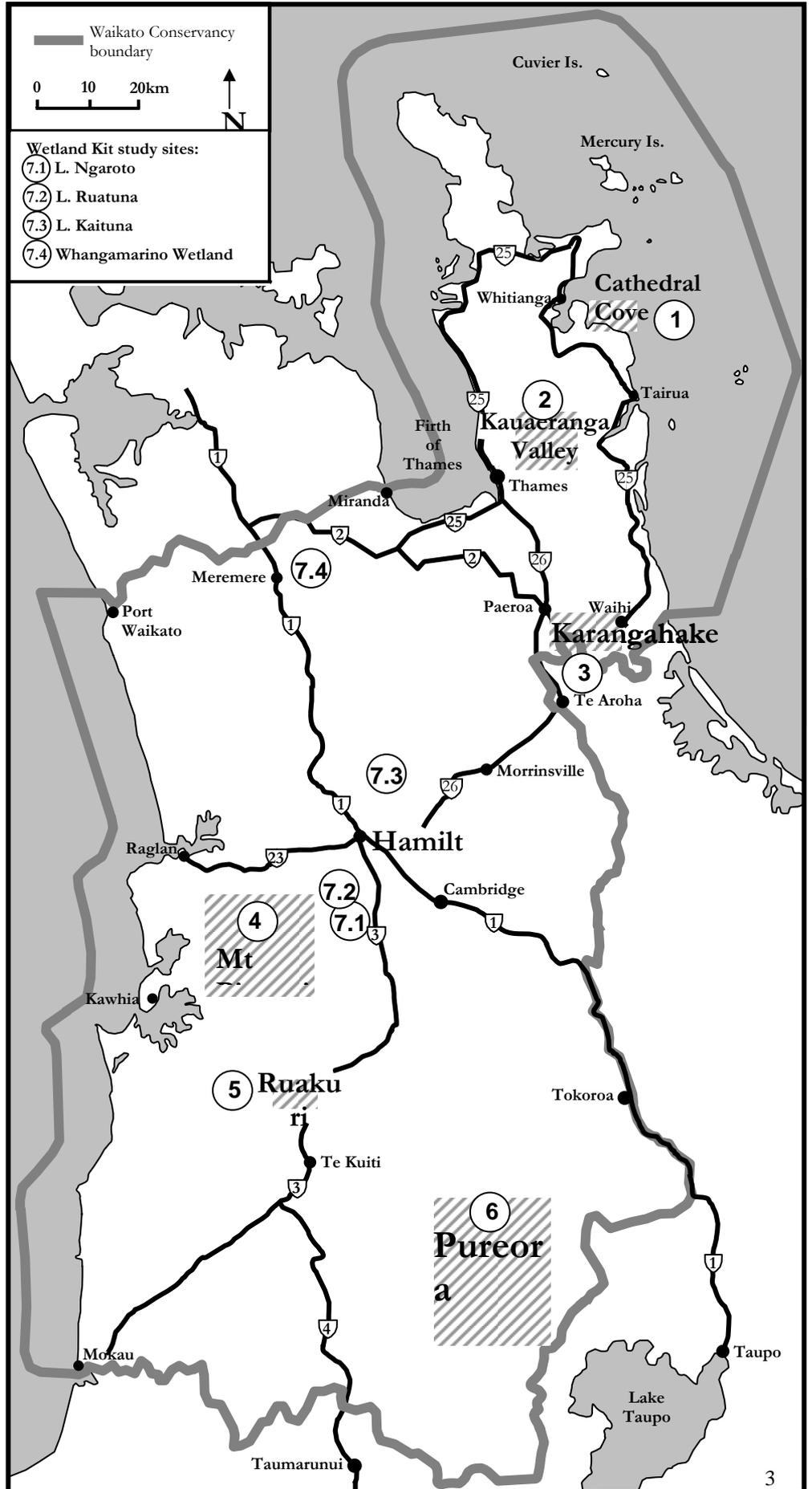




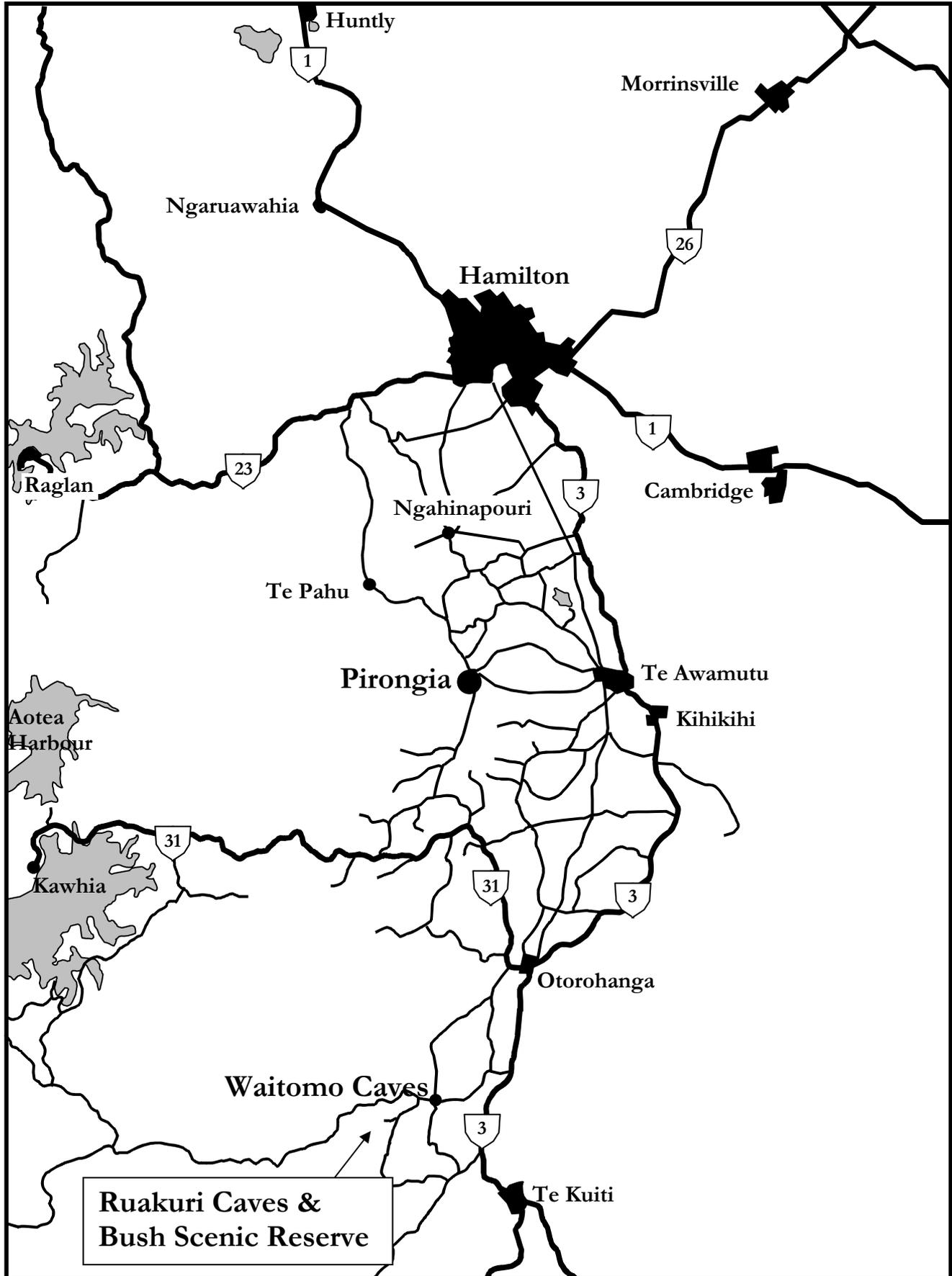
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# Locations of Teacher Resource Kits in the Waikato Conservancy



