Drains to Harbour
Student Activities

Table of Contents

These activities have been copied and adapted from a range of resources which are identified in the Bibliography on Page 35.

Experiencing Marine Reserves (EMR) is going to take you on a journey to find out how our actions can effect our local waterways.

You can write the dates for your experience below:

1. EMR Classroom Workshops

2. Waterway Investigation

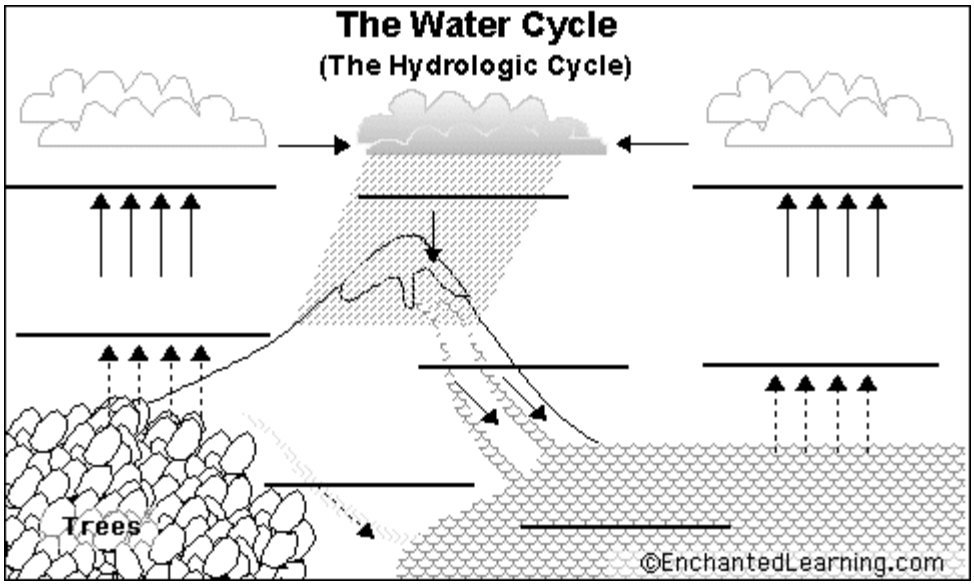
3. Drain Stencilling

Before you start complete the first two columns.....

What we know...	***What we would like to find out...***	***What we learnt...***

Label Water Cycle Diagram

Read the definitions below, then label the water cycle diagram.



Accumulation - the process in which water pools in large bodies (like oceans, seas and lakes).

Condensation - the process in which water vapor (a gas) in the air turns into liquid water. Condensing water forms clouds in the sky. Water drops that form on the outside of a glass of icy water are condensed water. (This term appears twice in the diagram.)

Evaporation - the process in which liquid water becomes water vapor (a gas). Water vaporizes from the surfaces of oceans and lakes, from the surface of the land, and from melts in snow fields.

Precipitation - the process in which water (in the form of rain, snow, sleet, or hail) falls from clouds in the sky.

Subsurface Runoff - rain, snow melt, or other water that flows in underground streams, drains, or sewers.

Surface Runoff - rain, snow melt, or other water that flows in surface streams, rivers, or canals.

Transpiration - the process in which some water within plants evaporates into the atmosphere. Water is first absorbed by the plant's roots, then later exits by evaporating through pores in the plant.

Background Text:
Concept a)
Water is essential for life

It was not until water appeared on Earth that life began.

According to geologists, our planet formed 4.5 billion years ago. Water appeared some time later, around 3.8 billion years ago and the first life evolved in the water. It was only much later that terrestrial forms of life arose.

All active organisms on Earth today contain at least 50 percent water in their bodies. Most of this water is contained in cells and between cells. Living things use water to transport nutrients, hormones and oxygen to their cells, cleanse waste from their systems and cool their bodies. Aquatic animals live in water and get oxygen and food from it. Animals drink water, while plants take it up through their roots and transpire it to the atmosphere through their leaves.

Water flows through non-living and living systems, shaping the land and giving life.

Water is a link between ecosystems and provides transportation for many living things, for example for migration or seed dispersal. The amount of water is an important influence on which forms of life can exist in a certain place.

Water supports many life forms and maintains the balance of the planet.

Oceans are important to all life - they play the major role in the water cycle, in absorbing carbon dioxide and releasing oxygen, and in influencing the climate. They are also home to a huge variety of life.

Freshwater supports its own life forms, including plants, fish, frogs and aquatic insects. The life forms found in the water depend on its condition. Some animals and plants need very pure water, others will survive in dirty water. Freshwater flows through streams and rivers into lakes, estuaries and coastal areas, all of which support different life forms.

Water is also important for life on the land, though there are certain types of plants and animals that are well adapted to live with very little water.

People need water too and we get sick if we drink dirty or salty water.

A reliable source of clean drinking water is essential. Towns and cities spend a lot of money to ensure that households have a safe drinking-water supply. Water provides important food sources for people such as shellfish, eels and fish which are edible water animals, and watercress and seaweed which are some water 'vegetables'. Farm animals need a constant supply of clean water and more if they are producing milk. Crops and fruit trees need water to grow and in dry areas they are irrigated (watered using sprayers or drip systems). Drip systems are hoses laid along the ground near the crop plants, with small holes that allow water to seep out. Factories and industries also use water. For example, to process one litre of milk requires around 20 litres of water. Hydro-power uses the force of water to generate electricity, while thermal (coal or gas burning stations) use water for cooling machinery.

Read the 'Healthy Water' concept A '*Water is essential for life*' and then answer the following questions:

1. When did our planet form?

2. When did water first appear on our planet?

3. Complete the following sentence: "All active organisms on Earth today contain at least ..... water in their bodies".

4. What do living things use water for?

5. Give an example of how water can provide transportation for living things.

6. Give 3 examples of why oceans are important to all life?

7. Give three examples of why clean freshwater is important to people?

Concept b)
Fresh, clean water is a relatively scarce resource

Maybe planet Earth should have been called planet Water instead, for it is a watery world. Over two thirds of the surface of the planet is covered by water.

