



He mahi mō ngā tauira
Student activities

Tiritiri Matangi

He rauemi mātauranga mō ngā kura
An education resource for schools

SUPPORTERS of



TIRITIRI MATANGI

REVISED 2018

Ki ngā taura ka whakamahia i tēnei rauemi:
Ko te tūmanako, mā te hītori o Tiritiri Matangi koutou e
whakaohoho hei kaitiaki mō te taiao

To the students who will use this resource:
We hope you will be inspired by the Tiritiri Matangi
story and become enthused as future caretakers of your
environment.

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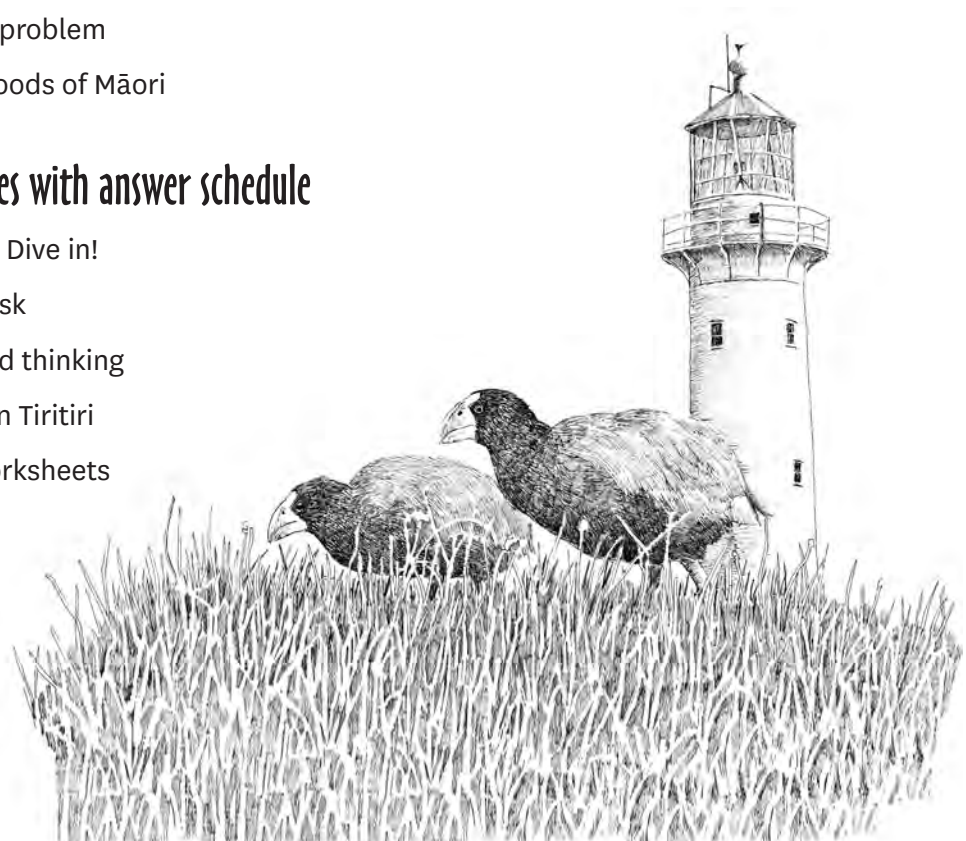
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Explore Tiritiri Matangi website

www.tiritirimatangi.org.nz

Hauraki Gulf quick guide: <https://tinyurl.com/yaop4u9h>

Māori translation website: www.maoridictionary.co.nz

New Zealand Birds Online <http://nzbirdsonline.org.nz/>

Science Learning Hub: <https://tinyurl.com/j7czleq>



- 1 How is Tiritiri Matangi Island described and who manages the Island?
- 2 What is the size of Tiritiri Matangi?
- 3 How many trees were planted between 1984 and 1994?

Biosecurity is crucial for Tiritiri. On the website www.tiritirimatangi.org.nz/home go to 'Visit / Before you come' and carefully read that page. Under 'Biosecurity' click on 'here' to take you to the 'Treasure Islands' site. Note the information on unwanted pests.

On this page look at: 'Treasure Islands', and the pages on 'Islands and marine reserves in the Hauraki Gulf Park', 'Threats to the Hauraki Gulf islands', 'DOC Rangers trap and kill rat on Tiritiri Matangi' and 'Further information'.

On the 'Further information' page, download and print the Help keep our Hauraki Gulf Islands pest-free poster. What do you do if you find a pest?

Again, on the 'Further information' page, go to 'Visiting pest free islands' and view the clip and learn how to 'Check, clean and seal' your gear.

- 4 Back to the Tiritiri Matangi home page, go to 'Visit / Before you come', and scroll to read the **Environmental Care Code for Tiritiri**. Discuss, copy and paste it into your book.
- 5 Enter 'pests' into the search box on the Home Page and find out what two pests have been eradicated from the Island?
- 6 Go to 'News / Dawn Chorus'. Choose a Dawn Chorus pdf and find one aspect you find fascinating. Share with the group by poster, PowerPoint, podcasts, conversation, or making a movie.
- 7 Back on the home page, discuss briefly one historical aspect of Tiritiri.
- 8 Go to 'Links', and choose one link about another conservation organisation and explore their website. Share your information with the group.
- 9 Check out the Tiritiri Facebook page www.facebook.com/TiritiriMatangiIsland and learn about recent happenings. Discuss an aspect of interest with your partner.
- 10 Pai and Piri, two DOC-trained pest dogs, have a Facebook page at https://www.facebook.com/PaiandPiri?ref=br_tf. Look through this page.

Immersion – Dive in!



After this research and reading, fill in the following chart.

What we now know

What we want to find out

What we have learned

How can we learn more

To help with 'How can we learn more', think of questions you have about animals and plants on Tiritiri or in your own school or home environment. Here are some ideas for questions you can use to help with your inquiry.

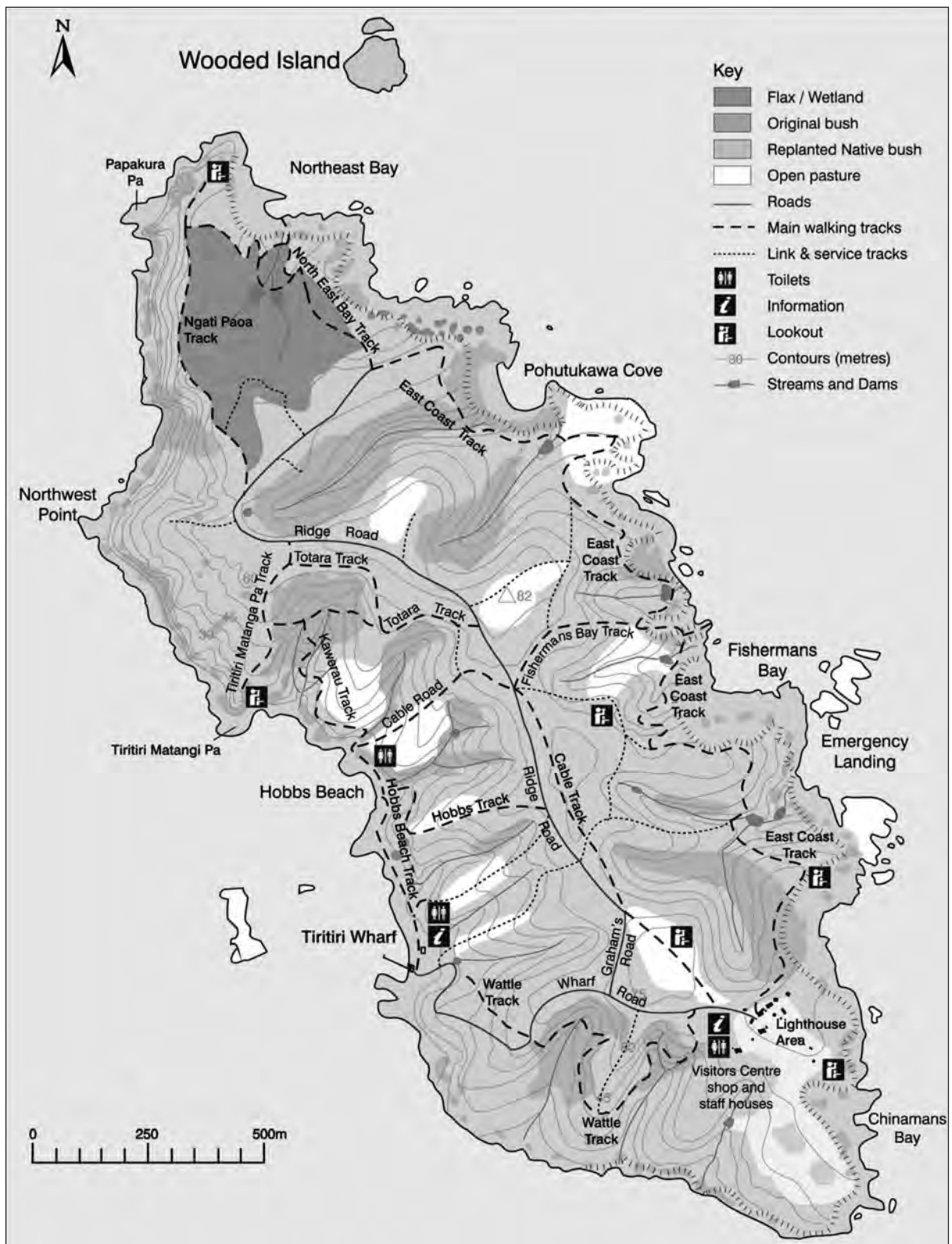
- Question/s I have about Tiritiri or my home area are:

- I am studying a particular animal or plant from the Tiritiri website and I wish to know the following:

- Are there any other websites that could help with my questions?

- Is there a person/expert I can ask?

Tiritiri Matangi



Suggested activities for trip preparation

- Understanding human impacts
- Create a pest free classroom
- The ecology of Tiritiri occupants
- Bird observation/inquiry
- Word definitions activity
- Checklist activity

Understanding human impacts

Look around your own school and home and write up a list of the ways that humans are not helping the environment (negative impacts) and ways where they are helping (positive impacts).

Human negative impacts	Human positive impacts

Create a pest-free classroom

Students:

1 Brain storm:

- What is a pest?
- What are pests in New Zealand?

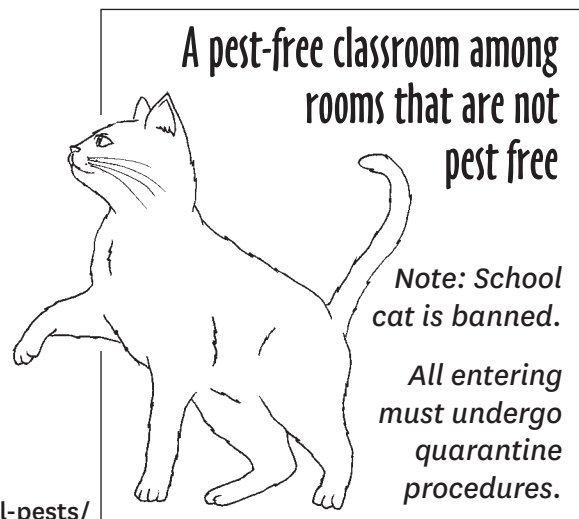
Check out the DOC website on pests:

www.doc.govt.nz/nature/pests-and-threats/

www.doc.govt.nz/nature/pests-and-threats/animal-pests/

Know before you go: <https://tinyurl.com/y9jr4s4s>

Recommended reference: *Invaders* by Nic Vallance and Rod Morris, New Holland Publishers (NZ) Ltd.



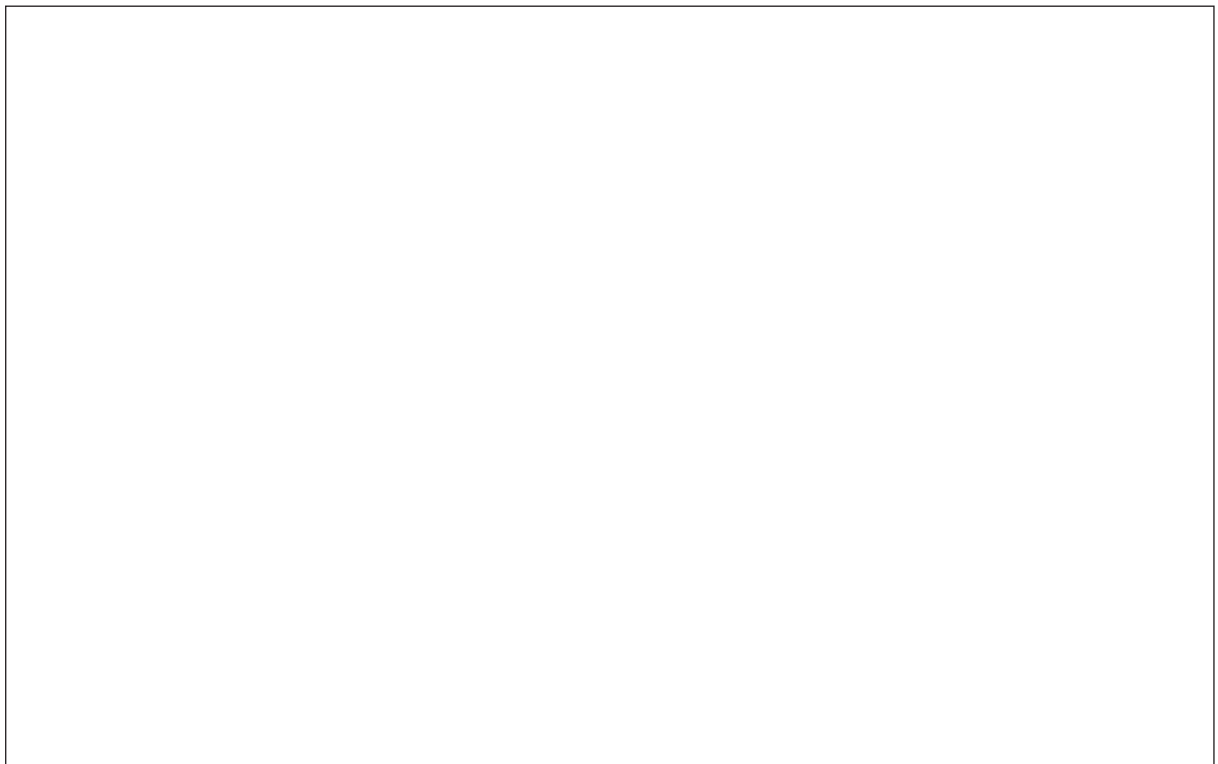
Tiritiri trip preparation – Define and ask

2 Check out the Treasure Islands at www.treasureislands.co.nz

3 As a class or in groups brainstorm the meanings of bio and security.
Come up with a class definition for biosecurity:

4 Study the DOC Treasure Island biosecurity poster at <https://tinyurl.com/yc5vmzvw>

a. Sketch small diagrams or list the stowaways that could get into your trip gear:



b. Write three things you need to do before visiting Tiritiri:

5 Discuss in your groups how you can set up your room to be a **biosecure zone** like Tiritiri.

Tiritiri trip preparation – Define and ask

- 6 List the **conditions** for making your room pest free. Hints: think about your clothing, shoes, where to pack and leave your bag, what container to have your lunch in, whether pets can be brought along.

