Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Improving
urban waterway health

Improving the water quality of Haytons and Paparua Streams and the Heathcote River in southwest Christchurch

Information for at-risk businesses in the Haytons sub-catchment June 2012

Everything is connected

In 2009-10 the National Institute of Water and Atmosphere (NIWA) collected water quality samples from the Haytons and Paparua streams in southwest Christchurch to investigate the sources of contaminants to those waterways.

This work is part of a joint Environment Canterbury and Christchurch City Council project to improve the health of the Haytons and Paparua Streams. The main source of water entering these streams comes from stormwater run-off from commercial and residential property, as well as from roads.

Sample check list for business owners and staff

- ☐ Do you know where your drains go? Develop a site plan that indicates where your stormwater drains are located and drain to.
- ☐ Check drainpipes are not broken or damaged. If they are, repair them and protect them from future damage.
- ☐ Check your stormwater for traces of waste. Stormwater should:
  - Be clear and not clouded with sediment.
  - Have no unusual colour or smell.
  - Have no chemical suds.
  - Have no signs of surface oil.
- ☐ Are liquids leaving your waste area? Check the lids on your bins and skips are closed to ensure no rainwater can get in.

For more info see the drainage module at: www.ecan.govt.nz/eppg

Why is it important that stormwater is clean?

All stormwater in Christchurch (from roofs, roads, driveways and parks) flows via gutters and drains into a network of underground pipes and open waterways, and ultimately into streams and rivers.

The stormwater system provides the most likely path for contaminants to enter streams and rivers. Contaminants include oil, grease, metals from vehicles, brake-pad dust, and spilt substances.

When it rains these contaminants are picked up by stormwater and washed into streams and rivers. Most stormwater is untreated and unfiltered: what goes down the drain ends up in the rivers.

Poor water quality can affect ecosystems and cause a decline in plant and animal life in waterways. It can also affect drinking water supplies and recreational users of water such as swimmers, kayakers, fishers, and boaties.

WHAT IS STORMWATER?

Stormwater is any water that runs off the land into gutters, sumps, streams, rivers and lakes.

Why Haytons and Paparua streams?

The Haytons and Paparua Streams were selected because they consistently show poor water quality based on long-term monitoring by the Christchurch City Council, and flow through land used for residential, rural and industrial purposes.

The poor water quality has downstream impacts as Haytons Steam flows into the Heathcote River/Opawaho, which has degraded water quality with respect to sediment, nutrients, heavy metals and bacteria.

Why have you been given this?

Your business is located within the Haytons sub-catchment and activities on site are considered likely to have an impact on the stream environment.

Rusty condensate water flowing into a gutter.

Run off from the car wash drains into the stormwater network.

CONTAMINANTS

All sealed surfaces (such as driveways, roads, car parks and loading/delivery areas) can build up contaminants, which are picked up and washed into the stormwater network and then to streams and rivers.

What to do to help

The best approach is to prevent contaminants entering the stormwater system in the first place.

Using water to wash down vehicles and containers, rinsing hard-stand surfaces, or processes that leak or overflow dirty water or other fluids, can cause contaminants to be washed into the stormwater network. Storage of liquid products near stormwater drains is another risk factor.

All business owners and employees should survey their sites for activities, practices and processes that could allow contaminants to enter the stormwater network.

Our recommendation is to maintain and clean your stormwater system on a regular basis (at least once a year, although this is subject to the activities on site and surrounding area).

Pollution Prevention Programme

Environment Canterbury's pollution prevention programme offers free assistance to businesses to help them improve their environmental performance and prevent pollution incidents.

For businesses in the Haytons catchment the focus is on reducing the contaminants flowing to local waterways and streams via stormwater.

Over the coming months a Pollution Prevention Officer will call you about organising a time to visit your site to discuss pollution prevention with you. This visit is part of the wider programme by Environment Canterbury to improve the water quality and health of Haytons and Paparua stream.

For more information on how to improve the quality of stormwater and in turn our streams and rivers, call Customer Services: (03) 353-9007

or visit:

www.ecan.govt.nz/pollutionprevention

www.cleanwaterways.org.nz

Remember - everyone has a role to play in protecting our urban waterways.

What was found?

The water quality of Haytons Stream contributes significantly to contamination of the Heathcote River, even following treatment in the Wigram Retention Basin (WRB).

