Burnett Regional Resilience Strategy

BUNDABERG REGIONAL COUNCIL

CHERBOURG ABORIGINAL SHIRE COUNCIL

NORTH BURNETT REGIONAL COUNCIL

South Burnett Regional Council

Queensland Government

Document details

Security classification	Public
Date of review of security classification	August 2022
Authority	Queensland Reconstruction Authority
Document status	Final
Version	1.0
QRA Reference	QRATF/22/3604 | GD 0709

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The Burnett Regional Resilience Strategy is a partnership between the Queensland Government and the following four councils of the Burnett Region:

Council	Website/Disaster Dashboard
Bundaberg Regional Council	www.bundaberg.qld.gov.au disaster.bundaberg.qld.gov.au
Cherbourg Aboriginal Shire Council	www.cherbourg.qld.gov.au cherbourg.qld.gov.au/services/disaster-management
North Burnett Regional Council	northburnett.qld.gov.au emergency.northburnett.qld.gov.au
South Burnett Regional Council	www.southburnett.qld.gov.au dashboard.southburnett.qld.gov.au

Cover image: Burnett Heads view of Burnett River, Bundaberg. Credit: Shutterstock.

Image: Burnett River in Gayndah. Credit: Shutterstock.

Introduction

Between 2010 and 2022, the Burnett region has endured 17 significant disaster events including flooding, severe weather and storms, cyclones, and bushfires . The region was hit by four significant disaster events in the 2021-2022 disaster season including the Southern Queensland Flooding, South East Queensland Rainfall and Flooding, Ex-Tropical Cyclone Seth, and the Central, Southern and Western Rainfall and Flooding events.

These disaster events have caused significant damage to property, infrastructure, businesses and homes, compounding localised stresses in the region. From these lived experiences our community has an appreciation of the factors that can enhance resilience and strengthen our region our local networks, sense of community, connection to the landscape, and a desire for a happy and healthy lifestyle.

The Burnett Regional Resilience Strategy provides the blueprint for a more resilient future where the community works together to create shared solutions to common problems. Developing this Strategy has provided an opportunity to work collaboratively across local governments and in partnership with the Queensland Government and other local stakeholders with an approach that is locally-led, regionally coordinated and state supported.

This Strategy was developed in partnership with the Bundaberg Regional Council, Cherbourg Aboriginal Shire Council, North Burnett Regional Council, South Burnett Regional Council and the Queensland Government via the Queensland Reconstruction Authority.

The Strategy builds upon the Burnett Catchment Flood Resilience Strategy released in 2018, by taking an all hazards approach to the challenges of bushfire, earthquake, drought and heatwave.

By strengthening disaster resilience our communities are better equipped to deal with the increasing prevalence of disasters.

Acknowledgement of Country

We acknowledge the Aboriginal peoples and Torres Strait Islander peoples as the Traditional Owners and Custodians of this Country. We recognise and honour their ancient cultures, and their connection to land, sea and community. We pay our respect to them, their cultures, and to their Elders, past, present and emerging.

Image: Community Art. Courtesy Cherbourg Aboriginal Shire Council.

Burnett Region

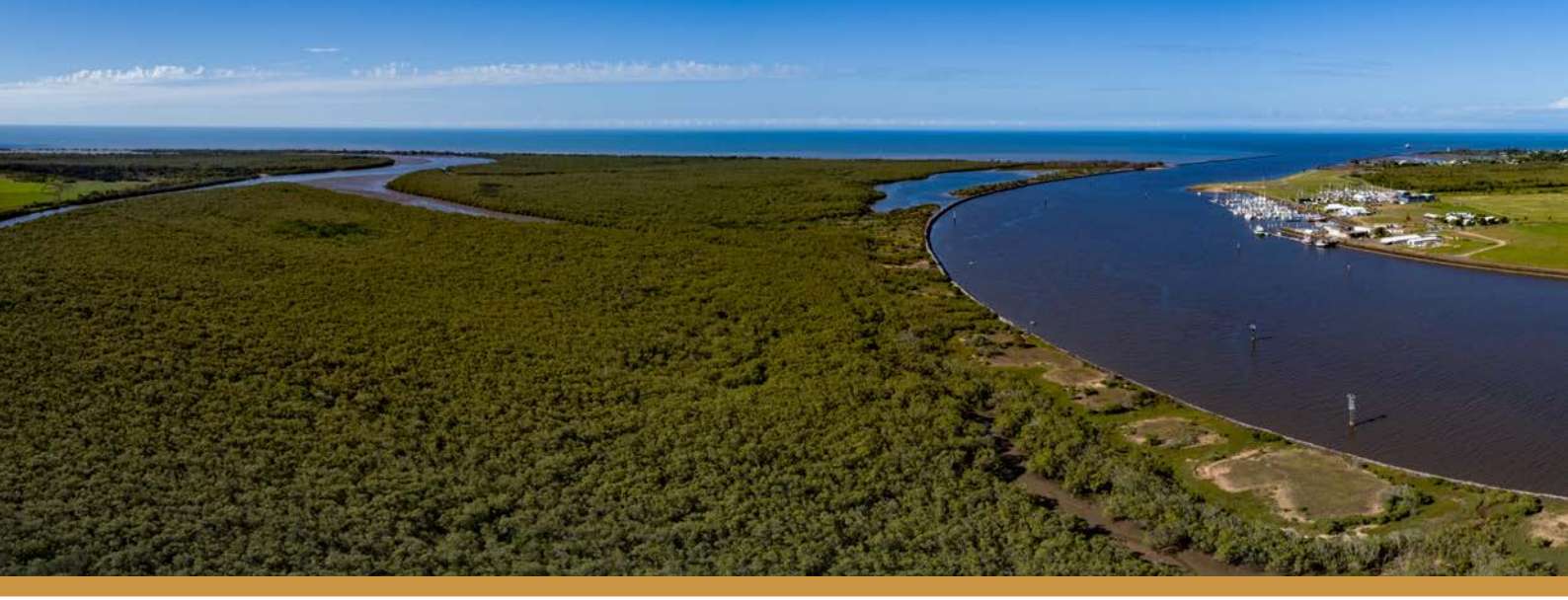

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Image: Aerial panorama of the Burnett River Mouth, Burnett Heads.
Credit: Shutterstock.

Our vision

We are well practiced in preparing for, dealing with, and recovering from emergencies and disasters.

We collaborate across boundaries, disciplines and industries to stand together 'as one'.

We value our local knowledge and eagerly share this with others for the benefit of our communities.

We demonstrate grassroots leadership in disaster risk management and disaster resilience – built from a sense of community, wellbeing and connectedness.

We harness the power and capability of our on-the-ground networks of people – formal and informal.

We take timely and committed action for collective benefit.

Our reliance on each other in the face of adversity is what makes us resilient.

We are a connected community.

Image: Aerial Panorama of Mount Walsh, Biggenden. Credit: Shutterstock.

About the Strategy

Resilience is everyone's business. Resilience in the Burnett region is dependent on a shared but also collective responsibility model.

This Strategy encourages a role for everyone in the Burnett region to rally around and deliver upon a common description of regional resilience, reflecting the voice of our locals. It highlights key opportunities to build disaster resilience that are unique to our region.

The end goals for resilience in the Burnett region are to:

- reduce the impact of an event so as to limit those that need support to recover
- set the conditions to enable transformation and adaptation to the range of stresses and shocks we experience.

Aims

The aims of this Strategy are:

- **tell the unique story of resilience in the Burnett**
- **bolster what needs to be done to improve disaster resilience in the Burnett**
- **deliver a clear Regional Resilience Strategy and Local Action Plans to further strengthen disaster resilience for our region.**

Objectives

The objectives of this Strategy are to:

- **identify the region's disaster resilience priorities**
- **identify actions and initiatives to address resilience needs**
- **prioritise the identified actions and initiatives**
- **connect priorities to future funding and resourcing opportunities**
- **articulate how risk-informed disaster resilience actions and projects meet local needs and align to state and national disaster risk reduction and resilience policy objectives.**

Council partners

This Burnett Regional Resilience Strategy (the Strategy) is a partnership between the Queensland Government and the following councils of the Burnett Region:

- **Bundaberg Regional Council**
- **Cherbourg Aboriginal Shire Council**
- **North Burnett Regional Council**
- **South Burnett Regional Council.**

Values guiding our resilience pathway

The Strategy reflects our values in the Burnett, which are unique and make us who we are. There are four underpinning values that guide our resilience pathway.

We value being prepared

We recognise and live comfortably with the prospect of natural hazards as a part of life. Our communities, businesses and households are prepared for floods, bushfires and severe weather.

We contribute to our individual and collective economic resilience

We strengthen our local economy against the impacts of natural hazards and economic shocks. We build our economic-base and continue to grow innovative industries based upon our established sectors.

We care for Country

We understand and respect the natural processes of land, waters and the sea. We combine traditional knowledge and western science to care for and sustain healthy Country.

We support the essential services and built environment networks upon which we rely

Our built environment, our towns and infrastructure, are part of the foundation upon which our communities thrive and prosper. It is therefore vital that we continue to invest in strong and reliable infrastructure to serve as the gateway to our success.

Image: Plantation of Radiata Pine and native Australian Eucalypt Forest, Bundaberg.
Credit: Shutterstock.

Traditional Owners

The Traditional Owners of the Burnett region include tthe Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda, Wakka Wakka, Kabi, Kabi, Burunggam and Wuli-Wuli peoples.

Bailai peoples Country stretches from Bundaberg towards the Fraser Coast. Taribelang Bunda (Gureng Gureng peoples) land and sea Country stretches from the coast off Elliot River north to Gladstone, west to Monto and south to Mundubbera.

Wakka Wakka peoples Country stretches from the D'Aguilar Ranges north-west to Mount Perry and Eidsvold.

Kabi Kabi (Gooreng Gooreng peoples) land and sea Country includes the North Coast coastline from Bribie Island to Inskip Point, out west through the hinterland, and northwards through Gympie and onto Hervey Bay and Childers.

Barunggam peoples Country encompasses the headwaters of the Condamine, stretching westward to the Yuleba State Forest west of Miles and Condamine townships.

Wuli-Wuli Country ranges the headwaters of the Auburn River and Redbank Creek, northward to Cambon and westward to Glebe.

Image: Waka Waka Dancers. Courtesy Cherbourg Aboriginal Shire Council.

Strategic alignment

The Queensland Government is committed to strengthening disaster resilience, so our communities are better equipped to deal with the increasing prevalence of natural disasters. By 2022, every region across Queensland will be part of a locally-led and regionally coordinated blueprint to strengthen disaster resilience.

This Strategy is a deliverable under the Queensland Strategy for Disaster Resilience (QSDR) and Resilient Queensland - the statewide long-term blueprint supporting Queensland's vision of becoming the most disaster resilient state in Australia.

The Strategy aligns with the QSDR and Resilient Queensland, as well as with national and international disaster risk reduction and sustainable development agendas articulated by the Sendai Disaster Risk Reduction Framework and the National Disaster Risk Reduction Framework.

This Strategy supports and aligns to the Queensland Disaster Management Arrangements (QDMA) and builds upon the Queensland Emergency Risk Management Framework (QERMF) and the Queensland Climate Action Plan.

Figure 1. The Burnett Regional Resilience Strategy disaster resilience policy line of sight to local, regional, state, national and international levels.

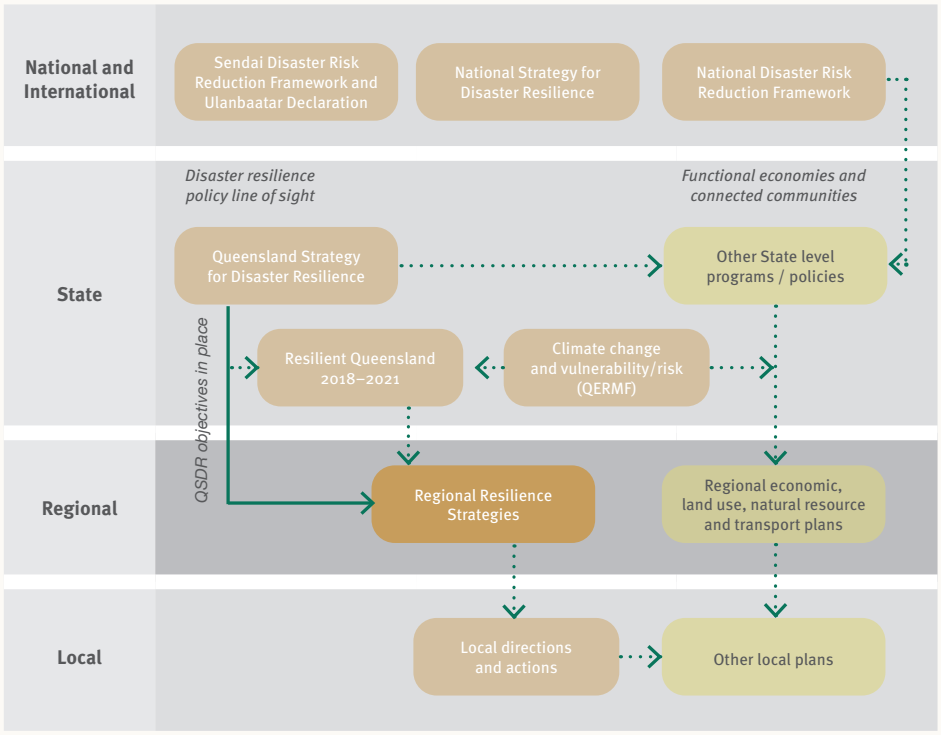


Image: Bridge over the Burnett River approaching town of Gayndah. Credit: Shutterstock.

