

How the department has responded to the Natural Resources Commission Review Recommendations for the Water Sharing Plans for the Bega and Brogo Rivers and Murrah-Wallaga Areas

This document outlines how the department has responded to the independent review of the *Water Sharing Plan for the Bega and Brogo Rivers Area Regulated, Unregulated and Alluvial water sources 2011 and the Murrah-Wallaga Area Unregulated and Alluvial Water Sources 2010* under S43A of the *Water Management Act 2000*.

Water sharing plans are statutory instruments under the *Water Management Act 2000* (the WM Act). They prescribe how water is managed to support sustainable environmental, social, cultural and economic outcomes. They intend to provide certainty regarding rules for water sharing for water users over the life of the water sharing plan, which is typically 10 years, unless it is extended.

The water sharing plans for the Bega and Brogo Rivers Area Regulated, Unregulated and Alluvial Water Sources 2011 and the Murrah-Wallaga Area Unregulated and Alluvial Water Sources 2010 (the initial plans) were due to expire 30 June 2021.

The Natural Resources Commission (NRC) has a role under Section 43A of the WM Act to review water sharing plans within five years of expiry and report to the Minister on:

- the extent that the plan's water sharing provisions have materially contributed to the achievement of, or failure to achieve, environmental, social and economic outcomes
- if changes to plan provisions are warranted.

The [final review report](#) (PDF 3.2MB) is available on the NRC's website.

The NRC may recommend extending or replacing water sharing plans depending on its review findings. In this instance the NRC recommended the replacement of the initial plans. This replacement must be done by no later than 30 June 2023.

Tables 1 and 2 below outline the recommendation and suggested actions arising from the NRC review and the status of the response to these actions by the Department of Planning and Environment – Water (the department).

The Towamba, Bega and Brogo, and Murrah-Wallaga plans were reviewed in the same document. The recommendations and suggested actions in Table 1 and Table 2 are relevant to the Bega and Brogo Rivers Area and Murrah-Wallaga areas only.

Table 1. The department response to NRC review recommendations

	The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
1	<p>That the plan is:</p> <ul style="list-style-type: none"> a. extended for a further two years until 30 June 2023, to allow time to complete data collection, analysis and modelling. b. replaced by 1 July 2023 supported by the completion of the recommendations of the review and consideration of outcomes from the South Coast Regional Water Strategy and other regional planning initiatives where relevant. 	<p>Implemented</p> <p>The initial plans were extended for two years and a replacement plan is to commence in July 2023.</p> <p>The replacement plan has considered options being reviewed by the South Coast Regional Water Strategy, increased harvestable rights and a proposal for a circular economy for the region that uses on-farm storage as a pillar to its design.</p>

The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
<p>2</p> <p>By 1 July 2023, to ensure all extraction under the plans is managed to protect, preserve and maintain the water sources, aquifer integrity and dependant ecosystems, the department should:</p> <ol style="list-style-type: none"> a. establish and publish sustainable fixed, numeric long-term average-annual extraction limits (LTAAELs), ensuring they are based on best available information, including ecological requirements, an accurate estimate of basic landholder rights and climate change b. undertake regular LTAAEL compliance assessments, ensuring they are underpinned by clear, publicly available procedures requiring consideration of basic landholder rights estimates that are no more than five years old when assessing compliance with extraction limits. 	<p>Implemented</p> <p>The definition of the LTAAEL in the replacement plan has been reviewed. It has been divided into a standard LTAAEL and higher flow LTAAEL. The Standard LTAAEL is fixed at the volume at the commencement of the replacement plan for entitlement and first plan for basic landholder rights. There are very limited circumstances under which the standard LTAAEL can vary, and this is associated with licences being converted from the <i>Water Act 1912</i> to <i>Water Management Act 2000</i> licences or licences being cancelled for environmental purposes.</p> <p>The replacement plan also includes an amendment provision to move to sustainable extraction limits should they be developed in the term of the plan.</p> <p>Current licence entitlement in each water source has been updated. During this process some licences have been identified in the wrong water source. These errors will be corrected.</p> <p>The appropriateness of high flow conversion licences has been reviewed and changes made to ensure only water sources that can support high flow conversions allow them. This assessment included a review of instream and downstream ecological factors.</p> <p>The new water metering rules are being rolled out in the plan area by December 2024. This information can be used to estimate annual take. The replacement plan includes an estimate of harvestable rights take as at 2022 and includes an estimate of harvestable rights uptake at the commencement of the first plan in the LTAAEL.</p>

