

Securing capacity in Gunbower Creek for all

The amount of flow that Gunbower Creek can carry has declined over time. Historically about 1600 ML/day could be delivered over Gunbower Weir, however regulation of the creek and the resulting silt and weed build up has meant the creek is shallower. The capacity of the creek below Gunbower Weir is now about half of what it once was.



Infestation of pale yellow waterlily (NCCMA)

North Central CMA and GMW are therefore investigating options to increase capacity in Gunbower Creek so that enough water can be delivered to all customers well into the future.

The reducing capacity of Gunbower Creek has the potential to cause problems delivering allocations for irrigators and the environment. This could mean rationing of water orders during peak demand periods. The CMA and GMW are looking for a long term solution and don't want to get to this rationing point.

Options to increase the creek's capacity are being investigated. One option being investigated is to remove Thompsons Weir which currently constrains flows. Removing the weir could reduce connectivity between Gunbower Creek and Cockatoo Lagoon which may impact upon landholders' ability to draw water from the lagoon. GMW is working with these landholders to investigate alternative supply options to ensure they have a secure long-term water supply. This process is completely voluntary.

The option to remove Thompsons Weir also provides an opportunity to improve the health of Cockatoo Lagoon by fluctuating water levels.

Recent ecological investigations have shown the health of Cockatoo Lagoon is declining. The lagoon once supported populations of freshwater catfish, turtles and platypus, but the evidence shows the numbers have been declining.

A century of operating the system to allow irrigation has also resulted in siltation, causing Cockatoo lagoon to shallow out, making it harder to pump from in some places and allowing pale yellow water lily to take over.

The Cockatoo Lagoon Working Group has been formed, with local community members working with North Central CMA and GMW to look at all the options that could increase the capacity of Gunbower Creek.

A final preferred option will be put forward in a funding submission later in the year. The final option put forward will require community support and need to consider the cost of works and the environmental benefits and risks of any works or changes to Cockatoo Lagoon and Gunbower Creek.

Go to North Central CMA's website and search 'Cockatoo Lagoon' for more info.

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NORTH CENTRAL
Catchment Management Authority
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COMMUNITY NEWSLETTER

Edition 19: Summer 2018

Welcome to the 19th edition of the Flooding for Life community newsletter. This summer edition features updates on environmental watering outcomes, Cockatoo Lagoon, Gunbower Primary waterbug day, and waterbird surveys.

Wetland plants thriving after spring environmental water

Environmental water was delivered to Reedy Lagoon and Black Swamp in spring 2017, after a trial project which removed 275 adult carp from both wetlands.

"Wetland plants in Reedy Lagoon have been absolutely thriving since water for the environment was delivered in October," Gunbower Project Officer Sophia Piscitelli said. "Early results from our summer vegetation monitoring show a dense cover of river swamp wallaby grass (*Amphibromus fluitans*) in the shallower parts of Reedy Lagoon, which is listed as vulnerable under federal environmental legislation."

"Black Swamp also supported a number of aquatic species which haven't been commonly observed in other years, and may be due to reduced carp numbers," vegetation ecologist Kate Bennetts said. "These include the river swamp wallaby grass and the wavy marshwort (*Nymphoides crenata*), which is rare in Victoria."



EPBC listed vulnerable river swamp wallaby grass at Reedy Lagoon (Photo: Damien Cook)

"Water quality is exceptionally clear in Reedy Lagoon and relatively good in Black Swamp too." "This is most likely to be due to low numbers of carp which re-suspend sediment and pull out aquatic plants through their characteristic muddling behavior," Sophia said. "The residual pools were extremely turbid before they were drawn down for the carp removal project, and now it is much clearer, especially in Reedy Lagoon. It's fantastic to see positive outcomes for the wetlands after all our work over the past few months, and we hope the autumn monitoring results show continued progress."

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Waterbird survey

In late November last year, Barapa Barapa traditional owners, North Central CMA Project Officer Will Honybun and ecologist Rick Webster undertook annual waterbird surveys at four known breeding sites in Gunbower Forest.

“We did perimeter surveys by walking the inside of the lagoons and recording all birds observed and heard,” Will said.

Colonial waterbird species, such as egrets and cormorants, have quite specific breeding requirements. They need wetlands to hold water for at least 4 months so they can complete their breeding cycles.

“In October, we delivered water for the environment into Reedy Lagoon and Black Swamp, so the waterbird surveys were also used to identify any breeding activity that may have occurred in response to the watering. We also wanted to understand the number of individuals and different species using these areas as refuge while the forest is mostly dry,” Will said.



