

LTAAEL compliance assessment for NSW Border Rivers Regulated River 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 2022-23 water year. The assessment found that long-term average annual extractions were compliant in 2022-23 due to the commencement of floodplain harvesting licences. The licences became fully operational on the 15th of August 2022 after the Water Sharing Plan (WSP) for the NSW Border Rivers Regulated River Water Source¹ was amended on the 29th of July 2022, to include rules for floodplain harvesting.

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 Department² on behalf of the Minister following the end of each water year. LTAAEL compliance 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 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 2022-23 water year. The assessment was based on best available models, using updated climate data from 1895 to 2023.

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 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 selected model scenarios reported in Table 1 are the most appropriate for the 2022-23 LTAAEL compliance purposes.

¹ [Water Sharing Plan for the NSW Border Rivers Regulated River Water Source 2021](#)

² Refers to the current Department of Climate Change, Energy, the Environment and Water (DCCEEW), as well as its predecessor(s) and likely successor(s) over the life cycle of each WSP).

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 2022-23, they are an integral component of the current conditions.

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

Scenario model	System file Default Input	Default Input
Cap	BorderRivers_2022_23_CAP.rsproj	Set.NSWPlanLimit.CAP
WSP	BorderRivers_2022_23_WSP.rsproj	Set.QLD_ROP.ROP_On.NSW_BDL
Current	BorderRivers_2022_23_CC_FPHRules.rsproj	Set.NSW_1516.NSW_1516_fphscale

Note: models above are the same as used in previous year(s) but run using updated inputs.

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 1895-2023 is used. The results of this analysis are reported in **Error! Reference source not found.**

The LTAAEL for the NSW Border Rivers Regulated River Water Source is 201.1 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.

Table 2 Modelled long term average annual extractions (1895-2023) for Cap and WSP scenario models (GL/y)

Extraction category	Cap scenario model	Water Sharing Plan scenario model
General and high security	94.8	92.0
Supplementary access	76.0	67.9
Local Water Utility	0.6	0.6
Floodplain harvesting	32.9	40.6
Total modelled extractions	204.3	201.1

Extraction category	Cap scenario model	Water Sharing Plan scenario model
Unmodelled estimates		
Basic Rights	8.0	8.0

It should be noted that the NSW Border Rivers WSP 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 WSP 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.

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 LTAAEL with the amended WSP.

Compliance assessment

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

Table 3 Modelled long term average annual extractions (1895-2023) for LTAAEL and Current Conditions' scenario models (GL/y)

Extraction category	LTAAEL scenario model	Current conditions scenario model
General and high security	92.0	92.5
Supplementary access	67.9	70.2
Local Water Utility	0.6	0.6
Floodplain harvesting	40.6	39.6
Total modelled extractions	201.1	202.9

The key reason for differences between LTAAEL and current scenario model results is a 1.8% growth in regulated river extraction due to floodplain harvesting rules. Despite larger current on-farm development (e.g., pumping and storage capacity), the accounting framework reduces floodplain harvesting extractions by around 2.5%, posing higher demand on other water sources but limited by overall water availability (Available Water Determinations (AWD) and Supplementary flow).

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

The results show compliance as the criteria for non-compliance are not met. Specifically, the results show that current conditions extractions are larger than LTAAEL extractions by 0.9%

In addition, the assessment does not include temporary water restrictions which were in place in 2022-23. In that year, there was a reduction to the Supplementary Access entitlement Available Water Determination (AWD). This reduction was an LTAEL compliance action. This new assessment is checking whether there is a return to compliance without the need for temporary water restrictions.

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 LTAEL. A further compliance action of 0.26 ML/share³ 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.

This year’s assessment results show the NSW Border Rivers Regulated River Water Source's return to compliance with LTAEL and, therefore, no further compliance action is required.

Supporting information

Results over Basin Plan assessment period

The results over the Basin Plan assessment period of 1895-2009 are presented in Table 4 and included for reference only. These results will be used to track significance of future model updates.

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 model	Current conditions model
General and high security	92.0	92.9
Supplementary access	69.1	71.2
Local Water Utility	0.6	0.6
Floodplain harvesting	38.7	43.1
Total modelled extractions	200.5	202.7

³ Reducing the available water determinations for Supplementary Access entitlements to 0.74 ML/share.