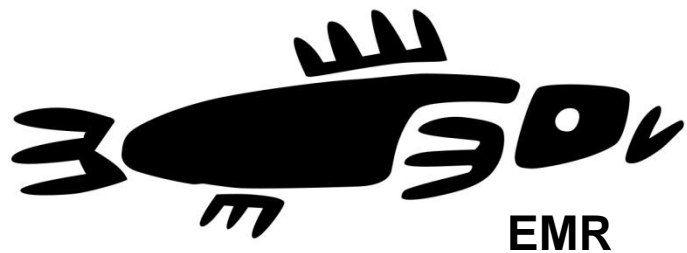




DRAINS TO HARBOUR



Drains-To-Harbour

**Raising awareness and understanding in
schools and communities**

Powerpoint compiled by Kim Jones
DTH Coordinator for the Mountains to Sea Conservation
trust
kim@emr.org.nz
www.emr.org.nz

Proudly Supported by:

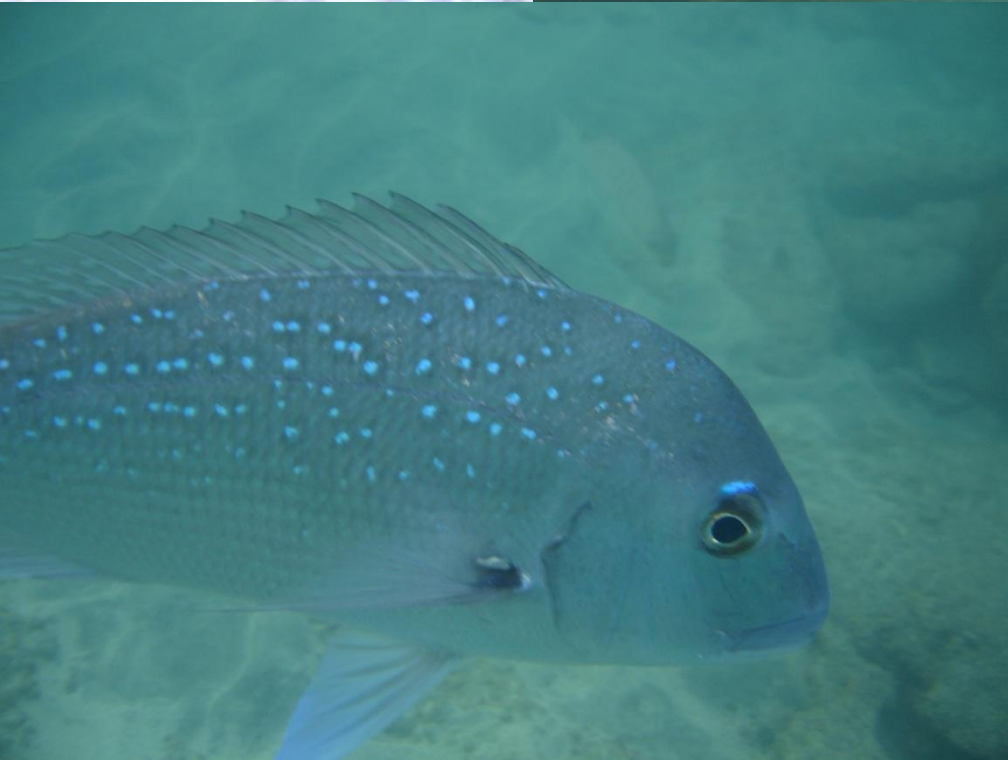


**WHANGAREI
DISTRICT COUNCIL**

Creating the ultimate living environment







Streams and Rivers

*The gateways to our
harbour*



Photo by Kim Boyle

**What lives in
our fresh
waterways?**

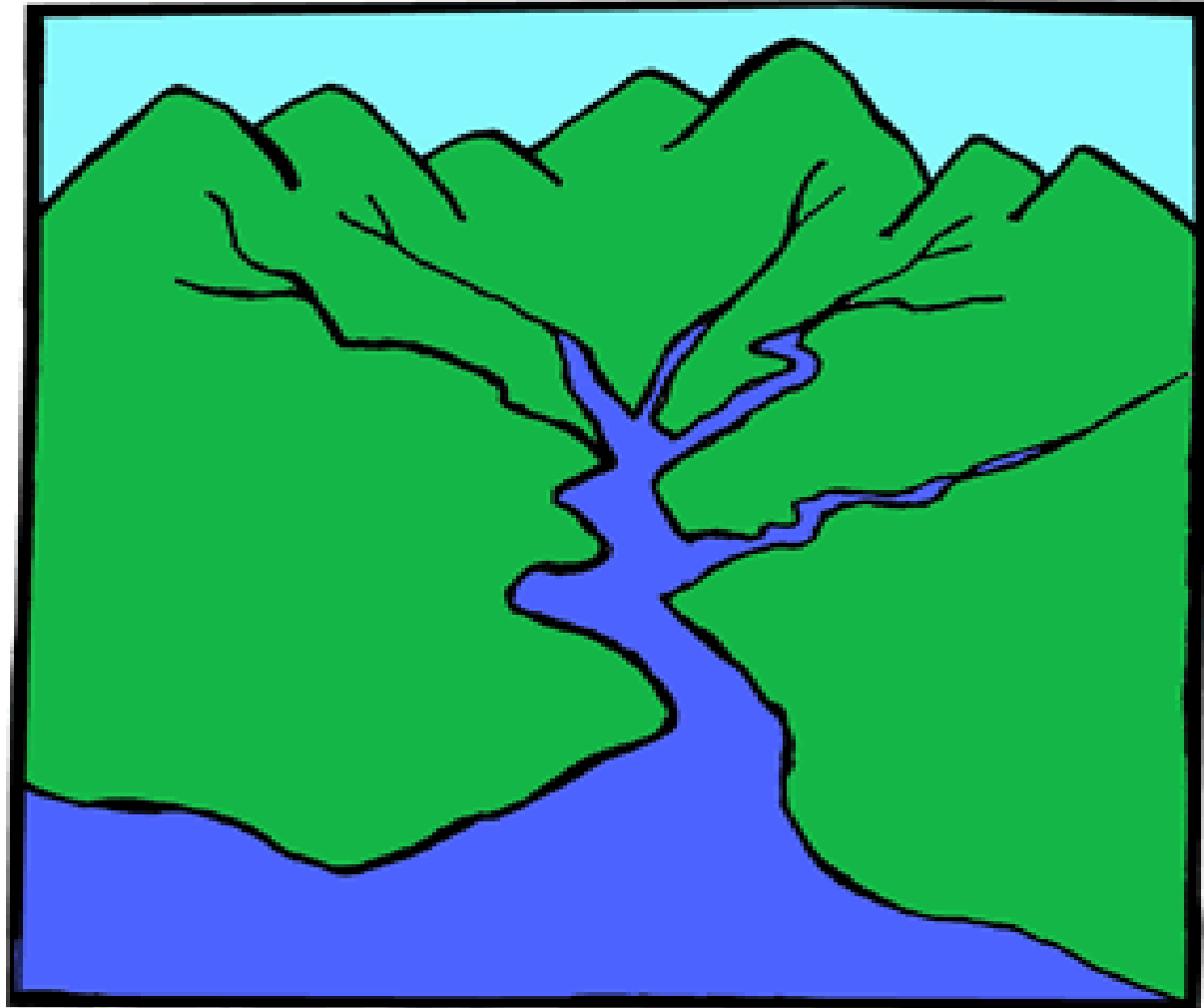


Streams flow from the land into the sea...

