Far West
Regional Drought Resilience Plan

CENTRAL DARLING SHIRE COUNCIL

CITY OF BROKEN HILL

Regional Development Australia
FAR WEST NSW

Acknowledgement of Country

We acknowledge the Barkandji, Maljangapa, Wilyakali (Wiljali) and Ngiyampaa (Ngemba) people as the Traditional Custodians of the lands and waters where we live and work, and pay our respected to Elders past and present.

We value the vital involvement of members of the primary production, service industries, health and education, First Nations and broader communities of Central Darling Shire, Broken Hill City and the Unincorporated Area of NSW to the formulation of this plan and extend our thanks to those who contributed.

The project was prepared by Meridian Urban and supported by Central Darling Shire Council, Broken Hill City Council and Regional Development Australia (RDA) Far West, through funding from the Australian Government's Future Drought Fund and NSW Government.

Contents

Glossary

Key terms used throughout this plan are defined below.

ADAPTATION	Adjustment or modification in natural and/or human systems in response to actual or expected shocks and stresses to moderate harm, reduce vulnerability and/or exploit beneficial opportunities.
ADAPTIVE CAPACITY	The ability of individuals and groups to adjust and respond to environmental and socio-economic changes.
ADAPTIVE GOVERNANCE	Coordinating iterative, flexible and responsive interactions between systems when designing interventions and for their implementation and evaluation.
COPING CAPACITY	Communities that may be constrained in their capacity to use available resources to cope with adverse events and to prepare for, absorb and recover.
DROUGHT	Drought means acute water shortage. Drought is a prolonged, abnormally dry period when the amount of available water is insufficient to meet our normal use.
ECONOMIC RESILIENCE	The ability of the economy to absorb the economic impact of shocks and stressors without changing the economic status or outcomes.
ENVIRONMENTAL RESILIENCE	The ability of the natural environment to cope with a diverse range of shocks and stressors while maintaining natural processes and ecosystem services.
GOVERNANCE	Governance is the structures and processes by which individuals, groups and agencies in a society share power and make decisions. It can be formally institutionalised, or informal.
INTERVENTION OPTIONS	Alternative or complementary actions, projects, programs, policies, initiatives and investments that are planned to bring about change in the system.
LOCAL KNOWLEDGE	Local knowledge and First Nations knowledge incorporates elements of lived experience within a landscape, bearing witness to the operation of systems. It includes aspects of people, landscape, culture – how people interact with surroundings and as part of communities and processes.
PATHWAYS	Understanding the future range of potential scenarios and the various pathways for adaptation relative to the systems that can be influenced.
RESILIENCE	The ability of a system to absorb a disturbance and reorganise so as to maintain the existing functions, structure and feedbacks.
RISK	The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems.
SHOCK	Sudden, short-term events that threaten a city (or region). Examples include: major storms, floods, bush fires, heatwaves, disease outbreaks, terrorism and cyber-attacks'.
SOCIAL RESILIENCE	The ability of the human society to cope with a diverse range of shocks and stressors while maintaining existing social and community functions.
STRESSOR	An event that occurs gradually over a timeframe that causes an adverse effect, e.g. drought.
SYSTEMS	The interaction of processes, networks and inter-dependencies across a complex 'whole'.
THEORY OF CHANGE	Refers to theories, causal mechanisms and assumptions that explain how and why outcomes and impacts will be achieved through use, implementation and production of proposed inputs, activities and outputs.
TRENDS	Major global or regional influences that have driven change in the past and are expected to shape change into the future.
THRESHOLD	The point at which a change in a level or amount a controlling variable causes a system to shift to a qualitatively different regime. Also referred to as a tipping point.
TRANSFORM	The process of radically changing or building a new system with different structure, functions, feedbacks and identity.
TRIGGER POINT	A pre-agreed situation or event, that when met, activates a management intervention. Trigger points are usually defined in the planning phase
VULNERABILITY	The propensity to be adversely affected by a hazard, including elements of sensitivity and susceptibility, or differential patterns of capacities to cope or adapt.

Introduction

This Regional Drought Resilience Plan (RDRP) is a collaboration between Central Darling Shire Council, Broken Hill City Council and Regional Development Australia (RDA) Far West on behalf of the Unincorporated Area, alongside community and industries, working together to advance the region's focus on its resilience to the impacts of drought.

Drought is a recurring and challenging experience in Australia, not just on-farm but, for entire communities and regions. The impacts from drought are significant, extending across economic, social and environmental arenas. Even when drought breaks, the impacts for people, businesses and communities can linger for some time after.

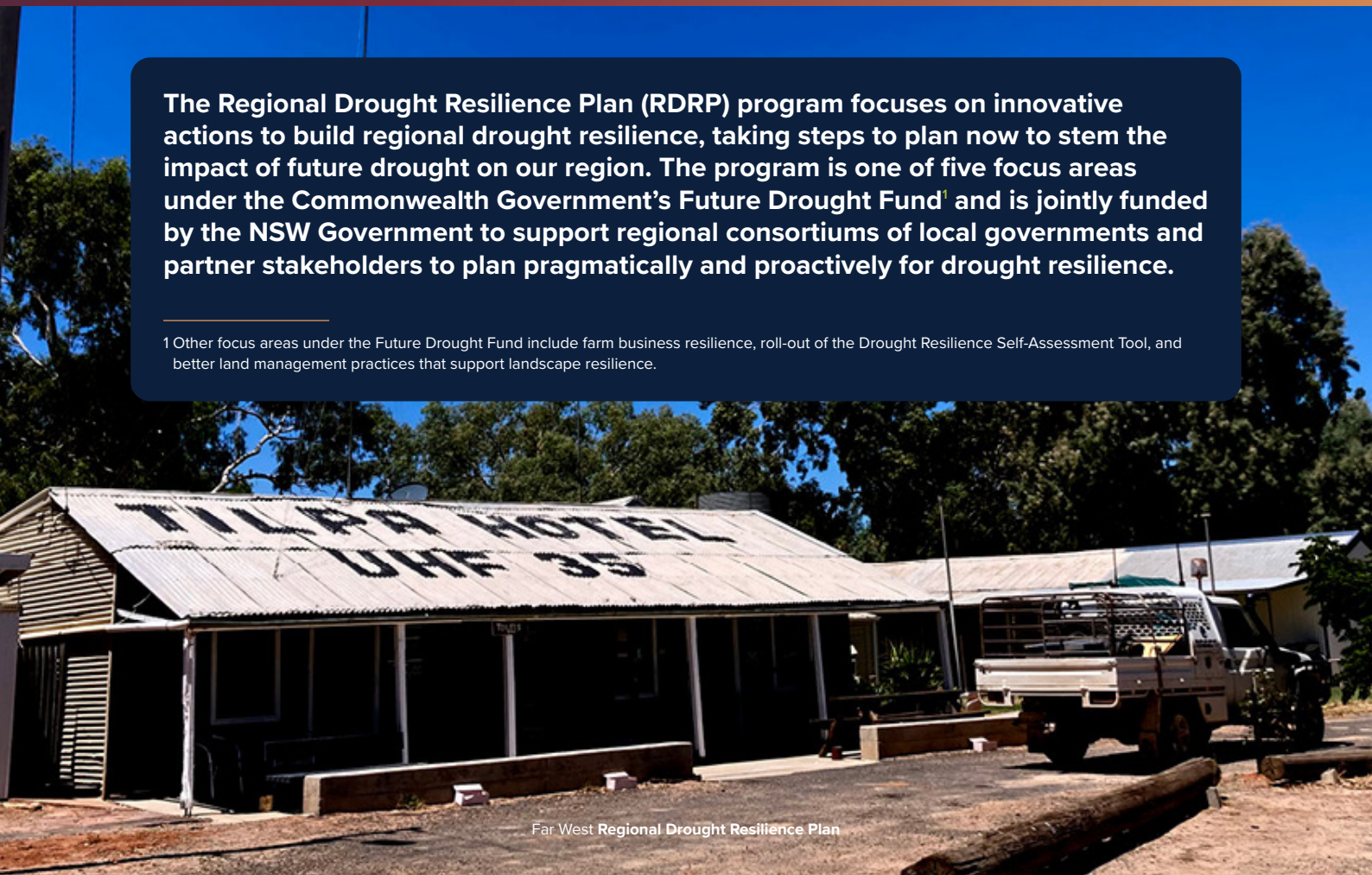
The Far West region of New South Wales (NSW) is exceptional for a range of reasons. It is a landscape of contrasts. It is the largest RDRP region in NSW, with the most dispersed population. Its contribution to the state and national economy is significant. The Far West is the first to enter drought in NSW and usually the last to cycle out of it. This is why our proactive efforts in drought preparedness is not only important to us; but, is factored into almost all that we do.

The Far West experiences periods of persistent drought, set between cycles of good years. When dry times arrive, reduced groundcover, reduced access to water and feed, stretched budgets, increased workload, and reduced streamflow in the Darling (Baaka) system all take a toll. This plan looks at the region's diverse impacts from droughts, using this knowledge and experience to inform how we, as a community, contribute toward enhanced drought preparedness into the future – before, during and after drought.

While drought may be cyclical and nothing new, the stakes are rising. A plan can't make it rain, but it can help by putting in place a series of options and opportunities to alleviate the stresses we have previously experienced during drought times, and position us well ahead of future dry periods.

The Regional Drought Resilience Plan (RDRP) program focuses on innovative actions to build regional drought resilience, taking steps to plan now to stem the impact of future drought on our region. The program is one of five focus areas under the Commonwealth Government's Future Drought Fund[1] and is jointly funded by the NSW Government to support regional consortiums of local governments and partner stakeholders to plan pragmatically and proactively for drought resilience.

1 Other focus areas under the Future Drought Fund include farm business resilience, roll-out of the Drought Resilience Self-Assessment Tool, and better land management practices that support landscape resilience.



Far West drought resilience vision

To continuously improve upon integrated drought preparedness and proactive adaptation, to position the region to weather the impacts of drought times and emerge stronger than before.

The drought resilience vision for the Far West acknowledges the drying climate of this part of Australia. It brings a sharp focus on the inter-relationships and dependencies that exist which underpin the region's economy, community connection and environmental systems. This is particularly poignant for the Far West, given the connection with the Darling (Baaka) River and its tributaries which sustain us in so many different ways. The river is mother, the heartbeat of the Traditional Custodians, the Barkandji people, of the Far West.

The vision is based upon a grassroots consideration of what can be realistically achieved by this foundational RDRP, acknowledging the new way in which planning for drought resilience is undertaken across Australia. As momentum builds and opportunities identified from the plan come to fruition, the ability to advance this vision will continue to grow.

As the Far West is formed by many distinct and different communities, the needs across these communities are diverse. Not everyone is affected in the same way, to the same degree, or at the same time by drought. Different circumstances exist. Despite this, the region's shared aspirations for drought resilience bring uniformity.

This vision has emerged from diverse and comprehensive stakeholder input. It recognises that for the Far West, a focus is needed on continuous improvement and proactive adaptation, facilitated by an integrated approach to how we plan for and act on drought preparedness.

The vision, pathways and outcomes of this plan, together with the priorities of the Future Drought Fund provide the context for how drought resilience is contemplated for the Far West.

The pathways which support this vision reflect four key themes and associated outcomes that were highlighted through the stakeholder and community consultation process, presented in Figure 1.

Resilient water

Water availability that can sustain the region, used efficiently to share and maximise its benefit

Resilient communities

Connected people, families and communities that are supported by coordinated and resourced services

Resilient business and economy

Innovative and adaptable enterprises which leverage changes in climate and market conditions

Resilient landscapes

Healthy Country and waters to sustain people and culture, environmental and industry needs

Figure 1 — Far West's drought resilience outcomes

Purpose of this plan

Drought resilience, as described by the CSIRO (2022):

'will ensure regional Australia can endure deeper, longer droughts, and recover from them sooner. This will help Australia's agricultural industries maintain national farm income, increase food security, and protect the regional jobs that rely on agriculture during the toughest years. Importantly, it will also increase the resilience of rural and regional communities and improve environmental outcomes'.

The Far West Regional Drought Resilience Plan provides locally informed pathways and actions to strengthen existing local drought resilience and support an integrated approach across the region to navigate the complex effects of drought. The plan builds upon the local strengths, knowledge, and networks of communities, industries and services.

The plan recognises the role of healthy Country and waters in supporting the region's economic and social functions, and the cultural connection to the lands and waters which the region's First Nations people have maintained for tens of thousands of years.

It is easy to say that we must plan and prepare for drought. Importantly, it must be acknowledged how challenging and complex this is.

No two droughts are the same. Our circumstances are different with each drought and these change as drought continues. This is the chronic and persistent nature of drought that sets it apart from other climate or natural hazards.

The objectives of the Far West RDRP are to:

- Increase the understanding of the region's current and future drought resilience, considering the region's unique economic, environmental and community characteristics
- Identify drought priorities in the communities' voice, and recognise each community's strengths from which to build
- Combine First Nations' and local knowledge, with resilience and risk data and information, to make informed decisions
- Identify opportunities and actions available in the short, medium and long-term
- Provide a platform and evidence-base to support public and private drought preparedness, response and recovery investment in the region, in a meaningful and impactful way.

The Regional Drought Resilience Plan is supported by a separate comprehensive Resilience Assessment that provides the technical evidence base for the plan. The assessment captures drought impacts, history of drought in the region, future climate trends, and builds an understanding of the local context which may present certain vulnerability to drought. However, the core component of the plan is the diverse community, industry and service provider contribution to its development.

The insights and direction that evolved through engagement sheds light on the local knowledge of the land and its function. It is informed by the realities of how drought affects primary producers, workers, industry, children, families and our First Nations' communities across the Far West. These communities stretch across a larges area including at Tibooburra, Milparinka, Packsaddle, Tilpa, White Cliffs, Wilcannia, Menindee, Ivanhoe, Silverton and Broken Hill, and the stations and properties in between.

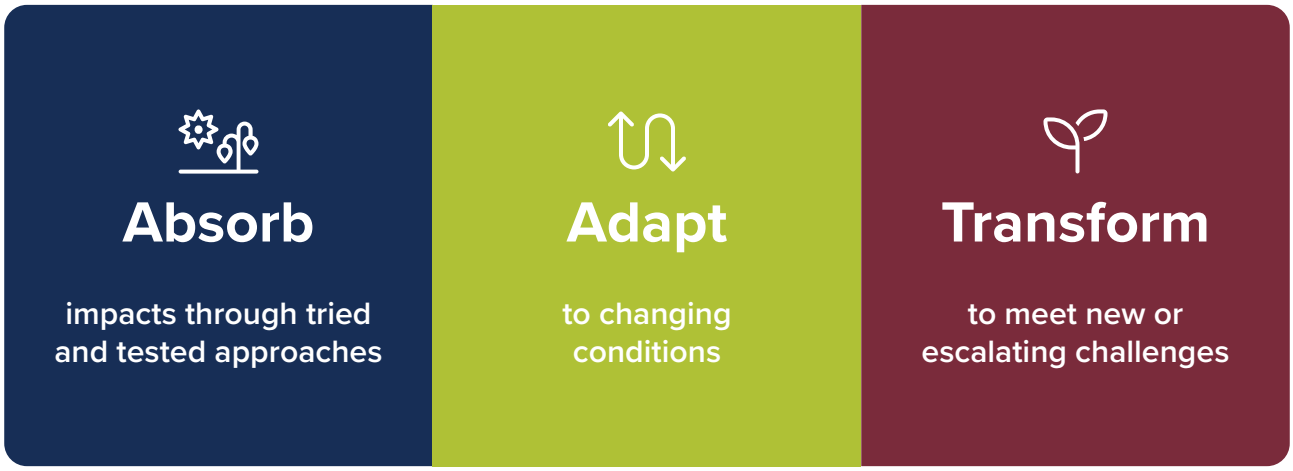


Figure 2 — Action pathways

How this plan supports drought resilience in the Far West

Looking back at the previous impacts of drought provides some indication as to what drought might look like in the future. While we don't have a crystal ball to predict the future, we can consider these past impacts alongside future climate scenarios to consider responses under different drought futures.

Building a collective understanding of how issues arise and persist from drought, and what has worked in the past to alleviate the extent of impacts, provides a useful guidepost to where our future focus should be.

Through this framing, we can recognise the symptoms and understand the signals to support action. These actions can be scaled and directed under several pathways.

These pathways of absorb, adapt and transform provide a view of the priorities identified by this plan relative to different components of the drought cycle, effort and/or costs associated. Some opportunities are short-term and more immediate, whilst others are more transformative in nature and require long-term effort to generate change.

This concept forms part of a resilience 'theory of change' model[2] which helps to break down and consider the complex elements of drought resilience and interlinkages across issues. This makes clear both how and why its impacts run so deep, and why an integrated and adaption-driven approach is required. This framing also helps to inform decision-making for enhanced resilience and adaptation as conditions and circumstances change over time.

Why we need a local plan

Having a plan enables us to think and act strategically, rather than on an ad hoc basis once the pressures of drought are upon us. Ad hoc approaches tend to be limited in the options or opportunities that can be considered, and are often too late. The plan helps us coordinate and direct effort, resourcing, funding and investment to actions that offer maximum benefit.

The state of NSW doesn't end at Dubbo — a feeling strongly expressed through the stakeholder engagement process that has informed this plan. This engagement highlighted the existing resilience of the pastoralist and agricultural sector, and communities of the region, and the role that established networks play in supporting this resilience. It also has demonstrated that drought can impact communities and economic sectors outside of agricultural production differently, exacerbating existing vulnerabilities.

Stakeholder and community consultation also highlighted the challenges of living in the Far West, underpinned by a common frustration of not feeling heard or seen. The city / bush divide can, in some ways, compound the trauma experienced during drought, and a strong shared desire for remote communities to be better understood by those outside of the region is critical to bridging this gap.

Despite the physical distance between communities of the Far West, many have common challenges, priorities and aspirations when it comes to drought. The plan seeks to reflect local priorities and regional needs, supporting the strengthening of resilience to drought cycles.

2 The RDRP integrates the 'Resilience, Adaptation Pathways and Transformation Approach' (RAPTA) developed by CSIRO which provides a framework to map resilience interventions. For more information on RAPTA, visit https://research.csiro.au/eap/rapta/

The Far West Regional Drought Resilience Plan adopts a focus to:

- Anticipate effects
- Act together
- $ Advocate for funding and action
- Advance regional strengths and opportunities.

The 2017-2019 drought was NSW's worst drought on record. It lasted much longer in the Far West. In a changing climate, we need to ensure we take learnings from the past to be better prepared for next time.

The key ways that this drought resilience plan seeks to achieve this is through:

- Understanding how people, businesses, and service organisations act in building grassroots resilience and ensuring they're supported by and advocated for in drought resilience actions
- Presenting a unified voice that informs more effective resourcing, advocacy and funding
- Having projects ready for pre, during and post-drought implementation and taking advantage of funding opportunities with relevant and well-developed projects or activities.

Developing the Far West Regional Drought Resilience Plan is about taking a local view for local benefit amidst a drought cycle that can affect large parts of the state and nation at the one time.

A plan can't bring rain, but it can work to make things a bit easier in its absence.

