

# Drains to Harbour (DTH) Programme

## Teacher Information



This resource has been adapted from the Auckland Regional Councils 'Stormwater City Issues' Kit

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## **Introduction to DTH and its background**

The Drains to Harbour programme has been developed by the Mountains to Sea Conservation Trust (MTSCT). The MTSCT umbrellas Education for Sustainability (EfS) programmes that empower schools and communities by providing hands-on experience in the environment.

The MTSCT has been operational in Northland since 2002 and its Experiencing Marine Reserves (EMR) and Whitebait Connection programmes have been available to other parts of New Zealand since 2004.

The 'Drains to Harbour' (DTH) stormwater programme was piloted with Whangarei Primary School and Morningside School by EMR in 2006 with support from the Whangarei District Council (WDC). Students were taken through an interactive multi-media presentation about stormwater and related harbour issues by coordinator Kim Jones (nee Boyle). Students were then given the chance to use their new knowledge to advocate for cleaner stormwater in their own communities. This was achieved by the students who stencilled the 'Drains To Harbour – Rainwater Only' message near stormwater grates around their schools and communities with the assistance of coordinators Kim Jones and Samara Nicholas and traffic safety management advisor, Ross Vaile.

A community day was also coordinated to give the wider community an opportunity to find out more and get involved.

The evaluation of the DTH 2006 pilot indicated the programme was fostering community awareness of local stormwater and related issues whilst promoting long-term behaviour change and recognition of the role of local government and community in these issues. Thus the further development of the DTH programme was both justified and sustainable.

Consequently, the programme was delivered to 10 schools in Whangarei in 2007 with some great results including the Clean Green Stream Team at St. Francis Xavier who discovered dead eels in their local stream and went on a problem solving mission to get to the source of the pollution and try to restore stream health – their efforts won them the National Problem Solving Championship (Junior Division) and they are still promoting community awareness through drain stencilling, visiting other schools with their message, writing letters to newspapers and local government officials and monitoring and riparian planting at their stream. They also spotted a healthy eel in their stream after their efforts and attended the International Problem Solving Championships in America at the end of 2008 – and won!

McBreen Jenkins (now Transfield) agreed to sponsor traffic management for 2007 DTH delivery and Wynn Fraser Paints agreed to supply the programme with environmentally friendly spraypaint for the stencilling. MTSCT is committed to developing the DTH programme as it compliments the trusts visions and links to the Whangarei harbour marine reserve. DTH and WDC have also designed and installed 230 permanent drain plaques in and around the city.

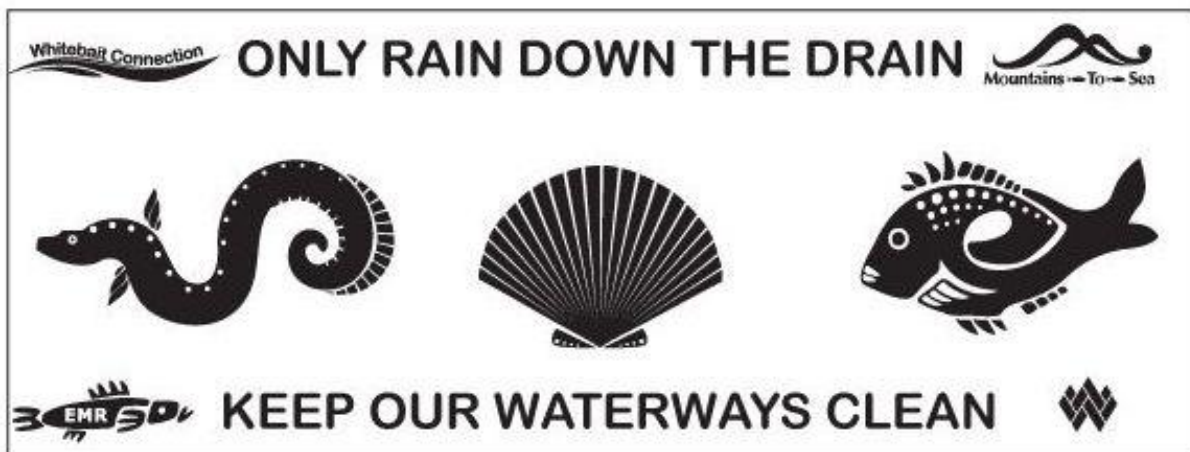


Figure 1. Permanent drain plaque design

WDC, Transfield and Wynn Fraser Paints are continuing their support for the Drains to Harbour programme in schools in 2011/2012 and DTH is delivering the programme to local schools whilst working with teachers to develop the programmes resources and unit plans.

## The Mountains To Sea Conservation Trust (MTSCT)

### *Nga Maunga ki te Moana*

The MTSCT is the umbrella organisation for The Experiencing Marine Reserves ([www.emr.org.nz](http://www.emr.org.nz)) & Whitebait Connection ([www.whitebaitconnection.co.nz](http://www.whitebaitconnection.co.nz)) programmes.

The formation of the MTSCT in 2002 brought together an extensive array of professional skills and capabilities. Within our group there is a balance of youth and experience, science, social science and educational accomplishment. Collectively amongst the Trustees of MTSCT we have decades of educational, science and business experience. We have extensive networks and professional relationships to call upon.