Water exists in many forms in nature - as ice, liquid (freshwater and saltwater) and water vapour. About 97 percent of the water on Earth is ocean. Of the remaining three percent (which is freshwater), over two thirds is locked in icecaps and glaciers. This means that less than one percent of the world's water is liquid freshwater. Of this one percent, the vast majority is too deep in the ground to extract, or too polluted to drink. So, only a tiny percentage (0.0003%) of the total water on the planet is available to drink.

Globally, clean, drinkable water is a very limited resource. In New Zealand, we are fortunate to have relatively abundant freshwater due to our high rainfall. However, we can tell a lot about our relationship with the environment by the condition of our local water resources, and in some places pollution is a serious problem. Parts of the country also experience drought and sometimes summer water restrictions are in place. Some of our groundwater aquifers are also being over-extracted, especially for domestic supply or irrigation.

Concept c)
The importance of water is reflected in culture and society

Water is important to us as individuals to sustain us and keep us alive, and has always been central to our economy and society.

In New Zealand, water supports important food sources such as fish, shellfish and watercress, and forms the basis for much of our recreation, sport and tourism. Water is also essential for our livestock and we have developed water irrigation systems for some farms, orchards and market gardens. Where there is too much water, pasture cannot grow and farmers create drains to take the water away. We have also used rivers and lakes to generate power from water, by storing it in hydro-dams and running it through turbines. Wherever you are, you can see the historic developments people have made using water.

Where water has become unclean, its mauri suffers and human beings can also suffer, such as when shellfish are contaminated. For Māori, each momo wai (type of water) has different values and uses. Every body of water has a mauri and so should not be mixed with water from another source. Mauri is often translated as the 'life force' - the essence of a being, the power that makes it what it is. It is considered that all natural things, and some things humans build, have a mauri. Land, plants, rivers and buildings all have their own mauri, which must be respected and protected. Tikanga (correct practices) reflect this necessity. For example, separate facilities are used for cooking and for washing the body; these waters should not be mixed. Different water sources may be used for different purposes, such as a spring for ritual purposes and a river for ordinary washing. In some places, distinct parts of the same river would be identified as sources for ritual, for drinking water and for washing. Alternatively, a different time of the day could be set aside for using a river for the various purposes. When water is properly cared for it can be used for purifying and cleansing, both in a physical sense (washing ourselves) and in a ritual sense. For example, water is used to sprinkle in a house whose occupier has died and for washing hands after being in an urupā (cemetery), or after being with a dead person at a tangi.

Read the 'Healthy Water' Concept B '*Fresh, clean water is a relatively scarce resource*' and then answer the following questions:

1. What forms does water exist in?

2. What percentage of the Earth's water is ocean?

3. What percentage of the Earth's water is freshwater?

4. How much of the freshwater is in the form of liquid?

5. How much of the total water on Earth is actually available to drink?

6. What issues do we need to think about regards to New Zealand's freshwater?

Read the 'Healthy Water' Concept C 'The importance of water is reflected in culture and society' and then answer the following questions:

1. What does 'mauri' translate as?

2. Why should different water sources not be mixed in the Maori culture?

How much water is in us?

In pairs, using chalk outside or crayons on large paper, take turns to lie down while your partner traces around your body shape.

Discuss with your partner where water can be found in your body. Shade in how much of your water you think is in your body.

Your teacher will tell you the answers after you have a guess.

1. Were you surprised at any of the answers? If so, which one and why.

2. Do you think every living thing contains water and how much?

How living things use water

This art activity involves creating a large circular collage (or brainstorm) to show how all living things use water in different ways for their own physical and social needs. To begin the activity students' views are considered. As the glue dries, students consider and select pictures to illustrate how other life forms and places and people beyond the boundaries of the school environment use water for physical and social needs.

You will need

A2 sheets of newsprint.
Large collection of magazines, photographs, drawings, diagrams and tables showing people and places using water.
Scissors, glue, crayons or felts.

1. In the centre of a large (A2) sheet of newsprint paper, create a collage of pictures or carry out a group brainstorm to list as many examples as possible of what children (or young people) like to use water for.

2. Around the centre collage of pictures or ideas, create an outer layer showing what other life forms like to use water for. For example, "Animals in the sea"; "Animals on the land" and "Plants".

3. Around this, create a third layer, a collage of pictures or a list of all the ways the school environment uses water.

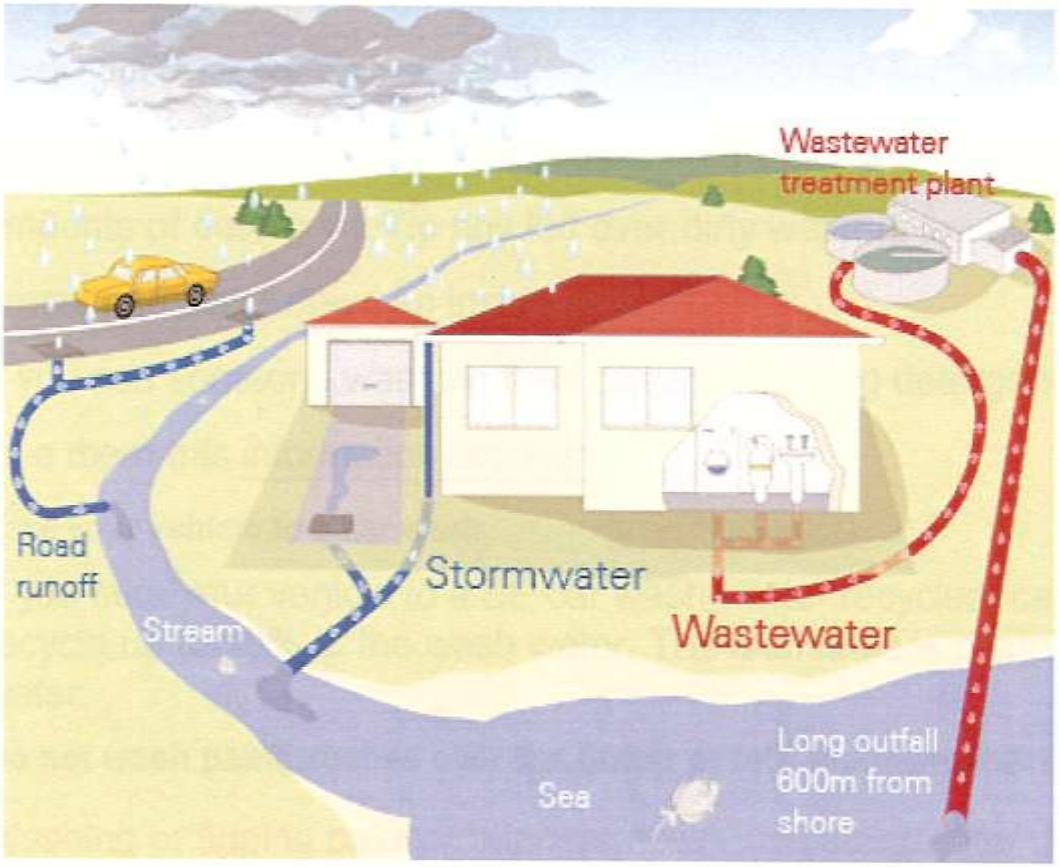
4. The fourth and last layer of your collage will need to show what people and places in the wider environment might need water for. For example, farmers, factories, ports, surfers, orchards, power stations, rafting companies, fishers.

