



ENVIROPOD.COM

STORMWATER POLLUTION

Identify, evaluate and quantify
the source of marine pollution

Education Resource



Stormwater Pollution Education

WHAT IS STORMWATER?

When rainwater falls onto a hard, sealed, impermeable surface (such as roofs, roads, driveways, car parks and footpaths) it cannot soak into the ground. Instead, it runs off the surface. This runoff water is called stormwater. It flows overland via gutters and drains into a network of underground pipes and open waterways. From here it flows, mostly untreated, into our streams, rivers, and eventually to lakes and out to sea.

STORMWATER POLLUTION

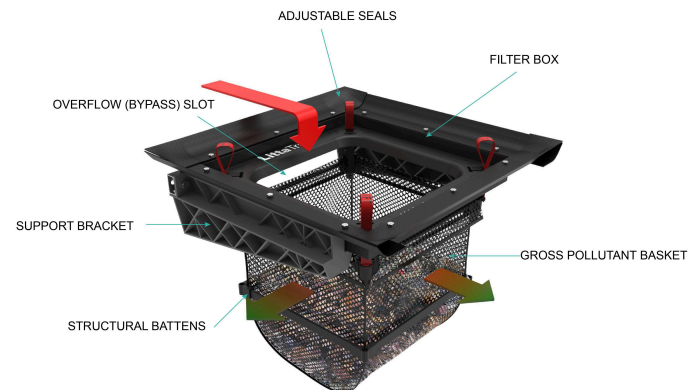
Urban stormwater is a global major concern and is an increasingly concerning issue with rapid urban growth and aging stormwater infrastructure.

A lot of stormwater runoff is not treated, and any plastic, rubbish or pollutants that are caught up in the stormwater drains directly into the waterways.

STORMWATER POLLUTION MONITORING

To better understand the impact of land-based pollution on the marine environment, the use of a 'source treatment' device allows students to identify, evaluate and quantify the source of marine pollution.

By engaging with technology and using scientific knowledge, students help their communities understand the problem and come up with achievable solutions.



LittaTrap™

A source treatment device

The LittaTrap is an innovative stormwater drain insert which simply sits inside a catch basin and when it rains, catches and retains plastic, pollutants and litter caught up in the runoff before it can reach the rivers, lakes and oceans.

By retaining pollutants before they enter the stormwater system, students are able to evaluate what and how much is caught in each LittaTrap, and then explore environmental issues, engage in problem solving, and act to improve the environment.

Monitoring the LittaTrap™

Below is a guide on how to monitor the LittaTrap™, evaluate material caught and record the data.



ROAD SIDE DRAIN



INSTALLED LITTATRAP™

SAFETY ASPECTS TO BE AWARE OF:

- If the drain is located on the roadside or near traffic – road cones need to be in place to alert traffic.
- All students and adults on the road need to be wearing High Vis vest.
- You will need to have one adult dedicated to being a spotter person looking out for passing traffic.
- Please take extra care when lifting the lid of the sump, it can be heavy. This is to be done by an adult only.



Make sure not to leave the drain unattended while the lid is lifted.

Students will need:



Sturdy shoes, gloves, high vis vest (if near the road)



TWO adults to lift the drain lid



Bucket or container to empty trap contents into, **space for sorting**, counting and recording rubbish and a record sheet

Stormwater Data Sheet

School/group: _____

Class: _____

Date: _____

		Week	1	2	3
		Date			
Plastic	Food wrappers				
	Soft plastic				
	Hard plastic				
	Bottle caps				
	Cups/containers				
	Cigarettes				
	Lighters				
	Rope/net				
	Plastic utensils				
	Straws				
	Straw wrappers				
Polystyrene	Smaller than thumb size				
	Larger than thumb size				
Metal	Aluminium/tin cans				
	Foil				
	Bottle tops or can tabs				
	Small hard metal pieces				
Glass	Bottles				
	Jar				
	Glass fragments				
Rubber	Rubber Fragments				
	Balloon				
Processed wood	Cardboard				
	Paper				
	Wood				
Fabric	Fabric pieces				
Chewing gum	Chewing gum				
Other					
Total:					

[illegible]

PROCESS TO BE CARRIED OUT:

Emptying the LittaTrap™

- **Adult to lift drain lid**, while second adult is watching for traffic.
- **Wearing gloves** – students to remove basket insert from the trap and carry to the footpath away from the road.
- **Empty contents into a bucket/bag**. Make sure to get everything that might be stuck to the basket. Replace basket back into the LittaTrap frame, take care and make sure the basket is fully inserted into the trap frame.
- Adult to **close drain lid**.



Evaluating pollutants caught

Back in class (or a space sheltered from the wind), students to sort the contents collected.

- **Please wear gloves and take extra care** around sharp objects. Spread out the rubbish well so sharp items can easily be seen.
- **Sort into category piles**, count the number of pieces and record on record sheet (preferable on Google Docs so information can be shared and analysed).
- Litter collected to be either stored in separate category containers (if wanting to keep to share with community) or disposed of in appropriate bin.

Students to empty and monitor the LittaTrap once a week/fortnight for 6–8 weeks (depending on time available) to understand size of pollutant loading

Results and Reporting



Get students to create graphs to display data collected with example questions:

How much each week?

What was the most common pollutant?

Was there more rubbish when it rained?

What is the catchment area of the stormdrain?

How many drains are in the street?

What would be the expected amount of litter caught if all the pits had catchpit inserts?

Can you work that out over the size of your community?



Get students to think about and research the following:

Where is the rubbish coming from?

What problems could this have in the marine and freshwater environments?

How long does it take for different pollutants to breakdown in the marine environment?

What can we do to change this?

Applications



Pretreatment



Manufacturing



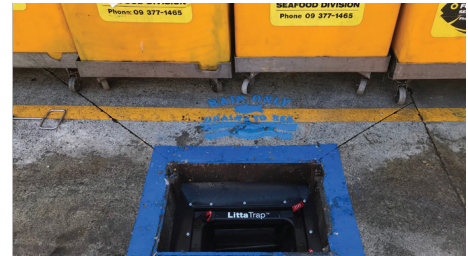
Retail



Industrial



Smoking Areas



Food Processing



Pedestrian Areas



City Streets



Car Parks

ABOUT ENVIROPOD™

EnviroPod is Australasia's leading catch basin insert technology provider. The company has over 25,000 installs of its technology worldwide, including catchment wide retrofits. The LittaTrap is a result of 25 years' of research, implementation and operation of source treatment solutions.

For further information please see www.enviropod.com



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