# Location of Ruakuri Caves & Bush Scenic Reserve





## USING THIS RESOURCE

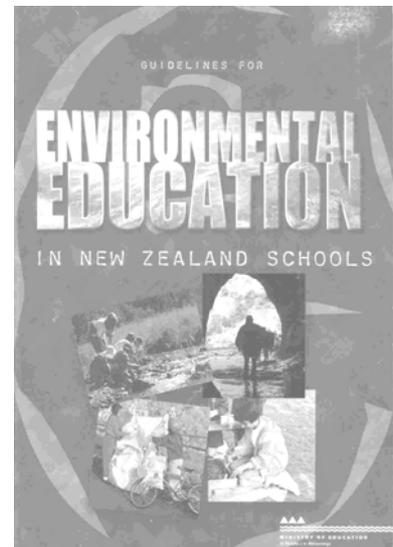
This Teacher Resource Kit is designed to give you a hand to plan exciting and educational conservation learning experiences outside the classroom. It focuses on a selection of parks and reserves administered by the Department of Conservation (DOC) in your region.

There are six accessible sites within the Waikato that are ideal for learning about marine reserves, limestone caves, volcanoes, forests, endangered species and historic reserves. In addition, there are currently three sites (plus one pending) suitable for wetland studies. By visiting these sites, students can consolidate work already done and gain additional first-hand experiences and information to complete their studies.

## CROSS-CURRICULAR OR SPECIALISED

In planning your programme we suggest using the *Guidelines for Environmental Education in New Zealand Schools*. The guidelines provide advice on environmental topics and how to plan these into curriculum studies and programmes with a bicultural focus.

Sites can be used to meet goals from specific curriculum areas, or different curriculum areas simultaneously. This is an approach that mirrors the interconnectedness of the environment.



## ACTIVITIES

Activities in these kits can be adapted to the age/level of your students, allowing you to choose the achievement objectives at the appropriate level. Activities are designed to support the key dimensions of environmental education - *in*, *about* and *for* the environment.

### Education *in* the environment

Education *in* the environment (both natural and built) gives opportunities to develop skills in observation, data collection, practical inquiry and investigation, as well as social and co-operative skills, group-work skills, communication skills, and problem-solving.

### Education *about* the environment

Education *about* the environment involves not only knowing about and understanding the natural and built environments, but also appreciating the key social, political, ecological and economic factors that influence decision making on local, national and global issues.

### **Education *for* the environment**

Education *for* the environment involves developing a sense of responsibility for natural and social environments. It deals with people's emotions and their willingness to make lifestyle choices that help maintain and improve the quality of the environment.

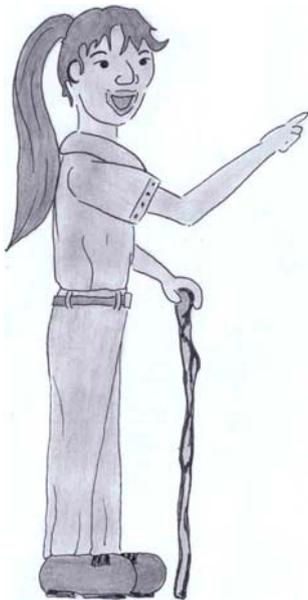
Education *for* the environment is based on students' knowledge and understanding *about* the environment and their experiences *in* the environment – all three aspects are interlinked.

A balanced environmental education programme addresses all three dimensions (*in, about, and for*).

### **BEFORE YOU START**

The activities offer students the opportunity of working across a range of related subject areas - in much the same way as project teams work together to manage a forest park or marine reserve, for the benefit of all. Teachers are encouraged to undertake further extension activities such as:

- Use of media such as the internet, books, videos, maps and tapes.
- Taking part in a Ministry of Education LEOTC (Learning Experiences Outside the Classroom) programme.
- Visits to zoos, aquaria, botanic gardens, museums, marine education centres and other facilities offering environmental education programmes and resources.
- Guided trips and recreational activities led by accredited outdoor education providers.



### **BACK AT SCHOOL**

To get the best value from a field trip teachers should plan good lead-in and follow-up activities. If students have some formative ideas about what they might find, they will observe in a more focused way and therefore develop their concepts more fully.

