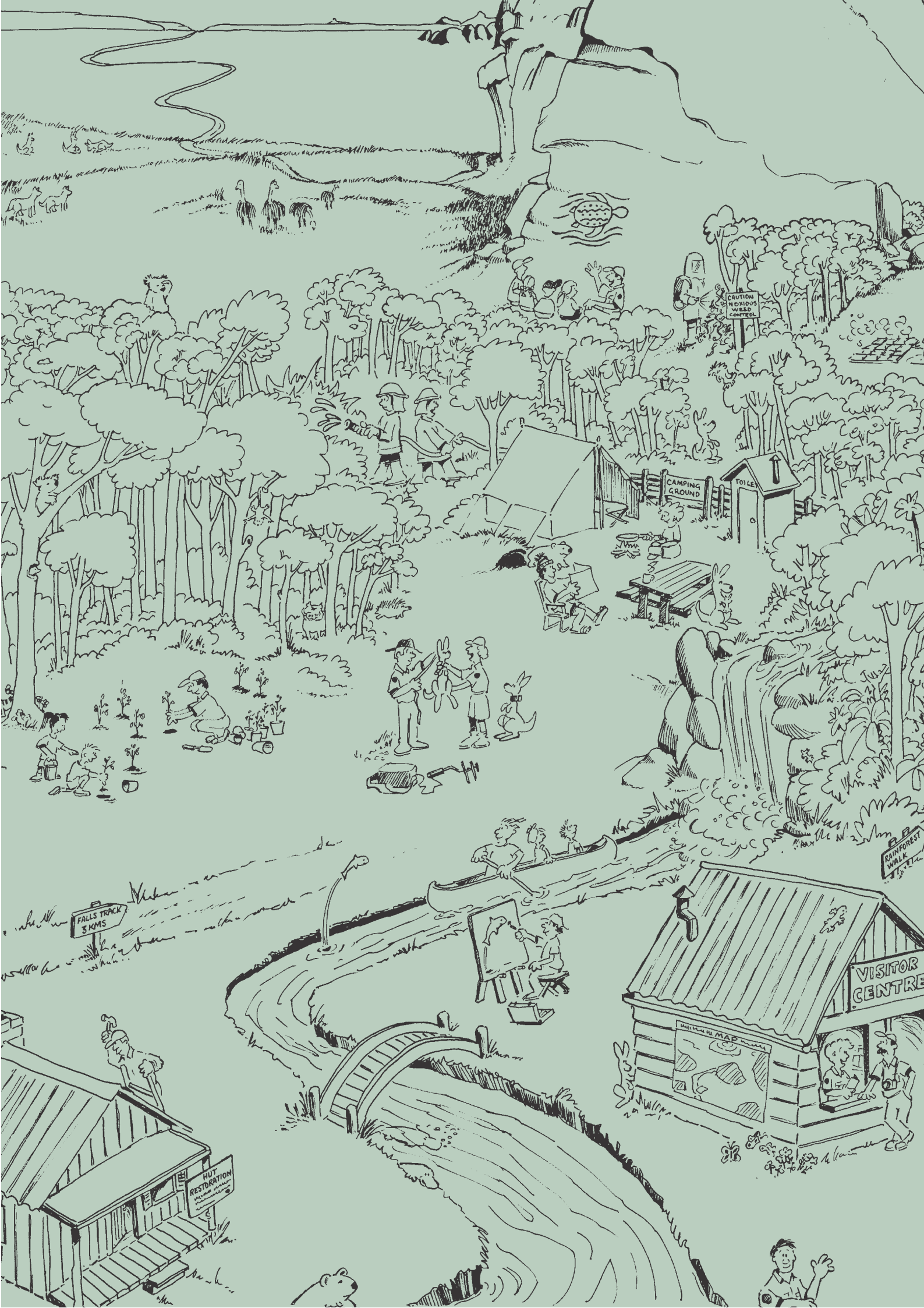
what is a national park?

Stage 2 HSIE - Teacher's Guide

a partnership initiative of the NSW National Parks and Wildlife Service and the NSW Department of Education and Training


CAUTION NOXIOUS WEED CONTROL
CAMPING GROUND
TOILET
RAINFOREST WALK
FALLS TRACK 3 KMS
VISITOR CENTRE
MAP
HUT RESTORATION

Acknowledgements

This resource has been developed by NSW National Parks and Wildlife Service in collaboration with the NSW Department of Education and Training.

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Foreword

This resource has been developed by NSW National Parks and Wildlife Service in collaboration with the NSW Department of Education and Training.

What is a national park? is an environmental education resource that provides a range of suggestions for achieving Stage 2 learning outcomes of the Human Society and Its Environment (HSIE) K-6 syllabus. This resource assists students to achieve many of the objectives of the *Environmental Education Policy for Schools* (for government schools). This policy can be found on the Department of Education and Training website on www.curriculumsupport.nsw.edu.au/enviroed/files/Env_EE_policy.pdf

What is a national park? covers a variety of subject matter and a range of issues relating to national parks including: what they are, why we have them, the natural environment, Aboriginal perspectives on the natural environment, the roles and responsibilities of national park workers, and national park management.

Contents

About this resource

Intended audience

This resource is intended for teachers of students in Years 3 and 4 working towards Stage 2 outcomes in the Human Society and Its Environment (HSIE) Syllabus. The activities included in the unit assist students to achieve outcomes in the *Environments* strand. Some outcomes in the *Change and Continuity*, and *Cultures* strands are also addressed.

The resource

What is a national park? is an environmental education unit that provides a range of suggestions for achieving Stage 2 learning outcomes and subject matter of the HSIE K-6 syllabus. Some of the indicators listed in this resource may be found in the syllabus, while others have been created specifically for this unit. The resource supports the sample Stage 2 unit of work *State and National Parks* in the K-6 HSIE Units of Work.

The teaching and learning activities presented in this resource provide a selection of activities that in total make up more than an average length unit of work. Each of the lessons can be regarded as a mini-unit. Teachers can choose a selection of lessons or mini-units that suit their needs or, if time permits, they can teach all the mini-units in sequence.

The activities may be modified to suit the needs of students. A variety of extension activities have been included.

What is a national park? meets many of the objectives of the NSW Department of Education and Training *Environmental Education Policy for Schools*. Aboriginal content is incorporated into this program.

The resource comprises teaching and learning activities and a range of supporting materials including posters and a video.

Outline of the resource

The package comprises the following resources:
- *What is a national park?*, a cartoon poster about national parks
- A series of national parks photographic posters
- *Cultural heritage in national parks* poster
- *Web of Life for Kids* video
- Teaching and learning activities
- Student factsheets/activity sheets
- Student worksheets
- Teacher's notes
- Guide to NSW National Parks booklets


VISITOR CENTRE
PARK TOURS

Lesson Plans

Lesson 1

What is a national park?

Overview
Visit a local park, look at the national park cartoon poster and discuss the differences between various types of parks.

Resources
- poster *What is a national park?* (see reverse of poster for explanatory notes)
- factsheet 1 *What is a national park?*
- butcher's paper and textas
- paper, pencils, clipboards

Preparation
Permission notes for your students to walk to a local park.

Background Information
It's amazing to think that Australia's first national park, the Royal National Park, was established way back in 1879. It was established at a time when conservation of natural areas was far from the norm; in fact the only other national park in existence was Yellowstone in the USA, which was created seven years earlier. Now, over seven per cent of NSW has been protected in national parks and this percentage is still growing. The primary role of these parks is to conserve the natural and cultural heritage values of an area and to provide representative samples that reflect the full range of landscapes and diversity of ecosystems.

National parks are areas of land that protect native plants and animals and their habitats, places of natural beauty, historic heritage and Aboriginal cultural heritage.

Apart from national parks there are a number of other areas that have been set aside for the conservation of natural and cultural heritage values. These include areas such as flora and fauna reserves, nature reserves and state recreation areas. While these areas have a similar purpose to national parks they differ in the types of recreational activities they allow.

Other protected areas such as state parks and state forests are not national parks but they do manage large areas of native environments in NSW and make a significant contribution to management of biodiversity across the landscape.

State Parks
In 2002 there were nine state parks in NSW managed by the NSW Department of Land and Water Conservation. These public reserves provide natural settings for a range of recreational and leisure activities (now managed by the NSW Department of Lands).

State Forests
State forests exist to ensure a sustainable supply of timber resources for NSW and other markets. State Forests of NSW manage over 750 state forests.

A list and explanation of the types of reserves and protected areas can be found in the Teacher's Notes. These also provide contact details and website addresses for more information.

Lesson 1

Teaching and learning activities

To set the scene, go on a mini-excursion to one of your local parks or use the school playground. Take paper, pencils and clipboards and ask the students to write down 10 words that describe the things they can see, such as play equipment, paths, gardens, and people playing. Ask several students to read their words to the class. Discuss:

- What is this park used for?
- Who uses the park?
- Who looks after the park?
- Can you think of a park similar to this one?
- What can you see that people have made?
- Why is it important to have parks like this one?

As a class create a definition for the word 'park' and write it on a sheet of butcher's paper.

Hold up the *What is a national park?* poster. Ask the students to look at it closely. Discuss:

- What is special about the place shown in the poster?
- What is this national park used for?
  eg homes – for animals and plants
  sustainable recreation – canoeing, camping, painting, rock climbing, skiing
  education and study – rangers talking to people, looking at Aboriginal sites, studying kangaroos
- Who uses the national park?
- What animals can you see?
  eg kangaroos, koala, lizard, wombat, cockatoo, seagulls, tortoise, pelican, snake, frog, etc
- What can you see that people have made?
  eg buildings, historic hut, lighthouses, Aboriginal art site
- Who looks after the park?
- Why is it important to have national parks like this one?
- What is the difference between a national park and the park we are sitting in?
  eg vegetation, loction, types of activity, type of landscape, size, rules.

Outcomes and indicators

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- gives reasons why particular activities may be associated with particular natural or built environments
- names and locates natural and built parks in their local area and beyond
- compares similarities and differences between local parks and national parks.

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.

- identifies sustainable recreational activities that are associated with council parks and national parks
- compares the responsibilities of workers in local parks and national parks
- identifies organisations associated with the care of local, state and national parks.

Objectives of the Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the impact of people on environments (K2).

Students will develop values and attitudes relating to:

- an appreciation of their cultural heritage (V2).

Lesson 1

Teaching and learning activities

Note. The poster also includes images of the city, an urban backyard and a farm. While these things are **NOT** in the national park they are included to demonstrate the interconnectedness between the built and modified environment and the national park. Most of these environments also provide homes for a range of native plants and animals (biodiversity).

As a class, create a definition for the words 'national park'. Add this to the butcher's paper. This should be revised throughout the unit and updated if required.

Students read and complete the activities associated with the *What is a national park* factsheet.

Students begin collecting information from the library and internet on national parks and other protected areas. This research material will provide information that can be used throughout the unit. As research materials are found the teacher and students present their collected information to the class. These 'class research materials' can be collected and stored on a display table or displayed around the room.

Outcomes and indicators

Lesson 2

What are national parks for?

Overview

Watch the *Web of Life for Kids* video and expand on the concept of a national park.

Resources
- factsheet 2 *Why do we have national parks?*
- video *Web of Life for Kids* (12 minutes long)
- worksheet 1 *Park facts*

Background Information
The *Web of Life for Kids* video shows a variety of national parks in NSW and the plants and animals found within them. It also highlights the value of Aboriginal and historic heritage in Australia.

Lesson 2

Teaching and learning activities

If possible, allow two screenings of the *Web of Life for Kids* video. Watch the video once without questioning to allow the students time to digest the information provided.

Before the second viewing split the students into small groups. Allocate each group a topic from the *Parks facts* worksheet. The topics are 'plants', 'animals', 'Montague Island', 'activities by people', 'different kinds of national parks' and 'interesting facts'. As the students view the video they record information relating to their topic in the appropriate box on the worksheet. After viewing the video students present their answers to the class. Each group should record the key facts from the other groups' presentations in the appropriate box on their worksheet.

Students read and complete the activities associated with the *Why do we have National Parks?* factsheet.

Revisit the national parks definition developed in Lesson 1. Does the definition need to be updated based on the knowledge gained during the video?

Outcomes and indicators

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.
- identifies natural Australian environments as the predominant environments in national parks
- identifies that the purpose of national parks is to conserve native plants and animals and historic and Aboriginal cultural heritage.

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.
- identifies national parks as places for outdoor recreational activities
- discusses reasons why people manage national parks.

CCS2.1 Describes events and actions related to the British colonisation of Australia and assesses changes and consequences.
- identifies some of the impacts on native plants and animals since colonisation.

Objectives of the Environmental Education Policy for Schools
Students will develop knowledge and understanding about:
- the nature and function of ecosystems and how they are interrelated (K1).

Students will develop values and attitudes relating to:
- a respect for life on Earth (V1)
- an appreciation of their cultural heritage (V2).

Lesson 3

Are all national parks the same?

Overview
Look at the national parks posters and examine some important types of natural environments.

Resources
- the set of national parks photo posters
- poster *What is a national park?*
- worksheet 2 *Natural environments*

Background information
Location, altitude, rainfall, soil type and human activity are some of the factors that have influenced the development of ecosystems in NSW. The word ecosystem refers to a community of plants and animals and the interactions that occur between them and their surrounding environment. Within an ecosystem you also find habitats. A habitat is the specific place in which a plant or animal lives, eg under a rock or in a tree hollow or rotting log. Each ecosystem and the species within it are perfectly adapted to suit the conditions where they live. For example there are over 750 recorded species of wattle varying in size from tiny shrubs to large trees, all of which are adapted to suit the conditions where they grow. Most likely each wattle species also plays host to animal species that are adapted to feed on that particular wattle and so on.

