

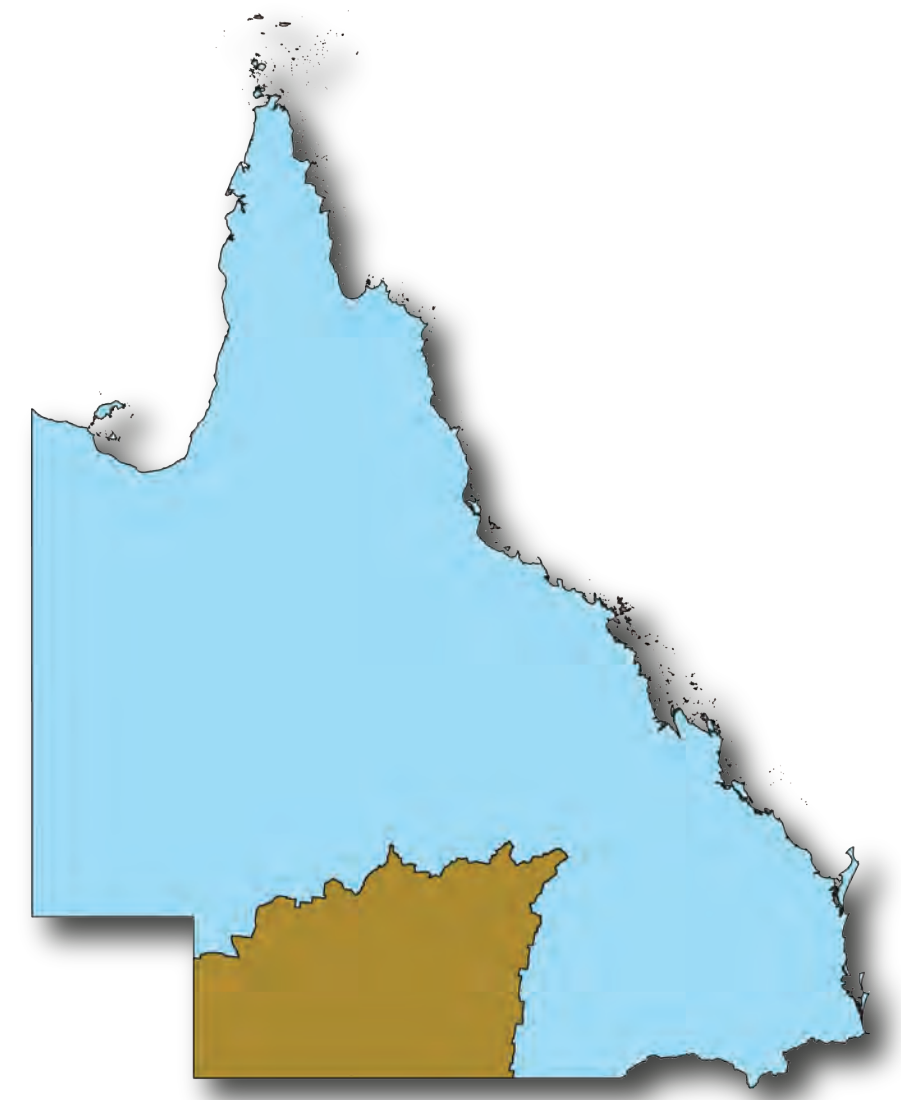
DRAFT Bulloo, Paroo and Warrego River Catchments Local Knowledge Map

Resilient Queensland Queensland Reconstruction Authority



Regional Overview

The Bulloo, Paroo and Warrego River catchments span a vast and remote landscape in South West Queensland. The main regional townships of Charleville, Quilpie, Thargomindah and Cunnamulla form part of an interconnected series of townships that are vital to the region. Mulga lands dominate the majority of the region, characterised by flat landscapes with strips of low lying hills. The Mulga plant is a hardy native which provides valuable fodder to livestock. In the western part of the region is Channel Country which is the hottest and driest part of Queensland and characterised by its unique landscape of inter-twining creeks.



