

## 9. Management issues in national parks

### Aim

This activity introduces students to some management issues and how Parks Victoria tries to resolve them.

### Materials

- Resource sheet 9: Some issues in park management.

### Activities

- Working in small groups, students read the resource sheet: *Issues in park management* and use the information to complete the following.
- The table below has been jumbled. Each issue listed in column 1 needs to be correctly linked to the correct problems and reasons in columns 2 and 3 so that problems are linked with causes.

To create flow charts each issue, identify at least one problem it creates and one or more causes for this problem.

Draw as many flow charts as you can from this table. Terms can be used more than once.

- Use the flow charts created in step 2 to answer the following questions.

a) Explain how changes to vegetation can also affect animal populations.

b) Explain how soil problems can eventually lead to changes in vegetation communities and animal populations.

- For each flow chart you created in step 2, suggest park management actions that could help reduce that particular problem. Which of the management issues do you think are most important to address?

- Share your findings with the class. Discuss whether some management issues are more important than others to address.

Issue	Problem	Reason
Urbanisation	loss of habitat	introduced domestic pets
Drainage	weed invasion	urbanisation
Tourism & recreation	erosion	invasive garden plants
Fire	soil compaction	trampling of vegetation
Loss of species	land degradation	logging
Loss of habitat	reduction in species	removal of vegetation
	predation by cats and dogs	fuel reduction burning
	vegetation dieback	increase in housing
	diseases such as distemper, mange and taxoplasma gondii	tourism
		storm water runoff & poorly maintained septic tanks
		maintenance of access tracks

## 9. Some issues in park management

### Introduction

National parks need to be actively managed to protect their natural and cultural values, and to provide opportunities for visitors' recreation and education compatible with the conservation of parks.

A variety of issues are threatening the fauna, vegetation and landscape of national parks in Victoria. Over the years, logging, fires, introduced plants, pest animals, urbanisation and recreation have contributed to a loss of species and a decline in environmental quality in some parks.

Overall the future ecological health of a park needs to manage the pressures of internal and external developments and public use. A park's management strategies need to promote conservation of the vegetation, fauna and habitat within the park as well as catering for park visitors.

### Urbanization

Residential development is a major threat to the indigenous fauna and flora of a park. However many people do not recognise the effects of their activities on parks near to where they live

The impacts of residential development on parks include:

- Predation on wildlife by wandering pet dogs and cats.
- Invasion of native vegetation by invasive garden plants from surrounding properties.
- Rubbish dumping and car dumping.
- Illegal removal of vegetation.
- Disturbance by trail bikes and four wheel drive vehicles.

- Soil erosion and dieback of vegetation as a result of stormwater runoff and effluent discharge from poorly maintained septic tanks.
- Reduction in scenic quality caused by construction works and the clearing of vegetation on residential blocks.
- The need for increased fire protection works to protect residential properties surrounding the park.

### Housing

The most obvious consequence of urbanisation is the change to the physical landscape. Residential development means that the indigenous tree cover adjoining the park is progressively disappearing.

Residential developments near a national park may be controlled by local planning schemes (e.g. the Shire of Yarra Ranges in connection with Dandenong Ranges National Park). The local planning scheme may specify the types of activities that cannot be undertaken on residential block adjoining a park (e.g. the clearing of native trees without a permit).

### Drainage

Stormwater runoff from roads or the drainage of domestic wastes and treated effluent from properties around a park can lead to the death of vegetation within the park. This can particularly impact on the edges of a park.

Poorly maintained septic tanks can result in nutrient-rich runoff being discharged. These wastes create unfavourable conditions for native vegetation and encourage growth of weeds.

Stormwater runoff can also carry pollutants such as rubbish, detergents and suspended solids in the park's waterways.

## Introduced species

### Introduced fauna

Introduced species often adversely affect native fauna and flora. Introduced fauna can directly compete with native fauna for breeding sites and food. They also introduce diseases, spread weeds and prey upon native species. Introduced species include domestic and feral cats, domestic dogs, foxes, rabbits, blackbirds and the common starling.

Introduced animals prey on native fauna. Small native animals including birds, mammals and reptiles are their main food sources.

Feral cats can transmit the *Toxoplasma gondii* parasite to humans and domestic and native animals. This disease can kill infected animals if they are under stress. The parasite has been found in several species of macropods, rodents, bandicoots, possums, wombats and birds.