5. Using four coloured dots (one for each layer), mark which things you consider are particularly important uses (based on needs rather than wants).

1. Did people have different ideas about what was important?
2. What happens when lots of people want to use the same water for different things?
3. Are there any ways that you or I affect the quantity or quality of water available?
4. Are there any issues about water that affect your school or wider environment?
5. Can you identify ways to reduce the quantity of water being used in the school?
6. Can you identify ways to improve the quality of water in and around your school?
7. Who else in your community plays a role in improving the quality of water?

Stormwater and Wastewater

There is an important difference here that we need to get clear....stormwater flows to our waterways UNTREATED, whilst wastewater flows to the sewage treatment plant to get TREATED. You can see this in the picture below:



Draw a flow diagram that shows the journey stormwater takes from a road into a stream, lake, beach or harbour.

Draw another flow diagram to show the journey wastewater takes from hand-basins in the school toilets to a sewage treatment plant.

Class brainstorm

Have a brainstorm in your class about what things you think are polluting stormwater drains in Whangarei. Write your ideas in the space below:

Complete the following statements:

I only drain rain means.....

If pollutants go down the stormwater drains.....

Let's evaluate...

Read the following statements and circle the opinion that best describes how you feel about the statement:

1. Motor vehicle use is the major cause of stormwater pollution.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

2. It's OK to wash your car on the road outside your house.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

3. Stormwater pollution is the Northland Regional Council's problem – not ours.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

4. It doesn't matter if we only put small amounts of waste down the stormwater drains.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

What is a catchment area??

A catchment is an area of land which collects rain. It is bounded by hills or mountains. Almost everyone lives in a catchment area.

Rain that falls onto hard concrete and asphalt surfaces flows off into the gutters and underground stormwater drains and into streams that join and flow out to the sea.

Rain that falls onto grassed or un-vegetated areas partly soaks into the ground.

Catchments vary in size from large, such as the Waikato River which stretches from Taupo to Pukekohe, to tiny areas of only a few hectares.

Most of the Whangarei District is part of one big catchment that drains into streams and eventually, the Whangarei Harbour. This large catchment is made up of smaller catchment areas as seen in the map below:

Make your own catchment map

Look at a map of your area and then go for a walk outside to look for **higher land or ridges** that form your catchment boundaries. Use this information to make your own classroom catchment map at school.

While you're walking around, look for **stormwater drains** and think about where they could flow to (are there any streams nearby?). Mark **streams** on your catchment map.

Record any rubbish , dirt, oil or oily sheen that you see that might wash into the stormwater drains and, if you can, where the stormwater pipe flows into the natural waterway.

Show on your map where the stormwater in your area goes and how it gets into the harbour.

Questions:

1. How much and what kind of rubbish was found in and around the stormwater drains?

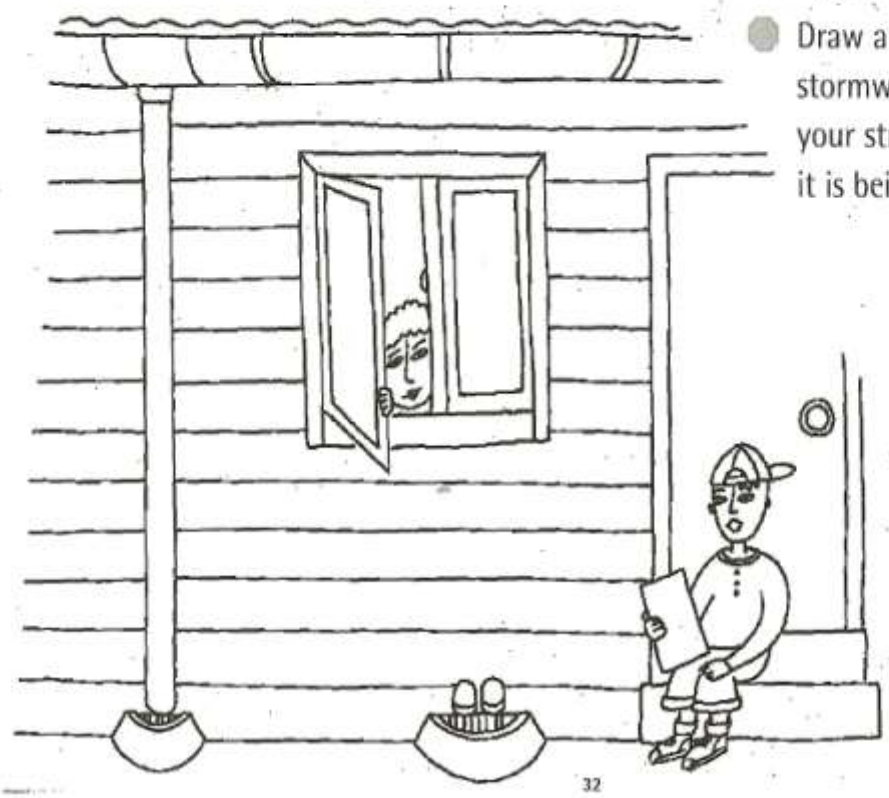
2. What other things might be washed into the gutters from the roads?

