



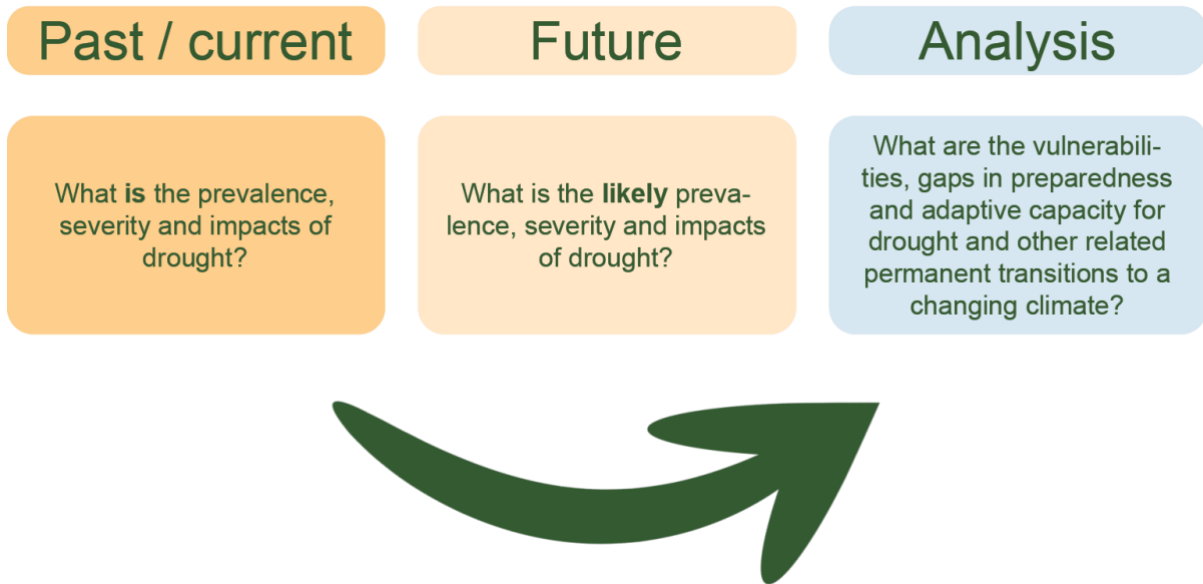
**Drought
Ready
Tasmania**

**Drought Risk,
Resilience &
Adaptive
Capacity Data**



Purpose

The purpose of this report is to provide a snapshot in time of the indicative and potential drought impacts for the Southern region of Tasmania. It answers the following three questions.



The Southern region drought data report will support the engagement activities of the Regional Project Coordinator and underpin the development of the Regional Drought Resilience Plan for southern Tasmania with regional stakeholders. This summary report is accompanied by a detailed full report, which includes all data sources and references.

Drought resilience is the ability to adapt, reorganise or transform in response to changing temperature, increasing variability and scarcity of rainfall and changed seasonality of rainfall, for improved economic, environmental and social wellbeing. This report analyses the resilience of agricultural, natural environment and community systems to drought.

The Southern Region

Agriculture and community

Southern Tasmania has a land area of 25,964 km², a population of just under 300,000 and is comprised of the following Local Government Areas (LGAs): Brighton, Central Highlands, Clarence, Derwent Valley, Glamorgan-Spring Bay, Glenorchy, Hobart, Huon Valley, Kingborough, Sorell, Southern Midlands and Tasman.

Compared to Tasmania as a whole, households in the Southern region are skewed towards the higher end of household incomes, people tend to be more educated and slightly younger. Clarence, Hobart and Kingborough have the least level of disadvantage of the LGAs in the Southern region, while people within the Brighton and Central Highlands LGAs demonstrate the most disadvantage.

