

# Stormwater Facts

## Stormwater

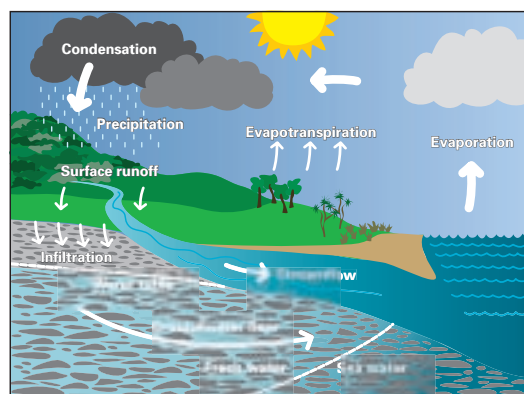
### What is stormwater?

Stormwater is rainwater that flows over land (buildings, roads, etc) into drains, along waterways, eventually discharging at the coast.

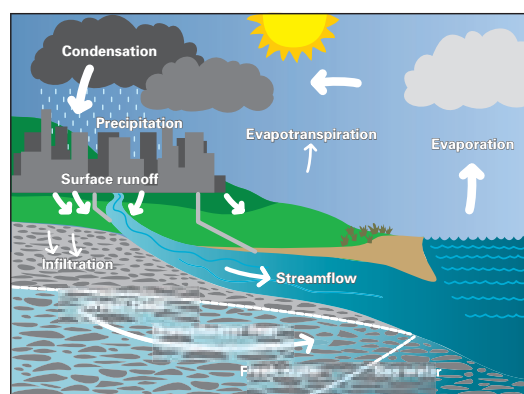
As land changes from bush or farmland to hard urban (impervious) surfaces, the amount of water running off the land increases and the amount of water soaking into the ground decreases.

In urban areas, rain that falls onto roofs, roads and other hard surfaces collects in stormwater catchpits and is carried through a system of pipes to our receiving waters.

These pipes have been built to protect public safety by directing water away from houses and people and to prevent flooding. However, the increased quantity of water can cause problems downstream. In addition, after stormwater has run over impervious surfaces, its quality also deteriorates.



Natural water cycle



Urbanised water cycle

### Why is stormwater a problem?

The three key adverse effects of urban stormwater on the environment are:

- **Water quantity effects**

Increases in impervious surfaces cause increases in stormwater run-off, and this increases the risk of flooding and erosion. Flooding risks for developments which are too close to existing watercourses are also increased.

- **Water quality effects**

Impervious surfaces collect contaminants derived from everyday urban life. This could be anything from litter, dust, decomposing vegetation and sediment to oils, tyre wear and exhaust emission particles. Increases in impervious surfaces therefore decrease the quality of stormwater runoff and increase threats to human health and the receiving waterways.

- **Aquatic habitats effects**

Altered hydrology (ie increased stormwater flows) and contamination of stormwater may cause a loss of freshwater aquatic resources. Increased stormwater flows cause erosion and sedimentation of streams, and contamination of stormwater run-off causes a deterioration of the quality of water entering receiving environments.

## Managing stormwater

The ARC's Stormwater Management Programme aims to prevent or minimise the adverse effects of stormwater quality and quantity on the human and aquatic environment.

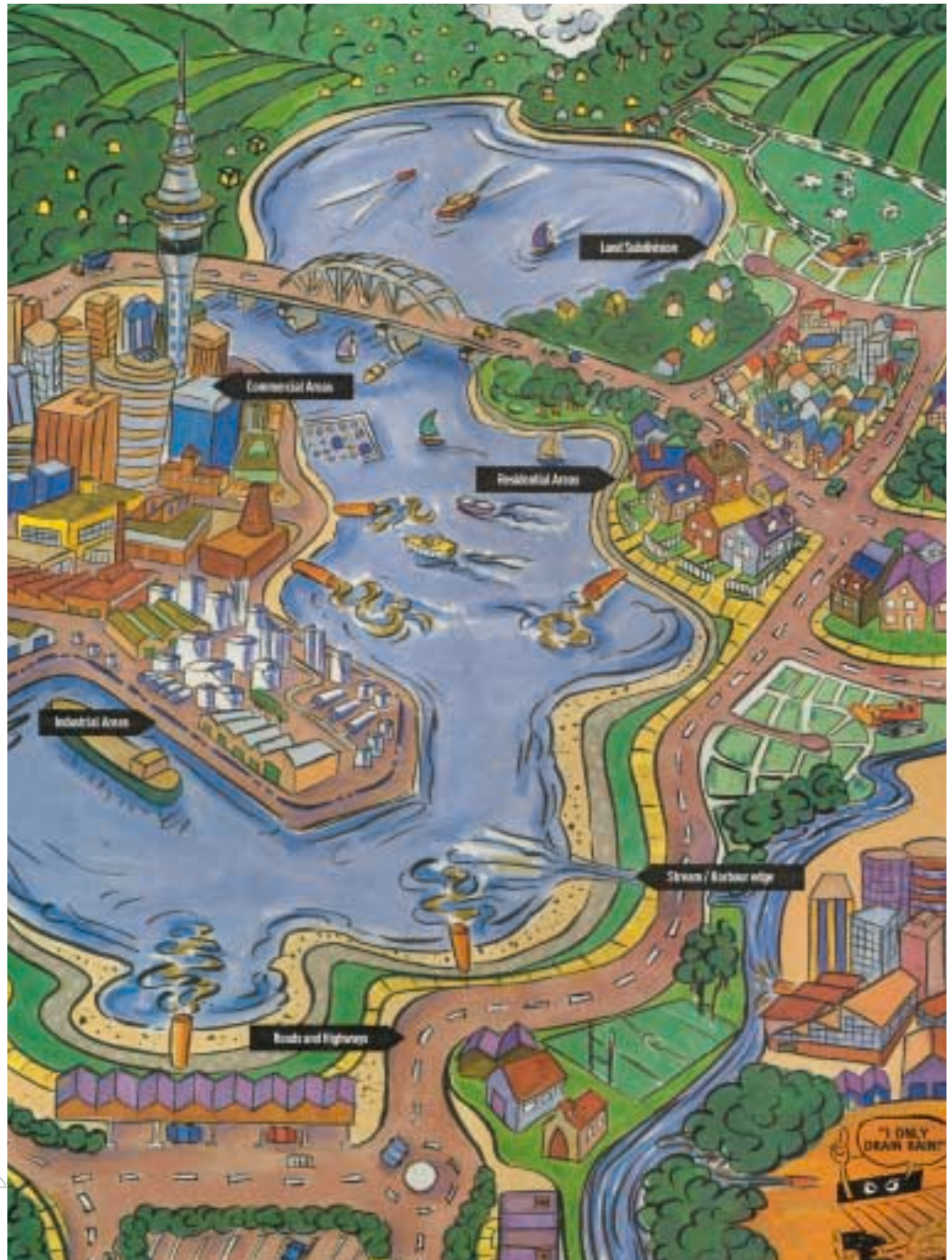
Management of the effects on water quantity and quality, and on aquatic habitat are discussed further in fact sheets 2, 3 and 4 respectively. These are available to download from the ARC website:

<http://www.arc.govt.nz>

Stormwater is managed through the consenting process. Consents are generally required for discharges from new impervious surfaces of more than 1000m<sup>2</sup> to land or to a receiving environment (ie streams, rivers, lakes, sea or groundwater).

## Further information

Please refer to Fact Sheet 7 and the Proposed Auckland Regional Plan: Air, Land and Water for further information about consents, or alternatively, please call ENVIROLINE on (09) 366 2000.



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