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Department of Regional Development,
Manufacturing and Water



Minister's Performance Assessment Report

Water Plan (Condamine and Balonne) 2019

February 2024

Acknowledgement of Country

The Department of Regional Development, Manufacturing and Water respectfully acknowledges the Traditional Custodians of Country. We recognise the ongoing spiritual and cultural connection Aboriginal peoples and Torres Strait Islander peoples have with land, water, sea and sky. We pay our deep respects to their Elders past and present, support future leaders, and acknowledge First Nations peoples' right to self-determination.

This publication has been compiled by South Region, Water Planning and Science, Water Resource Management, Department of Regional Development, Manufacturing and Water.

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Minister's foreword

I am pleased to publish this report which provides an overview of the implementation of the [Water Plan \(Condamine and Balonne\) 2019](#) (the water plan) over the past five years and summarises the findings of the assessments undertaken since the water plan commenced in 2019.

The water plan, developed under the Queensland *Water Act 2000*, is a key element of the Condamine-Balonne Water Resource Plan. Water resource plans are a requirement of the Murray-Darling Basin Plan 2012 (Basin Plan). The Condamine-Balonne Water Resource Plan was accredited by the Australian Government as being consistent with the Basin Plan on 21 September 2019. Queensland remains committed to implementing the Basin Plan and welcomes the opportunity to work with other jurisdictions to sustainably manage the water resources of the basin into the future.

This report confirms the water plan continues to advance sustainable water management in the Condamine and Balonne catchment and that the water plan's implementation has been effective in achieving the majority of its 23 general, economic, social, cultural and environmental outcomes. This includes consistency with the Basin Plan through accreditation of the water resource plan package, meeting outcomes to safeguard existing water users and support the water market operation. The water plan is effectively maintaining water flows to support river channels and river forming processes, native fish and water quality. These outcomes were aided by significant monitoring and research. To develop and implement the water plan, extensive engagement with Aboriginal peoples and Torres Strait Islander peoples in the plan area led to improved understanding of cultural values and uses of water.

The Condamine and Balonne catchment is a highly developed catchment with limits on increases in overall water take from the catchment. The potential risks to water users including the environment were assessed as low for most water plan outcomes.

Emerging risks beyond the next five-year review cycle have also been identified. These matters will be considered as part of the next water plan review. The water plan expires in 2029 and it must be replaced prior to expiry. The learnings gained from implementing the existing plan will be used to make improvements to the new water plan. As part of an adaptive management cycle the new water plan will be based on new scientific information from socioeconomic, cultural, environmental and hydrologic assessments and stakeholder consultation.

In the meantime, my department will continue to implement the water plan. Ongoing monitoring will continue, enabling any new emerging risks or existing risks that are increasing in threat level to be identified to ensure the water plan continues to sustainably manage the water resources in the [Condamine and Balonne water plan area](#).

I encourage anyone with an interest in water resource management to read this report.

Hon. Glenn Butcher MP

Minister for Regional Development and Manufacturing
Minister for Water

Executive summary

Under the [Water Act 2000 \(s49\)](#) (Water Act), a report on each water plan must be prepared at least every five years to assess the effectiveness of the water plan and its implementation. The [Water Regulation 2016](#) (Water Regulation) states the matters that must be addressed in this report.

This report provides an assessment of the performance of the Water Plan (Condamine and Balonne) 2019 (the water plan). A summary of the assessment is provided in Table 1.

The assessment showed that the water plan continued to advance the sustainable management of water resources and that the implementation of the water plan had been effective in achieving most of the plan's outcomes. 17 of 23 outcomes are assessed as low risk and fully achieved. Part of one environmental outcome is assessed as medium risk with a high-risk area and five other outcomes were assessed as medium risk with three partially achieved and two achieved, these are:

- Economic outcome '19(1)(g) To make water to which this plan applies available to support the economic and social aspirations of Aboriginal people', was assessed as a medium risk and partially achieved. 1950 megalitres of groundwater in the Queensland Murray-Darling Basin deep and the sediments above the Great Artesian Basin underground water units, has been reserved in the water plan area for the purpose of helping an Aboriginal community achieve its economic and social aspirations. The processes for releasing unallocated water are stated in the Water Regulation. To date no requests to access groundwater from this reserve have been received and no unallocated water from this reserve has been released. The Department of Regional Development, Manufacturing and Water (the department) will continue to engage with Aboriginal peoples and Torres Strait Islander peoples in the plan area to support the implementation of this outcome.
- Part i of environmental outcome '22(1)(b) To maintain, and if possible, improve flows of water to which this plan applies that support waterholes as refugia', was assessed as medium risk and partially achieved in the upper and mid Condamine catchment with the Lower Balonne catchment assessed as a high risk. The water plan is still being implemented and monitored. Improvements have been noted since the previous 2018 risk assessment. The ongoing risk to waterholes is partly due to factors outside the scope of the water plan such as sedimentation and infilling of waterholes largely due to landscape uses and practices. Further monitoring and research will be undertaken during the life of the water plan to further understand waterholes and their flow requirements.
- Environmental outcome '22(1)(c) To maintain and, if possible, improve flows of water to which this plan applies that support bird breeding at Narran Lakes', was assessed as a medium risk and achieved. The water plan and supporting statutory instruments contain strategies and rules including flow event management rules to meet this outcome however for this outcome to be considered low risk further monitoring and research will be undertaken to better understand how flows can support bird breeding at Narran Lakes including the benefit provided by Commonwealth Held Environmental Water by leaving water in-stream or through event-based mechanisms.
- Environmental outcome '22(1)(d) To maintain and, if possible, improve flows of water to which this plan applies that support floodplain ecosystems within and downstream of the plan area, including the Balonne River floodplain; the Culgoa River floodplain; Narran Lakes', was assessed as medium risk and achieved. The water plan and supporting statutory instruments contains strategies and rules including flow event management rules to meet this outcome however for this outcome to be considered low risk further monitoring and research will be undertaken to better understand floodplains and flow requirements.
- Environmental outcome '(22)(1)(h) To maintain an underground water regime that supports groundwater dependent ecosystems to which this plan applies', was assessed as a medium risk and partially achieved. The water plan and supporting instruments include strategies and rules that seek to maintain the groundwater regime. However, there remains a high level of uncertainty about groundwater dependent ecosystems including springs in the water plan area. Further monitoring and research in the lead up to water plan review and replacement, including updated spring

mapping and reporting of ecological status and values of springs, will support development of policies to reduce this risk.

- General outcome '(18)(d) Achieve a balance between the social, economic, cultural and environmental outcomes', was rated medium risk and partially achieved. The water plan is still being implemented and science gathered. Medium risk ratings and partial achievement for other outcomes indicate that the balance between social, economic, cultural and environmental outcomes is not yet fully realised.

More information and detail about each risk and associated strategies and rules are provided in Section 8 of this report.

In addition, the assessment identified emerging issues and matters for future consideration to ensure water management arrangements are fit for purpose beyond the next five-yearly review cycle. The main issue identified as potentially emerging in the near future, or beyond the next five-year review cycle, is climate change. Although climate change is a contemporary risk, there is significant uncertainty around the impact climate change will have on the water plan area. Some of the key reasons climate change was considered a risk, include:

- Rainfall variability – the projected increase in summer months and decrease in winter months, with no projected annual change, leads to uncertainty around the impact of rainfall variability on streamflow.
- The extent to which increased evapotranspiration and temperature will impact water availability and groundwater recharge.
- The potential impact on the water market.







Another emerging issue in the plan area is increased take of groundwater for basic rights in peri urban areas not connected to reticulated town water supplies, particularly surrounding large urban areas such as Toowoomba, Warwick and Dalby.

An assessment of the water plan outcomes is provided in Table 1. This shows the water plan remains fit for purpose and that the department will continue its implementation. Water plan performance will be assessed again as part of the review and replacement of the water plan. The water plan expires in 2029. The water plan is a key component of the Condamine-Balonne Water Resource Plan which has been accredited as being consistent with the Murray-Darling Basin Plan 2012 (Basin Plan) by the Australian Government. The Murray-Darling Basin Authority will review the Basin Plan in 2026. The replacement water plan will need to align with the Basin Plan.

Table 1: Summary of the performance assessment of the Water Plan (Condamine and Balonne) 2019

Matters to be addressed	Comment	Section of the report	Status
Effectiveness of the plan in advancing the sustainable management of Queensland's water resources	Overall, this assessment indicates that the water plan is achieving the purposes of the Water Act.	Section 3	On track
Effectiveness of the implementation of the plan in achieving the plan outcomes	The water plan continues to provide for 23 economic, social, cultural, and environmental outcomes. However, there are some matters that need to be considered further in order to fully achieve all outcomes. Part of one outcome was considered medium risk with a high risk area and five other outcomes were considered medium risk and partially or fully achieved.	Section 4	Some issues
Summary of water usage and entitlements including those taken or interfered with under statutory authorisations	Water users have access to water which is taken under a water entitlement or under a statutory authorisation through the Water Act (e.g. low risk or prescribed activities), provided that the take complies with water plan requirements.	Section 5	On track
Summary of research and monitoring findings	The department conducts several monitoring programs across the catchment (in particular, the Environmental Flows Assessment Program). Ecological assets (species and habitat) are the best indicators of water plan success.	Sections 6	On track
Summary of amendments to the plan since its commencement	Only one minor amendment was made to the water plan in September 2023 to reflect an amendment to the <i>Water Act 2000</i> .	Section 7	On track
Summary of identified risks and emerging issues to plan outcomes	A risk assessment conducted in September 2023 found that generally water plan outcomes are being achieved. However, part of one outcome was considered medium risk with a high risk area and five other outcomes considered medium risk and partially or fully achieved. Emerging issues identified in the plan area include climate change and increased take of groundwater in periurban areas not connected to reticulated town water supply around major urban centres such as Toowoomba, Warwick and Dalby. These will be considered in the review and replacement of the water plan.	Sections 8 & 9	Some issues
Summary of non-compliances under a water entitlement or other authorisation in the plan area	The department seeks to ensure all entities are operating within the rules of the water plan. Education and advice are the first response with compliance action escalated when necessary. As of January 2024 there have been 1432 cases of non-compliance related to water entitlements or other matters since the water plan commenced in 2019.	Section 10	On track
Way forward for the water plan	While overall risks to water users and the environment remain low, this assessment of the water plan has highlighted some current and emerging issues with the plan, and the department will work to address these issues over the next five years.	Section 11	On track

Colour legend:

	Completed		On track		Some issues
	Some major issues		Not achieved		Insufficient information available

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Appendix D Overview of non-compliance associated with the water plan

Appendices

Appendix A Assessment of water plan outcomes

Appendix B Water trade data

**Appendix C Water taken or interfered with under statutory
authorisations**

**Appendix D Overview of non-compliance associated with the
water plan**

1. Introduction and purpose of the report

Section [49 of the Water Act 2000](#) (Water Act) requires the Minister to prepare reports for each water plan. This is to ensure the implementation and effectiveness of each water plan is regularly reviewed and evaluated as part of an adaptive management cycle of planning, implementation, monitoring and reporting. The Water Regulation 2016 (Water Regulation) requires these reports to be prepared at five-year intervals and address a range of matters relevant to the ongoing sustainable management of Queensland's water resources including:

- whether or not the water plan is advancing the sustainable management of Queensland's water resources
- an assessment of the effectiveness of the implementation of the water plan in achieving the plan's outcomes
- information on water use and authorisations in the plan area, including:
 - water entitlements
 - water taken or interfered with under statutory authorisations
- a summary of the findings of research and monitoring for the water plan
- any identified risks to the water plan's outcomes
- what amendments, if any, have been made to the water plan since its commencement
- any non-compliance under a water entitlement or other authorisation in the water plan area.

This report provides an overview of the above matters for the Water Plan (Condamine and Balonne) 2019 (the water plan) since its commencement on 22 February 2019 and its implementation through its statutory instruments such as the Condamine and Balonne Water Management Protocol.

A range of data and information from various sources was collected, interrogated and assessed to support the findings of this report including:

- Summary of monitoring and assessment of environmental management rules
- Socio-economic analysis and
- Assessment of current and potential future climate change in the Condamine and Balonne catchment.

A risk assessment was completed in September 2023, which identified potential risks to achieving the water plan's outcomes in full, as well as potential risks that could emerge within the current life of the plan. The risk assessment approach used was consistent with the [Risk Management Guideline \(ISO 31000:2018\)](#). This approach ensures a consistent, repeatable, and defensible consideration of risks.

2. Water plan area

The water plan area covers the Queensland portion of the Condamine and Balonne catchment, covering approximately 88,563 square kilometres of southern Queensland. The catchment stretches from the headwaters of the Condamine River near Killarney through the Darling Downs and into the floodplains of the Lower Balonne, see Figure 1. Urban centres located within the catchment include Toowoomba, Warwick, Dalby, Chinchilla, Roma and St George.

The water plan area experiences a semi-arid climate where droughts and floods are characteristic. Rainfall occurs mainly in the summer months. The annual average rainfall is variable ranging from 1,200mm on the eastern ranges to 400mm in the west. Evaporation rates in the south-west of the catchment are very high. River systems are ephemeral, which means they only flow for brief periods

throughout the year. This is due to the semi-arid climate where river flows are driven by the natural drought and flood regime.

The Condamine and Balonne catchment is dominated by semi-arid plains, with approximately two-thirds of the region being relatively flat. Tablelands and sloping topography typify the eastern section along the Great Dividing Range and steep gorges are located in the north-west, forming the headwaters of the Maranoa River in the Carnarvon Range. Elevation of the catchment varies from ~1,400 metres above sea level in the east to ~100 to ~200 metres above sea level in the south-west.

The Condamine River is the major drainage system of the southern Queensland area, extending from its headwaters southeast of Warwick to the convergence with Dogwood Creek north of Glenmorgan. The Condamine flows through the Darling Downs region via Dalby, Chinchilla and Surat, where it becomes the Balonne River. The Balonne flows southwest to St George and then splits into a series of river channels including the Culgoa, Balonne-Minor, Ballandool, Bokhara and Narran Rivers and the Briarie Creek. The rivers of the distributary river system ultimately flow into the Barwon River, which in turn flows into the Darling River. The Maranoa River extends south from its headwaters of the Great Dividing Range at the north-western part of the Condamine and Balonne catchment through to Mitchell and down to Beardmore Dam where it joins the Balonne River.

The water plan manages supplemented and un-supplemented water, including water in a watercourse, lake or spring, overland flow water and groundwater. Within the water plan area, there are five surface water management areas:

- Upper Condamine
- Condamine and Balonne
- Lower Balonne
- Condamine and Balonne Tributaries
- Gowrie and Oakey Creek.

Supplemented water is managed by Sunwater, which operates four water supply schemes:

- Upper Condamine – irrigation water and urban water for Warwick and Cecil Plains from Leslie Dam
- Chinchilla Weir – irrigation water and town water supply for Chinchilla
- Maranoa River – irrigation water from the Neil Turner Weir
- St George – irrigation water and town water supply for St George from Beardmore Dam.

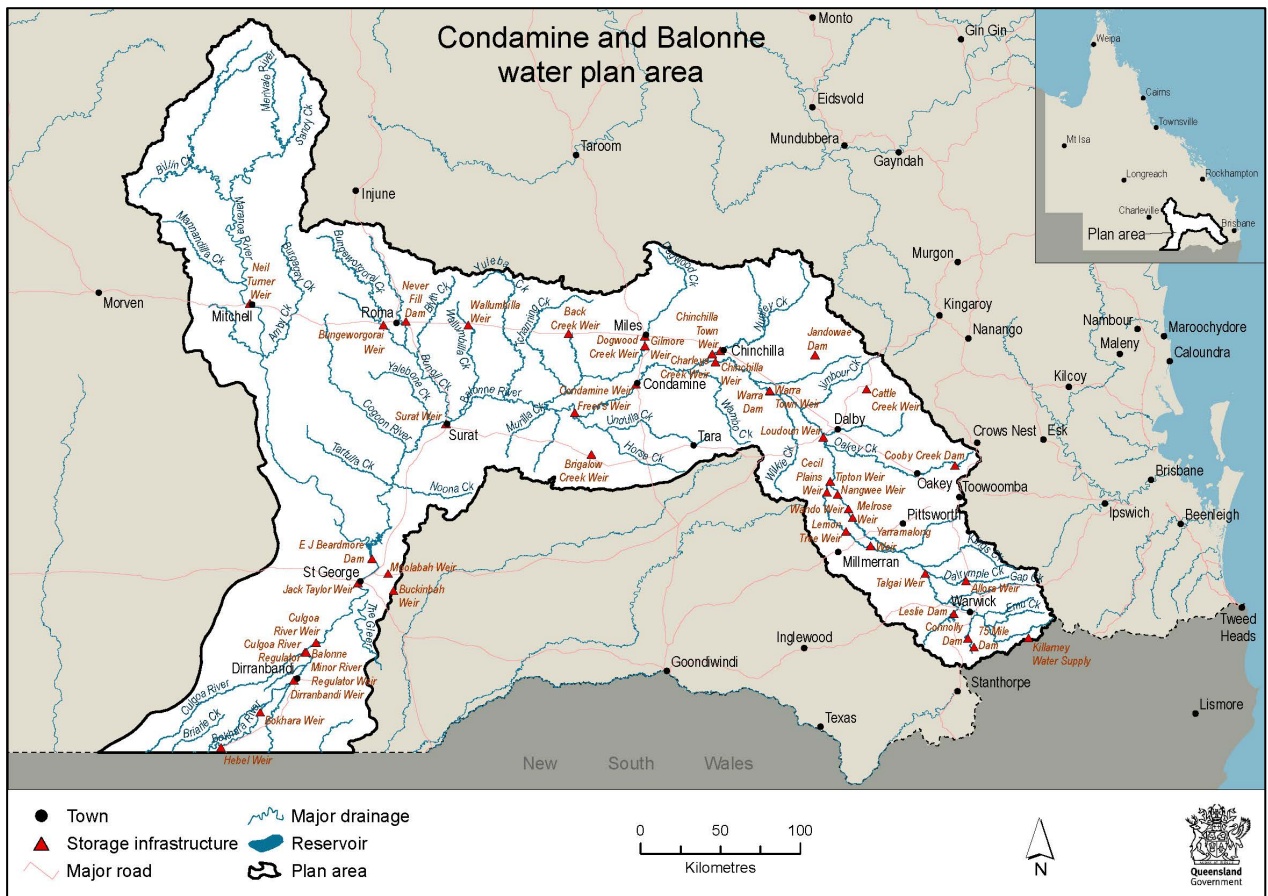
Groundwater in the water plan area is predominantly found in alluvial aquifers associated with the major rivers and creeks as well as basalt and fractured rock. The water plan contains numerous underground water units and underground water sub-units including:

- St George Alluvium (shallow)
- St George Alluvium (deep)
- Sediments above the Great Artesian Basin
- Upper Condamine Alluvium (Central Condamine Alluvium)
- Upper Condamine Alluvium (tributaries)
- Upper Condamine Basalts
- Condamine fractured rock
- Queensland Murray-Darling Basin deep.

The population of the water plan area in 2021 was an estimated 206,500 people. This population is dominated by the Toowoomba local government area which also accounts for most of the population growth. Population growth in the remainder of the water plan area is in slight decline or remaining stable.

Land use within the water plan area is dominated by the grazing industry (72%), followed by non-irrigated cropping (15%) and irrigated cropping (3%).

Figure 1: Map of the Condamine and Balonne water plan area



The Condamine and Balonne water plan area is one of the largest catchments in the Murray-Darling Basin. The [Basin Plan](#) is an adaptive management framework to provide a coordinated approach to managing water resources across the jurisdictions in the Murray-Darling Basin. The Condamine and Balonne water plan is a key component of the Condamine-Balonne Water Resource Plan which is a requirement of the Basin Plan.

3. How the water plan advances the sustainable management of Queensland's water resources

The water plan advances the sustainable management of Queensland's water resources by establishing a framework for the allocation and management of water resources in the plan area for economic, physical and social wellbeing of the people of Queensland. The water plan provides outcomes and strategies to advance the sustainable management of ecosystems, water quality, water-dependent ecological processes and biological diversity associated with watercourses, lakes, springs, aquifers and other natural water systems. The allocation and management of water within the plan area must be in accordance the outcomes, measures, objectives and strategies of the water plan and with the rules in the associated statutory instruments such as the water management protocol, operations manual and resource operations licences (ROLs). For a more detailed summary of the linkages between water plan outcomes, strategies and rules see Appendix A.

3.1 Ecologically sustainable development

The water plan was developed with the support of hydrologic science and model with long-term simulation period to better understand patterns of water use and availability for both consumptive (e.g. agricultural water uses) and non-consumptive (e.g. environmental) purposes. The hydrological model is also used as a tool to assess the consistency of future water management decisions made under the water plan to ensure its objectives and outcomes are met.