Climate & Rainfall

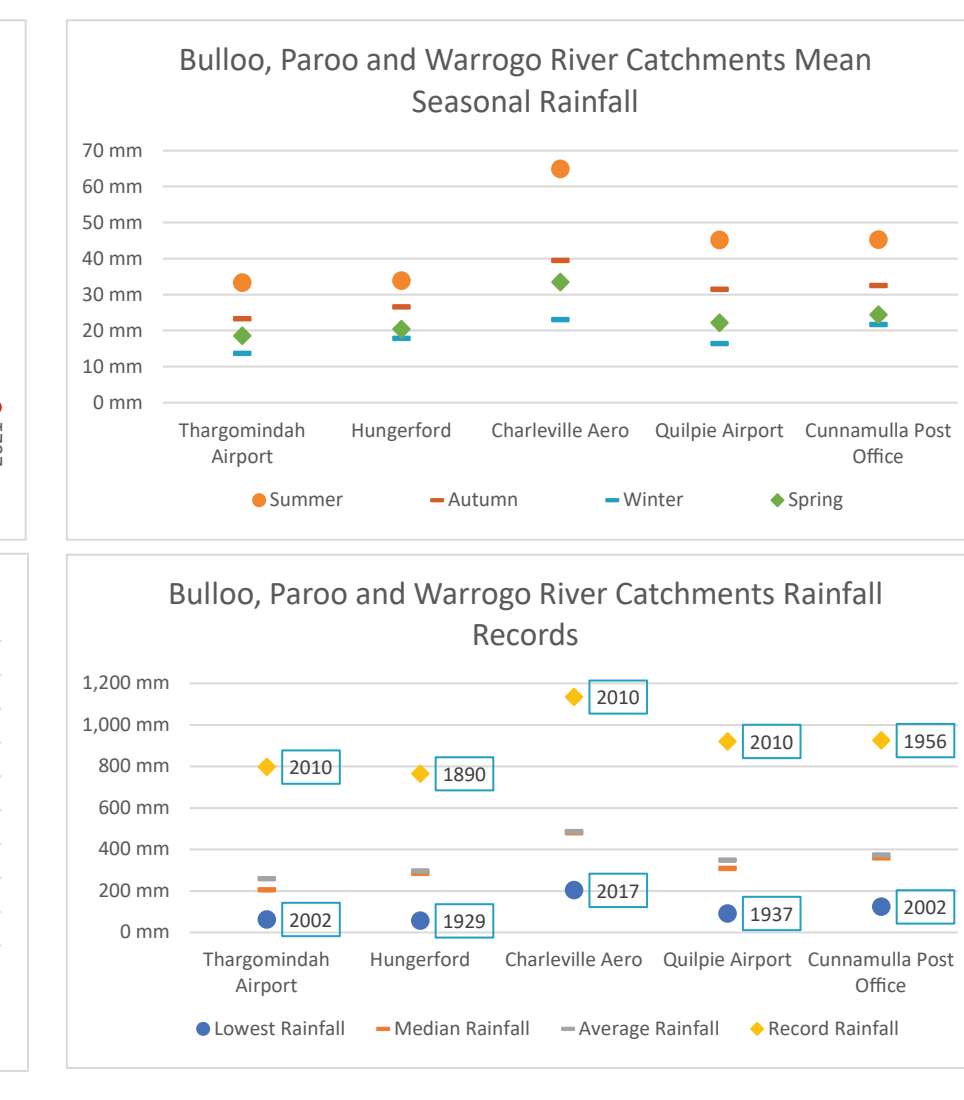
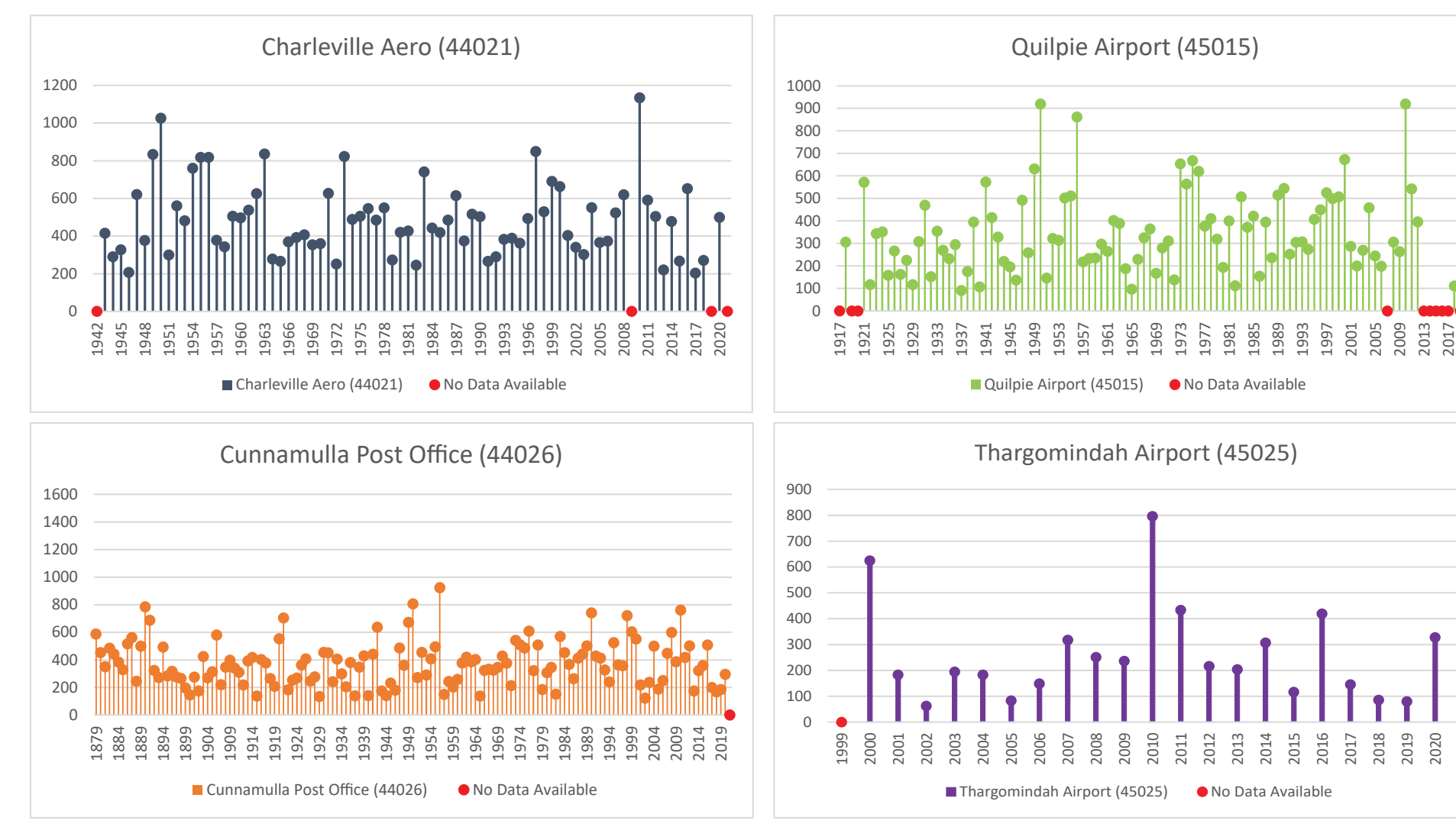
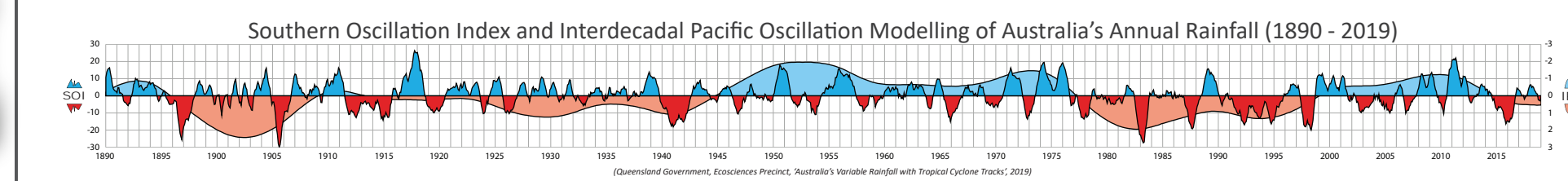
Weather and climate characteristics in the Bulloo, Paroo and Warrego River catchments in the last 30 years (1989 - 2018):

