



ONLY DRAIN RAIN

An industry guide to preventing stormwater pollution



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Thank you to:



for sharing the information
that makes up this guide.



INTRODUCTION

Most stormwater isn't treated before it drains into our local waterways. It's important to only drain rain and prevent anything nasty getting into our waterways. We need to protect our streams, rivers, lakes and coastal waters.

If you see pollution, please call ORC's 24 hour pollution hotline straight away on **0800 800 033 or email **pollution@orc.govt.nz** during business hours.**

Otago is a big region, and we rely on the public to let us know when and where you see pollution.

In the urban environments we have created, rainwater runs into gutters and is collected in stormwater pipes that feed directly into the nearest waterway. Anything that goes into the drains can end up polluting our environment and poisoning fish, animals and plants. This pollution can also spoil waterways for our own use.

Otago Regional Council (ORC) is responsible for looking after our region's natural resources. To help us do this we have rules that are designed to prevent pollution harming the environment. But it takes more than rules - we need your help to look after our waterways and make sure they are safe for swimming in and gathering kai from, as well as being healthy homes for the plants and fish that live in them.

You can only drain rain!

This guidebook will help you understand what you can and can't do in the workplace to make sure industry or trade worksites don't have any impact on our waterways.

STORMWATER POLLUTION AND YOU

Stormwater is one of the most significant, yet often unnoticed, sources of water pollution. The rainwater that runs off our yards and from our streets, parking lots, parks and playgrounds picks up everything in its path and eventually ends up in a waterway.

These are the very same waterways that we take drinking water from, and bathe and swim in. Polluted stormwater runoff changes the water's chemistry, which damages the habitat of aquatic animals and plants.

Pollution kills.

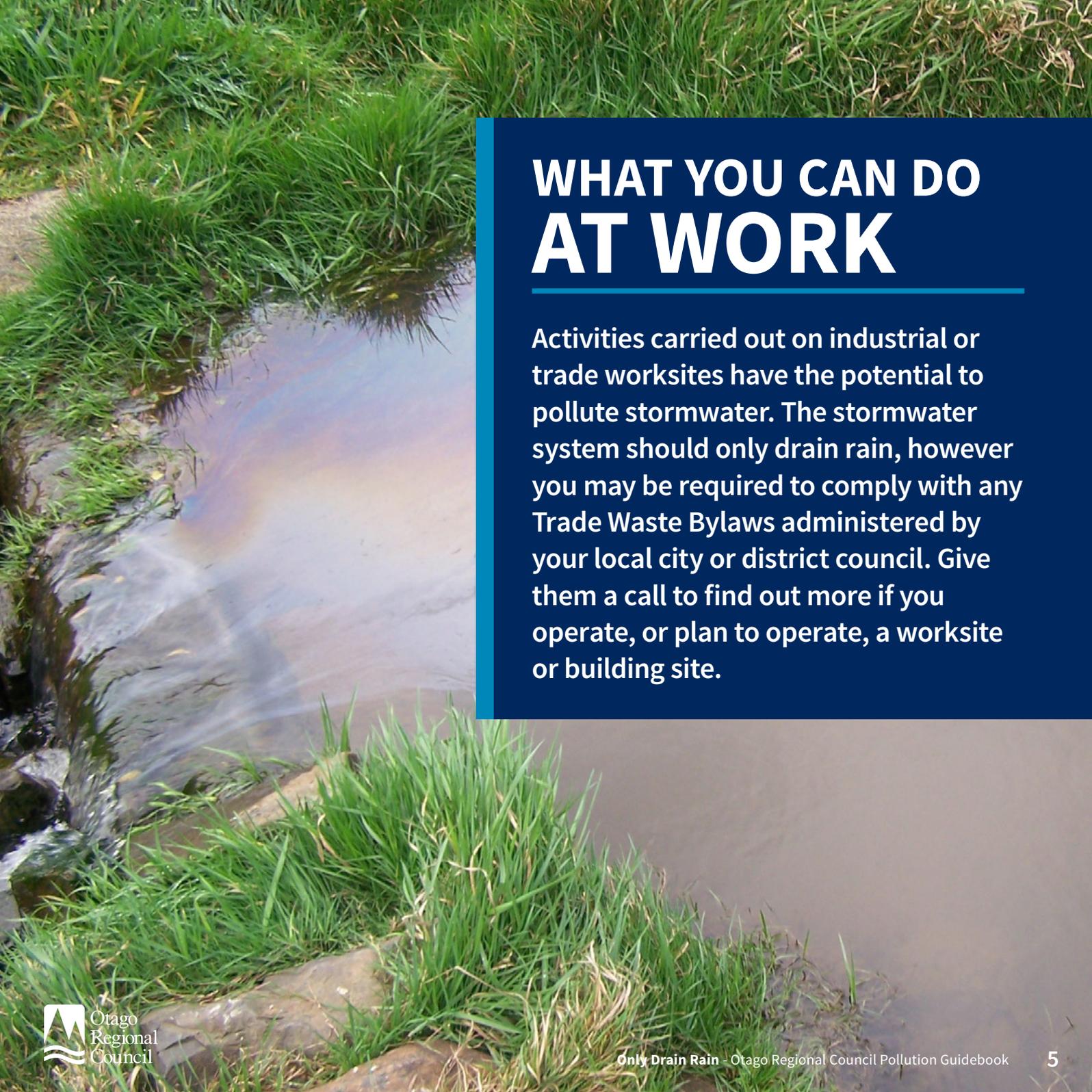
SO FOR YOU, IT COULD MEAN:

- **An end to fishing trips and seafood dinners.** Shellfish, watercress, eels and other fish can die or become contaminated by toxins washed in via stormwater.
- **The fun we have in and on the water becomes hazardous to our health.** High levels of bacteria and poisons in our lakes and harbours due to polluted stormwater runoff could make swimming, surfing and other water sports a thing of the past.
- **Our waterways look like rubbish dumps.** Streams and beaches can become blocked or littered with rubbish carried down by stormwater. This is not just unsightly but also a breeding ground for disease and bacteria.
- **Our drinking water makes us sick.** Council water supply sources can become contaminated by waterways draining polluted stormwater. This makes our drinking water costly and difficult to treat to safe levels.

IF WE ONLY DRAIN RAIN, IT MEANS:

- We can eat healthy fish, free of contaminants.
- We can swim in our lakes, rivers and oceans without the fear of getting sick.
- Our waterways look clean and smell fresh.
- We can trust our drinking water.





WHAT YOU CAN DO AT WORK

Activities carried out on industrial or trade worksites have the potential to pollute stormwater. The stormwater system should only drain rain, however you may be required to comply with any Trade Waste Bylaws administered by your local city or district council. Give them a call to find out more if you operate, or plan to operate, a worksite or building site.

OIL, FUEL, AND OLD VEHICLES

WHAT'S THE PROBLEM?

Oil is a common water pollutant and even tiny amounts can be fatal for plants and animals. A waterway can take years to recover. A rainbow sheen on a water surface or in a sump means it's most likely contaminated with oil or fuel.

WHAT'S THE SOLUTION?

Use good storage practices

- This includes bunding, providing specialist decanting areas and locating spill kits close to risk areas.
- Use lockable valves on bunds to prevent contaminated water being discharged from your bunded areas.
- For old vehicles, drain and dispose of fluids properly so they cannot leak onto the ground.

A TOP TIP:

Make sure your staff are trained in how to deal with an oil spill.

If it's a large spill, call ORC's Pollution Hotline on 0800 800 033.

Ensure all tanks meet HSNO requirements

- Ensure all tanks and secondary containment systems meet HSNO* requirements and are regularly maintained and certified.
- Tanks used to store waste or used oil may also require HSNO certification to verify they are safe.

**HSNO – stands for the Hazardous Substances and New Organisms Act 1996, which controls the management of hazardous substances in New Zealand.*

Dispose of contaminated washwater safely

- Use the wastewater system or have your washwater removed by a reputable liquid waste contractor.
- Install oil interceptors in areas that collect drainage from refuelling or fuel storage areas to prevent pollutants entering the stormwater system.

