



ISSUE 75 WINTER 2018

Pollution

If you see lots of pollution entering the water, air or land (like oil or fuel spills, big smoky fires or rubbish dumping), you can report it to the Bay of Plenty Regional Council's 24 hour Pollution Hotline on 0800 884 883

In this issue:

- Air, land and water pollution
- Activities
- DIY reusable food wrap
- Oil pollution
- Upcycle Competition

Kia ora

Pollution Busters

This issue is all about Pollution!

Pollution is a problem and affects everyone somehow; especially air pollution now that the winter weather has set in and we are using our fires.

Bay of Plenty Regional Council work with the community to make sure the region's environment is clean and healthy. There are some simple things we can all do to help prevent pollution. Read on to find out how to take action for our environment.

Enter the competition on page 10 and send BuzzBOP a letter or email to let him know what great pollution busting things you have been up to, you might even appear on our mail page.

Keep warm over the winter break!

Tiakina tona a Ranginui rāua ko Papatūānuku
- keep protecting our sky father and earth mother.

From BuzzBOP and the Pollution Busters team at
Bay of Plenty Regional Council.



BuzzBOP's mail

Send BuzzBOP your photos, stories, and art!
Remember to include your name, age and address on the back.

Thanks to everyone who entered the colouring competition – here are some of the many entries:



Bonnie - Galatea - age 11



Katie - Ōpōtiki - age 9



Patrick - Pāpāmoa - age 8



Cieve - Ōhope - age 5



Lucy - Awakeri - age 11



Keolani - Rotorua - Age 11



Send your drawings, photos, letters and competition entries to:

POST: Bay of Plenty Regional Council
Pollution Busters Club
Freepost 122076
PO Box 364
Whakatāne 3158

EMAIL: buzzbop@boprc.govt.nz



What is pollution?

Things that dirty or harm the environment; or change the environment in a bad way.

Types and causes of pollution

Pollution comes in all shapes and sizes. Some pollution you can smell or see – like smoky fires, big oil spills or rubbish; some might be little drops of oil or chemicals that get washed into stormwater drains; and some you might need to use a microscope to see (like tiny particles in the air).

Often pollution is waste or rubbish that is caused by people.

Pollution can also be caused by natural hazard events like floods, storms, earthquakes and volcanoes.

WORDFIND

M	S	S	E	W	A	G	E	D	B	A	W	P	E	A	AIR
P	I	E	P	L	A	R	T	U	O	A	I	A	F	T	CHEMICAL
Y	O	C	D	H	P	E	S	S	S	O	L	R	U	T	CONTAMINATE
N	R	L	R	I	S	O	I	T	O	N	N	T	L	O	DEPLETION
T	O	T	L	O	C	D	E	P	L	E	T	I	O	N	DUST
P	S	I	S	U	B	I	R	P	A	R	O	C	N	T	EARTHWORKS
O	K	M	S	U	T	I	T	A	F	T	H	U	A	E	EROSION
P	R	G	O	O	D	I	O	S	Z	R	O	L	T	L	FARMING
L	O	A	U	K	R	N	O	L	E	A	E	A	U	T	FIRE
I	W	S	O	N	E	E	I	N	O	P	H	T	R	X	GAS
X	H	F	A	R	M	I	N	G	X	G	F	E	A	X	HAZARDS
E	T	A	N	I	M	A	T	N	O	C	I	S	L	W	INDUSTRY
X	R	E	T	A	W	M	R	O	T	S	R	C	S	Y	LAND
X	A	C	H	E	M	I	C	A	L	X	E	V	A	X	MICROBIOLOGICAL
X	E	H	S	I	B	B	U	R	L	A	N	D	L	L	NATURAL
															OIL
															PARTICULATES
															PEOPLE
															PESTICIDES
															POLLUTION
															RUBBISH
															SEWAGE
															SMOKE
															STORMWATER
															WASTE
															WATER

After solving the wordfind use the left over letters to find the hidden message (ignore any left over X's)

_____ ,



In Māori culture, Rangi (the sky) and Papatūānuku (the earth) are very important, and tangata whenua (people of the land) have a vital role as kaitiaki (guardians).

