

Environmental Decline in Ecosystems

Gunbower Forest Ramsar Wetlands

Location

The Gunbower Forest Ramsar site is located in northern Victoria, within the Murray-Darling Drainage Division (bioregion).

The site covers 19 931 hectares on Gunbower Island, an area of river red gum forest and wetlands between the Murray River and the anabranch Gunbower Creek.

The Gunbower Creek and its lagoons are an integral part of the Gunbower Forest Wetland and provide habitat for water bird breeding however the failure to have them included in the Ramsar site has been a terrible oversight.

Gunbower Forest is 255 kilometres north of Melbourne and approximately 30 kilometres north west of the town of Echuca (population in 2006; 12 400) within the Shires of Campaspe and Gannawarra local government areas.

It is part of the Gunbower-KoondrookPerricoota Forest Icon Site, one of six icon sites under The Living Murray program established in 2002. The Gunbower Forest site is within the Murray-Darling Basin, which covers over one million square kilometres and comprises 14 percent of the continent. The forest is located on the floodplain of the Murray River, the longest river in Australia.

Discussion will revolve around two Environmental Issues

1. Ground Water and Salinity Issues in Gunbower Forest resulting in Environmental Decline in Gunbower Forest Ecosystem

This region has over the years had a history of high water tables and high salinity issues. Much has been done since the seventies to address this with improved and advanced on farm irrigation practices along with water trading policies.

Irrigators of the region are very aware of the detrimental effects of salinity and rising ground water tables on their irrigated pastures.

Since 2005 North Central Catchment Management (NCCMA) have been the managers responsible for implementing and monitoring environmental flows into the Gunbower Forest.

In a sense they are the new irrigators of the forest. However irrigating the forest has turned out to much more than turning on the pump or opening the regulator.

Successful irrigation requires fundamental knowledge and experience in irrigation practices to be able to deliver environmental water to give the best overall ecological result..

Irrigation practices applied to the forest are similar to irrigating farmland and an awareness of the outcomes need to be adhered to.

Probably the most important observation in this region over time has been the ability to adapt and deal with the detrimental effects of Water Table & Salinity Issues

NCCMA have acknowledge salinity mitigation in Gunbower forest as a low priority in their risk analysis .

Flooding of Gunbower forest and wetlands is managed through regulators along the Gunbower Creek.

Small regulators allow environmental water to be pumped from Gunbower Creek into several Lagoons and swamps in Gunbower Forest.

For large broad scale flooding into the Gunbower forest, water is backed up by Hipwell Weir in the Gunbower Creek and then allowed to flow into the forest via Hipwell Channel and then into the Gunbower forest via Spur Creek.

The amount of water (1650 ml per day) projected to flow through the weir was never a reality. Rarely gets 900 ml per day through into the forest.

This reduced flow has slowed the time the water flows through the forest and I believe is accessing the water table and causing the saline water to rise to the surface..**WMIS Bore Reports are available on the website**

Consequently gum trees and understory in these flooded areas look terrible and are very stressed. Also Red Gum trees surrounding Reedy Lagoon and Black Swamp are in very poor condition.

Data results of essential monitoring of water table at the WMIS site appears inconsistently recorded and salinity monitoring data on the site is very sparse.

Monitoring of bores throughout the forest have indicated very high salinity levels (around 20,000 Ecs) at some sites throughout the forest. (Consideration sea water - 35,000Ecs)

A common factor linking high water tables and high salinity levels appears to have a connection with the Hipwell Weir watering in 2014 after a large natural flood 2010 - 2011.

At the time when the Hipwell Weir plans were being proposed it was a well known risk factor that they were going to have trouble delivering 1650 ml per day via the Gunbower Creek without third party impact. Also fitting the environmental waterings in around the farming irrigation season was an issue . This has turned out to be correct and has proven to be detrimental to the whole project suggesting that this was not the best option for getting water into the forest.

There has been no attempt by NCCMA to include the salinity and ground water data into their monitoring reports however it has recently come on the agenda after much pressure.

NCCMA are required to do a ground water and salinity monitoring report every 5 years but have failed to do this.

The proposed Upper Gunbower Restoration Project in the Upper section of Gunbower forest appears to have no relevant ground water bores in the relevant area to be flooded. Very alarming .

2. Modification of environmental water delivery from large area forest flooding to targeted smaller water bodies that form ecological hot spots throughout Gunbower Forest

(“Aboriginal heritage as ecological proxy in south-eastern Australia: A Barapa wetland case study by Dan Hutton And Colin Pardoe”)

The Living Murray Program, established 6 representative and significant ‘icon sites’ as a focus for environmental flows and landscape restoration. They were selected for their high ecological value and cultural significance (MDBA 2011a). The Gunbower-Koondrook-Perricoota Forest is one of these Icon Sites.

Prior to European settlement evidence exists that demonstrates that there was a relationship between Aboriginal residential patterning and productive environmental resources . Aboriginal people situated their villages in the most productive areas of the flood plain and returned to these locations year after year.

These so called “ hot spots” identify preferred aboriginal village sites that form productive micro –environments of the riverine forest for centres of mass migratory bird and small fish breeding as well as associated wetland plants and invertebrates.

Identifying these targeted smaller water bodies that form these ecological “Hot Spots” presents a case for modification of environmental water delivery from large area forest flooding to targeted smaller water bodies.

As a result we could have traditional owner land use practices as a model to inform heritage, land and water management policy and practices in a way to help restore the health of the Gunbower Forest along with other Riverine forests and wetlands.

Conservation efforts for forest and floodplains of the Murray River come down to the allocation of one scarce resource –WATER

We cannot hope to re-create a pre European environment or mimic natural flooding events.

The time for restorative ecological planning is past.

Focussing distribution to targeted locations will maximise the ecological value of scarce water

Will deliver best results

Will maximise diversity and density of species

Will ensure sustainability of vegetation, fish and waterbirds

LARGE SCALE FLOODING OF FORESTS IS DETRIMENTAL TO THE ENVIRONMENT AND RESULTS IN THE DECLINE IN THE ECOSYSTEM AND IS NO LONGER AN OPTION

