces per 100 metres is at least 5745! This is due to an eddy in Skagerack, the Jutland current, which carries the debris from the sea.

The absolutely most common debris fraction at the Bohuslän coast is plastic: 94%. At the Bohuslän coast, a different method is used to measure debris than the one used by The Keep Sweden Tidy Foundation använder: see www.ospar.com.

Measurement of debris along the Bohuslän coast

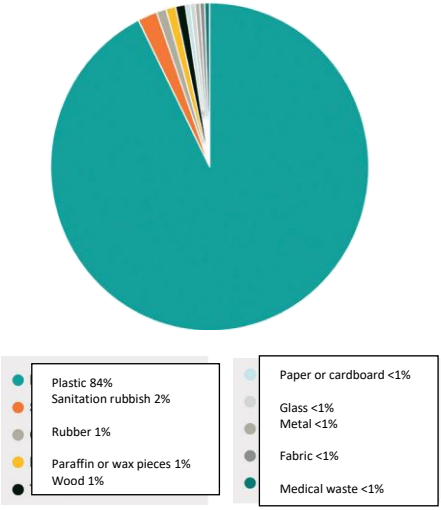


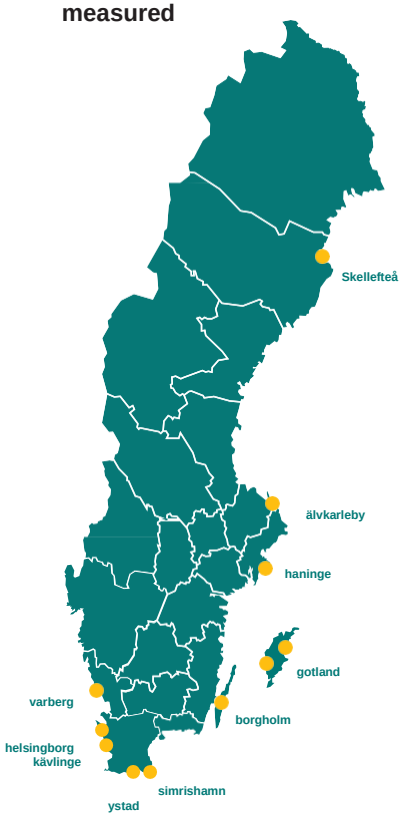
Figure 9 - Plastic dominates: 94% of the debris found on beaches is produced by plastic.

Where does refuse come from? Some rubbish is generated by the fishing industry and by other vessels, but most of it comes from land-based sources. These potential sources are all from rubbish on land and along the coast, overflows from sewage treatment plants, landfills and coastal industries. Illustration: TT Nyhetsbyrån Infografik

In debris measurements carried out by The Keep Sweden Tidy Foundation, litter from plastic usually dominates on beaches. Objects or fragments of plastic or polystyrene constitute 82% of the total amount of debris. In addition to unidentifiable plastic trash, there are consumer-related objects on beaches according to The Keep Sweden Tidy Foundation measurements. That consumer-related objects wind up on beaches with fewer visitors indicates that debris in the sea comes originally from land.
The Keep Sweden Tidy Foundation measures debris on 10 beaches from Gothenburg to Haparanda (Kattegatt, Öresund and the Baltic Sea on behalf of the Swedish Agency for Marine and Water Management since 2012. Measurements are made three times a year: spring, summer and autumn.

For 2016, The Keep Sweden Tidy Foundation has decided to report only the results from six beaches where most of debris is considered to have come from the sea. The aim is to present the debris situation in the sea through the quantity of beach trash. The other four beaches have many visitors, especially in the summer. Rubbish then comes primarily from these beachgoers. It tells more about littering on land and how much rubbish can potentially become debris at sea.

Beaches where debris is measured



Beaches where The Keep Sweden Tidy Foundation measures rubbish on behalf of the Swedish Agency for Marine and Water Management.