The land and the sea are connected



A Catchment





**Where does water
come from?**

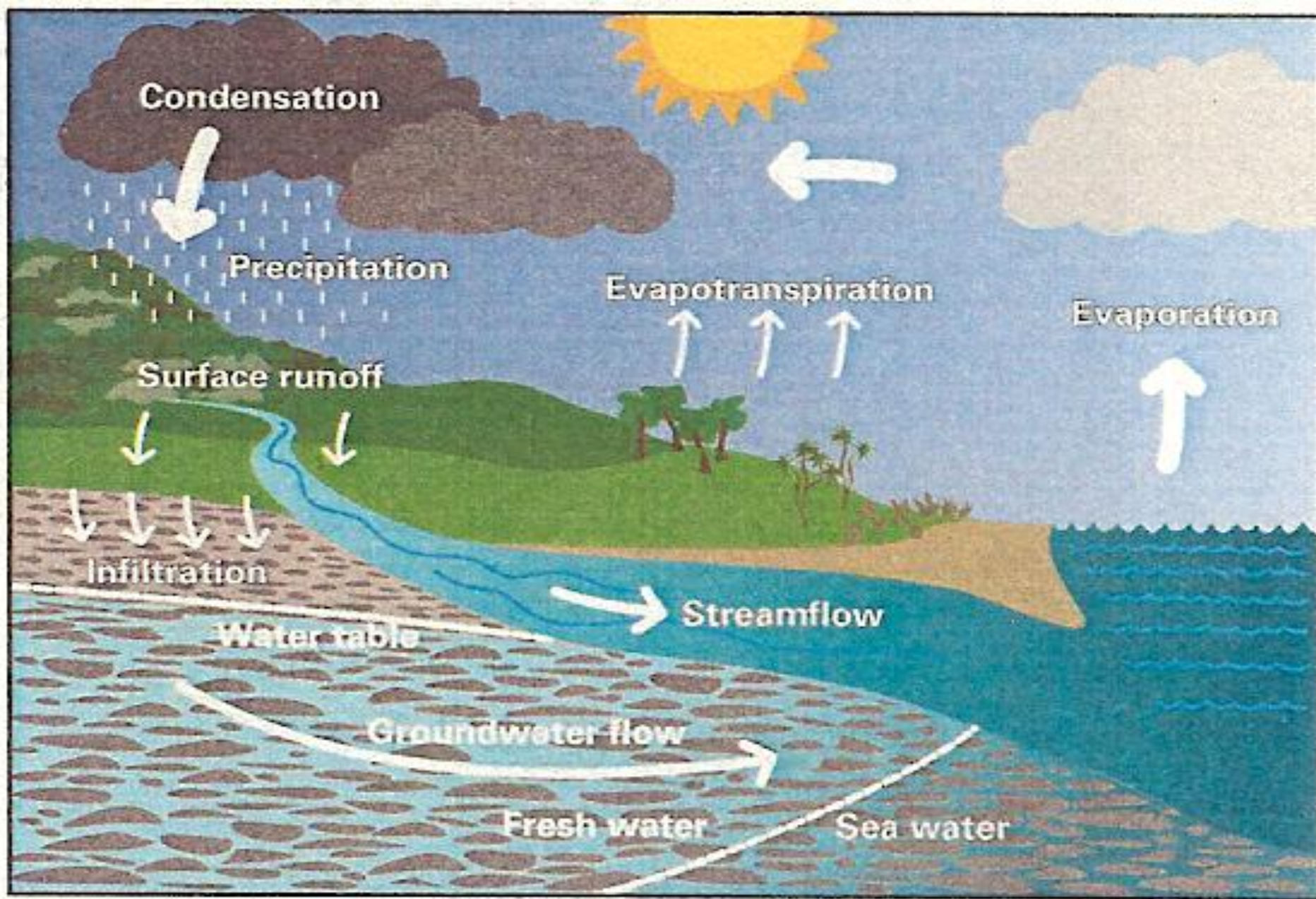


Illustration from Auckland Regional Council

Natural water cycle