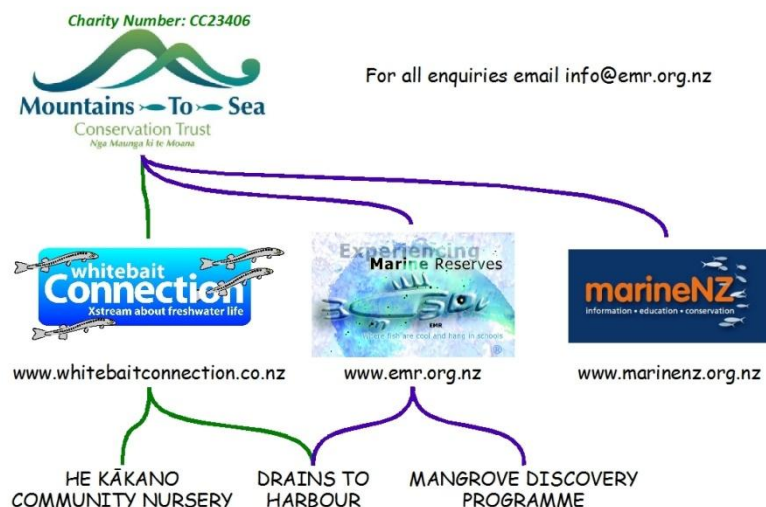


Figure 2. MTSCT programme structure

## Stormwater and Environmental Education

Through the exploration and development of the Stormwater theme, and underlying issues within the Whangarei District, it is hoped that students will develop:

- **Awareness and sensitivity** to the quality of Whangarei's stormwater and related issues
- **Knowledge and understanding** of stormwater and the impact of people on it
- **Attitudes and values** that reflect feelings of concern for our stormwater issues
- **Skills** involved in identifying, investigating and problem solving associated with the issues related to stormwater quality
- A sense of responsibility through **participation and action** as individuals (and as members of a group) in addressing the issues of stormwater quality (Ref. Guidelines for Environmental Education in New Zealand Schools p. 9)

## Keeping Safe

Take care near stormwater drains and waterways. Never enter a stormwater manhole or pipe and do not go close to drain openings after rain.

Students should be told not to touch material found lying in or near stormwater drains. However, as part of an organised litter clean-up, it is appropriate to collect samples of pollutants – gloves must always be worn to protect hands from germs and cuts.

## Key Concepts

1. The water cycle
2. Differences between stormwater and wastewater
3. Stormwater drains
4. Pollutants in stormwater drains – what are they and where do they come from?
5. Critical numbers – small amounts of pollution add up to a critical number, when just one bit is just one bit too many
6. Stormwater pollution at home
7. The effect of pollutants on streamlife
8. The importance of keeping our streams clean – why and how
9. Motor vehicles and stormwater pollution
10. Personal and community commitment and action to improving stormwater quality



## Drains To Harbour Unit Plan example – Level 3/4

### TOPIC: Stormwater

Level/  
3/4

Suggested  
environmental  
education  
outcomes  
Students will develop:

Achievement  
statements from  
selected curriculum  
statements that  
could be used as a  
focus for the  
environmental  
education topic.  
These include:

Suggested  
learning  
experiences that  
could enable  
students to meet  
the learning  
outcomes of  
environmental  
education in  
association with  
objectives from  
selected  
curriculum

#### Knowledge and understanding of:

- The interdependence of living things in the marine environment.
- The impact people have had, and can have on the freshwater and marine environment.
- The significance of clean stormwater for protecting and enhancing waterways.
- The importance of working together as local communities, including the ethic of Kaitiakianga (stewardship).

#### Skills such as:

- Social and co-operative
  - Physical
  - Information
  - Work and study
  - Communication
  - Problem solving
- Key Competencies:
- Thinking
  - Making meaning
  - Relating to others
  - Managing self
  - Participating and contributing

#### Attitudes and values such as:

- Respect for others
- Appreciation and concern for fresh water and marine life
- Awareness of the need for both individual and group action in keeping stormwater clean and enhancing biodiversity.
- Awareness of conflicts of interest in the use and protection of our waterways.

#### Science

##### Making Sense of the Living World

###### Students can:

Investigate & classify closely related living things on the basis of easily observable features (AO1)  
Use simple food chains to explain the feeding relationships of familiar animals and plants and investigate effects of human intervention on these relationships (AO4)

##### Making Sense of Planet Earth and Beyond

###### Students can:

Justify their personal involvement in a school or class initiated local environmental project (AO4)

#### English

##### Oral Language: Interpersonal Speaking

Students can talk clearly in small and large groups about experiences, events and ideas, organising material effectively and attending to others' responses.

##### Visual language: Presenting

Students can combine verbal and visual features to communicate information, ideas or narrative through layout, drama, video, computer or other technologies and media.

#### Social Studies

##### Resources and Economic Activities

Students can explain how and why people view and use resources differently and the consequences of this.

##### Time, Continuity and Change

Students can explain how the ideas and actions of people in the past changed the lives of others.

**Place and Environment**  
Students can explain how different groups view and use places and the environment.

#### IN:

Exploring a local waterway.  
Assessing the health of a local waterway.  
Stencilling stormwater drains in the community.

#### ABOUT:

'Treasure Chest'.  
Listen to a Waiaia about a feature in the marine or freshwater area.  
'Food Web Tug' experiential learning activity.  
Carry out a survey to determine how people use a local stream.  
Research the development of a project that was designed to clean up stormwater, and find out how the restoration has changed how people think and feel about, and use the area.

#### FOR:

Oral report to the school or local community.  
Pamphlet, role-play, chart or video to provide information to the public.  
Waiaia to local community.

#### Students will:

- Look at and touch a variety of marine life from the Experiencing Marine Reserves 'Treasure Chest'.
- Visit a local stream, identifying plants and animals, and assessing the health of the stream using biological and non-biological indicators.
- Take part in the experiential learning activity 'Food Web Tug' to discover food chains and human impacts.
- Listen to a Waiaia that describes a feature of the aqua environment and retell the story in writing.
- Prepare and present an oral report following a visit to a local stream.
- Design and publish a pamphlet, role-play, chart or video to provide information for the public on the connection between our stormwater and our waterways.
- Carry out a survey to determine how people use a local stream and work out how the human impacts identified might affect the area.
- Research the development of a stream restoration project and find out how the restoration has changed how people think and feel about, and use, the area.

