

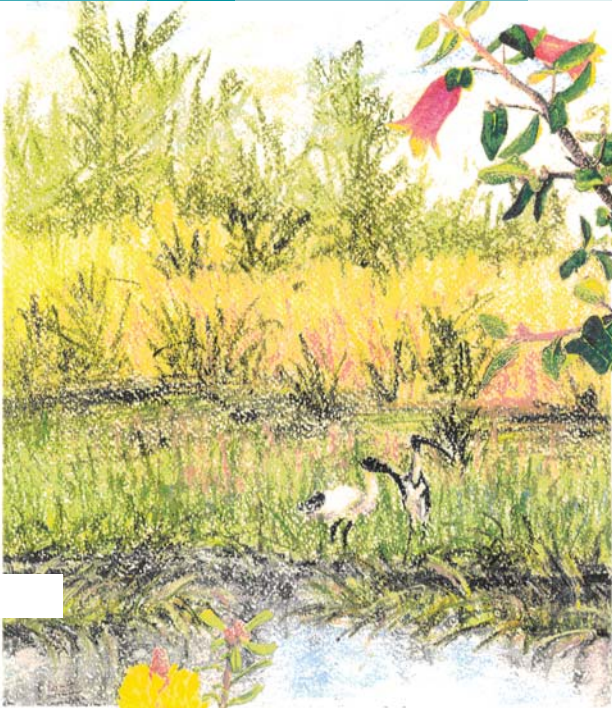


**PORTLAND
ALUMINIUM**

Partnering Stronger Communities

endangered species

Portland Aluminium Environmental Education



Helping you protect our environment

endangered species



UNIT SUMMARY

This unit of work focuses on the study of threatened and endangered species, both within specific areas of Portland Aluminium's 'Smelter in the Park' and in the local environment. The proposed activity sequence incorporates elements of an interactive approach to teaching, whereby students use their prior knowledge, explore topics, pose their own questions and report their findings. This unit can be linked to other units within the 'Environmental Education in the South West Resource Kit'.

LEARNING OBJECTIVES / FOCUS AREAS

Students will be able to:

- Identify factors which influence the natural balance of the environment
- Understand that extinction is a process and can often be reversed if action is taken early enough.
- Realise solutions are based on a good understanding of the species and its habitat.

RESOURCES ATTACHED

- Suggested Teaching Sequence
- Activity Sheet 1 (Endangered – but why!)
- Activity Sheet 2 (Word Match)
- Activity Sheet 3 (Feral Peril)
- Activity Sheet 4 (What's the threat?)

SPECIALIST MATERIALS

- Keeping the Balance 'Threatened and Endangered Species', Portland Aluminium, 1999
- Endangered Species Teachers Book, Gould League, 1996
- www.gould.edu.com.au
- Activities in, for and about the environment, Gould League, 1994
- Outdoor Environmental Games, Gould League and VAEE, 1998
- Victoria's Biodiversity, Education Resource Book 1, NRE.

LEARNING OUTCOMES

Relevant outcomes from the Victorian Essential Learning Standards;

SCIENCE: Life and Living - Level 4 & 5

- Identify living and non-living things that affect the survival of organisms in an ecosystem.
- Identify current endangered species and examine strategies to conserve them.

SOSE: Natural and Social Systems - Level 4

- Describes responses of different elements to change in natural systems.

TEACHING SEQUENCE OUTLINES

Pre-visit (~4 lessons)

Refer to Portland Aluminium Education Booklet

- Students' Prior knowledge of endangered species of plants and animals
- Research an endangered species
- Threats to plants and animals (Refer to DNRE Victoria's Biodiversity Education Resource Book 1 – Unit 15)
- Feral animals & species overpopulation

The Visit (1/2 Day at Portland Aluminium Wetlands)

- In pairs, students choose an endangered animal to gather information on from the signs along the trail.
- Activity Sheet 1 (Endangered – but why?)
- Group discussion to share information
- Activity Sheet 2 (Word Match)
- Discussion about feral animals – Activity Sheet 3 (Feral Peril)
- Chasey Game (Matt Matt the Feral Cat)
- Using Species Info Cards - Activity Sheet 4 (What's the threat?)