The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
<p>3</p> <p>To improve the effectiveness of water management during drought, the department should:</p> <ul style="list-style-type: none"> a. assess level of risk desired in balancing water security and availability for extraction for managing for drought response b. based on the outcomes of (a) review the AWD [available water determination] provisions for Brogo Dam, considering lessons from the recent drought, increased understanding of climate and river losses c. include provisions in the remade plan that identify clear triggers for adjusting access to water allocation during drought. 	<p>Closed</p> <p>The AWD for Brogo dam has been reviewed and no changes have been recommended. The replacement plan includes an improved minimum release rule from Brogo Dam, extending the period in which minimum releases are required to be made from when Brogo dam is at 50% storage to 20% storage.</p>

The Natural Resources Commission recommended (May 2021)		Action taken against NRC recommendation (November 2022)
<p>4</p> <p>By 1 July 2023, to reduce pressure on low flows and enhance economic opportunities, the department should:</p> <ol style="list-style-type: none"> a. investigate the feasibility of setting a high flow LTAAELs as a component of overall LTAAEL b. undertake further modelling to investigate the potential for increased access to high flow runoff via licensed farm dams to be used as tool to shift water users out of extraction of low flows within the Bega Brogo Plan area. Modelling or further analysis should consider the impact of: <ul style="list-style-type: none"> - excluding extraction at low flows under the assumption of users migrating to diversion of high flows - benefits and costs of implementation of low flow bypasses on dam infrastructure - proposed changes on end of system flows and flow requirements for the protection of environmental assets c. determine the metering and monitoring requirements that would be needed to implement high flow access options and assess their feasibility. 	<p>Implemented</p> <p>The definition of LTAAEL in the plan has been reviewed (see 2).</p> <p>Based on the analysis of updated flow information, the replacement plan establishes a suite of complimentary rules (access, trade and high flow conversion rules) to encourage the transition from a reliance on low flows to off-river storage. Increased harvestable rights may also result in a decreased reliance on low flows.</p> <p>Addressing barriers to the dam infrastructure is a key action of the South Coast Regional Water Strategy.</p> <p>The new water metering rules are being rolled out in the plan area with a commencement date of December 2024.</p>	

The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
<p>5</p> <p>By 1 July 2023, the department should complete their review of trade for coastal catchments and review and address trade barriers for these plans, including but not limited to options to combine water sources and increase flexibility to trade into high flows. Any changes to trade rules should maintain protections for high-value aquatic ecosystems and cultural values, including considering latest HEVAE mapping and risk assessments.</p>	<p>Implemented</p> <p>Trade opportunities have been reviewed in the plan. Generally, trade is allowed between hydrologically connected water sources where hydrologic stress is low or medium at low flows. This provided no opportunity for improving trade opportunities in the plan area.</p> <p>Improved trade opportunities in the plan include:</p> <ul style="list-style-type: none"> a. into higher flow classes has been included, where the Risk Assessment identified a low risk to sufficient water for ecosystem health at high flows. Ecological protection was provided by placing a limit based on allowing no more than 20% of that flow class to be accessed b. into low flows has been included, within two water sources which form a geographic catchment area. A Management Zone was created to protect identified high value aquatic ecosystems.

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<p>6</p> <p>To ensure estuary condition is maintained in the plan areas, the department should:</p> <ul style="list-style-type: none"> a. by 1 July 2023, establish clear objectives and estuarine flow requirements for estuaries across the plan areas b. by 1 July 2023, include provisions to achieve the estuarine flow requirements defined in (a), including clear agency responsibilities c. use data from the DPE-Environment and Heritage estuarine monitoring program and NSW Food Authority to monitor estuarine condition and identify changes to estuarine condition that may be impacted by the plans. Plan provisions should be adjusted as required to ensure that there is sufficient planned environmental water to respond to the needs of these estuaries. 	<p>Implemented</p> <p>Decisions around flow classes and access rules consider the instream, downstream and GDE values and impact on these values from extraction. The risk assessment considers the value of each estuary and evaluates the risks of extraction impacting on the ecological values of the estuaries.</p> <p>Water sharing rule decisions consider the risks to estuaries identified in the risk assessment.</p>	

