



Southern Gulf  
NRM

# Climate and Weather Practice Change for Landholders **CASE STUDY**

REPORT BY PRU WHARTON

## Overview

Five areas in Southern Gulf region have been drought declared under the Queensland Government since 2013. Three further areas were declared in May 2015. With the Southern Gulf region fully drought declared Southern Gulf NRM began to look at ways to help properties adopt risk management strategies to minimise the impact of drought on their enterprises – particularly through increased land manager knowledge and skills related to Climate and Weather.

This saw a new partnership emerge with The University of Southern Queensland Professor Roger Stone, Department of Agriculture and Fisheries Drought and Climate Adaptation Program\* Dr Neil Cliffe and Southern Gulf NRM's Regional Landcare Facilitator Pru Wharton. Two Climate and Weather workshops were conducted in the region in October 2017 to form a one-on-one connection between Climatologist and grazing land managers.

The two workshops, which engaged 18 grazing properties that represent a total of 911,749 hectares of grazing land in the rangelands, helped land managers to apply practice change through learning the latest in seasonal climate forecasting for the industry.

The knowledge and skills developed from the workshops enabled land managers to better interpret and apply climate information to increase value to the management and production of their grazing enterprises. An improved understanding of the different climate patterns and cycles that are occurring around the world gave them increased:

- Capacity to manage for variable rainfall and temperatures,
- Capacity to better understand, interpret and apply climate information.
- Ability to interpret seasonal forecasting products
- Ability to use climate forecasts in their business management plans for future wet or dry periods.

*\*The Queensland Government's Drought and Climate Adaptation Program (DCAP) aims to improve drought preparedness and resilience for Queensland producers.*



Australian Government



Queensland Government



This event is an initiative of Southern Gulf NRM funded through

- The Regional Landcare Facilitator program under the Australian Government National Landcare Program
- Queensland Government War on Western Weeds
- The Australian Government War on Northern Invasive Weeds Project



*“Now more than ever, we need to better prepare farmers for extremes of climate but also enable them to become more resilient.”*

**PROFESSOR ROGER STONE, UNIVERSITY OF SOUTHERN QUEENSLAND**

## Background

The workshops were funded under the Regional Landcare Facilitator (RLF) Project through the National Landcare Program. The RLF Project was created to increase community engagement and participation through the delivery of highly interactive and innovative workshops and events and in turn developing land manager’s knowledge and skills to increase future sustainable grazing practice changes in the Southern Gulf region. These workshops are one of many that have had positive outcomes in the region. One particular case was the Brodie Family from Redland Park who participated in the climate workshop in Cloncurry on the 17 of October 2017.

Redland Park, situated in McKinlay Shire, has felt the effects of the drought since being declared on 28/03/2013 and is still drought declared today. The family have lived at Redland Park for 32 years and the average annual rainfall calculated over those years is 382mm. The property is open downs with primarily Flinders and Mitchell grasses and is currently running 1,500 head of cattle, having continually adjusted livestock numbers due to ongoing drought.