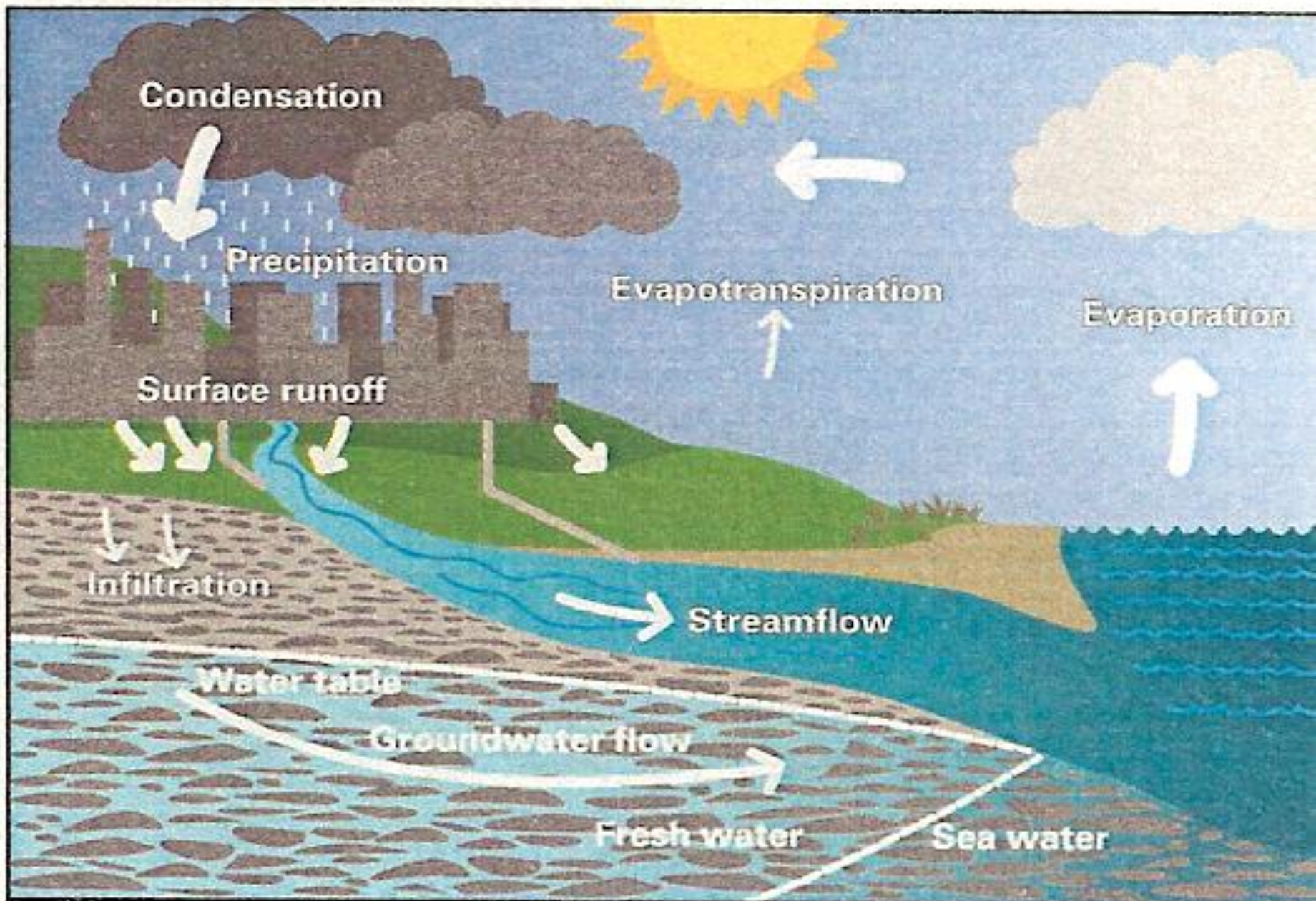
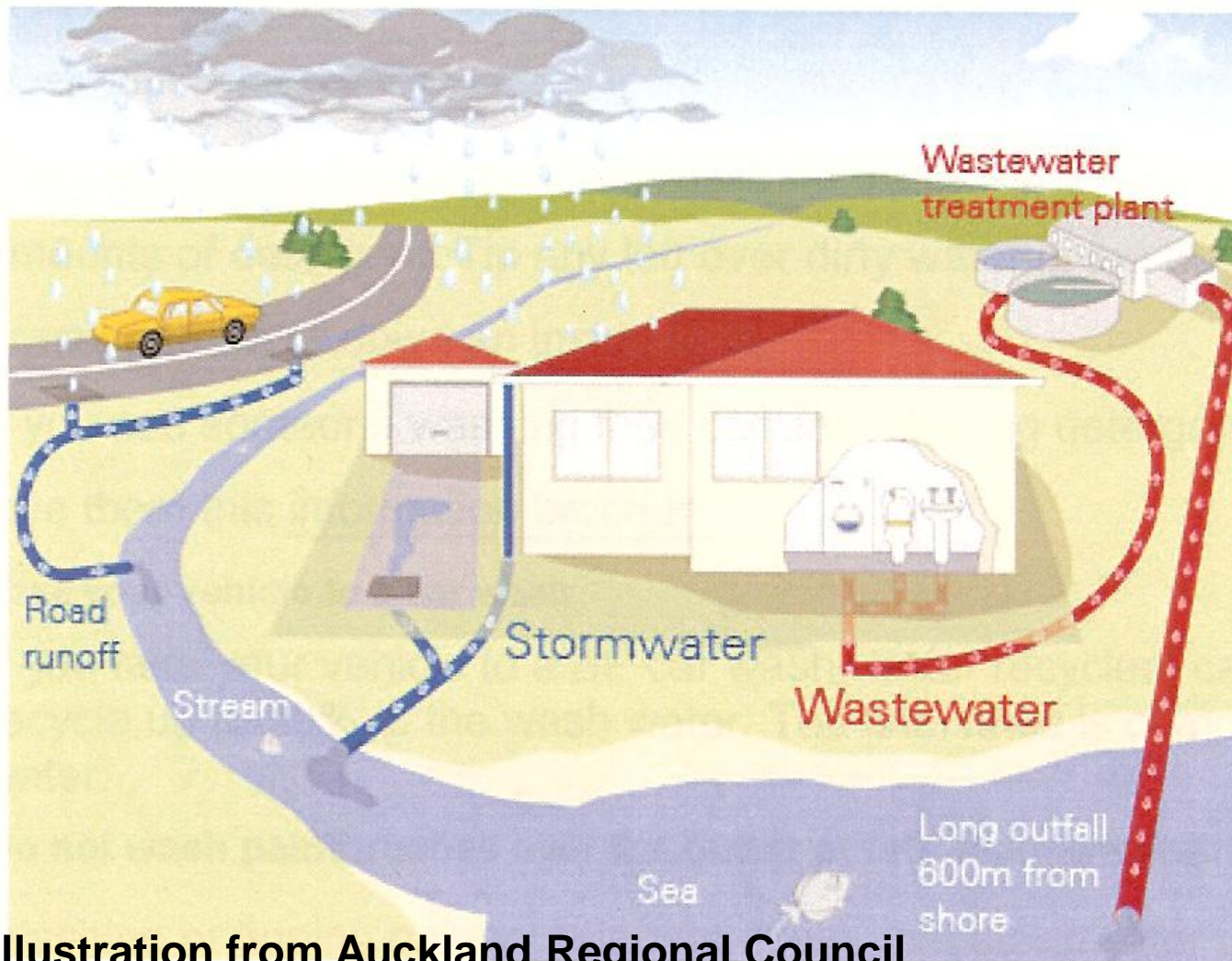


Illustration from Auckland Regional Council

Urbanised water cycle

Did you know that there are *two* sets of drains under your street?