Conditions for a pest-free room	
1	
2	
3	
4	
5	
6	
7	

- 7 Map your classroom as a pest-free area with set entry points.

- 8 Place pest-free zone posters with all the conditions up on your walls and windows (refer to teacher notes page 52).



<https://tinyurl.com/yc5vmzww>



<https://tinyurl.com/yg9ndtyg>

- 9 Set up a checking post/quarantine area right by the classroom door.
- 10 With help from your teacher put these conditions in place for a week before your trip to Tiritiri.
- 11 Organise a roster of quarantine officers during the week. Everyone coming into your classroom has to go through your quarantine.
- 12 Invite the principal into your bio-secure classroom for a briefing on biosecurity and to check their clothing and shoes. The principal is banned if they do not pass your quarantine conditions.

The ecology of Tiritiri occupants



Habitat, adaptations, food chains, food web and conservation

1

Refer to the Tiritiri website at www.tiritirimatangi.org.nz/home

Click on 'Learn' on the top bar and study 'birds', 'other wildlife', and 'plants'.

For more information, visit: <http://nzbirdsonline.org.nz> and www.doc.govt.nz/nature

2

Choose three examples for each of the following:

- Tiritiri bird species:

- Other wildlife on Tiritiri:

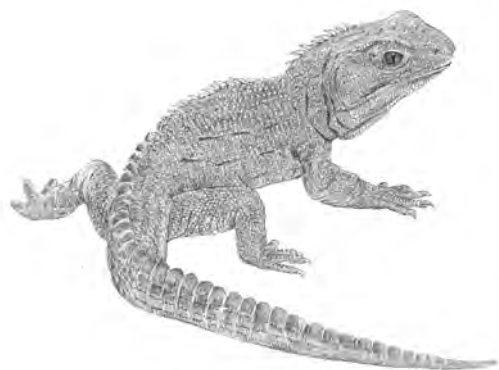
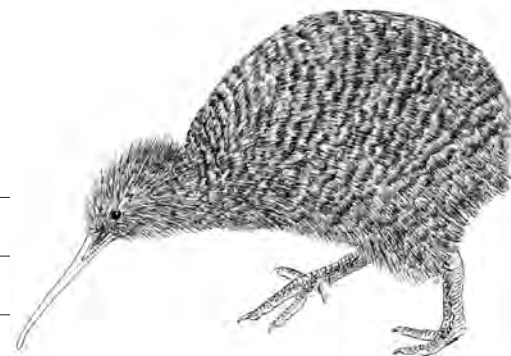


- Plants and trees found on Tiritiri:

Note the habitat and adaptation for each chosen organism.

Indicate how the adaptation helps with survival.





Definitions:

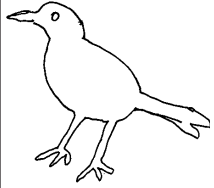
Habitat – where an organism lives.

Adaptation – feature or characteristic that helps an organism to survive and reproduce in its habitat.



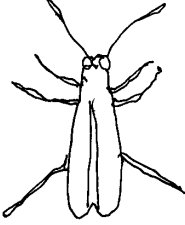
Habitat and adaptations

Complete the tables describing three species for each category. In each case an example has been given.


Bird species on Tiritiri					
Name	Native or endemic or non-native (introduced)	Habitat	Adaptation (survival feature)	How adaptation helps survival	Photo or illustration
Blackbird	Non-native	Found in forest and open grass-land areas.	Females are dark brown.	Good camouflage when nest sitting.	



Other wildlife on Tiritiri

Name	Native or endemic or non-native (introduced)	Habitat	Adaptation (survival feature)	How adaptation helps survival	Photo or illustration
Huhu longhorn beetle	Endemic	Found in forest areas.	Active at night.	Not so easily seen by predators.	



Plant/tree species on Tiritiri					
Name	Native or endemic or non-native (introduced)	Habitat	Adaptation (survival feature)	How adaptation helps survival	Photo or illustration
Pōhutukawa	Native	A coastal evergreen tree / shrub.	Many small hairs on the underside of the leaves.	Retains moisture in the leaves.	

Food chains and food webs

Food chain: All living things need food to give them the energy to grow and move. A food chain shows a linear series of feeding relationships in an ecological community in which each species is the food of the next member of the chain – its energy. The food chain shows who is eating whom. The arrow means ‘is eaten by’, which is the energy transfer.

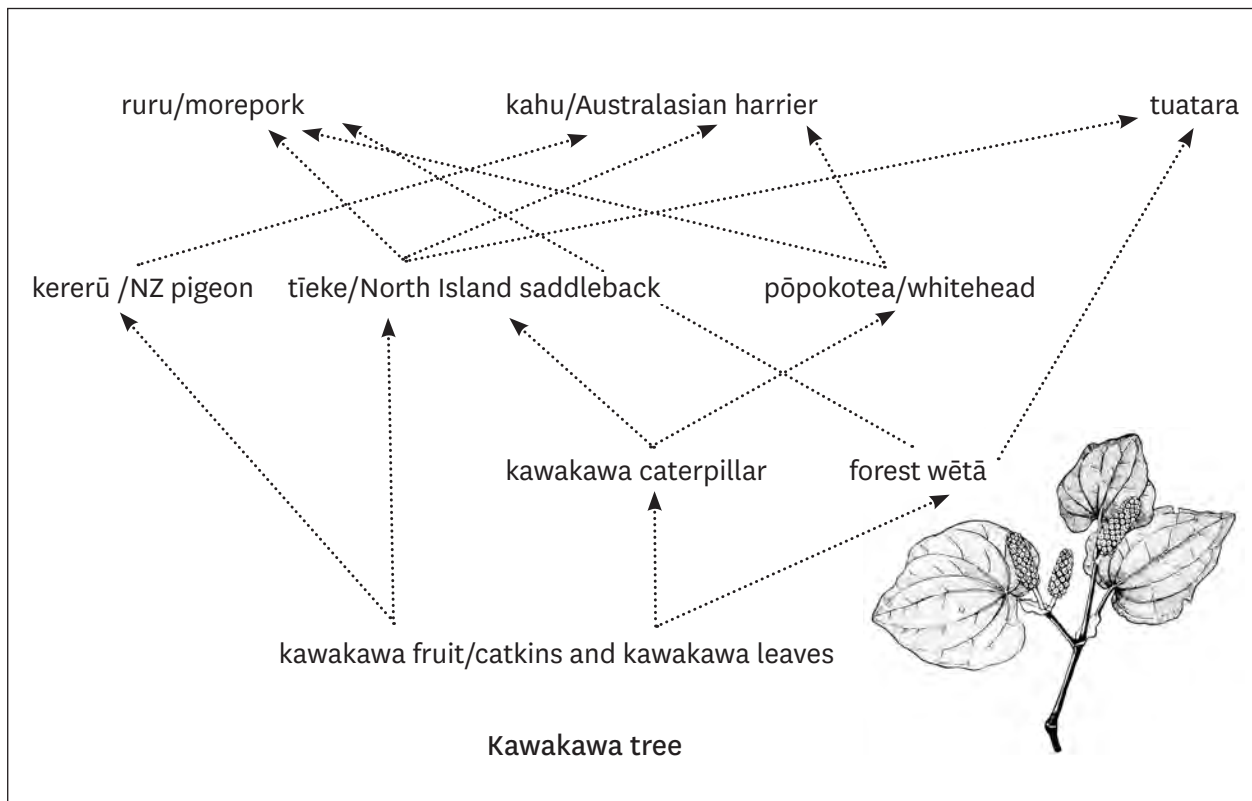
Examples of food chains in your own garden:

Cabbage → snails → thrush → cat

Nectar from kōwhai tree flowers → tūī → cat

Tiritiri Matangi Island food web

Food web: A food cycle of a number of interrelated food chains in an ecological community.



1 Study the Tiritiri food web and write out two food chains you can identify.

- a) → → →
- b) → → → →

2 Explain what the arrowed lines represent:

3 After your visit to Tiritiri, add extra food chain links to the Tiritiri Matangi Island food web above or create your own Tiritiri food web.

Extension

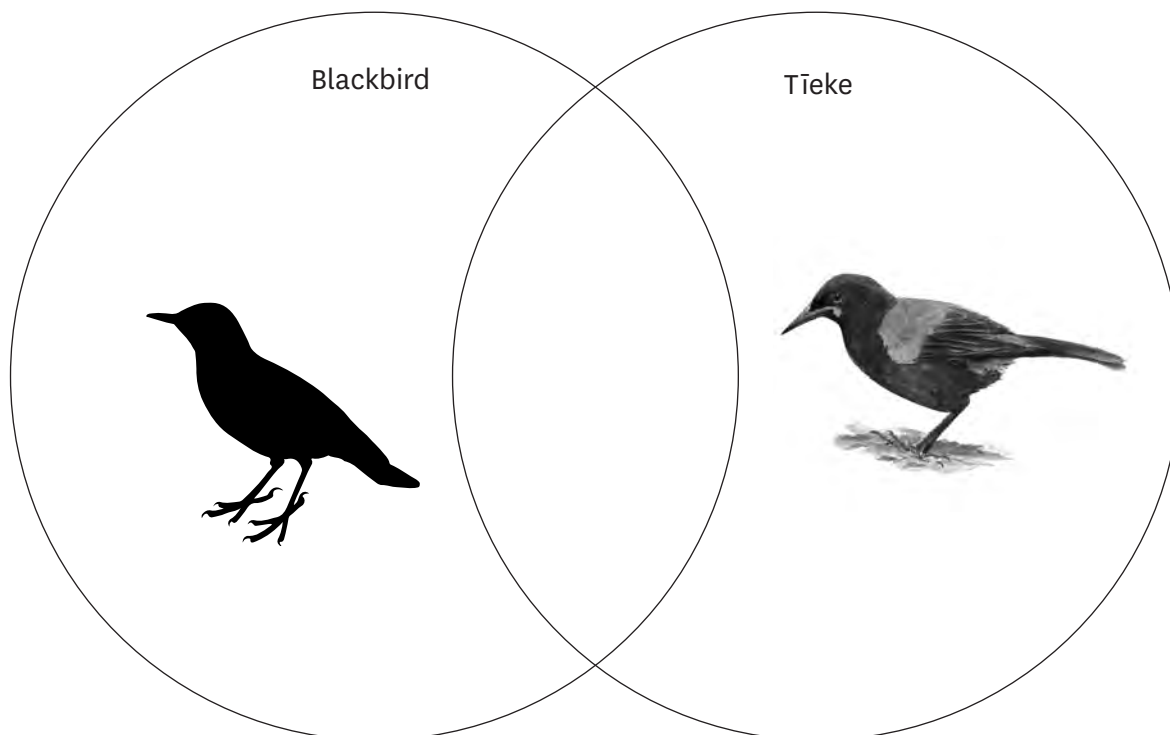
Class discussion/research project on:

- The effect of cats on the wildlife in our gardens and bush areas.
- What effects dogs have on native/endemic wildlife at the beach and in the forests.

Bird observation – inquiry-based exercise

School grounds and Tiritiri exercise **years 5-7**

- 1 For 30 minutes observe a blackbird in your school grounds. Note their characteristics and behaviours in the Venn diagram below. Take this sheet with you and compare these characteristics with a tīeke/saddleback when out on Tiritiri. Reference: <http://nzbirdsonline.org.nz>.



- 2 Highlight one distinctive or interesting characteristic and one behaviour of each of these birds.

- 3 Why is one bird rare/endangered and not found on the school grounds?

School grounds and Tiritiri exercise **years 8–11**

Observe a single blackbird on your school grounds for 15 to 20 minutes, and compare this with a single tīeke/saddleback when out on Tiritiri. Take this sheet to Tiritiri with you.