3. What about the pollutants we can't see? What are these and where do they come from?

Homework...

Complete this activity at home (no excuses!)

- Draw a floor plan of your house and section.
- Show where all the drains run under the house and off the section.
- Colour code the drains to clearly show where wastewater is going and where the stormwater drains are nearest to your house.
- Talk to your family (and / or neighbours) about where your stormwater drains go. If possible, follow the path from the stormwater drains to the place where this water is discharged.
- Draw a map showing the stormwater journey from your street to where it is being discharged.



32

Did you know...

- Any time we let something other than rain water flow down a stormwater drain, we are causing pollution.
- Many of the things that cause the most serious pollution of stormwater are invisible, or very hard to see.
- It's illegal to allow oil, paint, detergents and other wastes into stormwater drains.

Here's a list of pollutants often found in our stormwater as it is discharged into

streams, beaches and harbours. Discuss and record how you think these pollutants get into the stormwater.

Pollutant	How do they get into stormwater
Rubbish such as drink cans and plastic bottles, plastic bags	
Paint	
Food wastes	
Animal faeces	
Soil	
Lawn clippings, garden rubbish, rotting plant material	
Herbicides, pesticides, garden fertiliser	
Grease and oil	
Chemicals	
Air pollution	
Heavy metals e.g. zinc and copper cadmium from cars	
Soapy water (detergent)	
Paper	
Bits of rubber	

Check out this gruesome list.

Pollutant	The effect it has on living creatures
Fuels	• Damages fish gills so they can't breathe • Poisons animals • Burns plants • Causes cancer in fish and shellfish
Oil (and toxic substances in waste oils like sulphur and acids)	• Creates a barrier that stops oxygen from getting in water • Causes serious damage
Paint and ink	• Poisonous to creatures who come into contact with them • Stops light from getting into the water making it difficult for plants to get the energy they need to make food and for animals to find food
Food stuffs	• Rot and decay in water using up all the oxygen, suffocating fish and insects
Sediment	• Reduces water clarity and interferes with vision, breathing and digestion • Fills the gaps between rocks in which some animals live • Affects the growth of plants, which can disrupt the food chain
Detergents (even some claiming to be 'biodegradable' or 'environmentally friendly'	• Can be toxic to fish • Remove oxygen from the water as they break down and suffocate the fish

PS This list is just a start - There's much, much more you could learn about what damage pollutants are causing.

So you say you love that car - think again!

Cars are really quick and convenient (unless they break down!)

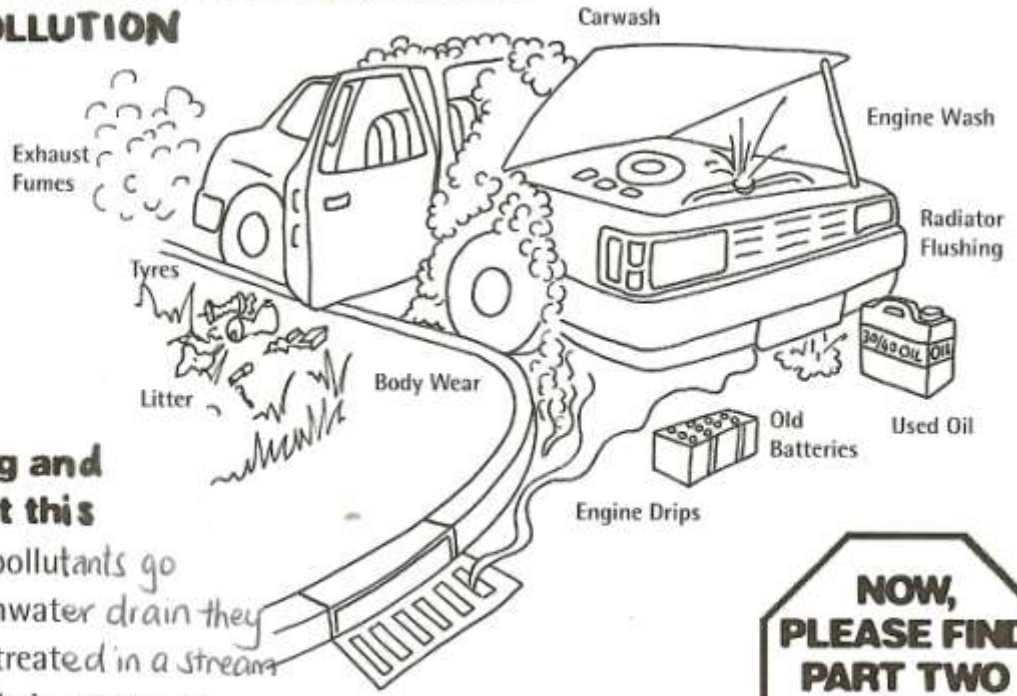
Cars are so comfortable (most of the time)

Cars are a great place to daydream (unless you're driving!)

Cars are a major source of stormwater pollution (and that's a fact!).

WHAT? Yep. In fact, Auckland's motor vehicles are **THE greatest source of stormwater pollution.** They have become a serious problem!

TAKE A LOOK HOW A CAR CAN CAUSE WATER POLLUTION



THINK long and hard about this

When these pollutants go down a stormwater drain they come out untreated in a stream and eventually in a harbour.

NOW, PLEASE FIND PART TWO OF THIS ACTIVITY

35

So you say you love that car - think again!