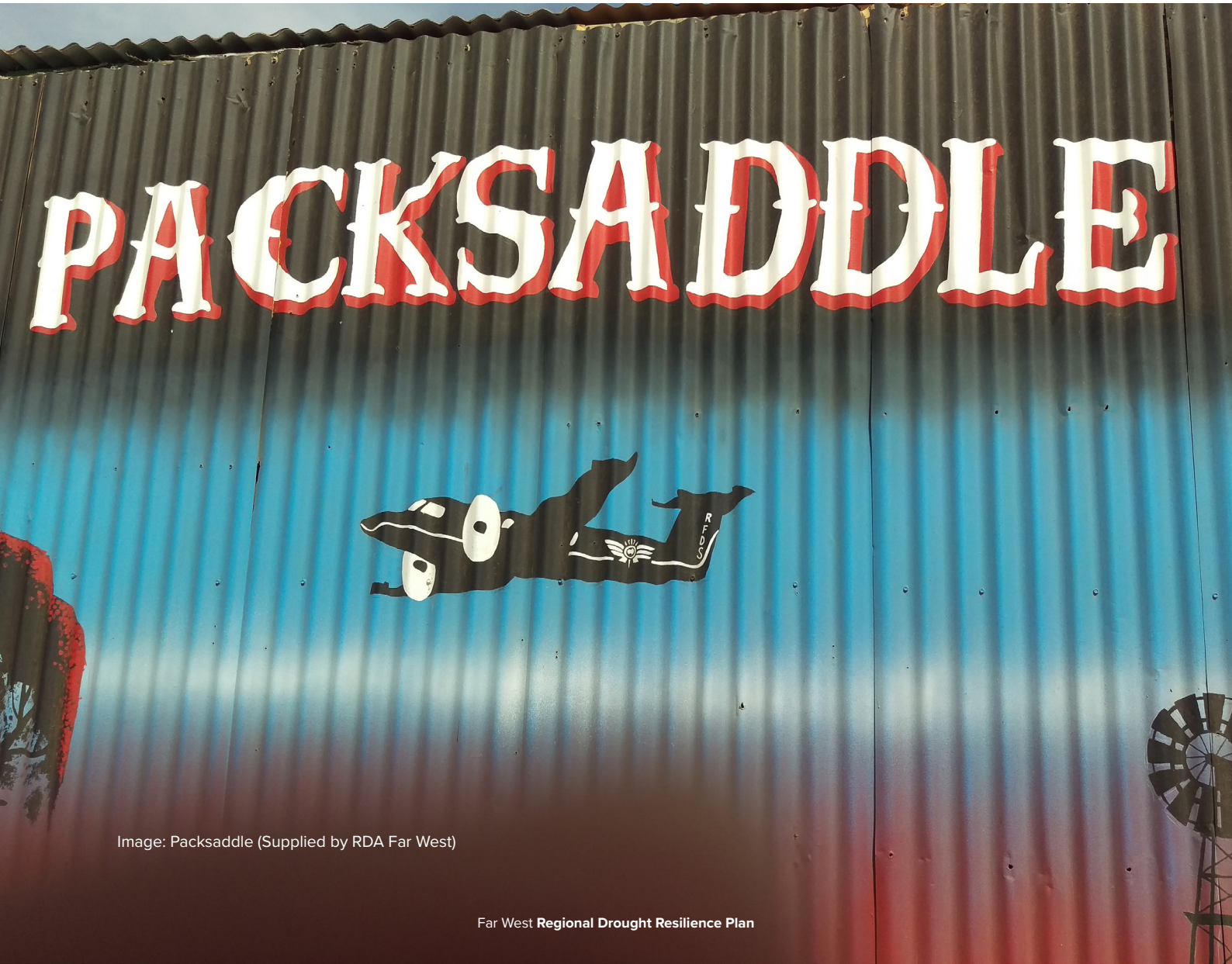


Image: Packsaddle (Supplied by RDA Far West)

Regional Drought Resilience Plan Framework

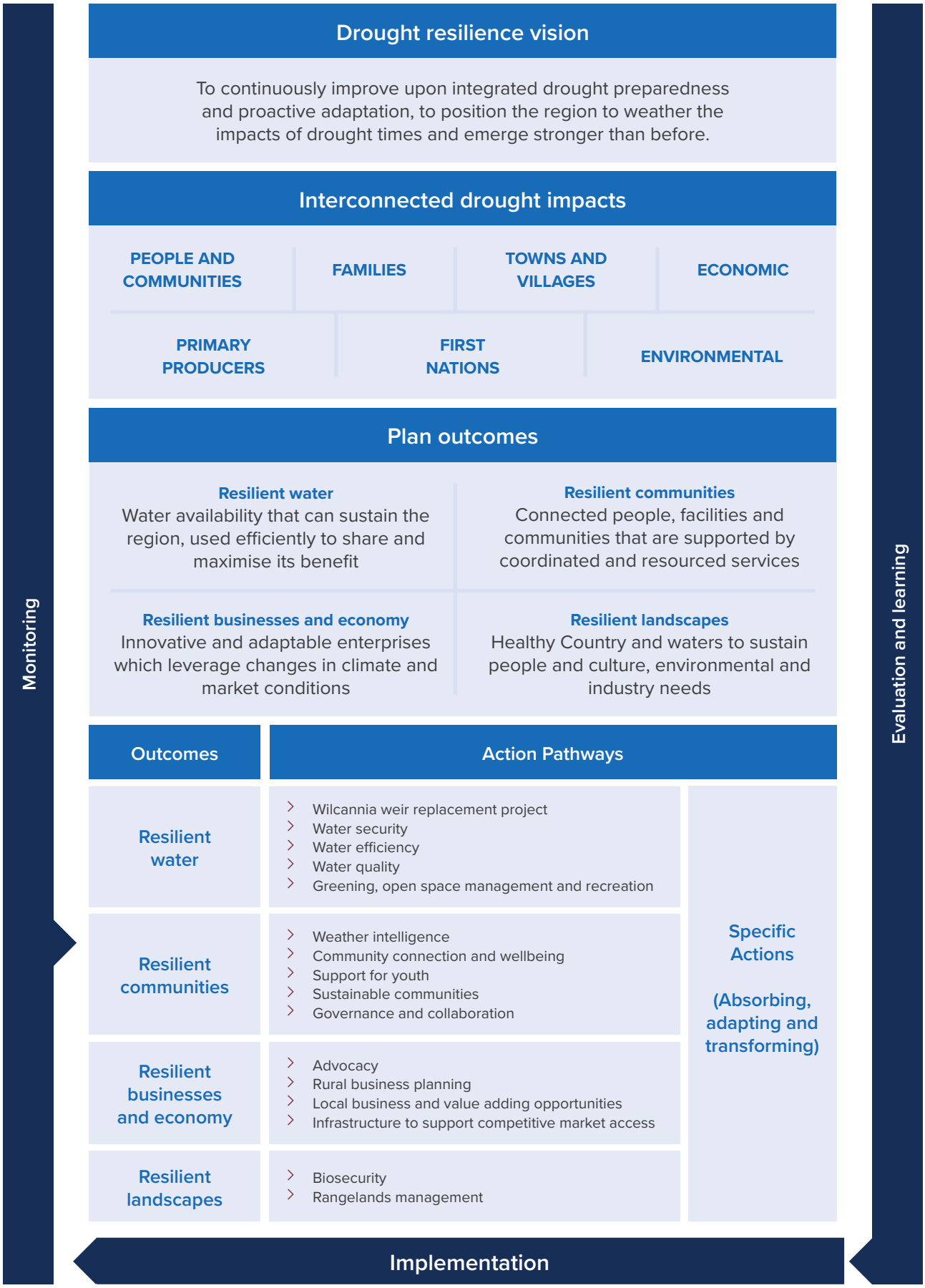


Figure 3 — Plan framework

Region snapshot

Information sourced from: ABS 2021 Census data, Regional Development Australia, Far West NSW Workforce Development Report, and AgTrack - Agricultural and Land Use Dashboard

20,441
population as at 2022

Median age
42
(39 NSW average)

First Nations population
13.2%
(3.4% NSW average)

Gross Regional Product
Central Darling $90M
Broken Hill $1.3B
Unincorporated Far West $77M

Unemployment
Central Darling: 7%
Broken Hill: 4.9%
Unincorporated Far West: 4%

Local businesses
1,297

Local jobs
8,508

LARGEST INDUSTRIES (BY EMPLOYMENT)

- Health Care and Social Assistance
- Mining
- Agriculture

TERTIARY INSTITUTIONS

- Country Universities Centre Far West
- TAFE NSW
- Robinson College
- Broken Hill University Department of Rural Health

AREAS OF SIGNIFICANCE

- Barwon–Darling (Baaka) River system
- Paroo River
- Menindee Lakes
- Mutawintji, Sturt, and Kinchenga National Parks
- Living Desert State Park
- Mundi Mundi Plains

AGRICULTURAL COMMODITY GROSS VALUE

Central Darling $31.3M

Broken Hill $3.95M

Unincorporated Far West $31.6M

PRINCIPAL AGRICULTURAL COMMODITIES

- Livestock (+90%)
- Sheep and cattle
- Wool
- Other livestock
- Broadacre crops
- Fruit and nuts

The Far West region

The Far West borders South Australia to the west, Queensland to the north, Bourke, Cobar and Carrathool local government areas (LGAs) to the east, and Wentworth and Balranald LGAs to the south. The region spans approximately 146,170 square kilometres, extending across the outback semi-arid landscapes of NSW, home to geologically unique and mineral rich areas and important waterways.

The role of water is a significant feature of the region's rangelands (arid and semi-arid) environment. The Darling (Baaka) River flows through Central Darling Shire, a focus of community connection – particularly for the Barkandji people. The river plays an integral role connecting the northern basin of the Murray-Darling system to the southern basin which connects with the Murray River to the south before continuing to flow into South Australia.

The extent of the region, and its position at the middle of the large, complex and heavily regulated basin of the Murray-Darling Basin invites a number of challenges relevant to drought resilience. Water supply arrangements are vital to any conversation about drought and the management of water within the water systems that flow through, and support Central Darling Shire, Broken Hill City and the Unincorporated Area.

Key environmental values include the Paroo River in the north which joins the Baaka River to the north-west of Wilcannia, flowing through to Menindee Lakes to the south. Numerous national parks and reserves are protected throughout the region. Mining activity has strong foundations in the region's European settlement history, underpinning the growth of Broken Hill. Alongside mining, the Far West is supported by its longstanding agricultural strengths, particularly in the livestock industry.

The regional city of Broken Hill is a hub for services, supplies and social activity for the region and beyond, including residents of South Australia. Smaller townships are located throughout Central Darling Shire including Wilcannia, Menindee, Ivanhoe, White Cliffs and Tilpa. The Unincorporated Area includes a number of townships, villages and rural communities including Silverton, Milparinka, Packsaddle and Tibooburra. While not part of any LGA, it is supported by considerable advocacy from RDA Far West. The majority of both Central Darling Shire and the Unincorporated Area comprises large-scale pastoral properties that support the agricultural and economic productivity of NSW. The region's unique landscapes have made it home to a thriving film, television and advertising industry.

Whilst the scale of the region can give rise to a range of challenges, the remoteness and connection to land are part of the many charms which has demanded the region build its own capabilities.

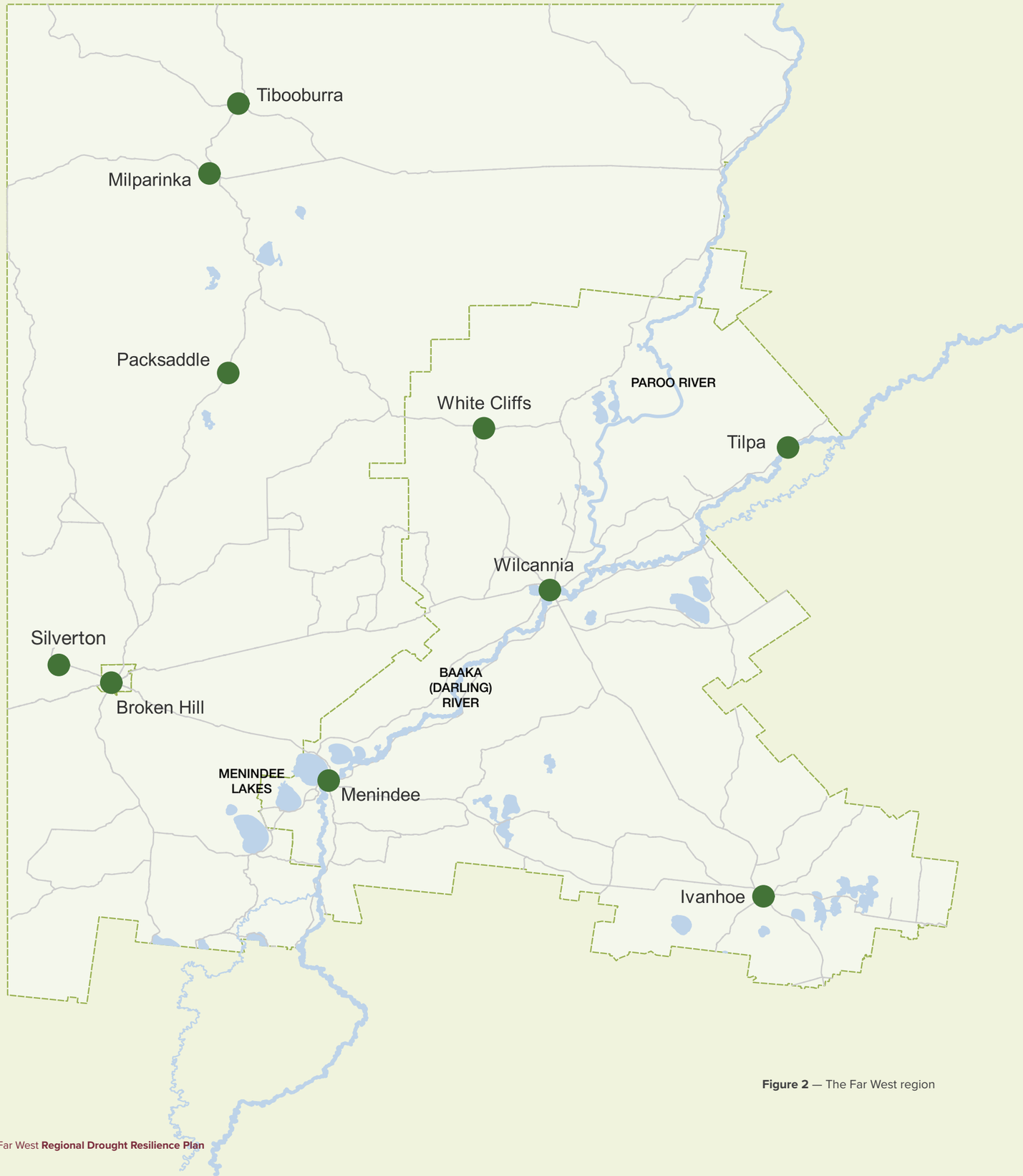


Figure 2 — The Far West region

People and community

Small towns and village centres are scattered across the large area of the Far West, with the majority of residents concentrated in Broken Hill. As the regional centre in the region, Broken Hill provides a range of health care, retail and community services. Smaller community services are dispersed across townships within the Central Darling Shire including at Wilcannia, Menindee and Ivanhoe. These townships, as well as White Cliffs, Tilpa and villages of Silverton, Tibooburra, Packsaddle and Milparinka, and the properties around these villages, are supported by a network of rural services, including primary and mental health services. Many people retain connections with other centres at Mildura, Cobar, Bourke and Adelaide given their proximity and access to specialist services.

The Far West has experienced a slight decrease in population over the years, attributed to a range of factors including the impacts of drought, and access to employment, education and health care. The mechanisation of mining over past decades and changing economic conditions has also shaped population decline. While at the state-level there is a projected population decline for the region, local governments are confident in the potential to leverage a range of key projects and investment to stabilise this trend. Attraction of families remains a priority to support the region's long-term growth ambitions and support the retention of key services and workers across the region.

The Far West, particularly in Wilcannia, Menindee and Ivanhoe, is home to a proportionally higher First Nations population compared to the state average, with a relatively young population. Cultural practices in the region link to water resources and land stewardship, with strong connection over generations to the Baaka.

First Nations peoples

The Traditional Owners and Custodians of the Far West Region are the Barkandji, Maljangapa, Wilyakali (Wiljali) and Ngiyampaa (Ngemba) peoples. Given the deep connection with these lands, First Nations peoples involvement is essential in developing a holistic and sustainable approach to drought resilience, with a number of First Nations representative groups consulted as part of the preparation of this plan.

Barkandji and Maljangapa First Nations people have existing rights to land and water in the region, however not flowing water as described in the Native Title Determination by the Federal Court. Aboriginal lore maintains that if we care for Country, it will care for us. This requires Country to be cared for throughout the process of design and development.

First Nations people's centuries-old relationship with the Far West region is crucial to upholding their livelihoods, culture, and heritage. Broken Hill City Council has endorsed a Reconciliation Action Plan (RAP) to remain committed to strengthening the relationship with the local Aboriginal community through identified initiatives. The Central Darling Shire Council is involved in a variety of initiatives to support the preservation of Indigenous culture in the region.

The Baaka River is an example of the deep connection to water and as a place for community and family gatherings, it is important to understand and consider its broader cultural role within the drought plan. The depletion of the river system has critical implications to First Nations communities' way of life and in particular their social and mental wellbeing. When the river is sick, the community is sick.

Image supplied by RDA Far West

Economy

The Far West region supports 8,508 jobs with a Gross Regional Product of $1.4B in 2020. The key economic activities are in the mining and agricultural sectors. Both sectors are highly influential on the community make-up, and fluctuations in markets relative to each have impacts across communities in the Far West. As a regional city, Broken Hill has high employment in the health care and social assistance sector, supporting the needs of Broken Hill and acting as base for delivery of services for the region.

Opportunities for growth in these dominant sectors is primarily associated with significant value-add activities. This relates to industrial development and manufacturing capabilities in Broken Hill, and emerging agribusiness in the broader Far West, as well as supply chain expansion. The draw of Outback NSW, through unique rock formation, starry skies, and rich Aboriginal culture, provides the backdrop for a growing visitor economy supporting the traditional agricultural backbone and mining strengths.

Renewable energy is an emerging industry in the region. The availability of land and suitable environmental conditions, lends itself to effective energy generation, and benefits from nearby energy demands.

Environment

Since European colonisation there has been substantial modification of the vegetation and landscape through the expansion of pastoral activities, the use of groundwater resources, and the introduction of feral animals to the region. Changes in the landscape have also occurred as intensification of land uses in the Murray-Darling Basin and water allocations have altered more broadly how ecosystems are functioning, including degradation of water quality. How native species use the area and vegetation in the riparian areas has also changed as a result.

The waterways, floodplains and riparian lands in the region have long supported rural communities and ecosystems. Importantly they have long formed both an important resource base and cultural link for Aboriginal people, both historic and continued today.

Other sites such as the Paroo River and Mutawintji and Kinchega National Parks, are part of the rich cultural and environmental heritage of the region.

Water security in the Far West

Water security is a key issue for people of the Far West. The Western Regional Water Strategy[3] is a 20-year strategy to improve security and certainty of the region's water resources. It identifies the key regional challenges to be tackled over the coming decades and outlines the actions to respond to those challenges.

The elements of the strategy that align to drought and water security are summarised below. These provide a comprehensive evidence base for developing RDRP actions, alongside insights and experience drawn from local stakeholder consultation.

The Western Regional Water Strategy key insights include:

- Environment, ecosystem health and water quality
- Aboriginal knowledge and connection to Country
- Water security for towns and small communities
  - Managing water demand and improving water-use efficiency were identified as key priorities.
  - Further investigation of options for water recycling and managed aquifer recharge were also suggested.
  - The impacts of water scarcity on town water supply remains of widespread concern due to a range of issues, including impacts on mental health and potential loss of critical industries and skills.
  - While groundwater was recognised as important to address future climate-related water scarcity issues, there was also concern about potential impacts arising from over-reliance on, and lack of understanding about groundwater.

3 https://water.dpie.nsw.gov.au/our-work/plans-and-strategies/regional-water-strategies/final/western-regional-water-strategy

- Insecure water supplies affect the viability of businesses
  - Water security was recognised as critical for economic growth, with support for providing greater certainty around the implementation and lifting of water restrictions by including triggers in water sharing plans.
- Investigating water efficiency measures was commonly raised as a priority to help address climate change impacts.
- Water management
  - Increasing the transparency of water management information was supported. There was also support for providing greater opportunities for inter-jurisdictional collaboration to manage water, environmental, social, and cultural needs.
  - Adapting water management to address climate change impacts and meet environmental needs was considered important.

Many communities and districts within the Far West do not maintain secure town water supplies, with many relying on water drawn from waterways which cease to flow in certain drought events. Agricultural and related industries away from towns and villages rely on low and irregular rainfall, limited river water supplies and groundwater.

The Strategy recognises that while there are many sources of groundwater across the region, its availability and quality vary according to location and geology. Potable groundwater is limited, and all shallow groundwater sources need to be treated to meet drinking water guidelines. The water from artesian bores is often at high temperatures, which can also make it challenging for towns to use this groundwater. Groundwater salinity is a major challenge in the region and salt interception schemes are in place to help manage the risks of saline groundwater discharging into surface water ecosystems.

The strategy sets out 20 actions across the themes of:

- Improving water security for towns, industries and communities
- Improving the resilience of natural systems, and
- Improving connectivity across the northern basin.

Image supplied by RDA Far West

How this plan was prepared

The Far West Regional Drought Resilience Plan was prepared with the valued contribution of community members, representatives and organisations, producers, industry representatives, service agencies, not for profit organisations, local businesses, local and state government.

The consultation and engagement process worked to:

- Involve diverse perspectives and insights from across demographic and industry groups
- Leverage local knowledge and experience with past drought effects to understand what worked, and what could have worked better
- Discuss opportunities to address drought resilience in an integrated manner over time
- Maximise participation by providing a range of consultation options in recognition of the scale of the region and dispersed population.

Key consultation and engagement strategies included:

- Online community and business surveys
- Industry, service provider and government agency workshops (online and in-person)
- A consultation stall at AgFair and distribution of surveys to a network of AgFair stalls
- Targeted consultations, interviews and discussions with community, industry and service provider representatives.

The consultation and engagement process adopted a principle of ‘appreciative enquiry’ whereby a diversity of stakeholders were engaged in a fair and non-discriminatory way to ensure the plan is well-informed by local views, experience, knowledge and values. Whilst it is acknowledged that the process was unable to individually hear from everyone, engagement sought to tap into key trusted local service providers who understand large segments of the regional population and have reach into existing networks in order to understand strategic and systemic trends.

Participation in the plan and generous contribution of time and insights was given by (but not limited to):

- Local pastoralists and primary producers
- Local residents
- Community group representatives
- Royal Flying Doctor Service South Eastern Section (RFDSSE)
- Far West Rural Services Network (RSN)
- Pastoralists Association of West Darling (PAWD)
- Regional Tech Hub
- Rural Financial Counselling Service
- National Emergency Management Agency
- Department of Primary Industries and Regional Development
- Department of Education and Training
- Business NSW
- Rural Adversity Mental Health Program (RAMHP)
- Foundation for Rural and Regional Renewal (FRRR)
- Salvation Army
- Red Cross
- Lifeline Broken Hill
- Contact Inc
- Outback Mobile Resource Unit (Toy Library)
- NSW Police
- State Emergency Services
- NSW Rural Fire Service
- Southern NSW Drought Innovation and Resilience Hub
- Local Land Services
- RFDSSE ‘We’ve Got Your Back’ Champions
- Western Landcare
- Isolated Children’s Parents’ Association
- Business Far West
- Foundation Broken Hill
- Silverton Village Committee
- Sunset Strip Progress Association
- Barkandji Native Title PBC
- Maari Maa Health Aboriginal Corporation
- Local Aboriginal Land Councils
- National Indigenous Australian Agency
- Wilcannia Domestic Violence Safe House
- Menindee Central School.

Image: Consultation at AgFair 2024

Alignment

This plan provides strategic alignment with international-scale goals and commitments including the United Nations Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction, with national-scale strategic frameworks and state-level strategic and policy instruments. This alignment demonstrates how working locally contributes to broader sustainability and resilience outcomes.

Key documents to which this plan aligns includes (but is not limited to):

- Murray-Darling Basin Plan
- Great Artesian Basin Strategic Management Plan
- Western Region Water Management Strategy
- NSW State Disaster Mitigation Plan 2024 – 2026
- NSW Climate Change Adaptation Strategy
- Draft Far West Regional Plan 2041
- Far West Regional Economic Development Strategy (2023 update) and associated industry plans
- NSW water strategies (Western Regional, and Lachlan Regional (draft), and Aboriginal Water Strategy)
- Southern NSW Drought Resilience Adaptation and Innovation Hub research
- Department of Primary Industry and Regional Development's DroughtHub
- Department of Primary Industry and Regional Development's Drought Signals Dashboard
- Commonwealth Government's Drought Resilience Self Assessment tool
- Department of Primary Industry and Regional Development's Climate Vulnerability Assessment
- Various local government strategies and plans, and industry group studies, plans, strategies and reports.