If pollution harms our air, land and water, it damages the mauri (life force) of the environment.



On the next few pages we are going to look at these types of pollution:



ANSWER: BE A PART OF THE SOLUTION. NOT PART OF THE POLLUTION

Air pollution

Air pollution (dirty air) happens everywhere, and is the name we use to describe all the bad gases and **particulates** (very small particles) in the air.

Some air pollution you can see like dust clouds or smoke but it's the bits we can't see (particulates) that are a big problem. These tiny particles float around in the air and get breathed in – they are bad for us.

Where does the pollution come from and how does the air get dirty?

Check out BuzzBOP's brainstorm – can you think of any other things that cause air pollution? *(Add them below)*



Particulates - size does matter!

The smaller the particles - the more damage they can do.

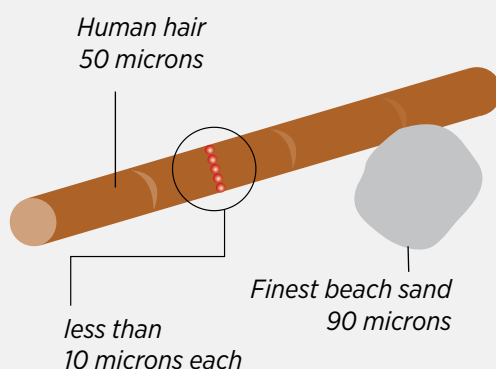
Particulate matter (PM₁₀) are very small particles, like soot, dust and fumes.

We can't stop all the PM₁₀ particulates getting in the air but there is a healthy level that they should be kept at.

How small is really small?

PM₁₀: PM stands for particulate matter, while 10 is the measurement across the middle of the speck – see the diagram to see just how small that is!

You could fit 50 PM₁₀ particles into this full stop.



Match the air issue to the picture



home heating



dust



open burning



discharge from industry
(like gases and smoke)



agricultural spraying

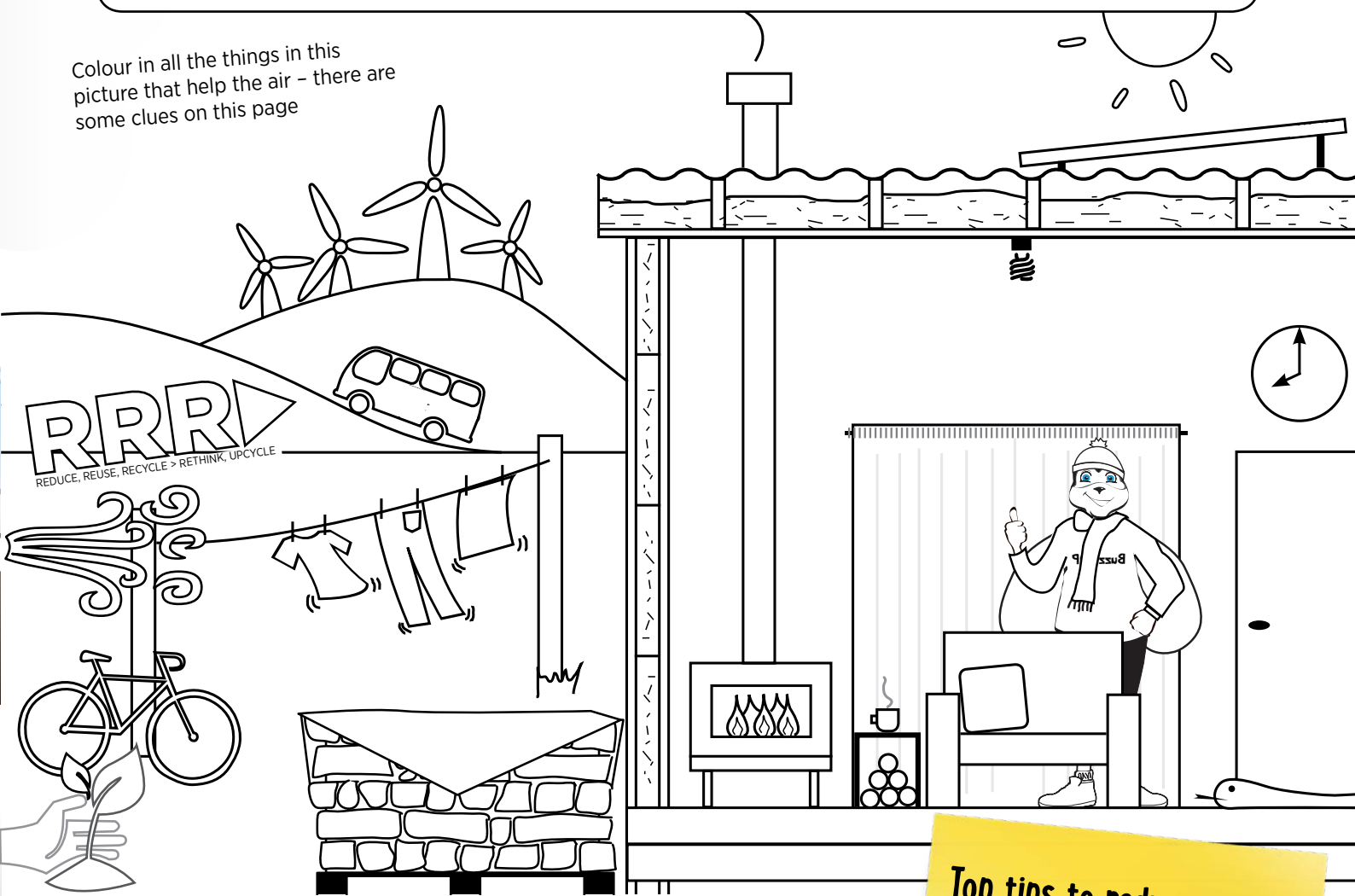
Make the world a better place to live - there are lots of ways we can **reduce air pollution!**