The plan is a 'no growth' plan, so water resources are protected at 2000 levels of take. This protects the share of water for the environment and existing users.

Targeted monitoring and research have improved our understanding and management of environmental flow requirements for aquatic ecosystems, particularly the Environmental Flows Assessment Program.

Ecological outcomes in the water plan identify key environmental assets and functions. The outcomes seek to minimise changes to the natural variability of flows of water that support aquatic ecosystems. They also seek to maintain flows to support key ecological assets, such as waterholes, river channels, migratory fish, floodplain ecosystems and lakes in the water plan area.

The water plan establishes environmental flow objectives for performance indicators which protect the key ecological assets and functions. Decisions made under the water plan must be consistent with these objectives.

The rules in the water management protocol, operations manuals, and ROLs implement the strategies to protect environmental flows and maintain the ecological integrity of the river systems.

3.2 Allocation and use of water resources for economic, physical, and social wellbeing of the people of Queensland

The water plan has outcomes that provide a framework for the allocation and use of water resources in the plan area for the economic, physical and social well-being of the people of Queensland.

Implementation of the water plan's strategies have provided certainty for water users, including improved specification of entitlements and water markets as well as defined volumes of unallocated groundwater which can be made available for future development. The catchment is highly developed and is required to comply with sustainable diversion limits established under the Basin Plan.

Unallocated water volumes have been reserved from three underground water units. There are two purposes prescribed under the water management protocol for the unallocated water. Unallocated water for 'any' purpose provides certainty for water users to promote economic development while also supporting population growth, as well as aesthetic and recreational values. Unallocated water is also

available for the purpose of 'helping an Aboriginal community achieve its economic and social aspirations'.

The water plan establishes a framework for water trading, which provides access to water through the permanent trade or seasonal water assignment of water allocations and certain water licences. Section 5.4 of this report provides further information on the water market, including the number of permanent trades and seasonal water assignments that have occurred since the commencement of this water plan in 2019.

Water can also be accessed for stock and domestic purposes or for prescribed activities, subject to limitations outlined in the Water Act, the Water Regulation or the water plan.

3.3 Sustain the health of ecosystems

The water plan contains ecological outcomes for catchments in the plan area. These outcomes aim to support the ongoing protection of ecological assets and their habitats.

Ecological outcomes are pursued through the implementation of strategies relating to the environmental flow objectives. Decisions made under the water plan must not increase the volume of water taken in the plan area and must be consistent with environmental flow objectives for the performance indicators that protect key environment assets and functions.

Resource Operations Licence holders are required, under conditions on their licences, to comply with environmental management requirements. These requirements strive to achieve a balance between consumptive water availability and the needs of the environment.

Section 6 of this report provides a summary of research and monitoring findings for the water plan area. This includes ecological monitoring and a summary of environmental management rules, supported by reports such as Summary of Environmental Monitoring Water Plan (Condamine and Balonne) 2019 and Assessment of Environmental Management Rules Water Plan (Condamine and Balonne) 2019.

3.4 Recognise the interests of Aboriginal and Torres Strait Islander peoples

The water plan contains outcomes that recognise the importance of the water resource to Aboriginal peoples and Torres Strait Islander peoples including their strong spiritual connection to water. The water plan includes a cultural outcome to maintain flows of water that support the water related cultural, spiritual, social and environmental values of Aboriginal people. Economic outcomes defined in the water plan include making water available to support the economic and social aspirations of Aboriginal people. General outcomes of the water plan strive for balance between economic, social, environmental, and cultural outcomes.

The Water Act provides for an Aboriginal party or Torres Strait Islander party to take or interfere with water for traditional activities or cultural purposes without an entitlement. The water plan in no way limits this right.

Unallocated groundwater reserves have been made available to help an Indigenous community achieve economic and social aspirations. Section 5.7 refers to unallocated groundwater reserves in the water plan area.

Development and implementation of the Condamine and Balonne water plan has been informed by ongoing engagement with Aboriginal and Torres Strait Islander peoples to develop a greater understanding of their water requirements for cultural values and uses.

The department will continue to actively engage with Aboriginal and Torres Strait Islander peoples in implementing the water plan.

3.5 Enable water resources to be obtained through fair, transparent, and orderly processes

Water in the water plan area can be obtained through:

- the water market – tradable water entitlements
- unallocated water reserves – groundwater only
- purchase of land with an existing water licence.

The water plan reserves unallocated water volumes “for helping an Aboriginal community achieve its economic and social aspirations” and for “any” purpose. Unallocated water is only available from groundwater sources - Sediments above the Great Artesian Basin, Condamine fractured rock and Queensland Murray-Darling Basin deep underground water units. No unallocated water has been released in the water plan area since it commenced in 2019. The processes for release of unallocated water are stated in the Water Regulation.

A framework exists under the water plan and the water management protocol for the temporary and permanent trade of water. Section 5.4 provides further information on this framework, including the number of permanent trades and seasonal water assignments that have occurred since the water plan was developed.

3.6 Build confidence regarding availability, security and value of water entitlements and authorisations

The water plan prevents any decision being made regarding the allocation or management of water that would increase the average volume of water that may be taken, excluding unallocated water and groundwater not in a groundwater unit. This strategy provides the desired level of protection for existing water entitlements. The water plan also establishes water allocation security objectives to protect the share of water available to the holders of water allocations for taking both supplemented and unsupplemented water.

The water plan states outcomes which aim to provide and maintain access to available water resources. It provides for the continued use of existing water entitlements and other authorisations to take or interfere with water.

The water plan’s defined volumes of unallocated groundwater for future development, and water markets provide certainty and security for current water users while also making water available to support towns, communities and industrial and agricultural production.

3.7 Promote efficient use of water through water markets, allocation, risk assessments and community education

The water plan provides for water allocations and some groundwater licences to be traded permanently or to be transferred seasonally within and between certain zones. This allows users to value water as a secure asset, encourages water use efficiency, enables entitlement holders to sell water without selling land, enables users to increase water supplies and improve allocation reliability and provides for new industries to acquire water without jeopardising the environment or affecting other water users.

Section 5.4 of this report contains further information on water trading in the water plan area.

Water efficiency practices are considered when granting water entitlements from unallocated water reserves. When the state releases unallocated water, a price is set, encouraging the recognition of water as a valuable resource and promoting its highest value and efficient use.

3.8 Facilitate community involvement in planning for the management and allocation of water

The Water Act outlines the community consultation and engagement requirements when developing, amending and finalising a water plan. Community consultation will occur when the plan is reviewed and replaced prior to its expiry. The water plan expires in 2029. The department will invite interested parties to participate in future water planning activities including activities to implement the water plan.

The [Condamine and Balonne Consultation Report](#) provides detail on the consultation process followed during the development of this water plan, including submissions made on the draft water plan.

4. Assessment of the effectiveness of the implementation of the water plan in achieving its outcomes

The department monitors the implementation of each water plan to make sure it is achieving its outcomes. The outcomes of this water plan were informed by a risk assessment undertaken in 2018, with the water plan being released in February 2019. A risk assessment was undertaken in September 2023 to help assess the effectiveness of water plan implementation in achieving its outcomes for the five years since the water plan was released. The assessment identified the following strategies that support the achievement of the water plan's outcomes:

- conversion of water licences to water allocations in accordance with the water entitlement notice
- water dealing rules, water sharing rules and seasonal water assignment rules that allow for the management and trade of water
- [Queensland's non-urban water measurement policy](#), interim standard and implementation plan
- increased regulatory presence and focus across high-risk areas based on [the department's Regulatory Strategy](#)
- contemporary surface water hydrological model (eSource)
- specific outcomes for the availability of water and maintenance of flows for the social and economic aspirations and cultural values of Aboriginal and Torres Strait Islander peoples
- environmental flow objectives and performance indicators that protect key environment assets and functions
- water allocation security objectives and performance indicators that protect the share of water available to the holders of a water allocation
- criteria for dealing with water licence applications including for applications to interfere with water by impounding flow and licences for taking overland flow water
- unallocated groundwater reserves
- Condamine and Balonne water management protocol (containing rules such as flow event management rules), Resource Operations Licences and Operations Manuals.
- Monitoring, Evaluation and Reporting Strategy for the water plan (to meet matter 23(4) of the water plan)
- publication of Assessment of Environmental Management Rules and Summary of Environmental Monitoring for Water Plan (Condamine and Balonne) 2019
- water plan is a key component of the Condamine-Balonne Water Resource Plan that is consistent with the Basin Plan

- reporting of [flow events from the Lower Balonne Water Management Area](#) (to meet matter 23(3) of the water plan)
- publication of the [Condamine and Balonne long-term watering plan](#)
- publication of [water use reports](#) for 2019-20, 2020-21, 2021-22 to meet measure 23(2) of the water plan.

The assessment reviewed the water plan outcomes and found most outcomes were being achieved. Outcomes that were found to be partially achieved or had a high or medium risk score are summarized in Table 2 below. Appendix A provides a comprehensive assessment of the effectiveness of the implementation of the water plan in achieving its outcomes.

Further implementation, monitoring and assessment of the water plan will continue to occur before the water plan expires in 2029. The risks to the water plan outcomes, emerging issues and potential treatment actions are further discussed in sections 9, 10 and 11 of this report.

Table 2: Water plan outcomes with medium to high risk scores

Water plan outcome	Risk level	Uncertainty level	Outcome achieved	Comment
Section 18 – general outcomes				
(d) seek to achieve a balance between the social, economic, cultural and environmental outcomes	Medium	Medium	Partially	The department will continue to implement the plan together with proposed treatments for subsequent risks to achieve genuine balance.
Section 19 – economic outcomes				
(g) to make water to which this plan applies available to support the economic and social aspirations of Aboriginal people	Medium	Medium	Partially	<p>Unallocated groundwater has been reserved for a purpose of helping an aboriginal community achieve its economic and social aspirations. The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>Further engagement with Aboriginal and Torres Strait Islander peoples in the plan area will be undertaken to better understand the demand and requirements of this groundwater and to implement this outcome.</p> <p>Unallocated water reserved is groundwater in the Queensland Murray-Darling Basin deep and sediments above the Great Artesian Basin underground water units. The cost of exploring these reserves may be a barrier to access and a risk to outcome 19(g).</p>

Water plan outcome	Risk level	Uncertainty level	Outcome achieved	Comment
Section 22 – environmental outcomes				
(b) to maintain and, if possible, improve flows of water to which this plan applies that support— (i) waterholes as refugia	Medium with Lower Balonne High	Medium with Lower Balonne High	Partially	<p>The 2018 risk assessments undertaken as part of developing the 2019 water plan found a high risk to waterholes in the Lower Balonne and a medium risk to waterholes in the Upper and Mid Condamine catchments and a low risk in the Maranoa.</p> <p>Ongoing risk to waterholes in the plan area is partly due to factors outside the scope of the water plan such as sedimentation and infilling of waterholes largely due to landscape uses and practices. There is also new information relating water level and quality and thresholds before which waterholes fail to act as a refuge, which also informs this risk rating.</p> <p>The water plan and supporting instruments include strategies and rules for the protection of waterholes that have been accredited under the Basin Plan as reducing residual risk to 'tolerable'. Strategies and rules include 'no growth' provisions, environmental flow objectives for waterholes, the use of waterholes rule, 'nil' flow condition rule, flow event management rules in the Lower Balonne for managing low, medium and Narran Lakes filling flows, managing environmental, stock and domestic water and protection of held environmental water recovered upstream of Beardmore Dam.</p> <p>The water plan will continue to be implemented and outcomes, environmental flow objectives and rules will be evaluated as part of the water plan review and replacement process. The replacement water plan will be informed by new science and modelling scenarios that will also consider held environmental water managed by the Commonwealth Environmental Water Holder and how this water is modelled.</p>
(c) to maintain and, if possible, improve flows of water to which this plan applies that support bird breeding at Narran Lakes	Medium	Low	Yes	<p>Risk assessment undertaken as part of developing the 2019 water plan identified a medium risk to Narran Lakes. The 2023 risk assessment indicates that this risk rating has maintained a medium risk but is achieved. This is because the water plan and associated statutory instruments include strategies and rules for the protection flows for Narran Lakes that have been accredited under the Basin Plan as reducing residual risk to 'tolerable'. Strategies and rules include 'no growth' provisions, environmental flow objectives specific to floodplain inundation, flow event management rules in the Lower Balonne for managing medium flows and Narran Lakes filling events, managing</p>

Water plan outcome	Risk level	Uncertainty level	Outcome achieved	Comment
				<p>environmental, stock and domestic water and the protection of held environmental water recovered upstream of Beardmore Dam.</p> <p>The Australian Government is yet to fully recover water to meet Sustainable Diversion Limits of surface water in the Condamine Balonne area set under the Basin Plan. Once this is complete the water held by the Commonwealth Environmental Water Holder can be modelled and assessed as to how it supports ecological assets including Narran Lakes.</p> <p>The water plan will continue to be implemented and opportunities to refine the outcomes, EFOs and rules will be explored as part of the water plan review and replacement process which is informed by new science and modelling scenarios that better consider held environmental water.</p>
<p>(d) to maintain and, if possible, improve flows of water to which this plan applies that support floodplain ecosystems within and downstream of the plan area, including—</p> <p>(i) the Balonne River floodplain; and</p> <p>(ii) the Culgoa River floodplain; and</p> <p>(iii) Narran Lakes</p>	<p>Medium</p>	<p>High</p>	<p>Yes</p>	<p>Risk assessment preceding plan commencement in 2019 identified a medium risk to floodplain wetlands and a high risk to turtles in the Lower Balonne. The 2023 risk assessment indicates that this risk rating is medium risk but the outcome has been achieved as the water plan and supporting instruments include strategies and rules for the protection of floodplain ecosystems that have been accredited under the Basin Plan as reducing residual risk to 'tolerable'. Strategies and rules include 'no growth' provisions, environmental flow objectives specific to floodplain inundation, flow event management rules in the Lower Balonne for managing medium flows and Narran Lakes filling events and the protection of held environmental water recovered upstream of Beardmore Dam.</p> <p>The Australian Government is yet to fully recover water to meet Sustainable Diversion Limits of surface water in the Condamine Balonne area set under the Basin Plan. Once this is complete the water held by the Commonwealth Environmental Water Holder can be modelled and assessed as to how it supports ecological assets including Narran Lakes.</p> <p>The water plan will continue to be implemented and opportunities to refine the outcomes, EFOs and rules will be explored during the review and replacement of the water plan which will be informed by new science and modelling scenarios that better consider held environmental water.</p>

Water plan outcome	Risk level	Uncertainty level	Outcome achieved	Comment
<p>(h) to maintain an underground water regime in the plan area that supports ecosystems dependent on underground water to which this plan applies</p>	<p>Medium</p>	<p>High</p>	<p>Partially</p>	<p>The 2018 environmental risk assessments identified medium and high risk to springs in the Upper Condamine Basalts, to baseflows in the Upper Condamine Basalts, Alluvium Tributaries and Central Condamine Alluvium and a medium risk to terrestrial vegetation in the Upper Condamine Basalts, alluvium Tributaries and Central Condamine Alluvium. The 2023 risk assessment indicates that this risk rating has been maintained or reduced under the water plan.</p> <p>The water plan and supporting instruments include strategies and rules for the protection of groundwater that have been accredited under the Basin Plan as reducing residual risk to 'tolerable'. Strategies and rules include 'no growth' provisions, environmental flow objectives for baseflow and productive base, trade zones with maximum zone volumes, water sharing rules that consider the SDL and groundwater levels and the protection of held environmental water.</p> <p>The outcomes, EFOs and rules will be assessed as part of water plan review and replacement process which will be informed by new science and modelling scenarios that better consider held environmental water.</p> <p>There is a high degree of uncertainty about groundwater dependent ecosystems in the plan area. Further monitoring and research in the lead up to plan review and replacement, including updated spring mapping and reporting of ecological status and values of springs, will support development of policies to reduce this risk.</p>

5. Information on water use and authorisations in the water plan area

Water users have access to water taken under a water entitlement (e.g. water allocation or water licence), water authorisation or under a statutory authorisation through the Water Act (e.g. low risk or prescribed activities such as stock or domestic use). Unallocated water is reserved and can be made available for future use while giving consideration to existing entitlements and flows for the environment.

General information about water trading and pricing can be found on the [Business Queensland website](#). This information supports measure 24(a), (b) and (c) of the water plan.

5.1 Information on water entitlements

Entitlements within the water plan area consist of supplemented water allocations (with water supply schemes managed by a ROL holder), unsupplemented water allocations and water licences.

There are five water schemes in the water plan area, within which the ROL/Distribution Operations Licence (DOL) holders are responsible for reading all customers' water meters and reporting annually to the department. Four ROL holder schemes are operated by Sunwater (Chinchilla Weir Water Supply Scheme, Maranoa Water Supply Scheme, St George Water Supply Scheme and Upper Condamine Water Supply Scheme) and one DOL holder scheme is operated by Mallowa Irrigation Ltd (St George Channel Scheme).

The unsupplemented water management areas consist of the Upper Condamine, Condamine and Balonne, Lower Balonne, Condamine and Balonne Tributaries and Gowrie and Oakey Creek. Schedule 11 of the Water Regulation states metered entitlements that are required to have an approved meter. The holder of a metered entitlement must not take water under the entitlement other than through works that have an approved meter attached.

The underground water management areas consist of St George Alluvium (shallow and deep), sediments above the Great Artesian Basin, Upper Condamine Alluvium (Central Condamine Alluvium), Upper Condamine Alluvium (Tributaries), Upper Condamine Basalts, Condamine Fractured Rock and Queensland Murray-Darling Basin deep underground water units. There are currently no entitlements in the water plan area for the take of water from the Queensland Murray-Darling Basin deep. Groundwater entitlements in the Central Condamine, Oakey Creek, Dalrymple Creek, Cunningham River and Jimbour Creek alluviums and the Toowoomba City and Upper Hodgson basalts are metered entitlements under schedule 11 of the Water Regulation.

The water plan includes a measure (s23(1)) that all water allocation and all groundwater licences in the underground water units listed in the measure are measured by 2022 and 2025 respectively. This is being achieved through work described in the [Queensland non-urban measurement policy implementation plan](#).

Details about the numbers of allocations and entitlements in the water plan area are outlined in Table 3, Table 4 and Table 5 below.

Table 3: Supplemented water allocations

Water supply scheme	Nominal volume (ML)	Number of water allocations
Upper Condamine	33,960	170
Chinchilla Weir	4,049	41
Maranoa River	805	6
St George	84,575	322

Table 4: Unsupplemented surface water entitlements (licences and water allocations)

Water management area	Nominal volume (ML)	Number of water allocations
Upper Condamine	64,765	310
Condamine and Balonne	38,669	132
Lower Balonne	283,722	144
Condamine and Balonne Tributaries	67,353	477
Gowrie and Oakey Creek	22,066	209
Condamine & Balonne Catchment (watercourses licences)	4,163	47

Table 5: Unsupplemented groundwater entitlements (licences and water allocations)

Water management area	Nominal volume (ML)	Number of water entitlements
Upper Condamine Alluvium (Central Condamine Alluvium	86,066	312
Upper Condamine Alluvium (Tributaries)	40,767	652
Condamine Fractured Rock	402	19
Upper Condamine Basalts	60,884	1,273
Sediments above the Great Artesian Basin: Condamine-Balonne	333	6
St George Alluvium	11,730	18

5.2 Announced allocations and announced entitlements

Announced allocation provisions apply to some unsupplemented water allocations within the Upper Condamine Alluvium (Tributaries) underground water unit and supplemented water allocations in the Chinchilla Weir, St George and Upper Condamine water supply schemes. While all the water supply schemes have medium priority allocations, Chinchilla Weir and Upper Condamine water supply schemes also include high priority allocations which have enjoyed 100 per cent announced allocations from water plan commencement in 2019 to February 2024. Announced entitlement provisions apply to unsupplemented water licences within the underground water units Upper Condamine Alluvium (Central Condamine Alluvium), some sub-units within the Upper Condamine Alluvium (Tributaries) and Upper Condamine Basalts. A summary of the unsupplemented announced allocations and entitlements are shown below in Table 6.

