

LTAAEL compliance assessment for Namoi Regulated River Water Source

Executive Summary

This report describes the methods used to assess if extractions in the Namoi Regulated River are compliant with the limit described in the Water Sharing Plan (WSP). The assessment has found that long term average annual extractions (LTAAE) are compliant for the 2024-2025 water year. As the current condition extractions are below the CAP and LTAAEL model extractions, no compliance action is required.

Background and Purpose

The Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Source (hereafter Namoi Regulated River Water Source) requires an assessment of compliance with a Long-term Annual Average Extraction Limit (LTAAEL) which is sometimes referred to as 'plan limit'.

The assessment is to be carried out annually by the Department¹ on behalf of the Minister following the end of each water year. LTAAEL compliance assessment requires two scenario models; one to represent the LTAAEL and one to represent current conditions. The long-term results from both scenario models are compared to assess compliance.

Each water sharing plan defines the plan limit, how the compliance assessment is to be completed, triggers for non-compliance and subsequent compliance action. The LTAAEL includes multiple types of water use. However, the compliance assessment is based on the total.

This report summarises a compliance assessment for the Namoi Regulated River Water Source. The assessment was based on best available models, using climate data from 1895 to 2025.

¹ Refers to the current Department of Climate Change, Energy, the Environment and Water (DEECCW), as well as its predecessor(s) and likely successor(s) over the lifecycle of each Water Sharing Plan.

Scenarios and agreed model version

Model scenarios for Cap, water sharing plan and current conditions were selected based on evaluation against multiple scenario model selection criteria², including whether these had been documented and independently reviewed, how appropriate the management and levels of development are, and consistency of the hydrology. For the Namoi Regulated River Water Source, the selected scenario models reported in Table 1 are the most appropriate for LTAAEL compliance.

Table 1 Scenario models selected for Namoi Regulated River Water Source for LTAAEL assessment purposes

Scenario model	System file	Scenario Input Set
Cap conditions	NAMO_CAL_313_5.20.0.12549.rsproj	LongTerm_Scenarios.CAP_93_94 ...CAP Reach Share Fix
Water Sharing Plan conditions	As above	LongTerm_Scenarios.BDL_99_00... BDL_Supp_Annual_Usage_Limit
Current conditions	As above	LongTerm_Scenarios.CurrentCondi tions_15_16...HEW_IRRI

The models are based on the recently completed Source model build, which used an extended climatic period and more accurate development data. This model was also used in the 2023–2024 compliance assessment.

An independent review of the Source model was completed in 2024, with the external reviewer (Alluvium) providing its endorsement (INT24/79189) on 02/08/2024. The review “*endorses the modelling as being the best currently available for undertaking both growth-in-use and floodplain harvesting entitlement assessments...*”. In addition, a second review covering aspects outside the scope of the first, was carried out by OD Hydrology (INT24/46409). It found “*that the model has been developed using the best available data, a logical approach ..., and that it is fundamentally consistent with the Australian Hydrologic Modelling Practice Notes ...*”.

One distinct improvement of the Source model is its ability to estimate floodplain harvesting take. This updated method forms part of the modelled component. It is worth noting that, in compliance assessments prior to 2023–2024 (before the Source model was first used) a fixed estimate of floodplain harvesting, as reported in the Basin Plan, was used instead.

²

<https://publications.water.nsw.gov.au/watergroupjspui/bitstream/100/2592/1/Guidelines%20to%20select%20scenario%20models%20for%20assessing%20compliance%20to%20long-term%20average%20annual%20extraction%20limits.pdf>

While floodplain harvesting licences have been issued in the unregulated Namoi system, they have not yet been issued in the regulated Namoi system. Because of this, and there being no evidence of any floodplain harvesting occurring without such licences (which would be unlawful), the modelling assumes no floodplain harvesting for the 2024–2025 assessment. This was considered the most appropriate position based on current information, and the adopted approach was approved by the Executive Director, Water Planning & Knowledge (BN26/1765).

