



KNOW YOUR STREAM

TE WAIREPO YORK STREAM

FIELD GUIDE

WHAKAPAPA

Ko Maungatapu te Maunga
Ko Wairepo te Awa
Ko Tainui me Tokomaru me Kurahaupō ngā wāka
Ko Ngāti Kua, Ngāti Koata, Ngāti Tama, Te Ātiawa, Ngāti Rārua
Me Ngāti Toa Rangitira ngā Iwi
Ko Kakati te whare tūpuna
Ko Whakatū, te Marae

E ngā uri o Ranginui rāua ko Papatuanuku, Nga Atua Kaitiaki
Tangaroa, Tāne-mahuta, Tāwhiri-mātea, Rūaumoko,
Tutewehiwehi

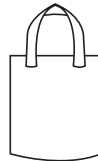
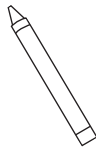
INTRODUCTION

This field guide is a project to encourage you to trace your own path along the waterway. It is brought to you by Nelson City Council's Healthy Streams initiative.

The booklet is a starter for finding different patterns in the environment, river systems, leaf veins, insect wings and bird flight paths. It invites you to look at textures in the landscapes, plants and animals you encounter. The pages are designed for you to discover stories and make new ones to share.





THINGS TO TAKE WITH YOU

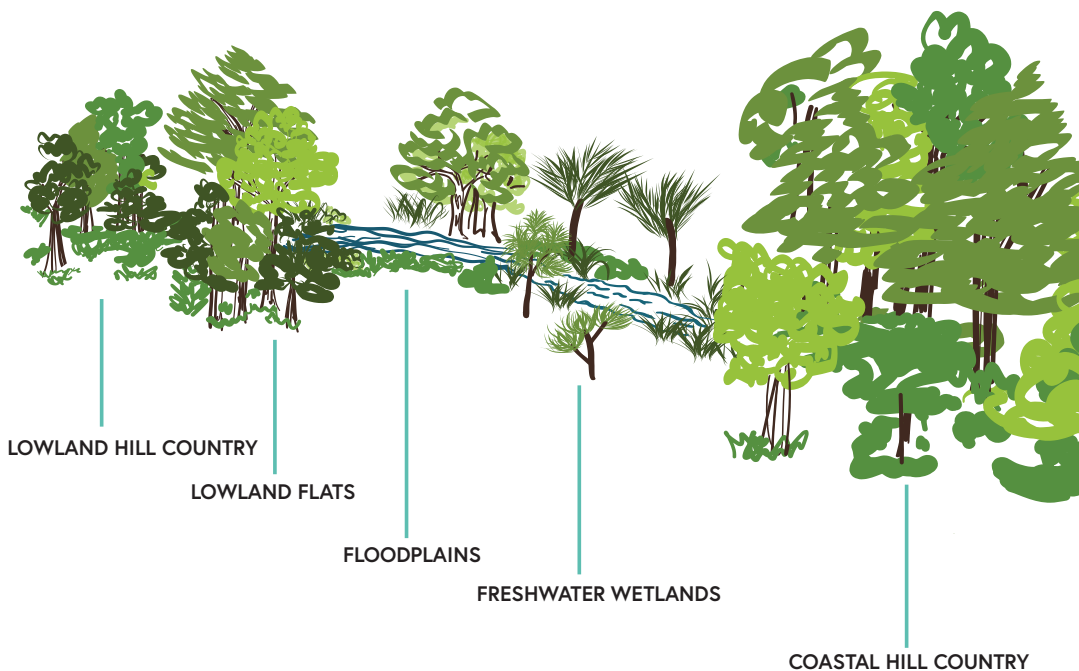
- A container with a good seal (for your picnic)
- Pen, pencil or crayons - whatever you like to draw with
- An extra washable bag to collect any rubbish you find

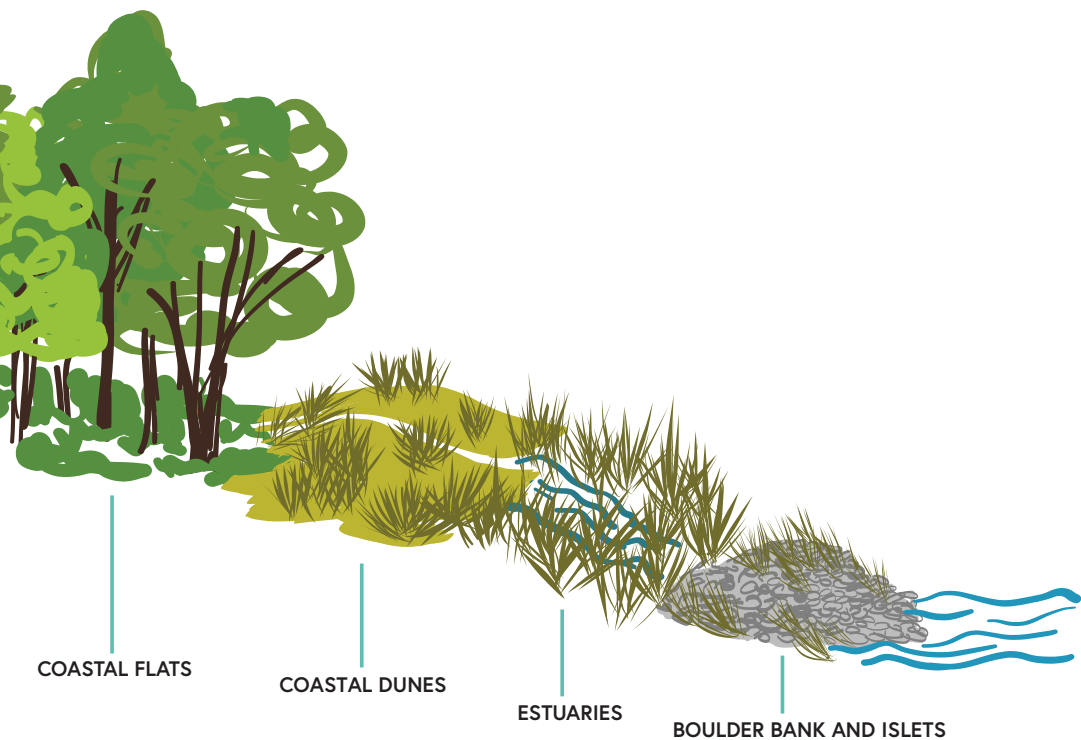
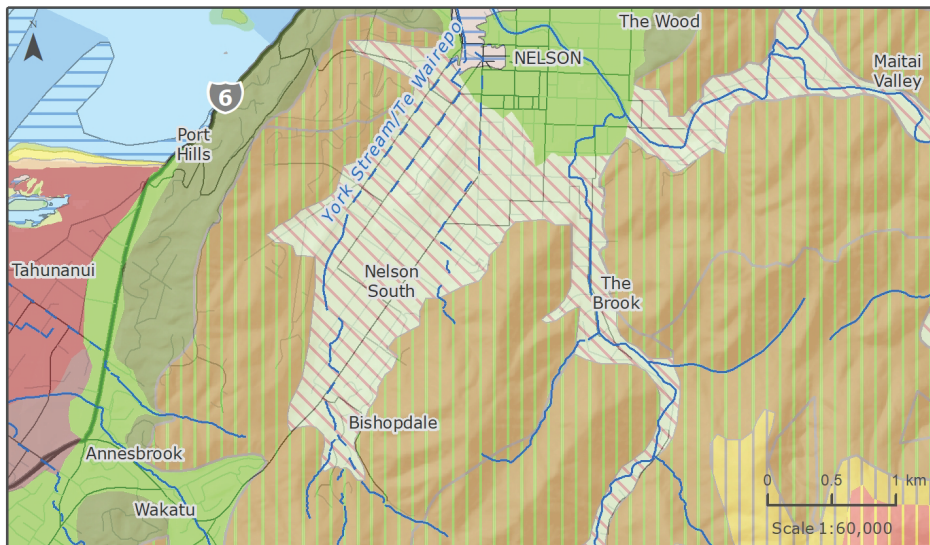