Beach measurement **2016 – without cigarette butts and snuff**

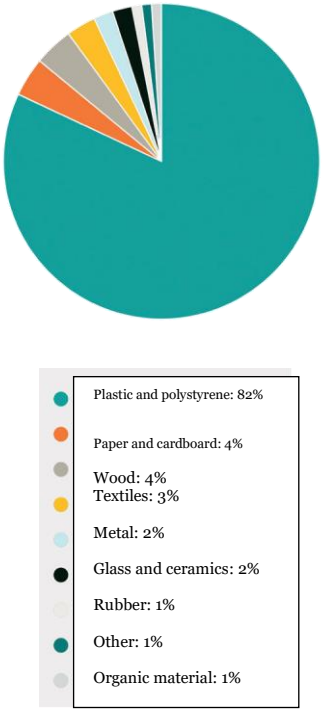


Figure 10 – Measurements of rubbish at six beaches, ätningar av skräp på sex tränder, Kattegatt-Öresund-Baltic Sea. Fractions of debris in 2016

This also varies in relation to the seasons. On beaches where the majority of rubbish comes from the sea, the greatest quantities of debris are in the spring measurement. Winter storms cause lots of debris to reach the beach and accumulate. On beaches with many visitors in the summer, it is of course natural that the quantities of debris are highest during that period.

The greatest difference in objects that are found on beaches where many visitors are excluded compared to beaches that have many visitors is that cigarette butts and snuff are not found on the top-10 list. The number of butts and snuff are otherwise very dominant and sometimes even more than the number of plastic fragments. Snuff in this case is portioned snuff, where the snuff which lies in a bag is broken down relatively quickly, which means that the snuff dissolves quickly if it lands in the water. Likewise, we find fewer cigarette butts on those beaches.

Top list of the most common rubbish on beaches

1. Unidentifiable plastic fragments
2. Plastic: Rope
3. Unidentifiable polystyrene pieces
4. Plastic bags
5. Plastic: Candy and ice cream paper and fast food packaging
6. Treated wood
7. Polystyrene insulation and packaging
8. Plexiglas fragments
9. Cartons and carton fragments
10. Textile: Ropes and straps

The ten top list for measurements at six beaches 2016 where rubbish is considered to come from the sea. There is a difference according to rubbish categories, depending on whether the beach has many visitors in the summer or not.

The Keep Sweden Tidy Foundation on behalf of the Swedish Agency for Marine and Water Management. Illustration: Johnny Dyrander

A novelty in the top-ten list is that fragments of polystyrene are involved, which has not happened previously.

Despite the fact that the result will show debris in the sea, many objects are found that are consumer-related.
Plastic bags are high on the list, as well as candy and ice cream wrappers and fast food plastic packaging (ten-in-top list). However, there is no other typical consumer-related rubbish on the list for beaches where debris from the sea dominates. This deals with plastic caps and bottles, plastic utensils and straws, ice cream sticks and wooden utensils as well as caps, metal caps, and metal cans and objects that are typical for beaches with many visitors.

Rope and treated wood do not make the top-ten list, if all types of beaches are taken into consideration. That plexiglass fragments are included on the 2016 list is due to the fact that a large quantity of such fragments were found on a beach at one point.