Post Visit (~2 lessons)

- Why save endangered species
- Conflict & Resolution (Class Debate)
- How can we help?

Further Study Suggestions:

- Refer to other units represented in the "Environmental Education in the South West Resource Kit".

ACTIVITY INFORMATION

During the visit to Portland Aluminium's education centre, students will be:

- Briefed on safety
- Given a background talk about Portland Aluminium's 'Smelter in the Park'
- Divided into small groups of 8-10
- Allocated time at 3-4 stations relevant to the 'Endangered Species Unit'
- Discussing, discovering and sharing information about endangered species
- Completing activity sheets relevant to their year level
- Playing a prey / predator chasey game.

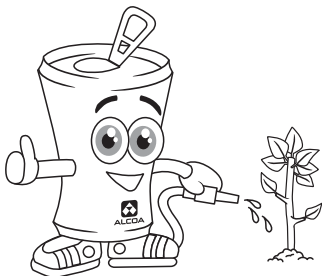
MATERIALS

School:

- Clipboards, pencils, walking shoes, jacket, sunscreen, hat, etc.....

Portland Aluminium:

- Guides, Information Cards, Activity Sheets,



BACKGROUND INFORMATION

Extinction is a tragedy – intellectually, scientifically, aesthetically, morally and often economically. It is a careless diminution of a part of the world that we need to survive. Although in the past there have been some very rapid and famous extinctions, (Tasmania Tiger) but most extinctions are relatively slow, taking many decades, and following a fairly typical path. Destruction or degradation of habitat plays a major part in most extinction. This may be caused by humans or by the animals they introduce to the area. Below are some major problems, which may result in animals & plants becoming threatened, endangered or even extinct.

HABITAT DESTRUCTION: This usually happens slowly as the habitat is gradually cleared or degraded, but sometimes it can be on a massive scale, as is presently happening to tropical rainforests in many countries.

HABITAT DEGRADATION: A habitat does not have to be completely destroyed to render animals extinct. For example, a forest without its understorey of shrubs may be useless to many species.

HUNTING: In some places hunting is a severe problem. Many animals are hunted for their skins, and for supposed medicinal properties of their teeth and bones.

INTRODUCED ANIMALS: This has been a major factor in many of Australia's mammal extinctions and endangered status. Rabbits – eat every piece of living vegetation, especially in drought periods, stripping the entire landscape.

Foxes – are expert hunters. They were introduced last century for people to hunt for sport. They now range over most of the continent causing many small Australian mammals to become endangered or extinct. Cats – are another very destructive animal, and are having a profound effect of our native mammals and birds. Many ground-dwelling birds have declined to the edge of extinction. Humans are partly to blame as they don't control their pet cats or let them breed, with many of them becoming feral. Goats – are known to compete with native animals such as rock wallabies for food and destroy vegetation that may protect small mammals from predators.

LIVESTOCK: Is necessary for food, but if there are no nature reserves in the area it is vital grazing practises are sensible. In arid Australia, poor underground water management has resulted in water tables dropping to a point, which endangers some native animals.

CHANGED FIRE REGIMES: Have caused some problems as many native species had adapted to Aboriginal burning of small areas for hunting. This regenerated vegetation, which was beneficial to some animal and plant species. Forest fuel has been allowed to build up in forest, which means hotter, more destructive fires.

OVER EXPLOITATION: Of many species such as the whales have brought them to the brink of extinction. Many of the world's great fisheries have collapsed due to overfishing.

DISEASE, CLIMATE CHANGE, WAR, GREED & APATHY, POLLUTION, POACHING

ENDANGERED! But Why?

Activity Sheet 1

Use the information signs to answer the questions below:

Names: _____

Animal's Name: _____

Habitat: _____

Feeds on: _____

Predators: _____

Interesting
Characteristics _____

Why is it
Endangered? _____

WORD MATCH...