The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
<p>7</p> <p>By 1 July 2023, to ensure threatened species and endangered ecological communities are protected, the department should:</p> <ul style="list-style-type: none"> a. finalise work to establish environmental flow requirements for coastal aquatic species and ensure that plan rules adequately protect them b. amend plan rules (for example, cease to pump rules and TDELs) where evidence indicates unacceptable impact on low flows c. implement monitoring within the plan areas at key strategic locations where significant extraction overlays high environmental values d. complete HEVAE mapping so that there is an updated assessment of strategic monitoring locations e. update any necessary plan provisions to account for protection of threatened species where updated HEVAE assessment and extraction pressure information identifies that current rules are insufficient f. ensure alignment with environmental objectives outlined in relevant NSW Government strategic plans including the Batemans Marine Park Operational Plan. 	<ul style="list-style-type: none"> a. In progress – on track. eDNA sampling on the south coast coastal areas continues as a component of water sharing plan monitoring, evaluation and reporting (MER) programs. This work will assist development of Environmental Water requirements (EWRs) requirements for fish, frogs and vegetation. b. Complete. Plan rules have been amended based on the environmental water requirements of key environmental values using the latest available science. c. In progress – on track. The department Environmental Outcomes and Research plan incorporates ongoing MER activities in this area. d. Complete. HEVAE mapping completed for Bega River Area. e. Complete. HEVAE results guided area of plan where changed rules were required. f. Complete: Common objectives.

The Natural Resources Commission recommended (May 2021)		Action taken against NRC recommendation (November 2022)
<p>8</p>	<p>By 1 July 2023, to improve the management of connectivity to protect water sources and dependent ecosystems, the department should:</p> <ul style="list-style-type: none"> a) use best available evidence and undertake additional required studies to identify highly connected systems, including the Mid Bega River Sands b) revise access rules accordingly to include new bore licences beyond 40 metres from the high bank of a river for areas that are identified in (a) as being highly connected and stage access rules for existing bores c) determine the level of connectivity between the aquifers and rivers in the Plans and Coastal Sands aquifers and, if highly connected, provide protection d) include comprehensive definitions for surface-groundwater connectivity in the plan dictionaries. 	<p>Closed</p> <p>The department takes a risk-based approach to research and water management. No further action proposed.</p>

The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
<p>9</p> <p>By 1 July 2023, to improve the management of GDEs, the department should:</p> <ul style="list-style-type: none"> a) map and ground-truth the presence and extent of GDEs, including estuarine and coastal ecosystems and define their groundwater requirements b) clearly define groundwater terms and their relevance to the plans, including GDE priority and types (including high-priority GDEs) c) review the GDEs in the South Coast Groundwater Plan and where appropriate recognise them in the South Coast replacement plans d) review setback distances for work near identified GDEs and standardise them based on the NSW Aquifer Interference Policy 2012. 	<p>Implemented</p> <p>The replacement plan uses the most recent GDE identification and mapping, which uses the best available information and <u>method</u>. The department has an identification process that uses the most up to date information and assigns an ecological value to each GDE identified. The replacement plan includes provisions to be updated with new information if it becomes available.</p> <p>The department is working on a process to confirm the presence of GDEs if there is a request to build infrastructure within restricted distances.</p> <p>The departments GDE policy protects high-priority GDEs. Moderate and low-priority GDEs were not considered in the replacement plan.</p> <p>Set back distance rules for new works near GDEs were reviewed and updated to align with standard hydrogeologically appropriate distance rules.</p> <p>Groundwater terms used in the plan are defined in the plan.</p> <p>The Bega River Area Coastal Floodplain Alluvial Groundwater Water Source has been included in the replacement plan to manage alluvial groundwater below the mangrove limit.</p>