Image supplied by Broken Hill City Council

Key insights

Key insights communicated from the consultation and engagement process include:

- Existing challenges in relation to access to services, health care and education can be made more difficult under drought conditions. A range of factors influence this such as increased workloads and loss of support staff on properties. This makes accessing services difficult, alongside the financial costs while under strained times and considering resourcing constraints.
- Workforce retention can play into this aspect of service availability for the community. Staff may need to be let go due to financial impacts from drought and it is often difficult and time consuming to rehire. This also plays into broader issues of continuity of services.
- The impacts on families are significant throughout drought. The pressures on individuals and couples can be transferred to children, who also are struggling to understand. These pressures are exacerbated by financial stress, increases in workloads, uncertainty of time, stigma in asking for help and higher levels of isolation.
- Business and industry workshops, or other community-style events, offer the chance to share knowledge, build capacity and capability, but also create the setting for community connections to organically occur, and alleviate feelings of isolation.
- There are many community members and key trusted organisations which people look to in times of crisis. Outside of drought they operate in different ways to proactively build community resilience, and demonstrate an understanding of the community needs. Their ongoing support is critical to this community, but they are put under pressure during drought as demand rises.
- The flow of support for services can be too late when relying on formal drought declarations. The region is so large that some areas are experiencing the impacts well before any declaration or support is offered. Drought relief often kicks in two years too late.
- There's a connection to the land, community and inter-generational identity, which is why people value the Far West, however the cumulative impacts from a range of stresses takes its toll in drought times.
- Waterways and water bodies hold significance amongst the community, in particular the Baaka represents a system with a long and continuous relationship with the Barkandji people. Other waterbodies represent opportunities for recreation and reprieve from dry conditions which is important for wellbeing.
- There can be a range of financial levers available for drought assistance but some people are not aware of them or know how to access them, and the process is seen as arduous to navigate – even more so when people are time poor from increased workloads and in a stressed frame of mind. These processes can compound.
- The Wilcannia Weir and changes to its design is not supported by the Central Darling Shire community. The original design, which was the outcome of significant community engagement, remains the preferred option. The revised option offers limited drought resilience benefit, particularly for the community of Wilcannia.

CASE STUDY

Wilcannia Weir Replacement Project

Water security has been a long-term issue facing the township of Wilcannia and the wider Central Darling Shire. An upgrade of the existing Wilcannia Weir was initially tabled almost 50 years ago. The existing Wilcannia Weir pool currently supplies six to nine months of water supply (subject to weather conditions), before the water becomes too saline to drink.

In 2018, the Federal and NSW Governments allocated approximately $30 million for the construction of the new Wilcannia Weir in an effort to ensure this long-term water security for the township of Wilcannia and the wider region, simultaneously improving outcomes for Indigenous communities who rely on cultural water flows.

A business case was undertaken in 2019 to identify the most appropriate location for the new weir, involving significant consultation on the design. Consultation on the business case took place with unanimous community support for the construction of a new weir from local government, Indigenous groups and organisations, and broader members of the community. Construction on the weir was initially anticipated to be complete by 2021.

In 2022, work on the new weir had not yet commenced owing to several iterations of revised designs. The community agreed to a final weir design one metre above the current weir height approximately five kilometres downstream from the Wilcannia township. This design anticipated a minimum of 5 years of sustainable water supply. A revised costing was forecasted for the project of approximately $45 million (including the construction new Wilcannia weir and associated works and the part removal of the existing weir).

In late-2023, a revised design was released for the weir (and associated fish passage) by the State Government without community consultation. This design was considered more appropriate by the State Government owing to lower construction and ongoing maintenance costs and lesser environmental impacts, amongst other things. The design of the new proposed weir is 1m lower than previously agreed by the community (i.e. the revised design is now the equivalent height of the existing weir) and will not provide additional water storage during drought periods than currently facilitated by the existing weir. This represents a significant lost opportunity for drought preparedness. The recently revised designs have been met with strong community desire to maintain the originally proposed weir.

The Far West Regional Drought Resilience Plan reflects the strong community desire to revert to the previous weir design to aid the drought resilience of Wilcannia and the broader population of Central Darling Shire.

Image: Sheba_Also 43,000 photos, CC BY-SA 2.0, via Wikimedia Commons

How our region is impacted by drought

The onset of drought in terms of the rate, and severity can vary substantially across the Far West. Given its scale, parts of the region can experience the effects of drought, long before a drought declaration is made. This limits the opportunity for enterprises, of all scales, to access assistance to make a difference.

Interconnected drought impacts

The impacts of drought don't happen in isolation, instead they are interconnected and felt across how the community functions. The relationship of the Far West to land and water is closely tied with economic prosperity due to the agricultural strengths of the region, particularly livestock management. Waterways and waterbodies form the foundations for community to connect, and for Aboriginal people to connect with culture.

Understanding how drought impacts are felt across the system both direct and indirect, helps to develop a range of actions which can address multiple impacts, or which at first glance may not seem directly related to drought.

People and community impacts

- Looking after physical and mental health can be put aside to manage the increasing workloads or due to financial constraints
- Mental health impacts and knowing how to go about accessing support can be challenging, particularly in a small town environment
- Other issues like domestic violence levels, alcohol or pre-existing social issues can be exacerbated
- The broader challenges of living remote are exacerbated, relating to access and discontinuity of services and for children on property accessing education
- Access to recreation opportunities and broader liveability within the community
- An expected reliance on bore water, which from the community's perspective, isn't desirable and has both liveability and health concerns in the community.

Image: Copi Hollow camping (image supplied by Broken Hill City Council)

CASE STUDY

We've Got Your Back

We've Got Your Back (WGYB) is a program led by the Royal Flying Doctor Service South Eastern Section in partnership with Lifeline Regional SA & Far West NSW. The program launched in 2019 during the last drought and is a peer focused mental health and wellbeing program specifically servicing Far West NSW. The program provides local advocates or 'champions' who have lived experience with adversities faced in rural areas, to support and raise the mental health of individuals and the wellbeing of communities.

With the impacts of drought and the unique hardships of living in remote areas, mental health is a major risk. Whilst there are clinical services available, access can be a challenge due to distance, confidentiality, stigma, and lack of awareness. By appointing peer based, and drought tailored programs, the program extends and localises the support, on land and outside clinical hours.

The program has been very successful, with 143 individuals accessing this program in one year during the region's last major drought. Those seeking support through the program included farmers experiencing extreme distress over the repeated loss of animals, as well as those trying to avoid severe financial impacts including foreclosure and repossession, and mental health, marital or relationship difficulties. These examples highlight the vital importance of supporting the emotional and mental wellbeing of rural communities during difficult times.

WGYB Champion

"My (Champion) role is like a portal.... I knew I would be able to help my peers. People are screaming out for help... we hope that people will identify with what we have been through and we can relate to them, they can draw from our lived experiences and we can then help them channel where they need to go to get help.

I've seen people come out the other side already in a better space, so it's a program that works."

RFDS Base (image supplied by Broken Hill City Council)

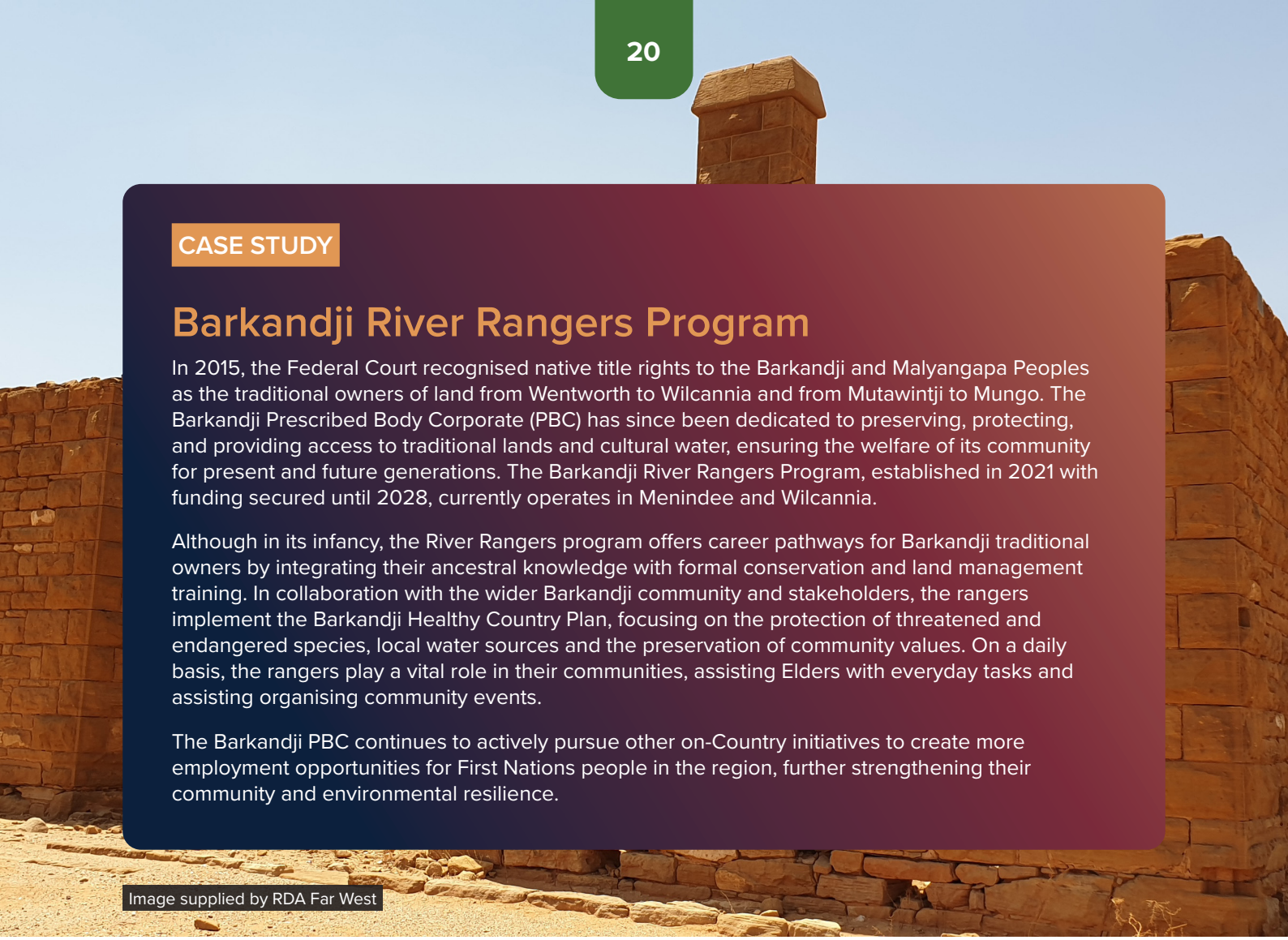
Economic impacts

- Reduced productivity cascades into a number of other economic drought impacts such as reduced income, increasing debt levels to maintain operations, and less discretionary spending
- Business in towns directly and indirectly impacted, not just on farm
- Any economic changes can be significant with a small population and employment base
- Cumulative impacts from other stressors and shocks have impacted business, particularly in the major centre of Broken Hill which provides for retail activity
- The increase in expenses and then a decrease in the value of the commodity
- Capacity to retain key support staff and services, impacting across periods of the cycle and beyond recovery
- Potential risks from major downturns in other sectors such as mining, subject to external conditions pairing with climatic impacts on agriculture
- Challenges in skills transfer to other sectors, like mining, which require highly specialised qualifications and skillsets. This is seen by stakeholders as a limitation
- The isolation of the Far West limits the opportunity for certain opportunities for on-property income diversification, like agri-tourism, which may be an opportunity in other drought-affected areas but occurs to a lesser degree in the Far West.

Environmental impacts

- Low-flow and cease to flow periods in the Barwon-Darling system
- Water quality impacts in the Darling system and Menindee Lakes system
- Reduced soil moisture
- Loss in abundance of bird species, impacts on fish through range of factors impacting water quality
- Health effects from dust and dust storms, and liveability
- Health impacts of relying on bore water, particularly for those vulnerable
- Liveability impacts, with reluctance from the community for bore water
- Impacts on the local environment and community infrastructure both public open space, private green space and maintaining planted areas for both visual amenity and civic activity
- Starvation and malnutrition of livestock and native animals
- Environmental management issues exacerbated like top soil loss, erosion, weed and pest management, combined with impacts under changing climate.

Many of the impacts outlined above affect the entire community, while other impacts are felt more heavily by certain groups in the community depending on vulnerability, exposure and a range of factors linked to drought in the Far West. Detail below delves further into these impacts across a number of groups within the community, drawn from engagement. While not an exhaustive list, it paints a picture of where specific actions are needed, or where some may overlap.



CASE STUDY

Barkandji River Rangers Program

In 2015, the Federal Court recognised native title rights to the Barkandji and Malyangapa Peoples as the traditional owners of land from Wentworth to Wilcannia and from Mutawintji to Mungo. The Barkandji Prescribed Body Corporate (PBC) has since been dedicated to preserving, protecting, and providing access to traditional lands and cultural water, ensuring the welfare of its community for present and future generations. The Barkandji River Rangers Program, established in 2021 with funding secured until 2028, currently operates in Menindee and Wilcannia.

Although in its infancy, the River Rangers program offers career pathways for Barkandji traditional owners by integrating their ancestral knowledge with formal conservation and land management training. In collaboration with the wider Barkandji community and stakeholders, the rangers implement the Barkandji Healthy Country Plan, focusing on the protection of threatened and endangered species, local water sources and the preservation of community values. On a daily basis, the rangers play a vital role in their communities, assisting Elders with everyday tasks and assisting organising community events.

The Barkandji PBC continues to actively pursue other on-Country initiatives to create more employment opportunities for First Nations people in the region, further strengthening their community and environmental resilience.

Image supplied by RDA Far West

First Nations communities

- When the Baaka River is low or dry, our First Nations people's mood becomes sullen and low due to lost opportunity to connect with family, culture and to gather
- Reliance on bore water is not preferred and can cause adverse skin irritation, eye and health issues
- There are cost and sustainability implications for reliance on bottled water
- Disruptions to traditional practices such as fishing, hunting, gathering bush foods, and lost opportunities to teach younger generations
- Further cost of living impacts relating to power, fuel and food both in towns and associated with travel to other centres. Some are forced to hunt for food
- Environmental degradation, affecting biodiversity and the health of ecosystems, has had an impact. Impacts on environmental flows affects ability to engage in traditional practices
- Housing maintenance is a challenge, exacerbated by high reliance on social housing and rentals. Many are not designed for existing climate (poor ventilation and air conditioning).

CASE STUDY

Pastoralists' Association of West Darling

The Pastoralists' Association of West Darling (PAWD) has represented pastoralists in the Far West of NSW since 1907. Directed by an objective to preserve and promote pastoral and agricultural enterprises in the Western Division of NSW, the group retains an important advocacy role in the region while shedding important primary producer insight into some of the impacts of recent droughts:

- The deficits in rainfall are exacerbated by heatwaves and frosts, dust storms and record numbers of kangaroos
- Pasture reserves completely exhausted
- Hard work of pastoralists to keep their core breeding livestock alive and were physically, emotionally and financially exhausted
- The cashflow drought will persist long after the physical drought breaks.

Shifting from 'impact' to 'what can be done' is a focus for the group. It's about addressing issues identified across the system like suitable road infrastructure to assist in fodder delivery, the importance of good bore to retain core breeding stock, first flush protection and connectivity throughout the Basin and need for long range weather forecasting.

Kangaroo management and pest management remain critical outside of drought, with contribution to grazing pressures and the take up of water. Actions like dam fencing can address this, while reducing issues on stock. Tax write-offs for small businesses in regional, rural and remote areas is also seen as a critical opportunity to manage debt and reduce loan stress. In addition, funding pools for community groups to utilise to run social network events, retention of freight subsidies, emergency water infrastructure rebate, and new subsidies and incentives for farm staff (including HECS-HELP contributions) would help to support the working community, retain staff and skills and maintain important resource redundancy. Reduced impost of application processes is strongly advocated for.

While not an extensive list of all actions, the knowledge of these impacts demonstrate the insight from those on the ground to understand what works during drought, and what doesn't - to ensure we are using resources effectively throughout the drought cycle.

Primary producers

- There is no blueprint for drought. What works for one enterprise may not work for others. Aversion to risk is different and circumstances are different
- Uncertainty has impacts on strategies for drought whether to de-stock, or feed bloodstock, or a combination, which also need to consider the flow on implications. A 'wait and see' mentality doesn't support outcomes
- Farmers need greater support for decision-making based on weather and ground conditions, as well as water and feed availability
- The tyranny of distance can complicate access to resources, support services, materials and market opportunities
- Compounding challenges of consecutive hazard events and economic stresses is having an effect on wellbeing
- Accessing drought relief funding and loans is hindered by extensive paperwork, discouraging those that are eligible in applying
- Fixed costs such as leases, registration, roadworthys and rates, become a greater burden during drought and add to the financial stress of producers during drought
- Many business enterprises struggle with succession planning, which often comes to the fore during dry times
- Mental health is inextricably linked to financial and operational stress, and it impacts on family dynamics.

Image: Wilcannia, Central Darling Shire

CASE STUDY

Contact Inc.

Contact Inc. is renowned for its expertise in delivering impactful programs for children, parents, and communities, specifically targeting isolated, vulnerable, and disadvantaged families in need. Operating in rural and remote areas across Australia including the Far West, their mission is to address local service gaps, enhance support offerings, and disseminate essential information to foster sustainable communities through community-led, locally tailored solutions.

In the Far West, community members face significant disadvantages due to isolation and prolonged drought periods. Contact Inc. is designed to meet the unique needs of these communities, advocating for improved services, facilitating access to crucial support, and fostering responsive connections and collaborations that integrate holistic child and family services.

As a trusted collaborator, Contact Inc. works closely with policy-makers and funders and actively partners with value-based organisations to extend their reach and impact.

Contact Inc. ran a series of community and family and children days in the Far West during the last drought, collaborating with other agencies and service providers to offer a range of services alongside awareness, education and social activities. Contact Inc. continue to run these events, subject to funding availability.

Through these initiatives, Contact Inc. continues to make a profound impact on the lives of those in rural and remote communities, fostering resilience and strengthening communities.

Image supplied by RDA Far West

Families

- Drought resilience in the Far West is an opportunity, through multiple means, to alleviate stress on the family dynamic. Drought is often thought about from a financial and economic perspective and whilst these might be the catalysts of stress during dry periods, the enterprise itself is for the benefit of family and inter-generational legacy.
- There are financial and psychological challenges with managing children's education. This starts at a young age as children on properties access School of Air, either requiring parental supervision, or the need to hire a governess. Governesses are pivotal to the family unit and require more network support which in turn, better supports families
- The financial impact of sending children away to boarding school is profound for many families, irrespective of the known costs well in advance. These associated costs and distance can lead to feelings of guilt and stress among children and parents during times of drought. This is compounded by the limited options for in-region education, recently exacerbated by the closure of Allison House, a student boarding facility, in Broken Hill
- The changing role of mothers on-property, from educating children when young to the time they go to boarding school can be challenging with mixed feeling of identity and role
- Social isolation, especially outside of town, has varying effects. During drought, families can be financially constrained which has flow on effects for participation in social events, but also ability to access services
- Women are often the backbone of communities, supporting their partners, families and the people around them during hard times as well as providing education for children, running households, running the business books and working on the property. In drought the competing demands on time can be amplified

CASE STUDY

Rural Adversity Mental Health Program (RAMHP)

Established in 2007 and funded by the NSW Ministry of Health, the Rural Adversity Mental Health Program (RAMHP) has evolved over the last 15 years. Starting with a focus on supporting farmers across NSW who were experiencing mental ill-health because of drought affecting their livelihood, the program has changed focus and expanded to encompass the broader mental health and wellbeing of regional, rural, and remote people and communities of NSW.

With 20 Coordinators across NSW, RAMHP are embedded within the communities they work. They understand the strengths, challenges, and unique characteristics of rural life.

RAMHP works to inform, train, partner and link individuals, communities, and workplaces with appropriate mental health services and programs. They help equip the people of rural, regional, and remote NSW with the tools they need to support the mental and emotional wellbeing of themselves and others during tough times, fostering connections and building networks that enable communities and agencies to prepare for and better respond in adversity.

An example of a RAMHP activity recently held in the region was the 'Men's mental health butchering days', which provided a safe space and allowed men the opportunity to learn a new skill and engage with others. The sessions provided an opportunity for rural men to come together, who have historically been difficult to engage with yet experience negative impacts due to drought.

Image: Broken Hill, image supplied by Broken Hill City Council

Workers (managers, contractors, governesses, skilled labour, etc.)

- Instability due to prolonged drought conditions leads to job losses and reduced work opportunities, particularly in seasonal employment
- High cost of living, driven by the scarcity of local goods and increased prices, elevates financial pressures on workers and their families
- Recruiting and retaining workers, especially governesses and contractors, is a persistent challenge
- Maintaining contractors and governesses on-properties during drought addresses a range of systemic issues. This includes increased workloads which limit capacity to leave property, multiple competing demands on time, reduced ability to maintain awareness of and prepare applications for grants and subsidies
- The employment, health and wellbeing of workers is often overlooked by government subsidies and grants, despite their critical role on-property during drought.

Township and village communities

- Many workers who are let go from properties come to towns for employment, but during drought economic downturn is also present in town. This increases employment competition and without work, people subsequently must leave the region
- Housing pressures are growing, as is cost of living which is exacerbated by long distances to transport goods. The risk of poverty and housing stress during drought therefore increases
- Drought creates further challenges to retaining young people and attracting skilled professionals to the region
- Impact of drought on local parks, ovals, and vegetation affects ability for social interaction and increases dust and heat intensity.

Trends and stressors

Beyond the consideration of climatic projections, trends, stressors and shocks will continue to have impact within drought cycles. This is an important consideration for our adaptability to changing conditions and circumstances. It is also important in terms of the Councils' governance arrangements and strategic priorities.

