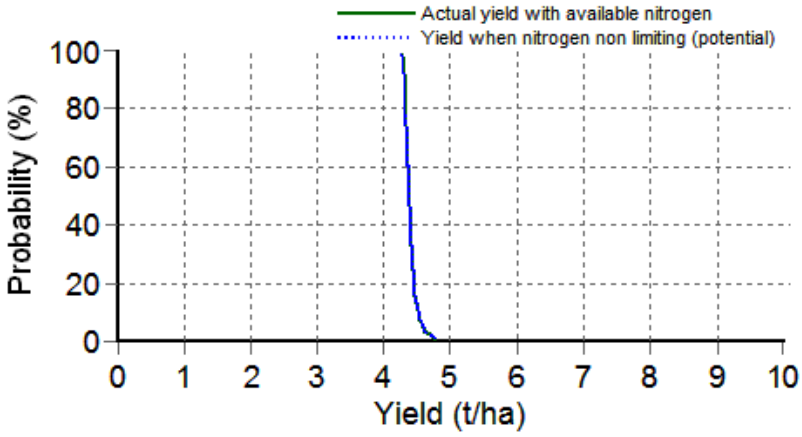
Crop Report

Report name: Loxton Midslope Crop report
Report date: 11/11/2010
Last climate date available: 9/11/2010
Client name: MSF
Paddock name: Loxton Midslope
Report generated by: MSF
Date sown: 02-Jun
Crop type: Wheat
Variety sown: Yitpi
Sowing density: 120 plants/m2

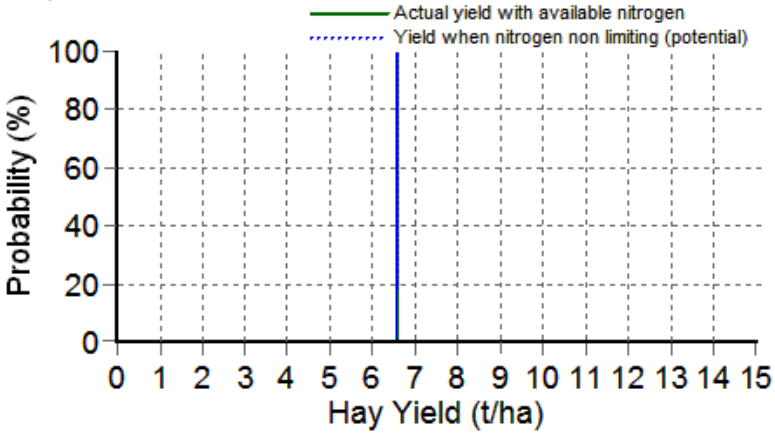
Weather station used: Loxton
Rainfall records used: Weather station
Soil type: Loxton-Moderate SSC
Maximum rooting depth: 180 cm
Roots constrained by EC: yes
Stubble type: wheat
Stubble amount: 250 kg/ha
Start of growing season: 01-Apr
Initial conditions date: 21-Apr
Growing season rainfall to date: 244.6 mm
Date of last rainfall entry: ?
Expected harvest date: 22-Nov

Grain Yield Outcome



This graph shows the probability of exceeding a range of yield outcomes this season. It takes into account your pre-season soil moisture; the weather conditions so far; soil N and agronomic inputs. The long term record from your nominated weather station is then used to simulate what would have happened from this date on in each of the past 100 years. The yield results are used to produce this graph.

