JOIN US IN REIMAGINING THE FUTURE OF THE LANDSCAPES OF SOUTHERN QUEENSLAND

A Pathway to Flourishing Landscapes and Healthy Communities

Version 6.0. March 2022

Prepared by Southern Queensland Landscapes with and for the Community of Southern Queensland

Cross Roads

by Herbert Wharton

From stoneage past to space age era,
Internet replaces message stick,
across dreaming tracks livestock graze,
space probes fly among the stars,
man have walked upon the moon,
still secrets from the dreamtime past,
and all hopes of human race,
rest in mother earth.

Uncle Herbert Wharton is a Kooma Elder who grew up on the Yumba in Cunnamulla in South West Queensland. Uncle Herb has written a series of novels about his experiences as a drover on the stock routes of inland Australia through the eyes of a First Nations Person.

'THE CONDAMINE CATCHMENT' PAINTED BY CORI LESLIE

Foreword

We are the Community of Southern Queensland, and this is the story of how we will work together for flourishing landscapes now and for following generations.

We love the Landscapes of Southern Queensland because they provide our communities with things we need for living, industry, and the environment.

The Landscapes of Southern Queensland give us clean air and water, food and fibre, natural resources, recreational and tourism opportunities etc.

Queensland, Australia, and the World rely on these landscapes for these benefits too.

We are stewards of unique landscapes and amazing plants and wildlife of which some are only found in Southern Queensland.

We have a connection to these landscapes — the places we live or like to visit, the history, memories and hopes and plans for the future.

First Nation Peoples have thousands of years of connection to these landscapes that live and breathe as Country.

Landscapes are changing as floods, droughts and fires intensify and happen more erratically.

More than ever markets and consumers are demanding clean and green products.

Society expects companies and farmers, etc. to produce goods and provide services for the greater good (social license).

The Community have agreed that we can't keep doing things the same way and expect a different outcome.

Trust and respect for each other and the Landscape is reshaping how we work together differently to nurture Flourishing Landscapes and Healthy Communities.

Land, water, air, economies, and communities are intertwined and support one another. Positive actions for each will grow the capacity of the region for Flourishing Landscapes and Healthy Communities.

The Community has decided that we all need to work together to do things differently so we can look forward to many more years of connection to the Landscape.

The story of the Landscape and Community is told in an online StoryMap available on the Southern Queensland Landscapes website.

Acknowledgement of Country

We acknowledge, respect, and learn from the First Peoples of the 28 Nations in Southern Queensland Landscapes area, and further afield. We pay our respects to the Elders; Past, present, and future, for they hold the memories, traditions, culture, science and knowledge, and hopes of Aboriginal and Torres Strait Island peoples across our nation.

Acknowledgement of previous natural resource management plans

SQ Landscape acknowledges the dedication and resources used by the Community of the southern landscapes of Queensland in the preparation and implementation of Natural Resource Management (NRM) Plans over the last three decades. The sharing and recording of vast amounts of learned experiences puts SQ Landscapes in a good position to add value and advance community natural resource management toward the goals clearly articulated in these plans.

Acknowledgement of contributions

SQ Landscapes acknowledges the contribution of; Anita Erba for editing; the SQ Landscapes Organisational Knowledge Team for production of the maps and; the Southern Queensland Community, First Peoples, Industry and Local Governments for their commitment and input into the Plan's development.

James Davidson Architect, Piet Filet and Graham Milligan for facilitating the Regional Workshops and production of the Flourishing Landscapes Healthy Communities Pathway.

This Plan has been prepared by Jenny Cameron and Andrew Davidson for SQ Landscapes.

Acknowledgement of funding

This Plan has been developed with and for the Community, supported by Southern Queensland Landscapes, through funding from the Australian Government's National Landcare Program.

Australian Government | National Landcare Program

Terminology

Landscapes

Landscapes is used as an inclusive term that encapsulates the complex system interactions of people, environment, and economy. Landscape is given a capital L wherever it appears to respect it as a living breathing entity.

Community

Within these Landscapes, the term *Community* is used in a broad sense to include the individuals and organisations working and living in, or otherwise enjoying and participating in, the Landscape. The use of the term *Community* thus includes government, businesses, land managers, community groups, etc.

The participation of these groups and individuals in landscape management thus includes the actions relating to supporting the people, environment, and economy in their geographical area.

First Peoples

Feedback from First Peoples across Southern Queensland has indicated a preference not to be referred to as *Indigenous*, as it was not felt to recognise their unique cultural identities. The terms *First Nations People* or *First Peoples* are preferred depending on context. The following terminology has been applied throughout this document:

- *First Nations People* or *Traditional Owners* are used in reference to the custodians of specific country when speaking of these people in relation to that country
- *First Peoples* is used as a collective term inclusive of both Aboriginal and Torres Strait Islanders, similar to the common usage of the term Indigenous

Note to readers

The material contained in this publication is produced for general information only. It is not intended as professional advice on specific applications. It is the responsibility of the user to determine the suitability and appropriateness of the material contained in this publication to specific applications.

No person should act or fail to act on the basis of any material contained in this publication without first obtaining specific independent professional advice. SQ Landscapes and Members expressly disclaim any and all liability to any person with respect to anything done by any such person in reliance, whether in whole or in part, on this publication.

The information contained in this publication does not necessarily represent the views of SQ Landscapes or Members. It is a faithful record of community conversations.

Version	Date	Notes
2.0	191121	Submitted to Australian Government 191121 for feedback.
3.0	221121	Draft completed with comments.
4.0	220122	All comments are included. Version for the Australian Government.
5.0	090222	All comments are included. Version for the Board of SQ Landscapes.
6.0	030322	Version endorsed by Board of SQ Landscapes.

RESTORING FLOODPLAINS – CUNNAMULLA

CONTENTS

TABLES AND FIGURES

GIRRAWEEN NATIONAL PARK

COMMUNITIES LIVE IN LANDSCAPES

Communities have a special relationship with the Landscape. First Nations have been part of the Landscape of Australia for over 65,000 years.[1] Regional communities are particularly connected and heavily reliant on each other and the Landscape to provide goods and services, more so than in larger cities to the east.

The Southern Queensland Region can be viewed as three distinct sub-regions that are inextricably linked by relationships between communities, waterways, bushland, and stories of the Landscape (Figure 1):

- The South West with its mulga lands at the centre of a grazing industry (includes the Mulga Lands bioregion hosting extensive rangelands)
- The Maranoa Balonne and Border Rivers with a bit of everything in industry and vegetation including trap rock granite country and the cropping lands of the river delta on the border with NSW (includes two bioregions—the Southern Brigalow Belt and the Mulga Lands)
- The Condamine with a major river emanating in the Border Ranges weaving its way through extensive areas of cropping

The Region is home to approximately 245,480 people with the majority living in greater numbers in the east (around Toowoomba). Figure 2 shows where people live in the Region. The large distances between communities in the west present particular logistical challenges for communication and action.

The region's range of climates and soils allow a variety of cereal, pulse and fibre crops to be grown both dryland and irrigated including wheat, barley, oats and chickpeas in winter; sorghum, sunflower, maize and cotton in summer; horticultural crops (fruit and vegetables); and some viticulture. Other significant land uses include forestry and intensive animal production. The Region has significant pastures of Mitchell grass and *Aristida/Bothriochloa* species of grasses that support browsing and grazing by sheep, cattle, goats, and native animals. Figure 3 shows the large areas of grazing and the concentrated areas of higher quality soils for food and fibre production.

[1] Clarkson, Chris, et al. (2017) "Human occupation of northern Australia by 65,000 years ago." Nature, vol. 547, no. 7663, 2017, p. 306+.

UPPER MARANOA – MITCHELL

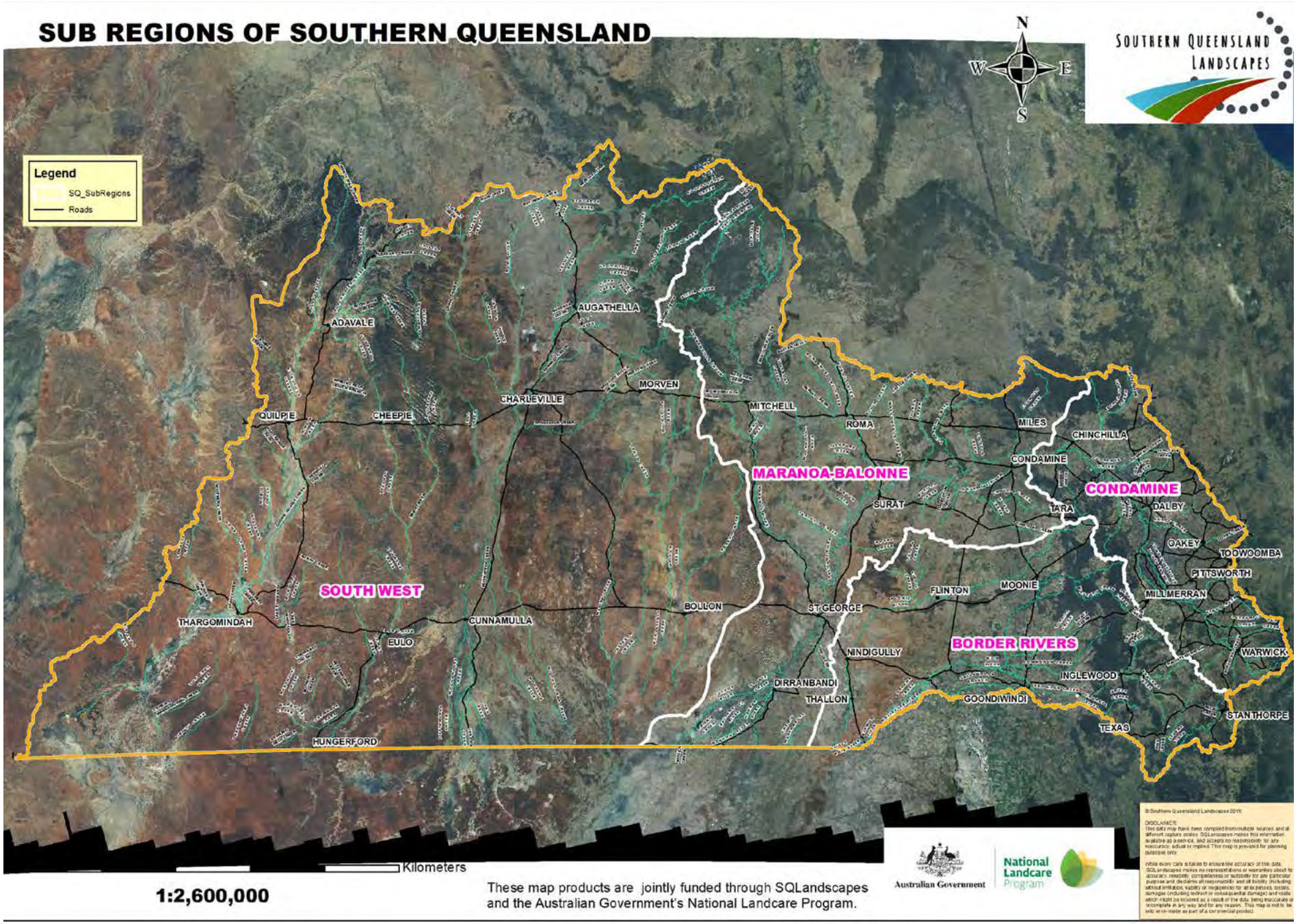
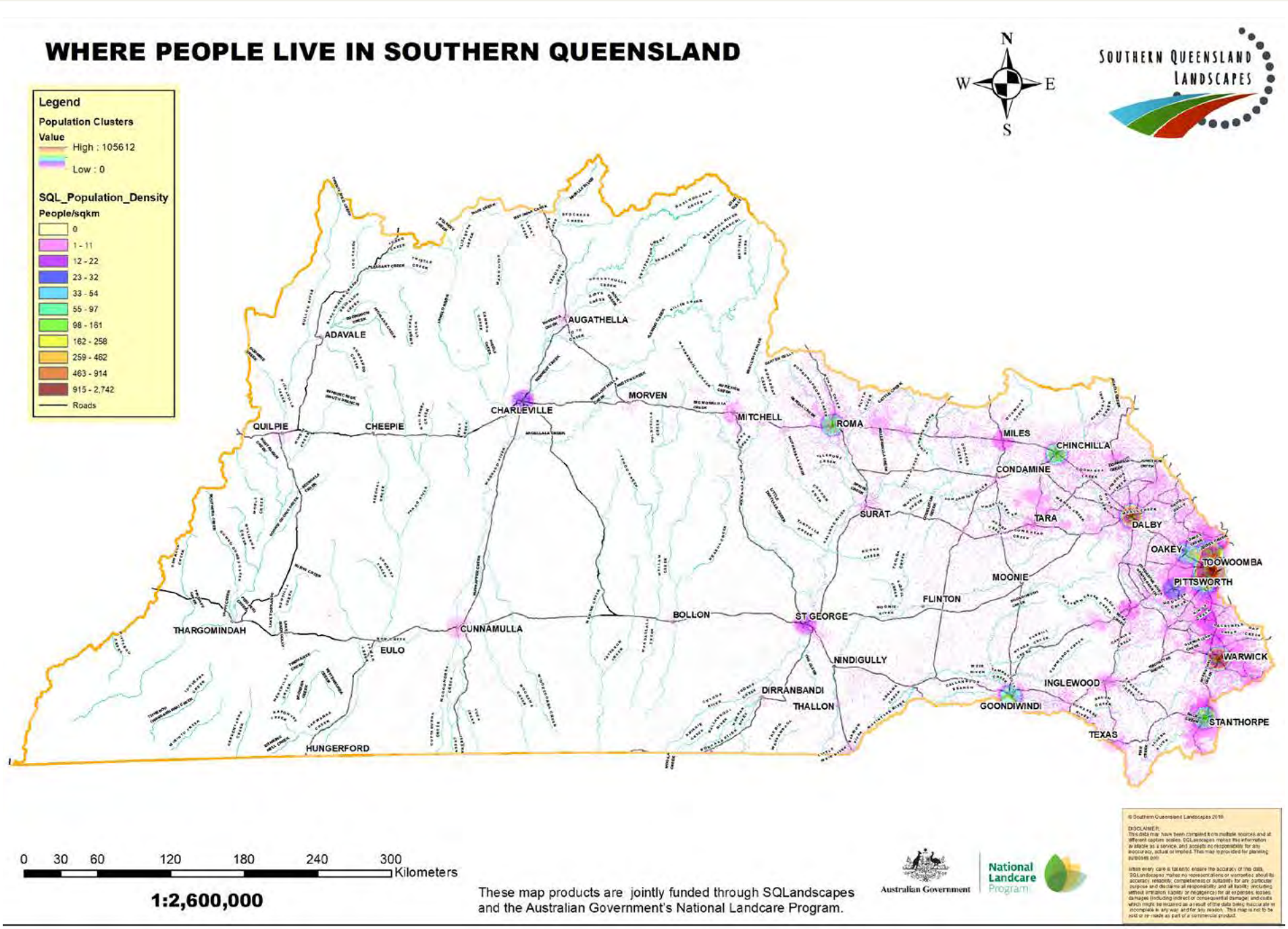


FIGURE 1: MAP OF SOUTHERN QUEENSLAND REGION

FIGURE 2: WHERE PEOPLE LIVE IN THE LANDSCAPES OF SOUTHERN QUEENSLAND



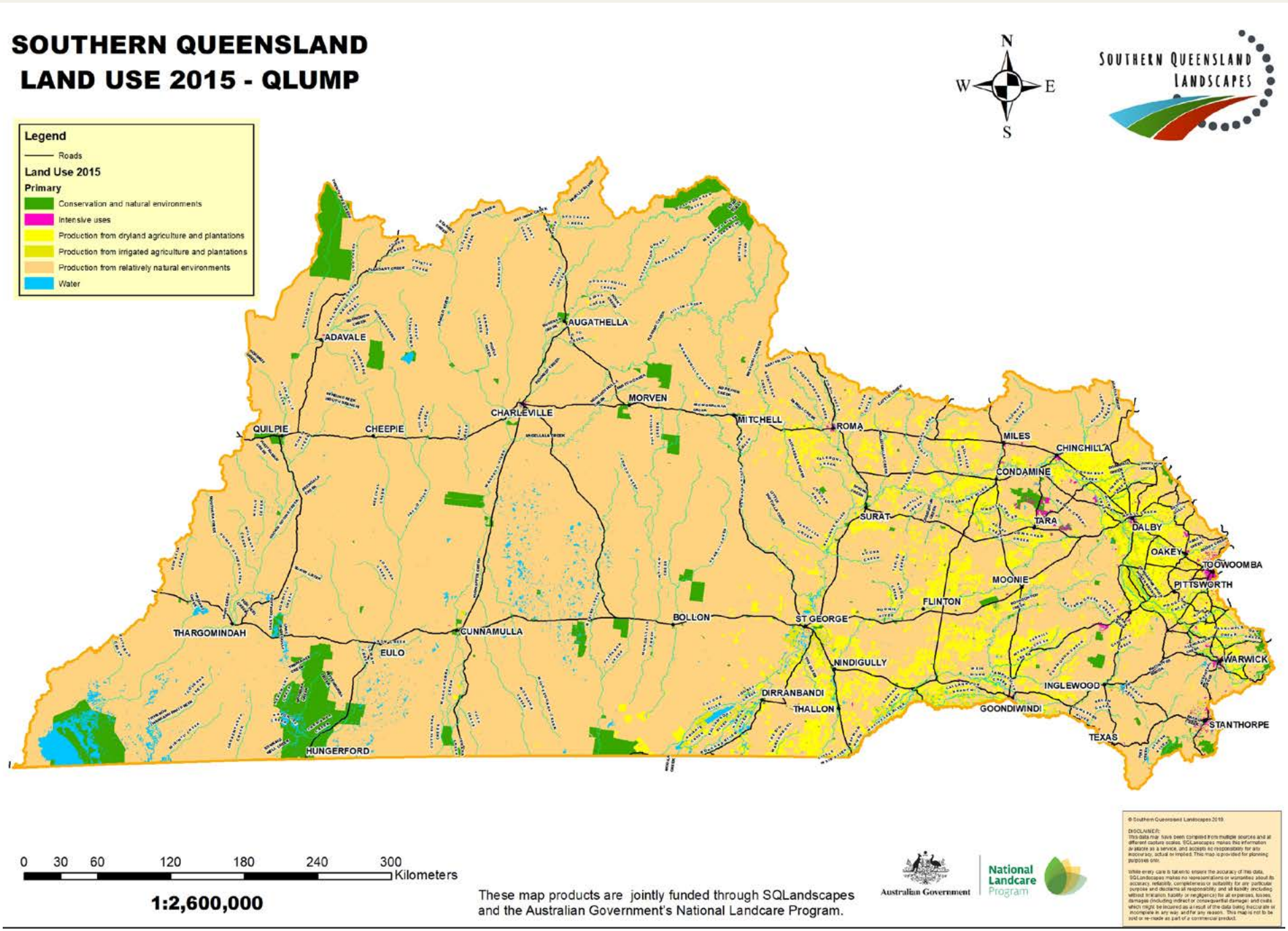


FIGURE 3: LAND USE IN SOUTHERN QUEENSLAND

The Landscape and soil have been key determining factors in shaping where and how people live in the Region.

The soil underpins economic, social and infrastructure networks; the Community live on it, grow food in it, it is the foundation of many major engineering works, and water is stored in it. This has led to a diversity of land uses (Figure 4) and industry (Figure 5).

All types of people occupy the Landscapes of Southern Queensland. They have shaped the region, as the region has shaped them.

There is also a broad range of plant communities (or unique regional ecosystems) including:

- the Mulga lands (*Acacia aneura*) of the South West
- Brigalow country (*Acacia harpophylla*) throughout the central east of the region
- native grasslands through much of the floodplain areas
- Gondwana rainforests in the south-east
- large wetlands on the border with New South Wales

The Community connects with these landscapes in many ways, from their backyards and urban parklands to National Parks and other public estates. These areas provide many benefits including oxygen, water, nature conservation, timber, and public recreation. There are 109 State Forests (approximately 10,550 km^2 or 3.4% of the whole region) and 61 national parks (approximately 7,700 km^2) in the region (Table 1).

Communities hold the stories and memories of what has happened in the past, what has worked and what hasn't worked. This is the basis for moving forward.

A new passion in the Community especially in the younger generation is providing hope for a new wave of connection and love of the land and an embracing of the regional lifestyle.

People are assembling and organising themselves across the region to work together in different ways to nurture flourishing landscapes as the basis for healthy communities.

The Community is healing Country so that the Landscape and Community can bounce back from economic and extreme events now and into the future.

TABLE 1: NUMBER, AREA AND PERCENTAGE OF PARKS, NATURE REFUGES AND STATE FORESTS IN SOUTHERN QUEENSLAND

	Number	Area (ha)	% of the region	% of the total area of Qld's parks, Refuges and State forests	% of the total area of Queensland
National Parks	61	772,525	2.5%	5.4%	8.2%
Nature Refuges	56	694,284	2.2%	10.7%	15.6%
State Forests	109	1,055,427	3.4%	15.2%	29.5%

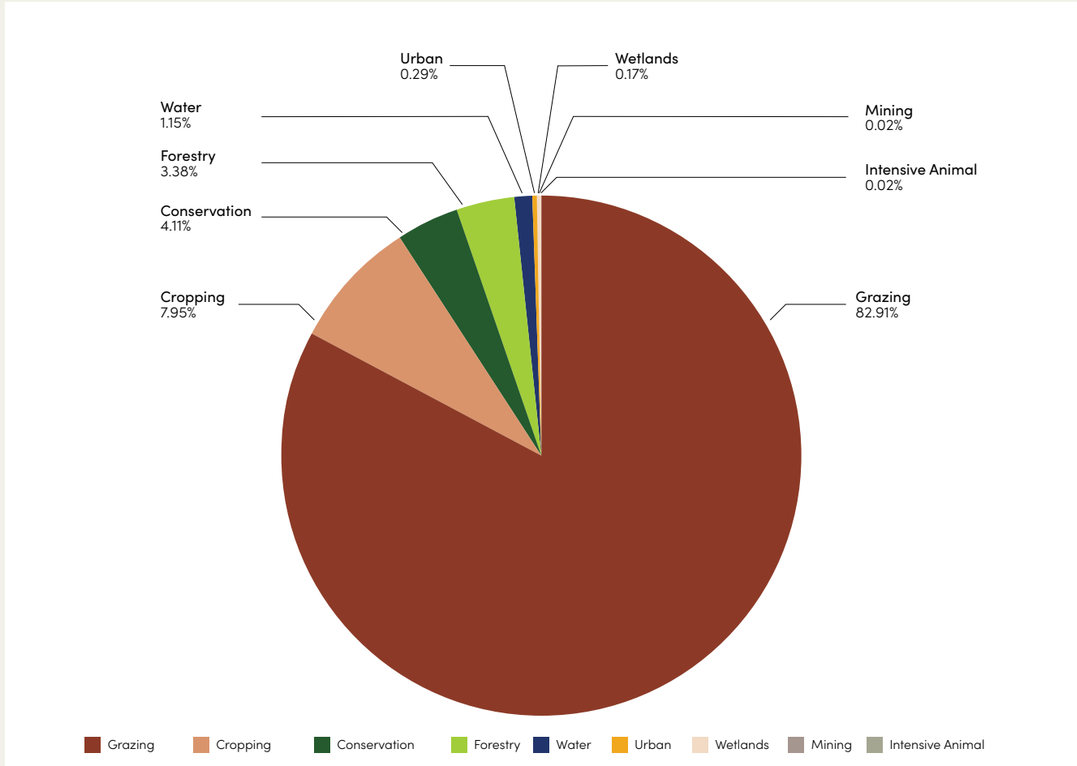


FIGURE 4: SOUTHERN QUEENSLAND LAND USE 2015

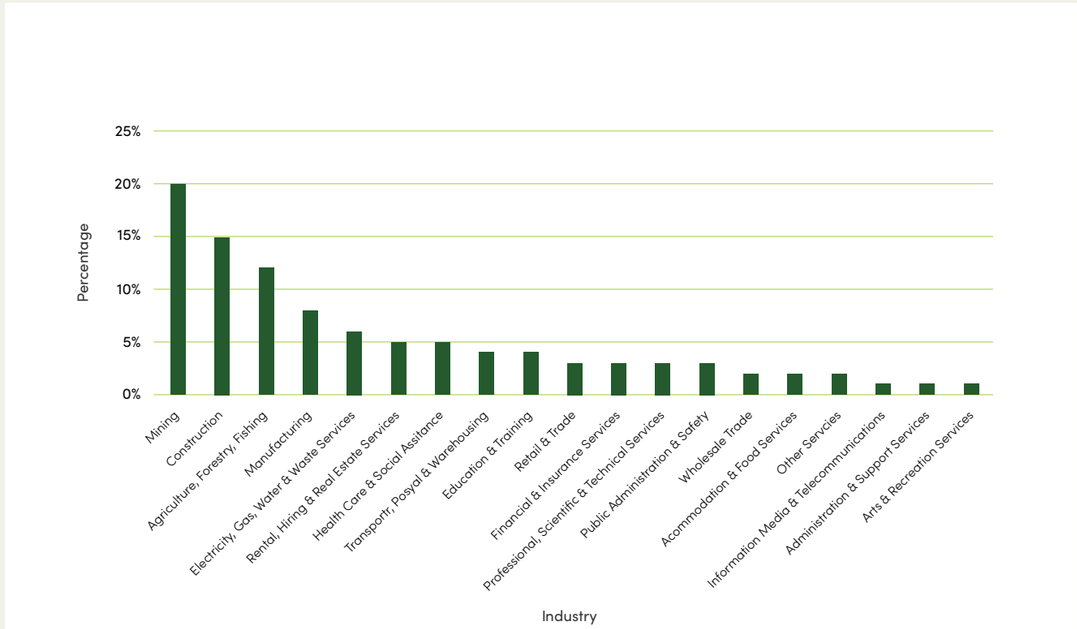


FIGURE 5: INDUSTRY AS A PERCENTAGE OF TOTAL VALUE IN 2018–19 FOR SOUTHERN QUEENSLAND REGION

Source Fig. 4: Queensland Land Use Mapping Program (QLUMP)

Source Fig. 5: Australian Bureau of Statistics, Regional Population Growth, Australia 3218.0, economy.id.