Barapa Barapa members with ecologist Rick Webster (Photo: NCCMA)

“Despite the wetland vegetation in Reedy Lagoon providing particularly good habitat we didn’t expect to find large numbers of colonial waterbird breeding this year as only a small area was watered. However, we did see evidence of other species breeding including grebes, ducks and swans. The two known pairs of white bellied sea eagles in the forest also bred again this year which is exciting, so we expect these species have bred also.”

December flood pulse

In early December 2017, the Murray River experienced a rise from the large rainfall event in North East Victoria. As a result, Gunbower Forest received some natural inflows.

The Murray River peaked at around 23,700 ML/day at Torrumbarry Weir on 11 December 2017, resulting in water flowing through low lying natural forest creeks and floodrunners.

“Our aim for 2017 was to dry the forest as much as possible to reduce the number of carp. After the carp removal trial in Reedy Lagoon and Black Swamp in spring, we also didn’t want to let carp get in and risk the great vegetation growth in these wetlands,” said project officer, Will Honybun.

“Looking at upstream water levels in the Murray River we could predict this very small flood. Therefore, the decision was made to close Shillinglaws and Barham Cut regulators which are on creeks on the Murray River, to exclude natural inflows entering the lower forest. Closing the regulators ensured the objective of drying the forest could be achieved as far as practical and the benefits of the carp removal trial in Reedy Lagoon and Black Swamp could be preserved by preventing the mass migration of carp from the Murray River.” said Will.

“In the upper section of the forest around Spur Creek and Kate Malones Bend there are no structures to manage inflows. Carp were observed moving into the forest in large numbers.”

Mapping of the flooding extent by North Central CMA staff showed that flood water from the Murray River did not extend past Robertson Break and therefore did not reach wetlands further downstream, such as Little Reedy, Charcoal, Corduroy and Green Swamps.

Gunbower Primary School waterbug discovery day

Gunbower Primary School students recently enjoyed a day discovering the wacky water critters in the Gunbower Creek. They learned how to collect and identify the critters, and how they are important indicators of the health of a waterway.

At the end of last year, North Central CMA staff showed the group of school students how to collect samples of aquatic macroinvertebrates – animals without a backbone that can be seen without the aid of a microscope. After collecting samples from different micro-habitats within the creek, they escaped the swarms of mosquitoes and returned to the classroom.

Spring is generally the best time of year to collect aquatic macro-invertebrates. This is because many species are at the juvenile stage and remain in the water during that time of year, providing a greater diversity of life to investigate.

However, students were still able to observe a reasonably good mix of critters on the day, including water boatmen, damselfly larvae, water mites, beetle larvae, plenty of freshwater shrimp and a tiny yabby.

The ecological health of a waterway can be somewhat determined by the presence or absence of certain macro-invertebrates, their abundance and diversity. Some groups of macro-invertebrates are more tolerant to pollution than others. If a stream is polluted, tolerant macro-invertebrates will usually be found in larger numbers than the intolerant ones. In contrast, high numbers of sensitive critters indicate a healthy waterway, most likely with an absence of pollutants.

The students used the SIGNAL method to measure water quality. SIGNAL stands for Stream Invertebrate Grade Number – Average Level. By knowing the SIGNAL score for each group of invertebrates (the more sensitive, the higher the score), a total score can be calculated that indicates the ecological health of the site. The healthiest sites will have a diverse range of inhabitants from all sensitivity grades and will result in a higher total SIGNAL score than an unhealthy site.



Gunbower Primary School students inspecting the samples (Photo: NCCMA)

The students were happy to discover that the Gunbower Creek received a “good” stream health rating, using the SIGNAL score method.

The students also discussed how macro-invertebrates are vital in maintaining a healthy ecosystem, as they play an important role in the food chain. They are food for other invertebrates and larger animals such as birds, fish and platypus, but they are also important consumers too. They play a star role in helping to keep our waterways clean and free of excess nutrients.

Event: Cultural heritage & platypus information session



The North Central Catchment Management Authority (CMA) invites the community along to an informative event on platypuses and the Aboriginal cultural heritage of the Campaspe River. Afternoon tea on arrival. Children welcome.

DATE: Tuesday 27 March 2018
TIME: 4:30pm - 6:00pm
LOCATION: Mercure Port of Echuca, 465 High St Echuca

Register by phoning the North Central CMA on 5448 7124 by Friday 23 March.