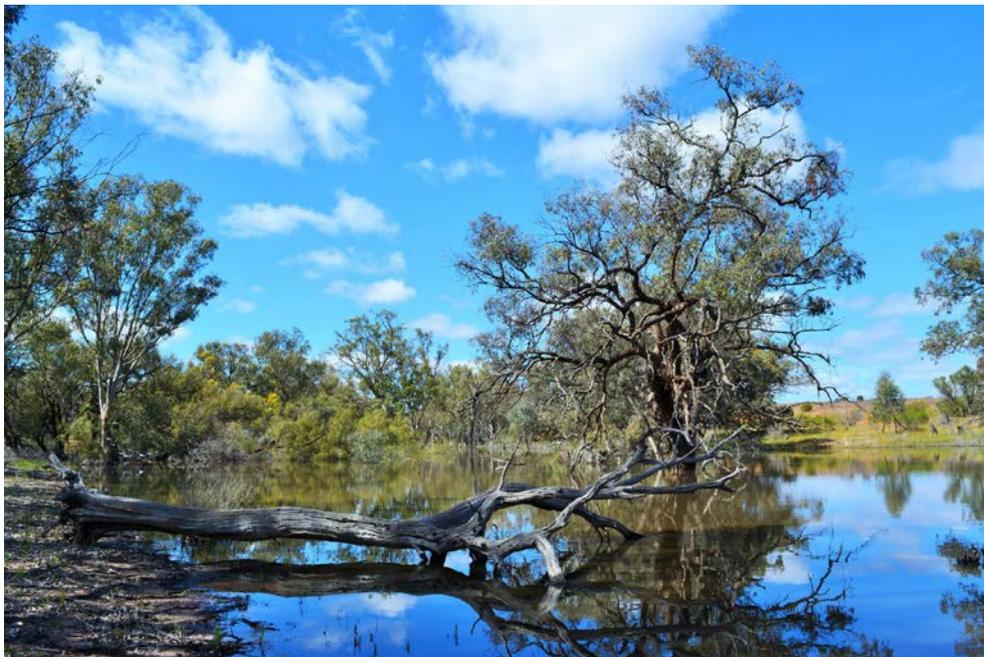


Hattah Lakes North story and FAQ

Hattah Lakes North is one of nine ecologically significant floodplains in north-west Victoria earmarked for restoration under the Victorian Murray Floodplain Restoration Project (VMFRP). Visit vmfrp.vic.gov.au for more information.

Location	Hattah-Kulkyne National Park in north-west Victoria between Robinvale and Red Cliffs, about 75 km south of Mildura
Landscape	Extensive complex of about 13,000 hectares of lakes and floodplain
Threatened animal species	57 species listed as threatened in Victoria and several nationally listed species, including winged peppercross, yellow swainson-pea, Murray cod, Mallee fowl, regent parrot and Mallee emu wren



The amazing Hattah Lakes (Photo: Mallee Catchment Management Authority)

Why do we need floodplain restoration works at Hattah Lakes North?

Over time, we have changed the way the Murray flows to suit our needs, building weirs, dams and levees. Regional communities have benefited in many ways from river regulation, but we continue to see serious ecological impacts to floodplain health.

The Murray River and its floodplains depend on intermittent flooding to stay healthy. River regulation has caused blockages to flow and reduced the frequency, duration and extent of flood events. It also causes increasingly long dry periods between floods, making it harder for floodplains to bounce back.

The Hattah Lakes are an extensive complex of about 13,000 hectares of lakes, wetlands, creeks and Red Gum and Black Box woodlands.



Modifications to the Murray River over time have restricted the flow of water into Hattah Lakes. The southern part of the floodplain underwent extensive restoration work under The Living Murray (TLM) program in 2013. It is now a great example of how infrastructure can be used to reconnect the river to its floodplains to restore health.

TLM works were designed with the flexibility to extend to the north when additional funding became available.

Flooding frequency has more than halved across all levels of the Hattah Lakes North floodplain, while the longest interval between flood events has more than doubled. The interval between floods for the Black Box woodlands is now as long as 21 years, compared to a maximum interval of 10 years before regulation. This is too long for floodplain plants and animals to persist – its longer than the Millennium drought.

