

# Managing the future: Australian environments

## Strand

Time, Continuity and Change  
Place and Space

## Core learning outcomes

*Time,  
Continuity  
and Change*

**TCC 6.3** Students collaboratively identify the values underlying contributions by diverse individuals and groups in Australian or Asian environments.

*Place and  
Space*

**PS 6.1** Students use criteria and geographical skills to develop conclusions about the management of a place.

**PS 6.3** Students initiate and undertake an environmental action research project based on fieldwork.

**PS 6.4** Students use maps, tables and statistical data to express predictions about the impact of change on environments.

## Purpose and overview

This module begins with a case study in which students use geographical skills to make decisions about the management of an Australian place. Students work together to identify how individuals and groups have contributed to this management by concentrating on positive contributions. Values underlying these contributions are identified. Students then initiate their own research into the management of a different Australian environment, emphasising the impact of change on environments. From this research, students learn to use maps, tables and statistical data to express some general predictions about the impact of change on environments. Students are encouraged to reflect on and reconsider how they can contribute to the ecological and economic sustainability of the environment and the management of places within their range of influence.

<b>Phases</b> (Minimum time recommended: 10 hours)	<b>Activities</b>	<b>Core learning outcomes</b>	<b>Assessment opportunities</b>
<b>1. How are places managed?</b>  (approximately 4 hours)	1. Using criteria to make decisions 2. Who is contributing to management?	TCC 6.3 PS 6.1	Case study report — in various formats Group oral reports
<b>2. How well are places managed?</b>  (approximately 3 hours)	3. Applying prior learning to initiate a case study 4. Accessing fieldwork 5. Action research based on fieldwork	PS 6.3	Fieldwork preparation and records Peer assessment
<b>3. How will places be influenced by change?</b>  (approximately 3 hours)	6. Using maps, tables and statistics to predict the impact of change 7. What will we do?	PS 6.4	Mini research task Test involving trend analysis based on data provided

## Assessment

The assessment opportunities outlined are examples of how to assess students' demonstrations of the identified learning outcomes. As often as possible, negotiate assessment with students and support a variety of ways of demonstrating the learning outcomes. Reflect with students on evidence gathered when making judgments about their demonstrations of learning outcomes. Some students may require more time and/or other contexts in which to demonstrate these learning outcomes. Other modules may provide such time and/or contexts and the 'Levels 1 to 6 module learning outcomes maps' in the *Years 1 to 10 Studies of Society and Environment Sourcebook Guidelines* can be used to identify these modules.

### **Assessing learning outcomes at different levels**

Activities are designed primarily for students working towards demonstrations of Level 6 learning outcomes. Some assessment opportunities may be used to decide whether students are demonstrating the learning outcomes at levels before or after Level 6. To guide judgments about students' demonstrations of learning outcomes consider whether students are:

- working towards demonstration of the Level 6 learning outcomes
- demonstrating the Level 6 learning outcomes
- demonstrating the Level 6 learning outcomes and working towards Beyond Level 6 learning outcomes.

Learning outcomes in the syllabus at Level 5 and Beyond Level 6 could provide a guide for teacher judgments. Studies of Society and Environment learning outcomes are organised so that there is a progression of concepts and processes within a strand. For example, the progression from PS 5.4 and PS 6.4 to PS D6.4 involves increasing sophistication and complexity, particularly related to the concept of *spatial patterns* and the process of *communicating*, though neither of these is exclusive of other concepts and processes. The elaborations provide specific content examples of how the concepts and processes may be levelled from Levels 1 to 6. See the Queensland School Curriculum Council website at [www.qscq.qld.edu.au](http://www.qscq.qld.edu.au) for more information.

## Using this module

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The activities in this module are less detailed than in other modules. Commercial texts and videos are relied upon for resources. Assessment opportunities are suggested. For more detailed suggestions about planning activities to assist students to demonstrate specific core learning outcomes, refer to other Queensland School Curriculum Council sourcebook modules.

Historical sources will need to be used in several activities. Some prior research into individuals who have made contributions to sustainable management practices is needed for Activity 1.

## Background information

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### Terminology

In this module students have opportunities to become familiar with and use the following terminology:

action research  
biodiversity  
geographic skills  
sustainability

### School authority policies

Be aware of and observe school authority policies that may be relevant to this module, particularly those relating to fieldwork and excursions.

### Equity considerations

Activities take place in a supportive environment. They provide opportunities for students to increase their understanding and appreciation of equity through valuing diversity and challenging inequities. Activities encourage students to:

- develop criteria-based judgments about the management of a place
- value peace and ecological and economic sustainability
- recognise that we all have a responsibility to leave environments in better condition than we found them.

