

Regional Water Strategy

South Coast – Executive Summary

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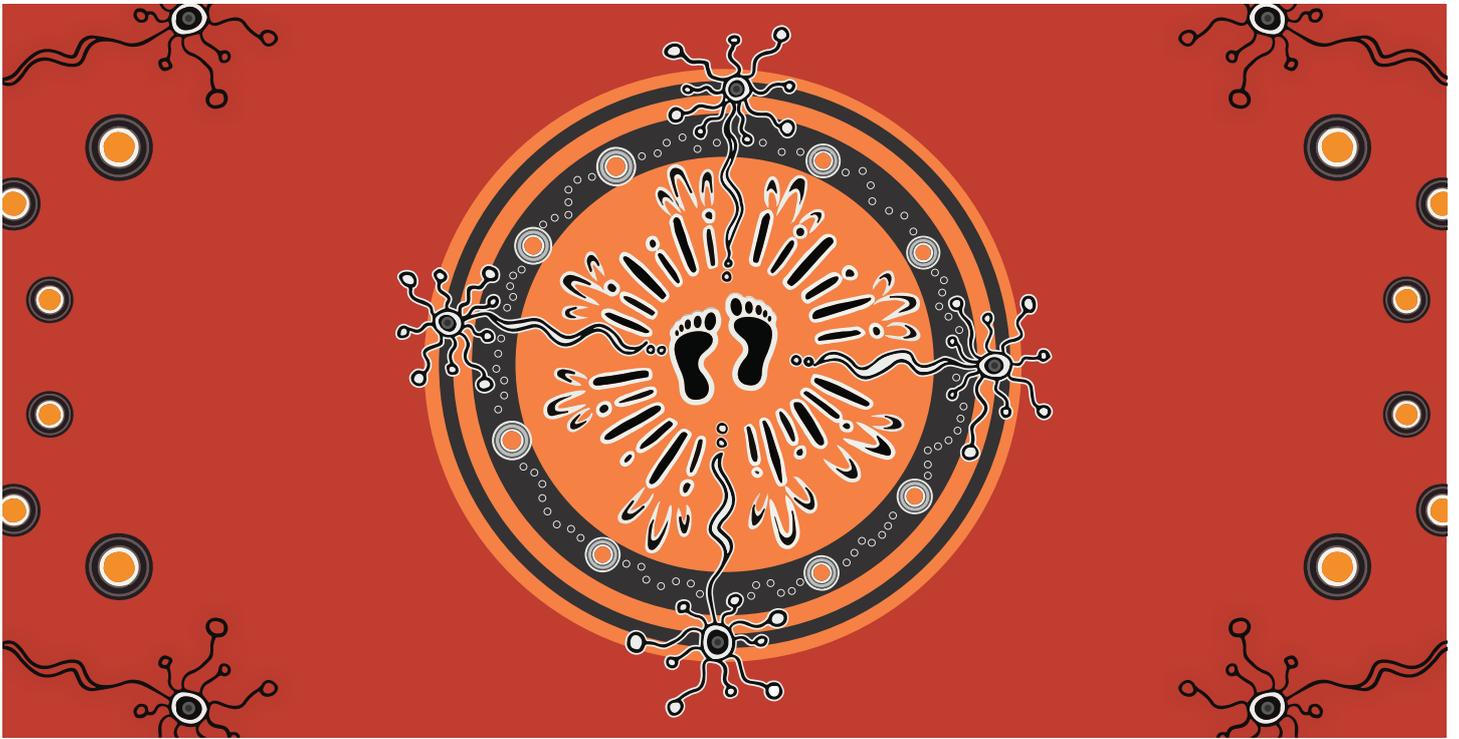
Cover image Image courtesy of Therese Hulme, Department of Planning and Environment. Bemboka River, Morans Crossing.

More information water.dpie.nsw.gov.au/plans-and-programs/regional-water-strategies

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Acknowledging First Nations people

The NSW Government acknowledges First Nations people as its first Australian people and the traditional owners and custodians of the country's lands and water. We have recognised that 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 First Nations people/Traditional Owners from the South Coast region as having an intrinsic connection with the lands and waters of the South Coast Regional Water Strategy area. The landscape and its waters provide the First Nations people with essential links to their history and help them to maintain and practice their traditional culture and lifestyle.

We recognise the Traditional Owners were the first managers of Country and by incorporating their culture and knowledge into management of water in the region is a significant step for 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, present and emerging 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 Traditional Owners/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 Indigenous/Aboriginal and non-Aboriginal communities.

Artwork courtesy of Nikita Ridgeway.