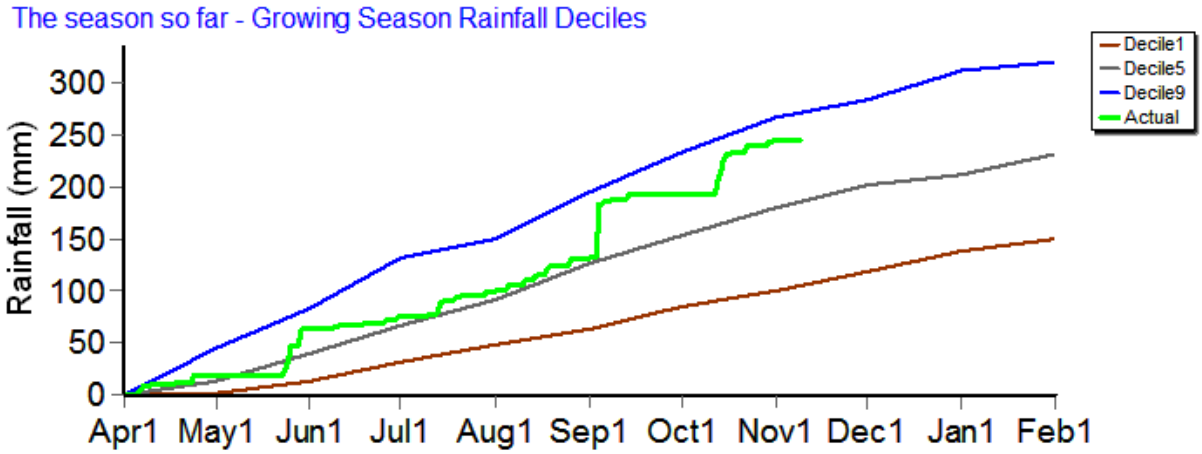
Hay Yield Outcome

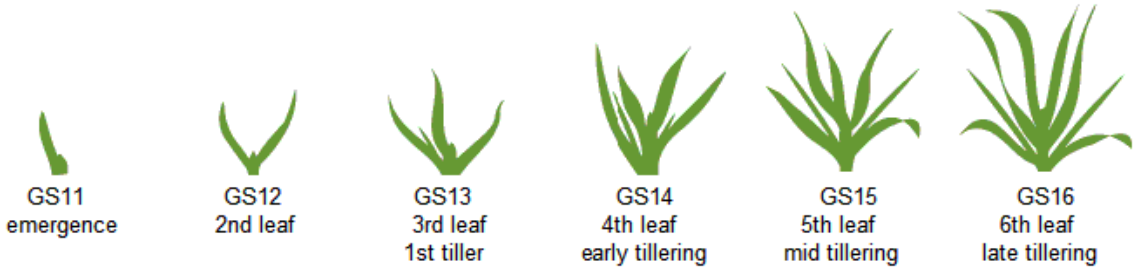


This graph show the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is between 2 and 12t/ha, hay yield is assumed to be between 70 and 75% of dry matter (sliding scale). When dry matter is above 12t/ha, hay yield is assumed to be between 75 and 80% (sliding scale).

Current dry matter: 9986 kg/ha

The season so far - Growing Season Rainfall Deciles





	GS11 emergence	GS12 2nd leaf	GS13 3rd leaf 1st tiller	GS14 4th leaf early tillering	GS15 5th leaf mid tillering	GS16 6th leaf late tillering
Predicted						
Earliest	12-Jun	26-Jun	8-Jul	18-Jul	28-Jul	6-Aug
Median	12-Jun	26-Jun	8-Jul	18-Jul	28-Jul	6-Aug
Latest	12-Jun	26-Jun	8-Jul	18-Jul	28-Jul	6-Aug

	GS30 end of tillering	GS31 1st node	GS32 2nd node	GS37 flag leaf	GS39 flag leaf fully emerged	GS45 mid booting	GS55 mid head emergence	GS65 mid flowering	GS75 mid dough fill
Predicted									
Earliest	20-Aug	24-Aug	27-Aug	8-Sep	12-Sep	20-Sep	1-Oct	10-Oct	26-Oct
Median	20-Aug	24-Aug	27-Aug	8-Sep	12-Sep	20-Sep	1-Oct	10-Oct	26-Oct
Latest	20-Aug	24-Aug	27-Aug	8-Sep	12-Sep	20-Sep	1-Oct	10-Oct	26-Oct

Percentage of years in which frost occurs

Mild	
Minimum temperature between 2 and 0°C during flowering (Z60-69)	0%
Moderate	
Minimum temperature between 0 and -2°C during flowering and early grain fill (Z60-75)	0%
Severe	
Minimum temperature less than -2°C during flowering and grain fill (Z60-79)	0%

Percentage of years in which heat shock occurs during grain fill (Z70-79)

Mild	
Maximum temperature between 32 and 34°C	0%
Moderate	
Maximum temperature between 34 and 36°C	0%
Severe	
Maximum temperature above 36°	0%