Some students with disabilities may need assistance with some activities. Advice should be sought from their support teachers. It is important that these equity considerations inform decision making about teaching strategies, classroom organisation and assessment.

### Links

#### **Studies of Society and Environment**

This module is one of a suite of modules for Levels 1 to 6. See the Queensland School Curriculum Council website at [www.qscc.qld.edu.au](http://www.qscc.qld.edu.au) for more information.

This module has conceptual and process links to the following modules:

- Level 4: *Resources rich and rare: Australian resource management*
- Level 5: *A question of balance: Australian environments.*

#### **Other key learning areas**

Activities may offer opportunities for planning across key learning areas. However, it is important that the integrity of the key concepts, organising ideas and processes within key learning areas is maintained. See the Queensland School Curriculum Council website for sourcebook modules developed for Science and Technology that may be useful resources.

### **Evaluation of a unit of work**

After completion of units of work developed from this module, collect information and make judgments about:

- teaching strategies and activities used to progress student learning towards demonstrations of core learning outcomes and in the cross-curricular priority areas
- opportunities provided to gather evidence about students' demonstrations of core learning outcomes
- future learning opportunities for students who have not yet demonstrated the core learning outcomes and to challenge and extend those students who have already demonstrated the core learning outcomes.
- the extent to which activities matched needs of particular groups of students and reflected equity considerations
- the appropriateness of time allocations for particular activities
- the appropriateness of resources used.

Information from this evaluation process can be used to plan subsequent units of work so that they build on, and support, student learning. The evaluated units of work may also be adapted prior to their reuse. For further information, refer to the 'Curriculum evaluation' section in the sourcebook guidelines.

## Activities

### Phase 1 How are places managed?

**Core learning outcomes emphasis: TCC 6.3, PS 6.1**

In this phase, students select an Australian place to investigate and use criteria and geographic skills to develop conclusions about its management. In the process, they deepen their understandings of sustainability and develop some appreciation of how individuals and groups have contributed to ecological and economic sustainability in Australia.

**Focus questions:**

- How can we make informed decisions about how well places are managed?
- Why do people care about managing environments?
- Who cares about managing environments?
- How do people care for environments?

#### Activity 1 Using criteria to make decisions

**Support materials and references**

Use a case study to demonstrate how criteria and geographic skills can be used to make informed decisions about the management of a place (see the research paper 'Geography in Years 1 to 10 Studies of Society and Environment Key Learning Area' on the Queensland School Curriculum Council website for more information). If possible, select a case study that is supported by a video. Websites, CDs, textbooks and other materials such as the Curriculum Corporation's *Discovering Democracy* resources provide a range of possible case studies (see 'Support materials and references'). Consider one of the following:

- Australia's old growth forests
- the Great Barrier Reef
- an area of significant urban development
- the Darling Downs
- the Murray–Darling Basin
- Fraser Island
- the Franklin Dam
- oceans and how to protect them.

Use the case study to model how the contributions individuals or groups make to sustainable management practices can be described. Explore underlying key values, especially ecological and economic sustainability and peace (see the sourcebook guidelines for more information about key values), by analysing photographs, speeches or text. Discuss the underlying assumptions or criteria that you used to make these decisions.

Divide students into small groups and provide each group with a case study. Assist students to use criteria and geographic skills and to demonstrate TCC 6.3 and PS 6.1. Students could demonstrate these outcomes in a variety of ways — for example, in a written report, a report using a computer format, a structured oral interview and/or a radio broadcast (in the form of a group tape-recording).

#### Activity 2 Who is contributing to management?

Ask representatives from each group to present a brief report describing their case study and their conclusions. As representatives present their report, ask other students to use definitions of ecological and economic sustainability and peace to identify the extent that the individuals or groups in the case studies were really committed to these values. After the presentations, assign students to new small groups and ask them to compare, discuss and collaborate to reach consensus about the values of the people researched as part of the case studies. This group work provides additional opportunities to observe demonstrations of TCC 6.3.

## Phase 2 How well are places managed?

### **Core learning outcomes emphasis: PS 6.3**

In Phase 1 students reached some tentative conclusions about the management of a place and the values of the people who contributed to the management of that place. In this phase, they test their conclusions by initiating and undertaking some environmental action research, based on fieldwork. Action research is essentially cyclical rather than linear. By testing their conclusions (often drawn from secondary sources like textbooks or videos) against fieldwork data, students will conclude the first cycle of planning, acting, observing and reflecting. Their reflections will involve more than brainstorming or introspection. They will be based on verifiable data drawn in part from fieldwork data. Activity 5 raises student awareness of the ongoing nature of action research and encourages them to sustain their interest in the place they have learnt about.

