

NSW Seasonal Conditions Report - March 2013

Highlights

- Wetter conditions possible for central and western NSW, cooler than normal daytime temperatures.
- Average rainfall in central areas, low around Bourke, Brewarrina and Nyngan and above average or higher in the east, south west and west.
- Very high rainfall on the north and mid north coast.
- Dramatic improvements in topsoil moisture along the coast, tablelands and NW slopes.
- Pasture growth average in the west and south, below average in the central west and north west, above average across the tablelands and coast.

Summary

- Wetter conditions are possible for central and western NSW between March and May with the chance of exceeding median rainfall being between 55-70%. Probabilities are 50-55% for eastern NSW.
- Cooler than normal daytime temperatures are likely over the three month period to the end of May. Minimum temperatures over the next three months are likely to be warmer than normal in the north to north east, and cooler than normal in the south west.
- During January, rainfall was limited over much of Darling and areas of Central West, Lachlan, North West and Western LHPA districts.
- Storm rainfall caused moderate to heavy rainfall over areas of southern and coastal NSW early in the month and mid month.
- Extremely heavy falls occurred late in the month across areas of the North Coast and Mid-Coast LHPA districts, due to an east coast low, and resulted in more flooding.
- Relative to historical records, rainfall for February was above average to extremely high across most of the coast, the eastern side of the tablelands, the alpine areas and areas of far west NSW and the Riverina. The rest of the State received average relative rainfall, except for the eastern side of Darling LHPA and the western edges of North West and Central West LHPA districts.
- Relative rainfall across all but the north east has remained below average to well below average for the last 9 months. The Central West and areas of surrounding LHPA district suffered serious rainfall deficiency.
- Maximum temperatures were normal to -2 degrees below average during the month across the eastern third of the State, due to heavy cloud cover, and near normal across much of the central and north western areas. In the south western third of the State, maximum temperatures ranged from 1-3 degrees above average.
- Modelled topsoil moisture remains very low across western and western-central areas of the State, but has improved slightly. The heavy rainfall along the north to central coast boosted relative topsoil moisture to average-high levels in these areas, and low-average in along the south coast, tablelands and central to north west slopes. Modelled subsoil moisture also improved across these areas, but was low-moderate in the west.
- Pasture growth models indicate that for February, average relative growth occurred across the Western LHPA district, as well as the western edge of Darling, Riverina and Hume and Lachlan LHPA districts. Pasture growth data was not available for large areas of the Western and Riverina LHPA districts.
- Above average to extremely high relative growth occurred across the coastal and tablelands LHPA districts, as well as Central North and the eastern half of the North West LHPA districts. Relative growth across the east of Darling, western half of North West and Central West LHPA districts was below average to extremely low
- Over the last three months, relative pasture growth has been below average to extremely low across the central areas, and above average or better across the north, mid and central coasts and northern tablelands.
- Modelled relative standing dry matter levels across central and south eastern NSW were generally below average to extremely low. Dry matter levels were average to well above average in the far north west, and across north, mid and central coasts and northern tablelands.

Rainfall

Relative rainfall

February

- Relative to historical records, rainfall for February was above average to extremely high across most of the coast, the eastern areas of the northern tablelands and parts of the south west slopes and the far west and Riverina. The central areas of the State generally experienced average rainfall, with the exception of an area including Bourke, Nyngan and Brewarrina.
- The North Coast, Mid-Coast, and Cumberland Livestock Health and Pest Authority (LHPA) districts received above average to extremely high relative rainfall, as did areas of the New England, Tablelands and South East and Hume LHPA districts. The Western and Riverina LHPA districts received generally above average to well above average relative rainfall.
- Relative rainfall was below to well below average in the east of Darling, the far west of North West and the west of Central West LHPA districts.
- Average falls occurred across most of Darling, North West, Central North, Central West, Lachlan and Tablelands LHPA districts.

December to February

- Over the December to February period, relative rainfall was extremely low to below average across much of the central west and north west of the State. The north east corner of the State received well above average to extremely high relative rainfall, extending into the north west slopes and to the mid and central coast. The south coast, central tablelands, south west slopes, Riverina and far west generally received average relative rainfall.
- Areas of well below average to extremely low relative rainfall extended across most of the Darling and Central West LHPA districts, the west of the North West and the north and east of Lachlan LHPA district.
- Above average to extremely high relative rainfall occurred in the far north east, including areas of North Coast, Mid-Coast, and Cumberland LHPA districts.
- Average relative rainfall occurred over much of the Central North, South East, Cumberland, Hume and parts of the Tablelands and Western LHPA districts.

September to February

- Over the September to February period, relative rainfall was extremely low to below average across much of the central, north west and south west of the State, and areas adjacent to the border with South Australia. The north east corner of the State received well above average to extremely high relative rainfall. The central and south coast, north west and central west slopes, and central and southern tablelands generally received average relative rainfall.
- Areas of well below average to extremely low relative rainfall occurred across the north of the Western LHPA district, the west of the North West and Darling districts, the Central West, Lachlan, the west of the Tablelands and the south of Riverina LHPA districts.
- Above average to extremely high relative rainfall occurred in the far north east, including areas of North Coast, Mid-Coast, and New England LHPA districts.
- Average relative rainfall occurred over much of the Central North, South East, Cumberland, Hume and parts of the Tablelands and Western LHPA districts.

June to February

- Over the 9 month period from June to February, relative rainfall across the State was generally below average or worse, with the exception of the north west slopes, northern tablelands and coastal areas. The north east received above average relative rainfall.
- Very much below average rainfall occurred in the central west and far south west, covering much of the Central West LHPA district and surrounding areas of Lachlan, Darling, North West and Western LHPA district.

Total rainfall

February

- During January, rainfall was limited to falls in the range of 0-25 mm over much of the Darling LHPA district, and the west of Lachlan, Central West and North West LHPA districts.
- Extremely heavy falls, associated with the effects of an east coast low pressure system, occurred along the coast and eastern tablelands, particularly in the north east. Rainfall in these areas ranged from 100-300 mm and reached 400-600 mm in some areas of the north and mid north coast, following on from similar falls in January.

- The North Coast and Mid-Coast LHPA districts were worst affected and suffered heavy flooding for a second month.
- Storm rainfall caused moderate to heavy rainfall over areas of southern and coastal NSW early in the month and mid month. Falls across most of the tablelands and slopes were in the range of 25-100 mm, and the Riverina and most of the far west received 25-50mm.

December to February

- Rainfall across the State during the December to February period ranged from 10-1,200 mm.
- The lowest rainfall over the period (10-50 mm) occurred across Darling LHPA district and all but the central section of Western LHPA district. Western areas of Lachlan and Central West LHPA districts also received similar rainfall.
- The west of the State generally received 25-100 mm, the central areas 50-200 mm and the upper slopes, tablelands and south coast 100-300 mm.
- Parts of the North West, and Central North LHPA districts received 300-400 mm.
- Sections of New England and Cumberland LHPA districts received 300-600 mm, Mid-Coast received 300-1,200 mm and North Coast LHPA district 600-1,200 mm.

Temperature anomalies

- Maximum temperatures were normal to -2 degrees below average during the month across the eastern third of the State, due to heavy cloud cover, and near normal across much of the central and north western areas. In the south western third of the State, maximum temperatures ranged from 1 to 3 degrees above average.
- Minimum temperatures during the month were 1 to 2 degrees above average in the south west of the State, near normal in the central areas and south coast, and -1 to -2 degrees below average in the north east.

Soil moisture

Relative soil moisture

Topsoil

- Modelled topsoil moisture remains very low across western and western-central areas of the State, but has improved slightly.

- The heavy rainfall along the north to central coast boosted relative topsoil moisture to average-high levels in these areas, including the North Coast, Mid-Coast and Cumberland LHPA districts. Levels are now average for most of South East, Central North, New England LHPA districts, the eastern half of Tablelands and the north west slopes area of North West LHPA districts. Levels across the western edge of Tablelands LHPA district remain low.
- Modelled topsoil moisture remains very low from the west of a line running south from Mungindi, Wee Waa through to Coonabarabran, Mudgee, Orange, Queanbeyan and thence south to Cooma. This covers most of the western and central LHPA districts.