A stormwater drain collects rain from your roof, road and driveway. *This water is untreated and goes straight to the nearest stream, lake, beach or harbour!*

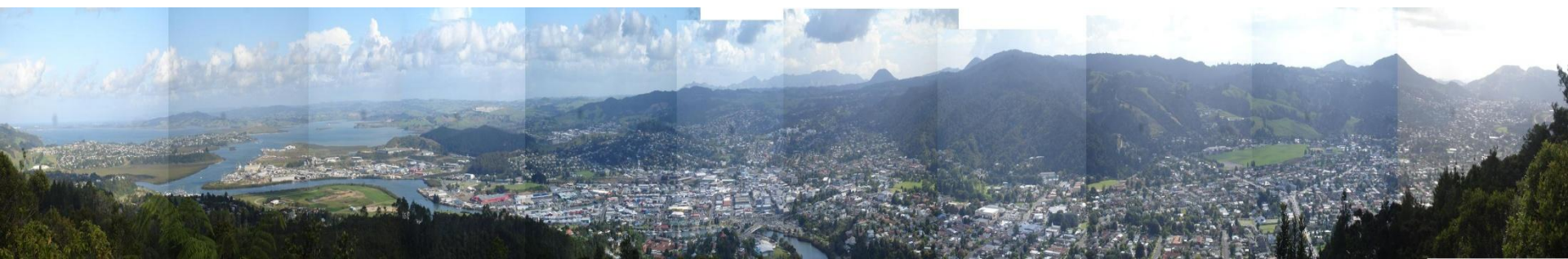


FIGURE 12.1:
ESTIMATED PRE-HUMAN AND 2002
LAND COVER IN NEW ZEALAND

ESTIMATED PRE-HUMAN LAND COVER

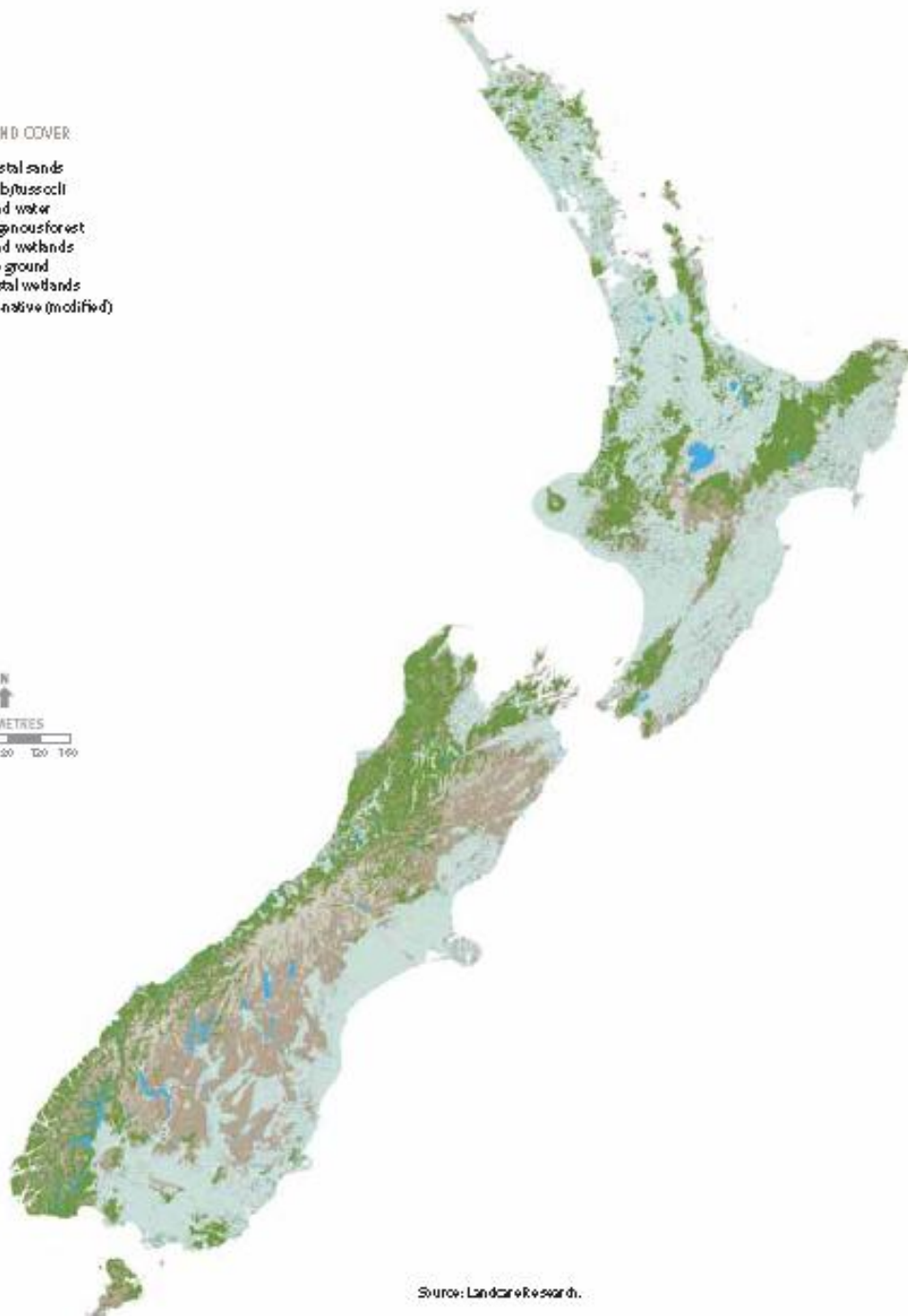
- Coastal scrub
- Scrub/forest
- Inland water
- Indigenous forest
- Inland wetlands
- Rare ground
- Coastal wetlands



