Chowilla Creek Environmental Regulator 2016 Testing Information

Background

The Chowilla Floodplain is one of the last remaining parts of the lower Murray that has retained much of its natural character. It contains the largest remaining area of natural River Red Gum forest in the lower River Murray and a range of aquatic habitats including fast and slow flowing creeks; backwaters; wetlands and lakes.

The Chowilla floodplain has experienced severe ecological decline, due to extended periods without flooding. This decline accelerated significantly through the recent long drought resulting in the loss of mature river red gum and black box trees.

A number of important environmental works have been undertaken on the Chowilla floodplain (see map) to enable the effective use of environmental water to improve the health of the floodplain.

These works have were constructed through The Living Murray's (TLM) Environmental Works and Measures Program which funds works for ecological restoration activities at TLM icon sites.

Why is testing of the works required?

Construction of the Chowilla Creek environmental regulator and ancillary structures was completed in early 2014. Since completion the regulator has been tested on two occasions, in 2014 and 2015 at low levels. Further testing is required at higher levels of operation.

The potential 2016 operation will enable further testing of the new and upgraded structures to ensure they are safe and function in accordance with design specifications under different operating regimes and help to achieve the ecological objectives outlined in the Chowilla Floodplain, Environmental Water Management Plan.

When will the testing event occur?

If River Murray flows to South Australia exceed 15,000 ML/day, testing of the Chowilla Creek regulator and ancillary structures could commence in mid August 2016. Lock 6 will also be raised during the operation in conjunction with the Chowilla regulator.

How long will the testing last for?

If river conditions remain favourable testing will occur over approximately a four to five month period from mid August to December 2016. Lock 6 will be raised for approximately 14 weeks during the peak of this operation. This duration may be shortened if river flows or other conditions change and a smaller event is undertaken.

What does the testing involve?

Testing will involve the progressive placing of stop logs between the concrete piers at the Chowilla regulator to raise water levels behind the structure. The event will target an initial Chowilla regulator height of up 19.4 metres AHD (3.1m above normal pool level), and if flow conditions increase to around 30,000 ML/d then the target height could increase to 19.75 meter AHD (3.45m above pool level). Engineering checks and monitoring of creek and floodplain conditions will be undertaken throughout the event to ensure the regulator and ancillary structures are operating as they were designed to do.

As water levels are raised behind the Chowilla regulator, Lock 6 will also be progressively raised by up to a maximum of 62 cm to ensure sufficient flow through the Chowilla anabranch is maintained. This raising of the Lock 6 water level is important for the management of water quality and protection of important habitat for native fish, including the iconic Murray cod.

Further testing of the structures on the Chowilla Island Loop, Woolshed Creek South and East regulators will also occur during the operation.

During regulator operation, fish passage is provided through fishways on either side of the structure. See the Frequently Asked Questions (FAQ) factsheet for further information on how the regulator will affect fish.

How much floodplain will be inundated?

If the regulator is raised to the height of 19.75 mAHD during testing, approximately 7,000 ha of temporary wetlands and floodplain could be inundated. Measurements will be taken during the event to confirm the area of inundation. During the first weeks of testing, water will remain mostly within the creek channels. As levels gradually rise, water will begin to spill into wetlands and then across the the floodplain.

Figure 1: operating scenario if River Murray flows to SA are about 15,000 ML/day with Chowilla Regulator operated to 19.4 m AHD and Lock 6 raised by the full 62 cm.