NSW is blessed with a huge variety of different ecosystems, from semi-arid areas to grasslands and rainforests, all of which have developed to suit their local conditions. The national parks network is aiming to conserve a comprehensive, adequate and representative system of relatively large natural areas, which together reflect the full range of landscapes, diversity of ecosystems and biodiversity of the state.

Most modified ecosystems such as agricultural and urban areas are found outside or adjacent to national parks. They provide homes for some native animals as well as providing them with vegetation corridors through which they can move between natural areas.

Further information on different types of ecosystem is provided in the teacher's notes.

Lesson 3

Teaching and learning activities

To begin this lesson ask the students to close their eyes and visualise what a trip to a national park would be like. Select a few students to describe the park they visualised. Pose the question: did everyone think of the same kind of national park? Explain that there are lots of different national parks, found in different kinds of environments.

Examine the *What is a national park?* poster and identify and list the different kinds of environments presented. The environments represented in the poster are coastal, wetlands creeks and rivers, rainforest, alpine, woodland and forests, grassland and semi-arid.

Introduce the national park photo posters. Some of these posters have photos of the environments found in the cartoon poster. Ask the class to match environments from the photographic poster to the corresponding environments on the cartoon poster.

(Note that there is not necessarily a photo poster to match each individual environment within the cartoon poster.)

Split the class into six groups and allocate one photo poster to each group. Each group examines the poster. Students complete the *Natural environments* worksheet. Once complete, the students present their information to the class.

Discuss:
- are all the environments the same?
- what makes them different?

Outcomes and indicators

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.
- examines visual texts and describes a natural Australian environment.
- reports to the class on features of a particular type of natural environment.

Objectives of the Environmental Education Policy for Schools
Students will develop knowledge and understanding about:
- the nature and function of ecosystems and how they are interrelated (K1).

Students will develop values and attitudes relating to:
- an appreciation of their cultural heritage (V2).

Lesson 4

What are the threats to native plants and animals?

Overview
Play the *Threatened Species* game (described next page) and explore issues about Australia's threatened species.

Resources
- factsheet 3 *Threatened species*
- factsheet 4 *Feral animals and weeds*
- newspaper
- stereo with appropriate music (perhaps new age rainforest songs etc)
- various web sites
- library books, posters
- class research materials

Background Information
A threatened species is any animal or plant that is facing possible extinction, declining in numbers or considered at risk.

There are two main factors that can lead to a species being threatened with extinction. These are:
- predation by feral animals
- habitat loss or disturbance.

One of the major roles of national parks staff is the conservation of threatened species. This is done by controlling pest animals and weeds and protecting and restoring the habitats of threatened species.

For more details refer to the threatened species information in the Teacher's Notes and student factsheet 3.

Lesson 4

Teaching and learning activities

Threatened species game
This game provides students with an insight into how native animals can become threatened. Students will experience the effects of habitat loss and feral animals.

In an open space spread large squares of newspaper on the ground. These represent bushland. Each square can only support four native animals (students) if intact. When the music plays students dance or move like native animals around the newspaper. Liken this to night time with nocturnal animals. When the music stops (sunrise) students need to find a newspaper to stand on. Alternatively the students could be diurnal animals (awake during the day) and find a safe place to hide in at night.

Start to remove newspaper sheets while providing a scenario for clearing native vegetation such as 'We need to put a road through here, a housing development, a new shopping centre, a school, etc'.

As the newspapers are removed the students who are not standing on a newspaper are also removed from the game. They represent native animals that died because their homes have been destroyed and they couldn't find another.

As the game continues the sheets of newspaper become tatty and torn. These represent bushland that is no longer big enough to support large native animals. Remove the students and the paper from the game.

How long does it take the native animals to die off without sufficient bush? What happens when the bush is cut up into small bits.

Add another element to the game. As the number of students decreases introduce the problem of feral animals. Choose a number of students who are sitting on the floor to become feral animals. These feral animals can capture the native animals while they move between the patches of bush. What happens to natives once the ferals are introduced?

* * * * *

After the game ask the students to identify two reasons why the native animals were at risk of becoming threatened, ie habitat destruction and feral animals. Can the students think of ways in which we can prevent these problems? eg establish national parks, trap feral animals, enclose national parks in feral-proof fences. Can the problems be fixed?

Students read and complete the activities associated with the *Threatened species* factsheet and *Feral animals*

Outcomes and indicators

CCS2.1 Describes events and actions related to the British colonisation of Australia and assesses changes and consequences.
- explains that a number of animals introduced to Australia by the First Fleet and subsequent colonists have become feral animals
- explains that feral animals and weeds have a detrimental impact on the natural Australian environment.

ENS 2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.
- identifies national parks as places in which people manage threatened species to ensure their survival
- demonstrates an understanding of the need to protect threatened species.

Objectives of the Environmental Education Policy for Schools
Students will develop knowledge and understanding about:
- the nature and function of ecosystems and how they are interrelated (K1)
- the impact of people on environments (K2).

Students will develop values and attitudes relating to:
- a respect for life on Earth (V1).

Lesson 4

Teaching and learning activities

and weeds factsheets.

Brainstorm and list any threatened plants or animals the students know of in Australia. Students can extend this list by examining the collected research materials or by collecting additional information from the library or internet.

Using collected resources or the internet, students select one threatened species they would like to use as the basis for an art project, such as a collage, drawing, painting or model. The art project should be labelled with the animal or plant's name and an explanation of why it is threatened with extinction and what can be done to save it.

In NSW there are a number of threatened species drawing competitions each year, such as the Golden Paw Award (NSW Foundation for National Parks and Wildlife), and the Gould League Project Environment Competition. If you are thinking of entering your class's drawings in one of these, check the competition specifications before the children do the drawings.

Optional ongoing project.
Consider an ongoing class project in which the class (or entire school) adopts a threatened species (plant or animal). Maybe it could become your class emblem! Choose a threatened species from your local area, learn about its habitat, what it eats, where it lives, what it looks like, and why it is threatened. Find out what is being done to protect this species. Get involved in surveys, habitat restoration and other activities being done by local community groups conserving your threatened species. Find other ways to help conserve your threatened species. How can your class/school educate the rest of the community about this species and how we can all help it to survive?

Outcomes and indicators

Lesson 5

Attitudes towards animals

Overview
Students investigate some of the reasons why conservation of all biodiversity is more effective than conservation of individual species.

Resources
- worksheet 3 *Attitudes to animals*
- factsheet 11 *Attitudes to animals*
- poster *What is a national park?*

Preparation
Make an overhead transparency of the *Attitude to animals* factsheet 11.

Background information
Media, peers, culture and religion have all shaped our ideas and beliefs in regard to the value of many types of animals. These beliefs influence perceptions that some animals have more value than others, particularly those that belong to the 'cute and cuddly' category.

This 'cute and cuddly' syndrome can influence the public's view on conservation, where most attention is focused on 'fluffy' animals while the 'non-cute' animals are forgotten. Just think about how you react to the presence of a spider in your household: would you react the same if it were a kangaroo's joey? If we are to have a comprehensive view of conservation we need to respect animals based on the role they play in the system, rather than just judging them on appearance.

The more we understand about particular species, the more we appreciate how amazing they are. Often we don't like some animals because they are perceived as threatening, noisy, smelly, annoying, or cause damage to gardens and buildings. When we are wise about them and understand their behaviour we can respect them on their own terms and for their importance in healthy functioning ecosystems.

One solution to this issue is to look at conservation in a more holistic way. That is to look at conservation in terms of biodiversity rather than individual species. Conservation of biodiversity protects whole ecosystems and all the species they contain, while conservation of individual species can overlook the support mechanisms that keep that species alive in the first place. An example of biodiversity conservation is the national parks system in NSW. These protected areas and other places like them have been set up to conserve all the native species they contain.

A plant or animal's habitat is the place where it lives (ie its home). An ecosystem is a community of plants and animals interacting with one another and the surrounding environment (ie the wider environment in which its habitat is found).

Lesson 5

Teaching and learning activities

Students examine pictures of four animals – a koala, magpie, blue tongue lizard and bush cockroach – found on the *Attitudes to animals* worksheet. Ask the students to think about how they feel about each of these animals. Based on their feelings the students choose five words from the list or choose their own words to describe each animal. Select several students to read their responses to the class.

Pose the following scenario. These four animals currently live in bushland that might be cleared to build houses. Discuss: which of these animals would you try to save and protect? The students number the animals in terms of conservation priority:1 (high priority) to 4 (low priority). Students report their answers back to the class, providing at least one reason for the rating they gave to each animal.

Display the overhead transparency and examine the facts on each animal. Do these facts change the way the students feel? Do they change the order the students have provided for the conservation of the animals? Why/why not? Ask the students if there is a better way to try and protect all four animals rather than looking at them on an individual basis. Basically, to protect all four animals you need to protect the whole environment in which they are found. This is the basic role of national parks in NSW.

Examine the *What is a national park?* poster. Brainstorm and list all the things that help to make national parks important to the conservation of biodiversity.

For example, national parks:

- protect all the species they contain, not just the 'cute and cuddly' ones
  Can you identify the plants and animals the national park is protecting?
- protect lots of different types of ecosystems
  What kinds of ecosystems can you see in the national park?
- provide lots of habitats for animals and plants
  Can you find five different animal habitats?
- contain workers who help look after the biodiversity in the national park
  Can you identify the workers and what they are doing to help biodiversity?
- contain the greatest amount of biodiversity.
  Apart from the national park are there any other areas in the poster that also support biodiversity? eg the farm, the backyard, the rooftop garden. How are these places looking after biodiversity?

Outcomes and indicators

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- identifies the importance of national parks in biodiversity conservation.

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.

- discusses the importance of conserving biodiversity
- examines how people's attitudes can have a positive or negative impact on conservation of native animals.

Objectives of Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the impact of people on environments (K2)
- the role of the community, politics and market forces in environmental decision-making (K3).

Students will develop skills in:

- identifying and assessing environmental problems (S2).

Lesson 6

What are Aboriginal sites?

Overview
Investigate aspects of Aboriginal cultural heritage by examining pictures and making a rock engraving.

Resources
- poster *Cultural heritage in national parks*
- worksheet 4 *Aboriginal art*
- activity sheet 8 *Meet the Aboriginal sites officer*
- clay, old cardboard boxes

Preparation
Make an overhead transparency of the *Meet the Aboriginal sites officer* activity sheet 8.

Background information
Aboriginal people are the cultural owners and managers of their sites and cultural knowledge.

For thousands of years Aboriginal people have been living as part of the natural landscape of Australia. The land and waterways feature in all facets of Aboriginal culture, from recreational to ceremonial, spiritual and as a source of food and medicine. The flora and fauna of NSW hold great significance as totems. Aboriginal people have an intimate knowledge of their local totem species that has been built up over thousands of years. The land and waterways are associated with Dreamings and cultural learning that is still passed on today. Aboriginal sites are an important link to Aboriginal cultural heritage. Aboriginal sites are objects and other material evidence relating to Aboriginal habitation. Shell middens, rock art, axe-grinding grooves, shelter sites, scarred trees, rock engravings, stone tools, initiation and burial sites are examples.

The Cultural heritage in national parks poster has a selection of pictures of Aboriginal sites and objects: fishtraps at Brewarrina, a scarred tree, rock engraving, rock art at Mutawintji, axe grinding grooves, and bushtucker (a rainforest fruit and bogong moth).

It is important to note that Aboriginal culture is a living and evolving culture. The natural landscape itself is central to contemporary Aboriginal culture. The landscapes depicted in the national parks posters have a cultural importance to Aboriginal people and should also be presented to the class as an example of Aboriginal cultural heritage in national parks.

The *Meet the Aboriginal Sites Officer* factsheet has more information. Aboriginal sites are important heritage places. People visiting these sites should take care not to disturb them.

The artwork provided in this kit is a modern individual style. The style of Aboriginal art varies from region to region. To find out more about the type and style of art that belongs to your region contact your local Aboriginal community.

Lesson 6

Teaching and learning activities

Display the overhead transparency of the *Meet the Aboriginal Sites Officer* activity sheet for the class. Examine each of the drawings of Aboriginal sites that are listed. Link the text boxes to their drawings and discuss how these things relate to Aboriginal life.

Explain to the class that national parks not only protect native plants and animals but also Aboriginal cultural heritage and historic heritage that occurs in the environments of national parks.

Display the Cultural heritage in national parks poster. These pictures contain examples of some Aboriginal and historic heritage. Point out the photos of the Aboriginal sites and objects. (Captions identifying the photos are on the back of the poster.) Discuss:

- what do these things tell us about Aboriginal culture?

Point out the rock engraving photograph. Aboriginal rock engravings are pictures carved into rocks. The grooves are scratched or pecked into flat surfaces, often sandstone. They often depict humans, animals, tracks and mythical figures. Like Aboriginal paintings, engravings provide important information about Aboriginal culture and social life. Discuss with the students why they think Aboriginal people have created rock engravings.

Students make an engraving of a threatened species of their choice. The engravings can be done in clay, in sand in the playground, or by pressing holes into a piece of cardboard box with the tip of a ball-point pen. The drawings or symbols in the Aboriginal art worksheet, or other examples of local Aboriginal art, can be displayed as a style for the students to imitate.

Outcomes and indicators

CUS2.4 Describes different viewpoints, ways of living, languages and belief systems in a variety of communities.

- examines the link between Aboriginal art and communication within Aboriginal culture.

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- discusses the importance of the natural environment to Aboriginal culture
- lists and describes some Aboriginal sites.