100% native
vegetation
before humans

2002 LAND COVER

- Coastal sands
- Scrub/tusssock
- Inland water
- Indigenous forest
- Inland wetlands
- Bare ground
- Coastal wetlands
- Non-native (modified)



Source: Landcare Research.

Today:
43.7%
covered in
native
vegetation



Photos by Northland Regional Council



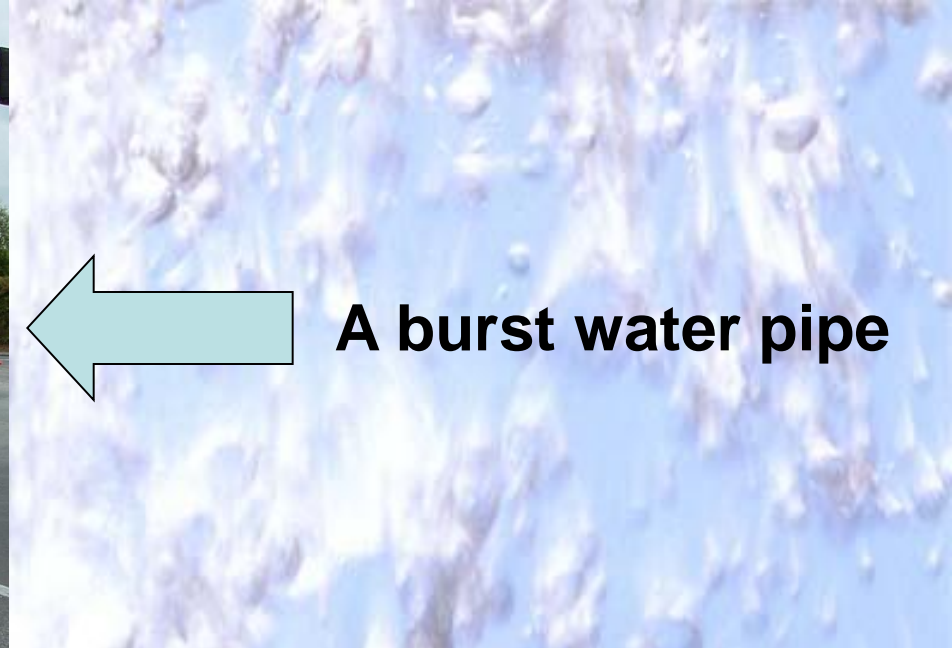
Photo by Northland Regional Council



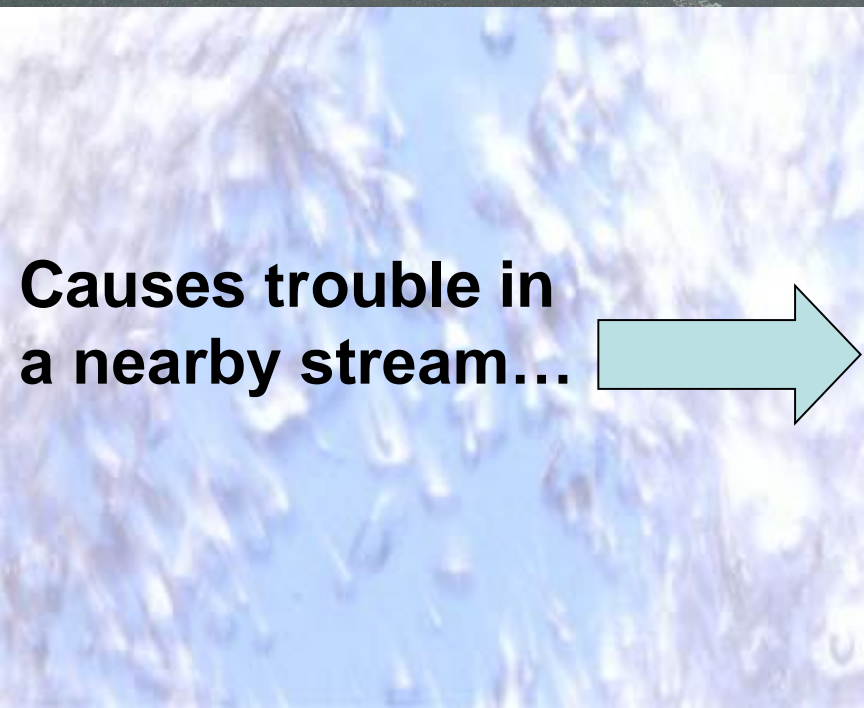


Stream Pollution from stormwater drains

Photo by Auckland Regional Council



A burst water pipe



**Causes trouble in
a nearby stream...**



Photos by Northland Regional Council

Detergent in Laurie Hall carpark...



Photos by Northland Regional Council



Which eventually discharges
into the harbour...



**Antifreeze down the
stormwater
drain...hmmmm.....
I wonder where that
will end up...**



Photos by Northland Regional Council



Photos by Northland Regional Council



**Wash off
from
concrete
cutting...
remember
concrete is
highly toxic
to our
freshwater
friends!!**

Photos by Northland Regional Council



Photos by Northland Regional Council



Photo by Northland Regional Council



Photo by Northland Regional Council



Photo by Northland Regional Council







Swimming under threat

by André Hueber

Swimming in Whangarei's upper harbour might not be a clever move with a new report showing bacteria counts have regularly exceeded safe limits during the past five years.

The dirtiest testing point failed water quality tests in almost four out of 10 tests. Water quality is generally poor in the upper harbour near the Town Basin and improves further down the harbour. The upper harbour sites exceeded safety guidelines 20 to 35 per cent of the time.

Enterococci bacteria occur naturally in the gut of animals and humans and indicate the presence of faecal matter, containing disease-causing bugs such as campylobacter, salmonella, giardia, cryptosporidium, and viruses causing diarrhoea and flu-like symptoms.

Northland Regional Council coastal monitoring leader Bruce Howse said the problem area was highly urbanised and had several inflows, including leaky sewage systems.

Run-off from intensive development and farms enter the upper harbour and linger there without mixing.

"Feral animals and onsite septic tanks don't help matters."

He said the fact industry surrounded the polluted area was a coincidence, as business was not responsible for the bacterial levels.