The infrastructure we build will extend the works already completed in the southern part of Hattah Lakes so we can get water on more of the floodplain through both natural flooding and environmental water flows.

More importantly, if the floodplain goes too long between natural floods, we'll be able to give the environment a 'top up' to keep it healthy, making the floodplains more resilient as we face a future with less water.

Bringing these floodplains back to life will benefit all our river communities – people, plants and animals – as we restore them for generations to come.

Why wasn't this bit done in the first instance?

The Hattah Lakes TLM works were designed to give us the best ecological results with the funding available at the time, but with the flexibility to extend to the north when additional funding became available.

What happens if we don't restore our floodplains?

The Murray River and its floodplains are part of a highly interconnected ecosystem where wet and dry cycles infuse the river with nutrients and support an extraordinarily rich tapestry of life on the floodplain.

Varying degrees of stress are already apparent across our floodplains. The tree canopy lacks vigour and flood-tolerant vegetation are stressed, which reduces habitat and food available for animals that rely on healthy floodplains.

If we do not intervene, these iconic landscapes will continue to decline, potentially beyond the point of rejuvenation. We risk losing areas that are vital to biodiversity, to Traditional Owners, and to regional communities.

Returning to pre-regulation flows would be devastating for the towns, cities, agriculture and industries along the river. The Basin Plan recovers significant amounts of water for environmental use. Infrastructure helps us use this water to bring our ecologically significant floodplains back to health, without impacting river communities.



Why choose Hattah?

The Hattah Lakes are Ramsar listed and provide important habitat and breeding sites for more than 47 waterbird species, including a number listed under international and national agreements. More than 20,000 waterbirds have been recorded when the lakes are flooded!

Hattah Lakes is highly culturally significant to Traditional Owners. It is also a much-loved recreational hotspot – camping, walking, bike riding and canoeing are all popular activities.

How are Traditional Owners involved?

Traditional Owners have cared for and sustainably managed the landscapes of the Murray River and its floodplains for thousands of years. Their connection to Country continues to the present.

The nine VMFRP sites are culturally significant with many registered heritage sites. The *Aboriginal Heritage Act 2016* describes a legislative pathway for protection of Aboriginal cultural heritage in Victoria. The process requires detailed on-ground assessments to document cultural heritage sites and consultation with Traditional Owners on the proposed works and their potential impacts.

The outcomes of this assessment along with proposed measures to protect sites are documented in a Cultural Heritage Management Plan. First Peoples – State Relations (formerly Aboriginal Victoria) is the regulatory approver at Hattah Lakes North.

VMFRP partners have long-standing relationships with Traditional Owners and a strong desire and intent to continue to build stronger and more meaningful relationships, regardless of formal recognition status. We recognise the many Aboriginal Victorians who identify as Traditional Owners for Hattah Lakes and the importance of waterways to their identity and sense of belonging.

We recognise the strength and courage of Traditional Owners which has enabled continued connections to Country and culture. As well as our work with these groups to preserve cultural heritage, we are exploring opportunities to support their rights and obligations to progress their aspirations for Country.

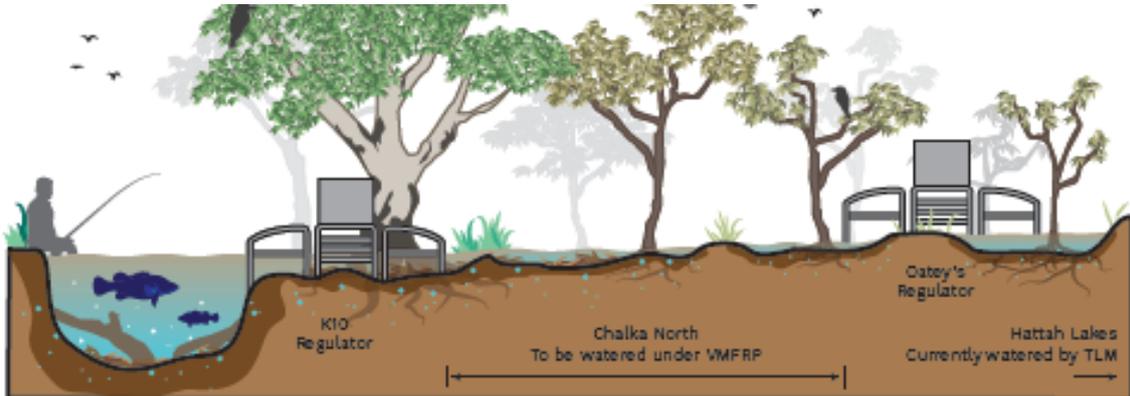
How will you get water onto the floodplain at Hattah?