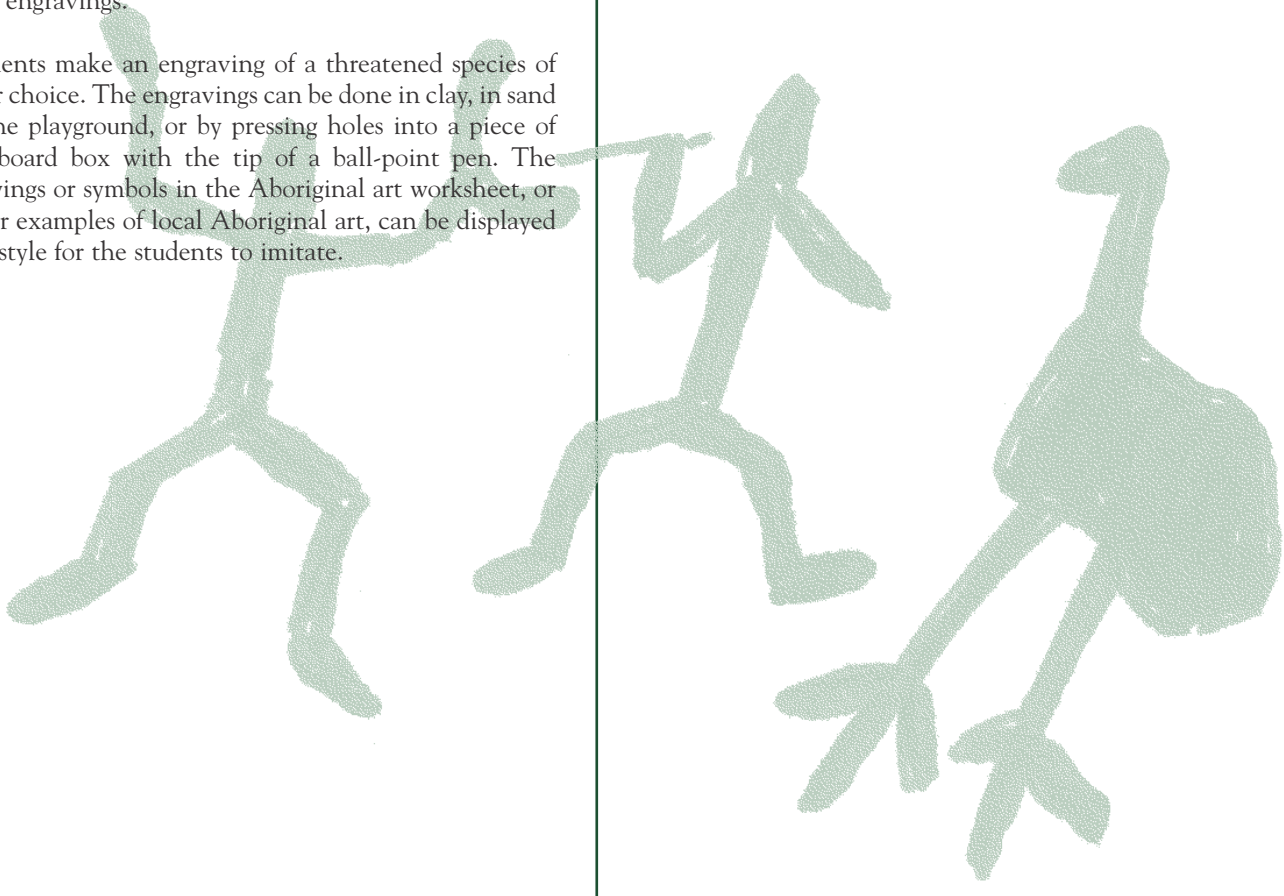
Objectives of the Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the impact of people on environments (K2).

Students will develop values and attitudes relating to:

- a respect for life on Earth (V1)
- an appreciation of their cultural heritage (V2).



Lesson 7

What is historic heritage?

Overview
Investigate aspects of historic heritage by examining pictures, precious items from home and by making a model log hut.

Resources
- poster *Cultural heritage in national parks*
- video *Web of Life for Kids*
- materials for model hut construction

Preparation
Ask the students to bring in something that is old or precious to them and their family, eg clock, photos, books etc.

Background information
Historic heritage (which also includes Aboriginal heritage) is important because it gives us a record of how people have lived and what the land has been used for in the past. Historic sites are sites that protect buildings, objects, monuments, landscapes, sites or events of national significance, or sites of special significance in the history of the state.

Historic sites are found in a variety of landscapes and are managed by different organisations including NPWS, the National Trust and the Historic Houses Trust. Sites protected in NSW national parks include buildings, structures such as roads, works, relics, archaeological sites and landscape elements. Historic heritage covers a diverse range of former land uses. Often these reflect pastoralism, recreation and low level resource extraction such as forestry and other timber industries, quarrying and mining. They also include abandoned townships, fortifications, defences, and places of major social importance. They have national, regional or local significance.

Lesson 7

Teaching and learning activities

Ask the class to sit in a circle with the special item that they brought from home on display. Invite each student to tell the class about their item. Discuss,

- where does it come from?
- who does it belong to?
- why is it special?
- could you replace it if it was lost or stolen?
- does it tell us anything about the owner?

Use the discussion to introduce the idea that these items help to tell us about people and what is precious to them. This is also why we need to conserve our historic heritage: it tells us about past lives.

Re-watch the first few minutes of the *Web of Life for Kids* video. Discuss:

- what's special about the lighthouse on Montague Island?
- can the students think of any other examples of historic heritage?

Examine the examples of historic heritage shown in the *Cultural heritage in national* parks poster.

- what do these tell us about the past?

Timber stockmen's huts are one example of historic heritage that exists in alpine areas. These were originally built and used by cattlemen or sheep graziers seeking high country summer pastures. Ask the students to visualise what life would have been like for these people in the hut. Working in groups, students create a time line showing how these people spent their day. The time line could be used as a basis for a dramatic play about past lives.

Poems such as The Man From Snowy River may be good for reflecting on times when stockmen's huts were in common use.

To conclude, students can build a model log hut from natural and non-natural materials. The huts will only be temporary and will be dismantled at the end of the lesson. It's best to conduct this activity in the school playgrounds as the students will have ready access to sticks, rocks and so on. Set a time limit on the hut construction. When complete, students can report to the class on their design and evaluate their completed hut.

Outcomes and indicators

CCS2.1 Describes events and actions related to the British colonisation of Australia and assesses changes and consequences.

- identifies examples of historic heritage
- examines changes in land use since colonisation.

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- lists and describes some types of historic heritage
- models an early settler's log cabin.

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.

- suggests reasons why historic sites should be protected.

Objectives of the Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the impact of people on environments (K2).

Students will develop values and attitudes relating to:

- an appreciation of their cultural heritage (V2).

Lesson 8

Who works in national parks?

Overview
Dress-up and perform a skit or charade to learn about the roles of people who work in national parks.

Resources
- *factsheets* 6 - 10 about workers in national parks
- poster *What is a national park?*
- props to help identify park workers, for example:
  ranger – maps, compass, model 4WD, shoulder badge
  field officer – hammer, saw, hat
  Aboriginal sites officer – examples of the engravings from Lesson 5
  information officer – phone, fact sheets
  research officer – clipboard, measuring tape, binoculars

Preparation
Ask students to think about who works in a national park. For homework, invite students to choose a national park worker and to come dressed as that worker for the following lesson.

Background Information
Within national parks people have many roles ranging from office workers to rangers.

The jobs carried out in the management of national parks and other protected areas include wildlife surveys, flora surveys, pest species control, threatened species recovery actions, fire management, historic research, working with the community on land care, urban runoff and tourism projects.

The National Parks and Wildlife Service in NSW employ over 1600 people, among them are scientists, technical officers, rangers, field officers, Aboriginal sites officers, legal officers, administrative and clerical officers, engineers, archaeologists, architects, librarians, pilots and crew, tradespeople, interpretive people and media people.

See the workers featured in the student factsheets for more information.

Lesson 8

Teaching and learning activities

Ask those students who dressed up to say which particular worker they represent. Ask them:
- what their job in the park is
- if they need any special equipment to do their job
- what they like about their job.

Display the *What is a national park?* poster in front of the class. Ask students to find all the people who are working within the park and identify the jobs they are doing. Discuss how these jobs contribute to conserving native plants and animals and Aboriginal and historic heritage. Can students spot all of the following examples?
- animal collar and radio tracking device
  = research officer – scientist
- Aboriginal site interpretation
  = Aboriginal sites officer
- guided tour
  = information officer
- trapping feral animals
  = ranger
- fighting fire
  = field officer/ranger
- spraying weeds, building a board walk
  = field officer
- repairing a bush hut
  = research officer – historian
- NB the farmer is **NOT** in the national park but on an adjoining property

Split the class into five groups. Each group is allocated a factsheet about a different worker. Students read the factsheets, then complete the activities on the reverse side. If groups finish early, provide them with a different set of fact and activity sheets. Groups reassemble as a class and report back on the various characteristics of the worker they investigated.

The remainder of the lesson involves individuals or pairs of students preparing and presenting a skit or charade about a type of worker and their activities in a national park. Each pair (or small group) presents their skit or charade to the rest of the class who try to guess what type of worker it represents.

Outcomes and indicators

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.
- identifies the role of various workers in national parks
- describes elements of the management of national parks
- recognises the effect of park management on conservation outcomes.

SSS2.7 Describes how and why people and technologies interact to meet needs and explains the effects of these interactions on people and the environment.
- extracts information about the job of a worker in a national park and reports to the class
- describes some of the tools that are used by workers managing national parks.

Objectives of the Environmental Education Policy for Schools
Students will develop knowledge and understanding about:
- the impact of people on environments (K2)
- career opportunities associated with the environment (K5).

Lesson 9

What is your local national park like?

Overview
Use basic mapping, index and symbol interpretation skills to find out facts about a nearby national park(s).

Resources
- *Guide to NSW National Parks* booklets
  (these free guides are published annually – to replace old copies contact your local NPWS office)
- worksheet 5 *About my national park*
- class research materials
- internet

Preparation
Trace a large map of Australia (eg outline of borders) onto butcher's paper.

Background Information
National parks cover 7% of the state of NSW. They represent a variety of ecosystem types and can be found in a variety of areas ranging from semi-arid to alpine areas to rainforests. Refer to the map in *Guide to NSW National Parks* booklet for more information about each park.

The NSW National Parks and Wildlife Service website has comprehensive information on state-managed national parks in NSW.

Each state in Australia has its own national parks, which are managed by state government agencies. The Federal Government is responsible for several commonwealth national parks such as Kakadu National Park, and Uluru-Kata Tjuta National Park.

Environment Australia's website has comprehensive information on the federally-managed national parks: *www.ea.gov.au/parks/commonwealth/index.html*

Lesson 9

Teaching and learning activities

Working in small groups students use the *Guide to NSW National Parks* booklet and the *About my national park* worksheet to find out about their local national parks. Students use the location map of NSW at the front of the guide to locate their town and the nearest national park. They use the key to locate the page in the guide that has a description of the national park. Reading the description and interpreting the symbols gives students the information they need to answer the questions on the worksheet.

Mark the location of your town on a big class map of Australia. Mark in the location of nearby national parks from the previous exercise. From the *Guide to NSW National Parks (or the NPWS website)*, find several other well known NSW national parks and mark these on the map. Develop a key for your map and add a four-point compass: north, south, east and west.

Using the internet or collected class research materials, research information about a major national park in another part of Australia, eg Kakadu, Uluru-Kata Tjuta. Mark the location of this national park on your big map. Make a list of the similarities and differences between this national park and your local national park.

Outcomes and indicators

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- uses geographical terminology
- uses index and symbol interpretation skills
- gathers research material and extracts information about a local national park
- identifies significant features of a local national park
- compares local national parks to those in other parts of the country.

Lesson 10

Caring for national parks

Overview
Play a true or false game to learn the rules in national parks.

Resources
- factsheet 5 *Care for your national parks*
- list of True and False Park Rules (on next page)
- 30 sheets of newspaper

Preparation
Label 15 sheets of newspaper with the letter T and 15 with the letter F.

Background Information
Physical impacts such as fire, feral animals, weed invasion and visitor impact are issues that need continuing action by park managers. Without management, these problems can irreparably damage the biodiversity in the park.

The impact of visitors on the environment can be severe, even though the damage they cause may be entirely unintentional. The purpose of rules for visiting a park is to restrict damaging behaviour. Some of the obvious impacts of visitors include:
- litter
- broken branches
- ringbarked trees
- trampled vegetation
- headless flower stalks
- graffiti
- missing or relocated rocks
- removal of timber
- noise
- artificial light
- graffiti on Aboriginal sites
- feeding native animals.

Good bushwalkers, campers and park visitors practise minimal impact behaviour. This means taking care to do as little damage as possible to the environment.

Remember: *Take only photographs, leave only footprints.*

Lesson 10

Teaching and learning activities

Introduce the rules for a game of True and False Park Rules. Randomly spread the sheets of newspaper with a big 'T' (true) or a big 'F' (false) on the floor. Students walk slowly around the room. The teacher reads one of the true or false questions. Students have to step on a piece of paper with the correct answer – one person per piece of paper. Only those on the correct piece of paper stay in the game. Two sheets from each category (T and F) are removed from the floor each round. The next question is asked and the process repeats itself until there is only one person left.

At the end the questions can be cut out and classified into two piles. Discuss the true rules and the reasons why they are in place. Referring to the *Care for your national parks* factsheet, students could write a short article for the school newsletter to educate others about rules in national parks.