Part Two

Everyone needs to think about ways of reducing stormwater pollution caused by cars - everyone, **EVEN** if you don't personally own and drive a car.

You need to **THINK** about what you can do and then you need to turn your thoughts into **ACTION!**

What can you do to help reduce stormwater pollution caused by cars?

START BY MAKING A LIST of things you can do directly and indirectly. Confused? Here are a few ideas to get you started.

- Walk, jog, bike, skateboard, rollerblade places instead of being taken by car.
- Encourage other family to use the car less. Remind them about carpooling and using public transport.

A little bit doesn't matter...or does it?

Some people don't worry too much about putting pollutants down their stormwater drains because they see it as only a small amount. (These people neeed to be reminded about multiplication).

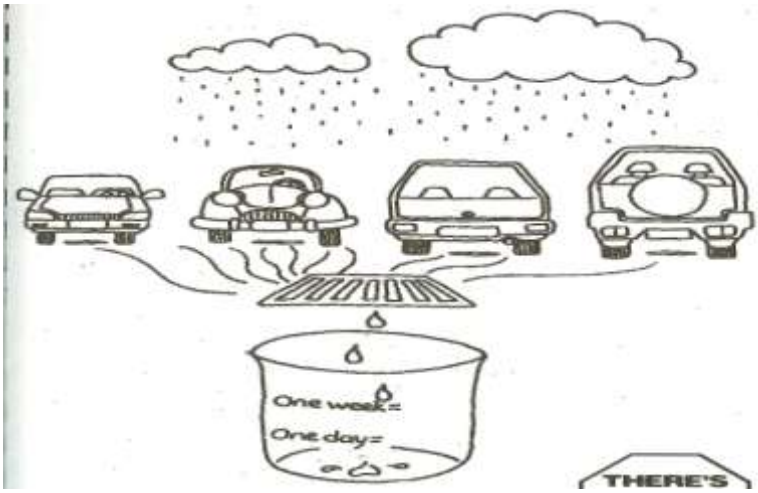
How's your maths? Try these for size.

Drip, drip, drip.

There are 17 cars parked in a school carpark. Each car leaves 5 drops of oil each day. (When it rains heavily this oil will be washed down a stormwater drain).

- What is the total number of drops of oil each day from these cars? _____
- What is the total number of drops of oil in one week? _____
- If there are 197 days in the school year how many drops of oil will have been left in the carpark? _____
- Work out how many litres of oil this might be? (Happy dripping!) _____

Sad to say, the small amounts add up to a critical number, when just one bit is just one bit too many...remember the pig silo in the Simpsons movie...



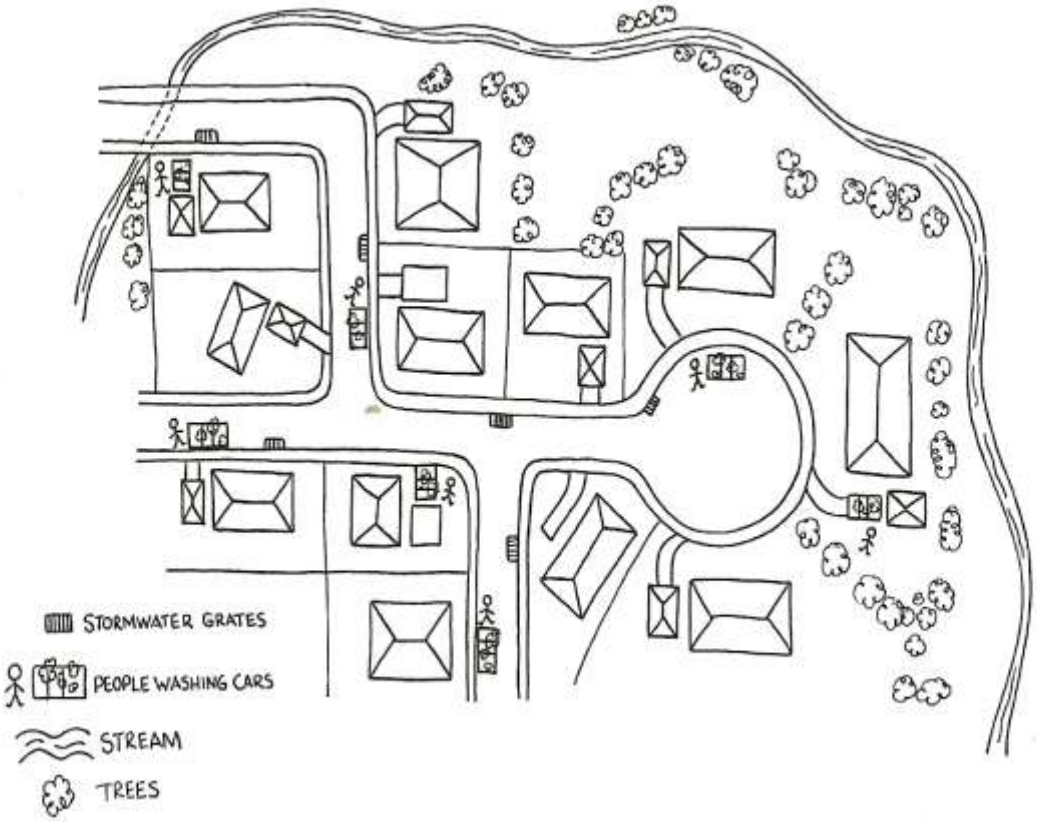
Car Wash Valley

Joanna Bloggs uses 8 litres of soapy water to wash her car in the driveway. She knows it will run down the driveway, into the gutter and down the stormwater drain but she's not too worried because, after all it's only a couple of buckets of water.

Joanna Bloggs should be worried, she should be very, very worried because she is not alone. In Joanna's street that afternoon 3 other people are doing the same thing.

- How many litres of soapy water will they put down the stormwater drains in one afternoon? _____
- There are 25 streets in Joanna's suburb. In each street 4 people are washing their cars on the roadside or in their driveway.