1

Characteristic	Single blackbird	Single tīeke																																																												
Are the male and female the same colour?																																																														
Describe how they move: walking/hopping/running.																																																														
Use a watch to note the behaviour and location each minute on the minute for 15 or 20 minutes using the following key.	Results/minute	Results/minute																																																												
<table border="1"> <thead> <tr> <th>Behaviour code</th> <th>Location code</th> </tr> </thead> <tbody> <tr> <td>F feeding</td> <td>A airborne</td> </tr> <tr> <td>Pr preening</td> <td>FF forest floor</td> </tr> <tr> <td>Fl flying</td> <td>WT water trough</td> </tr> <tr> <td>W walking</td> <td>U understory</td> </tr> <tr> <td>H hopping</td> <td>C canopy</td> </tr> <tr> <td>R running</td> <td>T track</td> </tr> <tr> <td>Ag aggressive</td> <td>F feeder</td> </tr> <tr> <td>Sb submissive</td> <td>O open ground</td> </tr> <tr> <td>OS other interaction</td> <td></td> </tr> </tbody> </table>	Behaviour code	Location code	F feeding	A airborne	Pr preening	FF forest floor	Fl flying	WT water trough	W walking	U understory	H hopping	C canopy	R running	T track	Ag aggressive	F feeder	Sb submissive	O open ground	OS other interaction		<table border="1"> <tbody> <tr><td>1</td><td>11</td></tr> <tr><td>2</td><td>12</td></tr> <tr><td>3</td><td>13</td></tr> <tr><td>4</td><td>14</td></tr> <tr><td>5</td><td>15</td></tr> <tr><td>6</td><td>16</td></tr> <tr><td>7</td><td>17</td></tr> <tr><td>8</td><td>18</td></tr> <tr><td>9</td><td>19</td></tr> <tr><td>10</td><td>20</td></tr> </tbody> </table>	1	11	2	12	3	13	4	14	5	15	6	16	7	17	8	18	9	19	10	20	<table border="1"> <tbody> <tr><td>1</td><td>11</td></tr> <tr><td>2</td><td>12</td></tr> <tr><td>3</td><td>13</td></tr> <tr><td>4</td><td>14</td></tr> <tr><td>5</td><td>15</td></tr> <tr><td>6</td><td>16</td></tr> <tr><td>7</td><td>17</td></tr> <tr><td>8</td><td>18</td></tr> <tr><td>9</td><td>19</td></tr> <tr><td>10</td><td>20</td></tr> </tbody> </table>	1	11	2	12	3	13	4	14	5	15	6	16	7	17	8	18	9	19	10	20
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What are they feeding on?																																																														
Describe their calls.																																																														
Note behaviours that are different.																																																														
Is this bird common or rare?																																																														



Observations and collecting data are really important to allow us to answer our questions. You are now moving towards becoming a true scientist!



- 2 What did you notice that was similar about these two birds?
- 3 What did you notice that was very different about each type of bird?
- 4 Write up questions you now have after this observation exercise.

Research question:

Explain and discuss why is one bird rare/endangered and not found on the school grounds?

Use the following web links to help answer your own and the given research question.

Web links

<http://nzbirdsonline.org.nz>

www.doc.govt.nz/nature/native-animals/birds/birds-a-z/saddleback-tieke

http://en.wikipedia.org/wiki/Saddleback_%28bird%29

Matching words to their meanings

Draw a line from the word on the left to its meaning on the right

endangered	found only in a certain country and nowhere else
fledged	brought to New Zealand by people
pest	likely to become extinct if not managed properly
migrant	an animal that takes birds or their eggs or chicks
moult	fully feathered, able to fly
endemic	naturally found or self-introduced
incubate	birds in their first plumage
introduced	a nuisance and competitor to the native/endemic organisms
predator	a species that moves annually or seasonally between breeding and non-breeding areas
plumage	develop and hatch young birds in eggs by sitting on them to keep them warm
native	the annual replacement of feathers
juvenile	a bird's feathers



Brainstorm the checklist for the school trip



1 From the diagram below pick out the items for the trip that are necessary and items that are optional.

a day pack	matches	family dog		
lunch	heater	walking shoes	barbecue	
a pot plant	binoculars	suitcase	sun cream	
water bottle	nail polish	cellphone	iPod	
all my school books	pen, pencil, paper	best shirt		
snacks	a bag of toys	sun hat	my bike	
my pet cat	medication	high heel shoes		
tent	umbrella	camera	rain jacket	iPad

2 Items I need for Tiritiri are:

3 Explain why a number of items are not to go to with you to Tiritiri.

Resources for the field trip

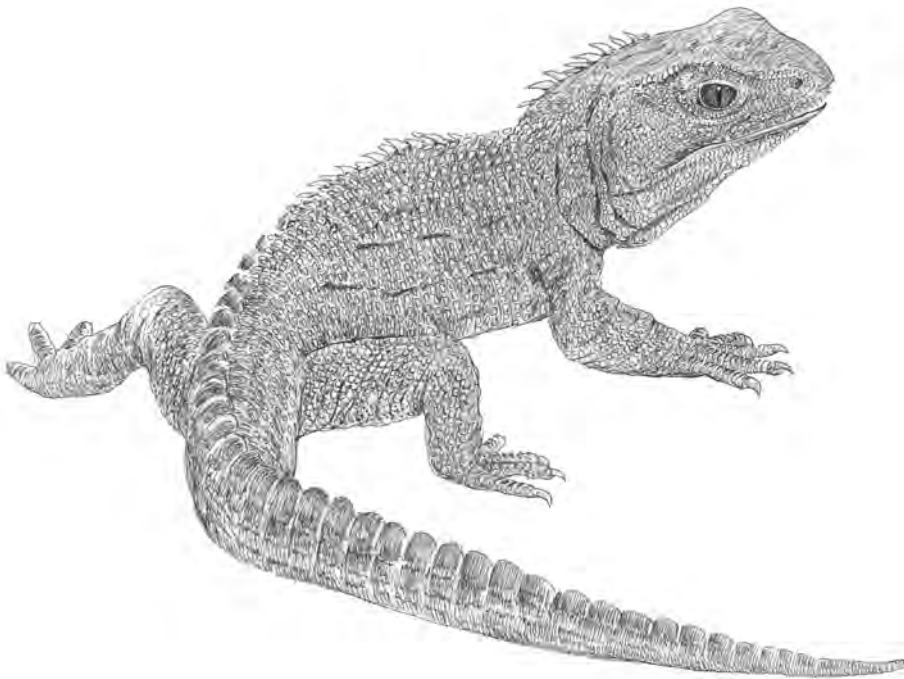
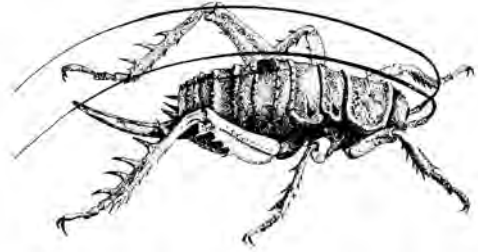


Sixteen species have been translocated (moved) to Tiritiri

This includes the 12 bird species (highlighted in the chart on page 21) and the following:

- tuatara
- shore skink/mokomoko
- Duvaucel's gecko
- wētāpunga

The tomtit translocation was unsuccessful but vagrants/visiting tomtits may be observed on the tracks.



Species list of Tiritiri animals

European/ common name	Māori name	Alternative names	Status	Seen	Probably seen	Heard (but not seen)
Bird species						
Australasian harrier	Kahu		N O			
Bellbird	Korimako		E O			
Brown quail			I			
Brown teal	Pāteke		E T			
Fantail	Pīwakawaka		N O			
Fernbird	Mātātā		E T			
Grey warbler	Riroriro		E O			
Kākā	Kākā		E O			
Little spotted kiwi	Kiwi pukupuku		E T	Nocturnal, unlikely to be seen		
Kingfisher	Kōtare		N O			
Little penguin	Kororā	Blue penguin	N O			
Morepork	Ruru		N O			
NZ pigeon	Kererū/kūkupa		E O			
North Island kōkako	Kōkako	Blue-wattled crow	E T			
North Island robin	Toutouwai		E T			
North Island saddleback	Tieke		E T			
Paradise shelduck	Pūtangitangi		E O			
Red-crowned parakeet	Kākāriki		E T			
Rifleman	Tītīpounamu		E T			
Silvereye	Tauhou		N O			
Spotless crane	Pūweto		N O			
Stitchbird	Hihi		E T			
Tomtit	Miromiro	North Island pied tit	E Tx			
Pūkeko	Pūkeko	Swamp hen	N O			
Takahē	Takahē	Notornis	E T			
Tūi	Tūi	Parson bird	E O			
Welcome swallow			N O			
Whitehead	Pōpokotea		E T			
Coastal birds						
Antarctic skua	Hākoakoa		N O			
Australasian gannet	Tākapu		N O			
Black-backed gull	Karoro	Dominican or kelp gull	N O			
Buller's shearwater	Rako		N S			
Caspian tern	Taranui		N O			
Fluttering shearwater	Pakahā		N S			
Little shag	Kawaupaka		N O			
New Zealand dotterel	Tūturiwhatu		E O			
Pied shag	Kāruhiruhi		N O			
Red-billed gull	Tārapunga	Silver gull	N O			
Reef heron	Matuku-moana		N O			
Variable oystercatcher	Tōrea		E O			
White-faced heron	Matuku moana		N O			
White-fronted tern	Tara		N O			
Others – seasonal						
Long-tailed cuckoo	Koekoeā		E O			
Shining cuckoo	Pīpīwharaua		N O			



T = Translocated to Tiritiri.

O = Originally on Tiritiri.

N = Native, breeds in NZ and other countries, e.g. silvereye.

E = Endemic, restricted to breeding in one country, e.g. kiwi in New Zealand.

I = Introduced by humans, now breeding here, e.g. brown quail.

S = Surrounding waters.

Tx = Translocated. No ongoing breeding population, e.g. tomtit. May observe (vagrant) tomtits on the tracks.

Match the names of the birds

Each of these birds has a Māori name as well as a common name. In this list they have been mixed up. See if you can match them correctly.

Common

- Swamp hen
- Whitehead
- Variable oystercatcher
- Parakeet
- North Island robin
- Morepork
- Stitchbird
- Saddleback
- Grey warbler
- Blue wattled crow
- Rifleman
- Bellbird
- Notornis
- Kingfisher
- Fernbird
- Fantail
- Little spotted kiwi
- Shining cuckoo
- New Zealand pigeon
- Little penguin
- Australasian harrier

Te reo Māori

- Riroriro
- Kōtare
- Takahē
- Kōkako
- Kororā
- Korimako
- Pīwakawaka
- Kākāriki
- Kererū/kūkū/kūkupa
- Pōpokotea
- Hihi
- Kahu
- Pipīwharau
- Ruru
- Kiwi pukupuku
- Tieke
- Titipounamu
- Mātātā
- Toutouwai
- Tōrea
- Pūkeko



Worksheets and activities for lunchtime



Fill in the sense chart below with some of the things you have seen, heard, felt and smelt

Sense chart

Use this sense chart to record your observations while exploring Tiritiri.

See

Hear

Feel

Taste

Smell

Checklist of some Tiritiri Matangi birds



Bird species	Seen	Probably seen	Heard (but not seen)
Hihi/stitchbird			
Kākāriki/red crowned parakeet			
Kererū/New Zealand pigeon			
Korimako/ bellbird			
Kōkako			
Kōtare/kingfisher			
Kororā/little penguin			
Takahē/Notornis			
Pāteke/brown teal			
Pīwakawaka/fantail			
Pōpokatea/whitehead			
Pūkeko/swamp hen			
Riroriro/grey warbler			
Ruru/morepork			
Tīeke/saddleback			
Toutouwai/North Island robin			
Tūī			
Other			

Scavenger hunt at the visitor centre

Version one

Note: Version one is shorter.



1 Outside the visitor centre

Find answers to the following and write or draw your answer in the space provided:

Something orange?

Bird with a white poi?

A leaf with many holes?

Birds at the feeder?

Little spotted kiwi
Māori name?

Small round and
red on a tree?

Common name for hihi

Something tall,
old and white?

Something we
cannot touch:

Where there is
a great view?

Something that
takahē eat?

Birds at memorial
tree?

As you walk around, find the footprints set in concrete. Hint: near the mural on the toilet building. Think about what animal made them.

2 Inside the visitor centre

Answer the following questions, starting in the kids' area and working around the room clockwise.

A day scene animal is?

A night scene animal is?

Who was Greg?

What is the name of our native owl?"

What is Ranger Robyn holding?

The major sponsor is?

Tiritiri Matangi in Māori means?

Total food cost from the 1938 invoice? Note £1 = \$2

Traces of Māori on Tiritiri?

Name the nearby island?

Find the female wētāpunga?

Who has the biggest egg?

Try the video microscope

Have a turn at the Bird Call Game



Scavenger hunt at the visitor centre

Version two

Note: Version two is longer.



Useful references:

Tiritiri Matangi website:
www.tiritirimatangi.org.nz

NZ birds online website:
<http://nzbirdsonline.org.nz/>

Department of Conservation:
www.doc.govt.nz/nature/

Outside the visitor centre

To find the answers to the following questions,

- walk around the lighthouse and the watch tower
- the **fence line** that lies between the watchtower building and the paddock
- along the **picket fence** alongside the DOC house
- past the toilets to the memorial tree
- to the bird feeder at the front of the shop, and finally
- to the **courtyard** behind the visitor centre.

Station one

The lighthouse

- In what year was the lighthouse built?

- How tall is the lighthouse?

- If the ground is dry, **lie flat on the ground** – look out for the bird poo! Look up at the lighthouse watching the clouds move past. Draw the shapes that the clouds make.

The shapes look like:

Exploring and thinking

The colourful 'Islands of the Gulf' sign on the corner of the fence out from the Watch Tower

- Find all the landmarks shown.
 - What is your favourite landmark?
-

Five metal fence signs on the picket fence in front of the Watch Tower

- Check the history written on the five signs.
 - Name the ship and in what year was the ship wrecked on Tiritiri?
-

- Why did that happen?
-

From the fence note the small Tiritiri weather station in front of you and further down the hill note the fog horn shed with a large funnel poking out the side. Do not go out past the fence unless a school adult is with you.

Look out for the takahē and ensure they are kept safe by having no students running.



Two signs on the fence alongside the ranger's house

- A small cartoon sign is attached to the white picket fence around the ranger's house. What warning does this give?
-

A photo is attached to the white picket fence round the ranger's house (towards the public toilets).