Draw a green transport picture here

GREEN TRANSPORT

Less vehicles on the road = less air pollution
Walk, ride a bike, take a bus or carpool!

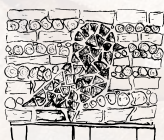
Colour in all the things in this picture that help the air - there are some clues on this page



Stack your wood good!

Burn only clean dry wood - less pollution into the air

You could get creative and have fun with your wood pile by making an arty wood stack. Send BuzzBOP a picture of your wood stack for winter!



Arty wood stack



Top tips to reduce air pollution this winter:

- Insulate - your home and yourself!
- Use clean heating (like heatpumps or low emission burners)
- Burn only clean dry wood

Land pollution

Land pollution is anything that **contaminates** or harms the land and soils.

Make dirty or dangerous

Causes of land pollution:



Rubbish and Illegal dumps – because there is no control over what is dumped and where any pollution will end up.



Erosion – when dirt is washed into streams and rivers. Erosion can be caused by **earthworks, clearing trees or natural events** (like landslides).



Farming – from chemicals like **pesticides and herbicides; poos and wees from animals**.



Construction – from scrap wood, metal, bricks, plastic. **Industry** – making more things and more waste to be disposed of.

Can you think of any other things that pollute the land?
Why do you think land pollution is bad?

Colour in 'Rubbish Road' below. What's going wrong on this road?
How is what is happening on the street affecting the birds and animals at the beach and in the sea? What could the people do differently?

The pollution that happens on **land** affects our **ivers**, **streams** and **sea**

There are lots of little things at home that you and your whānau can do to prevent land pollution making it's way to the sea. Stopping stormwater pollution is one of them!

- ☒ Pick up rubbish
- ☒ If your car is leaking oil, ask mum or dad to get it fixed
- ☒ Don't let water full of pollutants like soap, litter, grass clippings or chemicals run down the road and into drains
- ☒ Use environmentally friendly cleaning products
- ☒ Wash the car on the grass



Reduce the Waste

Whakaiti i ngā parahanga

Look after Papatūānuku by reducing our waste (waste is the things we no longer want or need, that we have to get rid of somehow).

Waste does not go away. It is just moved to another place - like a landfill or poured down a drain.

BuzzBOP's tips to reduce waste

How many do you do already?

