# Matiu/Somes Island environmental education resource

3RD EDITION, JANUARY 2009





# Matiu/Somes Island environmental education resource

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Wellington Conservancy Department of Conservation P.O. Box 5086 Wellington 6145, New Zealand

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Cover: School pupils become acquainted with a female Cook Strait giant weta. Photo: Matt Barnett.

#### CONTENTS

S	Contacts	iv
	Environmental education	1
B.	Environmental education on Matiu/Somes Island	2
there are	Planning a trip to Matiu/Somes Island	8
Ð,	Curriculum links and activities	11
	Ecology, conservation and restoration People and the island today History	12 20 28
	Te Whanganui a Tara	33
A.	Formation of Wellington Harbour	34
44.1	Europeans arrive	35
	Ecology, conservation and restoration	38
E .	Animals of Matiu/Somes Island	41
17	Marine life	43
	Matiu/Somes Island diary	44
A.	Matiu/Somes Island timeline	47
Y	Bird presence and frequency survey	49
<b>MARK</b>	Template for action plan	51
103	Control options for weeds	52
	Tracking tunnels	53
1	Preservation versus use	55
100	People caring for Matiu/Somes Island	56
DESERVICIÓN DE CODE	Environmental Care Code	58
WATER ANT CODE	Water Care Code	59
in the	Ecosystem activity sheet	60
	Matiu/Somes Island school visit booking form	61

### Contacts

#### Matiu/Somes Island

#### Field centre supervisor

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#### **DOC Wellington Visitor Centre**

E-mail: wellingtonvc@doc.govt.nz Phone: (04) 384 7770 Fax: (04) 384 7773

#### **Department of Conservation Poneke Area office**

Phone: (04) 472 5821 Fax: (04) 499 0077 Website: <u>www.doc.govt.nz</u>

### Environmental education

If New Zealand is to have a sustainable future, environmental education is essential. Historically, schools have provided programmes for students to learn about the environment and provided learning experiences in the environment. Today, environmental education includes another vital component—education for the environment. It requires students to use knowledge, skills, and values they have acquired, to contribute to a sustainable future for New Zealand's natural, social and cultural environment. Teachers are encouraged to provide opportunities for students to access information that will enable them to debate issues and make informed decisions, and to take responsibility, through personal and/or groups actions, in addressing environmental issues.

This resource has been provided by the Department of Conservation, for teachers using Matiu/Somes Island as a focus for an environmental education programme.

#### Environmental education and the curriculum

The goal of the National Environmental Education Strategy is to enable people to make informed decisions about how they affect the environment and what they can do about this. The aims of Environmental Education are for students to develop:

Aim 1: Awareness and sensitivity to the environment and related issues;

Aim 2: Knowledge and understanding of the environment and the impact of people on it;

Aim 3: Attitudes and values that reflect feelings of concern for the environment;

*Aim 4: Skills* involved in identifying, investigating, and problem solving associated with environmental issues;

*Aim 5: A sense of responsibility* through participation and action as individuals, or members of groups, whanau, or iwi, in addressing environmental issues.

The Matiu/Somes Island education resources encourage these ideas in the following ways:

- The suggested activities encourage learning IN the environment—enabling development of skills, attitudes and values that students gain from experiences in the environment.
- Background notes and activities assist study ABOUT the environment—raising levels
  of knowledge. understanding, awareness and sensitivity to the environment and
  environmental issues.
- Fostering the opportunity to participate and take action and do something FOR the environment, either as an individual or a group.

#### **Curriculum links**

Environmental Education can be incorporated into any curriculum area. The *Guidelines for Environmental Education in New Zealand Schools* provide some excellent ideas. They also recommend using a cross-curricular approach, as this mirrors the interconnectedness and interdependence of the environment.

Different environments provide different learning opportunities and curriculum links. Suggested links to the curriculum are incorporated throughout this resource.

# The four key concepts underlying environmental education\*

#### 1. Interdependence

The relationships between all living things

#### 2. Sustainability

Reflected in the concepts of hauora (total well-being and balance with nature) and rāhui tapu (conservation).

#### 3. Biodiversity

The variety of all life on earth and the interrelatedness of all parts.

# 4. Personal and Social Responsibility for Action

Reflected in the concept of kaitiakitanga, respecting the environment, protecting the mauri of the taonga. People ensuring their actions do not cause environmental problems and taking positive action to help resolve existing environmental problems.

\* (pp. 9–13 Ministry of Education Guidelines for Environmental Education, 1999)



The Guidelines for Environmental Education in New Zealand Schools (Ministry of Education 1999) is a free publication and your school should have a copy of it.

For further information about environmental education refer to your school's copy of the guidelines or find them online at <u>www.tki.org.nz</u> > tki kete > communities > environmental education > guidelines. They are also available from Learning Media.

### Environmental education on Matiu/Somes

Matiu/Somes Island provides many opportunities for students to explore the environment, develop essential learning skills and address the key environmental concepts of interdependence, sustainability, biodiversity and personal and social responsibility for action.

Matiu/Somes is an island rich in social history offering a unique perspective on Wellington past and present. It is rodent free and is now a refuge for some of our living taonga (treasures), including the tuatara and giant weta. The island is only a 20-minute (8km) ferry trip from the central city, or 10 minutes from Days Bay.

Matiu/Somes is not only unique in its proximity to our capital city but also provides a unique position from which to envisage Kupe's view of Whanganui a Tara on his first voyage to Aotearoa in 14 AD. The island also provides a special opportunity to see where the first settlers arrived and where they built Wellington's first settlement; to learn about how the island has been used and changed during its use as a human and animal quarantine area; and to see the results of recent restoration work carried out by the community, enabling a safe refuge for some of our threatened native and endemic species. These aspects provide a wide range of learning contexts to meet the learning needs and interests of students of all ages and abilities.

This resource has been developed for teachers who wish to involve their students in environmental education both inside and outside the classroom. It focuses on three main topics for Matiu/Somes Island. For each of these topics (Ecology, conservation, and restoration, p. 12; People and the island today, p. 20; History, p. 28), key focus areas, curriculum links and suggested pre-visit, on-site and post visit activities have been developed.

The key concepts underlying environmental education interdependence, sustainability, biodiversity, personal and social responsibility for action—interweave throughout the suggested activities.

Brothers Island tuatara (photo: Brett Robertson).

Schools may hire a ranger to guide them around the island. Cost \$50 per class (approx. 30 pupils). Proceeds go to the Matiu/Somes Island Charitable Trust. To book a ranger, e-mail matiusomes@ doc.govt.nz; phone (04) 568 6555.

#### **Resources available for Matiu/Somes Island**

This publication is intended to provide you with information to plan a class study of and a trip to, Matiu/Somes Island. Information will be updated when appropriate.

A resource kit is available for loan when a class visit is booked. The kit includes display and reference material—photographs, newspaper clippings, books, plant and animal identification cards and some surprises—that will provide an instant display to promote pupils' interest.

The range of material makes it suitable for pupils from Y4/5–Y9. However, this is flexible and teachers of all year groups would find valuable information in this kit.

Activity packs are provided on the island. One backpack per class contains six identical group activity packs. Each contains:

- 12 laminated cards with map, information and exploratory activities on ecology (plant and animal life), social history, geology, and animal and human quarantine.
- Name tags for role-playing (People and the island today, p. 20).
- You must reserve these island activity packs using the school visit booking form, page 58.

The activity cards are also located on the DOC website: <u>www.doc.govt.nz</u> > getting involved > students and teachers >

students and teachers > fieldtrip by region > Wellington > Matiu/Somes education resource





#### Resources (Items listed in **bold type** are included in the loan kit)

Alla Fine del Mondo - To The Ends of the Earth. Elenio, Paul, 1995

Conservation of the Tuatara. MacIntyre, Mary, 1997

Field Guide to the Native Edible Plants of New Zealand. Crowe, Andrew.

#### Island of Secrets. McGill, David, 2001

Little Tuatara. Cunningham, Robin. 2005

Matiu/Somes Island: birds, stones and bones. Beautrais, Letteri, et al. 2002

#### New Zealand Weta. Gibbs, George

*Nga Reo o Te Whenua—The Voices of the Land.* Learning Media 1992. Legends associated with Wellington Harbour and NZ landforms.

#### Nga Taonga o te Ngahere – Treasures of the Forest. Paul, Tom 1991

Papa's Island. Drewery, Melani. 2006

Past Days in Lower Hutt and Petone. Kenneally, JM & BM

Rugged Landscape - The geology of Central New Zealand. Stevens, G. R. 1990

Somes Island – Matiu. Lower Hutt Branch of the Royal Forest and Bird Protection Society, 1990

Spineless Wonders. DOC

Tails and Scales – Resource kit New Zealand lizards. DOC

#### Take a Closer Look. DOC

Te Whanganui a Tara Wellington Harbour. East Harbour Environmental Association 1998

The Harbour is Our Home. Eastern Bays Little Blue Penguin Foundation, Inc. 1995.

The Land of Tara. Best, Elsdon

The Pioneers of Port Nicholson. McGill, David. 1984

The Weta Book - A Guide to the Identification of Wetas. Meads, Mike 1990

Tuatara: A living Fossil. Lutz, Dick. 2006

Tuatara – a resource kit for secondary schools. Baker, Robyn

#### Tuatara Photo Pack – WWF-NZ.

Wellington Harbour - A Heritage of Tara. Nelson, D. R.

Weta: A knight in shining armour. Cowley, Joy. 2002

Environmental Education Guideline. Ministry of Education, Learning Media. 1999.

#### **Environmental education websites**

#### www.doc.govt.nz

Department of Conservation website. Wide range of conservation information and teacher resources.

#### www.eednz.org.nz

Environmental Education Directory for New Zealand.

#### www.kcc.org.nz

Kiwi Conservation Club website – the kids side of Forest and Bird. Lots of really useful fact sheets, illustrations and stories for a variety of conservation issues with some activity suggestions.

#### www.biodiversity.govt.nz > up the creek

An adventurous journey up a waterway sets the scene for a lesson in freshwater conservation. Three friends travel up a creek to discover why they're not catching any whitebait. On the way they explore different freshwater environments and conservation issues.

#### www.arc.govt.nz > education

Auckland Regional Council website. Extensive environmental education site with on line lesson ideas, activities, worksheets and information for a variety of topics.

#### www.tki.org.nz > tki kete > communities > environmental education

The Ministry of Education's TKI site is developing an environmental education kete – it includes an online version of the EE Guidelines document, education activities, lesson and unit plans, as well as useful links.

## <u>www.english.unitecnology.ac.nz</u> > English units > English units for yrs 7-8 > endangered species

An online English unit plan on endangered species. Has links to other useful websites and resources.

#### www.tuitime.org.nz

Provides the basics of ecology, interactive games and activities for kids and is led by a tui character.

# <u>www.mfe.govt.nz</u> > working with you > what you can do? > ecological footprint calculator

Ministry for the Environment website. Enables you to calculate your personal ecological footprint based on New Zealand standards. Also has links to other environmental actions.

#### www.carbonzero.co.nz

Household and School Calculators will help you estimate the amount of  $CO_2$  that your household or school releases into the atmosphere through direct energy use and other activities.

#### www.landcareresearch.co.nz > education

Teacher and student resources and information on a variety of conservation topics.

#### www.kiwirecovery.org.nz

Kits, information, good artwork, all related to kiwis.

#### www.livingheritage.org.nz

Schools are encouraged to identify a unique piece of heritage in their community, such as a tree, person, or event, to research and record.

#### www.nwp.rsnz.org/

Water quality monitoring for students on rivers and other fresh waterways in NZ. Includes curriculum support materials, opportunities in waterways management, and field trip organisation and monitoring equipment support.

#### www.bush.org.nz/

New Zealand Ecological Restoration Network. A website with information on how to get involved in restoration projects (or start your own) and what's happening in your area.

#### www.biosecurity.govt.nz

Website about biosecurity issues in NZ. Includes facts, general information, education activities with curriculum links and links to other useful websites.

#### www.teachingonline.org > environmental education

A variety of lesson plan ideas including Environmental Education lessons and activities.

#### www.gw.govt.nz > get involved > community environmental projects

Learn about how you can help to look after water—great games and activities for students in the kids' section.

#### www.wwflearning.co.uk

Fantastic UK site with a Resource Bank full of Case studies of school EE programmes.

#### www.globalfootprints.org > quiz

Try this activity to assess the global footprint of your school - it can be quite illuminating!

#### www.nzpcn.org.nz

Information about native plants with emphasis on threatened species.

#### www.somesprisonersnz.net

History of Matiu/Somes Island as an internment camp for 'enemy aliens' during World War I and World War II

#### www.learnz.org.nz > field trips > Matiu/Somes Island

Take a virtual field trip to Matiu/Somes Island, see the wildlife, explore the history and enjoy the scenery. On this website you will find much of the information you need as well as a sample of what you will experience on your visit.

#### Related environmental education opportunities in Wellington

#### Te Papa

www.tepapa.govt.nz View exhibits on geology, marine and plant ecology.

#### Museum of Wellington City and Sea

**www.museumofwellington.co.nz** See/hear the legends related to the harbour, view exhibits related to Maori occupation and crafts, and early whalers.

#### **Otari-Wilton's Bush Native Botanic Garden**

www.wellington.govt.nz > search Otari-Wilton. View local and NZ endemic plant species.

#### Victoria University

**www.victoria.ac.nz** > Faculties & School > Faculty of Science > School of Biological Sciences > Tuatara@VUW. View tuatara in their glass enclosure—open to the public.

#### Wellington Zoo

www.wellingtonzoo.com Another place to learn about and view tuatara.

#### **Karori Sanctuary**

www.sanctuary.org.nz Compare Matiu/Somes with this 'mainland island'.

#### **Petone Settlers Museum**

www.huttcity.govt.nz Find out more about the early settlers.

#### **Greater Wellington**

www.gw.govt.nz Take action for water programme.

#### World Wilde Fund for Nature

www.wwf.org.nz Planting and restoration projects, enviroschools.

#### **Trash Palace**

**www.pcc.govt.nz** > Consents & Services > Recycling & Rubbish > School Resources. Porirua Environment Centre, waste education.

#### **Rimutaka Forest Park**

**www.doc.govt.nz** > getting involved > students and teachers > field trips by region > Wellington > Rimutaka Forest Park environmental education resource. Environmental education resource about cultural sites, native bush, wildlife habitats, river catchments, mountain ranges and more in and around Rimutaka Forest Park.

#### **Oriental Parade seascape mural**

**www.doc.govt.nz** > getting involved > students and teachers > field trips by region > Wellington > Oriental Parade Seascape Mural environmental education resource. Use the seascape mural to learn about some of Wellington's sea life through fun activities on Oriental Parade.

#### Kapiti Island and Kapiti Marine Reserve

**<u>www.doc.govt.nz</u>** > getting involved > students and teachers > field trips by region > Wellington > Kapiti Island and Kapiti Marine Reserve environmental education kit. Learn about Kapiti Island and Kapiti Marine Reserve.