  How many litres of soapy water from this suburb? _____



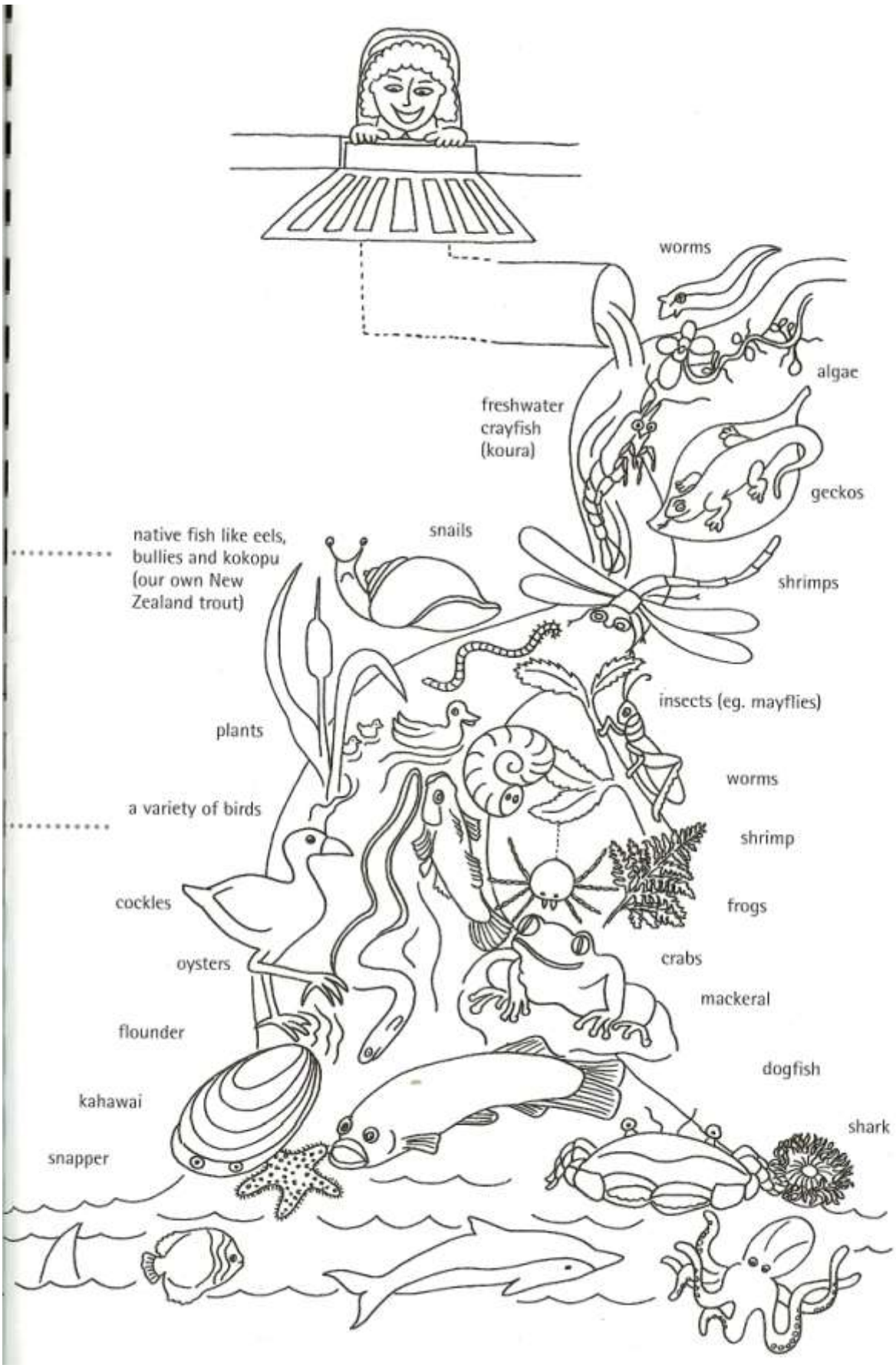
Are you getting the picture?

Every little bit of pollution we put down the stormwater drains does matter because that little bit is multiplied again and again and again! Sooner or later the environment just won't be able to cope anymore.

- When your local stream or creek reaches that **critical number (when just that bit too much pollution has been added)** it will eventually die, along with the plants and the creatures that live there.
- When your favourite beach reaches that **critical number (when just that bit too much pollution has been added)**, plants and animals will struggle to survive and may eventually die. And you? Well, you won't be able to swim there unless you want to run the risk of getting sick!

Isn't it worth doing something about it?

Let's explore our local waterways...


worms
algae
freshwater crayfish (koura)
geckos
native fish like eels, bullies and kokopu (our own New Zealand trout)
snails
shrimps
insects (eg. mayflies)
plants
worms
a variety of birds
shrimp
cockles
frogs
oysters
crabs
mackeral
flounder
dogfish
kahawai
shark
snapper

Record what information you found during your stream investigation...

- **Water Temperature**

- **Clarity**

- **pH**

- **Water flow**

- **Species found**

- **Pollutants found**

- **Health rating given to your local waterway**

List any ideas you have about how you could improve the health of your local waterways...

WHAT YOU CAN DO ... IN YOUR WORKSHOP, GARAGE AND DRIVEWAY

Changing your car oil, draining radiators or working with other liquid wastes?

Never get rid of these wastes by pouring them down the stormwater drain... and don't put them into the wastewater system, either. (See "Toxic wastes and the wastewater system".)

Washing your car?

The best way to avoid car-washing pollutants getting into the stormwater is to use a car wash at a service station – their wash water is recycled. But you may be unable to get to a service station, or may prefer to do the job yourself.

Remember it's illegal to wash any equipment or vehicle over the stormwater drain, or to let the run-off get into the stormwater system. Doing this can result in an instant fine of up to $1,000, or prosecution.