List of True and False rules for visiting a national park

Keep pets at home (T)

No kids allowed (F)

Remove all your rubbish (T)

Laughing is not permitted (F)

Do not disturb plants, animals, rocks and soil (T)

Picking flowers is allowed on Mondays only (F)

Motor bikes must stay on roads (T)

Rubbish should be thrown in the river (F)

Ride your mountain bike on roads but not on walking tracks (T)

Don't use gas stoves – burn animal homes instead (F)

Don't feed the wildlife (T)

Only feed animals sausage rolls (F)

Tread lightly – keep to the tracks and trails (T)

Don't check the water depth before diving in (F)

Don't pick flowers (T)

Put your tent on top of endangered plants (F)

Use toilet facilities not the bush (T)

Use your four-wheel drive on walking tracks only (F)

Camp in camping areas only (T)

Dump weeds from your garden in the national park (F)

Do not touch or walk on historic sites or Aboriginal sites (T)

Outcomes and indicators

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.

- explains the importance of rules in a national park
- demonstrates an understanding of responsible behaviour for looking after a natural environment.

Objectives of the Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the impact of people on environments (K2).

Students will develop skills in:

- identifying and assessing environmental problems (S2).

Students will develop values and attitudes relating to:

- a respect for life on Earth (V1).

Lesson 11

Visiting a national park / guest speakers

Overview
Take an excursion to a national park or other protected area, or have a national park guest speaker visit your class.

Resources
- *Discovery- walks, talks, and tours* programs, NSW NPWS, national parks visitor centres, environmental education centres (Department of Education and Training).
- worksheet 6 *Looking after national parks*

Preparation
Pre-visit the venue of your excursion to avoid any nasty surprises.

Background Information
What is learnt inside the classroom about national parks needs to be reinforced by what happens outside the classroom. Hands-on experiences within national parks or other protected areas bring to life all the learning that has already occurred. Here are some suggestions for excursion programs – for further information please see the Teacher's Notes.

NPWS Discovery for Schools program
Discovery-walks, talks and tours programs operate in most areas. Contact your local national parks office to arrange an in-park activity led by a Discovery Ranger. Many regions offer activities tailored to meet syllabus needs.

Environmental Education Centre's programs
There are over 20 Environmental Education Centres (EECs) around NSW, run by the Department of Education and Training. Your local EEC can offer an extensive array of curriculum–linked activities, including programs on the topic of national parks.

Conduct your own program
Conduct your own lesson in a local national park (but check with the local NPWS office about the location you intend to use) or use any local bushland you have access to. Possible activities include: bushwalk, mini-beast survey, sound maps, texture rubbings, outdoor education activities.

Invite a guest speaker from a national park
If an excursion is out of the question, contact the national parks office in your area and ask whether a member of staff is able to come to your school to talk about national parks.

Member of local Aboriginal community
Contact your local Aboriginal Land Council or Aboriginal Corporation to invite a local Aboriginal person to share their knowledge.

Virtual park visit
Your could also do a "virtual visit" to a park on the internet (www.nationalparks.nsw.gov.au); or visit the Virtual Ranger website at www.virtualranger.net.au that will commence during term 1, 2004.

Contact details for the above organisations and groups can be found in the Teacher's Notes.

Lesson 11

Teaching and learning activities

Organise an excursion to a national park. Some places you visit will have programs and guides or rangers who can work with your students on the day. At some stage during the visit ask your students to interview the guide and complete the *Looking after national parks* worksheet. If you conduct your own excursion, consider focussing on types of ecosystems and the plants and animals they contain.

If an excursion is not practical, then try and arrange for a ranger or other national park worker to visit your school and give a talk. Invite representatives from the local Aboriginal community to visit the school and talk about their view of land management practices, Aboriginal sites and correct behaviour when visiting Aboriginal sites.

Outcomes and indicators

These indicators may need to be modified according to the lesson content (eg a guest speaker or an excursion).

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- describes the physical environment of a national park or natural area.

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.

- identifies responsible behaviour while visiting a national park
- describes how people manage national parks
- gives reasons why natural environments, features or places should be cared for
- examines some of the practices used by national parks staff to care for national parks.

Objectives of the Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the nature and function of ecosystems and how they are interrelated (K1)
- the impact of people on environments (K2).

Students will develop skills in:

- adopting behaviours and practices that protect the environment (S5).

Students will develop values and attitudes relating to:

- a commitment to act for the environment by supporting long-term solutions to environmental problems (V3).

Lesson 12

National parks mini-project

Overview
Conduct a case study of a national park and its features.

Resources
- *Guide to NSW National Parks* booklet; or www.nationalparks.nsw.gov.au
- class research materials
- the completed *About my national park* worksheet (Lesson 9)
- big class map of Australia
- poster *What is a national park?*
- usual art/craft resources
- leaves, twigs, pebbles, other 'natural' craft resources
- photos and drawings cut from leaflets and brochures

Background Information
This lesson is a follow-up to visiting a national park, but can be also be used if you are unable to conduct a park visit.

Lesson 12

Teaching and learning activities

Go back to the *What is a national park?* poster and ask students to pick out the key features of a national park: natural features, built features, plants and animals.

In pairs, students develop a mini-poster about a national park of their choice, either real or imaginary. The centre of the page can be a drawing of the park, or a photo cut from a brochure. Around the drawing place boxes with information about the following things: facilities, natural features, plants, animals, historic heritage, Aboriginal heritage and workers.

Students use this information to create a diorama of their park. Refer back to previous activities for additional sources of information and ideas. Some of the features they might want to include are:

- natural features
  eg mountains, plains, rivers, forests, cliffs, waterfalls, etc
- built features
  eg toilets, fresh water, camping sites, barbeques, information boards
  cabins, car park, caravan sites, fireplaces, a visitor centre, walking tracks, roads
- special features
  eg animals, plants, historic sites, Aboriginal sites

Does the park need an entry sign, or other types of sign?

To complete the activity, students design and write a promotional brochure/poster advertising their park. It could include things such as:

- how to get there
- opening hours
- tours available
- accommodation available
- food and meals available
- activities available
- areas of the park
- workers
- protected plants and animals
- rules.

Outcomes and indicators

ENS2.5 Describes places in the local area and other parts of Australia and explains their significance.

- describes the natural and built features of a national park
- explains the significance of national parks.

ENS2.6 Describes people's interactions with environments and identifies responsible ways of interacting with environments.

- describes the built features of a national park that promote conservation of natural and cultural heritage values.

Objectives of the Environmental Education Policy for Schools

Students will develop knowledge and understanding about:

- the impact of people on environments (K2).

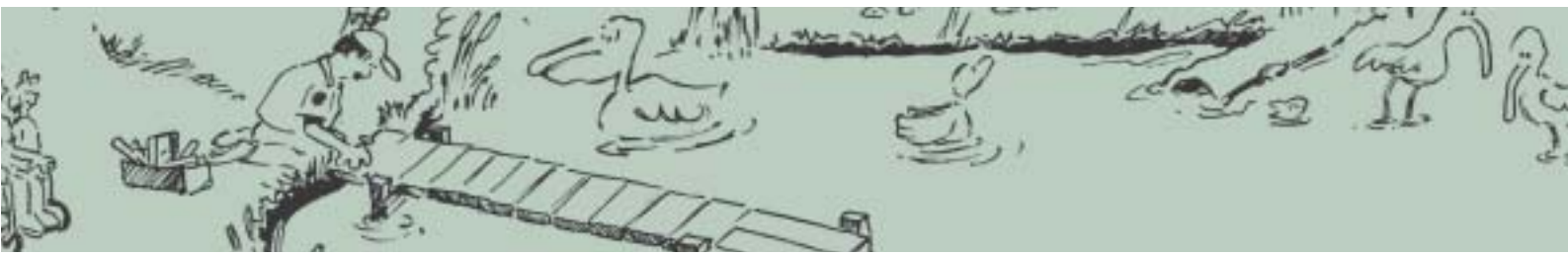
Students will develop values and attitudes relating to:

- a respect for life on Earth (V1)
- an appreciation of their cultural heritage (V2).


VISITOR
CENTRE
PARK TOURS

Student Worksheets

1. Park facts
2. Natural environments
3. Attitudes to animals
4. Aboriginal art
5. About my national park
6. Looking after national parks



Park Facts

Work Sheet 1

Choose your topic. As you watch the video write down facts about your topic in the spaces below.

Plants	**Animals**
Montague Island	**Activities by people**
Different kinds of national parks	**Interesting facts**

Natural environments

Work Sheet 2

What is the name of your national park?

FEATURES. Tick the boxes that apply to the environment on your poster

☐ hot	☐ rivers	☐ valleys	☐ few trees
☐ cold	☐ mountains	☐ grassy	☐ many trees
☐ dry	☐ hills	☐ shrubs	☐ sandy
☐ wet	☐ flat	☐ low trees	☐ lakes
☐ moist	☐ rocky	☐ tall trees	☐ sea

PLANT and ANIMALS. Draw a plant or animal that you think would live in the environment on your poster.

Why does this plant or animal like this environment?

DESCRIBING. Circle eight words that help describe the environment on your poster.

red	dark	rough
green	sunny	old
brown	light	dotted
black	variety	leafy
blue	messy	lush
yellow	plain	cleared
purple	unusal	friendly

Write three words of your own.

.....

.....

.....

Attitudes to Animals

Work Sheet 3

Which words do you think match each animal. For each animal use up to four words. Use the words from the list or try to think of your own. Use each word as often as you like.

fierce violent ferocious savage tough sad creepy ghastly rank foul filthy grimy dirty happy evil vulgar noble slimy wise clever smart silly angry quick speedy nasty dull clumsy cunning intelligent lazy tricky alert swift cuddly smelly rude noisy friendly furry loveable

Koala

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Blue Tongue

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Magpie

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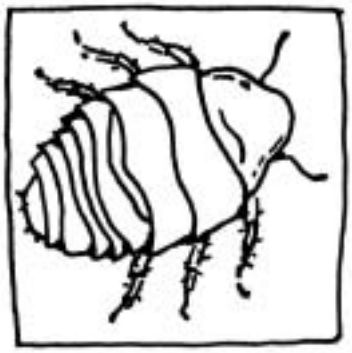
Bush Cockroach



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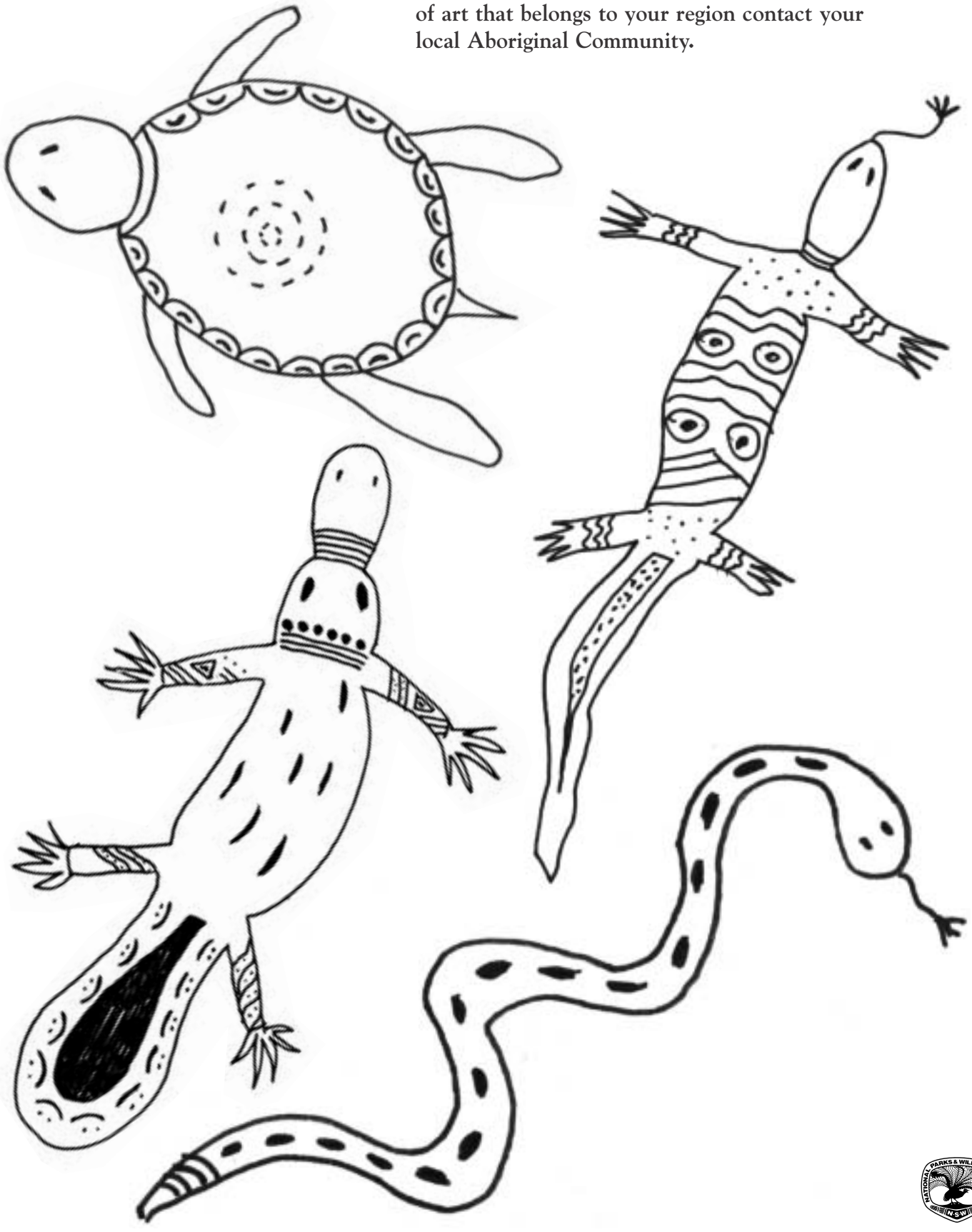
Aboriginal art

Work Sheet 4

This Aboriginal art work is a modern individual style. For information about the traditional and modern styles of art that belongs to your region contact your local Aboriginal Community.



