

# Cranbourne Land management

The aim of land management is to promote biodiversity by conserving the native flora and fauna communities.

## Fire Protection

The Management Plan recognises that a key to the management of the native flora and fauna of the site is the appropriate use of fire.

Heathlands and heathy woodlands are fire-tolerant environments, which undergo changes in species composition, and vegetation structure that relate to their age since last being burnt. In order to maintain the full diversity of species, active fire management ensures that a mosaic of different fire ages is maintained.

### Key factors that require consideration in a fire plan

Burning too frequently will lead to the loss of species that only regenerate from seed, as plants will not be able to produce enough seed to replace the population between fires. At Cranbourne, the absolute minimum time between burns in any one area is at least twelve years.

Burning too infrequently may cause the loss of plants that require fire to stimulate their growth or which are out-competed by longer-living species. At Cranbourne, heaths can probably become quite old (50 years or more) without significant long-term effects, but a conservative maximum time between fires of about 25 years is recommended.

Certain fauna species have specific fire frequency requirements and these need to be catered for. The critical species at Cranbourne are the New Holland Mouse and the Southern Brown Bandicoot. The New Holland Mouse prefers habitats that age between two to six years since fire. This does not mean burning the whole area every six years, but rather, that there should be a mosaic within which some areas are always younger than six years old. The Bandicoot uses a range of vegetation of different fire ages but requires at least some areas less than about 15 years old.

The size of the burnt patches is also important for fauna management. Small patch sizes of two to four hectares have been recommended by research as the minimum size appropriate for the New Holland Mouse and bandicoots. Clearly the maximum area burnt at any one time must be less than the total area of habitat, so that not all the population is burnt out in a single fire. Pest plants

Weed invasion is one of the greatest threats facing the indigenous vegetation at the Cranbourne Garden. Several highly invasive weed species are present, and the presence of cleared land surrounding the site provides a source of further weed invasion.

The large numbers of visitors to the site also poses a problem since weeds can be readily transported into indigenous vegetation on clothing, in mud on shoes, and in cars.

The risk also exists that non-indigenous plants species planted in the Australian Garden and Research Collections could become serious weeds as has happened with garden escapees in areas surrounding Melbourne.

The close proximity of non-indigenous native plant species to the indigenous vegetation could lead to the cross-pollination of related species. This can result in hybrids which are more vigorous than, and thus out-compete, the indigenous parent.

## **Weeds**

The weeds of greatest concern are:

Trees and shrubs

Blackberry (*Rubus fruticosus* spp. agg),

Genista (*Genista linifolia*),

Sallow Wattle (*Acacia longifolia*),

Coast Tea-tree (*Leptospermum laevigatum*),

Sweet Pittosporum (*Pittosporum undulatum*)

Monterey Pine (*Pinus radiata*);

## **Ground Cover**

Brown – top Bent (*Agrostis capillaris*),

Couch (*Cynodon dactylon*),

Panic Velt Grass (*Ehrharta erecta*),

Annual Velt Grass (*Ehrharta longifolia*),

Yorkshire Fog (*Holcus lanatus*),

Indian Rat Tail Grass (*Sporobolus indicus* var. *africanus*)

Paspalum (*Paspalum dilatatum*),

Sweet Vernal – grass (*Anthoxanthum odoratum*)

## **Introduced mammals**

Foxes, cats and dogs have a potentially severe effect on native fauna populations.

As well as preying on native fauna, foxes in the Garden are sustained by the resident rabbit population

Cats and dogs are probably mostly pets from surrounding areas, with some feral individuals. Cats in particular have wide ranging tastes and, in addition to catching birds and mammals, are known to hunt numerous reptile, amphibian and invertebrate species. Increased housing density adjacent to the Garden is likely to increase the numbers of domestic pets in the area, thereby increasing predation rates on native fauna.

A predator–proof fence has been erected around the Royal Botanic Gardens Cranbourne. This is combined with predator control measures within the garden.

Rabbits have a number of negative effects on the native vegetation. Their grazing inhibits the regeneration of native vegetation and eventually may result in the local extinction of some of the smaller plants. Their grazing may also lead to changes in the structure of the vegetation, thinning out the understorey and so reducing the amount of ground cover for small ground-dwelling native species, thereby exposing them to increased rates of predation.

## **Cinnamon Fungus Dieback:**

The pathogenic root fungus, Cinnamon Fungus or Dieback (*Phytophthora cinnamoni*) has been found in several locations in the Cranbourne Gardens. This fungus is able to parasitise the roots of many native plants which frequently results in the death of the host plant. The fungus is readily spread in soil and carried in water, and favours moist areas.

## **Adjacent land use:**

Adjacent land use to the Royal Botanic Gardens Cranbourne includes: a horse – racing complex, farms, a rubbish tip and housing. All of these have implications for the management of the natural areas of the Gardens.

The landscape planner from the RBGC liaises with council and advises on ways to minimise impact of “urban use” on the gardens.