Sources of rubbish

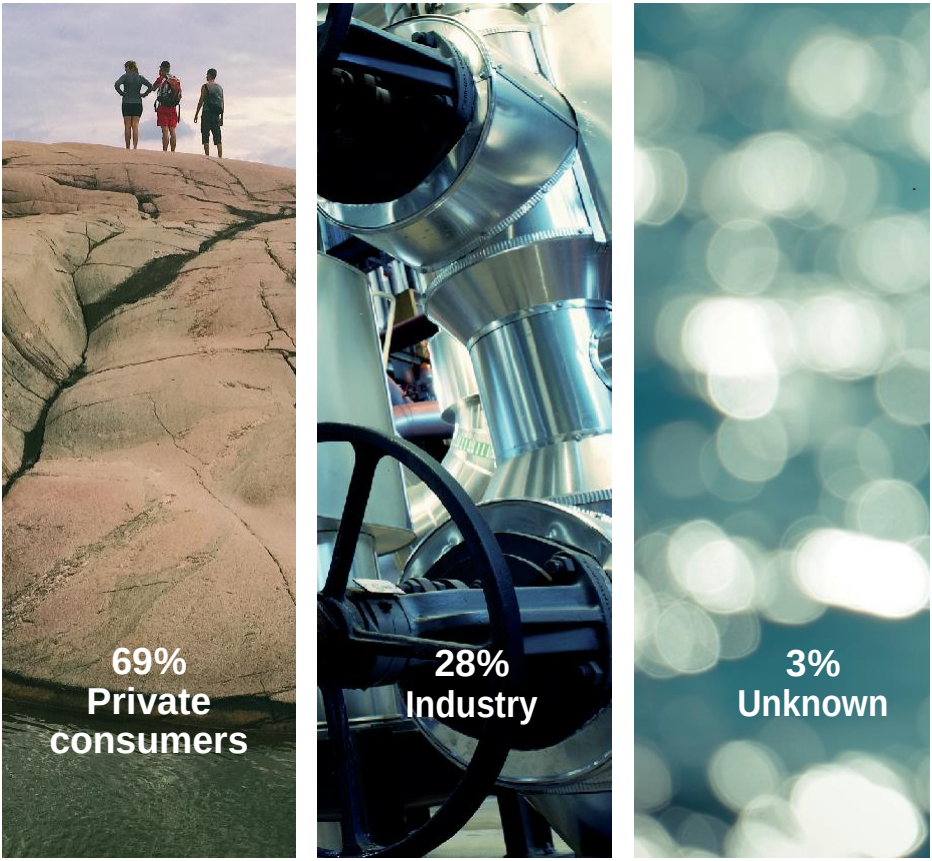


Photo: shutterstock.com / alacat, shutterstock.com / nostalgie, shutterstock.com / Latte Art.

In 2016, an analysis was made of refuse picked up from three beaches on the west and south coast. The most typical source of rubbish in the analysis came from private consumers and consisted of packaging with a short shelf life, a type of disposable packaging. Plastic is the most typical material in the analysis.

The Keep Sweden Tidy Foundation conducts beach-cleaning activities each year with the participation of the public and makes a pick-up analysis of a portion of the rubbish collected. In 2016, rubbish was collected from three beaches on the west and south coast: Strömstad, Lysekil and Simrishamn.

Also this study showed that private consumers (69%) account for the largest source of rubbish. Packaging dominates and most of the objects have a short period of use, a type of disposable packaging. The result did not differ significantly from a similar pick-up analysis that was carried out in 2014.

Photo: shutterstock.com / majeczka.

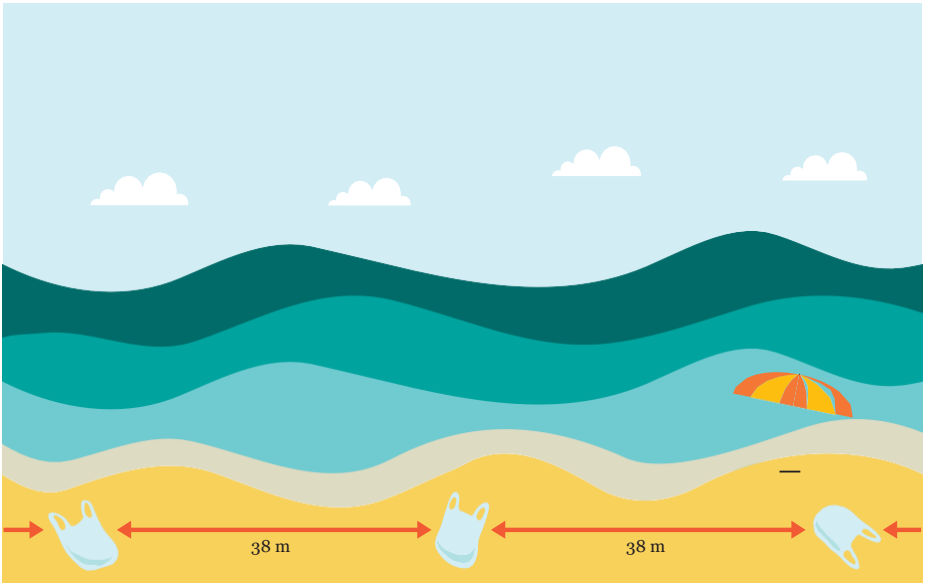
Plastic carrier bags (plastic bags) constitute an additional consumer-related product, which is very topical nowadays and which has been discussed greatly during the last year (see page 40). There are many people who claim that plastic bags are not a problem of litter, because the bag from a grocery store is often used as a garbage bag, and thereby energy is recycled.