Follow best practice when loading/ unloading/ transferring and site management

- Store waste oil and other liquids securely in a covered, bunded area and dispose of/recycle them regularly.
- Keep areas exposed to rainfall clean and all wastes out of stormwater drains.
- Store car parts and batteries under cover on a sealed surface.

Have spill response procedures and spill kits handy

- Ensure your staff are well-trained in the use of your kits and how to respond to both small and large spills.
- Always contact Otago Regional Council if a large spill occurs.

PAINTING AND PLASTERING

WHAT'S THE PROBLEM?

Painting and plastering waste left on the ground can wash into stormwater drains and straight into waterways. The toxic solvents, heavy metals and suspended solids in these wastes can all harm aquatic animals and plants and make waterways unhealthy.

WHAT'S THE SOLUTION?

Buy water-based and low VOC/VOC-free paints

- Volatile organic compounds (VOCs) in paint can cause health and pollution issues so aim to use paint/products that are low VOC or VOC-free.
- Use water-based paints (rather than solvent/oil-based) where possible.

Handle and store material safely

- Always use drip trays when transferring or draining paint.
- Store paints and other liquids under cover so that rainfall cannot wash out pollutants.
- Keep your site clean and make sure waste does not get into stormwater drains.

Keep the environment clean when cleaning up

- Clean up paint chips and sanding dust and dispose of them in a bin.
- Clean up spilled material immediately and dispose of it in a bin (making sure it can't leak out).

- Allow paint thinners to settle and then strain and re-use.
- Be 'washwise' - use a rotating two-container washing system to clean your gear (your local paint shop can advise you on this).

Recycle unwanted paint

- Use take-back recycling schemes such as Resene's Paintwise (www.paintwise.co) or Dulux's Take-Back Service for trade painters.
- Leave excess paint with property owners for touch-ups.
- For special paints such as old lead-based paint, solvent-based, industrial or special purpose paints - please contact your local paint shop for advice on recycling or disposal.

A TOP TIP:

Let paint thinners settle, then you can strain and re-use them.



DIRECTIONAL DRILLING

WHAT'S THE PROBLEM?

Directional drilling excavations and the slurry produced by drilling can cause sediment discharges that smother aquatic animals and plants, block the light entering water and irritate/clog the gills of fish. Pollutants in the drilling fluid can result in a range of adverse effects on natural habitats.

WHAT'S THE SOLUTION?

Contain sediment and slurry

- Dig a containment pit or use drums/barrels to collect all slurry discharges.
- Allow slurry to settle and then dispose of settled slurry by recycling on-site, spreading onto land at an approved site, or taking to a landfill.

Please contact ORC if you have a spill into a waterway

If sediment from a spill enters a waterway, stop, implement your spill procedures and then call ORC's Pollution Hotline on 0800 800 033.

During business hours, you can also email pollution@orc.govt.nz

Avoid stockpiling onsite, but if you have to:

- Use an area well away from stormwater catchpits, kerb channels, waterways or low/hollow places.
- Cover stockpiles to prevent rain washing sediment from the pile downstream.

Regularly inspect your site

- Daily inspections of site controls will allow you to ensure they are all working correctly.

Have spill response procedures and spill kits handy

- Ensure your staff are well trained in how to respond to spills.
- Keep spill equipment/kits handy and ensure staff know how to use them.

VEHICLE PAINTING AND PANEL BEATING

WHAT'S THE PROBLEM?

Waste paint, paint thinners and sanding waste contain toxic solvents, heavy metals (such as lead, cadmium, chromium and mercury) and suspended solids. Vehicle washwater picks up oil and fuel residues, paint and cleaners, all of which cause harm to the environment if they get into our waterways.

WHAT'S THE SOLUTION?

Vehicle painting

- Wash out water-based painting equipment into a sink or sewer gully trap.
- Always use drip trays when transferring or draining paints and other liquids.
- Allow paint thinners to settle, then strain out the waste solids and re-use the liquid.
- Clean up all spilled material immediately.
- Remember that waste solvents can be recycled.
- Store all paints, thinners and other liquids under cover to prevent rainwater washing out pollutants.

