



Fieldwork investigations - Litter survey

Fieldwork involves observing, measuring, collecting and recording information in the real world. Learn how to use a litter survey to find out how human activities effect the environment we live in.

What is litter? Why do we do a litter survey?

Litter is rubbish such as plastic bottles, plastic bags, food wrappers and cans, left in an open or public place rather than in a bin. When it rains that litter can end up in a waterway. Litter can have impacts on environmental quality and liveability of an area, especially our creeks, rivers and beaches.

By doing a litter survey we can:

- find out what sort of litter is there
- see if that litter may be causing a problem
- work out where the litter came from
- see if litter makes the place look/feel bad

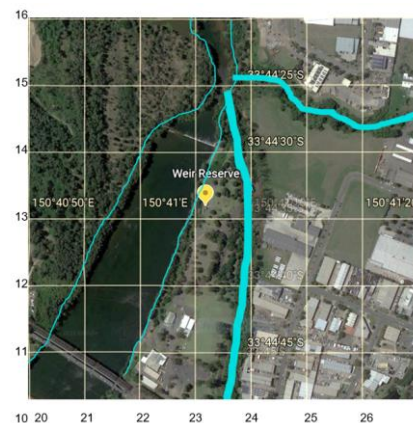
A litter survey can be completed in two parts:

1. Litter tally - Make a tally of the types of litter that you see in a specific area
2. Litter map - Mark on a map the location of the litter identified



What you'll need?

- Tally recording sheet (paper or digital)
- Map of the area under investigation (paper or digital)
- Clipboard, pen or pencil or digital device
- Camera (optional)



Grid map

How to do a litter survey

Before beginning your litter survey, it is important to think about what you want to do with the information that you collect. Do you want to know what type of litter is being left or where the litter is being left... maybe both?

Method 1. Litter tally

- Think about the type of litter you may see in the area you are going to survey.
 - Is it a park where people picnic? - You may find food wrappers
 - Is it a stormwater drain collecting litter from the streets around? - You may find lots of plastic bottles
 - Is it near an industrial area? - You may see metal, cardboard and foam packaging
 - Make a table to record what you see - Each dash is one piece of litter four dashes with a line through equals five pieces of litter.

Litter Tally	notes
Plastic bottles	### //
Plastic bags	
Foods wrappers	
Glass	
Paper/Cardboard	
Metal/industrial	
Other	

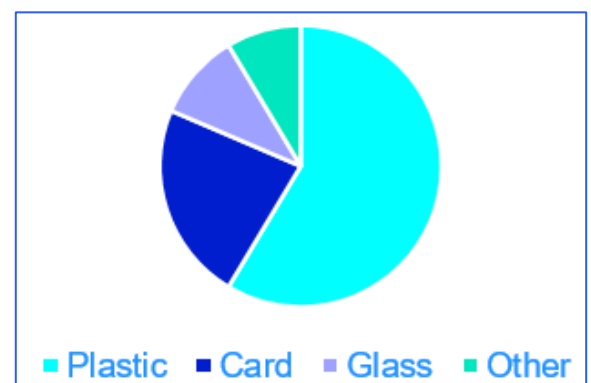
Method 2. Mapping litter

- Think about the places you may see litter in the area you are going to survey.
 - Is it a park where people picnic? - You may see bins or see litter left near the tables?
 - Is it a stormwater drain collecting litter from the streets around? – You may see litter that has been carried by stormwater runoff and trapped?
 - Is it near an industrial area? – You may see the places that produce the litter you see nearby?
- Use your choice of map of the area you are surveying.

Our example is a Google image with grid lines marked over it. But you could use any printed or online mapping tool you wish.
- Record what you see on your map. You may even like to take photos of what you find and annotate your map with examples of litter.

Results

- Collate your litter tally results and present your information in a table or graph.
- Compare with the litter map consider the following:
 - Is there a pattern to where you found the litter?
 - Is there more of one type of litter?
 - Where could it end up?
 - Where could this litter have come from?



Pie graph of results

Background information

A litter survey helps us to identify litter type and location. With some background information, or secondary research, we can use our litter survey to show how the flow of water distributes litter.

Why does litter matter?

Litter can be messy and can make a place look very uninviting. Litter often ends up in a waterway – the creeks, rivers and beaches around where we live.

Waterways are often places we enjoy spending recreation time. Being near water, on the water or in the water can make many people feel relaxed, calm and connected to the natural environment.

How do you feel when you're near water?

Clean waterways can make us feel better about where we live.

How does litter get to our waterways?

First, we should investigate how water moves in our environment.