Building on the 2018 Burnett Catchment Flood Resilience Strategy

The multi-hazard approach of this Strategy builds upon the work completed by project partners to develop the award-winning Burnett Catchment Flood Resilience Strategy (2018), which was Queensland's first pilot regional resilience strategy and one of the first of its kind in Australia.

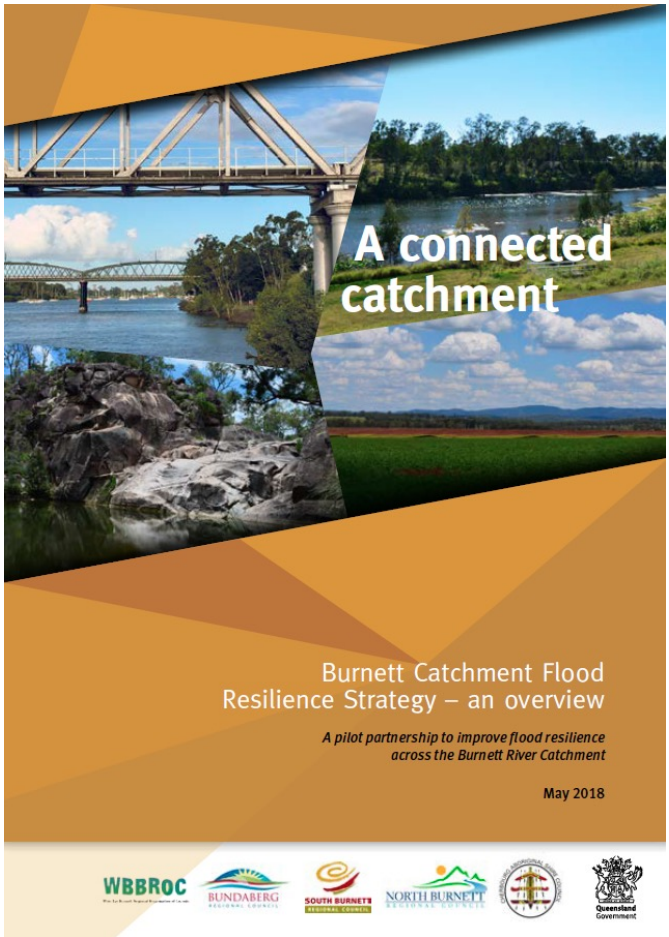
The Burnett Catchment Flood Resilience Strategy provided a consistent and coordinated approach to managing flood risk across the four local government areas and enhanced our understanding of the diversity of resilience issues experienced.

The Flood Resilience Strategy changed how we collectively reduce flood risk and strengthen the resilience of individuals, communities, the economy and the environment.

The success of this pilot project informed and influenced the subsequent development and delivery of resilience strategies across urban, rural, remote, and coastal communities across Queensland.

In the four years following the release of the Flood Strategy it delivered a region-wide focus on:

- raising the profile of disaster resilience and framing the efforts of stakeholders through resilience leadership
- flood warning network improvements – adopting whole-of-catchment approaches to flood warning infrastructure and aligning with best practice
- aged care and mental health resilience enhancements and advocacy
- support for rural leadership programs
- regional disaster management and resilience collaboration across sectors and disciplines.



This 2022 Burnett Regional Resilience Strategy encapsulates relevant aspects of the 2018 Strategy and combines these with broader multi-hazard considerations.

Image: Burnett River. Credit: Shutterstock.

Our locally-led approach

This Strategy has been developed using a community-led approach with the voice of the locals. To build resilience means to think and deliver systematically – to deliver what is needed in the places it is needed.

We have applied CSIRO's Resilience Adaptation Pathways Transformation Approach (Q-RAPTA) process. This is a resilience building approach tailor-made for the Queensland context.

An approach that is locally-led, regionally coordinated and state facilitated has allowed us to draw on local leadership and direction for this Strategy to ensure local needs and priorities of the Burnett are reflected.

This approach means identifying and prioritising regional resilience needs that we can strengthen over time by matching these needs with real funding and resourcing opportunities.

This approach allows for greater collaboration and coordination of resilience efforts across our region, guided by the principles of:

- local leadership
- flexibility and adaptation
- shared responsibility and collaboration
- prioritisation
- resilience becoming business as usual.

Figure 2. The Resilient Queensland implementation delivery approach (adapted from CSIRO).

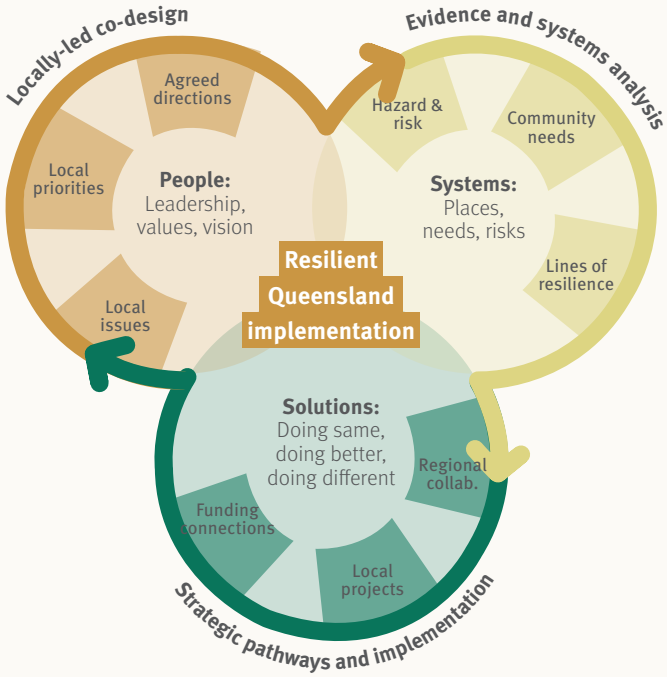


Image: Old railway station and platform at Biggenden, North Burnett region. Credit: Shutterstock.

How the Strategy has been developed

This Strategy has been co-designed with local representatives through multiple engagement activities and leverage the substantial array of data and intelligence collated as part of the Burnett Catchment Flood Resilience Strategy (2018). The process has applied the latest in resilience thinking:

- relationship and trust-building engagement
- co-design with locals
- risk-informed
- place-based strategies
- locally-led and regionally coordinated solutions
- integrated multi-objective responses.

The Strategy has a multi-dimensional and cross-disciplinary approach and considers the five elements that contribute to systems-based resilience: human and social; economy; roads and transport; towns and infrastructure; and environment. The Strategy was developed taking a disaster resilience lens to our economic, social, and environmental systems to ensure the best of disaster management and risk reduction practices can be brought into effect in the Burnett region over time.

Engagement with local representatives reflected a deep understanding of local and regional issues and a desire to find collective responses to these needs. This context is then matched to an understanding of the exposure and vulnerability of each council area within the region to a range of hazards informed by the Queensland Emergency Risk Management Framework (QERMF), including:

- flooding
- bushfire
- heatwave
- earthquake
- severe wind, storm and cyclone.

Drought and other natural hazards are considered by the Strategy where they have been raised as an issue at the local level.

The impacts of climate change are a key component to long-term resilience and are incorporated, both in terms of relationships with hazards but also by alignment of the Strategy to the Sector Adaptation Plans developed for the Queensland Climate Adaptation Strategy (QCAS).

Figure 3. The five elements of resilience.

Elements of resilience

The multi-dimensional and cross-disciplinary approach of this strategy contemplates five elements that contribute to systems-based resilience. These are:

Integration and alignment

This Strategy reflects previous and existing work at the state, regional and local levels to ensure this work is taken forward, and not 'reinvented', and provides a further mechanism to connect local needs to further funding opportunities at the state and federal levels.

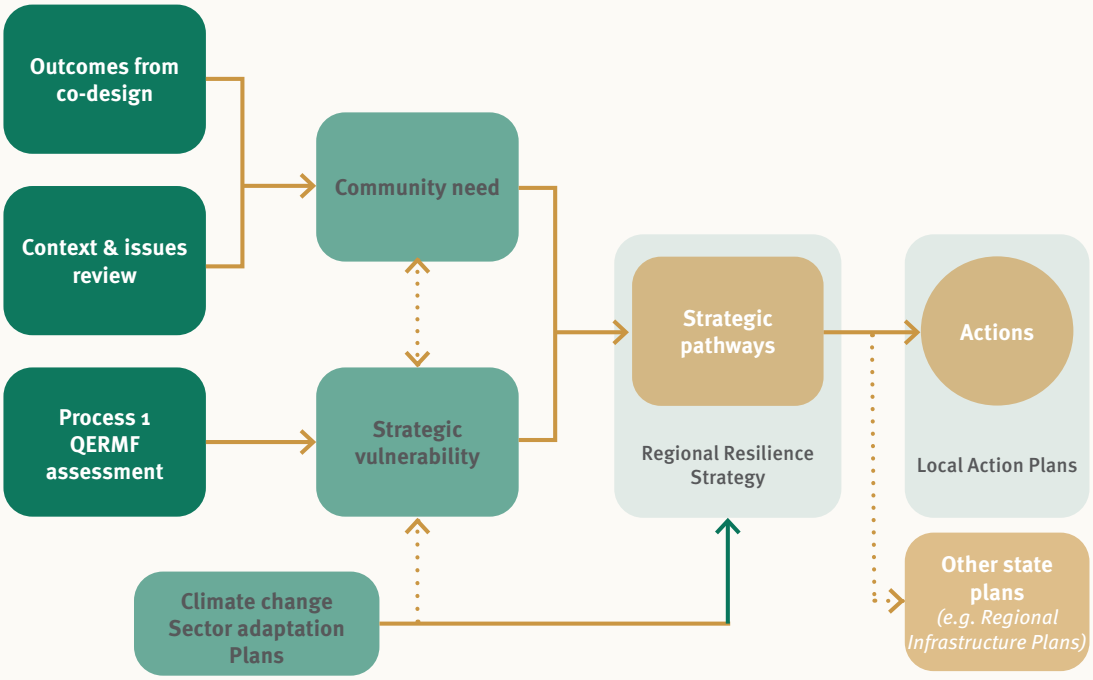
This Strategy culminates in resilience pathways that provide a linkage between locally identified actions or projects, and the state, federal and international policy environment. That way, the need for a particular project or action can be justified by it meeting a regional pathway to resilience that meets one or more objectives of the Queensland Strategy for Disaster Resilience.

This Strategy is supported by Local Action Plans setting out the specific projects and initiatives that are needed to deliver on the aspirations set out by the Strategy. These Local Action Plans are provided to partner councils to implement.

The Strategy aligns with the following risk management, recovery resilience and adaptation planning initiatives, strategies and plans:

- *Queensland Resilience, Adaptation Pathways and Transformation Approach project (QRAPTA)*
- *Queensland Emergency Risk Management Framework (QERMF)*
- *Queensland State Natural Hazard Risk Assessment and hazard-specific risk assessments prepared by Queensland Fire and Emergency Services*
- *Climate Change Sector Adaptation Plans*
- *Queensland Climate Resilient Councils Climate Risk Management Framework and Guideline*
- *QCoast 2100 Coastal Hazard Adaptation Program*
- *Bundaberg 10-year Action Plan*
- *Burnett Catchment Flood Resilience Strategy*
- Local Government Disaster Management Plans, Corporate Plans, Economic Development, Biosecurity, land use and other plans

Figure 4. Strategy development process reflects the CSIRO Q-RAPTA resilience building approach tailor-made for the Queensland context.



Resilience in the Burnett

Resilience is a term that means different things to different people. The QSDR defines resilience as:

> ***A system or community's ability to rapidly accommodate and recover from the impacts of hazards, restore essential structures and desired functionality, and adapt to new circumstances.***

Resilience in the Burnett includes the following aspects:

A resilient society

We recognise and live comfortably with the prospect of flood as a part of life. We anticipate serious weather and we understand what it means for us. We know what to do when action is needed. We can bounce back quickly and with minimal impact – both physically and emotionally.

We understand the risk that flooding presents in how we go about our day-to-day lives, and we share responsibility for our own resilience and that of our families and community. We work together to look out for and help those who need it. We care for and respect one another and the environment in which we live, work and play. We work hard to maintain and build strong relationships as we know these networks are the lifeblood of our communities and stand us in good stead during times of recovery. We participate in the decisions which affect us.

A resilient economy

We strengthen our local economy against the impacts of natural events. Our experience of past flood, bushfire, drought and storm events across our catchment has provided us with the ability to explore and identify opportunities to constantly enhance economic resilience. The COVID-19 global pandemic was especially trying. We know the primary elements to enduring economic resilience includes a diverse economy, ensuring continuation of employment as well as the provision of goods and services to those in need.

