



Stormwater and the Darebin Creek

The Darebin Creek is more than 50 kilometres in length and the catchment drains an area of 129 square kilometres. Approximately half of this area is urbanised containing pockets of industry. One of the challenges of this type of land use is the pollution from stormwater carried via drains and pipes from households, industry and roads. Pollution carried in stormwater is harmful to the health of aquatic plants and animals. This pollution can be prevented by individuals taking responsibility for their actions as well as infrastructure and law enforcement.

How does stormwater get into our rivers?

When it rains, water runs off all impervious surfaces including roads, house roofs, driveways, car parks and footpaths. This water is known as *stormwater*. The stormwater travels into pipes and drains from households, businesses, car parks and roads. From these pipes, it travels untreated into the Darebin Creek. This causes turbidity (cloudiness) of the water and decreases the oxygen and the quality of the water.

What is stormwater pollution?

Stormwater pollution occurs when the water that runs into the creek is contaminated with liquids, sediment, sludge and solids. This can include various domestic or industrial pollutants such as chemicals, detergents and fertilisers, as well as soil green waste and litter.

Preventing stormwater pollution

The most effective way to reduce the problem of pollution in our creek is to stop the contaminants entering the drains. Education programs are especially important, as many people are unaware that the drains connect to the Darebin Creek. Litter traps and infrastructure can be used but are not necessarily cost effective and they cannot prevent small items or liquid contaminants from entering the drain.

Effect of stormwater on plants and animals

If the stormwater entering the creek has large amounts of sediment in it, it can reduce the amount of light that penetrates the waters surface. This can be fatal to aquatic plant and

animal life. Plants need light to photosynthesise, the process whereby they produce food for themselves and at the same time produce oxygen that is then available to animals. An excessive amount of nutrients can cause algae to grow. This has detrimental effects on aquatic life as algae can also cover the surface preventing photosynthesis, producing toxic substances and suffocating fish and other aquatic animals. Turbid water can also kill fish by clogging their gills. Pollutants in the water carry bacteria, which can make you sick. Therefore you should wash your hands after contact with the water.



Gutter guards prevent larger littered items from washing into Darebin Creek.



Litter in the Darebin Creek adjacent to Northland Shopping Centre.

Litter and stormwater

It is important to place all litter in the bin because if it is left on the ground, it can enter the stormwater system via drains. Litter clogs Darebin Creek and becomes toxic as it breaks down. It also has an effect on plants and aquatic animals such as birds, frogs and fish because they rely upon the Darebin Creek to live and breed.

What other activities cause stormwater pollution and how can I reduce it?

Car washing on the street: Washing cars on the street with detergents and allowing it to run down the drain is a common cause of stormwater pollution. Safe alternatives include washing on lawn area and making sure run-off soaks into the ground or going to a car wash.

Fixing your car on the street and poorly maintained cars: Car repairs on the street or poorly maintained vehicles can lead to oil or other fluids to flow into the street drain to pollute stormwater. When it rains these pollutants are washed into the Darebin Creek and therefore a danger to the local wildlife.

Disposing of garden waste: Leaves from your guttering or garden, lawn clippings and other organic material can be easily washed into stormwater. To reduce the impact, clean gutters regularly, collect leaves from deciduous trees in autumn and collect lawn clippings after mowing.

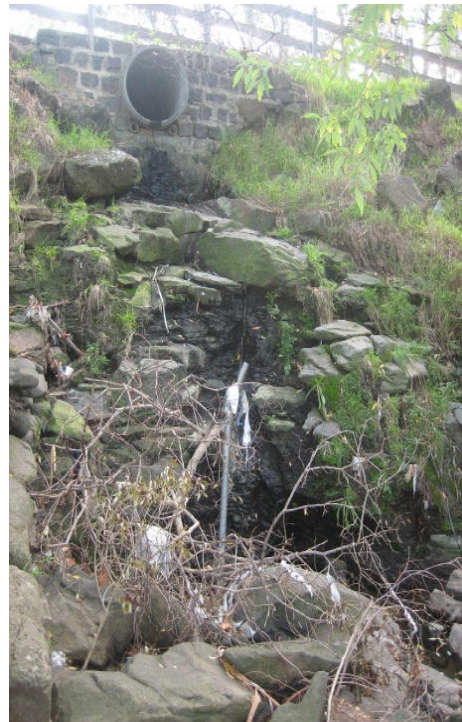
What are other ways that stormwater can be improved?

Stormwater can be improved by having integrated stormwater management and treatment, including keeping our drains and pipes free of rubbish and by the use of litter traps and infrastructure.

Processes such as bio-retention, whereby plants take up the excessive nutrients that are present, while rocks are used to increase the oxygen in water that carries pollutants into the creek. The use of infiltration trenches can also reduce pollution entering the creek. An infiltration trench is a rock-filled trench with no outlet that receives stormwater runoff. Stormwater runoff passes through some combination of pretreatment measures, such as a swale or sediment basin, before entering the trench. Runoff is then stored in the voids of

the stones, slowly infiltrated through the bottom and into the soil matrix over a few days. The primary pollutant removal mechanism of this practice is filtering through the soil.

The use of wetlands improves water quality while also increasing the aesthetics and recreational amenity of the area. Wetlands within the Darebin Creek Catchment are used to clean up pollutants in the water. The water is filtered through semi aquatic and aquatic plants, which increase the oxygen and help improve the quality of stormwater discharged to the Darebin Creek.



Stormwater pipe delivers litter from residential and industrial areas to the Darebin Creek.

Report pollution

If you see anyone littering or causing pollution to our stormwater system, you can contact the Environmental Protection Authority on their Litter and Pollution Hotline, 9695 2777. You will need to provide details of what you observed.

Related Fact Sheet:

Water Pollution Management of the Darebin Creek

Contact:

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