

## The Macleod Morass Story

The Macleod Morass is a naturally formed 520 hectare, deep freshwater marsh on the outskirts of Bairnsdale.

It once formed the bed of Lake King and the Mitchell River, with the escapement along the western boundary and relic gravel beaches and sand spits mark out the former shoreline of Lake King.

## Human Use

The Tatungalung Clan of the Gunaikurnai Aboriginal people traditionally used the Macleod Morass and Jones Bay as a food source and the nearby open forest for shelter. In the latter part of the 19th century, European settlers cleared much of the surrounding forest.

Following on from this, drains, levees and floodgates were constructed to prevent flooding on those areas of the Morass used for agriculture. The majority of these works remain in use today and help to control water levels in the Morass as well as preventing the inflow of salty water from the lower reaches of the Mitchell River estuary.

Sewage effluent has been discharged into the Morass since 1939, further adding to increased nutrient levels within the system. This in turn changed the distribution and abundance of vegetation in the wetland area.

## Conserving the wetland

The Morass was officially recognised as a reserve by the Fisheries and Wildlife Department in 1961.

With the introduction of new environmental legislation in the 1970s, it was formally recognised as both a State Wildlife Reserve and a State Game Reserve. It was listed as an internationally significant wetland site (as part of the Gippsland Lakes) under the Ramsar Convention, which plays a key role in ensuring its conservation.

A co-ordinated program to improve the long-term health and ecological viability of the Morass commenced in 1994 with the formation of a wastewater management working party involving a range of government, statutory bodies and community representatives.



This group recommended a range of actions including improved treatment at the Bairnsdale Wastewater Treatment Plant and establishing constructed wetlands. Additional levee banks and water flow control devices were also planned for the Morass. These works were carried out during 1997/98 and 2001/02.

## Ongoing management of the morass

The new engineering works ensure high quality treated water can be released into the various sections of the Morass rather than entering solely at the Upper Morass. It is now possible to allow the Upper Morass to mimic the natural drying cycles wetlands require, as it no longer receives a continual inflow of water from the Bairnsdale Wastewater Treatment Plant.

In 2001, East Gippsland Water and Parks Victoria signed a Memorandum of Understanding to provide a framework within which both organisations can work towards the common goal of protecting and enhancing the ecological values of the wetland.

During 2001/02 East Gippsland Water completed a major project to build three constructed wetland cells and associated structures to control water flow and levels through the Macleod Morass. The works have ensured the ecological value of the wetland will be protected and that its value as waterbird habitat will be maintained.

Funding for the project was provided by the Victorian Government, East Gippsland Water and the National Heritage Trust.

## Wetlands Need Water

To gauge the health of a wetland, begin by looking at the requirements for water flowing into and out of it;

- Is there enough water for wetland needs?
- Are natural wetting and drying cycles maintained?
- Is water entering it substantially free of damaging sediments, nutrient loads or pollutants?

Reclaimed water supplied to the Macleod Morass meets all these requirements - reflected in the abundance of native wildlife found there. While events such as local flooding can complicate matters, the overall long-term health of the wetland ecosystem is being maintained. In part due to its international significance for migratory birds, a healthy future for the Morass is now assured with East Gippsland Water and Parks Victoria working together to sustain this important wetland into the future.