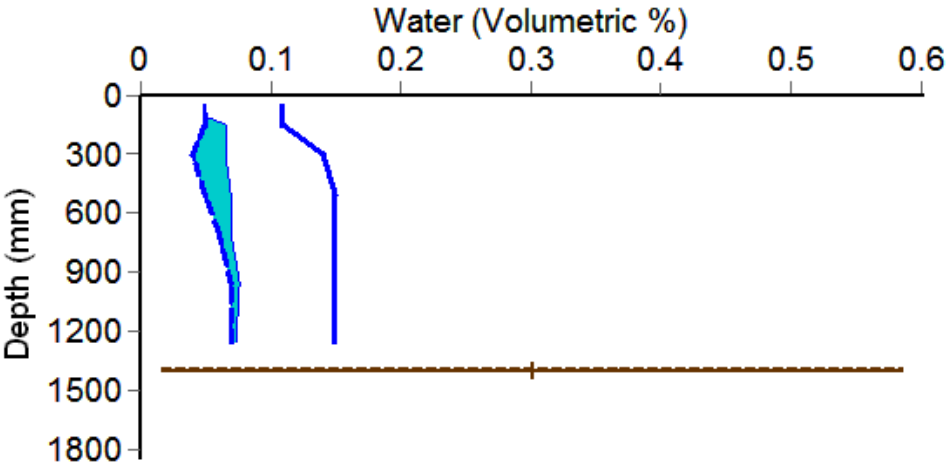
Incidence of frost for this growing season

Mild	
Minimum temperature between 2 and 0°C during flowering (Z60-69)	0
Moderate	
Minimum temperature between 0 and -2°C during flowering and early grain fill (Z60-75)	0
Severe	
Minimum temperature less than -2°C during flowering and grain fill (Z60-79)	0

Incidence of heat shock for this growing season, during grain fill (Z70-79)

Mild	
Maximum temperature between 32 and 34°C	0
Moderate	
Maximum temperature between 34 and 36°C	0
Severe	
Maximum temperature above 36°	0

Current distribution of PAW



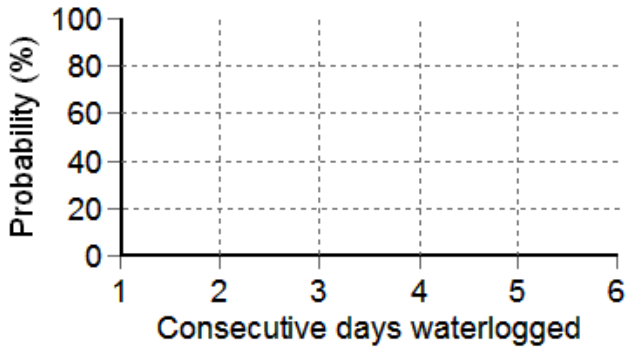
Current root depth = 1396 mm
Median final root depth = 1400 mm
Current crop PAW = 14 mm
Soil PAW = 14 mm
PAWC = 118 mm

PAW = Plant Available Water
CLL = Crop Lower Limit or Wilting Point
DUL = Drained Upper Limit or Field Capacity
PAWC = Plant Available Water Capacity
Current Crop PAW = Soil water currently accessible to the roots down to the current rooting depth
Soil PAW = Total accessible soil water in the soil profile

Water Budget

Initial PAW status @ 21-Apr	46 mm
Rainfall since 21-Apr	233.3 mm
Irrigations	2-Jun: 3 mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
Evaporation since 21-Apr	123 mm
Transpiration since 21-Apr	146 mm
Deep drainage since 21-Apr	0 mm
Run-off since 21-Apr	0 mm
Current PAW status:	**14 mm**

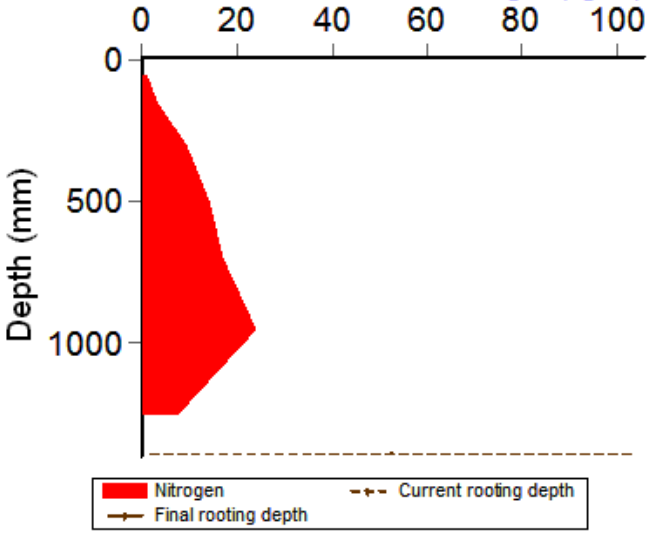
Probability of Future Waterlogging Events