Water will be delivered through a combination of natural flood events and, in times when the floodplain is too dry, by temporary pumping using environmental water entitlements via the TLM works. TLM and VMFRP infrastructure will be operated together.

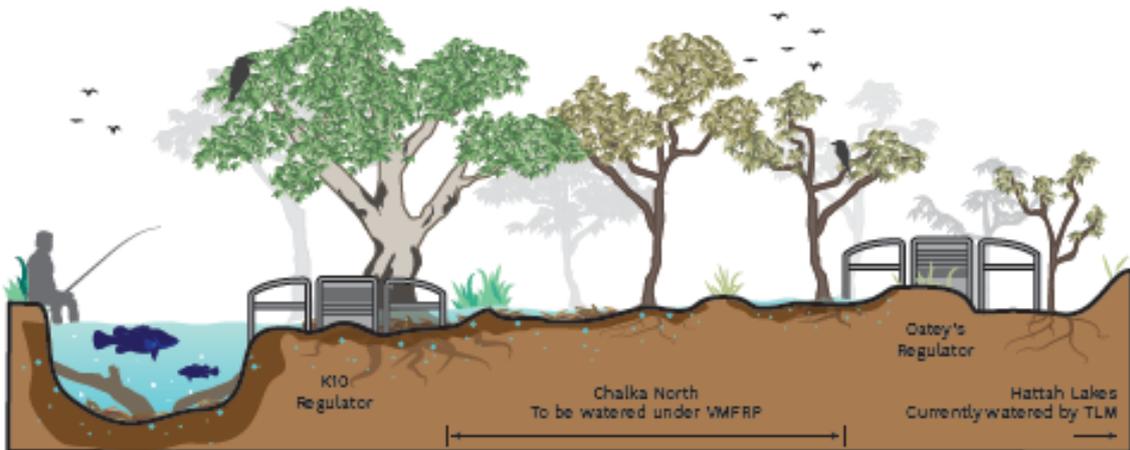
Chalka Creek and Lake Boolca will operate under different watering scenarios. Environmental conditions will also be considered when deciding whether to water these areas. Ecological objectives will be met by providing environmental water typically every 2.5 years in 10 at Chalka Creek and every 1.5 years in 10 at Lake Boolca.

Chalka Creek

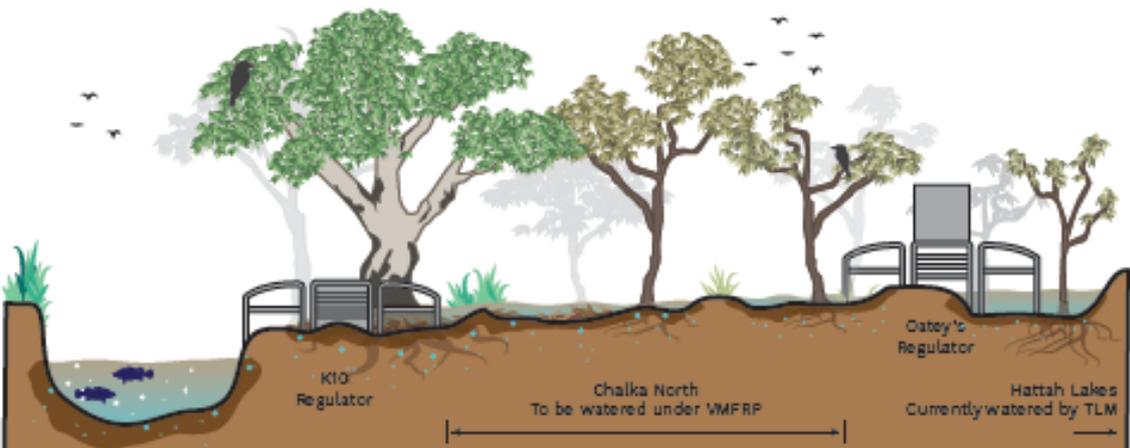
Chalka Creek can be watered from the north via the Murray River or from the South through Oatey's Regulator built under TLM (see Figure 1)



Scenario 1: If the Murray River is high and overflowing into Chalka Creek and we know the water will stay on the floodplain for long enough, we will open both regulators and leave the water to flow naturally.