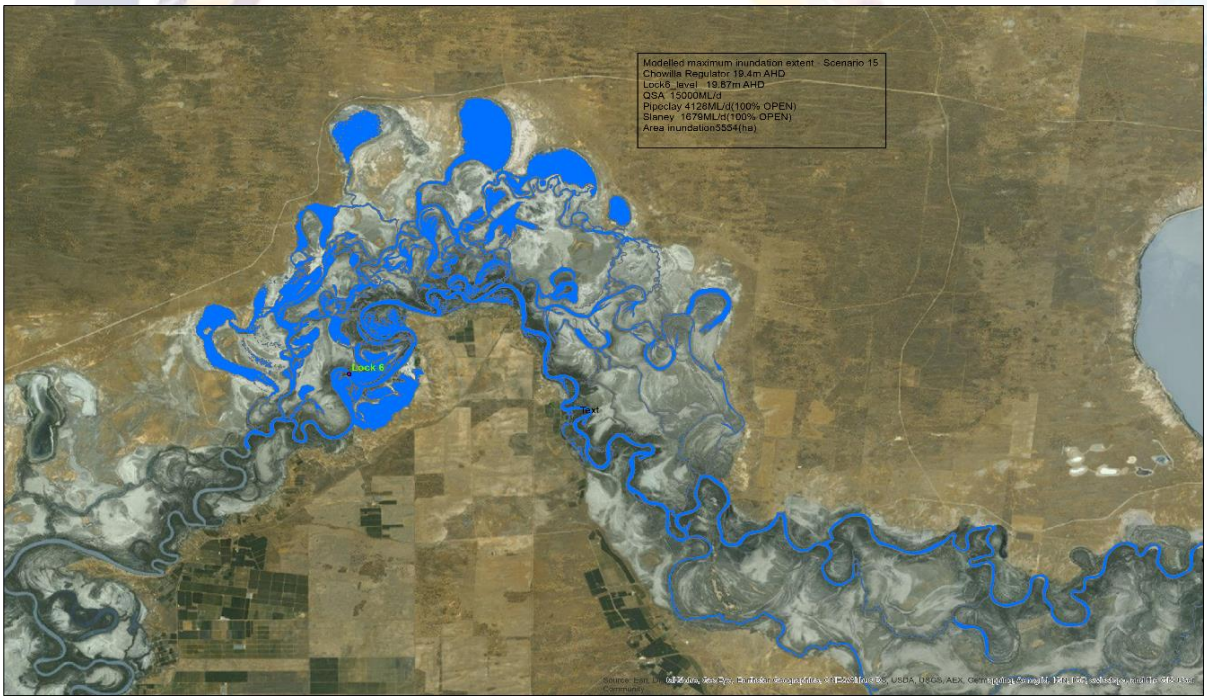
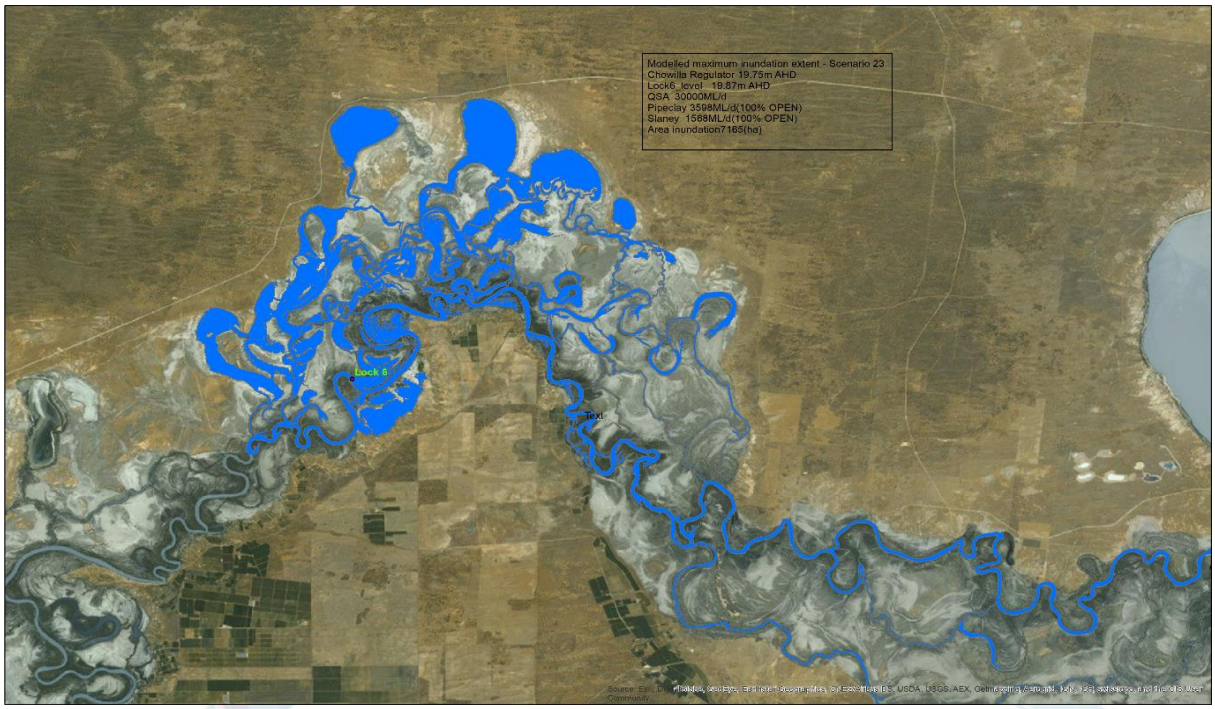


Figure 2: Operating scenario if River Murray flows to SA reach about 30,000 ML/day with Chowilla regulator operated to 19.75m and Lock 6 rasied by the full 62cm.