#### Other resources

The following sets should be in schools:

Maths in the Natural World, Ministry of Education, Item Number 89/142, Picture Set Living Things: The Pond Community, Learning Media, Pictures, Food Web, Teachers Guide Living Things: The Pine Tree Community, Learning Media, Pictures, Food Web, Teachers Guide

*Living Things: The Gorse Community*, Learning Media, Pictures, Food Web, Teachers Guide *Living Things: The Stream Community*, Learning Media, Pictures, Food Web, Teachers Guide

*The Scrub – Living Things*, Ministry of Education, Item Number 88/134, slide set, OHT masters, teachers guide, wall chart ISBN 0477 048536

*Caring for the Environment*, Learning Media, picture set with teachers notes, Item Number 93/215, ISBN 0478 05825

#### Some useful books for Environmental Education

Cornell, J. 1989: Sharing Nature with Children, Dawn Publications, Nevada City.

Cornell, J. 1989: *Sharing the Joy of Nature,* Dawn Publications, Nevada City.

Cornell, J. 1989: Listening to Nature, Dawn Publications, Nevada City.

- Crowe, A. 1992: *Earthkids: New Zealand Conservation Stories, Activities and Games,* Viking Pacific, Penguin Books, Auckland.
- Hillary Commission. 1995: Kiwi Outdoors, Hillary Commission.
- Macfie, C. 1997: *In touch,* Longman Paul Ltd, Auckland. This book is based on a lot of the activities of Joseph Cornell.

Morris, R. 2005: New Zealand Nature: a photographic souvenir, New Holland, Auckland

#### Other books

Crowe, A. 2002: Which New Zealand Insect? Viking Pacific, Penguin Books, Auckland.

Crowe, A. 1994: Which Native Forest Plant? Viking Pacific, Penguin Books, Auckland.

Crowe, A. 1994: Which Native Fern? Viking Pacific, Penguin Books, Auckland.

Crowe, A. 1994: Which Native Tree? Viking Pacific, Penguin Books, Auckland.

- Ministry of Education 2002: Safety and EOTC (Education Outside the Classroom). A good practice guide for New Zealand Schools. The Ministry of Education, National Operations.
- Ministry of Education 1999: *Guidelines for Environmental Education in Schools*. Learning Media, Wellington.
- Ministry of Education 2001: Building Science Concepts series. Learning Media, Wellington.

Ministry of Education 1998: Making Better Sense series. Learning Media, Wellington.

Moon, G. 1992: The Reed Field Guide to New Zealand Birds, Reed Books, Auckland.

- Powlesland, R. 1998: *Penguin Pocket Guides: New Zealand's Native Seabirds.* Penguin Books, Auckland.
- Powlesland, R. 1998: *Penguin Pocket Guides: Native Birds of the Bush and Countryside.* Penguin Books, Auckland.
- Powlesland, R. 1998: *Penguin Pocket Guides: Native Birds of Shore and Wetland*. Penguin Books, Auckland.
- Powlesland, R. 1998: *Penguin Pocket Guides: Native Flowers of the Bush.* Penguin Books, Auckland.
- Powlesland, R. 1998: *Penguin Pocket Guides: Introduced Birds of Town and Country.* Penguin Books, Auckland.
- Suzuki, D. and Vanderlinden, K. 2001: Eco-fun. Allen and Unwin, New South Wales.

#### Wild South video titles

Produced by the TVNZ Natural History Unit

- Bandits of the Beech Forest
- Birds of New Zealand
- Kakapo, night parrot
- Kea, mountain parrot
- Land of the Kiwi
- Meet the Real penguins
- Possum, a New Zealand nightmare
- Saving New Zealand's Endangered Birds
- Song of protest, the Kokako
- Wrybill-bird with a bent
- The Black Stilt, a bird surrounded by change
- To Save the Kakapo

Search the National Library catalogue to locate these and other titles:

www.natlib.govt.nz > catalogues and directories > national library catalogue

### Planning a trip to Matiu/Somes Island

#### Before your visit

- 1. Read the suggested pre-visit, on-site and post-visit activities and additional information related to the key focus areas (Ecology, Conservation, and Restoration; People and the Island today; History) described in this resource.
- 2. Identify the preferred study area for your class.
- Book a visit, order the resource kit and activity backpacks by faxing the completed booking form (page 59).

For more information, phone the DOC Wellignton Visitor Centre: (04) 384 7770. Fax: (04) 384 7773.

- Schools may hire a ranger to guide them around the island. Cost \$50 per class (approx. 30 pupils). Proceeds go to the Matiu/Somes Island Charitable Trust. To book a ranger, e-mail <u>matiusomes@doc.govt.nz</u> or phone (04) 568 6555.
- 5. Arrange transport to and from the island. Please note that sailings may be cancelled at short notice due to weather. Be prepared for this and check with the ferry office on the day of sailing. The island may also be closed because of fire risk during summer. Contact the DOC Wellington Visitor Centre for more information.

NAME	INFORMATION	CONTACT DETAILS
The Dominion Post Ferry	Runs daily between Queens Wharf and Days Bay stopping at Matiu/Somes. The ferry can take up to 90 passengers and may arrange extra sailings but with limited availability of shelters and toilets on the island, and the impact of large numbers of children on the island's wildlife, it is recommended that you plan visits for no more than two classes per day. Classes will usually have approximately 2½ hours on the island, based on leaving Queens Wharf at 10a.m. and returning from Matiu/Somes at 12.50 p.m.	For an up to date timetable and fare schedule visit <u>www.eastbywest.co.nz</u> Phone: 04-499 1282. E-mail: info@eastbywest.co.nz

Other private boat-owners who are licensed to take passengers may be available to charter on request.

If you are leaving cars in the city be aware of variations in parking building prices, as they can be quite dramatic.

If travelling into the city by train, Queen's Wharf is a 15-minute walk from the station.

 Locate and use Safety and EOTC: A good practice for New Zealand schools, Ministry of Education 2002 (<u>www.tki.</u> <u>org.nz</u> > communities > EOTC > Safety and EOTC: A good practice guide for New Zealand Schools). This document



provides a rationale, safety management process, legal obligations and planning templates for a good EOTC programme. Use the templates it provides (under Appendix V – Tool kit for safety management systems) for a **Risk Management Plan** (sample form 12), an **Outdoor Safety Action Plan** (form 13) and an **EOTC event planning checklist** (form 17) to ensure you are well prepared for your visit. Other helpful documents include: Outdoor Safety – Risk Management for Outdoor Leaders (CD-ROM, NZ Mountain Safety Council, 2005), and Water Safety Across the Curriculum (Water Safety New Zealand, 2000). A ratio of one adult to 5/6 children should be applied. *Children under 15 years must be under constant adult supervision*.

Instruct students that if a fire alarm is heard on the island, they are to go immediately to the wharf area. There is an emergency escape route to the beach from the lighthouse.

8. Compile a checklist of equipment required by each student, each class. The list should include:

Food, drink, a parka, sound footwear and warm clothing, e.g. those made from thermal fibres such as wool, polypropylene or polarfleece. Remember that two light layers of

thermal fibre clothing are warmer than one heavy one. Teachers should carry a cellphone and a first aid kit.

Students should carry any necessary medication and ensure that the adult supervisor accompanying them is aware of any special medical conditions. Teachers should carry a cellphone, first aid kit and a comprehensive list of students' medical histories, and be aware of what medication students are carrying and where it is located.

It is recommended that students use a notebook or small exercise book to record trip information, rather than loose sheets of paper.

9. Arrange for the possibility of postponement.

#### On the island

Classes will be met by a Department of Conservation ranger who will briefly welcome you, take you through the whare kiore (to check your bags for rats and mice!) and introduce you to Matiu/Somes Island, as well as remind you of some of the boundaries that will keep both you and the island inhabitants safe. Location of toilets, shelters and good picnic spots will also be explained.

#### Things to remember

#### Comfort zones for animals

Remember you are visiting their home. The recommended distance from wildlife is 10 m. This ensures you do not disturb them or their habitat.

#### Restricted areas

It is also important to remember areas where you cannot visit, e.g. sites indicated as private/staff only and wahi tapu (sacred) areas (food should not be consumed in these areas).

The garden area near the Forest and Bird Nursery is a sheltered area to picnic. The grassed area near the DOC Field Centre has magnificent harbour views and a toilet close by, but is exposed to the elements.

#### Using the activity packs

If requested prior to your visit, a backpack of six activity packs will be given to the class teacher to distribute. Ideally, each class will be divided into no more than six groups, so that there is one activity pack for each group.



Each group with their accompanying adult will be responsible for their activity pack and must ensure that all items are checked and returned to the ranger before leaving the island.

To ease congestion and create fewer disturbances to wildlife, direct two groups to begin their explorations around the nursery area, two groups to set off on the circuit track, one group to begin at the cemetery area and one group to explore the buildings.

If students are expected to focus on a particular theme, you can specify the activity cards students should use. The topics are:

#### Ecology and conservation

- Coastal forest community
- Coastal shrub community
- Cliff plants
- Birds of the coast
- Reptiles
- Weta



to 'experience' and time is so limited, it is recommended that classes focus on one or two topics. This will allow students time to focus their attention on the environment, and save the written work for the classroom. Alternatively, classes could look at all of the aspects covered in this resource.

As there is so much

If they are expected to record information, please encourage the use of an exercise book. Loose sheets of paper can so easily be whisked away by a sea breeze or a gusty northerly.

Pupils from Thorndon School investigate a weta motel. Photo: Rose Hudsoon.

#### History

- Te Whanganui a Tara
- Formation of the Wellington Harbour
- The immigrants/human quarantine
- Military history—the war years
- The lighthouse
- Animal quarantine

#### People and the island today

• Role play cards are an effective way to discuss and discover more about this aspect.





View of the lighthouse. Photo: Rose Hudson.

## Curriculum links and activities

Three themes for Matiu/Somes Island have been highlighted in this resource. For each theme, a selection of key focus areas has been identified. For each focus there is a brief overview of environmental education outcomes followed by curriculum links and a range of suggested activities for you to select from:

- Pre-visit—so students can learn more about the environment that they will visit.
- On-site—these are on the Activity Cards that will be available for your students to use in the Matiu/Somes Island environment. Further suggestions for on-site activities are included in this resource, to enhance learning further about the environment.
- Post-visit—to follow-up on things students have learnt during their visit and to use their knowledge and skills to take some positive action for their local environment.

Through the suggested activities students can develop communication and information skills by researching information in order to argue/debate a case convincingly or set up their own project; numeracy skills when organising plant or animal survey information; problem-solving skills when analysing problems such as introduced pests, raising awareness or taking action for the environment; social and cooperative skills when taking responsibility as a group member for planning and carrying out an environmental project; and physical skills when exploring Matiu/Somes Island.

Teachers should prepare a student task that can be completed at the beginning and end of this study and used for diagnostic and summative assessment. It should provide an opportunity to compare students' development in knowledge, attitudes, values and skills in



making lifestyle decisions.

It is possible that a database of activities and assessment could be collated from teachers that visit the island with their students. This would enable a network of further resources for schools visiting the island. This idea would require feedback and input from teachers who plan to use the island in this way.

If you would be happy to share your resources with other teachers please write your name and the name of the school you are teaching at on the resource and return it

A 3D model of Matiu/Somes Island produced by Thorndon School pupils after their visit to the island. Photo: Diana Evans. with the kit. Alternatively you could send it to; Community Relations Ranger Department of Conservation Poneke Area Office P.O. Box 5086 Lambton Quay Wellington 6145 Phone (04) 472 5821

Feedback from teachers and students is vital in order for us to continue to update this as an environmental education resource. We envisage an investigative and active education experience for children and adults using these resources.

### Ecology, conservation and restoration

#### Key focus: The coastal forest community

Students will learn about a native coastal forest community and the relationships that exist within it. They can develop an appreciation of walking in this area as a recreational activity. Links can be made to:

#### Science – Making sense of the living world

Students can:

L3.2: Investigate special features of some native coastal forest plants and how these help them to stay alive.

L4.1: Investigate and classify plant species by where they are located on the island (forest, coastal, or cliff) on the basis of easily observable features.

L4.4: Use simple food chains to explain the feeding relationships on Matiu/Somes Island.

#### The Arts – Visual arts

L1-2: Developing ideas in visual arts

L1-2: Communicating and interpreting in the visual arts

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions

#### PRE-VISIT: Learning about the environment

Students can:

- Find out what 'native' means. Use a dictionary to look up the meanings for the words *native*, *indigenous*, *exotic*, and *endemic*. Build up lists of the plant and animal species in your neighbourhood under these headings. *Threatened*, *rare*, *extinct* could provide topics for further research. The DOC and Landcare Research websites are a good start for finding out about native and non-native species. (<u>www.doc.govt.nz</u> > conservation > native plants and animals, www.landcareresearch.co.nz > education).
- Brainstorm ideas about 'native bush' what is it? Who lives in it? How does it survive?
- Find out about forest communities by visiting the DOC website and using the forest ecosystems activity (<u>www.doc.govt.nz</u> > getting involved > students and teachers > activities).
- Observe an ecosystem e.g. a tree or small garden. Look for plant and animal interactions and examples of interdependence between species. How do they live together? (E.g. Do they live separately? Do they depend on each other? Does one help the other to survive?) Who feeds whom? What happens when something in the system dies? Use the ecosystem activity sheet (page 58) to assist with this. Encourage students to become familiar with ecosystems in their school grounds and predict whether they will find the same plant and animal interactions and interdependence on Matiu/Somes Island.
- Look at photo ID cards (items 3a–3m in the resource kit) of birds, reptiles and plants. Predict links between species e.g. who eats what/whom? What lives together? Do any species depend on each other for food/a home?
- Learn how a tree functions and survives by taking part in the build a tree activity (<u>www.doc.govt.nz</u> > getting involved > students and teachers > activities).

#### ON-SITE: Learning in/about the environment

Read through the cards in the activity packs (cards can also be copied from <u>www.doc.</u> <u>govt.nz</u> > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- Observe the different plant and animal species on the island. Read all about the restoration of Matiu/Somes at <u>http://somes61.learnz.org.nz</u> > background > restoration and in the past. Complete the activity ... Are there any clues about likely food chains on the island?
- Compare the special characteristics of native coastal forest plants, coastal shrub plants and cliff plants.

#### POST-VISIT: Taking action for the environment

Students can:

- Identify an area of local bush in or near their school
  - Identify the plants and animals living there.
  - What issues threaten this area? Is this a healthy environment? Think about how the health of this area would affect animal and plant life.
  - Start the project with an action plan template (page 50).
  - Use the template provided to collect data on bird presence and frequency (page 48)
  - Identify and record flowering and fruiting times of native plants (<u>www.doc.govt.nz</u> > conservation > native plants and animals).
  - Find out about the native plants that are endemic to their area.