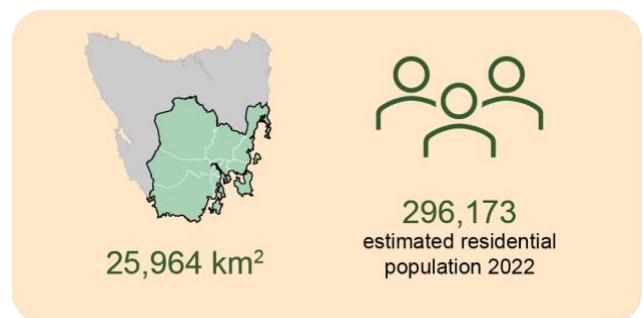


Figure S-1: Southern area and population

There are large areas of modified land in the region outside the World Heritage Area. There are a few pockets of prime agricultural land within the southern region the remainder is of lesser value for agriculture.



Figure S-2: Prime agricultural land

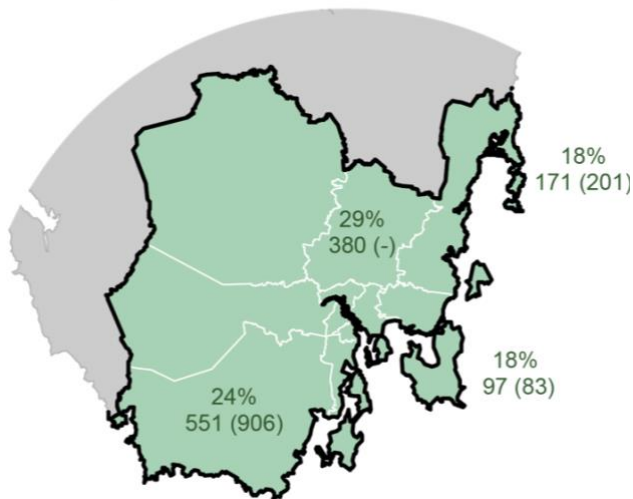
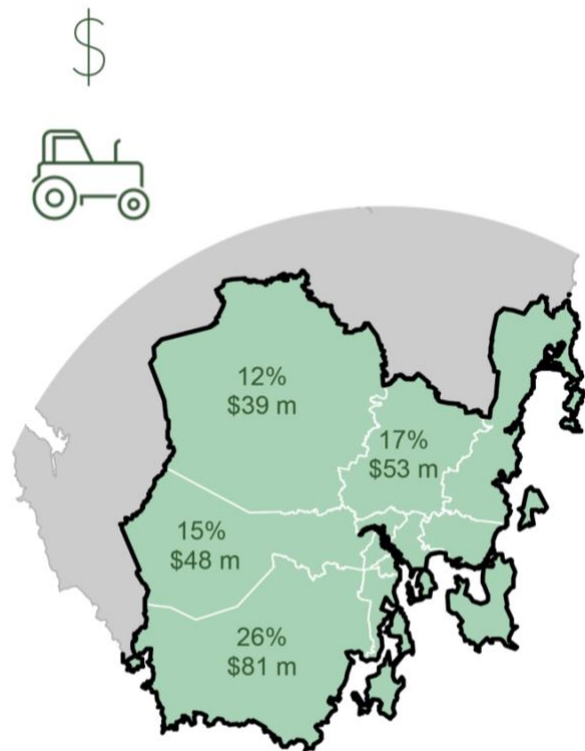


Figure S-3: Agricultural workforce per LGA (forestry and fisheries in brackets)

About a fifth to a quarter of the population in Huon Valley, Southern Midlands, Tasman and Glamorgan-Spring Bay LGAs work in primary industry. In the Southern Midlands, all of these people are employed in agriculture, while in the other LGAs aquaculture plays a significant role as well.

