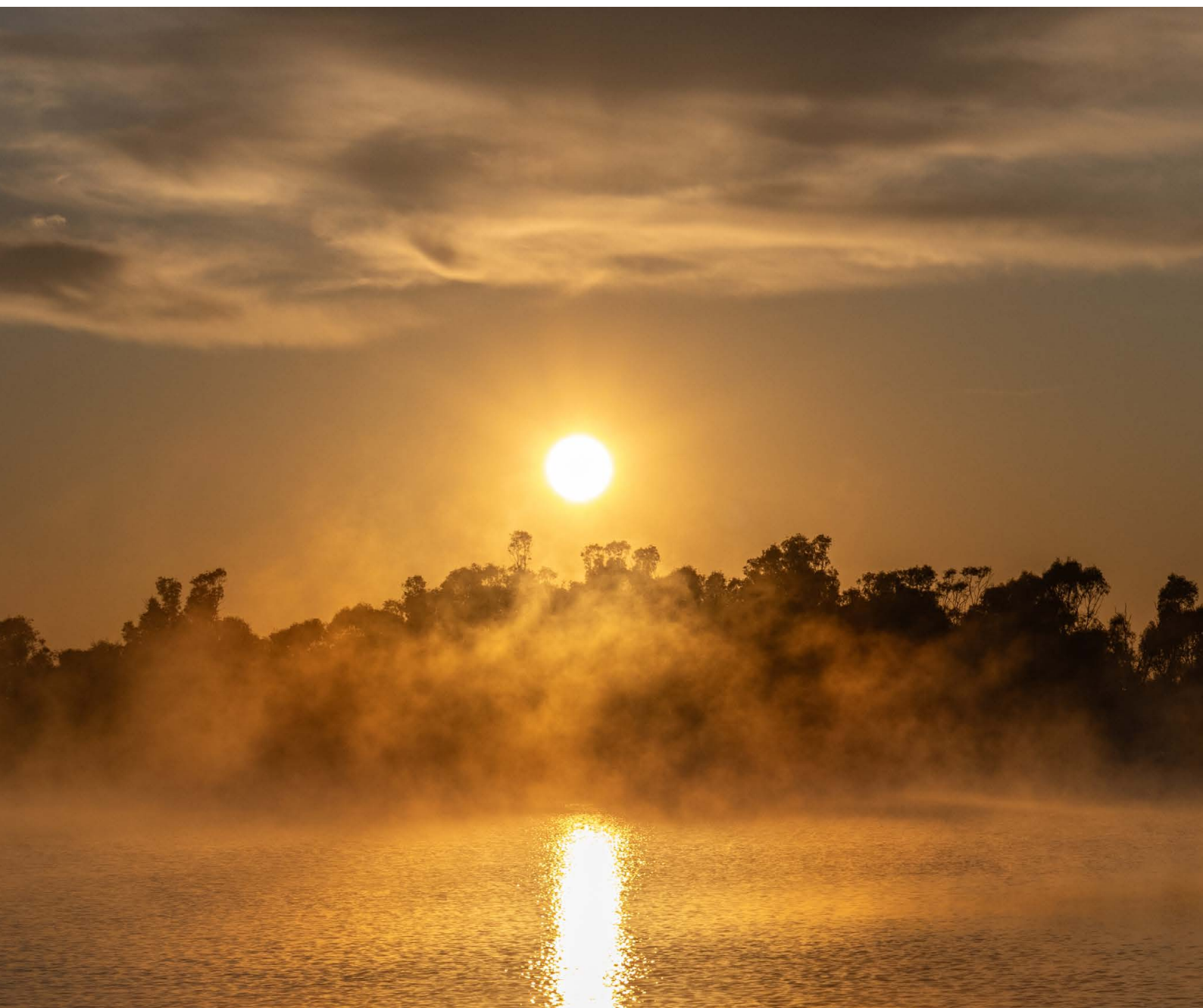


Regional Water Strategy

Lachlan – Executive Summary

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Acknowledging First Nations people

The NSW Government acknowledges First Nations people as the first Australian people and the traditional owners and custodians of the country's lands and water. First Nations people have lived in NSW for over 60,000 years and have formed significant spiritual, cultural and economic connections with its lands and waters.