Activity Sheet 2

DEFINITION	WORD
Species is in decline and likely to become endangered in the future.	
Species that is endangered, vulnerable or rare.	
Animals from other countries that have been allowed to go wild in places they don't belong.	
No individual of the species has been sighted for fifty years or intensive searches have failed to find any.	
The area in which an organism lives that contain all the resources it needs to survive, food, water space, light, shelter, mates, etc.	
A group of animals and plants that live and interact in a given area, eg. a wetland.	
A species that naturally occurs in a given local area.	
Likely to become extinct if the threat continues.	

endangered species

HABITAT

COMMUNITY

INDIGENEOUS

THREATENED

VULNERABLE

ENDANGERED

EXTINCT

FERAL

FERAL PERIL...

Activity Sheet 3

Choose a feral animal from below and complete the impact study:

Name of Feral Animal: _____

Question

Impact

Reason

Pest to Humans: Yes or No _____

Harmful to Humans: Yes or No _____

Harmful to Bandicoots: Yes or No _____

Impact on Eagles: Yes or No _____

Impact on Kangaroos: Yes or No _____

Other Problems: Yes or No _____

Is there a Solution: Yes or No _____



Feral Cat



Fox



Rabbit



House Mouse



European Carp

WHAT'S THE THREAT?...

Activity Sheet 4

Using the Species cards, can you fill in the table below...

Threat

Habitat destruction

Habitat degradation

Predation by introduced animals

Competition by introduced animals

Pollution

Inappropriate land & water management

Urbanisation

Changed fire regimes

Illegal trade

Road kills / accidents

Disease

Changed climate

Species Threatened

GROWLING GRASS FROG

(*Litoria raniformis*)



Description

The Growling Grass frog is active by day and preys on other frogs.

The adults are bright emerald to dull olive green with brown and/or gold blotches on a warty back. The toes are almost fully webbed and the toe discs are small. The ear is distinct, as is the dorsolateral fold.

The adult length is ~55-100mm. Tadpoles are pinkish-grey with yellowish fins. The call is a growling "waaah..waaah", similar to a motorboat.

The males call while floating in water among the reeds.

Distribution & Habitat

Adults are usually found close to or in water or very wet areas in woodlands & shrub-lands, especially those with bulrushes and emergent vegetation. Eggs and tadpoles can be found in permanent lakes, swamps, dams and lagoons with still water.

General Information

The Growling Grass frog was once found from southern New South Wales, across Victoria and into South-east South Australia. Over the past twenty years, the Growling Grass Frog has disappeared from many areas. No one is sure exactly why. It is probably mainly due to habitat decline and predators such as water birds, snakes, lizards and fish.

SOUTHERN EMU-WREN

(*Stipiturus malachurus*)



Description:

The Southern Emu-wren is one of Australia's smallest birds, weighing approx. 7 grams. These tiny passerines are rufous brown with darker striations of the back. The male is distinct from the female with its lavender blue bib and eye coverts. The species gets its name from its unusual tail that consists of only 6 feathers, that are very reduced, and resemble Emu feathers. Emu-wrens have very short wings and therefore are poor fliers and highly adapted to dense habitats.

Distribution & Habitat:

Emu-wrens are found along the southern and eastern coasts of Australia. They inhabit dense vegetation including swamplands, wet and dry heathlands and sedgeland. They are insectivores and forage by hopping through the shrubbery and sedges, gleaning insects from leaves and stems and occasionally hawking for flying insects. They occur in pairs, but also may be found as "cooperative" groups, where male helpers assist the adult pair in raising the young.

General Information:

The Southern Emu-wren builds its dome-shaped nest in the bases of tussocks or within the foliage of dense shrubbery. The female lays 2 to 3 eggs, which hatch in approximately 16 days. The young then remain in the nest for another 14 days and continue to remain with their parents after fledging for nearly two months. In Southern Australia, the Southern Emu-wren is critically endangered due to habitat loss and fragmentation. Swampland habitats are often drained for agriculture or considered undesirable due to their unattractive appearance, but are home to many unique species such as the emu-wren.