FIRST PEOPLES IN THE LANDSCAPE

Ancestors of the 28 First Nations of Southern Queensland have navigated changes in climate as it cycled from wet to dry periods over tens of thousands of years.

These First People responded to the rhythms of the Country and added their own beats to the music of the Landscape.

Landscapes took on great cultural significance as they revealed their stories. These stories have been passed down through words, art, carving, song, music, and dancing over thousands of generations.

This inherited knowledge and science places responsibilities on First People to act appropriately on Country as they are watched and guided by 'the Old People'.[2]

Elders administer the lore and ensure adherence to the protocol. Observing protocol and acting appropriately on Country for First Peoples means speaking for Country, smoking (cleansing) of place, silence, or giving a portion of harvested resources back to Country as a sign of respect.

First Peoples journey in these landscapes has been a long and often challenging one that continues today. They have endured separation from their cultural landscapes and experienced many hardships as a result of changes to natural and cultural asset management.

First People have maintained a connection to the Landscape and are playing an active role in ongoing custodianship. A combination of First Nation science and knowledge and other technologies is now required to heal Country. Representation on boards and committees etc. that are planning and making investment decisions will enhance the inclusion of First People's knowledge in the process of healing Country.

First Nations are landholders in Southern Queensland and manage several properties including Indigenous Protected Areas (IPAs).[3] There are also areas under Native Title where First Peoples continue their ongoing custodianship and connection to cultural landscapes.[4]

Many organisations have worked with First People on Reconciliation Action Plans (RAP) to embed the principles and purpose of reconciliation. For a list of organisations with RAPs in Southern Queensland see the Reconciliation Australia webpage.

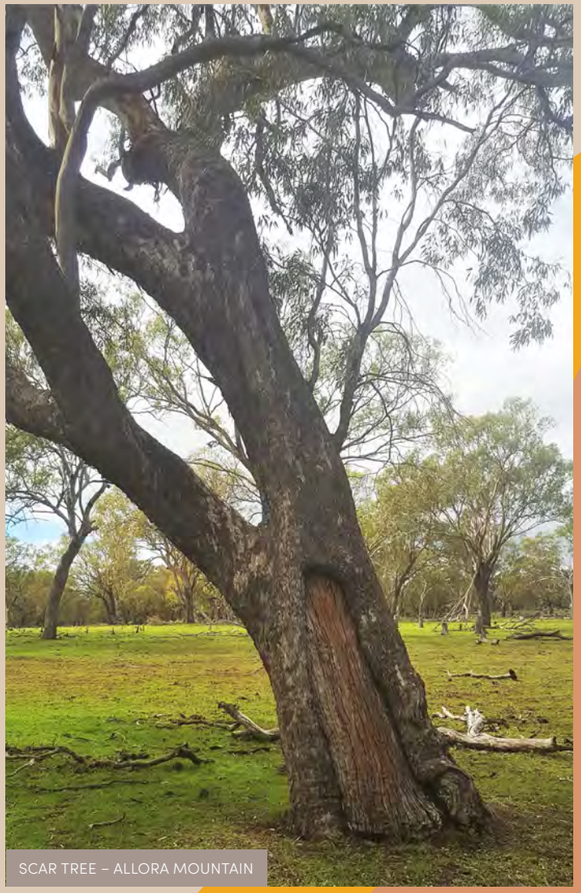
Southern Queensland Landscapes' Reconciliation Action Plan can be found here.

[2] Queensland Murray-Darling Committee Inc (2008) Regional Caring for Country Plan, Queensland Murray-Darling Committee Inc. Aboriginal Program, Toowoomba.

[3] IPAs combine traditional and contemporary knowledge into a framework to leverage partnerships with conservation and commercial organisations and provide employment, education and training opportunities for Indigenous people. niaa.gov.au/indigenous-affairs/environment/indigenous-protected-areas-ipas viewed 29 March 2022.

[4] National Native Title Tribunal (nntt.gov.au/assistance/Geospatial/Pages/Maps.aspx) viewed 24 March, 2022.

ROCK ART – CARNARVON GORGE



SCAR TREE – ALLORA MOUNTAIN

ROCK ART – CARNARVON GORGE

COLLABORATIVE PRICKLY PEAR MANAGEMENT ON COUNTRY

CULTURAL BURNING WORKSHOP – SOUTHERN DOWNS

WHAT SORT OF FUTURE DO WE IMAGINE?

Communities across the Region in South West Queensland, the Maranoa Balonne, Border Rivers and the Condamine have expressed their aspirations for the future through many years of conversations and planning both locally and regionally with industry and governments.

These conversations have informed the following community vision for Flourishing Landscapes and Healthy Communities in Southern Queensland:

Flourishing landscapes with diverse native species, healthy wetlands and other waterways, and vigorous soils supporting viable, healthy, and connected communities and industries that value and protect natural and cultural systems.

In more general terms regional communities across Australia have specifically identified the need to feel safe and have access to:

- affordable decent housing
- high quality health services
- the natural environment
- good job prospects[5]

These items directly and indirectly require a flourishing landscape. A vibrant Landscape relies on the Community having these needs met to enable them to respond to the challenges and opportunities that are part of a changing world.

Flourishing landscapes and human health are one in the same. The quality of life and the health of Australians is underpinned by having clean water and air, safe food and housing, recreational opportunities, protection from pollutants and the means to prevent and control disease.

There has been significant investment and hard work over many years to enhance the health of natural and cultural assets and the economy and community that rely on these assets. There is a renewed momentum across the Region from individual landholders in towns and on farms, to whole industries looking at what can be done differently to nurture Flourishing Landscapes for Healthy Communities.

The actions and commitment from the people of Southern Queensland is the key to achieving the Community's collective vision. Everyone is coming from a slightly different starting point with different values, knowledge, and resources, resulting in different ideas of how to achieve a flourishing landscape.

Although many people are well underway with changing the way they do things, it is recognised that change takes time, both for people and the Landscape. Funding support is limited, and so a collaborative approach is required to share knowledge and support members of the Community at whatever stage they are at along the pathway to flourishing landscapes.

Coordinated regional action and requests for funding and support is a priority. This can enable our endeavours, both big and small, in backyards and paddocks to help achieve collective outcomes greater than individuals, industries or governments acting alone.

"We are learning and building on our past as we look to the future."[6]

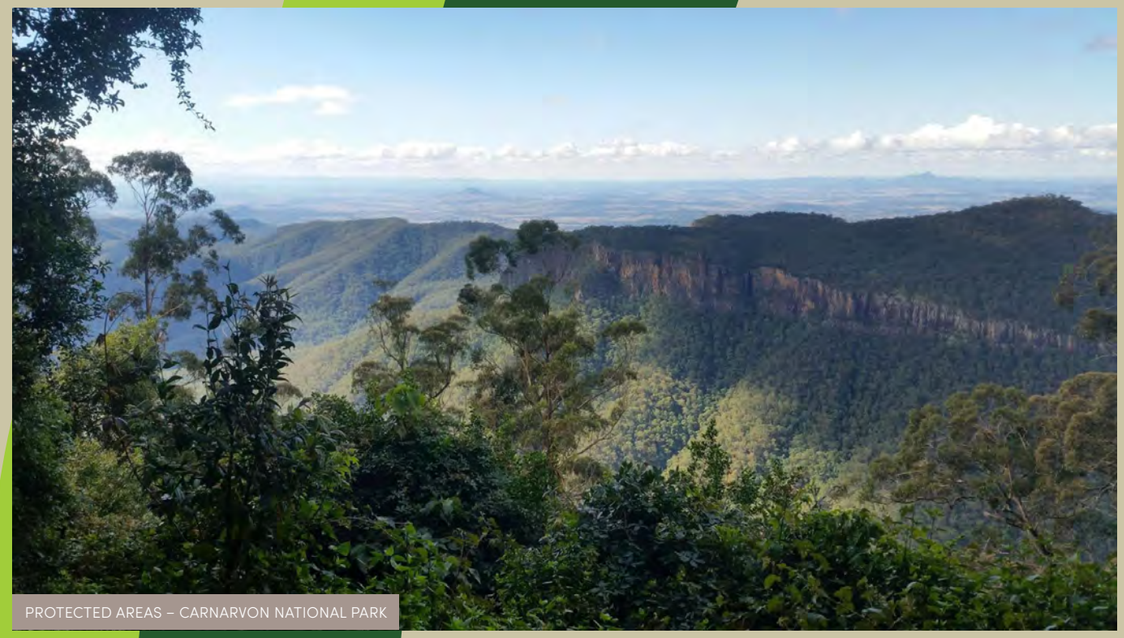
[5] Ipsos (2020) Life in Australia 2020 Understanding liveability across regional Australia, viewed 23 March 2022 (ipsos.com/en-au/life-in-australia)

[6] Community Roundtable.

COLLABORATIVE SOLUTIONS – MILLMERRAN

VIGOROUS SOILS FOR CROPPING – ALLORA

DIVERSE LANDSCAPES – GRANITE BELT



PROTECTED AREAS – CARNARVON NATIONAL PARK

THE LANDSCAPE IS A COLOURFUL CHARACTER

The most important part of the Landscape is the soil. Soils underpin, literally and figuratively, all the processes that support human societies and economies and, indeed, all other terrestrial life on earth.

Soils contain their own diversity with a vast number of living organisms and non-living elements that assist in providing raw materials, maintaining soil structure and fertility, water filtration, breakdown of wastes, pest control, regulation of atmospheric composition, carbon sequestration, regulation of water and wind flows across landscapes and maintenance of the water cycle.[7]

Apart from areas of rich productivity like the Darling Downs, Australian soils generally have less organic matter and poor structure and tend to be clay rich near the surface compared with those in the Northern Hemisphere. In the main Australian soils are old and fragile and prone to damage and erosion, especially when subjected to unsustainable practices.

Even with the addition of water, many of the soils are not very productive in a traditional commercial sense. The clayey characteristics of a large number of Australian soils tend to restrict water drainage, impede root growth and, due to their 'shrink and swell' nature, impact engineering and farming.

The diverse underlying geologies of the region give rise to 109 different land types which have specific stewardship requirements if they are to flourish (Figure 6).[8]

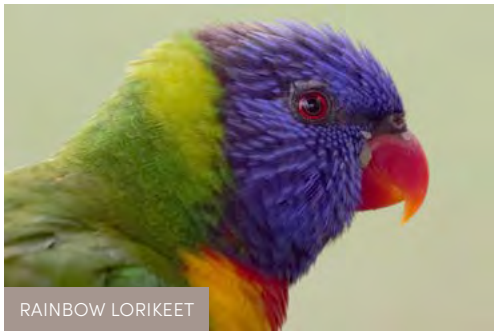
The restrictive and fragile nature of many of these soil types limits land use options. It also requires soil management practices that are responsive to highly variable seasons to maintain viability into the future.

[7] Dominati E., Patterson M. & Mackay A. (2010) A framework for classifying and quantifying the natural capital and ecosystem services of soils. Ecological Economics 69, 1858-68.

[8] For more information on land types see futurebeef.com.au/knowledge-centre/land-types-of-queensland/ viewed March 2022.

BUNYA TREE

MULGA ON RANGELANDS NEAR QUILPIE



RAINBOW LORIKEET

GIRRAWEEN NATIONAL PARK

UPPER MARANOA

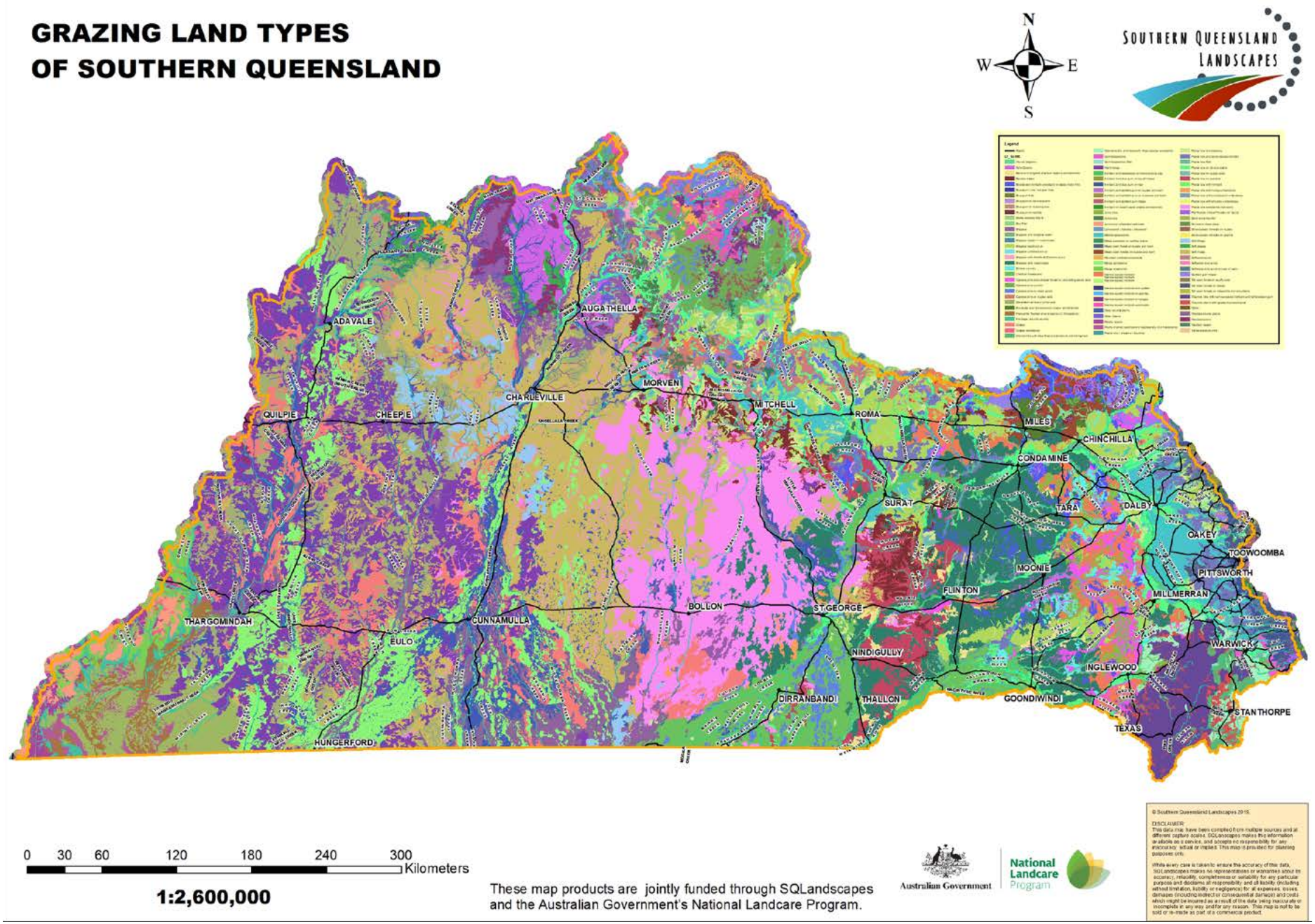


FIGURE 6: GRAZING LAND MANAGEMENT LAND TYPES OF SOUTHERN QUEENSLAND

CULTURAL LANDSCAPES

Land, water and skyscapes, contain and carry significant values and meanings for First Nation People, including songlines of connection to Country. Songlines can be understood as ancient trade routes and walking tracks. People would 'sing' (acknowledge through song and ceremony) the Country as they travelled from one place to another.

Significant stories of creation and songlines are present in the Landscape as geographic forms, making nature and culture intrinsically linked.

The Landscape contains visible evidence of these stories and cultural heritage including:

- wells
- ceremonial places
- scarred or carved trees
- burial sites
- rock art
- fish traps and weirs
- occupation sites
- quarries and artefact scatters
- grinding grooves
- contact sites

The Landscape also contains less visible elements of cultural heritage and connection which flow through the Landscape as powerful life forces. Thus, the whole Region can be considered as a cultural landscape, since it contains the cultural, spiritual, environmental, and ceremonial values intrinsic to First Nation culture.

Respecting these critical flows requires an integrated approach to planning and action. First Nation People must be involved at the beginning of planning processes to ensure these elements are acknowledged and reflected in outcomes.

Legislation also makes explicit the right of a person to enjoy the normal and allowed use of their land to the extent that they don't harm Aboriginal heritage.[9] The *Aboriginal Cultural Heritage Act 2003 (Qld)* and *Torres Strait Islander Cultural Heritage Act 2003 (Qld)* create a positive duty of care. Any person who performs an activity must take all reasonable and practicable measures to ensure that the activity does not harm the cultural heritage of Aboriginal or Torres Strait Islanders. This is called the cultural heritage duty of care.

There are also legislative requirements to inform and consult First Nations about any future acts that may affect their interests.[10]

First Nation communities have strong connections to Country, and totemic relationships with certain plants and animals. "Throughout history, native plants, animals, and other biological materials have been removed without the consent of Indigenous people. In many cases, Indigenous knowledge was also taken without permission – and Indigenous people rarely benefited from the commercial products developed as a result."[11]

To address these issues the *Biodiscovery and Other Legislation Amendment Act 2020 (Qld)* stipulates that anyone engaging in biodiscovery must take all reasonable measures to form agreement with the custodians of Indigenous knowledge being used. This includes a benefit-sharing agreement.[12]

[9] *Aboriginal Cultural Heritage Act 2003* Section 21

[10] National Native Title Tribunal (nntt.gov.au/futureacts/Pages/default.aspx) viewed 24 March 2022.

[11] Jefferson, D., Robinson, D., Claudie, D., Bosse, J. and Raven, M. (2021) Australia's plants and animals have long been used without Indigenous consent. Now Queensland has taken a stand (theconversation.com/australias-plants-and-animals-have-long-been-used-without-indigenous-consent-now-queensland-has-taken-a-stand-144813)

[12] *Biodiscovery and Other Legislation Amendment Act 2020* (Qld) (legislation.qld.gov.au/view/html/asmade/act-2020-027)

GUMMINGURRU FIRST NATION STONE ARRANGEMENT ON THE DARLING DOWNS – SOUTHERN QUEENSLAND (IMAGE: NATHAN MORRIS, ABC)

SCAR TREE – JIMBOUR

ROCK WELL - WEENGALLON

TRUST, RESPECT AND ATTACHMENT TO LANDSCAPE

"We need a pathway based on trust, coordinated partnerships and real action."[13]

The Flourishing Landscapes and Healthy Communities Pathway in Figure 7 was developed by the Community at gatherings across Southern Queensland during 2020 and 2021. The Pathway shows how the Community are adapting to the "new normal". The discussions were based on renewed hope, a desire for partnerships, and action based on trust – trust between sectors of the Community, industry and government (Figure 7).

The Community acknowledge the world has changed and we must heal Country so that the Community and economy can continue to "weather any future storms."

It is well accepted that Country, economies, and communities are intertwined and support one another. Positive actions for each will grow the capacity of the Region to achieve Flourishing Landscapes and Healthy Communities:

- Healing Country must restore soils as the foundation for healthy plants and animals and healthy waterways
- Healthy Economies rely on Healing Country — a healthy economy can promote and facilitate good stewardship of our landscapes
- Healthy Communities need Healthy Country on which industries and livelihoods can be based on

By growing each of these elements, everyone's actions (farmers, government, business, urban residents) can contribute to a flourishing landscape.

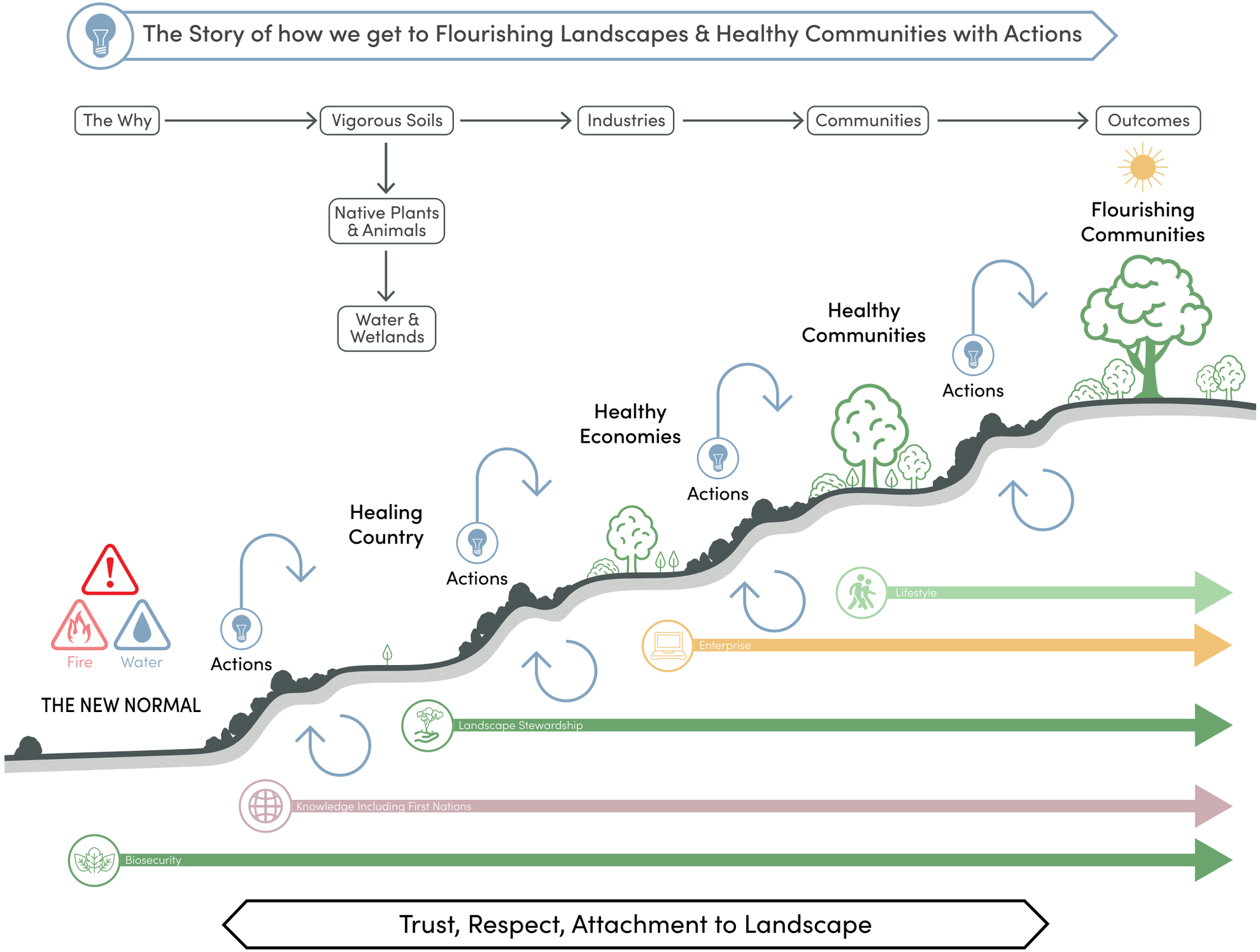
This Plan tells the story of how this Pathway can facilitate the sharing of information and the connections and tools required to achieve the Community's vision.[14]

[13] Community Roundtable.