## Possible Learning Outcomes

Students should be able to :

1. Understand the water cycle and the difference between salt and freshwater
2. Understand the difference between stormwater and wastewater
3. Locate and record the position of stormwater drains in their local area
4. Identify and describe things that pollute our stormwater drains
5. Research the effects of different pollutants in stormwater drains
6. Develop solutions to the problem of stormwater pollution
7. Use criteria to evaluate a range of solutions
8. Make a choice about possible action and justify this choice

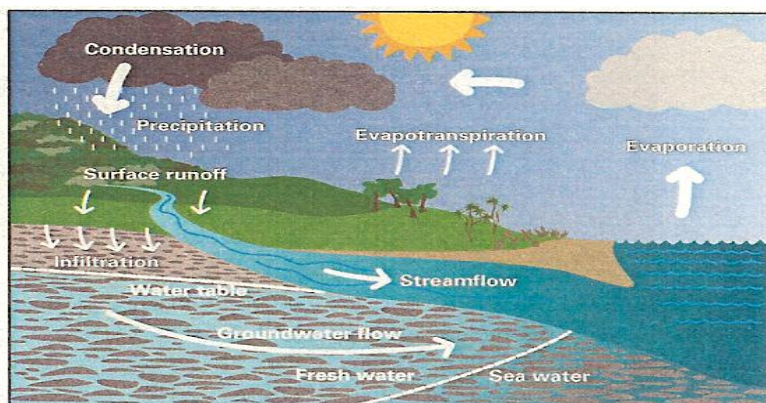
## Assessment

Teachers may derive specific learning outcomes that are appropriate to the learning needs of their students. These learning outcomes will provide the criteria against which student's achievement can be assessed. Some suggestions for assessment activities can be found in this resource on Page 15.

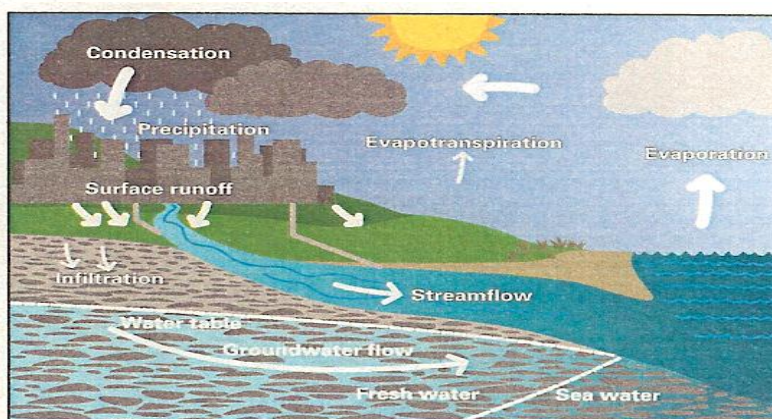
## Related Themes

The focus of this resource is stormwater and related issues in the Whangarei district. There are a number of other topics that you may wish to explore, for example:

- The water cycle
- Wastewater and sanitary sewers
- Water use and conservation
- Whangarei's water catchment area
- Ground and surface water issues in the Whangarei district



*Natural water cycle*



*Urbanised water cycle*



## Stormwater vs Wastewater

### Stormwater

There are two sets of drains running under the city:

**Sanitary sewers** collect waste flows from inside houses, offices, factories, hotels, shops, schools and other buildings. Wastes from sinks, basins, laundries, toilets, bathtubs and showers flow through this network to a sewerage treatment plant before disposal into the environment.

**Stormwater pipes** collect rainfall from roofs, yards, driveways and other hard surfaces. Rain is channelled through roadside drains or stormwater grates in roads, yards and parking lots into stormwater pipes which carry this run-off to the nearest stream, lake, harbour, beach or aquifers (underground rocks which have water in the cracks and spaces).

