

Murray and Murrumbidgee Valley National Parks SDL Adjustment Supply Measure – Yanga National Park

February 2017

The Basin Plan sets a sustainable diversion limit (SDL) for each catchment and aquifer in the Basin, as well as an overall limit for the Basin as a whole. In order to meet the new limits, 2750 GL of water needs to be recovered Basin-wide. NSW's share of this "SDL gap" is 1310 GL, with approximately 965 GL¹ of water recovered to date. For the remaining 345 GL of recovery, NSW is pursuing investment by the Commonwealth Government in a range of projects and programs, with infrastructure projects being prioritised over water buybacks.

This document provides an overview of *Murray and Murrumbidgee Valley National Parks SDL Adjustment Supply Measure – Yanga National Park* supply measure project being proposed by NSW.

The proposal of modified and new works in the Yanga National Park will provide more efficient and effective use of water currently diverted from the Murrumbidgee River, and receive proposed environmental watering from the Nimmie-Caira into Yanga to achieve improved environmental outcomes.

The resulting outcome will be the delivery of equivalent environmental outcomes as proposed in the Murray Darling Basin Plan but with less water, thus generating a possible Sustainable Diversion Limit (SDL) offset. These changes will enhance the ability to use environmental flows when most needed to meet the environmental objectives of the Basin Plan. The proposal is partly an 'Operating Rule Change' under the terms of the Phase 2 Assessment Guidelines for Supply and Constraint Measure Business Cases published by the interjurisdictional SDL Adjustment Assessment Committee (SDLAAC).

Fast Facts

Location	Yanga National Park on the Lower Murrumbidgee floodplain, located North East of Balranald in southern NSW
Type of project	Supply measures involving engineering works and modelling, designed to improve the environmental watering regime and enhance landscape-scale ecological outcomes with complimentary projects
Status	Business case submitted in August 2015 and is being assessed by SDLAAC
Estimated SDL	Potentially 24 GL combined with Millewa Forest project

¹ Information sourced from MDBA website. Includes Commonwealth water recoveries contracted through the Sustainable Rural Water Use and Infrastructure Program (SRWUIP) Infrastructure projects, the South Australian River Murray Sustainability Program (SARMSP) and the Water Smart Australia Program. Estimates do not take into account potential changes as a result of the Northern Basin Review and proposed changes to the long term diversion limit equivalent factors.