Today, they practice the oldest living culture on earth.

The NSW Government acknowledges the Barkandji, Maljangapa, Nari Nari, Ngiyampaa, Wiradjuri, and Yita Yita people as having an intrinsic connection with the lands and waters of the Lachlan Regional Water Strategy area. The landscape and its waters provide the First Nations people with essential links to their history and help them maintain and practice their traditional culture and lifestyle. We acknowledge that Bila Galari is the traditional Wiradjuri name for the Lachlan River.

We recognise the Traditional Owners as the first managers of Country. Incorporating their culture and knowledge into management of water in the region is a significant step towards closing the gap.

Under this regional water strategy, we seek to establish meaningful and collaborative relationships with First Nations people. We will seek to shift our focus to a Country-centred approach – respecting, recognising and empowering cultural and traditional Aboriginal knowledge in water management processes at a strategic level.

We show our respect for Elders past and present through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places where First Nations people are included socially, culturally and economically.

As we refine and implement the regional water strategy, we commit to helping support the health and wellbeing of waterways and Country by valuing, respecting and being guided by First Nations people, who know that if we care for Country, it will care for us.

We acknowledge that further work is required under this regional water strategy to inform how we care for Country and ensure First Nations people/Traditional Owners hold a strong voice in shaping the future for all communities.

Artist and designer Nikita Ridgeway from Aboriginal design agency, Boss Lady Creative Designs, created the People and Community symbol.

The Lachlan region

The Lachlan region (Figure 1) lies at the geographic heart of NSW and includes stunning natural landscapes, changing from mountainous terrain in the east to flat alluvial plains in the west. The region is home to many vibrant towns and communities, productive agricultural and mining industries. There are also many critical ecosystems and nationally important and culturally significant wetlands, including the Lake Cowal–Wilbertroy Wetlands, the Booligal Wetlands and the Great Cumbung Swamp.

The region is located within the traditional lands of the Barkandji, Maljangapa, Nari Nari, Ngiyampaa, Wiradjuri and Yita Yita nations. These nations have been caretakers of the Lachlan region for over 60,000 years.

The Lachlan region has access to surface water and good quality groundwater for towns, recreational use, cultural and environmental needs, and industry. Due to the region's highly variable climate, groundwater is an important water source for the region.

The Lachlan region experiences extreme weather events. Severe and prolonged droughts are frequently followed by extensive rainfall events and flooding. Over the last few years, we have seen extended and large-scale flooding across the catchment. These extreme events pose challenges for the region, its water resources and all water users.

The NSW Government is committed to having healthy, reliable and resilient water resources for the Lachlan region, so that it remains a place where people want to live, work and visit, both now and for future generations. To do this, we need to make the best use of existing water resources and prepare for future uncertainty presented by a more variable and changing climate.

Like other regions across Australia, the Lachlan region faces a more variable and changing climate. We need to transition to a scenario where more can be done with less water, smarter decisions are made about water use and management (based on better knowledge and information) and important water needs are protected.