Bring all your senses and remember 'take only pictures and leave only footprints'

ECOSYSTEMS

-  WF7-4, Tawa, kamahi, podocarp forest
-  WF3, Tawa, titoki, podocarp forest
-  SA2-1, Seagrass and mudflats
-  SA2, Searush, oioi, glasswort, sea primrose, rushland/ herbfield (Saltmarsh)



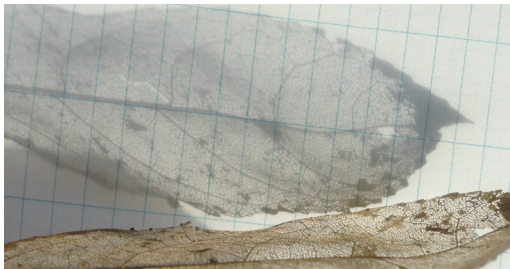


HOW TO LOOK AT PLANTS

Look carefully at the shape of the leaves and the edge of the leaf. Is the underside different from the top, how do they attach to the branch (are they opposite or alternate?) and what is the bark like?

Make an impression of some interesting bark by holding the paper against it and rubbing over it with your pencil or crayon.

WHAT IS YOUR FAVOURITE TREE?



Iconic Local Trees
Kahikatea
Tōtara
Tītoki

RĀKAU / TREES

Aotearoa is home to many endemic plants and this region is as far south as many of them grow. Check your plant guides and see what interesting species you can find locally from the tiniest orchid to the tallest trees.

KŌWHAI

Known for its brilliant yellow flowers in spring, Kōwhai provides food for many birds and insects. There are eight different kōwhai species from bushes to trees. Some are listed as naturally uncommon with threats to natural redistribution by introduced pest species and stock.



TAWA

An important canopy and sub-canopy tree previously common around this waterway. Tawa has distinctive light yellow green foliage and large berries with seeds that rely on big birds like Kereru to distribute. Tawa seeds are a food source for maori.



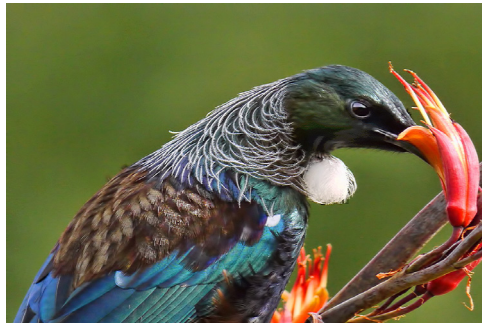
MĀHOE

A small and commonly found tree, Māhoe has berries favoured by birds and is host to an endemic moth species. Māhoe has many uses for Maori including for creating fire. You can tell you are standing beside one when you find the beautiful skeleton leaves on the ground.

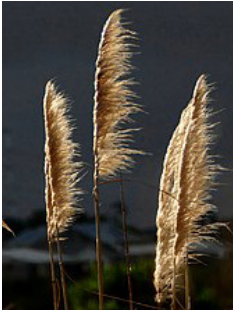


HARAKEKE

Found from the mountains to the sea; this plant is a taonga (treasure) because every part of it can be used, for everything from construction and containment to adornment, health and food.



Often called flax, Harakeke is really a lily, the flowers are specially shaped to be pollinated by birds.



TOETOE

One of the tall grasses, favouring cliffs dunes and wetland margins. Toetoe has a drooping flower head, a cream coloured plume, and the leaves do not break when tugged firmly. Toetoe also has a white, waxy bloom on the leaf-sheath and conspicuous veins between the midrib and leaf margin.



MAMAKU

A gaint tree fern that can grow up to 20m, they can still be found in the upper reaches of Te Wairepo and would have been common in the gullies along the waterway.



PĪNGAO

A once common plant, Pīngao is found along active sand dunes. Pīngao is highly prized by weavers for the beautiful colour and is the subject of several stories of the boundaries between land and sea.

IKA / FISH

Below are some fish to look for. The better the water conditions; cool, clear and flowing, the more likely fish will be present. Check your fish guide to be sure. See if you can find the *Upokororo* or *Greyling* at Pioneer Park.