#### Key focus: Control of pests and weeds

Students can learn about people who are taking action to protect a native forest environment from plant and animal pests. They can carry out pest surveys in their local communities and initiate pest control action. Links can be made to:

#### Social Studies – Social organisation

Students will demonstrate knowledge and understanding of:

L2.1: How and why groups are organised within communities.

## Science – Making sense of the nature of science and its relationship to technology

Students can:

- L3.3: Investigate the impact of pest and weed control techniques on people and/or their local environment.
- L3.4: Explain where and how a range of familiar plants and animals live.
- L6.3: Investigate how knowledge of science and technology is used when making decisions about environmental issues such as pest control.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

#### The Arts – Drama

L1-2: Developing ideas in drama.

L 1-4: Communicating and interpreting in drama.

#### PRE-VISIT: Learning about the environment

Students can:

- Investigate the range of control options for weeds (page 51) and the effectiveness and acceptability of these options.
- Find out about animal and plant pests that are found in your local area and consider their impact on the native bush and natural food chains. (<u>www.doc.govt.nz</u> > conservation > threats and impacts > animal pests and weeds, or <u>www.landcareresearch.co.nz</u> > education)
- Investigate how plants and animals are affected by introduced pests.
- Visit the weedbusters website <u>www.weedbusters.org.nz</u> to find out about weeds and the impact they have on native species.
- Discuss the impact of animal pests if they were to get onto Matiu/Somes Island by playing possum picnic <u>www.doc.govt.nz</u> > getting involved > students and teachers > activities).
- Become familiar with possible weed species on Matiu/Somes Island. Item 6C in the resource box will assist with this.

#### ON-SITE: Learning in/about the environment

Read through the cards in the activity packs (cards can also be copied from <u>www.doc.</u> <u>govt.nz</u> > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- Identify weed species present in the coastal forest community on Matiu/Somes Island.
- Discuss why groups have to go through the whare kiore when they arrive on the island. How does this help keep the island pest free? What could happen if pests were found on the island?
- Take on the roles of the people on the ID badges (page 54) provided in the activity pack. How do you think each of these people would respond to/deal with pest animals or plants found on the island?

POST-VISIT: Taking action for the environment

Students can:

- Use the information gathered about pest plants and weeds in the school or local community to take action to control these pests. Use the action plan template as a starting point (page 50).
- Think of ways to raise awareness of plant and animal pests and provide some ideas for controlling them e.g. create a play; write an information sheet or give a presentation to a specific group.
- Contact your local Council pest control officers for assistance with monitoring and controlling pests and weeds in a local bush area or your garden at home.
- Make a tracking tunnel (page 52) to identify small animals living in your school grounds or local bush.

#### Key focus: The coastal community

Students can discover the biodiversity and interdependence that exists in an island ecosystem. They can compare this with, and plan actions to protect, a local ecosystem. Links can be made to:

#### Science – Making sense of the living world

Students will:

- L1-8: Investigate the relationship between the plants and animals on the island.
- L1–8: Investigate the features (and their functions) and adaptations of New Zealand coastal plants and wildlife.
- L1-4: Gain an understanding of the diversity of some NZ plants and animals.
- L 2: Investigate responses of plants and animals to changes in their environment.
- L 3: Observe how a range of NZ plants and animals live.

#### English

Links can be made to Written Language: Reading and Writing functions

#### PRE-VISIT: Learning about the environment

#### Students can:

- Discuss special features that the coastal plants have developed to help them survive the salty winds and the sandy ground.
- Find out about marine life (page 43) through:

 Visiting Te Papa (<u>www.tepapa.govt.nz</u>) where there are displays of marine life present in the harbour.

– Visiting Petone Settlers Museum (<u>www.huttcity.govt.nz</u>) which has an historical model of the harbour which includes marine life.

– Visiting Otari-Wilton's Bush Native Botanic Garden, Karori Sanctuary (<u>www.</u> <u>sanctuary.org.nz</u>) and The Mountains to Sea display at Te Papa. Each of these locations provides opportunities for related plant studies. Students could look for plants likely to be found on the island.

- Choose a plant or an animal (pages 38–43) that lives on Matiu/Somes Island e.g. tuatara, weta, little blue penguin/Korora, karaka, mountain flax/wharariki. List the conditions that are specific to this environment. Identify the special features and/ or adaptations of the plant/animal that help it to survive in this environment e.g. thick waxy leaves, protective feathers, being nocturnal. Use the plant and animal information in the resource kit as a reference.
- Find out about forest ecosystems using the forest ecosystems activity <u>www.doc.govt.</u> <u>nz</u> > getting involved > students and teachers > activities).
- Observe an ecosystem e.g. a tree or small garden. Look for plant and animal interactions and examples of interdependence between species. How do they live together? (E.g. Do they live separately? Do they depend on each other? Does one help the other to survive?) Who feeds who? What happens when something in the system dies? Use the ecosystem activity sheet (page 58) to assist with this. Encourage students to become familiar with ecosystems in their school grounds and predict whether they will find the same plant and animal interactions and interdependence on Matiu/Somes Island.
- Look at photo ID cards (items 3a–3m in the resource kit) showing birds, reptiles and plants. Predict links between species.
- Discuss what ecosystems and links between species tell us about biodiversity. Discuss the term biodiversity—what does it mean? (<u>www.biodiversity.govt.nz</u>)

#### ON-SITE: Learning in/about the environment

Read through the cards in the activity packs (cards can also be copied from <u>www.doc.</u> <u>govt.nz</u> > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- Identify other animals that may be sharing the coast e.g. seals, copper skink, variable oyster catcher/torea, black-backed gull/karoro, little blue penguin/korora, spotted shag/parekareka. What does this tell us about biodiversity on and around the island? Why do these animals live here? What would happen if one species was removed?
- Discuss what might live in the waters surrounding the island. What issues could threaten this marine environment? E.g. pollution, fishing, pest invasions.
- Observe special features of coastal plants. Compare these observations to pre-visit discussions.
- Compare the island sounds and atmosphere with urban ones. Have students note down observations of the island using all of their senses. Get them to repeat this back at school and compare the two lists.
- Create an atmosphere where the students can take in the forest and plant community they are visiting. Why are the sounds different? What does this tell you about how the environment has changed?

POST-VISIT: Taking action for the environment

Students can:

- List the plants and animals you saw on Matiu/Somes Island and use the list to construct a food chain or food web. (Item 3 in the resource kit will help).
- Write about the interdependence of the animals on the island. What does this tell us about animal/plant relationships on the mainland?
- Use the preservation versus use discussion cards (page 54) to consider a range of views about Matiu/Somes Island. Share your personal ideas about its value.
- Identify an area of local bush in or near your school
  - Identify the plants and animals living there.

- What issues threaten this area? Is this a healthy environment? (E.g. is there rubbish in this area? What is the soil and water quality like? Are many native plants and/or animals living there? Could native plants and animals live in this environment?). Think about how the health of this area would affect animal and plant life.

- Start the project with an action plan template (page 50).
- Think about adopting this or another special area near your school/community and make a commitment to restore/care for it. A restoration guide might help get you started.

(<u>www.doc.govt.nz</u> > by region > Canterbury > publications)

• Contact your local Council to get involved in a local project.

#### Key focus: Restoring the coastal forest community

Students can investigate how people are taking action to restore native coastal forest after it has been cleared. They can identify and carry out actions to restore native bush in local areas and can use this knowledge to guide a revegetation project of their own. Links can be made to:

#### Science – Making sense of the living world

Students can:

L2.4: Investigate the response of native coastal plants to habitat changes caused by fire. L3.4: Justify their involvement in a revegetation project.

#### Social Studies - Place and environment

Students will demonstrate knowledge and understanding of:

L4.1: how places reflect past interactions of people with the environment.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

#### PRE-VISIT: Learning about the environment

Students can:

- Find meanings for the terms regeneration, revegetation, and coloniser.
- Identify any areas in your community where revegetation projects are in progress. Who is responsible for them and how can people become involved? Contact your local council for more information.
- Find out how the local environment has changed over the last 100 years. Was it once covered in bush? If so, who cleared it? Why/how was it cleared?
- Discuss why Matiu/Somes Island was cleared e.g. for settlement, military use and quarantine (page 35) purposes.
- Find out about the ecological restoration (page 38) on Matiu/Somes Island.
- Visit the LEARNZ website and find out about virtual field trips to Matiu/Somes Island. The trip focuses on the island's history; biodiversity and community involvement via the LEARNZ teacher diaries, audio conferences, photos and short videos. General background information about the island and who works there is also included on the website. (www.learnz.org.nz)

#### ON-SITE: Learning in/about the environment

Read through the cards in the activity packs (cards can also be copied from <u>www.doc.</u> <u>govt.nz</u> > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes Island environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island, students can:

- Identify signs of people's past interactions with the Matiu/Somes environment e.g. buildings, plantings, tracks. Think about how this has changed and what the current managers and users of the island are doing.
- View the historical displays in the Matiu/Somes Island information centre. Discuss how the island has changed in terms of its use and values and how the vegetation e.g. the Western side of the island and around the lighthouse has changed as a result of a revegetation project since the 1980s.
- Observe how the coastal forest and cliff plants have grown.
- Use the ID badges (page 54) provided in the activity pack and discuss in role, why the islands' regeneration has been so successful.

#### POST-VISIT: Taking action for the environment

#### Students can:

- Write an action plan (page 50) for improving an area of native bush in the school or local community. This could include:
  - Collecting seeds and growing native seedlings. Students could get support from the local regional council.

 Taking photos to add to records. Students can compare growth in 5 years/10 years time and be inspired to continue the project.

#### OR...

 Look for opportunities to be involved in a revegetation programme near (or at) your school. Forest and Bird can provide local information. Lower Hutt Forest and Bird has information about the Matiu/Somes revegetation programme and could help with ideas to get you started on a programme of your own. (www.forestandbird.org.nz > about us)

#### Additional information to support the activities above

Ecology, conservation and restoration on Matiu/Somes Island (page 38) Animals on Matiu/Somes Island (pages 41-42) Marine life (page 43) People caring for Matiu/Somes Island (page 55) Matiu/Somes Island diary (pages 44-45) Matiu/Somes Island timeline (pages 46-47) Europeans arrive (pages 35–37) Immigrants/human guarantine (page 35) Military history (page 36) Animal guarantine (page 37) Bird Presence and Frequency Survey (pages 48–49) School/Community Restoration Projects and template for action plans (page 50) Matiu/Somes Island Identification Badges/Role Play activity (page 54) 'Preservation versus Use' discussions cards (page 54) Control options for weeds (page 51) Bird pudding recipe (page 49) Tracking Tunnel activity (page 52) Activity cards in the activity back-packs on the island (cards can also be copied from www. doc.govt.nz > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes Island environmental education resource)

Ecosystem activity sheet (page 58)

Have you seen these plants on Matiu/Somes Island? (DOC factsheet  $\underline{www.doc.govt.nz} > conservation > threats and impacts > weeds$ 

#### Web links

Department of Conservation: <a href="http://www.doc.govt.nz">www.doc.govt.nz</a>

- Forest ecosystems activity: <u>www.doc.govt.nz</u> > community > for schools > activities
- Flowering and Fruiting Times of Native Plants: <u>www.doc.govt.nz</u> > conservation > plants and animals
- Template for action plan: <u>www.doc.govt.nz</u> > getting involved > students and teachers > activities
- Possum picnic activity: <u>www.doc.govt.nz</u> > getting involved > students and teachers > activities

Build a tree activity: <u>www.doc.govt.nz</u> > getting involved > students and teachers > activities Pet survey: <u>www.doc.govt.nz</u> > community > for schools > activities > pet survey

Protecting and Restoring our Natural Heritage - a Practical Guide: <u>www.doc.govt.nz</u> > by region > Canterbury > publications

Greater Wellington Regional Council: www.gw.govt.nz Wellington City Council: www.wellington.govt.nz Hutt City Council: www.huttcity.govt.nz Upper Hutt City Council: www.upperhuttcity.govt.nz Horowhenua District Council: www.horowhenua.govt.nz Horizons Regional Council: www.horizons.govt.nz Nest boxes: <u>www.nzbirds.com</u> > more about birds > bird rescue Weedbusters New Zealand: www.weedbusters.org.nz Animal and plant pests: <u>www.doc.govt.nz</u> > conservation > threats and impacts > animal pests and weeds www.landcareresearch.co.nz > education Native species: <u>www.landcareresearch.co.nz</u> -> education www.doc.govt.nz > conservation > plants and animals www.nzpcn.org.nz Te Papa: www.tepapa.govt.nz Petone Settlers Museum: www.huttcity.govt.nz Karori Wildlife Sanctuary: www.sanctuary.org.nz NZ Biodiversity: www.biodiversity.govt.nz Forest and Bird: www.forestandbird.org.nz Lower Hutt Forest and Bird: <u>www.forestandbird.org.nz</u> > about us LEARNZ: <u>www.learnz.org.nz</u>

#### Other

Items 3a-3m, 15C in the Matiu/Somes Island resource kit

### People and the island today

#### Key focus: How Matiu/Somes Island is used today

Students will investigate how people interact with the Matiu/Somes Island environment. They can consider how different groups of people value this environment and work to protect it, how they value it personally and whether they feel a sense of responsibility to maintain and improve the quality of this environment. They can also learn how people have taken action to protect and enhance the environment on the island and could plan a project to protect or enhance an area in their local community. Links can be made to:

#### Social Studies – Place and environment

Students can develop an understanding of:

- L1 & L5: Why particular places and environments are important/significant for people.
- L2: How people's activities influence places and the environment and are influenced by them.
- L3: How and why people express a sense of belonging to particular places and environments.
- L3: How different groups use Matiu/Somes Island.
- L4: How places reflect past interactions of people with the environment.

#### Social Studies – Social organisation

Students can demonstrate knowledge and understanding of:

L1: Why people belong to groups such as Forest and Bird Protection Society, Friends of Matiu, Eastbourne Forest Rangers, Ornithological Society.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

#### The Arts – Drama

- L1-2: Developing ideas in drama.
- L 1-4: Communicating and interpreting in drama.

#### PRE-VISIT: Learning about the environment

Students can:

- Conduct a survey to find out who (from your class, school and/or neighbourhood) has visited Matiu/Somes Island. Why did they go there? What did they enjoy the most?
- Find out how the following groups use Matiu/Somes Island for work or recreation:
  - Matiu/Somes Charitable Trust
  - The Friends of Matiu/Somes Island
  - Department of Conservation
  - YMCA Conservation Corps
  - Schools
  - Forest and Bird
  - Victoria University of Wellington
  - Ornithological Society of NZ (OSNZ)
  - Eastbourne Forest Rangers
- Examine the roles of people who care for the island (page 55) Who are they? What do they do? Classes may be interested in joining an organisation that helps to care for Matiu/Somes Island. See items 18a, b, and c in the resource kit.
- In groups get students to read thoroughly through each of the newspaper articles from 1996 to 2007 (see items ... in the resource kit). Have them discuss and identify who the interest groups are, what they are doing on the island and what effect this will have on Matiu/Somes.