We take action to develop business continuity across industries and build strong supply chains to ensure our communities can bounce back as quickly as possible, with limited impact. We know our rich primary production and agricultural industries are amongst our largest economic assets but can remain vulnerable to the impact of severe weather and natural hazards.

We value collaboration across industries, and across government and private sectors. We value the depth and diversity of our small business offering, and the important role it plays in underpinning the wellbeing of our families, our towns and our communities. Combined with our major economic and employment activities, we are invested in leveraging our economic network – as part of an economic 'ecosystem' across the catchment.

A resilient environment

We help our environment to endure and sustain by prioritising the health of Country.

We know a healthy and productive landscape is one which underpins and supports all other activity – from social, to physical, and economic activity. Our day-to-day lives are enhanced by the wellbeing of the environment in which we live.

We know and value how much a resilient environment contributes to a resilient economy in our region – the livelihoods of nearly everyone in the region are connected in some way to the land.

We know the importance of responding to issues such as soil erosion, loss of riparian vegetation, invasive weeds, the uncontrolled release of chemicals, and waste and land use management practices which can influence water quality.

We respect that natural hazards are in fact natural processes that shape and form the landscape and our waterways. We also know that these processes often benefit the health and wellbeing of environmental systems, fauna and flora.

We focus on improving environmental resilience by identifying and addressing key knowledge gaps, monitoring and building data intelligence, and prioritising collaboration. We are informed contributors to the health and wellbeing of Country. We respect and value the ecology, biodiversity and cultural heritage, and the connection of Traditional Owners and custodians to Country – physically, spiritually and culturally.

A resilient built environment

Our built environment – our townships and infrastructure – is a large part of the foundation upon which our communities thrive and prosper. They are the hub for local access to employment, goods and services, and they support the strength of our rich primary production and agricultural industries.

Our settlements underpin the social and economic activity of the region, connected by reliable infrastructure networks which support our community before, during and after events. We know the importance of system redundancy, particularly for critical items of infrastructure (water, sewer, electricity, telecommunications and roads) relied upon by our community.

Resilient networks

We know how important it is for emergency services and others to move around our towns and landscapes to help those who need it most, when they need it. Transport networks allow people to move about immediately after events, enabling rapid access to resources, re-supply and helping the community to respond and recover – socially, physically and economically.

We take action to concentrate settlement and infrastructure expansion in low risk areas. We value the many ways in which our built environment and its systems and networks help us to get back on our feet quickly, with the least amount of effort necessary. When we endure loss, we make improvements to build back better.

We recognise the individual character and identity of the settlements which form our catchment. Each is different in its own way and we recognise that different communities have different expectations about how our built environment and its systems and networks perform during times of need.

We understand that our own resilience and that of our families, community and visitors can reduce the pressure placed on these systems and networks at the time when they are most needed. We forward-plan our own redundancy and put measures in place to keep us going when we need it.

Our resilience needs

Resilience is about looking at people, places and landscapes through the lens of trends, stresses and shocks faced now and into the future. Understanding the trends, stresses and shocks can highlight the resilience needs of the region and the complex interplay between social, economic, built and environmental systems.

There are many geographic, demographic and climatic events that can have major impacts on the Burnett.

Trends

Transformative forces that could change a region:

- transient populations
- property boom and bust cycles
- housing stress
- changing community expectations and level of tolerance
- growth of social media sources for information
- growing focus on the need for mental health resilience
- demographic shifts in age, multiculturalism and lifestyle communities
- ageing populations
- insurance availability and affordability
- climate change.

Stresses

Long term situations or circumstances, weakening the potential of a given system and deepening vulnerability – they may be periodic or chronic:

- disease and pandemics
- anxiety tied to historical events and event frequency
- periodic and long-term drought
- limited telecommunications in certain areas
- consecutive, cumulative and compounding events
- weed and pest outbreak
- water resource availability
- reliance upon larger centres for essential services.

Image: Kingaroy. Credit: Shutterstock.

Shocks

Sudden events with an important and often negative impact on the vulnerability of a system and its parts (such as a flood or bushfire):

- severe storms and sudden rainfall events
- cyclones
- flooding
- bushfire and grassfire
- heatwave
- earthquake.

Core resilience needs

Core resilience needs include:

- mental health initiatives
- feedback loops between recovery and resilience
- proactive business continuity planning
- regional management of pest and weeds
- enhanced ecological and cultural burning activity
- circular economy opportunities
- enhanced riparian corridor management
- strategic prioritisation of physical and digital infrastructure networks to improve connectivity
- increased disaster management resources and personnel
- addressing the vulnerabilities of small, isolated communities
- natural resource management and landscape sustainability.

How resilience is affected by stresses and shocks

Our disaster management system has traditionally dealt very well with the event-based episodic or acute shocks like floods, cyclones or bushfire. But we need to continue dealing with more of the systemic issues that worsen disaster events when they occur, and place increased burden on our disaster management system.

Investment and effort in building social, economic, infrastructure and environmental resilience helps to reduce the stresses caused by periodic stresses like drought and means that communities are better able to cope with episodic events like floods, bushfires or cyclones when they happen. Investment and effort in building social, economic, infrastructure and environmental resilience helps to reduce the periodic stresses and means that communities are better able to cope with episodic events when they happen.

Figure 5. How resilience is affected by stresses and shocks.

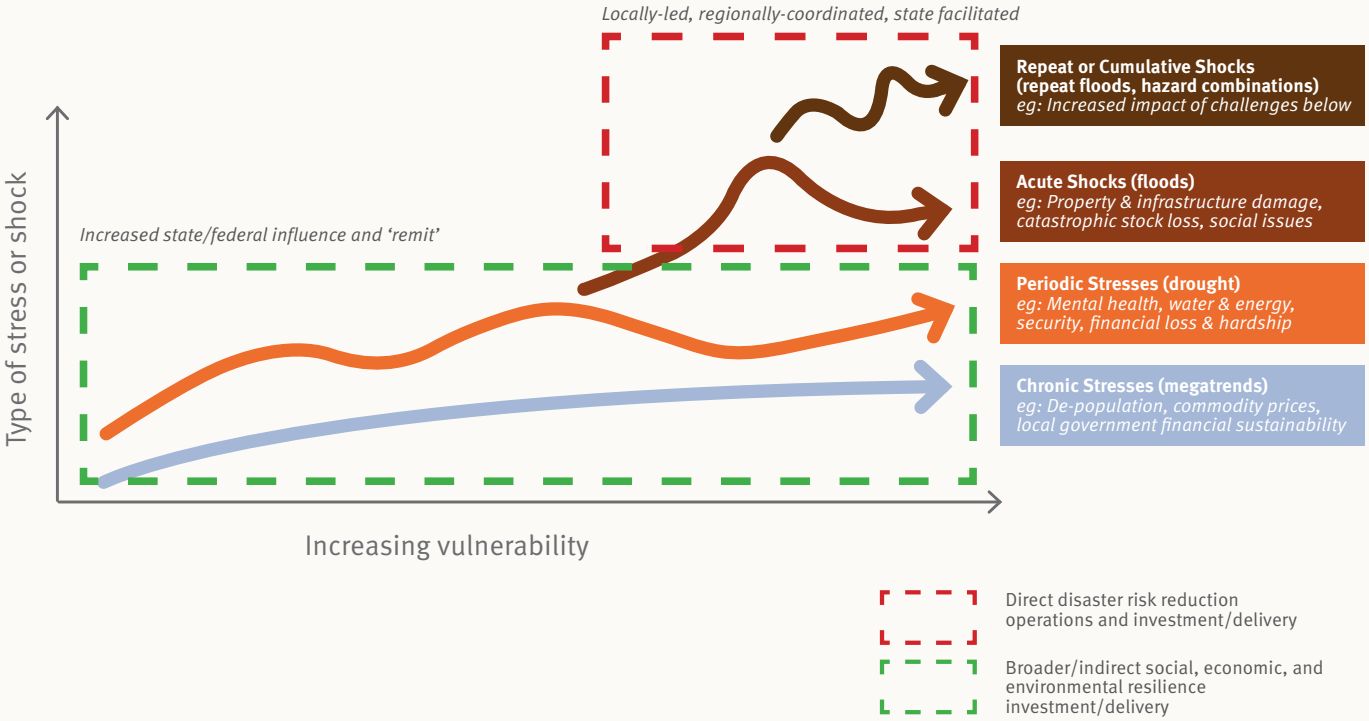


Image: view from a lookout in Gayndah. Credit: Shutterstock.

Rethinking resilience in the Burnett region

To date the focus of post-disaster recovery efforts in Queensland has been building resilience through programs like infrastructure improvements that can limit the impacts of recurrent events.

However, with our lived experience of recovery, we now acknowledge the need to proactively identify and deliver over time on initiatives that help avoid the stresses and shocks in the first place – ultimately putting us on a more sustainable track for growth and prosperity. This Strategy continues the legacy initially developed by the Burnett Catchment Flood Resilience Strategy.

Limiting impact or shortening recovery from stresses or shocks

This Strategy focuses on identifying actions that limit impact or shorten recovery from stresses or shocks. These will help communities in the immediate aftermath of an event.

It provides pathways for actions to adapt or transform socio-economic settlements or systems to avoid or resist the impact in the first place. This will help our communities in the Burnett to grapple with long term trends and stresses like climate change, drought and economic cycles.

This way, we can provide a long-term blueprint for how our region can continue to improve its disaster resilience for years to come.

How we make real and lasting change

To meet our collective challenges, we need to actively take steps to reduce disaster risk and equip our Burnett communities to thrive in spite of the stresses and shocks they face. We need to match community need with funding and support to deliver – by refocusing over time from recovery to prevention and preparedness.

Figure 6. Improving our prosperity through resilience (adapted from Joseph Fiksel).

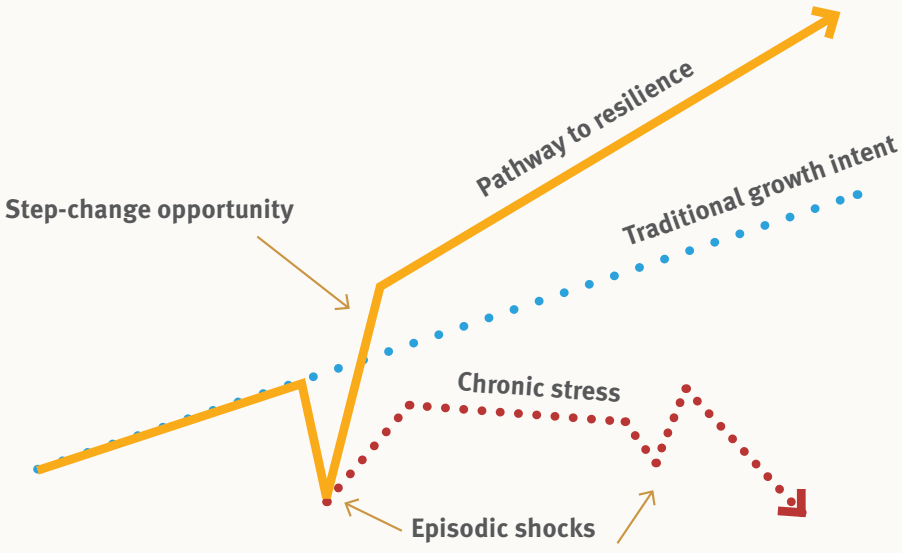


Image: Wooroolin Wetlands, South Burnett. Credit: Shutterstock.

The changing funding landscape

Under the joint Australian Government-State Disaster Recovery Funding Arrangements 2018 (DRFA), assistance is provided to alleviate the financial burden on states and territories. It also supports the provision of urgent financial assistance to disaster affected communities.

The DRFA replaced the previous Natural Disaster Relief and Recovery Arrangements (NDRRA) on 1 November 2018.

The reforms to the DRFA included, for the first time, a framework to incentivise reconstruction efficiencies to create more funds for resilience and mitigation purposes.

Efforts to realise efficiencies under DRFA are critical to fund resilience and mitigation efforts in the future and will help change the funding landscape from a focus on reconstruction and recovery to a focus on prevention and preparedness.

We now have a clear forward plan for how we can make lasting change into the future through sustained investment in resilience and mitigation activities. Recent changes in funding arrangements will enable the creation of funds for mitigation and resilience, along with a range of other funding programs (e.g. the Local Government Grants and Subsidies Program, Get Ready Queensland) that support resilience building.

Regional Resilience Strategies will provide the 'long list' of locally identified actions that can be prioritised against a wide range of possible funding opportunities (including DRFA efficiencies) to build resilience in Queensland communities over time.

Figure 7. Changing the focus from reconstruction to prevention and preparedness.