Scenario 2: If the river is high and overflowing into Chalka Creek, but we know the flood won't last as long as it used to, we will shut the K10 Regulator and hold the water on the floodplain for longer (most natural floods don't last as long as they used to).



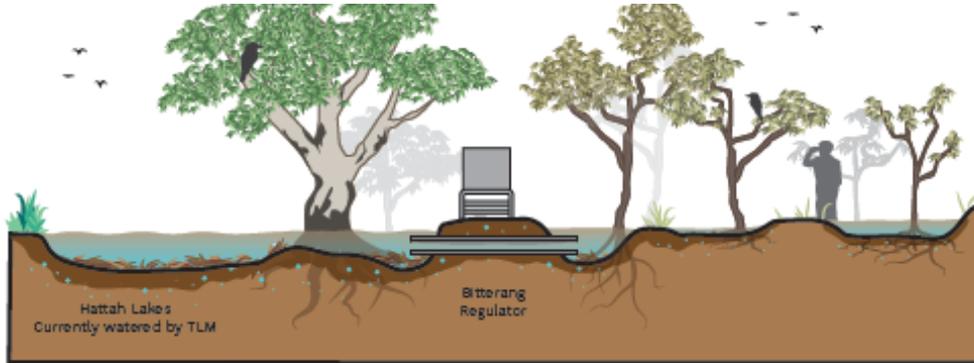
Scenario 3: If environmental water is pumped into the Hattah Lakes TLM area, we will close the K10 Regulator and open Oatey's Regulator and let water flow onto Chalka Creek (but only if the floodplain needs a drink).

Figure 1: Watering scenarios planned for Chalka Creek at Hattah Lakes North

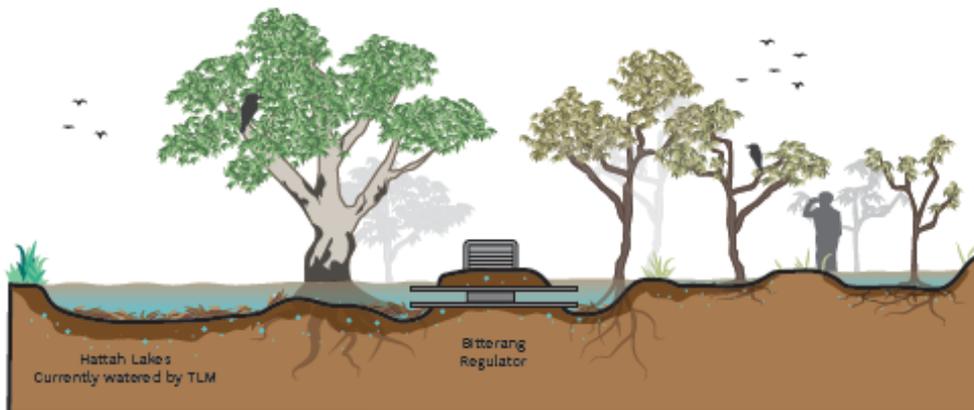


Lake Boolca

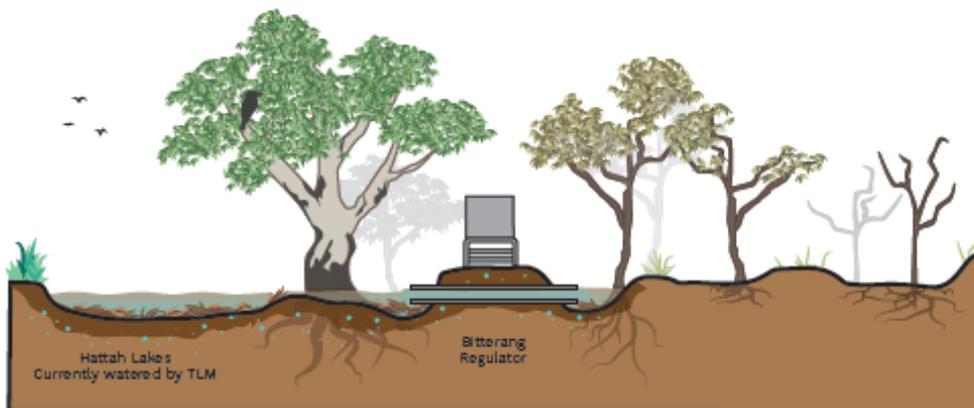
Lake Boolca relies on occasional very high floods from the southern (TLM) part of the Hattah Lakes system. We will improve the connection between Lake Boolca and the southern part of Hattah Lakes using the Bitterang Regulator built under TLM (see Figure 2).