Water is our most precious resource. Water supports the essential needs of communities in the South Coast region and is vital for maintaining our aquatic environments and Aboriginal cultural heritage. It is central to liveability within the region and supports our industries and employment.

The NSW Government is committed to having healthy, reliable and resilient water resources. We want the South Coast region to remain a place where people are able to live, work and play, both now and for future generations. This means ensuring that we make the best use of existing water resources and prepare for future uncertainties, such as a more variable and changing climate, changing industries, populations and water needs.

The South Coast region is located on the traditional lands of the Yuin people who have been the caretakers of this country for over 60,000 years. The region stretches from Jervis Bay south to the Victorian border and is bounded by the Great Dividing Range to the west and the Pacific Ocean to the east (Figure 1).

Water is critical to the economic prosperity of the South Coast region, its social fabric and liveability, and health of the environment. As well as meeting the daily needs of households and towns, water benefits many industry sectors, including agriculture, which is a significant driver of regional economic prosperity and local employment. Water also contributes to the region's amenity and liveability and protects and conserves ecological assets and Aboriginal cultural heritage.

Like all regions across Australia, the South Coast region faces a more variable and changing climate. As the population grows, there is an increasing demand for water for human consumption, agriculture, industrial uses and energy production. This increased demand drives land use and water resource development that can disrupt natural water cycles and puts ecosystems under stress. In parallel with this increased demand, future climate changes are expected to increase the risk of less available, less reliable and poorer quality water.

The South Coast Regional Water Strategy aims to have a comprehensive and balanced package of actions that deliver on the strategy's objectives and align with the priority actions of the *NSW Water Strategy*.¹ This balance recognises that water is essential for all stakeholders, including primary producers, local communities, First Nations people and the environment, and it does not preference one group over another.

Getting the balance right means recognising limits and trade-offs and understanding the stresses on the region's water resources and natural environment. While we may have to make some difficult choices, there are also opportunities to improve water governance for Aboriginal people; enhance town water efficiency; use water more effectively; restore river, wetland and floodplain habitats; and develop alternative water supplies. These decisions can have positive benefits for all users. It is in the best interests of all stakeholders to have a healthy, sustainable system that is collaboratively managed.

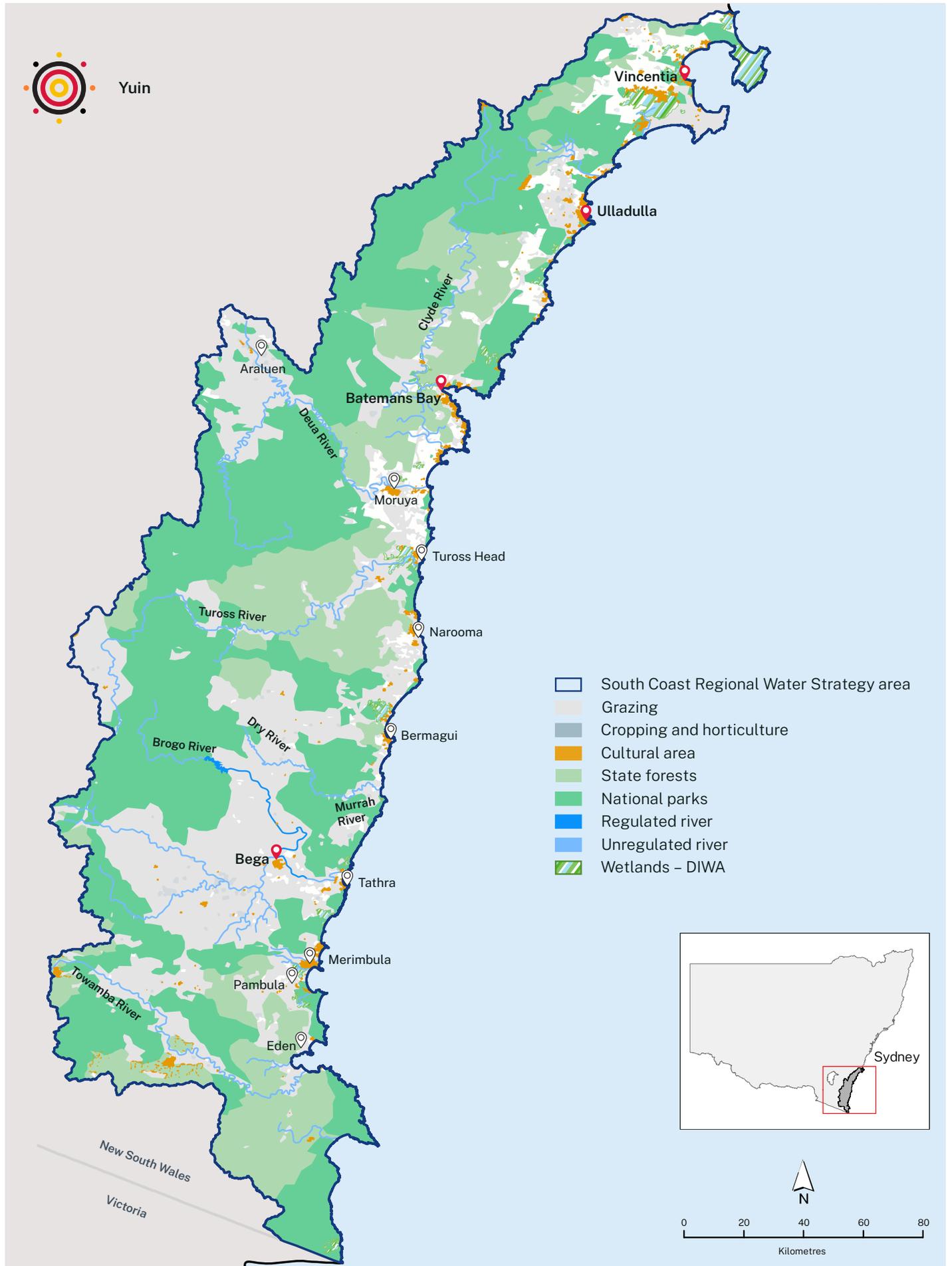
The regional water strategy will help set the region up so it is prepared for a changing climate. This will also help to keep the South Coast region as an attractive place to live, work and visit.