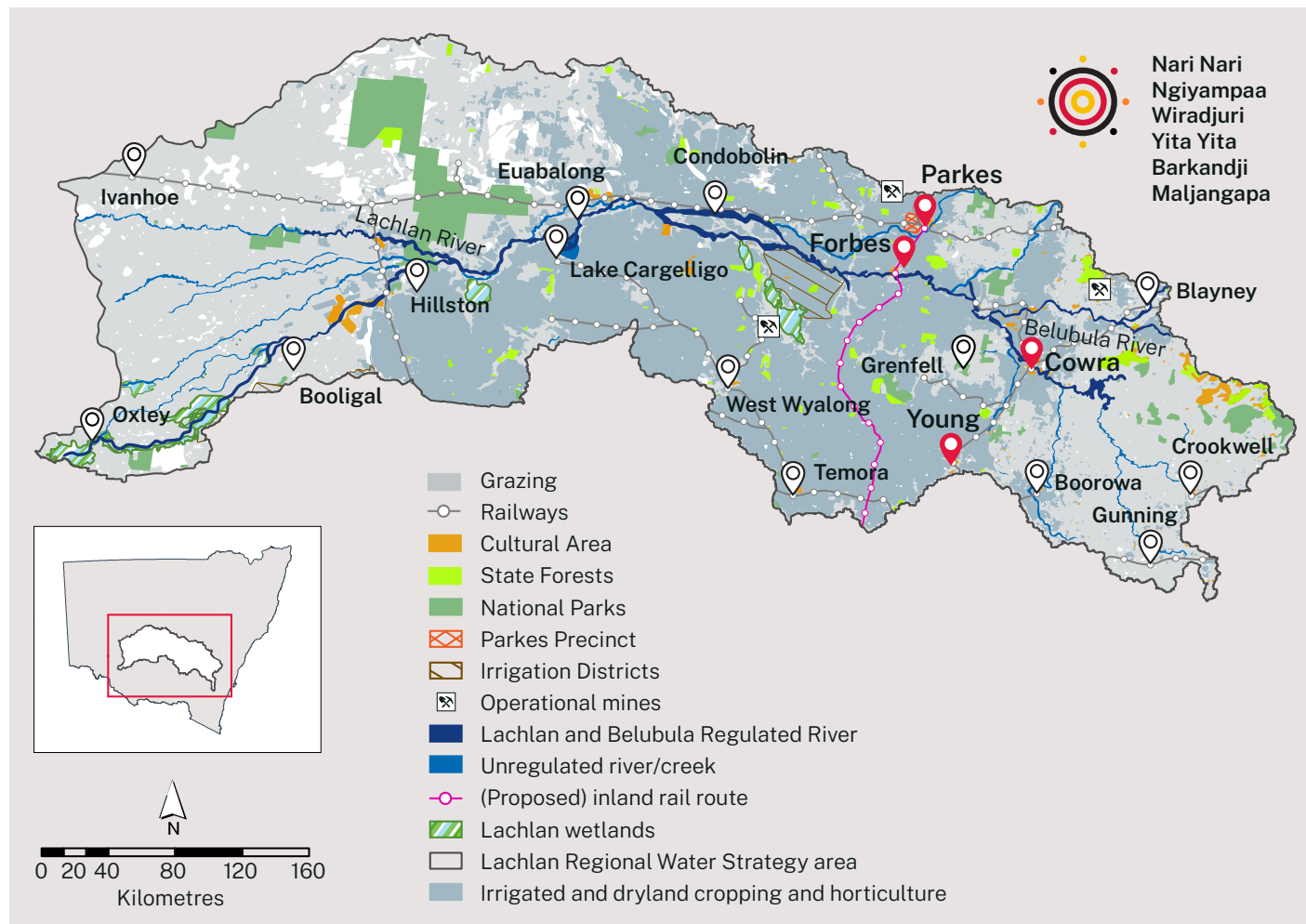
The Lachlan Regional Water Strategy provides a long-term strategic plan to enable communities, the environment and industries to be better prepared for a changing climate.

The way we implement the Lachlan Regional Water Strategy needs to be adaptable so we can address the future needs of water users and the environment, and capitalise on emerging opportunities in the region.



Image courtesy of Chris Watson, NSW Department of Climate Change, Energy, the Environment and Water. Sunset over dam, Canowindra.

Figure 1. Map of the Lachlan region



Environmental significance of the Lachlan region

Water is a significant feature of the Lachlan region's landscape and environment. The river system, floodplains, swamps, aquifers and wetlands provide habitat for many aquatic species, including birds and native fish. The lower Lachlan floodplain is home to 8 nationally important wetlands, which feature areas of valuable river red gum forest and woodlands, black box woodland and lignum. The Lachlan waterways and floodplains support up to 17 species of native fish, of which 9 are listed as threatened or endangered in NSW, including the Murray cod, freshwater catfish and Booroolong frog.