Scenario 1: If the Hattah Lakes are high and able to overflow into Lake Boolca and we know the water will stay on the floodplain for long enough, we will open the Bitterang Regulator and leave the water to flow into Lake Boolca naturally.

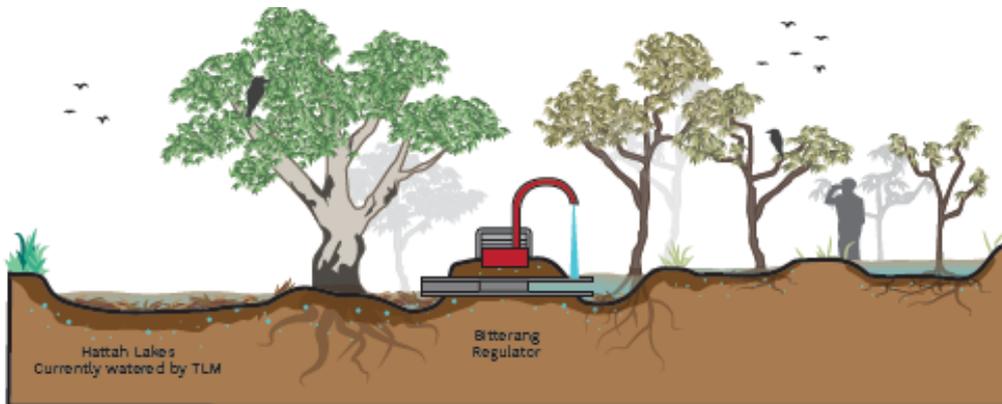


Scenario 2: If the Hattah Lakes are high and able to overflow into Lake Boolca, but we know the flood won't last as long as it used to, we will shut the Bitterang Regulator and hold the water on the floodplain for longer (most natural floods don't last as long as they used to).



Scenario 3: If the floodplain is suffering and too dry, we can pass environmental water from Hattah Lakes TLM area through the Bitterang Regulator.

Figure 2: Watering scenarios planned for Lake Boolca at Hattah Lakes North



Scenario 4: If the floodplain is suffering and too dry, we can use a temporary pump to pass environmental water from Hattah Lakes TLM area over the top of the Bitterang levee to get environmental water further out onto the floodplain.

Figure 2 (cont): Watering scenarios planned for Lake Boolca at Hattah Lakes North

What infrastructure will you build?

The work planned at Hattah North will extend the works already completed in the southern part of Hattah Lakes under the TLM program in two project areas.

This infrastructure will allow us to target different parts of the floodplain to improve the condition of 1,130 hectares of Red Gum forests and woodlands, Black Box woodlands and episodic wetlands.

Chalka North

Three small regulators (two new and one existing) and a containment bank will enable us to get water into the northern part of Chalka Creek.

We will return the water to the river via an existing rock chute built under TLM. A rock chute is a rocky path that slows the water's return to the river. It's a tried and tested way to avoid erosion and reduce the risk of damage to the stream banks, vegetation and cultural heritage values.

Lake Boolca

A regulator will be built in the existing Bitterang levee to allow flood waters to flow north into the Lake Boolca area during very high flood events. A hardstand will also be built to allow TLM water to be pumped over the levee in lower flood events.

Figure 3 shows the extent of vegetation we can reach with different flows using VMFRP works.