### **Focus questions:**

- What more detailed information do we need about the management of a place?
- How can we obtain more detailed information?
- What forms will this information take?
- How can we/should we interpret fieldwork data?

### **Activity 3 Applying prior learning to initiate a case study**

Ask students who have studied the same or very similar places to form small groups and discuss the extent to which their conclusions so far are based on generalised interpretations. Ask students to consider what specific fieldwork information might help them to test their conclusions and make better decisions about managing this area. Encourage groups to share ideas about possible fieldwork information. During this sharing, ask students to individually record whether they agree with different proposals and to list their reasons or criteria. Collect the criteria and exchange it with different groups. Discuss a suitable fieldwork excursion that students could be involved in organising and assist them to identify the information they need to collect and the equipment required and to allocate roles.

An alternative to fieldwork is to provide fieldwork data collected by other groups. Such information is available from websites, environmental groups, local councils, community organisations and/or state government departments.

### **Activity 4 Accessing fieldwork**

During excursions to sites or while exploring resources such as photographs, maps, statistics and websites, ask students to collect information that will help them to decide how well a place is managed. The information they collect and the criteria they use to make judgments will be based on that developed in Phase 1. Encourage students to revise and add to their earlier criteria. Revisions could be explained verbally or in writing, individually or in small groups, and used to assess demonstrations of PS 6.3. Alternatively, assessment could include collection of student fieldwork notes.

### **Activity 5 Action research based on fieldwork**

Using fieldwork data and revised decisions about how well a place is managed, ask small groups of students to consider:

- What could we do?
- What should we do?
- What will we do?

Arrange for groups to present their proposed actions to one or two invited guests. Choose people from environmental, business, Indigenous or government groups. Provide the guests with background information so they can respond to the decisions presented by the students. These responses may encourage students to continue taking an interest in this area after completing the module.

### Phase 3 How will places be influenced by change in future?

#### **Core learning outcomes emphasis: PS 6.4**

Students have used resources such as textbooks and videos to explore the management of a place and have tested their conclusions against fieldwork data. They have interacted with people who have some stake in the management of the area and considered whether they will continue to take an interest in this area. In this phase, they reflect again on their decisions and draw on extrapolations that can be drawn from studying other areas. They make predictions about the future and create visions of preferred futures.

#### **Focus questions:**

- What do maps, tables and statistical data reveal about the impact of change on similar areas?
- What is the likely impact of change on environments we have studied?
- What are possible, probable and preferred futures for the management of the area?
- What will we do to continue our study of management of the area?

#### **Activity 6 Using maps, tables and statistics to predict the impact of change**

Select a case study that shares some characteristics with one or more of the areas students have studied and which is likely to be impacted upon by change in the near future. Describe it using maps, tables and statistics and demonstrate some trend analysis. Incorporate some corroboration — that is, demonstrate how more reliable predictions can be made when there is some agreement between maps, tables and statistics.

Refer to descriptions of trend analysis in Years 11 and 12 syllabuses, work programs and/or textbooks, particularly in subjects such as Economics and Geography. If possible, discuss your proposed analysis with teachers of these subjects as well as teachers of Mathematics. The complexity of the maps and data needs to be commensurate with the expectations of Year 11 and 12.

Assisting students to develop their numeracy skills is a major focus of core learning outcome PS 6.4. Consider discussing your ideas with your students' Mathematics teacher/s as they may be able to incorporate this core learning outcome into their work. Alternatively, consider incorporating some Mathematics core learning outcomes in this activity and collaboratively assessing them with the Mathematics teacher.

Ask students to individually extrapolate from the conclusions you provide about possible impacts of a similar change on the area/s they have been studying. Ask them to compare extrapolations with one other student and then share extrapolations in small groups (think/pair/share). Once there is some agreement about possible impacts, assist students to use maps and statistical data to test their hypotheses and demonstrate PS 6.4. Alternatively, a test based on another place could be created. Maps and data could be provided and students could be asked to make predictions about the impact of a change. PS 6.4 would be demonstrated in this context if the maps and data were correctly comprehended, corroboration occurred and the predictions expressed were clearly communicated and based on reasonable extrapolations from the data provided.

