

Lower Namoi water source supplementary flow access rules

Background

When the *Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources* was first gazetted in 2003, the arrangement for sharing supplementary flow in the Lower Namoi water source was 90% for the environment, and 10% for water users (90:10), between July and October each year, and 50% for the environment and 50% for water users (50:50) for the rest of the year. From 5 March 2015 to 30 June 2019, a trial was undertaken of 50:50 supplementary flow sharing throughout the year.

During the trial period, a scientific study was undertaken by NSW Government agencies and partner organisations. The study assessed whether increasing access to supplementary flow events in the July to October period had any adverse impact on environmental outcomes in the river. The study concluded that the 50:50 sharing arrangement did not provide the same level of protection to the environment, compared with the 90:10 arrangements.

A six month extension of the trial period has been proposed, and is currently under consideration. The NSW Department of Planning, Industry and Environment is investigating alternative supplementary flow sharing rule options. If an acceptable alternative is not found we propose reverting to the 90:10 supplementary flow sharing rule over the July to October period.

The *Water Sharing Plan (WSP) for the Upper and Lower Namoi Regulated River Water Sources 2016* (the Namoi WSP 2016) prescribes the rules under which the Minister may announce a supplementary water event, and the conditions under which holders of supplementary flow access license may access the event. The rules relating to supplementary flow sharing are described in clause 48 (11) of the current Namoi WSP (2016) and clause 50 (3)(b) of the proposed *Water Sharing Plan (WSP) for Upper and Lower Namoi Regulated River 2020* (the Namoi WSP 2020).

The NSW Department of Planning, Industry and Environment is seeking comment on the following options for supplementary flow sharing in the *Water Sharing Plan for Upper and Lower Namoi Regulated River (2020)*.

When making your comments, please consider the effectiveness and timing of the flows and their environmental outcomes, as well as the long term outcomes.

Option 1

This option has been developed using Environmental Water Requirements (EWR) established as part of the development of the Long Term Water Plan.

An EWR describes the characteristics of a flow event (e.g. magnitude, duration, timing, frequency and maximum dry period) within a particular flow category (e.g. small, fresh), that are required for that event to

achieve a specified ecological objective or set of objectives (e.g. to support fish spawning and in-channel vegetation).

There may be multiple EWRs defined within a flow category and numerous EWRs across multiple flow categories within a planning unit. Achievement of each EWR will be required to meet the full set of ecological objectives for a planning unit. EWRs sets the foundation to align sharing of supplementary flow events with the priorities of the NSW *Water Management Act 2000 (WM Act 2000)*.

For this option, the supplementary water event ‘start flow’ and supplementary water event ‘finish flow’ at locations downstream of Narrabri are specified in Table 1.

Table 1: Proposed supplementary water event start and finish flows in the Namoi River (Option 1)

Date	Supplementary event start flow (ML/day)	Supplementary event finish flow (ML/day)	As measured at
1 July - 31 April	6,000	6,000	Namoi River plus Narrabri Creek at Narrabri
	6,000	6,000	Namoi River at Mollee Weir
	3,200	3,200	Namoi River at Gunidgera Weir
	3,200	3,200	Namoi River at old Weeta Weir site
1 May - 31 June	500	500	Namoi River plus Narrabri Creek at Narrabri
	500	500	Namoi River at Mollee Weir
	350	350	Namoi River at Gunidgera Weir
	350	350	Namoi River at Weeta Weir

Option 1 does not include the supplementary flow trigger of 500ML/day at Narrabri when the total volume of water allocations in regulated river (general security)access licence accounts is less than or equal to 90,000 megalitres. Rather the flow trigger at Narrabri reflects the proposed EWRs over the year.

The modelling will determine the relative shares between the environment and consumptive use to re-establish the level of take permitted under the 90:10 rule set. This may mean more or less than a 50% share for consumptive users.

Option 2

In this option, all thresholds are kept the same as the current WSP except for July and August.

When the total volume of water allocations in regulated river (general security) access licence accounts is greater than 90,000 ML, the supplementary water event start flows and supplementary water event finish flows would be those specified in Table 2.

Table 2: Proposed supplementary water event start and finish flows in the Namoi River (Option 2)

Date	Supplementary event start flow (ML/day)	Supplementary event finish flow (ML/day)	As measured at
1 July – 31 August	6,000	4,000	Namoi River plus Narrabri Creek at Narrabri
	6,000	4,000	Namoi River at Mollee Weir
	2,130	2,130	Namoi River at Gunidgera Weir
	2,130	2,130	Namoi River at old Weeta Weir
1 September – 31 December	5,000	3,000	Namoi River plus Narrabri Creek at Narrabri
	5,000	3,000	Namoi River at Mollee Weir
	4,000	2,500	Namoi River at Gunidgera Weir
	3,000	2,000	Namoi River at old Weeta Weir
1 January – 31 January	4,000	2,000	Namoi River plus Narrabri Creek at Narrabri
	4,000	2,000	Namoi River at Mollee Weir
	3,000	2,000	Namoi River at Gunidgera Weir
	2,000	1,500	Namoi River at old Weeta Weir
1 February – 30 June	2,000	1,000	Namoi River plus Narrabri Creek at Narrabri
	2,000	1000	Namoi River at Mollee Weir
	2,000	1000	Namoi River at Gunidgera Weir
	1,500	1000	Namoi River at old Weeta Weir