Vehicle washing

- Wash vehicles and equipment down so that washwater enters a sewer gully trap and not a stormwater drain. Check with your local council to find out if you need a resource consent for a sewer gully trap.
- Use cleaning methods that require less or no water, such as sweeping or a bucket and rag.
- Get vehicles washed by a commercial cleaner with compliant facilities.

Abrasive (wet or dry) blasting

- Using these techniques in relation to vehicles may require a resource consent, as they can produce hazardous liquid and dry wastes. See the next section for more detail.
- Spray painting and abrasive blasting can also cause air pollution. It's important to follow the correct procedures to protect our environment.

ABRASIVE BLASTING

WHAT'S THE PROBLEM?

Dust from abrasive blasting can get into the air and be inhaled, settle on plants and get into water. The blasting washwater can become contaminated with sediment, paint, oil, heavy metals, chemical cleaners and organic waste, all of which cause harm to the environment if they get into our waterways.

You may need a resource consent for abrasive blasting. Contact ORC on 0800 474 082 for more information.

WHAT'S THE SOLUTION?

For stationary dry-abrasive blasting

- Stationary blasting must be carried out in a room/cabinet that contains all emissions and it should be vented through an effective dust collector (fabric or paper cartridge filter).
- Spent blasting material should be treated as a hazardous waste (seek disposal advice from ORC).

For mobile dry-abrasive blasting

- Mobile blasting must be carried out so that waste material does not get onto soil or into water.
- Look to use synthetic blasting materials that create less or no dust, a vacuum blaster (which has its own dust extraction system), and only operate in calm conditions.

- Remove blasting waste material on a daily basis. Do not allow waste to accumulate on the ground or floors.
- Spent blasting material should be treated as a hazardous waste (seek disposal advice from ORC).

For wet-abrasive (water) blasting

- Only carry out wet-abrasive blasting in an area where the waste water can be contained using bunds or a collection/filtration system.
- All collected waste water may need to be disposed of in the tradewaste system, which is different to the wastewater system. Call your city or district council for more information.
- Allow collected blasting material to dry and then treat it as a hazardous waste (seek disposal advice from ORC).

CONCRETE WASHING AND CUTTING

WHAT'S THE PROBLEM?

Cooling water used in concrete cutting, and rinse water used to remove fines, will pick up concrete particles and turn the receiving waterway strongly alkaline. Wash water from concrete trucks and equipment will also be very alkaline and contain high sediment loads. The alkalinity can kill or burn aquatic life and the sediment can smother it.

WHAT'S THE SOLUTION?

Never wash concrete products into areas where the wastes and washwater will drain to a stormwater drain or stream

- Measures like sacking, filter cloth, weed mat, enviro-filters and hay bales will not reduce the high pH of concrete wastewater. The filtered water will still have an elevated pH and be toxic even though it looks clear.

Plan ahead: use a wet vacuum

- If you are a regular concrete worker, a wet vacuum (vac) can be used to vacuum up wet concrete slurry and prevent spills to the stormwater system.
- Wet vacs can cost around the same price as a fine and are also available for hire, so plan ahead.
- Ensure your wet vac (or pump) can cope with the volume of wastewater your site will produce.
- Check the weather forecast, plan ahead and put your controls in place before you start work.

When concrete cutting and washing fines

- Divert all runoff to a grassed area where it can soak into the ground.

- Block receiving drains and pump the wastewater to an area where it can evaporate or soak into the ground.
- Discharge filtered wash water to the sewer with the approval of your local Council, or tradewaste if you have a permit.
- Wash the fines off freshly laid concrete to the side, not into the stormwater drainage system.
- Clean up all spilled material immediately and dispose of wastes in a bin in such a manner that they won't leak out.
- Ensure all workers and contractors are aware of the above requirements.

For concrete delivery trucks and equipment

- Use a specifically designed wash area that either discharges into the sewer or contains all wastewater in a sealed pond or tank for re-use (as concrete make-up water or for washing equipment).
- On large construction sites that require multiple deliveries, ensure there is a designated wash-out area that allows water to soak into the ground and not run overland into the stormwater system.