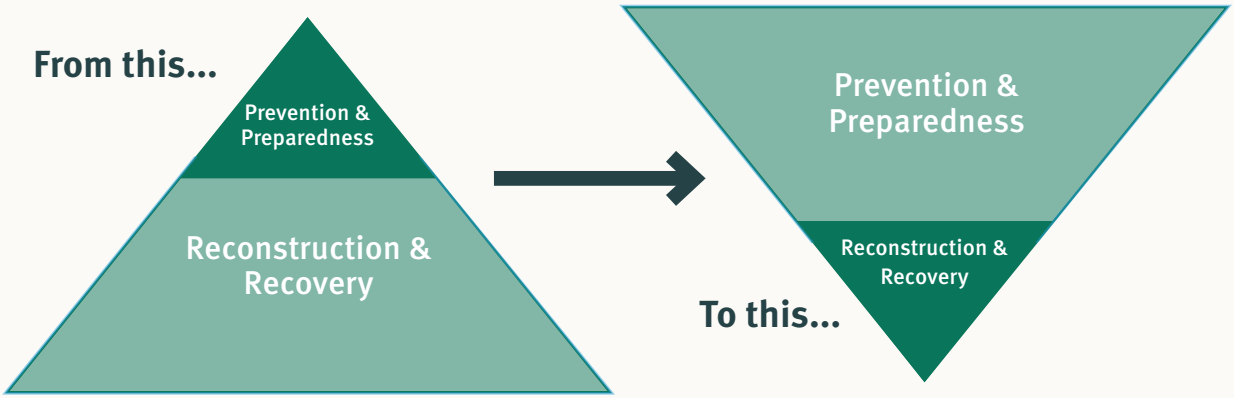


Image: Nielson Beach Bundaberg . Credit: Shutterstock.

Our region

The Burnett region spans an area of 34,515km2 that approximately 140,987 people call home. It encompasses several major river systems including the Nogo, Stuart, Burnett, Boyne and Auburn Rivers, with coastal catchments including Prrey River, Gin Gin Creek which flows into the Kolan River, Yandaran Creek, Gregory River, the Isis River and Baffle Creek.

The region has a diverse, rural landscape consisting of grazing lands, rugged upland areas, forestry, fertile agricultural land stretching from the Burnett River headwaters in the west to the coastline in the east.

The region encompasses the four local government areas of Bundaberg, North Burnett, South Burnett and Cherbourg which are all situated east of the Great Dividing Range. Bundaberg is the major regional centre, with principal centres including Kingaroy and Gayndah.

There are several large water bodies in the region which include the Paradise, Cania, Wuruma, Boondooma, Bjelke-Peterson and Fred Haigh Dams.

The Burnett is a region that benefits from an interconnected network of towns. It is situated within proximity to power stations in Gladstone, Callide and Tarong which generate a sizeable portion of the state's electricity. Its economy is based on health care and social assistance, agriculture, forestry and fishing, and retail trade. The region is well known for the extensive sugarcane fields, producing key ingredients of the famous Bundaberg Rum and Bundaberg Ginger Beer.

While sugarcane is the main cultivated crop, the region does have a large agriculture sector accounting for approximately 34 per cent of registered businesses being in the agriculture, forestry and fishing industries, followed by construction at 13.2 per cent. The agriculturally rich lands are supported by the Burnett River catchment and produce nuts, wine and animal production in South Burnett, citrus and cropping in North Burnett, and macadamia and sugarcane production in Bundaberg.

Transport linkages traverse the region both north-south and east-west, including the Bruce Highway. Connections to the Port of Bundaberg support the export of sugar and wood pallets. The North Coast Line is the main commercial rail network which passes through the Bundaberg region, connecting the Bundaberg and Isis Central Sugar Mill lines to the main sugarcane growing areas within the Bundaberg region. Bundaberg Airport is the main regional airport. These transport linkages support the supply and demand of goods and services coming from and to the region.

Tourism is a growing industry in the region underpinned by the natural attractions like Bania National Park, and Mon Repos Conservation Park that hosts the largest east Australian concentration of nesting marine turtles. Agri-tourism is becoming popular across the region.

Image: Aerial view of Bundaberg and Burnett river. Credit: Shutterstock.

Bundaberg Regional Council

With over 100,000 residents, the Bundaberg local government area has the largest population in the Burnett region. The majority of its population live in the city of Bundaberg, situated along the banks of the downstream stretch of the Burnett River. To the east are villages dotted along the coastline, with diverse inland townships serviced by the Bruce Highway.

The name 'Bundaberg' is a mixture of local Aboriginal language and ancient European language. 'Bunda' is the name of the local Aboriginal group and 'burg' is a word meaning 'town'.

The rural hinterland townships in the west of the region, including Childers and Gin Gin showcase the region's pioneering histories, and multicultural legacies. Gin Gin is the gateway to the world-renowned barramundi destination at Lake Monduran.

Along the Bundaberg coastline are coastal townships and villages, including Woodgate Beach, Elliot Heads, Bargara, Burnett Heads and Moore Park Beach. The shoreline is home to several significant environmental protection zones in the Great Sandy Marine Park. The Bundaberg region is also the southern gateway to Great Barrier Reef and snorkelling and scuba diving experiences on the coral cays of Lady Elliot Island and Lady Musgrave Island.

Cherbourg Aboriginal Shire Council

Cherbourg township, formerly known as Barambah, is located along Barambah Creek. The Aboriginal Shire is surrounded by South Burnett Regional Council and located near Murgon.

Cherbourg is located on the traditional lands of the Wakka Wakka people. As a result of forced relocations of Indigenous people to Cherbourg since European settlement and during its time as a Mission, residents of Cherbourg have connections to many other mobs throughout Queensland.

Cherbourg township is home to the national, award-winning Ration Shed Museum. The Museum provides visitors with a glance into Cherbourg's past as a Mission. The nearby Bert Button Lookout provides views through the Wondai State Forest onto Bjelke-Petersen Dam.

The Cherbourg community has strong aspirations to foster its community's independence and uniqueness, and to provide the services, support and resources which enable this.

North Burnett Regional Council

Inland from Bundaberg, North Burnett Regional Council is located in the north of the Burnett River catchment, accounting for approximately 57 per cent of the land area in the region and contains the headwaters of the Burnett River.

Gayndah is the administrative centre for the North Burnett which is situated adjacent to the Burnett River. The township is the most populous in the North Burnett region with a population of approximately 2,000 people and was the first town in Queensland to be gazetted in 1852. Gayndah is considered to be the citrus capital of Queensland, home to the Big Orange and hosts the biennial Gayndah Orange Festival that began in 1957 and attracts thousands of visitors to support the main industry of the area.

The Burnett River catchment shapes the region. The river provides a reliable water supply to residents and for extensively irrigated crops, while its rich floodplains host productive farming. The North Burnett's settlement legacy creates an interesting patchwork of rural landscapes with a diversity of beef cattle, irrigated crops, citrus, mixed cropping, dairying, stone fruits and vineyards.

South Burnett Regional Council

South Burnett Regional Council derives its name from the Burnett River and is the backdrop to the majestic Bunya Mountains in the south-west. The region is a mosaic of regional and rural townships and villages, each showcasing a unique aspect of the region.

The region is considered to be Queensland's newest wine region and has long been renowned as a farming and agricultural district that exports its produce nationally and internationally.

Kingaroy is the administrative centre for the South Burnett and is considered the peanut capital of Australia. This is due to having the largest peanut processing plant in Australia and the abundance of peanut silos situated across the town. The town is surrounded by natural beauty and has become very popular for bushwalking.

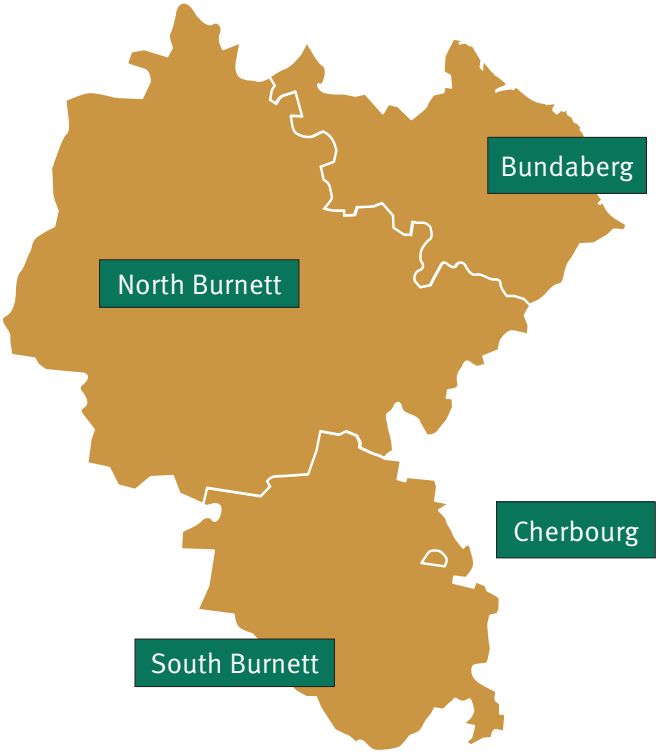
Nanango was the first town to be established in the now South Burnett local government area and has a long-held history of timber and forestry activities. Murgon supports a diverse farming community in the surrounds and provides strong connections with Cherbourg, Wondai and Goomeri.

The misty Bunya Mountains are in the southwest of South Burnett and are significant to Aboriginal peoples across the region as a gathering place to celebrate, conduct ceremonies and share stories.

Image: Kalkie, Bundaberg. Credit: Shutterstock.

A snapshot of community characteristics

4 local governments



Population – 140,987 (2.7% of Queensland population)

Over the next 25 years the Population aged 0-14 – 17.7% (Queensland 19.4%)

Population aged 65+ - 24.5% (Queensland 15.7%)

Aboriginal and / or Torres Strait Islander population – 5.4%

Median age – 45.9 (Queensland 37.4)

Area – 34,514km² (1.9% of Queensland area)

Unemployment rate – 7.6%

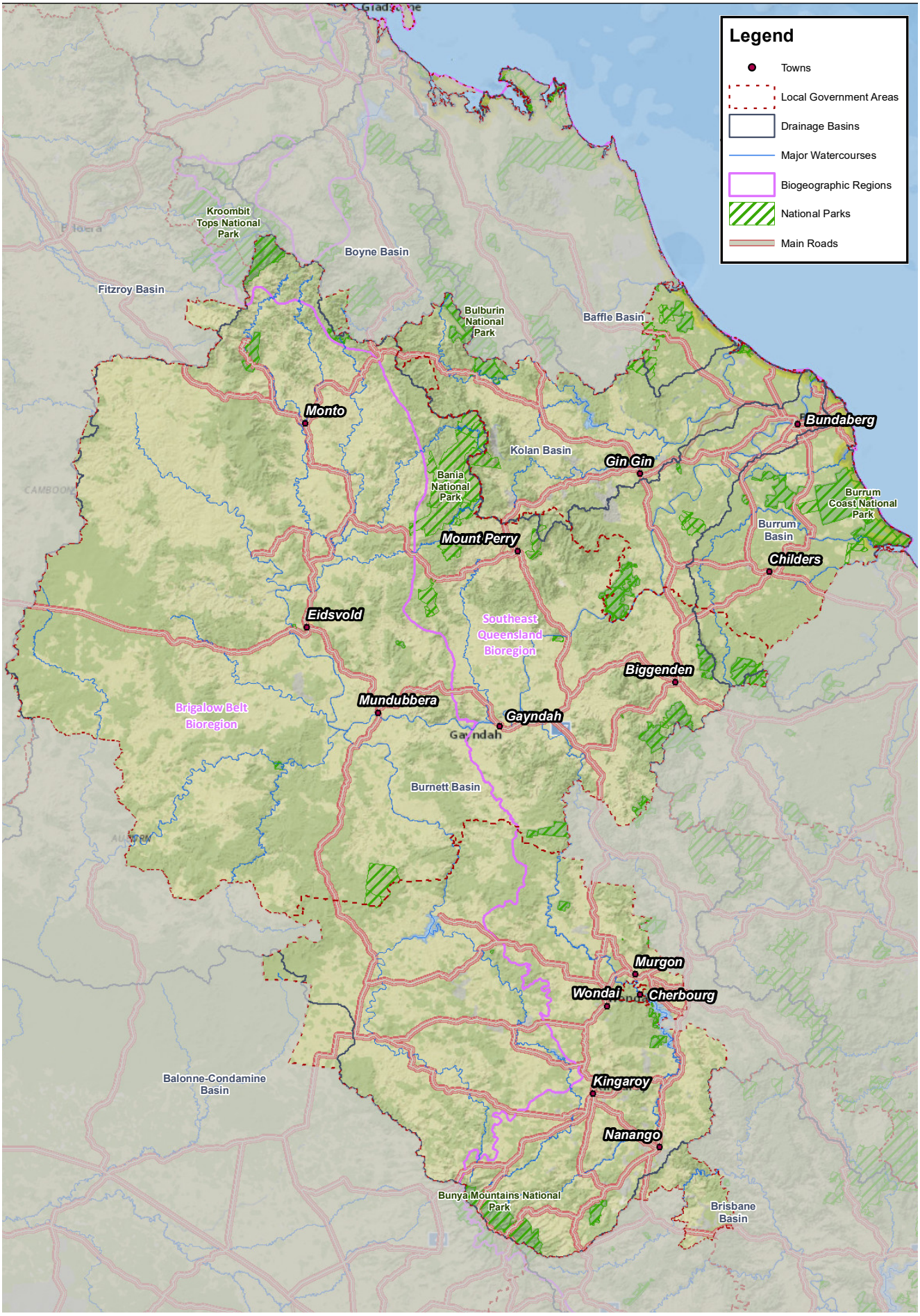
Population of the region is projected to grow at 0.8% per year over the 25 years to 2041