Areas of high ecological value aquatic ecosystems also overlap in many places with groundwater dependent ecosystems. These include the Great Cumbung Swamp, where the groundwater to surface water interactions are central to ecological health. There are also significant amounts of groundwater dependent ecosystems identified in the area around Condobolin.

Environmental assets in the Lachlan play a crucial role in the liveability of the region, as well as providing recreational and tourism opportunities and holding cultural significance.

Purpose of the Lachlan Regional Water Strategy

Pressure on water resources is increasing, and the climate is changing. We need to prepare our regions for the future now. Regional water strategies do this by bringing together the best and latest climate evidence with a wide range of tools and solutions to plan for and manage the water needs of regional NSW over the next 20 years.

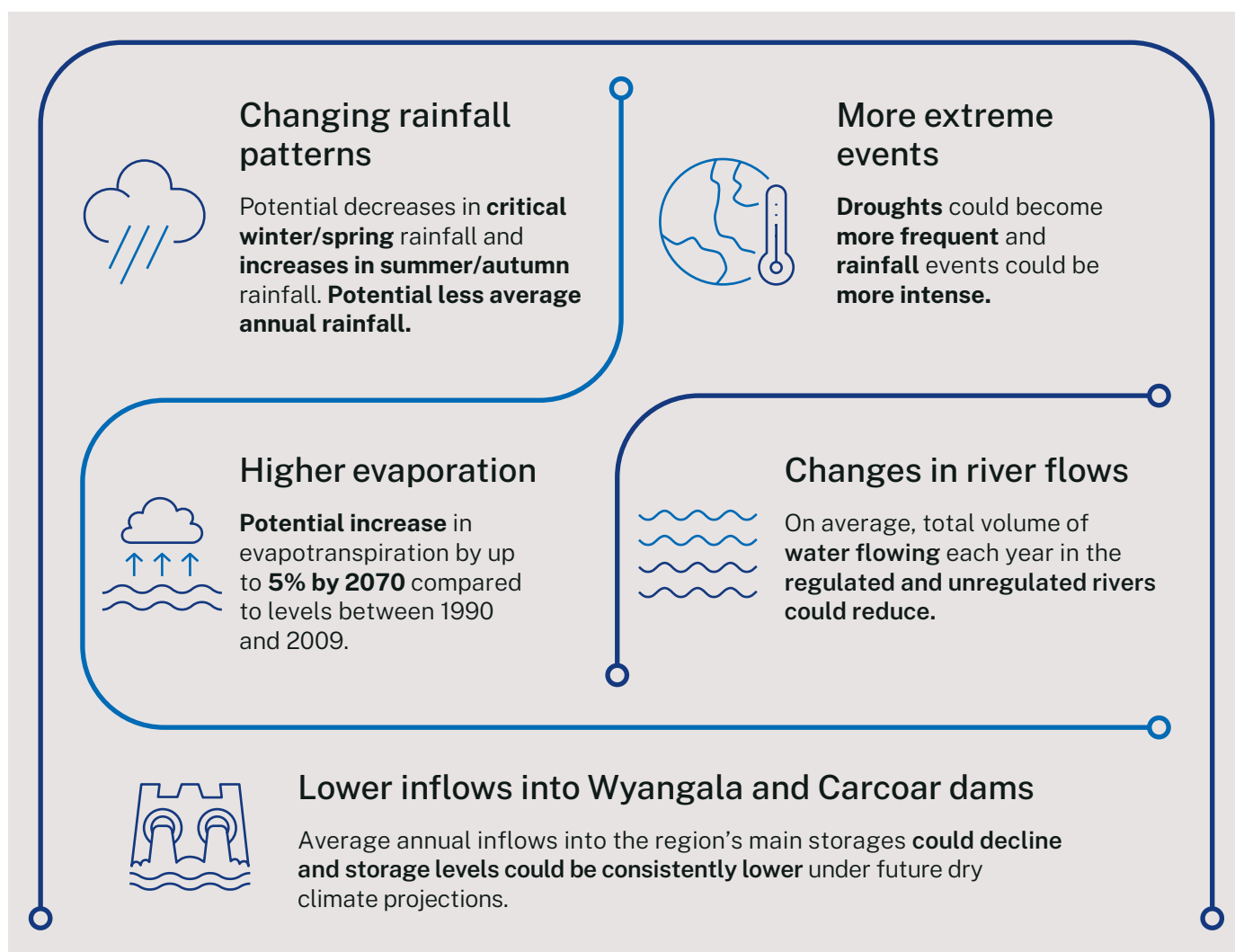
The Lachlan Regional Water Strategy identifies the critical challenges we need to tackle over the coming decades. It also lays out the strategic priorities and actions to respond to these challenges and provide a foundation to build resilience.