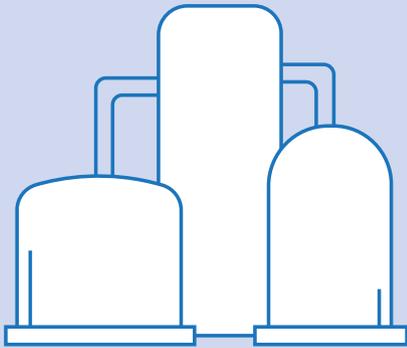
A TOP TIP:

Make sure all staff and contractors know the correct procedures for concrete washing and cutting.

STORMWATER OR WASTEWATER?

There are separate systems for collecting stormwater and wastewater in our towns and cities. To help protect our waterways it's important to understand how each one works.

Downpipes that feed into open drains are for rainwater only.



WASTEWATER

A wastewater system (also called a sewerage system) collects and removes sewage and wastewater from your house or workplace to a treatment plant.

During treatment, harmful bacteria, solids and other pollutants are removed so that the water can be disposed of, either on land or out at sea, without damaging our health or the environment.

WASTEWATER



Wastewater is removed in a closed drain and travels to a treatment plant where pollutants are removed.

Treated water is disposed of without damaging our health or the environment

Local District Authorities will require sediment traps to be in place where ever there is a connection to their reticulated storm water system. For more information contact your district council or see the Building Regulations 1992.

STORMWATER



Stormwater that runs off roofs and paved areas picks up pollutants before it's collected through drains. These are generally open drains.

Untreated water enters our waterways



STORMWATER

A stormwater system is designed to prevent flooding by collecting rainwater that runs off roofs and paved areas such as roads, parking lots and driveways.

Stormwater isn't pure water. As it runs over the ground and paved areas towards a drain it picks up pollutants.

So whatever goes into the drain outside your house or workplace – whether it's poured in intentionally or washed down with rainwater – enters our waterways in virtually the same untreated condition.

STORMWATER POLLUTION AFFECTS ALL OF US

Even if you don't live near water, the stormwater pollutants that run off your property can find their way through the drainage system into where our drinking water comes from and where we fish and swim. A pollutant is a substance that has the potential to contaminate our water, soil or air. Here's a list of the common ones that can cause problems if they get into stormwater.

Go to the ORC website at www.orc.govt.nz to find out more about what you can do at home to prevent stormwater pollution.



Chlorine

Even in concentrations that are safe for humans, chlorine can be toxic to fish, insects and beneficial bacteria.

Cleaning products

Detergents and disinfectants can poison and burn aquatic animals and irritate their sensitive tissues. Even products labelled as 'biodegradable' or 'environmentally friendly' can suffocate fish by depleting the levels of oxygen in a waterway.

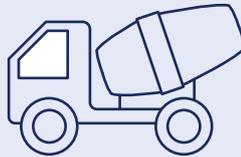


Corrosives

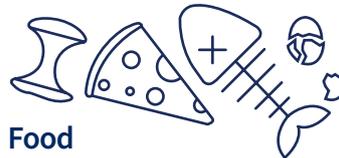
Liquids such as battery acid, some cleaning compounds and cement wastes can damage the eyes, gills and skin of fish. They can also kill juvenile fish and burn other animals.

Concrete, cement and lime

Lime is a major component of cement. When lime is dissolved in water it produces an alkaline solution that burns and kills any animals or plants that come in contact with it.



It takes 100,000 litres of fresh water to dilute a bucket of concrete wastewater to a neutral pH!

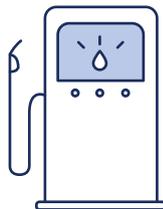


Food

As food breaks down in waterways it uses up the water's oxygen, suffocating any animals that live in the water.

Fuels and solvents

These chemicals damage fish gills, poison animals and burn plants. They can contain carcinogenic chemicals that build up in the tissues of aquatic animals. Petrol is also a major fire hazard, particularly in small, confined spaces like stormwater drains.