Subsoil

- The heavy rainfall across the north east, and coastal areas of the State increased modelled subsoil moisture levels in these areas to average-high.
- Across the rest of the State, modelled subsoil moisture was mostly static, with a slight increase across the north west slopes.

Pasture growth and biomass

Relative pasture growth

February

- Modelled pasture growth in February was average across the Western LHPA district, as well as the western edge of Darling, Riverina and Hume and Lachlan LHPA districts. Pasture growth data was not available for large areas of the Western and Riverina LHPA districts.
- Above average to extremely high relative growth occurred across the coastal and tablelands LHPA districts, as well as Central North and the eastern half of the North West LHPA districts.
- Relative growth across the east of Darling, western half of North West and Central West LHPA districts was below average to extremely low.

December to February

- Over the last three months, relative pasture growth has been below average to extremely low across the central areas, and above average or better across the north, mid and central coasts and northern tablelands.

- Between December and February, relative pasture growth was particularly low across Darling, Central West and the western half of North West LHPA districts. There were also areas of low relative growth the Hume, Lachlan and South East LHPA districts, and the south western edge of Western LHPA district.
- Most of Western, Riverina and Central North LHPA districts, and the eastern half of North West LHPA district had average growth. Central North and Tablelands LHPA districts had areas of above average or higher growth, particularly on the eastern edges.
- Relative growth was generally average to well above average for Cumberland, Mid-Coast and the North Coast LHPA districts, and well above average to extremely high for the New England LHPA district.

September to February

- Most of the State had well below average or extremely low relative pasture growth over the six months to February.
- Only sections of the Western, LHPA district and the coastal LHPA districts had average relative growth over the period. New England LHPA district had average to extremely high relative growth.

Relative biomass

- Modelled relative standing dry matter levels across central and south eastern NSW were generally below average to extremely low, including most of Central West, Lachlan, Riverina and Hume LHPA districts, and the eastern half of Darling and western half of North West LHPA districts.
- Dry matter levels were average to well above average in the far north west, and generally well above average to extremely high in the North Coast, Mid-Coast, Cumberland and New England LHPA districts.
- Relative biomass was variable but generally average in Central North and was variable, ranging from well below average to well above for Tablelands and South East LHPA districts.

Crop production

Crop production information is sourced from the DPI January grains report.

Summer crops

- Estimated sowings of 487,650 ha (excluding rice), are down on the December forecast of

534,700 ha. Most of this drop is sorghum area. Very high temperatures in January and a rainfall took its toll on dryland crops in the north.

- Sorghum sowings of around 101,070 ha are well down on the December forecast of 155,070 ha, due to the dry conditions and a lack of planting opportunities from October through to early January.
- Maize plantings are estimated to be 37,010 ha, up 4% on the December forecast. About 57% of the crop is in the Riverina where 21,100 ha are planted. The major production areas in the north are Moree (8,000 ha) and Gunnedah (2,000 ha). Coleambally is the largest production area in the Riverina with 9,000 ha. Extreme heat and irrigation supply restrictions in the irrigation areas of the Riverina have caused stress in some of the later planted maize around the critical flowering time.
- Mungbean sowing estimates of 8,540 ha are similar to the December forecast. The major production areas are Gunnedah, Moree and Narrabri.
- Soybean plantings are estimated at 32,100 ha, up 5% on the December forecast. The Riverina will be the largest production region with 41% of the State's plantings. Establishment of the North Coast crop of 11,900 ha has been excellent but the heavy rain and inundation has impacted on crops.
- Estimated plantings of sunflowers of 9,550 ha are down 69% on the December forecast of 30,660 ha. The yield forecast for the 5,300 ha early plant monounsaturated crop is 1.17 t/ha. Yield potential has been severely impacted by the very hot, dry conditions between November and January.
- The NSW cotton crop is estimated to be 293,380 ha, comprising 264,600 ha irrigated and 28,780 ha dryland on skip row configurations. Yield potential of the dryland crop has been reduced by the very hot, dry conditions between late November and January. The irrigated crop is now slightly forward in development and has set a very high fruit load.
- The NSW rice crop is estimated at 120,000 ha. Favourable temperatures from late November have improved crops dramatically and yield potential is now forecast to be slightly above average.

NSW summer crop production area ('000 hectares)

	2012-13 harvest forecast	2011-12 harvest estimate
Grain Sorghum	101	163
Maize	37	20
Mungbean	9	14
Soybean	30	22
Sunflower	9	19

Water storage and irrigation allocations

Storage levels

Storage levels are given as at 11th March 2013.

Storage	Current Volume (GL)	Effective Capacity (%)	Monthly Change (%)
Toonumbar	11	102	1
Glenbawn	748	100	4
Glennies	281	99	12
Lostock	20	101	0
Broggo	-	-	-
Cochrane	1	-	-
Dartmouth	3639	94	-3
Hume	1639	54	-5
Blowering	1015	61	-9
Burrinjuck	388	38	0
Brewster	-	-	-
Carcoar	27	74	-4
Cargelligo	26	64	2
Wyangala	961	79	-2
Glenlyon	230	-	-
Pindari	194	62	7
Copeton	1023	75	-
Chaffey	52	84	1
Keepit	183	42	5
Split Rock	354	89	4
Burrendong	522	42	-2
Oberon	40	88	-1
Windamere	209	57	0
Lake Cawndilla	351	49	-15
Lake Menindee	239	31	-21
Lake Pamamaroo	188	66	4
Menindee	-	-	-
Total Menindee	-	-	-
Wetherell	101	51	18
Total	12442		
Average		70	

- Levels in water storages remain generally moderate, with the average effective capacity being 70%.
- Storage levels have remained stable on average during the last week, with the major reductions/outflows being generally low.
- The greatest monthly change in storage capacity was from Glennies and Blowering Dams and Lakes Menindee and Cawndilla.

Irrigation allocations

- Most general security allocations are unchanged from January. Allocations are at 100% or more, except for the Lachlan, Belubula, Macquarie, Namoi, Peel and Brogo river valleys where they are low to moderate.
- The allocation for the Namoi valley increased slightly from 32-43%.

River valley	Allocation	Licence category
NSW Border Rivers	100%	General security A Class
	100%	General security B Class
	100%	High security
Richmond	100%	General security
	100%	High security
Gwydir	150%	General security
	100%	High security
Hunter	100%	General security
	100%	High security
Paterson	100%	General security
	100%	High security
Lachlan*	0%	General security
	100%	High security
Belubula*	39%	General security
	100%	High security
Lower Darling	100%	General security
	100%	High security
Macquarie and Cudgegong*	58%	General security
	100%	High security
Murray	100%	General security
	100%	High security
Murrumbidgee*	100%	General security
	100%	High security
Lower Namoi*	32%	General security
	100%	High security
Upper Namoi	100%	General security
	100%	High security
Peel	83%	General security
	100%	High security
Bega Brogo	52%	General security
	100%	High security

* Carry over water may be available

Seasonal outlook

Seasonal outlook information is sourced from Bureau of Meteorology forecasts.

Rainfall

- Wetter conditions are possible for central and western NSW between March and May.
- The probability of exceeding median rainfall between March and May is between 55-70% for western and central NSW, increasing towards the west, and 50-55% for eastern NSW.
- However, the outlook confidence (skill) for this forecast is low, being 50% or less for most of the State. Outlook confidence tends to be low in Autumn.
- These percentages mean that in the far west of NSW, for every ten years with similar ocean patterns to those currently observed, about six to seven years would be expected to be wetter than average, and about three to four years would be drier.

Temperature

- Cooler than normal daytime temperatures are likely over the three month period to the end of May.
- The probability of exceeding the median maximum temperature between March and May is 35-40% for the majority of the State, and 40-45% for the coast, south west slopes and part of the Riverina.
- However, the outlook confidence (skill) for this forecast is low, being 50% or less (only weakly consistent) for most of the State, with the exception of parts of the coast. The

confidence for the far north and far south coast is moderate.