[14] Community's Vision for Flourishing Landscapes and Healthy Communities in Southern Queensland pg. 18 in this Plan.

CULTURAL BURNING WORKSHOP - JIMBOUR

FIGURE 7: FLOURISHING LANDSCAPES HEALTHY COMMUNITY PATHWAY



THE NEW NORMAL — CHALLENGES FOR A FLOURISHING LANDSCAPE

A range of factors contribute to the creation of what the Community now call the New Normal (and/or New Dry). While it is often hard to describe what normal actually is, it is a fact that change is constant, and flexible approaches are required to take advantage of opportunities as they arise.

This section describes what the Community has identified as overarching challenges facing the whole Region.

Drought

Floods occur in Southern Queensland. However, drought and water scarcity are ever-present concerns.

In recent times the region has consistently experienced sustained periods of drought. Some local government areas have been drought declared for close to 50% of the last 60 years (Figure 8).

The amount of time spent in extreme drought has increased. Periods of extended drought are predicted into the future. A major consequence of these extended periods in drought are the reduced flows into the Murray Darling Rivers.[15]

Over the past 20 years, the flows of water from the Region have been approximately half that of the preceding century (Figure 9). More significantly, the frequency of drier years is also much higher.

This will create challenges for the availability of reliable water supplies for irrigation and, most importantly, to the natural rhythms of nature. Lack of available water for the environment has impacts on plants and animals and the cultural flows that are integral to First Peoples connection and ongoing custodianship of Country.

Figure 9 shows the large reduction in flows over time in the rivers that feed the Murray Darling Basin; the largest food bowl of Australia.

While the Millennium Drought of the 2000s and the last seven-year drought are important contributors to this situation, there is also a measurable underlying drying in the climate over the last 40-years. Fossil records from across Australia show that the 1996-2009 Millennium drought was larger and longer than any other drought in the previous 400 years.[16]

[15] Cobon, D.H., Terwijn, M.J. and Williams, A.A.J. (2017). Impacts and adaptation strategies for a variable and changing climate in the Eastern Downs Region. International Centre for Applied Climate Sciences, University of Southern Queensland, Toowoomba, Queensland, Australia.

[16] Freund, M., Henley, B. J., Karoly, D. J., Allen, K. J. and Baker, P. J. (2017). "Multi-century cool-and warm-season rainfall reconstructions for Australia's major climatic regions". Climate of the Past 13, pp. 1751–1770. DOI: 10.5194/cp-13-1751-2017. (doi.org/10.5194/cp-13-1751-2017)

[17] Murray–Darling Basin Authority 2021 (mdba.gov.au/sites/default/files/pubs/MDBA-Basin-climate-and-landscape-poster.pdf) accessed January 2022.

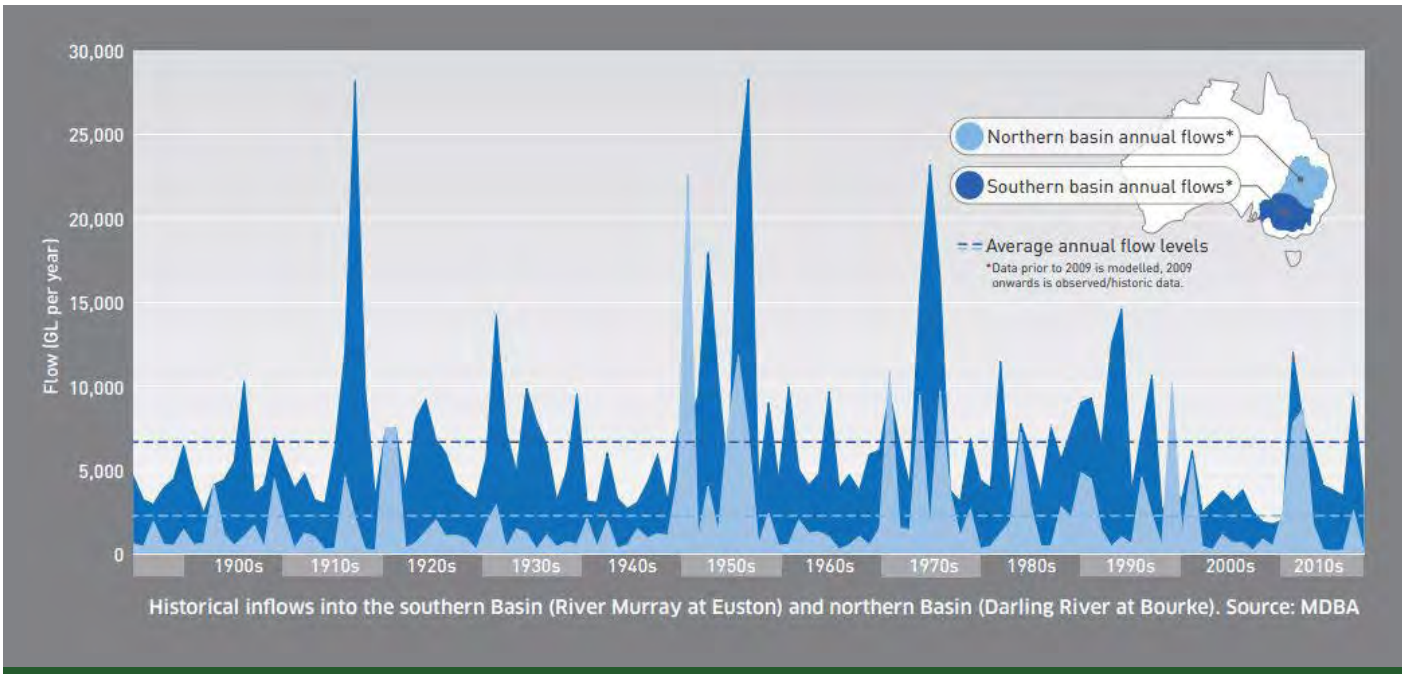


FIGURE 9: FLOWS INTO THE MURRAY DARLING RIVERS 1895–2013[17]

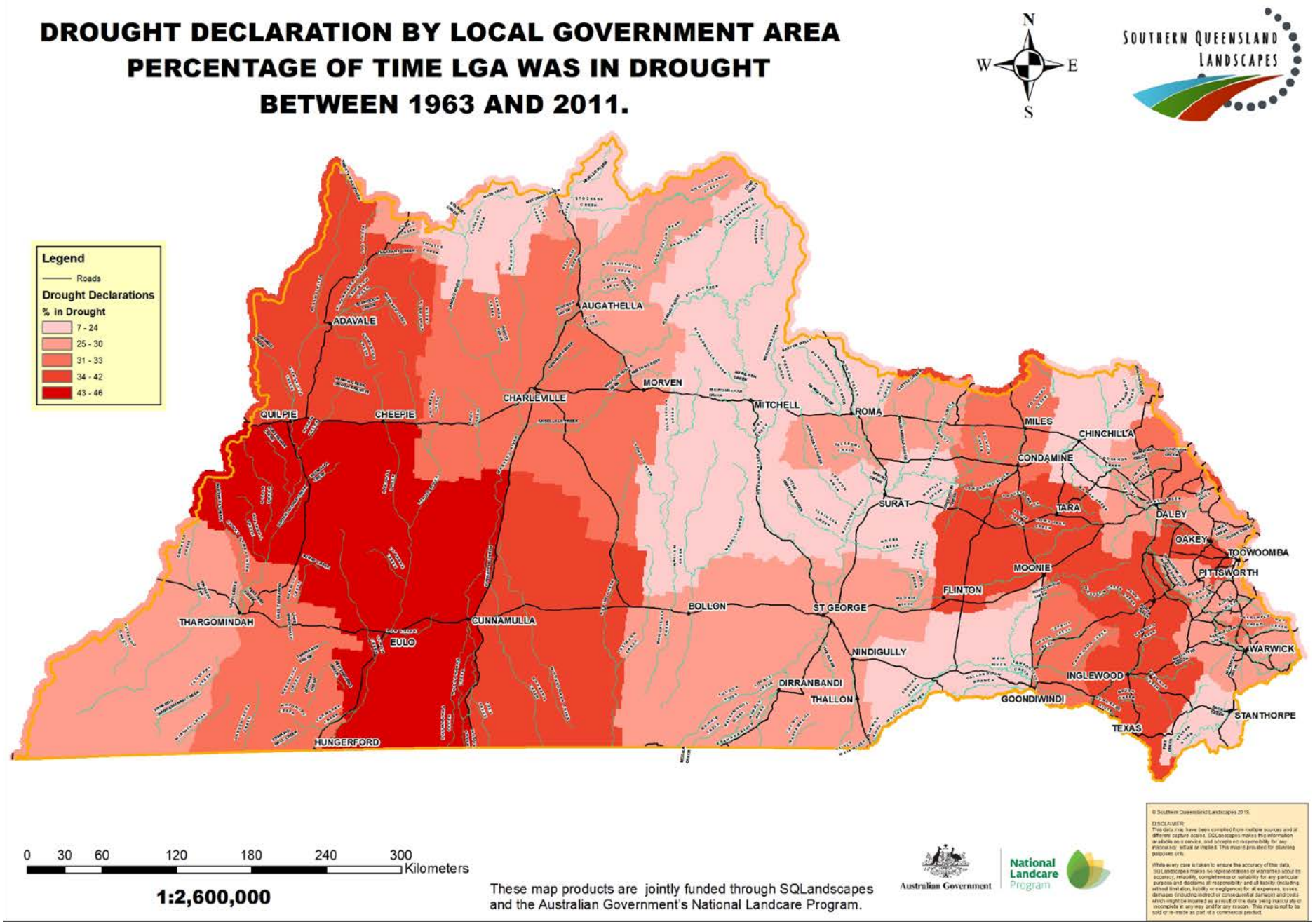


FIGURE 8: DROUGHT DECLARATION BY LOCAL GOVERNMENT AREA IN SOUTHERN QUEENSLAND (1963–2011)

Floods

Dry times are often broken by the other extreme of floods. The characteristics of the Landscape and the topography of the Region makes it highly susceptible to flooding. Figure 10 shows the large areas of the Region that are on floodplains. Many of these flood events have had impacts on the communities of the Region, including loss of life, extensive property damage, and major impacts on the economic productivity; particularly in the agricultural and resources sectors.

The Region can expect more intense and erratic rainfall events, including local events that may cause localised flooding.[18]

Fire

Fires both wild (unplanned) and planned are common in many areas across Southern Queensland. Figure 11 shows the number of years an area had a fire during the period 2010 to 2019 (cropping areas have been removed from the map).

The majority of bushfires in the recent past have damaged the country e.g. the seed bank has been burnt, hollows (which provide habitat) have been destroyed and erosion has occurred when ground cover is removed and rains follow.

Warmer and drier conditions with a higher frequency of electrical storms could increase the risk of wildfires in the future.

Consumer and market preferences

The landscapes of Southern Queensland are part of a global system of food and fibre production and consumption. Markets and consumers want to know that their favourite products are clean and green.

Companies are pressured to show their customers how they get their materials from sustainable sources.

This means that global investors will increasingly require transparency on the risk to sustainability from industry activities; investment decisions will incorporate high standards of environmental, social and governance (ESG) criteria.

Whole markets like the European Union are moving toward only accepting products that can show their sustainable journey from the paddock to people's plate or to the clothes on their back or the shoes on their feet.

The supply chains that provide input for industry and transport output from the region are often complicated and lengthy. These chains can be broken by global events such as pandemics (COVID-19) or by political decisions elsewhere in the world.

Industry can also be subject to disruption from changing consumer preferences and diet trends.[19]

There is also the public expectation for cheap food that does not take into account the real costs of producing this food in a sustainable way. This can drive farmers to focus on the production side of their operation to the detriment of the multitude of social, cultural and environmental benefits that landscapes provide. Land managers in Southern Queensland have said they would like to be seen as producers (stewards) of a range of goods and services (biodiversity, clean water etc.) rather than of a limited range of commercial food and fibre products. The recognition and support from the public for the true cost of food will support landscape stewardship as part of the new normal.

[18] Cobon DH, Terwijn MJ, and Williams AAJ (2017). Impacts and adaptation strategies for a variable and changing climate in the Maranoa and Districts Region. International Centre for Applied Climate Sciences, University of Southern Queensland, Toowoomba, Queensland, Australia.

[19] NFF KPMG (2019) A Return on Nature: Enabling the market for sustainable finance and ecosystem services, KPMG, Sydney.

FIRE IN THE LANDSCAPE

BALONNE RIVER IN FLOOD AT SURAT, 2011 (IMAGE: SANDRA NEILL)

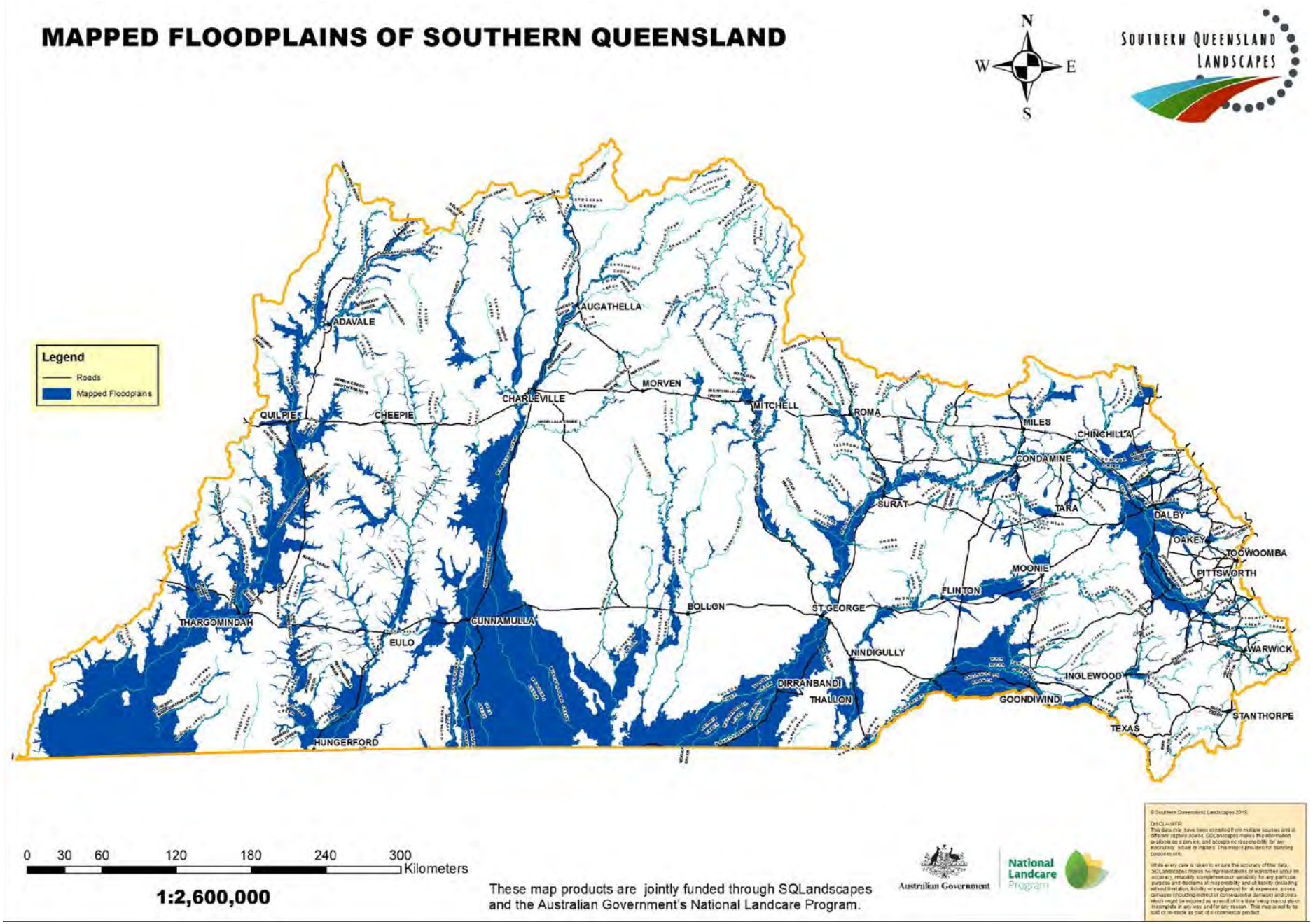
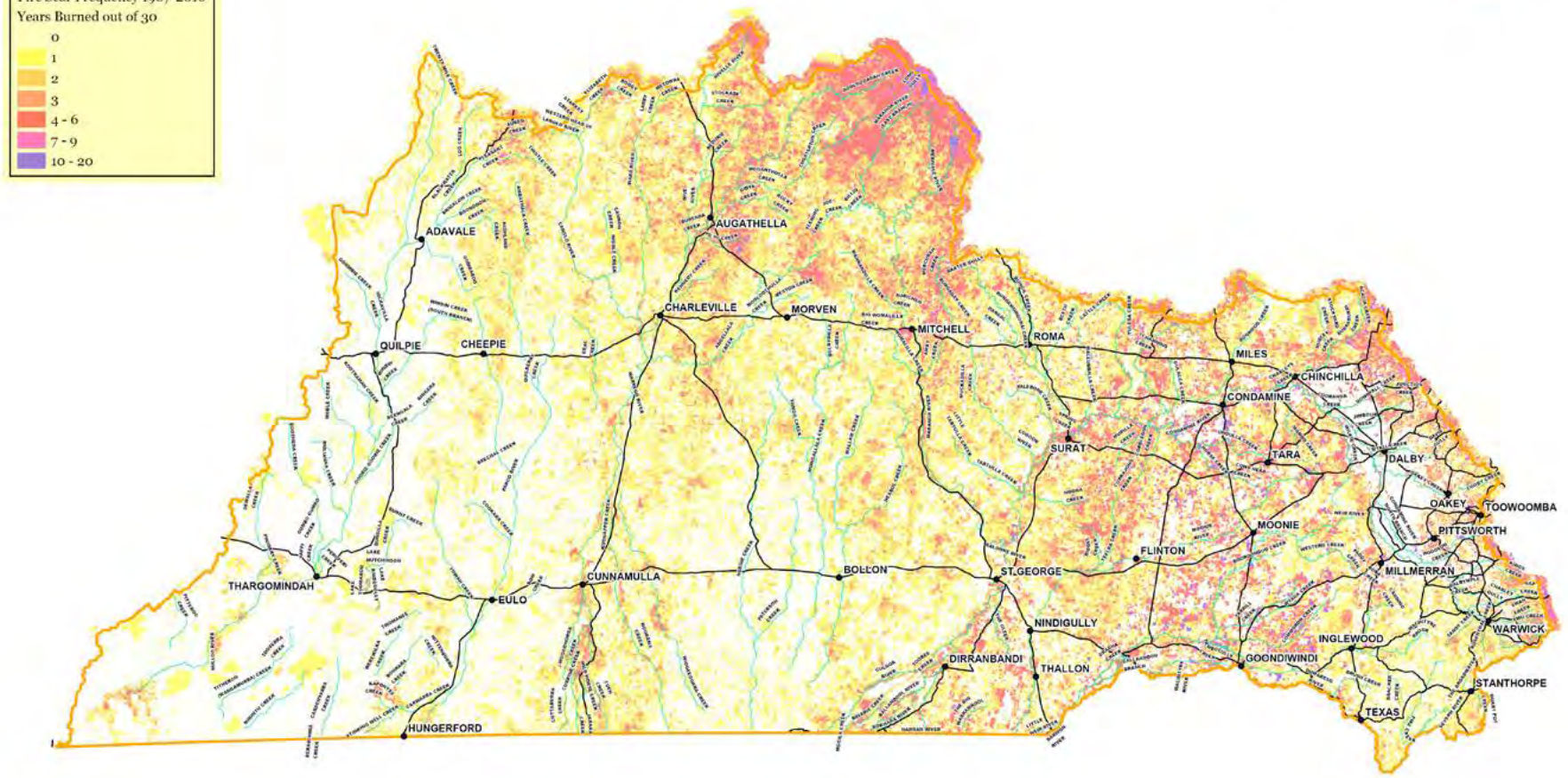


FIGURE 10: MAPPED FLOODPLAINS OF SOUTHERN QUEENSLAND

FIRE FREQUENCY OVER 30 YEARS



0 30 60 120 180 240 300 Kilometers

1:2,800,000

These map products are jointly funded through SQLandscapes and the Australian Government's National Landcare Program.

Australian Government | National Landcare Program

Carbon farming

As the world moves to reduce carbon in the atmosphere to avoid the full impacts from global warming, there has been a spike in carbon farming activities across the region. Some of these commercial investments have had unfortunate environmental and social impacts because many of the carbon farms are owned by absentee landlords or corporations. Some properties have caretakers, but the overall decrease in people and on-site managers has disrupted social networks and impacted the viability of some towns. The change in land management has interrupted the natural ecology and may lead to a deterioration in landscape health through a build-up in pests, wild fire and erosion.

Community capacity

18% of people in the Region are aged 65 years and over compared to 15.4% for the rest of Queensland.[20] The largest age group in the region is 45–64 years of age and many of these are farmers.[21] These older age groups are near retirement age so making big changes or borrowing money to make changes is not always attractive or possible.

5.0% of the population in the region identify as Aboriginal and Torres Strait Islander people.[22] The socioeconomic situation of many in the community particularly First Nations People often makes it hard to find the time and the resources to invest or be involved in healing country.

The work of volunteers is a significant input to healthy and prosperous communities with 23.3% of the Region regularly undertaking voluntary work compared to 18.8% across the rest of Queensland. At the 2016 Census, Quilpie Local Government Area (LGA) had the largest percentage of persons who undertook voluntary work at 36.1% of the population.[23] With the pressures of drought and fluctuations in population, volunteers are stretched and worn out. This creates a large hole in the capacity of these communities to invest in thriving landscapes.

The Community's capacity to participate in landscape stewardship is vital for Flourishing Landscapes and Healthy Communities.

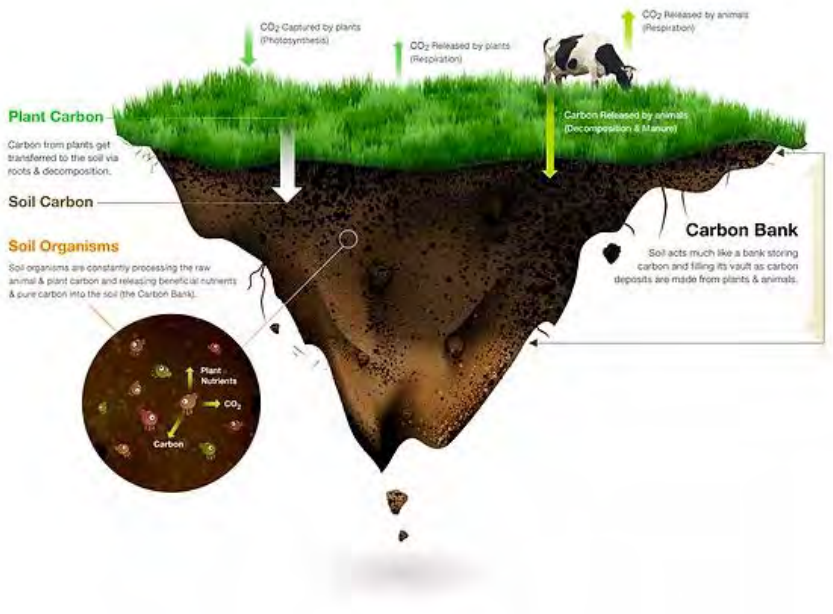
The demographic differences between people living in the Region and those living in larger cities have contributed to a growing disconnect between city and country. This makes it hard for land managers to tell the good news stories and basic stories about where people's food and fibre comes from. The capacity to do this storytelling is important to enhance understanding and support of landscape stewardship.

