

Protection of floodplain marshes

in Barmah National Park and Barmah Forest Ramsar Site

Overview

Achieving our goal to:

Improve the health of the floodplain marshes of Barmah Forest, increasing the extent and cover of Moira grass plains and associated wetland vegetation.

The vegetation of Barmah Forest is predominantly river red gum forest and woodland (red gum wetland), and, along with the adjoining Millewa group of forests in New South Wales, forms the largest stand of river red gum in the world. The forest features a variety of permanent and temporary wetlands, including lakes, swamps, lagoons and flooded forest. These support regionally important vegetation communities, including seasonal freshwater wetlands dominated by Moira grass, (forming large Moira grass plains), and provide significant habitat for many species of waterbirds.

The Barmah Forest natural and cultural landscape is at the heart of Yorta Yorta Country, and is a major source of food, shelter, fibre and cultural-spiritual materials. For the Yorta Yorta people, physical health of Country is directly connected to their physical, emotional and spiritual health. The forest, river, plants and animals are all part of Country and the cultural identity of the Traditional Owners, who are the joint managers of Barmah National Park.

Purpose

The purpose of the action plan is to identify and improve management of threats to the ecological character of floodplain marshes at Barmah Forest Ramsar Site and Barmah National Park (Barmah Forest).

The need for the plan is driven by adverse changes to the floodplain marshes of the Ramsar Site that have occurred since the site was listed as a wetland of international importance in 1982.

The plan will apply over a four-year period, through to June 2023. It outlines the roles of partners in delivering the proposed strategies, and includes a monitoring, evaluation and reporting framework to enable the effectiveness of actions to be assessed and inform further management.



Great egrets, royal spoonbills, and wood ducks foraging

Floodplain marshes

Floodplain marshes include diverse vegetation communities that occur in low lying areas subject to more frequent inundation, and with periods of drying. In Barmah Forest, floodplain marshes include Moira grass (*Pseudoraphis spinescens*) plains, giant rush (*Juncus ingens*) beds, common reed (*Phragmites australis*) beds, moist grasslands and aquatic herblands. These wetlands can be either semi-permanent or ephemeral, fluctuating in extent and composition relative to water availability (or flooding regime).



Moira grass plains at Little Rushy Swamp

Moira grass condition

In the Barmah Forest the Moira grass plains are now at less than 5% of their original range and are projected to be extinct by 2026 without management intervention.

Moira grass is an aquatic species. With its spiky rush-like leaf, Moira grass thrives in warm to hot conditions, lying dormant in the soil and rapidly growing when water arrives.

As it grows to the surface, Moira grass is thought to oxygenate the water. The drying phase of the Moira grass life cycle serves to insulate the wetland. As floodwaters recede, grassy mats settle as thatch on the floodplain floor, helping to slow wetland evaporation.

Moira grass plains provide habitat and food resources for the extensive wildlife populations of the wetlands, particularly for waterfowl, frogs and invertebrates.

Improve the health of the floodplain marshes of Barmah Forest, increasing the extent and cover of Moira grass plains and associated wetland vegetation.

Drivers of Moira grass decline

The principal factors that are likely to have contributed to the decline in Moira grass extent are:

1. Changes to the natural flooding regime
2. Grazing and trampling pressure (particularly by feral horses and, prior to 2007, cattle), and
3. Encroachment by invasive wetland plant species.

Changes to the natural flooding regime

Current water management practices aim to help mitigate the risks to Moira grass plains from river regulation. This water management aims to reinvigorate floodplain marsh vegetation species including Moira grass by promoting the winter-spring flooding and summer-autumn dry period that this species requires. Late summer-autumn flooding can change the composition of wetland vegetation and needs to be minimised.

Grazing and trampling pressure

Reduction in Moira grass extent has been exacerbated by the presence of introduced herbivores that preferentially graze Moira grass. Reducing the total grazing, browsing and trampling pressure, is required to complement environmental water management to achieve protection and recovery of this significant component of the Barmah Forest Ramsar Site.

Of all the introduced grazing species present, feral horses are currently considered the most destructive and their removal from the Barmah Forest is an immediate priority for action. Based on aerial thermal imaging surveys conducted in June 2018, it is estimated that there are more than 500 feral horses in Barmah Forest.

Other feral species requiring management include pigs, deer, goats and sheep.



Feral horses around heavily pugged area of Steamer Plains

Encroachment by invasive wetland plant species

Over decades, winter-spring floods of insufficient depth and duration, and shallow flooding over summer-autumn have provided conditions suitable for the encroachment of native wetland plant species, predominantly giant rush and river red gum, into habitats formerly suitable for Moira grass.

Conservation strategies

The following conservation strategies and actions will be undertaken to tackle these threats:

Maintain and improve current water regimes

- Provision of an appropriate water regime (frequency, timing, duration, depth, variability and extent) to increase the extent and diversity of floodplain and wetland vegetation.
- Minimise the incidence and magnitude of undesirable summer-autumn flooding of floodplain marshes.

Control of grazing by feral horses

- Staged capture and removal of feral horses to reduce the population of feral horses to 100 by 2023, with the long-term aim of reducing feral horse numbers to zero.
- Feral horse numbers will be reduced principally by: (i) passive trapping and rehoming, and (ii) shooting of free-ranging horses. Trapping will only occur when rehoming opportunities have been identified.
- Undertake annual feral horse counts using helicopter-based thermal imaging in late autumn.
- Install targeted small-scale fenced enclosures in sensitive areas where an immediate reduction of impacts is needed

Control of feral pigs and other introduced herbivores

- Reduce feral pig population density across the planning area to reduce ground disturbance and predation.
- Reduce population density of deer species and maintain the densities at such a low level that impacts on wetland values are minimal.
- Reduce, and if possible, eradicate feral goats and sheep.

Manage encroachment by invasive wetland plants

- Trial the use of ecological burning and/or mechanical control (e.g. slashing or thinning), followed by managed flooding to limit giant rush and river red gum regrowth or germination.
- Continue to control arrowhead weed in surrounding waterways and delivery channels.

Performance measurement

Research and monitoring activities will run concurrently with implementation of the conservation strategies and will assist in evaluating their performance. In the final year of the plan a comprehensive review will occur, to ensure that the conservation outcomes required to restore the Moira grass plains are being achieved.

More information

Copies of the plan may be downloaded from the Engage Victoria website (www.engage.vic.gov.au)