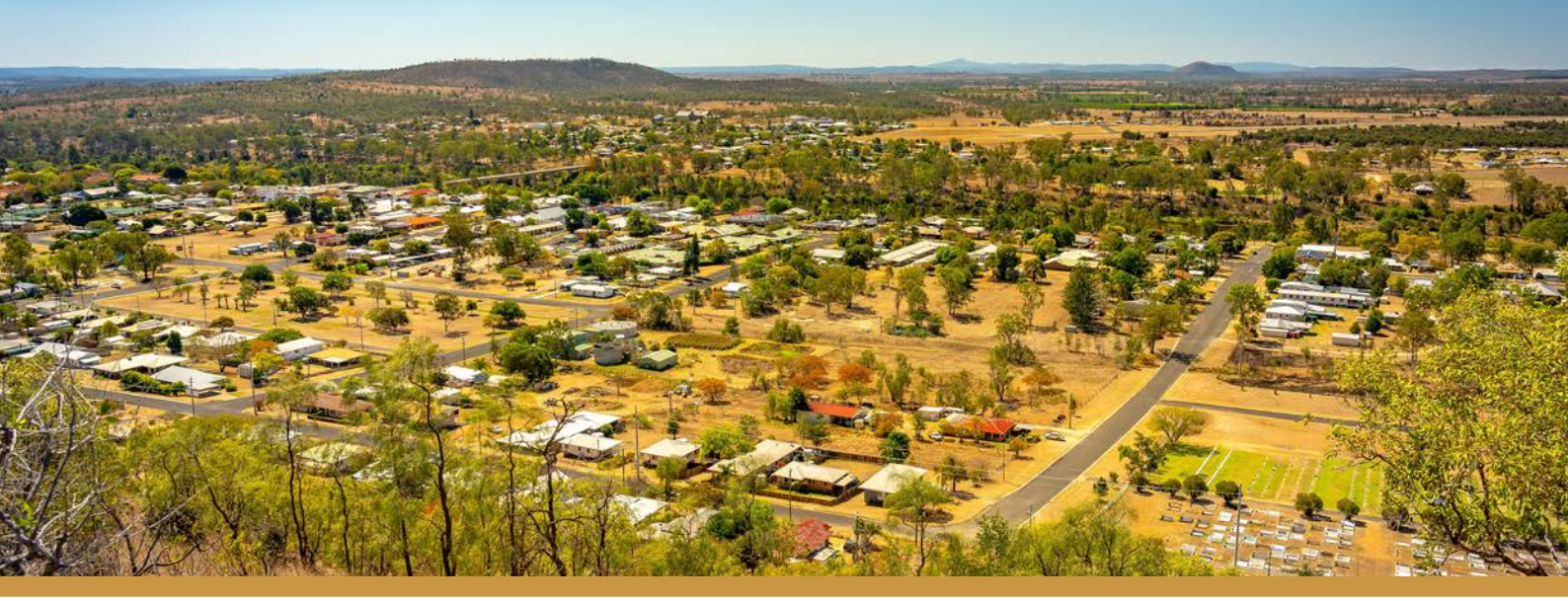
Migration rate – 37.4% (Queensland 44.1%)

Top five employing industries

- 15% health care and social assistance
- 10% retail
- 12% Agriculture, forestry and fishing
- 9% education and training
- 7% Construction

Burnett region landscape features





Our landscape

Our landscape has a diverse, rural landscape of grazing lands, national parks, fertile agricultural land and rugged uplands that primarily consists of the two main bioregions being the Brigalow Belt and South East Queensland. An expansive upper catchment area contains several tributaries that feed the agricultural lands of the region. This begins with the Three Moon, Monal, Eastern and Splinter Creeks which converge on the Burnett River east of Abercorn in the North Burnett Region.

The Burnett River is continued to be fed in the upper catchment by the St John Creek, and Nogo, and Auburn Rivers as these systems merge with the Burnett just upstream of Mundubbera.

Mundubbera is an Aboriginal word, which means 'meeting place of the waters'.

These three rivers have not flooded simultaneously during the time of European settlement in the region. However, local Elders have shared stories that the river convergence of the three rivers can cause extreme floods, greater than that experienced in 2013. They tell of standing at what is now the Gayndah airstrip, and seeing nothing but a sea of floodwater down the valley.

The southern catchment's systems feed the Burnett River through Barker Creek which merges into Barambah Creek near Cherbourg, and the Stuart River which feeds into the Boyne River tributaries, including the Perry River, before discharging into the ocean.

Diverse geologies and soils in the region shape the catchment with the headwater regions steeply incised with sedimentary sandstone formations. These formations drop off as the catchment continues through interspersed areas of granite, and into alluvial floodplains that make up the lower catchment and floodplains surrounding Bundaberg and along the coastal waterways of the region.

There are a number of significant protected areas in the region such as the Burrum Coast National Park. Numerous terrestrial and marine animals inhabit this National Park including the endangered little tern, southern giant-petrel and red goshawk, all of which are affected by loss of habitat. Threatened loggerhead and green turtles will make their way up the beach to lay their eggs between November and March, while the migrating humpback whales will swim off the coast during August to October. Rare and threatened flora species can be found in the area including a cycad (Macrozamia lomandroides), a paperbark tree (Melaleuca cheelii) and a wattle (Acacia baueri subsp baueri).

In the southwest, the Bunya Mountains are the remains of volcanic activity from 24 million years ago. The mountains are like an island in the landscape, surrounded by plains. They provide refuge for a mix of biodiversity and the world's largest stand of bunya pines (Araucaria bidwillii).

The mountains were home to the Bunya Gatherings, a gathering of Aboriginal mobs from across South East Queensland and the Darling Downs every two to three years between December and March to celebrate the bunya nut harvest. The gathering was a place to conduct ceremonies, law-making and exchange stories. The last large Bunya Gathering was held in 1902. A reimagined gathering was revived in 2018, as the Bunya Festival, which celebrates Aboriginal culture and history.

Other significant protected area includes Allies Creek, and Coominglah State Forests, as well as Bania, Bulburin and Beeron National Parks.

Image: Gayndah. Credit: Shutterstock.

Case study: Gidarjil Bundaberg Land and Sea Rangers

The Indigenous Land and Sea Rangers of Gidarjil Bundaberg combine traditional knowledge, practices and lore with western science to care for, manage and sustain their country.

Traditional owners are fostering restoration and protection of natural habitats and cultural heritage, after a history of forestry and cattle grazing. The land rangers are engaged in planning, management and execution of weed and pest management activities. They also undertake biodiversity and environmental quality surveys, among other activities. The group are actively reestablishing a traditional knowledge database.

Gidarjil Bundaberg Land and Sea Rangers work in the sea country of the Port Curtis Coral Coast Traditional Owners. From the Burrum River in the south, to Agnes Water in the north, the sea rangers care for both coastal and marine environments.

They work to conserve, manage and monitor threatened species in the area, including marine turtles, dugongs and cetaceans. The Gidarjil Bundaberg Land and Sea Rangers work in collaboration with the Department of Environment and Science to monitor nesting turtle populations and identify where management intervention is necessary. The sea rangers also coordinate and respond to marine wildlife rescues and incidents.

Case study: Boyne Biar (Bunya Mountains) Land and Sea Rangers

The Bunya Peoples' Aboriginal Corporation (BPAC) rangers work across the Bunya landscape, centred on Bonye Biar (the Bunya Mountains).

Bonye Biar is the heart of the Wakka Wakka nation and there are numerous clan groups within the nation. Custodial groups associated within Bonye Biar country identify as Wakka Wakka, Western Wakka Wakka (known as Jarowair 'the givers' by visiting groups), Barrungam, and Wulli Wulli-Djakunde / Auburn Hawkwood peoples.

The BPAC rangers are expanding on their already successful work, contributing to the conservation of cultural heritage and biodiversity values across the Toowoomba, Western Downs and Burnett regions.

Image: Gidarjil ranger and marine turtle. Courtesy: Gidarjil Development Corporation.

Rangers are undertaking work including:

- cultural burning at Bonye Biar (Bunya Mountains), including on national park estate, to manage the health of country
- weed management, fencing, and track maintenance at Bonye Biar (Bunya Mountains)
- weed management and cultural burning to protect threatened Poplar Box ecological communities in the Western Downs
- fire management for cultural site protection, and to encourage the health of local ecosystems, including open eucalypt woodlands
- water quality monitoring at sites across the region.

Case study: Saltwater Creek Master Plan

Saltwater Creek is situated through the centre of Bundaberg City on the southern side of the Burnett River, between the Bundaberg Airport and Bundaberg Creek. It has a catchment area that is approximately 10.5km2 in size and is approximately 6km in length along the main flow path.

The Saltwater Creek catchment has seen significant change since European settlement. Substantial watershed areas have been cleared up to (and often including) riparian corridors in efforts to maximise yield. Furthermore, since the mid to late 20th Century, urban development has seen many sections of Saltwater Creek 'upgraded' from a natural creek to a concrete channel in efforts to maximise conveyance and developable land.

The Saltwater Creek Master Plan highlights the value of this water as more than just a concrete channel asset, and asset which is showing signs of deterioration.

Numerous homes adjacent to the creek are subject to flooding during localised storm events.

The need to address flood risk and replace deteriorating concrete channels presents Council and the community with an opportunity to consider channel replacement or look at something different for the future.

Urban creeks can offer significant value-added benefits to the community as vibrant spaces that balance healthy waterways, flood and climate resilience, community and liveability outcomes.

Our climate

Our livelihoods and lifestyle are closely linked to the climate. The Burnett features two climates, subtropical in near the coast and through North Burnett, and temperate in the southwest of the catchment. We experience hot summers and cool winters.

Summer averages range from 30-35°C while in winter the maximum temperature averages from 19 -23°C. Rainfall within the Burnett is highly seasonal with a clearly defined wet season occurring in the summer months.

Rainfall systems and severe storms

The average annual rainfall of the region is typically around 740 millimetres. Most rainfall occurs during summer with reliable, but not always consistent falls during the wet season from October to April. Local factors such as topography and vegetation as well as broader weather influences such as El Niño and La Niña make the average and seasonal rainfall variable.

Rainfall systems in the Burnett region generally occur as heavy thunderstorms or from ex-tropical cyclones. These events can lead to widespread flooding or intense localised flash flooding.

Notable flood events over recent times include:

- Southern Queensland Flooding 2022
- South East Queensland Rainfall and Flooding 2022
- Ex-Tropical Cyclone Seth 2022
- Tropical Cyclone Oswald and Associated Rainfall and Flooding 2013
- Queensland Flooding and Tropical Cyclones Tasha and Anthony 2010–2011

For a full list of significant disasters for each council area in the Burnett region visit:

www.qra.qld.gov.au/disaster-funding-activations/activations

Fire weather

Bushfire and grassfire are endemic to the landscape of large areas of the region, often ignited by lightning strike or accidental causes.

Good fire supports a healthy landscape, with many of the region's ecosystems dependent on a level of fire frequency. Aside from fuel loads, our weather and climate play significant role in the intensity to which fire may occur, and how easily fuels may burn.

Fire weather is determined by aspects of temperature, low relative humidity, high wind and drought factor. These aspects are considered as part of a framework known as the Forest Fire Danger Index (FFDI) as well as the Grass Fire Danger Index (GFDI). Based on data analysis performed by the Bureau of Meteorology (BoM), from 1950 to 2018, annual accumulated FFDI has increased in the area by 42 per cent. The average annual occurrence of fire weather days exceeding FFDI 50 has increased by 245 per cent since 1950 (BoM, 2019). The length and timing of the annual fire season remains stable.

Overall fire weather conditions are intensifying and becoming more frequent within the region. What this means is that higher fire danger days are occurring and are likely associated with our changing climate, drought and heatwave phenomena.

Image: Damaged fruit crop. Courtesy: DAF.

Temperature

Summers in the Burnett can be hot, with average maximum temperatures ranging from 30 to 35°C. On very hot days, the temperature can approach 40°C. While annual temperatures have fluctuated year-on-year, the region has experienced a steady increase in temperatures over the past half-century and an increase in days over 35°C.

This can lead to heatwave conditions which can have significant impacts on society and the environment in several ways, including human health, agriculture, economy, natural hazards and ecosystems. They are also Australia's most costly disaster in terms of human impact, with severe and extreme heatwaves being attributed to more than half of all disaster-related deaths.

The BoM identifies heatwave conditions as three days or more of high maximum and minimum temperatures that are unusual for that location. This is considered in relation to the local climate and past weather at the location.

Heatwaves are generally driven by a high-pressure system which pushes hot air from the Australian interior towards the region. This pressure in the upper atmosphere stops hot air from rising, causing it to stagnate over the region. Climate phenomena such as periods of El Niño produce changes in heatwave pattern and severity, resulting in significantly more heatwave days and longer and more intense events within northern and eastern Australia.