[20] The State of Queensland (Queensland Treasury) (2020) Queensland Regional Profiles: Resident Profile - people who live in the region, Queensland Government Statistician's Office, Brisbane.

[21] The State of Queensland (Queensland Treasury) (2020) Queensland Regional Profiles: Resident Profile - people who live in the region, Queensland Government Statistician's Office, Brisbane.

[22] The State of Queensland (Queensland Treasury) (2020) *op cit*

[23] The State of Queensland (Queensland Treasury) (2020) *op cit*



SOIL AS A CARBON BANK (IMAGE: AUSTRALIANSOIL.COM.AU)

Land prices

Land prices have gone up over recent years, which causes a number of issues by:

- Making it expensive to expand landholdings
- Creating difficulties for young people to purchase land
- Placing added pressure on the Landscape to produce an economic return that is perhaps beyond its biophysical (natural) capabilities.

Knowledge sharing

Everyone has knowledge born from life experiences or from various degrees of 'formal' education.

Getting the right information at the right time from a source land managers trust and can relate to is a challenge. This has been exacerbated by the loss of the network of government extension officers living and working in the Community. There are opportunities for providers and sharers of knowledge to support approaches to landscape stewardship that promote the best of past practices alongside new approaches (e.g. regenerative agriculture, soil carbon farming).

The very act of connecting across large areas to share knowledge is hampered by the variability of internet connection:

- 77.8% occupied private dwellings in the Region had internet access compared to 83.7% occupied private dwellings in Queensland
- Toowoomba LGA had the largest number of dwellings with Internet access while Paroo LGA at 35.2% is the largest percentage of dwellings without internet access[24]

Good internet is needed to participate fully in opportunities in the emerging digitally-enabled economy, and to access professional, health, financial, educational and other services delivered online.

Governments, including Local Governments, are investing to improve internet connectivity across the Region.

Pests

The management of pests such as wild dogs, pigs, rabbits, and weeds to reduce their impact on the environment, crops and infrastructure costs Queensland more than $700 Million a year, excluding uncosted environmental and social impacts.[25]

Human health

The psychological impact of the health of the Landscape also affects the energy levels of the Community. First Nations have a deep connection to Country and when it is "sick" so are its people.

Regulation

Regulation is not always easy to understand or apply in local contexts. The Community is asking for more opportunities to participate in the design of policies so that they can clarify the objectives of the legislation. Rebuilding trust between policy makers and land managers is a priority.

A fresh discussion on a combination of regulation and reward for good stewardship is needed.

Change (behavioural change, population, knowledge)

While land managers are in the main keen to hand on landscapes to the next generation in good or better condition, there can be little other reward for good stewardship.

Change takes time, both for people and the Landscape. The Community has experienced barriers to change including limited recognition of private investment that provides a good that the wider public expects. Despite this, the Community is rising to the challenge with many innovative approaches to working together and doing things differently underway.

The following section explores how the Community is working to address these challenges and Heal Country for Flourishing Landscapes and Healthy Communities.

[24] The State of Queensland (Queensland Treasury) (2020) Queensland Regional Profiles: Resident Profile - people who live in the region, Queensland Government Statistician's Office, Brisbane.

[25] Queensland Government (2016) Biosecurity (business.qld.gov.au/industries/farms-fishing-forestry/agriculture/overview/biosecurity)

REGENERATIVE AGRICULTURE WORKSHOP

FERAL PIG DAMAGE

GOOD QUALITY AGRICULTURAL LAND

RAISING AWARENESS OF THE IMPORTANCE OF BEES

COMMUNITY TREE PLANTING DAY

HEALING COUNTRY

The Community is responding to these and other challenges by connecting to landscapes and Healing Country. Actions are focussing on enhancing the vigour of soils and the diversity of habitats for plants and animals that rely on healthy soil and water to sustain economies and communities.

Land managers want to be recognised for good stewardship of Country. Land managers would like to be seen as producers (stewards) of a range of goods and services (biodiversity, clean water, etc.) rather than of a limited range of commercial food and fibre products. Investing in good stewardship would help them drought-proof their business and make regional communities more resilient.

First People have been stewards of landscapes for tens of thousands of years. The science and knowledge of First Nations is an integral component of Healing Country.

The aim is not to "lock up" land, but for stewardship to nurture productive landscapes that provide food, fibre, cultural values, and the biodiversity that all life depends on. This can support land managers to deliver positive social, environmental, and cultural outcomes for the Community, while also improving the financial sustainability of their own business.

CREEK BANK EROSION – LOWER EMU CREEK

VIGOROUS SOILS

Good stewardship starts with healthy, vigorous soils. Soils underpin all the processes that support human and economies and, indeed, all other terrestrial life on earth. Soils physically support plants and structures.

Healthy economies and communities need vigorous soils that can grow plants that provide habitat for birds and animals and the biodiversity that sustains all life on Earth.

Vigorous soils are often more stable and can resist erosion that otherwise damages fertile farming land and fills waterways and wetlands with sediment.

Agriculture in relatively natural environments is the most extensive land use in the Region (over 260,000 km^2 of grazing of beef cattle and sheep), although cropping dominates the eastern and central floodplains of the Region. The Condamine and Border Rivers are the primary irrigated cropping areas, although smaller areas also exist in other parts of the Region's floodplains.

Healthy and fertile soil is the foundation for farming, grazing and forestry. The quality and type of the soil, in part determined by underpinning geology, also influences the distribution of plant species and provides a habitat for a wide range of organisms. There are 109 different land types based on the different soils of the Region (Figure 6). These land types have specific requirements if they are to flourish.

Vegetation and the biodiversity it creates, can benefit from having more water in the Landscape for longer. The ancient floodplains are not soaking up the water like they used to thus starving the land of the life-giving moisture needed for plants, animals and food and fibre production.

In many parts of the Region, land managers are restoring floodplains by slowing (but not stopping) the flow of water as it travels into the Murray Darling Rivers.

This reduces soil erosion and improves ground cover. The improved ground cover is enhancing soil health including carbon sequestration and prolonging pasture growth in dry times that follow periodic rain. Land cover provides a variety of ecosystem services, such as helping to regulate water flow and maintain water quality.

Adequate land cover will be critical in the future as more intense storms are likely to increase runoff, reduce infiltration, reduce soil moisture levels and pasture and crop growth and increase the risk of soil erosion.

As vegetation and soil that support it start to work together, the health of the broader Landscape has been seen to improve.

What is the fuss about carbon?

Carbon is an essential component of the life support systems and the constituent of one of the three great cycles that sustain life (with water and nitrogen). Carbon is endlessly recycled between the soil, the atmosphere and the oceans via plants and algae.

As a general principle, carbon (contained in organic matter) in the soil enhances a range of beneficial indicators: it aerates, improving both drainage and water-holding capacity; it renders water and nutrients accessible to the roots; it buffers both acidity and alkalinity; it oxidises (neutralises) methane; it increases the landscape's capacity to respond to rain events; it aids efficient utilisation of nitrogen; it feeds microlife.

Most unhealthy landscapes are sick because their carbon status is low, resulting in compacted pasture, waterlogged toe slopes, eroded creek banks, boom and bust catchments.

Land managers can encourage and accelerate the carbon cycle through methods that increase plant production, such as improving nutrient management or sowing permanent pastures. For each unit of atmospheric carbon they remove in this way, land managers can earn "carbon credits" to be sold in emissions trading markets.

The Australian Government's Emissions Reduction Fund[26] provides a process for soil sampling, laboratory analysis and calculation of credits. This process aims to reward removal of atmospheric carbon, in the form of "Australian Carbon Credit Units".

The Queensland Government's Land Restoration Fund supports land managers to generate additional, regular and diverse income streams through carbon farming projects.[27]

While the potential carbon market can be an added bonus, regardless, soil carbon is good for farm resilience and productivity.

There are concerns in some parts of the Region about carbon farming models that leave vegetation unmanaged while it accumulates carbon and the undesirable impacts that this can have across the broader Landscape, economy and Community.

LANDHOLDER INSPECTING DUNG BEETLES

HEALTHY SOIL IS THE STARTING POINT FOR HEALTHY COUNTRY

[26] Australian Government Clean Energy Regulator- accessed January 2022 at cleanenergyregulator.gov.au/ERF

[27] Queensland Government's Land Restoration Fund (LRF) – accessed January 2022 at qld.gov.au/environment/climate/climate-change/land-restoration-fund

ACTIONS FOR VIGOROUS SOILS

Vision: Vigorous soils covered with plants for the majority of the time to produce food and fibre.

Issues	Community Goals	Jobs	Who can help with these jobs?
Reduced soil health. Some carbon farming models do not suit all landscapes. Pest plants and animals and biosecurity.	Maintain and enhance good quality soil by minimising soil loss and enhancing soil health. Enhance soil health by addressing erosion, compaction and the decline in organic matter. Increase soil carbon levels by increasing ground cover.	Improve soil health by: » Reducing areas of bare ground » Managing erosion including construction and maintenance of erosion control infrastructure (e.g. contour banks) » Planning on a catchment scale to coordinate the construction and maintenance of erosion control infrastructure » Managing soil salinity and acidification » Increasing soil organic carbon including: • increasing residue retention • using controlled traffic systems. » Increasing soil nutrients including balanced use of inputs such as fertiliser and chemicals	Land managers Industry Government SQ Landscapes Landcare
		Restore floodplains: » coordinated planning, construction and maintenance of infrastructure (between State Government, Councils, landholders etc). » designing and installing low profile contour banks » fencing of waterways and wetlands	Land managers SQ Landscapes Landcare Government
		Cap Great Artesian Basin water bores.	State Government[28]
		Adopt traditional burning practices.	First Nations Rural Fire Service (RFS) and Queensland Fire and Emergency Services (QFES) Landcare
		Manage total grazing pressure to optimise groundcover by: » applying a more conservative approach to stocking rates » adjusting stocking rates as local pasture productivity changes (whether increases or decreases) » increasing the robustness of pastures by encouraging regeneration of palatable perennial forage (where possible) - in particular a focus on the 3-P pastures of the Mulga lands of the South West has been identified as a priority for stewardship	Land managers Industry SQ Landscapes Government
		At a property scale – undertake and support Property Management Planning.	Land managers Industry SQ Landscapes Government
		Support the adoption of integrated and comprehensive industry led Best Management Practice programs.	Industry
Where to go for appropriate knowledge for best practice/ locally appropriate information?		The Australian Government is investing to help make information and support more readily available (RLP 5).[29] This investment aims to increase awareness and adoption of land management practices by increasing the number of land managers and the area of land where practices are adopted to: » manage soil acidification, » reduce the risk of soil and nutrient loss from wind erosion, » reduce the risk of soil and nutrient loss from hillslope (water) erosion, » increase soil organic carbon, and » protect and enhance on-farm biodiversity and native vegetation[30]	SQ Landscapes is coordinating planning and action for this Australian Government investment.

[28] Great Artesian Basin rehabilitation program (business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/great-artesian-basin/rehabilitation-program)

[29] See Appendix A for information on the Regional Land Partnerships (RLP).

[30] RM Consulting Group (2018), Regional Land Partnerships Evaluation Plan – Final Report, Department of the Environment and Energy 51

PLANTS AND ANIMALS

Over 262 unique plant communities (regional ecosystems) including 11 threatened ecological communities provide habitat for 1,162 animal species, 4,309 plant species and 991 fungi species that call the Region home.[31]

This natural environment is central to the quality of life enjoyed by the Community and the economy. The environment provides oxygen, food, fibre, and water as well as recreational and cultural benefits. The preservation of native species is one way of ensuring these life-giving services are available for future generations.

The lives and very being of First People are based on these interactions and relationships – everything and everyone are connected and dependent on each other.

Plants and animals have nourished First Nations both spiritually and with food, medicine and other resources for thousands of years. The availability and abundance of bush tucker is an important issue for First Nations in the Region. The Region's First Nations would like to see flora and fauna species of importance to them restored and protected, especially those noted as 'at risk'. Through greater awareness and understanding, First Nation communities and the wider community need to appreciate the importance of these species and their cultural value. First Nation People will be involved in the planning and management of species of importance to them.

The Landscape traditionally had its own checks and balances supported by the active land management practices of First Nations. This includes cultural burning and the practice of taking only what is needed. The practice of beneficial take was regulated by strict cultural protocols linked to totems and kinship.

As the climate and Landscape of Southern Queensland have changed over thousands of years so have the plants and animals. Some areas of the Region have not experienced the extremes of climate and different types of plants and animals have survived relatively unchanged for thousands of years.

These areas, called refugia, provide the best chance for many plants and animals to survive in the future. They are also important areas for providing good quality water, outdoor recreation and tourism, inspiration, etc.

Special places of refuge for plants and animals and people include the lakes of Currawinya, Granite Belt Highlands, Gondwana World Heritage Rainforests, Bunya Mountains, and the Upper Maranoa area; however, numerous smaller areas scattered across the Region also form a network of key areas (including wetlands). Rivers and streams also provide important pathways for plants and animals to move between areas. Persistent waterholes along the river systems provide aquatic habitat during extended periods of low or no flow and, as a result, are referred to as 'refugial waterholes'.

Information on exactly where particular species exist and the condition of habitats is limited due to the resources required to collect this information across such a large Region. Therefore nature conservation requires a landscape-scale approach that avoids managing individual areas of habitat and species in isolation from the wider Landscape.

[31] Queensland Government (2020) Generalised distribution and densities of Queensland wildlife. Species codes – Conservation status of Queensland wildlife | Open Data Portal | Queensland Government

PINK MULLA MULLA *PTILOTUS EXALTATUS* – CURRAWINYA

Fire as a positive spirit

Fire is a natural part of a flourishing landscape and can be as important as rain as it heals Country when done properly.

Fire as a positive spirit is used by First Nations as a land management tool and food gathering technique.[32] It has had significant influence on the type and structure of plant communities in existence today.

First Nations, land managers and Rural Fire Brigades are working together to share knowledge and implement fire practices in tune with the Country, seasons, and legal requirements for burning. Cultural burning must acknowledge the traditional lores and customs of the First Nation on whose Country cultural burning is to be demonstrated or practised. Burning must also be planned and carried out within legal and legislative frameworks.

The Community has acknowledged that the best times of the year for burning have changed in recent years. It can be a big ask to burn standing feed when you are not sure when the next shower of rain is coming to freshen things up. Being agile and flexible in tune with changing seasons is one way land managers are dealing with this uncertainty as they reinstate traditional land management practices.

The Queensland Parks and Wildlife Service and Partnerships (QPWS&P) are implementing a fire program in National Parks and reserves that is in tune with the changing nature of the seasons.

Unwelcome characters – pest plants and animals

The Region is home to many plants and animals that have been introduced, either deliberately or accidentally, since human settlement. Some of these species have become invasive—that is they have spread and multiplied to the point where they can cause damage to the environment, economy and human health and recreation. The objective is to limit the distribution of invasive species and try to slow or stop further spread. Most exotic vertebrate pests have long been established in the state and have broad distributions. Eradication is not feasible for these species, so their management must focus on restricting their spread, preventing new introductions, and controlling their impacts.

General climate warming may influence the spread and distribution of weeds in Queensland. Tropical weed species could extend further south while temperate species retreat. Summer-growing species would also become more prevalent in southern regions. Drought can also weaken native pasture systems, making them prone to invasion by weeds.

[32] Roma Regional Workshop 10/03/2021

Transport of people and goods is a major pathway for weed spread in Queensland. Seeds can 'hitchhike' to new sites in and on vehicles, on machinery and other equipment, and attached to clothing or the soles of footwear. Transport of stock can facilitate weed spread, since seeds consumed at the point of origin of the animals can be defecated at other sites, leading to the establishment of weeds. Products such as hay, silage, and seed for planting can also be contaminated with weed seed and facilitate weed spread.

Major pest plants include:

- Lantana
- Harrisia cactus
- Anchored water hyacinth
- Salvinia
- African boxthorn
- Blackberry
- Broad-leaf privet
- Mother-of-millions
- Parkinsonia
- Parthenium weed
- Prickly Pear
- Chilean needlegrass
- Lippia
- Tree Pear
- Serrated tussock

The main pest animals include

- feral cats
- wild dogs
- feral pigs
- rabbits
- cane toads

Kangaroo populations are out of balance, resulting in a large build up in numbers in some places partly due to the absence of traditional stewardship and natural predation. The increased supply of water from dams and stock drinking troughs has also provided kangaroos with the opportunity to spread and breed. This puts pressure on the Landscape by taking the total grazing pressure beyond natural limits. It also has detrimental impacts on the health of kangaroos. This has been made worse by the extreme boom and bust cycles associated with the changing climate.

Many land managers have erected exclusion fencing to manage total grazing pressure and predation by wild dogs. More research on the benefits and impacts of exclusion fencing would be beneficial in understanding the role exclusion fencing plays in the broader landscape.

Ancient Landscapes of the World

The Gondwana Rainforests include the most extensive areas of subtropical rainforest in the world, large areas of warm temperate rainforest, and nearly all of the Antarctic beech cool temperate rainforest.

The Main Range National Park (home to World Heritage Listed Gondwana Rainforest) is also the headwaters of the Condamine River which flows through the landscapes of Southern Queensland as part of the Murray–Darling Basin.

QPWS&P manage the Park on behalf of the people of Queensland.

Most of the country surrounding the Park is used for cattle grazing. QPWS&P has supported a program to fence the park boundary to exclude cattle.[33]

Extensive liaison between Park managers and neighbours in relation to fire management has led to a reduction in the incidence of wildfires in the Park in recent years.

There are 11 nature refuges adjacent to or in close proximity to the Park. This has the potential to enhance conservation outcomes in the Park and across the broader landscape by creating linkages and increasing the size of the combined protected areas. These neighbouring landscapes could also be supported for fire and pest management.

The Australian Government on behalf of the Australian people is investing in reducing the threats from invasive species to areas that possess values of World Heritage significance such as the Gondwana Rainforests.

[33] State of Queensland (2013) Main Range National Park and Spicers Gap Road Conservation Park Management Statement 2013, Department of National Parks, Recreation, Sport and Racing, Brisbane.

GONDWANA RAINFOREST – GOOMBURRA

BANKSIA

CRUCIFIX FROG *NOTADEN BENNETTII* – GLENMORGAN

BRIGALOW IN FLOWER

GRASSLANDS – JIMBOUR

ACTIONS FOR DIVERSE NATIVE SPECIES

Vision: Diverse native species living in vegetated corridors and areas of healthy bushland, landscapes and waterways.

Issues	Community Goals	Actions	Who can help land managers with these jobs?
Managing for pest plants and animals and other aspects of biosecurity in general. How to go about Property Planning to integrate best practice while considering the competing priorities of market, environment, climatic conditions, land type etc. and grazing pressures. Where to go for appropriate knowledge for best practice, locally appropriate information? What is the best way to manage the Landscape with Fire? Misunderstanding of Legislation – it can be a challenge to interpret when planning action in the field. Lack of opportunities for First Peoples to participate in planning and implementing actions for Healing Country. Need to better understand any impacts of cluster / exclusion fencing.	Maintain and enhance connections between natural areas and refugia to provide resilient and productive landscapes. Enhance biodiversity (including managing native vegetation condition) and improve the connectivity of natural areas in priority landscapes by enhancing the knowledge and capacity of land managers including people in urban and periurban areas.	Maintain and enhance the health of landscapes by: » retaining native vegetation » revegetating creek banks » revegetating habitat » restoring wetlands » fencing waterways and wetlands » implementing First Nations traditional burning practices as part of whole of Country stewardship approach » managing pest plants and animals » establishing and maintaining feral-free enclosures » protecting habitat by managing stock access » enhancing land management practices (e.g. stocking rates)	All The Queensland Government is investing in fencing and pest and weed management, erosion control, and fire management to improve waterways. Actions include: » vegetation management » retaining native vegetation on farms » controlling invasive weeds and other threats to native vegetation » reducing the impact of feral animals on waterways » waterway and wetland management » pest animal management.
		At a property scale – undertake and support property management planning.	Industry SQ Landscapes Government

Issues	Community Goals	Actions	Who can help land managers with these jobs?
		At a landscape scale (connecting up across the whole Region): » avoid the fragmentation of vegetation corridors due to clearing and fencing » enhance and maintain connections between large patches of vegetation	Government Land managers SQ Landscapes Industry
		Coordinate resources for the implementation of recovery plans for threatened species and ecological communities.	SQ Landscapes Government
		Further research into the benefits and impacts of exclusion fencing.	SQ Landscapes Government First Nations Industry Research
		Maintain and enhance areas of Outstanding Universal Value of World Heritage – Gondwana Rainforests of the Main Range National Park (RLP 3). In particular: » managing pest plants and animals » adopting traditional burning practices » reducing runoff of nutrients » reducing the unsustainable use of land within or surrounding the Park	Australian Government Investment (RLP) Land managers First Nations QPWS&P SQ Landscapes

WATERWAYS AND OTHER WETLANDS

For First Nations People, rivers are the arteries of the land, and the land, sky, water, and people are connected and inseparable. Water is of critical importance for the health of Country and its people. Wetlands are a symbol of fertility of Country.

The wetlands and waterways of Southern Queensland are local, national, and international assets of critical importance to the health of social, economic, cultural, and environmental systems. In depth information on wetlands in the Region can be found on the Queensland Government's web page Wetland*Info*.

First Nations People have described the way in which water is valued and used across the Region including:

- natural springs and mound springs
- rivers and waterholes
- lakes, wetlands, claypans and gilgais
- fish traps
- earthen and stone arrangements
- scarred and carved trees
- middens
- hearths
- burial grounds
- plants and animals
- water quality
- riparian zone
- connectivity through the landscape[34]

The story of the Landscape is connected by waterways. What happens in the headwaters of the Warrego River is connected by water to the Landscape at Cunnamulla. However, without major mountains, Australia's river systems have low and erratic flow rates compared with those on other continents.

The connectivity of surface water and groundwater systems is critical and has been the key to the survival of people in these landscapes for thousands of years. This connectivity or flow provides water for drinking, agriculture, industry, the environment and culture.

One of the major flows from the Region is the water that collects and flows south into the Murray Darling Basin. The Murray and Darling rivers in Australia make up one of the great river systems in the world in terms of areal drainage. Together, their catchments form the 1 Million km^2 Murray–Darling Basin, which covers around 14% of the mainland area. The Murray–Darling River system is Australia's longest with a length of more than 3,670 km, with its headwaters in central Queensland and its mouth in South Australia.

All river systems in the Southern Queensland Region form part of the Murray–Darling Basin—the Bulloo system in the South West can flow into the Basin system during flood events, although it is not traditionally considered part of the Basin.

Population growth and the expansion of industrial water requirements have increased demands for access to the water resources of the Region.

The impacts and opportunities of coal seam gas activities are also an important consideration for landscape stewardship. The emissions from coal and coal seam gas pollutants and issues for groundwater have been discussed at length in community consultation meetings. Discussions, research and monitoring of these activities is an ongoing priority.

In some areas, groundwater salinity is currently above crop tolerance levels and is present at a shallow depth of groundwater (less than 5 metres). This creates a potential risk of dryland salinity.

The Community is getting in tune with these flows as part of the water cycle to recharge local underground water systems, conserve ancient water in the Great Artesian Basin (GAB) and enhance wetlands as refugia for wildlife and cleaners of water before it enters the Murray Darling Basin.

In a drying landscape, the Community are working to enhance the health of waterways. Action is being taken to get the appropriate vegetation in the right place on the banks and slopes of the creeks, increase the amount of water stored in the floodplains, look after the natural springs and aquifers that feed the waterholes, care for the wetlands, and maintain the health of the areas that are in good condition.

[34] Healthy Waters Management Plans - Warrego, Paroo, Bulloo and Nebine Basins, Maranoa Balonne Basins, Condamine River Basin and Border Rivers, Moonie River Basins.

The Great Artesian Basin

Not all water is at the surface and some of it is very old. The groundwater in the south west of the basin originated as rain that fell on the uplands of the east up to 2 Million years ago.[35]

The Great Artesian Basin (GAB) covers much of inland eastern Australia, and it was this resource that opened up the arid interior to pastoral development in the late 1800s.