Table 6: Announced allocations and announced entitlements for relevant underground water units

Underground water unit	Management area	Zone	Announced allocation/entitlement (%)				
			2019/20	2020/21	2021/22	2022/23	2023/24
Upper Condamine Alluvium (Central Condamine Alluvium)	Central Condamine Alluvium (Announced entitlement)	1	100	100	100	100	100
		2	100	100	100	100	100
		3	100	100	100	100	100
		4	100	100	100	100	100
Upper Condamine Alluvium (Tributaries)	Dalrymple Creek Alluvium (Announced allocation)	1	70	70	90	100	100
		2	80	80	90	100	100
		3	80	80	90	100	100
	Oakey Creek Alluvium (Announced allocation)	1	70	70	70	100	100
		2	75	75	75	100	100
		3	70	70	70	100	100
		4	80	80	80	100	100
	Cunningham Alluvium (Announced allocation)	1	80	75	75	100	100
		2	80	75	75	100	100
		3	80	75	75	100	100
		4	80	80	90	100	100
		5	80	80	90	100	100
	Jimbour Creek Alluvium (Announced entitlement)	-	80	80	-	100	100
	Upper Condamine Basalts	Toowoomba City Basalts (Announced entitlement)	-	70	60	60	100
Upper Hodgson Basalts (Announced entitlement)		1	60	60	70	100	100
	2	60	60	60	100	100	

5.3 Water use

Water use in the plan area is provided in Table 7 and Table 8. Water use data has been sourced from reporting under section 71 of the *Water Act 2007* (Commonwealth), which is compiled in accordance with the [Water Accounting Methods Report](#) for the [Condamine-Balonne Water Resource Plan](#). The reporting under section 71 submitted by Queensland demonstrates compliance with the sustainable diversion limits for the Condamine-Balonne Water Resource Plan. Annual actual take was less than the sustainable diversion limit in all years.

Table 7: Water use supplemented and unsupplemented surface water

Condamine and Balonne surface water supplemented and unsupplemented	2019/20	2020/21	2021/22	2022/23
No. of entitlements	1,851	1,852	1,887	1,891
Nominal volume/nominal entitlement (ML)	604,042	604,127	604,127	604,127
Annual Permitted Take (ML)	1,117,997	853,871	1,653,629	859,372
Annual Actual Take (ML)	1,004,832	848,349	1,314,702	599,888
Volume of held enviro water accounted (ML)*	166,185	44,065	319,445	113,253

- volume of held environmental water accounted is not included in the Annual Actual Take.

Table 8: Water use unsupplemented groundwater

Condamine and Balonne unsupplemented groundwater	2019/20	2020/21	2021/22	2022/23
No. of entitlements	2,520	2,275	2,279	2,280
Nominal volume/nominal entitlement (ML)	199,020	199,324	199,475	199,273
Annual Permitted Take (ML)	225,380	225,380	225,380	225,380
Annual Actual Take (ML)	137,440	130,048	110,470	144,121
Volume of held enviro water accounted (ML)	39,707	40,224	40,224	40,224

- volume of held environmental water accounted is not included in the Annual Actual Take.

The department also publishes water use reports annual based on the section 71 reporting to the Murray-Darling Basin Authority which complies with the water plan measure 23(2) to achieve the outcome stated in section 18(b) to report water use annually in terms of complying with sustainable diversion limits established under the Basin Plan.

5.4 Water trading

The water plan establishes a framework for the permanent and seasonal assignment (temporary trading) of supplemented and unsupplemented water allocations and some water licences. Outcome 19(c) of the water plan relates to the improvement and support of the effective and efficient operation of the water market. Measures that contribute to achieving this outcome are found under section 24(a), 24(b) and 24(c) of the water plan to collect, analyse and publish information about the number, value and volume of water entitlement trades within five years of plan commencement. Trade data is shown in Appendix B with Table B6 and Table B7 summarising supplemented and unsupplemented surface water seasonal water assignments and permanent trades respectively. Table B8 and Table B9 summarises groundwater seasonal water assignments and permanent trades. Table B10 summarises the value of water entitlement trades.

5.5 Water taken or interfered with under statutory authorisations

The take of water under the category of statutory authorisations – such as stock or domestic take and for various prescribed activities – is typically not measured. However, by identifying trends in consumptive behaviour, it is possible to infer whether these trends are a risk to existing water users or to the environment.

An assessment of the risk posed to water users and the environment by activities under the Water Act sections 93 – 103 is presented in Appendix C. There has been no increase identified under most of these activities. However, an increase in water take was identified under section 101 of the Water Act – Authorisations that may be altered or limited by water planning instrument or regulation. This increase is attributed to the take of groundwater in peri-urban areas not connected to a town water supply. In these areas, particularly surrounding large urban centres such as Toowoomba, Warwick and Dalby, there is an increase in population and subsequent demand for water. The water plan limits the increased take of underground water for stock or domestic purposes by only allowing take from existing underground water works, i.e. no new works for this purpose are authorised where the land is connected to a town water supply. This has also been identified as a “hotspot” in the risk assessment in Appendix A.

5.6 Measurement

The department published [Queensland's strengthened non-urban water measurement policy](#) in September 2022. The policy will strengthen the way that non-urban water take is measured and reported across Queensland.

The strengthened policy was developed through [extensive consultation](#) statewide with industry, water entitlement holders and the community on policy proposals (2019 -2021) and targeted engagement in 2022 with peak bodies and industry bodies, including in the Queensland Murray-Darling Basin.

In September 2023, legislative amendments to *Water Act 2000* to establish the head of power for the strengthened measurement requirements were passed by the Queensland Parliament. Associated amendments to the Water Regulation to provide the operational detail for the strengthened measurement requirements are required to support full implementation of the policy and these amendments are in development. Measurement requirements in Queensland's [interim water meter standard for non-urban metering](#) have been strengthened to align with the policy.

The policy is being implemented using a risk-based approach. This means that implementation in the Queensland Murray-Darling Basin for new metering and revalidation of existing meters is a priority.

Since the water plan commenced in 2019, the following activity has been undertaken to strengthen measurement across the Condamine and Balonne catchment in accordance with the implementation plan based on the new measurement policy and interim standard:

- About 600 new surface water meters have been installed or in the progress of being installed
- About 2000 new groundwater meters have been installed or in the progress of being installed
- About 300 existing surface water meters have been or are in the process of being revalidated
- About 900 existing groundwater water meters have been or are in the process of being revalidated

The strengthened policy also states the intent to require [telemetry on surface water meters in the Queensland Murray-Darling Basin](#). To offset the cost to water users to implement telemetry in these areas, the department secured funding from the Australian Government to subsidise the cost of installing telemetry devices.

5.7 Entitlements granted from the unallocated water reserves

The water plan reserves unallocated water volumes “for helping an Aboriginal community achieve its economic and social aspirations” and for “any” purpose. Unallocated water is available from sediments above the Great Artesian Basin, Condamine Fractured Rock and Queensland Murray-Darling Basin deep underground water units.

The water plan states the volume of unallocated water reserve for an underground water unit to be dealt with under the Water Act and the water management protocol states the purposes for its release. The risk assessment identified issues relating to the release of unallocated water for a purpose of helping an Aboriginal community to achieve economic and social aspirations due to the potential cost of exploring and sourcing these groundwater resources. Further engagement with Aboriginal people in the plan area will be undertaken to better understand their groundwater requirements and how to release water from this reserve.

The department has established a process in accordance with measure 24(d) for the granting of water entitlements for the taking of unallocated water. However, no unallocated water has been released in the water plan area since its commencement. Finding a reliable source of water from the underground water unit can be challenging due to either poor water quality or resource availability. Available reserves of unallocated water are detailed in Table 9 below.

Table 9: Unallocated water reserves of underground water

Underground water unit	Nominal entitlement (ML)	Purpose
Sediments above the Great Artesian Basin	450	For helping an Aboriginal community achieve its economic and social aspirations
Sediments above the Great Artesian Basin	4,050	Any
Condamine Fractured Rock	660	Any
Queensland Murray-Darling Basin deep	1,500	For helping an Aboriginal community achieve its economic and social aspirations
Queensland Murray-Darling Basin deep	13,500	Any

6. Research and monitoring findings for the water plan

The water planning framework is supported by water monitoring activities that include water quantity and quality of surface water and groundwater systems across Queensland. Together with targeted ecological monitoring for water plans, this information is vital for continued improvement of water planning.

The Environmental Flows Assessment Program (EFAP) undertakes ecological monitoring to assist in assessing the ecological performance of each water plan in meeting its stated ecological outcomes. Ecological assets with critical links to flow that represent the plan’s ecological outcomes and the various aspects of the flow regime, are selected as indicators of the broader ecosystem for monitoring.

The department manages, operates and maintains approximately 400 stream gauging stations across Queensland (42 stations in the Condamine and Balonne catchment). Streamflow measurements are an integral part of producing volumetric data at gauging stations, and measurements are taken throughout a full range of low and high flow conditions to enable derivation of accurate streamflow volumes.

The department also manages, operates and maintains approximately 4,300 groundwater monitoring bores across Queensland. These bores provide data that assist in improving hydrological understanding within the water plan area, including the understanding of surface water and groundwater interaction. Water monitoring data can be accessed via the [water monitoring information portal](#).

6.1 Summary of ecological monitoring

Monitoring and research projects have been conducted in, and adjacent to, the water plan area since its commencement. These projects include those implemented under the EFAP conducted by the department, and other monitoring and research conducted by other agencies, such as Department of Environment, Science and Innovation (DESI), the Murray–Darling Basin Authority, Commonwealth Environmental Water Office and research institutes like the University of Queensland. This collective monitoring and research is used to assess the ecological performance of water plans in meeting their stated ecological outcomes. The Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019 provides a summary of key findings of projects as they relate to the assessment of the water plan’s ecological outcomes.

The region holds significant ecological value with features including:

- wetlands listed on the Directory of Important Wetlands in Australia (DIWA)
- Narran Lakes Nature Reserve (Ramsar-listed, national significance)
- migratory bird habitat
- Brigalow-gidgee woodland/shrubland in the Mulga Lands and Darling Riverine Plains Bioregions which are endangered ecological communities¹
- diverse flora and fauna including lignum, river red gum woodland, straw-necked ibis and native fish
- species listed as (critically) endangered or vulnerable under the [Environment Protection and Biodiversity Conservation Act 1999](#) and/or the [Nature Conservation Act 1992](#), including Murray cod, silver perch and the Australian painted snipe
- habitat for wetland dependent species
- wetlands of national importance including:
 - Lake Broadwater
 - Great Artesian Basin springs
 - The Gums Lagoon
 - Dalrymple Creek².

The largest number of wetlands of any catchment within the Murray-Darling Basin occurs in the floodplain channel system of the Lower Balonne River. Amongst these is the Narran Lakes system which comprises a series of interconnected terminal drainage lakes (Back, Clear and Narran lakes). This lake system is considered one of the most important waterbird breeding habitats in eastern Australia. Although Narran Lakes is located outside the water plan area in New South Wales, water plan environmental outcomes 22(1)(c) and (d) are dedicated to maintaining or improving flows of water that support floodplain ecosystems and bird breeding at Narran Lakes. In addition, the Culgoa River Floodplain is listed in the DIWA due to the large area of remnant coolabah woodlands it supports. High plant diversity and a low percentage of exotic species characterise and add value to the Culgoa National Park in this region³.

Monitoring information has been collated on a range of assets in the water plan area including species and ecological functions. These include refugial waterholes, floodplain ecosystems such as wetlands and vegetation, migratory fish species and waterbirds. This monitoring has been undertaken by multiple

¹ New South Wales Office of Environment and Heritage, Department of Premier and Cabinet (NSW OEH) 2011, *Brigalow-Gidgee woodland/shrubland in the Mulga Lands and Darling Riverine Plains bioregions*. Office of Environment and Heritage, Department of Premier and Cabinet, Sydney, New South Wales.

² Department of Environment and Science (DES) 2017, *Surface Water Ambient Network (SWAN) – Water quality*, WetlandInfo. Department of Environment and Heritage Protection, Queensland. Last updated: 1 August 2017. [Accessed 7 July 2023]. <https://wetlandinfo.des.qld.gov.au/wetlands/assessment/monitoring/current-and-future-monitoring/surface-water-ambient-network.html>

³ Australian Government (2021) Directory of Important Wetlands in Australia. Department of Climate Change, Energy, the Environment and Water, Canberra. [Accessed on 03/01/2023]. [Australian Wetlands Database - Directory Wetland Information Sheet \(environment.gov.au\)](#)

organisations including the department's EFAP program, the DESI Q-catchments Assessment and multiple university projects including Griffith University, University of Queensland, La Trobe University and University of Western Australia. The 2023 risk assessment suggests most of the eight ecological outcomes of the water plan are being met, however there are ongoing issues with waterhole persistence from deposited sediments and the ability for aquatic fauna to move across barriers in the Lower Balonne.

Recommendations have been made in section 8 of this report for assessing the ecological outcomes at the next water plan review and replacement. While risk was assigned to assets during last review, quantifying the risk was not always possible due to insufficient information around thresholds of concern. Knowledge gaps have been identified and further research is scheduled for the water plan area to inform the next plan review. This work is consistent with the Monitoring, Evaluation and Reporting Strategy developed for the water plan area.

6.2 Summary of water monitoring

The stream monitoring network is operated by water monitoring staff within a quality management framework under [International Organisation for Standardisation ISO 9001:2015](#) accreditation.

Measurements taken at stream monitoring sites show that the water plan area is characterised by low annual discharge and sporadic flows that vary in magnitude both within and between years. Over the past ten years, higher flows have tended to occur in the warmer months. During the winter months, these rivers generally don't flow, and contract to a series of disconnected waterholes.

Stream water level is recorded at gauging stations throughout the water plan area, and water level is converted to discharge (ML/day) using a rating table. Over the five years since the current water plan was approved in 2019, the system went from deep drought conditions with no flow to some of the highest flows recorded since the floods of 2011 and 2013. On the Condamine River at Chinchilla Weir gauging station there was zero flow for the majority of 2019 and 2020 but in December of 2021 there were daily flows of over 100,000ML/day. On the Balonne River at St George there was zero flow for the majority of 2019, 2020 and 2021, but in February of 2020 there was one flow event which reached a daily flow of 195,567ML/day. Examples of the annual flow range for sites across the basin are provided in Table 10.

Rainfall is recorded at 23 gauging stations throughout the plan area. Since the beginning of 2019, rainfall across the catchment has been highly variable, especially during 2021 and 2022. The catchment generally receives most of its rainfall during the summer months, from December through to March. However, in 2022 there were also significant rainfall events in May, August, September and October and the normal high summer rainfall did not occur in early 2023. Rainfall totals at the lowest sites in the catchment are generally much lower than those further up in the catchment, even when the rainfall events coincide between locations. Despite this trend, the highest location in the catchment (Warwick) did not experience the September and October rain in 2022 than sites lower in the catchment received and had very low rainfall across the following summer months.

Table 10: Annual flow data from representative gauging stations across the basin

Gauging station	Year	Minimum annual flows (ML/day)	Maximum annual flows (ML/day)
Condamine River at Warwick	2019	0	1
	2020	69.5	9,691
	2021	658	43,423
	2022	1,436	88,090
Condamine River at Chinchilla Weir	2019	11	269
	2020	709	51,312
	2021	3,239	104,507
	2022	6,947	94,441
Balonne River at Weribone	2019	25	1,949
	2020	3,166	170,449
	2021	6,182	120,881
	2022	12,024	77,596
Maranoa River at Cashmere	2019	121	12,606
	2020	823	88,071
	2021	646	16,846
	2022	404	18,199
Balonne River at St George	2019	65	3,683
	2020	3,911	195,567 (1 flow event)
	2021	5,706	115,313
	2022	11,616	76,129
Culgoa River at Woolerbilla Road	2019	15	1,044
	2020	580	20,200
	2021	1,042	23,873
	2022	6,493	32,401
Narran River at Dirranbandi-Hebel Rd	2019	4	393
	2020	489	24,619
	2021	687	21,199
	2022	2,014	12,089

6.3 Summary of groundwater monitoring

6.3.1 Groundwater dependent ecosystems

There is limited information available regarding groundwater dependent ecosystems in the Condamine and Balonne water plan area which means it is difficult to assess groundwater-related outcomes. The Springs values inventory project will collect crucial information on spring ecosystems to increase confidence in future water plan assessments. The project will result in updated spring mapping data and a report detailing the ecological status and values of non-GAB springs in the project area. The Department of Environment, Science and Innovation will implement this project during 2023/24.

6.3.2 Groundwater monitoring network review

The water plan area contains several highly developed and utilised groundwater systems including the Toowoomba Basalts, Central Condamine Alluvium and its tributaries. A groundwater monitoring network review was undertaken in 2021 to assess the status of the groundwater monitoring network. As part of the monitoring network review, a resource risk assessment was undertaken. Most groundwater resources in the Condamine and Balonne plan area were assigned a high to very high monitoring risk scores where

high monitoring risk identifies the importance of continued and appropriate groundwater monitoring within the groundwater unit. These scores were predominantly due to the following factors:

- highly developed system with high demand
- Basin Plan Baseline Diversion Limit (BDL) greater than Sustainable Diversion Limit (SDL)
- increase in water use not considered sustainable/possible
- high level management rules in place requiring monitoring bores
- monitoring bores required for hydrologic modelling purposes
- town water supply requirements.

Table 11: Groundwater monitoring network review assessment results and number of monitoring bores

Monitoring risk score	Groundwater unit	Monitoring bores
Very high	Myall Creek Alluvium	4
	Toowoomba North Basalts	18
	Toowoomba South Basalts - Zone 1 and 2	30
	Cunningham Alluvium – Warwick to Pratten	15
	Dalrymple Creek Alluvium	10
	Glengallan Creek Alluvium	13
	Moola Ck & North Myall Creek Alluvium	11
	Nobby Basalts – Deep	3
	Oakey Creek Alluvium	20
	Swan Creek Alluvium	3
	Toowoomba City Basalts	15
	Upper Hodgson Creek Basalts - Zone 1 and 2	15
High	Canal Creek Alluvium	1
	Central Condamine Alluvium	147
	Condamine River Alluvium - Killarney to Warwick	9
	Emu Creek and Farm Creek Alluvium	4
	Jimbour Creek Alluvium	0
	Kings and Spring Creek Alluvium	5
	Linthorpe Creek Alluvium	1
	Nobby Basalts – Shallow	7
	Rosenthal Creek Alluvium	1
	Thanes Creek Alluvium	0
	Warwick Basalts	7
	Cattle Creek Alluvium	2
	Freestone Creek & Campbells Gully Alluvium	4
	Hodgson and Spring Creek Alluvium	0
	Lower Condamine River and Tributary Alluvium	3
	Rodgers and Greymare Creek Alluvium	1
St George Alluvium – Condamine Balonne - Deep	12	
Medium	St George Alluvium – Condamine Balonne - Shallow	10
	Total monitoring bores	371

6.4 Summary of resource operations licence holder monitoring

The Condamine and Balonne water plan area covers four water supply schemes (WSS): Upper Condamine WSS, Chinchilla Weir WSS, Maranoa River WSS, and St George WSS. For location of these water supply schemes, including relevant infrastructure, see Attachments 2, 3 and 6 of the Condamine and Balonne Water Management Protocol. Sunwater is the ROL holder for the water supply schemes of the water plan area and is required to monitor on a quarterly and annual basis. Monitoring reports showed that water quality monitoring was conducted by Sunwater in accordance with their Water Quality Monitoring Program for the following water storages – Beardmore Dam and Jack Taylor Weir (St George WSS); Chinchilla Weir (Chinchilla Weir WSS); and Cecil Plains Weir and Leslie Dam (Upper Condamine WSS). Water quality was not monitored at Neil Turner Weir (Maranoa River WSS). Other than issues with faulty equipment, or an inability to collect data due to high flows, monitoring requirements were met.

The department requires continual improvement of data and report quality which is supported by specific guidance on data collection and reporting requirements. As a result, a new guide to water monitoring data collection and reporting standards was developed, the [Water Monitoring Data Collection Standards 2022](#) and the [Water Monitoring Data Reporting Standards for water infrastructure licence holders 2022](#). The revised guide applies to those water infrastructure licence holders (ROL and DOL) who are required to collect and report water monitoring data and information to the department. The updated data collection and reporting standards were designed to improve public confidence in the information used for water resource management under the Water Act, through greater direction and transparency. The guide now uses a risk assessment approach, which allows operators to meet the standards using updated monitoring practices and adaptive management to reduce water quality and flow management impacts, including the potential for bank slumping and fish stranding. Operators of water storages with a potential for medium to high risk to associated water quality, are required to have a monitoring program that demonstrates to the department their adaptive storage management. This new framework encourages the reduction in potential for releasing poor water quality i.e., through stratification, bank erosion or downstream impacts, whilst being tailored to the operational needs of water storage management⁴.

6.5 Summary of existing environmental management rules

There are five water management areas (WMA) within the Condamine and Balonne water plan area:

1. Upper Condamine
2. Gowrie and Oakey Creek
3. Condamine and Balonne Tributaries
4. Condamine and Balonne
5. Lower Balonne.