The South West has averaged around 400mm of rainfall per year in both the past 30 years (1989-2018) and previous 30 years (1959-1988) around Charleville and Thargomindah. Summer rainfall is noted to be more reliable than other seasons however, rainfall is unreliable across all seasons from year to year.

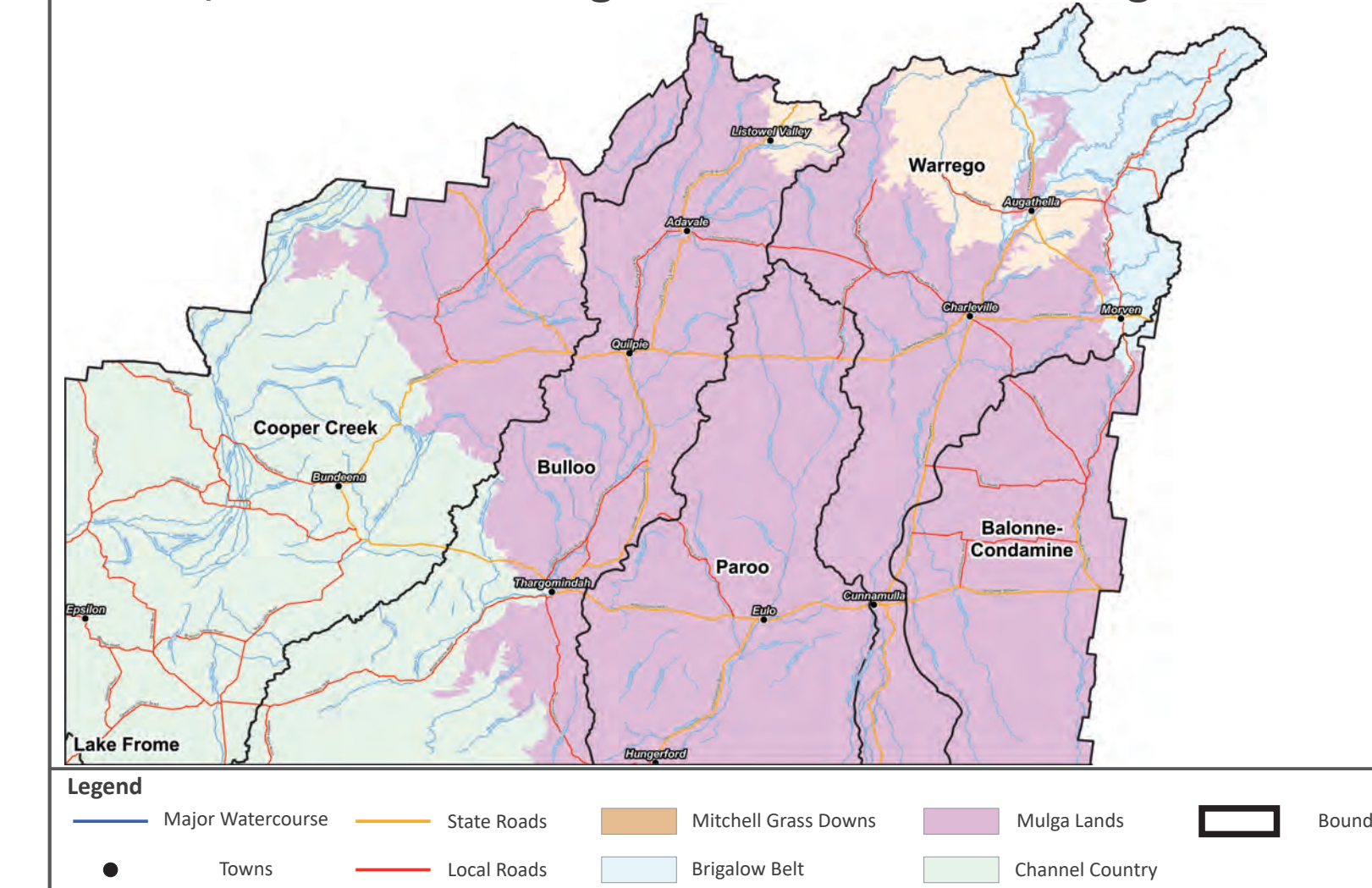
Rainfall around the north-east of the region near Charleville has received moderately reliable rainfall in summer which is in contrast to winter and spring. This is particularly relevant to the south-west of the region. Winter and spring rainfall averages for Quilpie and Thargomindah are decreasing, but are offset by increases in summer monthly rainfall averages.