Groundwater provides nearly a third of the water that is consumed but makes up less than one-fifth of the total available freshwater resource in Australia.[36] Geology, landscape and climate dictate the nature of the groundwater resources, with the geology providing the underlying architecture of aquifers and aquitards that define the reservoirs and seals, respectively.

Groundwater also provides almost a third of the high-security water that is vital for agriculture and towns during droughts and is the only source of water for many regional and remote communities and many mining operations. Groundwater is the lifeblood that sustains Australian communities, industries and habitats, particularly during the tough times.[37]

Currawinya Wetland of International Importance

Nationally and internationally important wetlands in the Region include:

- Currawinya in the Paroo catchment is the only Wetland of International Importance under the Convention on Wetlands — commonly known as the Ramsar Convention (Ramsar, Iran, 1971) in the Region[38]
- Twenty-one wetlands in the Directory of Important Wetlands (DIW), including Lake Broadwater which are part of the Japan-Australia Migratory Bird Agreement (JAMBA) and China-Australia Migratory Bird Agreement (CAMBA).
- The Balonne River floodplain that contributes to the Narran Lake Ramsar wetland across the border in New South Wales.
- The Paroo River contributes to the Paroo River Ramsar Wetlands in western New South Wales

The Paroo River catchment contains the entire Currawinya National Park (3,440 km^2).

Currawinya is a critical area of the Landscape that provides a refuge for plants and animals and connects natural assets across the area.

The Currawinya Lakes system is of international significance as part of an inland route for migratory shorebirds from East Asia, providing important summer feeding areas. The water bodies support substantial waterbird breeding events particularly for pelicans, gulls, terns, cormorants, and swans, as well as providing refuge habitat in drought conditions for birds, amphibians, reptiles, and native fish.

The wetlands of Currawinya also act as flood control mechanisms and drought refuges for birds and other wildlife. No other wetland complex in arid or southern Australia consistently supports such large populations of waterbirds.

The lakes of Currawinya are highly significant to the Budjiti First Nation People for their archaeological, traditional, and contemporary values. The site includes stone arrangements, native wells, scarred trees (trees with bark removed for canoes and shields), stone artefacts and burial grounds. The National Park is managed by the Budjiti People and Queensland Parks and Wildlife Service & Partnerships (QPWS&P).[39]

A number of nature-based, low-impact recreational activities occur within the site, including nature walks and drives, wildlife watching, camping, canoeing and fishing.

There are several priority weeds in the river systems that feed into Currawinya, which if left unchecked, would have high negative impacts on the economic, environmental and social values of infested waterways.

[35] State of Queensland (20221) Queensland's plan to protect our Great Artesian Basin DRDMW, Brisbane.

[36] Blewett R.S. (ed.) 2012. Shaping a Nation: A Geology of Australia, Geoscience Australia and ANU E Press, Canberra.

[37] Blewett RS (ed.) 2012. Shaping a Nation: A Geology of Australia, Geoscience Australia and ANU E Press, Canberra

[38] South West NRM (2015), South West NRM Plan 2015–2025 - Achieving sustainable Landscapes for rural communities 22

[39] Queensland Parks and Wildlife Service and Partnerships. (2021). Currawinya National Park Management Plan. Queensland Parks and Wildlife Service.

CURRAWINYA NATIONAL PARK
(IMAGE: GARY CRANITCH © QUEENSLAND MUSEUM)

Mound springs

Currawinya and the surrounding area contain artesian springs, including mound springs, which are an endangered ecological community that supports plants and animals that are only found in these unique habitats. These wetland communities have significant cultural values for First Nations Peoples.[40]

Mound or Artesian springs and their associated wetland communities are dependent on the discharge of groundwater from the GAB.

Eulo Artesian Springs Supergroup is a collection of more than forty springs scattered in the area south-west of Eulo. The Budjiti People are known to have been using the springs of the Eulo Supergroup for at least 13,000 years.[41]

Early pastoralists quickly recognised the importance of springs as a reliable water source in a landscape with otherwise limited permanent surface water.

Over-utilisation of the GAB and individual spring groups has seen a significant decline in the condition and extent of artesian spring wetland communities.[42] Other threats to artesian springs include excavation for water storage, exotic plants, stock and feral animal disturbance, exotic aquatic animals, tourism, and impoundment.

The Great Artesian Basin Sustainability Initiative[43] progressively capped uncontrolled flowing bores across the entire basin. Uncontrolled bores can contribute to the depressurisation of groundwater aquifers, and result in degradation of groundwater-dependent ecosystems (including mound springs) and reduced water availability for other water users.[44]

The Queensland Government has recently launched its Plan to protect the Great Artesian Basin.

Chain of waterholes

Persistent waterholes along the river systems provide aquatic habitat during extended periods of low or no flow and, as a result, are referred to as 'refugial waterholes'.

The waterholes are connected during floods and disconnect as the water in the rivers evaporates. This wetting and drying is vital for dispersal and survival of lots of plants and animals.

Persistent waterholes require careful management, not as individual waterholes, but as an integrated system of waterholes along the length of rivers and channels.

During dry spells, many plants and animals depend on waterholes along the river channel.

Other water users also depend on these waterholes for social, cultural, and economic purposes.

Many camping grounds are located next to waterholes, as they have been for thousands of years.

Action is underway to protect waterholes through fencing and pest and weed management, erosion control and fire. (See Southern Queensland Landscapes' Fencing Northern Riverbanks Program)

Floodplains of hope

Water has shaped the Landscape as it flowed through floodplains for thousands of years.

The vast floodplains of the Region feed the waterways and wetlands that are the lifeblood of the natural and cultural systems critical for flourishing landscapes. Floodplains are where a lot of cropping occurs in the soil that has been left behind by floods over many years.

For thousands of years floodplains have naturally stored water in the soil, wetlands, and associated waterholes in the rivers and creeks.

The floodplain is believed to support and sustain the life of Country. The life of the waterways and rivers is critical to First Nations community wellbeing and if it is in poor health, it cannot provide spiritual, cultural, economic, and social benefits to all those who depend on it. Restoring flood plains can help restore these cultural water flows.

Flourishing floodplains reduce the impacts of floods by absorbing and slowing destructive flows of water. Fully functioning floodplains provide the soil and water for plants and animals to survive and the medium to grow food and fibre.

Land managers have been finding ways to reengage the floodplains to heal Country and restore productivity. Through this practice, land managers have seen soil erosion reduced, ground cover improved and enhancement of the water quality entering the Murray Darling Basin. The improved ground cover improves soil health (potentially including carbon sequestration) and prolongs pasture growth in dry times that follow periodic rain.

[40] Peck, S. (2020) Evaluating the Effectiveness of Fencing to Manage Feral Animal Impacts on High Conservation Value Artesian Spring Wetland Communities of Currawinya National Park.

[41] Queensland Parks and Wildlife Service and Partnerships. (2021). Currawinya National Park Management Plan. Queensland Parks and Wildlife Service.

[42] Fensham, R. J., Fairfax, R. J., & Sharpe, P. R. (2004). Spring wetlands in seasonally arid Queensland: floristics, environmental relations, classification and conservation values. Australian Journal of Botany, 52, 583–595.

[43] business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/great-artesian-basin/rehabilitation-program

[44] Queensland Parks and Wildlife Service and Partnerships. (2021. Currawinya National Park Management Plan. Queensland Parks and Wildlife Service.

Water plans

Water in the Region is shared and managed through different types of plans:

- The Murray-Darling Basin Plan sets the amount of water that can be used for towns, irrigation, and other uses, including water for the environment.
- Water Resource Plans, which set goals for water quantity and flows and the sharing of water between users, such as irrigators and the environment.
- Healthy Waters Management Plans, which set goals for water quality.

The Murray–Darling Basin Authority (MDBA) is a key agency responsible for coordinating how the Basin's water resources are managed through the Basin Plan, and uses an approach, based on evidence, that considers the health of the Basin as a whole.[45] The Basin Plan uses a variety of information including from State-based Water Resource Plans, to set the amount of water that can be taken from the Basin each year, while leaving enough for rivers, lakes and wetlands and the plants and animals that depend on them.

Queensland Water Resource Plans state the outcomes, objectives, and strategies to achieve a sustainable balance between water for industry, irrigators, town water supply, the Community and the environment. This includes the economic, social, and ecological outcomes that apply to the plan area, as well as the security objectives for water allocation and the environmental flow objectives.

Water plans include several cultural outcomes. These outcomes were informed by the information gathered from engagement between State Government and First Nation People on cultural values and uses of water, and objectives and outcomes for water management.[46]

Healthy waters management plans have also been prepared alongside the development of the water plans. Healthy water management plans identify ways to improve water quality. Water quality goals, accompanying mapping (including the identification of high ecological value waterholes) and management responses to address key risks are included in healthy waters management plans to achieve stated objectives and outcomes. This includes the water quality objectives and outcomes for First Nations cultural, spiritual, and ceremonial values.

The allocation and sustainable management of water in Queensland is accomplished through the water resource planning process. This process involves the preparation of statutory water resource plans under the *Water Act 2000* (Qld.) and accompanying resource operations plans. Statutory water resource plans under the *Water Act 2000* (Qld.) for the Region are:

- Condamine and Balonne (accredited September 2019)
- Border Rivers and Moonie (accredited September 2019)
- Warrego, Paroo and Nebine (accredited June 2017)

[45] The Murray–Darling Basin Authority (mdba.gov.au/)

[46] State of Queensland (2019) Water Connections: Aboriginal People's Water Needs in the Queensland Murray–Darling Basin, Department of Natural Resources, Mines and Energy, Brisbane.

FRESHWATER LAKE - CURRAWINYA NATIONAL PARK

ACTIONS FOR HEALTHY WATERWAYS AND OTHER WETLANDS

Vision - Healthy waterways and other wetlands that rovide good quality water for plants, animals and people.

Issues	Community Goals	Jobs	Who can help with these jobs?
Reduced water infiltration of soils causing erosion, degraded landscapes, floodplains, rivers and waterways. Reduced rainfall. No basin-wide water quality report card or monitoring.[47] Pollutants such as nutrients, pesticides, sedimentation and suspended solids and gross pollutants. Cleared vegetation, close cultivation and stock access leading to bank instability. Sand and gravel extraction. Shallow groundwater and potential for salinity. Changed flow regime.	Maintain or improve the health of wetlands and other waterways, ground water and artificial waters by: » addressing water quality issues in priority landscapes. » maintaining and enhancing wetlands and refugia (including chains of waterholes)	Maintain and restore floodplains, rivers and waterways to improve water quality and store water for longer by: » Protecting existing habitat » Maintenance of ground cover » Managing erosion » Designing and installing low profile contour banks » Fencing waterways » Revegetating creek banks » Maintaining and restoring wetlands » Restoring bore drains » Adopting traditional burning practices » Managing aquatic pest plants and animals » Reducing runoff of sediment and nutrients	All
		Prevent the establishment of all Class 1 and Class 2 WoNS[48] weeds in or adjacent to waterways and other wetlands.	All
		Identify key sites and install modern screens on diversion infrastructure to enhance fish friendly water extraction.	Government Irrigation industry
		Cap Great Artesian Basin water bores	State Government[49]
		Develop and fund urban, industrial, and rural water use efficiency programs and enhance the operation of available water storages.	Government
	Minimise impacts to ecological and cultural values by: » using water efficiently and effectively based on the ecological and cultural values of water and wetland systems (including groundwater). » meeting the requirements for water use as agreed to in Water Resource Plans and Healthy Waterways Management Plans (where in place) Meet First Nation goals from the three Water Resource Plans for the Region, which all seek to: » ensure the suitability of water to support the identified cultural, ceremonial and spiritual values and uses of waters across the Region. » water resources of the Region remain fit for purpose in relation to cultural, spiritual and ceremonial values and uses of water	Meet requirements of Water Resource Plans: » Improve hydrological regimes including environmental flows » Restore cultural flows	Land managers First Nations Industry Government Murray Darling Basin Authority
		Promote improved understanding of the water required for environmental, economic, social, spiritual, and cultural uses by First Nations People.	First Nations State Government (as per Water Connections: Aboriginal People's Water Needs in the Queensland Murray–Darling Basin – Outcome 1)
		Extend water monitoring across Region.	Community Government First Nations SQ Landscapes Murray Darling Basin Authority
		Maintain and enhance refugia waterholes: » fencing and pest and weed management, erosion control and fire management » connect refugia waterholes and chains of waterholes by improving fish passage along waterways	Land managers First Nations SQ Landscapes Government Industry
		At a landscape scale (connecting-up across the whole Region): » restore floodplains and headwater catchment areas for downstream benefits, including in the Murray Darling Basin	Land managers First Nations SQ Landscapes

[47] The Condamine Balonne Water Committee (CBWC) have a long history of water quality monitoring and a warehouse of data.

[48] WoNs Weeds of National Significance (daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds/wons)

[49] Great Artesian Basin rehabilitation program (business.qld.gov.au/industries/mining-energy-water/water/catchments-planning/great-artesian-basin/rehabilitation-program)

Issues	Community Goals	Jobs	Who can help with these jobs?
		Restoration of and reduction in threats to the ecological character of Currawinya, a Wetland of International Importance (Ramsar), through the implementation of priority actions in the Management Plan (RLP 1)[50] including: » Prevent the establishment of annual beard-grass *Polypogon monspeliensis* on category 1 and 2 artesian springs » Prevent the establishment of water lettuce *Pistia stratiotes*, a Class 1 WoNS » Prevent the establishment of *Parkinsonia aculeata*, a Class 2 WoNS » Improve the condition of mulka (mulga) community by learning from Budjiti traditional knowledge and land management practices with consent of knowledge holders » Reduce impacts of feral goats on mulka (mulga) community » Eradicate feral cats within the bilby enclosure » Reduce the impacts of feral cats and foxes in the surrounding areas of the bilby enclosure » Improve the condition of the catchment by using Budjiti traditional knowledge and land management practices » Improve the condition of lakes and wetlands through the use of traditional Budjiti knowledge and land management practices » Minimise visitor impacts to waterbird breeding and fragile ecosystems (e.g. samphires) » Mitigate the potential severity and impacts of wildfire on neighbouring properties[51]	First Nations (Budjiti Nation) The Australian Government is investing in this action as part of the RLP. QPWS&P SQ Landscapes

[50] See Appendix A for information on the Regional Land Partnership (RLP).

[51] QPWS&P (2019) Currawinya National Park Management Plan, Queensland Government, Brisbane.

Issues	Community Goals	Jobs	Who can help with these jobs?
		Maintain and enhance mound springs: » Improve the condition of the springs through the use of Budjiti People's traditional knowledge and land management practices » Reduce impacts of goats, cattle, pigs and horses » Minimise visitor impacts and manage visitor safety around springs » Decommission or cap bores on the park to deter feral animals and reduce groundwater drawdown » Prevent the establishment of annual beard-grass *Polypogon monspeliensis* on artesian springs[52]	Budjiti Nation QPWS&P SQ Landscapes The Australian Government is investing in this action as part of the RLP.
		Cross border scale: Discuss cross border collaborations for the catchment stewardship of the Ramsar listed Narran Lakes wetland and Paroo River Wetlands	SQ Landscapes Local Land Services (NSW) The Australian Government is investing in this action as part of the RLP. Murray Darling Basin Authority Commonwealth Environmental Water Office

[52] QPWS&P (2019) Currawinya National Park Management Plan, Queensland Government, Brisbane.

HEALTHY ECONOMY

The economy is one benefit we get from a flourishing landscape. Many other benefits such as a healthy environment and the goods and services that we need to survive are even more important.

Connection to landscapes is very important in regional communities as they are heavily reliant on each other and the Landscape to provide goods and services, more so than in larger cities to the east.

Industry groups are supporting members to respond to market demands. Industry is also responding to the opportunities of the circular economy which seeks to minimise waste by extracting maximum value from a product while in use before recovering and regenerating materials at the end of its life.

Localised supply chains and markets are also being developed and nurtured to create a more resilient local and regional economy and community.

Despite many challenges, the Region has a rich history of communities building local economies and taking initiatives for social cohesion.

One option the Region has is to capitalise on existing regional strengths when planning for future industries. Rather than relying on establishing whole new industries, existing industries can be enhanced to make them more productive, efficient and/or to meet new consumer expectations. Training will need to focus on enhancing current skills to take advantage of new industries based on these existing strengths.[56]

Enhancements underway include the opportunities presented by new technologies, digitisation, and automation.

On farm technologies such as global positioning system (GPS), geographical information systems (GIS), Variable-Rate Technology (VRT), soil sensors and yield monitors allow data to be collected and used to address sustainability issues by optimising profitability in the productive parts of the Landscape while conserving biodiversity and natural resource base in other areas.

There is a growing trend for land managers to change the way they operate so they can access finance and insurance for their businesses (both are favouring businesses that have a commitment to Greenhouse Gas (GHG) emissions reductions). Buyers of commodities and consumers also want to know their food is produced sustainably.

A key focus of many financial consulting services is to help businesses during good times to build financial resilience before things get dire during extreme times. A key component of business resilience is a flourishing landscape.

In this way, land managers can be recognised as producers of a range of goods and services (ecosystem services) rather than of a limited range of commercial food and fibre products.

Good stewardship practices can provide benefits to the wider Region, the nation, and the world including carbon storage, recreational opportunities (particularly iconic sites and experiences for tourism) and water (particularly to the Murray Darling Basin).

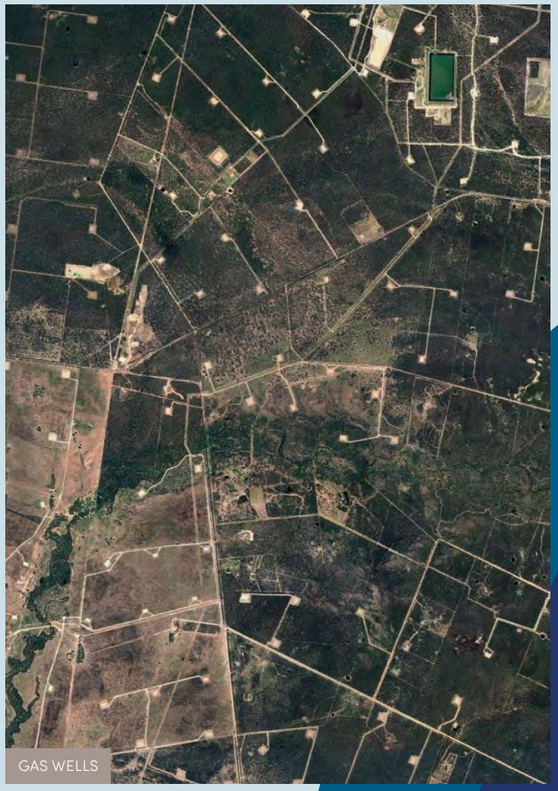
Widespread recognition and direct payment/ investment, or other financial reward, for the provision of the many public benefits that come from privately managed landscapes, would enhance the capacity for broad-scale stewardship. This would prepare landscapes for harder times and enable economies and communities to flourish in the longer term.

There is also the very real satisfaction we all get from knowing that plants and animals (e.g. bilbies) exist. These public benefits are often provided from landscapes under the stewardship of individuals, families, and businesses.

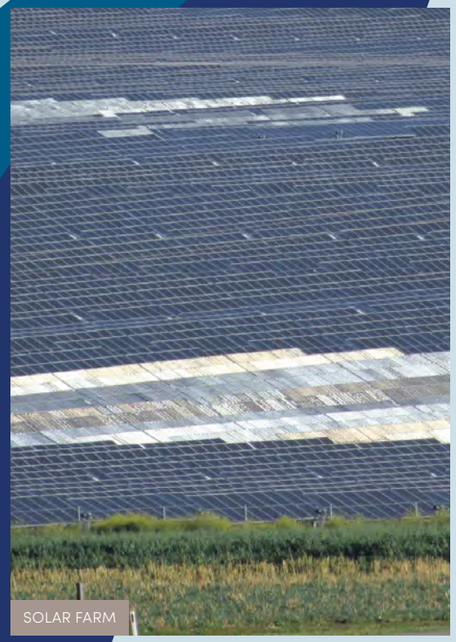
There are some challenges to a circular economy that require innovative thinking. Access to markets is the primary limitation to recycling in regional and remote areas, particularly given the high cost of transporting materials to manufacturing facilities or ports. The lack of volumes for some waste streams in certain locations restricts efficient processing and thus recovery in regional areas. Although Queensland has pockets of industry and towns in remote areas, recycling in more remote areas is challenging. It is recognised that collaboration could be enhanced in some regions to establish planning regimes that reach beyond local government boundaries, consider the redesign or rationalisation of uneconomic services, and the development of new infrastructure. In some other regions, regional aggregation of waste volumes has increased the options for recovery and more efficient disposal, supported investment in new infrastructure, and attracted greater competition and industry interest.[54]

[53] Commonwealth of Australia (2019) Select Committee into Jobs for the Future in Regional Areas

[54] Queensland Treasury Corporation (2018) Economic opportunities for the Queensland waste industry: final report, Queensland Government.



GAS WELLS



SOLAR FARM

DIVERSE LAND USE - GOWRIE MOUNTAIN (IMAGE: ANDREW CAMERON)

ACTIONS FOR DIVERSE INDUSTRIES

Vision: A diversity of industries based on a circular economy (everything is recycled, reused, or repurposed) that integrates renewable energy and rewards land managers for good stewardship.

Issues	Community Goals	Jobs	Who can help with these jobs?
Recognition of good land stewardship. How can we become more energy efficient? Increased social pressures to produce with a social licence.	Enhance the health of regional economies with: » diverse land uses (e.g. alternative energy, tourism, carbon sequestration, waste to energy) » sustainable and socially appropriate opportunities for carbon sequestration and investment » carbon grazing for improved productivity and soil system resilience is common in priority areas » collaborative approaches to best and alternative practices for waste management, minimisation, and conversion as part of circular economies » visitors staying longer and able to undertake experiences that raise awareness of the need for flourishing landscapes	Investigate and support the diversification of industry that embraces a circular economy and net zero principles and practices (e.g. alternative energy, tourism, carbon sequestration, waste to energy).	First Nations Industry Government SQ Landscapes
		Develop systems and programs that recognise good land stewardship.	Industry including AgForce's 'AgCarE' program[55] Community Government
		Make water available to support the economic and social aspirations of First Nations People.	First Nations State Government (as per Water Resource Plans and Water Connections: Aboriginal People's Water Needs in the Queensland Murray–Darling Basin – Outcome 2.)
		Work towards net zero emissions.	All Industry Government
		Explore opportunities for the Flourishing Landscapes Plan to support the social licence of industry.	Industry Government SQ Landscapes
		Carbon: » support sustainable and socially appropriate opportunities for carbon sequestration and investment » implement carbon grazing for improved soil health and productivity	SQ Landscapes Consultants Education providers Government Queensland Government's Land Restoration Fund
		Increase awareness and adoption of land management practices that improve and protect soil, biodiversity and vegetation condition. » implement industry best practice » share knowledge of Regenerative Agriculture, etc	Land managers First Nations Industry Private education, training, and advisory services. SQ Landscapes Landcare
		Increase the capacity of agriculture systems to adapt to significant changes in climate, markets, and extreme weather.	Government Industry
		Enhance tourism opportunities so that visitors stay longer and can undertake a diversity of experiences that raise awareness of the need for flourishing landscapes.	Land managers First Nations Tourism Groups Government Queensland Tourism Industry Council (QTIC)
		Promote and coordinate innovative waste management solutions, such as reduce, reuse, recycle, and waste management. Support the implementation of the Queensland Waste Management and Resource Recovery Strategy.	All Government Waste management and resource recovery sector

[55] AgForce's 'AgCarE' program - accessed January 2022 at web.agforceqld.org.au/agforceqldorgau-apjnk/pages/5869e0e3d5f0eb1194ef000d3acc5192.html?PageI

HEALTHY COMMUNITIES

Most of the Community express pride in the natural and cultural assets of the Region. Spreading this energy and knowledge throughout the Community will ensure that these assets are treasured for generations to come.

Rural and regional areas and towns have experienced elements of social and economic decline due to issues such as changing prices for primary produce. The level of government services also change over time too e.g. agricultural extension is no longer a key government service. This reduction in service can make it difficult to obtain locally appropriate advice on the farm in some areas.