The ideas below can help you make sure that contaminants don't get into the stormwater system:

- If you're replacing old parts such as radiators and batteries, drain all fluids first (and dispose of them as suggested below). Store the empty disused parts on a sealed surface undercover, if you're not going to discard them immediately.
- Oil is recyclable. You can return it to your local service station or to a recycling station, where the contaminants are removed and the oil is reused. Radiator fluids are also recyclable.
- Used antifreeze can be flushed down the toilet – provided your house is connected to the public sewerage (wastewater) system. If your toilet's connected to a septic tank, put the antifreeze in a closed container and take it to the hazardous waste facility. Check with your local council for location details.
- Always use a drip tray when transferring or draining oil, or working with parts that contain fluids. Wipe up any small spills or drips.
- If your car leaks oil or other fluids, repair it as soon as possible to stop these fluids washing down the road and into the stormwater drains.

Toxic wastes and the wastewater system

Materials such as solvents, oils and oil-based paints, paint thinners and herbicides can block pumps and damage pipes both in and outside of treatment plants. They can also kill the bacteria and other organisms required to treat sewage, or contain toxic chemicals which can't be removed by treatment processes.

These ideas will help your car-washing have minimal effect on the water environment:

- Always use cleaning products sparingly, by following the instructions.
- Wash your vehicle on the lawn if possible, so that the run-off soaks into the ground.
- If you can't wash your car on the lawn, channel the water away from the stormwater gutter and towards a grassy area or garden.
- Pour any left-over cleaning water down the laundry sink, or on the garden, instead of down the gutter.
- If your vehicle's a muddy 4WD, remove as much of the dirt as possible at the track before washing at home.
- Conserve water, by using a trigger hose or rainwater from a tank.

WHAT YOU CAN DO ...
IN YOUR HOUSEHOLD D.I.Y

Doing some painting?

When you're purchasing paint, work out the exact amount required for the job – and buy only what you need. That way you won't have the problem of storing or disposing of left-over paint.

If you do find yourself with left-over paint, try these suggestions:

- Left-over paint (for touch ups) can be stored in its can for years. Store the can upside down, so the paint forms an air-tight seal around the lid.
- If you'd rather not hold on to the left-over paint, donate it to community or theatre groups or to your local school's art department.

And make sure you clean up safely:

- Equipment used with **water-based paints** can be safely washed in the laundry tub or a wastewater gully trap. Make sure the washing water goes into the wastewater – don't pour it down the stormwater drain.
- Take **oil-based paints** and solvents to your local refuse station, or put them out for collection on your council's household hazardous waste collection days. Contact your local council for more information.
- Small amounts of excess **oil-based paint** can be painted on to cardboard or allowed to dry in their tins. They can then be put into a rubbish bin or an approved recycling bin.
- Re-use **solvents** such as turpentine or brush cleaners – let the paint particles settle, then pour off the clear liquid.
- **Oil-based paints** and **solvents** used for cleaning oil-based painting equipment must **not** go down the stormwater or the wastewater system.

Doing your own plastering?

- All plastering wastes should be allowed to dry at the work site. You can then get rid of the solid waste – either put it in a bin, or take it to a refuse station.
- Solid wastes such as calcium sulphate can also be used as a modifier for gardens, especially those with clay soils.

WHAT YOU CAN DO ...
IN YOUR OUTDOOR D.I.Y

Pressure Water-Blasting

The water that comes off the house when you're water-blasting can be full of pollutants – cleaning solutions, paint, lichen, and cement residues.

Use these suggestions to avoid discharging water-blasting contaminants into the stormwater:

- Assess your property well, before you start the job. Can you make sure any run-off water flows on to an unsealed area like garden or lawn, where it can soak into the ground?
- When you're water-blasting your roof, disconnect the downpipes and channel the run-off on to the lawn or garden.
- If you're water-blasting the walls in an area where the ground surface is sealed, again channel your run-off towards the garden or lawn.
- If you can't channel the run-off to an unsealed area and are only blasting dirt or flaking paint, stretch a filter cloth over the drain grate. This will allow the water to pass through and the paint and dirt to be collected for disposal.
- If you're using chemical additives, or the run-off contains oils, fuels and other chemicals, then allow the run-off to flow into a **plugged** stormwater sump where it can then be collected by a liquid-waste contractor. Contact your local council for more information on this.

Concrete, cement, and asphalt.

Wastes associated with cement and asphalt works can't be disposed of anywhere near stormwater drains or natural waterways.

Use the following guidelines to dispose of concrete wastewater properly:

- Divert run-off to a pit, or to a grassed or unsealed area where it can soak into the ground.
- If you're working close to the road or footpath, plug the stormwater sump, and then pump your waste to an area where it can soak into the ground – or get it collected by an approved liquid-waste contractor. Ask your local council for more information.
- Cover any exposed soil, cement or other materials with plastic sheeting, to prevent it from blowing or washing into the stormwater system.
- Cut bricks and pavers over a container that can collect sediment. Then sweep up any debris that's spilled on the ground, to stop it from washing into the stormwater drains.
- If rain's forecast, hold off any work involving cement, lime or asphalt.

OTHER THINGS YOU CAN DO ...

Landscaping your garden? Designing your dream home? These onsite techniques not only help to reduce flooding, but also help to filter pollutants from stormwater before it reaches a natural waterway.

Porous Paving:

Porous paving has a permeable surface. Rainwater slowly passes through the permeable surface, and enters a layer of gravel and crushed stone. Underneath this layer is a specialised fabric that filters oil and smaller particles out of the water before it finally seeps into the subsoil. Many councils use porous paving for footpaths and parking lots, to reduce the amounts of pollutants that get into the soil.

Other permeable surfaces:

You can reduce the amount of impermeable surface area on your property by replacing solid concrete paths with other materials – such as shell, gravel, bark, or paving slabs that have grass or gravel between them. You can also add a grass filter-strip down the centre of your driveway. A grass strip lets water soak into the ground, and also acts as a filter to catch driveway contaminants.

Rain Gardens:

Rain gardens look like any other garden – but they're planted in low-lying areas to improve water quality by removing pollutants from rainwater. The soil in these gardens is carefully structured, so that the rainwater slowly filters through specific layers of soil and mulch.