- ✓ **Composting** or **worm farming** organic matter (like vege scraps) and then using the products in the garden
- ✓ **Reducing** - using less, choose long lasting products - not disposable (throw away) ones, buy in bulk, or items with the least amount of packaging
- ✓ **Reuse** - reuse containers, use reusable straws, reusable food wrap instead of plastic wrap (*see below how to make your own*)
- ✓ **Recycle** - process of changing waste materials into new materials and objects
- ✓ **Upcycle** - stop things going to landfill - turn something old into something new *Try the upcycling tshirt activity on page 10*

✓ WRITE YOUR TIP HERE!

For more tips and activities to reduce waste check out Pollution Busters Issue 63 WASTE at www.boprc.govt.nz



Did you know?

Reducing and reusing is better than recycling. because of the energy needed to transport and reprocess the recycled materials.

DIY reusable beeswax food wraps

! Have an adult help you with this activity - the wax can be very hot.

WHAT TO DO:

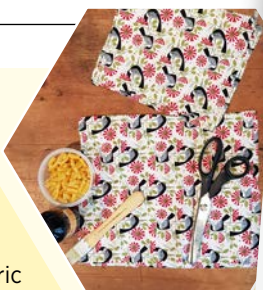
1. Wash and dry the fabric.
2. Cut it into pieces (what ever size you want your wraps).
3. Place oil and beeswax into a double boiler (or you could use a heatproof jug and a pot with water in it) to melt the beeswax.
4. Put cloth pieces onto a clean baking tray and place in an 80°C oven for about 10 minutes.
5. When the wax is melted and the fabric is hot, take the baking tray from the oven and brush each piece with the wax/oil mixture. Put them back in the oven for 10-15 minutes so all the fabric gets soaked with wax.
6. Remove from oven and quickly hang each piece (on a clothesline or rack). Try to be fast to stop the beeswax from cooling and the pieces from sticking together - but if this does happen, just reheat the pieces in the oven).

The wax food wraps are ready to use!

Caring for your wraps: To wash always use cold water and mild soap (eco-friendly is best). Air dry on a dish rack.

YOU WILL NEED:

- thin 100% cotton fabric
- 10ml almond or jojoba oil
- paintbrush
- 100g beeswax



Water pollution

Water pollution is the contamination of water (like lakes, streams, rivers, oceans, groundwater). Water pollution harms our health and the natural environment's health.

What causes water pollution?

Human activity - sewage (toilet waste), pesticides and fertilisers from farms, waste-water and chemicals from factories, silt from construction sites, rubbish, oil spills (from normal shipping/boating activities, run-offs and dumping).

Natural Causes - like algae blooms, volcanoes, animal waste, and silt from storms and floods

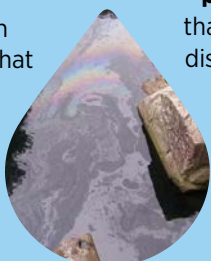
Air pollution - what goes up must come down! All the bad gases that go into the air eventually come back down and end up on our land and in our water.

Types of water pollution

Microbiological pollution
- viruses or bacteria in the water.



Oxygen depleting pollution
- too much biodegradable material (like organic waste or a polluting milk spill) which increases the organisms that use up all the oxygen so other things can't live.



Chemical pollution
- chemicals that get into water.



Nutrient pollution
- when there are too many nutrients in the water (usually from waste-water, or fertilisers)



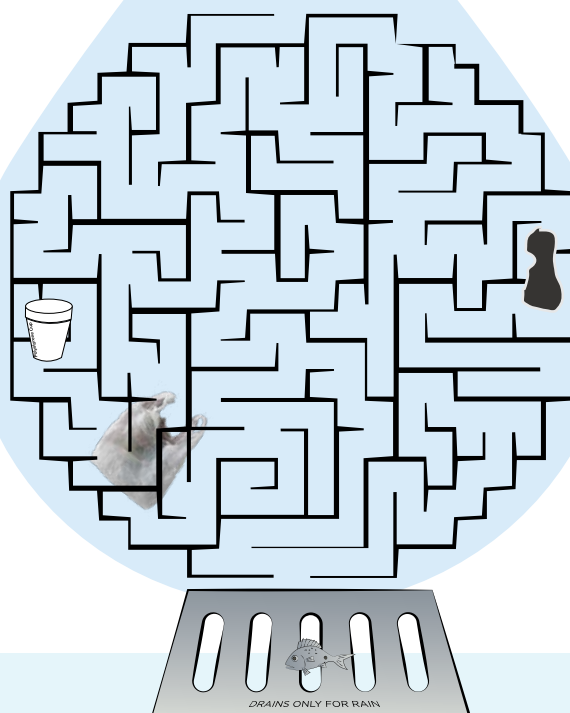
Suspended matter pollution - things that don't dissolve or disperse in the water (like plastic).