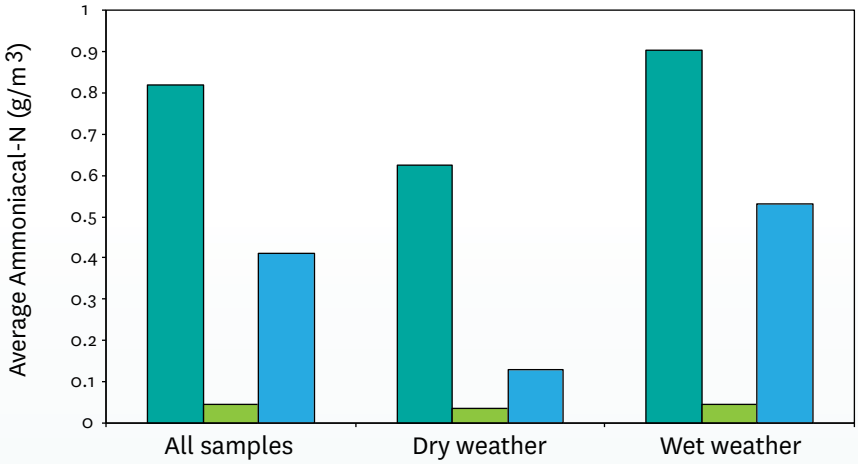
Contaminants that were found in higher concentrations in the Heathcote River below the Haytons Stream inflow included ammonia, zinc and biochemical oxygen demand (BOD).

These contaminants can affect the aquatic life in a stream in various ways, by being directly toxic (ammonia and zinc) or by reducing the amount of oxygen available in the water which stresses and can kill fish and other aquatic life (BOD).

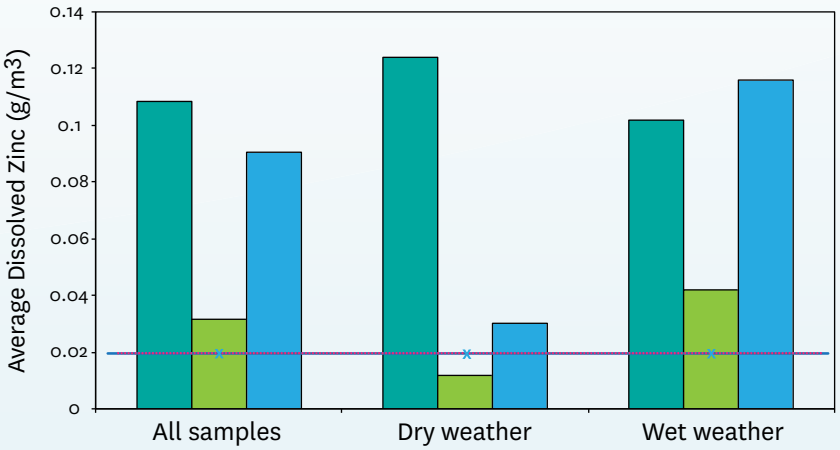
Ammonia can be used or generated in a number of industrial processes, including refrigeration, while elevated BOD concentrations usually indicate high levels of organic matter, e.g. plant or animal waste.

Zinc is a common stormwater contaminant that comes from road runoff as a result of tyre wear and also from galvanised iron roofing. Sources of zinc during dry weather include discharges from metal treatment industries.