Most people have adequate capacity to cope with many of the heatwaves experienced in Queensland, as they are low intensity heatwaves. However, less frequent, higher intensity severe heatwaves can be challenging for vulnerable populations and can translate to agricultural, infrastructure, economic and ecosystem impacts.

Drought

There is a long history of droughts occurring in our region given the subtropical climate. These events can seem unending and impact the whole region, particularly the agricultural sector which our region has a rich history in.

Notable drought events include:

- Federation Drought 1895 – 1902
- May 1914 – March 1915
- January 1965 – June 1966
- April 1982 – February 1983
- April 2002 – January 2003
- April 2017 – September 2019.

For a full list of drought declarations visit:

www.longpaddock.qld.gov.au/drought/archive/

Future climate trends

The Queensland Regional Climate Change Impact Summaries provide climate change projections for the years 2030 and 2070. In the future, the Burnett can expect to experience:

- higher temperatures
- hotter and more frequent hot days
- harsher fire weather
- fewer frosts
- reduced rainfall
- sea level rise
- warmer and more acidic oceans
- more frequent sea level extremes.

These changes to the climate will bring with it both opportunities and risks for which we will need to prepare, impacting our lifestyle and landscape.

Image: Biggenden Bluff. Credit: Shutterstock.

Our challenges and opportunities

Living in lockstep with the functions of the landscape and weather conditions provides the region with a unique awareness and understanding of the implications of serious weather.

> ***Our challenges and opportunities to continue to bolster our resilience in the face of serious weather, disasters and a changing climate are varied, having regard to aspects of the environment, infrastructure, roads and transport, people and communities, and the region's economy.***

Environment

We know the importance of maintaining a healthy landscape at all time and taking action after events occur to ensure the wellbeing of our waterways, ecosystems and environmental values and their function.

First Nations communities care for land and sea country using traditional knowledge spanning tens of thousands of years. This knowledge not only supports practices that underpin healthy Country, but can also inform decision-making.

We understand that flooding is a natural process that shapes and forms the landscape. There are also detrimental aspects. Scouring and erosion can change riverine morphology and sedimentation, damaging infrastructure and removing vegetation in riparian zones. We need to be cautious of the cascading risks flooding can generate, like biosecurity issues and spread of weed species.

We also know some changes caused by flood are of benefit to the environment, and we leverage these opportunities as they occur.

In addition to environmental impacts along the Burnett floodplain, additional risks are felt as floodwaters discharge to the immediate south of the Great Barrier Reef Marine Park. These include potential threats to protected loggerhead, flatback and green turtle habitat and nesting sites at Mon Repos, as well as water quality and sediment-laden floodwaters entering the ocean to the south of the Great Barrier Reef Marine Park, located close to the mouth of the Burnett River Catchment.

From a fire perspective, a range of opportunities exist in relation to land management moving forward, including advanced approaches to primary production such as regenerative agriculture, and partnerships which embrace First Nations sustainable land management practices.

The stewardship of healthy Country offers benefits beyond the intrinsic values it contributes to ecosystems and biodiversity, including reduced bush and grassland fuel loads, reduced carbon emissions through improved fire management practices, improved weed and pest outcomes and reduced erosion.

Image: Old railway shed in Wooroolin. Credit: Shutterstock.

Roads and transport

The day-to-day activities of the region are supported by a complex infrastructure network which becomes all the more essential before, during and after events. The ability to move around the catchment as well as to maintain access to electricity, water supply, sewer and telecommunications are critical elements underpinning how our community functions in response to events.

Impacts on the road network can present challenges during and following major events, where reliance upon this network is critical to restoring essential community services and supporting economic and employment activities which are the lifeblood of the Burnett.

The essential nature of transport extends beyond road networks to rail, air and stock routes. Not only do these networks enable us to travel for work and for personal purposes, but they support product, freight and stock movements, and drive tourism, as foundations of our economy.

Extreme heat can also damage road pavement surfaces, causing sealed surfaces to 'melt' and railway lines to buckle. This type of damage can also occur due to flame contact and radiant heat emitted from intense bushfire events.

Image: Sugar Mill in Bundaberg with a locomotive leaving to collect sugar cane. Credit: Shutterstock.

People and communities

We know that disasters can create 'cascading' risks in communities. For example, in situations where evacuation is required or isolation occurs, access to essential medication can become an issue, in particular for people requiring daily treatment.

In instances where such situations are prolonged, public health issues may emerge, particularly during periods of high temperatures where there is no access to electricity, air conditioning and refrigeration. These conditions impact vulnerable people, especially the very young, elderly and the ill.

The cumulative effects of repeated weather events can take a toll. Sometimes, it can be years before communities recover – and some people may never fully recover depending upon the extent of trauma experienced. Each individual will experience disasters and the associated recovery in different ways.

Recovery can sometimes be compounded by other social and economic impacts such as impact on family, friends and neighbours, and the financial burden of loss, damage and clean-up activities. In some cases, people may be unable to return to work or return to day-to-day activities previously enjoyed.

Disaster recovery is often a very personal experience and can be particularly challenging for our most vulnerable members of the community. However, it can be supported through strong social connections within the community and careful pre-planning and preparedness.

As communities in the Burnett catchment, we must be able to anticipate hazard events and understand their behaviour, and what that means for us.

We can build our capacity to act, and to recover. We share responsibility for our personal and community resilience. We care for and respect our communities, and the environment in which we live, work and play, especially during times of hardship. This is particularly relevant for the vulnerable in our community.

Our community networks are our lifeblood. Our networks sustain us throughout the year, and they support us during times of hardship. We must continue to work hard to maintain and build strong relationships.

A good starting point is to better familiarise ourselves with our Council Disaster Dashboards and Local Disaster Management Plans, which outline the spectrum of potential risks we may be exposed to.

From a household and business perspective, we should check our home and contents insurance, and business insurances, on an annual basis and ensure we have appropriate cover.

Economy

Economic resilience is a critical aspect of overall community resilience, ensuring employment is disrupted as little as possible.

Economic inputs and outputs that continue to flow through the region are important to keep local business open, maintain local employment, and continue the delivery of goods and services to support the local population.

Approximately 40 per cent of good quality agricultural land throughout the region is susceptible to flooding. Whilst other industries may be able to recover relatively quickly following a flood event, the impact on agricultural activity can be long-lasting. Impacts include degraded soils, weed and pest infestation as well as damaged and destroyed buildings, equipment, contour banks and fencing. This is in addition to the devastation of stock and crop losses that impacts not only the duration of recovery but the overall ability for business recovery.

Similar economic exposure exists for bushfire and heatwave across the region.

Severe storms, including hail, have had devastating impacts on agricultural production and other businesses in parts of the region and their rapid-onset means there is little warning. Hail storms are a damaging hazard in the Burnett, given their relatively frequent occurrence.

Looking forward, we have exciting opportunities to step-change and grow new industries and economies based upon our traditional roots – while taking measures to enhance their resilience. Our new, emerging industries include:

- agricultural technology (AgTech)
- bio-energy and bio-products
- advanced manufacturing
- new tourism opportunities.

Broadening our economic base builds our economic resilience. We are able to withstand the shocks of local and global economic shifts.

Towns and infrastructure

Our settlements underpin the social and economic activity of our region.

Across the built form of the Burnett region, best practice adaptation to natural hazards can be observed. Examples include cyclone-rated and flood immune buildings, implementation of asset protection zones around buildings and infrastructure assets, and bushfire mitigation.

To reduce overall exposure of people and property to potential impact and disaster over time, development across the region should be contemplated with existing and future hazards and risk at front of mind.

Effective telecommunication networks are important, not just for keeping in touch and doing business, but during times of disruption. For example, advising neighbouring communities downstream to be prepared or seek assistance during hyper-local disruptions and emergencies, like flash flooding and severe storms.

Our network of townships need reliable telecommunication infrastructure and back-up power supplies to prepare, respond and recovery from disruptions. Quality communication sets us up for success at other times too, creating opportunities for new, digital business ventures and remote working.

Image: Barambah Pottery, Ration Shed.
Courtesy Cherbourg Aboriginal Shire Council.

Climate influences

Our climatic challenges include projections of higher temperatures, hotter and more frequent hot days and nights, fewer frosts, harsher fire weather, reduced rainfall, more intense downpours, rising sea level, more frequent sea-level extremes and warmer and more acidic seas. Changes to drought are less clear, but reduced rainfall in the region may give rise to more instances of drought than currently occur.

Rainfall is projected to become concentrated, with a smaller number of high volume, intense events. More intense rainfall episodes and climatic variability could increase agricultural vulnerability and potential erosion. More intense downpour events could increase flash flooding risks without increasing infrastructure resilience to cope.

Tropical cyclones and tropical lows are expected to track further south across Queensland than has previously been the case. While the quantity of cyclones each year is not projected to increase, their general intensity is forecast to increase. This presents potential challenges for coastal locations with severe wind, intense rain and coastal hazards associated with tropical cyclones and tropical lows.

A rise in mean temperatures brings with it an increase in the number of hot days experienced, giving the effect of an extended summer. The number of hot days (over 35°C) and very hot days (over 40°C) are both projected to increase, bringing with them hot nights.

Temperature rises will have impacts on our people. The elderly, children and the ability to work and enjoy our unique natural lifestyle. The need to cope and adapt to the heat will bring with it increased use of mechanical cooling. This places increased demands on our energy networks, from both residential and commercial uses. Despite our best efforts, some people will experience heat stress or heatstroke, placing increased demands on our region's hospital and health service.

Economic costs of heat may see a reduction in workforce capacity during severe and extreme heatwaves. Heat also increases the risk of mechanical failure for business, especially in energy overloads, road surfaces, rubber and plastic components failure of plant and equipment. The tourism season may see a reduction, rather than the desired lengthening. Risk to tourists' health and well-being will emerge where low risk awareness can potentially be a burden on emergency services resources.

In our landscapes, heatwaves will also impact our flora and fauna, placing a particular strain on our native animals and world-class environmental areas, like the Great Sandy Marine Park.

The behaviour of our environment and ecosystem functions may change. Shifting climatic patterns may promote the spread of invasive flora further afield. Irrigation will need to increase for our crops or alternative varieties developed requiring less water for growth.

Fire hazard will grow as fire weather conditions become more frequent and intense, making bushfires and grassfires in the region more difficult to suppress. Fire presents human, economic and environmental risks. Good fire and burning for ecological benefit, and not just for the purpose of hazard reduction, can help maintain healthy, vibrant ecosystems in vegetation communities that depend on specific fire regimes (fire frequency) for regeneration.

To avoid certain stresses, maintaining and maximising collaborative, grassroots approaches will be paramount. The opportunities for resilience stem from technology, innovation, commitment and collaboration in a way that harnesses local knowledge and expertise.

Image: Miara, Bundaberg. Courtesy QRA.

Case study: Red Earth Community Foundation

Launched in February 2013, Red Earth Community Foundation was formed in the South Burnett to 'help the community help itself'.

The focus of Red Earth is local. The foundation is guided by a board of local leaders, with a view to develop the community's capacity for independence and self-reliance by fostering local people, projects and ideas.

Since 2019, Red Earth have operated across both the South and North Burnett local government areas. Using a community foundation model, Red Earth helps philanthropic individuals and organisations support grass-root causes and projects.

The foundation runs a nationally recognised annual Community Leadership Program and has delivered several community capacity building projects.

The foundation is currently leading community conversations and advocacy, with the support of the Rural Economies Centre of Excellence, to co-design Burnett Inland Futures, an action plan to facilitate long-term economic resilience.

Case study: Gayndah Mundubbera Road Betterment Project

Gayndah Mundubbera Road is an essential freight and transport link for the North Burnett region, connecting the highly productive agricultural towns of Gayndah and Mundubbera.

The road was damaged in 2011 and rebuilt only to be damaged again in 2013.

Betterment funding from 2013 was used to increase the resilience of the two kilometre section of road adjacent to the Burnett River that was washed out, relocating it uphill by 11 metres.

New stormwater drainage works (including concrete-lined channels, culverts and scour protection) were also completed, improving functionality of the entire Gayndah-Mundubbera Road.

The road has since been impacted by four disaster events in 2015, 2016 and twice in 2017, and has remained functional with only minor expenditure required to clean up and remove debris.

Proven success of this project:

Restoration: $6,785,707

Betterment: $1,308,863

Avoided cost over seven events: $47,499,499

Image: Gayndah Mundubbera Road Betterment Project (inset: damaged road).

Case study: Cherbourg Material Recovery Facility

The Cherbourg Material Recovery Facility (MRF) is the only recycling centre within a 150km radius and services Cherbourg, the North and South Burnett, Gympie and the Fraser Coast.

The facility received nearly $1.5 million in funding to increase its annual output from 250 tonnes up to an estimated 3500 tonnes.

The Material Recovery Facility is the first for a remote indigenous community in Australia and provides new opportunities with other businesses and local governments in the region.

The increase in capacity brings with it new jobs and training opportunities for the community too.

Councils has also been exploring the incorporation of new technologies into like artificial intelligence into the operations of the Material Recovery Facility.

Case study: NBN Bushfire Resilient Hybrid Power Cube projects

Funded under the Australian Government's Black Summer Bushfire Recovery Grants, the Hybrid Power Cube power redundancy solution provides ongoing connectivity during bushfires and other disasters.