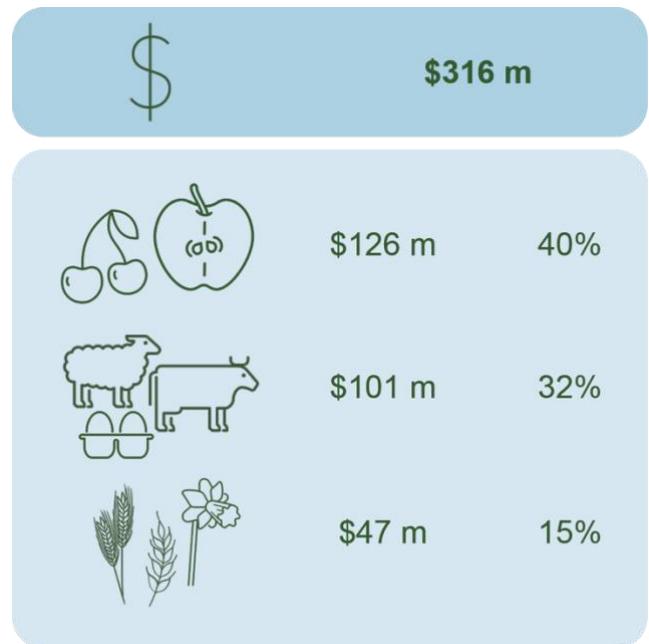


Figure S-4: Regional agricultural output

The Huon Valley, Southern Midlands, Derwent Valley and Central Highlands account for 70% of the region's agricultural output. Fruit, livestock products (excluding dairy) and field crops (including nursery and floriculture) make up approximately 87% of the value of agricultural enterprises within the Southern region.

Natural environment

Almost half of Tasmania’s internationally listed (Ramsar) wetlands are in the Southern region. The region spans 17 catchments - 13 catchments wholly within its boundaries and 4 partially within the region.



Figure S-5: Regional catchments and Ramsar wetlands

Outside the areas of modified land are vegetation communities including dry eucalypt forest, native grasslands, wet eucalypt forest and woodland, rainforest and in the coastal or elevated regions, areas of scrub, heathland and coastal complexes. Moorland, sedgeland and rushland communities and highland and treeless vegetation are found towards the higher and/or wetter regions of the Central Plateau / Tasmanian Wilderness World Heritage Area.

There are threatened ecological communities in the region.

Threatened ecological communities

Eucalyptus ovata / *E. brookeriana* / *E. viminalis* forests

Lowland native grasslands

Alpine sphagnum bogs

Subtropical and temperate coastal saltmarsh

Giant kelp marine forests of SE Australia

Figure S-6: Threatened ecological communities

Parts of the Tasmanian Wilderness World Heritage Area span the Huon Valley, Derwent Valley and Central Highlands LGAs.

Past climate trends

Major droughts occurred across the Southern region of Tasmania in 2006, 2008 and 2019, with further more localised droughts in 2002, 2007, 2014, 2015 and 2017. These events offer insights on the impacts to agriculture and the natural environment, and the potential resilience of communities to future droughts.



Figure S-7: Past low rainfall years (indicated in red, dark red is lowest on record)

Evapotranspiration is an indicator incorporating both water availability and temperature. Increased evapotranspiration needs to be balanced with increased rainfall to avoid water deficit.

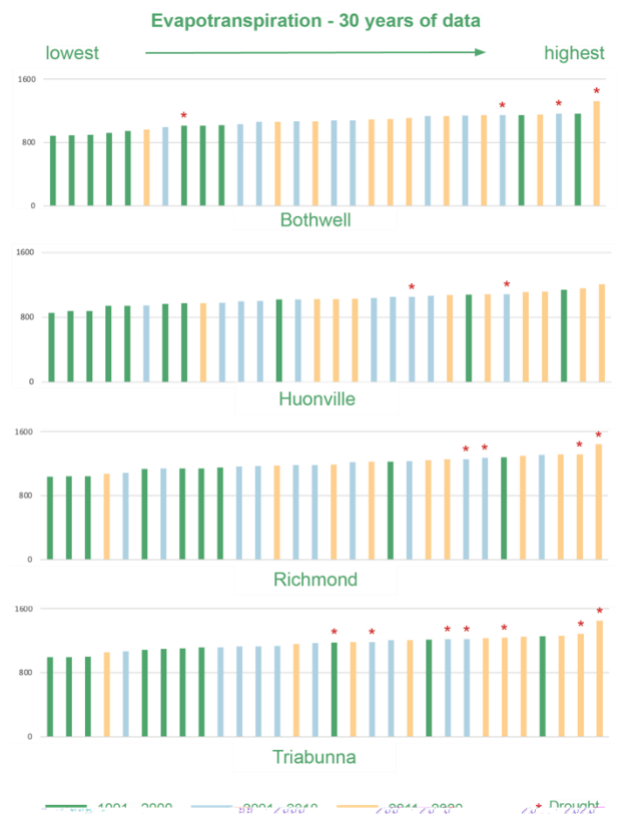


Figure S-8: Evapotranspiration over 30 years (mm, drought years marked with red asterisk)

There appears to be increasing evapotranspiration across the four Bureau of Meteorology sites examined in this report when viewed by decade.