- In what year were the lighthouse keepers' houses built?
 - How many people are in the photo and what animal is present?
-

Being the detective on Tiritiri

As you walk between the white picket fence towards the memorial tree, find the footprints set in concrete. You will all walk over the footprints during lunchtime so keep a lookout.

They are near the ...

What animal do you think made them?

Exploring and thinking

Visit the memorial tree down the lawn from the bathrooms

Look at the resting place of our special takahē, Greg and Mr Blue, along with Daphne the duck.

- **Sound log:** Sit or stand quietly in a circle or simply lie down on the ground. Close your eyes and count the different sounds around you for 3–4 minutes.
- **Create a poem** for your group by having every student take a turn to say a line about what they feel or what they have heard. One student writes it down. *Examples: bell-like sounds, wind, laughing, lightness, etc.*

Poem:



Courtyard signs

Search out the colourful signs to the side and in the courtyard of the visitor centre.

North Island kōkako signs

- What are the 'continuing threats' to kōkako numbers?

Kiwi signs

- Māori name of the little spotted kiwi is
- Note how many different species of kiwi are listed

Station four



Tīeke/North Island saddleback signs

- Tīeke is a close relative of what two birds?

- How can you help tīeke?

Pāteke/ brown teal signs

- Explain why pāteke are easy prey to cats and dogs?



- Discuss how we can help pāteke to increase in numbers.

Station five

Takahē signs

- When were the takahē rediscovered?



- Takahē eat how much grass in a day?

Endemic nectar feeders sign

- How many nectar feeders are listed, and what are their Māori and English names?

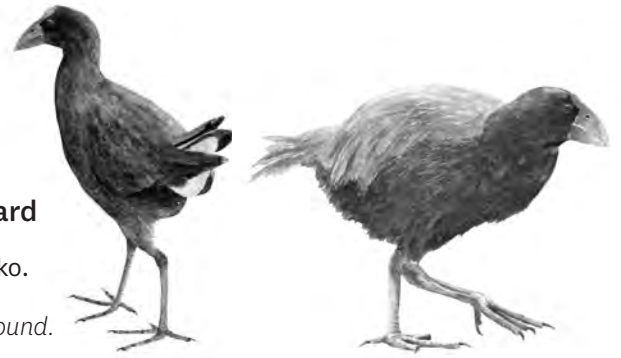
- Describe what tūi represented to Māori

Station six

Observational field skills/takahē and pūkeko noticeboard

- Observe four or more differences between takahē and pūkeko.

Refer to the noticeboard in the courtyard if the takahē cannot be found.



Then check your observations with those on the noticeboard comparing takahē and pūkeko.

Station seven

Observations at the feeder and water baths

At the front of the visitor centre, sit quietly, without talking, for 6–7 minutes to observe the birds near the feeder and water baths. Note the interactions between the birds.

1. What birds are coming to the feeder?

2. Note down any activity at the water baths.

Draw one of the Tiritiri birds



Inside the visitor centre

- One group moves clockwise from the kids' area just inside of double doors answering the questions at the top of this sheet, starting with 'a day scene animal'.
- Another group moves anticlockwise from the glass case by the microscope, starting at the bottom of the sheet with 'who has the biggest egg'.

A day scene animal is?

A night scene animal is?

Make sure you have a turn at the bird game screen as you walk past it.

Who was Greg?

What is the name of our native owl?"

What is Ranger Robyn holding?

The major sponsor is?

Tiritiri Matangi in Māori means?

Name the nearby island?

Traces of Māori on Tiritiri?

Total food cost from the 1938 invoice? Note £1 = \$2

Find the female wētāpunga?

Who has the biggest egg?

Ask an expert

Endemic animals are particular to one country, e.g. kiwi are only found in New Zealand.

Native plants or animals are self-introduced by wind, sea currents or hitching a ride on a bird, and breed in more than one country, e.g. the silver eye/tauhou (meaning stranger) is believed to have arrived from Australia early in the 1800s.

In your study of endangered *endemic* animals on Tiritiri Matangi, what questions would you like to ask the people who look after them?

Questions about takahē

Questions about hihi

Questions about tīeke

Questions about toutouwai

Questions about kōkako

Questions about kiwi

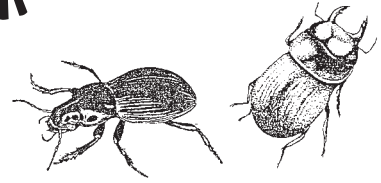
Questions about wētāpunga

Questions about tuatara

Questions about . . . (your choice) Some suggestions include: ask a volunteer what they enjoy most about being on Tiritiri; when they started coming to the island; their favourite animal; a brief message they may have for children



Activities during the second walk through the bush



Years 3–7

During your afternoon walk back to the ferry or around the visitor centre, select an animal that interests you and photograph or film the different behaviours of your animal.

Years 8–10

During your afternoon walk back to the ferry or around the visitor centre, select an animal that interests you. You could do the following things:

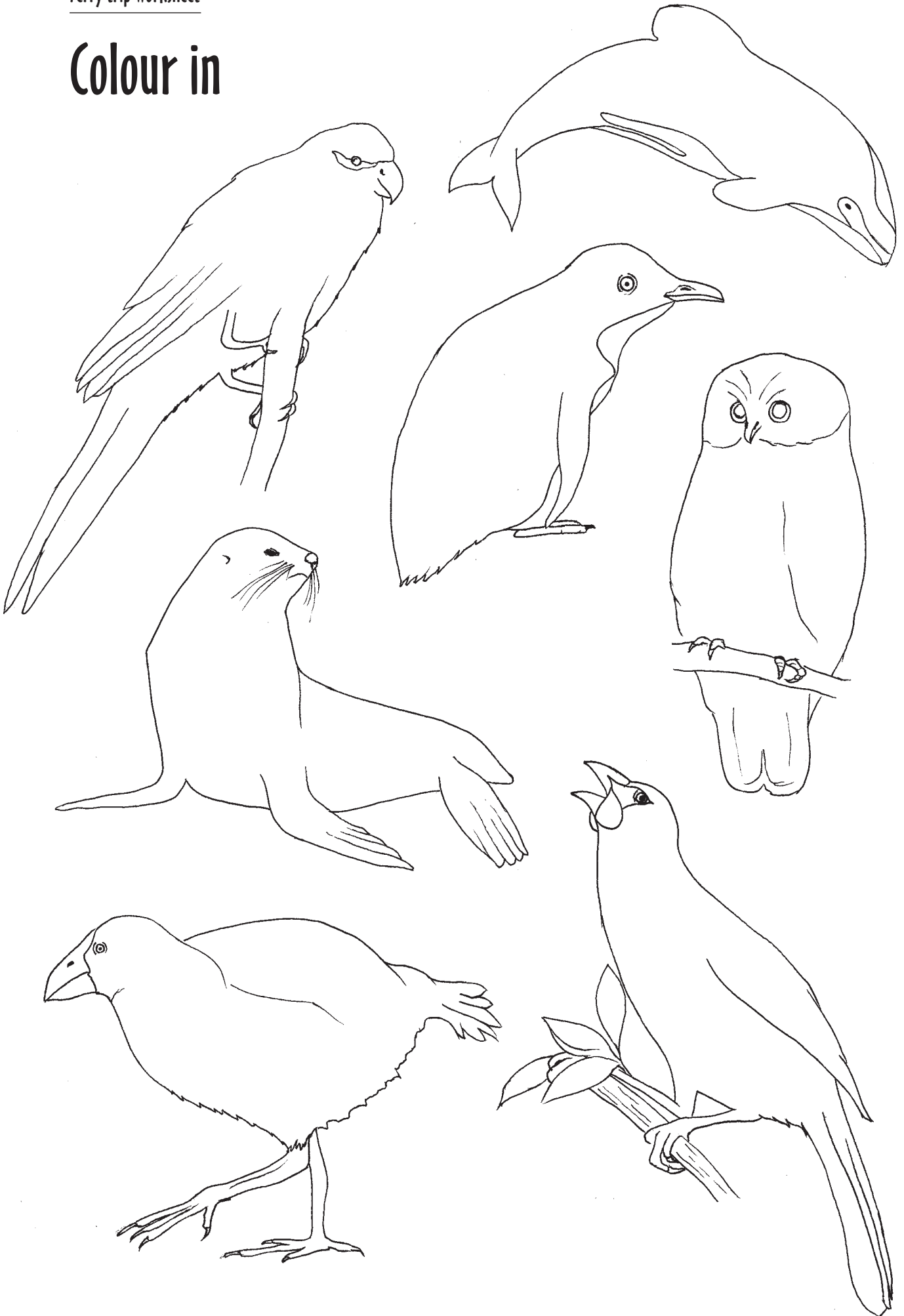
- Think about a monitoring system that would work to find out which habitat your animal prefers or where your animal likes to live?
- How can you test your animal's adaptations, to see these in action?
- As a scientist, what sort of observation techniques help you to see how your animal lives and survives?

Additional work

If your animal was on the mainland of Aotearoa/New Zealand, what would it need to survive? What sort of scientific systems could you put in place to monitor its success?



Colour in



Find who the bird is



What animal am I?



1 I am a green bird with red above my beak and blue under my wings.

I often feed along the sides of the tracks on Tiritiri Matangi.

I like to eat grass seed, fruit and flax seeds and sometimes I destroy the flax flowers.

I make loud chattering calls when I am flying.

I AM A _ _ _ _ _ (Māori name _ _ _ _ _)

2 I have a shiny green back and dark green stripes on my chest and head.

I lay my eggs in the nests of small birds, mostly grey warblers.

In winter I migrate to the Solomon Islands.

I return to breed in New Zealand in October.

I AM A _ _ _ _ _ (Māori name _ _ _ _ _)

3 I am New Zealand's largest insect and can grow to be heavier than a mouse or sparrow.

I look fearsome but I'm very docile.

During the day I usually hide in dead foliage such as the drooping dead fronds of tree ferns.

At night I move around in the trees feeding mainly on leaves of native trees.

I AM A _ _ _ _ _)

4 I am a dark brown nocturnal bird.

I am a natural predator on Tiritiri Matangi.

I hunt at night, eating large insects and small birds.

During the daytime bellbirds and saddlebacks sometimes mob my roosting place.

I AM A _ _ _ _ _ (Māori name _ _ _ _ _)



Ferry trip worksheet

5 I am a large blue-grey bird with a black mask and long legs.

I leap around in trees and don't fly well.

When I am a chick I have pink wattles but they turn blue when I am an adult.

I used to be known as the organ bird because of my rich mournful calls

I AM A _____ (Māori name _____)



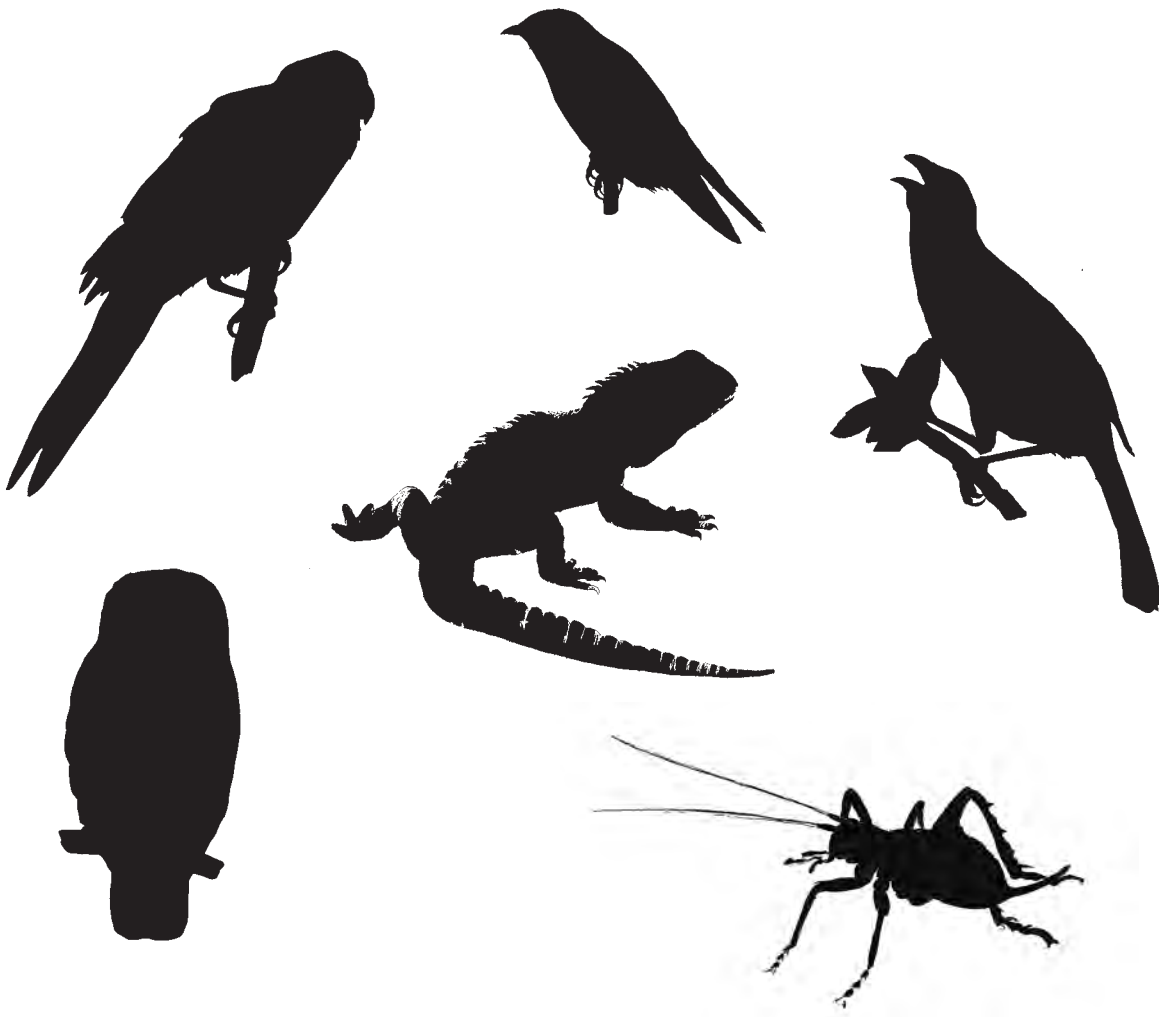
6 I am an ancient reptile, not a lizard, and can live up to 100 years.