Dogs and foxes can carry the diseases distemper and mange. Both these diseases can be fatal when spread to native species, especially wallabies and wombats. Dogs also carry the parasite hydatid tapeworm that can be fatal to native animals.

Rabbits can have a major impact on vegetation and wildlife habitat.

Starlings can invade parks from nearby native vegetation. These introduced birds often dislodge native birds from feeding sites and breeding hollows by their aggressive nature. Blackbirds spread the seeds of weeds in their droppings.

A variety of strategies and actions have been adopted in recent years to reduce the number and impact of pest fauna on parks. Control programs have included shooting, trapping and baiting.

The development of park regulations, community programs and local legislation is helping to reduce the impact of domestic dogs and cats. Community education programs which encourage responsible pet ownership have been promoted by the RSPCA and Parks Victoria.

Any long-term solution to protecting native fauna in a national park involves reducing the population of feral dogs, cats and foxes in and around the park, and in restricting access by domestic animals.

### Introduced flora

European settlement has brought with it logging, fires, introduced plants and a range of public activities, all of which can significantly modify the native vegetation in a park.

The spread of introduced plants from adjacent residential gardens, neglected farms, tracks and roadsides causes a gradual change in the structure and diversity of the vegetation. This can lead to a substantial change in the character of the ecosystem and habitat within the park.

Table: Dietary Intake by Introduced Predators in Sherbrooke Forest.

CAT	FOX	DOG
Bush Rat	Common Ringtail Possum	Common Ringtail Possum
Broad-toothed Rat	Common Brushtail Possum	Common Brushtail Possum
Antechinus species	Brown Antechinus	Common Wombat
Eastern Pygmy Possum	Dusky Antechinus	Swamp Wallaby
Sugar Glider	Broad-toothed Rat	
	Black Rat	
	Sugar Glider	
	Rabbit	

(Source: Predator Scat Analysis, Victoria College)

The aggressive nature of many weeds is such that they quickly occupy disturbed areas and prevent the germination and regeneration of indigenous species. In this way weeds may reduce the variety of species present in a park.

Fires, fuel reduction and the maintenance of access tracks in conjunction with urban development can lead to weed invasion, particularly around the fringe of a park.

Key factors in weed invasion in parks appear to be:

- Soil disturbance (e.g. tracks, clearing, erosion).
- Grazing by introduced animals (e.g. cattle and horse introduce and spread weeds).
- The presence of adjoining agricultural land with weed species.
- Too-frequent fire.

Parks Victoria flora management aims include:

- Protect and maintain the full range of the natural plant communities and their diversity with particular emphasis on protecting communities and species of botanical significance or importance as wildlife habitat.
- Eradicate or control introduced species, particularly those seriously affecting habitat.
- Develop revegetation programs.
- Rehabilitate degraded areas - control noxious and environmental weeds
- Encourage community and friends groups to take part in revegetation and rehabilitation programs.
- Minimise the impact of weed control programs on native flora and fauna.
- Minimise direct disturbance to soils.
- Minimise damage to native vegetation and maintaining vegetation cover.

### **Tourism and recreation**

National parks provide important recreation assets for Victoria. Their popularity with visitors means that

enormous visitor pressures are being placed on some parks and on the most popular recreation sites with a park.

### **Fire**

Victoria's plant communities and their associated wildlife have evolved over thousands of years under a natural fire regime. Fire has major effects on ecosystems. The effects may be beneficial or adverse, depending on the characteristics of the fire and the nature of the area burnt. Fires have the potential to cause soil erosion, alter stream flow and water quality as well as change the vegetation composition.

Fire management is a very complex and contentious issue which often involves the balancing of fire safety requirements against vegetation and habitat management requirements. The Department of Natural Resources and Environment is responsible for the prevention and suppression of fire in national parks.

Management actions include fuel reduction, either by burning or slashing, coupled with the maintenance of fire detection systems, fire fighting resources and fire breaks, access roads and tracks.

However, the occurrence of wildfire can also be greatly reduced through public education. For example, in the past 30 years only five of the 142 wildfires occurring in Dandenong Ranges National Park have been from natural causes. Nearly all the other fires in the park were either deliberately lit or were escapes from burnoffs on adjoining properties.

Parks Victoria's fire management aims include:

- Protect human life, property and park values from injury by fire.
- Maintain fire regimes appropriate to the conservation of native flora and fauna.
- Minimise the adverse affects of all fires and fire suppressions methods on park values.