Projected climate changes

While the modelled 2070 rainfall may decrease overall, the fewer rainfall events that do occur are likely to be more intense.

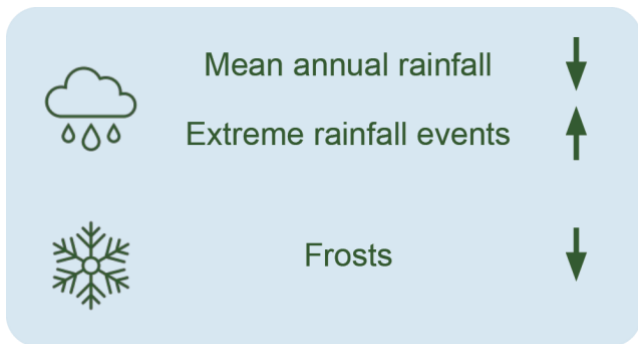


Figure S-9: Projected climatic change trends

Four key southern towns were examined for climate variables: Bothwell (Central Highlands LGA), Huonville (Huon Valley LGA), Richmond (Clarence LGA) and Triabunna (Glamorgan-Spring Bay LGA).

Days over 30°C and average temperatures are predicted to increase by 2070.

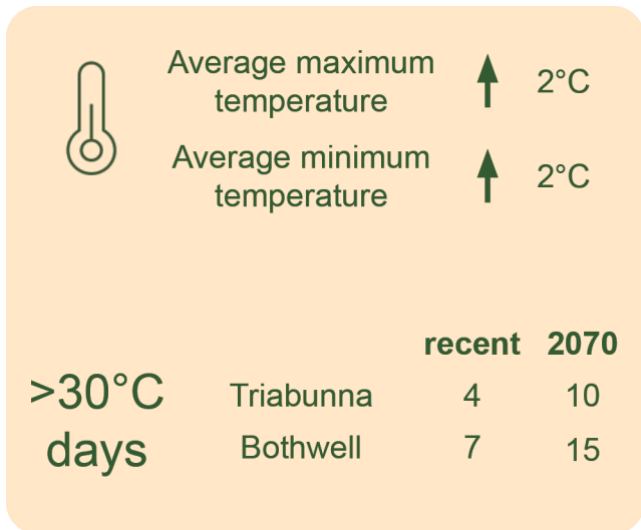
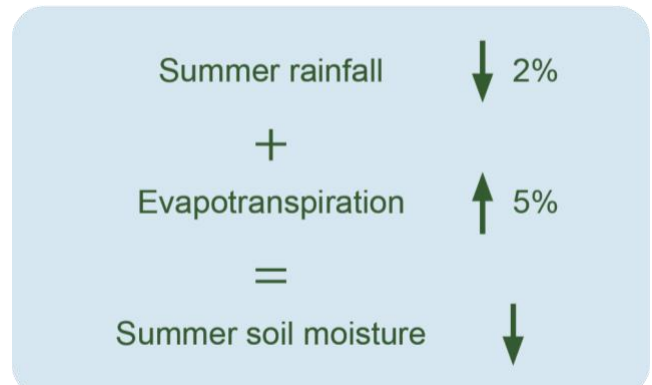


Figure S-10: Projected temperature changes (number of days over 30°C)

Overall average regional summer soil moisture is predicted to decrease in 2070.



Predicted changes to water availability in the Southern region catchments are expected to be variable..