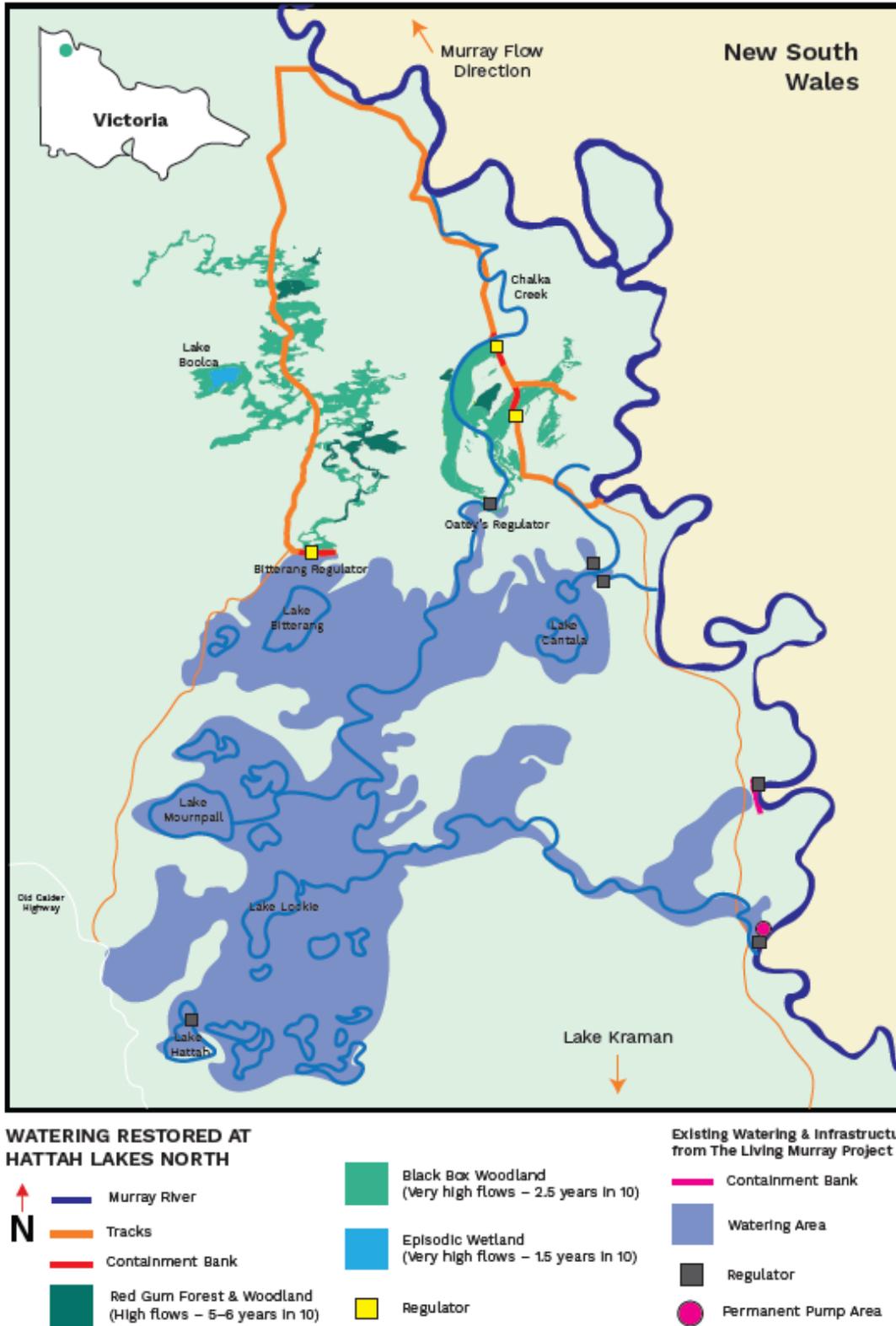


Figure 3: Extent of vegetation that can be reached with VMFRP works (based on conceptual design from October 2021)

What will the infrastructure look like at Hattah?

The infrastructure planned for Hattah is tailored to the area. As much as possible, it will be sited on existing access tracks to minimise ecological impacts during construction.

We've been building environmental water infrastructure for more than 15 years. We know what works and how to build just the right amount to get ecological results in a very large area of the floodplain.

The regulators at Chalka Creek will be similar in scale to Horseshoe Lagoon Regulator built under TLM at Wallpolla Island. The proposed K10 regulator at Lake Boolca will be similar to Oatey's Regulator built at Hattah Lakes under TLM (see Figure 4).



