

# LTAEL compliance assessment for NSW Border Rivers Regulated River Water Source

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## Executive summary

This report describes the methods used to assess if extractions in the NSW Border Rivers Regulated River Water Source comply with the limit described in the Water Sharing Plan in the 2021/22 water year. The assessment has found that long term average annual extractions were not compliant in 2021/22. Compliance action taken by the NSW Government in 2021/22 and the commencement of floodplain harvesting licences in the 22/23 water year is expected to see extractions return to compliance. The NSW Border Rivers Regulated River Water Sharing Plan was amended on 29 July 2022 to include rules for floodplain harvesting and the licences became fully operational on 15 August 2022.

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## 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 (LTAEL). The LTAEL is sometimes referred to as the 'plan limit'.

The assessment is to be carried out annually by the Department of Planning and Environment - Water (DPE Water) following the end of each water year. LTAEL compliance requires two scenario models: one to represent the LTAEL 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 LTAEL, how the compliance assessment is to be completed, triggers for non-compliance and subsequent compliance action. The LTAEL 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 2021/22 water year. The assessment was based on best available models, using climate data from 1895 to 2022.

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## 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 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 LTAEL compliance purposes.

The scenarios are based on the floodplain harvesting scenario models which are documented and published [on our 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 LTAEL and current conditions as well as other scenarios required for the floodplain harvesting program.

Table 1: Model scenarios selected for NSW Border Rivers Regulated River Water Source for LTAEL assessment purposes

Scenario model	System file	Input data set
Cap conditions	BorderRivers_2022_10_06_CAP.rsproj	Default Input Set.NSWPlanLimit.CAP.
WSP conditions	BorderRivers_2022_10_06_WSP.rsproj	Default Input Set.QLD_ROP.ROP_On.NSW_BDL
Current conditions	BorderRivers_2022_10_06_CC.rsproj	Default Input Set.NSW_1516
Current conditions with floodplain harvesting licences	BorderRivers_2022_10_06_CC_FPHRules.rsproj	Default Input Set.NSW_1516.NSW_1516_fphscale

## LTAEL compliance results

### LTAEL assessment

The LTAEL 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 1895-2022 is used. The results of this analysis are reported in Table 2.

The LTAEL for 2021/22 water year for NSW Border Rivers Regulated River Water Source is 200.3<sup>1</sup> gegalitres per year (GL/y) based on the water sharing plan scenario model. There are also unmodelled extractions estimated at 8.0 GL/y based on estimates in the water sharing plan. These unmodelled estimates have not changed and are not included in LTAEL compliance assessment.

Table 2: Modelled long term average annual extractions (1895-2022) for Cap and WSP scenarios (GL/y)

Extraction category	Cap scenario model	WSP scenario model
General and high security	94.0	91.1
Supplementary access	75.9	67.9
Local Water Utility	0.6	0.6
Floodplain harvesting <sup>1</sup>	33.1	40.7
<b>Total modelled extractions</b>	<b>203.7</b>	<b>200.3</b>

<sup>1</sup> This estimate does not include rainfall runoff harvesting which is now exempt under the Water Management (General) Regulation 2018.

Extraction category	Cap scenario model	WSP scenario model
<b>Unmodelled estimates</b>		
Basic Rights	8.0	8.0

This water sharing plan will be revised to include 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.

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.

## Compliance assessment

Compared to the LTAEL 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 (1895-2022) for LTAEL and current conditions model scenarios (GL/y)

Extraction category	LTAEL scenario model	Current conditions scenario model
General and high security	91.1	91.6
Supplementary access	67.9	68.8
Local Water Utility	0.6	0.6
Floodplain harvesting <sup>1</sup>	40.7	45.8
<b>Total modelled extractions</b>	<b>200.3</b>	<b>206.8</b>

The key reason for differences between LTAEL and current scenario model results are:

- 13% growth in floodplain harvesting attributable to development of farm infrastructure such as additional pumping and on farm storage capacity. Detailed summary of changes to farm infrastructure can be found in published Border Rivers [scenario report](#).

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

- Current condition extractions exceed LTAEL by 3% or more.

The results show non-compliance as current total modelled extractions exceed LTAEL extractions by 3.2%. It should be noted, however, that:

- This assessment is for the 2021-22 water year which means that Floodplain Harvesting licences had not yet commenced.
- The assessment does not include temporary water restrictions which were in place in 2021-22. 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 for the 2021-22 water year by reducing the available water determinations for Supplementary Access entitlements in the Border Rivers Regulated Rivers Water Source to 0.75 megalitre per share (ML/share) to return extractions to LTAEL. A similar compliance of 0.74 ML/share was taken at the commencement of the 2022-23 water year as the rules in the Water Sharing Plan to allow for floodplain harvesting licensing had not commenced.

Floodplain harvesting licences have now been issued and given legal effect in the NSW Border Rivers Regulated River Water Source. Rules for floodplain harvesting licences are defined in amendments made to the NSW Border Rivers Regulated River Water Sharing Plan made on 29 July 2022. These licences have been fully operational since 15 August 2022 and are able to restrict water taken through floodplain harvesting and to return extractions to LTAEL. This enabled the lifting of the compliance action and returning the available water determination for Supplementary Access entitlements to 1.0 ML/share. Future LTAEL compliance assessments will examine this further.

The floodplain harvesting licensing and accounting framework provides for a partial exemption for runoff into tailwater drains. This exempt rainfall-runoff volume is excluded from the definition of floodplain harvesting and from the definition of LTAEL with the amended Water Sharing Plan.

Compared to LTAEL the modelled long term average annual extractions from the current conditions with FPH licences model scenario are reported in Table 4.

Table 4: Modelled long term average annual extractions (1895-2022) for LTAEL and current conditions model scenarios (GL/y)

Extraction category	LTAEL scenario model	Current conditions with FPH licences scenario model
General and high security	91.1	91.9
Supplementary access	67.9	70.0
Local Water Utility	0.6	0.6
Floodplain harvesting <sup>1</sup>	40.7	39.7
<b>Total modelled</b>	<b>200.3</b>	<b>202.2</b>

The results show extractions under current conditions with floodplain harvesting exceed LTAEL by 1.0%. The Border Rivers Regulated River Water Source is expected to be compliant under the rules of the Water Sharing Plan of 15 August 2022.

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 (Table 5) are included for reference only. These results will be used to track significance of future model updates.

Table 5: 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 model	Current with floodplain harvesting licences scenario model
General and high security	92.0	93.0
Supplementary access	69.1	71.2
Local Water Utility	0.6	0.6
Floodplain harvesting <sup>1</sup>	38.8	38.0
<b>Total modelled extractions</b>	<b>200.5</b>	<b>202.8</b>