• Visit the LEARNZ website and find out about virtual field trips to Matiu/Somes Island. The trip focuses on the island's history; biodiversity and community focus via the LEARNZ teacher diaries, audio conferences, photos and short videos. General background information about the island and who works there is also included on the website.(www.learnz.org.nz)

ON-SITE: Learning in/about the environment

Read through the activity cards (in the activity pack and at <u>www.doc.govt.nz</u> > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- Look for signs of impact from people using the island today e.g. disturbance, change to the landscape etc.
- Discuss whether signage encourages users of the tracks to respect the environment.
- Use the ID badges (page 55) provided in the activity backpack to role play the different users of Matiu/Somes Island. As you walk around the island think about how you value the area as a DOC ranger, Matiu/Somes Charitable Trust volunteer, scientist, OSNZ member, Forest and Bird, Eastbourne Forest Ranger.

#### POST-VISIT: Taking action for the environment

Students can:

- Help to organise a group (family, scout, guide) trip to Matiu/Somes Island and share your knowledge of the area with your group.
- Look for opportunities to be involved in environmental projects in your area. local councils, NZERN (NZ Ecological Restoration Network) and Forest and Bird may be able to assist with this. Websites listed page 27.
- Write a report for your school newsletter about environmental projects available in your area.
- Write to the Department of Conservation or the Matiu/Somes Charitable Trust to tell them about your visit to the island note highlights and suggestions for improvements that would enhance school trips.
- Record their visit. Be creative with ideas for visually representing the island environment (e.g. model, mural, posters, sand structures): its place in the harbour, geology, vegetation, wildlife, buildings, people and any threats to/impacts on this.
- Record an aspect of their island experience in written form e.g. report, imaginary diary of one of the past inhabitants, poetry, sound picture, etc.

#### Key focus: Land use and management

Students can investigate how people use Matiu/Somes Island and how it is managed in order to protect its diversity for future generations to enjoy. They can find ways to act positively for Matiu/Somes Island and for their local bush areas. Links can be made to:

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

Students can:

L1.1/4: Share their ideas about physical features and patterns that occur on Matiu/Somes Island and how some of these features may be protected.

#### Social Studies – Place and Environment

Students can demonstrate knowledge and understanding of:

L2.1: How people's activities influence the Matiu/Somes Island environment.

L3.1: How different groups view and use places and the environment.

#### Social Studies – Time, Continuity and Change

Students can:

L3.2: Demonstrate knowledge and understandings of how the past use of Matiu/Somes Island is recorded and remembered in different ways.

#### Social Studies- Resources and Economic Activities

Students can find out:

L3: How and why people manage resources.

L4: How and why people view and use resources differently and the consequences of this.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

#### PRE-VISIT: Learning about the environment

Students can:

- Discuss and clarify what the term 'island' means. Compare Matiu/Somes with Karori Sanctuary, which is referred to as a mainland island. (www.sanctuary.org.nz)
- Identify some conservation-related advantages/disadvantages of isolation as opposed to a 'mainland island' (e.g. quarantine possibilities, greater ability to eradicate a pest species of plant or animal and develop natural ecosystems.) Use the poster of Matiu/Somes Island (items 8a–8e in the resource kit) as a focus for discussion.
- Locate Matiu/Somes Island. Use a map of the Wellington area to locate Matiu/Somes island and consider the importance of its location in terms of defence (Maori fortress and military operations) and marine safety/harbour navigation (lighthouse is visible from 29 km away). Think about how warfare has changed. Would this island serve the same purpose if war were declared on NZ today? Consider why enemy aliens were sent to the island. Would this happen today? What has changed?

ON-SITE: Learning in/about the environment

Read through the activity cards (in the activity pack and at <u>www.doc.govt.nz</u> > getting involved > students and teachers > field trips by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island. (Cards can also be copied from this site.)

Using the activity cards available for classes visiting Matiu/Somes Island students can:

• Look for evidence of the different people that have lived on the island e.g. buildings, tracks, and animals.

- Use the ID badges (page 54) in the activity pack to assist discussion about the different groups that are involved with the island. What aspects of the island are these people involved in?
- Discuss the possible risks to this environment. Listen to the Ranger's introduction to the island. How is it protected? e.g. the whare kiore, closure when fire risk is high, no dogs.
- Create a physical timeline of events (page 46) and people on the island. How has life on the island changed? What is the focus for the island now? (Back in the classroom refer to item 11a – 11i Paper's Past, in the resource kit.)
- Visit the gun emplacements and discuss further the use of the island for defence purposes. Would this be possible today?
- Imagine being an enemy alien on the island. How would you feel? How could you escape? Could the island be used for similar purposes again?

POST-VISIT: Taking action for the environment

Students can:

- Investigate past land use in the local community:
  - How has the environment changed over time?

- Identify areas where the environment could be better used or be in a healthier condition for future generations, e.g. pollution, water and soil quality, number of plant and animal species present. Think about how the health of this area would affect animal and plant life.

- Take action to improve this environment. (e.g. write a letter to the editor, request for placement of rubbish bins, community clean-up, painted signs).
- Find out how other schools are working to restore native ecosystems in their communities. Visit the NZAEE website for inbformation: <u>www.nzaee.org.nz</u>
- Write an action plan (page 50) for improving an area of native bush in your school or community.

#### Key focus: Landforms

Students will use research skills to identify how a landscape can change over time because of natural causes and how people can impact on a fragile environment. Students will consider how different groups of people value this environment and work to protect it. They can consider how they value their local landforms and how they can take action to protect them. Links can be made to:

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

Students will:

L1, 2: Investigate the physical features of Matiu/Somes Island.

L3, 4: Gather information about the geological history of this island.

L5: Investigate and describe processes which have changed the earth's surface over time.

L5.4: Research and explain the need for responsible and cooperative guardianship of Matiu/Somes Island.

#### The Arts – Drama

L1-2: Developing ideas in drama.

L 1-4: Communicating and interpreting in drama.

#### The Arts – Visual Arts

L1-2: Developing ideas in visual arts.

L1-2: Communicating and interpreting in the visual arts.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

PRE-VISIT: Learning about the environment

Students can:

- Research the geological history (page 34) of this area. This could be represented in a timeline or on a map of the area.
- Research large earthquakes in New Zealand and find out how they affected the landscape or the people. (<u>www.gns.cri.nz</u> > learning > quaketrackers)
- Consider the importance/value of the area for different groups of people e.g. Maori, geologists, seismologists, conservationists. Discuss how these people can help us to live/work with our environment in the future.
- Students could share their knowledge of Maori legends (page 33) associated with this area e.g. Maui fishing up the North Island, taniwha Ngake and Whataitai forming the harbour, Kupe and the giant octopus. Nga Reo o Te Whenua – The Voices of the Land (Learning Media 1992) tells some of the local legends.
- Check out the facts behind landforms described in the legends.
- Visit the Awesome Forces area at Te Papa. This shows how the earth's tectonic plates are constantly moving and changing landforms. An understanding of this process will enable students to better understand the fact that Matiu/Somes and neighbouring Makaro/Ward are peaks of a central harbour ridge that has formed as the Pacific Plate slowly pushes its way into and under the Australian Plate resulting in tilting along the Wellington faultline.
- View Matiu/Somes Island from Mount Victoria or Wainuiomata Hill. These are good locations to view the island's landforms and to imagine Wellington Harbour as a drowned valley system with Matiu/Somes as a remnant hilltop.

#### ON-SITE: Learning in/about the environment

Read through the activity cards (in the activity pack and at <u>www.doc.govt.nz</u> > getting involved > students and teachers > field trip by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- See the impact of earth movements and the harsh climate in this coastal area. Look for evidence of changes in the islands formation over the years e.g. the top of the island, erosion, and shoreline. Use the human camera activity to assist with this. (Human Camera (adapted from a Joseph Cornell activity) Students are in pairs—one is the 'camera' (eyes closed) and the other the photographer. The photographer has 5–10 minutes to take the 'camera' to approximately 3 sites and set up the 'shots' (squeezing shoulders, tap on head etc.). The 'camera' opens its eyes then shuts them to take a 'shot'. Each of these 'shots' must be remembered as the pairs then swap roles. On completion each 'camera' develops their favourite 'photo' by drawing a picture to represent it.).
- Look for signs of the impact of people on this environment e.g. disturbance, land changes, and buildings.
- Look for links between the landscape and the Maori legends (page 33) associated with this area e.g. taniwha Ngake and Whataitai forming the harbour, Kupe naming the island in the harbour.
- Think about the significance of this island for Maori—both past and present e.g. food, defence, and history.

Use the ID badges (page 55) in the activity kit and take on the role of someone involved with the island. How do you value the area? What do you think is important about the island? Consider what a geologist might think.

#### POST-VISIT: Taking action for the environment

Students can:

- Predict what is likely to happen when another large earthquake occurs. Plan
  personal, class, school and community precautions to lessen the effect of the next
  major earthquake. Information is available at Civil Defence (<u>www.civildefence.govt.</u>
  <u>nz</u> > being prepared at home, at school, at work > at school > earthquake) and the
  Awesome Forces exhibition at Te Papa.
- Research the history of interesting landforms in your local area. Consider their value to you personally and to the local community. Consider some actions to protect them and raise awareness of their value e.g. create a play, write an information sheet or give a presentation to a specific group.
- Write their own legends to explain the land formations that Matiu/Somes is part of. These could be presented to the school or local community. This could also be a focus for art/drama. *Nga Reo o Te Whenua – The Voices of the Land* (Learning Media 1992) tells some of the local legends.

#### Key focus: Planning a trip

Students can take part in preparing for a trip to Matiu/Somes Island and consider risk minimisation strategies in terms of themselves and the environment. They can prepare a risk assessment. Links can be made to:

# Health and Physical Education – Personal Health and Physical Development

Students will:

L1-7: Identify and use safe practices and basic risk-management strategies on a trip to Matiu/Somes Island.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

#### PRE-VISIT: Learning about the environment

Students can:

- Study the Environmental Care Code and Water Care Code (item 6d in resource kit).
- Consider precautions that will have to be taken when planning a trip to Matiu/Somes Island (page 8).
- Make a list the gear required for the trip (water, food, first aid kit, parka, mobile phone). Think about how these things will be checked before and on the day.
- Ensure that students and accompanying adults are aware that they are expected to respect and care for the environment. Use the Environmental Care Code as a basis for developing a set of behavioural expectations for your trip. (Safety rules could be included). A simple test could be given. Younger students may find it fun sitting a test in order to gain a "license to land" on the island. Class members could be appointed to ensure these rules are adhered to on the island. Please encourage students to share these rules/expectations with parents, particularly those who will be accompanying you on your class trip.
- Run the 'Be prepared' activity (<u>www.doc.govt.nz</u> > getting involved > students and teachers > activities > be prepared)

ON-SITE: Learning in/about the environment

Students can:

- Observe the safety procedures the class has discussed prior to the trip.
- Note any other suggestions for safety procedures that were not previously considered.

Monitor risks on the day, to both people and the environment. What risks does the DOC Ranger mention? What risks can you see? Why is it important to consider these risks when on the island?

#### POST-VISIT: Taking action for the environment

Students can:

- Write an Environmental Care Code specific to your school or a local area.
- Promote your Environmental Care Code to users of the area.
- Make at least one change to your personal actions that will contribute to a healthy environment, e.g. buy less packaging, compost food scraps rather than put them in the rubbish bin. Ministry for the Environment (<u>www.mfe.govt.nz</u> > working with you > what you can do) and the Energy Efficiency Authority (<u>www.energywise.org.nz</u>) have more ideas. These actions could be followed for a set time period e.g. 3 months and changes to amounts of rubbish or behaviour monitored.
- Measure their Ecological Footprint and take actions to reduce it. The footprint could be remeasured in a month's time. (<u>www.mfe.govt.nz</u> > working with you > what you can do > ecological footprint calculator)
- Consider their personal relationship with the environment and how the life-style choices they make impact on the environment. If students have pets they could consider the strategies they have in place to lessen their impact on our native species, e.g. putting a small bell on their cat to warn birds of its presence, respecting restrictions in areas where there is protected wildlife (e.g. keeping dogs away from seal colonies and blue penguin nesting areas around the Wellington coastline).

Think about ways they could help to protect the marine life (page 43) in the harbour. Make a poster to share their ideas. This could go up at school, a local community centre or library.

#### Additional information to support the activities above

Environmental Care Code (page 58) Water Care Code (page 59) Planning a trip to Matiu/Somes Island (page 8) Matiu/Somes Island booking form (page 61) Ecology, conservation and restoration on Matiu/Somes Island (page 38) People caring for Matiu/Somes Island (page 56) Matiu/Somes Island diary (page 45) Matiu/Somes Island timeline (page 47) Marine life (page 44) Formation of the Wellington Harbour (page 34) Te Whanganui a Tara (page 33) Schools and restoration: support material (page 51) Matiu/Somes Island identification badges background (page 55) Activity cards (in the activity pack and at <u>www.doc.govt.nz</u> > getting involved > students and teachers > field trip by region > Wellington > Matiu/Somes environmental education resource)

#### Web links

Be prepared activity: <u>www.doc.govt.nz</u> > getting involved > students and teachers > activities > be prepared Action plan template: <u>www.doc.govt.nz</u> > getting involved > students and teachers > activities > action plan template Greater Wellington: www.gw.govt.nz Wellington City Council: www.wellington.govt.nz Hutt City Council: www.huttcity.govt.nz Upper Hutt City Council: www.upperhuttcity.govt.nz Horowhenua District Council: www.horowhenua.govt.nz Horizons Regional Council: www.horizons.govt.nz Forest and Bird: <u>www.forestandbird.org.nz</u> > branches Karori Wildlife Sanctuary: www.sanctuary.org.nz Institute of Geological and Nuclear Sciences: www.gns.cri.nz > learning > quaketrackers Civil Defence: <u>www.civildefence.govt.nz</u> Department of Conservation: <u>www.doc.govt.nz</u> > conservation > historic Ministry for the Environment: <u>www.mfe.govt.nz</u> > working with you > what you can do

### History

#### Key focus: Early settlements

Students can explore sites that were once occupied by Maori and view evidence of how they used this coastal environment. They can consider how and why different people value historic sites and how they can help to protect them. Links can be made to:

# Science – Making Sense of the Nature of Science and its Relationship to Technology

Students will:

L5: explain how Maori developed/demonstrated an understanding of the living, physical, material and technological components of the environment.

#### Social Studies – Culture and Heritage

Students can demonstrate knowledge and understanding of:

- L2: Ways in which communities reflect the cultures and heritages of their people (name of island).
- L3: Ways in which movement of people affects cultural diversity and interaction (immigration)

L5: The effects of cultural interactions on cultures and society.