Our measurements show that plastic bags are ranked in fourth place in the top-ten list and constitute 5% of the total number of objects.

If you walk on an average beach (2016), you will encounter a plastic bag every 38 metres.

At one of the beaches, eight plastic bags were found per 100 metres (or around one plastic bag every 12 metres).

Based on the results of The Keep Sweden Tidy Foundation and other measurements of rubbish on Swedish beaches, it is perhaps no wonder that people consider debris in the sea a problem.



A common category of rubbish found on beaches is plastic bags. If you walk on an average beach, you will encounter one plastic bag every 38 metres. The Keep Sweden Tidy Foundation on behalf of the Swedish Agency for Marine and Water Management. Illustration: Johnny Dyrander

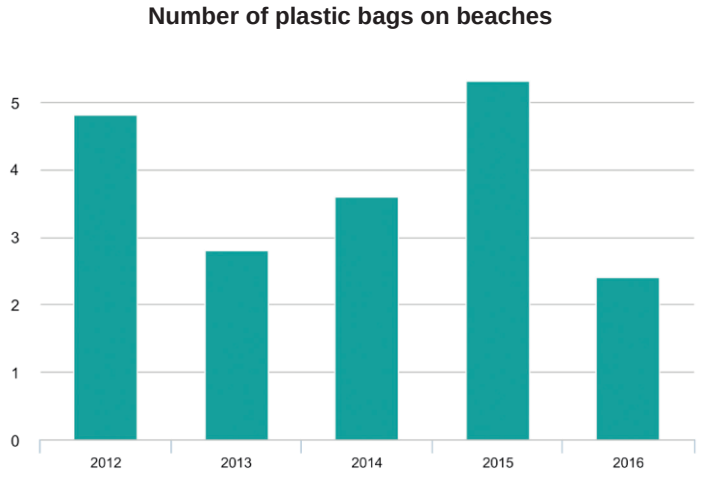


Figure 11 - Measurements of the number of plastic bags on beaches in Kattegatt-Öresund-Baltic Sea. The average number of bags per 100 m during 2012-2016. The Keep Sweden Tidy Foundation on behalf of The Swedish Agency for Marine and Water Management.

What do people think about marine debris? There are many who live along the west and Skåne coast who believe that marine litter is a problem. Two out of three believe that littering on beaches is a problem, while three out of four believe that debris at sea is a problem.[22]

There isn't such a great difference among places between Simrishamn and Strömstad, but further north along the west coast, the problem is perceived as somewhat greater.

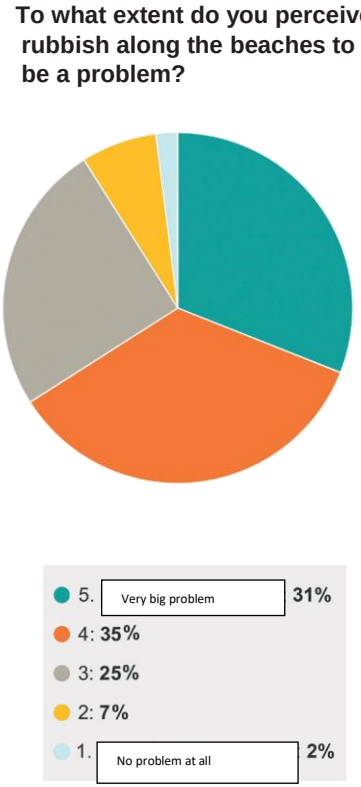


Figure 12 – Result of study, Sifo 2016.