The number of samples per site varies, but between six and 12 are taken at the Town Basin each year.

"We've been in discussion with consent holders like the Whangarei Town Basin Marina Trust in regards to what impact their activities might have. Sewage from boats has been a problem in the past, but they are pretty proactive."

The council also tested for lead, zinc and copper. Metal levels had improved, especially since lead was removed from petrol in 1996.

"We've been working with car washers, recyclers and scrap-metal dealers to minimise contamination. The seagrass is returning so that's a good sign."

Northland medical officer of health Jonathan Jarman said the results were disappointing but the public health risk from swimming in the harbour was low.

"There hasn't been any evidence of illnesses caused by water quality in the upper harbour area but the potential exists for illness when sewage systems overflow after heavy rainfall."

Mr Howse said the state of the upper harbour was similar to other waterways surrounding towns in New Zealand but that didn't mean the present situation was acceptable.

He said people could apply for money from the Northland Regional Council Environment Fund for riverside planting which could stop run-off from reaching the water and allow more time for bacteria and sewage to be absorbed. Applications for the \$500,000 fund close on July 18.

■ The new figures came after Northland's top health watchdog hit out at contamination of the region's waterways, saying Nor-



POINTS OF CONCERN: The five affected spots in the upper Whangarei Harbour.

thlanders were "crapping in their own food basket". With soaring food prices, people were

more likely to gather shellfish to feed their families, so the number of poisoning cases were

almost certain to rise. If you have concerns about sewage, call the council on 0800 504 639.

Filter Feeders



Things that filter the water for food are easily effected by storm water pollution. Some examples of filter feeder species living in the Whangarei harbour are mussels, oysters, cockles and scallops. If you ate these after they'd been filtering raw sewerage you would become very sick ☹

Sediment

Sediment can smother important habitat and reduce light penetration. If water gets dirty, sunlight cannot get through it. Plants need sunlight to grow.