When the total volume of water allocations in regulated river (general security) access licence accounts is less than 90,000 ML, the supplementary water event start flows and supplementary water event finish flows would be those specified in Table 3.

Table 3: Proposed supplementary water event start and finish flows in the Namoi River (Option 2)

Date	Supplementary event start flow (ML/day)	Supplementary event finish flow (ML/day)	As measured at
1 July – 31 August	2,000	1,000	Namoi River plus Narrabri Creek at Narrabri
	2,000	1,000	Namoi River at Mollee Weir
	2,000	1,000	Namoi River at Gunidgera Weir
	2,000	1,000	Namoi River at old Weeta Weir
1 September – 30 June	500	500	Namoi River plus Narrabri Creek at Narrabri
	500	500	Namoi River at Mollee Weir
	500	500	Namoi River at Gunidgera Weir
	500	500	Namoi River at old Weeta Weir

The modelled long term total diversion and end of system flow for both options used the climatic period of 1895 – 2009 using the pre floodplain model. The floodplain harvesting component will be revised as part of the Healthy Floodplains project.

Preliminary information

DPIE – Water has undertaken early modelling to enable some assessment of the options (Tables 4 and 5). The modelling has provided preliminary information in regards to the change in supplementary access and take. Please note the results are preliminary and have not been finalised and reviewed. The BDL that the changes are compared with is the most up to date BDL model and has been amended to reflect the best available information. It is different to the BDL model used in the Basin Plan in 2012. For the purposes of the comparison the model does not include floodplain harvesting take.

Table 4. Preliminary model outputs for Lower Namoi supplementary options paper

Category	BDL (updated)	Option 1	Option 2
Entitlements or use type	Long term average (GL/y)		
General security	191.4	151.6	150.1
Supplementary	44.3	59.5	62.0
Utilities, domestic and stock	1.4	3.4	3.4
Total Diversions	237.1*	214.5	215.5
Flow at Bugilbone	524.3	537.9	536.8
Flow at end of system (Goangra and Waminda)	580.1	592.1	591.0

* The BDL model does not include the current or proposed water recovery in the Namoi Valley of 20GL. This is the main reason the BDL volume appears greater than the modelled total diversions for each option.

Table 5. Seasonal change – supplementary diversions

Month	BDL (updated)	Option 1	Option 2
Long term average (GL/y)			
Jul to Oct	13.2	26.5	27.7
Nov to Jun	31.1	32.9	34.2

Consideration of options

The determination of the final rule package will be based on the following principles:

- the WSP must be consistent with the principles for water sharing and use within the *WM Act 2000*
- the benchmark scenario for assessment of change is the 90:10 (July to October) rule in place at the time of Murray-Darling Basin Plan (Basin Plan) commencement
- the primary measure for 'effectiveness' of a rule (or rule set) is the capacity of the water made available to protect and enhance the environment
- non-flow based measures will not be used as an 'offset' to planned environmental water (PEW)
- an option will only be progressed if it provides the same or better environmental outcomes as the 90:10 (July to October) rule based on these assessment principles.

Additionally, a set of assessment criteria is being used to aid in determining how the options meet the principles. Management actions and assessment processes should be informed by best available knowledge, multiple lines of evidence, and involve a range of stakeholders guided by the following:

- the precautionary principle will be at the forefront of any decision making and deferred to in any case where there is insufficient evidence
- the baseline condition used for comparison in any assessment is the 90:10 sharing arrangement that existed at the time of commencement of the Basin Plan
- assessments will consider the seasonality and effectiveness of the proposed options
- assessments will consider implications across the flow regime, not just individual flow bands
- effectiveness assessments will use EWRs in preference to site-specific flow indicators, as these are based on the best available knowledge for achieving ecological outcomes
- both long term and event (i.e. where and how events occur) analyses will be required in the assessment, and EWRs will need to be tested for sensitivity to ensure they are sensitive enough to detect change
- assessments must take into account the hydrological and ecological implications for both the Namoi River and connected Barwon-Darling River.

While the focus of the assessment of the options will be the requirements under the *WM Act 2000*, NSW is required to meet a number of water resource plan accreditation requirements under the Basin Plan. The consideration of these requirements, in particular the requirement for no net reduction in the protection of planned environmental water, must be part of the overall assessment.