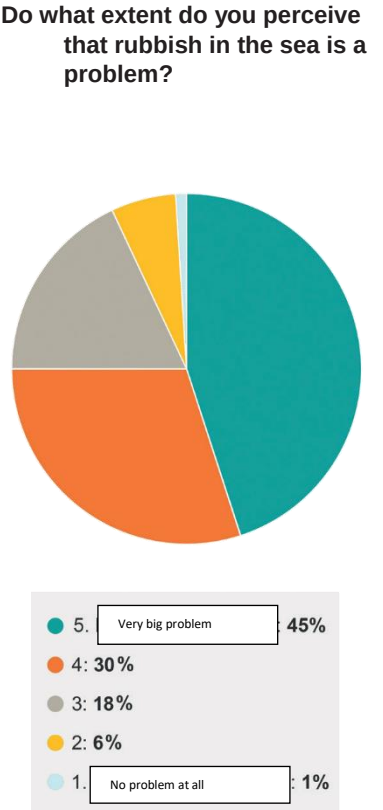


Figure 13 – Result of study, Sifo 2016.

Responsibility for littering

Photo: shutterstock.com / Silvan Bachmann.

The individual is primarily responsible for not littering. All littering in Sweden is forbidden. The key party for keeping clean and taking preventive measures against littering in Sweden are the municipalities.

Legislation on littering on land

In Chapter 15 of the Swedish Environmental Code (MB) there are provisions regarding waste. Section 30 of Chapter 15 of the MB states that no one may litter outdoors at a place that the public has access to or which is within its view. The provision translates into a general prohibition against littering. It is addressed to everyone, also landowners and it encompasses all areas where the public has access or visibility. Rubbish refers to both smaller objects, such as glass, paper, one-time grills, cigarette butts and larger objects, such as construction debris, furniture, cars and home electronics.

Liability for Waste Holder

Liability for a waste holder in Chapter 15 section 5a of the MB. The provision states that a person who accumulates waste shall see to it that the waste is handled in a healthy and environmentally acceptable manner.

Penalty provisions

Chapter 29 in the MB has penalty provisions. In section 7, there is a provision on liability for littering. The provision states that whether deliberately or through negligence, a person who leaves litter outdoors in a place to which the public has access or which is within its view can be convicted for littering (not the offence of littering – see below). The penalties for littering are fines or imprisonment of maximum one year. Examples of such littering ("littering of normal degree") can be construction waste, furniture, cars, car parts and tyres, home electronics and garbage bags with different types of debris.[23] See page 23 about statistics of littering of normal degree.

In section 7 in the same chapter, there is a provision about liability for littering offences, where less dangerous littering is penalised. The penalty for a littering offence is a monetary fine, which can be issued on the spot by the police. An example of a littering offence is discarded fast food packaging, beer cans, disposable grills and landscaping items on the ground at a recycling station. Littering offences that are minor are included in the littering prohibition, but do not entail criminal penalties. Minor offence refers to trivial situations, such as throwing away a single cigarette butt or piece of gum. While this is forbidden, it is not punishable e.g. to throw single cigarette butts.

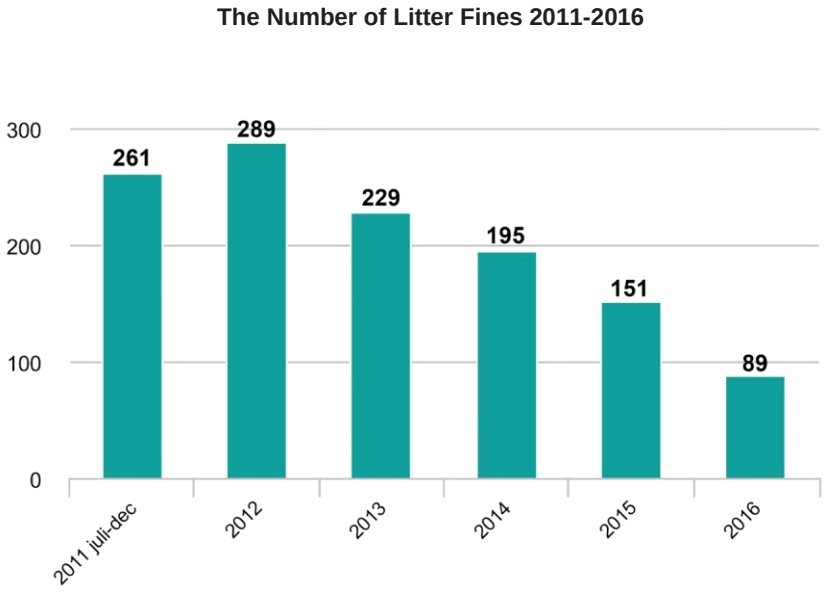


Figure 14 - Total number of litter fines 2011 2016, Rikspolisstyrelsen (National Police Board).