Ko te wai te ora o ngā mea katoa
Water is the life giver of all things

Waimate is the type of water that has no mauri (life force) usually because of pollution, or has been damaged in some way.

Help the water get to the stormwater drain without picking up any pollutants on the way



ACTIVITY: Follow the lines to find the word meanings

pesticide	_____	when something is put into a liquid and it becomes part of the liquid
dissolve	_____	to cause to separate and go in different directions
disperse	_____	something that can be broken down by natural processes
biodegradable	_____	a chemical used to kill pests (like rodents or insects)

Oil pollution

An oil spill is a big problem because so much oil is spilt in one place. It cannot dissolve in the water and forms a thick sludge.

Why is it bad?

- Makes birds and mammals sick when they eat it.
- Damages their feathers, skin or fur stopping them from flying and/or swimming. *Try the activity below*
- Can suffocate fish.
- Blocks the light from aquatic plants.
- Stinky and yucky and not good for us or our pets when we are at the beach!

How does the oil travel?

Oil spills in the sea spread quickly and move with the tides and currents as well as the wind. Oil will move at the same speed as the water carrying it.

Defence force personnel cleaning up northern side of Mount Maunganui after Rena.



A penguin waits to be cleaned at the Oiled Wildlife Response facility

Did you know?

Oil spills like Rena make a small amount of the oil that enters the oceans. The rest comes from shipping travel, air pollution, stormwater pollution, dumping and natural sources.



MV Rena disaster

In 2011 the container ship Rena hit Otaiti (Astrolabe Reef) off the Tauranga coast. A large amount of oil spilled and marine debris from the containers was lost overboard causing a lot of pollution. A lot of people worked together to clean it up.

- 350 tonnes of oil was lost overboard
- Over 1000 tonnes of fuel recovered (that was great – it didn't end up in the sea!)
- 1368 containers on board, 88 containers lost overboard.
- about 1,000 tonnes of waste collected from beaches



Container and other marine debris washed ashore.

YOU WILL NEED:

- 2 bowls of water
- oil (from the kitchen)
- bird feather

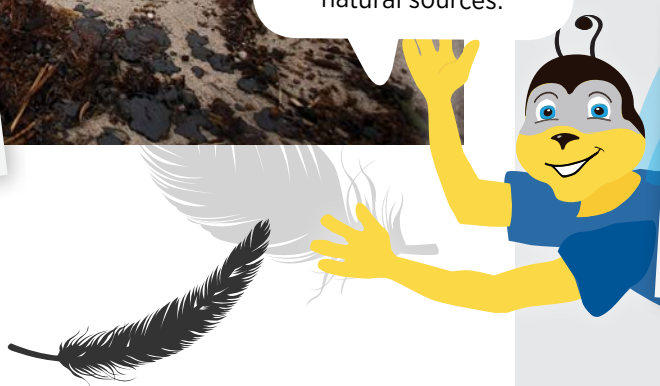
WHAT TO DO

Put a couple of teaspoons of oil in one bowl of water – what happens? Will the oil and water mix together, or will they stay separate?

Place the feather in the bowl of clean water – what happens? Does the feather repel the water and float?

Take the feather out of the clean water and put it in the oil bowl, swish it around in the water. What happens to the feather?