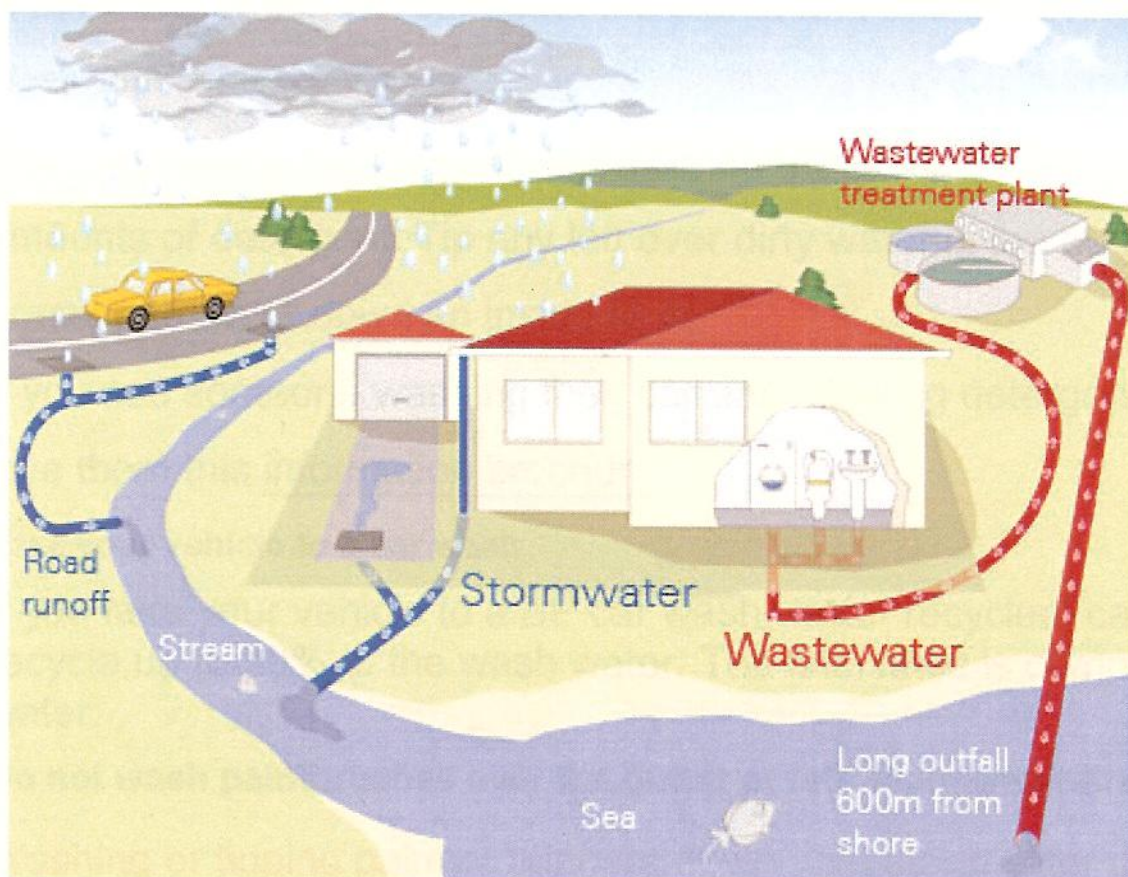


Figure 3. The difference between stormwater and wastewater. Image from Auckland City Council.



## The Environmental Issue

***Every day all over the Whangarei district (and the rest of New Zealand) pollutants find their way into our streams, lakes, harbours, beaches and aquifers.***

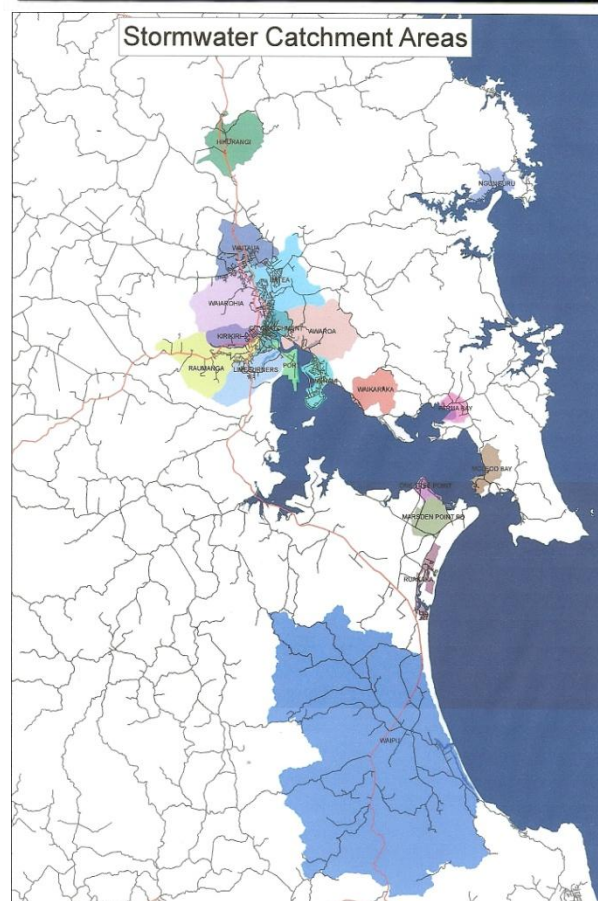
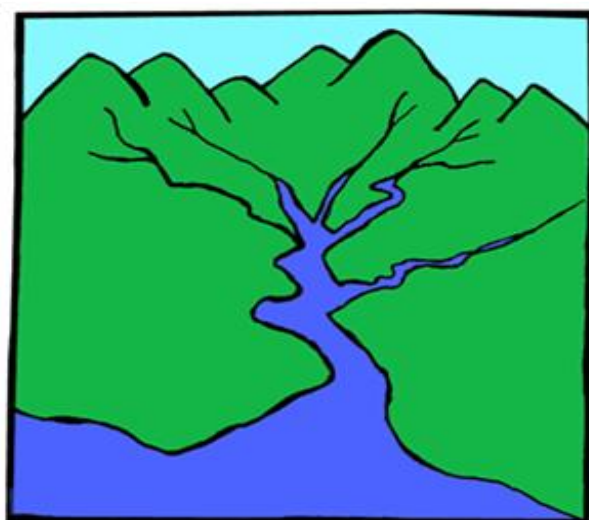
- Pollutants are either accidentally or occasionally deliberately spilt on the ground or directly down stormwater drains.
- The enormous range of pollutants are having a disastrous impact on our water systems and their ecology e.g. Fish, shellfish, plants and birds and have serious consequences for people.
- Most people are unaware that whatever goes down a stormwater drain goes untreated to the nearest body of water.

## What is a Catchment?

“A catchment can be described as an area of land, bounded by hills or mountains from which surface and groundwater flow into streams that join and ultimately have the same outlet to the sea.

Almost everybody lives in a catchment. Catchments in New Zealand vary in size from large, such as the Waikato River stretching from Taupo to Pukekohe, to tiny areas of only a few hectares. Tangata Whenua understand their ancestral waterways in terms of tribal boundaries and relationships rather than the scientific definition of a catchment area. The 'tribal catchment area' is identified in terms of key geographic features such as maunga (mountains), awa (rivers), puna (water sources/springs), which form the basis of iwi and hapu identity and spiritual and physical sustenance. You will need to have an understanding of the Tangata Whenua relationship with their streams and rivers. Each waterway will have significant history, names and stories attached to it because of the way it has been used in the past.