During prolonged emergency situations like a bushfire, where grid power is not operational, the hybrid power cubes provide redundancy power to NBN fixed wireless towers by combining solar, battery and diesel generator technologies.

Each cube can be powered for up to nine months with the need to refuel.

This redundancy solution has lower emissions, smoother operation and lower running costs compared to traditional generators.

The roll out is expected to benefit 13,600 households and businesses across the local government areas of Bundaberg, Fraser Coast, Gympie and North Burnett, reducing outage times from up to 44 hours to near zero.

'Jesse from Gayndah' helped communities understand flood resilience as part of the former Burnett Catchment Flood Resilience Strategy. Watch the video at youtu.be

Image: Cherbourg Material Recovery Facility. Courtesy Cherbourg Aboriginal Shire Council.

Our exposure and risks

Critical elements in understanding risk are exposure and vulnerability which exist at both a micro and macro scale. For example, specific bridge or culvert assets may be exposed or vulnerable to natural hazards however, the resupply network these bridges and culverts support may then also be vulnerable. From a resilience perspective, it is necessary to consider risk consequences across a broad spectrum from asset-based analysis through to strategic and systems-based analysis.

Following is a high-level overview of the nature of hazard exposure across the Burnett region. Observations are drawn from the 'process one' analysis of each hazard using the QERMF approach across each local government area.

Cyclone and severe storm

Cyclone and severe storm events are one of the most frequently occurring events in the region, with cascading associated impacts.

The region's cyclone exposure is largely associated with systems crossing the coast from the Pacific Ocean, and those which track down the coastline from the north. The energy from a cyclone will generally dissipate upon making landfall, transitioning to a low-pressure system as it moves further inland however, these systems can still result in considerable damage from extreme wind. Areas with the highest level of vulnerability to cyclones are predominately coastal settlements along the Bundaberg coastline.

Climate projections show that tropical cyclones are projected to increase in intensity. The Queensland State Natural Hazard Risk Assessment identifies tropical cyclones as the highest natural hazard risk priority for Queensland, followed by severe weather as the seconded highest.

While risk is elevated to coastal locations, severe wind remains a risk for the entire region. Considering current average severe wind exposure during a cyclone, the region is exposed to gust wind speeds between 40 to 55 metres per second, which equates to a category two to category three tropical cyclone. Under the projected future scenario, this is expected to increase by up to 10 metres per second.

The Burnett region also has experience with another type of severe wind and storm phenomena, tornadoes. A tornado event occurred across two days in January 2013, when the Bundaberg region experienced a tornado outbreak associated with ex-Tropical Cyclone Oswald. More than six tornadoes developed across several townships, resulting in the destruction of houses and buildings, uprooting of trees and left more than 20 people injured. Queensland Ambulance Service experienced an increased number of calls from residents with anxiety, due to the unprecedented nature of the event.

Vulnerability to cyclones, tornadoes and the ability to withstand the extreme wind associated with these systems is particularly prevalent to the age and condition of building stock particularly situated along the coastline. This includes critical assets such as aged care, schools, telecommunication towers, exchanges, schools, airport facilities, emergency service facilities and public hospitals.

In general terms, homes built before 1985 usually sustain more damage during a cyclone than more recently built homes. For homes constructed after the mid-1980s, they are likely designed and built for the wind speed specific to its particular location.

Image: Burnett River Railway Bridge, Bundaberg. Credit: Shutterstock.

Coastal hazards

As well as extreme winds, a tropical cyclone can cause the sea to rise well above the highest tide levels of the year when it comes ashore. These storm surges are caused mainly by strong, onshore winds and reduced atmospheric pressure. Storm surge is potentially the most dangerous hazard associated with a tropical cyclone.

Storm surge is an abnormal rise in sea level over and above the normal (astronomical) tide levels. It can be thought of as the change in the water level due to the presence of a storm. These powerful ocean movements are caused by strong winds piling water up against the coast as a tropical cyclone approaches. Storm tides can swamp low-lying areas, sometimes for kilometres inland. Strong winds at the coast can also create large waves, worsening the impact and giving rise to coastal erosion. Storm surges are at their most dangerous when they arrive at high tide – when the sea is already at its high point.

Coastal erosion results in the loss of land or removal of beach and dunes due to waves, water flows or permanent inundation. Caused by cyclones and severe storms, the temporary inundation of land by sea water due to abnormally high sea levels is storm-tide inundation. The coastline of Bundaberg Regional Council is vulnerable to storm tide inundation. On a longer-scale, sea level rise will likely result in the permanent loss of land. Each of these coastal hazards pose significant risks to coastal communities, infrastructure and environmental areas in our region.

The changing coastal line may result in damage to, or loss of homes, public and private assets and facilities with community-wide impacts for some townships. Sea level rise may lead to loss of habitat, and salinisation of soils may cause changes to the distribution of plants and animals.

To support this increased awareness of coastal risk and to set adaptation pathways, Bundaberg Regional Council has developed a Coastal Hazard Adaptation Strategy under the QCoast2100 program administered by the Local Government Association of Queensland.

Flood hazard

With more than 40,000 dwellings located across the catchment, residential areas represent one of the more common flood-affected land uses in terms of impact on property. Across the catchment, both urban and rural are exposed to flood risk and isolation.

The northern part of the catchment will flood depending on the amount of rainfall in the Dawes Ranges above Monto, as well as the rainfall received in the hinterlands which drain into the Boyne and Auburn Rivers. Large rainfall deriving from tropical lows and ex-cyclones from the tropics will usually produce significant flooding in the north and this area is typically the first section of the catchment to receive rainfall.

The Boyne and Auburn Rivers will begin to flood when rainfall is received over the southern and western parts of the catchment, while the Stuart River and Barambah Creek will begin to flow when rainfall is received in the southern and eastern areas of the catchment.

Water will flow off the Bunya Ranges quickly to be drained by Barambah Creek and the Stuart River before joining the main Burnett River system. This often gives communities limited warning.

There are multiple ways which flooding can occur downstream of Paradise Dam. The Lower Burnett River can flood into Bundaberg where rainfall occurs in the Mount Perry area and other areas below the dam, while floodwaters from the upper catchment can flow to the dam and continue to Bundaberg.

Closer to the coast are a series of shorter-run waterways include Gin Gin Creek which flows into the Kolan River, Elliott River, Gregory River, the Isis River and Baffle Creek in the very northern extent of the Bundaberg region.

Localised flood events along smaller tributaries can occur throughout the catchment from localised rainfall. This is exacerbated by the region's susceptible to severe storms that can be very intense and can particularly affect Reid Creek near Gayndah, Harkness Boundary Creek through Eidsvold, and overland flow around Hivesville and Proston.

Many individual properties, localities and towns in the catchment can become isolated due to flooding for extended periods. Locations such as Stanmore in the North Burnett, and Wondai and Proston in the South Burnett can be isolated for several days, while communities such as Cherbourg, Murgon, and the larger towns of Eidsvold and Biggenden can be cut off from other towns for some time.

Image: Woodgate Beach, Bundaberg. Courtesy QRA.

Heat and heatwave hazard

Most of the Burnett region experiences a subtropical climate. Bundaberg benefits from its coastal position, with sea breezes providing cooler temperatures. While in places like Gayndah, in the region's interior, they can experience over 30 days each year above 35°C. Other parts of the region enjoy a temperate climate. In Kingaroy, the annual number of days over 35°C is just over ten. However, increasing intensity and frequency of heatwaves means all of the Burnett region will experience longer periods of increased temperatures.

Currently, heatwave days are experienced an average of 22 days each year, slightly higher for Bundaberg, at 25 days per year. This is anticipated to increase under a changing climate of up an average of 33 days additional heatwave days for North Burnett and South Burnett and an additional 79 heatwave days in Bundaberg and Cherbourg each year.

The rise of annual heatwave days may potentially increase stress on the region's economy, social and community services, as well as potentially impact infrastructure networks, if unable to adapt to prolonged periods of increased heat.

Those who are most vulnerable to the effects of hotter and more humid temperatures associated with heatwave days will require considerable attention and care from our community. This includes the aged, the ill and the very young.

Bushfire and grassfire hazard

Bushfire is becoming an increasingly prevalent part of the landscape. The Burnett region is no stranger to the risks of bushfire, with a recent history of fire events.

Across the Burnett and Mary catchments, 35 bush and grassfires occurred over the 2019-2020 Black Summer fire season, burning more than 48,000 hectares.

While much of the landscape across the Burnett – particularly around Bundaberg – is dominated by agriculture, managing availability of potential fuel, the ongoing threat of grassfire remains.

The economic impact of bushfire and grassfire in the region can be significant. Loss of grazing pastures, crops and impacts to fodder, equipment and sheds can be difficult to overcome.

A number of rural fire brigades are located across the region which are deployed to respond to bushfire and grassfire events. These rural fire brigades are able to undertake hazard reduction activities during the cooler months. Hazard reduction burning is an important mitigation measure for bushfire threat and can contribute to environmental activities such as the management of weeds and restoration of landscapes.

Image: Courtesy DAF.

Bundaberg has undertaken significant fire risk and fuel management assessments over recent years to inform mitigation approaches into the future.

In addition to hazard reduction burning, other mitigation measures and environmental activities can contribute to healthy, managed landscapes. These include weed management programs, the implementation of strategic asset protection zones, establishment of firebreaks and the use of regenerative or ecological fire to restore landscapes. Cultural burning practices and Traditional Owner fire management opportunities offer significant benefits for the region.

Earthquake hazard

Earthquakes are a rare event in the Burnett and across Queensland more broadly, but their potential impact should not be downplayed. In fact, a fault line traverses the region, from Gayndah down to the Fraser Coast region, and tremors are not uncommon in the area.

A 4.9 magnitude event occurred in 2015 in Gayndah at a depth of 15 kilometres. Other events have occurred in 2004, 1965 and 1935. The largest recorded was in 1883 at a magnitude of 5.9. An event of this size today would likely cause significant damage.

Multiple events have also occurred in the Kingaroy area.

The Burnett region is within earthquake Zone 3. The Queensland State Earthquake Risk Assessment identifies Zone 29 has the highest risk of earthquake occurring exposing the western part of the region to a 17.37 per cent probability of a 5.35 magnitude earthquake occurring over the next 100 years.

In terms of exposure, damage to underground assets and above ground infrastructure networks may yield considerable damage.

Essential infrastructure, such as water, sewerage, communications and power could also be potentially impacted by earthquake. Depending on the severity of damage, this could result in cascading effects for availability of water, sanitation and public health.

Also of concern is the age and condition of building stock which may be vulnerable to earth tremors.

The Burnett has considerable expanse of road network. The network is particularly vulnerable to earthquake and could be subject to considerable damage which may be difficult to repair and affect response and recovery initiatives following an event. Similar, impacts upon the North Coast Rail Line would impact the region, and supplies to northern Queensland.

Bundaberg Regional Council

Residential areas within Bundaberg, as the most urbanised centre within the Burnett region, are unsurprisingly more susceptible to flooding impacts.

Areas including Bundaberg North, Avoca, Bundaberg South and Bundaberg East are amongst those areas most heavily affected, which is reflected by the Bundaberg 10 Year Action Plan. Outside of Bundaberg City, upstream locations are also significantly affected including Branyan, Sharon, South Kolan and Wallaville.

Several key pieces of infrastructure in and around Bundaberg City are flood exposed along the Burnett River, including jetties, wharfs and other facilities.

Coastal erosion and coastal inundation present many risks to communities along the Bundaberg coastline. The Bundaberg Coastal Hazard Adaptation Strategy found intolerable risk associated with sea level rise of 0.8 metres in several coastal townships, including Woodgate Beach & Walkers Point, Coonarr and Bargara. Storm tide inundation risk was also found to be intolerable in Burnett Heads and Woodgate and Walkers Point. Coastal hazards in these locations present the potential for major and catastrophic damage to buildings and infrastructure and potential isolation of communities.

As for extreme heat, currently, heatwave days are experienced an average of 25 days each year. This is anticipated to increase under a changing climate of up an average of 78 days additional heatwave days each year.

The 2019 bushfires primarily affected drought-declared Bundaberg and particularly impacted communities in Buxton, Doughboy, Gregory River and Woodgate between November and December.

Other notable bushfire seasons in the region include 1976, 2011 and 2018.

Cherbourg Aboriginal Shire Council

The township of Cherbourg is located next to the Barambah Creek, and downstream of the Bjelke-Petersen Dam. During moderate to major flood events, the single sealed road and bridge access in and out of the Cherbourg township can become inundated, cutting off the community. A number of items of essential infrastructure are exposed to flood hazard, including the wastewater treatment plant, local bridges and the fire station.

Grassfires are common in late spring and early summer. Bushfire in the adjacent Wondai State Forest could affect Cherbourg.

As for extreme heat, currently, heatwave days are experienced an average of 18 days each year. This is anticipated to increase under a changing climate of up an average of 79 days additional heatwave days each year.

The 2021 Census shows that the Cherbourg community experiences higher rates of health conditions like diabetes, heart disease and kidney disease. Extreme heat can exacerbate these health conditions and, in some cases, decrease an individual's ability to regulate their body temperature. Housing resilience and passive cooling options are an opportunity to avoid or mitigate these effects.