For example: single, discarded cigarette butts. When assessing the impact of littered conditions, consideration should be given to the sensitivity of the environment where the littered conditions exist. If a single action is a part of a larger, collective litter problem, this should be considered when assessing if the action was petty or more serious. [24]

Statistics Concerning Fines

In July 2011, police agents were permitted to issue fines for littering, as the new legislation on littering offences came into effect. However, the power to issue fines is seldom used and the trend line shows a decreasing rate of individual fines for littering. Over the first six months that the law was in effect, 261 fines were issued and the following year (2012), 289 fines were assessed across the entire country. Last year (2016), 89 individual fines were assessed.

Marine Debris Legislation

There are national and international regulations prohibiting the discard of plastic and other solid waste in our seas. Solid waste may not be discarded from ships. This applies to all vessels within Sweden's territorial waters and economic zone, as well as to all Swedish vessels regardless of geographic location. Within the EU, marine debris represents one of the eleven indicators that will be used to assess if and when the marine environment has reached good environmental status. The directive is

incorporated into Swedish marine environment legislation (2010:1341).

Photo: shutterstock.com / Emmoth.

The Havs- och vattenmyndighetens föreskrifter (2012:18), which outlines the characteristics of good environmental status and environmental quality standards with indicators for the North Sea and the Baltic Sea, states that good environmental status is characterised by the amount of waste, including materials created during decomposition, that does not cause damage to the marine environment, and that the amount of waste affecting or likely to affect marine organisms should decrease.

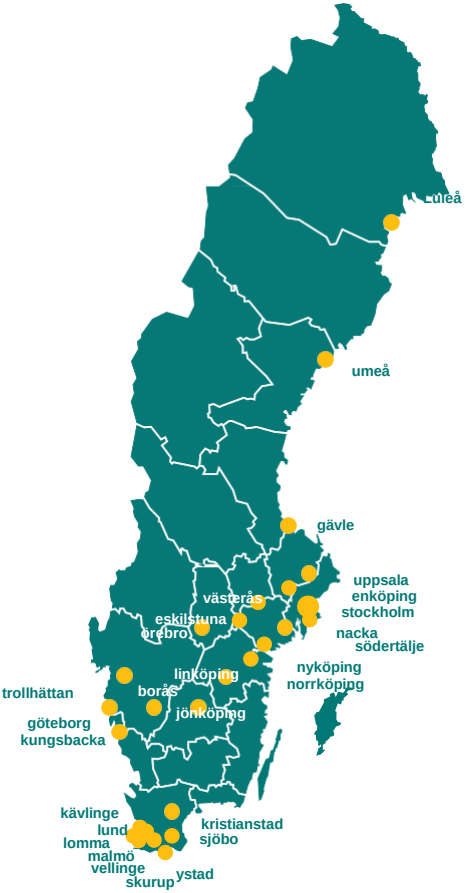
The Havs- och vattenmyndigheten (Sea and Water Authority) has taken up an initiative contained in five data sheets that outline the measures to be taken against marine debris. Municipal liability under § 4 gaturenhållningslagen (see below) also applies to marine debris on the shoreline.

Community - The Central Player

Despite the fact that it is prohibited to discard debris in the ports, great deal of debris is still discarded illegally in the waterways. Under specific conditions, the municipality has the responsibility for cleaning the streets, squares and other public places in the outlined areas.

The municipality may also be responsible for restoring other outdoor locations open to public use. Under certain conditions, property owners may be responsible for the remediation of debris, mainly around developed areas and footpaths in the outlined area. This responsibility is regulated under the law (1998:814) with specific provisions regarding street maintenance and signage

Municipalities That Have Measured Debris In the Urban Environment, Parks, or Open Spaces



Some municipalities, for example, are working to prevent litter accumulation by measuring debris and arranging litter pick-up days or similar. In 2016, 20 municipalities measured their debris.