Streams are generally described as permanently flowing (perennial) or intermittently flowing (ephemeral) which dry up in summer. Catchments come in all different sizes, but even the large catchments are made up of many smaller sub-catchments. ***Whatever happens in the smaller feeder streams affects the overall wellbeing of the main waterway lower down”.***



**Reference:** Wai Care Books 2 and 7, Auckland Regional Council, Auckland City Council, North Shore City Council, Manukau City Council, Waitakere City Council. <http://waicare.org.nz>

# Types and sources of stormwater pollutants

Knowing what pollutants are present in stormwater and where they come from can assist in working out ways to avoid practices that produced them or reduce their impact on waterways.

The following table lists typical sources of stormwater pollutants.

<b>Urban Runoff Contaminant Sources</b>							
<b>Contaminant Source</b>	<b>Solids</b>	<b>Nutrients</b>	<b>Bacteria</b>	<b>Oxygen Demanding Substances</b>	<b>Metals</b>	<b>Oils</b>	<b>Synthetic Organics</b>
Soil erosion	●	●		●	●		
Cleared land	●	●		●			
Fertilisers		●					
Human waste	●	●	●	●			
Animal waste	●	●	●	●			
Vehicle fuels /fluids	●			●	●	●	
Fuel combustion	●				●	●	●
Vehicle wear	●			●	●		
Industrial /household chemicals	●	●		●	●	●	●
Industrial processes	●	●		●	●	●	●
Paints /preservatives					●	●	
Pesticides				●	●		



# Effects of pollutants on living creatures

Pollutant	The effect it has on living creatures
Fuels	<ul style="list-style-type: none"> <li>● Damages gills so fish can't breathe</li> <li>● Poisons animals</li> <li>● Burns plants</li> <li>● Can cause cancer in fish and shellfish</li> </ul>
Oil (and toxic substances in waste oils like sulphur and acids)	<ul style="list-style-type: none"> <li>● Creates a barrier that stops oxygen from getting in water</li> <li>● Causes serious damage</li> </ul>
Paint and ink	<ul style="list-style-type: none"> <li>● Poisonous to creatures who come into contact with them</li> <li>● 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</li> </ul>
Food stuffs	<ul style="list-style-type: none"> <li>● Rot and decay in water using up all the oxygen, suffocating fish and insects</li> </ul>
Sediment	<ul style="list-style-type: none"> <li>● Reduces water clarity and interferes with vision, breathing and digestion</li> <li>● Fills the gaps between rocks in which some animals live</li> <li>● Affects the growth of plants, which can disrupt the food chain</li> </ul>
Detergents (even some claiming to be biodegradable or environmentally friendly)	<ul style="list-style-type: none"> <li>● Can be toxic to fish</li> <li>● Remove oxygen from the water as they break down and suffocate the fish</li> </ul>



## **What can we do?**

1. Educate others about the effects of pollutants on our waterways.
2. Inform others about alternatives for waste disposal:

### **Paints and brushes**

- Wash out paint brushes in an inside sink
- Allow all unwanted paints to dry, then dispose with household rubbish
- Allow used brush cleaning fluids to settle then decant off and reuse the solvent, and then allow the residue to evaporate

### **Oil**

- Drop off used oil for recycling at a local service station or Refuse Transfer Station

### **Household hazardous wastewater**

- Drop off at any Refuse Transfer Station

### **Detergent and wash water**

- Wash cars at a car wash or on the lawn (most pollutants will be absorbed and broken down in the ground)
- Pour all household liquid wastes down a sink or toilet

***Take responsibility for changing our own actions – ensure that what we do does not cause further pollution.***

***If you see storm water pollution in a drain, stream or at the beach...  
CALL the Northland Regional Council's WATER POLLUTION HOTLINE  
0800 504 639***

## Classroom Activity Ideas

- ② Walk in the rain. Select a viewing spot to watch the flow of water from one place to another. Discuss the local catchment area. What and where is it?
- ② Talk about what happens when rain hits the ground. Conduct experiments to show what happens when water is poured on different surfaces e.g. Grass, soil, sand, and hard surfaces. Discuss erosion and its causes and solutions.
- ② Invite your school caretaker to talk to the class. Ask them to show students where the systems are obvious within the school.
- ② Invite a water pollution expert from the Northland Regional Council to talk about how water pollution is monitored/tested.

## Ideas for Action

- ② Create a restoration plan for a local stream e.g. clean up and plant with native riparian plants to slow stormwater run-off.
- ② Hold an information evening for the community to learn more about stormwater pollution.
- ② Create posters or artwork showing strong messages about stormwater issues and display these in public places.
- ② Students could role-play different scenarios related to stormwater issues.
- ② Clean up local gutters and create an inventory of the items found. This should only be done if students can wear gloves and if it can be done safely. Find out how long it would take each item of rubbish to break down. Write letters to the local papers about the amount of litter students found and what action they would like others to take to clean up the area.

# School journals

## Blue fish on the footpath

by Patt Quinn

1992 2:2

The children of Westmere School have an unusual job helping the Auckland Regional Authority to tell people about storm water drains and the dangers that these drains can create for the fish in the Waitemata Harbour.

## New Zealand's colourful sea life

by Kim Westerskov

1988 2:3

Some people think you can only find brightly coloured fish in tropical seas. Kim has taken flash photos to show the colourful sea life in New Zealand waters.

## The shapes of water

by Gillian Shannon

1995 1:4

A photo-article about water in some of its many forms: rain, sea, clouds, fog, hail, frost and rainbows.