My name in Māori means 'spiny back'.

My ancestors "knew" the dinosaurs.

I often live in old burrows dug by seabirds.

I AM A _____



Tiritiri Matangi word search

I	O	H	K	O	W	H	A	I	J	K	N	I	K	S
W	E	K	M	A	T	A	T	A	K	A	H	E	D	R
D	N	D	C	O	K	E	K	U	P	X	A	L	F	O
D	I	A	W	A	K	A	W	A	K	A	W	I	P	T
C	B	E	L	L	B	I	R	D	I	O	D	G	O	I
K	O	M	S	T	V	E	R	I	K	H	R	H	H	S
Q	R	D	Q	U	A	I	L	A	K	I	I	T	U	I
C	S	J	R	Z	B	O	K	D	F	I	O	H	T	V
Q	N	U	B	N	L	O	A	L	D	U	U	O	U	D
U	R	E	R	E	K	R	E	G	T	A	S	U	K	R
S	E	E	I	C	A	M	Z	O	M	E	S	S	A	O
J	F	W	E	T	A	P	U	N	G	A	K	E	W	J
C	I	G	A	N	G	W	H	I	T	E	H	E	A	D
K	N	U	W	H	A	R	F	K	V	V	Q	O	I	Q
R	T	I	R	I	T	I	R	I	R	U	P	Q	E	T

Can you find the following Tiritiri names in the word search above?

BELLBIRD

TĪEKE

KĀKĀRIKI

ROBIN

KŌWHAI

FLAX

PŪRIRI

WHARF

SADDLEBACK

PĪWAKAWAKA

TŪĪ

KŌKAKO

DOC LIGHTHOUSE

TIRITIRI

KAWAKAWA

RURU

SKINK

GECKO

QUAIL

WHITEHEAD

FERNBIRD

PŌHUTUKAWA

VISITORS

WETĀ

MĀHOĒ

TOUTOUWAI

KERERŪ

TAKAHĒ

HIHI

RIFLEMAN

FERNS

PŪKEKO

WĒTĀPUNGA

MĀTĀTĀ

TUATARA

KIWI





Illustration: Chris Gaskin

Can you find the endemic birds and native plants in the forest?

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> Kōkako (2) | <input type="checkbox"/> Tūi | <input type="checkbox"/> Toutouwai/ North Island robin | <input type="checkbox"/> Kohekohe flower |
| <input type="checkbox"/> Korimako / Bellbird | <input type="checkbox"/> Tīeke Saddleback | <input type="checkbox"/> Kererū / Native pigeon | |
| <input type="checkbox"/> Kawakawa (2) | <input type="checkbox"/> Hihi / Stitchbird | <input type="checkbox"/> Tītītipounamu / Rifleman | |

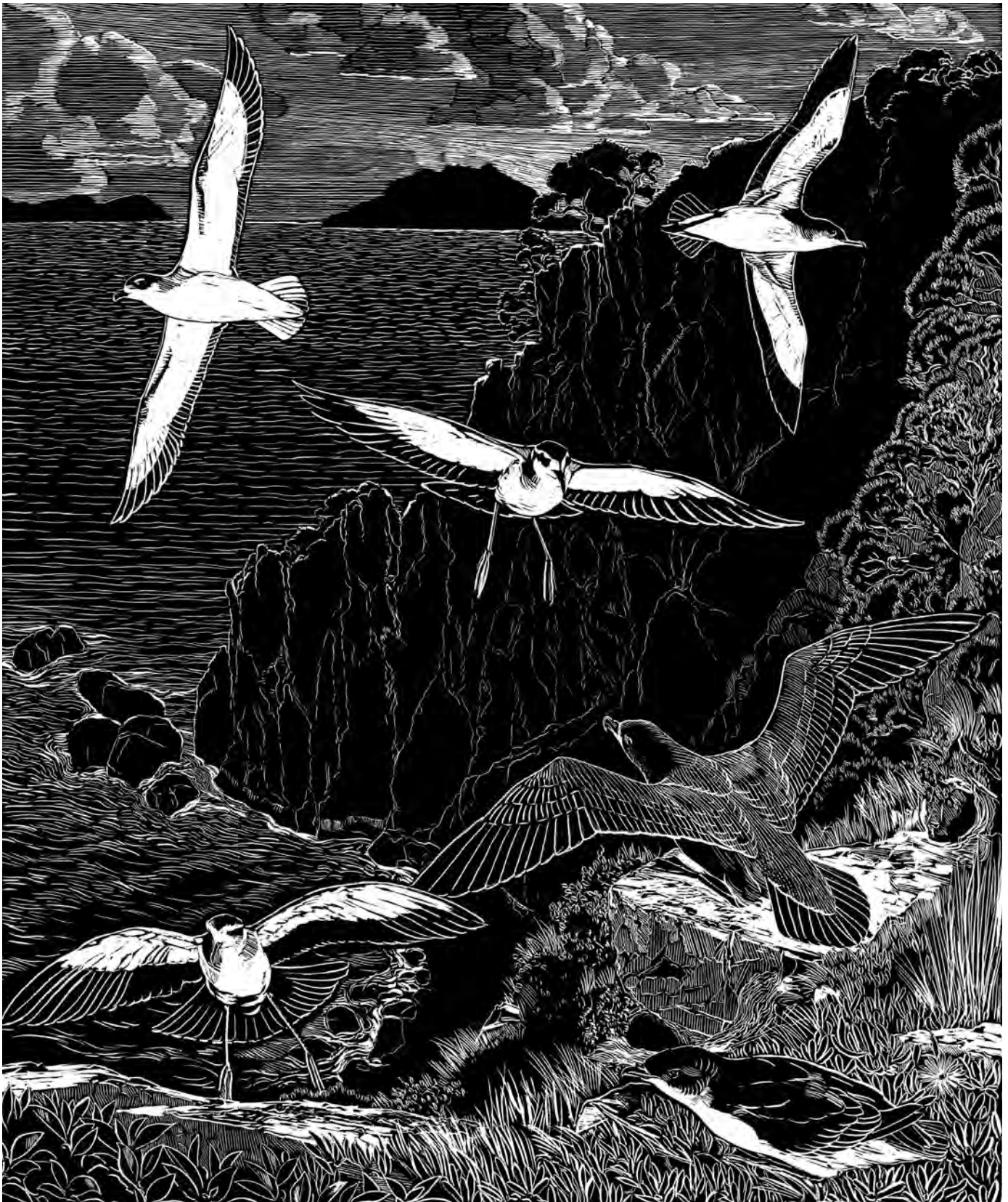


Illustration: Chris Gaskin

Can you identify these birds on the cliffs of Tiritiri Matangi?

Tītī / Cooks' petrel

Pakahā / Fluttering shearwater

Ōi / Grey faced petrel

Kuaka / Common diving petrel

Takahikare-moana / Whitefaced storm petrel

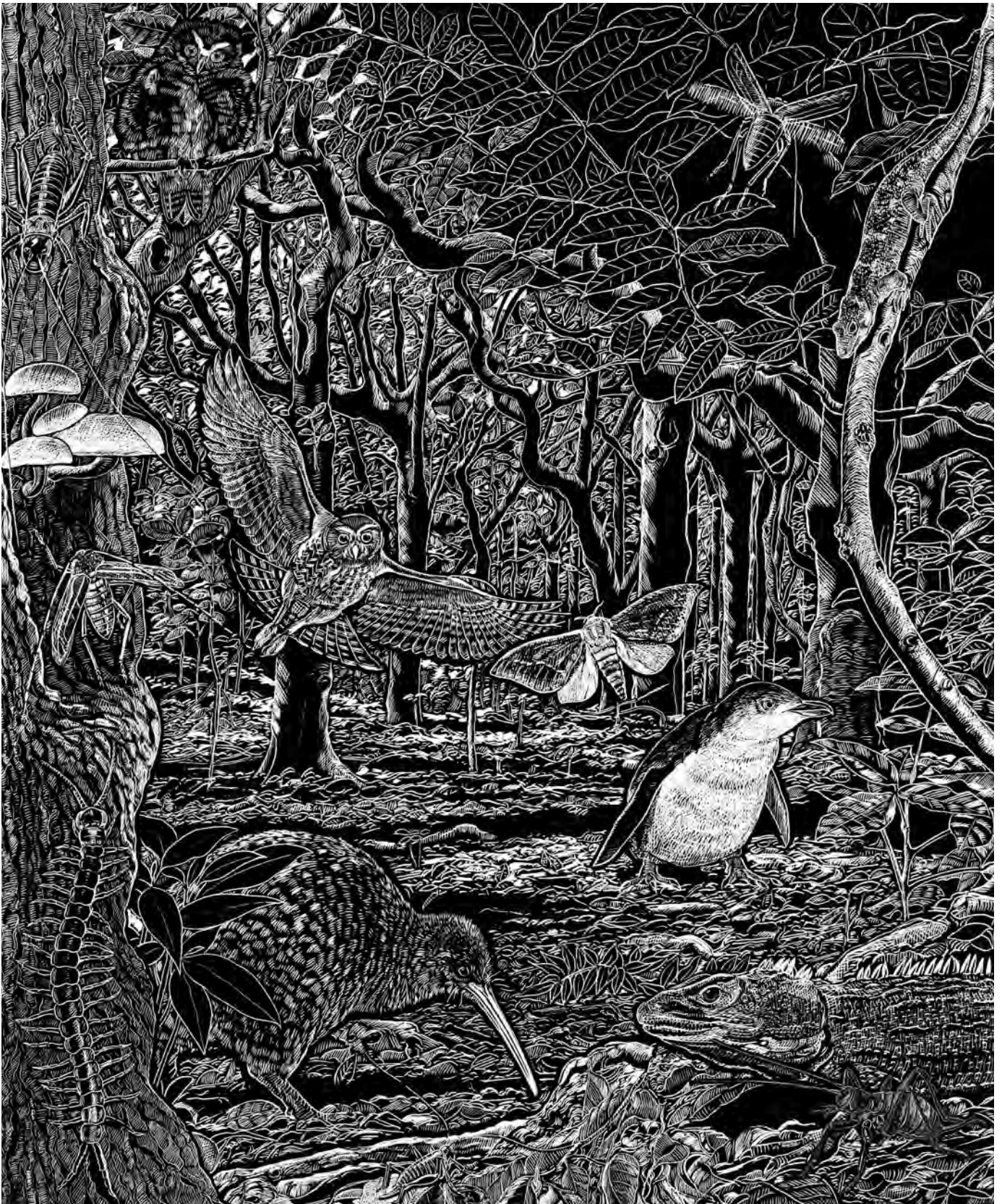


Illustration: Chris Gaskin

Can you find these creatures in the night scene on Tiritiri Matangi?

- | | | | |
|---|--------------------------------------|--|--|
| <input type="checkbox"/> Kororā / Little blue penguin | <input type="checkbox"/> Fungi | <input type="checkbox"/> Duvacel's gecko | <input type="checkbox"/> Kiwi pukupuku / Little spotted kiwi |
| <input type="checkbox"/> Ruru / Morepork (2) | <input type="checkbox"/> Tuatara | <input type="checkbox"/> Giant centipede | <input type="checkbox"/> Wētāpunga |
| <input type="checkbox"/> Tunga rere / Huhu beetle | <input type="checkbox"/> Pūriri moth | <input type="checkbox"/> Tree wētā | <input type="checkbox"/> Ground wētā |

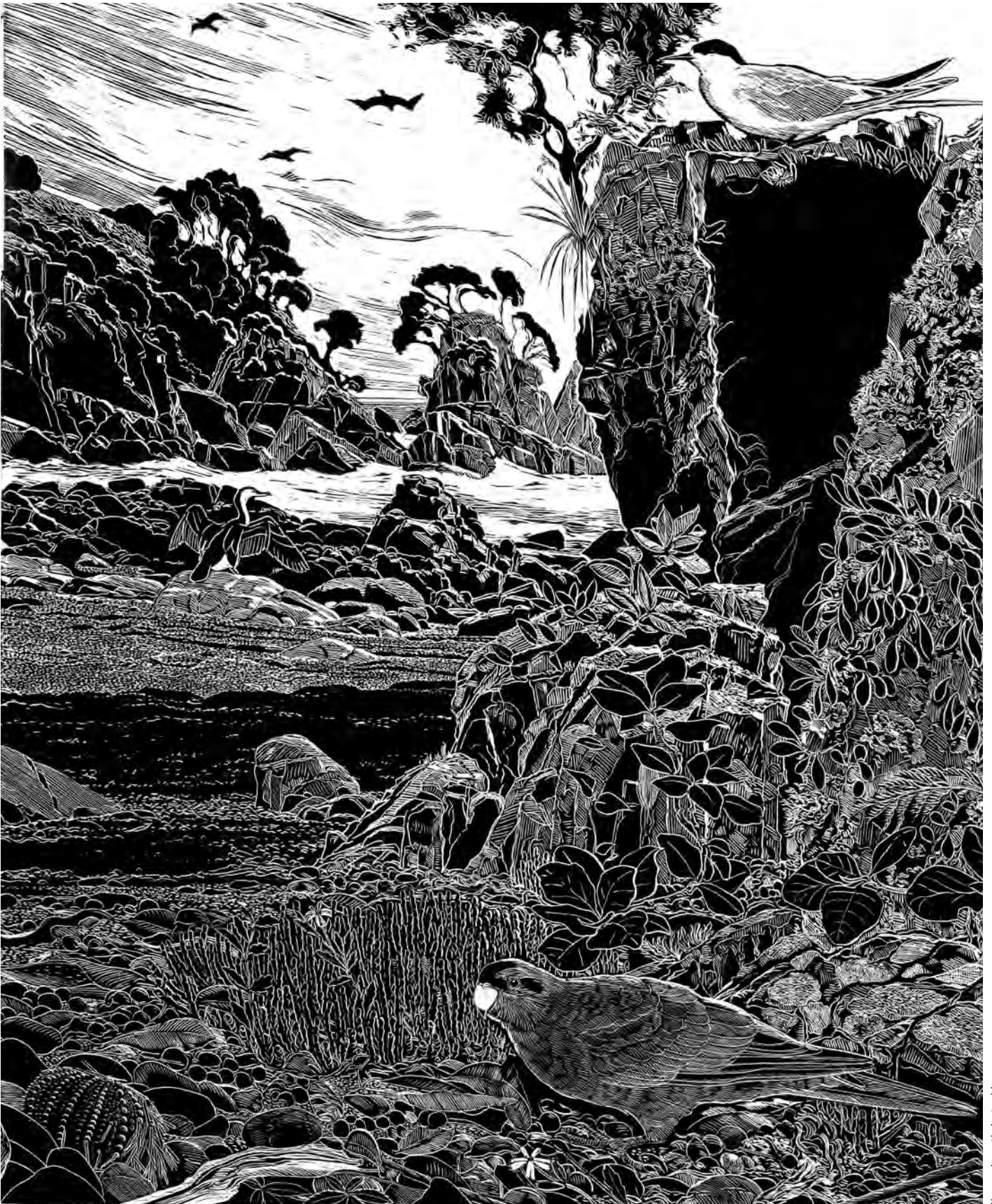


Illustration: Chris Gaskin

Can you find these in the beach scene at Tiritiri Matangi?