Meaningful engagement and a collaborative approach to planning and decision making will be key to achieving sustainable and equitable outcomes over the strategy's 20-year horizon and beyond.

What the future climate could look like in the Lachlan region

We do not know what the future climate will be like. It may be like similar to what we have experienced in the past, or it might be drier than we have seen in the past. Analysis of different climate projections tells us there could be more extreme wet and dry periods – droughts could become hotter and longer, and there could be higher evaporation rates and more unpredictable rainfall and river flows (see Figure 2). This long-term water strategy will help us plan for this uncertainty and give us a better understanding of the future risks we face.

Figure 2. What the future climate could look like in the Lachlan region



The challenges facing the Lachlan region

We have identified 6 key challenges as immediate priorities for the region:

- managing water resources during more extreme events for people, industry, and the environment
- understanding flood risks to individuals, businesses and communities
- improving water quality
- addressing barriers to Aboriginal water rights
- sustaining the health and resilience of the region's water-dependent ecosystems
- supporting a sustainable and diverse regional economy.

Addressing these challenges will help us meet the vision and objectives we have set for the strategy.



Managing water resources during more extreme events for people, industry and the environment

Water management in the Lachlan region is challenging. The region's climate is highly variable and the extensive, meandering river system results in high system losses. Future changes in climate are predicted to bring more extreme events, warmer temperatures and higher evaporation rates, which will stress the system and give it less time to recover. More variable river flows and impacts on groundwater recharge are also anticipated, affecting water supplies to all water users, including towns and communities, industries and environmental assets.

Droughts in the region often limit the ability to deliver water to town off-take points and nationally significant wetlands. They can also result in low or zero water allocations to general security licence holders over multiple years, which mostly affects industry and environmental water managers. Towns and communities that rely on unregulated water sources could also experience greater risk of limited water supplies due to more frequent low-flow or cease-to-flow periods.



Understanding flood risks to individuals, businesses and communities

The management of floods is an ongoing challenge for the Lachlan region that could worsen with climate change.

The flat landscape means many parts of the region are subject to flood risk. Development on the floodplain has meant that floods significantly impact people and businesses, damage infrastructure, create safety risks and cause financial and economic loss. The devastating flood event in the Lachlan region in late 2022 highlighted the flooding risks to many communities in the region at an unprecedented and catastrophic scale.

Floods are also a vital natural process that support the region's ecosystems. They provide benefits such as significant groundwater recharge and connections between rivers and their wetlands and floodplains, including the Great Cumbung Swamp and the Booligal Wetlands in the lower Lachlan River.

Local councils are primarily responsible for managing floods and flood risks within their boundaries, with the support of the NSW Government. Roles and responsibilities for the different organisations are outlined in the *Flood Risk Management Manual* and its toolkit.¹ Achieving integrated flood management in multi-jurisdictional catchments like the Lachlan remains challenging and requires effective coordination between state agencies and local councils.

1. Available at: environment.nsw.gov.au/topics/water/floodplains/floodplain-manual



Improving water quality

Maintaining water quality is a key challenge for the Lachlan region. Poor water quality can degrade ecological health, increase treatment costs for towns, reduce industry productivity and affect Aboriginal peoples' wellbeing and connection to Country.