Key trends and stressors that may interface with drought resilience in the Far West include:

People and community

- Water security
- Distance to access services, availability of services, and continuity of services
- Availability of suitable education, and support to attend education offerings for children outside of town
- Reliance on boarding school education for high school children
- Reduced spending
- Housing supply, and quality of housing in some areas
- Population changes (attraction of young population and aging workforce)
- Catering to all ages in the community, aged care services
- High costs of living
- Increased risk of motor vehicle accident due to increased animal strikes

Economic

- Supply chain disruptions
- Local employment pathways, aligned with local training access
- Local employment retention
- Land values
- External market conditions, commodities and energy policy
- Input costs, transport, logistics, general business costs
- Water prices
- Resource scarcity
- Input costs: energy, labour, fertiliser, feed and fuel
- Shifts in government spending and priorities
- Rising rents for business, housing affordability for locals
- Digital transformation and aligned access to telecommunications
- Impacts of road quality on market access

Environment

- Drying climate
- Water management of the Murray-Darling Basin
- Increasing impacts of pests and other non-natives, particularly impacts to riparian lands
- Land use changes, shifts from property to national parks
- Top soil loss
- Wildlife loss from changing conditions
- Compounding hazard and disaster events
- Increased fauna loss through road strikes.

Resilience to drought is therefore not just about water, it stretches beyond the farm gate, across industries, services and the community. Groups across our community can be affected differently and require a mix of actions in recognition that a one-size-fits-all approach will not address everyone's needs. The extent of the region also raises the need to recognise individual communities, with their own challenges and opportunities. What is pressing for some in Broken Hill is unlikely to be the highest priority in Wilcannia, or be the focus in Tibooburra.

Drought history

No two droughts are ever the same, and the impacts are not the same. Conditions are different, our circumstances are different, and the climate and weather factors are different. Major droughts in Australian history have affected the Far West, characterised by protracted periods of low rainfall, leading to low soil moisture.

While these time periods are used to describe national droughts, the effects are not necessarily limited to these years as some drought impacts are experienced locally earlier and can last for many years following the droughts formal end date. These significant drought periods identified by the Bureau of Meteorology include:

- 1895 to 1902 (Federation Drought)
- 1914 to 1915
- 1937 to 1945 (World War II drought)
- 1965 to 1968
- 1982 to 1983
- 1997 to 2009 (Millennium drought)
- 2017 to 2019.

The below timeline illustrates the more localised impacts during the identified major drought periods. A comprehensive history of drought is located at **Appendix A** and within the Resilience Assessment. This data was drawn from historical climate records and weather events, as well as analysis from a variety of news sources that provided commentary on drought at the time. These events demonstrate that droughts and the history of the area are effectively intertwined.

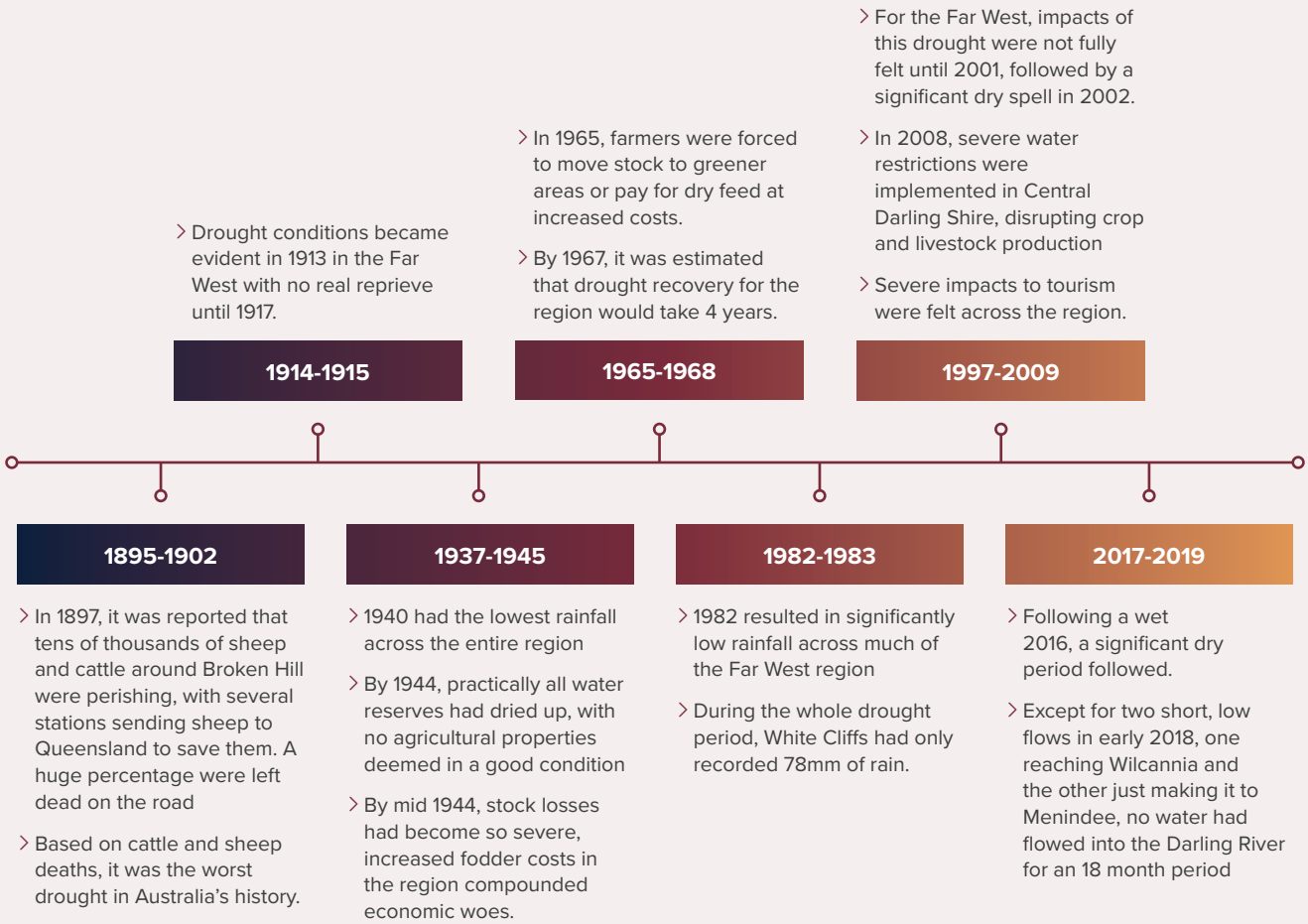


Figure 4 — Drought timeline, regional impacts of note for each drought period

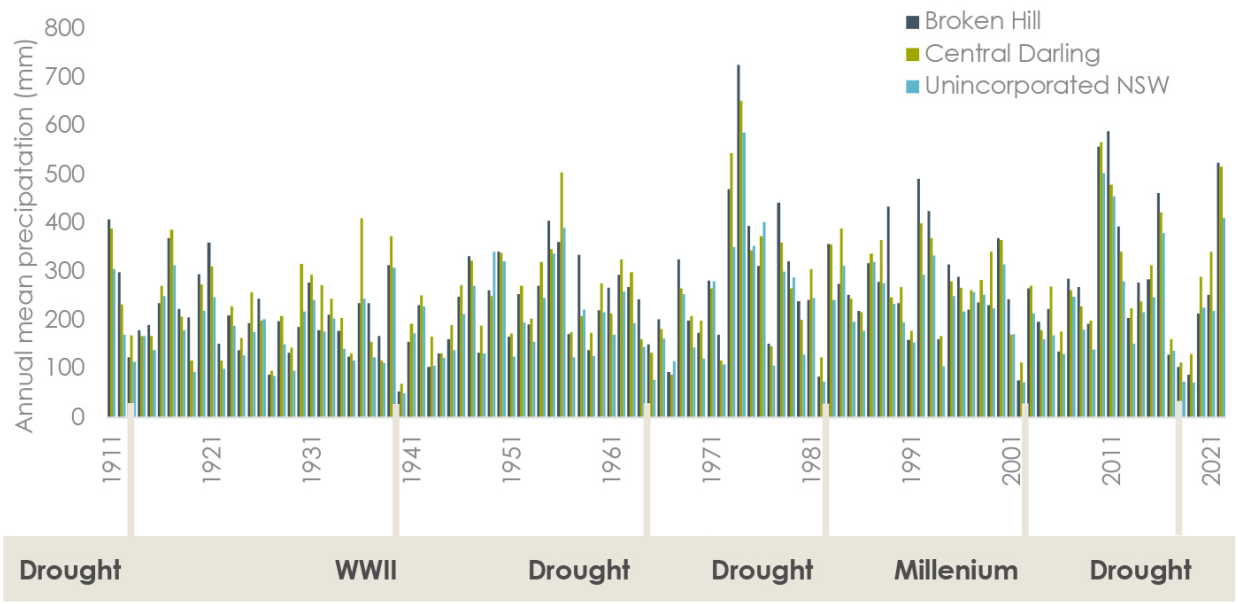


Figure 5 — Annual precipitation average across areas. Major historical droughts coincide with period of lower than average rainfall

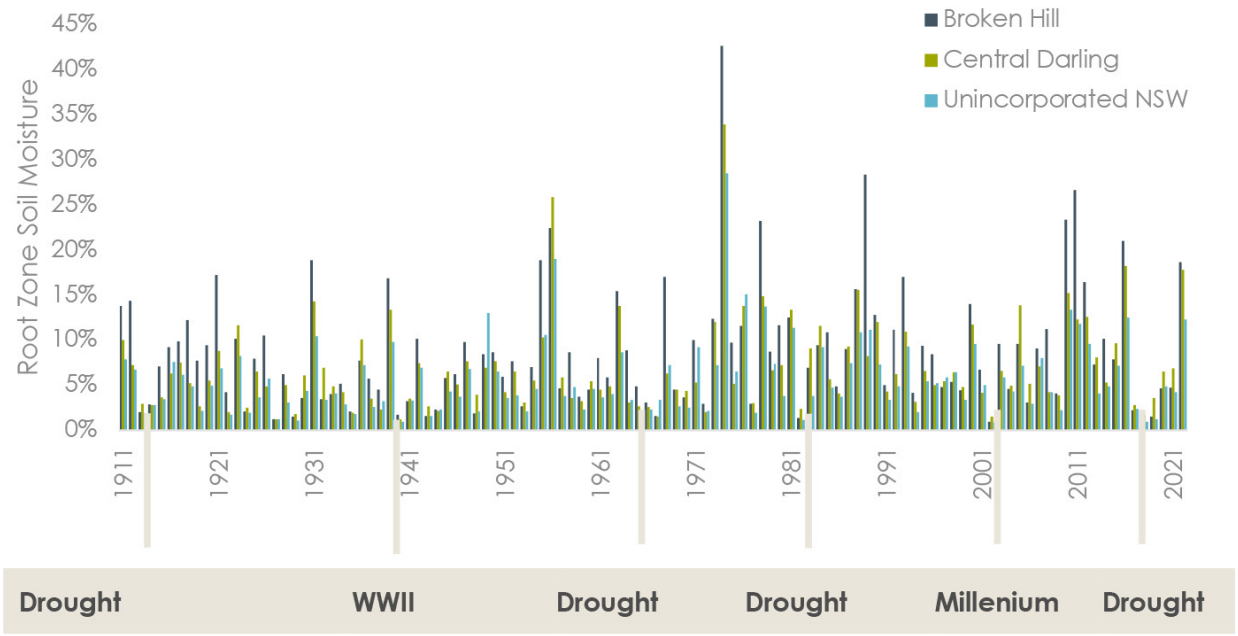


Figure 6 — Soil moisture across each area. Major historical droughts align with lower soil moisture levels

Past records for the region demonstrate a year-to-year fluctuation in precipitation and soil moisture across the region. The mid-1970s and 2010-2011 feature significant rain, whereas 1926, 1940, 2017-2019 represent periods of unusual dryness.

The timing of rain is important in the region. The region already receives low average annual rainfall. When it falls is critical. A comprehensive synthesis of historic drought climate data specific to the Far West is included at **Appendix A**.

In addition to low average rainfall, there is significant year-to-year variability in rainfall amounts, and dry years. Reduced streamflow and cease to flow periods in the Barwon-Darling system has a profound impact. Drought conditions are often accompanied by more frequent and intense heat extremes and bushfire weather was experienced across much of NSW in the 2017-2019 drought, with 2018 and 2019 recording the lowest annual rainfall totalled across the region.

A focus on the 2017-2019 drought

The impacts of the 2017-2019 drought on the region were unprecedented on many fronts.

Environmentally, the recent 'Tinderbox' Drought posed observable impacts. The Menindee fish kill event of 2018/19 was well documented as one of the more profound national scale impacts of the drought. In response, an investigation into the cause was launched by the Australian Government. The review found that, especially during the drought, the Baaka River has been subject to a series of consecutive 'cease to flow' days, as displayed in Figure 7 below. What can be observed is that, particularly during the Millenium Drought between 2005-2009, the majority of these years were 'cease to flow' days in Wilcannia. These no flow days increase the risk of blue-green algal blooms and fish kills.

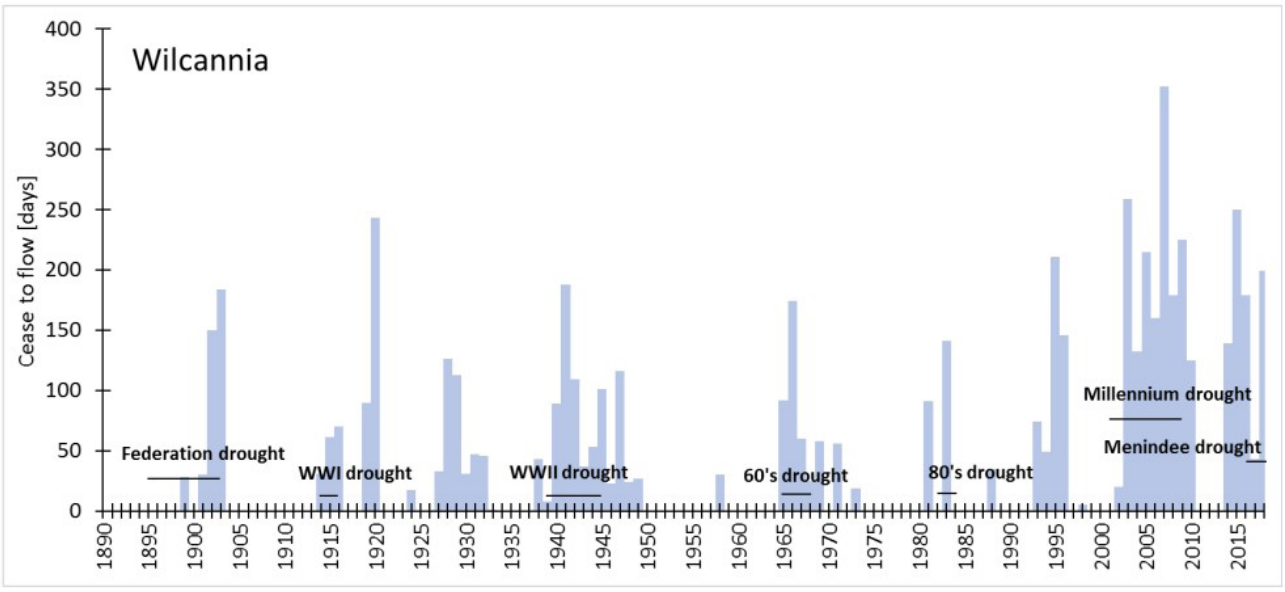


Figure 7 — Historical cease to flow days in Wilcannia (Source: Australian Academy of Science, 2019)

Despite the criticality of understanding rainfall across the rangelands, there remains a gap in the rainfall / forecasting system. The need for a new weather radar including doppler capability is identified locally, and across a large number of stakeholders, as a priority for infilling the radar coverage in central east Australia. Such a radar seeks to improve forecasting and monitoring of rainfall in an area of increasing popularity for tourism, with obvious public safety and other agricultural benefits.

Future drought projections

The value of agricultural commodities as part of the Far West economy is significant, particularly in livestock which dominates gross value product of the industry. Drought impacts the livestock industry across the inputs and values through the drought cycle, and ongoing decisions on stock management. Beyond agricultural production, drought impacts local business, workers, families and the community more broadly as discussed throughout this plan. Because of this, it is important to consider the projected impact of future climate change, to help us plan now for the impacts.

The further in advance we plan, build awareness and put in place redundancy measures, the more options we will likely have available to address issues down the track.

Future climate scenarios

According to the Intergovernmental Panel on Climate Change (IPCC) reporting, under all emissions scenarios considered, global surface temperatures will continue to increase until at least the mid-century. Increasing temperatures and energy within the climate system are projected to result in widespread changes to weather and climate patterns including all elements of the water cycle, including drought.

For Central Darling Shire, Broken Hill and the Unincorporated Area, key drought related metrics have been calculated from the regional climate model projections for two scenarios, with data presented below. These climate scenarios are based on the IPCC representative concentration pathways (RCPs) and are designed to explore a range of possible futures relating to greenhouse gas (GHG) emissions, land use, and air pollution. The analysis is focused on projections to the near-term (2050) and mid-range (2070); with change shown relative to present day climate.

The highest GHG scenario is RCP8.5 and represents a high emissions scenario where GHG emissions continue to increase, and global mean temperature increase exceeds 4°C. RCP4.5 is a moderate GHG emissions scenario where some mitigation of GHG emissions occurs, and global mean temperature increase is between 2-3°C. RCP4.5 is currently considered by the IPCC to be our most likely scenario.

Current climate models do not account for global climate tipping points. This means that the effects of tipping points are typically not included in climate projections and impact assessments. Breaching global climate tipping points represents significant risks on top of the changes typically described in climate assessments. The effects of breaching certain tipping points may include abrupt changes to the El Niño Southern Oscillation, rainfall patterns, and rainfall variability that are not represented in climate model projections.

Drought climate indicators:

Summary:

- A small increase in rainfall under lower emissions, while a small decrease under high emissions scenarios
- Decrease in root zone soil moisture
- Increasing temperatures are likely to be the primary driver of increased frequency and severity of evapotranspiration and drought conditions
- Other climate and weather-driven events like heatwaves and bushfires / grass fire may compound broader impacts from drought events.

On average, annual precipitation is projected to have a small increase under both near-term and mid-range timeframes for the RCP 4.5 scenarios, while an annual decrease of around 6-9mm could be expected under the RCP 8.5 scenarios into 2050 and 2070.

Under the moderate emissions scenario, rainfall increases are expected in the far north, the east, and the far south of the region. Across all scenarios, soil moisture is expected to decrease on average. However, in the medium term, root zone soil moisture will increase in the northern and eastern extent. Come 2070, these areas of increase become more isolated and shift westward. Decreasing soil moisture is also projected to be exacerbated in the far north-west of the region.

This small trend of an increase in rainfall for the

region is not shared with other parts of NSW which will see much larger shifts and decreasing availability. With already limited rainfall, variation in the region presents a challenge particularly when linked with the timing of rains.

Frequency of hot days (>35°C) and frequency of high fire danger days (FFDI > 25)[4] do not directly describe drought however, they are climate hazards which typically occur in conjunction with drought. Both extreme heat and bushfire weather risk are projected to increase by 2070 compared to the present day. This will increase the likelihood of compound events such as severe drought occurring in conjunction with heatwaves and bushfire/grassfire. Given the weak trends in rainfall, the increase in drought severity will likely be driven by increased evapotranspiration due to increasing temperatures.

Broken Hill

Variable	Climate model reference period	2050 (change)		2070 (change)	
		RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	8.56%#	↓ 0.004 mm^	0.000 mm^	↓ 0.005 mm^	↓ 0.004 mm^
Annual total precipitation (mm)	271.43 mm	↓ 1.01 mm/year	↓ 3.32 mm/year	↑ 2.18 mm/year	↑ 1.20 mm/year
Days above 35°C	38 days	56 days +18	62 days +24	Data unavailable	
Days with FFDI above 25	80 days	98 days +18	102 days +22		

Central Darling

Variable	Climate model reference period	2050 (change)		2070 (change)	
		RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	8.63%#	↓ 0.002 mm^	↓ 0.001 mm^	0.000 mm^	↓ 0.004 mm^
Annual total precipitation (mm)	274.62 mm	↑ 4.14 mm/year	↓ 0.80 mm/year	↑ 5.95 mm/year	↓ 3.32 mm/year
Days above 35°C	62 days	83 days +21	90 days +28	Data unavailable	
Days with FFDI above 25	113 days	130 days +17	137 days +24		

Unincorporated NSW (Far West)

Variable	Climate model reference period	2050 (change)		2070 (change)	
		RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	6.82%#	↓ 0.001 mm/year^	↓ 0.002 mm^	↓ 0.002 mm^	↓ 0.004 mm^
Annual total precipitation (mm)	274.62 mm	↑ 1.69 mm/year	↓ 5.84 mm/year	↑ 0.89 mm/year	↓ 8.63 mm/year
Days above 35°C	66 days	90 days +24	96 days +30	Data unavailable	
Days with FFDI above 25	126 days	143 days +17	150 days +24		

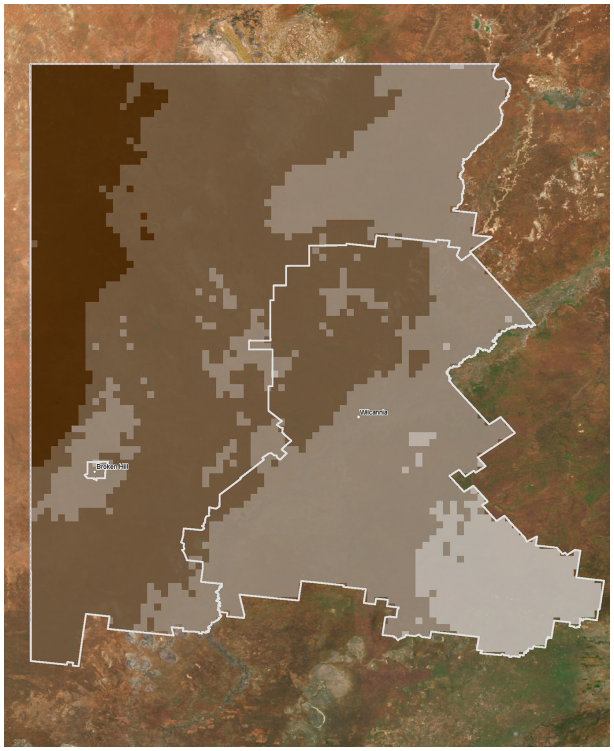
Mean water content as a percentage of capacity
^ Change in relative soil water content of the 1976-2005 reference period's relative soil water holding capacity.