## Turid Reid: field studies scientist

by Frances Parkin

1979 4:1

Turid Reid's job is to find out how clean the water is in the streams and harbours and at the beaches of Auckland. She works for the Auckland Regional Authority which, as part of its responsibility, safeguards the purity of the waters of its region.

## Wairere - poem

by Kevin White

1987 4:2

## Water - poem

by Stanley Cook

1984 2:4

## Water - poem

by Alan Bagnall

1997 2:3

## Water mad - poem

by Peter Bland

1979 4:1

## Water supply

1978 4:3

An outline of the problems of a good water supply - the need for a piped supply as a population grows, the treatment of the water and the growing need for water conservation. Good diagrammatic illustrations.

## The water we breathe

by Gillian Crook

1978 3:2

How clouds are formed, the three main types of the sort of weather they foretell. Also how fog and mist are formed.

## The creek

by Tuaine Taniwha

1990 pg. 43

## Laying the drains

by Brian Birchall

1981 3:3

When a house is built, drainlayers put drains under the ground to carry away the sewage and dirty water. Brian Birchall spent a couple of days watching some men doing this job on a new house and asked them some questions about their work.

## Oil spill - are we prepared?

by Norman Bilbrough

1995 4:1

This scenario looks at the possibility of an oil tanker grounding on the New Zealand coast. The Midas is not a real ship, but the situation is possible, the organisations mentioned do exist, and the steps taken in this scenario are those they have worked out if such an emergency arises.

## Pollution - what happens?

by Janet Humphris

1988 pgs. 16-18

A comic strip shows what often happens to sewage and what can be done to reduce pollution.

## Using water

1979

4:1

Here are the answers to the question "Where does the water go when we empty the sink, or the bath, or flush the lavatory?"



## **Suggestions for monitoring and assessment**

**Complete a concept map** that represents the flow of stormwater and the source and effect of pollutants.

### **Interactive approach**

- observing
- working with small groups
- listening to discussions

### **Conferencing individuals – groups**

- Tell me about your.....
- Explain your.....

### **Checklists**

Use specific skills and objectives from given lists as criteria in checklists

### **Peer Support**

Students give constructive/positive feedback to peers

### **Self Evaluation**

Students complete an evaluation sheet that may include the following:

- In this study I enjoyed learning about.....
- The most interesting fact I learned was.....
- Four new words and their meaning I have learned are.....
- The most interesting sentence I read/learned about the topic was.....
- One thing I would like to find out more about is.....
- This picture/illustration shows.....

### **Complete activities from the DTH student learning journal**

# Environmental Action Planner

What's the issue?	
What's our goal?	
What skills will we need?	Who could influence the decision?  Who makes the final decision?
<div style="text-align: center;">ACTION What are we going to do?</div>	
Evaluation of action	Evaluation of plan
How will we find out what people think and feel about the issue?	How can we make people more aware of this issue?
What information do we need and where will we find it?	

## HAZARD IDENTIFICATION & REGISTER – Freshwater and/or storm water study

Hazard	Significant		Practicable to eliminate		Practicable to isolate		All practicable to minimise		Management Systems
	Yes	No	Yes	No	Yes	No	Yes	No	
Minor injury caused by fall		✓		✓		✓	✓		<p>Hazards discussed in induction briefing (e.g. slippery rocks, fast flowing water, unstable banks). Maintain a tidy work area.</p> <p>Tutors trained in first aid</p> <p>First aid kits carried by tutors and visitor group leaders.</p> <p>Leaders assist volunteers/students to transport where they can be taken to first aid treatment if required.</p> <p>If incident is a <b>serious injury</b> or medical condition refer to the emergency planning section</p>
Major Injury caused by fall	✓			✓		✓	✓		Refer emergency response section.
Medical condition experienced by participant	✓			✓		✓		✓	<p>Leaders trained in first aid</p> <p>First aid kits carried by leaders and teachers</p> <p>Tutors assist volunteers/students to transport where they can be taken to first aid treatment if required.</p> <p>If incident is a <b>serious</b> medical condition refer to the emergency planning section</p>
Structure collapse	✓			✓	✓		✓		Code of conduct for participants. Leaders to ensure that any warning signs on structures are adhered to.
Abduction	✓			✓	✓		✓		All children must stay within sight of an adult and must not go to the toilets alone. Adult to student ratio is 1:4
Sunburn	✓		✓		✓			✓	Participants must apply sunscreen before visiting as outlined in the instructions they get before arriving.
Ingestion of polluted water	✓			✓	✓		✓		Visitors are to be briefed to not drink the water from the waterway and hand sanitiser is on hand for use before eating or drinking.
Allergic reaction to plants or bees/wasps.	✓			✓	✓		✓		Participants are asked to notify leaders of any allergies or medical conditions at induction so precautions can be taken if required. First aid is kept onsite. If reaction is a <b>serious</b> medical condition refer to the emergency planning section.
Drowning	✓			✓	✓		✓		Freshwater studies must not be conducted in areas where participants are put at significant risk. Participants are not to go into the water above their knees. If water is flowing faster than 5 metres per 10 seconds then a rope must be put up.
Aquatic Life – Leeches or Eels		✓		✓		✓		✓	Advise participants of hazards and have first aid on hand.