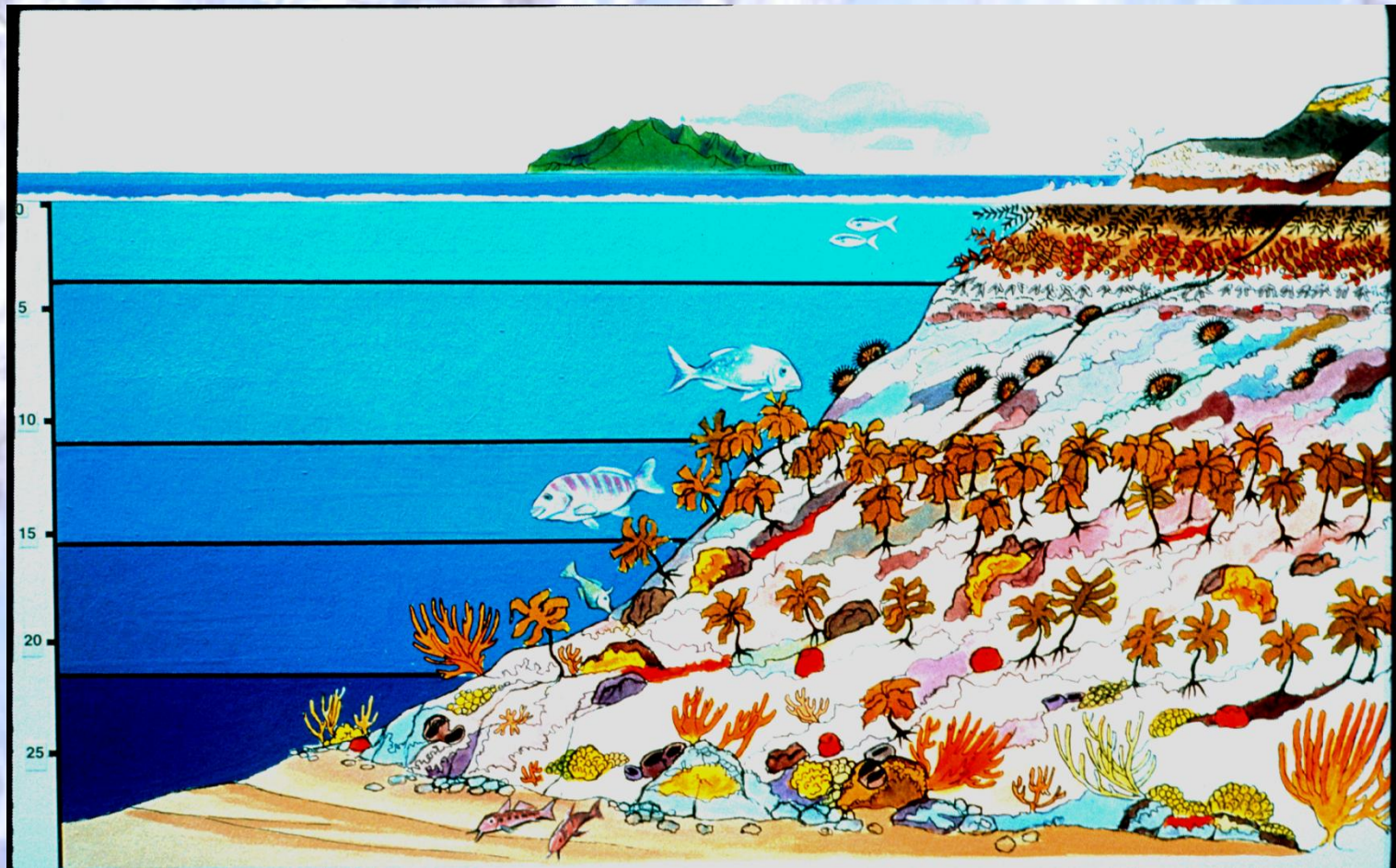


Illustration from Dr, Roger Grace

Rubbish

- Rubbish including plastic and cigarette butts have been found in the stomachs of birds, sea turtles and other marine creatures.
- Rubbish takes a long time to break down!!



**HOW LONG DO
THEY TAKE TO
BREAK
DOWN??**

- 1 year in fresh water!!
- 3 years or longer in sea-water!!

An aerial photograph of a harbor filled with brown, murky water and floating debris, including plastic bottles and other trash. The water is a mix of light brown and grey, indicating significant pollution. The text "Who dirtied the harbour?" is overlaid in the center in a bold, italicized black font.

Who dirtied the harbour?



***What can we do to help stop
storm water pollution and clean
up our waterways?***

- Be a role model – don't pollute!!
- Report pollution to NRC 0800 504 639.
- Spread the word – keep our waterways clean!
- Help to plant riparian areas to stop runoff into waterways.



Photo by Kim Boyle