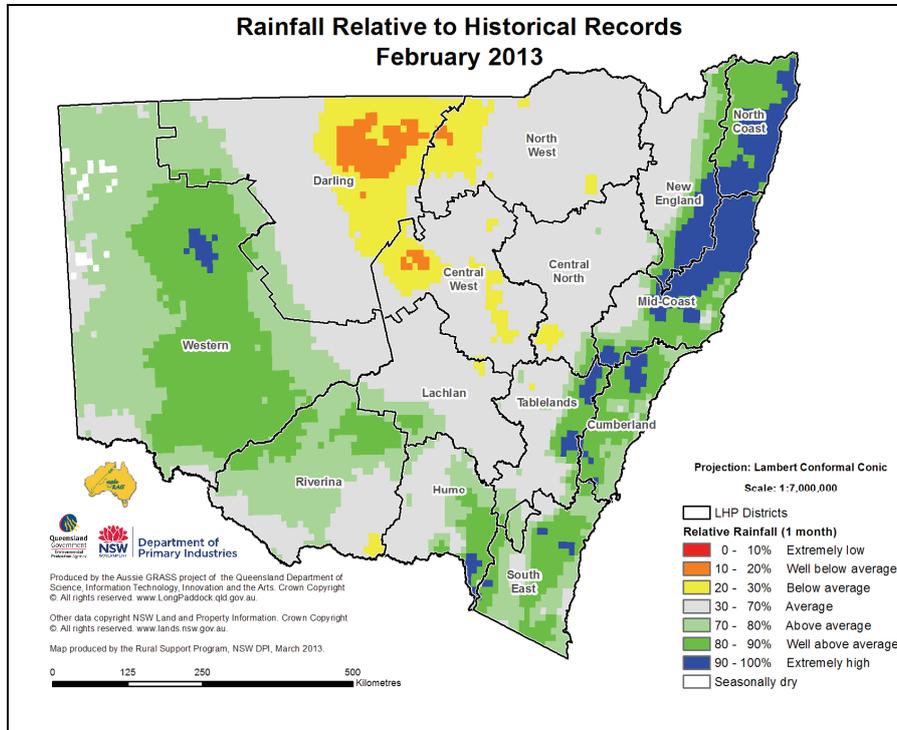
- These percentages mean that for every ten years, about six to seven years will have cooler than average daytime temperatures and three to four years will be warmer.
- Minimum temperatures across the State will tend to be cooler in the south west, grading diagonally to near normal in the central areas of the State and hotter than normal in the north and north west.
- The probability of exceeding the median minimum temperature is between 30-40% in the south west of the State, 40-60% in the central third of the State and 60-75% in the north to north east of the State.
- Outlook confidence (skill) for this forecast is low, being 50-55% (weakly consistent) for most of the State and being moderate 55-65% over the mid north coast and north west slopes (moderately consistent).
- The probability of exceeding the median maximum temperature during the period ranges from 35-40% in the south and south east to 45-55% in the centre of the State, the far north west and much of the coast.
- Outlook confidence for this forecast is moderate to high (50-70%) for the north and north east of the State, and low-moderate (45-60%) for the south west.

Appendix

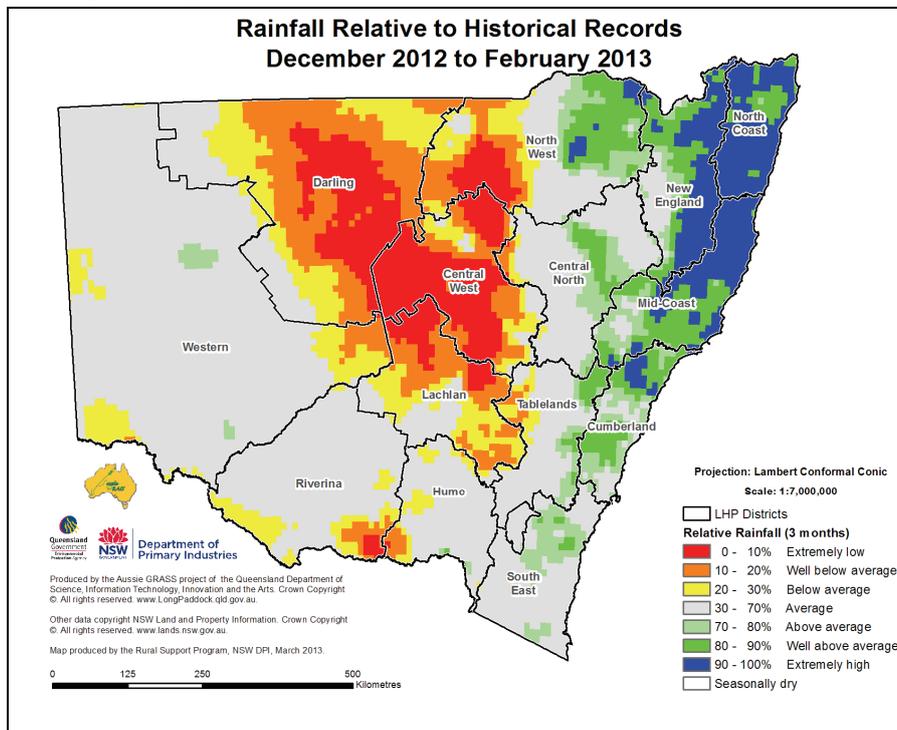
Maps and data used in the production of this report.