## HAZARD IDENTIFICATION & REGISTER – Drain Stencilling

Hazard	Significant	Practicable to eliminate		Practicable to isolate		All practicable to minimise		Management Systems
		Yes	No	Yes	No	Yes	No	
Minor injury caused by fall			✓		✓		✓	<p>Hazards discussed in induction briefing (e.g. slippery surfaces, traffic, unstable surfaces). Maintain a tidy work area.</p> <p>Leaders trained in first aid. Traffic management and safety equipment (e.g. high vis vests and cones/signage) is provided by a qualified STMS.</p> <p>First aid kits carried by tutors and visitor group leaders.</p> <p>Leaders assist volunteers/students to transport where they can be taken to first aid treatment if required.</p> <p>If incident is a <b>serious injury</b> or medical condition refer to the emergency planning section</p>
Major Injury caused by fall	✓			✓		✓	✓	Refer emergency response section.
Medical condition experienced by participant	✓			✓		✓	✓	<p>Leaders trained in first aid</p> <p>First aid kits carried by leaders and teachers</p> <p>Tutors assist volunteers/students to transport where they can be taken to first aid treatment if required.</p> <p>If incident is a <b>serious</b> medical condition refer to the emergency planning section</p>
Structure collapse	✓			✓	✓		✓	Code of conduct for participants. Leaders to ensure that any warning signs on structures are adhered to.
Abduction	✓			✓	✓		✓	All children must stay within sight of an adult and must not walk to the toilets alone. Adult to student ratio is 1:4
Sunburn	✓		✓		✓		✓	Participants must apply sunscreen before leaving school as outlined in the instructions they get before arriving.
Ingestion of polluted water	✓			✓	✓		✓	Hand sanitiser is on hand for use before eating or drinking
Allergic reaction to plants or bees/wasps.	✓			✓	✓		✓	Participants are asked to notify leaders of any allergies or medical conditions at induction/briefing so precautions can be taken if required. First aid is kept onsite. If reaction is a <b>serious</b> medical condition refer to the emergency planning section
Spraypaint being inhaled or getting into eyes.	✓			✓	✓		✓	When using spray paint participants must wear gloves and dust masks. Spray paint is water based and eye wash is available

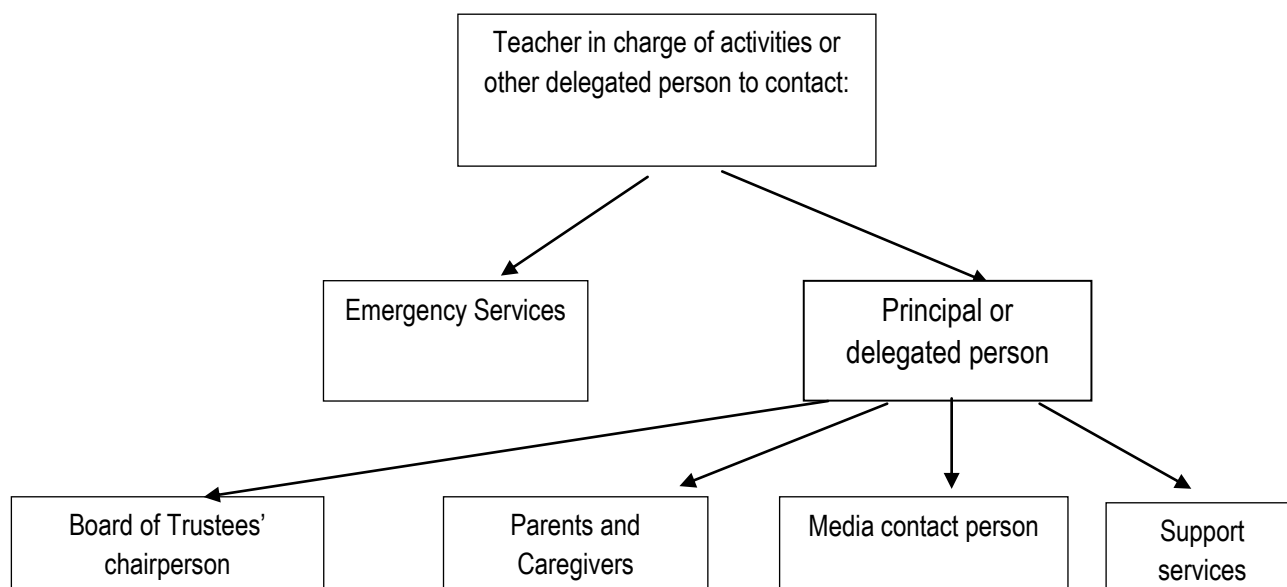
## Emergency planning and procedures

In the event of an emergency the following generally will happen:

1. Prevention of harm to all persons on site.
2. Raise the alarm (notify all other persons on site).
3. Contact emergency services on 111.
4. Do not put yourself or anyone else at any unnecessary risk.
5. Evacuate from building or area.
6. Assemble all personnel immediately at a designated meeting point.
7. Check all persons are accounted for.
8. Contact the Department of Conservation, other relevant land manager or owner.

All emergencies including evacuation requirements will be noted in the incident register. Note that specific emergency procedures for each programme are included with the RAMs/field trip briefing forms.

### DELEGATION FOR EMERGENCY PROCEDURE



### APPROVAL FROM SCHOOL

**Accept**

☐

**Reject**

☐

**Comments**


## Agreement between Mountains to Sea Conservation Trust and school

*The following agreement must be reviewed by the teachers and coordinator at the initial planning meeting. The agreement must be signed by both parties prior to the delivery of the DTH programme.*

The Drains to Harbour (DTH) programme empowers schools and communities by providing hands-on experience in the environment. The DTH programme involves investigating types of stormwater pollution and its sources within local waterways and assessing the health of local waterways using biological and non-biological indicators. Students then have the opportunity to create an environmental action plan based on their experiences and findings. The action plan includes, but is not limited to, stenciling storm water drains around their community with the 'Drains to Harbour – Rainwater Only' stencils.