Now put the feather back into the clean water – what happens? *It should sink to the bottom of the bowl because the oily feather can no longer repel the water.*



Rena and wildlife

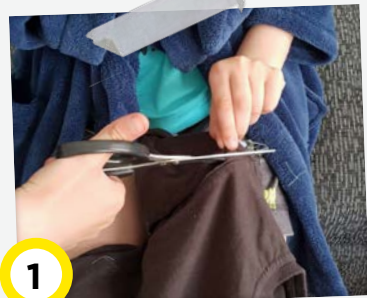
- 409 animals were cared for at the wildlife facility
- 2,009 dead birds collected
- 340 clean little blue penguins
- 4 clean pied shags
- 60 rare New Zealand dotterels caught so they didn't get covered in oil and held in wildlife centre

OLD
T-SHIRT
UPCYCLE!

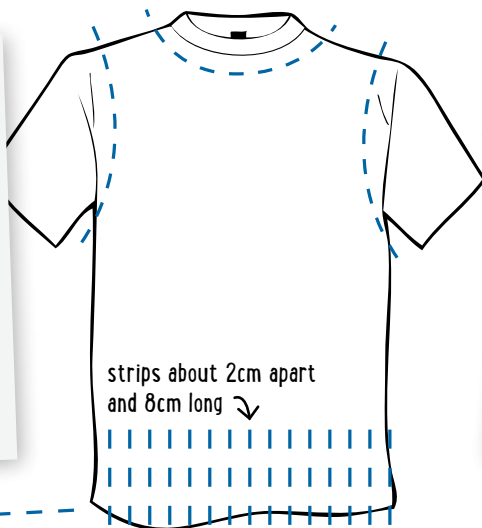
NO SEW CARRY BAG



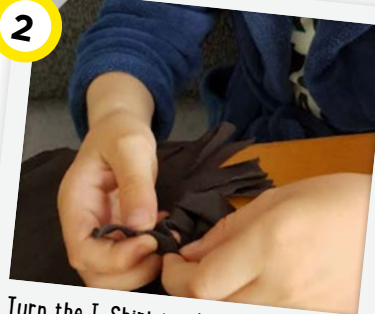
YOU NEED: Old T-Shirt and scissors



1
Cut off the sleeves, and around the neck. Cut strips through both sides along the bottom (see diagram)

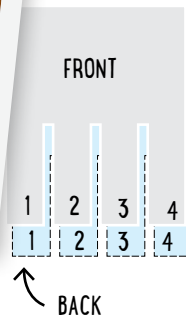


2



Turn the T-Shirt inside out
Tie front and back strips together

TIP: if you want the tassels on the outside of your bag don't turn the T-Shirt inside out



3
Tie one of each tassel to the one next to it (this is so you don't have any holes)



New carry bag!



Upcycle COMPETITION

Reduce waste and upcycle something!

Email or post a photo of your creation along with a description to BuzzBOP to go in the draw to win!

Remember to include your name, address and age.

POST: Bay of Plenty Regional Council, Pollution Busters Club, Freepost 122076, PO Box 364, Whakatāne 3158
EMAIL: buzzbop@boprc.govt.nz

BuzzBOP's Friend

Reece Irving Senior Regulatory Project Officer

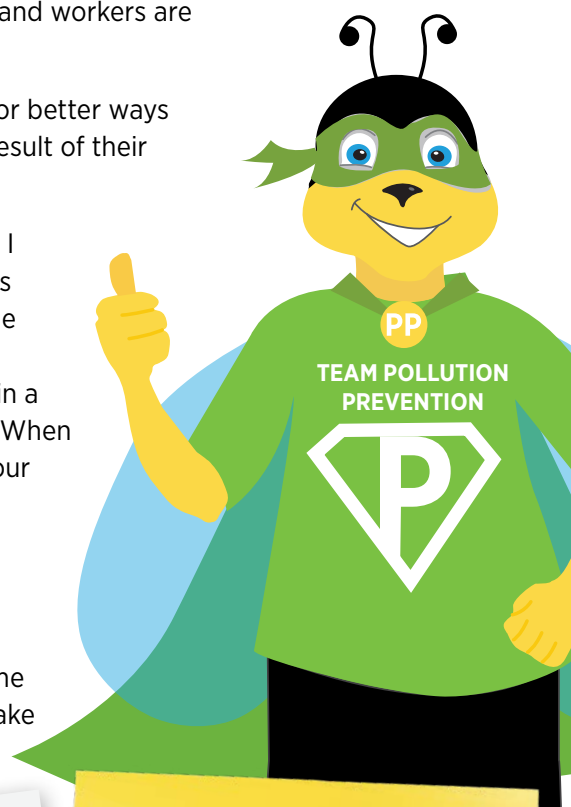
What do you do in your job? I work in the Pollution Prevention team, we are the pollution fighters in the Regional Council. We do:

- lots of clean ups around estuaries, streams and beaches;
- try to catch the bad guys (the ones who dump their rubbish all around when they think no one is watching);
- work with big businesses and industrial sites to make sure the owners and workers are not letting any pollution from their business damage the environment.

What is the best part of your job? Working with people who are looking for better ways to deal with their rubbish and the waste products that are produced as a result of their business.

What path led you to this role? I was lucky to travel around the world and I saw in many countries that the environment is in a really bad way. The air is polluted – in a lot of cities you have to wear a dust mask if you go out in the street, and often school kids are kept inside all day as the air outside is too dangerous to breathe... so no fun in the playground there. I saw the rivers in a lot of places were polluted and the beaches were not good for swimming. When I returned to New Zealand I wanted to work where I could help look after our natural environment.

What is your message to pollution busters? As a Pollution Buster spread the message, educate your friends and family so they always know there is an easy way to deal with waste that is also good for the environment. Encourage and get involved in clean-up projects near your school and home and get those family and friends involved in helping out as many hands make light work.



Stream and Estuary Clean-up events

These school students got to learn more about pollution, sustainability, reducing/reusing/recycling, while removing rubbish!

They were involved one of the Stream and Estuary Clean-up events run by Bay of Plenty Regional Council, Tauranga City Council, and Western Bay of Plenty District Council.

If you would like your school to get involved and have your teacher to check out

www.facebook.com/TCCWaterline and get in touch.



Stream and Estuary Clean-up events

- 10 Clean-up events held per year
- 50-300 students at each event
- Over 5000 kids have taken part
- 24+ tonnes of rubbish collected
- 1600kgs of material recycled



NEVER HAPPENS? HAPPENS



Storm - Te Āwhā

Major storms are mostly the result of low pressure weather systems (depressions). Storms can have a wide range of impacts and cause pollution.

Storms can destroy roads, railways, bridges and buildings. Crops can be ruined and livestock killed. At sea, ships are at risk (the ferry Wahine sank during Cyclone Giselle in 1968). Dangers from storms include fallen trees and poles, torn-off roofs, fast-flowing currents in streams and rivers, flying objects, landslides, and flooding. Coastal areas can suffer from storm surges, which are extra-high waves caused by low pressure in the air above the sea that causes the sea-level to rise.

WHAT SHOULD YOU DO?

BEFORE A STORM

- Listen to the radio for information.
- Bring pets inside.
- Clear away anything outside that may fly around in the wind.
- Put tape across large windows to prevent them from shattering.
- Close all windows.

DURING A STORM

- Stay inside and bring your pets inside. If you have to leave, take them with you.
- Close all curtains and stay away from doors and windows.
- Open a window on the side of the building away from the wind - this will lessen pressure on the roof.
- Stay away from metal and electrical fixtures.
- Listen to the radio and follow the instructions of emergency services.

AFTER STORM

- Stay indoors and listen to the radio.
- Avoid dangling and broken power lines.

For more Emergency preparedness tips visit www.whatstheplanstan.govt.nz

Information in this newsletter was sourced and adapted from the following sources:
boprc.govt.nz, whatstheplanstan.govt.nz



Join up or change of address:

*Please have an adult check that the details are correct
before you send this.*

- ☐ I am a new Pollution Buster
- ☐ I am already a Pollution Buster but my address has changed

Name _____

School _____ Birthday ____ / ____ / ____ day / month / year

Address _____

Are you (or your friends or family) 3-15
years old and live in the Bay of Plenty?

Are you interested in learning about the
environment and sustainability?

Join Pollution Busters!