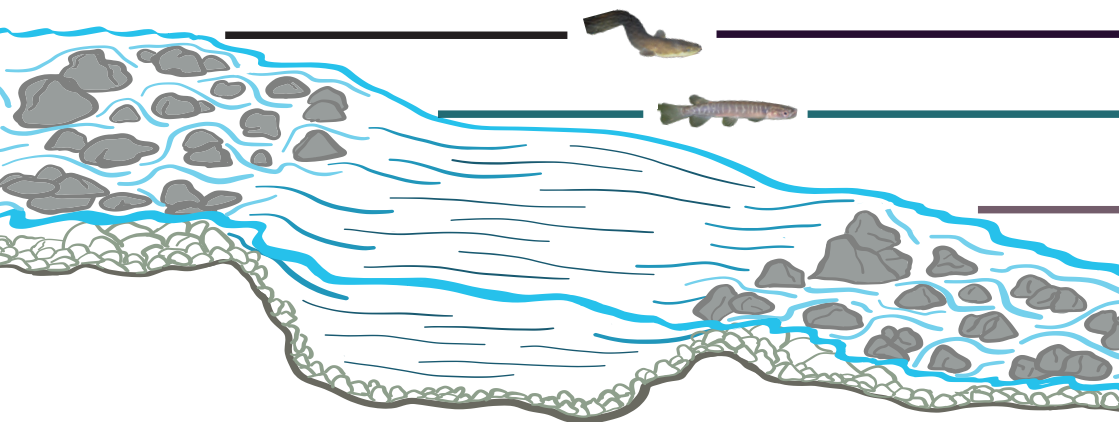
TUNA / THE LONG FINNED EEL

Tuna is an endemic (only found here) species, with a slow reproduction rate and are listed as at risk declining. You can differentiate this eel from the shortfin by the way her sides wrinkle when she bends. Tuna is a toanga (treasure).



BANDED KŌKOPU

These fish are good climbers, able to go up near vertical surfaces if there is a thin film of water. They love shade and are badly affected by toxins and turbidity in the water. They are night feeders so hang out under banks or in pools during the day.



Check out the fish-passage work undertaken to assist fish making their way upstream or downstream. Contact Council if you find any other barriers to stop their progress.



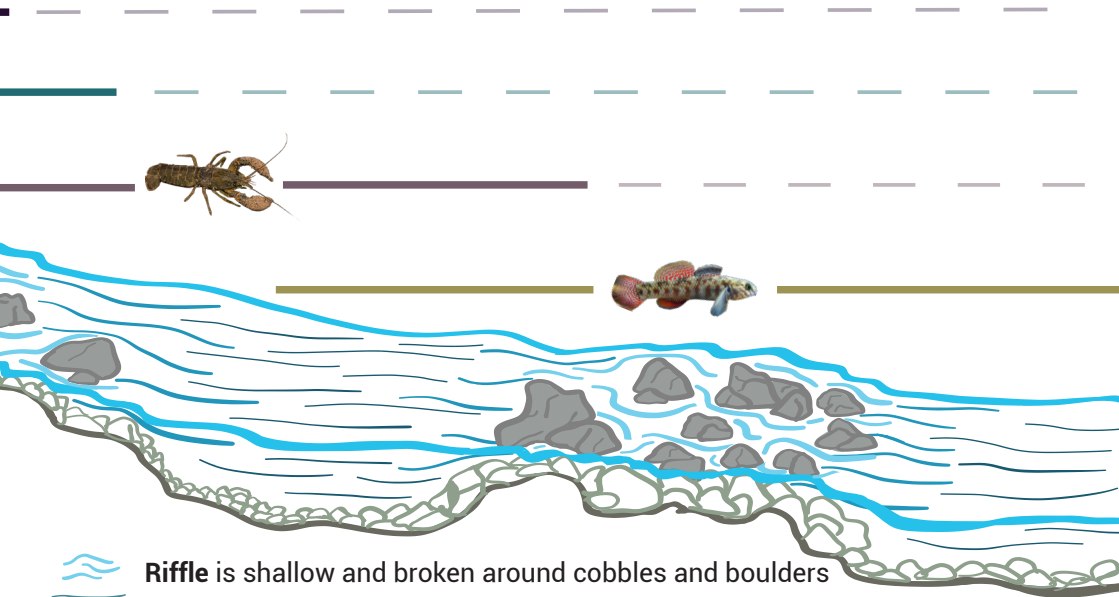
KŌURA

Kōura are found in many waterways but not commonly in urban streams because of pollutants introduced from storm-water systems and the potential for higher water temperatures through lack of vegetation. Previously recorded in Te Wairepo; places to look for them are sheltered areas under banks or rocks, pools or lower flow areas.



REDFIN BULLY

The male has distinctive red fins, however both sexes can be identified by diagonal stripes on their cheeks. Redfins are good climbers although don't venture far inland. They are keen on runs and pools in small bouldery streams.



Riffle is shallow and broken around cobbles and boulders



Pool has depth and slow flow



Run smooth flowing connections between riffles and pools

MACRO-INVERTEBRATES

When looking for macro-invertebrates as indicators of stream health, the presence of mayflies will be a sign that the water quality is fairly good or better, but not all mayflies are equal!

Aside from their varying tolerances and requirements for cold, clear, flowing conditions macro-invertebrates supply the food chain. Without an abundance of these, fish and birds may go hungry!

SPINY GILL MAYFLY

Large spiny curved gills easily visible on back/sides of body, favours fast flow, good quality freshwater habitats. Uses hairs on legs for filter feeding and swims with a doggy-paddle-like motion.



SMALL BROWN STONEFLY

This bug walks on the substrate (stream bottom), breathes through anal gills and feeds on algae and detritus. Detritus describes the organic "stuff" that drops in from outside e.g. fallen leaves and decomposing matter.



RED DAMSELFLY

One of three common damselflies in NZ, one other is blue and the third an Australian import now common in the North. They tend to adhere to side vegetation in low flow streams, ponds and lakes. Nymphs can be mistaken for mayflies so pay close attention to head/body shape, movement and tail parts.



TRUE FLIES

This collective group refers to Craneflies (sometimes called daddy-long-legs), sandfly, mosquito, midges and miscellaneous maggot-like larvae without visible head part.



CADDISFLIES

(Oxyethira) this particularly small (3.5 mm) caddis larvae, constructs transparent, mobile cases shaped like an axe-head, that are only visible in the final stage. Found in wetlands, ponds and low-flow streams with limited shade and abundant algae, which they feed on. Not an indicator of good stream health.