The suggested activities given on pages 7 and 8 are designed to encompass learning '*about*' and '*for*' the environment. You will find specific site-based activities for Ruakuri Caves & Bush Scenic Reserve (learning '*in*' the environment) from page 26 onwards.



## Before Visit Activities

1. Find out what the students know about DOC. Why does DOC exist? Is there a DOC office in your area? What sorts of things does a DOC ranger do? Check out the DOC web site, [www.doc.govt.nz](http://www.doc.govt.nz) (*about & for*)
2. Brainstorm the ideas that students already have about Ruakuri Caves & Bush Scenic Reserve, for example - what is a karst landscape? What is a cave? What would you expect to find living in a cave? Can you think of any caves you have visited? (*about*)
3. Design and carry out an opinion poll. What different attitudes do people have about caves and their protection? Is there a range of views? What are the implications of your findings? (*for*)
4. Have a class debate on why the cave ecosystems at Ruakuri should be protected and saved. Explore concepts such as attitudes and values. (*for*)
5. Examine the meanings of the words 'exotic', 'endemic', 'indigenous' and 'native'. Think about what plant and animal species might be found in Ruakuri and where they fit in the above categories. (*about*)
6. Consider the impact of water quality, logging, plant and animal pests on cave ecosystems. Why is management necessary? Design a campaign to raise awareness about the impacts on cave ecosystems. (*for*)
7. Look at what your class can do to help the environment - while visiting Ruakuri and back at school. Why is this important? How can your school's local community get involved in protecting natural areas? (*for*)
8. Explore New Zealand's responsibilities under global conventions such as the Convention on Biodiversity, and the Kyoto Convention. Use the DOC web site to find out about the New Zealand Biodiversity Strategy. Why is this strategy necessary? How do the goals and actions in the strategy relate to the site you are visiting? (*about & for*)
9. Find out who the local iwi near Ruakuri are. Where are their marae? Who are the kaumātua? What stories can they tell you about Ruakuri? (*about*) How can traditional knowledge of Ruakuri be more widely available to people who visit the area? Design ways of distributing information, such as interpretation panels, brochures, web pages, and radio interviews. What will your message be? Why? (*for*)
10. Visiting outdoor areas usually requires special gear and there are safety issues to take into account. Have students list the clothing and other gear they think they will need on the trip and create new designs. (*about*)
11. Design an outdoor safety code. Appoint class members to help apply it on the day. Why is this important? (*about*)





## After Visit Activities

1. Draw plants and animals that make a food chain and/or cut them out. Arrange them into a food chain or, for more advanced students, build up a food web. What happens when you introduce an animal pest (herbivore or predator) into the equation? (*about*)
2. Examine a picture of a bat and identify its special features, e.g. echolocation, furry body. Add labels for these adaptations (features) and say how each helps the bat survive. What can we do to help protect them? (*about & for*)
3. Make a poster about glow-worms. Find out why they become rare when streams are polluted and stripped of surrounding trees. What can be done to protect our waterways? (*about & for*)
4. Make a “wanted” poster for an introduced mammal pest. Describe the damage that the pest is doing and suggest an ecological reward for its elimination. (*for*)
5. Calculate the weight of forest that possums destroy in New Zealand. There are about 70 million of them and they can eat between 0.8 and 1 kg per night. Work it out per night and per year. Then consider the effects on their favourite food species and on the other native plant eaters. How can we keep possum numbers down? (*about*)
6. Find out about the use of plants as *rongoa* or traditional medicines. Ask your local kaumātua or check books in the library. Try some tea made from kawakawa leaves. (*about*)
7. Have a class debate on why the cave ecosystems at Ruakuri should be protected and saved. Explore concepts such as attitudes and values. (*for*)
8. Consider the impact of water quality, logging, plant and animal pests on cave ecosystems. Why is management necessary? Design a campaign to raise awareness about the impacts on cave ecosystems. (*for*)
9. Look at what your class can do to help the environment - while visiting Ruakuri and back at school. Why is this important? How can your school's local community get involved in protecting natural areas? (*for*)



### Get your school involved:

- Adopt a local reserve.
- Join a community conservation group.
- Plant a native garden.
- Use plants that will encourage native birds to your school.
- Start a native plant nursery.
- Raise funds for a threatened species.
- Embark on a conservation awareness campaign.
- Get involved with the Kiwi Conservation Corp (Forest & Bird) or Junior Naturalists.

