

SECTION 6



TAKING ACTION TO PROTECT ALPINE ENVIRONMENTS



Hooker's speedwell and *Pimelea buxifolia*. Photos: Alan Cressler

INVESTIGATING ALPINE ENVIRONMENTS

Section 6: Taking action to protect alpine environments

THE CURRENT SITUATION

It is sad, but New Zealanders are now more familiar with a blackbird, sparrow or magpie than they are with a robin, rifleman or kōkako. Pine trees, gorse and broom are now an everyday sight. For more information about threats to alpine environments, see Section 5: Understanding alpine environments (pages 7–8).

When we visit conservation areas we need to respect and enjoy them; to try not to introduce seeds and foreign plants, leave our household pets at home and look after the fences around protected areas that keep out animals. If we all take a little care, we will be able to enjoy our national parks and special native flora and fauna for all time. See www.doc.govt.nz/tongariro-pests-and-weeds.

These and other similar threats are not only unique to alpine ecosystems. You will also have a range of threats to your local environment. That might be the water quality of rivers and streams, degradation of wetlands, decrease in bird numbers due to predation, weeds smothering native plant species and damage to dune systems by vehicles and motorbikes, to name just a few.

If we want to preserve any of our unique New Zealand plants and animals, we must protect what we have left before it is completely gone.

This section delves into ‘taking action to protect alpine environments’. Whilst reflecting on your field trip to the alpine environment of the Tongariro National Park, use the following framework to think of some actions that you could take to help protect this unique environment.

If you are unable to take meaningful and effective action in the alpine zone, do some of your own research into threats to the environment in your local area, and use the taking action guides below to develop an action that you can take to help your local environment.

A guide to ‘taking action’ for teachers

Teaching conservation education is about providing your students with a real-life context on which to base their learning, and an opportunity to apply their learning to authentic opportunities to take action. Participating in environmental action is empowering and inspiring for students and encourages them to become informed, active participants in their own society by connecting with nature in a meaningful way.

Taking informed action allows students to move from acquiring knowledge and experiencing nature, to actively participating in deep contextual learning, developing skills and creating positive change in their environment.

When deciding on which real life conservation issue to take action on, students should have a good understanding of the underlying causes related to issues and be able to justify why carrying out action is important. Taking action empowers students to consolidate, extend and share their learning. Students are able to do something with their learning: "It's not what you know, it's what you do with what you know".

Any action needs to have a meaningful, authentic, real-life purpose. The process of taking action for the environment should not be conducted in isolation but should be a natural outcome of students' experiences, knowledge and reflection. (See the project planning inquiry cycle on page 15 in the Appendix).

Healthy Nature, Healthy People

Humans are an integral part of the environment that surrounds us, so it stands to reason that if our environment is unhealthy, we too will become unhealthy. The research tells us what we've long suspected, that spending quality time in the outdoors both playing and learning is good for us.

Taking action for conservation is about the future of Aotearoa. Without environmental action, the outlook

for our New Zealand threatened species is doubtful. The more we can do to contribute to conservation and protecting our unique plants and animals, the more resilient the natural environment will be for future generations. Informed, targeted action is a key component of education for a sustainable future.

Growing young people who have the knowledge and skills to look after Aotearoa now and into the future has huge benefits and outcomes for both the environment and the humans who live, work and play here.

Planning the action

Identify the issue

Teachers should take into account the prior knowledge of students and their current interests, enthusiasm and skills when making decisions about what issue to focus on. Also contemplate what students might learn from acting to solve an issue. Gaps in knowledge, skills and information should also be considered. Students should be as free as possible to decide which issue is important for them to contribute to.

Student-led action

Sharing decision-making with students will increase their enthusiasm and engagement. Considerations here include the time and resources available to successfully carry out the action. Students should examine their own values, attitudes, thinking and behaviour around an issue to determine how they and other people might contribute to it. To enable students to work to their interests and strengths, identify a range of roles and tasks required to complete the action.

Some students may feel compelled to help carry out animal pest trapping; others might prefer a supporting role. Some might be more interested in communicating actions by writing stories, blog posts and/or taking photographs. All students can contribute in ways that suit their strengths and interests.

Teacher considerations before planning for action






Research the action and be aware of key stages of the project. Some initial research by the teacher to ensure feasibility can clear the way for students and avoid unnecessary setbacks.