Dry years have occurred eight times and wet years have occurred 10 times with the remaining years in the average range. It is noted that four of these years were during the Millennium drought years.

Hot days have become more frequent with more consecutive days above 42 °C with Thargomindah experiencing an average of 11 days above this temperature between 1989-2018.



Bulloo, Paroo and Warrego River Catchment Bioregions



How to use this guide:

The information below provides local knowledge on landscape characteristics and flood behaviour. This is provided for local land managers, Council staff, and State Government officers to better understand the Bulloo, Paroo and Warrego River catchments and their unique characteristics. This guide has used the best available information at the time of printing. It is intended to help assess what type of flood is likely to occur and indicate expected feed volumes. You may wish to record your own flooding and landscape characteristics on the map.

Bulloo Catchment Overview

The Bulloo is a long and narrow catchment wedged between the vast Cooper Creek to the west and the Paroo to the east. The water rises in the uplands of Quilpie Shire in the Gowan ranges and the Idalia National Park. Headwaters can be swift before slowing and broadening into braided channels south of Adelaide. The Bulloo River a wide river, typical of the channel country broadening across the plains into Bulloo Shire before narrowing significantly at Thargomindah and heading west. The Bulloo is a unique closed catchment in its own Drainage Division. Water from the Bulloo is isolated and drains into ephemeral lakes located at Bulloo Downs Station where salt marsh and sandhill country straddles the border.

Paroo Catchment Overview

The portion of the catchment which is in Queensland takes up 35,237.7km² or 2 percent of Queensland. The Paroo is a relatively small catchment with headwaters in the high country in Quilpie Shire in Mariala National Park. The Paroo catchment includes the Paroo River and the extensive Beechall Creek which runs parallel until they merge at Mount Banco in the Paroo Shire. Yowah Creek joins the Paroo from the west south of Eulo, before spreading across the sandhill country further south. The Paroo River dissects the region from north to south and is part of the Murray-Darling Drainage Division.

Warrego Catchment Overview

The Warrego River has its headwaters in the Carnarvon Range, which is part of the Great Divide to the east and the Warrego Range to the west. The catchment collects rainfall from a wide expanse of high country before narrowing significantly south of Charleville. The highlands produce swifter flowing waters from the highlands which slow substantially on the lowlands and floodplains. The catchment is wedged between the Paroo to the west and the Maranoa and Wallara to the east. The upper Warrego River consists of several tributary rivers including the Nive, Ward and Langlo which join the Warrego River further south. Closer to the NSW border, Cunnamulla is the administration centre for Paroo Shire nestled on the banks of the Warrego River. The catchment covers 52,161.8km² or 3 percent of Queensland and is part of the Murray-Darling Drainage Division.

Currawinya Lakes RAMSAR Site

The Currawinya Lakes RAMSAR site is internationally recognised as one of the most important wetlands in Queensland with an area of over 151,300 hectares that has special cultural significance to the Budjiti people, the area's Traditional Owners. The lakes support an incredible diversity of arid and semi-arid wetland types including the two large freshwater Lake Numulla and saltwater Lake Wyara, smaller lakes, clay pans, swamps, and waterholes connected with the Paroo River. Both the larger lakes of the Numulla and Wyara have different levels of salinity and are fed by separate catchments, with flooding from the Paroo River having more influence on Lake Numulla.