Image courtesy of Jaime Plaza Van Roon, Department of Planning and Environment. Farmland outside of Bega, NSW.

1. Department of Planning, Industry and Environment 2021, *NSW Water Strategy*, available at: dpie.nsw.gov.au/water/plans-and-programs/nsw-water-strategy/the-strategy

Figure 1. Map of the South Coast region



Purpose of the South Coast Regional Water Strategy

Regional water strategies bring together the best and latest climate evidence with a wide range of tools and solutions to plan and manage each region's water needs over the next 20 years. With increased pressures on our valuable water resources, including a more variable and changing climate, we need to prepare now for the future.

The South Coast Regional Water Strategy identifies the critical strategic challenges we need to tackle over the coming decades, as well as the priorities and actions that will set us up to respond to these challenges.

The actions outlined in the regional water strategy provide a foundation for building resilience and realising the benefits of working together in reaching the vision for the region. Meaningful engagement and a collaborative approach to planning and decision-making will achieve sustainable and equitable outcomes over the strategy's 20-year horizon, and beyond.

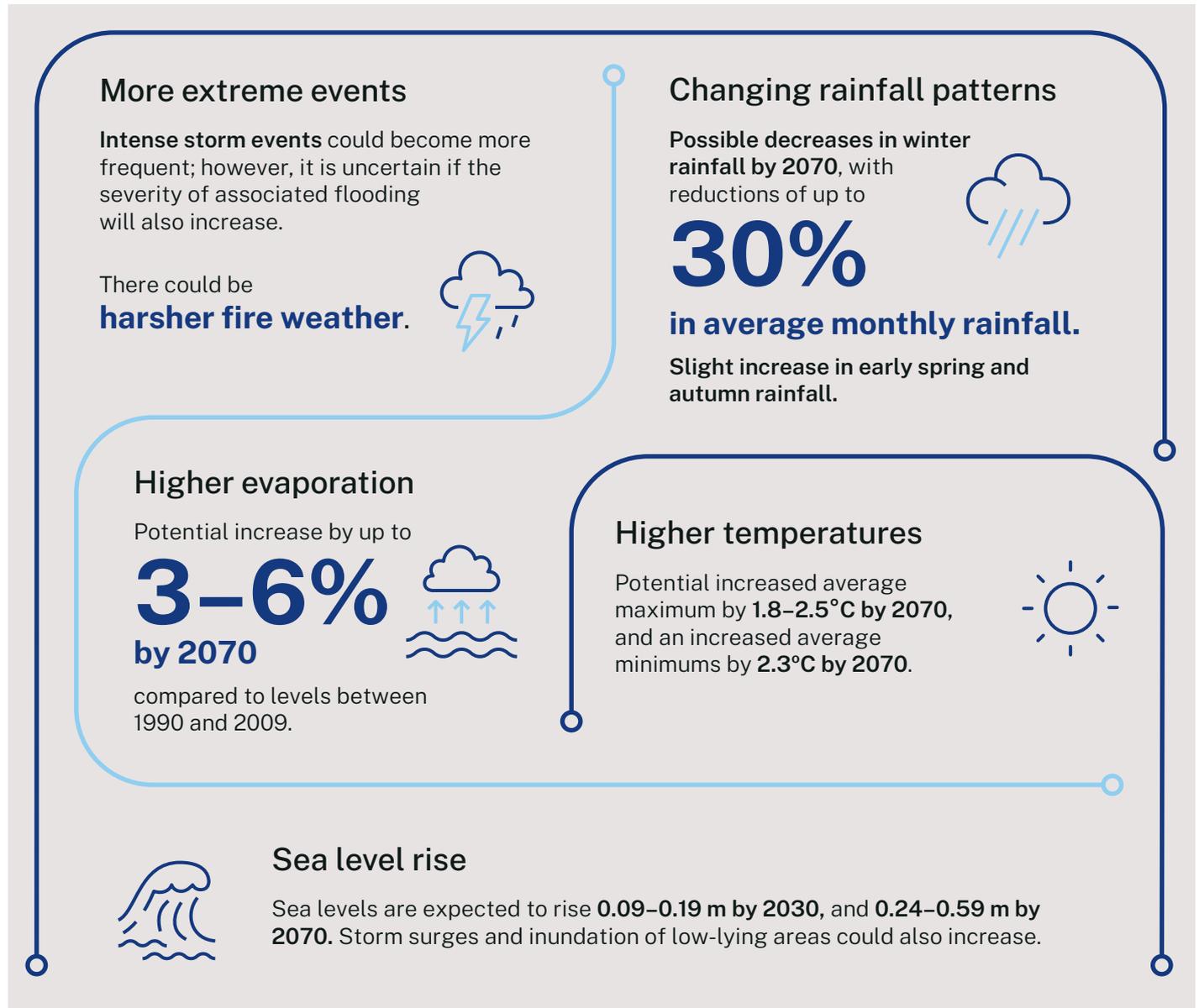


Image courtesy of Lachlan Edwards, Department of Planning and Environment. Rehabilitated stretch of Tantawangalo Creek, Candelo.

What the future climate could look like in the South Coast region

We don't know for certain what the future climate will be like. It may be similar to what we have experienced in the past, or it might be drier than we have seen in our lifetimes. Our analysis of different climate scenarios tells us that droughts could become hotter and longer, there could be higher evaporation rates and more unpredictable rainfall and river flows (Figure 2). We need to plan for this uncertainty and fully understand the future risks we face.

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



Key regional challenges – what we will focus on first

The South Coast Regional Water Strategy identifies 5 key challenges that are the initial focus for the region. Other water challenges, as described in the Draft South Coast Regional Water Strategy, will be revisited in future reviews.