An assessment of all Lower Balonne flow event management rules (low flow, medium flow, managing Narran Lakes filling flows and environmental, stock and domestic flows) is required prior to next water plan review. This is important to understand their collective effectiveness in providing for waterhole management, connectivity for fish movement, floodplain maintenance, providing breeding opportunities for high-risk assets and general support for downstream ecology. A more in-depth assessment of these rules, with consideration of the implications of projected changes in climate, may provide more suitable alternatives. Eleven management rules were assessed as part of this reporting and summaries are provided below. More detail is provided in the Assessment of Environmental Management Rules Water Plan (Condamine & Balonne) 2019.

⁴ Department of Regional Development, Manufacturing and Water (RDMW) 2022, *Water Monitoring Data Reporting Standards for Water Infrastructure License Holders (Version 5.0, April 2022)*. Department of Regional Development, Manufacturing and Water, Brisbane.

6.5.1 The use of waterholes rule

This rule is intended to protect waterholes in WSS reaches by only allowing pumping to occur in a waterhole when water has been released by the ROL holder, and then only to 0.5m below the cease-to-flow (CTF) level. The intention is for the waterhole to be replenished by released water within a short timeframe. The rule is likely to sufficiently protect waterholes within the WSS, given that these waterholes are quickly replenished, and drawdown is only 0.5m below CTF. Strategies to mitigate risk in waterholes not in WSS may involve implementation of event management following extended periods of no-flow for a particular area, where this period exceeds the persistence time of modelled waterholes. Releases for environment, stock and domestic (ESD) purposes may also alleviate risk under these circumstances.

6.5.2 Prohibited dealings – ‘dealings – ‘nil’ passing flow conditions rule

This rule relates to the sale or transfer of the location of an unsupplemented water allocation and the resultant change to allocations with an existing ‘Nil’ passing flow condition. The intent of this rule is to stop pumping from waterholes below CTF for irrigation purposes by including a passing flow condition on traded allocations over time. Within the water plan’s water management areas, a total of 30 allocations were traded and “Nil” passing flow conditions removed so that take is not permitted unless there is a visible flow.

It is currently not possible to change the conditions placed on a water allocation once it has been granted unless it is sold or traded through a water allocation deals. This rule will be further explored in the next water plan review and replacement process.

6.5.3 The storage operating levels rule

This rule is intended to provide refuge to biota during extreme dry periods and applies to all 14 WSS storages managed within the water plan area. Monitoring of nine of the 14 storages is required under operations manuals; however, only the water levels of Leslie Dam, Beardmore Dam, Jack Taylor Weir, Talgai Weir, Lemon Tree Weir, Cecil Plains Weir and Chinchilla Weir are required to be monitored by Sunwater under the ROL monitoring and reporting requirements. All but one of the storages monitored by Sunwater maintained a water level above the minimum operating level for the reporting period. However, due to drought, on the 20 November 2017 the level of Leslie Dam fell below the operating level of 460.35m AHD. As a result, downstream water allocation holders were notified of the restrictions to supply water, as per Chapter 2, Section 6, of the Upper Condamine WSS Operations Manual, which states that releases or diversions are not allowed to supply medium priority or high class B priority water allocations when the dam is below this level. The water remained below this level until February 2020.

6.5.4 The change in rate of release rule

This rule aims to mimic the natural hydrograph as closely as possible and maintain the natural variability of flows. The intent of this rule is to minimise the risk of adverse environmental impacts (i.e., bank slumping, fish stranding and excessive scouring) by controlling the rate of release from storages. This rule has previously applied to all WSS infrastructure managed within the water plan area. However, it now only applies to the Upper Condamine WSS ROL (Condition 2) and the Chinchilla Weir WSS ROL (Condition 3). The St George WSS ROL no longer contains this rule and instead now has Condition 3.1

which states that the licence holder must maintain and operate the infrastructure so that there is minimal adverse impact on water quality, bed and bank stability and fish. There were no reported instances of scouring, bank erosion or bank slumping downstream of storages between 2017 and 2022. Under the revised water monitoring standards⁵, the department will be working with ROL holders on appropriate monitoring methods to assess these types of changes.

6.5.5 The Chinchilla pass flow rule

This rule relates to pass flows associated with the Chinchilla Weir and was originally implemented to ensure water was available for stock and domestic use downstream⁶. A minimum natural flow must be released from the weir, which equals the inflow into the weir, up to 122ML/day. The inflow into the weir is not measured. Instead, an estimation of inflow into Chinchilla Weir is determined using a storage inflow derivation technique. This rule is not identified as an environmental rule; however, it has been included here as it is likely to be providing environmental benefits downstream of the weir by increasing the persistence time of waterholes as refugia during dry periods. This rule will be further assessed during review and replacement of the water plan and consideration given to the benefit the rule provides to environmental outcomes.

6.5.6 The passing and storing of water for environmental, stock and domestic purposes rule

This rule applies to the Lower Balonne WMA and relates to the decision to store or release flows into Beardmore Dam, based on antecedent conditions downstream. If a release occurs, the release is designated to provide stock and domestic water to users in the Lower Balonne Distributary System downstream of St George, and from an environmental perspective, to support natural ecosystem processes and the maintenance of the natural variability of the flow regime. These flows enhance habitat connectivity and sustain significant refugial waterholes throughout the system. Generally, inflows to Beardmore Dam were stored and passed as required over the assessment period. The current practice under the ROL is to pass inflows as they occur up to 730ML/day, unless otherwise directed by the chief executive. However, because bank erosion on and around the regulator on the Sandy Culgoa breakout and a build-up of sand in the Balonne-Minor River immediately downstream of the Sandy-Culgoa breakout, the maximum ESD flow was reduced at times to 600ML/day to keep the flow within the main channel⁷. The bank erosion has subsequently been repaired and the site will be monitored during future releases to establish if the regulator is operating as designed or if the sand build up is an ongoing issue.

6.5.7 The releasing water for environmental, stock and domestic purposes rule

This rule applies to the Lower Balonne WMA and is associated with the availability of water to support natural ecosystem processes and the maintenance of the natural variability of the flow regime and connectivity through to the end of the Condamine and Balonne system. Storage level data and release records were recorded by Sunwater during the period from 2017 to 2023. The department publishes flow update reports to provide information on the extent downstream to which flows occurred in the catchment and report the occurrence of flow through events⁸. A flow through event occurs if the flow reaches the five trigger points at the bottom of the Lower Balonne Distributary System listed in the [Condamine and Balonne Water Management Protocol](#) (Chapter 9, Section 161). Releases between 2020 and 2023 reconnected the rivers of the northern Murray-Darling system with the main branch of the Barwon-Darling River in NSW. These flow events reconnected those waterholes which had persisted through the dry periods of 2018 and 2019 and allowed recolonisation opportunities across the rest of the system for the

⁵ Department of Regional Development, Manufacturing and Water (RDMW) 2022, *Water Monitoring Data Reporting Standards for Water Infrastructure License Holders (Version 5.0, April 2022)*. Department of Regional Development, Manufacturing and Water, Brisbane.

⁶ O. Farrington pers com

⁷ Bartlem, M., Mackenzie, J., RDMW, pers. comm

⁸ Department of Regional Development Manufacturing and Water (RDMW) 2023, Condamine and Balonne Water Plan area information, [flow event reports for the Lower Balonne water management area](https://www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/water-plan-areas/condamine-balonne). <https://www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/water-plan-areas/condamine-balonne>

populations within these refugia. However, the risk assessment⁹ found the risk of waterholes drying out in the Lower Balonne was medium to high during dry periods, particularly under a drying climate scenario. A more thorough assessment of ESD flows is required before next plan review.

6.5.8 The managing low flows rule

This rule is intended to provide for the maintenance of natural riverine habitats and connectivity of the river system to maximise environmental benefits and provide a reliable supply of water for stock and domestic purposes. The rule is implemented if a flow through event has not occurred for more than 12 months.¹⁰ A flow through event occurs if the flow reaches the five trigger points at the bottom of the Lower Balonne Distributary System listed in the [Condamine and Balonne Water Management Protocol](#) (Chapter 9, Section 161). Supplemented water was made available under the Lower Balonne flow event management rules for managing low flows in March of 2018, as it had been more than 12 months since the previous flow through event, and the release of environmental, stock and domestic water alone was not likely to result in a flow through event.

Rainfall in the Maranoa and Condamine and Balonne catchments in early 2020 triggered the low flow rule. Flows continued downstream of St George through 2022 and early 2023 and as a result, the rule was not triggered during these years.

Current and future department ecological monitoring examining fish movement and waterhole processes may provide an assessment of whether low flows are providing for fish movement opportunities, flow spawning opportunities and maintenance of waterhole levels and the health of the natural riverine systems in the Lower Balonne.

6.5.9 The managing medium flows rule

This rule is about reducing the level of water harvesting when triggers relating to medium flows are met. The rule is implemented by reducing water harvesting to 90 per cent of entitlement for a maximum period of five days when a water harvesting period is announced and, either a flow event of at least 60,000ML/day at Jack Taylor Weir has not occurred for two years or a flow event of at least 100,000ML/day at Jack Taylor Weir has not occurred for three years. Rainfall in January and February 2020 triggered the low flow management rule because there had not been a significant flow in the system since April of 2018. As per the low flow rule, a water harvesting period was announced which included a 10 per cent reduction in take for five days. Because the flow continued into March, the Narran Lakes support rule was also implemented, which triggered another reduction of 10 per cent to the maximum rate of take for an additional five days. As per section 164 of the water management protocol, these two five-day periods of reductions met the maximum period for reductions (ten days) which can be implemented under the flow event management rules, for a single flow event. Therefore, despite the flow conditions past the St George gauge for this event meeting all the requirements to trigger the medium flow rule, the rule was not implemented. Although the medium flow restrictions were not implemented, both of the medium flow trigger criteria were met, therefore, the triggers for a Medium Flow Event were reset without an event occurring.

6.5.10 The managing Narran Lakes filling flow events rule

This rule is to improve water availability for bird–breeding and vegetation at the internationally significant Narran Lakes Ramsar site (Dharriwaa) and to support natural ecosystem processes and the maintenance of the natural variability of the flow regime. Dharriwaa is a terminal wetlands system located in NSW downstream of the assessment area. The rule operates from 1 March to 31 August of each year.

In early 2020, Dharriwaa filled for the first time since April 2013, and 4,500 hectares of key waterbird breeding habitat was watered and provided favourable conditions for waterbird breeding. The event also

⁹ Department of Environment and Science (DES) 2018. *Review of Water Plan (Condamine and Balonne) 2004 Ecological Risk Assessment Report January 2018*. Brisbane: Department of Environment and Science, Queensland Government.

¹⁰ Department of Regional Development Manufacturing and Water (RDMW) 2023, Condamine and Balonne Water Plan area information, [flow event reports for the Lower Balonne water management area](https://www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/water-plan-areas/condamine-balonne). <https://www.business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/water-plan-areas/condamine-balonne>

reconnected important refugial waterholes throughout the Lower Balonne River system and contributed to the well-being of native vegetation, fish, other animals and plants¹¹.

Between November 2021 and June 2022, Dharriwaa received over 700GL of water which included over 127GL of Commonwealth water for the environment passing the St George stream gauging station. Early 2022 saw continued inflows of large volumes into Dharriwaa, and bird breeding showed continued success with pelicans, ibis, cormorants, and other colonial nesting species breeding. However, the Lower Balonne and Dharriwaa began to dry rapidly after November 2022. To counter this, over 6GL of water was released from private on-farm storage into the Narran River by the Commonwealth Environmental Water Office (CEWO) in February 2023. This release ensured that key wetland areas in Dharriwaa remained wet at this critical time for waterbird breeding.

This rule was revised during the development of the 2019 water plan to make it more transparent and fit for purpose. While it would have been desirable for it to apply all year round, to better align with bird breeding events, it was not possible given the requirement to comply with the water allocation security objectives of the water plan.

6.5.11 The Thuraggi Watercourse rule

The Thuraggi Watercourse is used to distribute water to entitlement holders and operates under Section 2.1 of the [St George Channel Scheme Distribution Operations Licence](#) (DOL), which is an 'Environmental Management Rule'. This rule requires the DOL holder to report on water quality in relation to scheme infrastructure, bank condition downstream of infrastructure, and instances of fish stranding related to the operation of infrastructure.

The Thuraggi Watercourse is mostly a closed system with no outlet back into the Balonne River system. Therefore fish and other aquatic organisms only have the opportunity to move in and out of the watercourse during major floods when it connects with the main river system. There have been reported incidences of water quality in relation to scheme infrastructure, bank condition downstream of infrastructure, and instances of fish stranding related to the operation of infrastructure by the DOL holder.

6.6 Climate assessment

A review of climate predictions for the water plan was undertaken to determine if there has been a significant change that affects the water plan's ability to provide consumptive and non-consumptive water use for the remainder of its life. The assessment shows current and potential trends in average temperature, potential evapotranspiration and rainfall.

6.6.1 Recent climate variation

To assess recent climate variation, it is useful to first recount the historic climate. Temperature, rainfall and evapotranspiration data is available for the catchment for the period 01/07/1889 to 30/06/2020. Since 2013, average daily temperature is markedly higher than the average for the previous 123 years (Figure 2). The annual potential evaporation has also increased, but to a lesser extent. Average annual rainfall since 2013 is lower than the average for the period from 1889-2012. To identify the time when climate change may have caused local conditions to deviate from past conditions, a time-of-emergence analysis was undertaken, (Figure 3). A time-of-emergence analysis identifies when the signal of the variable emerges from the background "noise", thereby reflecting the onset of change. The results of the time-of-emergence analyses undertaken for the Condamine and Balonne water plan area indicate that a temperature increase emerges around the 2000s, as identified by the Signal-to-Noise Ratio (Figure 3). The orange shading represents the time the signal emerged by one standard deviation. There was no emergence for annual evapotranspiration or annual rainfall.

¹¹ Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2020, *Lower Balonne flow 2020 – Update #5 – 4 May 2020*, <https://www.dcceew.gov.au/water/cewo/publications/lower-balonne-flow-2020-update-5>

¹¹ Merritt, W, Spencer, J, Brandis, K, Bino, G, Harding, P, & Thomas, R 2016, *Review of the science behind the waterbird breeding indicator for the Narran Lakes*. Final report to the Murray-Darling Basin Authority.

Figure 2: Observed catchment average annual climate – temperature, potential evapotranspiration and rainfall

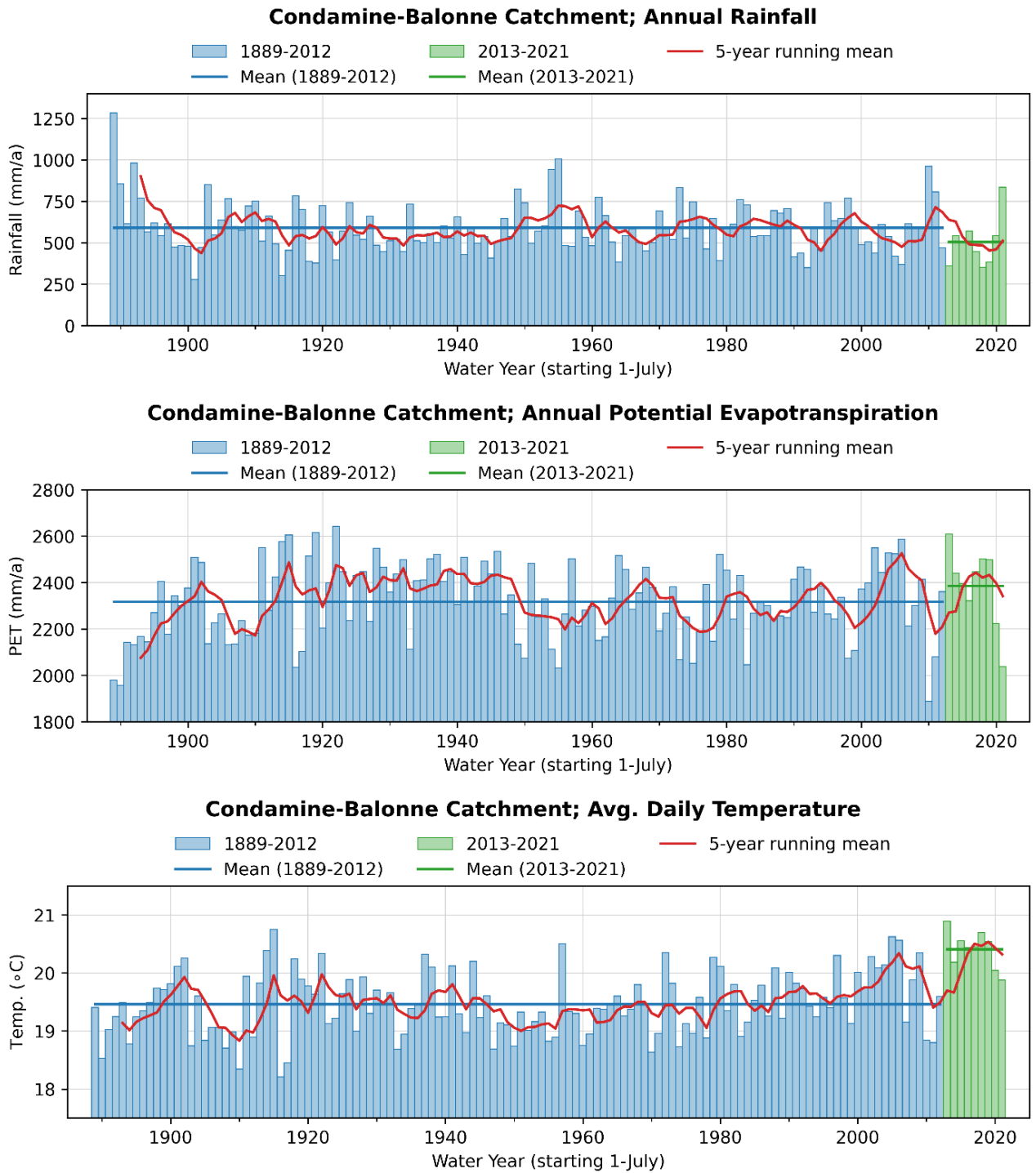
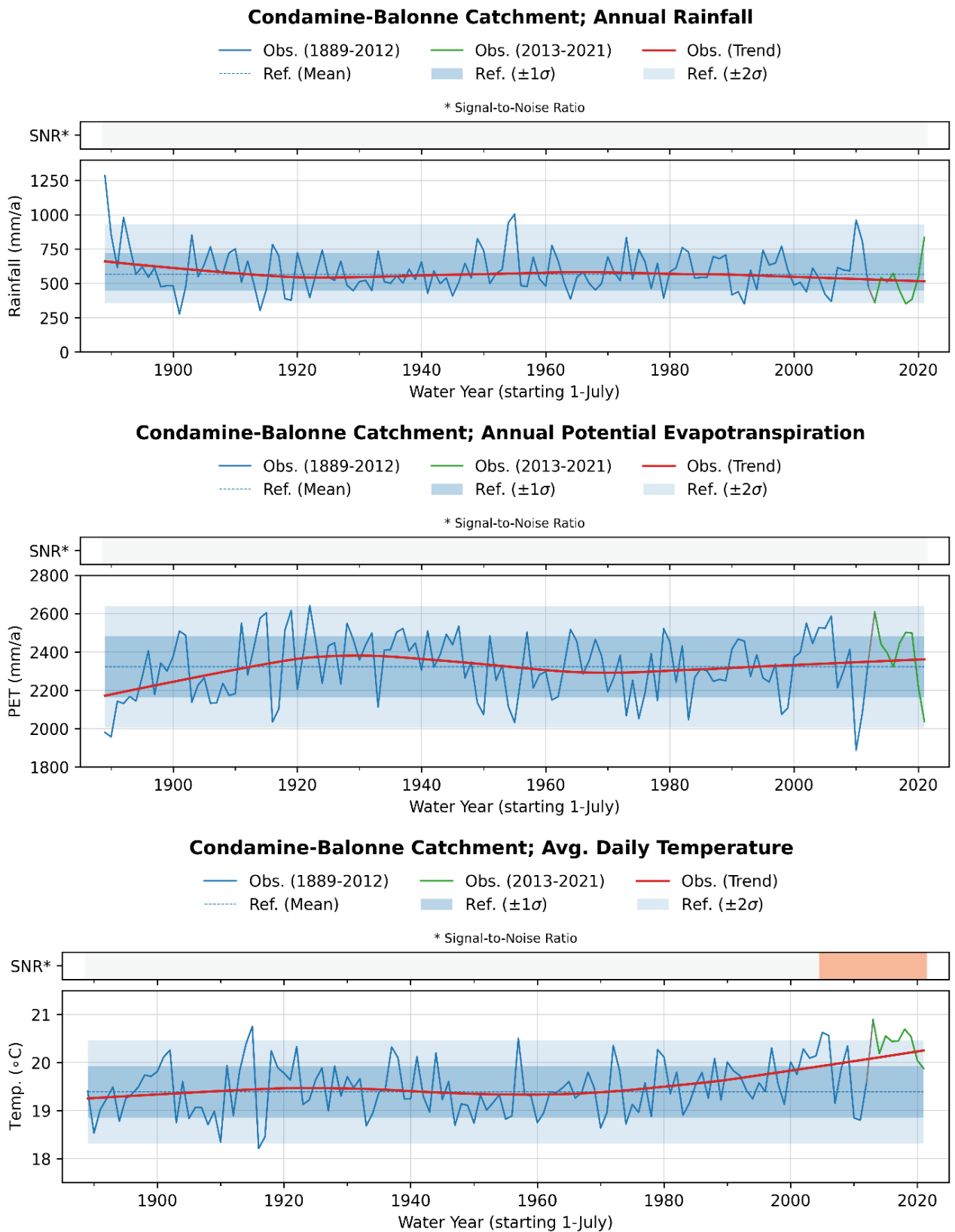


Figure 3: Observed trends in catchment average annual climate – temperature, potential evapotranspiration and rainfall



6.6.2 Climate change projection

Projected annual change in temperature, potential evapotranspiration and rainfall for the Condamine and Balonne Basin is shown in Figure 4. This projection uses RCP emissions scenarios 2.6, 4.5, 6.0 and 8.5. RCP is the Representative Concentration Pathway, a greenhouse gas concentration trajectory where RCP 8.5 represents a future with little reduction in emissions and RCP 2.6 represents the most ambitious mitigation scenario. All scenario projections show a temperature increase, with the scenarios diverging around 2040. This indicates an increase in temperature is now inevitable. There is an associated increase in potential evapotranspiration across the catchment, although recently the projections are slightly overestimating the observations. The projected rainfall has a large uncertainty, which is typical for Queensland. Consequently, there is no identifiable trend in predicted annual rainfall.