Beginning to plan with students

Students should be actively involved in all stages and aspects of planning the action project. Empowered students will be much more motivated to carry out actions.

Using current approaches and teaching practice

You can draw from a range of pedagogies to guide planning for conservation action, including the following.

	<p>Inquiry or project-based learning</p> <p>The inquiry learning approach provides a project management framework to support students in planning and implementing their action. Project-based learning builds on knowledge, skills and perspectives already developed and allows students to apply these and contribute to real-life and authentic action. Teachers often are learning alongside students as learning and skills are applied to solving a conservation issue.</p> <p>See the project planning inquiry cycle on page 15 in the Appendix.</p>
	<p>Māori world views</p> <p>Incorporate cultural knowledge, kaupapa and te reo Māori.</p> <p>Encouraging the exploration of different perspectives about the environment and how we interact with it.</p>
	<p>Future-focused or 21st century education</p> <p>Learning that is relevant and authentic in relation to young peoples' interests and concerns.</p> <p>Forming new kinds of partnerships between school and the wider community.</p> <p>Young people developing their capacity to create knowledge rather than merely consuming knowledge.</p>
	<p>Cross-curricula learning</p> <p>Using the conservation education context to access learning in different curriculum areas while also acknowledging the obvious links with strands such as Nature of Science (Participating and Contributing) and Technology (Technological Practice).</p> <p>Action develops the New Zealand Curriculum principles, vision, key competencies and learning objectives of multiple subject areas. It promotes the development of students into knowledgeable, actively involved, empowered future citizens.</p>
	<p>Place-based learning</p> <p>The opportunity for students to experience and explore a particular place – to connect, identify and take action on real-life conservation issues specific to that place.</p>

Project planning inquiry cycle

1. Identify an issue

- What do you already know?
- What learning have you already done that will be useful to use?

2. Ask the questions – find the underlying causes of your issue

- What questions do you need answers to?

3. Investigate – understand the issue better

- Find out more information.
- Sort and organise the information you collate.

4. Extend your thinking

- What haven't you already thought about?
- Who else could help?
- Where would you find information from a different perspective?

8. Monitor and review

- What worked? What didn't?
- What would you do differently next time?
- What new learning have you done?
- Was your action successful? How?

7. Implement your action – working alongside your community

6. Plan your environmental action

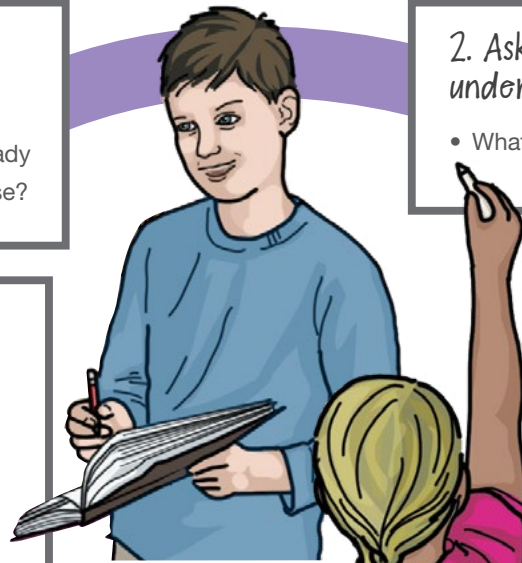
- How are you going to do this?
- What do you need?
- Who can help?
- When will it be done?

5. Decide on meaningful, effective action

- What are you going to do? Why?
- How will it benefit the environment?
- Set goals and have a common vision.

9. Share your action successes and next steps

Note: sharing can happen at any stage of your action project. It can be worthwhile sharing your action plans with your community at the start of your project, to encourage people to support you.



A guide to ‘taking action’ for students

Use the information below alongside the project planning inquiry cycle (on the previous page) to support planning, implementing, monitoring, reviewing and sharing/celebrating your conservation action.