Image source: The Entomological Society of New Zealand

NAME	SPECIES	INGOA MĀORI	SENSITIVITY SCORE
Spiny Gill Mayfly	<i>Coloburiscus humeralis</i>	Piriwai	9/10
Small Brown Stonefly	<i>Spaniocerca zelandica</i>	Ngarongaro wai iti	8/10
Red Damselfly	<i>Xanthocnemis</i>	Kihitara	5/10
True Flies	<i>Austrosimulium</i>	Namu	3/10
Caddisflies	<i>Oxyethira</i>	Ngaro waiwai koeko	2/10

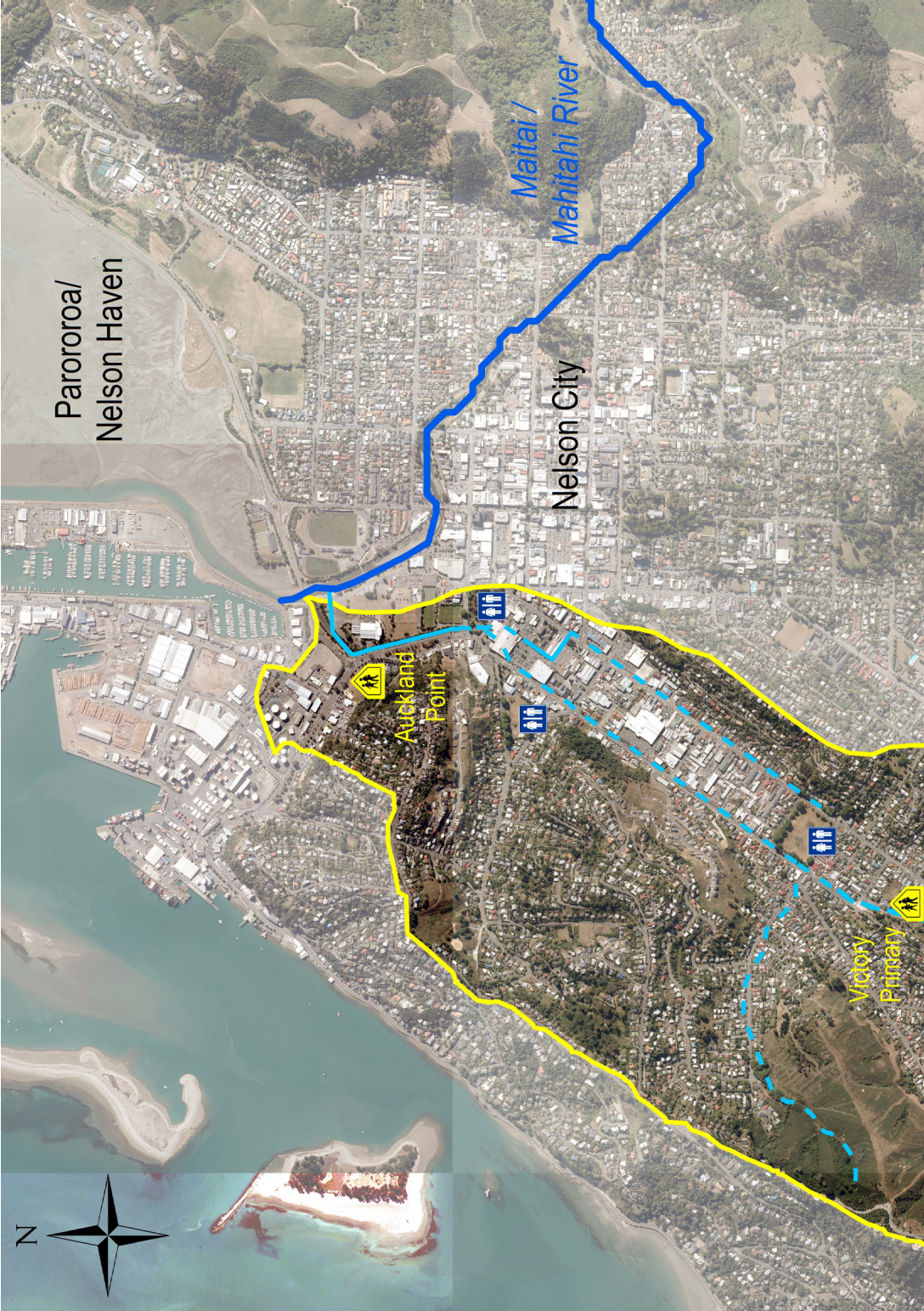
Pararoroa/
Nelson Haven

Maitai /
Mahtahi River

Nelson City

Auckland
Point

Victory
Primary





River Ecology Monitoring Sites

School

Public Toilet

Piped Streams

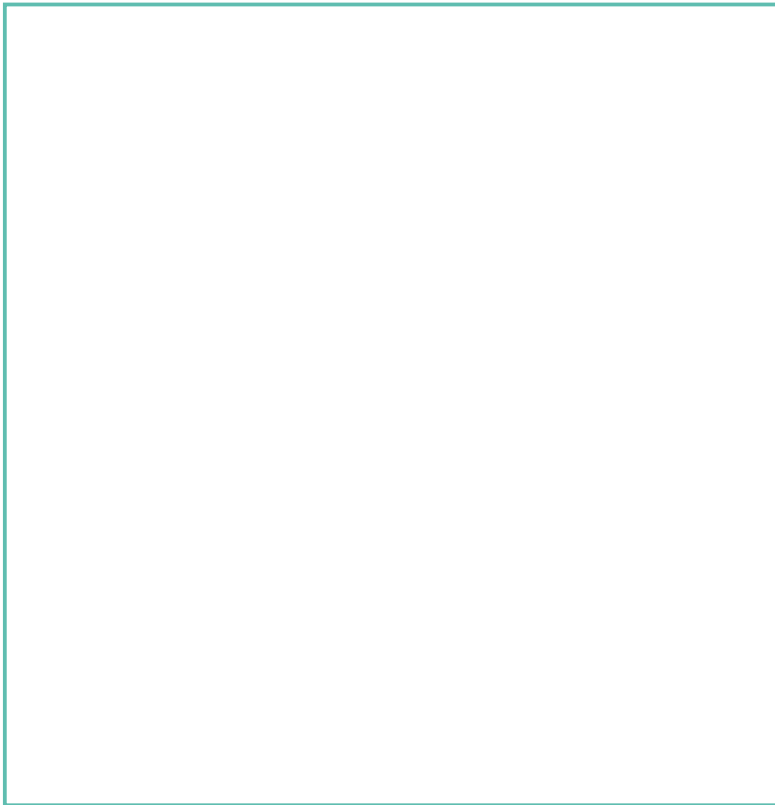
Te Wairepo/York Stream above ground