For more information on how your school can get involved in conservation contact your local DOC office.



kawakawa

# ORGANISATION OF OUTDOOR SAFETY



Remind students that they must be able to see another person at all times.

When planning a visit to Ruakuri Caves and Bush Scenic Reserve, follow school policy to make sure the correct procedures are being followed. For example, you will need to do a risk analysis and management plan for your visit.

## Points to remember:

- ❖ Be sure to brief students on outdoor safety before the visit, and remind them again on arrival to take care. Students are to stay together at all times and under no circumstance are they to wander off by themselves.
- ❖ Have parents/helpers well briefed on their responsibilities - mainly to know exactly where their charges are at all times.
- ❖ The study sites are along or close to main tracks and the possibility of getting lost is minimal.

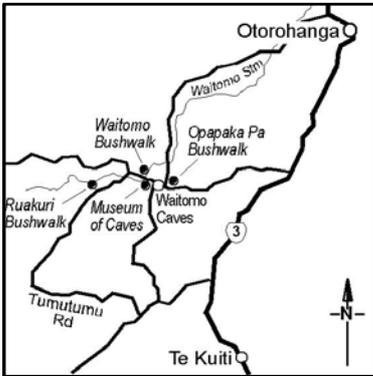
For further in-depth information on outdoor safety refer to:

- **Education Outdoors New Zealand (EONZ)**  
For information about EONZ, publications and resources, and local contacts, check out their website: [www.conz.org](http://www.conz.org)
- ***Safety and EOTC: A good practice guide for New Zealand schools*** (Ministry of Education, 2002)  
[www.tki.org.nz/e/community/eotc](http://www.tki.org.nz/e/community/eotc)
- ***Managing Risks in Outdoor Activities*** (Mountain Safety Manual 27, 1993)
- ***Outdoor safety management systems for primary and intermediate schools*** (Education Outdoors New Zealand, 1998)
- ***Outdoor Activities: Guidelines For Leaders*** (SPARC)  
[www.sparc.org.nz/education/outdoor-activities-guidelines-for-leaders](http://www.sparc.org.nz/education/outdoor-activities-guidelines-for-leaders)
- ***Be WaterWise programmes*** (Water Safety New Zealand)  
[www.watersafety.org.nz/directory/bewaterwise.asp](http://www.watersafety.org.nz/directory/bewaterwise.asp)