Only 15% of municipalities have current estimates regarding the economic impact of a littered environment.[25] It is not common for municipalities to specify objectives and actions to reduce the amount of litter.
According to Håll Sverige Rent's (Keep Sweden Clean) questionnaire, approximately 39% of municipalities set up both the objectives and actions to reduce litter. In many cases, the municipalities enacted measures to increase cleaning and provide more waste bins, rarely providing for preventive measures.

Most municipalities in Sweden are connected to Håll Sverige Rent's debris pick days. Last year, 274 municipalities helped to distribute materials such as sacks and bags to participants in the campaign and many municipalities took over the responsibility for debris removal.

This year's news is that municipalities

will set objectives and actions to prevent and limit litter according to the revised regulations for municipal waste planning, which will come into effect on May 1, 2017.

The municipal waste plan is applied together with the local authority's local waste management regulations.
However, there are few municipalities that are aware of the financial impact of a littered environment. According
to a.
Under the 2012 Naturvårdsverkets nationella avfallsplan (Swedish National

Waste Management Plan), one of the five priority areas is household waste, which includes littering. The objective of the plan is to decrease littered conditions in cities, in nature areas, and along the coastline.

International Outlook

Photo: shutterstock.com / Christoph Lisc

Plastic Initiative

Marine plastic debris is an urgent international issue. In June 2017, Sweden and Fiji partnered to initiate a major UN conference on the state of the oceans, with marine plastic debris as top priority. The objective of the conference is to support efforts to save the world's oceans and to contribute to the achievement of Objective 14 in the UN's Agenda 2030, also called the Global Targets.

In 2015, the EU decided that all member states shall reduce the consumption of thin plastic bags. Many other countries around the world have outlined similar goals, with some introducing a ban on plastic bags or imposing a mandatory fee. France has even gone further and will introduce a ban on disposable plastic cutlery.

Plastic is a hot topic within the EU, as is apparent in the new plastic strategy being developed under the work towards a circular economy. The strategy focuses on three different aspects. It is problematic that plastic production relies on fossil fuels and it is important to find alternatives for fossil fuels. Another aspect is the low rate of recycling and reuse of plastics within the EU - only 30% of all plastics.

Photo: shutterstock.com / Magnus deep

Lastly, the strategy focuses on the large quantity of plastic in the environment and the resulting littered conditions. The EU strategy focuses on the negative effects of plastics on animals and nature, but it lacks a clear and sustainable regulatory framework for biodegradable plastics. This could contribute to littered conditions if consumers incorrectly believe that plastics break down in the environment, when in fact, they do not.

The third part of the EU strategy is to target the consumers' lack of awareness of the plastics problem. Today, there are few incentives for consumers to recycle plastic and it is important to change that.[27]

The **Skräp in i Avfallsdirektivet (Debris Into Waste)** was the first to propose that a series of measures against littering should be included in the EU's Waste Directive. Work on a revised directive has been ongoing over the last few years and in the spring of 2016, the EU Parliament approved the outline for littering as described by the EU Commission. Included in the proposal is a plan to have manufacturers pay for information and prevention campaigns to reduce littering.

Another proposal is that member states should identify which products are the greatest sources of litter pollution in the environment and to take measures to reduce these.[28]

Photo: shutterstock.com / ARIA

Consumer Behaviour Must Be Changed

The consumption of plastic bags should decrease across the EU. At the end of 2016, the Swedish Government enacted legislation with new provisions. It states that manufacturers are the parties responsible for ensuring that the use of plastic bags decreases.

The government is proposing measures where the manufacturers would be required to inform consumers regarding the environmental impact of plastic bags and the benefits of reducing consumption while informing the consumer of alternatives to plastic bags.

Manufacturers will also report the number of plastic bags that are intended for use within the Swedish market. Tote bags intended for long-term use are excluded from plastic bag regulations. Naturvårdsverket assesses the qualification "intended for long-term use" as carrier bags designed to be reused many times. Thin bags needed for hygienic reasons or used as primary packaging for food items sold in bulk are excluded from plastic bag regulations. The aim of the new regulation is to reduce the consumption of plastic bags.