Rainfall

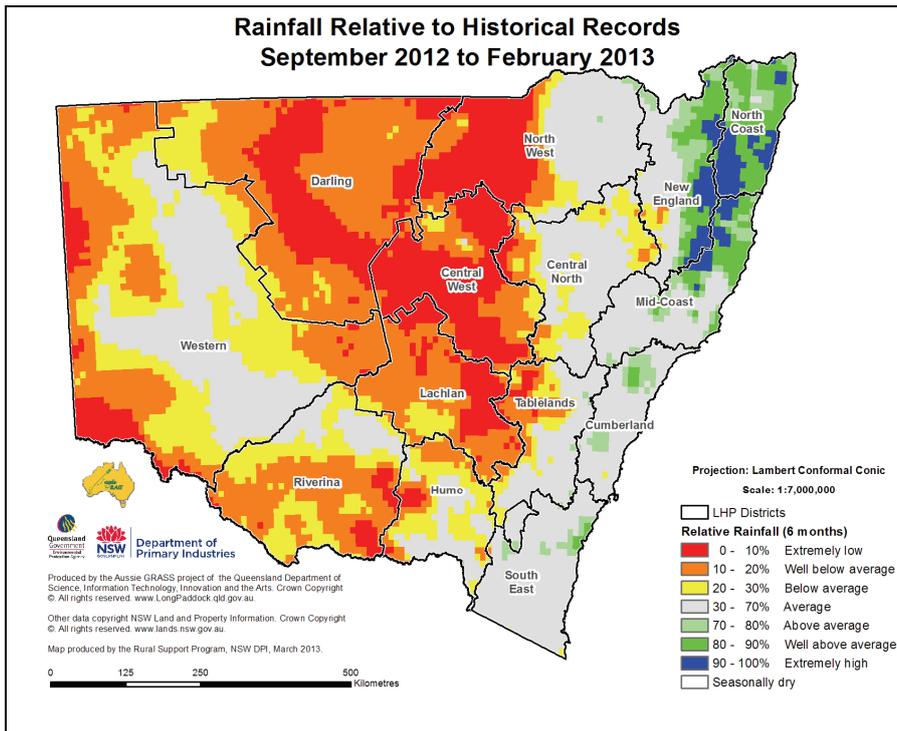
Relative rainfall – monthly



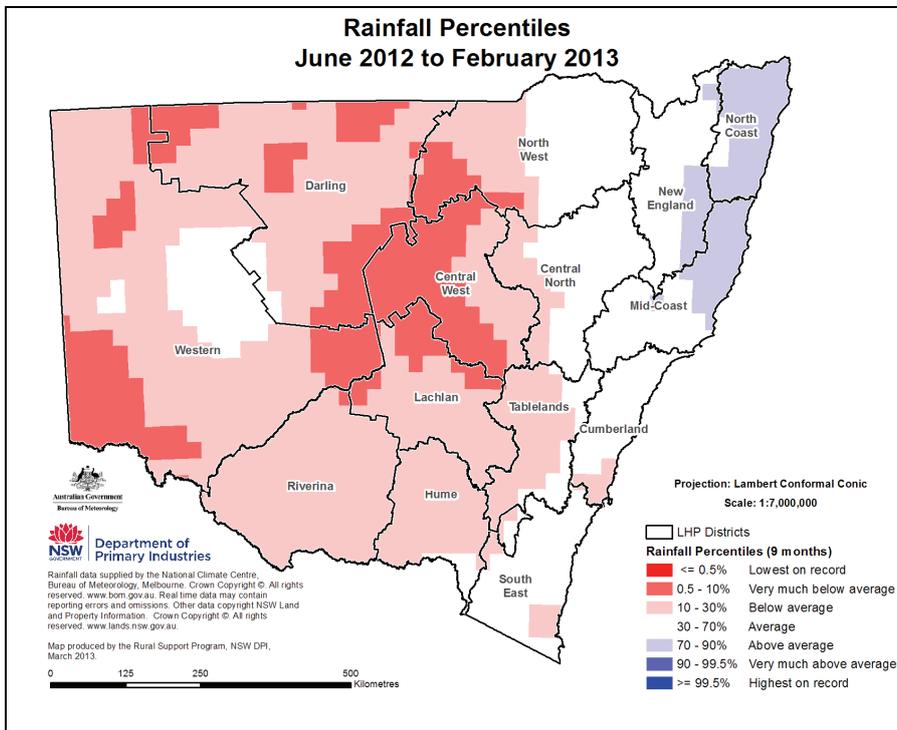
Relative rainfall – quarterly



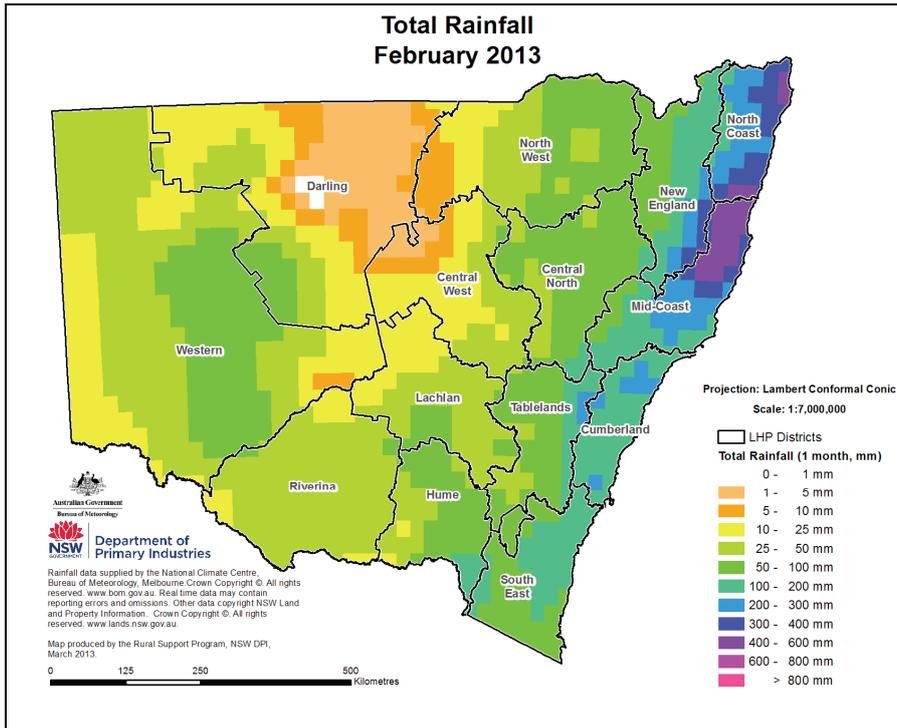
Relative rainfall – half yearly



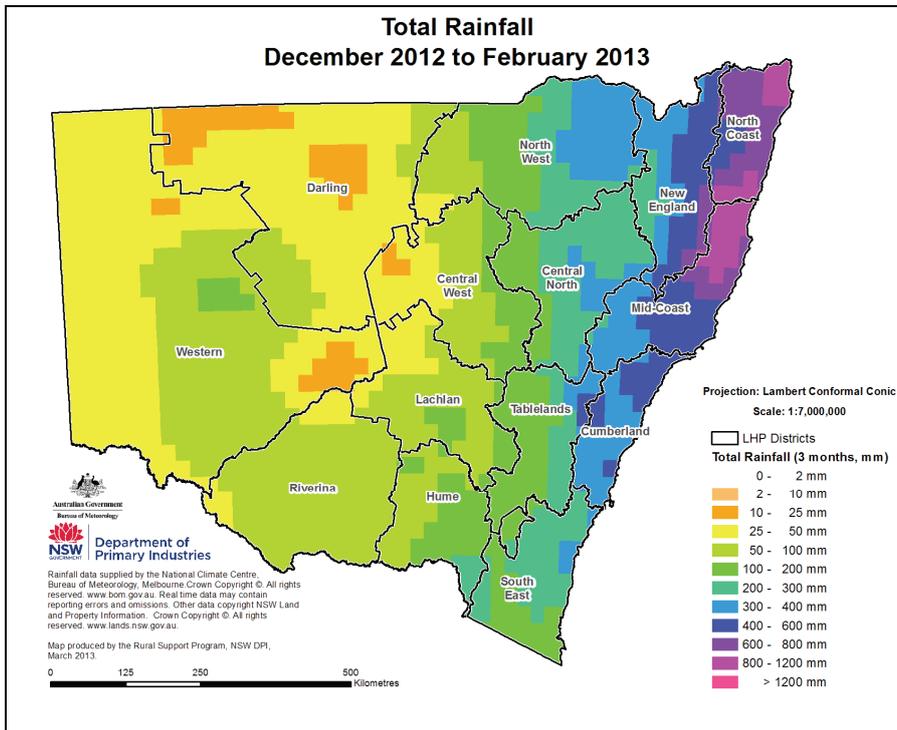
Relative rainfall – nine monthly



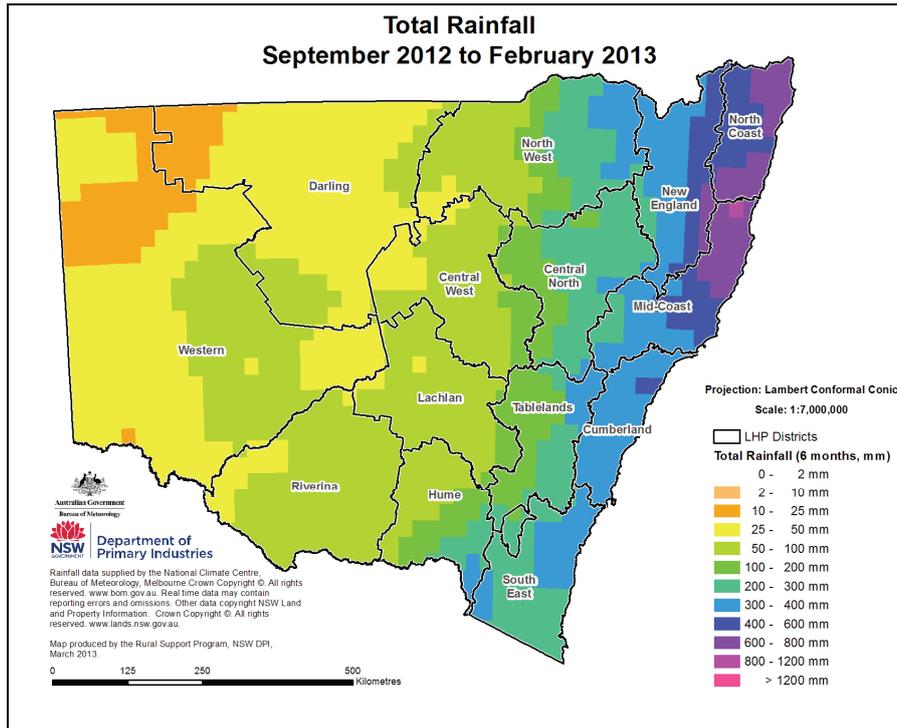
Total rainfall – monthly



Total rainfall – quarterly