Heavy metals

Metals such as zinc, copper and lead don't break down in water. They inhibit aquatic plant growth, and poison aquatic animals by accumulating inside their bodies. These metals then accumulate up through the food chain. Each time one animal eats another, it adds to the heavy metal poisons in its body. And who could well be at the end of this food chain? Us!



Just 1 litre of oil can a) cover 100m² of a waterway surface, preventing oxygen from entering the water, and b) contaminate the equivalent of 2 olympic-sized swimming pools, along with smothering any birds or other animals that it comes into contact with.

Litter

Rubbish such as cigarette butts and drink cans take a very long time to break down, destroying habitats and disrupting ecosystems.



Nutrients/fertilisers

The nutrients in fertilisers and domestic sewerage can cause uncontrolled growth of aquatic weeds and micro-organisms, which then choke waterways and use up the oxygen supply.

Oils

The liquid wastes from draining radiators, bleeding brakes and changing car oil contain toxic substances. These can dissolve in water and poison aquatic life.



Paint, ink and dye

As well as being poisonous to all creatures living in and on the edges of waterways, paints and dyes can block the light from entering the water. This kills off plant life and the animals that feed on it.

Pet waste

Dog poo that isn't removed from footpaths and grassy areas can get washed into waterways and into the sea. Once this poo gets into the water it increases the level of harmful bacteria and viruses.



Sediment

Clay, silt and sand washed off construction sites and subdivisions can smother streambeds, destroy habitats and choke the fish and animals that live there. Sediment is one of the most significant contaminants in our waterways.



WHAT DOES THE LAW SAY?

Under the Resource Management Act 1991 (RMA), the discharge of water or contaminants into the environment is unlawful unless:

- the discharge complies with the relevant rules or conditions contained in Regional Plans; or
- a resource consent from the Regional Council is held that authorises the discharge.

Breaching the RMA could result in an infringement fee of up to \$1,000; or if convicted:

- a fine of up to \$300,000 or up to 2 years' imprisonment for an individual or;
- a fine of up to \$600,000 for a corporation.

You may also have to comply with discharge rules contained in local bylaws.

HERE IN OTAGO, rules for discharges are contained in ORC's Regional Plans and ORC's Flood Protection Management Bylaw. Which rules apply depend on your circumstances:

- If your discharge is to land or water, refer to the Regional Plan: Water for Otago rules 12.B.1.8, 12.B.1.9, 12.B.4.1, 12.C.0.1 and 12.C.1.1.
- If your discharge is to the coastal marine area, refer to the Regional Plan: Coast for Otago rules in section 10.5 of that plan.
- If you are doing abrasive blasting or spray painting you should also check the Regional Plan: Air for Otago.
- If your discharge is into an ORC Scheduled Drain, refer to ORC's Flood Protection Management Bylaw 2012 section 3.1. Maps showing ORC's Scheduled Drains can be viewed online at www.orc.govt.nz/plans-policies-reports/regional-plans-and-policies/flood-protection-management-bylaw-2012

Your local District or City Council may also have bylaws that relate to stormwater discharges, so check out their website or give them a call. If you are unsure if your discharge is compliant give us a call on **0800 474 082**.

Everyone has a part to play. Reducing stormwater pollution depends on all of us working to prevent harmful substances entering our drainage systems.

If you see pollution in our waterways,
call the pollution hotline straight away

0800 800 033

24 HOURS A DAY, 7 DAYS A WEEK

You can also email pollution@orc.govt.nz
during business hours.

SPILLS HAPPEN – HELP US FIND THEM

Call the hotline if you see something unusual in a
waterway. The quicker we hear about a pollution
incident, the more likely it will still be occurring by
the time we get there, allowing our staff to stop it
and/or find the source.

Remember to tell us where you saw the pollution,
what time you spotted it and if you could see where it
was coming from.



OTHER COUNCIL CONTACTS



Central Otago District Council
(03) 440 0056 - codc.govt.nz



Clutha District Council
0800 801 350 - cluthadc.govt.nz



Dunedin City Council
(03) 477 4000 - dunedin.govt.nz



Queenstown Lakes District Council
(03) 441 0499 - qldc.govt.nz



Waitaki District Council
0800 108 081 - waitaki.govt.nz