About my national park

Work Sheet 5

My name is .....

The name of my class is .....

The name of the suburb or town in which I live is .....

1. Open your national parks guide book and find the big map of NSW. Each numbered dot shows the location of a different national park. Name two national parks in NSW.

.....

2. On the map try to find your town, or the town nearest to you. What is the name of this town?

.....

3. Read the number and colour of the dot nearest your town. The colour and the number of my dot is

.....

4. In the colour list next to the map, find the number of your dot. Look across and read the name and the page number. The name of my park is

.....

It is on page .....

5. Turn to that page. Does your national park have any symbols? Copy down some of the symbols and write next to them what they tell you about your park.
(Hint: a key to the symbols is near the front of the booklet.)

6. Read the description of the park.
Write down one of the activities that can be done in the park

.....

My park is ..... kilometres from the nearest town.

One of the highlights of this park is .....

Looking after National Parks

Work Sheet 6

Who am I ?

Where do I work ?

What are some of my duties at work ?

The national park I look after is important because .....

Colour the guide's clothing. Use the correct colours if they wear a uniform.

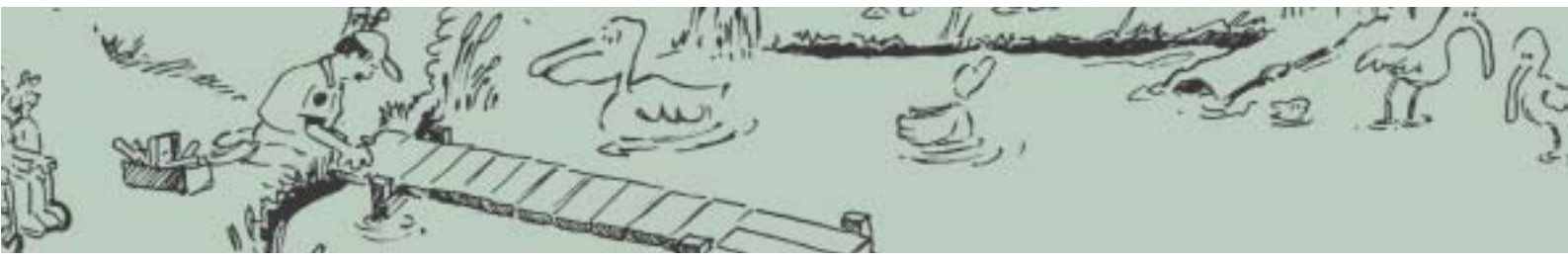
What do I like about my job?


VISITOR CENTRE
PARK TOURS

Student Factsheets

The first 10 fact sheets have an activity sheet on the facing page.

1. What is a national park?
2. Why do we have national parks?
3. Threatened species
4. Feral animals and weeds
5. Care for your national parks
6. Meet the ranger
7. Meet the field officer
8. Meet the Aboriginal sites officer
9. Meet the researcher
10. Meet the information officer
11. Attitudes to animals



What is a national park?

Fact Sheet 1

National parks are large areas of public land set aside for native plants, animals and the places in which they live. National parks protect places of natural beauty. They also protect places important to Aboriginal people, and places that show how people lived in the past.

Plants, animals and where they live

All our native plants and animals live in a particular habitat that suits their needs. Most of these plants, animals and habitats are not found anywhere else in the world. National parks protect this unique wildlife.

Landforms and places of scenic beauty

Rugged mountain ranges, sunburnt deserts, steep sandstone cliffs, snow-capped peaks, misty rainforests and white, sandy beaches are some of the beautiful landforms found in the Australian environment. They are protected for the enjoyment of everyone, both now and in the future.

Windows on the past

Old houses, convict jails, light houses, graves, and explorers' marks are places that tell us about how people lived in the past. These special places are called historic sites. Many historic sites are found and protected in national parks.

Aboriginal Areas

Aboriginal people have lived in Australia for thousands of years. Aboriginal people have a special relationship with the land and the plants and animals that live here. Art sites, campsites, rock engravings and natural features like rivers and mountains are some of the places that are important to Aboriginal people.

People

People work in national parks to look after and study the park's plants, animals, landforms and sites. People visit national parks to enjoy the scenery and stay healthy by walking, camping, having a picnic or exploring.

What is a national park?

Activity Sheet 1

Copy the following words into the correct spaces on the drawing.

historic hut	visitor centre	camping
forest	Aboriginal art	bushwalkers
grassland	planting	studying animals

Why do we have national parks?

Fact Sheet 2

There are many good reasons for having national parks. They provide a safe home for native plants and animals. They help keep the air and water clean. They help us to learn about the environment. National parks give us places to enjoy.

For the variety of living things

All the different plants and animals on Earth make up the variety of living things, or 'biodiversity'. We share this planet with all these creatures and we must do our best to protect them. Many plants and animals can only live in certain areas. National parks protect some of these areas.

For a healthy environment

We all need fresh air, clean water and food. Without them we would die. The leaves of plants make fresh air. Their roots hold the soil together, which stops erosion and helps keep our waterways clean. National parks have lots of plants so they play a big part in keeping our environment healthy.

For our enjoyment and health

National parks are places of natural beauty. They are places for people to relax in and enjoy. Many people have fun bushwalking, camping or having a picnic. There are lots of things to do in a national park such as swimming, skiing, painting, taking photographs, enjoying the view and taking in fresh air.

For learning

National parks are places for everybody to learn about native plants and animals and the way they rely on each other. Historic sites and Aboriginal sites also help us to learn about how people lived in the past.

Why do we have national parks?

Activity Sheet 2

Draw a line to link the first part of each sentence to its second half.

In national parks we can	can be a lot of fun.
Historic sites help us find out	of beautiful landforms.
Bushwalking and camping	live in national parks.
People take photos	places in the environment.
Many different plants and animals	learn a lot about the environment.
The leaves of plants	found in some national parks.
Aboriginal sites can be	about the past.
National parks protect important	make fresh air.

Write down some other reasons why we have national parks.

.....

.....

.....

.....

.....

Threatened species

Fact Sheet 3

We all need a safe place to live

Just like you, all plants and animals need food, water and somewhere safe to live. Native plants and animals need natural environments such as forests, grasslands, deserts, wetlands, and rockpools for their survival.

A home that suits their needs

Each creature has its own particular need for a home. Some can't live where it's too cold or too hot. Some prefer dry, sunny places. Others prefer wet and shady places. Some rely on a particular type of food that can only be found in one small area. Rocks, logs, tree trunks, creeks or swamps give some animals a place to hide from their enemies. It is important to protect the places that animals and plants need.

No home to go to

Sadly, some of our native plants and animals are dying because they no longer have a safe place to live or food to eat. When we clear land to make way for cities and farms, or when we create pollution, or let weeds grow wild, we take away the homes of native plants and animals.

Food for ferals

Feral animals such as cats, foxes, rabbits, pigs and dogs eat native animals or destroy their homes. Weeds and feral animals make it hard for a lot of our native wildlife to survive.

What is a threatened species?

When all the plants or animals of one particular kind are dead, we call them extinct – they are gone forever. Any plant or animal that is at risk of becoming extinct is called a threatened species.

How can threatened species be saved?

We can save threatened species by protecting them from the things that threaten them. This is done by controlling weeds and feral animals, and by stopping the clearing of land where threatened species live. National parks are places where people look after threatened species and their homes.

Fact File: In Australia at least 140 plant and animal species have become extinct since the First Fleet arrived in 1788. Find out more about threatened species on the NPWS website www.nationalparks.nsw.gov.au.

Threatened species

Activity Sheet 3

Circle the correct answers to these questions.

1. *Many native plants and animals are facing extinction because:*
   - ❄ their homes are being destroyed
   - ▲ they have colds and 'flu
   - ◯ they are dying of old age

2. *Most native plants and animals live in:*
   - ☆ high-rise apartment blocks
   - ☾ the local park
   - ⛸ forests, grasslands, wetlands and other natural environments

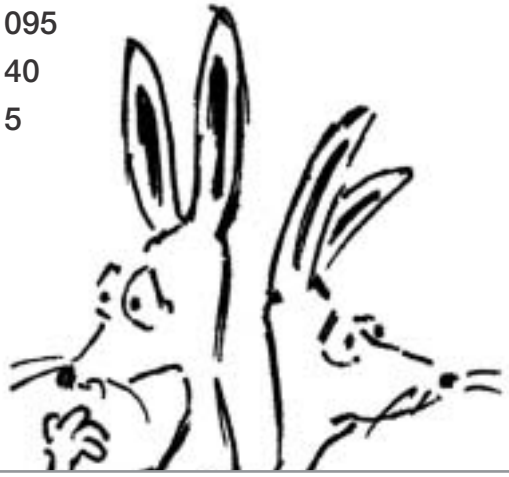
3. *When a species is extinct:*
   - ⛉ it can no longer smell
   - ⚖ every single plant or animal of that species is dead
   - ⚓ it can only be found in a zoo

4. *Feral animals:*
   - ▲ kill native animals
   - ⩾ are native to Australia
   - ✪ are good for the environment

5. *Which of the following is <u>not</u> a threat to native species:*
   - ✪ dumping pollution
   - 🍁 land clearing for cities and farms
   - ⛉ killing weeds

6. *Which of these things <u>is</u> a threat to native species:*
   - ⚛ planting native trees and shrubs
   - ✈ letting pets roam free at night
   - ☆ controlling weeds and feral animals

7. *How many extinctions have happened since the arrival of the First Fleet?*
   - ☾ 1095
   - ☆ 140
   - ⛌ 15



Code

❄	◍	▲	★	☆	⛸	⚓	☽	✈	⩾	□	⛌	⚛	◯	◇	⚖	✪	🔥	◉	⛉	🎓	🍁	✪	⌂	☾
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	v	w	x	y	z

To complete the sentence match the symbol beside the correct answer to a letter in the code. Write the letter in the corresponding space in the sentence.

Threatened species cannot survive if they don't have a

s _ _ e _ l _ _ e _ o l _ v _.

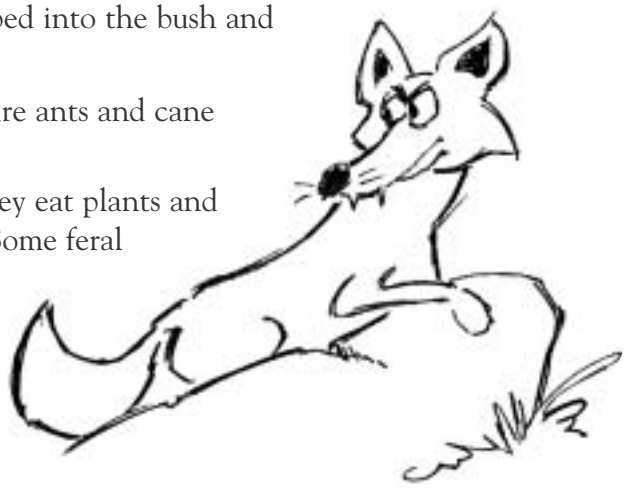
1 2 3 1 4 5 6 7

Feral animals and weeds

Fact Sheet 4

Feral animals

Many different kinds of animals have been brought to Australia since the First Fleet arrived in 1788. Unfortunately some of these animals have escaped into the bush and become pests. We call these animals 'feral'.



Cats, foxes, dogs, rabbits, pigs, goats, horses, deer, carp, fire ants and cane toads are examples of feral animals in Australia.

Some feral animals hunt, kill and eat native animals. They eat plants and damage the homes and food supplies of native animals. Some feral animals spread disease and kill farm animals.

There are several ways of controlling feral animals, including using traps and poisons.

Weeds

Weeds are plants that grow in the wrong place. All plants need sunlight, food and water from the soil. Weeds grow and spread faster than native plants. They shade them and crowd them out. Without enough sunlight and water, native plants can stop growing or die off. When this happens all the animals that rely on the plants suffer too.

Some common weeds are willows, camphor laurel, privet, blackberry, lantana and bitou bush.

In national parks weeds are killed by digging, cutting or spraying with weed poison. When the weeds are removed, native plants can grow back.

How you can help stop the spread of feral animals and weeds

- **Plant local native plants in your garden.**
- **Do not dump garden clippings in the bush or wash them down stormwater drains.**
- **Keep your cats and dogs indoors or locked up at night to stop them from killing native animals.**
- **Do not dump unwanted animals such as kittens, dogs, chickens, fish and rabbits in the bush.**

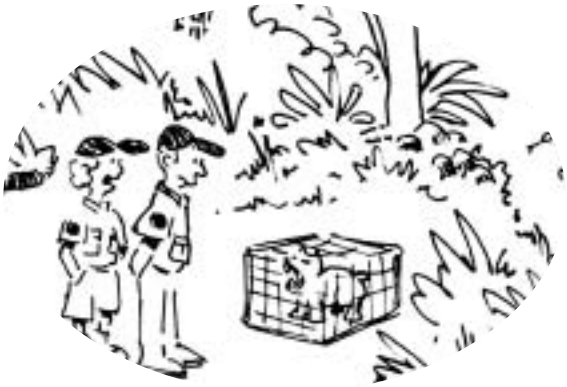
Feral animals and weeds

Activity Sheet 4

Unscramble the letters to reveal the name of a feral animal or weed.