#### **Activity 7 What will we do?**

Discuss how the predictions in the previous activity were based on a number of assumptions and describe some of them. Invite students to describe a possible, probable and preferred future management strategy for a place they have been studying (refer to A Futures Perspective: Position Paper about the impact of change on an environment for further information). Conclude by inviting students to once again reflect and consider whether they will sustain an interest in this topic and if so what they might do to enact personal decisions based on their understandings gained through this study of a place.

## Support materials and references

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Alexander, A. 2001, *SOSE for Queensland Books 1 and 3*, Heinemann, Melbourne.

Curriculum Corporation 1998, *Discovering Democracy: Middle School Units*, Melbourne.

McCauley, D., Brown, P. & Mills, M. 2001, *SOSE for Queensland 1 and 2*, Jacaranda Wiley Ltd, Milton, Qld.

Triolo, R. 1996, *The Australian Experience*, Cambridge University Press, Melbourne.

### CD-ROMs

Armstrong, J. et al. 1995, *Hieronymus on CD-ROM*, Film Australia, Lindfield, NSW.  
This CD-ROM for lower secondary students is about energy use and its effect on the environment.

### Videos

The following Film Australia titles are appropriate for this module. Visit its website at [www.filmaust.com.au](http://www.filmaust.com.au) or call (02) 9413 8777 for more information.

- *Act of Necessity*  
A small country town is faced with a choice: the immediate prosperity of their booming cotton crop versus the possible serious health risks posed by the industry
- *Big Brother of Christmas Island*  
The controversial life of Gordon Bennett and his role in the survival of Christmas Island and its people.
- *The Change at Groote*  
This video looks at the influences of the manganese industry of Groote Eylandt on the life of the Aboriginal people.
- *Custard Goes Green*  
An entertaining guide to recognising energy efficient solutions in the office
- *Heroes of our Time*  
This film penetrates the inner sanctum of the Greenpeace organisation during a direct action against the international oil company, Caltex.
- *Invaders*  
A video that is supported by teacher's note on-line traces the way Australians adopted a more protective attitude to the country's natural environment, especially against the many animal and plant pests introduced by European settlement.
- *Kakadu Man*  
Bill Neidjie is the traditional custodian of all the lands that are now the Kakadu National Park, and he has presided over the mining ventures, the hunting ventures and the tourist ventures. *Kakadu Man* takes the issues as Bill sees them and gives them surprising life
- *Lake Pedder*  
In Tasmania's wilderness an alpine lake and its spectacular quartz beach are drowned. And the world's first Green party is born
- *The Man Who can't Stop*  
The story of Francis Sutton and his passion to save the Australian coastlines from pollution. *As screened on ABC (Aus)*.
- *One Man's Response*  
This film shows how in 1971, one clan leader, Narritjin Maymuru, responded to the coming of the Gove bauxite mine.

- *One Voice*  
A young person stands up for something that is important to her, despite pressures to conform
- *The Reef*  
The Reef traces a history of the Great Barrier Reef from early exploration by European travellers through to its exploitation by modern day visitors.
- *Using the Land*  
Using The Land examines Australia's physical environment in an attempt to understand what needs to be done to protect and conserve the environment as a sustainable resource for the future.

### **Websites**

(All websites listed were accessed in January 2002.)

Australian Minerals and Energy Environment Foundation. [www.ameef.com.au/](http://www.ameef.com.au/)

Australian Tourism Commission. [www.australia.com/](http://www.australia.com/)

Film Australia. [www.filmaust.com.au](http://www.filmaust.com.au)

Indigenous Land Corporation (ILC). [www.ilc.gov.au/](http://www.ilc.gov.au/)

ILC assists Indigenous Australians to acquire and manage their traditional land.

Queensland Department of Natural Resources.

[www.dnr.qld.gov.au/resourcenet/education/teaching/index.html](http://www.dnr.qld.gov.au/resourcenet/education/teaching/index.html)

Queensland Department of Primary Industries.

[www.dpi.qld.gov.au/home/default.html](http://www.dpi.qld.gov.au/home/default.html)

Senator Bob Brown, Australian Green's homepage.

[www.apf.gov.au/senate/senators/homepages/web/s-QD4.htm](http://www.apf.gov.au/senate/senators/homepages/web/s-QD4.htm)

Tourism Queensland. [www.tq.com.au/](http://www.tq.com.au/)

World Wildlife Fund Australia. [www.gbr.wwf.org.au/](http://www.gbr.wwf.org.au/)

**This sourcebook module should be read in conjunction with the following Queensland School Curriculum Council materials:**

***Years 1 to 10 Studies of Society and Environment Syllabus***

***Years 1 to 10 Studies of Society and Environment Sourcebook Guidelines***

***Studies of Society and Environment Initial In-service Materials***

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