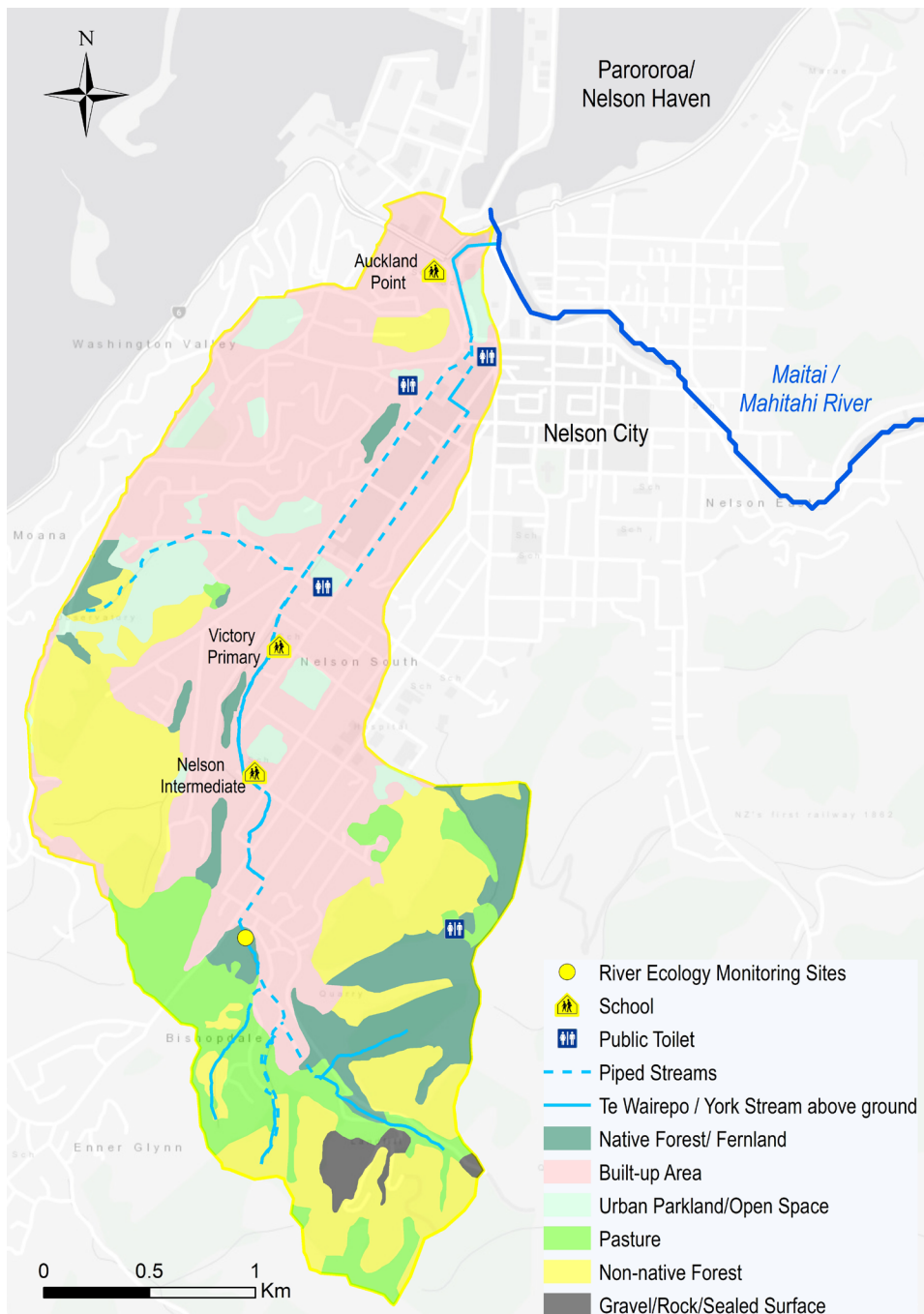
Nelson
Intermediate



MAP LEGEND

Map Legends are a group of symbols to describe important features on the map. Create some symbols of things important to you about your awa. Create your own legend of Te Wairepo/ York Stream.

A large, empty rectangular box with a thin teal border, intended for students to create their own map legend. The box is currently blank.



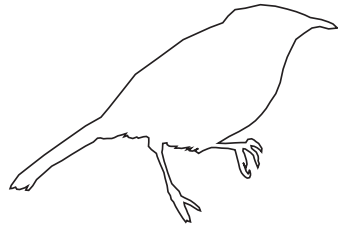
MANU / BIRDS

- Tūī
- Korimako
- Kōtare
- Pīwakawaka

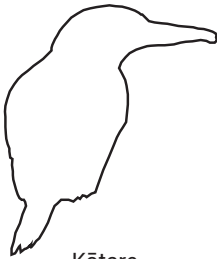
Take part in the Great Kereru Count ® www.greatkererucount.nz every September and plant trees birds love (like Kaikomako).