The majority of the Region's towns have had declining populations for at least five years, with more than 10 towns declining for at least 15 years.[56] This is especially the case in the western areas where younger people have left to seek jobs or education to the east. Some of these young people are now returning to live and work in the Region.

The social values and capital of communities (including amenity and liveability, harmony and sense of well-being, sense of community, access to recreation and access to social and community services and infrastructure) are recognised as important elements of maintaining a resilient community equipped to practice sustainable landscape management. These elements need to be continually nurtured.

Community infrastructure, such as leisure activities and national parks, are necessary to meet the social needs of regional areas. Affordable quality housing is equally important in attracting people to live in the area.

A job will potentially be the deciding factor for somebody to move, but liveability, community connection, and services will often be the reasons that they stay, that community cohesion factor.

Local Governments in partnership with State and Federal Government agencies (such as Health) work to deliver the community's aspirations for their local areas and promote community cohesion.

All of these aspirations require a flourishing landscape to support a healthy community.

Councils in Southern Queensland identify and support the services and infrastructure needed for the economic, social, and environmental well-being of their communities.

Common visions from Local Government Community Plans and other strategies across the Region centre around the importance of community, the economy, natural areas, recreation, safety, prosperity, industry, and infrastructure.

The changing climate is having direct impacts on physical and mental health leading to increased pressure on health systems, including an increased demand for health professionals, ambulance, and hospital workers. Direct effects of extremes of weather include injury and death during floods and cyclones and heat stress during heat waves.

The changing climate could also affect the liveability of many regional areas, potentially impacting on population numbers of some locations and increasing the frequency and/or severity of extreme weather events.

These extreme events will increase the vulnerability of residents with less mobility, due to age, connection to the place, or disadvantage. They also have important implications for the provision of emergency, health and related services.[57]

Natural asset management has been discussed in disaster risk reduction undertaken by government, emergency services and industry across the region.[58] Natural resource management planning that provides certainty for the preservation and management of key areas of natural assets can reduce the costs borne by governments and the Community. Preventing loss is significantly less expensive than having to restore livelihoods after extreme events.

Such measures include investing in the health of waterways, wetlands, and the use of vegetation as barriers.[59] [60] Well managed natural assets can provide protection against common natural hazards, such as landslides, flooding, wildfires and drought.

The National Rural Health Alliance has advocated for the expansion of investments in ecological services as a way to increase the well-being of regional communities, particularly Indigenous land management initiatives and regenerative farming practices.[61]

These measures require communities, organisations and governments connecting and working together to avoid working in silos. This will help avoid key links being missed and the duplication of effort or action that inadvertently might be at odds with a desired outcome.

Local Governments are working together in regional organisations of councils (South West Queensland Regional Organisation of Councils and South East Queensland Council of Mayors), to link up silos, coordinate planning and funding and build partnerships across governments, community, and industry.

[56] Australian Bureau of Statistics, 2020, Regional population growth Australia, various editions, Australian Government, Canberra.

[57] Taylor, B, Walton, A, Loechel, B, Measham, T & Fleming, D 2017 *op cit*

[58] Queensland Reconstruction Authority (QRA) Regional Resilience Strategies at qra.qld.gov.au/regional-resilience-strategies

[59] Partnership for Environment and Disaster Risk Reduction (PEDRR). (2010). Demonstrating the Role of Ecosystems-Based Management for Disaster Risk Reduction. Partnership for Environment and Disaster Risk Reduction.

[60] Dudley, N., S. Stolton, A. Belokurov, L. Krueger, N. Lopoukhine, K. MacKinnon, T. Sandwith and N. Sekhran [editors] (2010); Natural Solutions: Protected areas helping people cope with climate change. IUCNWCPA, TNC, UNDP, WCS, The World Bank and WWF, Gland, Switzerland, Washington DC and New York, USA.

[61] National Rural Health Alliance, Submission 161, pp. 14–15 Select Committee into Jobs for the Future in Regional Areas

THE BLUE TREE FOR MENTAL HEALTH – ST GEORGE

COMMUNITY EVENT – BEGONIA

ROMA RACES (IMAGE: RACINGQUEENSLAND.COM.AU)

ACTIONS FOR VIABLE AND HEALTHY COMMUNITIES

Vision: First Peoples, Government, Community, and industries value and protect natural and cultural systems by sharing knowledge to respect the Landscape as a living breathing entity.

Issues	Community Goals	Jobs	Who can help with these jobs?
Organisations/ Governments working in 'silos'; key links are missed and work is sometimes duplicated. Not all land managers have the capacity to change and adapt. Limited internet connection in many places. Social and economic decline of rural towns. Number of volunteers decreasing due to population and major events such as drought. Connecting people to the Landscape is a challenge. The disconnect between city and country makes it hard for land managers to tell the good news stories and basic stories about where people's food and fibre comes from.	The health of communities will be enhanced when: » The Community has the capacity to coordinate efforts of groups and individuals to address priority landscape issues and opportunities » The Community has considered targets on the catchment scale to encourage local action » Government, industry, community, and First Peoples are visibly working together to protect and nurture natural, economic and cultural resource assets » First Peoples are leading caring for Country projects	Link up all sectors, facilitate conversations and build partnerships across governments, community, industry and First People for natural resource management: » Use this Flourishing Landscape Plan to coordinate planning, investment, action, monitoring and evaluation. » Maintain and promote calendar of events resources, including the SQ Landscapes webpage	SQ Landscapes Governments Community Groups Industry
		Community groups including tourism groups and agencies work together to explore and promote a diversity of sustainable uses of the Region's natural assets.	SQ Landscapes Governments Community Groups Industry
		Improve community flood readiness including maintaining and value-adding to Early Flood Warning Systems (EFWS).	Government including Queensland Reconstruction Authority (QRA).[62] Industry
	» There is an improvement in community and landscape flood preparedness including the operation of emergency flood warning systems » Social and economic resilience is enhanced as a result of the diversification in the sustainable use of natural assets	Actions to achieve the aspirations of First Nations People: » increase employment, training, and economic opportunities for First Nations People » continued involvement and decision-making of the First Nations People in the Region » NRM work in each First Nations area to be done in close collaboration with the correct local group » protect cultural, spiritual, ceremonial, and economical values of water » increase First Nation People's representation in monitoring of water, land, vegetation, and cultural values » mentor local youth through natural resource management activities, overseen by Elders » complete and implement Reconciliation Action Plans	First Nations State Government (Water Connections: Aboriginal People's Water Needs in the Queensland Murray–Darling Basin – Outcome 3). Government Industry
		Link social services sector and the Flourishing Landscapes Plan to help maintain and enhance community health and wellbeing in particular: » Health » Housing	Q Health (Queensland Government). Department of Communities, Housing and Digital Economy (Queensland Government).

[62] Queensland Reconstruction Authority (QRA) Regional Resilience Strategies at qra.qld.gov.au/regional-resilience-strategies

Issues	Community Goals	Jobs	Who can help with these jobs?
		Coordinate resources, capacity, and initiatives across governments, agencies, organisations, and community groups to share knowledge using the Internet, field days, community days, and demonstrations: » Increase knowledge sharing opportunities for land managers focussed on what they want to know and share » Establish local on farm demonstration sites for peer-to-peer knowledge sharing. » Establish and support urban food gardens	SQ Landscapes Industry Community Groups The Australian Government is investing to support the work land managers are undertaking to: » Increase awareness and adoption of land management practices that improve and protect soil, biodiversity, and vegetation condition. » increase the capacity of agriculture systems to adapt to significant changes in climate, markets, and extreme weather.
		Enhance internet connectivity	Government Service Providers
		Establish Croxdale as a rangelands centre of active learning: » Continue the development and implementation of the business case for Croxdale » Explore the establishment of Living Classrooms and other peer-to-peer knowledge sharing opportunities	SQ Landscapes First Nations Government Research Industry

Issues	Community Goals	Jobs	Who can help with these jobs?
		Operate Southern Queensland and Northern New South Wales (SQNNSW) Hub nodes at Roma and Stanthorpe to apply proven drought-resilience research on the ground to improve innovation and adoption across agriculture, industry, and the Community.	SQ Landscapes USQ Industry Government
		Investigate and create a mechanism to share knowledge and science across the Region. Share knowledge and learnings from the Region to other regions.	SQ Landscapes Research and Education
		Increase awareness and understanding of changes in climate and markets.	Government SQ Landscapes
		Enhance positive outcomes from NRM legislation: » Enhance the opportunities for community and industry to be involved in developing legislation in particular to contribute advice for on-ground application	Government
		Make current legislation, in particular, vegetation management, easier to understand: » Provide information that explains the application of legislation	EDO NRMQ State Government
		Establish a coordinated approach across the Region to pest animal and plant management - identify threats and develop an approach based on avoidance, mitigation, and management.	Industry Landcare
		Promote the Waste Management and Resource Recovery Strategy Community Summary.[63]	Government

[63] Waste Management and Resource Recovery Strategy Community Summary - accessed January 2022 at qld.gov.au/__data/assets/pdf_file/0020/94061/qld-waste-mgment-resource-recovery-strategy-community-sum.pdf

WHERE THE JOBS COULD BE DONE

This section puts all the parts of this story together to identify areas where action could occur to achieve the Community's vision for the landscapes of Southern Queensland.

Before that, though, it is important to recognise and acknowledge that all landscapes have value. However, this Plan is focussed on achieving the common vision for the Region through the effective and efficient use of currently available funding and resources. Attracting further support to fund other specific local projects is also an important objective.

Where do we focus our efforts? Maps can use large amounts of available data to paint a picture of the Region. The following maps show areas of the Region with values that relate to the Community's vision for Southern Queensland or where the things are that current investors (e.g. Australian and Queensland Governments) have indicated an interest in investing for public benefit.

Working together in these areas in particular will help achieve the overall vision for the Region and attract ongoing investment.

The maps can help identify areas where the Community can discuss the need and feasibility of action based on desire, circumstance, and the ability to prioritise actions.

These community discussions will be the most important part of implementing this Plan to achieve the vision. The Community's participation in the prioritisation process will aid in ownership of the action.

It is hoped that government, industry, and the Community can work together to attract support and funding as part of a whole of Region investment program.

Diverse native species

Where could we take action to achieve diverse native species that live in vegetated corridors and areas of healthy bushland, landscapes, and waterways?

The dark green areas in Figure 12 are areas that contain known high regional ecological or special biodiversity values or unique plants and animals. Vegetated corridors and large areas of bushland, grasslands and waterways are often found in these areas.

Maintaining and enhancing these areas will provide broader benefits to adjacent or downstream areas and the Region in general.

Actions in these areas could focus on lessening the impact of:

- fragmentation of bushland corridors due to clearing and fencing
- competition, disturbance and predation from pest plants and animals
- management in and around bushland (including grazing, chemical use, burning etc.)

Threatened plants and animals

Many of the ecological communities in the Region are considered threatened or of conservation concern because their health and future survival are at risk. These ecological communities are often threatened because they have been extensively cleared and fragmented or are naturally restricted in distribution.

They may be exposed to several other threats, including pest plants and animals and surface and groundwater changes. These threats will escalate as the climate changes.

Many threatened ecological communities also support a large number of threatened species within them.

The Australian Government is investing to:

- look after threatened species and priority species listed in the *Environment Protection and Biodiversity Conservation Act 1999 Cth* (EPBC Act) (RLP Outcome 2) (Appendix A)
- improve the condition of the threatened ecological communities listed in the EPBC Act (RLP Outcome 3) (Appendix A)

CHRISTMAS BEETLE – GIRRAWEEN NATIONAL PARK

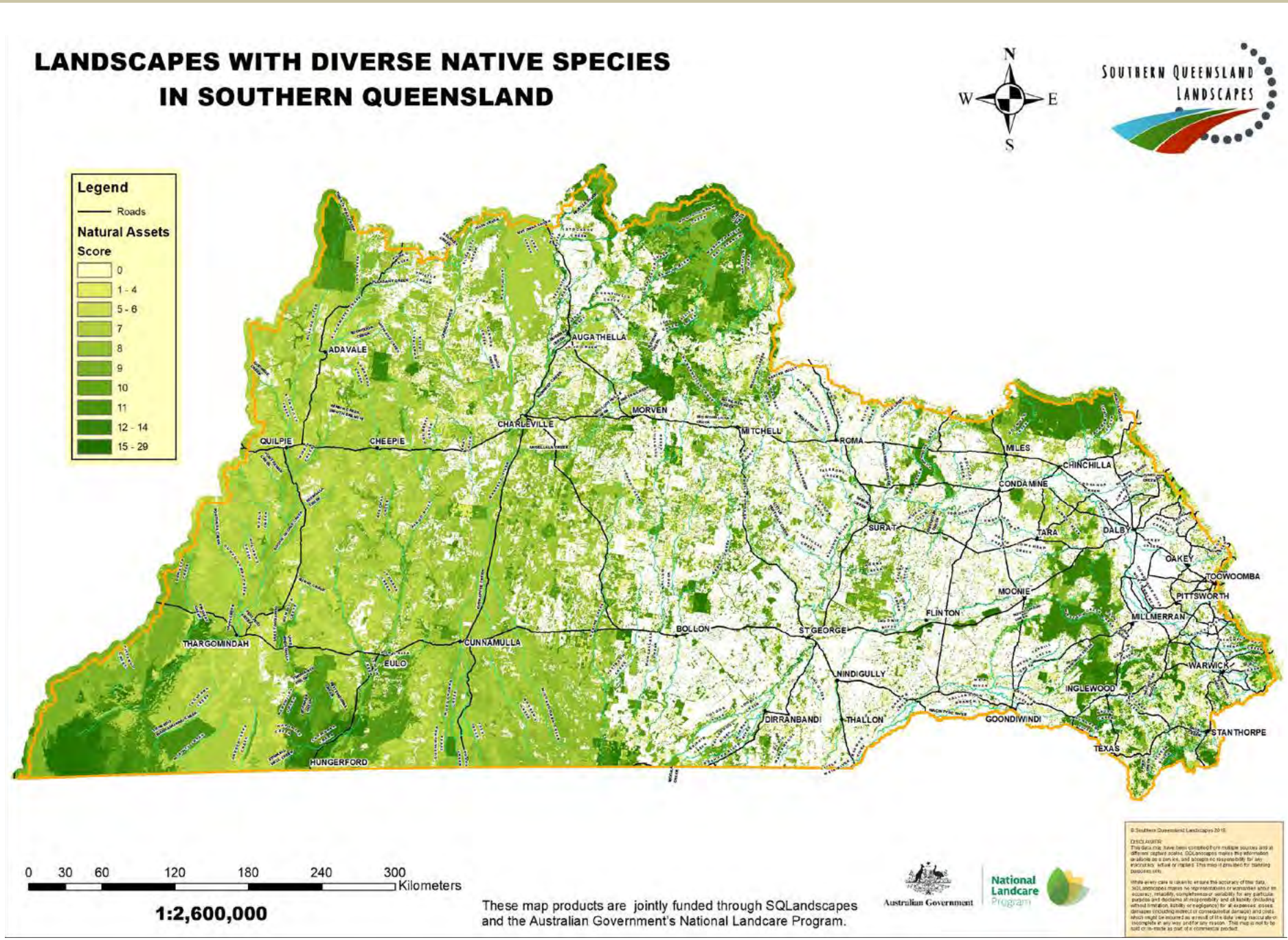


FIGURE 12: LANDSCAPES WITH DIVERSE NATIVE SPECIES

This investment is for actions to achieve the following outcomes over the next 1-3yrs:

- pest, predator, and competitor species have been controlled
- threats from disease have been contained, reduced, or excluded
- the area of suitable habitat has increased
- quality of habitat has improved
- existing populations have been protected
- re-introductions have enhanced wild populations[64]

The Australian Government Threatened Species Strategy prioritises the following broad themes for investment:

- tackling feral cats
- safe havens for species most at risk
- improving habitat
- emergency intervention to avert extinctions

A number of projects are currently focussing on areas of TECs including some of those identified in Figure 13.

Sightings of some species targeted under the Threatened Species Strategy and other EPBC Act priority species in Southern Queensland are shown in Figure 14 and Figure 15. There are gaps in knowledge due to the scale of the Region and bias towards the east where more observations are recorded. This necessitates a landscape approach to habitat stewardship that is able to address numerous issues and provide multiple outcomes.

[64] RM Consulting Group (2018) Regional Land Partnerships Evaluation Plan – Final Report, Department of the Environment and Energy, pg 24.

CULTURAL BURNING FOR BIODIVERSITY OUTCOMES

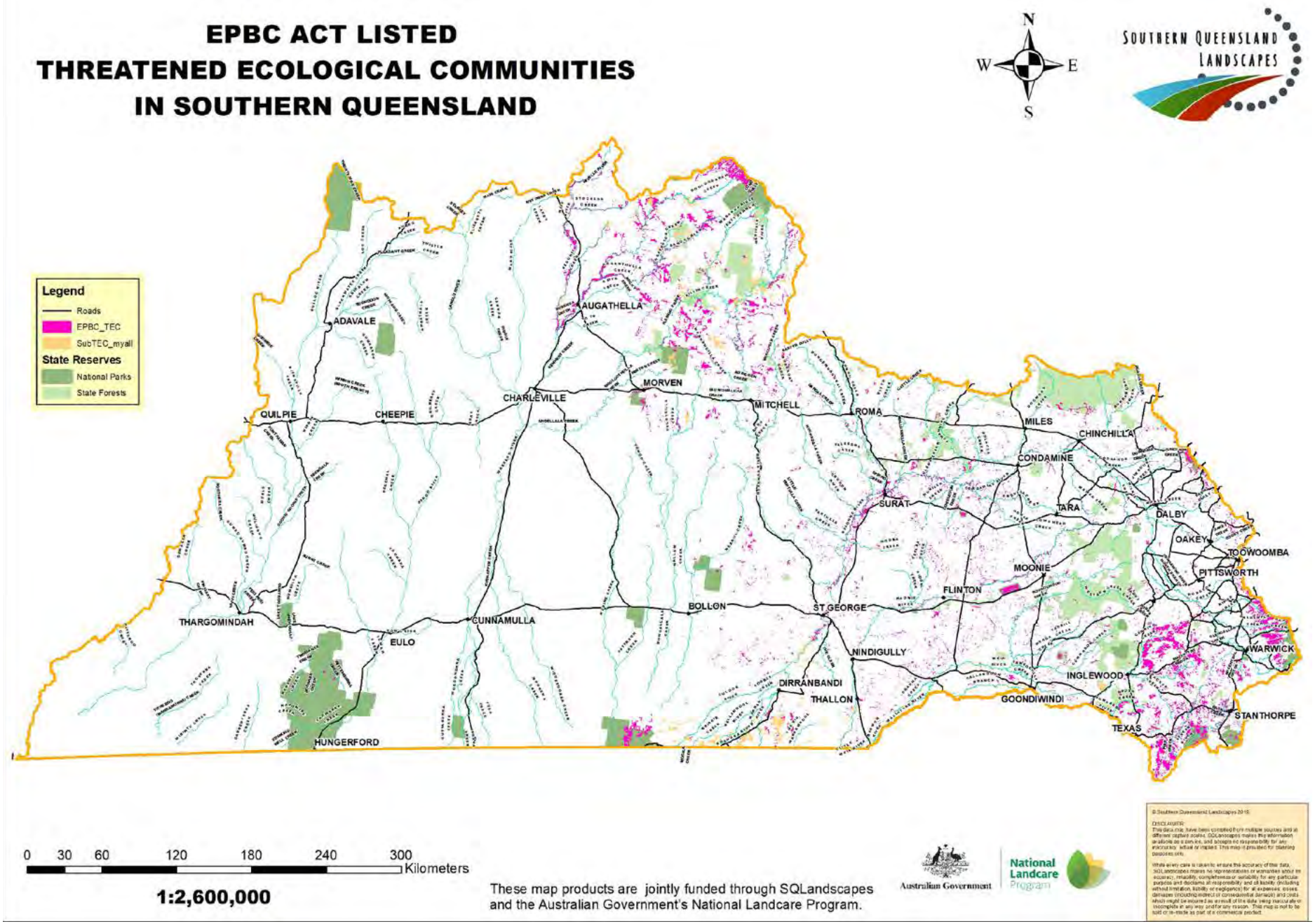


FIGURE 13: EPBC ACT LISTED THREATENED ECOLOGICAL COMMUNITIES IN SOUTHERN QUEENSLAND

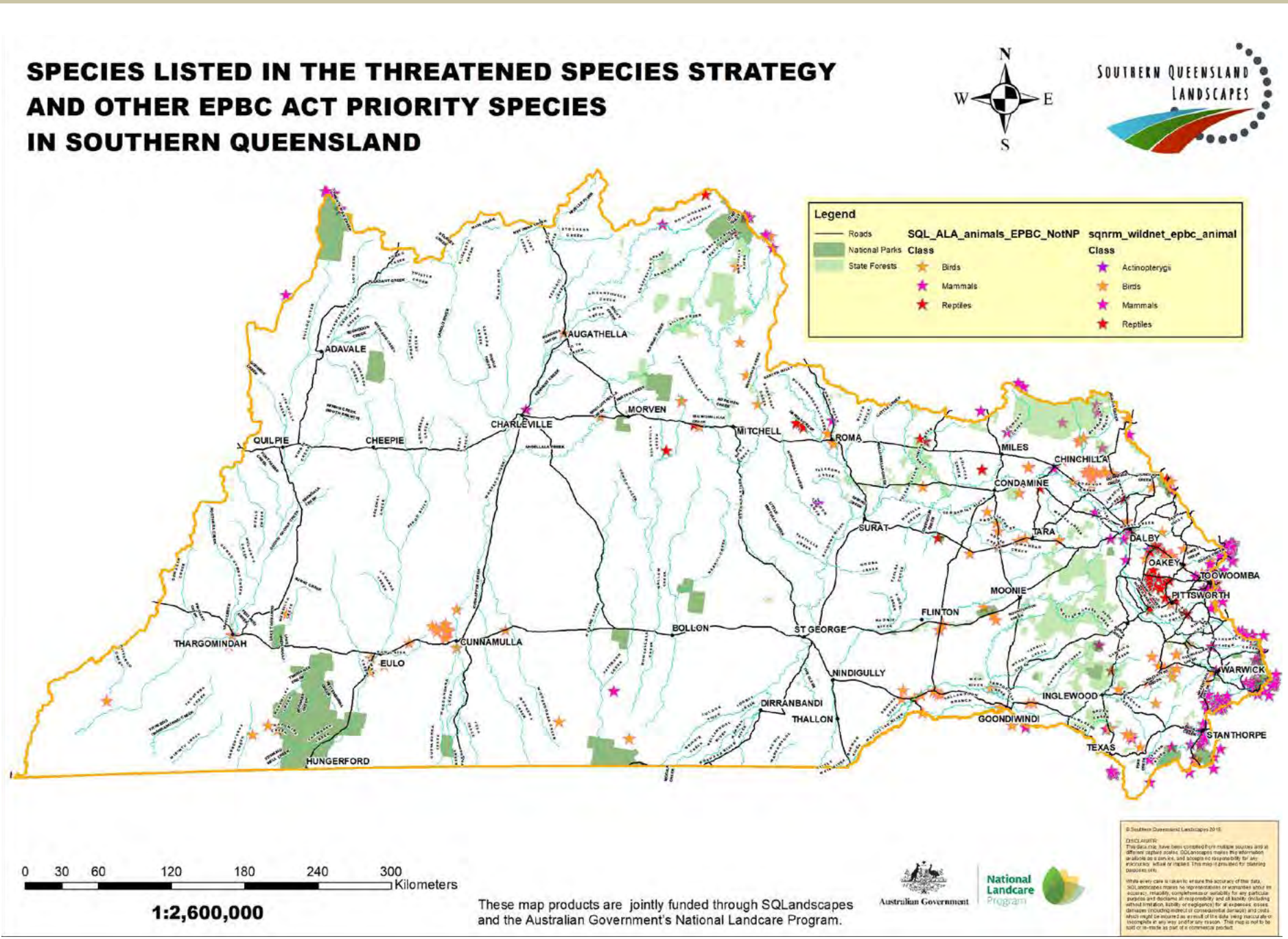


FIGURE 14: SIGHTINGS OF SPECIES LISTED IN THE THREATENED SPECIES STRATEGY AND OTHER EPBC ACT PRIORITY SPECIES (EXCLUDING KOALAS) OUTSIDE OF NATIONAL PARKS, IN SOUTHERN QUEENSLAND