Projected monthly changes in climate for the Condamine and Balonne Basin is shown in Figure 5. The temperature and potential evapotranspiration projections broadly show increases for all months, with the evaporation showing high projected increases in the winter and spring months. The monthly rainfall has more variability, but it is trending towards an increase in the summer months and decreases in the winter and spring months. These monthly changes result in a similar annual rainfall, but a potentially drier catchment leading into the wet season. This may have some effect on streamflow generation.

6.6.3 Climate change conclusion

There is evidence that climate change is occurring in the Condamine and Balonne Basin. Future climate change projections show increases in temperature and evapotranspiration. Rainfall shows an increase in summer and decreases in winter and spring but no projected trend in annual rainfall. There is uncertainty in all climate change projections, in particular rainfall. The recent observed climate falls within the projections.

Climate change has been incorporated into the Oakey-Gowrie, Upper Condamine, Charley Creek and Middle Condamine models. The remaining St George and Distributary models do not incorporate climate change.

Climate change analysis is an evolving field with new understandings, models and syntheses published regularly. The information presented in this brief represent the best understanding at the time and are subject to change as new science becomes available.

Figure 4: Observed and projected catchment average annual climate – temperature, potential evapotranspiration and rainfall

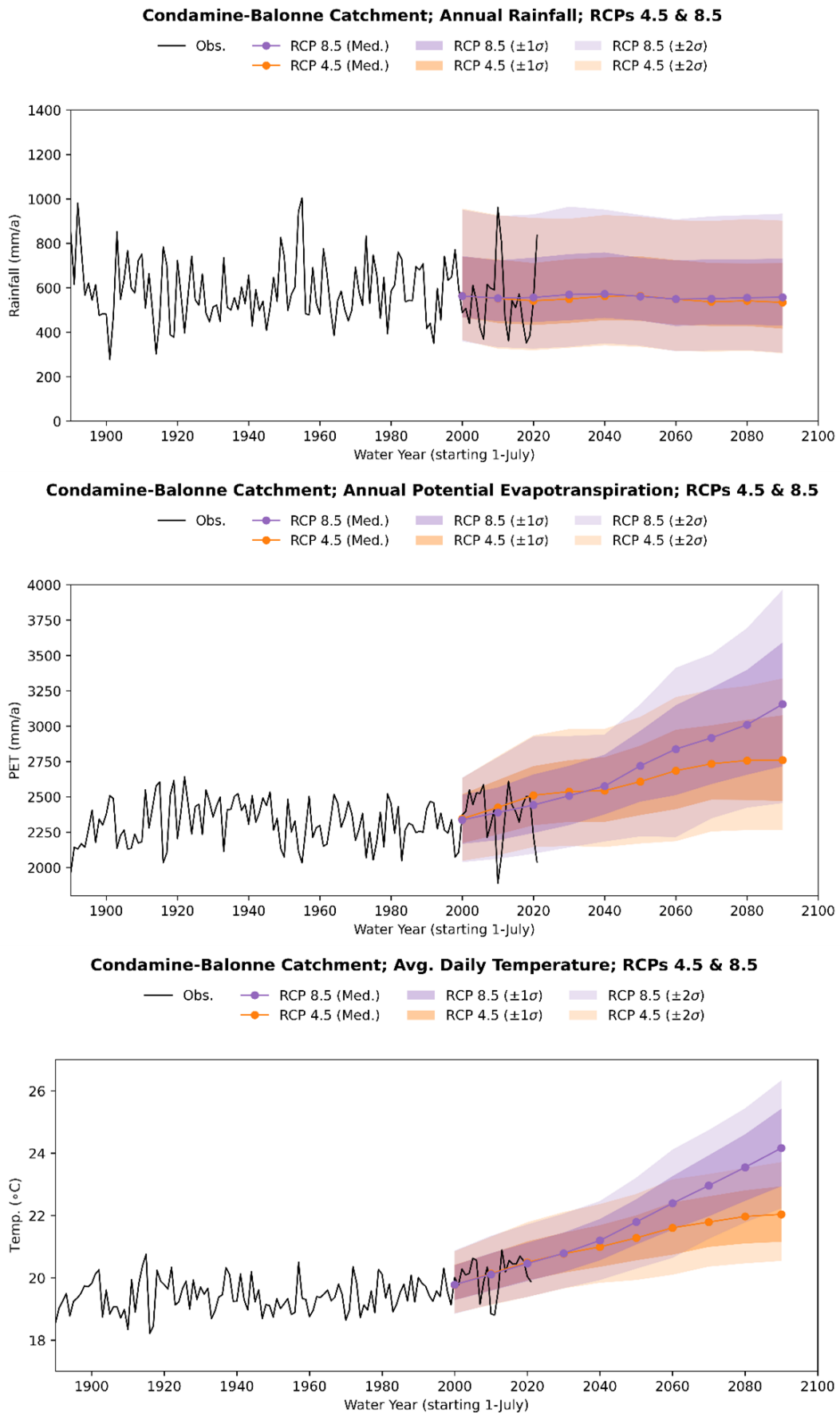
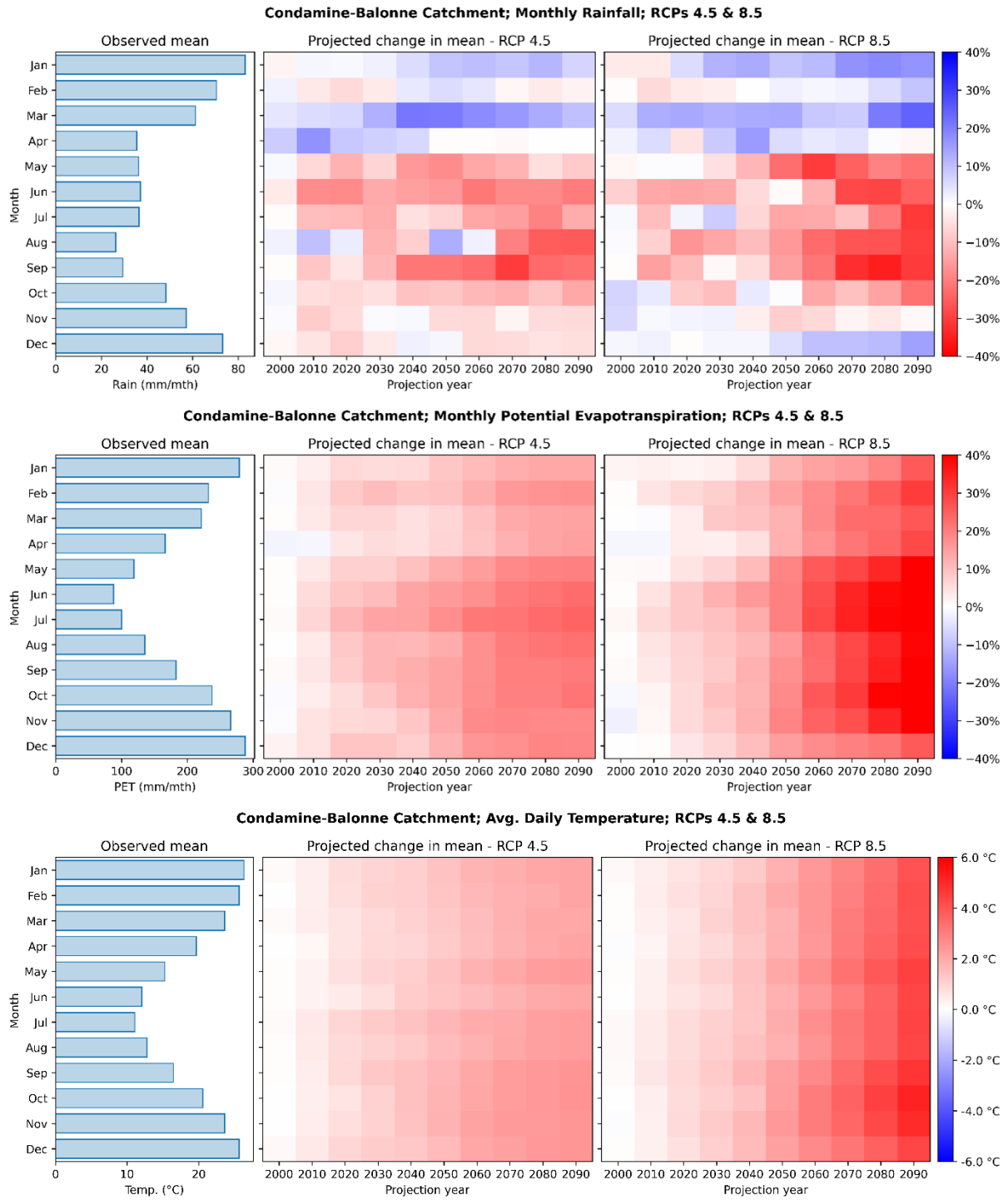


Figure 5: Observed and projected catchment average mean monthly climate – temperature, potential evapotranspiration and rainfall



6.7 Social and economic assessment

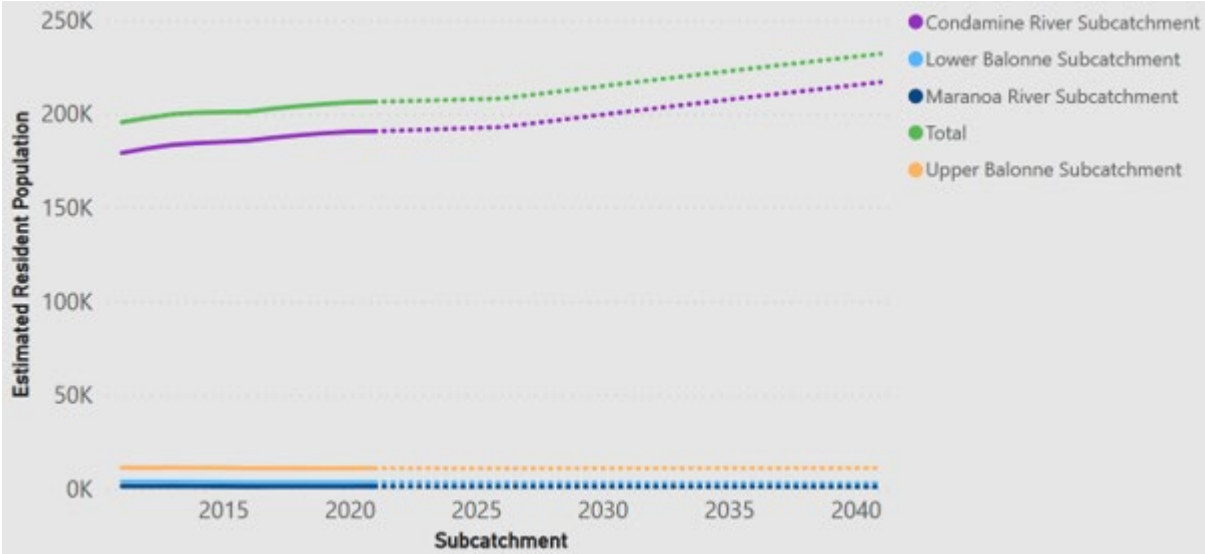
The water plan supports growth in population and industries and aims to maintain flows that support water-related economic values in the plan area. Socio-economic analysis for the Condamine and Balonne water plan area was undertaken. The analysis considered the socio-economic profile of the Condamine and Balonne water plan area, with a focus on changes since the last assessment in 2018. It drew together relevant socio-economic findings and other relevant water plan management information and assesses these against the water plan’s economic and social outcomes.

The socio-economic analysis sourced data from a range of sources including the Australian Bureau of Statistics (ABS), Australian Trade and Investment Commission, Murray-Darling Basin Authority and other agencies. For the purpose of the socio-economic assessment of the catchment, sub-catchments were identified including the Condamine River sub-catchment, Upper Balonne sub-catchment, Lower Balonne sub-catchment and Maranoa River sub-catchment.

6.7.1 Population information

The population of the Condamine and Balonne water plan area in 2021 was an estimated 206,500, with 86 per cent of this population in the Toowoomba local government area (LGA). Toowoomba LGA is within the Condamine River sub-catchment, all other sub-catchments have low populations (less than 15,000) and are projected to decline slightly or stay stable over the projection period to 2041, see Figure 6. Population growth in the Toowoomba LGA is expected to grow up to an estimated 94 per cent of total population by 2041.

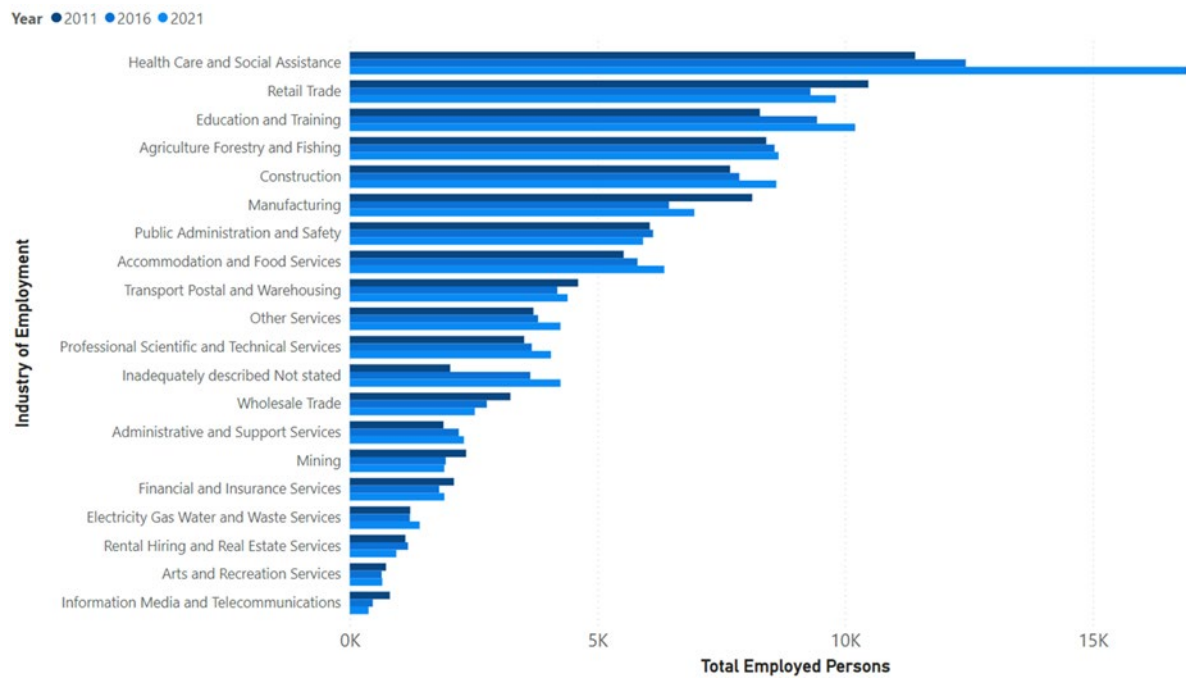
Figure 6: Total estimated population of the Condamine and Balonne water plan area by sub-catchment (forecasted population represented by dotted line). Source: NineSquared calculations, ABS Census Data.



6.7.2 Employment

The industries that are the largest employers of people in the region are health care and social assistance, retail trade and education. The agriculture, forestry and fishing industry is the largest industry group that relies on water security, see Figure 7. Although this industry group encompasses agriculture, forestry and fishing, forestry and fishing are not major employers in the region. This industry group employed 8,567 people in 2021, or approximately 8 per cent of the total employed people in the water plan area, with livestock being the dominant employer of this industry group. The employment data is supported by land use data, with the largest proportion of land use being attributed to grazing pastures in 2023. Other industries dependent on water security, such as mining, saw reduced employment over the ten year period, accounting for only 2 per cent of all employed people within the water plan area.

Figure 7: Total number of employed persons in the water plan area by industry and year. Source NineSquared calculations, ABS Census Data.



6.7.3 Land use change

Land use within the Condamine and Balonne water plan area is dominated by the grazing industry with 72 per cent of the area associated with grazing native vegetation. A further 15 per cent is associated with non-irrigated cropping and horticulture. Irrigated cropping and horticulture accounts for approximately 3 per cent of land in the water plan area. Intensive uses including intensive animal production, residential and industrial land, transport, wastewater management and mining make up around 1 per cent. The remaining 9 per cent of the land area comprises conservation uses and forestry.

6.7.4 Agricultural production and water use

The Condamine and Balonne Socio-Economic analysis considered agricultural production that shows the region is a major producer of livestock commodities and accounts for over 60 per cent of Queensland's cereal crop production. Vegetables and cotton are also important commodities for the region. Table 12 summarises agricultural production by LGAs intersecting the water plan area.

Table 12: Top agricultural commodities production in LGAs intersecting the water plan area as proportion of total Queensland production

Commodity production	Balonne	Maranoa	Southern Downs	Toowoomba	Western Downs	All LGAs production as % of Queensland production
Proportion of LGA area within water plan area	47%	66%	62%	63%	60%	n/a
Livestock - total cattle	122,608	588,958	76,660	398,717	611,089	17%
Livestock - pigs	17	8	46,759	137,829	252,925	57.96%
Livestock - sheep & lambs	396,005	127,727	54,829	23,972	54,333	31.58%
Livestock - live chickens	-	-	131,282	3,971,352	-	80%
Cereal crops (t)	463,982	182,259	53,945	578,519	737,131	62%
Vegetables (t)	6,468	1	16,855	23,081	4,924	8%
Cotton - lint production (kg)	63,398,137	3,633,722	140,206	32,572,900	27,027,094	61%

6.8 Cultural assessment

6.8.1 Legislative Background

A main purpose of the Water Act is providing a framework for the sustainable management of Queensland's water resources. A key objective under this purpose is recognising the interests of Aboriginal and Torres Strait Islander peoples and their connection to water resources. A key provision in recognising these interests is understanding cultural outcomes in relation to water.

In October 2018, the Water Act was amended ensuring that cultural outcomes are now to be specified separately from economic, social and environmental outcomes in all new and replaced Queensland water plans. Furthermore, the water-related interests of any Aboriginal parties or Torres Strait Islander parties must be considered in making new Queensland water plans.

Specifying cultural outcomes in water plans recognises that Aboriginal and Torres Strait Islander peoples hold a wealth of traditional knowledge about water and water-dependent ecosystems, and also hold strong spiritual and cultural connections to water and the natural features they support. This knowledge and connection to water is of critical assistance to the water planning process.

6.8.1.1 Important legislative definitions

Under the Water Act Schedule 4 Dictionary, a cultural outcome means 'a beneficial consequence to an *Aboriginal party* or *Torres Strait Islander party* relating to aquifers, drainage basins, catchments, subcatchments or watercourses.' The definition of *Aboriginal party* under the Water Act refers to the definition of *Aboriginal party* under the [Aboriginal Cultural Heritage Act 2003](#) (ACH Act), which is Queensland's primary legislation to recognise, protect and conserve Aboriginal heritage.