#### Social Studies – Time, Continuity and Change

Students can investigate:

- L2: How and why the past is important to people.
- L3: How the past is recorded and remembered in different ways.

#### The Arts – Drama

L1-2: Developing ideas in drama

L 1-4: Communicating and interpreting in drama

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

PRE-VISIT: Learning about the environment

#### Students can:

- Discuss why Matiu/Somes Island would have been chosen as a place for Maori settlement (page 33) e.g. defence, food. Use a map of the area to assist this discussion.
- Visit the Museum of Wellington City and Sea (<u>www.museumofwellington.co.nz</u>). Here you can view the films of local legends. This could be done immediately prior to an island visit if you plan to catch the ferry from Queens Wharf. The Education Officer allows classes a 15 minute visit (for a small fee) to view the Kupe film on the big screen (script for this film is item 7g in the resource kit), the carving of the legend, and the map of Maori pa sites.

Contact the Education Officer (04-496 1943) to arrange your visit for 9.30 - 9.45 a.m. and you'll be in time to catch the 10 a.m. ferry to the island.

Check to see if local kaumatua (Wellington Tenths Trust, ph (04) 473 2502 can put you in touch with people) have stories that they could tell about Maori history related to the island, layout of a pa site, use of natural resources, etc.

#### ON-SITE: Learning in/about the environment

Read through the activity cards (in the activity pack and at <u>www.doc.govt.nz</u> > getting involved > students and teachers > field trip by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- Look for signs of Maori occupation on e.g. pa sites, middens. Look for evidence of changes in the islands formation over the years e.g. top of the island. Visit the top of the island and use the human camera activity to assist with this.
- Experience the environment and look for ways the environment supported people living here e.g. food, shelter, and transport.
- Look for signs of the impact of people on this fragile environment e.g. disturbance, plantings, buildings, and tracks.
- Observe the pa sites (at the northern tip of the island and the visitor centre area). Compare these sites and consider their use, e.g. defence or habitation.

Debate some positive/negative aspects of settling on Matiu/Somes Island. The ID badges in the activity packs and 'Preservation versus use' cards (page 55) will give some ideas for this.

#### POST-VISIT: Taking action for the environment

Students can:

- Invite a local kaumatua to come and talk about the Maori history of your local community. Contact the local DOC office for more information. (<u>www.doc.govt.nz</u> > by region> Wellington)
- Prepare and present a short speech or play titled "Our knowledge of the past helps us to make decisions for the future."

Make something they would ordinarily buy and promote sustainable harvesting. Find out about the importance and use of plants as rongoa (traditional medicines) or for traditional crafts such as weaving, rope-making, building houses and canoes. Ask the local kaumatua or check the local library for information. The resource kit includes a book by Tom Paul, *Nga Taonga o te Ngahere – Treasures of the Forest* (item 15a) which gives information about Maori herbal remedies.

#### Key focus: The history of Matiu/Somes – the island and the people

Students will develop an awareness of people's interaction with, and impact on, this environment through time. They can debate the importance of keeping records of the past. Links can be made to:

#### **Social Studies - Place and Environment:**

Students will understand:

- L2: How different groups used Matiu/Somes Island in the past.
- L3: How remnant tracks and existing buildings reflect past interactions of people with this area.

#### Social Studies - Time, Continuity and Change

Students will understand:

- L2: How and why groups are organised within communities and societies. Support groups that helped prisoners on the island during the war years could also be investigated.
- L3: How the past is recorded and remembered.
- L3: How and why people make and implement rules and laws regarding the access and use of Matiu/Somes Island (fire danger, protection of species).
- L4: How people organised themselves in response to challenge and crisis during the history of Matiu/Somes. (fortified village, the war years)
- L4: Causes and effects of events that have shaped the lives of a group of people (war, disease).
- L5: How the ideas and actions of individuals and groups that have shaped the lives and experiences of people are viewed through time.
- L6: The effects of changes in society on people's rights, roles and responsibilities (enemy aliens).

#### Technology -Technological Knowledge and Understanding

Students can develop an understanding of the technological practices associated with animal quarantine (concrete wheel washes), transporting goods (tramways from lighthouse and from the wharf, flying fox), construction of a retaining wall (stone work on path leading up from wharf) and road-building.

#### The Arts – Drama

L1-2: Developing ideas in drama.

L 1–4: Communicating and interpreting in drama.

#### English

Links can be made to Oral Language: Listening and Speaking functions and Written Language: Reading and Writing functions.

#### PRE-VISIT: Learning about the environment

Students can:

- Discuss why recording of the past is important to particular groups of people. Find out how their families recorded the past for future generations and share personal experiences of this.
- Arrange students into groups of no more than three. Hand out both the old Paper's Past articles and the more recent newspaper articles (items...in the resource kit). Students need to discuss and record their answers to a number of questions on the article they have been given e.g., why are these events important to people today? How have these actions helped to shape the island?
- Visit the Museum of Wellington City and Sea (<u>www.museumofwellington.co.nz</u>) and discover the stories of Wellington's history, including the harbour and Matiu/Somes Island.

• Create a Matiu/Somes time-line (page 47). Draw a time-line on a long sheet of card that can be placed on the floor or on the playground, if the weather is suitable. Allow individual students, or groups, to choose an item from the resource material you have borrowed from the Department of Conservation.

Allow time for students to study the item they have chosen and be prepared to share something about it with the rest of the class, and place it in an appropriate position on the time-line.

Alternatively ask students who have items related to a particular topic (information on Maori history, WWI and WWII, human and animal quarantine, geology, conservation) to group together for discussion prior to a group presentation to the class.

Students could speculate on future scenarios—2010, 2050, etc.

- Trace family histories. Students could chat with their families about their ancestors where they came from, how they travelled to New Zealand, etc. Those who have an historical link to Wellington may discover some family links to Matiu/Somes Island that they could share. Read the excerpts from Paul Elenio's book (Alla Fine Del Mondo – To The Ends of The Earth, item 12i in the resource kit). Paolo Casa shares his memories as a prisoner and Italo Comis (the son of a prisoner) remembers visiting his dad on the island.
- Share some artefacts from students own family histories and write a story to accompany them.
- Examine the social history of Matiu/Somes Island. Find out about the groups of people who have lived on the island and their reasons for doing so. Refer to items 6b (Somes Island booklet), 6f (Island of Secrets), and 12f (Kim Lee's story) in the resource kit.
- Visit the LEARNZ website and find out about virtual field trips to Matiu/Somes Island. The trip focuses on the island's history; biodiversity and community focus via the LEARNZ teacher diaries, audio conferences, photos and short videos. General background information about the island and who works there is also included on the website (www.learnz.org.nz or http://somes61.learnz.org.nz).

ON-SITE: Learning in/about the environment

Read through the cards in the activity pack (cards can also be copied from <u>www.doc.</u> <u>govt.nz</u> > getting involved > students and teachers > field trip by region > Wellington > Matiu/Somes environmental education resource) and assess which ones are most appropriate for your visit. The activities below provide further ideas and support for your visit to the island.

Using the activity cards available for classes visiting Matiu/Somes Island students can:

- Compare photos of the environment 50–100 years ago with what it is like today. This tells us about the success of the islands restoration programme. What has changed? e.g. vegetation, buildings.
- Observe the forest regeneration that has occurred since those photos. Visit the western side of the island, where there is a clear view of the changes. How has the vegetation changed? Do you think the island's restoration has been successful? Can you distinguish the different stages of growth?
- Ask students to think about the impact of having a quarantine station on Matiu/Somes Island (page 37). Discuss the possible advantages and disadvantages of quarantine to people, stock and the environment.

Imagine being a prisoner of war/enemy alien on the island, or quarantined there. How would you feel? Why were these people put on Matiu/Somes? Could they escape? How would they escape? Would the island be used for similar purposes today? Why/why not?

#### POST-VISIT: Taking action for the environment

Students can:

• Debate the issues:

Set some issues for debate that relate to Matiu/Somes. This will encourage critical thinking, careful analysis of information, and exploration of attitudes and values. Some examples are: removing plants that do not naturally occur in Wellington (pohutukawa) from the island, re-introducing tuatara, the pros and cons of preserving buildings on the island, maintaining public access to the island, the treatment of captives during war. The 'Preservation versus use' cards (page 54) may assist with this activity.

- Devise a drama based on a topical issue associated with the history of Matiu/Somes e.g. should we intern enemy aliens? Would Matiu/Somes still be effective as a place to send enemy aliens? What has changed within society that means the island is no longer used for this purpose?
- Consider what action can be taken to protect New Zealand/Aotearoa through biosecurity measures. Visit the Biosecurity New Zealand website (<u>www.biosecurity.</u> <u>govt.nz</u>) for ideas and take action on at least one of them.

Create an action plan to get a project underway (see template on page 50).

#### Additional information to support the information above

Te Whanganui a Tara (page 33) Formation of the Wellington Harbour (page 34) Matiu/Somes Island timeline (pages 46–47) Europeans arrive (pages 35–37) Immigrants/human quarantine (page 35) Military history (page 36) The lighthouse (page 36) Animal quarantine (page 37) Action plan template (page 51; <u>www.doc.govt.nz</u> > getting involved > students and teacher > activities > action plan template) People caring for Matiu/Somes Island (page 56) Preservation versus Use discussion cards (page 55) Matiu/Somes Island identification badges (activity packs; background information page 54) Activity cards (<u>www.doc.govt.nz</u> > getting involved > students and teachers > field trip by region > Wellington > Matiu/Somes environmental education resource)

#### Web links

Wellington City to Sea Museum: <u>www.museumof wellington.co.nz</u> Biosecurity New Zealand: <u>www.biosecurity.govt.nz</u> Department of Conservation: <u>www.doc.govt.nz</u> LEARNZ: <u>www.learnz.org.nz</u>

#### Other

Items 6b, 15a, 6f, 12f, 12i in Matiu/Somes Island resource box.

# Te Whanganui a Tara



Legend tells that Maui and his brothers caught a great fish (the North Island—Te Ika A Maui) while out fishing in their canoe (the South Island—Te Waka A Maui).

Another legend tells of two taniwha, Ngake and Whataitai, who lived in the lake at the head of the great fish of Maui. They wanted to free themselves of the restrictions of the lake. Ngake coiled himself up like a great spring and sped down the lake. He forced his way through the land and was free at last. The lake became a harbour.



Above: Birdseye view of Port Nicholson. Charles Heaphy 1839. Alexander Turnbull Library, No. C-029-006-b. Kupe, Ngahue (also known as Ngake) and Toi sailed into the harbour when they came to New Zealand from eastern Polynesia about 1000 years ago. Kupe is important in the history of all Maori in Aotearoa and has connections to many of the present tribes.

Kupe named the islands in the harbour after two of his daughters (some say nieces) Matiu and Makaro. The story is told that Matiu and Makaro were left in the harbour while Kupe went to explore the south island. Kupe returned to Polynesia with news of his voyages which generated the later migrations.

Below: A midden located on the bank behind the DOC field centre. When Photo: Linda Chronis. that

Later came Toi's grandson Whatonga, who sent his sons Tara and Tautoki southward from the eastern coastline to search for new areas to settle. They knew this was the harbour that Kupe had visited when they found the islands of Matiu and Makaro that Kupe had named.



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Department of Conservation *Te Papa Atawhai* 

Tara named the Miramar peninsula (then an island) Motu-Kairangi ('sky-gazing island') and decided to settle there. Tara's people took on the tribal name of Ngai Tara. Tautoki and his followers travelled to the Pencarrow Head and settled there.

The followers of Tara became numerous in the Wellington district and the harbour was named 'Whanganui-a-Tara' (the great harbour of Tara). Elsdon Best (1919) wrote of the Maori chief Tara and the existence of "three superior houses" on Matiu— Haere Moana, Aotearoa and Te Pu O te Tonga.

Although Tara settled and built fortifications on Matiu, he is said to have used the island mainly as a place to accommodate women and children until defensive stockades and whare could be built on the mainland. One report tells of a fort for 1000 Maori that was on the island and vast quantities of kumara being grown at the northern end.



Maoris taking kumara (sweet potatoes) to market c. 1855. Matiu/Somes Island in the background. John Pearse's 'Album, 1851–56', Alexander Turnbull Library.

While the location of Matiu was important for defence purposes, the waters as a source of kai moana (seafood) were highly valued and have ensured a strong Maori association with the island since this time. Orca and right whales were present in the harbour so the food must have been plentiful. Many shells found in middens (rubbish dumps) are evidence of the large proportion of seafood in the diet of these early inhabitants of Matiu.

Ngai Tara were succeeded by Ngati Ira who built two Pa—Te Moana a Kura Pa (terraces can still be seen at the northern end of the island) and Haowhenua (situated on the ridge at the southern end). Te Haowhenua was the name given for the 1460 earthquake.

Ngati Ira lived on Matiu until about 1825 and were succeeded by Te Atiawa who, supported by their Taranaki relations, became the dominant iwi within Wellington and the Hutt Valley in the 1830s. Te Atiawa have maintained ahi kaa roa (kept the tribal fires burning) to the present day.

# Formation of Wellington Harbour



The older basement rocks which make up most of the Wellington region were formed 280–150 million years ago (during the Permian, Triassic and Jurassic periods) when the land we now know as New Zealand was the site of a long, narrow trough in the sea-floor known as a geosyncline. Through time, the trough filled with sediments. Drying-out and the changes made by heat and pressure of sediments in the lower levels of the trough (geosyncline) made the rocks lighter (less dense). The light rock then began to rise and push the trough-full of sediment above the sea to form a new mountainous landmass.

#### Hello New Zealand!

Below: When viewing Matiu/Somes and Mokopuna from Wainuiomata Hill you can see three step-like levels. The upper level was cut artificially to make room for the anti-aircraft guns in 1942. The lower levels were probably shaped by the sea prior to the land being raised as a result of earth movements. Photo: Jeremy Rolfe. Matiu/Somes, Makaro/Ward, and Mokopuna, Wellington Harbour's three islands are peaks on a ridge formed 1.5 million years ago. The Port Nicholson basin was once some distance away from the coast, and rivers and streams drained across it. The basin flooded when land southeast of the Wellington fault tilted down—Wellington Harbour (now formed) submerged the ridge and created three islands.

The harbour originally had two entrances, the present one and a channel where Kilbirnie now lies. The Miramar peninsula was an island. An earthquake in 1460 linked Miramar island with the

mainland. Further uplift during the major earthquake of 1855 brought Matiu/Somes higher above sea level so that much of the present shore line is now surrounded by cliffs.

Both islands show remnants of a shore platform (beach ridge) cut by the sea before the 1855 earthquake and now about 1.5 m above sea level. Above this platform are remnants of an older platform 2.4–3.0m above sea level.



Above: On both islands caves and arches, cut by the sea when it was at its pre-1855 level, can be seen at the foot of the cliffs. Remind students to watch out for these as you approach the island. Photo: Linda Chronis.