1. Identify an issue

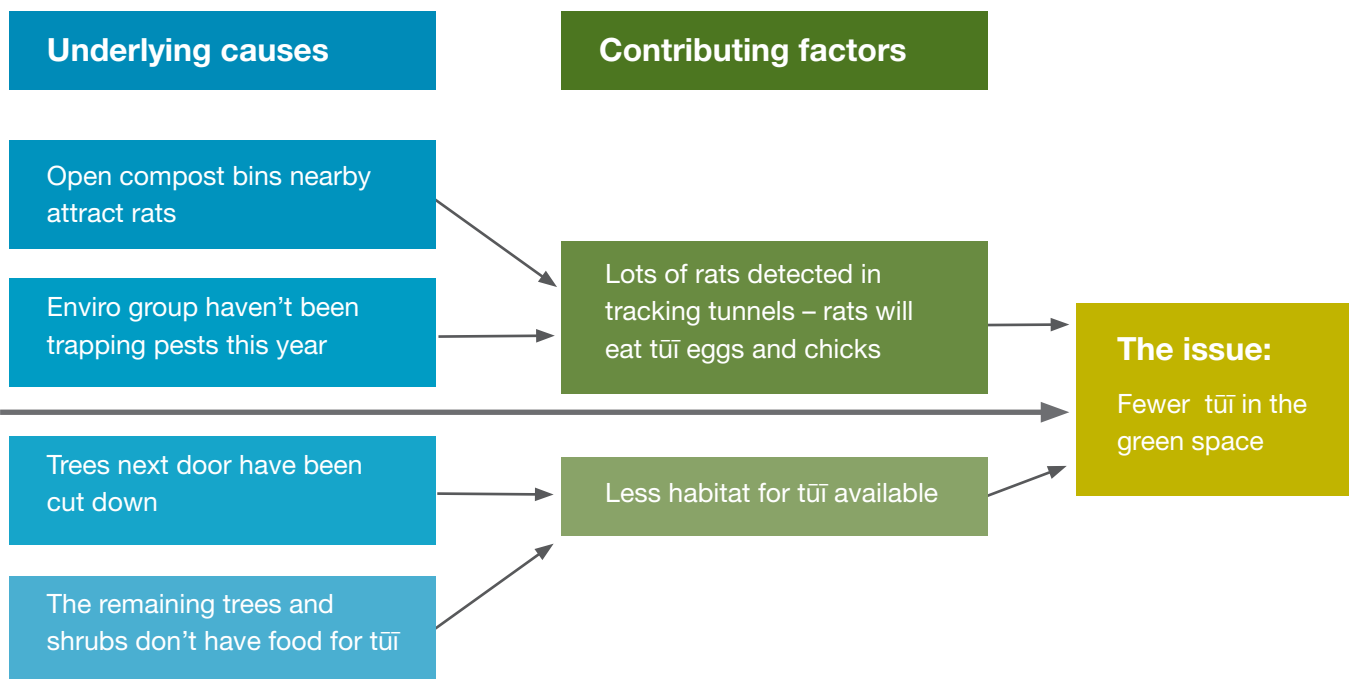
An issue is something that needs to change in order to achieve a sustainable future where New Zealand biodiversity is protected and enhanced. An issue could be a challenge/concern/problem for endemic and native plants, animals or the environment.

Sometimes issues are large and can seem unsolvable (e.g., mass extinctions, plastics in the ocean or climate change). Breaking an issue down into smaller parts and making it particularly relevant for your local community can help you to tackle it more effectively.

2. Ask the questions – find the underlying causes of your issue

Brainstorm the aspects of an issue. Look closely at these aspects and identify any underlying causes.

Use a Fishbone diagram from www.doc.govt.nz/education-toolsforaction to help organise your thoughts about the underlying causes of an issue.



3. Investigate – understand the issue better

Research the causes to determine which is the most concerning. Ensure you are targeting the root causes or the issue in your action, otherwise the issue could keep occurring. In the example above, if students only planted trees it might not make a difference if the other underlying problem/cause of the issue (the rats) is not addressed.

4. Extend your thinking

Questions to consider:

- What haven't you already thought about?
- Who else could help?
- Where would you find information from a different perspective?

5. Decide on meaningful, effective action

Setting goals and having a common vision

Having a vision and achievable and measurable goal(s) for your action will ensure you stay on track to achieve what you set out to do, avoid going off on tangents and continue to refine and review your progress. Goals are good motivators and can help to inspire and involve the wider community. They will also help you to define the extent of your action and set criteria.

Questions to consider:

- Keeping in mind the issue you have identified, what is the goal you want to achieve?
- What is your vision for your environment? How would you like it to look in the future?
- Envisage the best possible future for native animals and plants in your environment. Create a 'best possible future' map or drawing of your environment.