## Wetlands at work

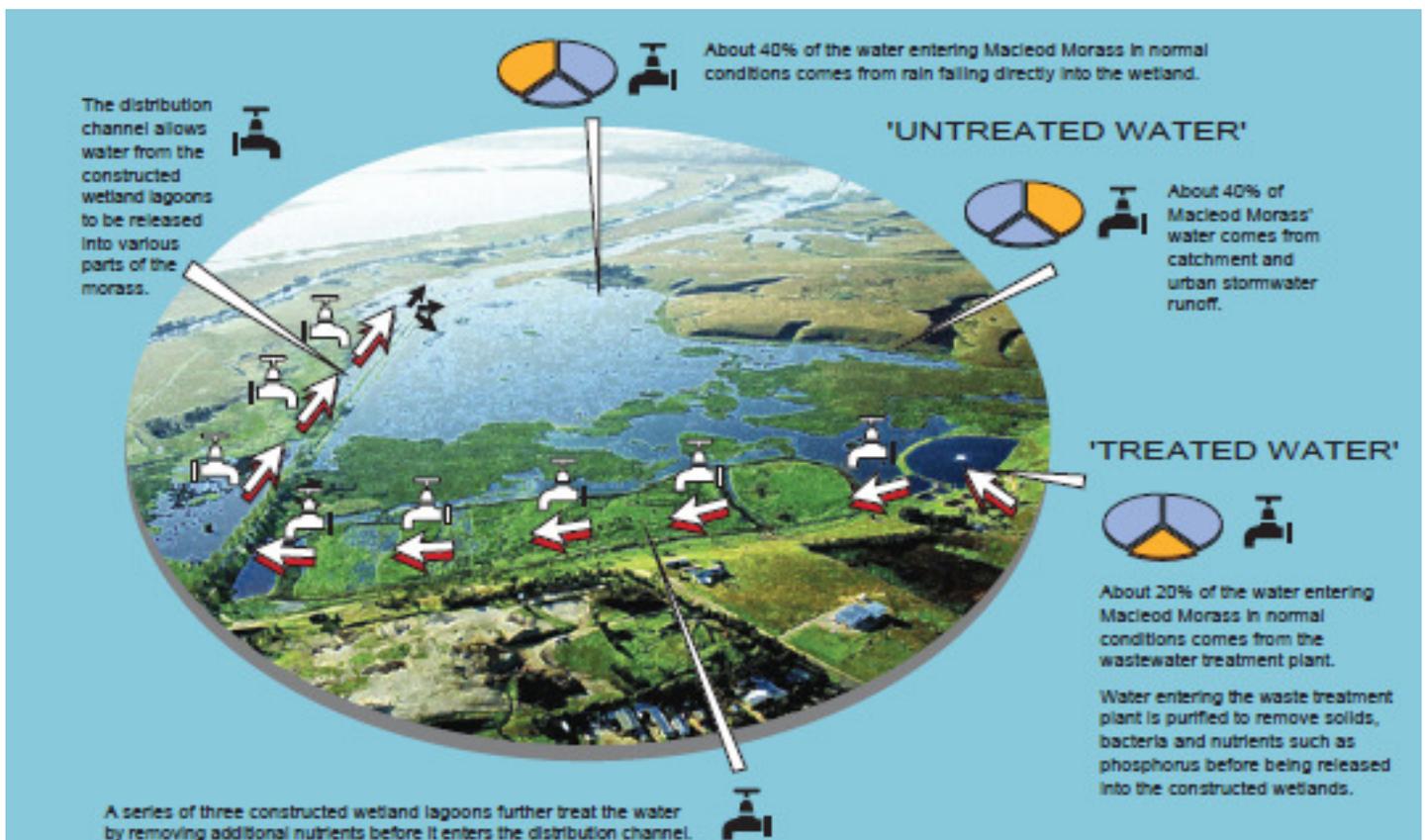
Water entering the Bairnsdale Wastewater Treatment Plant is purified to remove solids, bacteria and nutrients such as phosphorus. It is then released to the three constructed wetland cells.

Aquatic plants in cells 1 and 2 are the ecological engine rooms, eating up large amounts of nutrients. The water flows to cell 3 for final polishing, before entering the distribution channel.

Levees block water in various parts of the Morass and act as pathways to allow management and pedestrian access. Two spillways accommodate flood flows.

The distribution channel also provides further polishing as it carries water from the cells to other areas of the Morass.

Deliberate drying of wetland segments can be used as a way of controlling carp, other pest plants and animals.



For more information –  
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