# RUAKURI CAVES AND BUSH SCENIC RESERVE

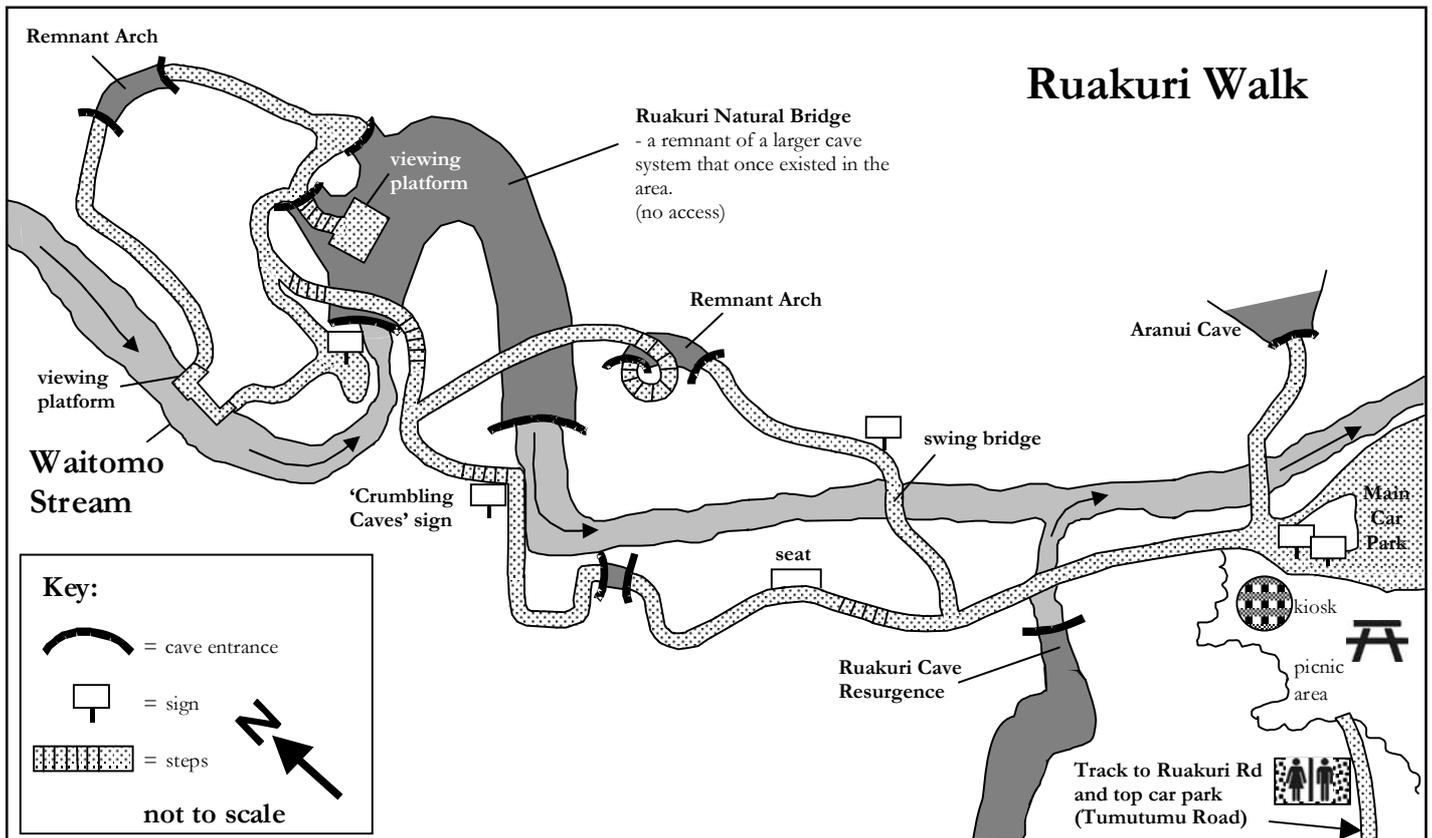
## Facilities & Organisation



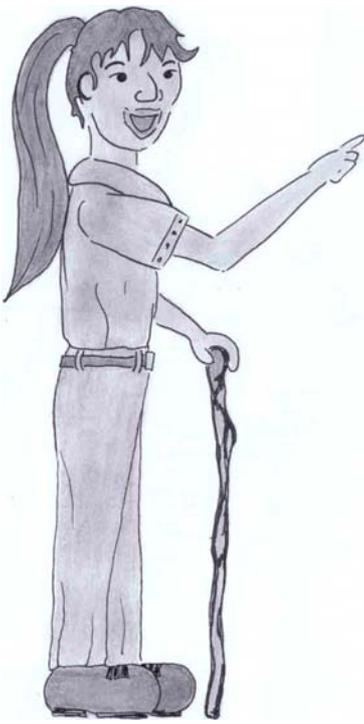
There are two sites that can be used by schools to start their Ruakuri cave and bush adventure:

- Top car park (Tumutumu Road)
- Main car park

Allow 45 minutes to one hour to walk the track (return).