The definition of *Aboriginal party* under the Water Act uses a hierarchical approach to identify the appropriate Aboriginal persons to speak for an area of land and waters, in the traditional sense. An initial consideration is whether there is, or was, any *native title party* for the relevant area. This process requires further reference to legislative definitions under the ACH Act and Commonwealth *Native Title Act 1993*, and researching land tenure and registration status of a native title claimant or of a native title holder. If there is no *native title party* for an area, then an *Aboriginal party* may be a person with recognised responsibility under Aboriginal tradition for the area.

6.8.1.2 Existing protections – taking water for traditional activities and cultural purposes

The Water Act s 95(1) provides that: An Aboriginal party or Torres Strait Islander party may, in the area of the State for which the person is an Aboriginal or Torres Strait Islander party, take or interfere with water for traditional activities or cultural purposes. This provision recognises the rights and interests of native title holders under the Commonwealth Native Title Act; and recognises and allows taking water by an Aboriginal party for an area for the maintenance and protection of Aboriginal cultural heritage in Queensland. This approach is consistent with the recognition and protection of the cultural rights of Aboriginal peoples and Torres Strait Islander peoples under the [Human Rights Act 2019](#) (Qld) (HR Act) s 28.

6.8.1.3 Benefits of specifying cultural outcomes

The cultural outcomes provisions under the Water Act extend further than recognition of existing native title rights and cultural rights. An aim is to ensure that adequate consultation is undertaken to identify cultural outcomes for a water plan area, and that cultural outcomes will be achieved through measures and strategies within the water plan. Community consultation will inform the selection of appropriate measures and strategies and it is intended that environmental flow objectives may be used to deliver cultural outcomes where appropriate.

Specifying cultural outcomes in water plans is not intended to remove the ability for the plan to also consider economic opportunities for Aboriginal peoples, through the use of or access to water, e.g., through setting unallocated water reserves. Water plans will continue to be tailored, on a catchment-by-catchment basis, to provide flexibility to support economic development opportunities for Aboriginal peoples informed by consultation.

6.8.1.4 Water Plan (Condamine and Balonne) 2019 – general outcomes

[Section 18\(e\)\(iii\)](#) of the Water Plan (Condamine and Balonne) 2019 states: A water plan outcome for this plan is that water to which this plan applies is to be allocated and managed in a way that promotes the improved understanding of the water required for social, spiritual, economic, environmental and cultural uses of water by Aboriginal people.

6.8.1.5 Water Plan (Condamine and Balonne) 2019 – cultural outcomes

[Section 21](#) of the Water Plan (Condamine and Balonne) 2019 (Qld) states: The cultural water plan outcomes for this plan are to maintain flows of water to which this plan applies that support the water-related cultural, spiritual, social and environmental values of Aboriginal people.

6.8.1.6 Water Plan (Condamine and Balonne) 2019 – measure to achieve cultural outcomes

[Section 25](#) of the Water Plan (Condamine and Balonne) 2019 (Qld) states: A measure that contributes to achieving the water plan outcomes stated in sections 18(e)(iii) and 21 is the publishing by the chief executive, within 5 years of the commencement, of a report on the flow requirements to support cultural values and uses, informed by engagement with Aboriginal people. The following section (6.8.2) provides information to meet this measure.

6.8.2 Flow requirements to support cultural values and uses

6.8.2.1 Consultation history

Consultation to inform the development and implementation of the Water Plan (Condamine and Balonne) 2019 has been ongoing since August 2016 when a workshop was held in Boggabilla between the Northern Basin Aboriginal Nations (NBAN) Delegates from the Nations in the Queensland Murray-Darling Basin catchment areas. The workshop outlined options for the Aboriginal Nation Delegates to consider how they wished to be engaged. From August 2016 to August 2017, people from the Aboriginal Nations across the plan area were engaged through a series of workshops on a Nation-by-Nation basis. In addition to the Nation workshops, individual Traditional Owners from each basin area were also consulted and input sought.

By April 2018 a draft version of the [2019 Healthy Waters Management Plan for the Condamine River Basin](#) (HWMP) and a draft version of the Water Plan (Condamine and Balonne) 2019 had been made available to Traditional Owners. People from Aboriginal Nations across the plan area were then engaged again during May and June of 2018 to discuss the draft plans and review the way in which their values and uses of water were included. Overall, 180 submissions on the Condamine and Balonne and Border Rivers and Moonie water plans and HWMPs were received from the Aboriginal community.

6.8.2.2 The Water Connections report

The 2019 Queensland Government publication 'Water Connections: Aboriginal People's Water Needs in the Queensland Murray-Darling Basin (2019)' is a comprehensive record of the consultation over the period 2016-2019. A copy of this report is available via the department's Library at the link [here](#). The Aboriginal Nations that have been involved in consultation for the Water Plan (Condamine and Balonne) 2019 include: Barunggam; Bidjara; Bigambul; Euahlayi; Giabel; Githabul; Gomeroi/Kamilaroi; Gunggari; Guwamu/Kooma; Jarowair; Kambuwal; Mandandanji; Murrawarri; Wakka Wakka.

6.8.2.3 Methods of consultation

The engagement process during preparations for the Condamine and Balonne and Border Rivers and Moonie water plans from 2016 to 2018 included 38 Aboriginal Nation workshops, 500+ face-to-face consultations, 30 Country visits, 2,000+ phone calls and emails; 180 submissions on the water plans and HWMPs were received from the Aboriginal community. The Water Plan (Condamine and Balonne) 2019 became effective upon Governor in Council approval on 22 February 2019.

From 2019 to 2023 further water planning consultation meetings were held in St George, Cherbourg, Mitchell, Mungindi, Roma, Toomelah, Warwick, Crow's Nest, Boggabilla. Various online and telephone engagements with Aboriginal Nations also continued throughout this time period. A significant part of this consultation specifically targeted achieving General Outcome 18(e)(iii) and Cultural Outcome 21 to improved and strengthen the understanding of the water-related cultural values and uses of Aboriginal people in the Queensland Murray-Darling Basin. Consultation with Aboriginal Nations is an ongoing process, aligned with the department's strategic and legislative objectives of building effective partnerships, recognising First Nations interests in water management, and identifying and delivering cultural outcomes.

6.8.2.4 Aims of consultation

The consultation process aimed to identify values and uses of water, risks to the values and uses of water, objectives and outcomes desired for the water, and opportunities to strengthen the protection of Aboriginal values and uses, for planning purposes. During consultation, careful consideration is given towards ensuring this information was documented in the participants' own words.

6.8.2.5 Risks raised about insufficient water available

The risks raised at the consultation workshops and during discussions were largely consequential risks that have occurred as a result of insufficient water available for the environment, water being of a quality unsuitable for use or the poor health of water-dependent ecosystems. In the discussions, Aboriginal people often relayed the risks in the form of stories about impacts to important social, spiritual and cultural aspects related to land and water. Participants also drew comparisons between the current state of the river systems and how they remembered using and valuing the river systems when they were children or from stories passed on from earlier generations.

6.8.2.6 Flow requirements

The flow requirements to support cultural values and uses in the Condamine and Balonne water plan area that have been identified from consultation from 2016 to 2023 include:

- Maintain and, if possible, improve the occurrence of natural flows and therefore a variety of flows (low, medium, high/overbank) throughout the plan area, to support a high variety of ecological assets and high levels of endemic biodiversity.
- Maintain and, if possible, improve flows that support waterholes as refugia, river channels, river-forming processes and floodplain wetlands.
- Maintain and, if possible, improve flows that support a healthy and sustainable population of key animal taxa including yellowbelly, Murray Cod, waterbirds, turtles, mussels, yabbies, witchetty grubs, prawns, catfish, dewfish (eel tailed catfish), catfish, crabs, eel, insects.
- Maintain and, if possible, improve flows that support a healthy and sustainable population of key plant taxa including river red gums, bulrushes, lime trees, bumbletrees, wildflowers, reeds, lomandra, floodplain vegetation, bush tucker species.
- Maintain and, if possible, improve flows that support swimming and fishing at accessible recreation and cultural sites.
- Maintain and, if possible, improve natural flows to prolong connectivity between springs, creeks, rivers, waterholes, billabongs and wetlands.

Refer to Table A.4: Cultural outcomes for the plan area below for more detail on water plan strategies that provide for cultural outcomes.

6.8.2.7 The Future directions

The department acknowledges that the work of mapping cultural values and uses (tangible and intangible), is ongoing in many areas and is not complete, including the Condamine and Balonne water plan area. More work is needed to understand the concept of cultural flows and how it applies to the Queensland water planning framework, particularly in light of recent research from the National Cultural Flows Research Project. While the more recent consultation resulted in improved understanding of Cultural values and uses of Aboriginal people and their water requirements, the department is committed to working with Aboriginal people for continued learning, and to look for opportunities to incorporate cultural outcomes in future water plans that is informed by this improved understanding.

6.8.2.8 Human rights considerations

Under the Water Act, there is a focus on consulting and working with *Aboriginal parties* for an area for water plan purposes. However, the department is mindful of its broader obligations under the *Human Rights Act 2019* (Qld) (HR Act) in making all decisions in a way that properly considers, and is compatible with, the cultural rights of Aboriginal peoples and Torres Strait Islander peoples, broadly. Cultural rights under section 28 of the HR Act are not limited to native title holders or claimants or *Aboriginal parties* under the ACH Act. The department is able to consult and understand broader First Nations cultural connections and cultural rights through targeted and public consultation.

The department understands that a human rights-based approach applied to water management will not only help build relationships with Aboriginal peoples and Torres Strait Islander peoples but will also support the ongoing work of the department to understand and recognise the cultural values, rights and interests of Aboriginal peoples and Torres Strait Islander peoples in the sustainable management of water under the Water Act.

7. Water plan amendments and previous reports

The Water Plan (Condamine and Balonne) 2019 commenced in February 2019. One amendment has been made to the plan on 20 September 2023. This was to align the water plan with the [Water Legislation Amendment Act 2023](#). There have been no other significant amendments to the plan or supporting instruments.

Since water plan commencement, this is the first performance assessment report.

The Water Plan (Condamine and Balonne) 2019 was a key document on the package of documents to support the Water Resource Plan that was submitted to the Murray-Darling Basin Authority and accredited by the Australian Government as being consistent with the Basin Plan 2012 in September 2019. Other significant milestones since commencement of the plan are summarised in Table 13 below.

Table 13: Significant milestones since plan commencement

Effective Date	Milestone
22-February-2019	The Water Plan (Condamine and Balonne) 2019 commenced.
30-August-2019	Moratorium notice on works for contaminated agricultural runoff was published and removed in 2023.
21-September-2019	The Water Resource Plan was accredited by the Australian Government as being consistent with the Basin Plan 2012, which included the Water Plan (Condamine and Balonne) 2019 as a key document
2020	Measure 23(4) – Monitoring, Evaluation and Reporting Strategy developed
20-July-2021	Measure 23(3) - The Lower Balonne Water Management Area flow event report was published.
12-December-2022	The Condamine and Balonne long-term watering plan published.
2019-20, 2020-21, 2021-22	Measure 23(2) - Water use reports published

8. Identification of potential risks to the water plan’s outcomes

A risk assessment was completed in September 2023 to identify potential risks to the water plan’s outcomes that could emerge within the next five years. A risk score was attributed to each plan outcome after data and expert opinion were used to rank the likelihood and consequence of threats identified from a standardised list of threats. The risk level and rationale for this ranking were documented (see Appendix A). Under this assessment framework, the level of risk, along with other factors such as the plan’s ability to achieve its outcomes were considered in proposing appropriate actions to mitigate the risks.

Of the 23 water plan outcomes assessed, 17 were assessed as low risk and fully achieved. Part of one environmental outcome is assessed as medium risk with a high risk area and five other outcomes were assessed at medium risk.

The outcomes assessed at medium risk are summarised in Table 14 below.

Table 14: Outcomes assessed as medium risk

Outcomes assessed as medium risk	Summary of assessment	Recommended approach
<p>18(d) seek to achieve a balance between the social, economic, cultural and environmental outcomes</p>	<p>Medium risk scores for some environmental and cultural outcomes indicate balance between social, economic, cultural and environmental outcomes not yet fully realised.</p>	<p>Refer to treatments for other outcomes.</p>
<p>19(1)(g) making water available to support the economic and social aspiration of Aboriginal people</p>	<p>1,950ML of groundwater in the Queensland Murray Darling Basin deep and sediments above the Great Artesian Basin reserved under the plan for a purpose of 'helping an Aboriginal community achieve its economic and social aspirations'.</p> <p>Awareness of water reserved for this purpose has been made through the Water Connections report and ongoing engagement with Aboriginal parties.</p> <p>The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The department will work with Aboriginal and Torres Strait Islander people to support the implementation of this outcome.</p> <p>There have been no requests to access these reserves, potentially influenced by the cost associated with exploring these groundwater reserves.</p> <p>Likelihood: Possible Consequence: Moderate</p>	<p>Continue to engage with Aboriginal and Torres Strait Islander people, build relationships and better understand demand and requirements for this water and how unallocated water can best meet the economic and social aspirations of Aboriginal peoples in the plan area.</p> <p>Continue to engage with Aboriginal and Torres Strait Islander people to implement this outcome.</p>
<p>22(1)(b)(i) to maintain, and if possible, improve flows of water to which this plan applies that support waterholes as refugia</p>	<p>Medium risk to waterholes in the Upper and Mid Condamine and high risk to waterholes in Lower Balonne assessed in 2018. This risk level to waterholes has been maintained in 2023.</p> <p>Assessment based on full entitlement modelling that treats held environmental water as being taken indicating level of risk could be lower.</p> <p>Risk to waterholes in the plan area is partly due to new monitoring and research relating to sedimentation and infilling of waterholes, an issue largely outside the scope of the water planning framework. New information relating water level and quality and thresholds before which waterholes fail to act as a refuge, which underpins modelling of risk, also informs this risk rating.</p> <p>Continued monitoring and gathering scientific data is required.</p> <p>Plan includes strategies and rules that are accredited under Basin Plan such that residual risk is 'tolerable'.</p>	<p>Continue to implement, monitor and assess outcomes, objectives and rules including rules for maintaining waterholes as refugia in preparation for plan review and replacement. The water plan expires in 2029.</p> <p>Further monitoring and further research to better understand critical thresholds and risks.</p>

Outcomes assessed as medium risk	Summary of assessment	Recommended approach
	<p>High level of uncertainty around the consequences to environmental values and water requirements.</p> <p>Likelihood: Possible</p> <p>Consequence: Moderate</p>	
<p>22(1)(c) to maintain and, if possible, improve flows of water to which this plan applies that support bird breeding at Narran Lakes</p>	<p>Medium risk to Narran Lakes asset in 2018 attributed to the reduction in the number of opportunities for bird breeding and recruitment, and maintenance of vegetation vigour maintained in 2023 risk assessment. Assessment based on full entitlement modelling that treats held environmental water as being taken indicating level of risk could be lower.</p> <p>The water plan includes strategies and rules including specific rule for Narran Lakes that are accredited under Basin Plan such that residual risk is 'tolerable'.</p> <p>Continued monitoring and gathering scientific is required.</p> <p>Likelihood: Possible</p> <p>Consequence: Moderate</p>	<p>Continue to implement, monitor and assess outcomes, objectives and rules including rules for managing flow events that support Narran Lakes in preparation for plan review and replacement. The water plan expires in 2029.</p> <p>Further monitoring and further research to better understand critical thresholds and risks.</p>
<p>22(1)(d) to maintain and, if possible, improve flows of water to which this plan applies that support floodplain ecosystems within and downstream of the plan area, including (i) the Balonne River floodplain; and (ii) the Culgoa River floodplain; and (iii) Narran Lakes</p>	<p>Medium risk to floodplain wetlands and high risk to turtles in the Lower Balonne and medium risk to floodplain wetlands and turtles in the Upper Condamine assessed in 2018. Medium risk to floodplain ecosystems maintained in 2023.</p> <p>Assessment based on full entitlement modelling that treats held environmental water as being taken indicating level of risk could be lower.</p> <p>Plan includes strategies and rules that are accredited under Basin Plan such that residual risk is 'tolerable'.</p> <p>Continued monitoring and gathering scientific is required.</p> <p>High level of uncertainty around the consequences to environmental values and water requirements.</p> <p>Likelihood: Possible</p> <p>Consequence: Moderate</p>	<p>Continue to implement, monitor and assess outcomes, objectives and rules including rules for managing flow events that support floodplain inundation events in preparation for plan review and replacement. The water plan expires in 2029.</p> <p>Further monitoring and further research focused on floodplain wetlands and turtles in the plan area.</p>

Outcomes assessed as medium risk	Summary of assessment	Recommended approach
<p>22(1)(h) to maintain an underground water regime in the plan area that supports ecosystems dependent on underground water to which this plan applies</p>	<p>2018 risk assessment identified medium and high risks to springs and baseflows and medium risk to terrestrial vegetation dependent on groundwater in the plan area.</p> <p>2023 risk assessment identified a medium risk to groundwater regime that supports groundwater dependent ecosystems.</p> <p>Risk attributed to increase in demand for groundwater entitlement and basic rights, climate change/variability, increase in urban demand, and knowledge gaps about the groundwater resources and dependent ecosystems.</p> <p>Plan includes strategies and rules that are accredited under Basin Plan such that residual risk is 'tolerable'.</p> <p>High level of uncertainty around the consequences to environmental values and water requirements.</p> <p>Likelihood: Unlikely Consequence: Major</p>	<p>Continue to implement, monitor and assess outcomes, objectives and rules including rules that support groundwater dependent ecosystems in preparation for plan review and replacement. The water plan expires in 2029.</p> <p>Further monitoring and research collecting crucial information about springs ecosystems in plan area including updated spring mapping data and reporting of ecological status and values of springs.</p>

9. Emerging issues

The predominant issue identified as potentially emerging in the near future or beyond the next five-year review cycle is climate change. Although climate change is a contemporary risk, there is significant uncertainty around the impact climate change will have on the water plan area. Some of the key reasons climate change was considered an emerging risk, as well as a contemporary risk, include:

- Rainfall variability – the projected increase in summer months and decrease in winter months, with no projected annual change, leads to uncertainty around the impact of rainfall variability on streamflow.
- The extent increased evapotranspiration and temperature will impact water availability and groundwater recharge.
- The potential impact on the water market.

Another emerging risk identified was the increased groundwater take under basic water rights in peri-urban areas not connected to a town water supply. In these areas, particularly surrounding large urban centres such as Toowoomba, Warwick and Dalby, there is an increase in population and subsequent demand for water. On land that is connected to a town water supply, underground water for stock or domestic purposes from underground water units of the St George Alluvium (deep), Upper Condamine Alluvium (CCA), Upper Condamine Alluvium Tributaries, Upper Condamine Basalts & Condamine Fractured Rock can only be taken from existing underground works.

The risk assessment identified these emerging risks may have an impact on economic, social, cultural and environmental outcomes.

It is proposed that these matters will be considered as part of the next water plan review and replacement process. The learnings gained from implementing the existing plan to date will be used to make improvements to the new plan as part of an adaptive management cycle based on revised future water needs, enhanced scientific information and targeted stakeholder consultation.

10. Any non-compliance under a water entitlement or other authorisation in the water plan area

Over the past five years, there were 1,432 non-compliance incidents, 884 of which were resolved without taking any compliance action and 548 required compliance action. Most incidents related to either late or failure to supply a meter reading. Appendix D provides details on the number and type of alleged non-compliance incidents and the outcome of departmental investigations and compliance response that occurred over the reporting period (2018/19 to 2022/23 water years).

The department uses a range of methods to monitor for compliance against entitlements including field and desktop audits, metering, and third-party notification. Further to this the department continues to invest in building our capability in intelligence tools, such as remote sensing, using satellite imagery for water storages across the state, and improved data analytics to support compliance monitoring and decision making. These activities support public confidence in how water is managed and protects the rights of all entitlement holders and the broader community.

To ensure our water resources are managed fairly and responsibly the department has developed a [Regulatory Strategy Water Resource Management – Water 2022 – 2024](#) that establishes our regulatory approach for the delivery of our regulatory functions and activities. The strategy explains the principles underlying our regulatory approach, the tools we utilise and our compliance and enforcement pathway. The objectives and principles set out in the Regulatory Strategy sets the foundation for our annual compliance planning.

The department's [Annual Compliance Plan 2023-2024](#) identifies activities that support department's compliance approach, including compliance outcomes, performance measures, focus areas, activities, targets and measures. The plan supports the department to take a risk-based, transparent and consistent approach to how we regulate Queensland's water resources.

In addition, the work being done under the Rural Water Futures Program will support improved compliance outcomes. Further information on the Rural Water Futures program and its initiatives can be found on the department's [website](#).