4 Forest Fire Danger Index

Annual Precipitation

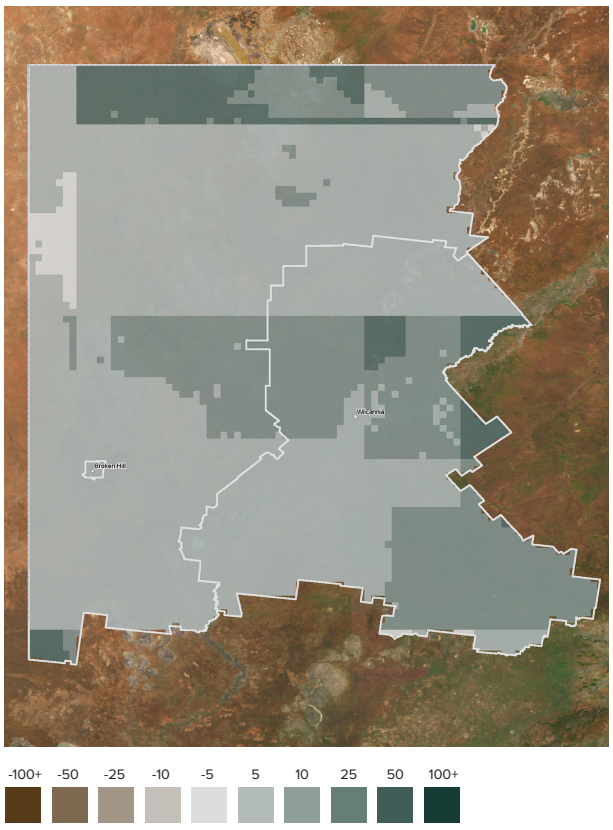
The following figures show the precipitation across the region using the reference period of 1976-2005 and then to two timescales 2036 to 2065 and 2056 to 2085. The region is coloured to represent annual precipitation changes from dark brown (reduced) to dark green (increase).

Figure 8 — Annual precipitation, reference period

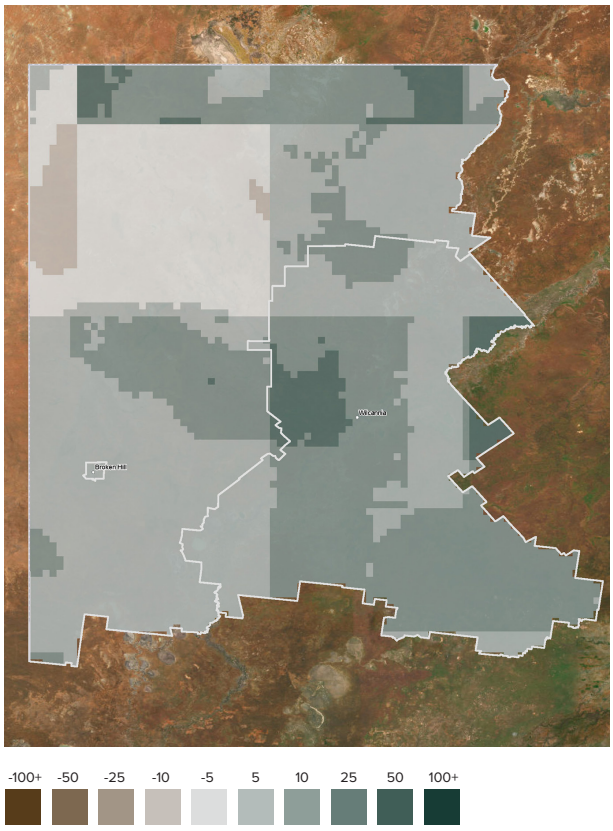


Precipitation, change during drought period (mm)

Figure 9 — Annual precipitation RCP 4.5 (top 2050, bottom 2070)



Climate-adjusted precipitation changes (mm/year)



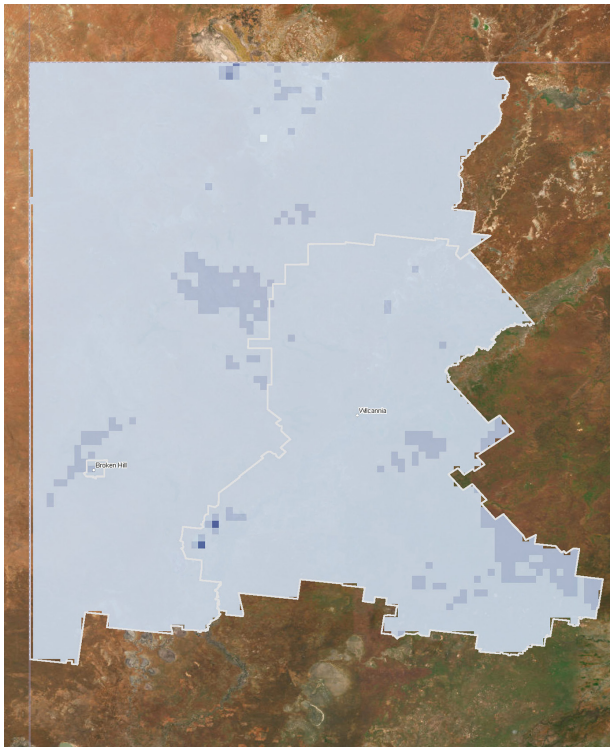
Climate-adjusted precipitation changes (mm/year)

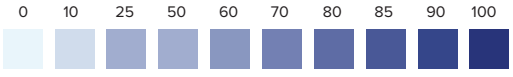
Root zone soil moisture

Root zone soil moisture is presented as a percentage of total capacity during the baseline reference period and as a change of millimetres per year of the climate adjusted scenarios.

During the reference period, both Broken Hill and Central Darling had a root zone soil moisture capacity of just over 8.5%, while Unincorporated NSW (Far West) was sitting lower with 6.8%. This moisture indicator is projected to decrease (i.e. worsen) annually into the future, with the magnitude of decrease to grow to the end of the century. These soil moisture reductions will be more severe in Broken Hill come 2050 and 2070, compared to Central Darling and Unincorporated NSW

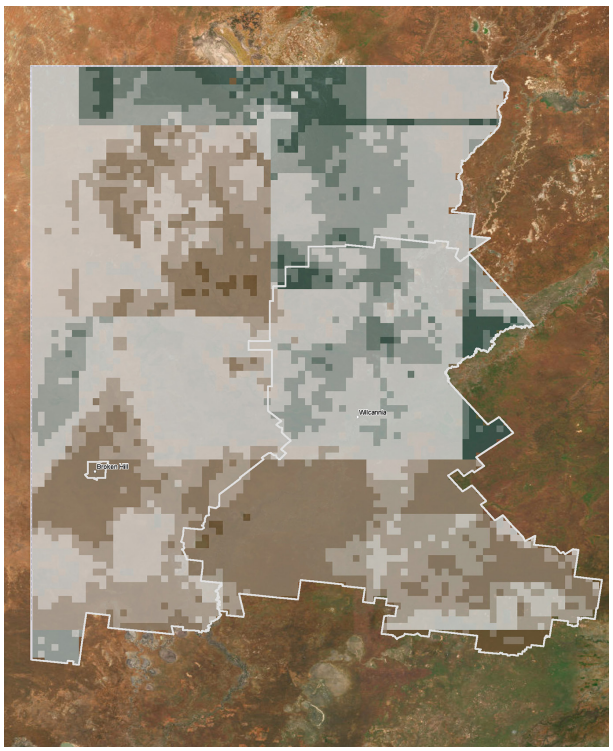
Figure 10 — Root zone soil moisture, reference period 1976-2005.

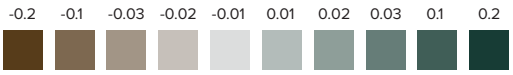




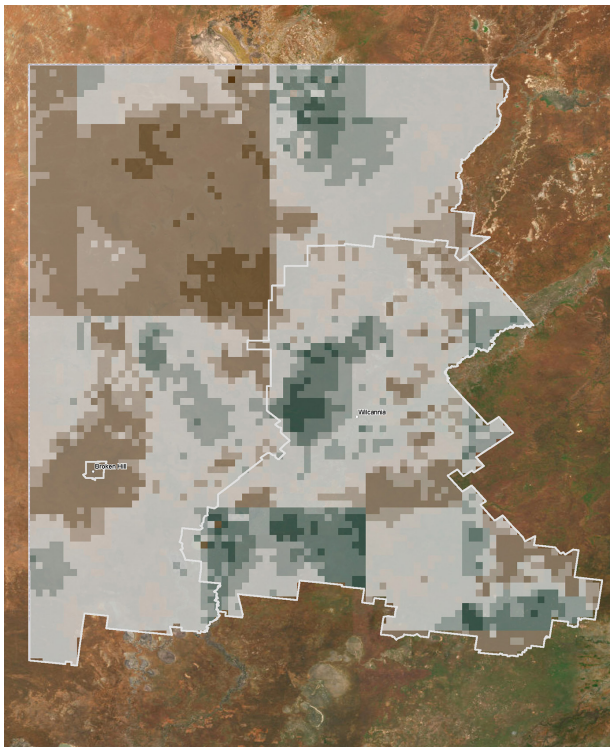
Root zone soil moisture reference period (%)

Figure 11 — Root zone soil moisture RCP4.5 (top 2050, bottom 2070)





Change in root zone soil moisture (mm)



Change in root zone soil moisture (mm)

What does the climate data tell us?

Broken Hill City, Central Darling Shire, and Unincorporated Area will continue to be susceptible to the impact of drought. Major historical droughts over the past 120 years have occurred in conjunction with low values of commonly used drought indicators including rainfall and soil moisture percentiles. Droughts can be protracted events spanning more than 10 years, such as the Millennial drought, or relatively shorter time periods, such as the recent drought.

Climate projections indicate an increase in drought risk by 2070 and beyond under both RCP4.5 and RCP8.5 scenarios with increasingly hot weather. There are the drivers of increased frequency and severity of drought conditions, especially towards the latter part of this century. This is largely driven by temperature, evapotranspiration and reduced soil moisture.

Recent events, and historical trends in rainfall patterns show sharp extremes with dry years followed by significant rainfall.

Our resilience to future drought impacts requires early planning and early intervention, which is the focus of this regional drought resilience plan. This will help us stand in good stead to deal with the impacts of a changing climate.

What are the likely regional climate implications?

Expected increase in 'cease to flow' days of the Baaka (Darling River) in Wilcannia	Anticipated decrease of average root soil zone moisture across the region	Decreasing soil moisture in the far north-west of the region
An expected increase of 20 'hot days' (days above 35 degrees) per year	Higher frequency of high fire danger days (FFDI > 25)	Greater variability of rainfall
Decrease of waterbird and fauna diversity around the Menindee Lakes	Exacerbation of vegetation loss and soil erosion	Increase of dust storms and poor air quality

Far West drought resilience

Drought resilience can be considered against three macro indicators:

Economic resilience

Environmental resilience

Social resilience

The Australian Bureau of Agricultural and Resource Economics and Sciences' (ABARES) Community Vulnerability and Resilience to Drought Index is the first stage of a comprehensive body of work to measure the potential impact of drought on communities.

ABARES has prepared a national index that ranks remote, rural or regional agriculturally dependent communities (at the LGA level) according to their potential to be adversely affected by drought. These indicators account for both agriculture industry exposure and sensitivity and community sensitivity, using ABS Census of Population and Housing 2021 data to represent the level of community dependence on agriculture.

It is important to note the data comprises data variables and indicators which have been combined and ranked. Scores are not necessarily representative of the magnitude of impact, rather it positions the sensitivity with respect to other LGAs. There is a strong link to employment in agricultural production, particularly for community sensitivity which may not be representative of broader community sensitivity detailed throughout this plan.

ABARES CVRDI scores for the Far West
(measured from 0 [lowest] to 1[highest])

Area	Farm sensitivity	Community sensitivity	Economic diversity	Potential drought impact
Broken Hill	0.1	0.02	0.6	0.01
Central Darling	0.25	0.53	0.52	0.16
Unincorporated	0.55	0.56	0.16	0.75

The ABARES CVRDI scores indicate for the Far West region:

- A range from low to moderate level of farm-based exposure and sensitivity to drought, which is linked to both exposure to climate variability, and the effects that has on farm outcomes
- A moderate level of community dependence on agricultural activity in terms of employment. Noting that Broken Hill as a regional city has additional major employment industries (however local business is still linked to strong agricultural performance)
- A low to moderate level of economic diversity
- A low to moderate level of overall potential drought impact for townships which grows to high for the Unincorporated Area (while potential drought impact measures farm sensitivity and community sensitivity, whether there is lasting loss or harm depends on community's adaptive capacity)

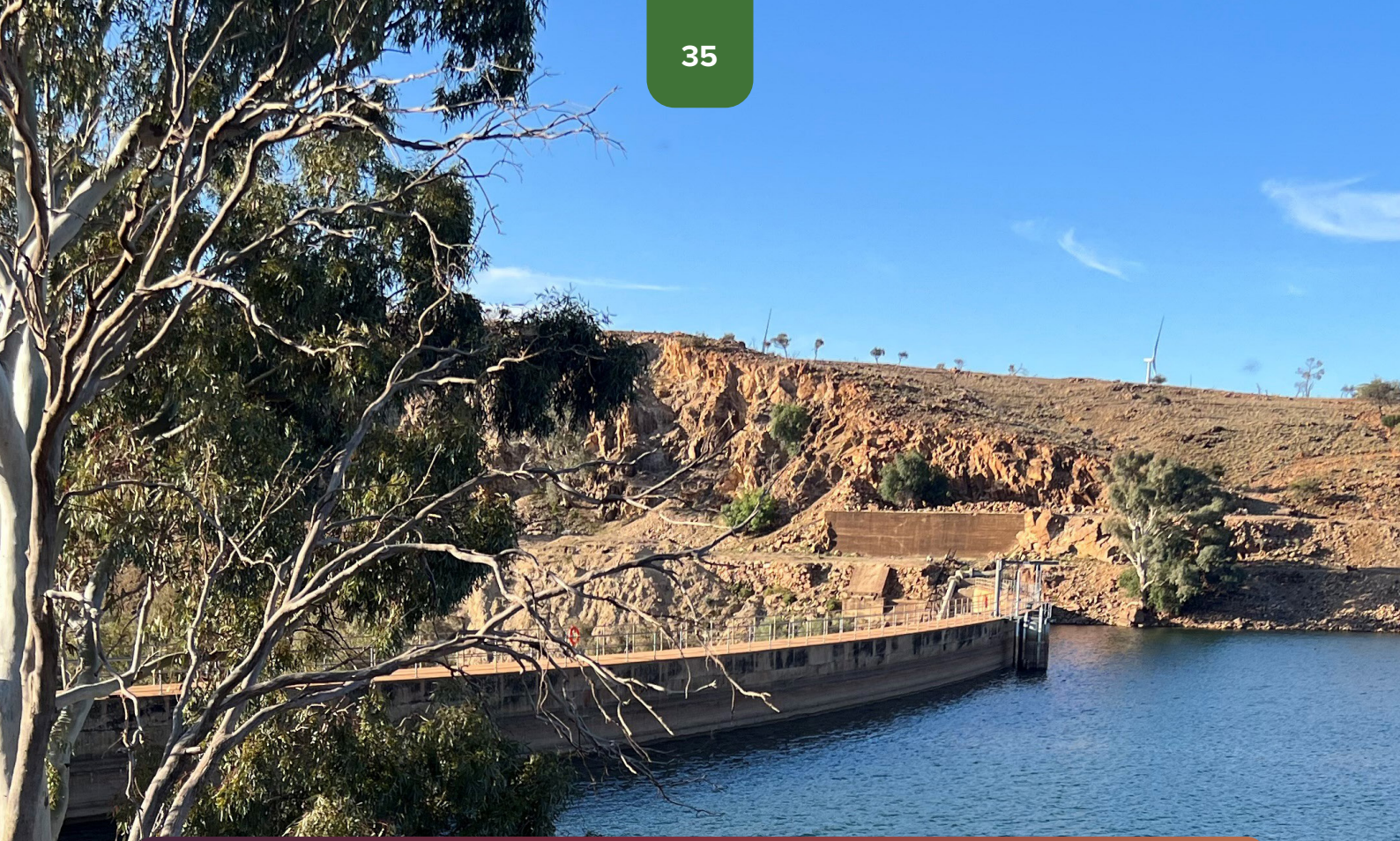
Future additions to the ABARES CVRDI framework will provide more granular detail to help measure vulnerability and resilience to drought at the local level.

The Australian Disaster Resilience Index, developed by the former Bushfire and Natural Hazards Cooperative Research Centre, now Natural Hazards Research Australia, considers broad measures of community coping capacity and adaptive capacity. It identifies a complementary mix between region's resilience strengths in Broken Hill and across Central Darling Shire and the Unincorporated Area and include its social character, community capital and community and social engagement.

While areas are susceptible to future drought impact, when considered as a region there are a mix of resilient strengths which work to support managing risks. The region's levels of community connection and social capital, along with emerging economic development opportunities, offer key opportunities to aid immediate as well as long-term drought resilience.

Importantly, the Far West regional drought resilience plan identifies that resilience needs and outcomes are different across different parts of the region and for different groups who work and live in the region.

Image supplied by RDA Far West



CASE STUDY

Transforming Umberumberka Recreation Reserve

Located in the Unincorporated area, 27km north west of Broken Hill and 9km north of Silverton, the Umberumberka Reservoir is historic asset for the region. Its construction began in 1911 to supply water to the Silver City of Broken Hill, its own construction an engineering marvel. As the reservoir no longer supplies water to Broken Hill an opportunity exists to transform the now disused water supply infrastructure into a multifaceted tourist attraction, and recreational space for the local community.

Umberumberka Reservoir is part of the Far West community fabric, with generations of families utilising the reservoir and surrounding facilities, Penrose Park and Silverton. The reservoir, fed by Umberumberka Creek and Star Creek, covers a large catchment and is located near the Mundi Mundi festival site. Flanked by a River Red Gum community and surrounded by Chenopod and Acacia shrublands, the Umberumberka Reservoir already plays a role in supporting community liveability, providing a space to gather, play and socialise. Business cases and concepts for an upgrade to the Umberumberka Reservoir have been undertaken, which outline a number of benefits with direct alignment to drought resilience needs established through this plan.

Rationale for investment in the project addresses a key focus on community liveability, linked to population growth and retention, as well as supporting visitor economy potential in the region by providing an additional asset to attract tourists. The proposal reflects similar successful outcomes interstate for community use reservoir transformations, while also preserving a significant engineering feat which also played a role in the industrial and social development history for Broken Hill.

Transforming the Umberumberka Recreation Reserve would entail upgrades to access roads, car parking, tourist infrastructure and facilities and additions to recreational bike and walking tracks, all components that provide an experience for those visiting the site. While the vastness of the Far West can be a draw for many, a focus on enhancing liveability remains paramount. Upgrading Umberumberka Recreation Reserve demonstrates alignment across government strategies and presents a readymade option to address a multitude of drought resilience needs in the Far West.

Image: Umberumberka Reservoir, supplied by RDA Far West

Drought resilience strengths and opportunities

MILPARINKA

- Iconic heritage, once a gold mining town
- Captain Charles Sturt expedition to find the inland sea was stranded in Milparinka for an extended time
- Milparinka is positioning itself to tell the story and attract significant tourism

SILVERTON

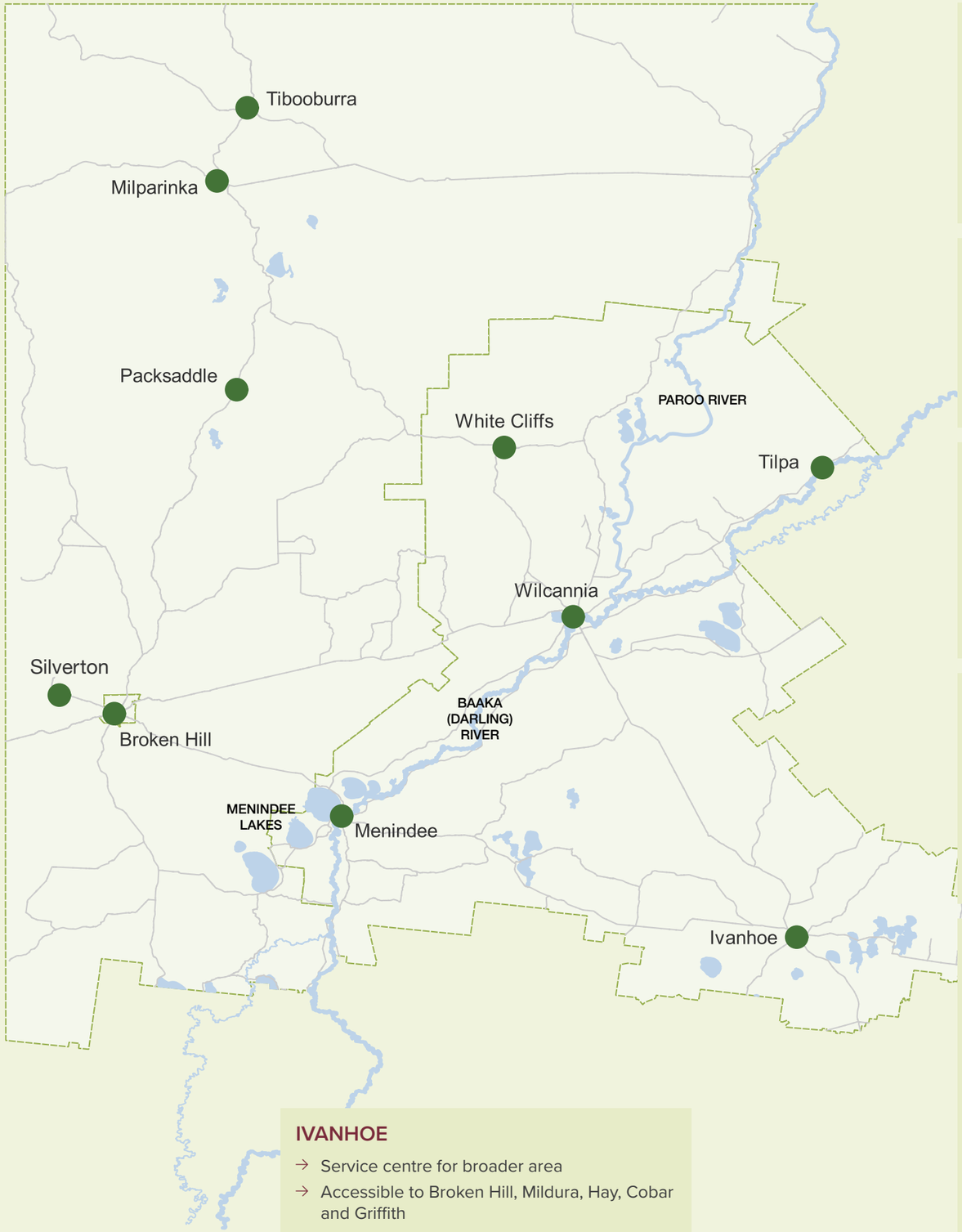
- Umberumberka reservoir
- Unique tourism and film industry foundations
- Strong community determination and investment in local facilities
- Strong relevance to early Australian history

BROKEN HILL

- Economic diversity
- Hub for services access for the Far West
- Wentworth to Broken Hill pipeline
- Investment in smart water devices for public spaces and assets, including sports fields
- Australia's first heritage listed city
- Australia longest lived mining community
- The largest and richest ore body of its kind in the world

MENINDEE

- Menindee Lakes a major tourism driver
- Community volunteerism and identity
- Environmental values and cultural connection
- The first town established on the Darling (Baaka) River
- Significant in the ill-fated Burke and Wills expedition
- Emergent cultural tourism



IVANHOE

- Service centre for broader area
- Accessible to Broken Hill, Mildura, Hay, Cobar and Griffith

TIBOOBURRA

- Community run water supply
- Capital of corner country, including access to Sturt National Park, cultural and pioneering history
- Iconic New Year's eve gymkhana / bikekhana / rodeo that attracts large numbers
- October long-weekend gymkhana

PACKSADDLE

- Packsaddle Roadhouse as key community and tourist point
- Healthy events calendar for community connection and economic sustainability (many travel across the country to attend the gymkhanas)

WHITE CLIFFS

- Healthy events calendar for community connection
- Unique underground homes to cater for the harsh environment
- Australia's oldest commercial opal field and one of the only places in the world where white opal is found

TILPA

- Installation of potable water supply
- Increase the village weir supply
- Development of camping facilities
- Sealed road to / from Cobar
- Boating facilities in the existing town weir
- Harry Harbord 'Breaker Morant' worked in the area

WILCANNIA

- Unified community position on need for Wilcannia weir replacement
- Access to key transport routes for freight and tourism
- Emergent cultural tourism facilities
- Darling (Baaka) River drive from Wentworth to Bourk via Menindee, Wilcannia and Tilpa
- Construction of boating facilities, boat ramp and mooring required
- Upgrade to town potable water reticulation system required

The action plan

There are many different approaches and opportunities that can help us continue to build and evolve our drought preparedness, in the short and long term. This includes both on-farm and off-farm.