LTAAEL compliance results

LTAAEL assessment

The LTAAEL is the modelled long-term average annual extractions calculated over the duration of the available climate record using either the Cap or the Water Sharing Plan scenario model, whichever is the lesser. For this assessment the modelling period 1895–2025 is used. The results of this analysis are reported in Table 2. The LTAAEL modelled components for 2024–2025 water year for the Namoi Regulated River Water Source is 235 GL/y based on the water sharing plan scenario model. Unmodelled extractions are not considered for this assessment.

Table 2 Long term average annual extractions (1895–2025) for Cap and WSP scenario models (GL/y)

Extraction category	Cap scenario	Water Sharing Plan scenario
Modelled Extractions		
General security	127.7	147.1
Supplementary access	63.8	33.7
High security and Stock and Domestic	4.4	4.7
Floodplain harvesting	38.7	47.6
Total modelled extractions	234.7	233.2
Unmodelled extractions		
Stock and Domestic rights ³	1.9	1.9
Total extractions	236.5	235.2⁴

This WSP includes all water take components such as plantation forestry to harmonise with reporting required under the Basin Plan. In this regulated river water sharing plan area, the water

³ Clause 17 of Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2016 (2015 SI 631) accessed 31 May 2023

⁴ The calculation is based on non-rounded numbers, whereas the report uses rounded figures that can reduce resolution when summed.

source boundary is defined by the bank of the regulated river and hence plantation forestry and harvestable rights dams are located within the adjacent unregulated river water source.

In addition, water taken under a basic landholder right has been excluded from the compliance assessment. This is because any unmodelled estimates are excluded if no assessment of change has been made.

Rainfall runoff harvesting exempt under the Water Management (General) Regulation 2018 (Clause 39B; Schedule 4 Part 1 Section 17C) is not included in the definition of floodplain harvesting and has been excluded from the compliance assessment.

Compliance assessment

Compared to the LTAAEL scenario, the modelled long term average annual extractions from the current condition scenario model are reported in Table 3.

Table 3 Modelled long term average annual extractions (1895-2025) for Current and LTAAEL scenarios (GL/y)

Extraction category	LTAAEL scenario	Current conditions scenario
General security	147.1	147.4
Supplementary access	33.7	42.8
High security and Stock and Domestic	4.7	5.0
Floodplain harvesting	47.6	n/a
Total modelled extractions	233.2	195.1
Tamworth Regional Council growth	n/a	0.2
Total extractions including TRC growth	233.2	195.3

In current condition scenario, it is assumed that there is zero take under floodplain harvesting because the regulated floodplain harvesting framework is not yet fully implemented at the time of assessment (as outlined above).

The extraction categories include provision for managing growth in extractions from the Peel regulated river water source by Tamworth Regional Council (TRC). The water sharing plan specifies that 95% of growth in TRC extractions is managed in the Namoi Regulated River Water Source.

Analysis reported in the Peel Regulated River Water Source plan limit assessment report (PUB25/864) estimated TRC extractions increased by 0.23 GL/y (from 8.36 GL/y to 8.59 GL/y). The volume to be managed in the Namoi Regulated River Water Source is therefore 0.22 GL/y.

The current water sharing plan specifies that there is non-compliance where:

- Current condition extractions exceed LTAAEL by 3% or more
- Current condition extractions exceed the average of Cap and LTAAEL
- Current condition extractions exceed Cap.

Note that plan limit compliance is assessed on total extractions and not by individual forms of take.

Including the estimated extraction by TRC, the results in Table 3 show current levels of extractions of 195 GL/y. This is 16% less than LTAAEL of 233 GL/y. Therefore, the Namoi Regulated River Water Source is compliant with the LTAAEL.

No compliance action is required.

Supporting information

Results over Basin Plan assessment period

The Namoi results over the Basin Plan assessment period of 1895-2009 are included for reference only. These results will be used to track significance of future model updates.

Table 4 Modelled long term average annual extractions over the Basin Plan reference period 1895-2009 (GL/y)

Extraction category	LTAAEL scenario	Current conditions scenario
General security	149.7	150.4
Supplementary access	33.7	42.4
High security and Stock and Domestic	4.7	5.0
Floodplain harvesting	47.5	0.0
Total modelled extractions	235.6	197.7