Please note this level of operation and resulting inundation will only occur if there is a significant improvement in river conditions so that flows are around 30,000 ML/day

Can I still visit the Game Reserve?

Some restrictions in access to parts of the Game Reserve will occur during the testing event as parts of the floodplain are inundated.

Please contact the DEWNR Office in Berri on 8580 1800 to receive the most up to date information about track and campsite access.

Driving/camping/fishing

- A number of internal tracks and roads on the Chowilla floodplain will not be open or accessible during inundation. It is an offence to drive off-road or leave a formed track in a park or a reserve
- A number of the Chowilla campsites will be unavailable during the testing event.
- Fishing regulations and bag limits will be in place as normal.

Boating

For safety reasons there will be a boating restriction zone in place at the regulator on Chowilla Creek during operation. Boating can occur upstream and downstream of the regulator but boats will not have access through the structure while it is in operation. A boat launching site (earthen) has been established at Campsite 13 on Monoman Creek above the regulator.

Who operates the regulator?

The regulator and ancillary structures will be operated and maintained by SA Water, on behalf of the Murray-Darling Basin Authority (MDBA). Decisions about when and to what extent the regulator will be used are made by the Minister for Water and the River Murray on advice from the Department of Environment, Water and Natural Resources working in conjunction with the MDBA and SA Water. An Operations Plan has been developed to guide all aspects of the regulator's operation. The Operations Plan and supporting documents describe how the regulator can be operated for maximum environmental benefit while carefully managing risks.

During the testing events scientific experts, river operators and engineers meet frequently to review monitoring data and to provide detailed advice to guide the operations.

Will salinity increase in the river?

Modelling indicates that operation of the regulator can be expected to generate a short-term increase in salinity of up to approximately 100 EC (assuming low river flow) immediately downstream of the regulator – though this is considered a worst case scenario. Methods to reduce the magnitude of potential salt spikes during and following the operation of the regulator, include:

- ensuring operation only during increased river flows to enable dilution of any salinity,
- slower drawdown of the pool behind the regulator, or
- reduced operating height and/or duration.

These measures are outlined in the Operations Plan for the regulator. Salinity levels in the River Murray and in the Chowilla anabranch will be closely monitored and the operations adaptively managed to ensure salinity thresholds are not exceeded.

More frequent inundation of the floodplain, through operation of the regulator, will reduce the build-up of salinity in the soil profile and partially freshen groundwater systems. These operations are expected to reduce future post flood salt loads.

Will the testing impact on my irrigation water allocation?