What's worked well?

Key areas for continued advancement of individual drought resilience and adaptive capacity on-farm include:

- Continuous development of financial literacy and business acumen
- Investing in farm maintenance and water infrastructure during good times
- Investment in feed storage and augers to avoid being beholden to feed prices
- Diversified investments off-farm or in other geographies
- Multiple on-property income streams
- Including drought cycle monitoring and decision triggers in business plans that are integrated against current market conditions
- Understanding the implications of business decisions
- A focus on animal nutrition
- Sustainable land management practices.

Broader community, economic and environmental approaches that have worked well in the region include:

- A focus on community development opportunities to bring people together such as the RAMHP butcher days and community and family / child days, field days and small motor mechanic course days
- Peer mental health support programs, such as the 'We've Got Your Back' and 'How's Your Mate' initiative
- Buy local programs which support local spending
- Incentivising value-add and supply chain industries
- Continued environmental monitoring for example, the Barkandji Ranger Program water quality monitoring support at Menindee Lakes.

Whilst the Far West already has in place a number of programs and initiatives that work well at different scales, there are further opportunities to build upon these, sustain their implementation and look for more transformative options to support drought preparedness and mitigation.

Argent Street, image supplied by RDA Far West

Priority activities

Key priority areas identified by this regional drought resilience plan to support community development, economic and environmental opportunities include:

Infrastructure

- Advocate to revise the proposed design change to the Wilcannia Weir Replacement Project
- Provide static water supply options for sports fields and other water saving and efficiency options
- Advocate for, invest in and implement a new radar installation north of Broken Hill with doppler capability
- Advocate for enhanced telecommunications infrastructure to enable data innovation, access to markets and access to tele services such as tele health
- Development of the Umberumberka Reservoir, which presents an opportunity to improve community liveability and support local tourism

Business enterprise

- Promote access to drought preparedness tools and resources to support business decision-making processes and trigger points
- Invest in feed storage options on-property
- Invest in succession planning processes for enterprise, land ownership, and the development of trained succession professionals in-region
- Invest in continued exclusion fencing around on-property dams.

Community development

- Roll-out mental health first aid programs through community and industry groups across the Far West
- Expansion of RFDSSE positive health and wellbeing programs, including the ‘We’ve Got Your Back Program’, including program coordination funding
- Continue the roll-out of Contact Inc community and family days in locations across the Far West, including ‘community gate-keepers’ program
- Investment in field days and skills development across the Far West, including the support of RAMHP related work and associated activities
- Provide resources and support for the continuation of traditional practices using cultural water, including funding for on-Country initiatives and cultural programs
- Youth and school-based Landcare programs
- Mobilise the ‘Kiila Shed’ Wilcannia Community Wellbeing Hub project

Governance

- Integrate the relevant pathways and actions of this regional drought resilience plan into Council Integrated Planning and Reporting Frameworks
- Build local emergency management capability through resourcing at the local level, supported through state government funding allocation

Pathways and actions

Key themes highlighted through the consultation and engagement process where further opportunities lie are represented by the plan's outcomes and action pathways.

The impacts of drought across these themes, as well as their experience by different cohorts of the community in the Far West, provides the basis for action as part of this foundational regional drought resilience plan for the Far West.

Advancing and continuously improving upon drought resilience, and our capacity to adapt, can involve absorbing known effects to the degree possible, adapting to changing conditions and transforming to meet new or escalating challenges. Many of these actions are reliant upon funding and/or resourcing.

This action plan provides a suite of opportunities which in combination, provide implementable pathways toward enhanced drought outcomes for the Far West.

This plan is a ten-year plan, to be reviewed after five years.

Overview

Plan outcomes

Resilient water

Water availability that can sustain the region, used efficiently to share and maximise its benefit

Resilient communities

Connected people, families and communities that are supported by coordinated and resourced services

Resilient business and economy

Innovative and adaptable enterprises which leverage changes in climate and market conditions

Resilient landscapes

Healthy Country and waters to sustain people and culture, environmental and industry needs

Action pathways

- Wilcannia Weir Replacement
- Water Security
- Water quality
- Greening, open space & recreation management
- Weather intelligence
- Community connection & wellbeing
- Support for youth
- Sustainable communities
- Governance & collaboration
- Advocacy
- Rural business planning
- Local business value adding opportunities
- Infrastructure to support competitive market access
- Biosecurity
- Rangelands management

Implementation (monitoring, evaluation and learning (MEL) performance measures

These plan outcomes and action pathways are supplemented by the detailed action plan and implementation framework that follow.

Action plan

Theme 1 – Resilient Water

PATHWAY	ACTIONS	MEL PERFORMANCE MEASURES
Wilcannia Weir Replacement Project	**Transform** → Advocate to revise the proposed design change to the Wilcannia Weir Replacement Project to revert back to the original design. The original design was the subject of significant community consultation and unanimous community support, to provide necessary drought storage for the Wilcannia community through improved water security, enhanced social gathering and cultural practices, support for on-property water supply for other parts of the Central Darling Shire by carting from Wilcannia, and contribute to better Murray-Darling Basin Plan outcomes for the population of Wilcannia and Central Darling Shire.	1, 2, 11
Water security	**Absorb** → Explore a groundwater modelling program for the region to build a greater understanding of groundwater resources and associated considerations → Undertake a study to investigate water cost saving options for potable water across the region. **Adapt** → Invest in continued exclusion fencing around on-property dams, with the aim to fence at least 10m back from the high water mark of the dam to decrease livestock bogging, increase productivity and improved biodiversity and biosecurity outcomes → Implement a betterment arrangement for potable water infrastructure from Broken Hill to Silverton and for the wastewater treatment facility in Tibooburra → Explore water security options for Packsaddle, which exhibits water security vulnerability having run out of water during the previous drought → Undertake a business case for an increased capacity water treatment plant in Wilcannia to support improved supply to rural properties in the Central Darling Shire, to coincide with the Wilcannia Weir Replacement Project → Advocate for the recognition and protection of water rights of First Nations people already identified by government water management arrangements, ensuring fair and equitable access to water resources → Invest in community potable water points / tanks in locations across the region where residents can pay a nominal fee to access potable water and cart it for person / household use. **Transform** → Installation of potable water supply for Tilpa and increase the village's weir supply. → Upgrade Wilcannia's township potable water reticulation system to improve water security alongside weir replacement.	1, 2, 7, 9, 11
Water efficiency	**Absorb** → Promote education and awareness programs on water conservation and sustainable practices within the broader community → Maintain reserve water supplies for firefighting during drought periods **Adapt** → Implement community-led water conservation projects such as rainwater harvesting and greywater recycling to improve water availability and efficiency → Consider investment in property-based desalination plants.	2, 10, 11

PATHWAY	ACTIONS	MEL PERFORMANCE MEASURES
Water quality	**Absorb** → Continue to undertake water monitoring at Menindee Lakes to better anticipate future fish kills, collection of data → Maintain and enhance existing fish kill response processes and plans in the event of future fish kills at Menindee Lakes → In accordance with provisions outlined in the Murray-Darling Basin Plan, water management plans and Western Region Water Strategy, ensure streamflow in the Darling (Baaka) River and other measures are implemented to effectively mitigate blue green algae outbreaks.	9, 10, 11
Greening, open space management and recreation	**Adapt** → Provide static water supply options for sports fields and other water saving and efficiency options to maintain turf and playing surfaces for as long as possible. Ability to continue to play and watch local sports has a profound impact on wellbeing during drought → Invest in sustainable water infrastructure to ensure reliable access and maintain green spaces, which are crucial for community and recreational activities → Promote option for drought-resilient landscaping which avoids use of turf, instead involving stones, succulents and other materials, along with sustainable gardening practices. **Transform** → Develop the Umberumberka Reservoir, which presents an opportunity to improve community liveability and support local tourism for both Silverton and Broken Hill. This project leverages the Broken Hill pipeline investment, demonstrating options for re-use of infrastructure. → Construction of boating facilities, boat ramp and mooring facilities at Wilcannia and Tilpa.	2, 3

Theme 2 – Resilient communities

PATHWAY	ACTIONS	MEL PERFORMANCE MEASURES
Weather intelligence	**Transform** → Advocate for, invest in and implement a new radar installation north of Broken Hill with doppler capability, rainfall and severe weather verification to increase weather radar coverage by closing a significant gap in the existing network for the Far West.	2, 6, 10
Community connection and wellbeing	**Adapt** → Support and advocate for delivery of different styles of mental health support that cater for different cohorts and needs of the community → Roll-out mental health first aid programs through community and industry groups across the Far West → Ensure support for service providers is available, maximising service availability and managing fatigue and mental fitness of those who support others → Continued support for and expanded roll-out of RFDSSE positive health and wellbeing programs, and support delivery of its outreach (fly-in, fly-out, drive-in, drive-out) mental health and alcohol and other drug services, as well as its outreach (both face-to-face and telehealth) primary health clinics to remote communities. → Continued roll-out of Contact Inc. community and family days in locations across the Far West, including 'community gate-keepers' program → Continued investment in field days and skills development across the Far West, including RAMHP work and activities (e.g. Men's butchering days), driver safety (increase wildlife strike during drought) or similar, grazing for profits, gymkhanas and sports events. This may potentially be in partnership with Royal Flying Doctor Service South Eastern Section → Continued investment in and support of the Outback Mobile Resource Unit (Toy Library) → Introduce a 'neighbour collective' approach to get-togethers when pastoralists cannot travel far during drought times → Provide resources and support for the continuation of traditional practices using cultural water, including funding for on-Country initiatives and cultural programs. This include enhancing the education of others on the importance of cultural water allocation → Continue support for rural respite care services. **Transform** → Undertake a review of existing community facilities across the region to identify upgrade needs to enable their use for community events (i.e. kitchens, bathrooms, water tanks, air conditioning) → Local governments, RDA Far West and others to transition community grant criteria during drought periods to ensure community grants and funding incorporates consideration of drought relief benefits / opportunities → Work with NSW government agencies to enhance TAFE and other tertiary education opportunities in Broken Hill, with outreach programs delivered across the Far West.	2, 3, 4, 5

PATHWAY	ACTIONS	MEL PERFORMANCE MEASURES
Support for youth	**Absorb** → Continue the delivery of holistic children's mental health and well being services offered by RFDSSE, including child and family primary health care, children's play therapy and other wellbeing services, and access to the RFDSSE's Broken Hill Wellbeing Centre → Invest in a swipe card access facility for the Silverton Municipal Chambers Building which serves as a community facility, to enable easier community access to support the areas youth and families → Increase support for families sending children to boarding schools, including financial assistance, mental health resources, and peer support networks → Continue to support initiatives like the Country Universities Centre and promote scholarships for local training to retain young talent and provide career development opportunities → Consider community-led opportunities to subsidise school excursion programs to nurture student wellbeing and advancement → Seek continued investment in Allison House in Broken Hill to allow its service provision to continue, retaining children in region and supporting the region's families. **Adapt** → Increase programs and support for late childhood / early teens on properties → Consider opportunities to locate playgrounds with sports fields across the region, as an opportunity to enhance participation and social interaction of families during drought and include provision for games and sports that do not require grass (hopscotch, handball, etc.). **Transform** → Mobilise the 'Kiila Shed' project ('Kiila' meaning 'grow' in Barkandji language) Wilcannia Community Wellbeing Hub for disengaged youth, weekly Yarning Circle, Wilcannia Men's Group and Women's Group, and to deliver counselling → Invest in delivery of Wilcannia Youth Camp project in Mutawindji National Park with a focus on food, fire and local knowledge, to support at-risk youth in the region, acknowledging these issues are exacerbated during drought.	2, 3, 4, 5
Sustainable communities	**Adapt** → Advocate for and increase investment in Indigenous housing supply and maintenance of existing dwellings for Wilcannia, Menindee, Ivanhoe and in Broken Hill → Enhance opportunities through facility and service investment in aged care and options for residents to age in place across the region → Continue financial and other support for the domestic violence safe house in Wilcannia → Leverage opportunities to increase defibrillator access on-properties across the Far West → Advocate for isolated patients travel allowance to seek specialist medical support → Introduce training programs and support for governesses, in addition to streamlining the recruitment process for families. Enhanced governess support is enhanced support for families and economic enterprise in the Far West → Consider establishment of Far West Farm Sitter program to enable property owners and managers to travel for medical visits, holidays, personal needs, etc. Social media platforms may assist.	2, 3, 5, 8
Governance and collaboration	**Adapt** → Integrate the relevant pathways and actions of this regional drought resilience plan into Council Integrated Planning and Reporting Frameworks → Build local emergency management capability through resourcing at the local level, supported through state government funding allocation → Work with the Southern NSW Drought Innovation Hub extension officer embedded within Western Landcare to develop place-specific research and project needs as part of the Far West Drought Hub node → Prepare plans for waste recycling in towns and villages across the Far West to maximise waste efficiencies and generate economic development opportunities when plastics used for water containers increases during drought periods → Support the NSW government workforce pilot to attract and retain skilled workers, in contribution to limiting staff turnover and reducing loss of knowledge continuity over time → Continue to implement actions from each community / district improvement plan.	10, 11

Theme 3 – Resilient business and economy

PATHWAY	ACTIONS	MEL PERFORMANCE MEASURES
Advocacy	**Absorb** → Advocate for revision of the drought classification process exclusively for the Far West given the scale of the region to enable better access to assistance at the time it is needed. **Adapt** → Advocate for a new contractor subsidy to maintain critical farm employees (including governesses) during drought, as an opportunity to stem a range of cascading on-farm and off-farm impacts from drought-driven employment downturn on properties → Advocate for concessions on yearly light vehicle safety inspection reports (pink slips) during drought periods (limited to isolated properties), having regard to the cumulative cost and number of light vehicles operating on properties → Advocate for enhanced support for biosecurity activities on-property during drought, noting biosecurity costs increase during drought → Advocate for assistance with equine costs during drought, including revision of minimum animal thresholds → Advocate for the simplification and streamlining of application processes for drought relief.	10, 11
Rural business planning	**Absorb** → Promote access to drought preparedness tools and resources to support business decision-making processes and trigger points → Invest in feed storage options on-property → Support farmers to implement evidence-based animal nutrition to strengthen livestock health and resilience. **Adapt** → Invest in comprehensive rural enterprise business and financial planning → Invest in succession planning processes for enterprise, land ownership, and the development of trained succession professionals in-region to support farm businesses and financial counsellors.	6, 7, 8
Local business and value adding opportunities	**Adapt** → Continue to implement ‘spend local’ programs to support town-based businesses in Broken Hill → Explore the use of land use planning, financial and other local government levers to support mix of uses within retail trade centres → Explore the options available to transition the Silverton Tramway corridor into a recreation / heritage asset and undertake business case → Work with the film and television industry and mining sector to capture community benefit, create a value capture policy to direct funds to community development projects.	6, 7, 8
Infrastructure to support competitive market access	**Transform** → Invest in regional road upgrades for multi-dimension benefits including drought, flood resilience, tourism and industry support, particularly the ability for stock movement → Advocate for the sealing of the Queensland section of the Silver City Highway (Warri Gate Road) → Identify and implement a roadside bores program to assist with road maintenance before, during and after drought, ensuring water availability → Advocate for enhanced telecommunications infrastructure to improve public safety and to enable data innovation, access to markets and access to tele-services such as telehealth which is critical for the Far West.	2

Theme 4 – Resilient landscapes

PATHWAY	ACTIONS	MEL PERFORMANCE MEASURES
Biosecurity	**Absorb** → Continue to undertake water monitoring at Menindee Lakes to better anticipate future fish kills, collection of data → Continue to focus on removal of carp from the Baaka and Menindee Lakes → Maintain and enhance existing fish kill response processes and plans in the event of future fish kills at Menindee Lakes → Continue to implement and maintain the NSW border wild dog fence program → Work with Local Lands Services, Department of Primary Industries and Regional Development and Landcare to invest in weed and pest management on private lands during drought to supplement on-property incomes and improve environmental outcomes.	4, 9, 10, 11
Rangelands management	**Absorb** → Continue support to roll-out and expand the Junior Landcare and Youth Network program across the region. **Adapt** → Implement groundcover management initiatives to reduce top soil loss, alleviate impacts of dust storms and flow-on health effects and heatwave mitigation, both on-farm and in communities. In Broken Hill this is particularly important to manage exposure to lead dust. → Support extended delivery of seed nurseries for seed stock across the region, promoting increased groundcovers, increased fodder, bee activity and improving soil water penetration → Continue to fund and support the operation of the Barkandji Rangers program → Support landholder investment in riparian corridor rehabilitation and fencing to reduce the impact of wild goats on waterway corridors, which results in significant waterway degradation, landscape change and impacts on fish populations. → Support to roll-out the 'Telling the Truth About the Western Division' project **Transform** → Continue to grow the Far West Rangelands Rehydration Alliance, including further investment for an additional 20 properties to participate.	4, 9, 10, 11

Implementation

The Far West regional drought resilience plan relies on collaborative implementation approaches.

The action plan for drought resilience spans different functions of government, and guides stakeholders with actions that can make a difference. This includes short, medium and long term opportunities.

The action plan has been drawn together through community expression, existing initiatives and background data. It is noted that:

- actions include unspecified timeframes and funding to acknowledge that delivery is dependent on a range of variables
- implementation will occur through participation of all stakeholders over time as priorities, resources and funding arise
- as a regional plan, the actions are collective and collaborative
- roles and responsibilities are flexible, including for local government role: the plan is owned by the region, and any stakeholder can start an action within their capacity; and
- some actions are indeed underway by various stakeholders, the purpose of maintaining them in the action plan, is that the community has advised that the action is integral to drought resilience.

ROLE DESCRIPTION
An advocate actively supports a position, action or policy. The task is outside the advocate's jurisdiction, capacity or resourcing and advocacy is required to engage with those parties with capacity to deliver. For example, telecommunications advocacy.
A partner joins others in a common cause or action where roles and responsibilities are shared across areas of expertise. Each partner brings an element to the action for joint delivery. For example, region-wide strategic initiatives.
A lead is in control of an action. The action may still involve partners or other roles, but the action is reliant upon a lead party due to their technical or other expertise. E.g. Health or counselling matters.
An owner is the only party that can undertake or permit the action. E.g. local government as public asset owners.
A supporter is united with others in the need or benefits of the action but potentially does not have a major role. The action is led or owned by others. E.g. A supporter may provide assistance in kind, technical advice or donations to action leaders.
A stakeholder is anyone who has an interest in the project, program or action. Stakeholders will have varying degrees of involvement from owner to advocate and all points between.
A deliverer is responsible for implementation and outcomes of an action or funded program. e.g. Community agency delivering social aid programs.
A funder provides the funding arrangements. The party is not involved with scoping, executing or delivering the program but may require some outcome reporting or evidence. e.g. the government agency providing grant funding for programs and projects.

Governance structure

Implementation of the regional drought resilience plan is to be driven by a collaborative and multi-disciplined drought resilience project control group (PCG). Membership will be deliberately broad to provide an integrated and coordinated approach to drought resilience efforts. Representatives from across community and industry will form part of the PCG.

This will enable the PCG to adopt agile approaches and change priorities as needed depending on changing circumstances, and as opportunities arise. Despite this, all actions remain relevant in terms of maximising funding opportunities.

A PCG Terms of Reference is to be prepared for its membership to guide its function. The Terms of Reference could include:

- Role and purpose and connection to the RDRP
- Stakeholder and membership lists
- Meeting arrangements, (potentially quarterly) and responsibilities of attendees
- The circumstances of a quorum and decision making protocols
- The election or rotation of a chair person
- An action plan for the first 60 days or 12 months including delivery of the priority actions with the implementation funding; and
- A process for reflection and nominating next priority actions

A Memorandum of Understanding may also be required.