Raised track (containment bank) at Hattah Lakes



Horseshoe Lagoon regulator at Wallpolla Island



Oatey's Regulator at Hattah Lakes

Figure 4: The scale of proposed infrastructure at Hattah



What about blackwater?

Too much leaf litter in the river can cause blackwater events. As the litter breaks down, it chews up all the oxygen, making it hard for fish and other organisms to breathe. If they can't escape to a fresher section of the river, they can die.

Regular flows at the right time of year wash away this leaf litter. Good spring and autumn flows will flush the litter out before the hotter months – reducing the likelihood of blackwater events.

We can manage the risk of blackwater events by controlling the timing, duration and frequency of water flows in and out of the floodplain. We regularly monitor water quality and oxygen levels at Hattah Lakes under the TLM works so we can manage water releases back to the Murray River to reduce the risk of blackwater events.

Will access to the park be restricted during flow events?

Given the infrequent water needs of these areas, watering events will have minimal impact on park access, especially around Lake Boolca.

Parks Victoria will provide information to park users to plan their visits when environmental water occurs. Check the [Parks Victoria website](#) for the latest information and closures in Hattah-Kulkyne National Park.

Will the VMFRP improve access tracks at Hattah Lakes North?

Tracks used during construction to transport equipment and materials will be restored and left in good condition at project completion. In particular, the Murray River regulator at Chalka Creek will improve the current access track, giving better access along river tracks during natural flooding and environmental water releases. Improving access tracks beyond this is outside the scope of this project.

Parks Victoria will maintain tracks to ensure visitors can access the park, including the wetlands and healthy floodplains. Check the [Parks Victoria website](#) for the latest conditions and closures in Hattah-Kulkyne National Park.

To support the delivery of environmental water, Parks Victoria will manage pest, plant and animals to ensure the best ecological outcomes are achieved.

How does it fit in with the other VMFRP sites?

The infrastructure at Hattah Lakes North is one part of a package of works to be delivered in Victoria under the Basin Plan.

Floodplain infrastructure is designed to target specific ecological results at each site. The decision to release water at a site is based on monitoring of floodplain conditions and is part of a holistic approach to keeping the Murray and its floodplains healthy.

Floodplains are interconnected with the river and the greater Murray–Darling ecosystem. Operations at individual sites can influence ecological outcomes in others. For example, release of water from one site may trigger a fish migration and breeding event to repopulate other sites, or watering at multiple sites concurrently could ensure plentiful food supply for colonial nesting waterbirds.

The Basin states and the Australian Government work together each year to work out how to operate the river system as a whole, and how to coordinate and prioritise environmental water delivery across all the different regions. This process has been in place for more than a decade.

How is this different to existing environmental water programs?

Planning and delivery of environmental water operations is coordinated via catchment management authorities, in consultation with stakeholders including Traditional Owners, land managers, water authorities and the local community, and informed by the results of ecological monitoring programs.

Infrastructure gives us greater reach across more floodplains and helps us get better ecological outcomes at sites that are either difficult or impossible to reach under our current environmental water program.

Will the other wetlands and floodplain spaces still get water?

Murray River floodplains and wetlands will continue to receive naturally occurring floods. VMFRP sites along with other floodplains across north-west Victoria will also receive environmental water when needed to complement existing natural flows as part of a holistic approach to maintaining healthy rivers and floodplains.

Figure 5 shows the sites included in Mallee Catchment Management Authority's environmental water program, alongside VMFRP sites.