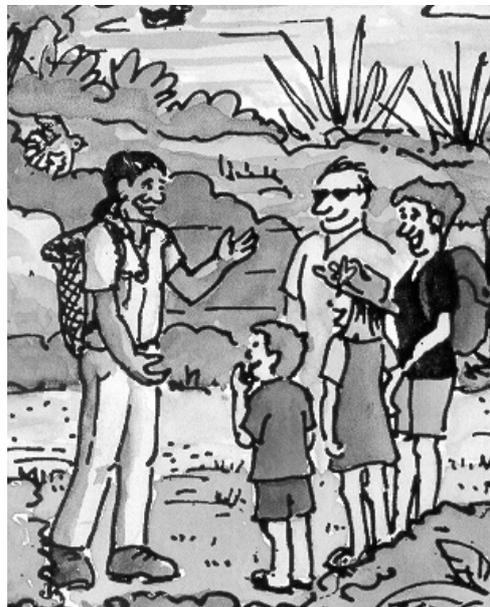
- At the top car park there are no facilities apart from a picnic table and a grassed area for assembling students.
- Main car park: There are toilets, some wet weather facilities and a picnic area. The car park is large and has room for assembling students.



- No bookings are necessary for the use of these facilities, but there are usually people using the track and facilities on most days and even at night.
- A pre-trip visit is recommended by supervising teachers.
- The actual walking time required for the track is approximately 45 minutes from the car park and from the top of the hill allow approximately 1 hour.
- Use the Department of Conservation brochure “West to Marokopa” to locate more limestone caves, bush walks and waterfalls close to Ruakuri Caves and Bush Scenic Reserve.
- The Museum in Waitomo Village can provide wonderful extended information.
  - ❖ Site investigation kits can be booked and collected from the education office at the Waitomo Museum of Caves. These contain a thermometer, plastic container for water sampling, cord and clip for lowering the thermometer and water sampler, and a plant identification guide.
  - ❖ The education office will photocopy your completed recording sheets so they can load the information into a database that you will be able to access on their web page: [www.waitomo-museum.co.nz](http://www.waitomo-museum.co.nz)
  - ❖ Primary schools would be advised to organise the responsibility of recording the data with an adult supervisor in the group. Secondary pupils could make either individual records or group summaries.
  - ❖ Water clarity assessments can be related to recent rainfall events in the local area. The best rain gauge to use is the Environment Waikato record from Waitanguru rainfall from the past seven days; go to this through the web at [www.ew.govt.nz](http://www.ew.govt.nz).



- NEW ZEALAND ENVIRONMENTAL CARE CODE
- Protect plants and animals
- Remove rubbish
- Bury toilet waste
- Keep streams and lakes clean
- Take care with fires
- Camp carefully
- Keep to the track
- Consider others
- Enjoy your visit
- Toitu te whenua  
(leave the land undisturbed)



# **RUAKURI CAVES AND BUSH SCENIC RESERVE CONSERVATION MANAGEMENT**

## **The Ruakuri Caves and Bush Scenic Reserve**

According to local tradition, the cave was inhabited by a pack of wild dogs - hence its name, *rua* which means cave and *keuri*, the name for a Maori dog. There are burial caves in the cliffs along the track making this a place of special significance for Maori. The entrance to Ruakuri Cave, marked by karaka trees with a burial cave above is *waahi tapu* (sacred).

The Ruakuri Caves & Bush Scenic Reserve (114 ha) uses interpretive signs on tracks, the car park and other facilities to inform visitors about the conservation values of this reserve.

## **Uses of Ruakuri Caves and Bush Scenic Reserve**

- ❖ Walking
- ❖ Caving
- ❖ Tourism
- ❖ Endangered species research
- ❖ Education
- ❖ Environmental monitoring



Protect plants and animals

Remove rubbish

Bury toilet waste

Keep streams and lakes clean

Take care with fires

Camp carefully

Keep to the track

Consider others

Enjoy your visit

Toitu te whenua  
(leave the land  
undisturbed)

## **Conservation**

Limestone rock formations, collapsed caves, the natural bridge, the Aranui tourist cave, outdoor glow-worm displays at night, fossils, long-tailed bat colonies, Maori settlement and burial sites make this reserve a very special place for the hundreds of visitors who arrive daily.