OXF _ _ _	
IPG _ _ _	
GDO _ _ _	
ERHOS _ _ _ _ _	
IBRABT _ _ _ _ _ _	
TCA _ _ _	
NACE ADOT _ _ _ _ _ _ _ _	
LLIWOW _ _ _ _ _ _	
ANTLAAN _ _ _ _ _ _ _	

In the space below, write the reason these animals and plants are a threat to our native species.



How can you stop the spread of feral animals and weeds?

Care for your national parks

Fact Sheet 5

When visiting a national park you need to ensure that you don't disturb plants, animals, special sites, or the enjoyment of other visitors.

Here are some of the rules for visiting a national park

Rule	Reason Why
Keep pets at home.	Pets can scare or kill native animals.
Take all your rubbish and litter home.	Litter causes damage to the environment.
Leave plants, animals, rocks, shells and soil as you find them.	Disturbing these things puts the lives of animals and plants at risk and ruins their habitats.
Vehicles must stay on roads.	Vehicles cause damage to plants and animals and increase erosion.
Ride your mountain bike on roads but not on walking tracks.	Riding on walking tracks can injure walkers and damage the track.
Tread lightly – keep on the track.	You won't damage plants and animals when walking on the track.
Do not pick flowers.	Flowers are food for insects and birds, and they make seeds from which new plants grow.
Use toilet facilities, not the bush.	This keeps damage to plants and the soil to a minimum.
Do not touch or walk on historic sites or Aboriginal sites.	These sites are easily damaged by humans.

Staying safe in national parks

- When bushwalking, tell someone where you are going.
- Take food and water, warm clothing and a raincoat.
- Do not go alone.
- Be careful when walking on rocks at the sea edge.
- Put on sunscreen and a hat.
- Stay behind safety fences.
- Before swimming check the depth, temperature and current.

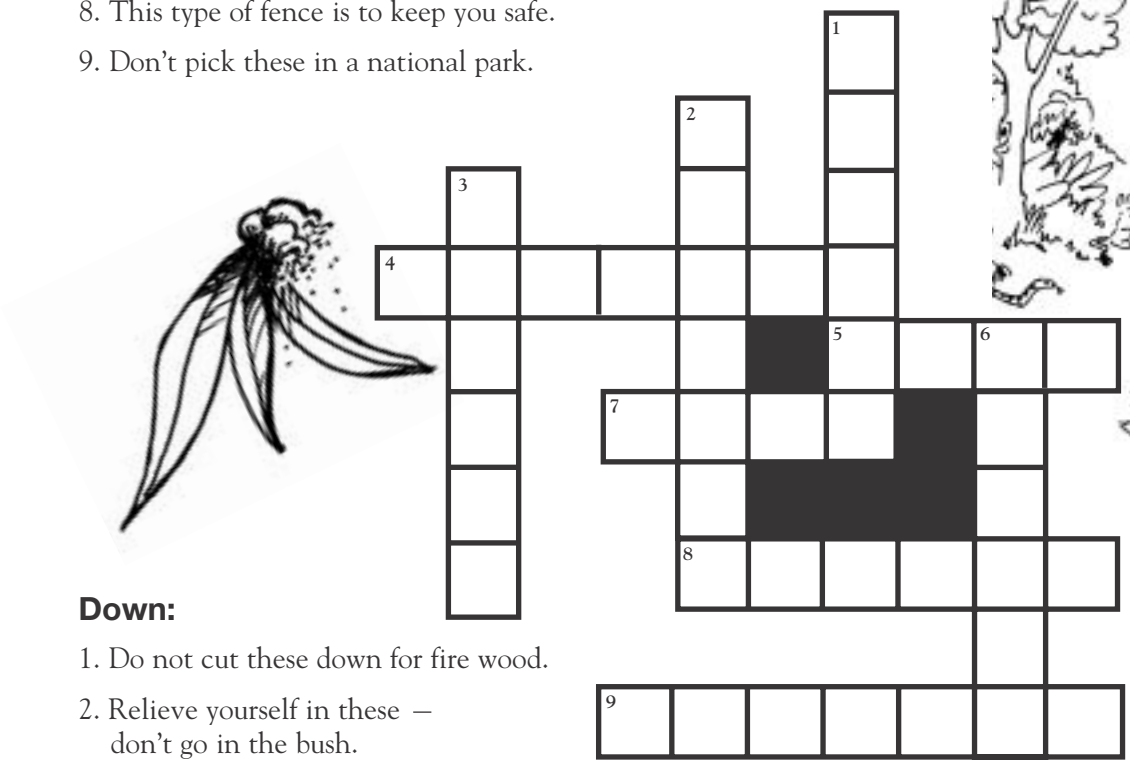
Care for your national parks

Activity Sheet 5

The *Care For Your National Parks* fact sheet has a list of rules for visiting a national park that will help you find the answers to these crossword clues.

Across:

4. This happens to the soil when vehicles don't stay on the road.
5. When bushwalking, _ _ _ _ someone where you are going.
7. Leave these at home when you go to a national park.
8. This type of fence is to keep you safe.
9. Don't pick these in a national park.



Down:

1. Do not cut these down for fire wood.
2. Relieve yourself in these — don't go in the bush.
3. Keep on these when walking.
6. Do not leave this behind when you leave.

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Meet the Ranger

Fact Sheet 6

My duties at work are to:

- write and carry out plans for improving the park
- protect native plants and animals inside and outside the national park
- protect historic places and Aboriginal sites
- talk to people who live near national parks
- make sure visitors are safe and obey the rules in national parks
- educate people about national parks and native wildlife

My workplace

I work in an office and outside in the national park. I often go to different parts of the national park to check on plants and animals or visit historic sites that I am looking after. I meet with neighbours and the community to encourage everyone to help look after our heritage.

My work clothes

My uniform is a light brown cotton shirt, thick shorts or trousers, boots and a hat. My shirt has a National Parks and Wildlife Service badge on the shoulder. I have special jackets for bad weather. If I am fire fighting I wear special protective clothes and a helmet.

My equipment

In my office I use a computer, maps and books. Outside I drive a four-wheel drive and use maps, a two-way radio, a camera, a notebook and a GPS (global positioning system). If I am fire fighting, I drive a water tanker truck loaded with special tools.

My job skills

At university I learnt about native plants and animals and how to look after the environment.

What I like about my job

I like working outside in the fresh, open air, talking to people who visit the national park and helping prevent threatened species from becoming extinct.

Meet the Ranger

Activity Sheet 6

Rangers write plans that help protect our national parks and their features. They also put these plans into action by carrying out improvements to the park's facilities and protecting its animals and plants.

1. Find the words.

Look in the puzzle for these words. Trace around and colour-in each word in the puzzle. Cross the words off the list as you find them.

protecting
conserve
educating
outside
plants
animals
inside
office
plan
radio
uniform
shirt
boots
university
fire
safety
map
drive
truck
tools
helmet

A	N	I	M	A	L	S	R	A	U	N
H	P	R	O	T	E	C	T	I	N	G
E	D	I	S	T	U	O	G	E	I	N
L	R	P	L	A	N	N	R	S	F	I
M	I	O	E	D	I	S	N	I	O	T
E	V	F	P	R	V	E	O	T	R	A
T	E	F	I	R	E	R	P	A	M	C
R	O	I	D	A	R	V	E	C	T	U
U	Y	C	O	U	S	E	R	P	A	D
C	R	E	S	H	I	R	T	K	S	E
K	P	L	A	N	T	S	T	O	O	B
S	A	F	E	T	Y	T	O	O	L	S

2. Find the hidden message.

When you have found all the words, circle the letters that have not been coloured. Starting at the top left, work your way across each line from left to right. Write the circled letters, in order, in the spaces in the sentence below to reveal the hidden message.

You can help _ _ _ _ _ _ _ _   _ _ _ _ _ _ _ _   _ _ _ _   _ _ _ _ _

3. Take action!

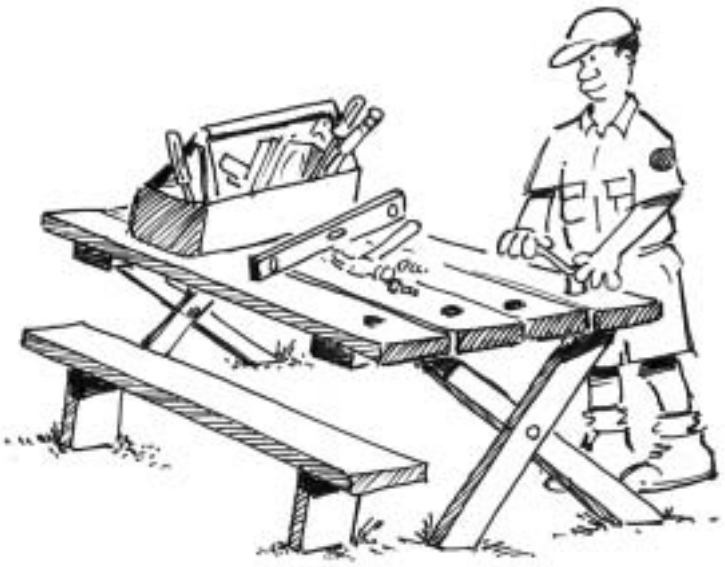
Write or draw one way you can do this.

Meet the Field Officer

Fact Sheet 7

My duties at work are to:

- build and look after roads, tracks, picnic shelters, signs and camping areas
- keep animal pests and weeds under control
- fight bush fires and reduce fire hazards
- clear fallen timber and dangerous trees from roads and picnic areas
- fix our equipment



My workplace

Sometimes I work at the workshop repairing equipment.
At other times I am in the office or out in the national park.
Over summer I sometimes go to other places to help fight fires.

My work clothes

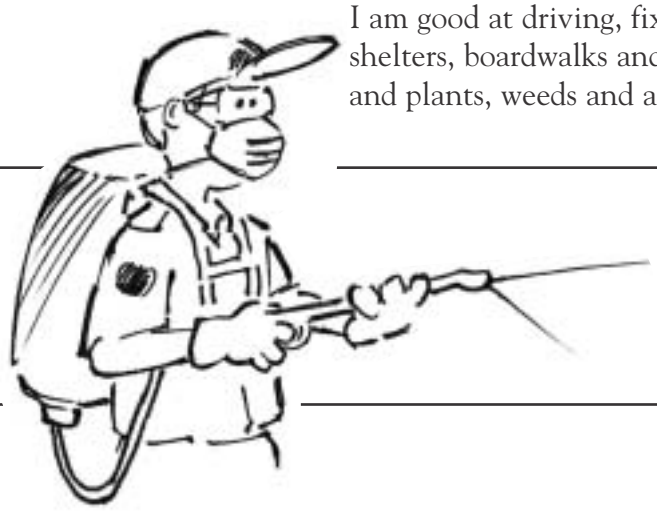
My uniform is a khaki cotton shirt, thick shorts or trousers, boots and a hat. My shirt has a National Parks and Wildlife Service badge on the shoulder. I wear safety equipment such as a helmet, goggles and ear muffs when working with machines. When I am fire fighting I wear special protective clothes.

My equipment

I drive trucks, tractors and mowers. I use a chainsaw (for special purposes), brush cutter, pumps and lots of other tools. When I am fire fighting, I drive a water tanker truck loaded with special tools. In the office I use a computer.

My job skills

I am good at driving, fixing equipment and building things such as shelters, boardwalks and signs. I need to know about native animals and plants, weeds and animal pests.



What I like about my job

I enjoy working outside and improving the facilities of national parks. My job is active and it keeps me fit.

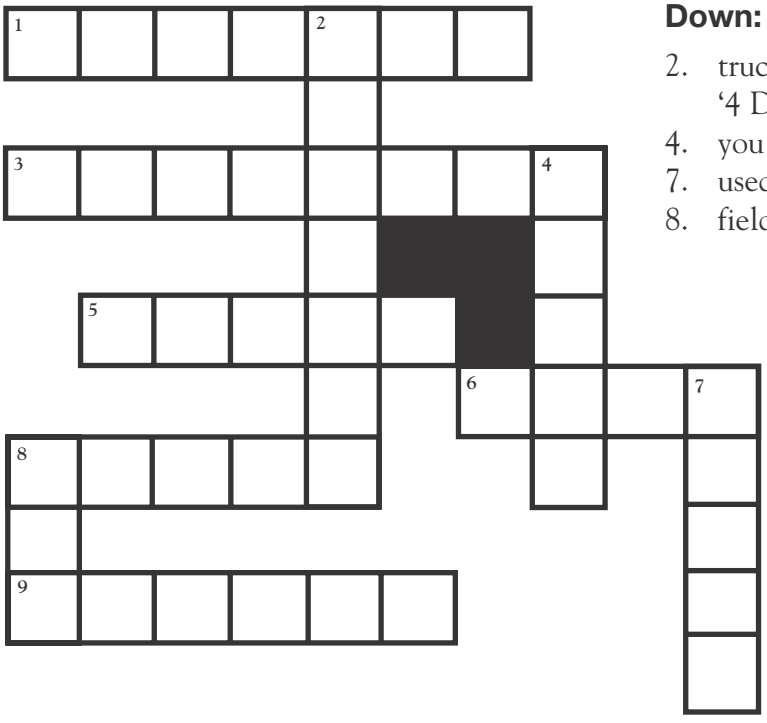
Meet the Field Officer

Activity Sheet 7

Field officers are in charge of the day to day running of the park such as making and fixing roads, tracks and camp grounds. They help to reduce fire hazards, fight bushfires and control weeds and animal pests.The *Meet the Field Officer* fact sheet will help you find answers to these crossword clues.