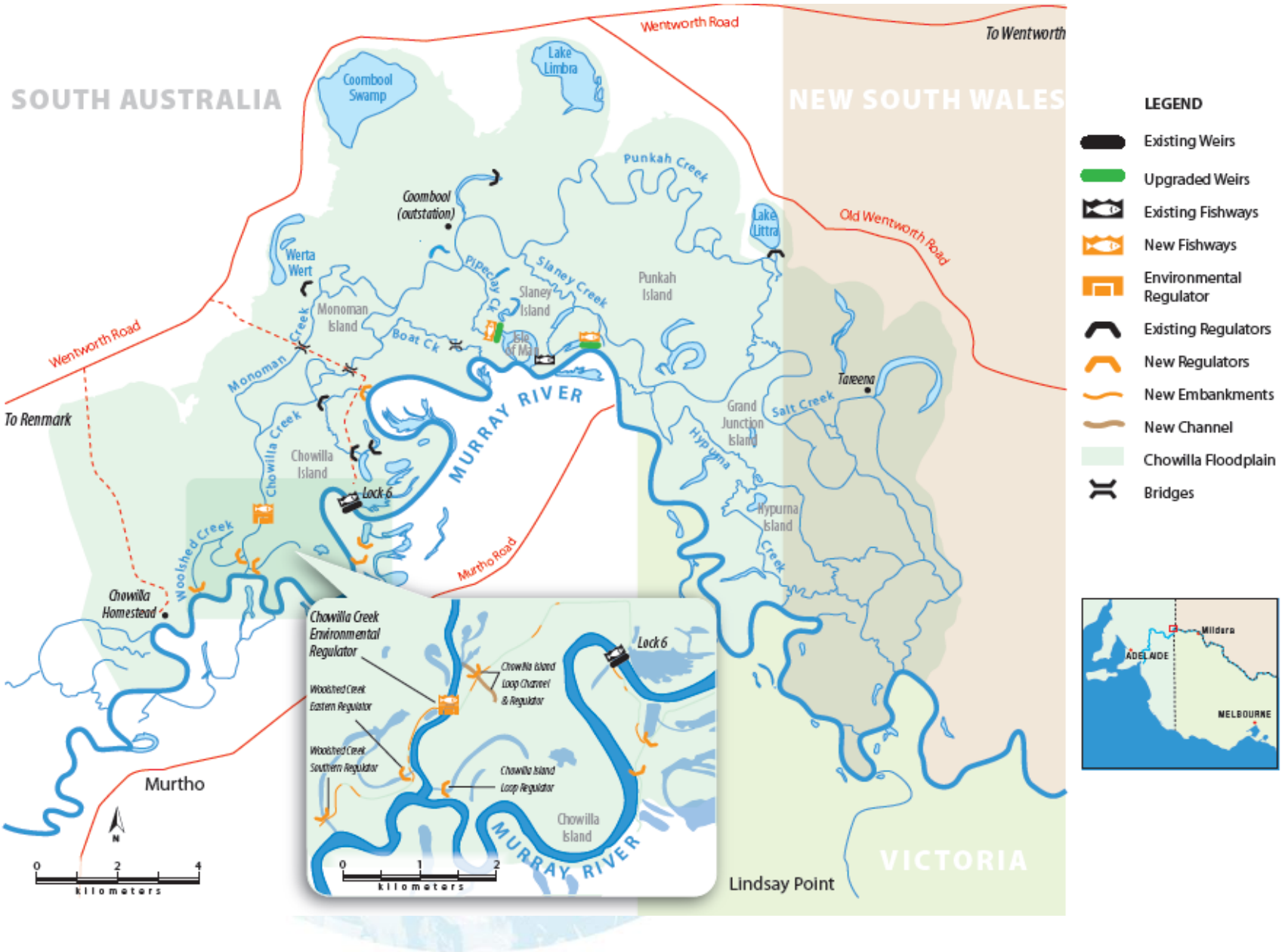
The regulator testing will make no difference to allocations for irrigation. This is because environmental water allocations from The Living Murray initiative will be used to boost River Murray flows during operation of the regulator and operation will occur during periods when South Australia is receiving unregulated flows. Water flow and water levels downstream of the Chowilla anabranch system will change noticeably due to operation of the regulator.

Will it create a black water event?

The operation will be managed to avoid creation of a blackwater event by ensuring there is sufficient flow through the system and by altering operations in response to water quality monitoring. The surface water monitoring network includes systems to inform operators about water quality and temperatures. This information will be accessed in real-time to enable rapid changes in operations to avoid or manage any reduction in dissolved oxygen levels that could result in a blackwater event.

Water quality monitoring and flow measurements will be undertaken throughout the testing event. See the FAQ for further information on monitoring.

Government of South Australia
Department of Environment, Water and Natural Resources



FOR MORE INFORMATION

Department of Environment, Water and Natural Resources
T: (08) 8580 1800
E: **chowilla@sa.gov.au**

Further information is also available at these websites:

Department of Environment Water and Natural Resources (SA)

http://www.environment.sa.gov.au/chowilla-floodplain

Chowilla Game Reserve;

http://www.environment.sa.gov.au/parks/

SA River Murray Flow Report (weekly updates)

https://www.waterconnect.sa.gov.au/River-Murray/SitePages/2016/20Flow/20Reports.aspx

The Living Murray;

http://www.mdba.gov.au/

Commonwealth Environmental Water Holder;

http://www.environment.gov.au/ewater/

Funds for the construction of the Chowilla works were provided through The Living Murray (TLM) program of the Murray–Darling Basin Authority, which was established in response to evidence showing the declining health of the River Murray system. The Living Murray is a joint initiative funded by the New South Wales, Victorian, South Australian, Australian Capital Territory and Commonwealth governments, and is coordinated by the Murray-Darling Basin Authority.

The combined Chowilla Floodplain and Lindsay and Wallpolla Islands in Victoria make-up one of the six Living Murray Icon Sites along the River Murray. Works are being undertaken at icon sites to maximise the environmental benefits from the cooperative use of environmental water provided through The Living Murray program, and from other sources.