A variety of native plants and are supported by these wetlands which the lake waters become a critical place of refuge for native fish, amphibians, reptiles and birds during drought conditions. These wetlands are regularly frequented by pelicans, gulls, terns, cormorants and swans however, there have been counts of over 20,000 individual waterbirds recorded in the wetlands and substantial waterbird breeding events. The site's springs that were formed by water from the Great Artesian Basin represent ecological communities that are unique and endangered.



Geology / Landzones

- Tidal flats and beaches
- Coastal dunes
- Alluvial river and creek flats
- Clay plains
- Old loamy and sandy plains
- Inland duneheils
- Ironstone jump-ups
- Basalt plains and hills
- Unfolding country on fine grained metamorphic rocks
- Hills and lowlands on metamorphic rocks

Local Knowledge

- Flood related information
- Fire related information
- Infrastructure related
- Climate related information
- Agriculture/feed information
- Vegetation related information
- Pinpoint between locations

Legend

- Community related information
- Water/water behaviour related information
- Topography related information
- Road and Transport related information
- Mining related information
- Severe storm related weather
- Property related information
- Other
- Manual Gauge
- Automatic Gauge
- Stock Route
- Cat D Proposed Gauges
- Mountains
- State Controlled Roads
- Towns
- Mines
- Local Roads
- Basin Boundaries
- Local Government Area Boundaries
- Train Line

Handy Catchment Tips

- Fish in the Bulloo include Yellow Belli, Catfish, Midgley's grunter, Barcoo grunt, desert rainbow fish and Bonny Brim. There are a number of amphibians that also inhabit the system including chubbly gurgon, barkwing frog, meowwing frog, holy cross frog, and the water holding frog.
- Dryland farming practices reduce flows.
- The waterflows in the Warrego are heavily dependent on what happens in the Carnarvon tablelands.