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<p>10</p>	<p>To ensure environmental flows and drought reserves from Cochrane Dam deliver environmental and social outcomes downstream, the department should:</p> <ol style="list-style-type: none"> a. use best available information to investigate the need and options to increase the Cochrane Dam drought reserve, including consideration of: <ul style="list-style-type: none"> - the adequacy of the drought reserve volume for a range of climatic scenarios - revising the definition and triggers (for storing and release) of the drought reserve - lessons from the recent drought (including system losses) and up to date data on environmental and critical human needs b. review daily flow releases from Cochrane Dam (including current timing and release volumes) based on a better understanding of environmental needs and the latest flow data. c. by 1 July 2023, as part of the Bega Brogo plan replacement: <ul style="list-style-type: none"> - include any necessary changes to provisions based on (a) and (b) - formalise the flow targets at Kanoona currently outlined in the Background Document but not included as a provision in the plan - ensure roles and responsibilities for reserve and releases are clearly stated in the plan. 	<p>Implemented</p> <p>Review of the drought reserve has resulted in only minor changes being made to the water sharing plan rules:</p> <ul style="list-style-type: none"> - triggers have been updated in line with latest drought declarations - roles and responsibilities are more clearly articulated and updated. <p>Management of drought reserve releases will be covered in an implementation guide.</p>

The Natural Resources Commission recommended (May 2021)		Action taken against NRC recommendation (November 2022)
11	<p>By 1 July 2023, to assist the environment in recovering from bushfires and minimise future risks, the department should:</p> <ul style="list-style-type: none"> a) collaborate with DPI-Fisheries and DPE-EES [now Environment and Heritage Group] to better understand the impacts of bushfires on aquatic species and determine any specific flow requirements that may aid recovery (e.g. cues for fish spawning) b) include a provision that can be triggered to support the protection of particular flow events to aid the post-fire recovery of aquatic ecosystems. 	<p>Implemented</p> <p>The department’s Environment and Heritage Group has funding and is conducting research on bushfire impacts on water quality in coastal water sources, particularly on the south coast. In addition, UNSW is conducting detailed research on key estuaries that were burnt to monitor water quality recovery. The department will work collaboratively and provide data and technical expertise to progress.</p>

<p>12</p>	<p>The department should continue to work with Bega Valley Shire Council as part of the regional water strategy process and plan remakes to improve town water supply systems and access. This should include:</p> <ul style="list-style-type: none"> a) revisiting the assignment of total daily extraction limits to ensure that they are sustainable and don't unnecessarily constrain town water supply needs on a daily basis or compromise environmental values or other water users (notably domestic and stock use) b) consideration of an emergency management provision that, when triggered, allows the local water utility to temporarily draw on individual water sources in emergency situations c) investigating revision of Plan provisions that provide Bega Valley Shire Council with the flexibility to optimise its water supply systems to meet peak daily demand and critical human water needs in emergency situations d) ensuring that plan provisions are based on best available information including: <ul style="list-style-type: none"> - up-to-date flow data - Bega groundwater modelling, including scenarios around increasing individual and total daily extraction limits (TDELs) and where possible, using these models to undertake more detailed assessment of the risks of saline intrusion of water sources used for groundwater - latest climate data, including stochastic modelling of climate change undertaken as part of the 	<p>Implemented</p> <p>Consultation with Bega Valley Shire Council occurred during the replacement process. TDELs were reviewed during development of the replacement plan. TDELs relating to domestic and stock access licences have been removed. TDELs relating to Bega Valley Shire Council's extraction have been retained and updated as required. Updated flow data was used during plan development.</p>
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The Natural Resources Commission recommended (May 2021)		Action taken against NRC recommendation (November 2022)
	South Coast Regional Water Strategy	
13	The department should amend all Plans to acknowledge the registered native title claim for the South Coast People. Sufficient additional time should be allowed to undertake detailed engagement with Traditional Owners on options to support these values and uses (including fishing) and make any final amendments.	Implemented No native title determinations exist in the Bega River Area. Where native title determinations are granted the plan will be amended as soon as practical. Amendments commonly take approximately six months to process as it is requiring sign off by multiple Ministers.