Hypoxic blackwater events and harmful algal blooms often caused by excessive nutrients have led to the death of aquatic plants and animals. Unseasonally high temperatures, like those experienced in recent years, can also directly contribute to fish deaths. Salinity (both dryland and in-stream) in the catchment affects vegetation, leading to erosion and high in-stream turbidity and increased salt loads beyond the tolerance level of some native plants and animals.

Existing water infrastructure, including Wyangala and Carcoar dams, can cause cold water pollution, which reduces the range and abundance of native fish and other aquatic animals.



Addressing barriers to Aboriginal water rights

Aboriginal people in the Lachlan region have always been closely linked to rivers, creeks and groundwater sources, and their relationship to these water sources and wetlands is essential to culture, community and connection to Country.

Existing water management arrangements, a lack of water ownership, and poor access to waterways and culturally important sites restrict Aboriginal people from fulfilling their cultural obligation to care for Country, and fail to provide suitable opportunities for Aboriginal people in the Lachlan region. Involving Aboriginal people more closely in decision-making processes around water management could enrich and improve water management decisions and, in turn, provide social and economic opportunities for Aboriginal people, including youth.



Sustaining the health and resilience of the region's water-dependent ecosystems

The river system, floodplains, swamps and wetlands in the Lachlan region provide habitat for many aquatic species, including birds and native fish. They include 8 nationally important wetlands that feature areas of valuable river red gum forest and woodlands, black box woodland and lignum.

Existing water-related infrastructure, river operations and water extractions have influenced flow variability, water quality and the distribution of water throughout the catchment. Combined with other drivers, such as changes in land management, climate and introduced species, these factors have contributed to a decline in native species and aquatic environmental health, especially at the end of the system. Further changes to river flows, due to a changing climate, could magnify the negative impacts on riverine and floodplain ecosystems, and water may not always be able to be used by environmental water managers when it is needed. These challenges emphasise the importance of proactive management in sustaining the health and resilience of natural assets and ecosystems across climate scenarios.



Supporting a sustainable and diverse regional economy

The industry profile in the Lachlan region is changing. Over the next 20 years, food processing and agriculture, mining and renewable energy production are expected to expand, aided in part by upgrades to roads and transport links.

Emerging industries, along with regional population growth, are expected to create greater competition for available water resources, including groundwater. An increase in groundwater demand could push extraction towards the allowable limit and risk the long-term sustainability of groundwater sources.

Although existing industries have adapted to the region's climate, the variability in allocations to general security entitlement holders creates uncertainty for business owners. This may deter new high-value industries from the region.

Our challenge is to support new and existing industries, in the context of a variable and changing climate and fully committed water resources and provide conditions to make the region an attractive place to live and invest.

A plan to secure water for the Lachlan region

We need to prepare now for a future where water resources in the Lachlan region may come under greater stress. By using the knowledge we have gained during recent droughts and floods, we can find smarter and better ways of managing water so that communities, industries, and environmental and cultural assets can thrive.

Surface water and most groundwater resources in the Lachlan region are fully committed and there is a risk of reduced water availability in the long term. Securing additional water or improved security for higher priority water users (such as town water supply) is likely to lead to less water being allocated to other users. In developing water sharing arrangements, consideration must be given to the principles of the *NSW Water Management Act 2000*.

Getting the balance right requires that we understand the stresses on the region's water resources and natural environment and recognise the limits and trade-offs. While we will need to make some difficult choices, there are also opportunities for the region. These opportunities include how we go about delivering on the water rights of Aboriginal people, enhancing town and on-farm water efficiency, restoring aquatic and floodplain habitats, and developing alternative water supplies.

This strategy sets out 22 actions arranged under 3 priorities, as set out in Figure 4, to ensure the Lachlan region is well-placed to meet future challenges.

- **Build resilience to climate extremes**

We want to continue to work with communities about how we should share water resources during times of scarcity and abundance. Our new climate research is an opportunity to enhance the department's work and ensure it is fit-for-purpose to address and mitigate more extreme conditions in the future.