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# **Europeans arrive**



On 8 February 1770, Captain James Cook sailed the *Endeavour* close to Wellington but he did not notice the harbour entrance until his second voyage in 1773 when he dropped anchor near Barrett Reef before continuing his journey south.

#### Immigrants/human quarantine

Many explorers and whalers visited New Zealand following Cook's visit and by the 1820's grand colonising schemes had begun to stir public interest in England. The New Zealand Company was formed in 1839 and Colonel Wakefield was despatched in the ship *Tory* to select a site for the first colony.

Right: The last surviving barracks building. Photo: Richard Nester. Here is what Charles Heaphy, the surveyor, saw as he entered the harbour:

On entering Port Nicholson one is struck by the grandeur of the view. The harbour resembles an island rather than an arm of the sea, and in beauty far surpasses that of our English lakes. As we worked up to anchorage, the noble expanse of water, surrounded by a country of the most picturesque character, formed a scene of indescribable beauty; and the valley of the Hutt River opened up to our view, apparently extending far inland, until bounded by a snowy range, we wondered that a place which seemed so much to invite settlement, had not before been colonised.

#### Colonel Wakefield saw:

...a fine expanse of water the whole of which is anchorage ground and where no inconvenience could arise to any vessel taking the usual precautions.

He saw the island as:

...well adapted for a fort which could command both the entrance and whole extent between the hills which enclose the port to the west.

In 1839, the New Zealand Company purchased Matiu from local Maori, along with the first acres in Wellington, and re-named it Somes in honour of Joseph Somes, a wealthy ship-owner and head of a big shipping firm in London. He was also deputy governor of the New Zealand Company.

During the next 3 years, 340 ships visited Wellington Harbour. The first settlers arrived at Petone where they built close to the shore. Local Te Atiawa people helped with house-building, thatching, and the supply of pigs, fish and potatoes in exchange for tobacco, blankets, muskets, powder, and clothing. Because of continual flooding at the Petone settlement, a site on Lambton Beach was chosen to lay out the first town. In 1850 the island was bought by the government in exchange for 1600 city acres (650 hectares).

In 1872 a human quarantine station was established on the island. Passengers on immigrant ships suspected of having infectious diseases had to make Somes Island their first port-of-call after long difficult sea voyages. (A passenger's diary in the loan kit shows the extent of sickness and death on board during these early voyages—item 12d).



The remains of the smoke house, in which people were made to sit to rid them of lice, are south of the wharf area.

In 1872, both the passengers and crew of the *England* were isolated and two cases of smallpox were confirmed. Soon after, the ship *Halcione* arrived with a yellow flag flying, signalling an outbreak of smallpox on board. Three hundred and fifty passengers (mainly Danish and Norwegian) and crew were sent to Somes Island. Provisions were sent over from Wellington to Mokopuna for the immigrants to row over and collect.

In 1903, Kim Lee, a Chinese fruiterer suspected of having leprosy was isolated on Mokopuna. Food and water were delivered to him by boat, or by flying fox when the sea was too rough. He was given packing cases to make furniture/shelter and lived in the cave that can be seen on the eastern side of the island. He died in 1904 after several months of isolation. He is buried on Matiu/ Somes Island.

In 1903, New Zealand soldiers returning from the Boer War in South Africa were quarantined because their ship suffered a measles outbreak on route.

In 1919, a navy sailor returning from WWI with influenza (a victim of the widespread epidemic at that time) was quarantined and died on the island. Two merchant sailors were also victims.

The island has not been used for human quarantine since the 1920s. In the 1970s, the gravestones of some people buried on the island were removed, and a monument recording the names of forty others who are buried on the island was erected.

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#### Military history

Because of its strategic position with a 360 degree view of the harbour, Matiu/ Somes was always important in defence from pre-European times right through to the war years.

Maori built fortified villages on the island and early European settlers were also prepared for attack. In 1840 Robert Houghton resided on Matiu/Somes guarding the magazine in which gun powder and muskets were stored.

During World War I (1914–1918) and World War II (1939–1949) the Department of Defence held "enemy aliens" as prisoners on Matiu/Somes Island. It was feared that they would assist the enemy, even though some had been born in New Zealand and had families and businesses here. They were held under suspicion, however, and had to spend the war years away from their homes and families.

A report from the island during WWI states that there were 296 prisoners on the island: 84 domiciled in New Zealand, 211 'temporarily' in the Dominion, one unaccounted for. Of the 4,015 'Germans' in New Zealand, 380 were sent to detention, and they included 23 Austrians, 2 Bulgarians, 12 Dalmations, one Turk, one Swiss, 3 Russians, one Dutchman, one Mexican.



Internees celebrate the Kaiser's birthday, 1915. Photo: R. Harte collection, Alexander Turnbull Library. Exercise was carried out regularly and all prisoners were required to do seven hours a week of road work and gardening. They were paid an allowance of four and sixpence (45 cents) per day.

Barracks that had been built 40 years before as quarantine buildings (over one of the two old fortified Maori villages) were used for the internees. A half of one of the barracks remains today and the Field Centre on the island is the former hospital built in 1918 to care for sick prisoners.

In WWII the island again became an internment camp for 'enemy aliens', comprising Italian, German, Japanese, Tongan and Thai nationalities.

In 1942, four 3.7-inch heavy anti-aircraft gun emplacements were built on the south end of the

island and manned by the Army. 180 internees and 60 guards were moved to Pahiatua on 31 January 1943, as Somes was now declared a war zone. They returned in September 1944 when the guns were taken away.

A navy degaussing (neutralising by producing an opposing magnetic field) station to render ships safe from magnetic mines, was operated by the WRENS (Women's Royal Navy Service) during WWII.

#### The lighthouse

In 1866 a lighthouse was built to assist mariners navigating the harbour. The lighthouse and two houses were built at a cost of £695. Next to the lighthouse there still remains a tramway, running down to the nearest bay. This was used for transporting supplies to the keeper.

In 1900, the original lighthouse was replaced. A new brick tower was built and a more powerful lantern installed. Its power source was changed from paraffin oil to acetylene gas in 1924 and it became automated.

The keeper's residence was removed from the island (apparently by making a raft of the walls and the roof and sailing it to Karaka Bay).

Since 1970 the lighthouse has been powered by electricity, provided by a generator.







The Matiu/Somes lighthouse through the years. Top: c. 1866. Photo: William Williams. Middle: 1943. Photo: Norman Seddon. Bottom: 2001. Photo: Linda Chronis.

#### Animal quarantine

Because New Zealand's agricultural industry was based on exotic species it was important to avoid diseases being imported along with new stock. As a precautionary measure, animals (dogs, cattle, and sheep) were kept isolated for a period of (usually) 30–60 days following their arrival from other countries (mainly the UK and Australia). In 1889, Matiu/Somes was designated a quarantine station. By 1908, it was considered to be New Zealand's principal quarantine facility. Sheep and cattle were kept inside and fed hay and meal. Blood samples were taken regularly and tested for disease and each animal was treated for internal and external parasites.



During the late 1960s, building began on a new maximum security quarantine station to allow for the importation of a more diverse range of exotic animals. This was completed in 1972. Matiu/Somes became the first port of call for elk, red deer, sheep, cattle, goats, alpaca, and llama. 120 cattle, 600 sheep or more than 200 deer could be housed in the new maximum security station.

In 1985 a scheme to import ova and embryos of cattle, sheep and goats for implantation into New Zealand female stock was begun. This method of diversifying the livestock lines as an alternative to importing livestock, along with the checking of animals to establish whether they were disease-free, prior to beginning their journey to New Zealand, lessened the need for quarantine stations.



Unloading animals for quarantine on Somes Island.

The quarantine station was closed in 1995 and MAF handed over management of the island to DOC. MAF (formerly the Department of Agriculture) had shared administration of the island from the late 1880s to 1920 with the Department of Health (when the island was used for human quarantine) and with the Defence Department during WWI and WWII (when 'enemy aliens' were interned there). From 1946 to 1995, MAF had sole responsibility and the island was closed to the public.



From 1972, quarantined animals were housed in the maximum security quarantine building.

Cattle were held on the island to develop new artificial breeding techniques.

# Ecology, conservation and restoration



In 1995, Matiu/Somes Island was opened to the public, and now has around 10,000 people visiting each year for recreation and education. The Department of Conservation manages islands in a range of ways-some are completely closed to people (sub-Antarctic Islands), some have restricted access (up to 50 people per day can visit Kapiti Island Nature Reserve): while others like Matiu/Somes are open to the public. DOC has to consider the impact of so many people on such a small island and closely monitors wildlife disturbance and fire risks as restoration of the island continues

Today Matiu/Somes bears the evidence of its diverse history and intensive use by people. Some of the history is slowly being revealed as old middens are unearthed. Other stories are told through oral history and some can be confirmed or disputed through sighting early paintings or sketches of the island.

One such story relates to the vegetation of Matiu/Somes. Some records say that most of the original vegetation was cleared but it is known that a European resided on the island in 1840, cutting wood for repairing the spars of ships. A painting by Saxton (1842) in the 'Passports' exhibition at Te Papa shows forest on the southern faces of the island. Photographs show that significant clearing had taken place at the top of the island. By 1876, there were no large trees on the island, but toetoe and flax were present.

Loss of habitat and introduced predators meant the disappearance of some of the island's native animals. The last tuatara was recorded on the island in the late 1870s.

Gradually, through the enthusiastic efforts (mainly voluntary) of many people, the island's vegetation is being restored to provide a safe natural habitat for native (some rare or endangered) species.



To find out what vegetation and animals existed on Matiu/Somes Island before people settled there and began clearing, burning, building, and introducing predatory/pest species such as rats, people have:

- Searched for and analysed sub-fossil bones (found in middens on the island) and fossil pollen which may be preserved in the peaty sediments at the south end of the island.
- Looked at old records made by natural historians.
- Analysed material excavated in 1999 from pile holes under the hospital building (bones from several species of bird not currently found on Matiu/ Somes were identified).
- Studied areas with similar soils, climate, slope, and aspect.

This helps to characterise plant communities that were there.

#### **Ecological restoration**

In 1981 the Royal Forest and Bird Protection Society (Lower Hutt) began a revegetation programme that continues today. Much progress has been made in restoring native vegetation and the habitats of particular animal species. DOC will continue to work with community groups to protect and restore the coastal forest on Matiu/ Somes.

Forest and Bird have done a range of work on the island, including helping the Ornithological Society with rat eradication; building a nursery with retaining walls, composting, setting up an automatic watering system; building aviaries; and maintenance tasks such as weeding. They have had a significant role in the island's transformation.

The revegetation programme supports New Zealand's Biodiversity Strategy—the framework established to actively conserve New Zealand's biodiversity. Natural ecosystems need to be restored to provide safe homes for some of our most threatened species before its too late.

Native vegetation now covers eastern cliff faces and gullies and southern, western and some inland slopes. Although about half of the island is pasture, of which half is grazed for fire control purposes, this will decrease as planting continues.

Four main plant communities are being restored: coastal forest, coastal scrub, cliff community, wetland community. Once the "pioneer" plants have established, "later successional" plants will be planted. (See tables in the loan kit for planting plans.)

Forest & Bird volunteers working in the nursery on Matiu/Somes Island. Photo: Annabel Riley.

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Coastal forest with kohekohe, tawa, karaka and pigeonwood as the dominant species



*Coastal scrub dominated by* Melicytus crassifolius, *wharariki (mountain flax,* Phormium cookianum), *tauhinu,* Olearia solandri, *toetoe, matagouri, speargrass,* Coprosma propinqua *and taupata* 



A: kohekohe (photo: Tony Lilleby); B: karaka; C: pigeonwood; D: tawa (photos: Jeremy Rolfe).



A: *Melicytus crassifolius*; B: matagouri; C: speargrass; D: *Coprosma propinqua.* Photos: Jeremy Rolfe.

Cliff community dominated by silver tussock, wharariki and rushes



A: silver tussock; B: wharariki, mountain flax. Photos: Jeremy Rolfe.



A: kowhai; B: ti kouka; C: manuka. Photos: Jeremy Rolfe.

Wetland community dominated by wharariki (flax), ti kouka (cabbage tree), toetoe, kowhai, Carex virgata and manuka





Several regionally threatened plants are known to have occurred on the island, but there are many others that may have occurred there, and where sites are suitable, they have been included in planting plans.

Some of the plants being propagated are matagouri, bidibidi, leafless clematis, Cook's scurvy grass, pygmy button daisy, shrubby tororaro, shore dock, large-leaved milk tree, and NZ spinach.

The planting was the first stage in the restoration of Matiu/Somes. The next major step was the eradication of rats in 1989, creating a safe breeding site for a variety of animals.

#### A vision for the future

A working plan for the management of the island has been prepared by DOC (*Matiu/Somes – a plan for conservation management*, September 2000). Many people were involved in its preparation—people from local and regional government and conservation, science, recreation and also those with commercial interests. The plan supports their agreed vision:

Matiu/Somes Island, its ecological landscape, historical, cultural and spiritual values recognised, restored and protected, providing an inspirational and educative visitor experience.

# Animals of Matiu/Somes Island



Animal communities include those once found on the island and some species introduced as part of national or regional recovery programmes.

#### Birds of the coast

Seabirds that inhabit Matiu/Somes Island include the southern black-backed gull, spotted shag, and variable oystercatcher. The island also provides critical habitat for the blue penguin/korora—the world's smallest. The protection that the island affords blue penguins during nesting season is also vital when they moult each summer. Moulting lasts about two weeks, during which time the penguins do not eat or swim.



Black-backed gull. Photo: Peter Morrison



Variable oystercatcher. Photo: Jeremy Rolfe.



Blue penguin. Photo: J.L. Kendrick,

#### Birds of the forest

A range of introduced birds live in the forest along with native species. Blackbird, chaffinch, song thrush, dunnock, fantail/piwakawaka, kingfisher/ kotare, and silvereye/tauhou breed on the island. Kakariki/red crowned parakeet have been successfully introduced to Matiu/Somes Island. They were once common on mainland New Zealand, but are now mainly confined to predator-free islands. Notable for their bright green and red plumage, kakariki nest in holes in branches and trunks of trees, crevices in cliffs, and in burrows in the ground. They are usually solitary or found in pairs, although in autumn and winter the birds may form small flocks. In flight they make a loud rapid chatter and may also chatter and babble when feeding.



Kakariki/red-crowned parakeet.

Kakariki previously lived on Matiu/Somes Island. Kakariki bones have been found in midden (rubbish heap) material on Matiu/Somes Island. The return of kakariki was made possible by the removal of rats

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Spotted shag.

Photo: Jeremy Rolfe.



and cats, and through the native forest replanting by Lower Hutt Forest and Bird since the early 1980s. There is now abundant food for kakariki.

North Island robin have also been relocated to the island from Kapiti Island. This iconic bird is renowned for its boldness around humans. Matiu/ Somes Island is an ideal habitat for robin which feed on insects, grubs and worms on the forest floor. Other than in the sanctuaries, robins are extinct from the Wellington region. Once widespread throughout the North Island, there are now only isolated populations across the centre of the Island from Taranaki to Bay of Plenty, but they are plentiful on several mammal-free offshore islands.