Declining catchment and river health

Poor catchment and riparian management, combined with changes in catchment and river hydrology, are affecting river health, hydrologic connectivity and raw water quality.

The decline in catchment and river health threatens aquatic and riparian ecosystems, as well as downstream estuarine health. This decline in catchment and river health impacts Aboriginal peoples' connection to Country and cultural sites associated with waterways. Industries, particularly those operating in estuaries, such as aquaculture, are directly impacted by poor water quality, while other sectors such as tourism are indirectly impacted through loss of amenity. Communities and towns increasingly need to treat poor quality water for consumption, and there are reduced opportunities for recreation.

Land use change, low soil carbon levels, poor riparian (streambank) management and uncontrolled stock access has led to riverbank and riverbed erosion, and the mobilisation of sediment, nutrients, pathogens and debris during rainfall events.

The condition of riparian vegetation is generally low across the region, except in protected or forested areas. Poor condition is often due to weed infestations and vegetation clearing.

Freshwater inflows are critical to the health and function of the region's estuaries. Our new climate data and hydrologic modelling show that the annual volume of flows in the Bega and Tuross catchments may decrease by up to 16% under a dry climate change scenario, and that all parts of the flow regime may be impacted.



Competition for low flows

Competition for water during low-flow periods is restricting access for landholders and industries and placing many of the region's waterways under stress.

Generally, there is enough water across the South Coast region to meet urban and rural water demands each year on average. However, competition for low flows during the drier spring and summer months places many of the region's rivers and creeks under increased hydrologic stress.

The periods of greatest agricultural water demand usually coincide with periods of lower stream flows.

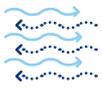
Low flows need to be protected in streams to maintain connectivity between river pools, and to provide freshwater inputs to sensitive estuaries and intermittently closed and open lakes and lagoons.