Kākāriki

Tara / White fronted tern

Kāruhiruhi / Pied shag

Kina shell

Back at school activities

Reflection activities

- Create a mind map or reflection board of the things you learnt from your visit to Tiritiri Matangi.
- Design a learning activity about Tiritiri Matangi Island to share with your class.
- Sharing or presenting findings:

Help or harm? Common or endangered?

Tiritiri Matangi Island and other special places in Aotearoa/New Zealand provide safe habitats for our native/endemic creatures that are endangered. We should also look after those that commonly live around our backyards, city parks and in mainland bush, streams and seashores.

Choose a native/endemic bird, insect, marine organism and reptile and start thinking about what top box it fits into!

Native/endemics that are common	Native/endemics that are endangered
Ways we might harm natives/endemics	Ways we might help natives/endemics

What can you do to help the environment at school and at home?

DOC website: <https://tinyurl.com/y7lkzkan>

Be aware of your environment

Is there anything to attract birds in your area?

- **Plant trees:** This is one of the most positive and useful things you can do, but remember: it's after the planting that the really important work has to happen. Newly-planted trees must be looked after properly until they are safely established and can survive without help.

Without long-term care, trees will not grow well and may even die out. What a waste of energy and enthusiasm that would be.

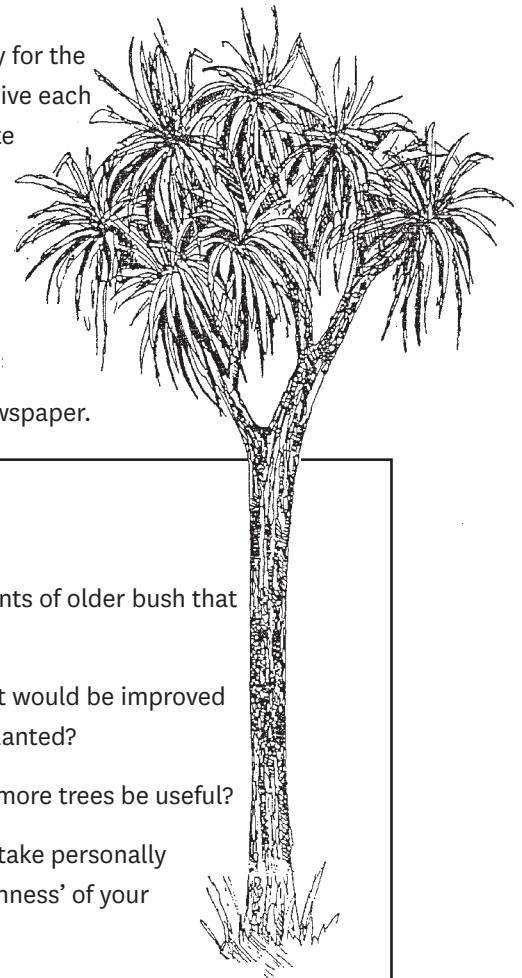
- **Weeds – the invaders:** Before you plant, clear away any long grass and weeds from the area.

After planting, weed around new trees twice a year (late autumn and late spring) for the first two or three years, or until the trees are well established. It's easier to weed after rain. Be careful not to disturb the roots of the tree.

- **Water:** Trees need water immediately after planting and regularly for the first 2 to 3 years. During long dry spells, water trees once a day. Give each tree at least half a bucket full of water at a time so it will penetrate right down to the roots.

- **Natural shelter:** Harakeke/flaxes, mānuka, kānuka and tarata will provide good protection for less hardy trees to be planted in later years.

- **Artificial shelter:** Shade cloth staked right around the trees or on the side of the prevailing wind, hay bales or bales of old newspaper.



Student activity: Survey your neighbourhood trees

- How will you go about your survey?
- How will you record your data (e.g. graph, list, result chart)?
- Where are the trees growing?
- How old are they?
- Why were they planted?
- Are there any remnants of older bush that have been saved?
- Are there places that would be improved if more trees were planted?
- Why could planting more trees be useful?
- What steps can you take personally to improve the 'greenness' of your neighbourhood?

Encourage birds to your garden

Here is a list of useful food sources for native birds. Several will be too large for a town garden and some will grow slower than others. Just check out your local plant nursery – there will always be some that suit your place!

The birds will love you for it and you will get a lot of fun out of watching the passing parade of birdlife.

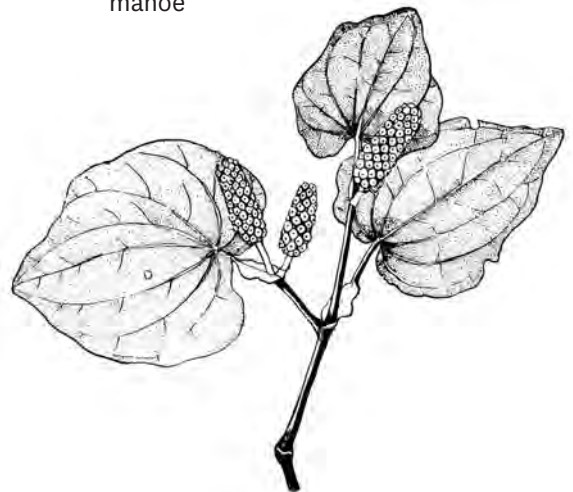


1 Nectar sources

kohekohe	tī kōuka/cabbage tree	kōnini
hangehange	rewarewa	pōhutukawa
harakeke/flax	karo/pittosporum	tecomanthe/ Three Kings Vine
pūriri	haekaro/pittosporum	whauwhaupaku/five finger
kōwhai	tarata/lemonwood/pittosporum	houpara/coastal five finger

2 Seeds and/or berries:

pūriri	makomako/wineberry	patē	haekaro
taraire	nīkau	tawa	tarata
tī kōuka/cabbage tree	whauwhaupaku/five finger	houpara	karo
kahikatea	mataī	karaka	
kohekohe	miro	tōtara	
kōnini	porokaiwhiri/pigeonwood	māhoe	
kawakawa	karamū/kawariki/coprosma		



Big question: To have or not to have feeders?

1 Background

Feeding birds is fun and allows for close interaction between people and birds, with people gaining the feel-good factor, but this is not a positive outcome for the birds. Providing feeders means that an unnatural number of birds are congregated in one small space and many of the birds are exotic/introduced and not native/endemic birds. The larger more aggressive blackbird, feral pigeon, myna, tūi and starling compete and crowd out the smaller birds, particularly the native/endemic birds. Busy garden bird feeders also have a negative impact by crowding out and disturbing the insect-feeding endemic grey warbler, which needs foraging space to find insects.

Another serious factor is that disease is easily spread among birds concentrated in one area and there is an increased risk of disease being passed from birds to humans. House sparrows are ranked the number one carrier of salmonella.

Many New Zealand native/endemic birds feed on nectar, fruit and/or insects and will not be able to eat bread or grains. Studies have shown that even grain-feeding birds have problems (they are unable to form egg-shells) if they eat too much bread with few nutrients.

Reference: Josie Galbraith PhD research; *To Feed or Not to Feed*.

Student activity: Research 'Is it good to feed birds?'

Read Josie Galbraith's research: Why you should think twice before feeding birds bread:
<https://tinyurl.com/pu5f2sg>



Student activity: Discussion

As a class, discuss or debate the pros and cons of having bird feeders in the garden.

2 What you can do

- Provide a regular **supply of clean water** for birds in your area.
- Set up **supplementary feeders only during the winter months** but carefully monitor the behaviour and ratio of birds coming to the feeder. If it is dominated by an aggressive territorial bird, this will affect all the other birds in the area and you may have to stop the supply of food.
- Do not use bread but support the nectar-feeding birds by setting up simple feeders and provide water, sugar water and fresh fruit or the mixture suggested for pine cone feeders.
<https://tinyurl.com/y9prlleu>
- Think about safe places from cats for the feeders so they can be viewed unobtrusively/quietly by the class.

Student activity: Observing the feeders

- Do you see more birds of the same species or more different species?
- What happens over time?
- Describe the birds behaviour?
- Draw them feeding or washing themselves.
- Take a winning photo.

The plastics problem

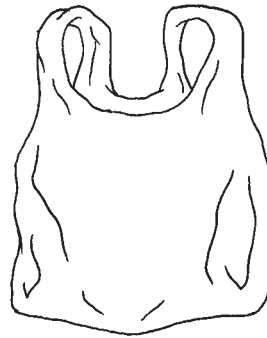
Studies have shown that about 80 percent of marine pollution comes from the land (MfE, 2015). Rubbish in the ocean and on our coasts harms marine life, who get caught in it or mistake it for food.

For more information about the impact of marine pollution on marine life, visit:

Sustainablecoastlines: <https://tinyurl.com/y88bkaq4>

Chris Jordan: <https://tinyurl.com/2enwu7o>

Note: some images may be disturbing as Chris has photographed birds and other marine life which have died with plastics in their stomachs.



Take action

- **Reduce your rubbish** – by using products that create less rubbish, and by disposing of waste correctly, we can keep marine environments litter free. Try packing a waste-free lunch: www.epa.gov/students/pack-waste-free-lunch
- **Do a beach clean up** – picking up other people's rubbish, if it is safe, is an easy way to help reduce pollution on our beaches and in the ocean. Visit the Love your Coast website, www.loveyourcoast.org, to see if any clean-up events are happening in your area. If there aren't any, you could organise your own!
- Most stormwater drains found on our streets run straight out to sea. Watch the 'Waste Warriors' cartoon to learn more about this: <https://tinyurl.com/y88bkaq4>. Drain art is a fun way to **increase awareness** about this. Design a picture or sign to be placed near a drain to remind people that the rubbish and chemicals that go down the drain goes into streams, and then into the ocean.

Reference: Ministry for the Environment 2015:

www.mfe.govt.nz/marine/marine-pages-kids/how-you-can-reduce-marine-pollution.

Traditional foods of Māori



Reference: www.teara.govt.nz/en/maori-foods-kai-maori.

Tiritiri Matangi was used by Māori searching for food supplies.

What foods do you think were gathered by Māori from the island's bush, streams and surrounding area?

Fish / animals:

Plants:

Other animals:

Teacher notes with answer schedule

Immersion – Dive in!

Explore Tiritiri Matangi Website (page 5)

<http://www.tiritirimatangi.org.nz/home>

- Contact educator@tiritirimatangi.org.nz if experiencing difficulties with the Tiritiri Matangi website.
- Research the differences between **native**, **introduced (exotic)** and **endemic** from the Science Learn Hub website: <https://tinyurl.com/j7czleq> and download the endemic, native or introduced PowerPoint (2 MB).

Tiritiri trip preparation – Define and ask

Understanding human impacts (page 8)

Human negative impacts	Human positive impacts
Non-biodegradable lunch wrappings	Rubbish-free lunches
Habitat loss	Planting of native trees, shrubs and grasses
Invaders introduced to New Zealand (pests and weeds)	Regular pest control
Non-biodegradable plastics and general rubbish in the seas	Strict recycling. Using compostable shopping bags and wrappings. Homes have composting systems.
Burning of fossil fuels	Sustainable fuel methods, e.g. wind and solar power
Overfishing	Limits on fish catch
Hunting of native/endemic animals, chopping down protected native trees	Protection for all native/endemic species. Parks and sanctuaries set up
Monoculture farming methods reduce biodiversity with negative impact on the soils	Enviro-friendly farming practices using organic farming methods

Create a pest-free classroom lesson plan (page 8)

This can be adapted for all years.

Resources required:

- Photocopy and laminate copies of the Treasure Islands Biosecurity Flyer from <https://tinyurl.com/y9fndty9>
- Poster-making materials
- Gloves
- Plastic tweezers – optional
- Brushes for cleaning shoes with buckets/boxes for storage
- Plastic petri dishes or equivalent
- Hazard jackets for student officers.