You also need to be careful about the plants you select for a rain garden. Native grasses and shrubs are usually recommended, because they're less prone to disease and need less maintenance than exotics once established. For advice on creating a rain garden, visit your local council or garden centre.

Rainwater tanks:

A rainwater tank collects the rain that would otherwise be lost as stormwater and stores it for later use, such as watering gardens during dry spells. So it reduces the risk of flooding during heavy downpours *and* it eases the demand for water from the council's water supply.

BOC WHERE THERE'S WATER COMMUNITY ENVIRONMENTAL GRANTS

The pollution that runs through the stormwater drains has drastic effects on our waterways. But fortunately some of this damage is reversible.

Community and school groups passionate about the health and well-being of their local waterways can apply for funding of projects that improve New Zealand's water environment – through the BOC Where There's Water grant programme.

Applications are considered once a year on World Water Day (22 March). Grants of $1,000 to $5,000 are available for projects focusing on streams, rivers, lakes, wetlands, estuaries and beaches.

Some of the successful projects carried out by schools and community groups from previous years have included:

- growing plants for future planting on the banks of a neighbouring waterway
- weed eradication and control within the riparian zone of a local wetland
- equipment for scientific monitoring of water quality to determine river health
- painting 'Stormwater Only' signs on public drains.

For more information on applying for a grant, or to read about successful projects, please visit www.nzwwa.org.nz/wherethereswater, email wtw@nzwwa.org.nz, or call 04 472 8925.

Let's re-evaluate...

Read the following statements and circle the opinion that best describes how you feel about the statement now:

1. Motor vehicle use is the major cause of stormwater pollution.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

2. It's OK to wash your car on the road outside your house.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

3. Stormwater pollution is the Northland Regional Council's problem – not ours.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

4. It doesn't matter if we only put small amounts of waste down the stormwater drains.
   - Strongly disagree
   - Disagree
   - Not sure
   - Agree
   - Strongly agree

There are blue fish where?

This is a really important activity because it's all about helping to get the message into the community about stormwater drains.

READ READ the School Journal article 'Blue Fish on the Footpath' (1992, No. 2, page 31)

FIND OUT if there are any blue fish, or similar stencils (Rain Only- Drains to Sea) in the school or neighbourhood.

IF not, AND if you think it's a good thing to do, just get out there and do it.

TAKE ACTION
GET ORGANISED
MAKE IT HAPPEN

40

STOP!!!

Before you go painting the footpath:

YOU WILL NEED

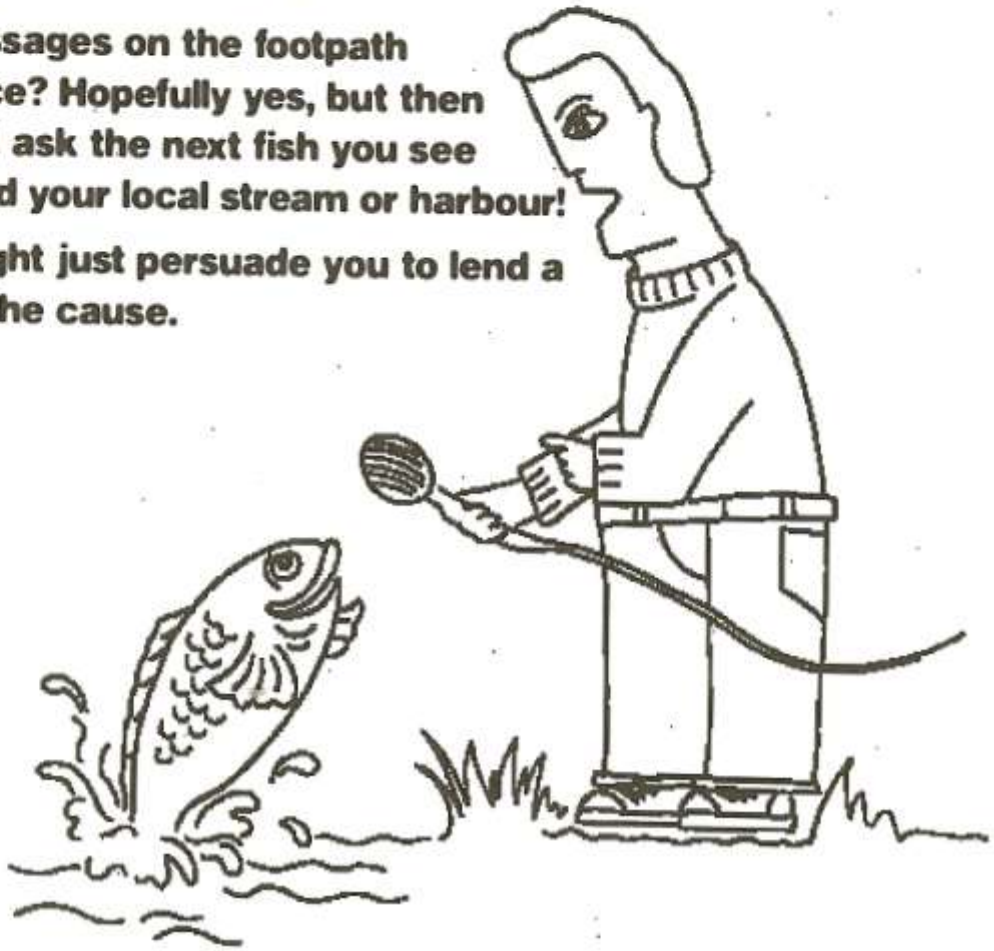
- people to help
- plans
- permission
- paint
- perfect painting weather (PLEASE don't let the paint wash down the drain if it rains!)

(HEY- this might be another excellent time to use the Environmental Action Planner).

You could use the stencil in the 'City Issues' resource - 'Rain Only. Drains to Sea', or you might get wildly creative and design your own stencil.

Will painting messages on the footpath make a difference? Hopefully yes, but then you really should ask the next fish you see swimming around your local stream or harbour!

Their opinion might just persuade you to lend a helping hand to the cause.



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