



Gunbower Forest Environmental Watering Winter/Spring 2014

WHY ARE WE WATERING GUNBOWER FOREST?

Gunbower Forest relies on regular flooding to remain healthy and support the forest's many plants and animals.

Over time, river regulation and a drier climate has significantly reduced the frequency and duration of natural flooding in the forest.

Over the past ten years Gunbower Forest experienced a long phase of drought. The drought was broken by natural floods in 2010, 2011 and 2012.

Since 2013, following three years of natural flooding, the forest has been in a 'drying phase' with no natural flooding or environmental water releases. The majority of the forest's wetlands are now completely dry or contain only small pools.

While the drying phase is important, the forest now needs watering. The North Central Catchment Management Authority (CMA) is planning the release of environmental water, using the newly-constructed Hipwell Road Channel.

WHEN WILL THE ENVIRONMENTAL WATER BE DELIVERED?

Environmental water will start flowing through the new Hipwell Road Channel by early June, after the irrigation season.

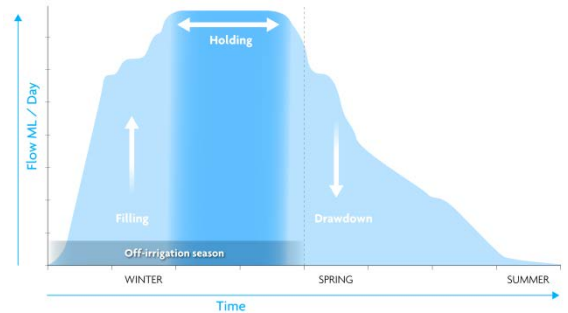
Water will continue to be released through the Hipwell Road Channel up until October. However, if rare colonial waterbirds (e.g. Egrets) begin to breed in response to the flooding, low volumes of water may continue to be released into the forest over the summer months.

The **Flooding for Life** project is delivered by the North Central Catchment Management Authority (CMA) in partnership with Goulburn–Murray Water, Department of Environment and Primary Industries (DEPI) and Parks Victoria.

The project is part of The Living Murray program, a joint initiative of the New South Wales, Victorian, South Australian, Australian Capital Territory and Commonwealth governments, coordinated by the Murray–Darling Basin Authority (MDBA). Together with Koondrook–Perricoota Forest in NSW, Gunbower Forest is one of The Living Murray's six icon sites.

HOW WILL THE WATER BE DELIVERED

The flow pattern is designed to mimic a natural flood pattern, and the Hipwell Road Channel operation will involve three phases: filling, holding and drawdown.



Filling involves slowly and gradually increasing water flow into the forest. Water levels in Gunbower Creek will rise, allowing the volume of water entering the forest to gradually increase.

During the holding phase, the maximum inflow into the forest will be held. Holding the maximum inflow for as long as possible is important to allow water to fill the creeks, flood-runners and wetlands and spread across the forest floor under the River Red Gums.

During the drawdown phase, inflows into the forest are slowly reduced.

During the drawdown phase the forest will look its best as spring starts. Ducks and frogs will start to breed and plants will flower.

As Gunbower Forest is a through-flow system, 70% of the water delivered through the forest will return to the Murray River near Koondrook and be available for downstream users.

The remaining 30% will be retained in the wetlands, providing on-going aquatic habitat for fish and waterbirds.



WHAT ENVIRONMENTAL BENEFITS WILL THE WATERING ACHIEVE?

Watering the forest aims to:

- Fill 80% of the forest's wetlands to allow aquatic plants to grow and set seed.
- Water 30% of the forest's River Red Gums to aid their recovery following the millennium drought.
- Provide feeding areas for waterbirds and other animals.
- Provide opportunities for fish to move between Gunbower Creek and Gunbower Forest so they can access the abundant food created by the flooding.

HOW MUCH WATER WILL BE DELIVERED INTO THE FOREST?

Up to 190 GL of water will be delivered through the Hipwell Road Channel, however, 70% of this volume will return to the Murray River near Koondrook and be available for downstream users.

An environmental water allocation of approximately 66 GL will be used to cover the volume of water not returned to the Murray River.

HOW MUCH OF THE FOREST WILL BE INUNDATED AND FOR HOW LONG?

It's predicted that large areas of the forest will be inundated from June 2014 to January 2015.

At the peak of the watering, up to 4,700 ha of the middle and lower sections of the forest will be inundated.

Water levels across the forest will gradually recede over late spring and summer.

WILL ACCESS TO GUNBOWER FOREST BE RESTRICTED?

Access to some parts of Gunbower Forest may be temporarily restricted due to flooding.

For information about track access check the Department of Environment and Primary Industries' website www.depi.vic.gov.au or phone 136 186, You can also visit Parks Victoria's website www.parkweb.vic.gov.au or call 13 19 63.