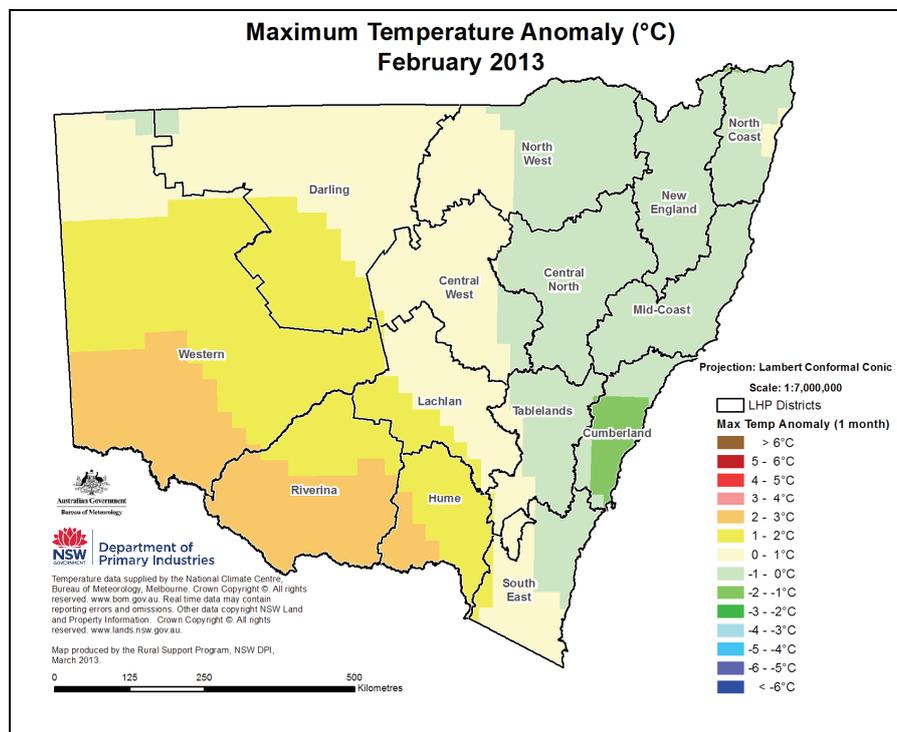


Total rainfall – half yearly

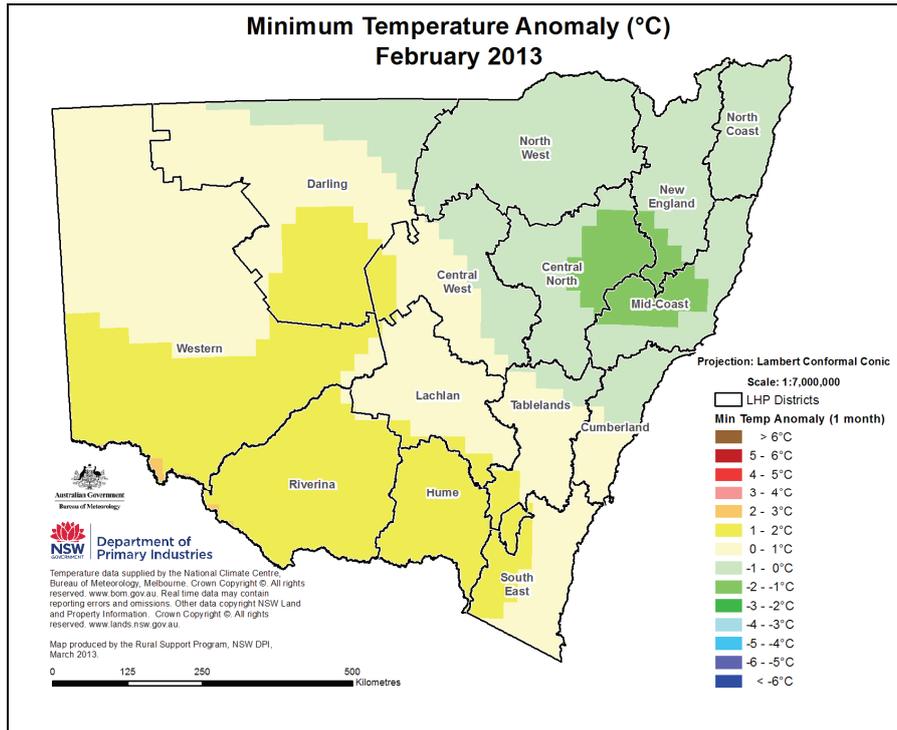


Temperature

Maximum monthly temperature anomaly

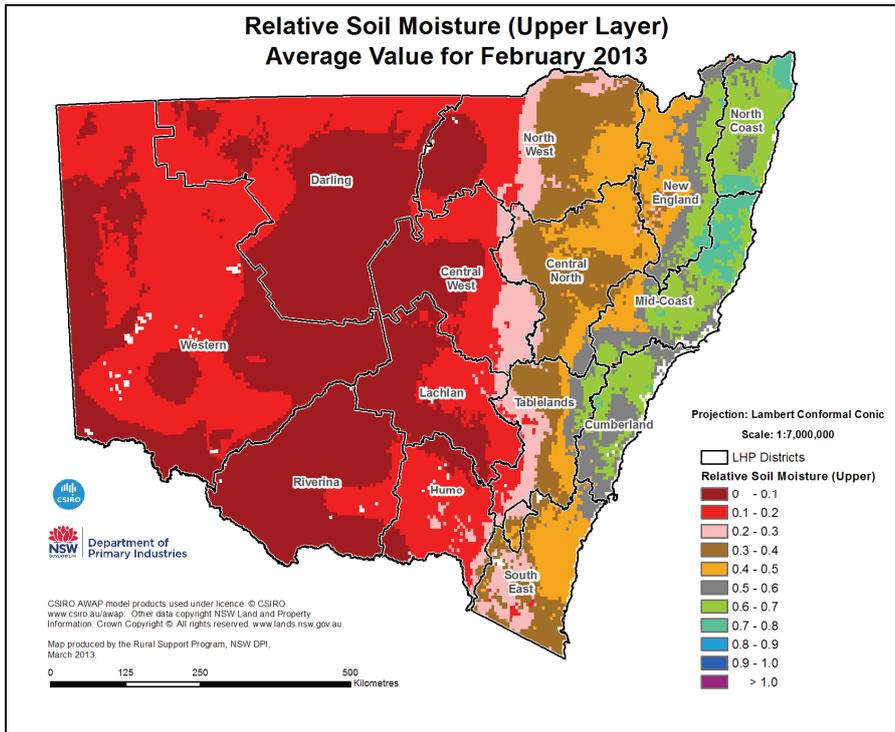


Minimum monthly temperature anomaly

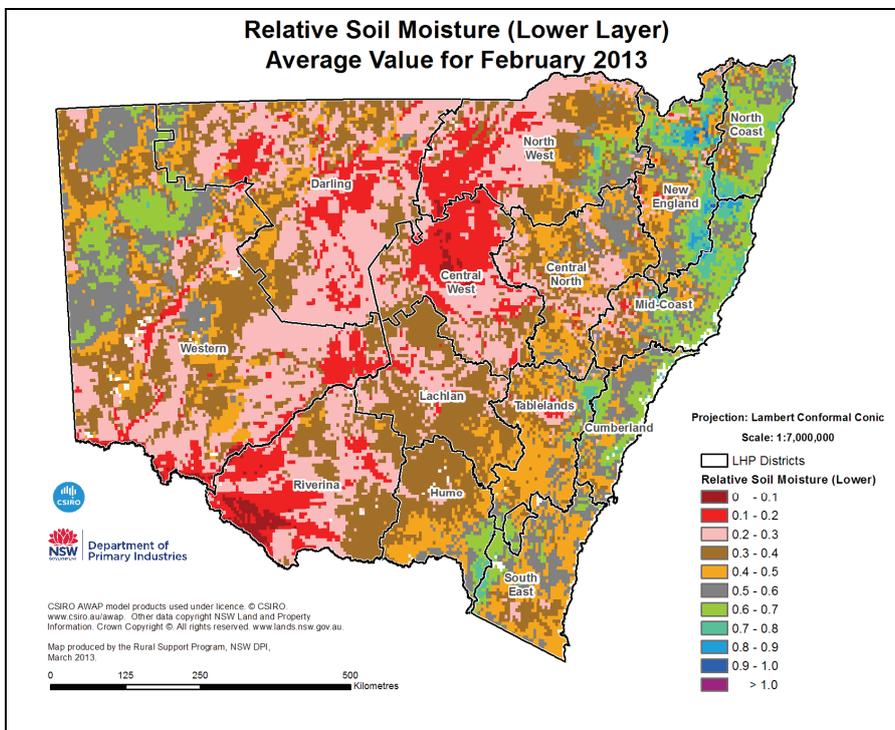


Soil moisture

Relative topsoil moisture

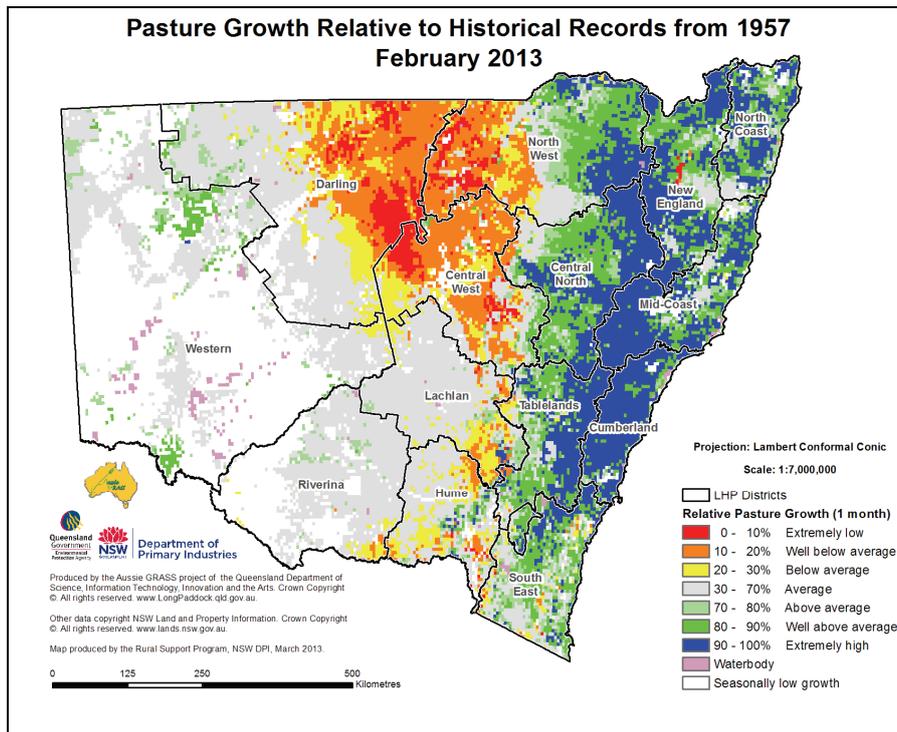


Relative subsoil moisture