Your chosen action should make a difference to the focus issue you are concerned about, as well as its underlying causes. The action needs to contribute to a positive future vision for your place.

Tools to help make a decision about action options

Sustainable action – There should be positive changes in all aspects of sustainability (environmental, social/political, cultural and economic) for a successful, ongoing action.



ASPECTS OF SUSTAINABILITY TO CONSIDER:

Environmental	Social/Political	Cultural	Economic
How will the environment be enhanced by your action?	How will different groups of people be affected by this action?	How could different cultures from your school contribute to your action?	How can this action enhance local business?
Which animals and plants will benefit?	How can this action contribute to bringing people together?	What unique cultural aspects (eg Māori perspectives) can you include?	How can businesses and the wider community contribute?

Consider the following questions when trying to determine which action(s) to take:

- Which actions would contribute to your positive vision of the future?
- Check that the action will address the issue.
- What environmental restoration has already been done in your area. Is there a way you can contribute to what is already happening rather than start a new action project? How can you collaborate to make a bigger difference?
- Learn from past or present contributions? (What has been achieved? Who was involved? How do they know their action was successful?)
- Brainstorm and record ideas about possible actions. Make a list of possible environmental action ideas.

Set criteria to assess the potential action ideas.

Criteria are principles or standards that will help to make your action successful. Examples of criteria are given in the table below.

Complete a decision-making grid or PMI (plus, minus, interesting) table (see www.doc.govt.nz/education-toolsforaction) about each option for action to determine which is the most suitable choice.

Criteria:						
Options for action:	Will this action make a difference to the focus issue, its causes and help to achieve our goals?	Will this action idea motivate and excite us to keep it going?	Do we have most of the resources required for this action or can we get them easily?	Will this action involve our wider community and include local iwi?	Do we have some prior knowledge and relevant experience that will assist us?	Will we learn something new from choosing this option?
E.g. Planting food trees for korerū	Yes 10/10	Yes 10/10	Not really - 2/10	Yes 10/10	Yes 8/10	Yes 10/10

A consequence wheel (see page 3 of the Appendix) could also be used to think reflectively and creatively about the possible consequences of an issue, event or idea. The information you gather can be used to justify your chosen environmental action.

6. Plan your environmental action

Create living planning documents that can easily change and adapt as you learn more about your action possibilities and opportunities. Use your plans every day to inform task lists and set milestones. Planning for action should be flexible, especially in the initial stages. Plans can change quickly according to time, people and resources available.

Making a rough plan to start with can be helpful. Then, as the project progresses, being more organised and detailed can help to achieve an effective action that is easy to collaborate on.

See <http://technology.tki.org.nz> for guidance and information about planning your project.

Action plans

Plan to manage your available money, time, equipment, people and resources carefully. Identify responsibilities, roles, skills needed, people affected by actions and time frames at each stage. Work backwards in your planning to reach your goal(s).

Use the planning tools that suit your individual preferences. Initial questions include:

- How can you apply your learning to help our local environment?
- How am I going to use what I have learned to make a difference to the issue?

Action planning templates:

These are available at nzcurriculum.tki.org.nz/Curriculum-resources/Education-for-sustainability/Tools-and-resources.

A brief for action and detailed action plan can be found at www.doc.govt.nz/education-toolsforaction.

7. Implement your action – working alongside your community

Working with tangata whenua in your area

Kaitiaki are tangata whenua who have been given responsibility through ancestral connections to protect and look after an area's resources. They work with the living and non-living aspects of the environment to act as kaitiaki or protectors/guardians. Kaitiaki help to restore ecosystems through a holistic approach, recognising that all things are interconnected. They look after the environment to help maintain the balance of everything within it, using their unique cultural, historical, spiritual and traditional knowledge and skills.

Becoming a kaitiaki is process that is handed down and managed through iwi members and kaumātua. The customs around kaitiakitanga vary according to region and tribal teachings.

Supporting kaitiaki

We can all support kaitiaki in their roles and work alongside them. Kaitiaki often need help from their communities to look after the environment. Local councils can help you to find the appropriate iwi responsible for kaitiakitanga in your area (rohe).

Find your local iwi, marae and or hapū using this website www.maorimaps.com. Contact your local iwi to ask how you can best support their work.