Competition for low flows also impacts groundwater systems. Many of the region's alluvial and coastal sand groundwater systems are highly connected to surface water flows and reductions in surface flows can affect recharge rates.

Competition for low flows is likely to increase in the future with projected climate change. Our new modelling suggests extended droughts are not unique and it is plausible they could be more frequent and more severe in the future. Therefore, irrigators already reliant on rainfall will likely become even more dependent on surface water or groundwater sources in the future.



Image courtesy of Department of Primary Industries. Clear water pools, Clyde River.



Saltwater intrusion into freshwater sources

Changes in catchment hydrology and sea level rise are projected to significantly impact coastal waterways and aquifers. We need to better understand the magnitude of this threat and how best to manage it.

Rising sea levels will result in saline water migrating upstream and saltwater intrusion in many of the region's groundwater and low-lying water sources. It is likely to cause impacts on coastal environments such as low-lying coastal wetlands which could become inundated for longer, or at the most extreme, inundated permanently.

Saltwater intrusion in freshwater and estuarine systems and the associated increase in salinity levels in freshwater systems is a significant future risk to water users in low-lying areas across the region. Even a small rise in sea level may reduce the suitability of water sources for local town water supplies, irrigation, dairy washdown, stock and domestic supplies.

Saltwater intrusion may also compromise water and wastewater treatment plants and infrastructure through corrosion and inundation of assets.

Sea levels around the coastline of Australia between 1966 and 2009 rose at an average rate of 1.6 mm/year,² which equates to approximately 7 cm over the past 50 years. For the South Coast region, the average sea level rise projection is between 0.24 m and 0.59 m by 2070. Although this rise seems small, it is already causing saline water to move upstream and into some of the region's groundwater sources.



Aboriginal people's rights and access to water

Historical dispossession of land, effects of colonisation and government water management processes continue to impact Aboriginal people's access to water and their ability to care for Country.

The Yuin people have been the custodians of the lands and waterways in the South Coast region for over 60,000 years. Water is deeply entwined with Aboriginal culture. Healthy waterways are essential to the culture and wellbeing of Aboriginal communities across the South Coast region, providing food, kinship, connection, recreation, stories, songlines and healing.

Fences and locked gates on public land prevent Aboriginal people from accessing Country, carrying out cultural practices and using traditional knowledge to care for and manage waterways. Access to waterways is critical to providing a purpose and pathway for young people to connect to culture. Waterways provide spaces for healing, as well as for food, medicine and teaching.

Current water legislation and water management processes do not adequately bring the Yuin people into decision-making, nor do they fully reflect Aboriginal perspectives, approaches and values.



Image courtesy of Destination NSW. Glasshouse Rocks, Narooma.

2. Siebentritt, M 2016, *Understanding sea-level rise and climate change, and associated impacts on the coastal zone*, CoastAdapt Information Manual 2, National Climate Change Adaptation Research Facility, coastadapt.com.au



Water security for South Coast towns and industries

The viability and growth of regional industries is constrained by the uncertainty of future access to water supplies. Town water supplies are generally secure but could become less reliable under climate change scenarios.

Historically, the need to store large volumes of water for irrigation across the South Coast region has been largely unnecessary. Traditional crops were rain-fed and only required irrigation during the drier spring months.

Water-dependent industries currently face an uncertain future in the region due to climate variability and climate change. New modelling shows that the reliability of existing water access licences is likely to be less than we originally thought and may decrease more in the future.

Irrigated agriculture in the region is mostly dependent on unregulated water sources. Unreliable water supplies can seriously threaten the long-term viability of agricultural practices like dairying especially if enterprises have to reduce stock numbers due to insufficient feed or water. Water insecurity also discourages future investment in emerging industries.

Saltwater intrusion also threatens existing supplies of high-quality surface water in low-lying areas close to the coast and coastal groundwater systems.

We have heard that gaining access to additional water to mitigate these risks to support new or expanding industries is a challenge for existing and prospective South Coast region businesses.

Town water supplies are generally secure, but could become less reliable under climate change scenarios. The water security risks for Bermagui were highlighted during the last drought. Our modelling shows that while Brogo Dam is expected to be full or spilling for most of the time in the future, a severe climate change scenario could result in droughts longer than what we have experienced in our historical record. If nothing changes, these risks to Bermagui's town water supply will increase.

Heavy rainfall following extended dry periods or bushfires can result in poor quality water, which constrains the ability of town water treatment facilities to effectively treat and maintain adequate supply to towns and communities in the region.



Image courtesy of Destination NSW. Cupitt's Winery, Ulladulla.