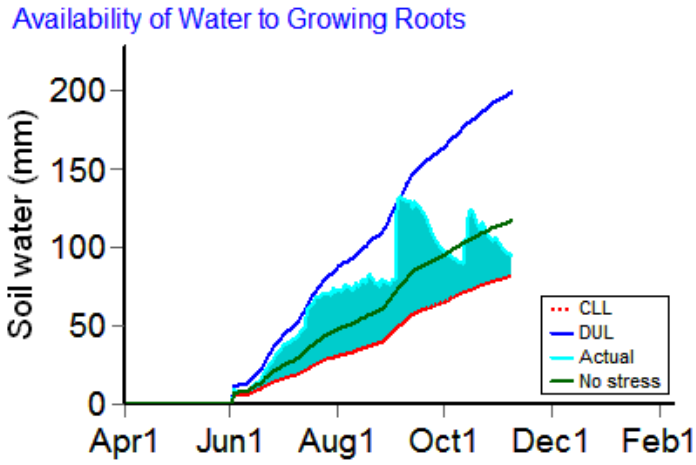


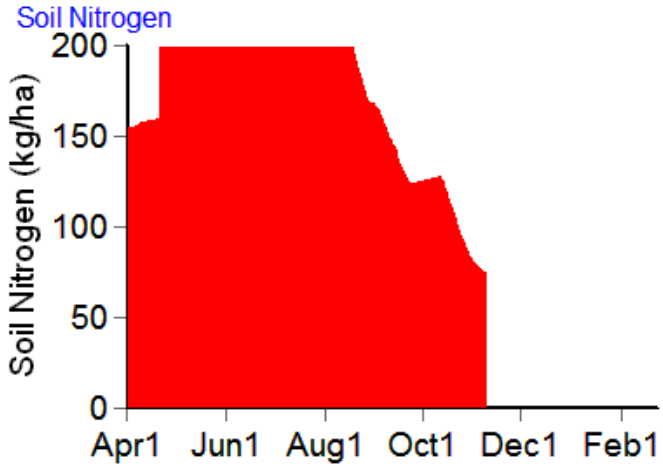
Nitrogen Budget

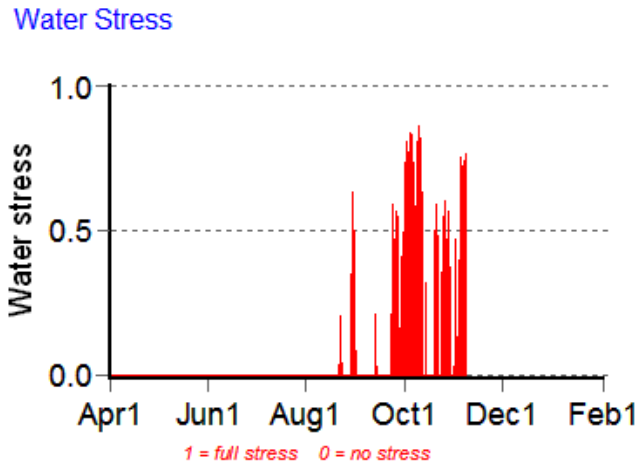
Initial N status @ 21-Apr	256 kg/ha
Mineralisation since 21-Apr	42 kg/ha
N applications	2-Jun: 4 kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
Total N in plant	222 kg/ha
De-nitrification since 21-Apr	0 kg/ha
Leaching	0 kg/ha
Current N status:	**77 kg/ha**