11. Way forward

This five-year assessment of the water plan has highlighted the majority of water plan outcomes have been achieved, however there some existing and emerging issues that may impact the plan's implementation and effectiveness. Possible treatment options have been provided for plan outcomes that were assessed to have a medium or high risk (section 8). Identified emerging issues will be addressed as part of the next water plan review. The water plan expires in 2029 and must be reviewed and replaced prior to expiry.

Overall, the current implementation of the water plan continues to advance the sustainable management of water resources.

Appendix A Assessment of water plan outcomes

Table A.1: General outcomes for the plan area

Plan outcome (as per Section 18 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
18 The outcomes include the allocation and management of water in a way that–			
<p>(a) recognises the natural state of watercourse, lakes, springs and aquifers has changed because of the taking of, and interfering with, water; and</p>	<p>The plan establishes a framework for managing and allocating water to protect the share of water available to entitlement holders and the environment.</p> <p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and environmental flow objectives and associated performance indicators to protect the share of water available to water allocation holders and the environment.</p> <p>Any decision made under the plan must be consistent with the water allocation security objectives and the environmental flow objectives.</p>	<p>The Water Management Protocol (WMP) and Operations Plans implement water plan outcomes and strategies in a way that is consistent with the Basin Plan and water sharing agreements/commitments between Queensland and New South Wales.</p> <p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p>
<p>(b) is consistent with the relevant Basin Plan; and</p>	<p>The water plan identifies the catchment areas, the groundwater management area and units and the water to which the plan applies.</p> <p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan includes outcomes for the protection of Aboriginal values and uses of water through strategies and objectives that protect flows.</p> <p>The water plan establishes strategies to meet its outcomes including requiring an entitlement to take water except for defined low risk activities.</p> <p>The plan defines unallocated water reserves for helping an Aboriginal community achieve its economic and social</p>	<p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences</p> <p>Flow event management rules for the Lower Balonne.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>The water plan is consistent with the Basin Plan 2012 as demonstrated through the accreditation of the water plan and its instruments as part of the water resource plan package and ongoing reporting required as per the Basin Plan 2012 and <i>Water Act 2007</i> (Cth).</p>

Plan outcome (as per Section 18 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
18 The outcomes include the allocation and management of water in a way that–			
	<p>aspirations and any purpose. The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The plan establishes water allocation security objectives and environmental flow objectives and associated performance indicators to protect the share of water available to water allocation holders and the environment.</p> <p>Any decision made under the plan must be consistent with the water allocation security objectives and the environmental flow objectives.</p>	<p>The Operations manuals (OM) for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p>	
(c) is consistent with water sharing agreements and commitments between Queensland and New South Wales; and	<p>The plan was prepared having regard to the water resources in the Intersecting Streams water resource plan area, located downstream in New South Wales, and in consultation with key stakeholders and regional communities.</p> <p>The plan establishes environmental flow objectives, including a specific mean annual flow objective that provides protection to flows into New South Wales receiving waters.</p> <p>The plan prohibits any decision that would increase the average volume of water taken or the total nominal entitlement for taking groundwater under the plan, effectively protecting existing entitlements and water for the environment from incremental increase in the amount of water taken.</p>	<p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>Queensland is a signatory of the Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin 2013.</p>
(d) achieves a balance between– (i) the ecological outcomes in section 11; and (ii) the economic outcomes in section 12; and (iii) the Indigenous outcomes in section 13; and (iv) the social outcomes in section 14.	<p>The plan outcomes recognise the need to balance environmental water needs with other consumptive water users. Water plan development was informed through consultation with stakeholders and collection of scientific data and information.</p>		<p>MEDIUM risk</p> <p>The outcome is being partially achieved.</p> <p>Four outcomes are being partially achieved indicating that this balance has not yet been fully achieved.</p>

Plan outcome (as per Section 18 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
18 The outcomes include the allocation and management of water in a way that–			
<p>(e) promotes improved understanding of-</p> <p>(i) matter affecting flow related and health of underground water dependent ecosystems including springs, in the plan area; and</p> <p>(ii) flow requirements of ecosystems in the plan area; and</p> <p>(iii) the water required for social, spiritual, economic, environmental and cultural uses of water by Aboriginal people; and</p> <p>(iv) the water required to deliver social and economic benefits to communities in the plan area; and</p> <p>(v) the impact of climate change on water availability; and</p> <p>(vi) the actions required to reverse the degradation of natural ecosystems caused by the taking of, or interference with, water to which this plan applies.</p>	<p>The plan includes measures that promote the improved understanding of these matters including:</p> <ul style="list-style-type: none"> - The annual publication of a water use report that includes information about compliance with the sustainable diversion limits - Each decision to implement flow event management rules in the Lower Balonne is recorded and published at least annually. - Information about the number, value and volume of water entitlement trades; and opportunities to improve the effectiveness and efficiency of the water market is to be published within five years of plan commencement. - A report about the flow requirements to support cultural values and uses, informed by engagement with Aboriginal people is to be published within five years of plan commencement 	<p>The WMP includes requirement to measure or collect and keep available records of water quality, water taken, prices for permanent trades, the number and volume of permanent trades and seasonal water assignments.</p> <p>The WMP requires preparation of a flow event report for public release within three months after the end of each flow event.</p> <p>The WMP requires that information be collected on ecological assets linked to the environmental outcomes of the water plan and the critical water requirements of ecological assets in the plan area.</p>	<p>LOW risk</p> <p>This outcome is being achieved.</p>

Table A.2: Economic outcomes for the plan area

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
<p>(1)(a) to maintain the probability of being able to take water to which this plan applies under a water entitlement</p>	<p>The plan provides for the take of surface water, groundwater, overland flow water under a water licence, water allocation or authorisation for defined purposes within defined limits.</p> <p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan provides for the granting of a licence to replace an overland flow authority.</p> <p>The water plan establishes the framework for permanent and temporary trade of water allocations in the plan area.</p> <p>The water plan establishes water allocation security objectives and performance indicators to protect the probability of obtaining supplemented and unsupplemented water under a water allocation.</p> <p>Decisions made under the water plan must be consistent with the water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program. Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department's Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p> <p>Strategic climate change policy development.</p>

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
<p>(1)(b) to maintain and, if possible, improve the productive base of underground water</p>	<p>No decision may be made under the water plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan outlines environmental flow objectives and performance indicators to protect flows to environmental assets including the productive base of groundwater.</p> <p>Decisions made under the water plan must be consistent with the environmental flow objectives stated in the plan.</p> <p>The water plan limits the take of groundwater for stock and domestic purpose in reticulated areas works existing at plan commencement.</p> <p>The water plan limits the total volume that may be taken for prescribed activities to 2ML using works existing at plan commencement.</p>	<p>The WMP defines:</p> <p>Water sharing rules for taking water under an unsupplemented groundwater allocations and water licences including announced entitlement/allocation rules that manage take in consideration of sustainable diversion limits and groundwater levels.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a unsupplemented groundwater allocations including maximum zone volumes and third party impact assessment.</p> <p>Water licence dealing rules for the relocation of groundwater licences including maximum zone volumes and third party impact assessment.</p> <p>Seasonal water assignment rules for unsupplemented groundwater allocation and water licences including limits on the volume that may be seasonally assigned, maximum zones volumes and third party impacts assessment</p> <p>Monitoring and reporting requirements</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of groundwater licences in the Upper Condamine Alluvium Tributaries to water allocations.</p> <p>Commonwealth recovery from willing sellers of 35 GL groundwater in the Upper Condamine Alluvium and Tributaries now held by the CEWO for maintaining productive base of groundwater.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program.</p> <p>Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department’s Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p> <p>Strategic climate change policy development.</p>

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
(1)(c) to improve and support the effective and efficient operation of the market in water allocations and relocatable water licences	The water plan establishes the framework for the permanent and temporary trade of supplemented and unsupplemented water allocations and relocation of some groundwater licences within the plan area.	<p>The WMP defines the following:</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences and</p> <p>Requirement to measure or collect information on the number and nominal volume of permanent and seasonal assignments and associated pricing information for permanent trades.</p> <p>The OMs for water supply schemes define the following:</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program. Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department's Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p> <p>Strategic climate change policy development.</p>

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
<p>(1)(d) to maintain the availability of water to which this plan applies for stock purposes and tourism in the plan area</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes strategies to meet its outcomes including requiring an entitlement to take water except for defined low risk activities (stock or domestic purposes, prescribed activities).</p> <p>The water plan establishes water allocation security objectives and environmental flow objectives and associated performance indicators to protect the share of water available to water allocation holders and the environment.</p> <p>Any decision made under the water plan must be consistent with the water allocation security objectives and the environmental flow objectives.</p> <p>The water plan establishes unallocated water reserves for any purpose. The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The water plan provides for the take of surface water for prescribed activities.</p> <p>The water plan provides for the take of overland flow water for stock or domestic purposes, for prescribed activities, to comply with an environmental authority or development permit or for contaminated runoff.</p> <p>The water plan provides for the take of groundwater for stock or domestic purposes or for prescribed activities.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences.</p> <p>Flow event management rules for the Lower Balonne.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program. Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department's Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p> <p>Southern and Darling Downs Regional Water Assessment (draft released for public comment).</p>

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
<p>(1)(e) to maintain the availability of water to which this plan applies for industries dependent on water resources</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes strategies to meet its outcomes including requiring an entitlement to take water except for defined low risk activities.</p> <p>The water plan establishes water allocation security objectives and environmental flow objectives and associated performance indicators to protect the share of water available to water allocation holders and the environment.</p> <p>Any decision made under the water plan must be consistent with the water allocation security objectives and the environmental flow objectives.</p> <p>The water plan establishes unallocated water reserves for any purpose. The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The water plan provides for the take of surface water for prescribed activities, limiting take to 2ML using existing works.</p> <p>The water plan provides for the take of overland flow water for prescribed activities, to comply with an environmental authority or development permit or for contaminated runoff.</p> <p>The water plan provides for the take of groundwater for prescribed activities limiting take to 2ML using existing works.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>There are reserves of unallocated water for any purpose.</p> <p>The water plan provides for the permanent and temporary trade of water.</p> <p>The plan provides for the take of surface water including overland flow water, and groundwater for prescribed activities.</p>

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
<p>(1)(f) to maintain and, if possible, improve flood flows to support grazing activities in the plan area and in the Lower Balonne distributary system</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes water allocation security objectives and environmental flow objectives and associated performance indicators to protect the share of water available to water allocation holders and the environment.</p> <p>Any decision made under the water plan must be consistent with the water allocation security objectives and the environmental flow objectives.</p> <p>The water plan limits the take of overland flow water to existing take or for specified low risk activities including stock purposes.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p>

Plan outcome (as per Section 19 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
19 The economic outcomes for water in the plan area are–			
<p>(1)(g) to make water to which this plan applies available to support the economic and social aspirations of Aboriginal people</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes unallocated water reserves for helping an Aboriginal community achieve its economic and social aspirations and any purpose.</p> <p>The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The water plan provides for the take of surface water for prescribed activities.</p> <p>The water plan provides for the take of overland flow water for stock or domestic purposes, for prescribed activities, to comply with an environmental authority or development permit or for contaminated runoff.</p> <p>The water plan provides for the take of groundwater for stock or domestic purposes or for prescribed activities.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences.</p> <p>Flow event management rules for the Lower Balonne.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation.</p>	<p>Medium risk</p> <p>The outcome is being partially achieved.</p> <p>The water plan reserves unallocated water for helping an aboriginal community achieve its economic and social aspirations. The processes for releasing unallocated water are in the Water Regulation.</p> <p>The department will continue to work with Aboriginal and Torres Strait Islander people to support the implementation of this outcome.</p> <p>Unallocated water reserves promoted through Water Connections report and ongoing engagement.</p> <p>Continued engagement with local Aboriginal and Torres Strait Islander peoples will be undertaken to better understand the demand and requirements and implement this outcome.</p> <p>Groundwater reserved may be costly to explore, reducing the overall accessibility.</p>

Table A.3: Social outcomes for the plan area

Plan outcome (as per Section 20 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
20 The social outcomes for water in the plan area are–			
<p>(a) to maintain— (i) the availability of water to which this plan applies for the supply of urban water to towns and communities dependent on the water resources</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes unallocated water reserves for any purpose. The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The water plan establishes the framework for the permanent and temporary trade of water allocations.</p> <p>The water plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Any decision made under the plan must be consistent with these security objectives.</p> <p>The water plan authorises the take of groundwater and overland flow water without an entitlement for stock domestic purpose, limiting take of groundwater to existing works in reticulated areas.</p> <p>The water plan authorises the take of groundwater, surface water and overland flow water for prescribed activities, limited to 2ML using existing works.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program. Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department’s Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p> <p>Southern and Darling Downs Regional Water Assessment (currently in draft for public comment).</p> <p>Urban Water Security Assessments.</p>

Plan outcome (as per Section 20 of plan)	Plan strategies that provide for outcomes	Water Management Protocol and Operations Manual rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
<p>(a) to maintain— (ii) the flows of water to which this plan applies that support water-related aesthetic, cultural and recreational values</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes environmental flow objectives and performance indicators that protect the share of water available to the environment.</p> <p>Any decision made under the plan must be consistent with defined environmental flow objectives for mean annual flow as well as waterhole persistence, fish migration events, floodplain inundation and river forming flows.</p> <p>The take of water for prescribed activities is limited to 2ML using existing works.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Flow event management rules for the Lower Balonne.</p> <p>Monitoring and reporting requirements.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p>
<p>(b) to provide water to which this plan applies for domestic purposes in the plan area.</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Any decision made under the plan must be consistent with these security objectives.</p> <p>The plan authorises the take of groundwater and overland flow water without an entitlement for stock domestic purpose, limiting take of groundwater to existing works in reticulated areas.</p> <p>The plan authorises the take of groundwater, surface water and overland flow water for prescribed activities, limited to 2ML using existing works.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of an unsupplemented water allocation.</p> <p>Rules for seasonal assignment and relocation of water licences.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Seasonal water assignment rules for the temporary trade of all or part of a supplemented water allocation.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p>

Table A.4: Cultural outcomes for the plan area

Plan outcome (as per Section 21 of plan)	Plan strategies that provide for outcomes	Resource operations plan (ROP) management rules that provide for outcome	Qualitative risk ranking and preliminary assessment of outcome
21 The cultural outcomes for water in the plan area are–			
<p>Maintain flows of water to which this plan applies that support the water-related cultural, spiritual, social and environmental values of Aboriginal people</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes unallocated water reserves for helping an Aboriginal community achieve its economic and social aspirations and any purpose.</p> <p>The processes for releasing unallocated water are stated in the Water Regulation.</p> <p>The water plan establishes environmental flow objectives and performance indicators that protect the share of water available to environmental assets linked to cultural values and uses including:</p> <p>Yellow Belly (Golden Perch) and stable flow spawning fish.</p> <p>Waterholes as refugia.</p> <p>Floodplain wetlands including Balonne River Floodplain, Culgoa River Floodplain and Narran Lakes and eastern snake-necked turtle.</p> <p>Fluvial geomorphology and river forming processes.</p> <p>Any decision made under the plan must be consistent with defined environmental flow objectives for mean annual flow as well waterhole persistence, fish migration flow events, floodplain inundation and river forming flows.</p> <p>Held environmental water is given the same protection as any other water entitlement. Decisions about how HEW is traded or managed must be consistent with the environmental flow objectives and performance indicators. Protection of HEW also supports achieving cultural values and uses.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne.</p> <p>Monitoring and reporting requirements.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements.</p>	<p>Low risk</p> <p>The outcome is being achieved.</p> <p>Significant consultation and engagement are being undertaken to better understand the water related cultural, spiritual, social and environmental values of Aboriginal people.</p> <p>Further engagement and relationship building is occurring and will be required in the lead up to the review and replacement of the water plan to increase certainty in knowledge of these values and their water requirements.</p>

Table A.5: Environmental outcomes for the plan area

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
22 The environmental outcomes for water in the plan area are–					
<p>(1)(a) to maintain the probability of being able to take surface water to which this plan applies under a water entitlement held only for providing benefit to the environment;</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit).</p> <p>The water plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Any decision made under the plan must be consistent with these security objectives.</p> <p>The water plan limits the take of water for prescribed activities to 2ML using existing works.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne for low, medium flows and Narran Lakes.</p> <p>Monitoring and reporting requirements.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental purposes including ‘waterhole drawdown rule’.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	<p>All:</p> <p>Waterholes</p> <p>River-forming processes</p> <p>Waterbirds</p> <p>Floodplain wetlands</p> <p>Floodplain vegetation</p> <p>Narran Lakes</p> <p>Golden perch</p> <p>Stable flow spawning fish</p> <p>Groundwater dependent ecosystems.</p>	<p>All monitoring referred to below.</p>	<p>LOW risk</p> <p>The outcome is being achieved. Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Commonwealth recovery of 86GL from willing sellers now held by the CEWO for environmental purposes.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program.</p> <p>Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department’s Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>(1)(b) to maintain and, if possible, improve flows of water to which this plan applies that support—</p> <p>(i) waterholes as refugia; and</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The water plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets including waterholes.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations including 'nil passflow rule'.</p> <p>Flow event management rules for the Lower Balonne for low, medium flows and Narran Lakes.</p> <p>Monitoring and reporting requirements.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes including 'waterhole drawdown rule'.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	<p>Waterholes</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Monitoring information has been collated on a range of assets including refugial waterholes persistence and sediment deposition.</p>	<p>Medium Risk (Upper and Mid Condamine)</p> <p>High risk (Lower Balonne)</p> <p>The outcome is being partially achieved.</p> <p>Risk level due emerging knowledge regarding sedimentation and waterhole infilling, flows and drawdown thresholds.</p> <p>The strategies in place to manage this risk including ecological outcomes, environmental flow objectives and rules will continue to be implemented, monitored and assessed as part of the water plan review and replacement. The water plan expires in 2029 and must be replaced prior to expiry.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Commonwealth recovery of 86GL from willing sellers now held by the CEWO for environmental purposes.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
	The water plan limits the take of water for prescribed activities to 2ML using existing works.				<p>Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department's Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p> <p>Continuing risk to waterholes is partly a result of factors outside the scope of the water plan i.e. sedimentation of waterholes as well as new monitoring and research relating to minimum thresholds used to determine the waterholes ability to act as a refuge, which underpins modelling of risk, is not yet incorporated into the plan.</p>
(1)(b)(ii) river channels; and	No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)	The WMP defines the following: Water sharing rules for taking water under an unsupplemented water allocations and water licences. Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.	Waterholes River forming processes	The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes. Monitoring information has been collated on a range of assets including refugial waterholes persistence and sediment deposition.	LOW risk The outcome is being achieved. The water plan and supporting instruments implement rules and strategies to provide protection to river channels and river forming flows e.g. 'no growth' plan; EFO for river forming flows.