Biosecurity definition: Protection from biological harm: the protection of the environment, and health of living things from diseases, pests, and bioterrorism.

	Conditions for a pest free room
1	Paper, recycle bin and a closed food bin for composting
2	No cats
3	To have clean shoes when coming into the room
4	Closed bags
5	Check point/quarantine bay
6	Sustainable lunches

Websites:

www.tiritirimatangi.org.nz/home

www.treasureislands.co.nz

www.doc.govt.nz/nature/pests-and-threats/

www.doc.govt.nz/nature/pests-and-threats/animal-pests/

www.doc.govt.nz/parks-and-recreation/know-before-you-go/visiting-pest-free-islands/

The ecology of Tiritiri occupants (page 12)

Bird species on Tiritiri – exemplars

Name	Native or endemic or non-native (introduced)	Habitat	Adaptation (survival feature)	How adaptation helps survival	Photo or illustration
Tieke/ saddleback	Endemic	Bush, forest, among flax, maybe seen on beach.	Strong, chisel-shaped, pointed beaks.	Helps with insects among the leaf litter and digging into rotting logs.	
Toutouwai/ North Island robin	Endemic	Lower forest area and at ground level.	Often tremble one foot on the forest floor.	Induces prey to move in response to the vibrations.	
Takahē	Endemic	Grasslands and bush area. Originally widespread around New Zealand.	Strong, large red beak.	Beak helps with pulling grasses from out of the ground and with defence.	

Other wildlife on Tiritiri – exemplars (page 13)

Name	Native or endemic or non-native (introduced)	Habitat	Adaptation (survival feature)	How adaptation helps survival	Photo or illustration
moko skink	Endemic	Coastal areas. under logs and stones and in clay banks	Gives birth to live young	In cooler environments eggs do not survive so well	
Tree wētā	Endemic	Common where there are trees	When disturbed arcs hind legs into the air	Arched legs strike downwards, so the spines could scratch the eyes of a predator	
Pepe parariki -Copper butterfly	Native	Found in open areas near pohuehue - wire weed	Some caterpillars/ larvae enter a resting stage for several months (diapause).	Increases chances of survival in harsh weather conditions.	

Plant species on Tiritiri – exemplars (page 14)

Name	Habitat	Adaptation (survival feature)	How adaptation helps survival	Photo or illustration
Coastal kōwhai	Western coastal areas of New Zealand.	Flowers contain nectar.	Nectar attracts nectar-feeding birds which help with pollination.	
Pūriri	Coastal and lowland forest in the upper half of the North Island.	Long flowering and fruiting period.	Provides a good supply of seeds for dispersal by birds.	
Karo	Along forest margins and streams in upper third of the North Island.	Tough, leathery green leaves with whitish, dense hairy under-surface.	Tough leaves cope with dry, salt-laden winds.	

1. Food chains

- a) Kawakawa fruit → kererū → kahu/Austrasian Harrier
- b) Kawakawa leaves → Kawakawa caterpillar → pōpokatea/whitehead → ruru/morepork

2. The arrowed lines represent where an animal gains its food from ie the energy flow through the community.

Bird observation/inquiry (page 16)

Find a quiet area in the school grounds to observe male and female blackbird interactions. The male birds in springtime are very territorial.

When out on Tiritiri, observe the tīeke/saddleback behaviour, noticing the differences and similarities to the behaviour of the blackbirds.

Matching words to their meanings activity (page 19)

endangered	likely to become extinct if not managed properly
fledged	fully feathered, able to fly
pest	a nuisance and competitor to the native/endemic organisms
migrant	a species that moves annually or seasonally between breeding and non-breeding seasons
moult	the annual replacement of feathers
endemic	found only in a certain country and nowhere else
incubate	develop and hatch young birds in eggs by sitting on the eggs to keep them warm.
introduced	brought to New Zealand by people
predator	an animal that takes birds or their eggs or chicks
plumage	a bird's feathers
native	naturally found or self-introduced
juvenile	birds in their first plumage

Checklist for the school trip (page 20)

Necessary items: day pack, lunch, walking shoes, water bottle, snacks, sun hat, sun cream, medication, rain jacket

Optional items: binoculars, camera, ipad, cell phone, ipod, pen, pencil, paper, umbrella, suit case.

Items not to go to Tiritiri: matches, family dog, heater, barbecue, pot plant, nail polish, all my school books, best shirt, a bag of toys, bike, pet cat, high heel shoes, tent.

Exploring and thinking

Resources for the field trip (page 23)

Match the names of the birds

Common	Māori
Swamp hen	Pūkeko
Whitehead	Pōpokotea
Variable oystercatcher	Tōrea
Parakeet	Kākāriki
North island robin	Toutouwai
Morepork	Ruru
Stitchbird	Hihi
Saddleback	Tieke
Grey warbler	Riroriro
Blue wattled crow	Kōkako
Rifleman	Tītipounamu
Bellbird	Korimako
Notornis	Takahē
Kingfisher	Kōtare
Fernbird	Mātātā
Fantail	Pīwakawaka
Little spotted kiwi	Kiwi pukupuku
Shining cuckoo	Pīpīwharau
New Zealand pigeon	Kererū/kūkū/kūkupa
Little penguin	Kororā
Australasian harrier	Kahu

Version one: Scavenger hunt at the Visitor Centre (page 26)

Outside the Visitor Centre

Something orange?

Orange back on saddleback

Bird with a white poi?

Tūi

A leaf with many holes?

Pepper tree leaves/kawakawa

Name birds at the feeder?

Tūi, korimako/bellbird, hihi/stitchbird

Little spotted kiwi Māori name?

Kiwi pukupuku

Small, round and red on a tree?

Berries on big pūriri tree

Hihi is Māori name for?

Stitchbird

Something tall, old and white?

Lighthouse

Something we cannot touch?

The birds

Where there is a great view?

On the verandah of the watch tower

Something takahē eat?

Grass, insects, skinks

Birds at the memorial tree?

Greg & Mr Blue, both takahē

Daphne the shelduck/paradise duck

Footprints in concrete are on the path near the toilets, made by a takahē.

Inside the Visitor Centre

A day scene animal is?

Tūi, kererū, kōkako, hihi/stitchbird, toutouwai/robin

A night scene animal is?

Wētā, kiwi, ruru, pūriri moth, tuatara

Who was Greg?

A friendly takahē

What is the name of our native owl?
Morepork/ ruru – inside the first showcase

What is Ranger Robyn holding?
Kōkako

The major sponsor is?
Supporters of Tiritiri Matangi Inc

Tiritiri Matangi in Māori means?
Buffeted by the wind

1938 invoice total food cost?
£2.78 = just over \$5 where £1 is approx \$2

Traces of Māori on Tiritiri?
Kūmara pits, middens, pā sites

Name the nearby Island?
Little Wooded Island

Find the female wētāpunga?
Female has a spike/ ovipositor at the end of her body

Who has the biggest egg?
Little spotted kiwi

Version two: Scavenger hunt (page 28)

Note: Activities that may be followed up after the trip are in *italics*.

Station one

The lighthouse:

- In what year was the lighthouse built?
1864, opened in 1865
- How tall is the lighthouse? 20m
- *Back at school/home: Carry out research to be completed in class on New Zealand lighthouses and how many are still operational.*

The colourful Islands of the Gulf sign out from the Watch Tower

- Find all the landmarks shown:
A fun interactive exercise.

- Favourite landmark? Any answer from the sign.

Five metal fence signs in front of the Watch Tower

- Check the history written on the five signs. Name the ship and in what year was the ship wrecked on Tiritiri? *SS Triumph, 1883.* Why did that happen? Captain fell asleep, left helmsman to sail and said to follow the light not the compass bearing. No one died.

Station two

Two signs on the fences alongside the Ranger's house

- Cartoon sign warning? Stop Thief Takahē will take your food.

Photo attached to the white picket fence round the ranger's house (towards the public toilets area).

- Find the year when the lighthouse keepers' houses were built? 1918.
- How many people are in the photo and what animal is present? 12 and a dog.

Being the detective on Tiritiri

- Footprints in concrete are on the path near the toilets; made by a takahē.

The Memorial Tree down the lawn from the bathrooms

- Resting place of takahē Greg and Mr Blue along with Daphne the duck.
- *Listening and writing exercise: A good exercise in the school grounds, creative students will enjoy it. Suggest a competition for most appealing poem produced by each group.*

Station three

Courtyard signs

Colourful signs to the side and in the courtyard of the visitor centre.

North Island Kōkako signs:

- The 'continuing threats' to kōkako numbers? Destruction, degradation of forests and introduced species.

Research at home or school how the North Island and South Island kōkako differ. There are interesting differences, and worth reading about. There have been sightings of South Island kōkako.

Kiwi signs

- Māori name of the little spotted kiwi – kiwi puku puku
- Note how many different species of kiwi are listed – five

Station four

Tieke/North Island saddleback signs

- Tieke is a close relative of what two birds? Kōkako and huia
- How can you help tieke? Join Supporters of Tiritiri, fund a tieke nest box, become involved in conservation activities.

Pāteke/ brown teal signs

- Explain why pāteke are easy prey to cats and dogs? They freeze when threatened.
- Discuss how we can help pāteke to increase in numbers.
 - Support Ducks Unlimited organisation,
 - Volunteer for pāteke recovery programmes,
 - Don't take dogs, cats or other predators into areas where pāteke live
 - ALWAYS ID when your target when out duck shooting

Station five

Takahē signs

- When were the takahē rediscovered? 1948.
- Takahē eat how much grass in a day? 8 metres of finger-sized green poo!

Endemic Nectar Feeders sign

- How many nectar feeders are listed, and what are their Māori and English names? Three nectar feeders: bellbird/korimako, tūi, hihi/stitchbird.
- Describe what tūi represented to Māori – Guardian bird of the door to the 12th heaven

Station six

Observational field skills

Observe four or more differences between takahē and pūkeko – one can fly, shape of body, legs, beak, the way they move, food preferences, breeding.

Back at school, research each bird: Shape, flight, family size, habitat, why is the pūkeko so successful whereas the takahē is endangered?

Station seven

- Observations at the feeder and water baths
At the front of the Visitor Centre sit quietly, without talking, for 6-7 minutes to observe the birds near the feeder and water baths. Note the interactions between the birds.
What birds are coming into the feeder?
Tūi, korimako/bellbird and some hihi.
Note any activity at the water baths – tūi, korimako/bellbird, kererū, sparrows, kākārīki can all come in at different times.
- Drawings of Tiritiri birds. Exhibit students' drawings.

Station eight

Inside the Visitors Centre

A day scene animal is?

*Tūi, kereru, kōkako, hihi – stitchbird,
toutouwai – robin*

A night scene animal is?

Wētā, kiwi, ruru, pūriri moth, tuatara

Who was Greg?

A friendly takahē

What is the name of our native owl?

Morepork/ruru – inside the first showcase

What is Ranger Robyn holding?

Kōkako

The major sponsor is?

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Traces of Māori on Tiritiri?

Kūmara pits, middens, pā sites

Name the nearby Island?

Little Wooded Island

Find the female wētāpunga?

*Female has a spike/ovipositor at the end
of her body.*

Who has the biggest egg?

Little spotted kiwi

A scientist on Tiritiri (page 35)

Activities during the second walk through the bush.

Years 8–10

Monitoring systems:

- Regular observations of known banded/tagged animals.
- 5 minute bird counts at set points.
- Slow walk bird counts along transect lines.
- Observations at the water baths.
- Observations at the feeders.
- Tracking tunnels that are monitored once a month on Tiritiri Matangi.

Reference websites:

<http://www.tiritirimatangi.org.nz/home> click on Learn on the top bar and study: birds, other wildlife.

<http://www.doc.govt.nz/nature/>

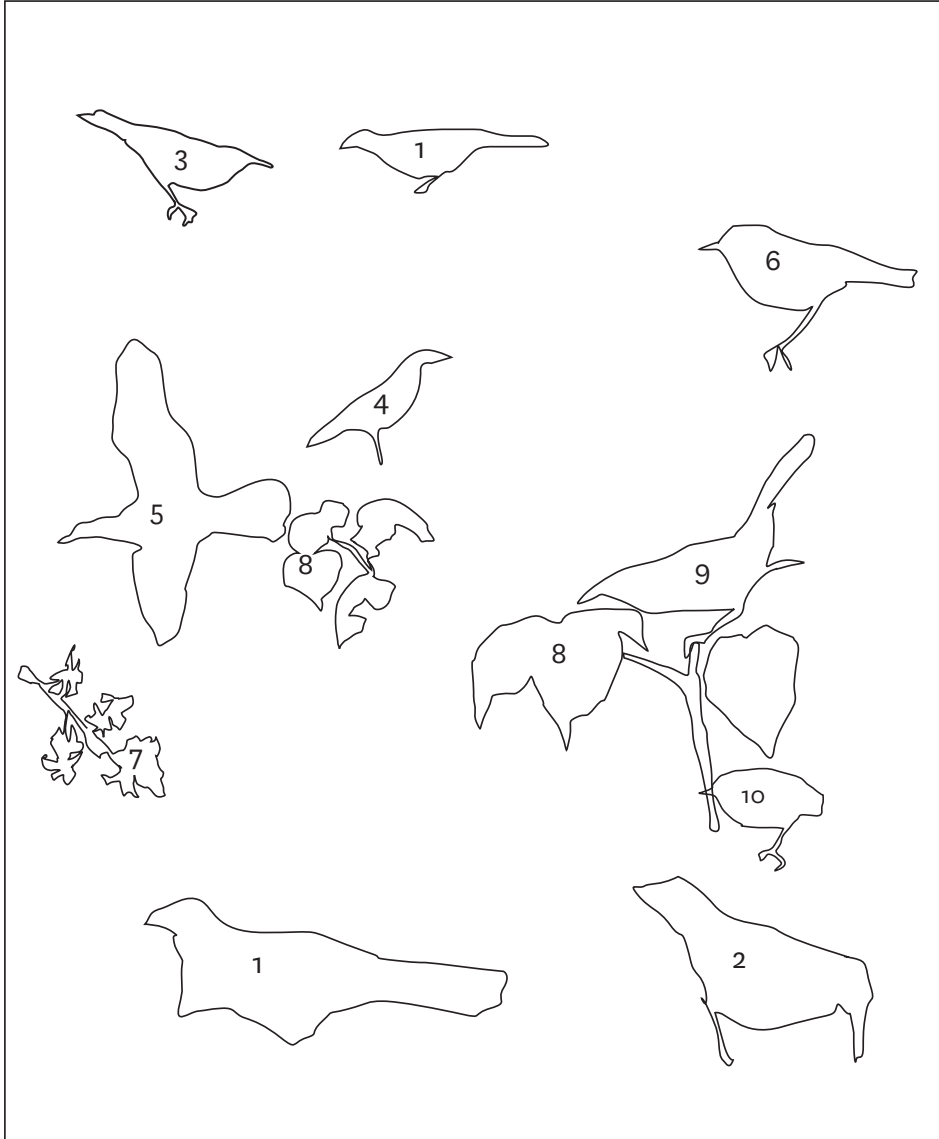
<http://nzbirdsonline.org.nz/>

Ferry trip worksheets (pages 36–40)

What animal am I?