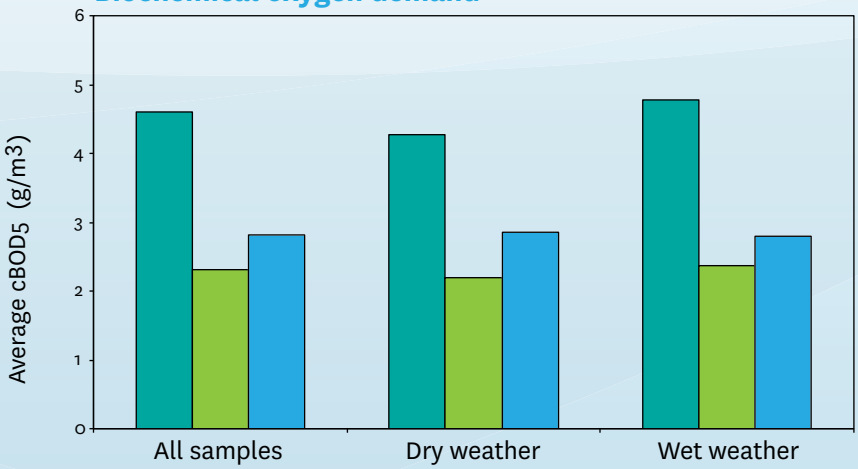
Total ammoniacal-nitrogen

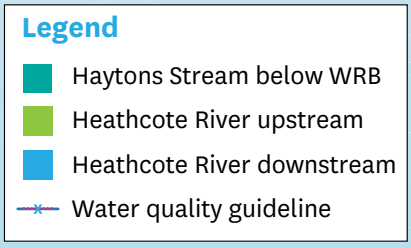


Dissolved zinc



Biochemical oxygen demand



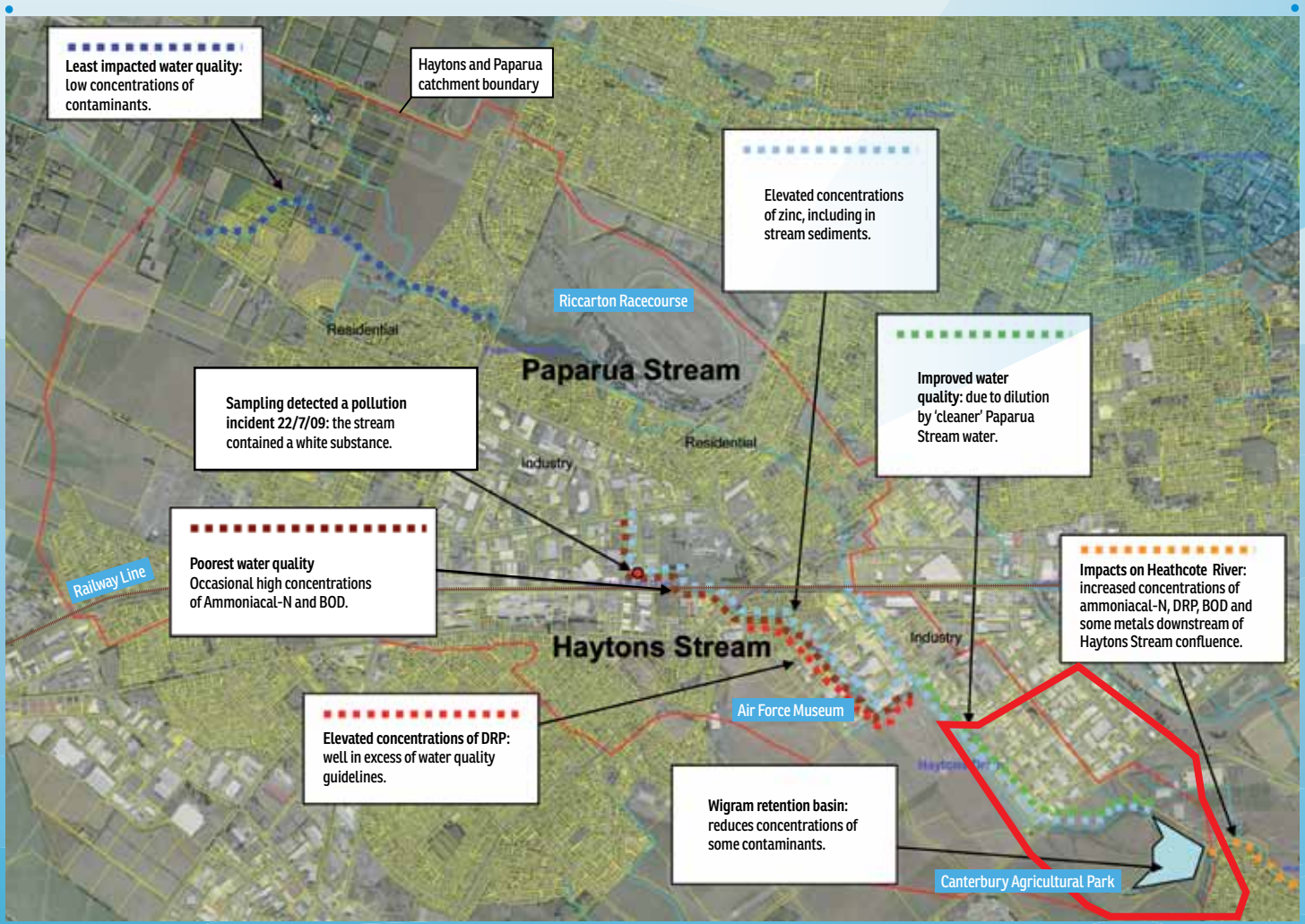


Your connection to the catchment

Your property is within the Haytons Stream catchment. All stormwater in this catchment flows via gutters and pipes to Haytons or Paparua streams. In some places the streams flow through underground pipes or open boxed drains but all stormwater eventually flows to the Wigram Retention Basin and into the Heathcote River/ Opawaho. Sediment and other contaminants are transported by stormwater into the Heathcote River/Opawaho.

Water quality studies have been undertaken by NIWA for Environment Canterbury in the Haytons Stream Catchment. These studies have identified pollution types and the potential significant sources of pollution entering the Haytons Stream catchment. From the Haytons and Paparua streams the water (and contaminants) enters the Wigram Retention Basin, which flows into the Heathcote to identify significant sources and types of pollution entering the Haytons Stream, Paparua Stream and the Wigram Retention Basin that flows into the Heathcote River and the Estuary/Ihutai.

The catchment of Haytons and Paparua streams (Hornby, Sockburn, Wigram)



Detailed map of the Upper Haytons catchment

Glossary

Ammoniacal-N
A form of nitrogen that occurs naturally in water bodies but can also be discharged by some industrial and waste processes.

BOD (Biochemical Oxygen Demand)
A indicator of the amount of biodegradable organic matter in water and the potential for bacteria to deplete oxygen concentrations.

CBOD (Carbonaceous Biochemical Oxygen Demand) The c stands for carbonaceous and distinguishes from total BOD which includes biochemical oxygen demand associated with the breakdown of nitrogen compounds.

If you have a spill you must do all you can to stop it discharging into the stormwater network. If a spill does leave your site, or you see contaminants entering the stormwater network call:

24-hour Pollution Hotline
0800 76 55 88

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Everything is connected

Facilitating sustainable development in the Canterbury region

www.ecan.govt.nz

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