- [Natural water cycle](#) – in nature when it rains, the water flows over the ground and into waterways. This is called run-off.
- [Urban water cycle](#) - in urban environments this run-off is called stormwater and flows down drains into waterways.

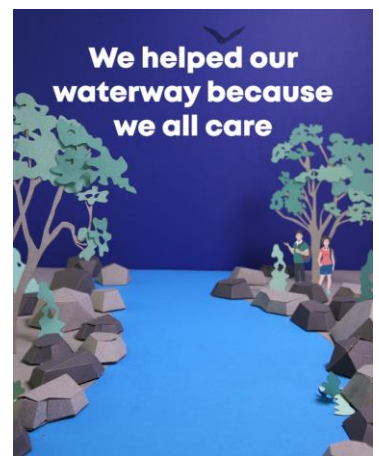
[Stormwater](#) carries all the things that collect on hard surfaces, like roads, footpaths, driveways and roofs, such as:

- litter, like plastic bottles, food packaging and cigarette butts that people leave on the street, in a park or garden
- dirt, leaves and twigs
- animal and bird droppings.

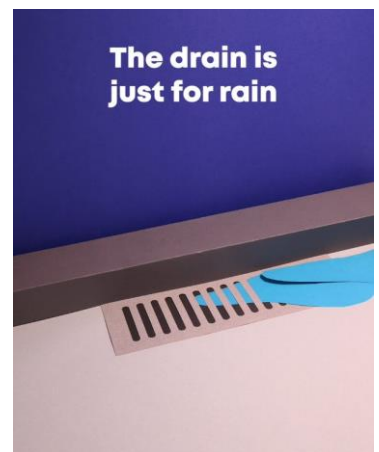
How do we manage stormwater?

The best way to manage litter in waterways is not leave any litter on the ground to get washed away.

However, we can manage some litter by using stormwater quality improvement devices (SQIDs). SQIDs are designed to catch solids so they can be removed from the water.



Caring for our waterways



Keeping our stormwater clean



SQIDs collect rubbish from waterways

Did you know?

In the past 20 years, we've installed 70 SQIDs. These devices have helped remove over 35,000 cubic metres of litter and organic waste as well as 39,000 tonnes of sediment from stormwater before it reaches Sydney's waterways.

How can litter surveys help us value water?

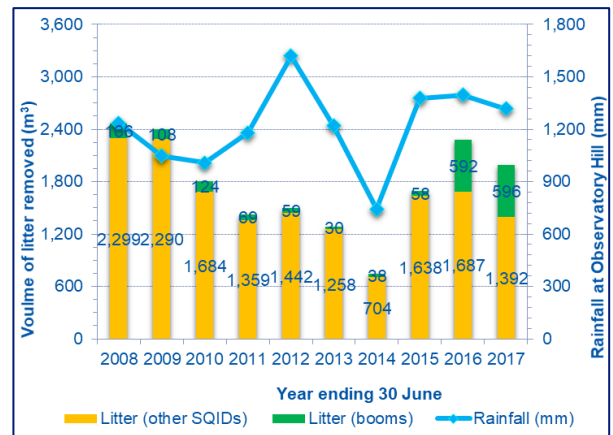
We use litter surveys to see the types of material entering the water and how best to improve or maintain the quality of our waterways.

The results show us:

- the litter disposal behaviour of people in the catchment (do they use a bin or leave it on the ground)
- directions that water flows from the highest point in the catchment to the lowest point
- the speed of water or flow rates. Faster flowing water carries larger things with it
- types of rubbish commonly left in the environment.

This means that we can use this information to help us manage:

- people's behaviour toward litter through education programs that teach people to use a bin
- the impacts of litter on the environment by installing litter management strategies, such as SQUIDS
- understand how water flows through the urban environment.



Discussion

1. What are some of the limitations of your survey today? (variables, time, bias, observational)
2. How can the amount of litter in a place change our perception about the area and how we protect it?
3. What actions can you take from the results of your survey today? How can you monitor the effectiveness of those actions?

Extension

1. Do a stormwater audit. You can use a [Stormwater audit](#) to identify how different pollutants, including litter, get into your stormwater drains.
2. Complete other fieldwork investigations to look at liveability and environmental quality of your favourite place. Present your results at a school assembly, post on the school social media or newsletter.

Why not make it a long-term study? Select a waterway near you and repeat the litter survey over a period of time. Ask yourself:

- a. What has influenced this change?
- b. Is your waterway clean enough to swim in? Be used for recreational water activities?
- c. Identify strategies that could be taken by individuals, organisations and councils to reduce stormwater pollution.

Want to know more?

There's lots to learn about water. Go to our [Education](#) pages to discover the value of water.