Responding to these challenges

We need to prepare now for a future where water sources and services may come under greater stress. We need to take action to improve the health, reliability and resilience of our water resources so that they may service all stakeholders and their interests. By using the knowledge we have gained during drought, we can find smarter and better ways of managing our water resources so that our communities, industries, and environmental and cultural assets can thrive.

There is no simple solution we can take to address the challenges ahead, and it is important that this strategy does not preference one interest group over another. Although sometimes interests compete, harnessing the synergies of various objectives will deliver maximum possible benefit for the whole region.

This strategy sets out 22 actions, to meet the key challenges of the region. The actions aim to take a holistic approach to land and water management, to ensure water resource development and use is sustainable and equitable, and to prepare the region for future climatic extremes (see Figure 3 to Figure 5). Collectively, the actions will help ensure the South Coast region is well-placed to adapt to a more variable climate and support the difficult decisions we may need to make to deliver healthy, reliable and resilient water resources.

A range of robust economic, hydrological, environmental and qualitative assessments were used to prioritise the actions in the regional water strategy.³

Getting the balance of actions right means understanding the stresses on the region's water resources and natural environment, and recognising the limits and trade-offs. While we may have to make some difficult choices, there are also opportunities for the region, including improving water governance and creating economic opportunities for Aboriginal people, improving data collection and monitoring to inform decision-making, restoring riparian and estuarine habitats, and developing more resilient water supplies.



Image courtesy of Destination NSW. Tuross River, Tuross Head.

3. More information is available at: water.dpie.nsw.gov.au/plans-and-programs/regional-water-strategies/what-we-heard/south-coast-regional-water-strategy

Implementing the strategy

The South Coast Regional Water Strategy has a separate implementation plan⁴ that prioritises the delivery of actions over the life of the strategy. The implementation plan also outlines responsibilities and timeframes for delivery, so that we can monitor the progress of the actions, assess the effectiveness of the strategy and identify areas where we need to adapt.

Not all actions will be commenced at once, and funding will be a key consideration in planning when and how the actions will be implemented. The regional water strategies will be a key tool in seeking funding as future opportunities arise.

The implementation plan sets out priorities over the next 3 years and is located at www.dpie.nsw.gov.au/south-coast-regional-water-strategy

The implementation plan also identifies the key partners who will be involved in implementing the strategy:

- NSW Government agencies will lead the implementation of actions that develop and review policies and regulatory arrangements, involve research, or deliver regional programs. They will also take action where there is a market failure or other need for government intervention.

- Local councils will be involved in actions that influence town water supply at the local level and will lead actions directly related to local-level strategic planning.
- State-owned corporations such as WaterNSW will be involved in actions that require changes to the design, operation and management of major infrastructure, or the way water is delivered in regulated rivers.
- Community and industry groups and research organisations will be engaged in implementation. They may also partner with different levels of government to progress or deliver certain actions.

Each year, we will report on our progress in implementing the strategy actions. This will provide transparency to the community, and allow us to show what we have achieved and what we will deliver in the future.



Image courtesy of Jaime Plaza Van Roon, Department of Planning and Environment. Coast of Tathra, NSW.

4. More information is available at: dpie.nsw.gov.au/south-coast-regional-water-strategy

Figure 3. South Coast Regional Water Strategy: overview of strategy vision, objectives, water security challenges and priorities