North Island robin. Photo: Andrew Morrison.

There are plans to reintroduce several other native bird species to Matiu/Somes. Ask the ranger about current activities.

#### Reptiles

Eight species of reptile, found only in New Zealand, occur on Matiu/Somes: common skink, copper skink, ornate skink, spotted skink, common gecko, forest gecko, Wellington green gecko, and Brothers Island tuatara. (See resource kits *Tails & Scales* and *Tuatara* in the loan kit.)



Brothers Island tuatara. Photo: Brett Robertson.

Skinks are often seen enjoying the sun beside the tracks, the common gecko is rare on Matiu/Somes and is nocturnal. Tuatara are less frequently seen on Matiu/Somes but sightings do occur.

#### **Brothers Island tuatara**

In 1998, 54 live tuatara, sourced from North Brothers Island were introduced to Matiu/Somes Island. There are now confirmed cases of the tuatara breeding on Matiu/Somes, 9 years after they were translocated to the island. Tuatara had been absent from the island since the 1842.



Common skink. Photo: C. Roderick



Spotted skink. Photo: Mike Aviss.



Copper skink. Photo: C.R. Veitch.



Common gecko. Photo: Rod Morris.

#### Invertebrates

There are 500 species of invertebrates on Matiu/Somes and Mokopuna Island, including several species of weta. (See the book *New Zealand Weta* in the loan kit.)

Cook Strait giant weta and Wellington tree weta were transferred to Matiu/Somes Island from Mana Island in 1996.



Cook Strait giant weta. Photo: Owen Calder.



Wellington tree weta. Photo: Brett Robertson.



Specially created "weta motels" provide a haven for Wellington tree weta. Photo: George Gibbs.



Groups can observe Wellington tree weta in the "weta motels". Photo: Linda Chronis.

# **Marine life**



The marine environment provides habitats for a huge range of sea creatures that form a complex array of food chains/webs. The sea-birds depend on the food the sea provides and for centuries it has been a main source of food for people who have lived on the island. Many shells have been found in excavations of middens. Marine residents around Matiu/Somes Island include: seaweeds, jellyfish, sea stars, urchins and sea cucumbers, shellfish, clams, mussels, scallops, shrimps, crayfish, crabs, barnacles, gurnard, spotty, sandfish, flounder, sole, cod, tarakihi, mackerel, kahawai, and snapper.

Regular visitors include sharks, stingray, dolphins and seals. (See the book *Te Whanganui A Tara* in the loan kit.)

Below is a selection of the marine life that occurs around Matiu/Somes Island.









From left: spotty, John dory, wandering anemone.



From left: sea cucumber, sole, stargazer.

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# Matiu/Somes Island diary



#### January

- Reef herons fledge
- Variable oystercatcher chicks seen with parents
- Some little blue penguin chicks hatching
- Southern black-backed gull chicks start learning to fly
- Common skinks and copper skinks give birth

#### February

- Little blue penguin chicks hatching
- Penguins start moulting
- Southern black backed gull start to flock for winter
- Variable oystercatcher juveniles seen with parents
- Common geckos give birth to young
- Common skinks and copper skinks give birth

#### March

- Southern black-backed gull flock for winter
- Variable oystercatcher juveniles seen with parents
- All birds may be seen feeding around Matiu/Somes but no breeding activity
- A few remaining penguins may be on land moulting
- Common geckos giving birth to live young

#### April

- Southern black-backed gull flock for winter
- Variable oystercatcher juveniles may start leaving their parents
- All birds may be seen feeding around Matiu/Somes but no breeding activity
- Penguins will all be at sea
- Common geckos giving birth to live young (others copulating)

#### May

- Southern black-backed gull disperse for winter
- All birds may be seen feeding around Matiu/Somes but no breeding activity
- Penguins will all be at sea
- Common geckos giving birth to live young (others copulating)

#### June

- All birds may be seen feeding around Matiu/Somes but no breeding activity
- Penguins will all be at sea
- Lambing begins on the farm
- Green geckos giving birth to live young
- Forest geckos giving birth to live young

#### July

- All birds may be seen feeding around Matiu/Somes but no breeding activity
- Some penguins start returning to shore to start excavating burrows in preparation for breeding
- Lambing on the farm

#### August

- Little blue penguin come ashore and start pair bonding in preparation for breeding
- All birds may be seen feeding around Matiu/Somes but no breeding activity
- Lambing on the farm

#### September

- Variable oystercatcher starts breeding
- Little blue penguins start laying eggs
- North Island robin begin breeding

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#### October

- Reef heron starts nesting
- Variable oystercatcher incubating eggs
- Southern black-backed gull starts laying eggs
- Little blue penguins laying and incubating eggs
- North Island robin breeding
- Kakariki begin breeding
- Skinks mating
- Kakariki begin breeding

#### November

- Reef heron starts hatching eggs
- Variable oystercatcher breeding
- Some variable oystercatcher chicks hatch
- Little blue penguins incubating eggs
- Southern black-backed gulls incubating eggs
- North Island robin breeding
- Kakariki breeding
- Tuatara can hatch around this time (after 13-14 months incubation) though it is variable

#### December

- Variable oystercatcher chicks hatch
- Southern black-backed gull starts hatching eggs, chicks learn to swim at 2 weeks
- Little blue penguin chicks hatching
- Reef heron eggs hatch
- North Island robin breeding
- Kakariki begin breeding
- Tuatara lay their eggs in the summer months

# Matiu/Somes Island timeline



c. 1000 years ago	Kupe visited the region. He named the island Matiu.
13th Century – 1835	Descendants of Tara (called Ngai Tara) were the original occupants of Matiu. Ngai Tara were succeeded by Ngati Ira who built two pa: Haowhenua on the summit and Te Moana a kura at the northern tip. Ngati Ira were succeeded by Te Atiawa about 1825. Te Atiawa have maintained ahi kaa roa (kept the tribal fires burning) to the present day.
1839	Matiu was included in the New Zealand Company purchase and renamed Somes after a deputy governor of the New Zealand Company, Joseph Somes. Somes was one of the largest shipping owners in England and had supplied the ship Tory on which Colonel Wakefield and his men sailed to New Zealand in search of a site to colonise.
1843	Two guns belonging to the New Zealand Company were mounted on the island. Later they were moved to Clay Point, above the junction of Lambton and Willis Streets.
1844	A ferry service took picnic parties to the island.
1850	The Government exchanged Matiu/Somes Island with the New Zealand Company for 1600 city acres. 1855 Somes Island was first used as an informal quarantine station for sheep.
1866	A lighthouse was built.
1872	A human quarantine station was established on the island for immigrants suspected of carrying diseases. Passengers from the ship England were quarantined because they were suspected of having smallpox. When the Halcione made her second trip to New Zealand in 1872, 350 passengers, mostly from Scandinavia, were quarantined for six weeks.
1889	Somes Island was designated a quarantine station for stock.
1900	The present lighthouse was built. It still remains part of Wellington Harbour's navigation system.
1900	Somes Island was designated a prison.
1904	Kim Lee died on Mokopuna (Leper) Island.
1914–1918	During WWI the island was used as a prisoner of war camp.
1918	Four prisoners built a raft and paddled it to Ngauranga. The escape attempt was unsuccessful.
1918	The hospital was built for the use of 'enemy aliens' who were detained on the island.
1919	Two prisoners escaped by stealing a dinghy and landing at Days Bay. Another two swam to Petone Beach. Neither attempt was successful.

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1935	Victor Penny experimented with a death ray he claimed to have invented. Tight security was observed on the island and Penny was constantly protected from would-be assassins by armed military personnel. His experiment proved unsuccessful.
1939–1945	Again used as an internment (POW) camp during WWII.
1941	Three Germans escaped by stealing a dinghy and making paddles out of two pieces of timber. They landed at Petone and were free for three days. Eventually they were recaptured at Akatarawa. Another attempt to escape failed when guards found a canoe which prisoners were secretly building.
1942	Four heavy anti-aircraft gun emplacements were built on the south end of the island and manned by the Army. A navy degaussing (neutralising by producing an opposing magnetic field) station to render ships safe from magnetic mines, was operated by the WRENS (Women's Royal Navy Service).
1972	Maximum Security Quarantine Station and associated structures were completed.
1981	The Royal Forest & Bird Protection Society of NZ (Lower Hutt Branch) began revegetation of the island concentrating firstly on the south and west slopes.
1984	F&B established a plant nursery in the island's old garden.
1988/9	Ship rats were successfully eradicated from the island
1995	The Animal Quarantine Station was closed and management of the island was transferred from Ministry of Agriculture & Fisheries (MAF) to DOC. The island was once again opened to the public on 1 August 1995.
1995	The Department of Conservation consulted with iwi, local authorities, community and business organisations to determine future management guidelines for the island.
1996	Cook Strait giant weta and Wellington tree weta were introduced from Mana Island.
1996	The New Zealand Geographic Board changed the name of the island to 'Matiu/Somes Island', based on the fact that iwi have used the name Matiu since the 14th century.
1998	Brothers Island tuatara were released onto Matiu/Somes Island.
2000	Five-year working plan published for protecting and enhancing the island's ecological, cultural and historical values.
2003	Red-crowned kakariki released onto Matiu/Somes Island.
2005	First release of forest geckos onto Matiu/Somes Island
2006	First release of green gecko onto Matiu/Somes Island North Island robin transferred from Kapiti Island. They began to breed just five months after being released on Matiu/Somes Island. Ornate skinks released onto Matiu/Somes after they were caught by a cat in Kelburn, Wellington.
2007	100,000th tree planted in the Forest and Bird revegetation programme. First tuatara hatched at Victoria University from eggs laid on Matiu/Somes Island.

# Bird presence and frequency survey

	See.
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كر	iz#
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#### **Bird pudding**

11/2 cups rolled oats 30 grams dripping (melted) 1/2 cup honey Mix together. Set for 2 hours. Put in hanging nets

or in the branches of trees.

Create a survey form for your local bush area. Carry out a survey of the birds present. As you improve the bush area, by controlling pests and planting more native species, continue regular monitoring and see if the bird population changes.

Numbers of birds in an area tell us a lot about the use and health of an environment.

BIRD	
Colours	Size
Beak shape (draw)	Foot shape (draw)
Voice	Food

BIRD	
Colours	Size
Beak shape (draw)	Foot shape (draw)
Voice	Food

BIRD		
Colours	Size	
Beak shape (draw)	Foot shape (draw)	
Voice	Food	

BIRD	
Colours	Size

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Beak shape (draw)	Foot shape (draw)
Voice	Food

BIRD	
Colours	Size
Beak shape (draw)	Foot shape (draw)
Voice	Food

BIRD	
Colours	Size
Beak shape (draw)	Foot shape (draw)
Voice	Food

BIRD	
Colours	Size
Beak shape (draw)	Foot shape (draw)
Voice	Food

BIRD	
Colours	Size
Beak shape (draw)	Foot shape (draw)
Voice	Food

# **Template for action plan**



#### School/community restoration projects

Check out projects by other groups. www.greenpages. org.nz a list of groups doing projects

#### **Project Crimson**

www.projectcrimson. org.nz Information about New Zealand's rata and pohutukawa trees, how to protect them and grow them from seeds or cuttings; reports of scientific research into the trees. and details on how schools. landowners. or conservation groups can apply for funding for planting projects and environmental protection activities.

#### Kiwi Conservation Club

www.kcc.org.nz Also has links to conservation organisations.

#### Karori Sanctuary

www.sanctuary.org.nz The Karori Sanctuary Trust has a 500 year vision for the restoration of the Karori Reservoir valley to reestablish forest giants such as rata and totara and recreate a thriving native forest.

#### Enviroschools

www.enviroschools. org.nz

Enviroschools are working towards a vision of a generation of innovative and motivated young people, who instinctively think and act sustainably

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## . Action

(Individual or group.)

Choose an issue or topic

(This could be local, national or global.)

#### Explore different attitudes and values by identifying people's:

(Taken from the Guidelines for Environmental

Refer to this for further information)

research and investigation

analysing information

generating solutions

problem solving

Education in New Zealand Schools, 1999, page 74.

Identify the skills required

using different media for communication

feelings

These could be:

monitoring

•

- ideas
- opinions
- to:
- clarify values
- understand conflicts
- achieve consensus about possible action

#### Identify and enhance knowledge and understanding

through the essential learning areas where appropriate

Department of Conservation Te Papa Atawhai

#### Identify the roles and processes within decision-making

The following diagram shows how you can start

to think about an action-orientated approach to

environmental education. This process should

always be evaluated as you work through it, to

check that you are headed towards your decision.

These could include:

- knowing about law reforms
- establishing role responsibilities
- identifying the most effective decision-making process
- knowing how to influence the decision •
- knowing the role of the media
- kowing the role of lobby groups

### Develop awareness through:

- personal experiences ٠ visits
- .
- videos
- visiting speakers .
- audiotapes
- visual aids

# **Control options for weeds**

Weeds are plants in the wrong place. They are usually foreign invaders in a place far away from the animals and diseases that had evolved to feed on them. Without these natural controls the weed population explodes. Weeds are the successes of the plant world. They have strategies or adaptations that help them beat out the competition.

#### Weed strategies

- They grow really fast old man's beard can grow 3 cm a day
- Some can climb up other plants to get their light – old man's beard, passionfruit vine



- Some have prickles to prevent browsing gorse
- Many produce vast numbers of seed gorse, dandelion
- Some take root as they grow along the ground blackberry, *Tradescantia*



Blackberry. Photo: Jeremy Rolfe.

Old man's heard

Photo: Jeremy Rolfe.

*Tradescantia.* Photo: Jeremy Rolfe.

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Department of Conservation *Te Papa Atawbai* 



Wild ginger. Photo: DOC.

- Some have many ways to reproduce oxalis, wild ginger
- Some have seeds that last a long time in the soil
   – gorse
- Some have brittle stems so they can't be pulled up by browsers and gardeners—*Tradescantia*

#### **Controlling weeds**

Many methods are used to control weeds with varying degrees of success. Some methods are a total waste of time. Burning gorse, for instance, helps crack the hard seeds lying in the soil so they can quickly grow, as well as burning, and thus killing, all the other plants that could otherwise compete with gorse.

Weed control can be physical, chemical and biological, or a combination (integrated pest management).

An activity for senior students based on the MAF Sustainable Agriculture Education Kits can be found at <u>www.maf.govt.nz</u> > Schools

#### Other useful web resources

<u>www.doc.govt.nz</u> > threats and impacts > weeds – DOC factsheets on weed control, Japanese honeysuckle, Tradescantia, wilding pines, gorse. <u>www.tussocks.net.nz</u> > weeds > gorse

# **Tracking tunnels**



Four toes on the front feet, five on the back. Lumps on the underside of the feet leave clear marks.