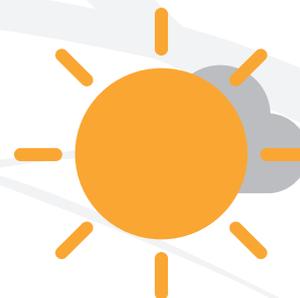


### Redland Park’s above average wet seasons:

1987, 1991, 1997, 1999, 2000, 2006, 2009, 2010, 2011, 2012

## Rainfall History Redland Park

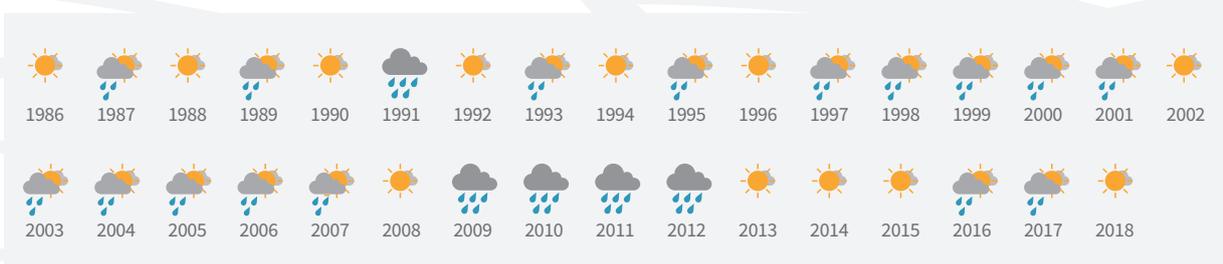
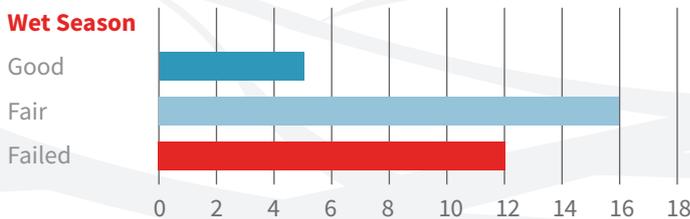
Looking back at Redland Park’s rainfall book, wet and dry seasons have varied immensely. For example, in 1991 they had a big wet season, but the following year received below average rainfall. In the 2010 they had a three-year cycle of big wet seasons and then went into failed seasons from 2013.



### Redland Park failed wet seasons:

1986, 1988, 1989, 1995, 1996, 2002, 2005, 2007, 2008, 2013, 2014, 2015, 2018

## Perceptions of annual rainfall - Redland Park





## Outcomes

After the completion of the workshops, Roger Stone compiled a three month forecast for Redland Park. The forecast indicated that Redland Park would have a reduced chance of exceeding the long term median rainfall of 196 mm and that the median rainfall under the current climate outlook was 178mm for the months of January to March, lower than what might be expected compared to the historical rainfall record. In those three months they received 183.5mm of rain. Planning for this drier outlook gave the family the advantage of planning stock movement and pasture management changes that had to be made to get through the season with the rainfall probabilities in mind.

Jim and Wendy Brodie stated that the timing of a wet season is very important to consider. An early wet (not much follow up rain after December) means a dry end of the following year whereas a late Wet (not much rain till March) means a short growing season so less bulk in the Mitchell Grass. ‘We have recalculated our green date using our rainfall records to be a week later then it was 11 years ago, which we assume to be a later onset of the wet season’, they said. With this observation they have made the decision, due to the later start to wet season, to change the seasonal mating date and are at present tightening up their calving window to 3 months.

### Key Changes in Improved landholder Management Practices using climate and seasonal forecasting tools

- Operations and planning management related to drought preparations.
- Selling/destocking early to beat the drop in cattle prices associated with droughts.
- Change in seasonal mating.
- Increased awareness of weather and climate risk management.
- Use of localised weather forecasts through to seasonal climate outlooks.

### Drought declaration info as of 20/08/2018

	<b>DECLARED</b>	<b>REVOKED</b>
Burke	1/5/2015	1/5/2017
Carpentaria	1/5/2015	1/5/2017
Cloncurry	1/4/2013	1/5/2016
Doomadgee	1/5/2015	1/5/2017
Flinders	1/4/2013	Still declared
McKinlay	1/4/2013	Still declared
Mount Isa	15/5/2013	2/5/2017

Professor Roger Stone said that a lot of work had been carried out in the past 20 to 30 years on seasonal climate forecasting and to add value to agricultural production and management. Linking industry decisions to seasonal climate forecasting, while challenging, can assist producers to reduce business risks and enhance their capacity to take advantage of good seasons when the information is applied correctly.



*‘There is a greater need than ever for the knowledge and expertise of agrometeorologists to assist farmers and the wider agricultural community and for more research and technology development in agrometeorology.’*

**PROFESSOR ROGER STONE**  
**UNIVERSITY OF SOUTHERN QUEENSLAND**



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**FURTHER INFORMATION:**

Pru Wharton *Regional Landcare Facilitator*

Phone: 4743 1888 | 0428 888 079

Email: [landcare@southerngulf.com.au](mailto:landcare@southerngulf.com.au)

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