<p>14</p>	<p>In order to better achieve cultural outcomes, by 1 July 2023, the department should:</p> <ul style="list-style-type: none"> a) identify and protect known high value cultural sites in the replacement plans b) undertake further work with a range of Aboriginal knowledge holders, including Aboriginal women, to better understand water values and uses (including fishing), identify and protect them, and better support water access and use c) ensure that where additional allocations become available within the south coast Plans the Aboriginal water needs including any cultural water allocations are assessed as a priority d) undertake state-wide actions identified in previous Commission water sharing plan reviews to improve consideration and respect for native title and Aboriginal values in plans and ensure these are included in the NSW Aboriginal Water Strategy. 	<p>In progress – on track</p> <p>Aboriginal consultation was conducted in June 2021 in conjunction with Regional Water Strategies. This consultation intended to inform Aboriginal people in the Towamba, Bega-Brogo and Murrah-Wallaga area about water sharing plans. The consultation also sought to identify ways the plan could protect or enhance values held by Aboriginal groups in the plan area.</p> <p>The department will work toward priorities in the State Water Strategy. Priority 2 of the State Water Strategy is the Recognise First Nations/Aboriginal People’s rights and values and increase access to and ownership of water for cultural and economic purposes.</p> <p>The NSW Government recognises First Nations/Aboriginal People’s rights to water and our aim is to secure a future where water for First Nations/Aboriginal People is embedded within the water planning and management regime in NSW, delivering cultural, spiritual, social, environmental and economic benefit to communities.</p> <p>Actions under the State Water Strategy include:</p> <ul style="list-style-type: none"> - Strengthening the role of First Nations/Aboriginal People in water planning and management - Developing a state-wide Aboriginal water strategy - Providing for Aboriginal ownership of and access to water for cultural and economic purposes - Working with First Nations/Aboriginal People to improve shared water knowledge - Working with First Nations/Aboriginal People to
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The Natural Resources Commission recommended (May 2021)	Action taken against NRC recommendation (November 2022)
	<p style="text-align: center;">maintain and preserve water-related cultural sites and landscapes</p> <p>The department is committed to providing greater opportunities for Aboriginal water management and participation in water sharing. A new Aboriginal water directorate has been established within the department and work is progressing on an Aboriginal Water Strategy, which will identify the ways in which we can achieve the priorities under the State Water Strategy.</p>

The Natural Resources Commission recommended (May 2021)		Action taken against NRC recommendation (November 2022)
15	<p>Monitoring, evaluation and reporting</p> <p>By 1 July 2023, to improve MER and plan implementation continue to implement state-wide recommendations and suggested actions made in previous Commission water sharing plan reviews (see for reference R 18 and SA G-K in the Commission’s Review of the water sharing plans for the Richmond and Tweed unregulated and alluvial water sources – Final Report).</p>	<p>In progress – on track</p> <p>The department is developing NSW water sharing plan evaluation framework and program. This will clarify the roles and responsibilities, reporting requirements, governance arrangements and timeframes associated with the program.</p> <p>Progress continues on the transition of the department’s Evaluation Framework to program implementation. Actions to date include:</p> <ul style="list-style-type: none"> - Established Water Sharing Plan Evaluation Project Advisory Group - Finalisation of rankings of 59 plans to prioritise evaluation effort - Delivered social and economic outcome methodology and application to Macquarie Cudgegong Regulated River and Clarence Unregulated and Alluvial plans - Procurement of economic and socio-economic data customised by plan area - Undertook first ever collection of primary social data to understand plan social outcomes - Commenced development of environmental outcome methodology. - Commenced development of process evaluation methodology

Table 2. Department response to NRC Review suggested actions

NRC suggested actions for the department to support the replacement Plan (May 2021)		Action taken against NRC suggested actions (November 2022)
A	NSW agencies continue to work with landholders to support riparian management throughout the catchments.	<p>No action required</p> <p>The department supports ongoing consideration of integrated catchment management approaches where possible. Noting that water sharing plans are developed in accordance with the requirements of the <i>Water Management Act 2000</i>.</p>
B	The department should consider simplifying the process for developing and implementing Integrated Water Cycle Management Strategies and assist with upskilling local water utilities in developing and implementing strategies.	<p>No action required</p> <p>These issues fall beyond the scope of the water sharing plan replacement but are being addressed through the Town Water Risk Reduction Program.</p>
C	The department work with other agencies, including DPE-Fisheries and DPE-Environment and Heritage to implement MER programs to examine bushfire impacts and potential implications for plan rules to aid recovery of aquatic ecosystems.	<p>Implemented</p> <p>Response as per Recommendation 11.</p>