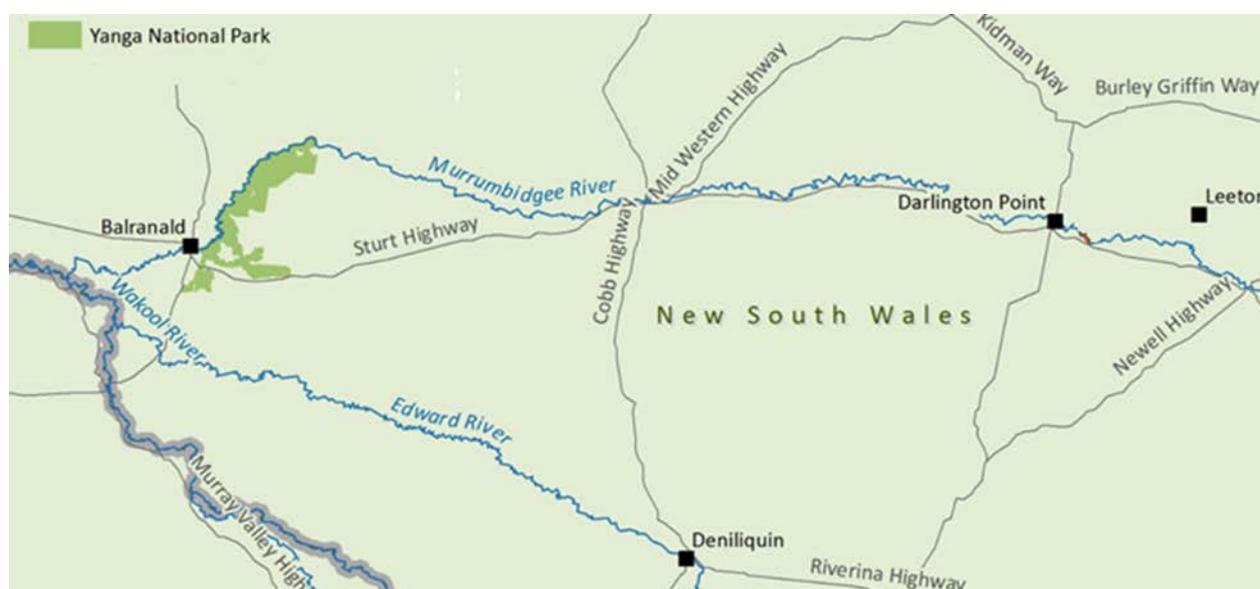
adjustment

Related SDL Nimmie-Caira
adjustment projects Murrumbidgee Computer Aided River Management

The project area

The Yanga National Park is approximately 67,000 hectares in size and is located between Redbank Weir and the township of Balranald on the Lower Murrumbidgee River floodplain (the 'Lowbidgee'). The Lowbidgee is the Murrumbidgee River's major wetland system, estimated to be 350,000 hectares. The extent of regular inundation of this floodplain has been drastically reduced through lower river flows and floodplain development for irrigated agriculture. The Lowbidgee is a nationally important wetland and a hydrological indicator site in the Murray Darling Basin. The Lowbidgee is also significant for migratory birds under several international conventions and agreements. Yanga is adjacent and downstream of the "Nimmie-Caira" scheme.

Figure 1: Location of Yanga National Park (Source: MDBA).



The proposal

This Proposal includes three elements for the Yanga National Park:

1. works to enable better targeting of existing environmental water management in the northern area of the Park.
2. works to manage flows from the adjacent Nimmie-Caira proposed supply measure.
3. modelling of the environmental outcomes of higher flows into Yanga, as proposed in the Nimmie-Caira business case. (The sale of Nimmie-Caira properties to the NSW government and their water entitlements to the Commonwealth provides a unique opportunity to achieve landscape-scale environmental watering across the Nimmie-Caira and Yanga areas).

Note: The benefits accruing to the Yanga National Park associated with integrated watering from Nimmie-Caira and improved structures and operations within Yanga National Park are detailed in this proposal.

The measures proposed for Yanga constitute supply measures, in that they are expected to deliver improved ecological outcomes whilst providing savings in the amount of environmental water required. The savings are achieved principally by reducing "overwatering" of vegetation

communities currently caused by inadequate and obsolete infrastructure for releasing or holding water within the park. The reduction of overwatering reduces the volume required and evaporation by reducing the area inundated. Other savings are achieved by increasing capacity of structures to manage environmental water, thereby reducing the need to “overtop” banks in the benchmark modelling scenario.

Works on the National Parks estate will become the property and responsibility of the NSW Office of Environment and Heritage, National Parks and Wildlife Service. The Yanga 1AS and 1ES offtake regulators are and will remain an asset of Water NSW. In addition to works identified for the northern area of Yanga, NSW OEH identified the opportunity to include further works, after consideration of the proposed higher flows from the Nimmie-Caira SDL adjustment supply measure. The combined effect of the Nimmie-Caira proposals and these additions to Yanga infrastructure provide a unique opportunity for landscape scale environmental watering for both on-site floodplain and downstream environmental benefits. In the Basin Plan context, this presents the opportunity to leverage further Murrumbidgee River environmental outcomes. The additional works are the Wagourah-North Stallion, Duck’s Nest and Tarwille-Cattleyards measures.

Ecological Outcomes

Yanga provides important habitat for a number of significant species and ecological communities. The supply measures at Yanga are essentially proposed to re-establish more natural wetting and drying cycles to the floodplain environment.