North Burnett Regional Council

In North Burnett, residential areas within towns and surrounding areas of Gayndah, Mundubbera, Mount Perry and Eidsvold are also exposed to flood inundation, with 50 per cent of residential properties in North Burnett identified as subject to possible flood impact or isolation.

Bridges are heavily exposed to flood hazard, similarly for medical facilities. Under an extreme flood (0.2 per cent AEP), Council's offices, emergency facilities and schools are exposed.

Heavy rain events can lead to flash flooding. Because of their short onset and hyper-local nature, flash flooding can be difficult to provide warning for. This was experienced in Dallarnil in January 2022, where 'tsunami-like' floodwater rushed through the rural township, forcing residents to vacate their houses in the middle of the night. Dallarnil was impacted again only six weeks later.

As for extreme heat, current heatwave days are experienced an average of 24 days each year. This is anticipated to increase under a changing climate of up an average of 36 days additional heatwave days each year.

Substantial areas of the North Burnett are subject to potential bushfire and grassfire hazard, as a function of the natural bushland areas of the region. During the Black Summer fire season, areas in North Burnett burned but with minimal reports of equipment or building damage. Exposure of infrastructure assets to bush and grassfire remains high across the North Burnett.

South Burnett Regional Council

Flood waters typically rise and fall rapidly in South Burnett, posing risk to people, and inundation and damage to property, infrastructure and agricultural activities.

In South Burnett, locations such as Kingaroy, Nanango, Memerambi, Hivesville, Coolabunia, Wooroolin and Proston are particularly susceptible to flooding.

South Burnett has flood exposed assets across a range of categories, including waste water treatment plant, state and local bridges, schools, retirement villages, and livestock farming.

Heatwave days are experienced an average of 21 days each year. This is anticipated to increase under a changing climate of up an average of 30 days additional heatwave days each year.

Similar to North Burnett, large areas of the South Burnett are subject to potential bushfire and grassfire hazard, as a function of the natural bushland areas of the region. The Wondai State Forest is situated between the townships of Wondai, Murgon and Cherbourg, for example.

Damaging storm and hail events are also common in South Burnett, which forms part of a hail corridor which extends east into the Gympie region. The Coolabunia hail storm in 2018 was particularly ferocious. Other severe storm events in the region have produced tornado-like winds, including events around Kumbia and Tansey, to the immediate east of the region.

Our pathways to resilience

This Strategy has been formulated through regional engagement and collaboration with the local governments and stakeholders. It builds upon existing resilience efforts across the region, including a wealth of existing studies, reports, plans and strategies. It also draws upon strategic observations from the initial assessment of exposure and vulnerability undertaken across the region.

Consideration of locally identified community needs, strategic vulnerabilities and risk information can inform and bolster resilience initiatives across the region.

The concept of resilience action can be considered in the context of three options or opportunities:

'Doing same' – some parts of the system may be able to continue successful functioning even with disruption. However, other parts of the system will not endure major disruptions and to 'go back to normal' after disasters is reinforcing existing vulnerabilities.

'Doing better' – some parts of the system may be amenable to incremental changes and adjustments, allowing for improved decisions and actions based on updating knowledge.

'Doing differently' – large parts of the system will not be able to withstand increasing frequency or magnitude of disruption and will require a step change to deliver on goals and things that are valued. System structural changes can be achieved by addressing root causes and re-prioritising.

For the Burnett, the doing same, doing different and doing better model encompasses the following examples:

- continuing to maintain and strengthen infrastructure networks and community cohesion
- improving disaster management facilities and early warning networks
- sustainable land management practices which merge traditional knowledge with western science
- enhance collaboration with cross-border partners.

Image: Buss park, Bundaberg. Credit: Shutterstock.

Regional strategic pathways

The following strategic pathways form a blueprint for coordinated resilience action for the Burnett region. Efforts at the local level are calibrated to work toward the achievement of regional goals

Each strategic pathway is mapped to its corresponding QSDR objective, referenced by coloured triangles.

	Resilient society	Resilient towns and infrastructure	Resilient transport	Resilient economy	Resilient environment
Doing same	Connect people to each other to improve health and wellbeing (3)	Connect disaster management into land use planning through a risk-responsive approach, accounting for evacuation, isolation, and inundation. (4)	Develop pathways for infrastructure resilience to support economic growth and community mobility (3)	Support local business through consistent, positive messaging to external markets (1)	Deliver regional programs that address risks such as waste, weeds, and riparian vegetation (3) Increase risk understanding and sharing of local knowledge (1) Improved environmental monitoring and reporting (4)
Doing better	Enhance data and warnings in a language people understand (1) Focus on community awareness on risk, not just hazard (1) Empower the community to make better, risk informed decisions (3)	Build redundancy into infrastructure by improving gaps in electricity and telecommunications over time (4) Advance flood, coastal and bushfire mitigation infrastructure as a priority (4)	Understand how our settlements create disaster management issues (1) Advance flood resilience and betterment programs for key routes across the region	Increase capacity/ capability to manage land more sustainably (3) Enhance resource stewardship for economic and social sustainability (4)	Climate adaptation as business as usual (4) Expand existing efforts across agriculture, business, and government sectors to adapt to our changing environment (2)
Doing different	Change the conversation about severe weather as a natural element of life in the region (3)	Create resilience in asset management through asset resilience in upgrade and renewal processes (4)	Advance regional transport priorities that build disaster resilience and strengthen supply chains (4)	Implement business continuity planning as business as usual (4) Lead awareness and action by small and medium enterprises to anticipate shocks (1)	Develop a strategic environmental management approach, based on risk (4) Clarify pathways for recovery/ resilience for environmental purposes (4)

Figure 10: Objectives of the Queensland Strategy for Disaster Resilience

Delivering over time

The strategic pathways provide broad themes that address the region's identified resilience needs. Focusing the right effort at the right time is critical to advancing resilience in a sustainable way.

Being able to describe what is needed, and when, is a key aspect of coordinating whole of government and collective responses to locally identified needs.

The diagram below provides a conceptual roadmap to understand key actions and investment priorities for the region, and when they might be applied, having regard to funding mechanisms and broader delivery programs of investment. It anticipates that stresses and shocks will continue to happen into the future – but it provides the trigger points for key interventions at the relevant points over time (before an event, during, and after) that are needed to help sustain socio-economic growth into the future.

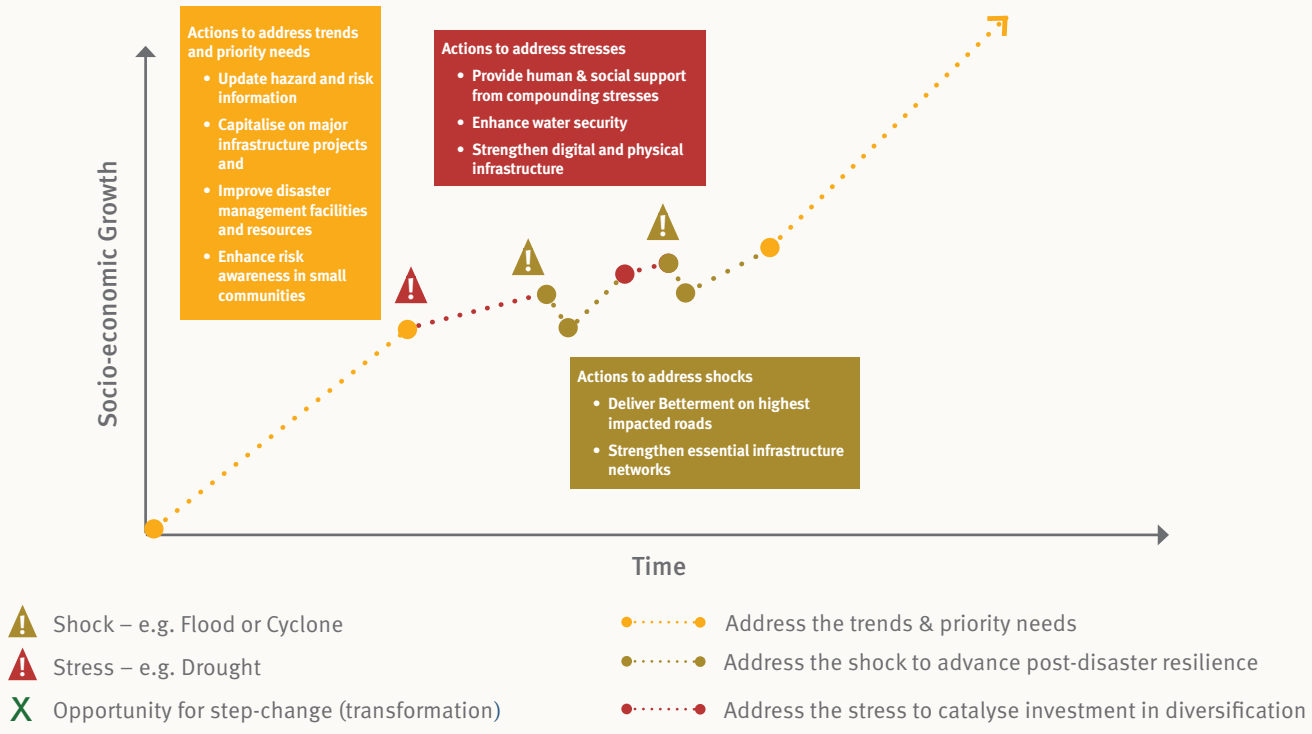
This can be used as a mechanism to understand key recovery and resilience priorities ahead of time, so that when an event occurs, all stakeholders are already aware of the key needs of the region through the action plan which enables post disaster efforts to be better coordinated and streamlined.

The phased approach, shown in the diagram below, acknowledges resilience is a journey and is punctuated by events that change our circumstances. Sometimes, it is easier to achieve changes to the status quo after an event, when the consequences are in clear memory. As challenging as events are, they also present opportunities for change so that today's lessons can be retained and put to work for future benefit. In other periods, under blue sky conditions, other opportunities exist to build hazard and risk information datasets, undertake monitoring, and plan for uncertain times.

Importantly, this approach means that efforts, projects, and activities need not be all done at once. Individual local government circumstances will dictate what is needed and when certain actions are best carried out depending on local priorities and needs at any given time.

The Burnett's approach to resilience and local contextualisation of disasters has triggered a method of delivery over time that responds to the region's unique circumstances.

Figure 12. Improving our prosperity through resilience (adapted from Joseph Fiksel).



Action planning

A Local Action Plan for each local government in the region supports the implementation of this Strategy. The Local Action Plan identifies a suite of potential projects, that if implemented, would contribute to improving resilience to natural hazards at both the local and regional level. It is calibrated to provide direction on how to pivot actions as events occur and circumstances change.

Each local government will be primary driver for implementing the Local Action Plan, however it is acknowledged that not every action identified is the responsibility of the local government. Some actions will require involvement by state agencies, local stakeholder groups, charities, NRM bodies and community groups. Where this is the case, councils can work with stakeholders to share these actions and projects.

Implementation

Working together to implement the Strategy

This Strategy will be implemented as a partnership across the four local governments of Burnett region.

The Strategy actions will be driven through local leadership with appropriate support from other coordinating bodies and entities including District Disaster Management Groups (DDMGs), local disaster management committees, recovery and resilience officers, state government agencies, and not-for-profits.

This approach recognises that while actions are best delivered locally, multi-disciplinary regional level support is also required to encourage cross jurisdictional collaboration, provide technical assistance and proactively assist project implementation.

Enduring governance and funding arrangements

This Strategy supports how local governments, and stakeholders work together to achieve common resilience outcomes for the Burnett region.

Under this model, the Strategy acts as the regional blueprint for coordinated and sustained action. An agreed governance arrangement will support the implementation of the Strategy and an enduring commitment to championing resilience into the future. Stakeholder-identified key requirements for the successful implementation of this Strategy are:

- a broad, multidisciplinary approach to resilience building
- sustaining governance arrangements, funding, and resource capability for implementation of resilience actions over time
- a clear understanding of how resilience arrangements interplay with Queensland Disaster Management Arrangements
- greater collaboration between government and non government organisations to optimise resilience service delivery and efficiency
- clarification of the proposed resilience implementation arrangements at state, regional and local levels so that local actions can be programmed and delivered accordingly.

This model is underpinned by a role for everyone in delivery including:

Local leadership

Local governments are encouraged to establish their own multi-disciplinary resilience working groups to transition community and climate-related disaster resilience to front-of-mind in all local government functions. This could be achieved by combining existing recovery group arrangements with an ongoing resilience focus over the calendar year.

Regional coordination

Regional coordination is encouraged through local partnerships with a strong link to other existing related governance arrangements such as the relevant DDMGs.

State support

As a locally-led and regionally coordinated strategy, the role of the State is intended to be one of provision of enabling measures such as administration of grant funding programs, delivery of core governmental functions that interface with resilience building, and facilitation or coordination of support that can assist implementation.

Image: Elliott Heads Beach and river.
Back cover: Billabong South Burnett. Credit: Shutterstock.

www.qra.qld.gov.au/regional-resilience-strategies/burnett