Across:

1. protects picnickers from the weather
3. hand-held machine that cuts wood
5. tall woody plants with branches and leaves
6. foreign plant or animal
8. field officers often have to fight these
9. cleared paths that you walk along



Down:

2. trucks that carry the answer to '4 Down' to put out fires
4. you drink this to survive
7. used to carry tools to an area
8. field officers need to be _ _ _ and healthy

Have you visited a national park? What did you do there?

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Meet the Aboriginal Sites Officer

Fact Sheet 8

My duties at work are to assist the local Aboriginal community to:

- identify and protect Aboriginal sites
- record details and learn more about these special places
- make displays about my culture and write reports
- put Aboriginal objects into safekeeping
- teach people about Aboriginal culture
- help to teach young Aboriginal people

My workplace

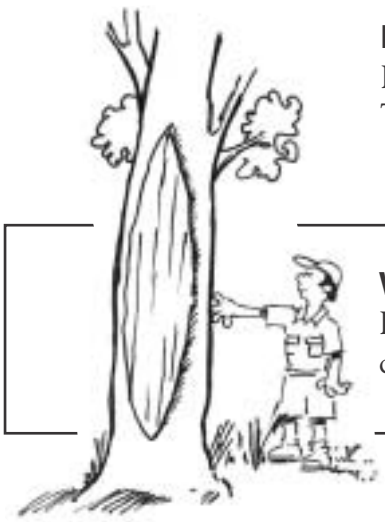
I work in an office and I often make trips to Aboriginal sites. Sometimes they are in remote bush locations. I also go out to talk to many different people in the community and visit schools to give talks.

My work clothes

My uniform is a light brown cotton shirt, thick shorts or trousers, boots and a hat. My shirt has a National Parks and Wildlife Service badge on the shoulder. I have a special jacket for bad weather.

My equipment

In my office I use a computer, maps and books. Outside I drive a four-wheel drive and use maps, a GPS (global positioning system), two-way radio, camera and notebook. Sometimes I use a cassette recorder to record my observations as I speak about them.



My job skills

I am an Aboriginal person with a good understanding of my culture. Talking to many different kinds of people is important in my job.

What I like about my job

I like helping people to get a better understanding of and respect for my culture, and helping the aboriginal community to protect their heritage.

Meet the Aboriginal Sites Officer

Activity Sheet 8

Aboriginal Sites Officers identify, record and protect Aboriginal sites. These sites are places that show things about Aboriginal people and their relationship with the environment.
Here are some examples of Aboriginal sites.
Draw a line to match the drawings to their descriptions.

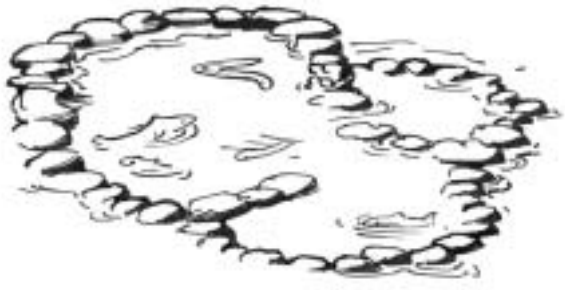
Fish traps
In rivers or tidal areas stones are arranged like fences below the water surface to trap fish.

Paintings
Aboriginal paintings are found on the walls of caves, rock shelters and overhangs. Hand stencils, animal tracks and people are painted. Rock art is used to pass on knowledge.

Shell middens
Many Aboriginal groups near rivers or the coast eat shell fish. A midden is the remains of empty shells and bones left in a pile near a campsite.

Scarred trees
Aboriginal people make canoes, shields and containers from a section of bark cut from a tree. The tree keeps growing but a scar remains where the bark was removed.

Stone tools
Aboriginal people used stone axes, spears, knives and chisels for wood working. These tools are shaped from pieces of rock and stone.



Meet the Researcher

Fact Sheet 9

My duties at work are to:

- find out about native plants and animals
- find out about the places where plants and animals live
- find out how pests harm native plants and animals
- ask older people about how historic sites were used in the past
- study historic sites and record things about them
- prepare fire plans to reduce fire danger and to help protect the national park

My workplace

I work outside collecting information at a variety of different places in national parks. I also work in an office writing reports and telling other people about my work. Sometimes I travel to other areas of Australia to learn more about the creatures or features that I am studying.

My work clothes

I often wear ordinary, comfortable clothes to work. When I am working outside, I wear boots, a hat, trousers and a shirt. Sometimes I have to go into creeks, rivers or the sea and I wear waders or a wetsuit.

My equipment

I use maps, cameras, binoculars, and animal traps, a GPS (global positioning system) so I know exactly where I am in remote places, and other scientific equipment. The traps are special traps that don't hurt the animals. I set the animals free after measuring and weighing them. In the office I use computers, books and magazines.

My job skills

I have been to university and studied science, history, architecture or archaeology. I am good at making observations, finding out about things and writing reports.

What I like about my job

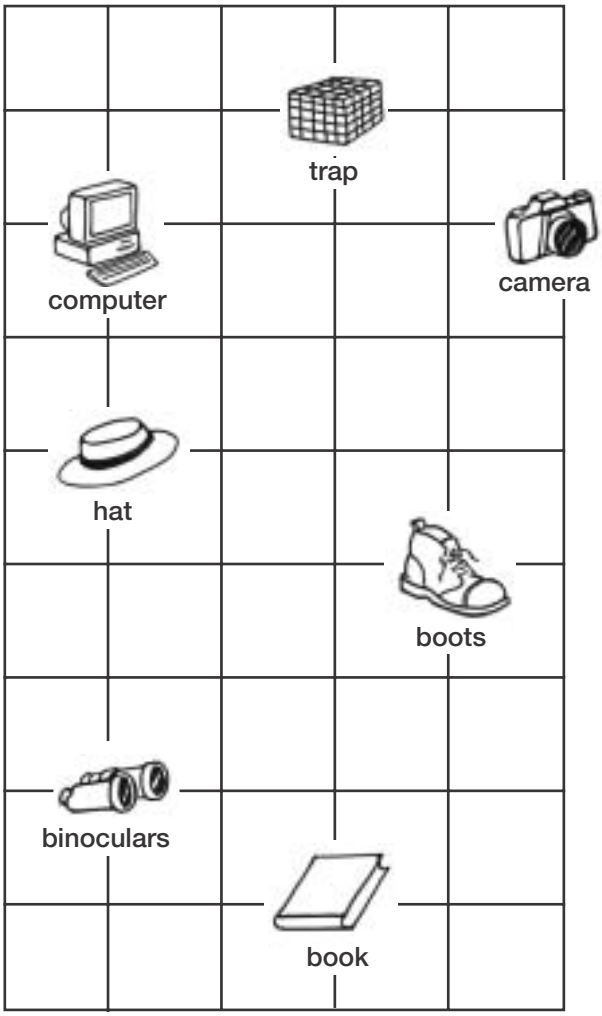
I like to find out new information and give advice about protecting our national parks. I like finding out new things about our past or about unique plants and animals, and finding out better ways to protect them.

Meet the Researcher

Activity Sheet 9

Researchers find out things about the creatures and features of our national parks. This includes finding out about native plants and animals, weeds and animal pests, historic buildings and what the land was used for in the past.

Help the research officers find the things they need for work today. Follow the position clues in each question to find out which item it leads to. Then record your answer.



a) up 2, right 2, up 2 = _____

b) up 7, left 1, down 2 = _____

c) up 8, right 3, down 1 = _____

d) up 4, left 1, down 2 = _____

e) up 8, right 2, down 3, left 1, up 3 = _____

f) left 1, up 4, right 2, up 4, left 2, down 1 = _____

g) up 9, right 1, down 8 = _____

If you were a researcher going into the bush to find out about an endangered bird, what equipment would you take with you and why?

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Why do you think researchers trap animals? Why do you think they let them go afterwards?

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Meet the Information Officer

Fact Sheet 10

My duties at work are to:

- answer phone calls, faxes, emails and visitors' questions
- help people find information
- organise the office
- give visitors information on national parks
- write and design information signs and fact sheets
- do office work that helps the other workers to do their jobs

My workplace

I work inside in an office or a visitor centre, or outside in the national park. Sometimes I visit schools and other community groups.

My work clothes

When I'm talking to the public I wear a uniform: a light brown cotton shirt with a National Parks and Wildlife Service badge on the shoulder, shorts or trousers and shoes. I wear a hat when I am working outside.

My equipment

When I am in the office I use a phone, computer, photocopier, filing cabinets, fact sheets and the library. When I'm outside I might use a camera, maps and a first aid kit.

My job skills

I have lots of different job skills such as organising an office, doing accounts, working a telephone switchboard, writing fact sheets, talking to people and leading tours.

What I like about my job

I like working as part of a team. I like helping the public to learn about our national parks. I also like helping visitors and reading letters from them when they have enjoyed their visit.

Meet the Information Officer

Activity Sheet 10

There are many different kinds of information officers such as visitor centre staff, office managers, librarians and tour guides. Answering questions from members of the public, collecting information, making signs for the parks and taking people on tours, are just some of the many jobs done by information officers.

Copy these phrases into the correct spaces under the drawings.

- Answering the phone
- Sorting and storing information
- Showing visitors around
- Designing signs and brochures
- Organising meetings
- Paying accounts and wages
- Setting up displays

Attitudes to Animals

Fact Sheet 11

Blue Tongue Lizard

What are they?
Blue tongue lizards are reptiles that can grow up to 50cm long and live for 20 years, not bad for a lizard. They are often found in backyards where they hide in groundcover plants, under rocks and even in clay pipes.

What do they eat?
Blue tongue lizards are useful because they eat snails, slugs and caterpillars that attack your favourite plants.

Other information
When threatened they will open their mouth, stick out their broad blue tongue and may even hiss and puff up to make themselves look scary. If you don't pick them up they are never dangerous to people, however our pets, particularly cats and dogs are very dangerous to blue tongues.

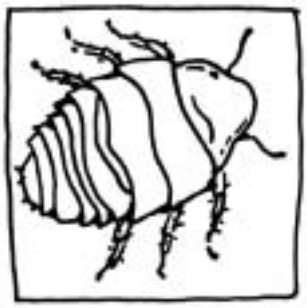
Koala

What are they?
Koalas are mammals that live in eucalypt forests. Because of their looks they are a popular tourist attraction. In 1996 an estimated $1 billion was spent by tourists visiting Australia to see koalas.

What do they eat?
They are fussy eaters and only like some kinds of eucalypt leaves.

Other information
Every year lots of money is spent to try and save koalas. Koalas live a relatively safe life except when they are on the ground where they may be attacked by dingos and wild dogs or hurt crossing roads.

Bush Cockroach



What are they?
Bush cockroaches are insects that belong to a group of animals called invertebrates.

What do they eat?
They eat dead leaves and plant material. Bush cockroaches are important because they help to recycle dead plant material on the ground and turn it back into plant food. In other words they help to keep our gardens and bush healthy.

Other information
They are usually found in native gardens or the bush, unlike their introduced and unwanted cousins that live in our homes. Some people think all cockroaches are bad so it's very hard to convince them that bush cockroaches should be protected.

Magpie

What are they?
Magpies are birds that are often seen in parks, gardens and the bush. For most of the year magpies live quite happily with people, but for a few weeks during nesting season they will often defend their nest by attacking any person or animal that comes near.

What do they eat?
They are very useful because they eat lots of insect pests. A favourite is the scarab beetle, which is a major pest in garden lawns.

Other information
People walking past the nest may be seen as a threat prompting the magpies to fly low and fast over the person clacking their beaks.

Teacher's Notes

Types of reserves and protected areas

Types of ecosystems

Threatened species

Threatened species – some examples

Contacts and websites

Teacher's Notes 1

Types of Reserves and Protected Areas in NSW

Type of reserve	purpose	Managed by
National parks Relatively large areas that protect unspoiled landscapes and native plants and animals. They are set aside for public education and usually offer visitor facilities.	• protect scenic and natural features • conserve wildlife and ecosystems • preserve Aboriginal and historic sites • encourage scientific and educational enquiry • provide outdoor recreation opportunities	NSW National Parks and Wildlife Service (NPWS)
Nature reserves Areas of special scientific interest, established to conserve native plants and animals. Permits are required for entry and outdoor recreation is not permitted.	• propagation and conservation of wildlife • preservation, conservation and study of natural environments and natural phenomena • education and scientific research	NPWS
State recreation areas Large areas which have been set aside mainly for outdoor recreation purposes. They often contain important natural environments.	• provide a range of outdoor recreation opportunities • maintain scenic values • protect natural and cultural areas	NPWS
Regional parks Parks situated near urban centres, that offer recreational opportunities in open space and bushland. Their environments have often been largely altered since European occupation.	• provide open space and bushland for recreation opportunities • protect and regenerate remnant bushland within urban centres	NPWS
Historic sites Areas that protect buildings, objects, monuments, landscapes or places of special significance in the history of NSW and Australia. Historic sites are generally open to visitors.	• conserve features of cultural significance • provide educational opportunities for the public • historic, archaeological and architectural research	NPWS
Aboriginal areas Places that are important to Aboriginal people, or sites that preserve Aboriginal culture. Aboriginal areas and sites may be located in national parks, state forests, crown land, or private property.	• preserve, protect and prevent damage and desecration to objects or Aboriginal places • protect other features having cultural value to the Aboriginal community • promote understanding of Aboriginal culture	NPWS
Karst conservation areas Above- and below-ground landforms of cave systems. These landforms can include surface features, caves and their decorative contents.	• preserve, protect and prevent damage to cave systems • provide opportunities for education and research	NPWS

Types of Reserves and Protected Areas in NSW

Type of reserve	purpose	Managed by
State parks Large areas of land set aside for a variety of recreation and nature study opportunities. Some have camping and low key accommodation.	• provides a unique natural setting for affordable recreational and leisure experiences consistent with the protection and enhancement of natural, cultural and scenic values	Department Of Lands
State forests Areas of natural forest and softwood and hardwood plantations dedicated for the supply of timber resources. Within State forests there is a system of flora reserves that provides special protection for areas considered to have high conservation values.	• provide forest products on a sustainable basis • provide opportunities for public recreation	State Forests of NSW
Special areas Inner catchments surrounding the water storages for Sydney, Blue Mountains and Illawarra water supply. Special areas are virtually untouched areas of natural bushland which act as a natural filter for water entering storage dams.	• manage and protect water catchment areas • protect and enhance quality of water • catchment research	The Sydney Catchment Authority and NPWS are jointly responsible
Marine parks Unique and outstanding marine areas, set aside to conserve aquatic plants and animals. Marine parks are divided into zones that allow different sustainable levels of commercial and recreational activities.	• conservation of aquatic animals, plants and habitats • enhancement of research and recreation opportunities • public education about the importance of conserving marine environments • increased fisheries' productivity	The Marine Parks Authority, which is a joint management arrangement between the NPWS and NSW Fisheries
Wilderness areas Large, remote areas of land which have remained essentially unchanged by modern human activity and are large enough to allow natural systems to develop and evolve without interference.	• protect landscapes, native plants and animals • managed so that native plant and animal communities are disturbed as little as possible, eg horses, vehicles and bicycles are not permitted	NPWS
World Heritage areas Areas ranked among the most important examples of natural and cultural heritage in the world. Protected by international convention, they are part of a global list of treasures that includes the Great Barrier Reef, Mount Everest, the pyramids of Egypt and the Great Wall of China.	• ensure the protection and conservation of natural and cultural heritage of international significance	NPWS and other organisations depending on location and land use

Teacher's Notes 2

Types of Ecosystems

The *What is a national park?* poster includes seven general types of natural ecosystems.