#### Mouse



Tracks show as very small dots. Prints have similar layout to those of rats.

### Mustelid (weasel, stoat, ferret)



Foot pad lies outside a line drawn between the first and last toes.

#### Hedgehog

Front and rear feet



have five digits and a centre pad. Centre pad is closer to toes than that of a rat.

© Diagrams courtesy of Connovation.

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### Tracking prints of pests in your home forest

A tracking tunnel is used to monitor (watch) species numbers. Tracking tunnels are usually used to monitor rodents like rats, mice stoats, hedgehogs etc. Tracking tunnels record the footprints of animals that pass through the tunnel. Inside the tracking tunnel is bait which is located at the centre. The bait is usually something like peanut butter, which has a smell that attracts the rodent.

To reach the bait, the rodent must walk through an inkpad which puts ink on the bottom of the rodent's feet. As the rodent goes to leave the tunnel a copy of its footprints is left on the paper. From checking the paper you can then tell what type of rodents have been around and how often they have been in the tunnels. This is done by using a footprint chart.

Find out what creatures are wandering around your local patch by using a homemade tracking tunnel. These instructions are from Craig Gillies and Dale Williams at the Department of Conservation.

#### Tunnel dimensions and materials

- Wooden base, 100mm (W) x 535mm (L) plywood or 25mm thick rough-sawn pine.
- Tunnel cover, black corflute, stapled or nailed to the base, 615 mm (L) allows for 40 mm overhang each end of timber. Tunnel internal clearance height should be 100mm.
- Polycarbonate trays, 520mm (L) x 95mm (W), with three partitions being 173mm (L).
- Papers—each paper should be pre-cut to 173 mm x 95 mm in size. The type of paper may be determined by local availability (and cost) but ensure it is sufficiently absorbent to retain the food colouring animal prints (standard "shopping bag" type brown paper seems to work very well).
- Sponge, 173 mm x 95 mm and 3–5 mm thick.
- Tracking media—use liquid food colouring at approximately 1:3 dilution in water. If you suspect that the liquid will freeze, use the food colouring neat. In extremely dry conditions mix the food colouring and water solution with polyethelene glycol (approximately 20%).
- Bait e.g. peanut butter, located at the centre of the tracking tunnel

Tracking cards and tunnels can be purchased from Connovation, <u>www.connovation.co.nz</u>



#### Setting the tunnel

- Put your tunnel at the site at least a week before you put food colouring on the sponge. This allows the animals to get used to its presence.
- Place your tracking tunnel in a small clearing, where creatures would naturally walk.
- Do not put your tracking tunnel in a place, which is wide open, as it may be blown away by the wind or soaked with rain.
- If more than one tunnel is being put out, make sure yours is named and mark the location of each one with coloured tape.
- Place your tunnel on level ground so the food colouring will stay put.
- It is safer to fill the lid with food colouring at the location than to walk long distances carrying it.
- Make sure your tunnel is secure so that a pushy hedgehog doesn't upset it.
- Look to see that it is easy for your guests to get in and out of the tunnel.
- Check daily for footprints. If there are, replace the paper with a clean piece. Also if the sponge is drying out, moisten it with water.



#### Advantages of using tracking tunnels

- Easily placed or removed from the natural environment, no pollution
- Do not harm animals
- The size of the entry space means that only small animals may enter, typically rodents.
- Increasing or declining occurrences of footprints tells of changing population sizes.

It is also possible to make tracking tunnels from cardboard but it is not as weather resistant.

Your sample will tell you what has been wandering around but will not tell you how many there are. This would require many tunnels on several tracking lines to gather sufficient data to be able to estimate the size of the pest populations.

#### What are you going to do now?

Your local Regional Council will be able to give you advice and possible assistance in getting rid of the pests from your forest.

#### References

Using Tracking Tunnels to Monitor Rodents and Other Small Mammals, Craig Gillies and Dale Williams, Department of Conservation. This document is available from the Department of Conservation.

For further information visit the LEARNZ archive website: <u>www.learnz.org.nz</u> (must be a LEARNZ registered school to log in)

# **Preservation versus use**

### (Debate/discussion starter cards)



Using these cards, students can explore attitudes and values that people may have about an area. Alter to suit your students. These cards could be used in conjunction with the ID badges in the activity packs, included in the on-site backpack. See notes below.

#### Developer

People will pay a lot of money to stay in a place like this. They can enjoy the lovely scenery and wildlife. It might cost me a bit for consents and building but it would be worth it.

#### Local iwi member

This is where my ancestors lived and some of the land close by is tapu. We want this area to stay as it is. People can visit the area but it should not be overrun by tourists and their rubbish.

#### Friend of Matiu/Somes

We come here to do planting and other volunteer work as well as explore. I don't want to see any of the area destroyed but we would like more people to visit and have a place to stay.

#### Matiu/Somes Island identification badges

The Matiu/Somes activity packs include eight ID badges. Each badge outlines the role of a group/organisation that is involved with Matiu/Somes Island. The badges can be used with the debate/discussion starter cards. The badges are:

'Forest and Bird' member
'Eastbourne Forest Ranger'
'Ornithological Society' member
'Wellington Tenths Trust' member

'Friend of Matiu''Scientist studying weta''Conservation Corps' leader'DOC ranger'

Each badge tells about the role the group/organisation has and key sites that they have been involved with.

The badges can be used for 'role playing'. Each student within a group can wear a badge for the duration of their visit and take on the role of whoever is described. This may include pointing out sites of interest and teaching others in the group about what 'they' do on the island.

The badges also provide opportunities for discussion e.g. personal values (of the island), who has been involved in the restoration of the island and why this has been successful, and how these groups would react if there was a major threat on the island e.g. an outbreak of plant or animal pests.

#### Department of Conservation

This is a very significant conservation area. A lot of work has been done in this area to restore and protect it because of its biodiversity. We do not want to see any more damage here.

#### Local school student

I don't want to see any development here. We visit this area every year and see native birds and plants. We have also just started some planting. I think it's a beautiful place.

#### Scientist

We want to look after this area because of the special animals and plants. Many students and scientists use this area for important research. We are lucky to have such a place so close to us.

#### **Eco-tourist**

When I go to another country I love seeing places of natural beauty. I don't always have a lot of time so places to stay and things to do are important to me. I am willing to pay for those experiences.

#### My personal opinion

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# People caring for Matiu/Somes Island



The Friends of Matiu planting native trees on Matiu/Somes Island. Photo: Ron Freeston.

Many people help care for the island and are restoring ecosystems to support native species.



Matiu/Somes Charitable Trust and the "Friends of Matiu" raise funds to assist with new projects.





Stan Butcher and the Lower Hutt Forest & Bird Protection Society have been raising and planting native trees and shrubs on Matiu/Somes since 1981. By 2007,100,000 had been planted, and plantings of 12,000 annually are planned for the future.

Reg Cotter from the Ornithological Society of New Zealand (OSNZ) monitors bird populations on Matiu/Somes. He puts bands on birds so their travels can be monitored and records numbers of

birds and eggs. Reg also helps to control the black-backed gull population because of the risk of bird strike at Wellington airport and because they compete with other birds for places to nest.



George Gibbs is a scientist who is studying the social behaviour of Wellington tree weta on Matiu/Somes Island. He visits the island regularly to check the "weta motels" he uses for his study.





Labour Weekend until about Easter two rangers are on duty to assist DOC staff with managing visitors to the island. Volunteers meet the ferries, supervise the biosecurity checks on visitors' bags, brief visitors on the rules (such as non smoking, staying on the tracks, etc) and outline the history and wildlife of the island for them. Rangers also provide guided tours for pre-booked groups.





Other DOC officers research, plan and monitor the conservation projects.



Liz Mellish of the Wellington Tenths Trust (Te Atiawa) represents the iwi who are descendants of the tribes who once lived on Matiu. Liz is available for comment on all Maori issues related to Matiu/Somes Island.

#### Ray Smith – Eastbourne Forest Rangers

Since February 1996 volunteer ranger services on Matiu/Somes Island have been provided by a team under the umbrella of the Eastbourne Forest Rangers group. Each weekend and public holiday between

Jo Greenamn and Matt Sidaway are the Department of Conservation rangers who

live on Matiu/Somes. They are responsible for the daily management of the island. Their tasks are many and varied: they coordinate the groups and individuals that work on and for the island, maintain the farm, the tracks, the buildings etc, and monitor the fire risks. They meet all the scheduled boats, explaining to visitors the more important aspects of the island, as well as answering questions the public have when they visit Matiu/Somes.

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There are many people working for Matiu/Somes Island. They don't have much time to spare but if students need some specific information that they have not been able to find elsewhere please call:

- Stan Butcher (Lower Hutt Forest & Bird) Phone 04-567 7271
- Reg Cotter OSNZ (available to assist with bird studies)
   Phone 04-568 6960
- Garibaldi Club (for information on Italian immigrants)
   Phone 04-382 8299
- George Gibbs (Weta specialist) Phone 04-562 0992
- Department of Conservation Wellington Visitor Centre

Phone 04-384 7770, fax 04-384 7773

 Liz Mellish/Mark Te One (Wellington Tenths Trust)
 Phone 04-473 2502

 Ray Smith (Eastbourne Forest Rangers) Phone 04-562 8587

Conservation Corps groups come and stay on the island for several days at a time to carry out planned conservation projects organised by their group leader and the Ranger. They have been involved in weed control, track maintenance, beach cleanups, and removing unwanted exotic trees. Conservation Corps is a government training programme for young people (16–24 years). It is funded by the Ministry of Youth Affairs.

# **Environmental Care Code**





### **10 POINT CHECKLIST**

#### Protect plants and animals

Treat New Zealand's forests and birds with care and respect. They are unique and often rare.

#### Remove rubbish

Litter is unattractive, harmful to wildlife and can increase vermin and disease. Plan your visits to reduce rubbish, and carry out what you carry in.

#### Bury toilet waste

In areas without toilet facilities, bury your toilet waste in a shallow hole well away from waterways, tracks, campsites, and huts.

#### Keep streams and lakes clean

When cleaning and washing, take the water and wash well away from the water source. Because soaps and detergents are harmful to water-life, drain used water into the soil to allow it to be filtered. If you suspect the water may be contaminated, either boil it for at least 3 minutes, or filter it, or chemically treat it.

#### Take care with fires

Portable fuel stoves are less harmful to the environment and are more efficient than fires. If you do use a fire, keep it small, use only dead wood and make sure it is out by dousing it with water and checking the ashes before leaving.

#### **Camp carefully**

When camping, leave no trace of your visit.

#### Keep to the track

By keeping to the track, where one exists, you lessen the chance of damaging fragile plants.

#### **Consider others**

People visit the back country and rural areas for many reasons. Be considerate of other visitors who also have a right to enjoy the natural environment.

#### Respect our cultural heritage

Many places in New Zealand have a spiritual and historical significance. Treat these places with consideration and respect.

#### Enjoy your visit

Enjoy your outdoor experience. Take a last look before leaving an area; will the next visitor know that you have been there?

Protect the environment for your own sake, for the sake of those who come after you, and for the environment itself.

> Toitu te whenua (Leave the land undisturbed)

Check <u>www.doc.govt.nz</u> > parks and recreation > plan and prepare > minimising your impact > NZ environmental care code

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# Water Care Code





### **10 POINT CHECKLIST**

#### Find out first

Find out and follow the regulations governing recreational use of waterways and access. They are designed to minimise conflict between users and protect everyone's health and safety.

# Stay on established tracks and use existing facilities

By using existing facilities, where these are provided, you run less chance of disturbing wildlife and damaging riverbanks and foreshores.

#### Take care of your gear

Careless use of equipment can harm wildlife and other users.

#### **Remove rubbish**

Litter is unattractive, harmful to wildlife and pollutes water. Plan your visit to reduce rubbish, and carry out what you carry in.

#### Dispose of toilet waste properly

Improper disposal of toilet waste can contaminate water, damage the environment, and is culturally offensive. Use disposal facilities where provided or bury waste in a shallow hole at least 50 metres away from waterways.

#### Be careful with chemicals

Use chemicals sparingly, and refuel with care. Dispose of cooking and washing water well away from the source.

#### Respect our cultural heritage

Many New Zealand waterways have special cultural, spiritual or historical values. Treat these places with consideration and respect.

#### Take only the food you need

When taking food from the sea or freshwater don't overdo it. Sustain life in our waterways by taking only what you need and no more than the legal limit.

#### **Consider plants and animals**

Remember we are only visitors to water environments. Other animal and plant species live there all the time.

#### Consider other people

Respect other visitors ... everyone has the right to enjoy the environment in safety.

Check <u>www.doc.govt.nz</u> > parks and recreation > plan and prepare > minimising your impact > NZ water care code

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# **Ecosystem activity sheet**



Students could list or draw the species they see.

SPECIES 1 (ANIMAL OR PLANT)	SPECIES 2 (ANIMAL OR PLANT THAT INTERACTS WITH SPECIES 1)	ACTION (CONNECTING THE TWO SPECIES)	OTHER SPECIES (THAT THESE PLANTS/ANIMALS INTERACT WITH)	WHAT WOULD HAPPEN IF THIS SPECIES WAS REMOVED FROM THIS ECOSYSTEM?	

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# Matiu/Somes Island school visit booking form (

Please photocopy this sheet, complete and send to:	From:
DOC Wellington Visitor Centre Fax: (04) 384 7773	School:
	Address:
or post to:	Phone:
P.O. Box 10-420 The Terrace	Fax:
Wellington 6143	E-mail:

I wish to make a booking for a class/es to visit Matiu/Somes Island. I understand there is a limit of two classes visiting the island per day because of limited availability of toilets and shelter, and the impact of large numbers of people on the island's wildlife.

Date		ŀ	Alternative dat	te		
Arrival time		C	Departure time	e		
Number of students		(	Class level			
Number of adults a students (include	ccompanying ding teachers)			Any chile supervis island.	d under the age of ed at all times whil	15 must be e on the
Please lend me a resource k period around the ti	it for a 3–week me of our visit		Tick if required	Please er \$25 for th payable t	nclose a refundable ne resource kit. Make to: Department of Co	deposit of cheques onservation.
Please se	end it to me by				Schools may also	o hire a
Please reserve the acti for our vis	vity backpack it to the island		Tick if required		tour of the island Cost \$50 per cla (approximately 3	ss 0 pupils).
Are you using this re	source and/or		T	ick	Proceeds go to t Somes Island Cr Trust.	he Matiu/ 1aritable
education	n programme?	Yes	No		To book a guide the island range (04) 568 6555 or	, phone rs on e-mail
For further information please	e contact:				matiusomes@do	<u>c.govt.nz</u>

DOC Wellington Visitor Centre, phone (04) 384 7770

This form is also available on the DOC website: <u>www.doc.govt.nz > getting involved > students and</u> teachers > field trip by region > Wellington > Matiu/Somes Island Environmental Education Resource

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