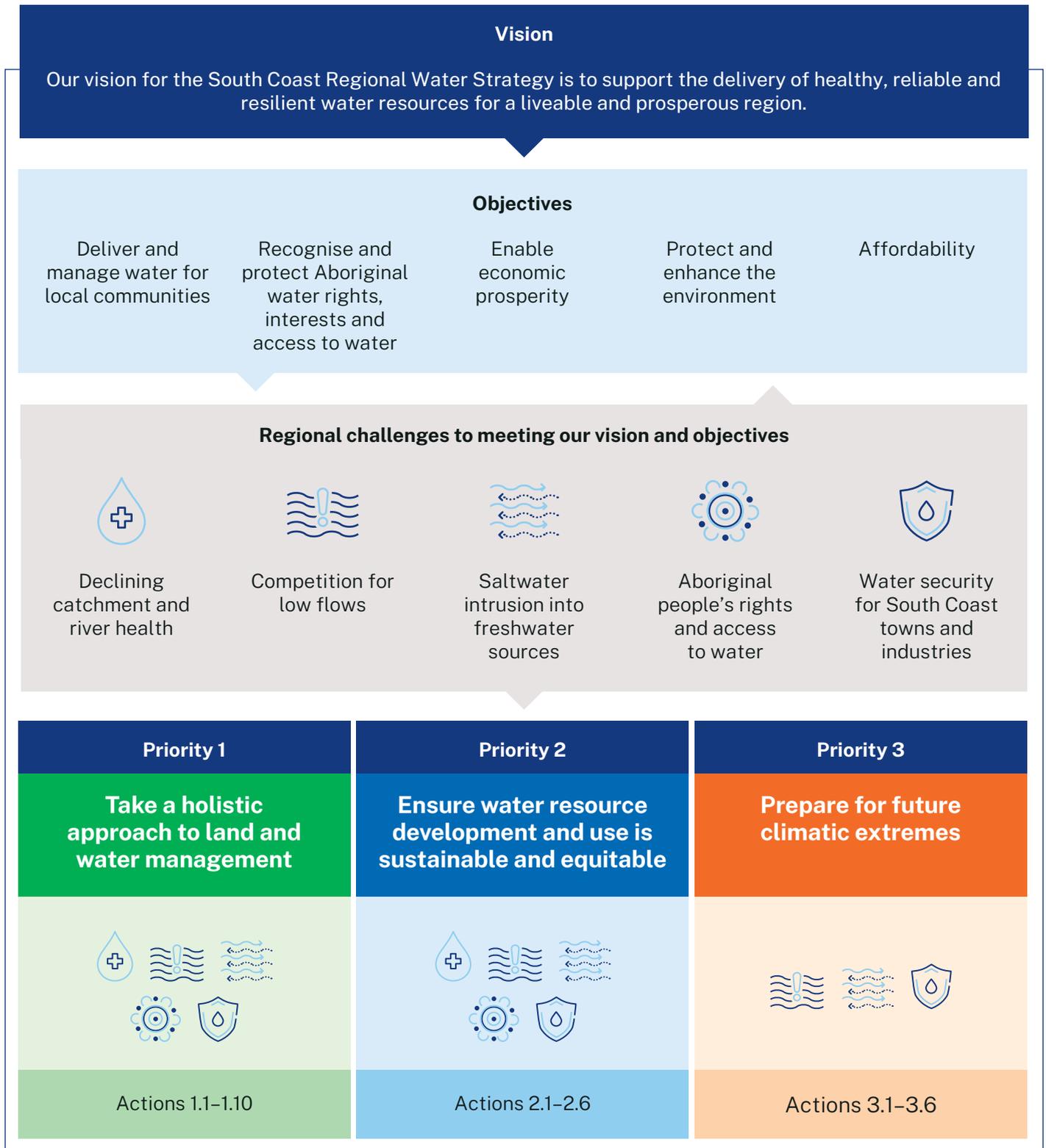


Figure 4. Summary of South Coast Regional Water Strategy actions

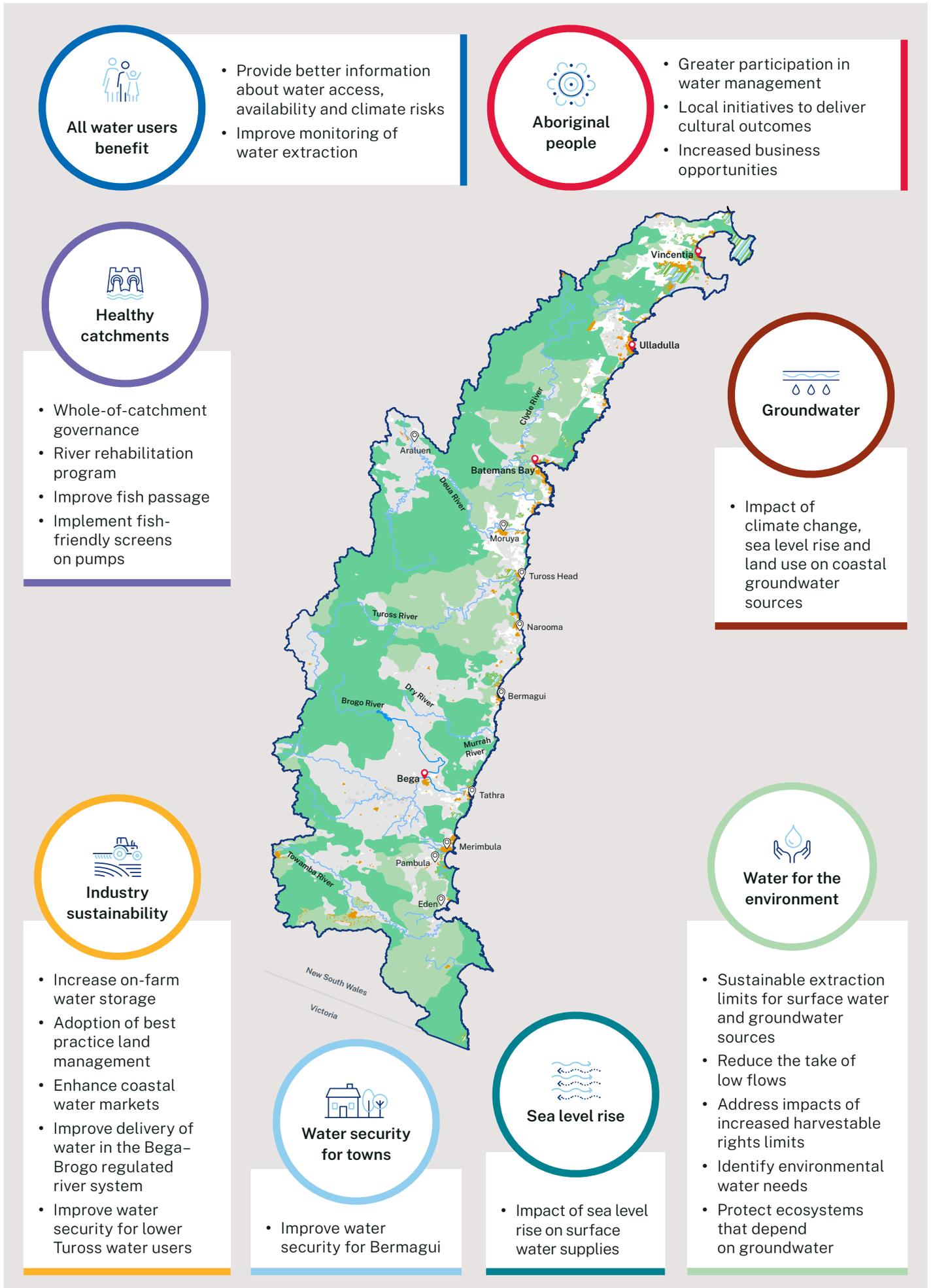


Figure 5. Priorities and actions identified to address the key regional challenges

Legend				
				
Declining catchment and river health	Competition for low flows	Saltwater intrusion into freshwater sources	Aboriginal people's rights and access to water	Water security for South Coast towns and industries

Priority	Actions	Challenges addressed
Priority 1: Take a holistic approach to land and water management	Incorporate Aboriginal knowledge and culture into land and water management	
	Action 1.1: Foster ongoing arrangements for participation of local Aboriginal people in water management	
	Action 1.2: Support place-based initiatives to deliver cultural outcomes for Aboriginal people	
	Undertake whole-of-catchment planning, decision-making and project delivery	
	Action 1.3: Support whole-of-catchment governance	
	Action 1.4: Deliver a river rehabilitation program	
	Support local landholders to adopt best practice land use and water management	
	Action 1.5: Support landholder adoption of best practice land management	
	Improve our understanding and management of the region's water resources	
	Action 1.6: Assess the vulnerability of surface water supplies to sea level rise and saltwater intrusion	
Action 1.7: Identify environmental water needs to support healthy coastal waterways		
Action 1.8: Characterise and plan for climate change and land use impacts on coastal groundwater sources		