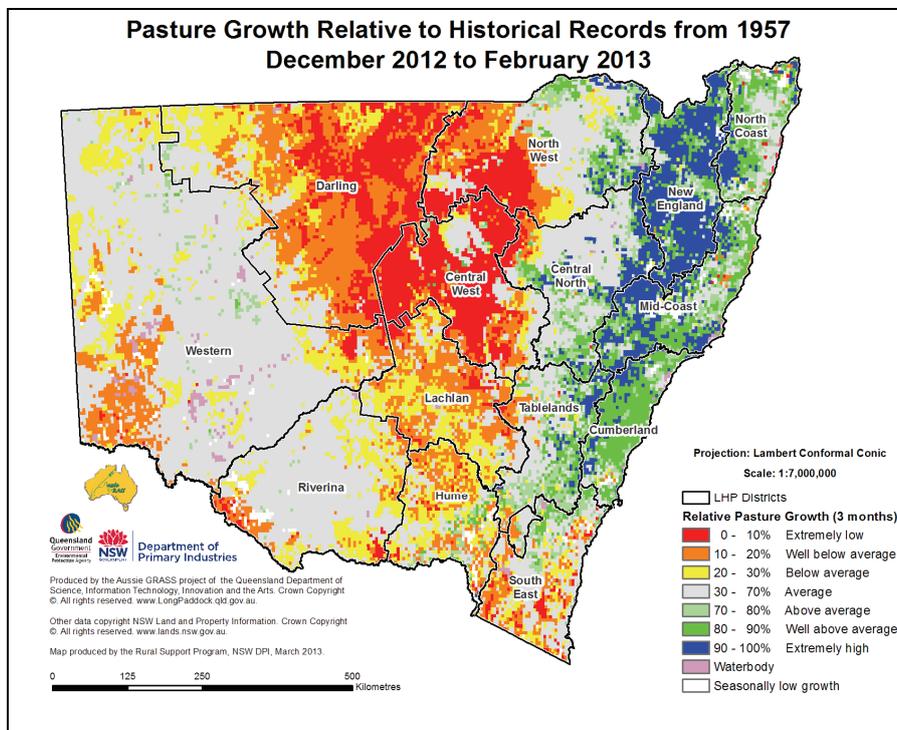


Relative pasture growth and biomass

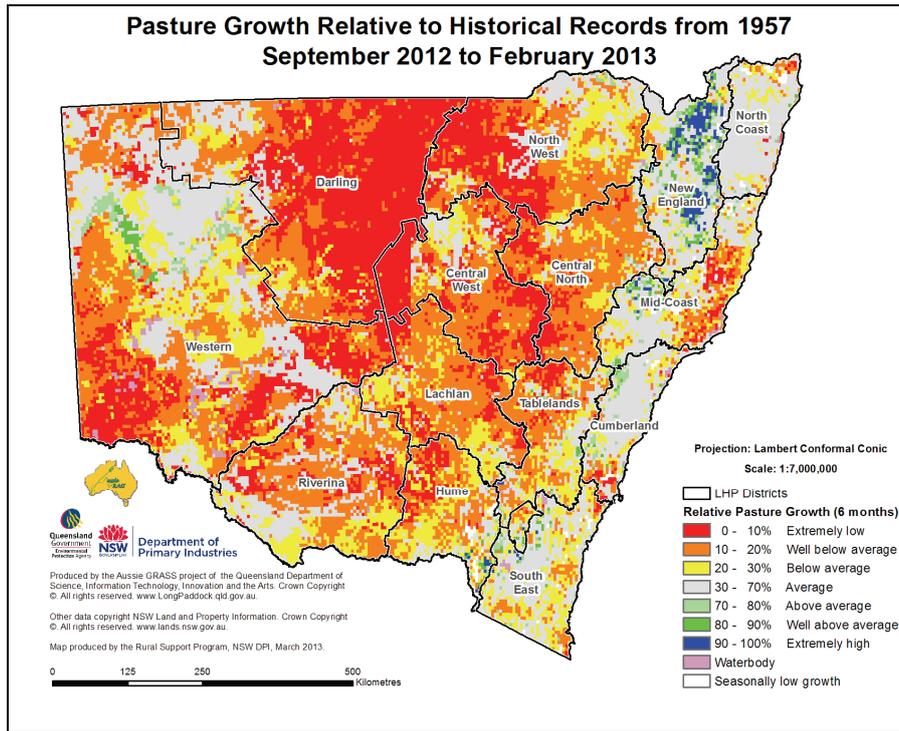
Pasture growth – monthly



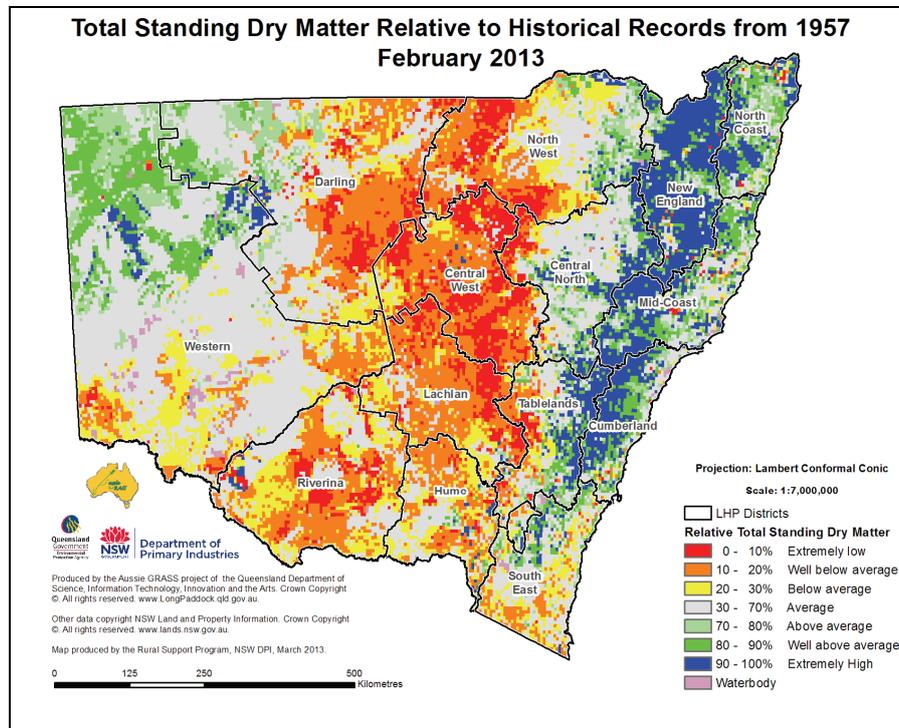
Pasture growth – quarterly



Pasture growth – half yearly

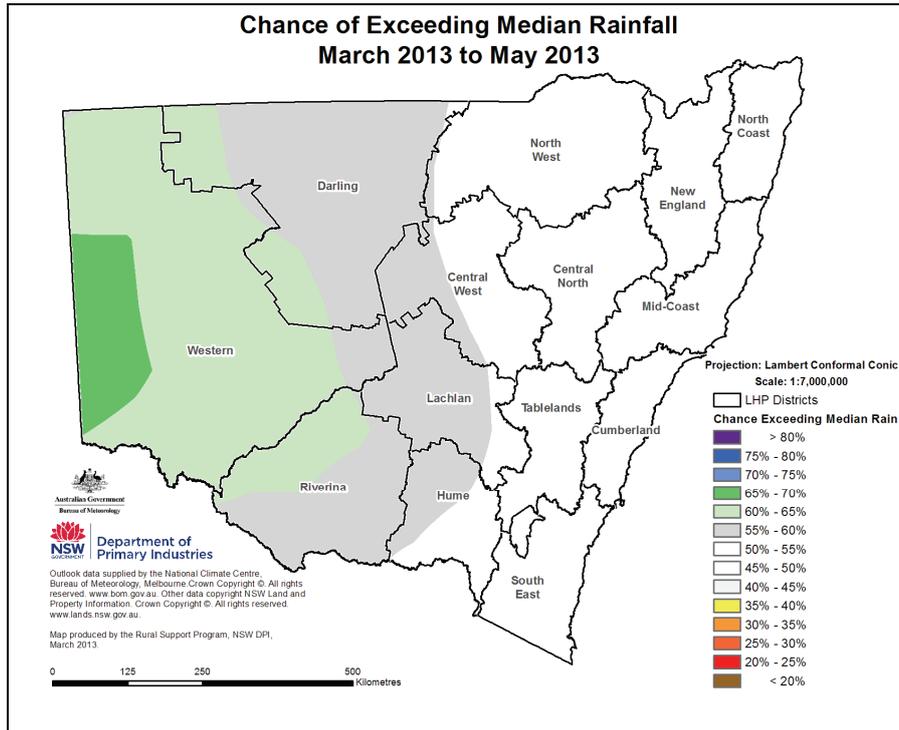


Biomass – monthly

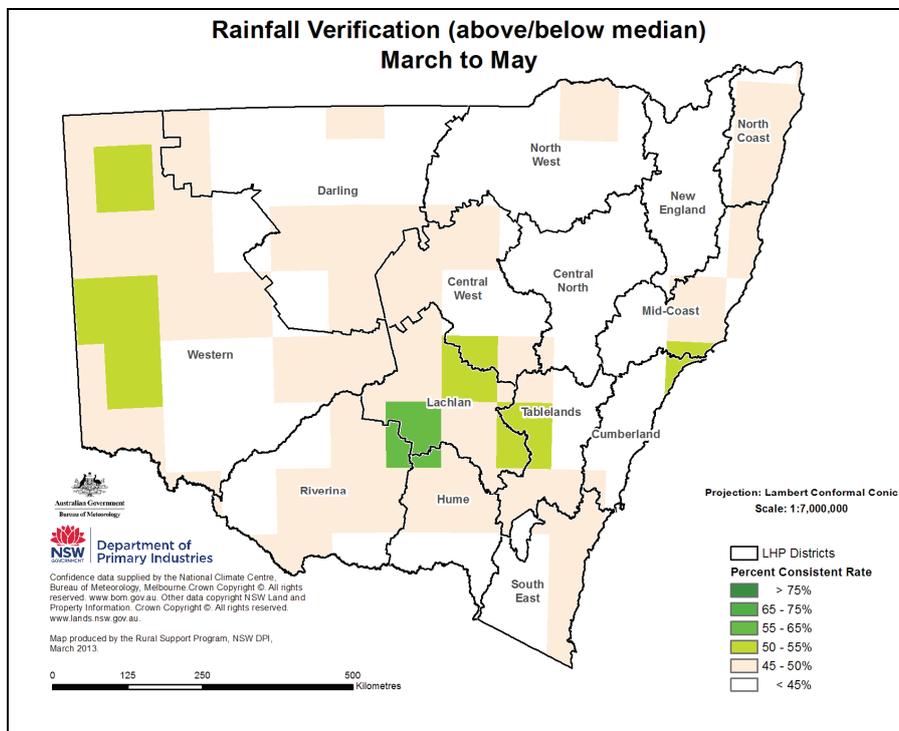


Seasonal outlook

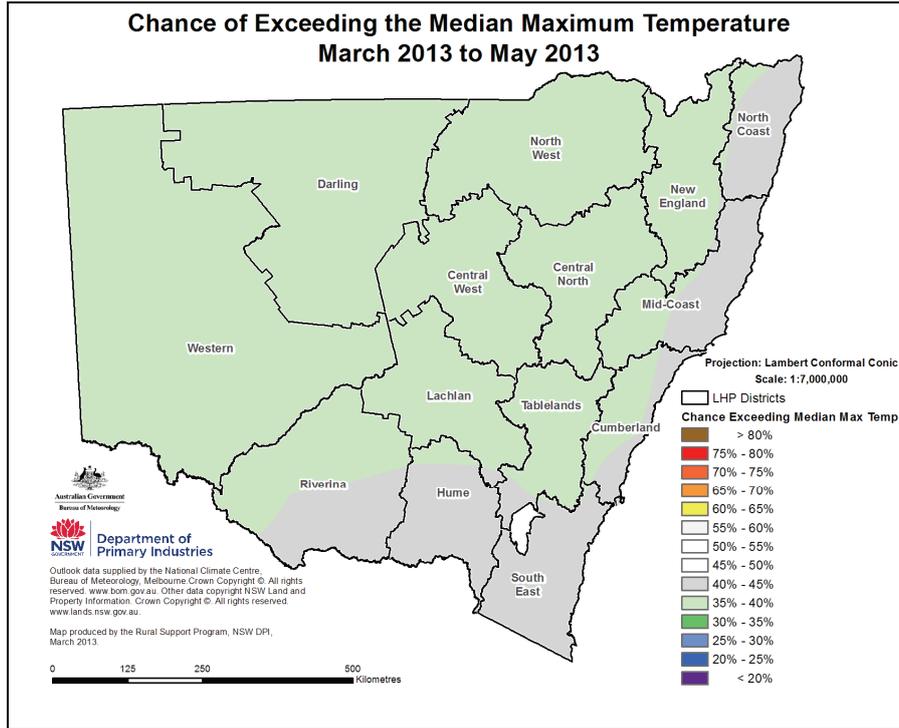