Tips for Graziers

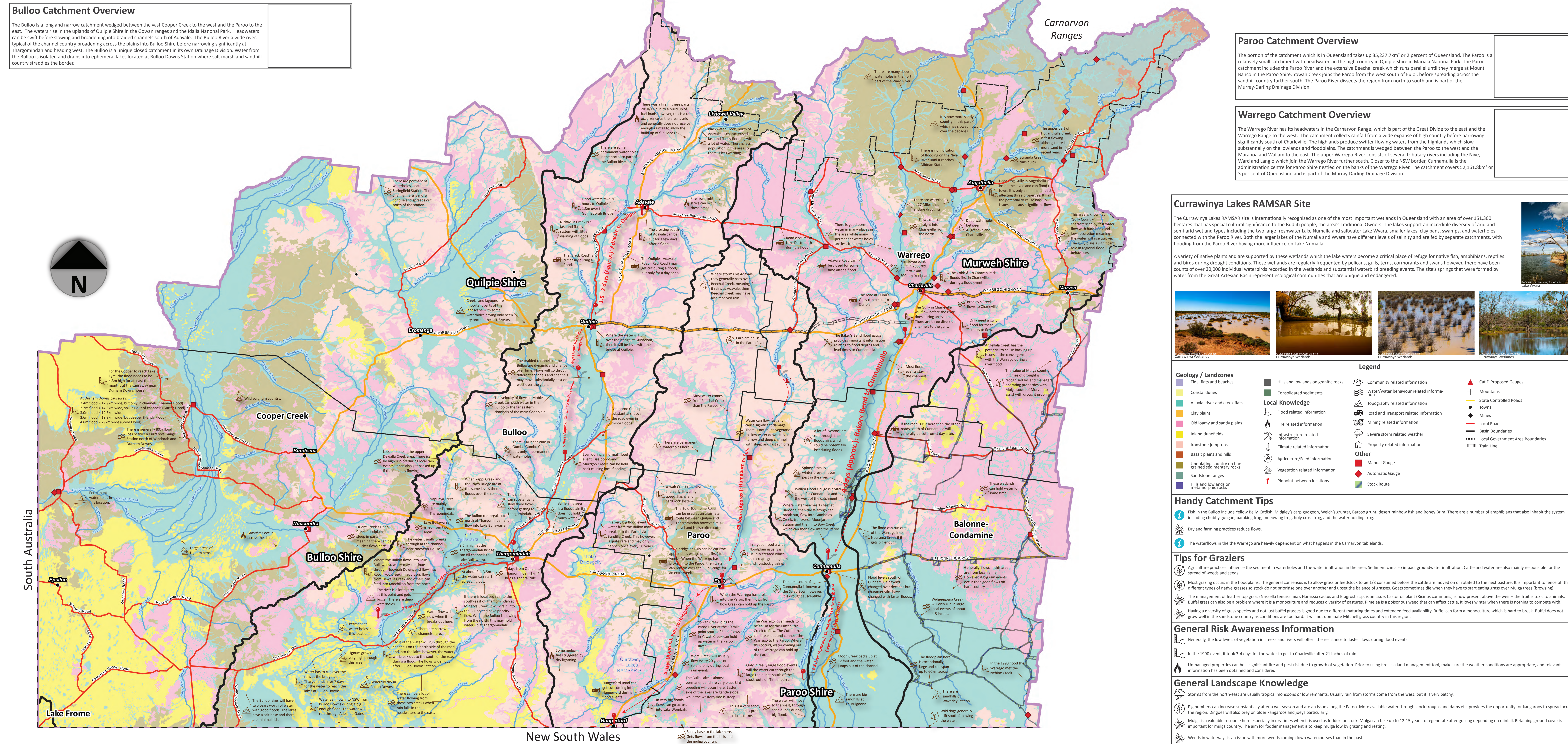
- Agricultural practices influence the sediment in waterholes and the water infiltration in the area. Sediment can also impact groundwater infiltration. Cattle and water are also mainly responsible for the spread of weeds and seeds.
- Most grazing occurs in the floodplains. The general consensus is to allow grass or feedstock to be 1/3 consumed before the cattle are moved or rotated to the next pasture. It is important to fence off the different types of native grasses so stock do not graze on one another and upset the balance of grasses. Goats sometimes die when they have to start eating grass over Mulga trees (browsing).
- The management of feather top grass (Nassella tenuissima), Harrisia cactus and Tragopogon sp. is an issue. Cattle and sheep (Ruminants) are now present above the weir - the fruit is toxic to animals. Buffel grass can also be a problem where it is a monoculture and reduces diversity of pastures. Pineweed is a poisonous weed that can affect cattle, it is toxic to sheep when there is nothing to compete with.
- Having a diversity of grass species and not just buffel maturing times and extended feed availability. Buffel can form a monoculture which is hard to break. Buffel does not grow well in the sandstone country as conditions are too hard. It will not dominate Mitchell grass country in this region.

General Risk Awareness Information

- Generally, the low levels of vegetation in creeks and rivers will offer little resistance to faster flows during flood events.
- In the 1990 event, it took 3-4 days for the water to get to Charleville at 21 inches of rain.
- Unmanaged properties can be a significant fire and pest risk due to growth of vegetation. Prior to using fire as a land management tool, make sure the weather conditions are appropriate, and relevant information has been obtained and considered.

General Landscape Knowledge

- Storms from the north-east are usually tropical monsoons or low remnants. Usually rain from storms come from the west, but it is very patchy.
- Pig numbers can increase substantially after a wet season and are an issue along the Paroo. More available water through stock troughs and dams etc. provides the opportunity for kangaroos to spread across.
- Mulga is a valuable resource here especially in dry times when it is used as fodder for stock. Mulga can take up to 12-15 years to regenerate after grazing depending on rainfall. Retaining ground cover is important for mulga country. The aim for fodder management is to keep mulga low by grazing and resting.
- Weeds in waterways is an issue with more weeds coming down watercourses than in the past.
- Water retention can be a challenge in areas with hard ground or geologies. Water infiltration and retention is linked to the health of the soil and the harder country creates a barrier to water infiltration.



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