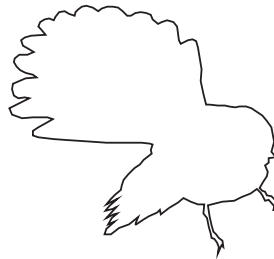
Tūī



Korimako

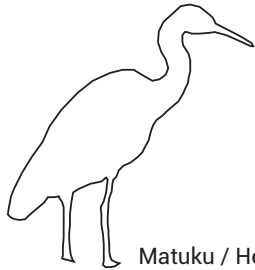


Kōtare

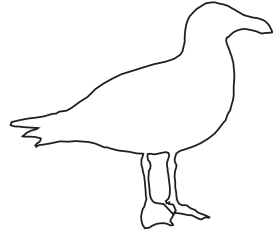


Pīwakawaka

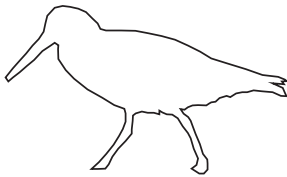
MANU MOANA / SEA BIRDS



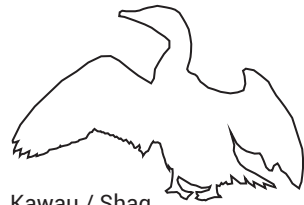
Matuku / Heron



Karoro / Black Backed Gull



Tōrea / Oystercatcher



Kawau / Shag

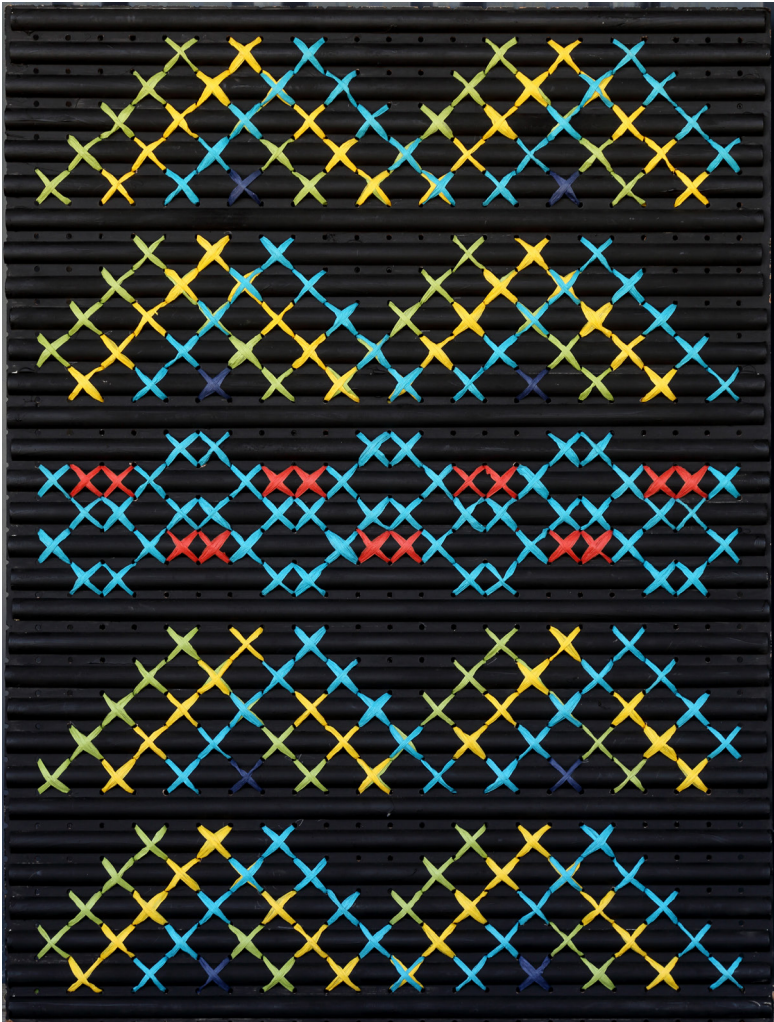
Regular visitors to the estuary and shoreline areas include species that were important tohu (signs) for the early navigators.

It is important to remember to keep dogs on leads and try not to stress or disturb birds when they are nesting (between October and May).

Use the excellent New Zealand Birds Online for bird identification: www.nzbirdsonline.org.nz

MAI I NGĀ MAUNGA KI TE MOANA

The story of a stream's journey from the mountains to the sea.



Maunga (mountains)

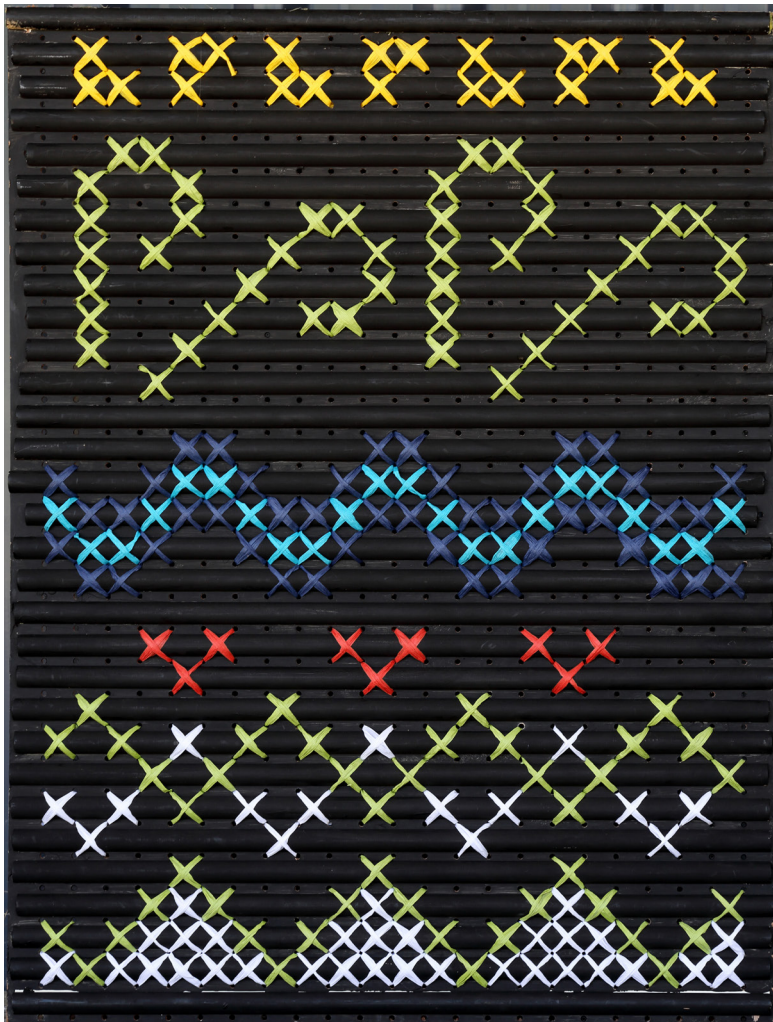
Where the rivers begin.

Designed and created by kōtiro in Ngā Mana Kākano o te Wairepo (Māori medium unit at Victory Primary School).