Example of working alongside tangata whenua to support kaitiakitanga

Te Kura Kaupapa Māori o Te Rāwhitiroa have been working collaboratively in their community to restore the Waitaua River. They have documented the journey through an interactive website: <http://tearaitakahia.teahoturoa.org.nz>.

Working with the wider community

Help from experts and community members can enhance your project. Canvas your community through newsletters, emails and your own contacts to reach out to interested people who may be able to assist with your project. Contact your local iwi to ask how you can best support their work.

Use the skills and expertise available in your community. Often there are parents, grandparents or community members waiting in the wings who can help your project reach the next level. Contact staff from supporting organisations (e.g., councils and not-for-profit groups) to see how you can work together.

For a list of community groups throughout New Zealand, see www.doc.govt.nz/volunteergroups and www.naturespace.org.nz.

8. Monitor and review

Measuring and monitoring action – taking photos and documenting your project

Ensure you and your team keep a record of your project journey from start to finish. This could be through photos, notes, apps, digital devices or written records. This could be photographing the growth of plantings over time, doing bird/invertebrate surveys on a regular basis or conducting ongoing pest monitoring or weed surveys. Photos are particularly useful to show the overall impact of your project, as well as recording a starting point and progress as the project advances.

Why keep records about action projects?

Photos and records can be vital for securing support and funding opportunities. They are also excellent resources for keeping the school and wider community informed about your project and for monitoring and reflecting on action. They can also be useful to refer back to when working on future projects. Keeping good records makes reviewing the progress and success of your project much easier.

Questions for students about measuring and monitoring change

- What changed because of your action?
- Will you measure this change?
- How will you maintain and monitor/measure your action?

Reviewing your action

Reviewing environmental actions can be helpful for learning and for informing future restoration efforts. When encountering setbacks, reviewing and monitoring can be especially beneficial, to help identify next steps. It can be done at any stage of your project but is most helpful when carried out at regular steps throughout the project.

Project self-reflection

You can reflect on your action and learning by asking questions throughout the project, such as:

- Does our action address the issue we were targeting?
- Did we achieve what we wanted to?
- What did we enjoy? What did we not enjoy?

- What unexpected outcomes did the action achieve?
- What has challenged us along the way?
- Did it go well with the people you worked with? Why or why not?
- How will you continue to involve whānau and the community in your project/action?

Learning reflection

- What did we learn from our action?
- Was there a learning gap? (Are there skills and knowledge or information we don't have yet?)
- How can this learning help others?

Reviewing with your community

Involve a range of people in reflecting on and reviewing your action, including participants, leaders, community members, supporters and other groups. Interview and survey these people to find out what they thought went well or what was not so successful from their perspective.

Sample questions for community members involved with your action:

- How has the action influenced you and your community?
- In your opinion what aspects of the action went well?
- What are some ideas for improvement?
- How could the school work more effectively with you in future?

9. Share your action successes and next steps

Note: sharing can happen at any stage of your action project. It can be worthwhile sharing your action plans with your community at the start of your project, to encourage people to support you.

Sharing success with your community

Celebrate the success that your action has accomplished with your community. Ensure you include everyone who was involved in your celebration and thank the people who have contributed to your success. Acknowledging others' help can keep relationships strong and people will be more inclined to help again in future.

Environmental actions can have amazing results, some of them unexpected! It is important to take a step back and examine what has been achieved over time. Use your records to add to the process.

Sharing success could be through your newsletter, emails, assembly item or a public event. For other ideas see also Digital tools to record prior knowledge/experiences, key questions and communicate learning on page 3 of Section 2.

Communities enjoy participating in environmental successes. Hosting events is a great way to also gain more support for your project on an ongoing basis and educate the public about your learning and local biodiversity assets.

Next steps

Now that you have achieved a successful action it doesn't have to stop there. This could be the beginning of something big!

- What do you think and feel about your results?
- What would you do differently next time?
- What is the next step for your environmental journey?

- How can you pass the project on to other students and staff in the school to ensure it continues?
- Check out <http://enviroschools.org.nz> and/or contact your local council for information about how to become a whole school committed to sustainability.
- Contact DOC's education team at conserved@doc.govt.nz for further support, and to share your environmental successes.

For tips for successful action in schools, potential funding sources, supporting resources and environmental action case studies, see DOC's Tools for environmental resource, pages 19–30 at www.doc.govt.nz/education-toolsforaction.