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
	<p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets including river channels.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>Flow event management rules for the Lower Balonne.</p> <p>Monitoring and reporting requirements.</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>			

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
(1)(b)(iii) river-forming processes	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets including river channels.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne</p> <p>Monitoring and reporting requirements</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	River forming processes	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Monitoring information has been collated on a range of assets including river forming processes such as sediment movement through erosion, transport and deposition.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>The water plan and supporting instruments implement rules and strategies to provide protection to river channels and river forming flows e.g. 'no growth' plan; EFO for river forming flows.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>(1)(c) to maintain and, if possible, improve flows of water to which this plan applies that support bird breeding at Narran Lakes.</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets including waterhole persistence and floodplain inundation.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne</p> <p>Monitoring and reporting requirements</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	<p>Waterbirds</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Monitoring information has been collated on a range of assets including survey of waterbirds at Narran Lakes.</p>	<p>MEDIUM risk</p> <p>The outcome is being achieved.</p> <p>The water plan and supporting instruments implement rules and strategies that support bird breeding at Narran Lakes e.g. 'no growth' plan; EFOs and flow event management rules.</p> <p>The strategies in place to manage this risk will continue to be refined based on new knowledge for plan review and replacement. The water plan expires in 2029. The water plan must be reviewed and replaced prior to expiry.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Commonwealth recovery of 86GL from willing sellers now held by the CEWO for environmental purposes.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program.</p> <p>Queensland non-urban measurement policy, standard and implementation plan.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
					<p>Increased regulatory presence and focus across high-risk areas under the department's Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p>
<p>(1)(d) to maintain and, if possible, improve flows of water to which this plan applies that support floodplain ecosystems within and downstream of the plan area, including—</p> <p>(i) the Balonne River floodplain; and</p> <p>(ii) the Culgoa River floodplain; and</p> <p>(iii) Narran Lakes</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets including floodplain ecosystems.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne</p> <p>Monitoring and reporting requirements</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p>	<p>Floodplain wetlands</p> <p>Floodplain vegetation</p> <p>Narran Lakes</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Monitoring information has been collated on a range of assets including floodplain wetlands and vegetation and the Narran Lakes.</p>	<p>MEDIUM risk</p> <p>The outcome is being achieved.</p> <p>A high level of uncertainty about consequences to environmental values and water requirements affects confidence of assessment.</p> <p>The water plan and supporting instruments implement rules and strategies that support bird breeding at Narran Lakes e.g. 'no growth' plan; EFOs and flow event management rules</p> <p>The strategies in place to manage this risk will continue to be refined based on new knowledge for plan review and replacement. The water plan expires in 2029. The water plan must be reviewed and replaced prior to expiry.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
	<p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>Water sharing rules for taking water under a supplemented water allocation. Monitoring and reporting requirements</p>			<p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Commonwealth recovery of 86GL from willing sellers now held by the CEWO for environmental purposes.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program.</p> <p>Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the department's Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Surface water and groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>(1)(e) to minimise changes to flows of water in the plan area that support fish movement and fish recruitment</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne</p> <p>Monitoring and reporting requirements</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	<p>Golden Perch</p> <p>Stable flow spawning fish</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Monitoring information has been collated on a range of assets including small-bodied fish requiring low to medium flows and water level stability for spawning and recruitment and Golden Perch, an indicator species for flow spawning fish with spawning and recruitment that is responsive to elevated river flow and floodplain inundation.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>The water plan and supporting instruments implement rules and strategies to provide protection to migratory fish e.g. 'no growth' plan; EFO for fish migration flow events</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>(1)(f) to minimise adverse environmental impacts, relating to water to which this plan applies, caused by the operation of infrastructure in the plan area</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne</p> <p>Monitoring and reporting requirements</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	<p>Golden Perch</p> <p>Stable flow spawning fish</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Monitoring information has been collated on a range of assets including small bodied fish requiring low to medium flows and water level stability for spawning and recruitment and Golden Perch, an indicator species for flow spawning fish with spawning and recruitment that is responsive to elevated river flow and floodplain inundation.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>The water plan and supporting instruments implement rules and strategies to provide protection to migratory fish e.g. 'no growth' plan; EFO mean annual flow, waterhole persistence, fish migration flow events, floodplain inundation events and river forming flows; and operating rules for infrastructure including for the store and release of water for environmental purposes.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>(1)(g) to minimise water quality degradation in relation to—</p> <p>(i) for surface water to which this plan applies—flow; and</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines the following:</p> <p>Water sharing rules for taking water under an unsupplemented water allocations and water licences.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a supplemented and unsupplemented water allocations.</p> <p>Flow event management rules for the Lower Balonne</p> <p>Monitoring and reporting requirements</p> <p>The OMs for water supply schemes define the following:</p> <p>Operating rules for supplemented water including for the store and release of water for environmental, stock and domestic purposes.</p> <p>Water sharing rules for taking water under a supplemented water allocation.</p> <p>Monitoring and reporting requirements</p>	<p>All surface water assets</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes.</p> <p>Assessment of risk to water quality under different flow regimes is complicated by relationships between factors such as soils, temperature, primary productivity, and flow.</p> <p>To better understand these dynamics to that water quality outcomes can be adequately assessed at plan review.</p> <p>Future projects will review water quality sensitivity to flow regime changes allow better understanding of these dynamics so that water quality outcomes may be adequately assessed, and appropriate strategies be developed at plan review and replacement.</p>	<p>LOW risk</p> <p>The outcome is being achieved.</p> <p>There is a high level of uncertainty around the interaction of the flow regime and water quality, compounded by limited spatial and temporal monitoring of water quality.</p> <p>However, given the plan precludes any decision that would increase the amount of water taken, and strategies are in place to manage the take of water and its relocation, likelihood and consequence of this risk are rare and minor.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>(1)(g) to minimise water quality degradation in relation to— (ii) for underground water to which this plan applies— flow and pressure</p>	<p>No decision may be made under the plan that would increase the amount of water taken (other than a decision about unallocated water or groundwater not in a groundwater unit) The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement. Environmental flow objectives and performance indicators are specified to protect environmental assets. Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>The WMP defines: Water sharing rules for taking water under an unsupplemented groundwater allocations and water licences including announced entitlement/allocation rules that manage take in consideration of sustainable diversion limits and groundwater levels. Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a unsupplemented groundwater allocations including maximum zone volumes and third party impact assessment. Water licence dealing rules for the relocation of groundwater licences including maximum zone volumes and third party impact assessment. Seasonal water assignment rules for unsupplemented groundwater allocation and water licences including limits on the volume that may be seasonally assigned, maximum zones volumes and third party impacts assessment Monitoring and reporting requirements</p>	<p>Groundwater dependent ecosystems</p>	<p>The <i>Summary of Environmental Monitoring Water Plan (Condamine & Balonne) 2019</i> provides a summary of key findings of projects as they relate to the assessment of the water plan's ecological outcomes. Limited information about groundwater dependent ecosystems in the Condamine and Balonne water plan areas makes it difficult to adequately assess groundwater-related outcomes. Future projects will collect crucial information on spring ecosystems to increase confidence in future water plan assessments.</p>	<p>LOW risk The outcome is being achieved. There is a high level of uncertainty around the interaction of groundwater flow and pressure and water quality in the plan area, compounded by limited spatial and temporal monitoring of water quality. However, given the plan precludes any decision that would increase the amount of water taken, and strategies are in place to manage the take of water and its relocation, likelihood and consequence of this risk are rare and minor.</p>
<p>(1)(h) to maintain an underground water regime in the plan area that supports</p>	<p>No decision may be made under the plan that would increase the amount of water taken</p>	<p>The WMP defines: Water sharing rules for taking water under an</p>	<p>Groundwater dependent ecosystems</p>		<p>MEDIUM risk The outcome is being partially achieved.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
<p>ecosystems dependent on underground water to which this plan applies</p>	<p>(other than a decision about unallocated water or groundwater not in a groundwater unit)</p> <p>The plan establishes water allocation security objectives and performance indicators to protect the share of water available to the holder of a water allocation. Held environmental water is given the same protection as any other water entitlement.</p> <p>Environmental flow objectives and performance indicators are specified to protect environmental assets.</p> <p>Decisions made under the plan must be consistent with the environmental flow and water allocation security objectives stated in the plan.</p>	<p>unsupplemented groundwater allocations and water licences including announced entitlement/allocation rules that manage take in consideration of sustainable diversion limits and groundwater levels.</p> <p>Water allocation dealing rules for the subdivision, amalgamation and change (including for permanent relocation/trade) of a unsupplemented groundwater allocations including maximum zone volumes and third party impact assessment.</p> <p>Water licence dealing rules for the relocation of groundwater licences including maximum zone volumes and third party impact assessment.</p> <p>Seasonal water assignment rules for unsupplemented groundwater allocation and water licences including limits on the volume that may be seasonally assigned, maximum zones volumes and third party impacts assessment</p> <p>Monitoring and reporting requirements</p>			<p>A high level of uncertainty about consequences to environmental values and water requirements affects confidence of assessment.</p> <p>The water plan and supporting instruments implement rules and strategies that support ecosystems dependent on groundwater e.g. 'no growth' plan; EFOs for baseflow and productive base of groundwater; and water sharing and dealing rules for groundwater entitlements.</p> <p>The strategies in place to manage this risk will continue to be refined based on new knowledge for plan review and replacement. The water plan expires in 2029. The water plan must be reviewed and replaced prior to expiry.</p> <p>Strategies and rules in water plan and supporting instruments supported by:</p> <p>The conversion of licences to tradeable water allocations at plan commencement.</p> <p>Commonwealth recovery of 35 GL from willing sellers now held by the CEWO for maintaining the productive base of groundwater.</p> <p>Enhanced measurement and monitoring being promoted under the Rural Water Futures program.</p>

Plan outcome (as per Section 22 of plan)	Plan strategies that provide for outcomes	Management rules that provide for outcome	Related ecological assets	Summary of monitoring and assessment	Qualitative risk ranking and preliminary assessment of outcome
					<p>Queensland non-urban measurement policy, standard and implementation plan.</p> <p>Increased regulatory presence and focus across high-risk areas under the departments Water Resource Management Regulatory Strategy 2022-24 and Annual Compliance Plan.</p> <p>Groundwater monitoring networks.</p> <p>Contemporary hydrologic modelling</p>

Appendix B Water trade data

Table B.6: Seasonal Water Assignment summary (supplemented and unsupplemented surface water)

Water Supply Scheme (WSS) or Water Management Area (WMA)	Water Year	Number of SWA	Volume (ML)
Gowrie Oakey Creek WMA	2017/18	17	2,805
	2018/19	16	2,540
	2019/20	18	2,813
	2020/21	19	2,975
	2021/22	20	3,260
	2022/23	17	2,454
Upper Condamine WSS	2017/18	18	298
	2018/19	0	0
	2019/20	23	920
	2020/21	27	2,783
	2021/22	5	290
	2022/23	0	0
Chinchilla Weir WSS	2017/18	14	976
	2018/19	16	1,583
	2019/20	14	1,367
	2020/21	5	271
	2021/22	1	68
	2022/23	0	0
Upper Condamine WMA	2017 to 2023	0	0
Condamine and Balonne and Tributaries WMA	2017 to 2023	0	0
Maranoa WSS	2017 to 2023	0	0
St George WSS	2017/18	139	15,216
	2018/19	170	20,259
	2019/20	155	9,612
	2020/21	83	13,239
	2021/22	18	3,826
	2022/23	0	0
Lower Balonne WMA	2017/18	0	0
	2018/19	0	0
	2019/20	6	14,924
	2020/21	9	15,968
	2021/22	0	0
	2022/23	0	0

Table B.7: Permanent water trade summary (supplemented and unsupplemented surface water)

Water Supply Scheme or Water Management Area	Water year	Permanent trade water (no.)	Permanent trade water (ML)	Permanent trade water & land (no.)	Permanent trade water & land (ML)	Total permanent trade (ML)
Gowrie Oakey Creek WMA	2017/18	1	72	9	1,882	1,954
	2018/19	2	132	2	108	240
	2019/20	2	120	4	420	540
	2020/21	5	494	10	2,070	2,564
	2021/22	3	144	3	547	691
	2022/23	0	0	3	108	108
Upper Condamine WSS	2017/18	6	652	11	1,762	2,414
	2018/19	8	1,171	5	634	1,805
	2019/20	7	1,886	3	28	1,914
	2020/21	6	1,469	7	1,272	2,741
	2021/22	4	100	4	1,176	1,276
	2022/23	1	308	2	248	556
Chinchilla Weir WSS	2017/18	0	0	0	0	0
	2018/19	4	216	1	252	468
	2019/20	1	1	1	30	31
	2020/21	1	30	2	67	97
	2021/22	0	0	0	0	0
	2022/23	0	0	0	0	0
Upper Condamine WMA	2017/18	14	1,675	18	5,058	6,733
	2018/19	10	1,658	10	1,715	3,373
	2019/20	4	1,166	9	2,480	3,646
	2020/21	2	250	4	850	1,100
	2021/22	8	2,916	8	228	3,144

Water Supply Scheme or Water Management Area	Water year	Permanent trade water (no.)	Permanent trade water (ML)	Permanent trade water & land (no.)	Permanent trade water & land (ML)	Total permanent trade (ML)
	2022/23	3	798	12	2,025	2,823
Condamine and Balonne and Tributaries WMA	2017/18	21	2,010	16	9,172	11,182
	2018/19	11	883	10	1,183	2,066
	2019/20	8	690	14	1,453	2,143
	2020/21	11	1,798	13	3,430.5	5,228.5
	2021/22	6	1,716	13	2,774	4,490
	2022/23	17	1,365	25	1,142	2,507
Maranoa WSS	2017/18	0	0	0	0	0
	2018/19	0	0	0	0	0
	2019/20	0	0	0	0	0
	2020/21	0	0	1	40	40
	2021/22	0	0	0	0	0
	2022/23	0	0	0	0	0
St George WSS	2017/18	10	2,853	8	771	3,624
	2018/19	6	285	3	490	775
	2019/20	9	3,719	11	4,745	8,464
	2020/21	6	514	4	477	991
	2021/22	17	7,275	9	989	8,264
	2022/23	14	3,870	13	538	4,408
Lower Balonne WMA	2017/18	10	7,127	1	621	7,748
	2018/19	5	1,822	1	2,960	4,782
	2019/20	2	496	3	108,635	109,131
	2020/21	3	3,087	1	1,250	4,337
	2021/22	8	113,622	1	4,005	117,627
	2022/23	1	5,995	16	4,882	10,877

Table B.8: Seasonal water assignment summary (groundwater)

Underground water unit	Water year	Number of SWA	Volume (ML)
Central Condamine Alluvium	2019/20	84	5,052.62
	2020/21	65	4109
	2021/22	24	1,335.46
	2022/23	35	2,126.57
Upper Condamine Alluvium Tributaries	2019/20	26	1,004.4
	2020/21	20	774.9
	2021/22	3	52.8
	2022/23	4	100
Upper Condamine Basalts	2019/20	26	1,201.2
	2020/21	16	680.8
	2021/22	12	313
	2022/23	8	224

Table B.9: Permanent water trade summary (groundwater) separate from land

Underground water unit	Water Year	Number of permanent trades	Volume (ML)
Central Condamine Alluvium	2019/20	11	915
	2020/21	5	385
	2021/22	6	341
	2022/23	1	53
Upper Condamine Alluvium Tributaries	2019/20	11	407
	2020/21	14	840
	2021/22	10	622
	2022/23	3	230

Table B.10: Average value of permanent water entitlement trades separate from land (2019/20 to 2022/23 water years)¹²

Water Supply Scheme or Water Management Area	Average \$/ML
Chinchilla Water Supply Scheme	2,400-4,500
St George Water Supply Scheme	2,800-7,600
Upper Condamine Water Supply Scheme	2,000-3,400
Condamine Balonne Tributaries Water management Area	300-3,900
Condamine Balonne Water Management Area	1,200-4,000
Gowrie Oakey Creek Water Management Area	500-7,000
Lower Balonne Water Management Area	1,500
Upper Condamine Water Management Area	2,500-3000
Upper Condamine Alluvium (Tributaries) underground water unit (Oakey Creek, Dalrymple Creek and Cunningham Alluvium sub-areas)	2,200-5,000
Upper Condamine Alluvium (Central Condamine Alluvium) underground water unit	1,900-10,000

¹² Permanent water trading and relocatable licence data available on Business Queensland. Average value of permanent water trades rounded to nearest \$100.

Appendix C Water taken or interfered with under statutory authorisations

Table C.11: Water taken or interfered with under statutory authorisations

<i>Water Act 2000</i> (section)	Current level of utilisation of statutory authorisations
Authorisations that may <i>not</i> be limited by water planning instrument	
S93 General authorisations to take water (e.g., firefighting, watering travelling stock)	<p>No major change in water taken under this general authorisation.</p> <p>There is no evidence to suggest major increases in take of water for incidences of firefighting, camping or travelling stock.</p>
S94 General authorisations to interfere with water. (e.g., overland flow, impoundments on a watercourse for state monitoring purposes)	<p>No new impoundments or interference identified under this general authorisation.</p>
S95 Aboriginal and Torres Strait Islander parties (the take or interference with water for traditional activities or cultural purposes)	<p>No identified change in water take under this general authorisation</p> <p>There is no evidence to suggest an increases in the take or interference with water for traditional activities or cultural purposes.</p>
S96 Landowners may take water for stock or domestic purposes	<p>No impacts identified under this general authorisation.</p> <p>A landholder may take water from an overland flow dam or from a watercourse adjoining their land. Stock and domestic dams are self-assessable development and must be notified.</p>
S97 Environmental authorities to take or interfere with overland flow	<p>No identified change in water taken under this general authorisation.</p> <p>Notification for the construction of overland flow storages to satisfy an environmental authority or a development permit for carrying out an environmentally relevant activity is required under the Planning Regulation 2017 and Water Regulation 2016.</p> <p>No overland flow dams constructed for these purposes have been notified and recorded in the department's database.</p>

Water Act 2000 (section)	Current level of utilisation of statutory authorisations
S98 Resource activities that interfere with the flow of water by diversion of a watercourse	<p>No identified change in interference with watercourses under this general authorisation.</p> <p>The impacts of interference by diversion are assessed through requirements of the <i>Environmental Protection Act 1994</i>.</p> <p>Satellite imagery is assessed annually when collection water use data for the department's annual report to the Murray-Darling Basin Authority. There is no evidence of increased resource activity on satellite imagery.</p>
S99 Constructing authorities and water service providers	<p>No identified change in water taken under these authorisations.</p> <p>Limited volumes of water are permitted to be taken for road and rail construction and maintenance and public amenities.</p>
Authorisation that <u>may</u> be limited by water planning instrument or regulation	
s101 Authorisation that may be altered or limited by water planning instrument or regulation.	<p>An increase has been identified under this general authorisation due to increased take of groundwater in peri-urban areas not connected to a town water supply. In these areas, particularly surrounding large urban centres such as Toowoomba and Dalby, there is an increase in population and subsequent demand for water.</p> <p>No significant increase in surface water has been identified.</p> <p>The water plan limits the total amount of water to which this plan applies that may be taken for all prescribed activities under section 101(1)(a) of the Act is 2 ML and, can only be taken using existing works.</p> <p>Take of overland flow is only permitted if the water is taken under a water entitlement or permit, is taken for stock or domestic purposes, or is taken using notified existing overland flow works.</p> <p>Take of underground water is only permitted if the water is taken under a water entitlement or water permit, under a seasonal water assignment, for stock or domestic purposes.</p> <p>On land that is connected to a town water supply, underground water for stock or domestic purposes from underground water units St George Alluvium (deep), Upper Condamine Alluvium (CCA), Upper Condamine Alluvium Tributaries, Upper Condamine Basalts & Condamine Fractured Rock can only be taken from existing underground works.</p>

Water Act 2000 (section)	Current level of utilisation of statutory authorisations
s102 Authorisations under water plans or regulation	There are no section 102 authorisations under the water plan relevant to this plan area.
s103 Authorisations to take water for stock or domestic purposes may be limited	There are no section 103 authorisations under the water plan relevant to this plan area.

Appendix D Overview of non-compliance associated with the water plan

Table D.12: Compliance and enforcement actions in Condamine and Balonne water plan area

Type of alleged non-compliances	Number of alleged non-compliances	Outcome
Contravene licence conditions	11	<ul style="list-style-type: none"> • One formal warning issued • Two advisory letters sent • Four incidents resolved and licence amendment occurred • Three incidents addressed with verbal education • One incident with no action taken and follow-up audit was planned
Excess take under entitlement	95	<ul style="list-style-type: none"> • One prosecution commenced • Seven penalty infringement notices issued • Eight show cause notices were issued • 40 formal warnings issued • 34 advisory letters sent • Four incidents addressed with verbal education • One incident resolved and authorisation applied for and granted
Late and non-supplied meter readings	1,235	<ul style="list-style-type: none"> • 35 penalty infringement notices issued • 318 formal warnings issued • Five advisory letters sent • 811 non-supply of meter reading' were resolved and meter readings were subsequently supplied, where required • 59 incidents finalised with no compliance action taken based on a data quality review. • In four incidents, prior to resolution the limitation period expired • Three incidents with no action taken due to insufficient evidence or no identified/servable party
Take of water not through an approved meter	6	<ul style="list-style-type: none"> • One compliance notice issued • Two incidents resolved through meter installation • Two incidents addressed with verbal education • One incident achieved compliance without compliance action
Tampering with a device	2	<ul style="list-style-type: none"> • One formal warning issued • One advisory letter sent
Failure to repair or replace a meter in response to a faulty meter notice	5	<ul style="list-style-type: none"> • One compliance notice issued • Two formal warnings issued • Two advisory letters sent
Certified Meter Installer installing non-pattern approved meter	1	<ul style="list-style-type: none"> • One advisory letter sent
Providing false and misleading information	1	<ul style="list-style-type: none"> • One formal warning issued
Unauthorised take	56	<ul style="list-style-type: none"> • One penalty infringement notice issued • Two compliance notices issued

Type of alleged non-compliances	Number of alleged non-compliances	Outcome
		<ul style="list-style-type: none"> • 19 formal warnings issued • 12 advisory letters sent • 10 incidents addressed with verbal education • One incident resolved through a licence amendment • Six incidents resolved with authorisation applied for and granted • Two incidents had no action taken and follow-up audit planned • Three incidents with no action taken due to insufficient evidence or no identified/servable party
Unauthorised interference / overland flow construction	20	<ul style="list-style-type: none"> • One compliance notice issued • One show cause notice issued • Four formal warnings issued • Five advisory letters sent • Seven incidents addressed with verbal education • Two incidents resolved and authorisation applied for and granted

*Data includes compliance cases received with the 2018/19 water plan year to cases within the 2022/23 water plan year.

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