It is not the intention of the regulation to replace the plastic shopping bag with another type of carrier bag, as this result would not lead to an efficient use of resources. Primarily, it is consumer behaviour that needs to be changed.

Sources

1.) Jambeck et al. 2015, Plastic waste inputs from land into the ocean, Science, Vol.347, No.6223, pp.768-771, UNEP, cleanseas.org, Wilcox et al 2015

2.) Förpacknings- och tidningsinsamlingen AB 2016

3.) Ellen McArthur Foundation 2016

4.) Eunomia, Plastics in the Marine Environment, 2016

5.) UNEP, cleanseas.org, Eunomia 2016

6.) Eunomia, Plastics in the Marine Environment, 2016

7.) Roland Essel et al. 2015, Sources of microplastics relevant to marine protection in Germany

8.) Kerstin Magnusson et al, 2016, Swedish sources and pathways for microplastics for the marine environment
- a review of existing data, No.C 183, Revised 2017-03-21, IVL Swedish Environmental Research Institute.

9.) Anna Kärrman, Christine Schönlau, Magnus Engwall (2016). Exposure and Effects of Microplastics on Wildlife. A review of existing data. Report Swedish Environmental Protection Agency, p. 39.

10.) Plug the marine litter tap, A pilot study on potential marine litter sources in urban areas, Håll Sverige Rent with the support of Nordiska ministerrådet, TemaNord 2017:501

11.) Sifo, Web Survey of 1000 people March 2-9, 2017, 1. Do you believe that litter is a problem?

12.) Sifo, Web Survey of 1000 people March 2-9, 2017, (several options can be selected) 2. Where do you think there is excess litter?

13.) Sifo, Web Survey of 1000 people March 2-9, 2017, 3. What do you think, in recent years the amount of litter has...

14.) Sifo, Web Survey of 1000 people March 2-9, 2017, 4. Do you litter? (This includes small scrap items such as cigarette butts, snuff, chewing gum, fruit scraps and similar).

15.) Sifo, Web Survey March 2 to 9, 2017. 5. If you have littered, what is the reason for doing so? (Several options can be selected)

16.) Chewing gum is reported separately in Håll Sverige Rent and the Statistiska Centralbyrån's (Central Statistical Office) measurements on the grounds that it might be difficult to determine whether there is a chewing gum stain or actual chewing gum.

17.) Sifo, Web Survey of 1000 people March 2-9, 2017, (several options can be selected) 2. Where do you think there is excess litter?

18.) The figure is based on the results of HSR's debris measurements which were designed together with SCB and were valid for the period from June 13 to June 19, 2016. The result has a margin of error of 10-20%, which means that the number may vary between 20,000 and 30,000.

19.) Various debris measurement methods were used in different environments.

20.) Sifo, Web Survey of 1000 people March 2-9, 2017, (several options can be selected) 2. Where do you think there is excess litter?

21.) Sifo, Unga och allemansrätten, 2016, Web Survey of 1000 respondents aged 16-25 years.

22.) Sifo, Marint skräp på syd- och västkusten, Web Survey of 1000 respondents, residing in coastal towns along the south and west coast (Strömstad to Simrishamn) 16 years or older. 27 January 27- February 8, 2017.

23 See figure 2010/11:125 s. 42.

24.) See figure 2010/11:125 s. 42 f.

25.) The questionnaire was sent out to all municipalities in Sweden, and answered by 158 municipalities. This corresponds to a response rate of 54%.

26.) Naturvårdsverket's regulations on municipal waste management plans for the prevention and management of waste, NFS 2017:2

27.) Strategy on Plastics in a Circular Economy, Roadmap 26/01/2107)

28.) The amendments of the European Parliament adopted on March 14, 2017 regarding Directive 2008/98 EC on waste.

Thanks to our partners 2016

And all the others that support our business.

In Skräprapporten 2017, Håll Sverige Rent has published detailed statistics and facts regarding litter on land and sea. The purpose of the report is to inform of the scope of litter, describe the effects, and describe the sources of debris. The report is largely a description of the current problem of plastic debris in our seas.

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