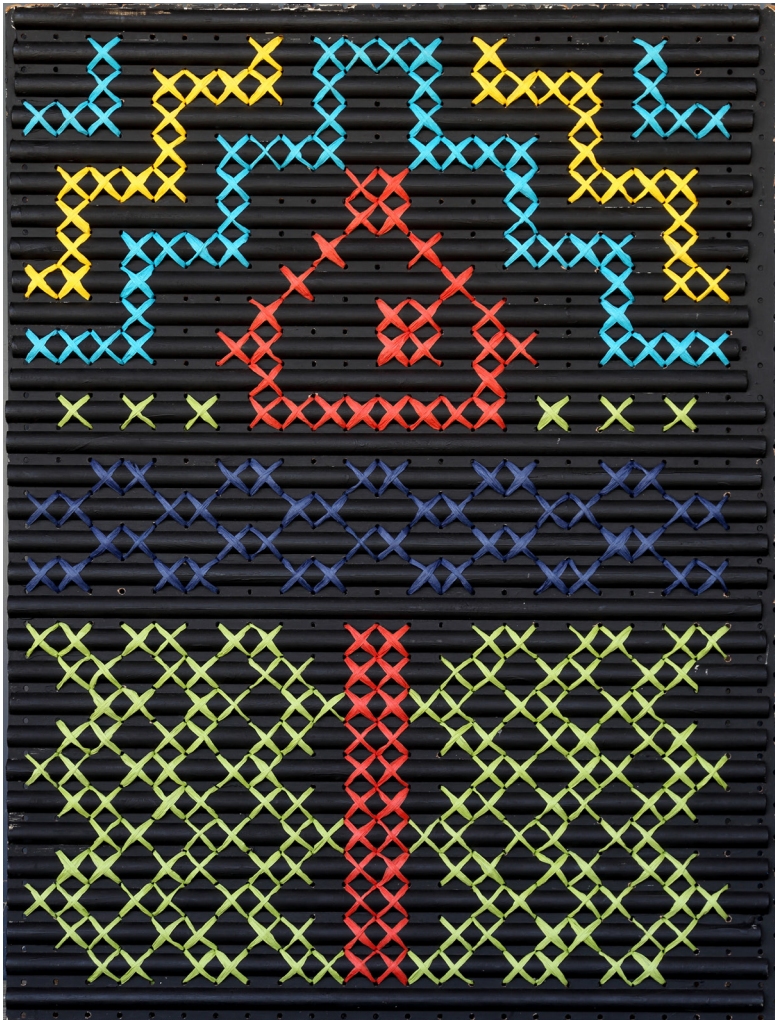
Rākau (trees)

The trees that grow alongside our stream, Te Wairepo.



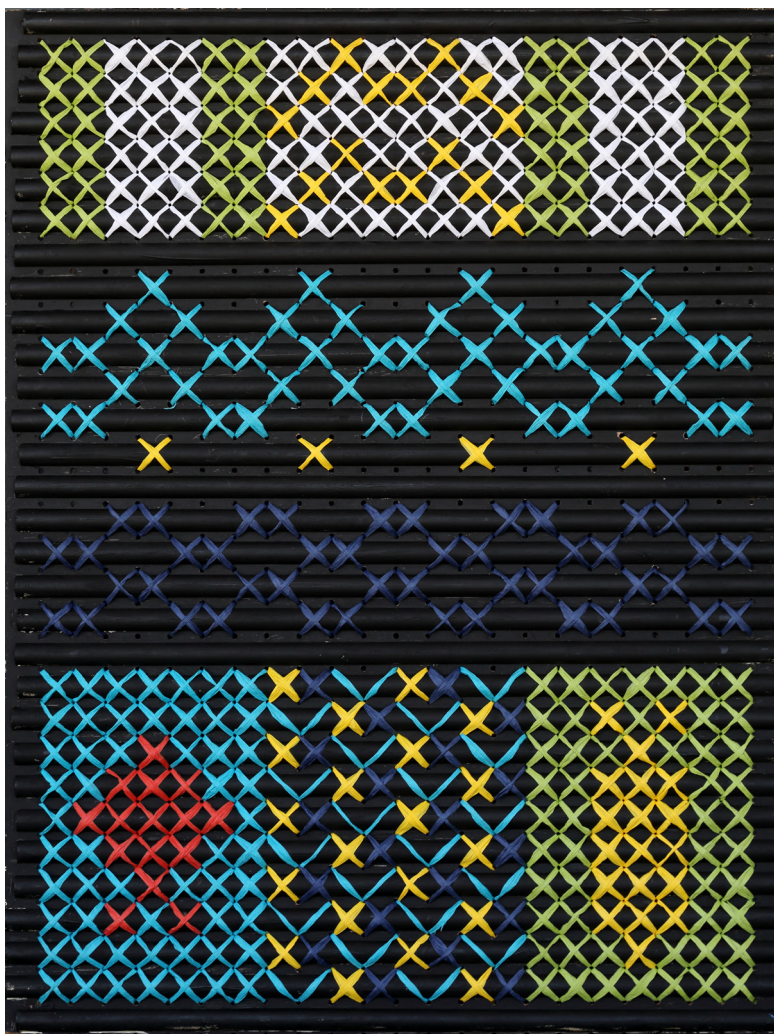
Manu (birds)

The birds that live alongside our stream.



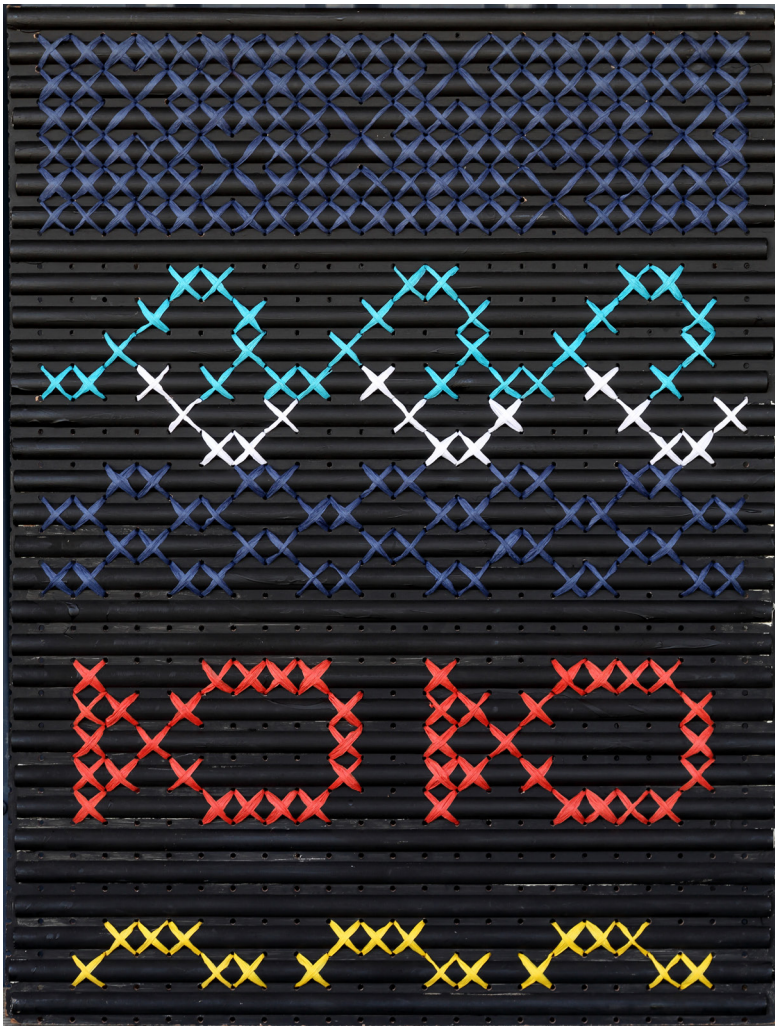
Kura (schools)

Nelson Intermediate School and Victory Primary School, our places of learning.