PCG meetings should be held in different localities across the region over time.

Monitoring, evaluation and learning framework

Whilst the drought action plan incorporates a large suite of projects, activities and actions, some offer immediate opportunity, some are medium-term items and others are longer-term transformational opportunities. Not all actions can be focused on or delivered at once. The 'absorb, adapt, transform' framework will guide the PCG in terms of its implementation and coordination of activities and funding pursuits. This will enable a flexible and agile approach as drought conditions change, guiding the focus.

Other stakeholders are able to use the plan to support funding and grant applications at any time, as desired. Opportunities for collaborative delivery partnerships, where two stakeholders may wish to provide similar projects, should be explored.

This system will:

- Provide regular opportunities to define when conditions are changing locally
- Catalyse a change in focus to respond to the needs of the changing conditions.

This ensures a level of agility is adopted with regard to the implementation approach.

As immediate efforts in response to the action plan are delivered, broader efforts across collaborators is guided in its approach, underpinned by this plan which enables stakeholders to work towards and contribute to regional drought resilience outcomes, including those at the local and property level.

The drought resilience action plan also requires that a 'lessons learned' posture is adopted, ensuring new information, knowledge, approaches and science is rolled into implementation delivery as a guiding principle. This will mean that over time, the drought resilience action plan may be adapted to reflect new learnings and the adjustment of intervention pathways as required. The PCG is responsible to conduct an annual lessons learned review, with changes to inform action moving forward.

The drought resilience action plan has been thoughtfully designed to not only guide collective effort and action but to enable adaptation through ongoing monitoring, evaluation and learning.

The regional drought resilience plan is a ten-year plan, to be reviewed after five years.

An annual monitoring program to inform adaptive learning is outlined below. Addendums to this plan can be made, to reflect these learnings over time and ensure the document maintains pace with changing circumstances and maturation of drought preparedness activities.

Tracking progress and reporting

Action-based project tracking against the drought resilience action plan, the principles and objectives of the plan should be undertaken on an annual basis. This tracking and reporting shall be the responsibility of the implementation PCG chair, unless otherwise delegated.

Likewise, an annual evaluation process will be conducted by the PCG, guided by the evaluation questions that follow.

Key evaluation questions

These key evaluation questions are high level questions designed to frame the analysis of progress and performance of the Far West Regional Drought Resilience Plan against the above framework. These key evaluation questions may help to structure annual tracking and reporting.

Effectiveness and outcomes:

- What have been the outcomes (intended, unintended, positive and negative) of the plan implementation process and progress?
- To what extent has progress contributed to or furthered the principles and objectives of the regional drought resilience plan?
- Has the plan been used for or otherwise supported successful funding and grant applications?
- Have any barriers or challenges been identified throughout the implementation of plan, and what solutions to address these have been identified?

Drought resilience maturation:

- To what extent has efforts in implementing the plan contributed to:
  - Creating stronger connectedness and greater social capital within our communities, contributing to well-being and security?
  - Empowering our communities and businesses to implement activities that improve their resilience to drought?
  - Supporting more primary producers and land managers to adopt whole-of-system approaches to natural resource management to improve the natural resource base, for long-term productivity and landscape health?

Ongoing stakeholder engagement:

- In what ways are the PCG and other stakeholders collaborating and collectively contributing to efforts outlined by the action plan?
- In what ways has the plan provided inclusive involvement across sectors, disciplines and communities?
- In what ways has the plan been able to support individual stakeholder goals, objectives and aspirations with regard to drought resilience?

The reporting may be undertaken using a range of tools to capture experiences and perspectives from across the PCG, allied stakeholders as well as the communities of Broken Hill City, Central Darling Shire and the Unincorporated Area more broadly. These tools may include:

- Meetings and event data capture
- Targeted meeting / interviews with stakeholders
- Survey data
- Case studies and data from the PCG
- Media, including social media
- Funding and grant applications.

Image: Umberumberka Reservoir, image supplied by RDA Far West

Achieving the plans outcomes and performance measures

A further opportunity for the PCG to measure the contribution to or achievement of the plan's outcomes is by using local data to assess specific outcomes. The data sources / indicators will need to be selected by the PCG, and can provide insights as to how the plan is tracking against the resilience theory of change.

The evaluation process is required to consider available metrics and perform an assessment.

The measures to gauge achievement against the plan's outcomes include:

PLAN OUTCOMES	PERFORMANCE MEASURES
Resilient water	1 Public health and safety and access to clean water prevents community health issues 2 Community infrastructure is resilient and helps to reduce disruptions
Resilient communities	3 Community connection and wellbeing is maintained 4 Capacity and capability of community groups is strengthened 5 General health services, including focus on mental health, are available and are accessible
Resilient businesses and economy	6 Reduced decline of gross regional product relative to: › Non-drought periods › Previous drought periods › Other regions in NSW, Victoria and South Australia 7 Agricultural productivity in the region is sustained 8 Employment loss is avoided or minimised, ensuring livelihood are maintained
Resilient landscapes	9 Environmental degradation of landscapes and waterways is reduced throughout and emerging from drought 10 Capacity to make informed decisions through access to data, intelligence and innovate tools is increased 11 Long-term sustainability is supported

Learning

Regular (annual) monitoring provides the ability for reflection and learning. The progress tracking and reporting methodology, using key evaluation questions, will present specific insights in terms of those opportunities to build in 'lessons learned' through engagement across stakeholders with a role in drought resilience. This can then be translated into opportunities for adaptive learning, as they arise.

These lessons should, on an annual basis, be contemplated with regard to the drought action plan to determine any relevant updates, new insights, intelligence and technologies that can be integrated to ensure the action plan keeps pace with a growing drought resilience maturation across systems and sectors.

This process will ensure the action plan remains a 'live document' that appropriately supports and services the needs of all stakeholders and importantly, those of the Broken Hill City, Central Darling Shire and the Unincorporated Area in preparation for, endurance of, and recovery from drought.

Concepts to guide adaptive learning as part of plan implementation are included at **Appendix B**. These items will help navigate maturation of this plan over time.

Silverton, image supplied by RDA Far West

Appendix A – Drought history

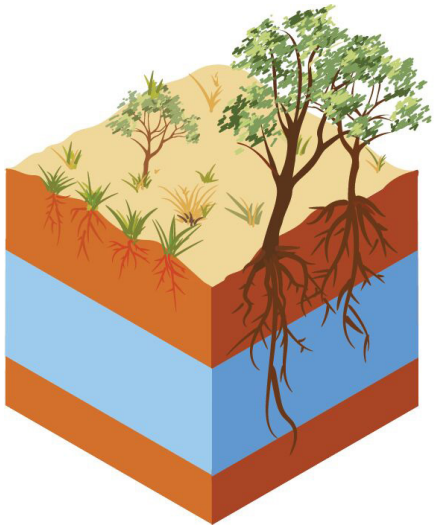
Precipitation and root zone soil moisture are considered as indicators of drought according to the Bureau of Meteorology's Australian Water Resources Assessment Landscape (AWRA-L) service[5]. Root zone soil moisture is a calculation of the upper and lower soil layers in the AWRA-L, which represents the water-holding capacity of the top one metre of soil. Root zone soil moisture and precipitation rates are each useful indicators of future drought potential.

Past records for the region demonstrate a year-to-year fluctuation in precipitation and soil moisture across the region. The mid-1970s and 2010-2011 feature significant rain, whereas 1926, 1940, 2017-2019 are some of the periods of unusual dryness.

In all cases these drought events were characterised by protracted periods of low rainfall, leading to low soil moisture as illustrated below.

In the below figures, these droughts are considered against a present-day baseline of 2002 to 2022.

*Note that the data does not go back to the Federation drought of 1890-1902



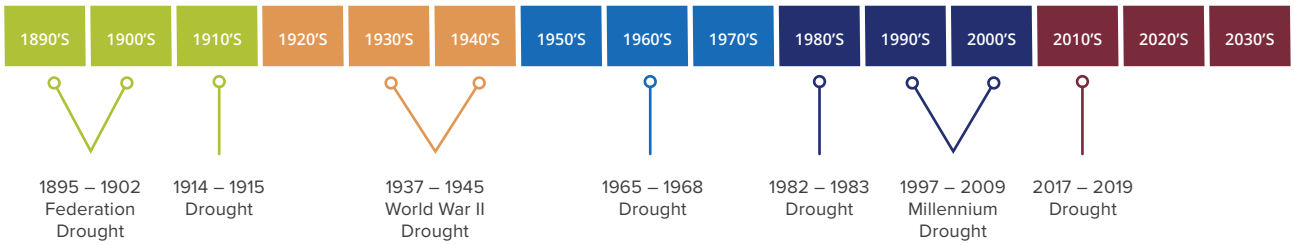


Figure 13 — Australian drought history timeline

5 Bureau of Meteorology 2021, The Bureau of Meteorology Australian Water Outlook Service Data Collection, *National Computational Infrastructure*, Available at: https://dx.doi.org/10.25914/6130680dc5a51

Mundi Mundi Plains, image supplied by RDA Far West

1914 to 1915

Nationally, this drought was short but notable, primarily due to the failed national wheat crop. This drought was driven by a strong El Nino, with drought conditions first becoming evident in 1913. For this region, it was not until 1916/1917 that there was any notable reprieve.

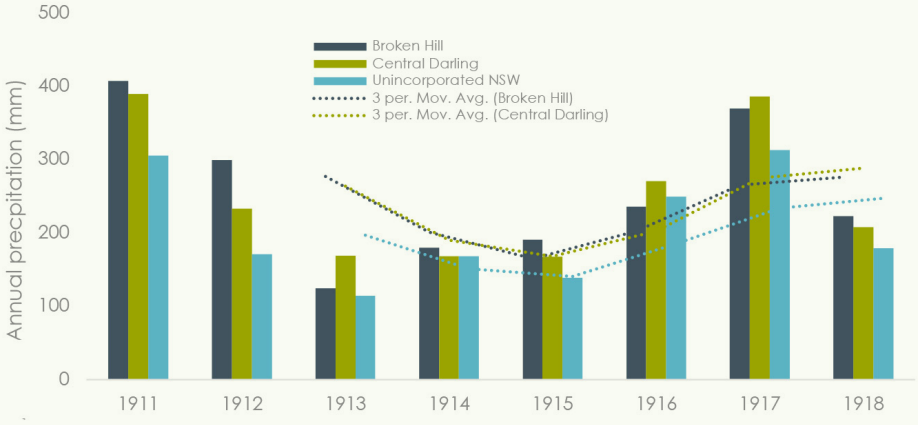
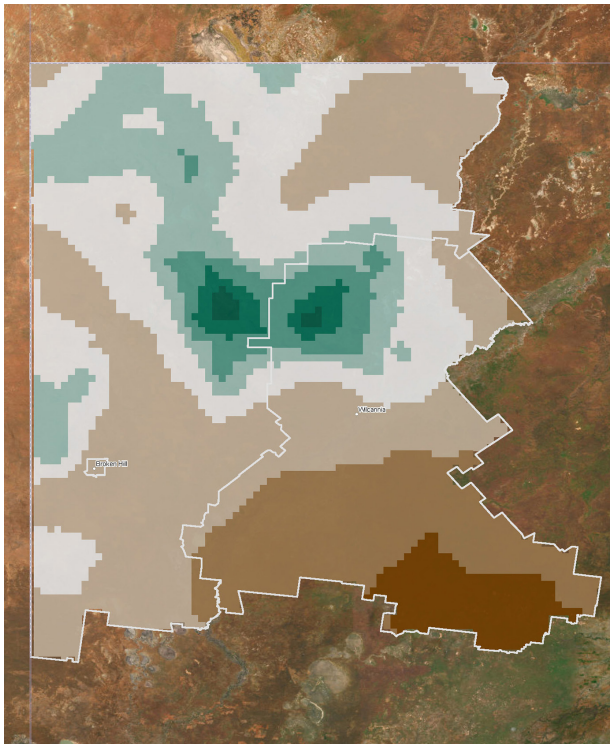


Figure 14 — Yearly precipitation (absolute), by LGA (1911 to 1918)

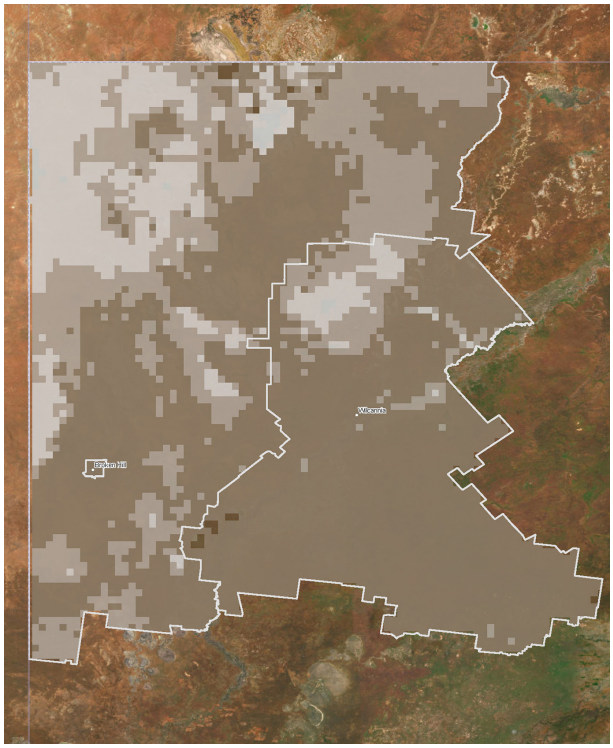
Precipitation



-300+ -250 -200 -150 -100 -50 -25 -10 10 25 50 75 100+

Precipitation, change during drought period (mm)

Soil moisture



-0.2 -0.1 -0.03 -0.02 -0.01 0.01 0.02 0.03 0.1 0.2

Change in root zone soil moisture (mm)

Figure 15 — Change in conditions during historic drought period compared to baseline (2002-2022)

1937 to 1945 (World War II drought)

This drought period was characterised by several breaks but intense periods of dryness. For this region, reduced rainfall was present beforehand, in 1934 and 1935. Reduced rainfall again occurred in 1937 and 1938. 1940 was the most notable year, with extremely low rainfall totals across the entire region.

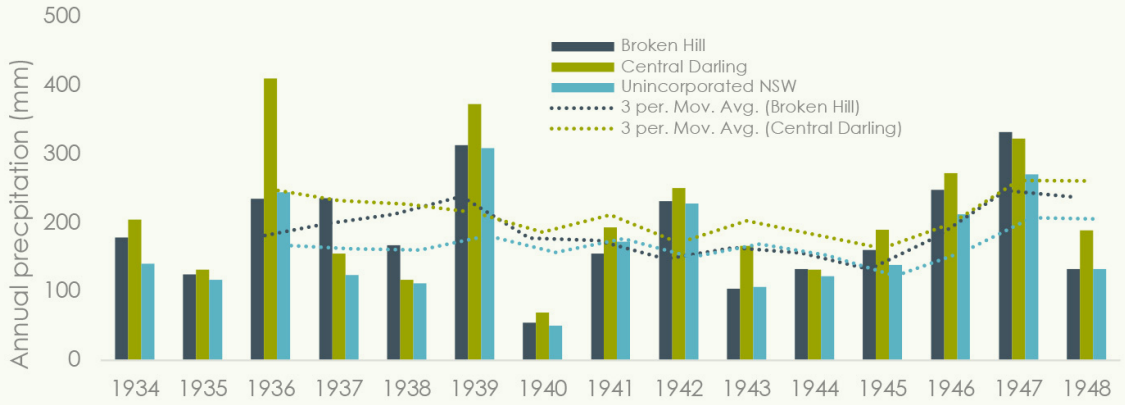
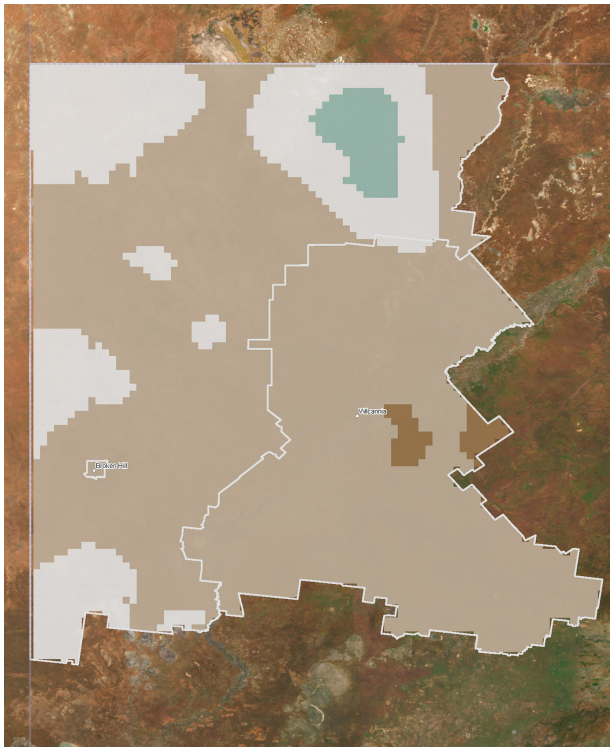


Figure 16 — Yearly precipitation (absolute), by LGA (1934 to 1948)

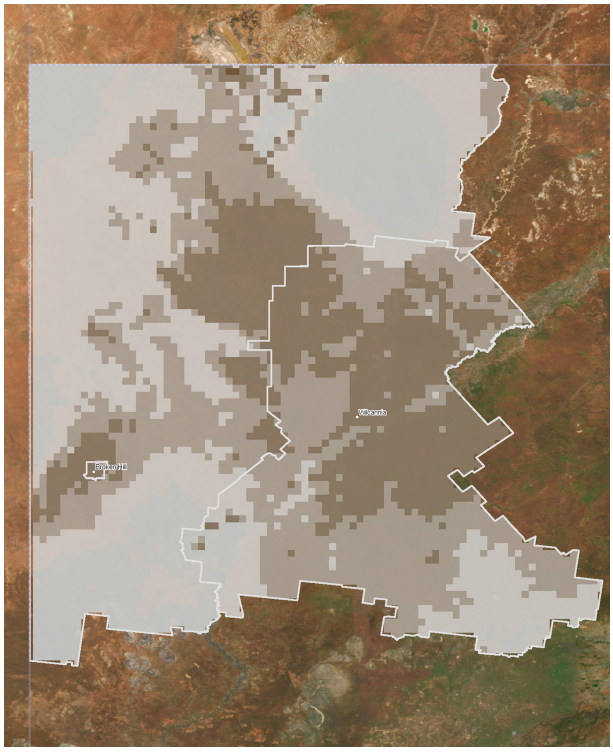
Precipitation



-300+ -250 -200 -150 -100 -50 -25 -10 10 25 50 75 100+

Precipitation, change during drought period (mm)

Soil moisture



-0.2 -0.1 -0.03 -0.02 -0.01 0.01 0.02 0.03 0.1 0.2

Change in root zone soil moisture (mm)

Figure 17 — Change in conditions during historic drought period compared to baseline (2002-2022)

1965 to 1968

The 1960s was generally dry across the continent. Drought developed in 1964 in northern New South Wales and had extended across most of the country by the following year. This was evident across the region, with lower rainfall and soil moisture across much of the region.

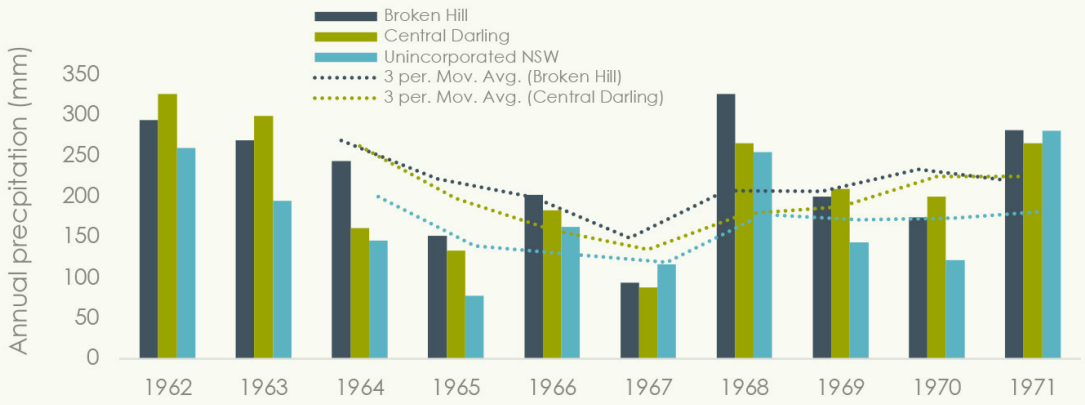
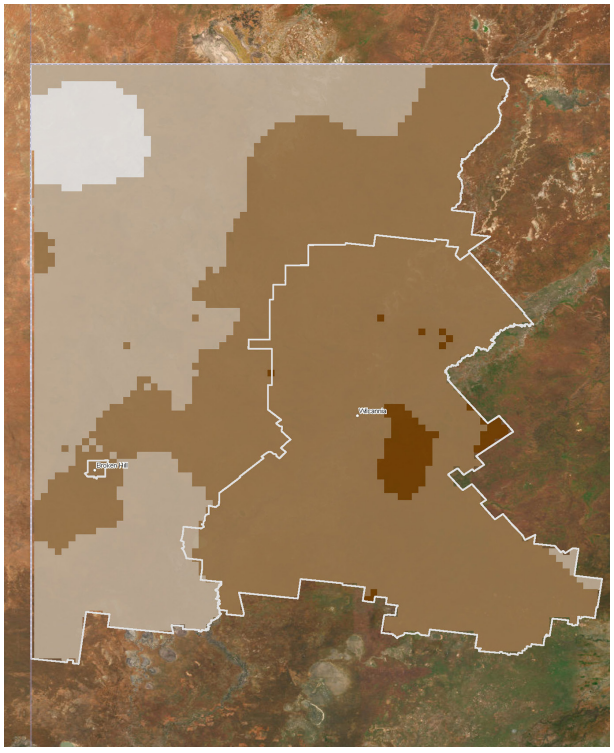
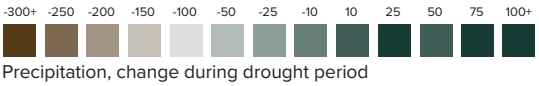


Figure 18 — Yearly precipitation (absolute), by LGA (1962 to 1971)

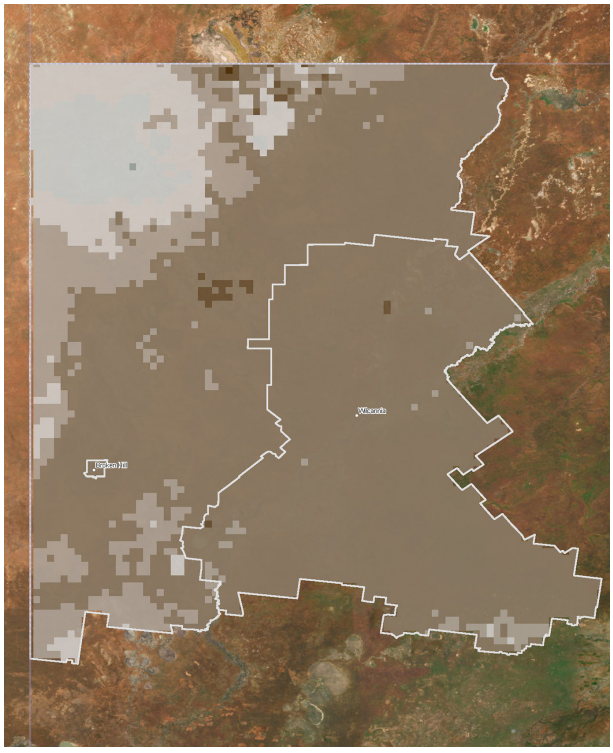
Precipitation

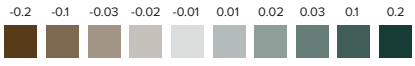




Precipitation, change during drought period (mm)

Soil moisture





Change in root zone soil moisture (mm)

Figure 19 — Change in conditions during historic drought period compared to baseline (2002-2022)

1982 to 1983

Despite only being a year long, this was one of Australia's most severe droughts in the 20th century. A very strong El Nino led to these drought conditions. The region experienced widespread dryness, which was most significant in the eastern extent of Central Darling and Unincorporated Far West, as well as Broken Hill as a whole.