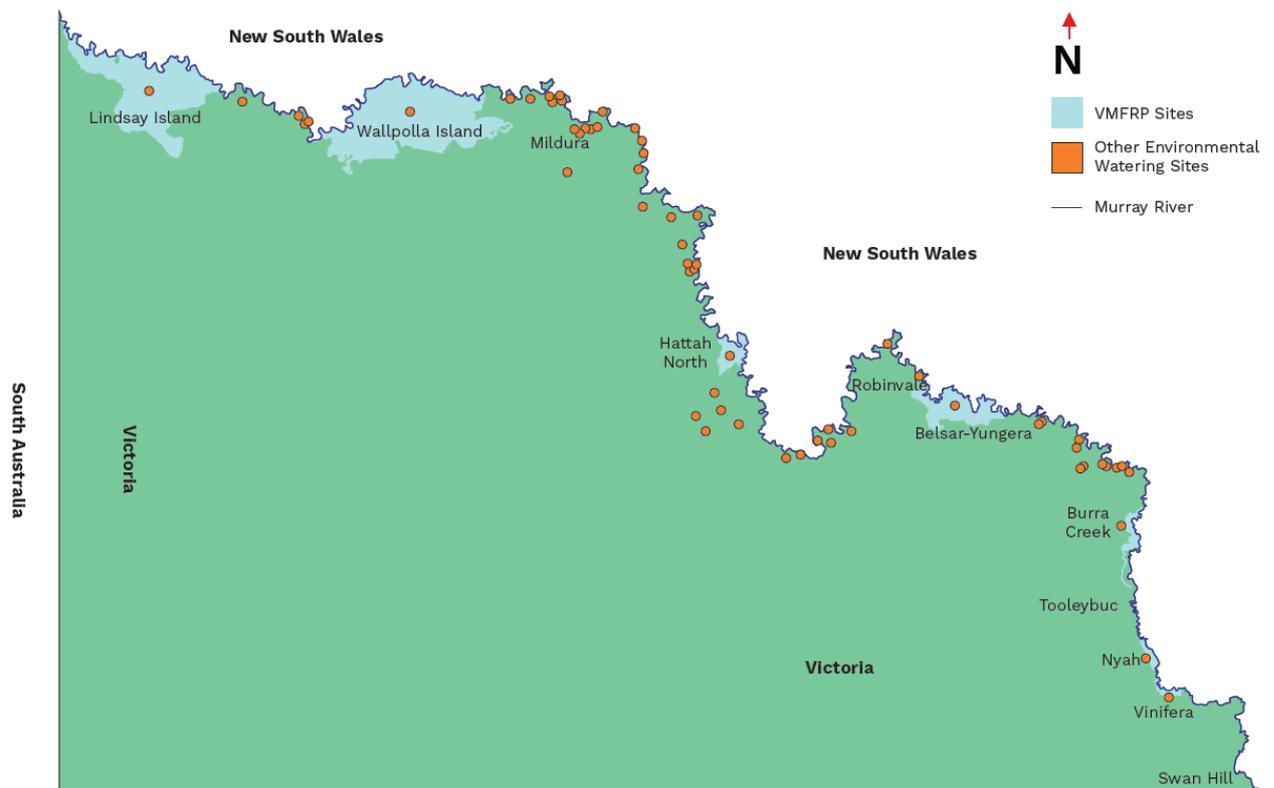


Figure 5: Environmental watering sites in the Mallee Catchment Management Authority area



When will you start building?

Construction is anticipated to start around December 2022, depending on funding, the environment assessment process outcome, and obtaining other legislative approvals. Projects will take about six to nine months to complete. All projects are to be operational by mid-2024 under legislation.

How do you know it will work?

The VMFRP partners have a long history of working with environmental water and using infrastructure to deliver environmental water. Specialist engineers and scientists have been working together on the project design for Hattah Lakes North since 2012.

Projects are currently undergoing a rigorous, transparent and comprehensive environmental assessment process to assess potential ecological impacts and benefits. We are confident that these works will bring these floodplains back to life and help them to flourish, restoring these valuable landscapes for generations to come.

We already know from infrastructure built at six TLM icon sites that these types of projects help restore river connectivity and health and deliver great outcomes for plants and animals.

What is the environmental assessment process?

In December 2020, the Victorian Minister for Planning determined that an Environment Effects Statement (EES) is required to assess any potential environmental impacts at Hattah Lakes North during construction and beyond. The Commonwealth Government also requires an assessment of potential impacts to threatened species.

Specialist investigations are now under way to assess potential impacts in areas such as biodiversity and habitats, water quality, cultural heritage, social, economic and amenity impacts, and waterway use and infrastructure.

Community consultation and advice is a significant part of this assessment process.

The EES will be publicly exhibited in mid-2022, giving the community and stakeholders an opportunity to have their say.

Find out more about the regulatory assessments at www.vmfrp.com.au/planning-approvals and how you can get involved at www.vmfrp.com.au/get-involved.