Ika (fish)

The fish that live or have lived in our streams, rivers and sea.



Moana (sea)

Our rivers flow to our moana, Te Aorere.

PLACES TO LISTEN (PICNIC)

Check the legend on the map to find where you can enjoy the waterway find a spot to experience the water and surrounds:

Look at texture of water where you are: draw lines to describe how it flows, what does it sound like, what can you smell?

Make a list of all the sounds you hear.
Check www.whatbird.co.nz

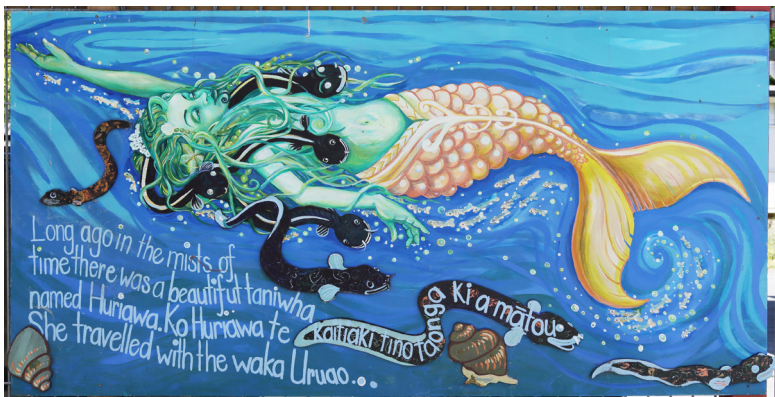
Remember to take away everything you brought with you.

HUMAN STORIES

There have been many people here before us, you may know their stories. Some have left lasting legacies and their children, grand and great, great grandchildren still live in the area.

Write your own story of the waterway:

Look up Huriawa - the Taniwha



Created by artist Lou-Darcie Louis and students from Victory Primary School

BLUEPRINT

Record your plans to act in a way that will improve the waterway for those who come along after you.

Some suggested actions

- Try to help minimise rubbish to landfill
 - Be careful with what goes into stormwater (try sweeping rather than using a hose)
- "only rain down the drain"**



HOW TO HELP

Check out Healthy Streams for local activities and opportunities to help take care of our waterways. Look at Project Maitai/ Mahitahi for information specific to this awa.

www.healthystreams.nz

Lots of great information can be found at;
<http://www.nelson.govt.nz/environment/nelson-nature/>

Find local groups to share the effort of bringing back the wild by looking under Community > Volunteers

People to connect with can be found through;
Friends of the Maitai
www.friendsofthemaitai.org.nz/

Victory Community Centre
<https://www.victory.school.nz/community.html>

Hotline
(for spills or discharge)
0800 No Pollute

If you see a bird or any other native animal entangled in rubbish, or in unnatural danger, please call the **DOC hotline: 0800 362 468**



MORE READING AND RESOURCES

Go to www.healthystreams.nz and check the resource section for the Field Guides for further reading and online resources. Some great sites with lots of great information to get you started are listed below

Nelson City Council: www.nelson.govt.nz

Department of Conservation: www.doc.govt.nz

Forest and Bird: www.forestandbird.org.nz

Land, Air, Water, Aotearoa (LAWA) www.lawa.org.nz

NIWA - SHMAK (stream health monitoring)

www.niwa.co.nz/freshwater/tools/shmak

Manaaki Whenua Landcare Research:

www.landcareresearch.co.nz/resources/identification/

Some Reading:

Remember to have a look at the Library for a wide range of reference books about this area specifically and about our local flora and fauna.

A list of the superb fieldguides by Andrew Crowe is provided on this site:

www.bookcouncil.org.nz/writer/crowe-andrew/

A Photographic Guide to Freshwater Fishes of New Zealand by Stella McQueen and Rod Morris is a handy resource for adventures to the waterways.

A beautiful new book worth looking out for is:

Treasures of Tāne Plants of Ngāi Tahu. By Rob Tipa.

GLOSSARY

Whakapapa – Ancestral connections, inter-related web of life

Papa – Ground, floor

Rangi – Sky, heaven, day

Whenua - Land

Tangata - People

Whakarongo – Listen

Titiro – Look/observe

Manu – Bird

Ika – Fish

Ngahere – Forest/bush

Taiao - Environment

Harakeke – Phormium tenax/flax

Pua - To bloom, produce flowers

Rongoā – Healing methods and substances, apply medicines, to treat

Rakau – Tree, wood, stick

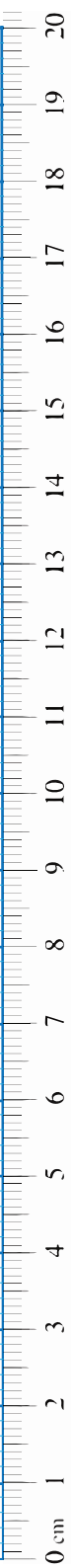
Rau – Leaf

Awa – River, creek, stream

NGĀ ATUA – Supernatural Kaitiaki/Guardians	
Papatūānuku	Earth Mother and wife of Ranginui
Ranginui	Sky Father
Tāne Mahuta	Atua of forests, trees, vegetation and associated environment
Tāwhiri Mātea	Atua of wind, storms, powerful weather events
Tūmatauenga	Atua of War, Man
Tangaroa/ Hinemoana	Atua of Ocean, all waters
Rūaumoko	Atua of earthquakes, youngest unborn child of Rangi & Papa
Haumia-tiketike	Atua of uncultivated foods (Mahinga Kai)
Rongo-mā-Tāne	Atua of kumara and cultivated foods

(Reference) maoridictionary.co.nz

Designed by:  @escherkelaherdesign



Nelson Marlborough Institute of Technology
Te Whare Wānanga o Te Tai Pū o te Waka a Māui



Nelson City Council
te kaunihera o whakatū



Healthy
Streams

From the Mountains to the Sea
ki uta ki tai



CAWTHON
The power of science®