- **Improve catchment health**

Improved catchment health in the Lachlan region will support the environment, economy and liveability of our communities. It will have far-reaching advantages, ensuring sustainable water resources for communities and ecosystems, and allow for the consideration of the cumulative impacts of land use change on water management.

- **Support the water needs of a strong and sustainable economy**

In the future, the region will likely experience higher water demand from a growing population, alongside potentially declining water availability. This will put pressure on all users, including the environment, and have flow-on impacts for the regional economy. It is vital to understand the risks and challenges to our industries and communities to better manage water supply. It is also important that operational, planning and development decisions consider the likely reliability and security of future water supplies.

Implementing the actions

We have heard from stakeholders that most actions in the strategy should be a priority to implement, and we have already started work on many of the strategy's actions.

The Lachlan Regional Water Strategy details 22 actions to address the challenges in the region (Figure 4). Each action within the strategy is comprised of a number of sub-actions. Not all sub-actions can be progressed at once, and funding is a key consideration in planning when and how the actions will be implemented. Each sub-action is categorised on current commitments for funding and resourcing:

- **funded sub-actions** are works that are underway or planned and funded for delivery within 5 years
- **currently unfunded sub-actions** are works that are not currently planned or funded and will have a 5-20-year timeframe for delivery.

The implementation plan for the Lachlan Regional Water Strategy focuses on funded actions and sub-actions that will be delivered in the first 5 years. The implementation plan includes at least one sub-action, for every action in the strategy (Figure 4).

Sub-actions that do not appear in the implementation plan will be carried out subject to funding availability.