Figure S-12: Projected catchment level changes

Risk, adaptive capacity and resilience

Drought resilience was determined by analysing the potential drought impact (risk) and adaptive capacity of each of the twelve LGAs in the Southern region. This showed Clarence had higher adaptive capacity potential to drought, whereas Central Highlands and Derwent Valley display lower adaptive capacity to drought. The potential drought impact (risk) showed Central Highlands with higher risk rating, while Kingborough was lower based on the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Community Vulnerability & Resilience to Drought Index (CVRDI). The potential vulnerability of LGAs in the Southern region to drought impacts are on the lower end of the index.

Therefore, the Southern region has moderate resilience to manage future drought conditions (Figure S-13). Central Highlands, Glamorgan-Spring Bay and Tasman LGAs have lower resilience to drought and Kingborough, Sorell and Clarence have higher resilience to drought. However, it is important to note that climate change will increase the frequency, severity and duration of extreme events such as periods of intense heat and rainfall. While the drought risk may be projected to moderately increase in most of the Southern region, it is going to be one of many factors that land managers and communities need to prepare for and respond to in the future.

While agriculture, forestry, and fisheries are not major drivers of the economy in the Southern region in terms of total employment, they are important drivers for individual councils (such as Huon Valley and Southern Midlands), where they employ a higher number of people. As the climate continues to change these industries need to continue to adapt and transform to ensure they are resilient to drought and other changes in climate.

Climate change is already impacting on agriculture and the natural environments and communities on which it relies. If communities can increase their adaptive capacity and resilience to future drought events, then it will also assist in increasing their resilience to other extreme events. It is important to note that more frequent, longer duration and severe droughts may reduce adaptive capacity.

Much work has been done and continues to provide secure water supplies for agriculture in parts of the region, through irrigation schemes and individual landowner investments in storage dams. In general, the region also has a high diversity of agricultural enterprises, both at the property and regional levels. These are two important factors that assist with the region's existing resilience to drought. The development of the Regional Drought Resilience Plans will help to identify regional needs, priorities and challenges and inform future investment to improve economic, social and environmental resilience to drought.