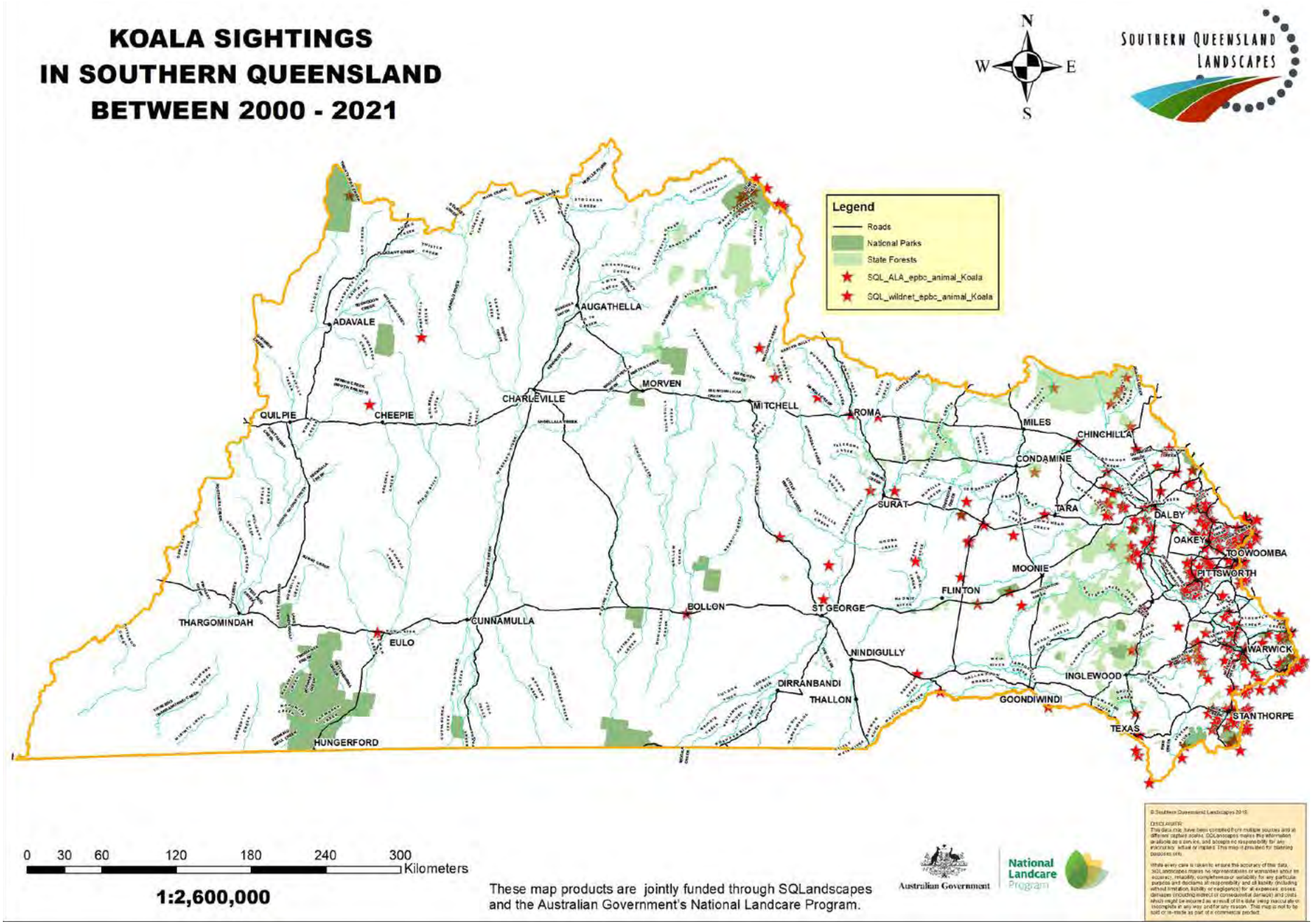


FIGURE 15: KOALA SIGHTINGS IN SOUTHERN QUEENSLAND BETWEEN 2000-2021

Healthy waterways and other wetlands

Where could we take action to achieve healthy waterways and other wetlands that provide good quality water for plants, animals, and people?

All landscapes have value. Figure 16 shows areas where particular effort to look after wetlands and other waterways could enhance the quality of water for plants, animals and people.

The darker coloured areas in Figure 16 show where many of the following things can be found together:

- vegetation on creek banks
- trees on slopes leading into waterways
- large areas of floodplains
- high numbers of springs and artesian bores
- wetland vegetation
- chains of waterholes that provide refugia for plants and animals in droughts and are joined in times of floods
- high ecological/conservation value areas where the biological integrity of the water is effectively unmodified or highly valued.

Key actions in these areas include restoring floodplains, rivers, and waterways to improve water quality and store water for longer by:

- managing erosion
- designing and installing low profile contour banks
- fencing waterways
- revegetating creek banks
- restoring wetlands
- caping Great Artesian Basin bores
- restoring bore drains
- adopting traditional burning practices
- managing pest plants and animals
- reducing runoff of nutrients
- implementing Water Resource Plans and Healthy Waters Management Plans
- restoring environmental and cultural flows

NORTH BRANCH CREEK – MARYVALE

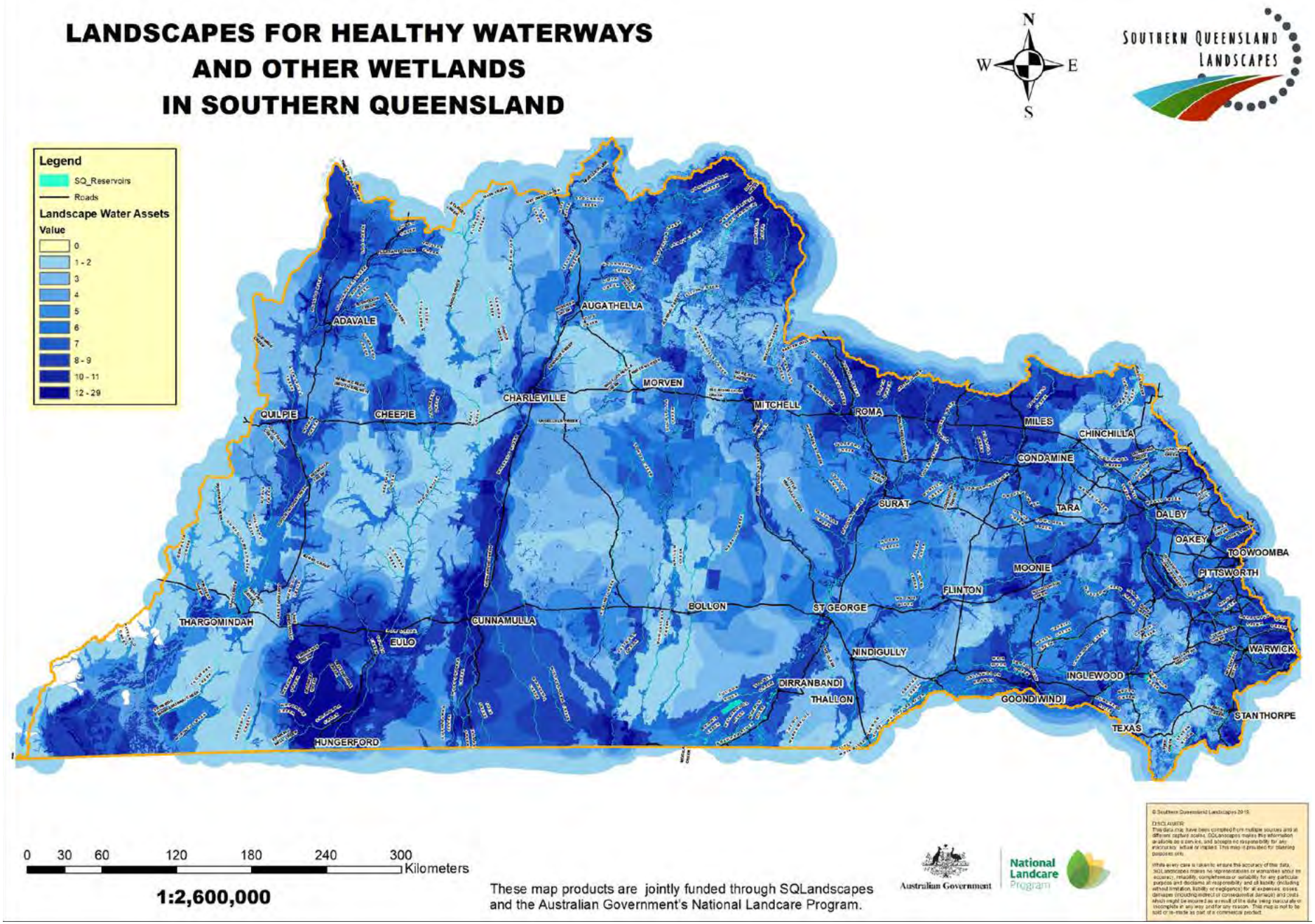


FIGURE 16: LANDSCAPES FOR HEALTHY WATERWAYS AND OTHER WETLANDS

Vigorous soils

Where could we take action to achieve vigorous soils that are covered with plants for the majority of the time, to produce food and fibre?

Grazing land

Figure 17 shows the grazing lands of the Region where enhancing ground cover is a priority.

The darker colours are where the following factors come together in the Landscape:

- land that has been identified as suitable for grazing (Qld Agricultural Land Classes)
- land that is on the floodplain that often has subsurface water or benefits from longer periods of access to stream flow
- above average ground cover (above 32% cover)
- open woodlands (less than 32% tree cover)

Key actions in these areas include:

- Restoring floodplains:
  - designing and installing low profile contour banks
  - fencing of waterways and wetlands
- Managing grazing pressure to optimise groundcover with:
  - a more conservative approach to stocking rates
  - adjusting stocking rates as local pasture productivity changes (whether increases or decreases
  - increasing the robustness of pastures by encouraging regeneration of productive, palatable, perennial forage (where possible) - in particular a focus on the 3-P pastures of the Mulga Lands has been identified is a priority for stewardship[65] [66]

[65] Mulga region GLM land types has a range of different PDF documents included that detail each of the preferred grasses for the different Mulga Lands. They can be found under each land type document, with the sub-heading of "Preferred" e.g., Hard Mulga has preferred grasses of "Cotton panic, mulga oats, kangaroo grass, mulga Mitchell"

[66] Land types of Queensland Mulga Region, Hard Mulga, Queensland Government

MERINO EWES (IMAGE: CATHY ZWICK)

SILOS

CATTLE

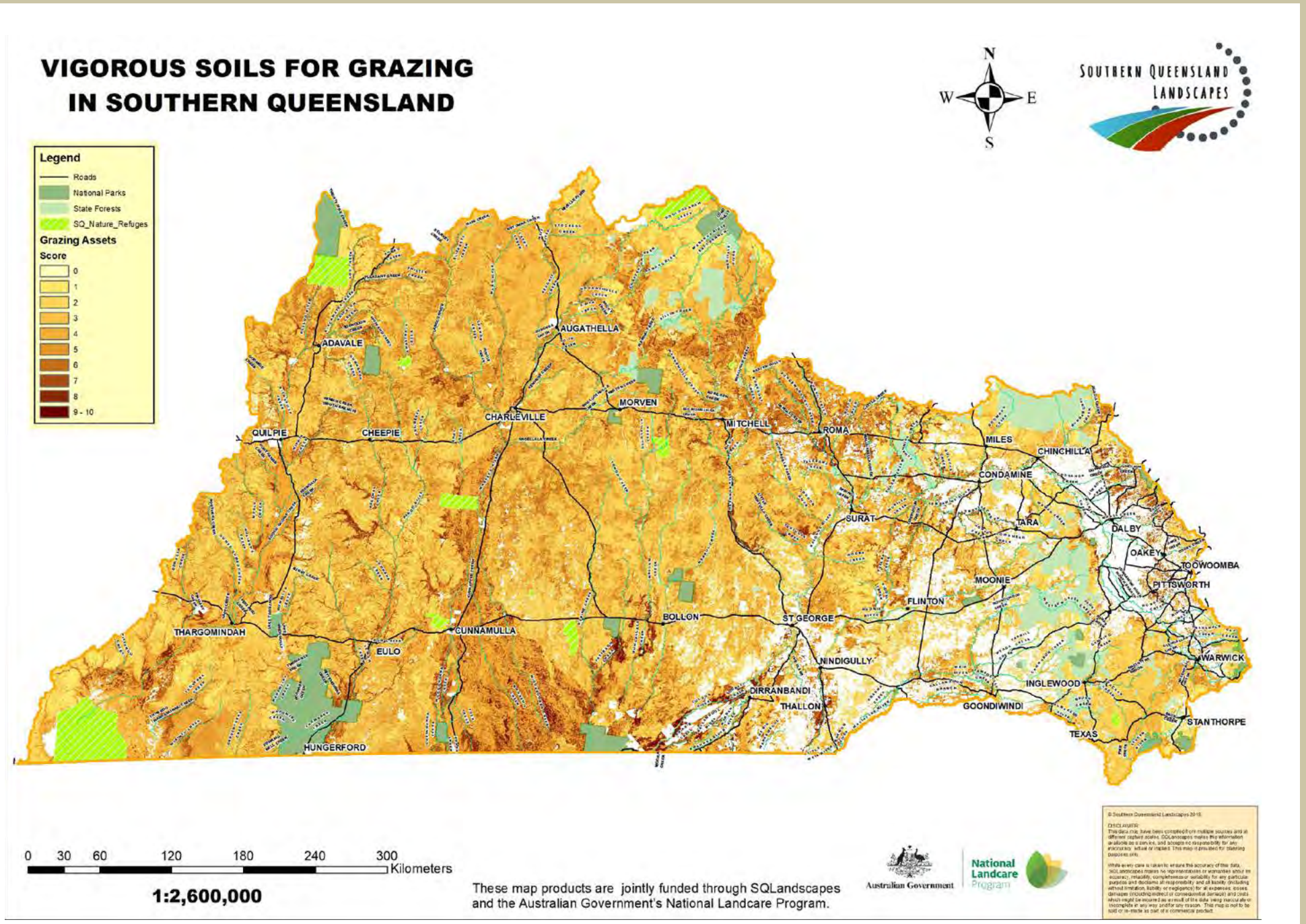


FIGURE 17: VIGOROUS SOILS FOR GRAZING (N.B. Cropping lands, National Parks and Nature Refuges have been removed as represented by the white areas).

Cropping land

Figure 18 shows the cropping land of the Region where ground cover, soil health and erosion management are a priority for food and fibre production. Cropping occurs mainly in the east of the Region, particularly in landscapes with good quality soils on floodplains (as indicated by the darker green areas).

Key actions in these areas include improving soil health by:

- reducing areas of bare ground
- managing erosion including construction and maintenance of erosion control infrastructure (e.g. contour banks)
- planning on a catchment scale to coordinate the construction and maintenance of erosion control infrastructure
- managing soil salinity and acidification
- increasing soil organic carbon including:
  - increasing residue retention
  - using controlled traffic systems
- increasing soil nutrients including the balanced use of inputs such as fertiliser and chemicals

WHEAT (IMAGE: CATHY ZWICK)

COTTON – GORE HIGHWAY

CROPLANDS – WELLCAMP

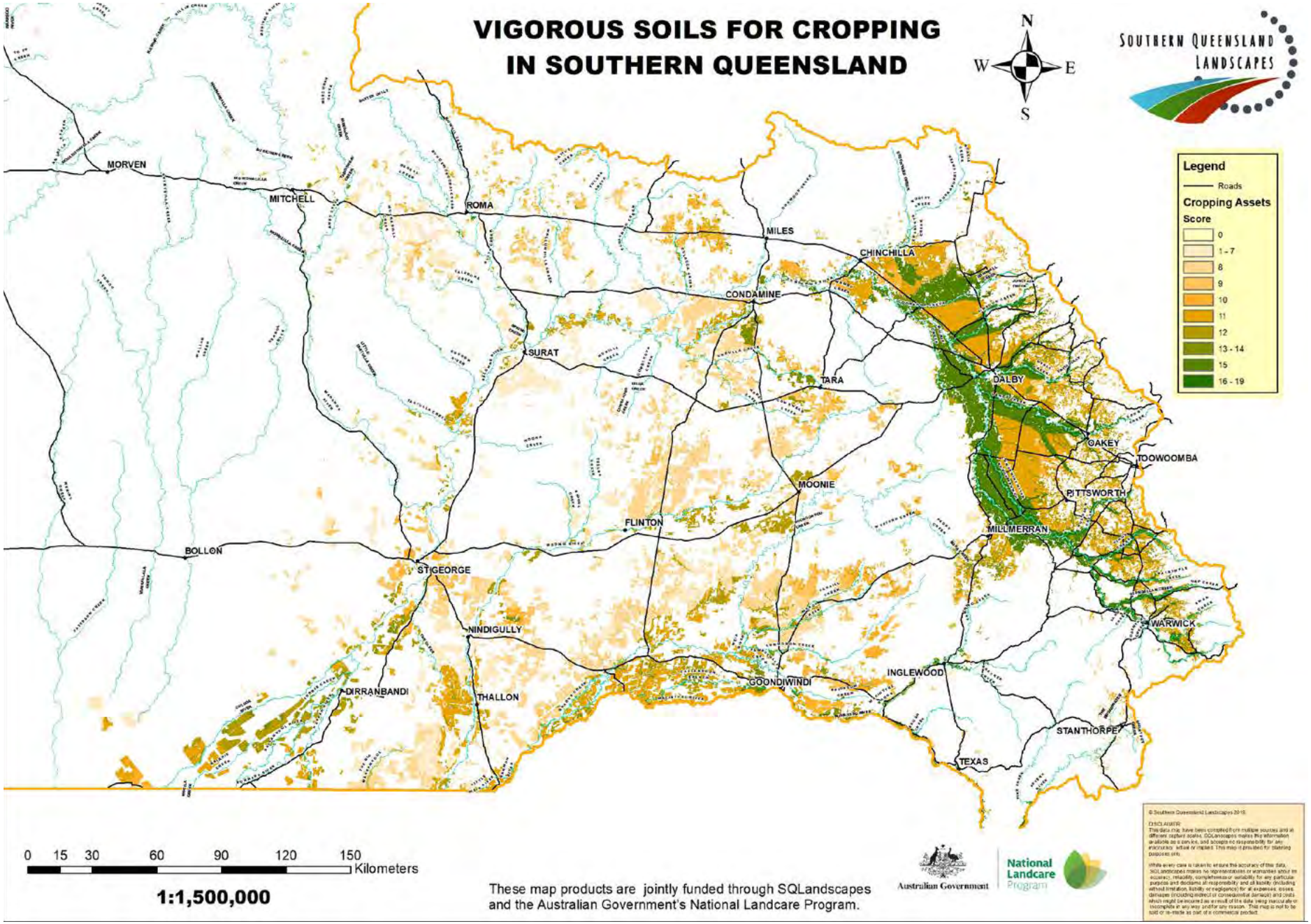


FIGURE 18: VIGOROUS SOILS FOR CROPPING

Rehydration for Flourishing Landscapes and Healthy Communities

Rehydration of the Landscape is a common topic of discussion in the Region. This recognises the critical role water plays in all the major cycles of life. Rehydrating the Landscape by extending the time that water remains in the soil can promote faster regeneration and prolong the growth of ground cover while maximizing carbon sequestration potential. This is good for soil health, productivity, and everything that relies on healthy soils.

> 'Storing water in the soil is money in the bank'.[67]

From discussions and feedback from the Community the following priorities can help identify areas for action:

- ensure that gains in areas where work has occurred in the past are maintained and gaps are filled
- extend works in identified rehydration priority areas to help slow the flow of water and ensure optimal recharge of soil water and sub artesian resources
- enhance the productivity of grazing, cropping, nature conservation, and water assets in the priority rehydration areas
- improve ground cover, reduce fire risks, manage weeds, and repair seasonal bare ground hotspots in potential rehydration areas – land managers to be supported through on ground works, knowledge support and practice change initiatives.

The floodplain areas and high and low potential for rehydration in Figure 19 indicate parts of the Landscape where interventions to slow the flow of water (particularly erosive flood flows from extreme events) could store water for longer periods in the floodplain and underground water systems. This stored water will promote ground cover and reduce erosion risk before flowing through the river system at a later date. This prolonged flow will help optimise the value of the reduced and erratic amounts of rainfall predicted into the future.

Rehydrating floodplains can return landscapes and waterways to a more natural state with important benefits for the environment, cultural flows and productivity.

[67] Community Roundtable.

REHYDRATION OF THE LANDSCAPES - QUILPIE

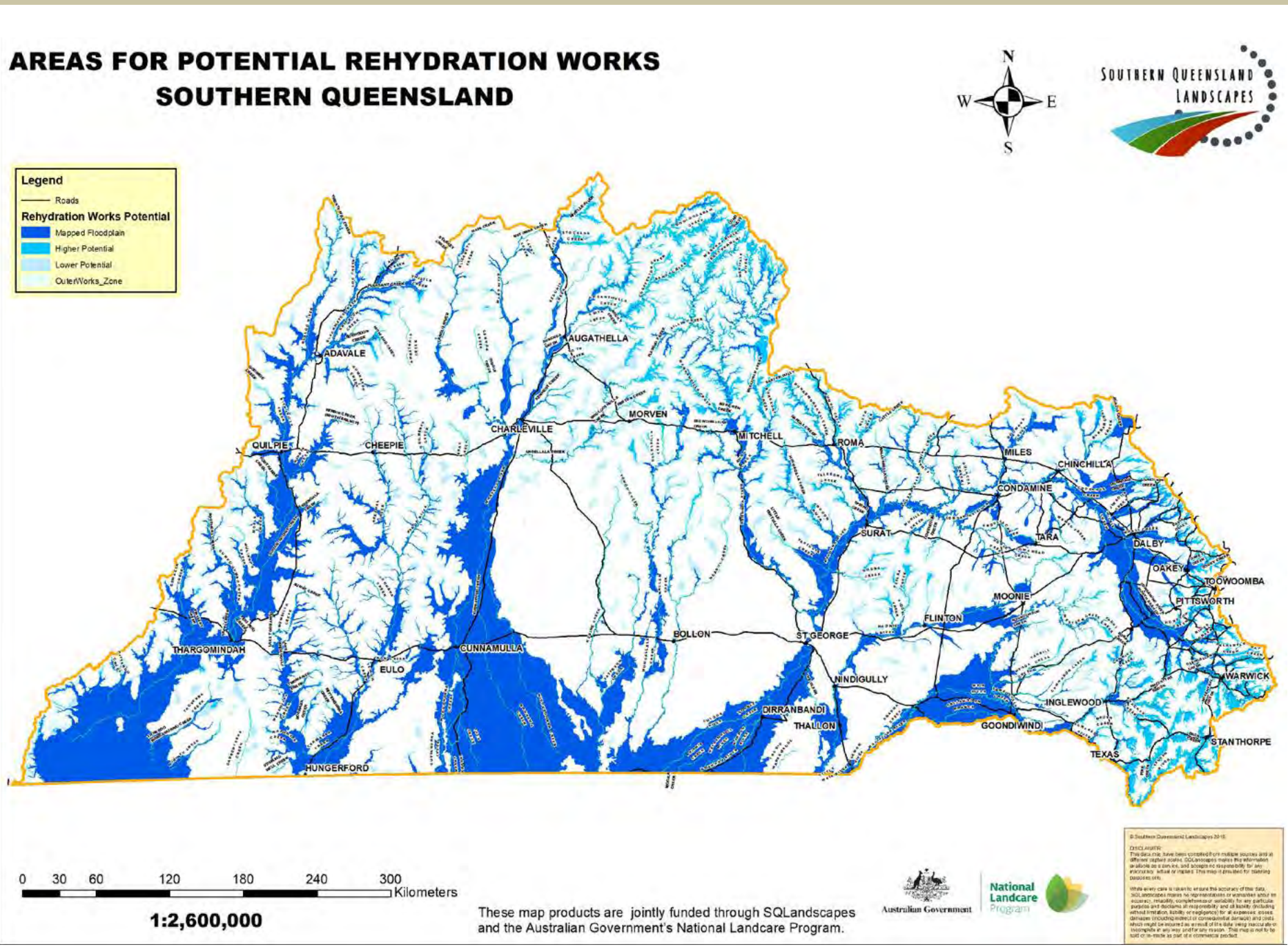


FIGURE 19: AREAS FOR POTENTIAL REHYDRATION WORKS IN SOUTHERN QUEENSLAND

LOCAL PRIORITIES (MANAGEMENT UNITS)

The diversity of landscapes and communities across Southern Queensland presents a variety of issues, opportunities and possible actions. This section recognises that the Region of Southern Queensland can be treated as three Management Units, broadly based on catchments (Figure 20).