Priority	Actions	Challenges addressed
	Action 1.9: Protect ecosystems that depend on coastal groundwater	
	Action 1.10: Improve monitoring of water extraction	
Priority 2: Ensure water resource development and use is sustainable and equitable	Reduce the impact of water infrastructure on native fish populations	
	Action 2.1: Improve fish passage	
	Action 2.2: Implement fish-friendly water extraction	
	Better manage competing demands for water	
	Action 2.3: Establish sustainable extraction limits for surface water and groundwater sources	
	Action 2.4: Reduce the take of low flows	
	Action 2.5: Address catchment-based impacts of increased harvestable rights limits	
	Action 2.6: Support Aboriginal business opportunities	



Image courtesy of Scott Nichols, Department of Primary Industries Fisheries. Merrica River, NSW.

Priority	Actions	Challenges addressed
Priority 3: Prepare for future climatic extremes	Support water users to manage risks	
	Action 3.1: Provide better information about water access, availability and climate risks	
	Optimise use of existing water supplies	
	Action 3.2: Enhance coastal water markets	
	Action 3.3: Investigate increased on-farm water storage	
	Action 3.4: Investigate delivery efficiency improvements for the Bega-Brogo regulated river system	
	Action 3.5: Identify the best option to improve water security for the Bermagui town water supply system	
Action 3.6: Improve water security for lower Tuross water users		



Image courtesy of Destination NSW. Bermagui Point, Bermagui.