The most significant environmental outcome of the proposal, is to significantly increase the area, frequency and duration of environmental flows to River red gum forest and sedgeland on the Yanga floodplain via the Nimmie-Caira proposed supply measure. Other measures within the project give rise to significant localised environmental outcomes.

Benefits include improving foraging and breeding habitat quality for colonial nesting waterbirds, providing drought refuge sites for native wetland fauna, sustaining and improving dispersal between riverine, wetland and floodplain habitat, maintaining ecological connectivity, and increasing structural diversity of habitats. The proposed works are likely to benefit many taxonomic groups including birds, frogs, fish and reptiles. At a functional level, it is anticipated there will be significant improvements in the health and vigour of River red gum forests and woodlands, Black box woodlands, lignum shrublands and floodplain marshes.

Within Yanga National Park, the main advantage of the proposal is the ability to build upon incoming flows from the Nimmie-Caira. Modelling shows that without these incoming flows, neither the current situation, nor the northern Yanga works alone, can achieve an equivalent level of River red gum watering as suggested in the Murray-Darling Basin Authority’s Specific Flow Indicator mapping.

The Yanga measures provide significant environmental benefit and moderate environmental water savings compared with benchmark during lower and medium flow events. The Yanga measures are not dependent on the Nimmie-Caira measures, with the exception of works to two regulators.

Risks and Impacts

A rigorous risk assessment was completed as part of the Business Case development. The table below shows a summary of the risks which had an initial rating of high. Once the mitigation was applied the residual risk was low or moderate. Please refer to the business case for the full risk assessment.

Description of threat	Mitigation
Barriers to movement / dispersal of biota	Adopt fish passage measures for infrastructure where feasible Adopt operational approaches to mitigate fish impacts (minimising head of water; regulator gates fully open or fully closed; open/close sequences on flood recession)
Cultural artefacts are damaged or lost due to construction activities	Cultural heritage approval processes and proactive engagement with Indigenous stakeholders. Minimise construction footprint at work sites. Desktop cultural heritage assessment accompanies this business case. Further site investigation will be undertaken as part of implementation.
Loss of access due to inundation	Further consideration during implementation of flooding risks to access. Augmentation of roads if necessary. Existing notification process in advance of high environmental flows and natural flooding (Very few private landholders require access across Yanga).
Flooding of floodplain outside Yanga and Nimmie-Caira	Further consideration in detailed design and implementation of any flooding risks. Existing notification process in advance of high environmental flows and natural flooding
Proposed flow regimes unattainable with proposed structures	Undertake additional survey and modelling to verify outcomes prior to final design and construction
Designs deficient due to insufficient or incorrect data	Undertake additional survey at sites where this is critical
Works do not meet design objectives	Undertake formal commissioning of projects upon completion. Undertake site verification during target flow events to assess performance
Costs exceed approved funds due to errors or omissions or because of costly mitigation requirements	Communication plans and approvals processes will be put in place

Consultation

Extensive consultation and engagement activities have been underway since the early stages of the project. Existing channels of communication have been established between key agencies, groups and individuals. Stakeholders will continue to be engaged as the proposal proceeds through the design and regulatory assessment phases.

Next steps for adjustment mechanism confirmation

Date	Details
30 June 2017	BOC notification of final approved SDL adjustment package
Late October 2017	MDBA public consultation on proposed SDL adjustment
15 December 2017	MDBA recommend SDL adjustment to Commonwealth Water Minister
February 2018	Amendments tabled in parliament
From March 2018	Commence detailed design, construction and commissioning under Commonwealth funding

More information

Background on the Basin Plan implementation and the SDL adjustment process can be obtained from:

www.mdba.gov.au

DPI Water is the lead agency for the implementation of the Basin Plan agreements within NSW. Reports on NSW SDL adjustment activities reports can be obtained from:

<http://www.water.nsw.gov.au/Water-management/Water-recovery>

Acknowledgements

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (February 2017). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent adviser..