



Stormwater Pollution

EPA 491/03

What is stormwater?

Any rain that falls on roofs or collects on paved areas like driveways, roads or footpaths is called stormwater. The stormwater drainage system is separate from the sewage system. All the pipes and drains inside buildings are connected to the sewer, or to a septic tank in un-sewered areas. All the outside drains (except the gully trap) are connected to the stormwater system. The sewer takes wastewater to treatment works before being piped to the sea or irrigated over land. The stormwater system runs from outdoor drains down the gutters and untreated into our natural waterways (creeks, rivers, groundwaters, wetlands and the ocean). That is why only clean rainfall run-off should enter this system.

What legislation governs stormwater pollution?

The stormwater system is protected by a number of different laws including the *Environment Protection Act 1993*, the *Environment Protection (Water Quality) Policy 2003* (the Water Quality Policy), the *Local Government Act 1934*, the *Development Act 1993* and the *Public and Environmental Health Act 1987*.

The new Water Quality Policy offers the most specific protection for the State's waters. It prohibits the pollution of the stormwater system and our natural waters. The Policy has general obligations which every person, business and industry must comply with as well as specific obligations for particular activities. Failure to comply with any of these obligations may result in the issuing of a \$300 fine, Environment Protection Order, and/or prosecution. For more information on the Water Quality Policy visit the EPA web site at www.epa.sa.gov.au or telephone (08) 8204 2004.

Why is stormwater pollution an issue?

As stormwater travels over the land, it picks up all kinds of chemicals and sediments that are not naturally found in our waterways. Some of these are poisonous, even in small amounts. Others, such as nutrients, are not poisonous but may be produced in such great quantities that natural systems simply can't cope. They can eventually cause toxic algal blooms and other pollution problems in our waterways.

What are the main pollutants?

Stormwater pollution can be divided into three categories:

- natural—organic material such as leaves, grass clippings and sediment
- chemical—such as detergents, coolant, oil, grease, fertiliser and paint
- litter—such as plastic bags and cigarette butts.

Environmental impacts of stormwater pollution

Issue	Probable source	Environmental impact
Animal & human waste	Leaking septic tanks, run-off from animal holding yards, and dog droppings.	Increased nutrient levels in stormwater which lead to an increase in toxic algal blooms.
Dissolved solids (salinity)	Primarily groundwater. Possibly also from air-conditioning and cooling systems.	Alters the chemical balance of our waterways, which may kill some aquatic plants and animals.
Heavy metals (e.g. cadmium, chromium, copper, zinc and lead)	Runoff from roads and carparks, deterioration of building surfaces (e.g. roofs), swimming pool water, air conditioning coolants, pesticides, batteries and electroplating.	Have toxic effects on aquatic plants and animals. Can build up in aquatic species, such as mussels, and have a dangerous impact on the food chain.
High runoff rates	Impervious surfaces (e.g. roads, roofs, paved areas, and footpaths) directly connected to the stormwater system.	Increased pollution of waterways, erosion of creek banks, lowering of water levels in wetlands which affects aquatic flora and fauna, increased flow disturbance which can reduce the diversity of aquatic life.
Litter	Littering (e.g. bottles, cigarette butts, and plastic bags), overflowing rubbish bins, tree litter and vegetation, uncovered truck and trailer loads.	Visual pollution. Toxins in the litter can kill fish, dolphins, and birds. Decaying litter can reduce water oxygen levels and kill aquatic animals and plants.
Nutrients (nitrogen and phosphorous)	Decaying vegetation (e.g. leaves & lawn clippings), treated wastewater, excess fertilisers, biodegradable detergents, animal droppings, washdown water from cars, leaky sewage systems and irrigated lawns.	Promotes toxic and non-toxic algal blooms which reduce the amount of light and oxygen in the water, disadvantaging other plants and animals. Also promotes unwanted weed growth.
Oil and grease	Runoff from roadways or carparks, poor storage and/or illegal dumping of waste lubricating oils.	Form a film over water and makes it difficult for aquatic animals and plants to breath. Can be toxic to plants and animals.
Sediment (e.g. soil, sand, clay, and dust)	Erosion from building sites and bare earth (e.g. unsealed roads), soil stockpiles on footpaths, roads and driveways, washing cars in the street.	Smothering of plants and animals that live on the bottom of rivers, creeks and the sea. Increase in sedimentation of the water. Heavy metals and other pollutants attach to the sediment particles, which transport them through waterways and harm water quality.

The information in this document is from a series of fact sheets developed by the Stormwater Pollution Prevention Projects. Visit www.catchments.net/initiatives/initiatives_stormwater.shtml for more information on stormwater issues.

FURTHER INFORMATION

Legislation

Legislation may be viewed on the Internet at: www.parliament.sa.gov.au/dbsearch/legsearch.htm

Copies of legislation are available for purchase from:

Government Information Centre

Telephone:

13 23 24

Internet:

www.info.sa.gov.au

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