WILL DOMESTIC FIREWOOD COLLECTION BE IMPACTED?

Domestic firewood collection areas may be closed if conditions become unsuitable.

For the latest information about domestic firewood collection areas and the regulations governing firewood collection, please contact DEPI on 136 186 visit www.depi.vic.gov.au

HOW OFTEN WILL THE HIPWELL ROAD CHANNEL BE OPERATED?

The channel will be operated to shorten the gaps between natural floods. This means that on average the channel will be operated approximately every 3-4 years in 10.

The decision to deliver water through the channel is made each year and a number of factors are considered, including:

- Time and size of last flood
- Condition of the forest e.g. health of wetland vegetation, health of River Red Gums, status of native fish populations
- Availability of environmental water allocations
- Watering plans of other forests and wetlands such as Bamah-Millewa Forest and Koondrook-Pericoota Forest.

For further information on the environmental watering of Gunbower Forest and other project information, contact the **North Central Catchment Management Authority**:

Ph: (03) 5448 7124

Email: info@nccma.vic.gov.au

www.nccma.vic.gov.au





FACT SHEET

WILL IRRIGATION SUPPLIES BE IMPACTED?

Water supply to irrigators accessing Gunbower Creek will not be affected by the environmental watering.

WILL PRIVATE LAND BE AFFECTED BY THE ENVIRONMENTAL WATERING?

Operation of the Hipwell Road Channel will not impact private land.

Landholders upstream of the Hipwell Road Weir may notice a higher water level within Gunbower Creek; however operations will remain within the capacity of the creek.

Landholders bordering the forest are protected from flooding by flood easements or levees.

Monitoring of water levels within the forest and creek will be conducted regularly throughout the operation.

Landholders in close proximity to the forest and the creek will be contacted prior to the operation commencing.

WHAT IS ENVIRONMENTAL WATER AND WHERE DOES IT COME FROM?

Environmental water is water legally set aside for the environment. This water is used to maintain or improve river and wetland health.

This includes Victorian, Commonwealth and Living Murray entitlements. Like irrigation water, these entitlements are subject to seasonal allocations.

WHAT WILL HAPPEN IF A NATURAL FLOOD EVENT OCCURS?

Flows through the Hipwell Road Channel will be modified to accommodate for natural flooding.

The Hipwell Road Channel will commonly be used in conjunction with natural inflows to the forest to extend the duration and increase the size of natural flooding.

WHAT MONITORING WILL BE UNDERTAKEN

The North Central CMA will coordinate a comprehensive monitoring program to capture the forest's immediate and long term response to the watering. Monitoring will include:

- response of wetland vegetation
- impact of carp on vegetation germination
- effectiveness of new fishways at regulators
- water quality monitoring
- water depth monitoring
- area of forest flooded
- waterbird breeding
- response of River Red Gums.

The information collected from this monitoring program will be used to improve the on-going management of environmental flows.

WILL THE ENVIRONMENTAL WATERING CAUSE A BLACKWATER EVENT?

Blackwater occurs naturally due to the breakdown of leaf litter and other vegetation in the water of the floodplain. The release of tannins causes the water to turn black.

Blackwater is rich in carbon compounds which can enhance fish and aquatic invertebrate production in floodplain rivers, acting as the basis for much of the food chain in rivers.

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Blackwater can be associated with low dissolved oxygen levels, known as 'hypoxic blackwater', when there are high litter loads and high temperatures. This can cause stress and the death of fish and other aquatic animals.

Assessments of existing litter loads in the forest have been undertaken prior to watering and the loading is low. Water delivery is planned for winter, during cooler weather.

Accordingly, the likelihood of a hypoxic blackwater is low.

Permanent monitoring stations are located in Gunbower Creek and spot monitoring in Gunbower Forest will be undertaken to continuously assess water quality to identify critical areas and determine when dissolved oxygen levels are approaching critical thresholds. This information is available in real-time to the North Central CMA and will be used to understand how water quality changes as it moves across the floodplain.

WHO PAYS FOR THE WATER?

The Murray Darling Basin Authority (MDBA) has entered into an agreement with Goulburn-Murray Water for the delivery of water to the forest.

The agreement, which is in keeping with Victorian policy, ensures the payment of fair charges and balances economic, recreational and social needs with the health of the forest.

Under the agreement MDBA will pay an annual charge equivalent to 100 delivery shares. (The delivery share system means the forest, like any user, is paying a fair amount for the water.)

The agreement makes a significant annual contribution to the upkeep of the irrigation system.

MDBA will have the same rights as other delivery share holders for delivery of up to 27 GL during the irrigation season to meet critical environmental needs. Less critical needs will be met outside the irrigation season or when there is spare capacity. Out-of-season deliveries will be charged at a flat rate and only applied when such deliveries occur.

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