Quarterly rainfall outlook



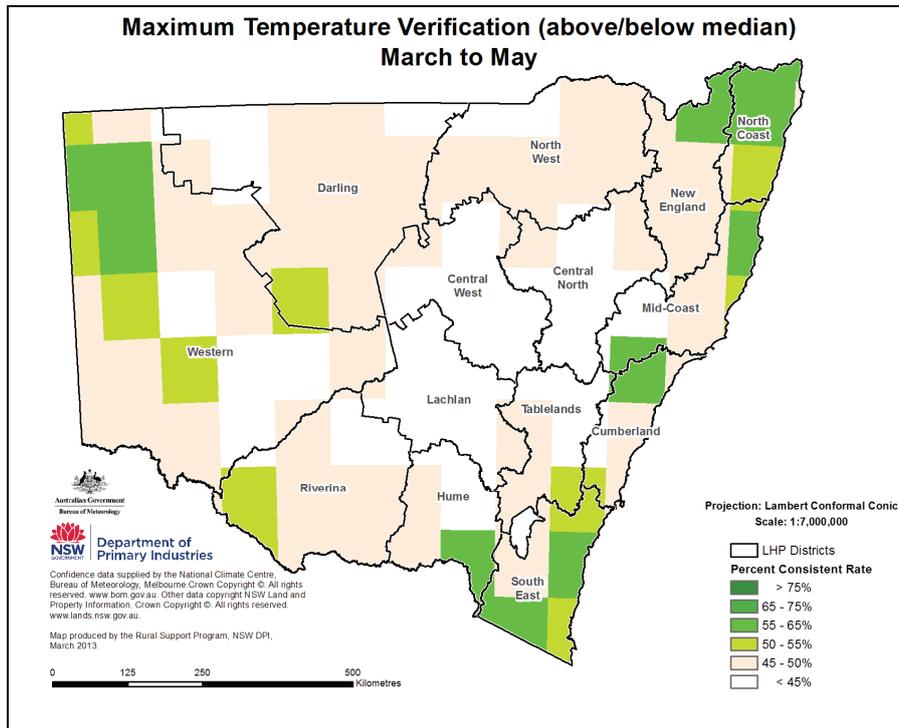
Quarterly rainfall outlook – confidence/skill



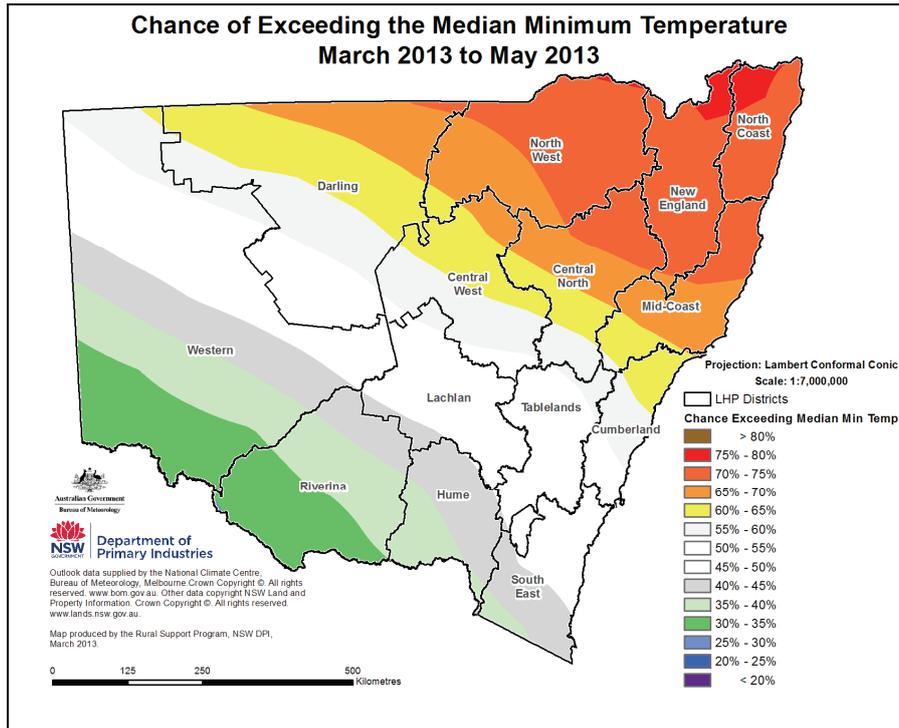
Quarterly maximum temperature outlook



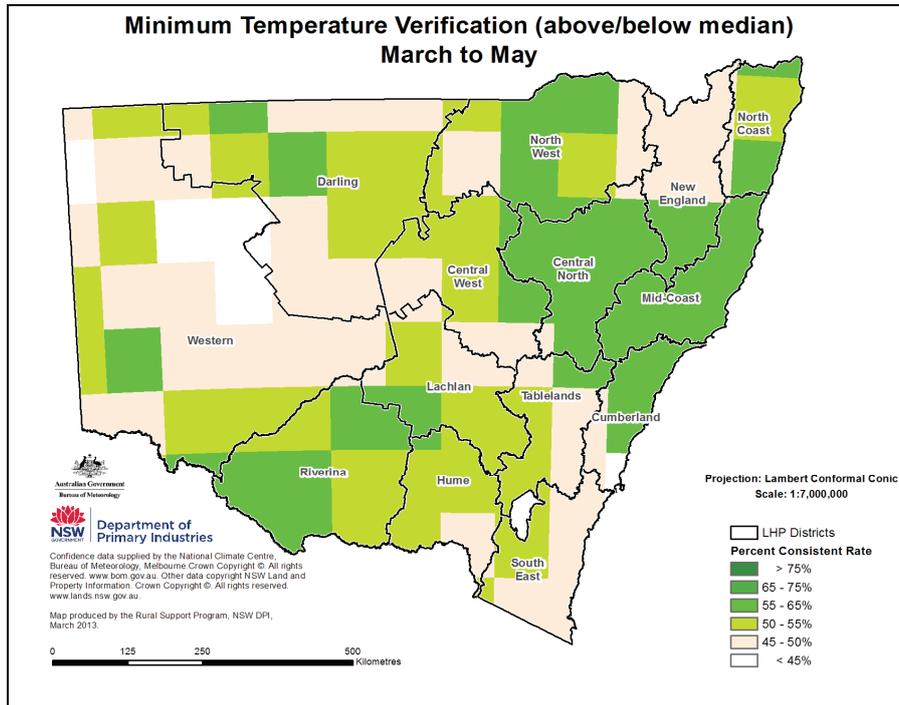
Quarterly maximum temperature outlook – confidence/skill



Quarterly minimum temperature outlook



Quarterly minimum temperature outlook – confidence/skill



More information

For more information, contact the NSW Department of Primary Industries.

Acknowledgments

Information used in this report was sourced from the Bureau of Meteorology, CSIRO, the Queensland Department of Science, Information Technology, Innovation and the Arts and the NSW Department of Primary Industries.

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