### This is an agreement between:

Mountains to Sea  
Conservation Trust  
(MTSCT)

Address:  
Phone:  
Mobile:  
Email:

### And:

(School)

Address:  
Phone:  
Email:

### Please tick to acknowledge the following:

#### ***DTH responsibilities – provide the school with the following:***

DTH will take all practicable steps to ensure the health and safety of the school students and staff while participating in the DTH programme.<sup>1</sup>

- ☐ Explanation of how the expected learning outcomes of the activity/ies will be met
- ☐ Stormwater education resources
- ☐ Stormwater presentation in classroom
- ☐ Work in partnership with teacher in charge to coordinate and organize field trip/s.
- ☐ Summary of experienced staff to student ratios required for each activity  
(in accordance with relevant best practice requirements)
- ☐ Volunteers with relevant qualifications/experience (if applicable)
- ☐ Stream study equipment and instruction for water activities
- ☐ Safety equipment and associated briefings and leadership
- ☐ Safety management plans and policies, for example RAMS.
- ☐ Emergency procedures for field trips

<sup>1</sup> Health and Safety in Employment Act 1992, sections 1.1, 1.2.1, and 1.2.2.

**School responsibilities – provide DTH with the following:**

- ☐ Intended learning outcomes that are based on the achievement objectives in the relevant curriculum areas
- ☐ Adequate parental/community supervision for field activities  
(DTH recommends 1:4 ratio, and can help identify community support for supervision)
- ☐ Health, medical and behavioural profiles of the students involved
- ☐ Student participation consents, medical conditions and permission for DTH use of student images
- ☐ Appropriate support for students with special needs
- ☐ Review of risk management and approval from Board of Trustees
- ☐ Risk management planning for all activities other than drain stencilling and instream activities
- ☐ First aid kit
- ☐ School covers costs associated with transport.

**Please also tick the following to recognize your commitment to DTH:**

**Our staff and students undertake to:**

- ☐ Recognise that the use of the DTH programme and resources is restricted to educational and non-profit purposes. The DTH resources can be reproduced in their entirety for educational non-profit use.
- ☐ Incorporate the DTH concept (information, experience and action) in the school programme and curriculum, for example by incorporating an introduction to stormwater, investigation of a local waterway and action- oriented activity.
- ☐ Inform the school and wider community about stormwater pollution and the Drains to Harbour connection, DTH experiences and encourage similar experiences within the community, incorporating any local conservation initiatives.
- ☐ Refer to the programme as 'Drains to Harbour' wherever possible when using the DTH concept.
- ☐ Recognise that risk management, other than that associated with drain stencilling and in stream activities, remains the official responsibility of the school.
- ☐ Indemnify the DTH leader for any claims, costs, damage and expenses that may result from the failure of the school to fulfil its risk management obligations.

**The school and MTSCT reserve the right to withdraw any or all participants from the programme if safety is compromised.**

Signed:  (School) Date:

Name:

Signed:  (DTH) Date:

Name:



## **Drains to Harbour (DTH): Student Participants' Evaluation (end of programme)**

The purpose of these questions is to evaluate the effectiveness of the Drains to Harbour (DTH) programme and to see if you support the creation of more stormwater pollution control initiatives in Whangarei. Please write or circle your answer.

**What is the name of your school?**

--

**What year level are you?**

--

**1. Do you remember the classroom sessions with your DTH coordinator? Yes / No**

**2. What do you remember about it?**


**3. Do you remember your waterway discovery experience and investigation? Yes/No**

**4. What do you remember about it?**


**5. Circle the parts of the DTH programme that you enjoyed and remember most from the list below:**

- classroom sessions
- stream discovery trip
- Wastewater Treatment Plant tour (if applicable)
- Taking action activity – drain stencilling, planting etc.

**6. What differences did you notice between the waterways you visited?**


**7. Which place did you enjoy visiting the most, and why?**


**8. What did you learn about stormwater? E.g. what is the difference between wastewater and stormwater? Where does it all go? Where does it all come from?**


**9. What did you learn about the freshwater environment?**


**10. What did you enjoy least about the programme?**


**11. Have you informed your community about your experiences since participating in DTH or shown your community what you learned? Yes/No**  
**If yes, what action did you undertake? How did you do this?**


**12. Do you feel that your attitude towards the need to care for the marine environment has changed since participating in the DTH programme? Yes / No**  
**If yes – how has your attitude changed towards the need to care for the marine environment since participating in the DTH programme? Comment:**


**13. Would you recommend the DTH programme to other schools? Yes/No**  
**Why/why not?**


**14. What are you personally going to do now to help look after the environment?**


*Thank You!*



## Drains to Harbour (DTH): Teacher Evaluation (end of programme)

Name of school.....

On a scale of 1 – 6 (6 being the highest), please rate the following by writing your rating in the circle provided on the left hand side of the page:

1. Resources (programme info, equipment and teaching materials etc) provided by EMR for the Drains to Harbour (DTH) programme  
Comment


2. Content of the DTH programme (including classroom intro, local investigation, drain stencilling and follow up etc)  
Comment


3. Effectiveness of safety management  
Comment


4. Satisfaction with your DTH Leader's role in the delivery and effectiveness of the programme (including rapport with students)  
Comment


5. Effectiveness of the programme in meeting your objectives  
Comment


6. How is your DTH project contributing to positive changes in your local environment (eg actions/activities being taken, community involvement, improvements in the environment itself)  
Comment


7. Educational value of this type of hands-on environmental education

Comment


8. Value added to students' knowledge, skills, and attitudes

Comment


9. Do you think your local community has learned anything about stormwater pollution and waterway protection as a result of the project?

Comment


10. Did you have to change the programme to make it work for you in terms of curriculum requirements or your own objectives? What in particular?

Comment


11. Has experiencing this programme with your students changed your own level of support for the implementation of more stormwater pollution prevention initiatives in the Whangarei District?

Comment


13. How has your attitude towards the need to care for waterways changed since participating in the DTH programme or via your students?

Yes / No

Comment


**Things you enjoyed most:**


**Things you suggest could be changed or improved:**