Local communities have identified actions that need to be supported to ensure that the different landscapes of the Region are part of a flourishing region. The actions have been identified as starting points for stakeholders to discuss how they can work together to implement on ground actions.

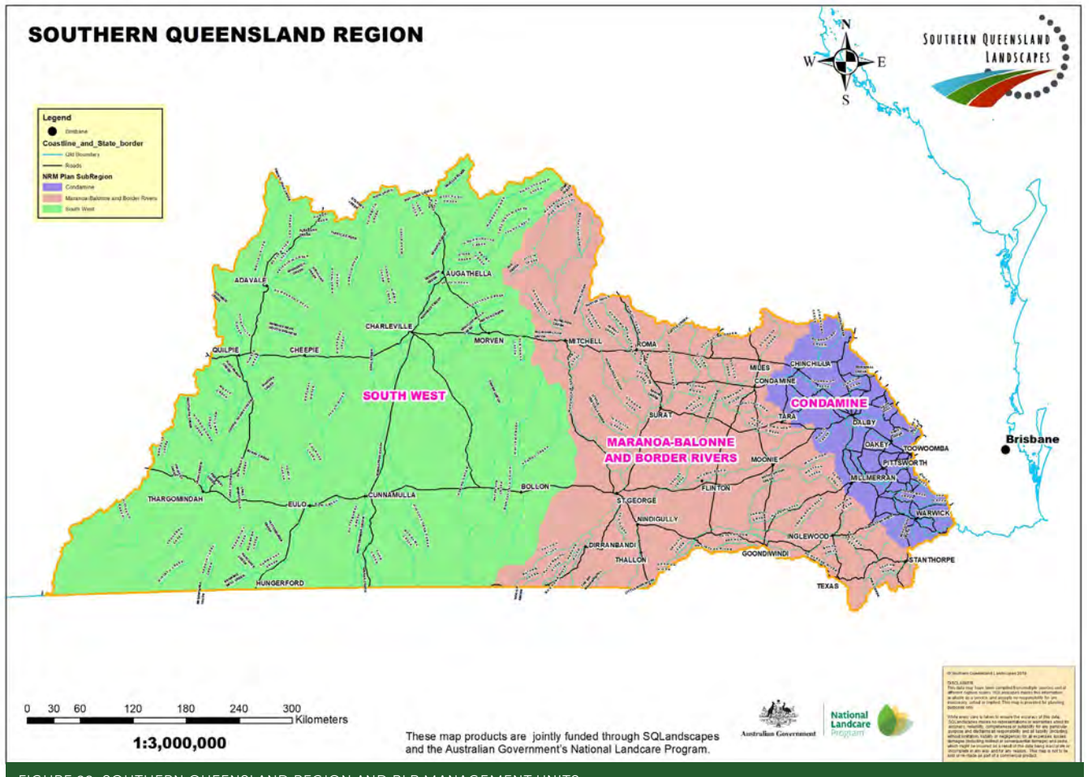


FIGURE 20: SOUTHERN QUEENSLAND REGION AND RLP MANAGEMENT UNITS

Maranoa-Balonne and Border Rivers issues and opportunities

Issues & Opportunities	Action
Pests and weeds.	Identify threats and develop a coordinated approach for prevention, mitigation, and management.
Fragmentation of bushland.	Increase wildlife corridors across the Granite Belt and Traprock to improve landscape resilience.
Soil is not healthy so doesn't store water or grow plants, crops, or pasture as well as it once did.	Support land managers to restore floodplains, rivers, and waterways to improve water quality and store water for longer. Support best management practice to improve soil health.
Need to better understand any impacts of cluster / exclusion fencing.	Support research into the benefits and impacts of exclusion fencing.
Need better access to knowledge and support and more opportunities for the whole community to share knowledge.	Coordinate resources, capacity, and initiatives to share knowledge using internet, field days, community days and demonstrations.
First Nations need to connect with Country and possess knowledge that can enhance Country (e.g. fire).	Work with First Nations to foster trust and capacity for the whole community to work together to care for Country.
Not enough water for towns and need to use water more efficiently in general.	Develop and fund urban, industrial, and rural water use efficiency programs and enhance the operation of available water storages.
Increased capacity and employment for First Peoples.	Work with First Nations to promote capacity building for the training and employment of First Peoples.
First Nations cultural sites/places and cultural assets.	Investigate and support options for the protection of cultural sites / places of First Nations and cultural assets in situ and in keeping places.
Loss of First Nations languages and customs.	Support First Nations with the revival and preservation of language and knowledge recording.
First Nation bush tucker and medicine.	Work with First Nations to expand bush foods/ medicine enterprises.
First Nations ecocultural tourism.	Work with First Nations to explore opportunities for tourism, including along songlines where appropriate (different funding and location options).
Culturally appropriate engagement.	Work with First Nations to develop a culturally appropriate engagement protocol and share with the wider community for awareness and adoption.

South West issues and opportunities

Issues & Opportunities	Action
The current way some of the Carbon Farming is done has impacts on the environment and the Community.	Discuss alternative approaches or modifications that allow coordinated fire and grazing management and more integrated approaches.
Soil is not healthy so doesn't store water or grow native plants and pasture as well as it once did.	Support land managers to restore floodplains, rivers, and waterways to improve water quality and store water for longer. Support best management practice to improve soil health.
Need to better understand any impacts of cluster / exclusion fencing.	Support research into the benefits and impacts of exclusion fencing.
Need access to knowledge and support and more opportunities for the whole community to share knowledge.	Coordinate resources, capacity, and initiatives to share knowledge using internet, field days, community days and demonstrations.
First Nations need to connect with Country and possess knowledge that can enhance Country (e.g. fire).	Work with First Peoples to foster trust and the capacity of the whole community to work together to care for Country.
Increased capacity and employment for First Peoples.	Work with First Nations to promote capacity building for the training and employment of First Peoples.
First Nations cultural sites/places and cultural assets.	Investigate and support options for the protection of First Nations cultural sites/places and cultural assets in situ and in keeping places.
Loss of First Nations languages and customs.	Support First Nations with the revival and preservation of language and knowledge recording.
First Nation bush tucker and medicine.	Work with First Nations to expand bush foods/ medicine enterprises.
First Nation ecocultural tourism.	Work with First Nations to explore opportunities for tourism, including along songlines where appropriate (different funding and location options).
Culturally appropriate engagement.	Work with First Nations to develop a culturally appropriate engagement protocol and share with the wider community for awareness and adoption.

Condamine issues and opportunities

Issues & Opportunities	Action
Pests and weeds.	Identify threats and develop a coordinated approach for prevention, mitigation, and management.
Soil is not healthy so doesn't store water or grow plants, crops and pastures as well as it once did.	Support land managers to restore floodplains, rivers, and waterways to improve water quality and store water for longer. Support best management practice to improve soil health.
More options are needed for peri urban residents to access information and support to look after their small blocks.	Foster relationships between rural and urban areas through LGAs, LGAQ, and industry, at a local level, to co-design and deliver awareness projects. Identify peri-urban land managers needs for an "induction pack".
Need better access to information and support and more opportunities for the whole community to share knowledge.	Coordinate resources, capacity, and initiatives to share knowledge using internet, field days, community days and demonstrations.
First Nations need to connect with Country and possess knowledge that can enhance Country (e.g. fire).	Work with First Nations to foster trust and capacity for the whole community to work together to care for Country.
Not enough water for towns and need to use water more efficiently in general.	Develop and fund urban, industrial, and rural water use efficiency programs and enhance the operation of available water storages.
Need to better understand any impacts of cluster / exclusion fencing.	Support research into the benefits and impacts of exclusion fencing. Discuss how current and any future exclusion fencing can allow native wildlife movement.
Increased capacity and employment for First Peoples.	Work with First Nations to foster capacity building for the training and employment of First Peoples.
First Nations cultural sites/places and cultural assets.	Investigate and support options for the protection of First Nations cultural sites/places and cultural assets in situ and in keeping places.
Loss of First Nations languages and customs.	Support First Nations with the revival and preservation of language and knowledge recording.
First Nation bush tucker and medicine.	Work with First Nations to expand bush foods/ medicine enterprises.
First Nation ecocultural tourism.	Work with First Nations to explore opportunities for tourism, including along songlines where appropriate (different funding and location options).
Culturally appropriate engagement.	Work with First Nations to develop a culturally appropriate engagement protocol and share with the wider community for awareness and adoption

TRACKING THE JOURNEY

A comprehensive Tracking the Journey report will be produced at five yearly intervals as part of a review of the Flourishing Landscapes Plan.

Monitoring of progress will occur at a number of scales:

- Spatial data – primarily regional data sets analysed using a geographic information system to produce a range of mapping products and associated statistics to track change.
- Demographic data:
  - Census data from the Australian Bureau of Statistics are to be analysed to produce a range of social, demographic, and economic reports
  - Queensland Survey Analytical System (QSAS)
- Capacity building and engagement activities—the number of activities and events aimed at sharing knowledge for change
- Practice Change/adoption – the number of properties and area of change in stewardship practices
- On-ground measures including change in condition using a number of accepted monitoring tools including:
  - Department of Agriculture and Forestry (DAF) 2020, Land Condition Assessment: Training and Reference Guide, Queensland Government
  - Department of Natural Resource, Mines and Energy (DNRME) 2019, Biocondition Assessment Tool Guideline, Queensland Government
  - Queensland Herbarium 2018, Terrestrial Vertebrate Fauna Survey Guidelines for Queensland
  - Queensland Murray Darling Committee (QMDC) n.d., Queensland Murray Darling Basin Water Quality and River Health Monitoring Guide
  - Wilkinson, S, Brooks, A, Hairsine, P, Crawford, D, Bartley, R & Pietsch, T 2019, Reef Trust Phase IV Gully and Stream Bank Toolbox, Australian Government

Data collected by landholders and the Community can also establish the level of carbon and other natural values in the Landscape in preparation for current and future programs that recognise landholder's positive stewardship of natural assets.

Reporting intervals will depend on a number of factors, including

- the requirements of individual funding programs e.g. the Australian Government RLP program has a detailed evaluation plan[68]
- the availability of data e.g. the Census is conducted every five years with products becoming available in the intervening years
- data collected from satellites is updated at semi regular intervals

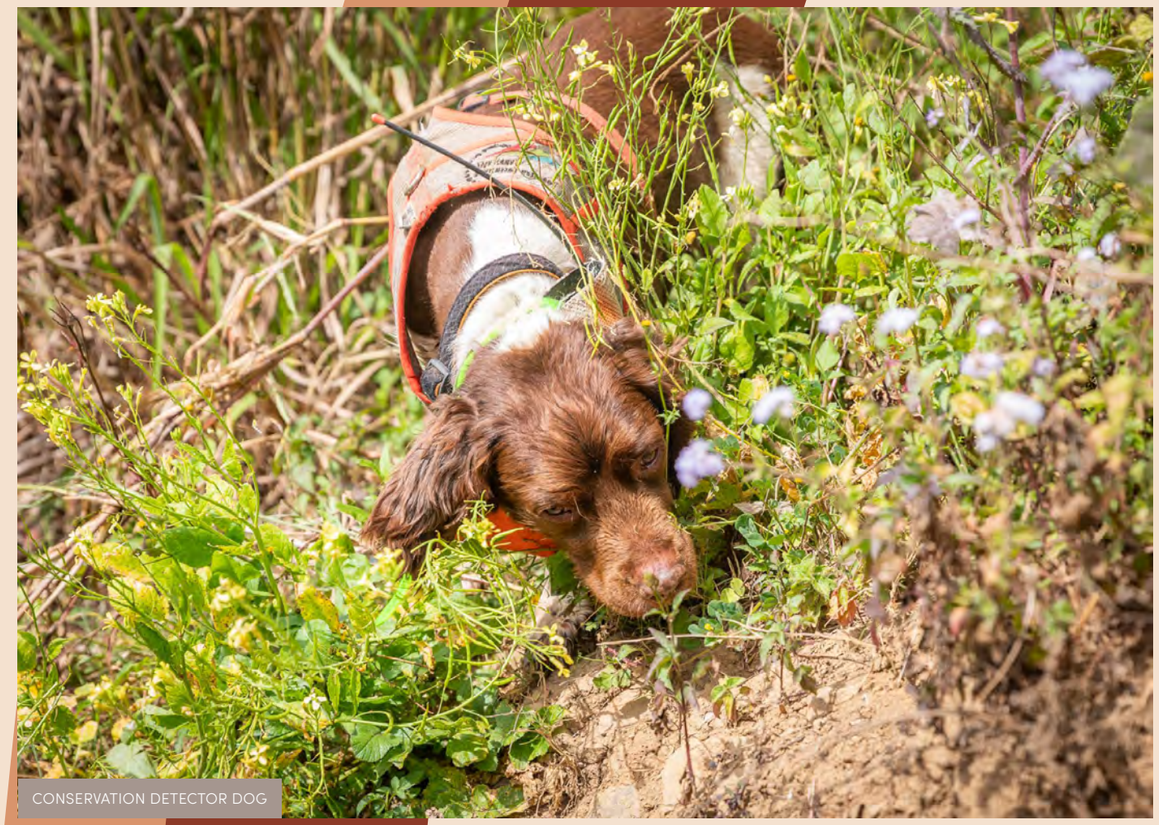
The distribution of active biophysical monitoring sites will also vary over years, according to the current funding programs and associated project sites at a given time.

Data will be stored and analysed in the Southern Queensland Landscape Atlas. The Atlas has the potential to be offered as an online resource capable of collecting and warehousing citizen science. The Atlas will also stay up to date with data collected by government and industry through data sharing arrangements.

WILDLIFE MONITORING CAMERA

[68] RM Consulting Group (2018), Regional Land Partnerships Evaluation Plan – Final Report, Department of the Environment and Energy, Canberra.

FIELD STUDY



CONSERVATION DETECTOR DOG

GLOSSARY OF KEY TERMS

Term	Description
Community	The term Community is used in a broad sense to include individuals and organisations working and living in or otherwise enjoying and participating in the Landscape. The use of the term Community thus includes government, businesses, landholders, community groups, First Peoples, etc. The participation of these groups and individuals in landscape management thus includes the actions relating to supporting the people, environment and economy in their geographical area.
First Nations People	First Nations People is used in reference to the custodians of specific country when speaking of these people in relation to that country.
First Peoples	First Peoples is used as a collective term inclusive of both Aboriginal and Torres Strait Islanders similar to the common usage of the term Indigenous.
Goal	A goal is the identified aim/aspiration for an element of the FLHC Pathway.
Government	Refers collectively to all three levels of government - local, state and federal. A particular level of government, local government authority or agency will be identified where there is sole interest in an issue or initiative.
Landscapes	The term landscapes is used as an inclusive term that encapsulates the complex system interactions of people, environment, and economy.
Landscape management	Management of components of the human-environment system such as land, water, biodiversity, community, etc.; also called natural resource management (NRM).
Management Unit (MU)	The Southern Queensland Region is made up of three MUs: Condamine MU, Maranoa-Balonne and Border Rivers MU, and South West MU.
Outcome	The desired result from actions performed towards the goal for a component of the vision achieved, as a result of achieving a number of goals.
Previous regional bodies	The areas supported by the previous three regional bodies (one for each MU) were combined to form Southern Queensland Landscapes. Previous regional bodies were: (a) Condamine Alliance (CA), which operated in the Condamine MU; (b) Queensland Murray Darling Committee (QMDC), which operated in the Maranoa-Balonne and Border Rivers MU; and (c) South West NRM, which operated in the South West MU.
FLHC Pathway	The Flourishing Landscapes Healthy Communities Pathway illustrates how coordinated action will achieve the Community's vision for Southern Queensland.
RLP App	Regional Land Partnerships program online app for spatially identifying national priorities.
Southern Queensland (SQ) Landscapes	Southern Queensland Landscapes acts as the service provider for the coordination of the new landscape Region that covers the three Management Units (MU).
Southern Queensland Region	The physical area of operation of SQ Landscapes is referred to as the Southern Queensland Region. Spanning 314, 398 km2—30% bigger than the state of Victoria—the Region unites the Toowoomba Range in the east to the Grey Range in the west containing the Condamine, Balonne, Border Rivers, Maranoa, Paroo and Bulloo catchments.
StoryMap	A StoryMap is an on line geographic information platform. The FLHC StoryMap tells the story of the Region and actions required using interactive maps.
Targets	The collective term for the goals, outcomes and associated activities.

ACRONYMS

Acronym	Description
3-P	3 P Pastures – productive, perennial, and palatable
CAMBA	China-Australia Migratory Birds Agreement
DAF	Queensland Department of Agriculture and Fisheries
DIW	Directory of Important Wetlands
DNRME	Department of Natural Resources Mines and Energy
EDO	Environmental Defenders Office
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESG	Environmental, social and governance
FLHC	Flourishing Landscapes Healthy Communities
GAB	Great Artesian Basin
GIS	Geographic Information Systems
GPS	Global Positioning System
JAMBA	Japan-Australia Migratory Birds Agreement
LGA	Local Government Area
MU	Management Unit
NRIP	Natural Resources Investment Program of the Queensland Government (qld.gov.au/environment/agriculture/sustainable-farming/nrm-investment-projects/program-2018-2022)
NRM	Natural resource management; also called landscape management
QMDC	Queensland Murray Darling Committee
QPWS&P	Queensland Parks and Wildlife Service and Partnerships
QSAS	Queensland Survey Analytic System
QTIC	Queensland Tourism Industry Council
RAP	Reconciliation Action Plan
RLP	Regional Land Partnerships funding within the National Landcare Program of the Australian Government (nrm.gov.au/Regional-land-partnerships)
SEIFA	Socio-Economic Indexes for Areas
SEVT	Semi-evergreen vine thickets
South West NRM	South West Natural Resource Management (previous regional body managing South West MU)
SQ	Southern Queensland
SQL	Southern Queensland Landscapes
TEC	Threatened Ecological Communities under the EPBC Act
VRT	Variable-Rate Technology
WoNS	Weeds of National Significance

APPENDIX A: THE AUSTRALIAN GOVERNMENT'S REGIONAL LAND PARTNERSHIPS (RLP) PROGRAM, FIVE-YEAR OUTCOMES, AND INVESTMENT PRIORITIES

The Australian Government is investing $450 Million in the Regional Land Partnerships (RLP) program as part of the National Landcare Program Phase Two from 2018 to 2023. Funded by the Department of Environment and Energy and the Department of Agriculture and Water Resources, the Queensland portion of the program will be delivered by natural resource management (NRM) bodies throughout the state. This includes providing core NRM services as well as delivering specific regional projects.

RLP Program Description and Objectives

Queensland's NRM bodies will continue to work in partnership with governments, industry, communities, and individuals to deliver core NRM services at a regional scale under the RLP program. SQ Landscapes is the NRM body for Southern Queensland. The objective of this program is to protect and conserve Australia's water, soil, plants, animals, and ecosystems, as well as support the productive and sustainable use of these valuable resources.

1	By 2023, there is restoration of, and reduction in threats to, the ecological character of Ramsar sites, through the implementation of priority actions.
2	By 2023, the trajectory of species targeted under the Threatened Species Strategy, and other EPBC Act priority species, is stabilised or improved.
3	By 2023, invasive species management has reduced threats to the natural heritage Outstanding Universal Values of World Heritage properties through the implementation of priority actions.
4	By 2023, the implementation of priority actions is leading to an improvement in the condition of EPBC Act listed Threatened Ecological Communities.
5	By 2023, there is an increase in the awareness and adoption of land management practices that improve and protect the condition of soil, biodiversity, and vegetation.
6	By 2023, there is an increase in the capacity of agriculture systems to adapt to significant changes in climate and market demands for information on provenance and sustainable production.

RLP Species and Ecological Communities

The Australian Government's Threatened Species Strategy lists 100 priority species across Australia.[69] Of the 100 the following species have been recorded in Southern Queensland[70] (Table 2). Threatened species in Southern Queensland have been mapped in Figure 14 using observations recorded in the Wildnet database.[71]

TABLE 2: *THREATENED SPECIES IN SOUTHERN QUEENSLAND AS LISTED IN THE AUSTRALIAN GOVERNMENT THREATENED SPECIES STRATEGY*

Species	Type	Scientific name	Condamine	Maranoa Balonne & Border Rivers	South West
Australasian Bittern	Bird	*Botaurus poiciloptilus*	Yes	Yes	Yes
Eastern Curlew	Bird	*Numenius madagascariensis*	Yes	N/A	N/A
Plains-wanderer	Bird	*Pedionomus torquatus*	N/A	N/A	Yes
Red Goshawk	Bird	*Erythrotriorchis radiatus*	Yes	Yes	Yes
Regent Honeyeater	Bird	*Anthochaera phrygia*	Yes	Yes	N/A
Swift Parrot	Bird	*Lathamus discolor*	Yes	Yes	N/A
Brush-tailed Rock-wallaby	Mammal	*Petrogale penicillata*	Yes	Yes	N/A
Greater Bilby	Mammal	*Macrotis lagotis*	N/A	N/A	Yes
Koala (Qld, NSW, ACT)	Mammal	*Phascolarctos cinereus*	Yes	Yes	Yes
New Holland Mouse	Mammal	*Pseudomys novaehollandiae*	Yes	Yes	N/A
Northern Hairy-nosed Wombat	Mammal	*Lasiorhinus krefftii*	N/A	Yes	N/A
Northern Quoll	Mammal	*Dasyurus hallucatus*	Yes	Yes	Yes
Adorned Collared Delma	Reptile	*Delma torquata*	Yes	Yes	Yes
King Blue-grass	Plant	*Dichanthium queenslandicum*	Yes	N/A	N/A
Native Guava	Plant	*Rhodomyrtus psidioides*	Yes	N/A	N/A
Threatened Species Listed in EPBC Act, but not part of the 100 Priority Species					
Eastern Bristle Bird	Bird	*Dasyornis brachypterus*	Yes	N/A	N/A

[69] 100 Priority Species Threatened Species Strategy, Australian Government at Federal Government's 100 Priority Species List

[70] Regional Land Partnerships App (erin.maps.arcgis.com/apps/MapSeries/index.html?appid=c2606f315ee74d899c4f7ae478c29ccc)

[71] WildNet database, Queensland Government (qld.gov.au/environment/plants-animals/species-information/wildnet)

The EPBC Act lists Threatened Ecological Communities (TECs). The TECs listed in the Region and the areas they cover are shown in Table 3. Area data was generated through the SQ Landscapes Atlas with input from the RLP App.[72] A map of Threatened Ecological Communities in Southern Queensland appears in Figure 13.

TABLE 3: THREATENED ECOLOGICAL COMMUNITIES IN SOUTHERN QUEENSLAND REGION AS LISTED BY THE EPBC ACT

Listed Threatened Ecological Communities	Recovery Plans	Area (Total)
Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South BioRegions in BBS BioRegion	Yes	195 km^2
Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin		19 km^2
Weeping Myall Woodlands Listing Advice	Yes	125 km^2
The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin[a]		9 km^2
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and Southern Queensland	Yes	58 km^2
Poplar Box Grassy Woodland on Alluvial Plains		2448 km^2
Brigalow (Acacia harpophylla dominant and co-dominant)		2045 km^2
White Box - Yellow Box – Red Gum Grassy Woodland		965 km^2
SEVT - Semi-evergreen vine thickets of the Brigalow Belt (North and South)	Yes	167 km^2
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands listing advice		3 km^2
Lowland Rainforest of Subtropical Australia	Yes	40 km^2

[a] Includes 100m buffer

[72] Regional Land Partnerships App erin.maps.arcgis.com/apps/MapSeries/index.html?appid=c2606f315ee74d899c4f7ae478c29ccc

For further information on the Flourishing Landscapes Healthy Communities Plan:

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The complete Flourishing Landscapes Healthy Communities Plan, Summary and interactive StoryMap can be accessed at Southern Queensland Landscape's website sqlandscapes.org.au