

LTAAEL compliance assessment for NSW Border Rivers Regulated Water Source

Executive Summary

This report describes the methods used to assess if extractions in the NSW Border Rivers Regulated River Water Source are compliant with the limit described in the water sharing plan in the 2023-2024 water year. The assessment found that long-term average annual extractions were compliant in 2023-2024.

Background and Purpose

The water sharing plan for the NSW Border Rivers Regulated River Water Source requires an assessment of compliance with a Long-term Average Annual Extraction Limit (LTAAEL). The LTAAEL is sometimes referred to as the '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 (WSP) defines the LTAAEL, 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 NSW Border Rivers Regulated River Water Source for the 2023-2024 water year. The assessment was based on best available models, using fully refreshed climate data from 1895 to 2024.

Scenarios and agreed model version

Model scenarios for Cap, WSP and current conditions were selected based on evaluation against multiple scenario model selection criteria, including whether these had been documented and independently reviewed, how appropriate the management and levels of development are, and the consistency of the hydrology. For the NSW Border Rivers Regulated River Water Source, the

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.

selected model scenarios reported in Table 1 are the most appropriate for the 2023-2024 LTAAEL compliance purposes.

The scenarios are based on the floodplain harvesting scenario models which have been documented and published on [the department website](#). There are two reports. The [model build report](#) describes the development of the river system model - its conceptualisation, construction and calibration. The [scenario report](#) describes how the model was used to assess the LTAAEL and current conditions as well as other scenarios required for the floodplain harvesting program. It should be noted that the NSW Border Rivers Regulated River Water Sharing Plan was amended on the 29th of July 2022 to include rules for floodplain harvesting. The floodplain harvesting licences have been fully operational since the 15th of August 2022; therefore, as of 2022-2023, they are an integral component of the current conditions.

Table 1 Scenario models selected for NSW Border Rivers Regulated River Water Source for LTAAEL assessment

Scenario	System file	Description
Cap conditions	BorderRivers_2023_24_Compliance.rsproj	Default Input Set.NSWPlanLimit.CAP Input set used for CAP conditions run.
WSP conditions		Default Input Set.QLD_ROP.ROP_On.NSW_BDL Input set used for WSP conditions run.
Current conditions		Default Input Set.NSW_1516.NSW_1516_fphscale Input set used for Current conditions run.

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 WSP scenario model, whichever is the lesser. For this assessment, the modelling period 1895-2024 was used. The results of this analysis are reported in Table 2.

The LTAAEL for the NSW Border Rivers Regulated River Water Source is 205.2 GL/y based on the water sharing plan scenario model. There are also unmodelled extractions estimated at 8.0 GL/y. These unmodelled estimates have not changed and are not included in LTAAEL compliance assessment.

The water sharing plan now includes all water take components such as plantation forestry and harvestable right dams, to harmonise with reporting required under the Basin Plan. In this regulated river water sharing plan area, the water 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. It is worth noting that while floodplain harvesting does not occur in the water source, the water sharing plan explicitly includes floodplain harvesting in connection with extractions from a regulated river in the LTAAEL and the use from the associated access licences is to be included in the compliance assessment.

Table 2 Modelled long term average annual extractions (1895-2024) for Cap and WSP scenario models (GL/y)

Extraction category	Cap scenario	Water Sharing Plan scenario
General and high security	94.8	92.1
Supplementary access	75.5	67.5
Local Water Utility	0.6	0.6
Floodplain harvesting	36.5	45.0
Total modelled extractions	207.4	205.2
Basic Rights (unmodelled estimates)	8.0	8.0

Water taken under a basic landholder right has also been excluded from the compliance assessment. This exclusion is due to any unmodelled estimates being omitted if no assessment of change has been made.

Finally, rainfall runoff exempt under the Water Management (General) Regulation 2018 (Clause 39B) has also been excluded from the compliance assessment. The exempt rainfall runoff volume is excluded from the definition of floodplain harvesting and from the definition of LTAEL under the Water Sharing Plan dated 29 July 2022.

Compliance assessment

The modelled long-term average annual extractions from the current conditions model scenario are compared to the LTAEL results in Table 3.

Table 3 Modelled long term average annual extractions (1895-2024) for LTAEL and Current Conditions' scenario models (GL/y)

Extraction category	LTAEL scenario	Current Conditions scenario
General and high security	92.1	92.7
Supplementary access	67.5	69.7
Local Water Utility	0.6	0.6
Floodplain harvesting	45.0	44.2
Total modelled extractions	205.2	207.2

The key difference between the LTAEL and current scenario models' results is a 3.3% increase in supplementary diversions and a smaller increase in regulated diversions, both driven by the FPH

accounting framework's restriction on floodplain harvesting. The restriction on FPH take increases demand on regulated supply subject to allocations. Additionally, the reduced FPH take increases storage availability, enabling higher supplementary take.

The current WSP specifies that there is non-compliance where current condition extractions exceed LTAAEL by 3% or more.

The results (Table 3) show that current conditions extractions are larger than LTAAEL extractions by 1%.

The long-term average annual extractions in the NSW Border Rivers Regulated River Water Source were compliant in 2023–2024, as the criteria for non-compliance were not met.

No compliance action is required.

It should be noted that the assessment does not account for temporary water restrictions that were in place in 2022–2023. In that year, there was a reduction to the supplementary water access licence Available Water Determination (AWD). This reduction was an LTAAEL compliance action. This latest assessment is checking whether there is a return to compliance without the need for temporary water restrictions.

Previous Compliance actions

The NSW Government took compliance action in the 2021–22 water year by reducing the Available Water Determinations (AWDs) for Supplementary Access entitlements in the NSW Border Rivers Regulated River Water Source to 0.75 ML/share to begin returning extractions to LTAAEL. A further compliance action of 0.26 ML/share was taken at the commencement of the 2022–23 water year as the rules in the Water Sharing Plan for floodplain harvesting licensing had not commenced.

However, floodplain harvesting licenses have been fully operational in the NSW Border Rivers Regulated River Water Source since the 15th of August 2022. The rules for floodplain harvesting licenses are defined in amendments made to the NSW Border Rivers Regulated River WSP on the 29th of July 2022.

As in the previous years, there was a firm anticipation that the licenses would effectively restrict water taken through floodplain harvesting and align extractions with the LTAAEL. This anticipation enabled the lifting of the July 2022 compliance action. On the day the licensing framework commenced, the available water determination for supplementary water access licences was restored to 1.0 ML/share.

This year's assessment results confirmed these expectations, demonstrating that the NSW Border Rivers Regulated River Water Source has returned to compliance with LTAEL.

Supporting information

Results over Basin Plan assessment period

This year, we refreshed all climate data inputs for the entire long-term model simulation period.

The updated results over the Basin Plan assessment period of 1895-2009 are presented in Table 4 and included for reference only. These results were also reported in last year's report and can be used to track significance of model updates. Table 4 shows that the current conditions average is 1.2% more than the LTAEL.

Table 4 Modelled long term average annual extractions (1895-2009) for LTAEL scenario model and Current with floodplain harvesting licences scenario model (GL/y)

Extraction category	LTAEL scenario	Current Conditions scenario
General and high security	92.2	93.1
Supplementary access	69.2	71.2
Local Water Utility	0.6	0.6
Floodplain harvesting	42.7	42.2
Total modelled extractions	204.6	207.1