Figure 3. Summary of the Lachlan Regional Water Strategy actions

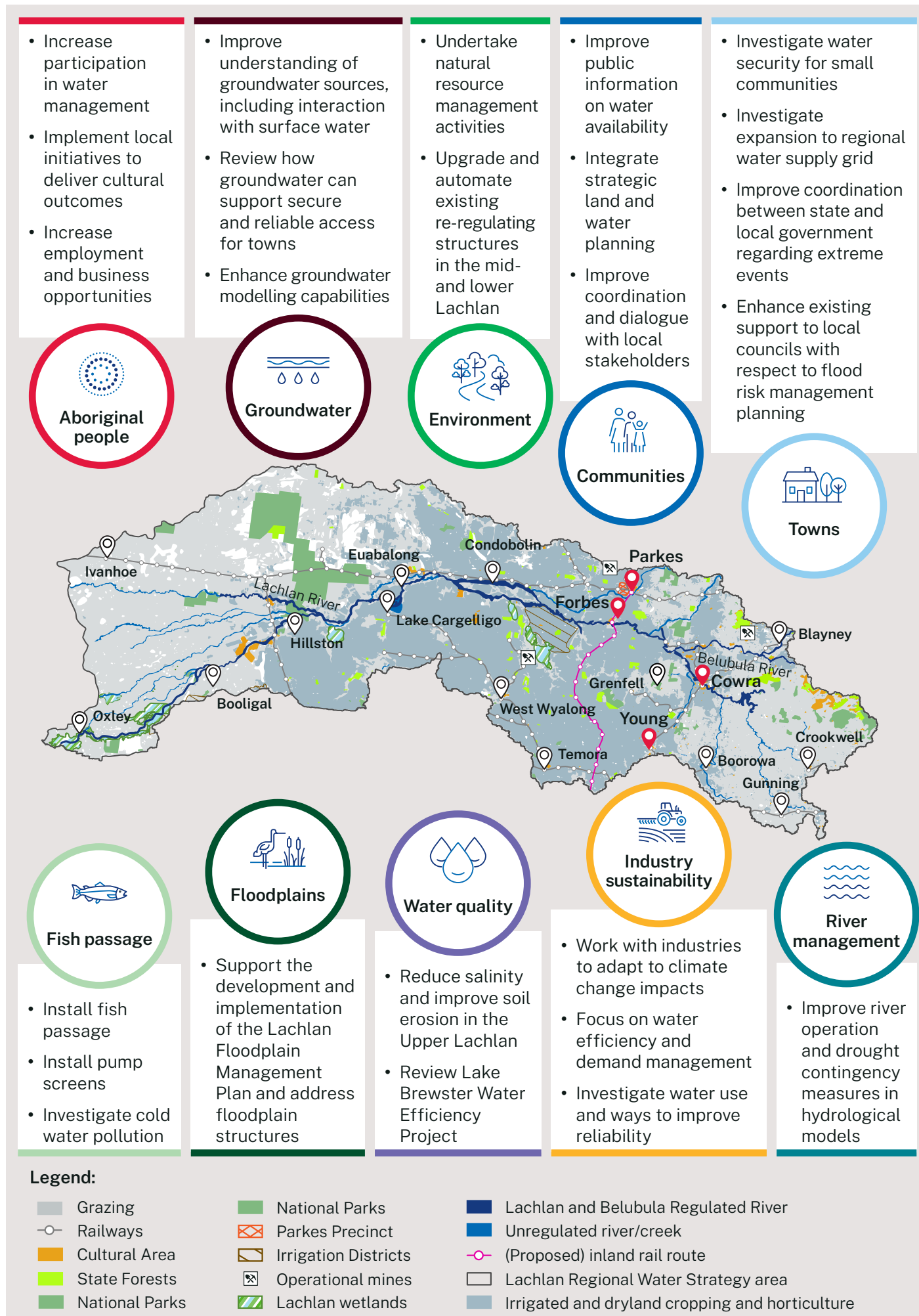


Figure 4. Priorities and actions to address the region's key challenges

Challenges in the Lachlan region					
					
Managing water resources during more extreme events for people, industry and the environment	Understanding flood risks to individuals, businesses and communities	Improving water quality	Addressing barriers to Aboriginal water rights	Sustaining the health and resilience of the region's water-dependent ecosystems	Supporting a sustainable and diverse regional economy

Priority	Actions	Challenges addressed
Priority 1: Build resilience to climate extremes	Action 1.1: Improve town water security in the Lachlan region	
	Action 1.2: Support local councils to improve flood risk management	 
	Action 1.3: Upgrade the Lachlan Regulated River hydrological model to better represent river operations and drought contingency measures	   
	Action 1.4: Work with local Aboriginal people to ensure they can participate in water management	 
	Action 1.5: Support groundwater use for towns and communities	 
	Action 1.6: Investigate water security for small and remote communities	 
	Action 1.7: Investigate expanding the regional water supply grid	 
	Action 1.8: Improve the understanding and management of groundwater resources	   
	Action 1.9: Better integrate strategic land use and water planning	    

Priority	Actions	Challenges addressed
Priority 2: Improve catchment health	Action 2.1: Reduce salinity and soil erosion in the Upper Lachlan and Belubula catchments	
	Action 2.2: Protect and rehabilitate regionally significant riparian and in-stream habitats in the Lachlan Regulated River	
	Action 2.3: Upgrade and automate existing re-regulating structures	
	Action 2.4: Mitigate impacts to native fish	
	Action 2.5: Review and evaluate the Lake Brewster Water Efficiency Project	
	Action 2.6: Develop and enable place-based initiatives to deliver cultural outcomes for Aboriginal people	
	Action 2.7: Support the development and implementation of the Lachlan Valley Floodplain Management Plan and address floodplain structures	
Priority 3: Support the water needs of a strong and sustainable economy	Action 3.1: Improve public access to climate information and water availability forecasts	 
	Action 3.2: Investigate water use in the Lachlan region	
	Action 3.3: Work with industries to better understand, mitigate and adapt to the impacts of climate change for water management	
	Action 3.4: Develop and enable employment and business opportunities for Aboriginal people	
	Action 3.5: Adopt a stronger focus on water efficiency and demand management	
	Action 3.6: Investigate ways to improve water reliability	



Image courtesy of Shutterstock. Summer storm approaching Blayney.