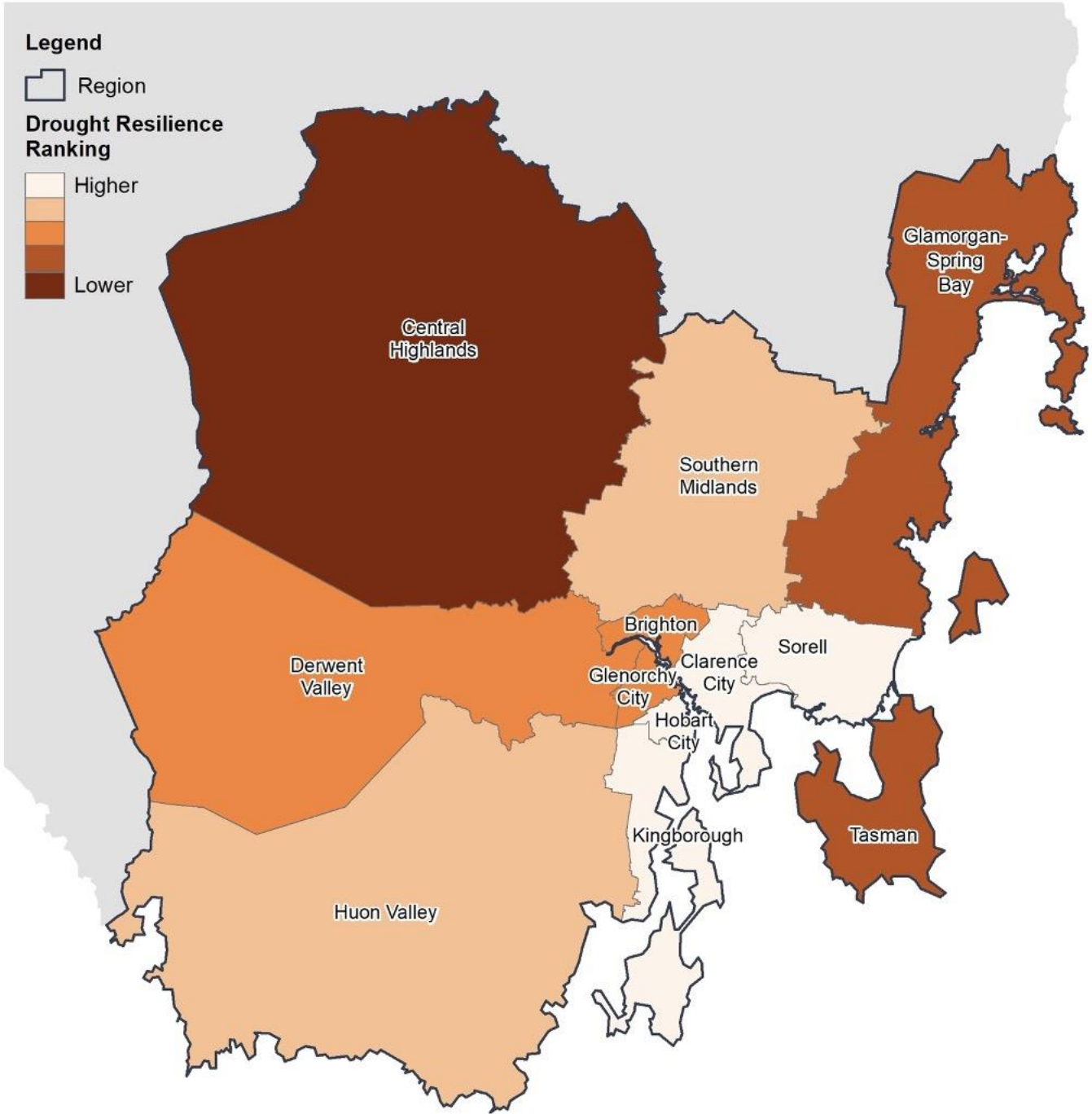


Figure S-13: Drought resilience of Southern region LGAs.

Recommendations

Based on the key findings in this report the following recommendations have been identified.

Table S-1: Recommendations.

Theme	Recommendation
Use this report to inform community engagement undertaken by the Regional Project Coordinator	<ol style="list-style-type: none"> 1. Test the risk, adaptive capacity and resilience to drought findings by LGA with the community to see if it reflects on-ground experience to past events. 2. Investigate the My Climate View forecast data as a tool to support further community engagement, which explores future climate predictions for individual towns and provides a specific snapshot of how conditions will change in the coming years.
Utilise the data in this report to inform the development of the Regional Drought Resilience Plan	<ol style="list-style-type: none"> 3. Undertake win-win, no regrets actions to assist with short to medium-term adaptation to future drought conditions (i.e. avoid maladaptation). 4. Ensure the Regional Drought Resilience Plan develops long-term transformative actions that consider all five capitals; physical, natural, financial, human and social. 5. Prioritise action in those communities with lower resilience by building adaptive capacity and reducing vulnerability to potential impacts of drought. This includes Central Highlands, Glamorgan-Spring Bay and Tasman LGAs in the Southern region. 6. Continue to develop irrigation schemes where feasible that balance environmental water needs. This is a priority in the Southern Midlands area. 7. Work with land managers to continue to improve and diversify their agricultural operations to be more adaptable to changing climatic conditions as well as extreme climate events (such as drought). This will have broader benefits for agriculture, the natural environment and communities. For example, this may include sustainable agriculture practices that improve soil health through increasing organic matter inputs and reducing losses for greater soil moisture retention. 8. Build technical literacy in regions to enable land managers to utilise current and emerging technology to better plan and prepare for changes in seasonal conditions. 9. Ensure actions consider community health, including mental health, as important aspects of resilience in the Southern region. Be aware that rates of mental health disorders are likely to be higher than are reported.
Undertake monitoring, evaluation, reporting and learning (MERL) for the Regional Drought Resilience Plan	<ol style="list-style-type: none"> 10. Establish clear, measurable and robust indicators of drought resilience in the Regional Drought Resilience Plan, informed by this report and emerging best-practice research. 11. Monitor drought resilience over time and update the Regional Drought Resilience Plan as required, including supporting data.



Drought Ready Tasmania

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Register to have your say

Scan the QR code or visit droughtready.tas.gov.au



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