Semi-arid

These ecosystems are found in western NSW and are characterised by low rainfall and high daytime temperatures that can drop substantially overnight. The plant species in these areas, including saltbush, mulga and river redgums, are drought tolerant and have adapted to poor soil and drainage.

Grassland

Grassy ecosystems are dominated by native grasses, often interspersed with native wildflowers. They may contain widely spaced tree cover or shrubs, creating a grassy woodland.

Wetland

Wetlands are found on land that is temporarily or permanently covered by fresh, brackish or saline water. Wetlands include rivers, streams, creeks, lakes, dams and ponds, billabongs, swamps, marshes, bogs, fens, lagoons, floodplains, estuaries and mangrove swamps.

Woodland and forest

Woodlands and forests are areas with trees, shrubs and grassy areas. Trees in woodlands and forests grow far enough apart to allow light to enter through the canopy to support a diverse shrub and groundcover layer. Woodlands and forests can be divided into dry sclerophyll and wet sclerophyll. The latter grows on moister soil, has taller and more closely spaced trees and a less obvious shrub layer.

Alpine

Alpine ecosystems occur in NSW at altitudes over 1800 metres where snow covers the ground for a substantial part of the year and it is too cold for trees to grow. The sub-alpine area immediately below this is distinguished by the predominance of snow gums.

Rainforest

Rainforest ecosystems grow where there is high rainfall and high soil moisture content. They have a closed canopy in which the interlocking branches and leaves at the top of tall trees completely shade the forest floor.

Coastal

Coastal ecosystems are found where the sea meets the land. They may involve rugged, eroded headlands, sand dunes, sandy beaches, saltmarsh, mangrove mud flats, coastal heath, seagrass beds, rocky shores, beaches and estuaries. They are influenced by the tides, waves and wind.

Teacher's Notes 3

Threatened Species

A threatened species is any species of plant or animal that is facing possible extinction, is declining in numbers or is considered at risk. Considering the huge impact on our native biodiversity since European settlement, it is very important that every effort is put into saving plants and animals from extinction.

Major threats to survival

Every organism needs food and shelter. In addition to being eaten by another animal, the major factors that threaten the survival of native species are actions that destroy their habitats and food supplies. If these things are taken away from plants or animals they will die. On a large scale it becomes a threat to the species' survival.

Major threats to the survival of our native animals and plants.

Loss and disturbance of habitat, such as:

- land clearing
- vegetation removal
- bush rock removal
- timber removal
- over grazing by introduced animals, eg rabbits, sheep, cattle, goats
- invasion by weeds
- high frequency fire
- pollution of soil and water

Predation by introduced animals, such as:

- foxes
- cats
- cane toads
- pigs
- dogs
- goats
- rats
- mosquito fish
- starlings

The term 'threatened' covers different categories of animals, plants, populations and ecological communities.

Presumed extinct are species that have been searched for but not seen for more than 50 years (40 animals and 38 plants species are currently presumed extinct in NSW).

Endangered species means the species is likely to become extinct or is in immediate danger of extinction if threats continue (about 76 animal and 300 plant species are currently endangered in NSW).

Vulnerable species means that the species is likely to become 'endangered' if the factors threatening its survival or continue (168 animals and over 200 plants species are currently vulnerable in NSW).

The *Threatened Species Conservation Act 1995* provides additional protection for threatened species and their habitats, and promotes their recovery and the abatement of threats.

In NSW there are currently over 700 species of animals and plants listed as threatened under the *Threatened Species Act*.

Teacher's Notes 4

Threatened Species - Some Examples

Presumed extinct

Bilby
Bilbies are marsupials and the largest of the bandicoot family. They are covered in silky, grey fur, have a long snout and a slender tongue. Up until the 1930s, the bilby was common in the drier parts of NSW. Their decline, due to habitat destruction by cattle and rabbits as well as from predation by cats, dingoes and foxes, was sudden and dramatic. The bilby is now presumed extinct in NSW. Its range was once 70% of mainland Australia, and is now reduced to isolated pockets in the Northern Territory and Queensland.

Paradise parrot
The highly coloured paradise parrot was highly prized and many were captured. Sale of the parrot and its export to England was one factor in its decline. Another factor was by the reduction in the growth of native grass seeds caused by drought and heavy grazing by cattle – this led to the bird's starvation or failure to breed. The paradise parrot dug chambers in termite mounds as nest sites, and this made them easy to capture. Once found in Queensland and northern NSW, the paradise parrot has not been seen since the early decades of the 1900s.

Endangered species

Malleefowl
Once common in the mallee country, the malleefowl has had to cope with major threats over the years, including clearing of its habitat and predation by foxes. Not surprisingly, it has been disappearing at an alarming rate and is now classed as endangered.

Wollemi Pine
The wollemi pine is a 'living fossil' because it belongs to a genus of plants previously known only as fossils that date back to the age of the dinosaurs, 150 million years ago. It is a 30 metre high tree that is only found in sheltered rainforest gorges in the rugged mountainous Wollemi National Park. It is one of the world's rarest species with only 43 adult trees known in three small stands. The major threats to the wollemi pine are people visiting the site where they grow, potential diseases and catastrophic fire.

Vulnerable

Koala
An Australian icon and on the 'must-see' list of every overseas visitor, the koala has quite specific habitat requirements. It needs particular types of forest with particular species mix of eucalypts. Studies in the 1980s showed that the koala had disappeared from 50 - 75 per cent of its range. Loss and fragmentation of habitat is the prime cause. Some populations also have added threats from disease, fire, drought, dogs and vehicles. The koala is now considered vulnerable. If threats continue, the koala is likely to become endangered.

Red-crowned toadlet
This small frog has a red t-shaped pattern on the top of its head. It can be found in restricted areas of mid-eastern NSW, generally near ridge tops in steep escarpment areas, plateaus and low undulating ranges. It lives under flat sandstone rocks, under logs, in damp loamy soils and leaf litter. Due to threats such as high frequency fire, bush rock removal, expanding urbanisation and habitat degradation, disease and water pollution, this species is now considered vulnerable.

Many more examples of threatened species can be found on various websites listed in the following section.

Teacher's Notes 5

CONTACT DETAILS

NSW National Parks and Wildlife Service
For information on national parks contact the National Parks Centre
102 George Street, The Rocks Ph 1300 361 967
email: info@nationalparks.nsw.gov.au
www.nationalparks.nsw.gov.au

State Parks
www.stateparks.nsw.gov.au

NSW Aboriginal Land Council
Contact details for regional land councils can be found at:
www.alc.org.au/about/organisation/RALCS/RALCS.html

Environmental Education Centres, NSW Department of Education and Training
Information on each environmental education and zoo education centre can be found at:
www.curriculumsupport.nsw.edu.au/enviroed/index.cfm

Environment Australia
(manages commonwealth national parks)
www.ea.gov.au/parks/commonwealth/index.html

WEBSITES

General resources:

NSW Board of Studies resources list for 'State and national parks' unit
www.bosnswk6.nsw.edu.au/hsie/resourcelist/k6hsie_s2_nparks.html

Department of Education and Training Environmental Education Policy for Schools
www.curriculumsupport.nsw.edu.au/enviroed/files/Env_EE_policy.pdf

Foundation for National Parks & Wildlife
www.fnpw.com.au

Animal factsheets:

Australian Museum – Wildlife of Sydney
www.wildlife.faunanet.gov.au/index.html

Australian Museum – general factsheets
www.amonline.net.au/factsheets/index.htm

NPWS – wildlife fact sheets
www.nationalparks.nsw.gov.au/npws.nsf/Content/Native+animal+fact+sheets+by+title

Backyard Buddies
www.backyardbuddies.net.au

Threatened species information

Community Biodiversity Network
www.nccnsw.org.au/member/cbn/projects/education-centre/index.html

Environment Australia – threatened species fact sheets
www.ea.gov.au/biodiversity/threatened/information/factsheets/index.html

NPWS – threatened species profiles
www.nationalparks.nsw.gov.au/npws.nsf/Content/Threatened+species+publications

Threatened Species Network – factsheets
www.wwf.org.au/default.asp?p=../tsn/index.htm

Biodiversity

NSW Environment Protection Authority – biodiversity page
www.epa.nsw.gov.au/envirom/biodiversity.htm

Australian Museum – biodiversity page
www.austmus.gov.au/biodiversity/

GLOSSARY

Aboriginal cultural heritage – the culture, traditions and relationship with the natural world which belongs to members of the Aboriginal community and is passed from one generation to the next.

Aboriginal site – any place which has the remains of Aboriginal occupation or is of contemporary significance to the Aboriginal community.

archaeology – the study of any culture by excavation and description of its remains.

artefact – an object made by humans and used for a specific purpose.

biodiversity – the variety of all living things on Earth.

boardwalk – a raised walkway built to protect the surrounding environment.

brush cutter – a hand-held electric or petrol-driven machine used for cutting underbrush and small shrubs.

culture – the body of beliefs, attitudes, skills and tools by which communities structure their lives and interact with their environment.

cultural heritage – the value people have given to items through their associations with those items, such as cultural practices, knowledge, songs, stories, art, buildings, paths and human remains. When natural elements of the landscape acquire meaning for a particular group, they may become cultural heritage. These may include landforms, flora, fauna and minerals.

(the) Dreaming – the embodiment of Aboriginal creation that gives meaning to everything: the essence of Aboriginal belief about creation and spiritual and physical existence.

ecosystem – a community of plants and animals interacting with one another and the surrounding environment.

endangered – at risk of becoming extinct.

environment – the combination of all the conditions that influence the life of an individual or population: the natural environment, built environment and social/cultural environment.

European settlement – settlement of Australia after the arrival of the First Fleet from England.

extinct – a species with no living representative.

facility – a building or complex of buildings designed for a specific purpose.

fauna – animals.

feral – a plant or animal that is a pest.

flora – plants.

GPS – global positioning system. A tool that can determine and display its geographical location (latitude and longitude) by measuring the distance to several satellites.

habitat – the place where a plant or animal naturally lives or grows.

historic heritage – all sites, places and cultural landscapes that contain examples of the cultural heritage (physical and non-physical) of human occupation and settlement after the arrival of non-indigenous people in Australia (including both non-indigenous and Aboriginal cultural heritage).

historic site – areas that protect buildings, objects, monuments, landscapes or events of national significance.

landforms – the features that make up the surface of the earth, such as mountains, valleys, plains, rivers, canyons.

national park – an area of land set aside for the protection and conservation of natural and cultural heritage.

native – environments, plants and animals that are original inhabitants in an area.

nature conservation – conserving the natural environment by protecting biodiversity and maintaining ecological processes and life support systems.

pest – a plant or animal that is troublesome, destructive and a nuisance.

population – the total number of people, animals or plants living in a particular area.

predation – the hunting or preying of one animal upon another.

protected areas – areas that are set aside for conservation purposes.

species – a distinct sort of plant or animal, having a unique set of common characteristics.

state park – an area of land that is reserved for outdoor recreation activities in a natural setting.

sustainable development – development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

threatened species – A plant or animal that is facing possible extinction; threatened species may be classed as either 'vulnerable', 'endangered' or 'presumed extinct'.

Threatened Species Conservation Act – a law that protects biodiversity and aims to prevent extinction of threatened species by protecting them and controlling processes that threaten them.

totem – an object or thing in nature that is the token or emblem of an Aboriginal person or group.

two-way radio – a radio system in which two people can talk to one another from separate locations.

vulnerable species – a threatened species that is at lower risk of extinction than an endangered species.

weeds – a plant that grows in the wrong place and is a nuisance.

OUR ENVIRONMENT

it's a living thing

A NSW GOVERNMENT INITIATIVE