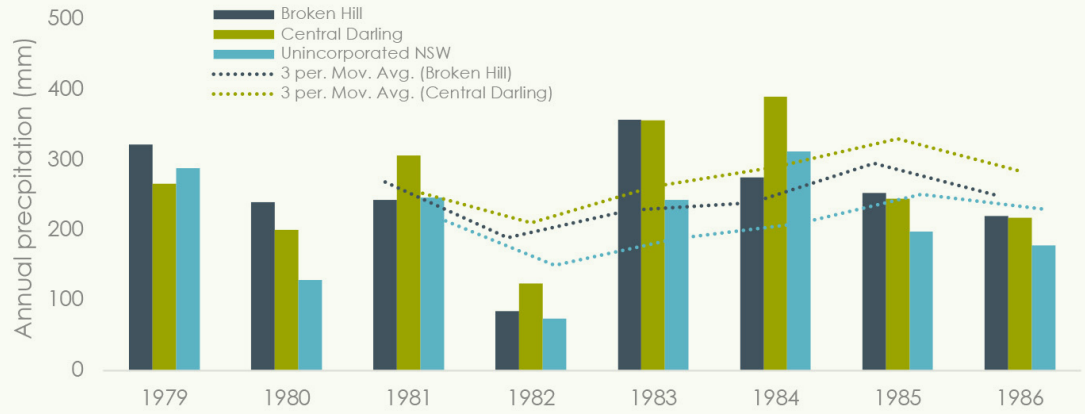
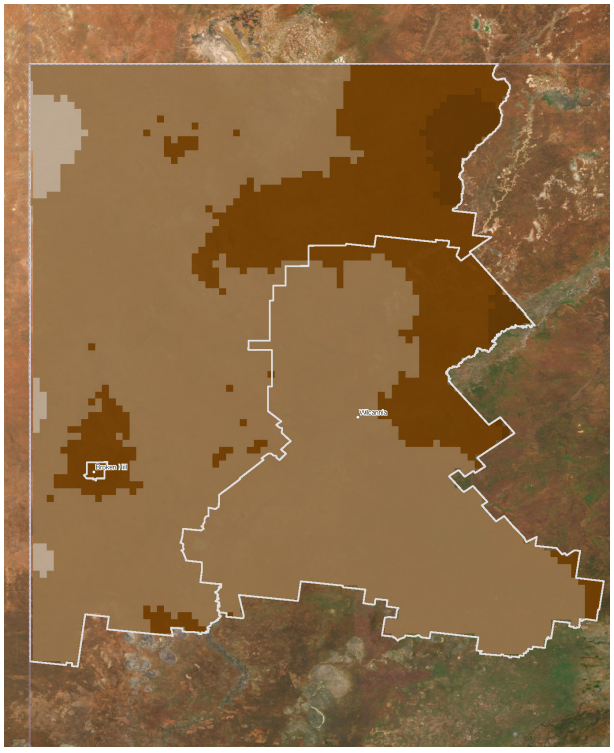


Figure 20 — Yearly precipitation (absolute), by LGA (1979 to 1986)

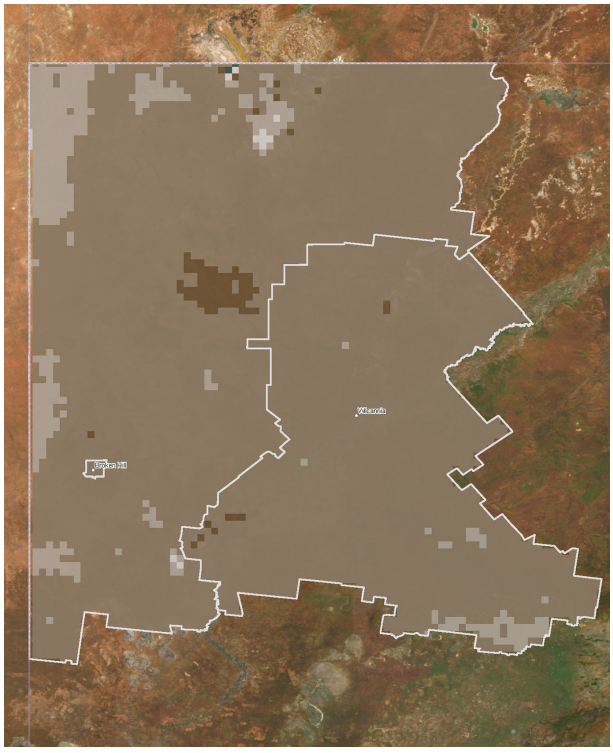
Precipitation



-300+ -250 -200 -150 -100 -50 -25 -10 10 25 50 75 100+

Precipitation, change during drought period (mm)

Soil moisture



-0.2 -0.1 -0.03 -0.02 -0.01 0.01 0.02 0.03 0.1 0.2

Change in root zone soil moisture (mm)

Figure 21 — Change in conditions during historic drought period compared to baseline (2002-2022)

1997 to 2009 (Millennium drought)

The Millennium drought was a long-lasting period of dryness, most severe in densely populated areas of the south-east and south-west of the country. For the Far West region, the beginning of this period is relatively unimpactful based on rainfall and soil moisture figures. It is not until 2001 when there is a significant dry spell into 2002.

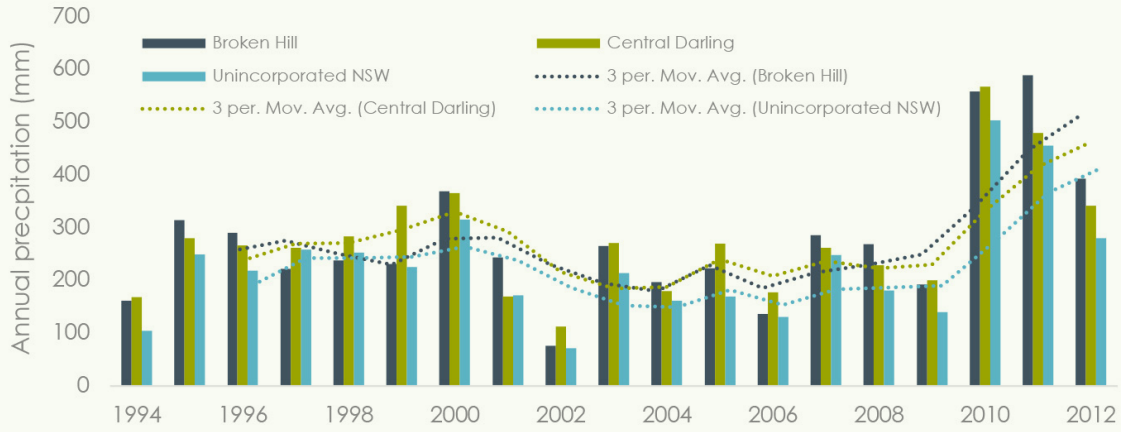
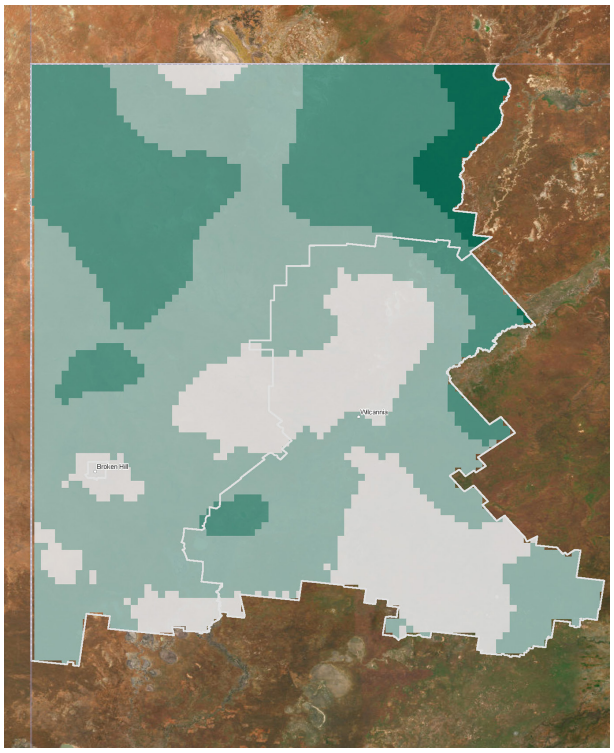
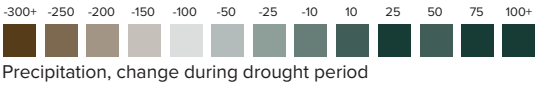


Figure 22 — Yearly precipitation (absolute), by LGA (1994 to 2012)

Editor's note: Some discrepancy in maps below showing significant rainfall and higher soil moisture over this period are linked to the reference period used (2002 – 2022) and significant dryness in the latter half of that period. This result is compounded by the short-lasting periods of rainfall decline during this long drought period (1997 – 2009)

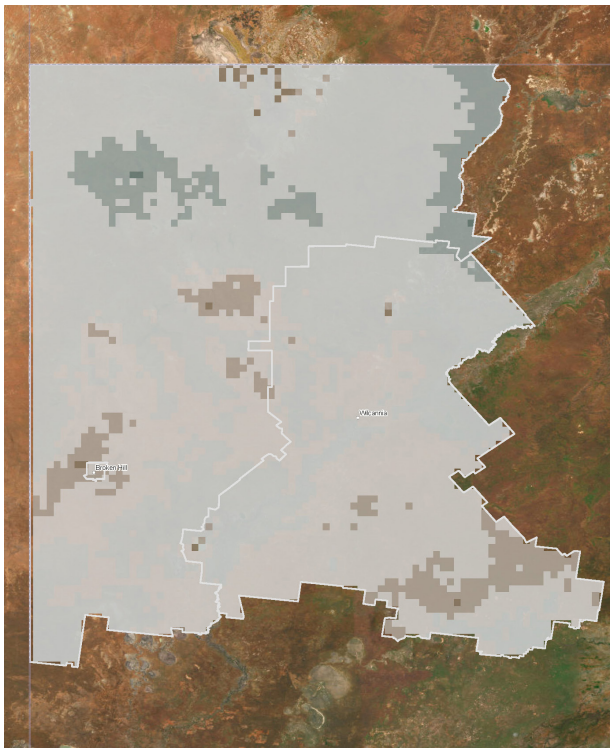
Precipitation

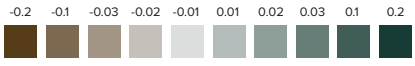




Precipitation, change during drought period (mm)

Soil moisture





Change in root zone soil moisture (mm)

Figure 23 — Change in conditions during historic drought period compared to baseline (2002-2022)

2017 to 2019

Following a wet 2016, dry conditions returned in 2017 across south and eastern Australia. This was a sustained multi-year period of dryness, unprecedented in recorded history . A strong Indian Ocean Dipoles was a significant contributor to dry conditions the second half of 2019, leading into significant 2019/2020 bushfire season. The region was similar affected during this period, with widespread low rainfall and low soil moisture.

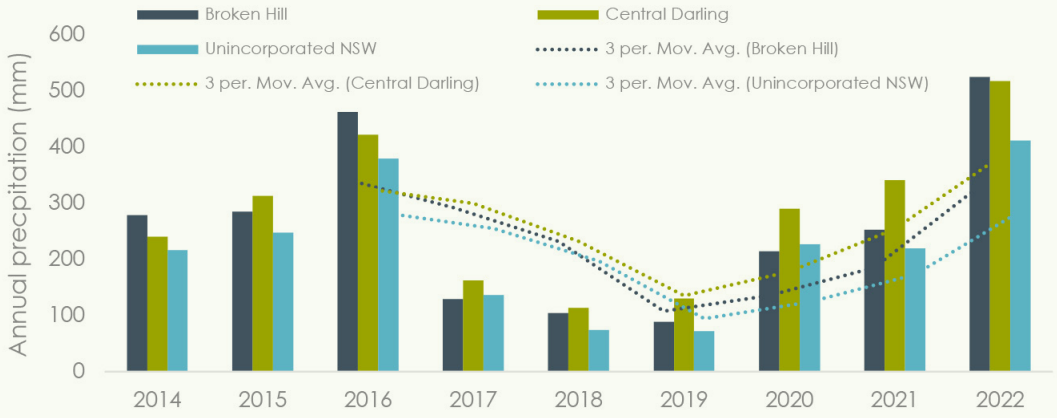
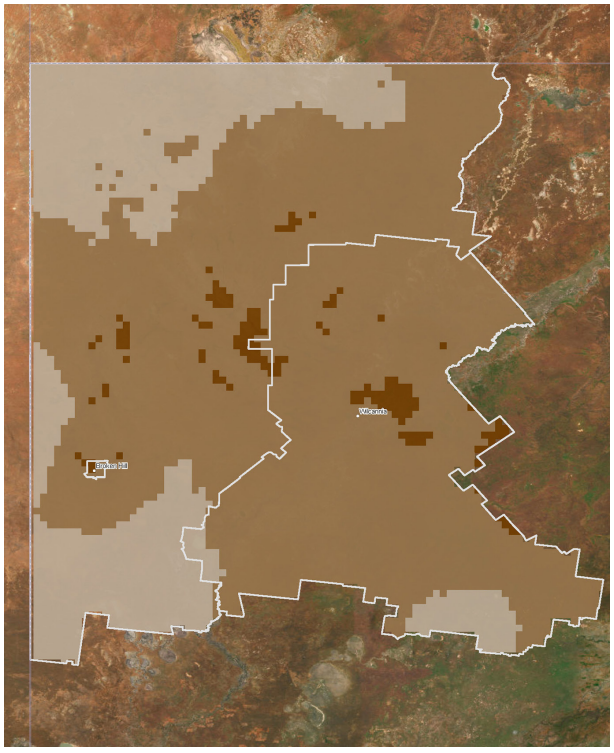
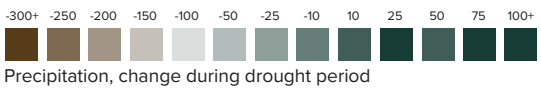


Figure 24 — Yearly precipitation (absolute), by LGA (2014 to 2022)

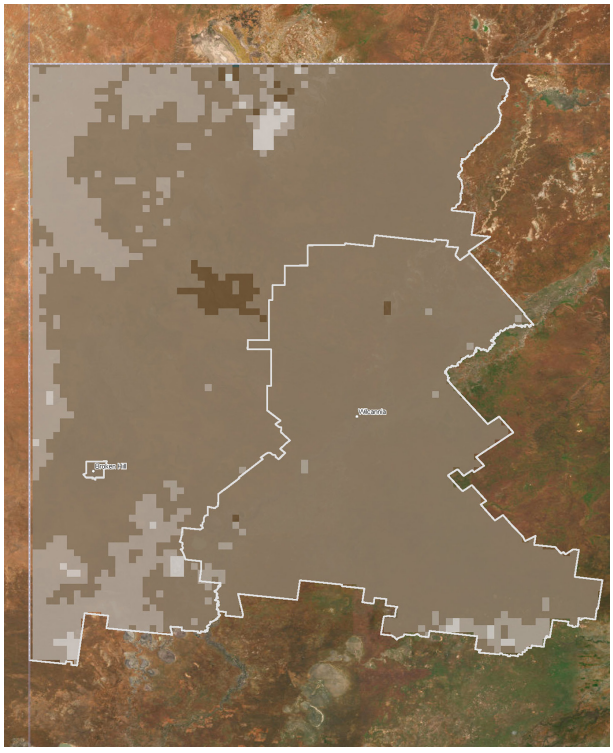
Precipitation

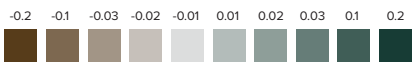




Precipitation, change during drought period (mm)

Soil moisture





Change in root zone soil moisture (mm)

Figure 25 — Change in conditions during historic drought period compared to baseline (2002-2022)

Appendix B — Concepts to guide adaptive learning

This appendix provides key aspects for consideration as part of learning processes throughout implementation of this plan and guides further iterations and amendments to this RDRP. As drought resilience processes mature, the ability for further robust adaptation pathways to be implemented will emerge.

The table below captures specific items identified for integration as part of future plan iterations.

Table 1 - Key aspects of consideration to guide future plan iterations

NO.	ASPECT OF CONSIDERATION
Expansion of drought resilience relative to diverse stakeholder groups	
1	Expand on what drought means to different segments of the region's community and industries, and adaptation pathways to 'absorb', 'adapt' and / or 'transform' to grow drought resilience. As implementation of this foundational RDRP occurs, and monitoring, evaluation and learning processes are undertaken, opportunity will arise to advance the concepts of resilience theory, and make more clear how the adaptation pathways are continuously improving and escalating to underpin drought resilience maturation.
2	Continue to engage with diverse community and industry groups to advance implementation of the plan. Future plan updates could capitalise on the community's desire to be engaged and involved in the plan's delivery by acknowledging the role that key knowledge holders could play. Stakeholder engagement could be expanded to include direct participation of different drought vulnerable groups including gauging their capacity to participate and how best to engage with them moving forward. This information could be used to better target vulnerable residents and ensure adequate supports are in place to involve different community segments.
Expansion of resilience adaptation pathways	
3	Use diverse quantitative and empirical evidence on the potential impact of the interaction of historical and projected drought with key economic and social variables over time, such as demographic changes, shifts in the diversity of businesses, and livelihoods and employment opportunities for different community segments, in emergent versus declining types of industries, and in labour mobility among different industry and sectors.
4	Further develop the theory of change to align the plan's objectives and actions towards reaching its intended outcomes, including the degree to which the proposed actions contribute to adaptation and transformation.
5	Expand on the interrelationships between economic, social and environmental factors across existing and updated documents, plans and strategies, and describe how these relationships influence potential cascading impacts of drought.

6	Future plan updates could profile drought impacts for those non-agricultural sectors identified as key sectors in the community, such as mining, renewable energy, health care and social assistance and tourism sectors. Such a profile could include an exploration of how these sectors can build resilience or drive transformation through learning, preparedness and planning.
7	Future plan updates could develop a suite of plausible future scenarios through a participatory process and based on climate, drought and other drivers of change. The development of future scenarios could consider how trends, shocks or stresses (including drought) will interact with and likely affect the region's economic, social and environmental characteristics, and the implications for diverse stakeholder groups. This exercise will also assist these stakeholders to explore and identify actions and pathways that assist with building resilience under different plausible future scenarios.
Resilience action planning	
8	Establish resilience indicators for each of the plan's 'priority areas', using baseline observations drawn from the MEL process within the initial years of plan implementation.
9	Future updates could provide more information to substantiate the assumed mechanisms by which its actions can be achieved, and to what extent they align with the broader objectives and outcomes of the plan.
Implementation	
10	As implementation advances, expand the implementation content of the plan with respect to its governance arrangements and the function / operation of the PCG.
11	Future plan updates could provide more explicit descriptions of what external support is required for successful implementation.
Monitoring, evaluation and learning framework	
12	Further develop structured approaches to capturing lessons from performance measures, linked with monitoring in addition to lessons from annual evaluations currently identified in the MEL. Integrate lessons learned from the plan's existing evaluation questions back into the plan's actions. Continue to enhance and mature the plan's MEL processes over time as the plan transitions from foundational into a performance posture.
13	Further develop performance indicators tied to actions in the plan's MEL plan. This will improve accountability by showing the degree to which proposed priorities and actions contribute to the plan's articulated vision and outcomes. This could include using quantitative and empirical evidence for key economic and social variables over time. This could include evidence that helps to track demographic shifts, changes in the diversity of businesses, livelihoods and employment opportunities for different community segments in emergent versus declining types of industries. It could further include evidence of labour mobility among different industry and sectors in order to assess actions focused on economic diversification.

Resilience assessment	
14	Ensure future iterations of the plan are qualified by a review of the Resilience Assessment components to identify key circumstantial changes which have occurred.
15	Continue to build upon and refine the program logic approach embedded within the Resilience Assessment that supported the development of the current plan, into a well-developed theory of change that provides a detailed and explicit causal mechanisms and valid assumptions by which the plan, through its implementation, will deliver the desired outcomes and impact.

CENTRAL DARLING
SHIRE COUNCIL

CITY OF BROKEN HILL

Regional Development Australia
FAR WEST NSW