EASTERN BARRED BANDICOOT

(Peramelidae gunnii)



Description

The Eastern barred bandicoot belongs to the marsupial family. It is a rabbit-sized terrestrial species with a body length of about 30cm and a tail about 11cm long, and weighs between 600g-1000g. It's grey-brown to buff above, somewhat paler on the sides and pale grey to white below. There are three of four pale bars on the hindquarters (hence its common name) although these are not always obvious.

Distribution & Habitat

Bandicoots are solitary, nocturnal animals that rest during the day in grass-lined nests that they construct, and forage on the ground at night for insects, spiders, seeds, berries and a wide range of similar fare, often digging into the soil or rummaging in the leaf litter. The species is relatively short-lived (1-2) years, with few surviving to three years in the wild.

General Information

The eastern barred bandicoot is endangered on mainland Australia due to the destruction of grassland habitat for grazing and farming. This has made them an easy target for introduced predators such as feral cats and foxes. A disease, toxoplasmosis, which is spread by cats, adds further pressure upon the small wild population that now only exists in Western Victoria.

STRIPED LEGLESS LIZARD

(*Delma impar*)



Description

Legless lizards are often mistaken for snakes. They are easily recognised by external ear openings, long tails that can be shed, two small hind limbs and a broad, flat tongue. Striped legless lizards have a pattern of light and dark stripes that continue along their body. Adult lizards can grow up to 30cm long; 75% is tail. The lizards have a tan body and dark head. Their face is often yellow.

Distribution & Habitat

The lizards live in grasslands, woodlands and dry sclerophyll forests in the far southeast of SA, Vic and southeastern NSW, west of the Great Dividing Range. They shelter beneath rocks, fallen bark, logs and mats of dry vegetation. Soils that form cracks are important to their survival. Cracks provide shelter from predators, unsuitable weather and fire. The cracks also provide places to lay eggs.

General Information

The lizards eat caterpillars, crickets and many other insects. During the summer months, females lay 2 eggs in a crack or under a rock ledge. Incubation lasts from 5-8 weeks. The Striped Legless Lizard has been classified as vulnerable. Processes such as, urban development, rock removal, grazing and especially the destruction of native grasslands threaten it. Less than 1% of native grassland still exists.

ORANGE BELLIED PARROT

(*Neophema crysogaster*)



Description

The Orange bellied parrot is a small parrot displaying bright green upper-parts, a blue band across the forehead, pale green areas on the side of the head and yellow-green throat, breast and flank. Of course the lower belly is orange. Females resemble males but are generally duller in colour.

Distribution & Habitat

The Orange Bellied Parrot is most often encountered alone or in pairs, but sometimes in the company of the Blue-winged Parrot. They are mostly terrestrial in their feeding habits, either searching for seeds of grasses, herbs, shrubs and salt-adapted plants. Feeding often begins before dawn and continues until after dark. They prefer tidal flats, grasslands and salt marshes in winter; when breeding, moorlands and open woodland.

General Information

Their breeding ground is restricted to fens in western Tasmania. The usual nesting site is a tree cavity. The hen incubates the eggs but is attended by the male who also contributes to rearing the young. Increasing development of coastal areas threaten their survival.

RUFIOUS BRISTLEBIRD

(*Dasyornis broadbenti*)



Description

The Rufous bristlebird is a medium-size primarily, ground-dwelling songbird. It is predominantly dark grey-brown above, with a long tail, rich rufous nape and ear coverts, scalloped grey breast, a pale patch before and around the eyes and a cinnamon centre on the wing and rump. It has a loud, distinctive call.

Distribution & Habitat

Rufous Bristlebirds are often found in coastal thickets. They build their nests close to the ground, in tussocks or low shrubs. They feed primarily on ground-dwelling invertebrates, although details of its diet are not well known.

General Information

Rufous Bristlebirds are threatened nationwide. Their range in Victoria has decreased because of loss of habitat through clearing for agriculture and coastal urban development causing fragmentation of habitat and extinctions of local populations. Continued coastal development is likely to result in further habitat fragmentation. The bird is a weak flyer and is unable to disperse well. Because of its ground feeding and nesting behaviour, it is vulnerable to introduced predators such as foxes and cats.