1. Red-crowned parakeet/kākāriki.
2. I am a shining cuckoo/pipīwharau.
3. I am a wētāpunga.
4. I am a morepork/ruru.
5. I am a blue-wattled crow/kōkako.
6. I am a tuatara.

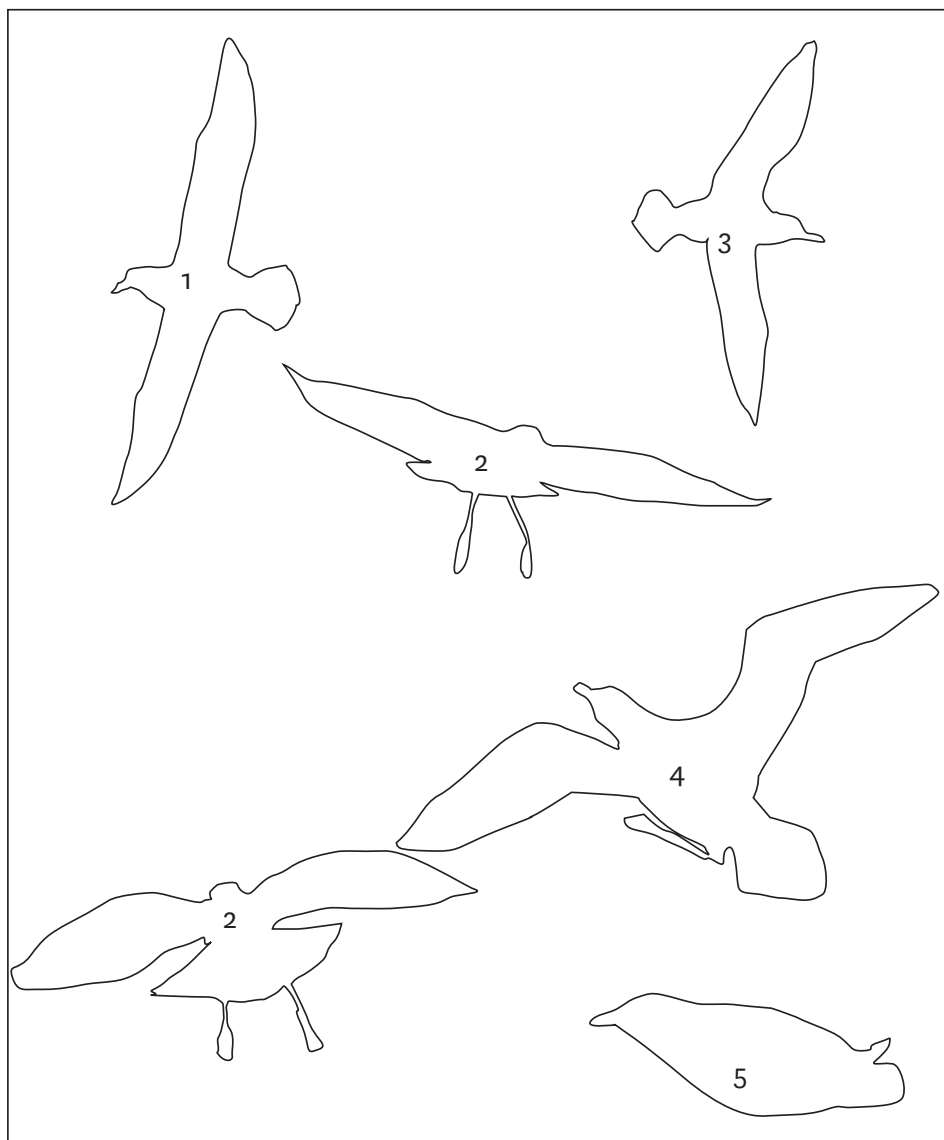
Ferry trip worksheet (page 41)



Can you find the endemic birds and native plants in the forest?

- | | |
|---------------------------|-----------------------------------|
| 1. Kōkako | 6. Toutouwai / North Island robin |
| 2. Tīeke / Saddleback | 7. Kohekohe flower |
| 3. Korimako / Bellbird | 8. Kawakawa |
| 4. Tūī | 9. Hiji / Stitchbird |
| 5. Kereru / Native pigeon | 10. Tītipounamu / Rifleman |

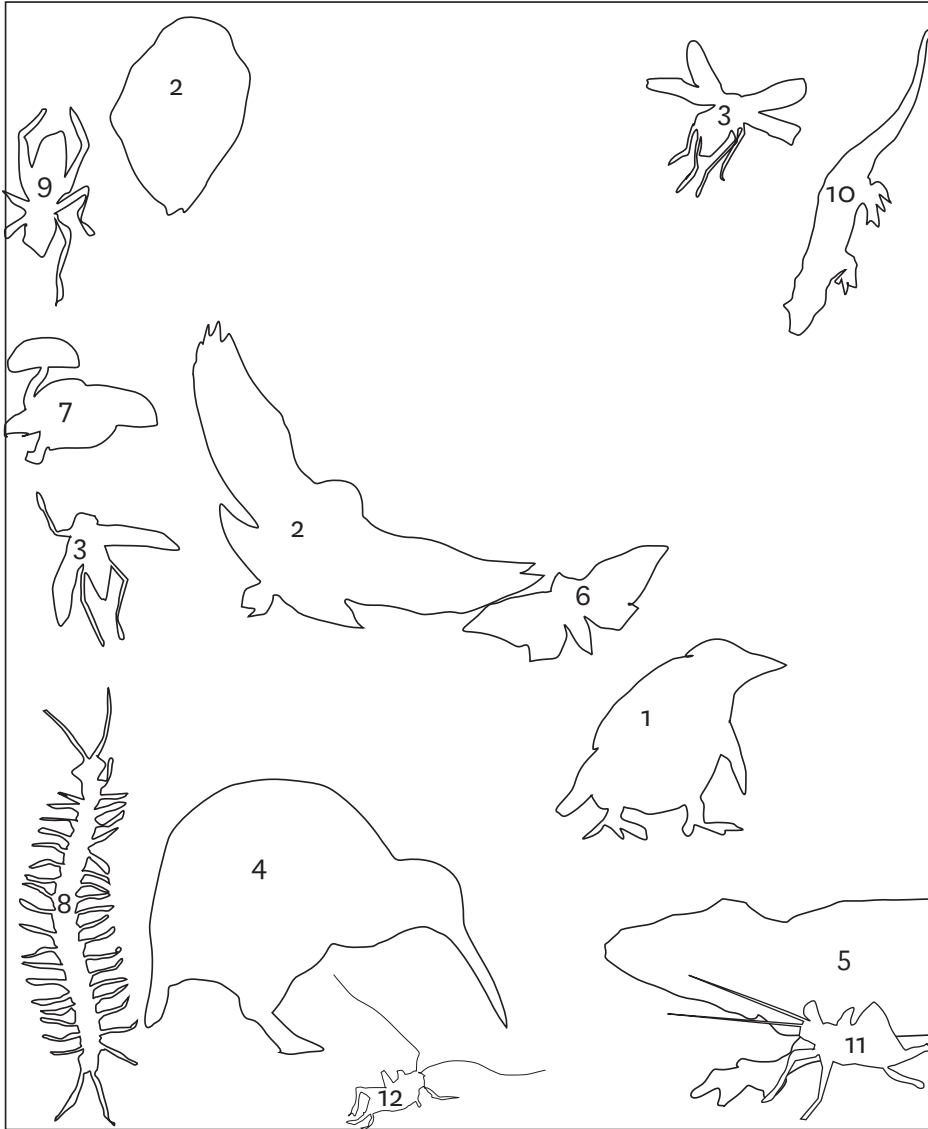
Ferry trip worksheet (page 42)



Can you identify these birds on the cliffs of Tiritiri Matangi?

1. Titi Cook's petrel
2. Takahikare-moana / Whitefaced storm petrel
3. Pakahā / Fluttering shearwater
4. Ōi / Grey faced petrel
5. Kuaka / Common diving petrel

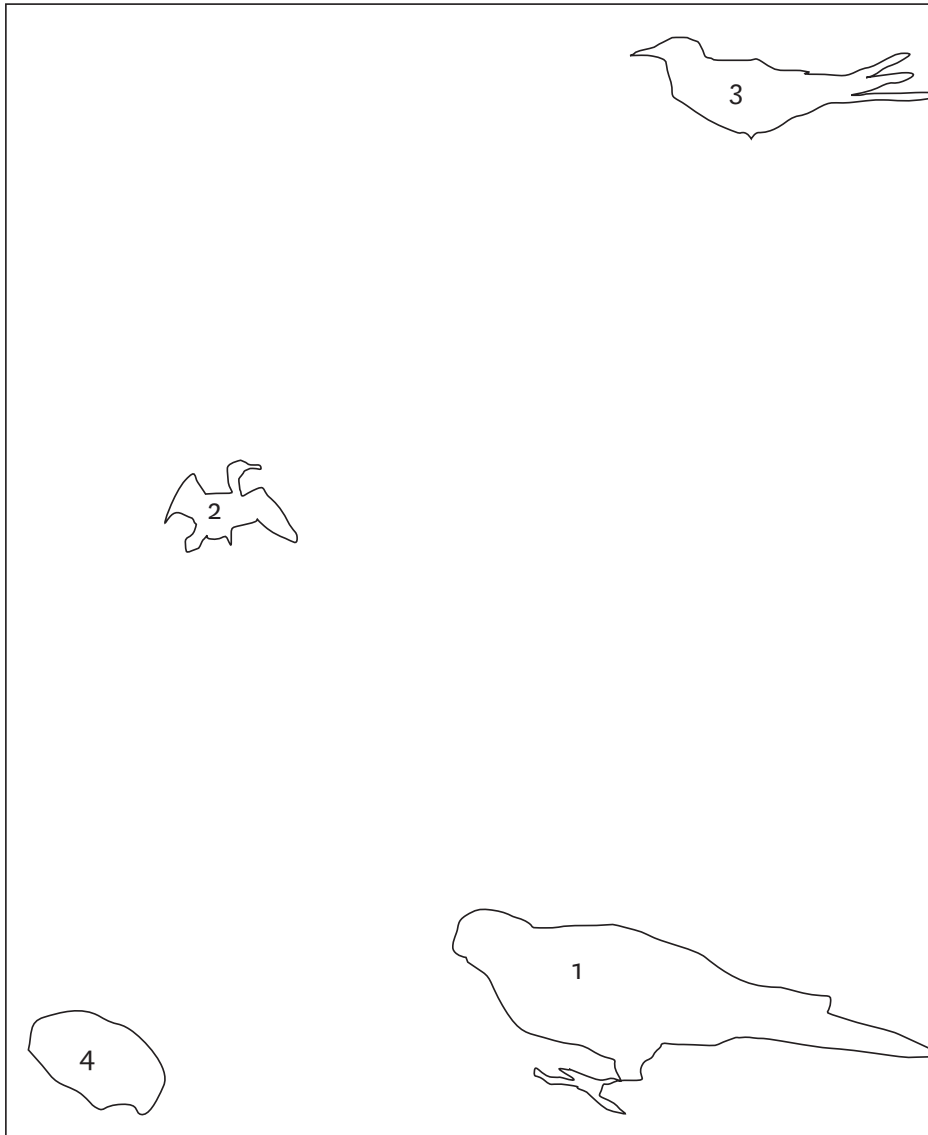
Ferry trip worksheet (page 43)



Can you find these creatures in the night scene on Tiritiri Matangi?

- | | |
|--|---------------------|
| 1. Kororā / Little blue penguin | 7. Fungi |
| 2. Morepork (2) | 8. Giant centipede |
| 3. Huhu beetle (2) | 9. Tree weta |
| 4. Kiwi pukupuku / Little spotted kiwi | 10. Duvacel's gecko |
| 5. Tuatara | 11. Wētāpunga |
| 6. Puriri moth | 12. Ground weta |

Ferry trip worksheet (page 44)



Can you find these in the beach scene at Tiritiri Matangi?

- | | |
|---------------------------|------------------------------|
| 1. Kākāriki | 3. Tara / White fronted tern |
| 2. Kāruhiruhi / Pied shag | 4. Kina shell |

Version one: Scavenger hunt at the Visitor Centre (page 26 – answers)

Outside the Visitor Centre

Something orange?

Orange back on saddleback

Bird with a white poi?

Tūī

A leaf with many holes?

Pepper tree leaves/kawakawa

Name birds at the feeder?

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Version two: Scavenger hunt (page 28 – answers)

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