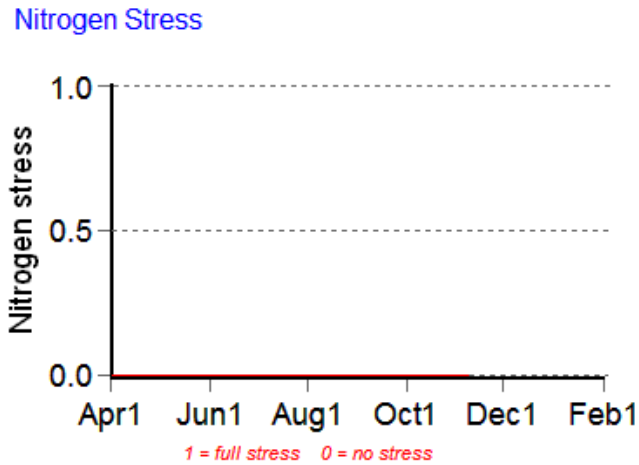
Current distribution of soil nitrogen (kg/ha)











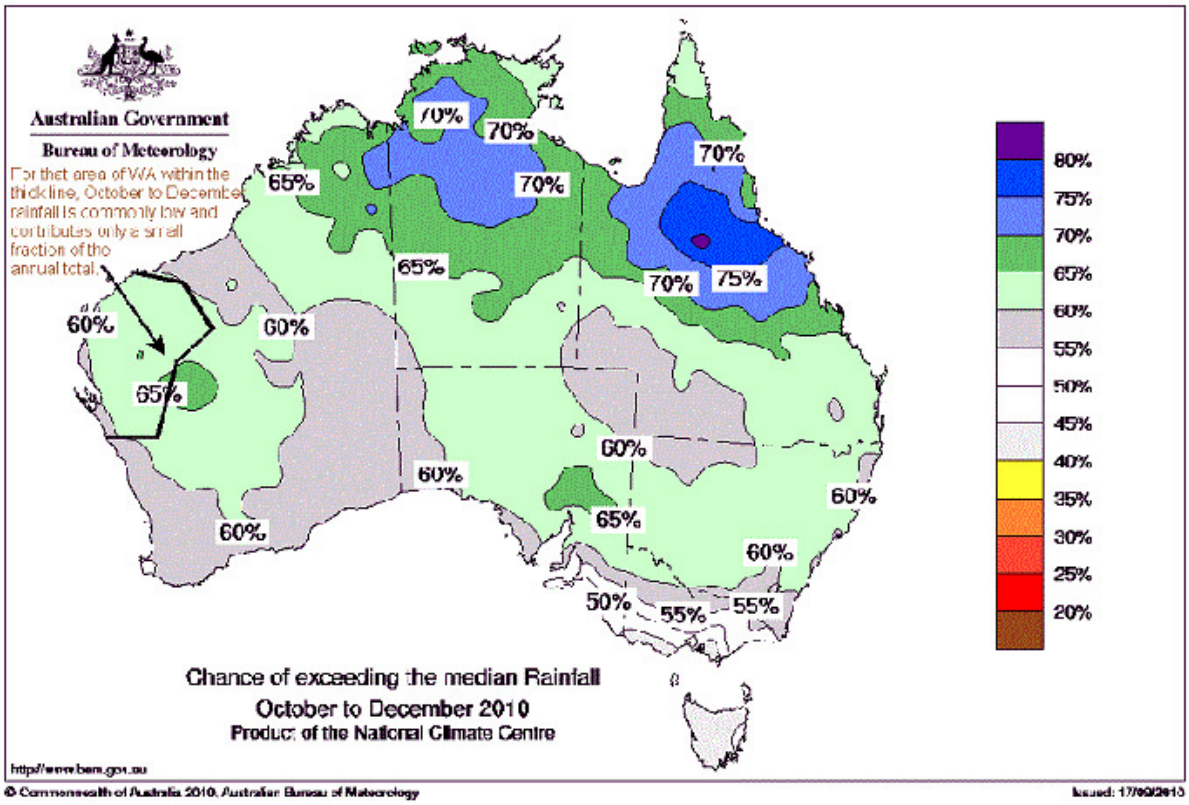
Brief periods of mild to moderate stress do not necessarily lead to reduced yield. To see the likely impacts of additional nitrogen fertiliser rates use the Nitrogen and Nitrogen Profit reports.

Mean projected crop performance and requirements for the next 10 days assuming no rain and no added fertiliser.

Date	Growth Stage	Evap (mm)	Daily water use (mm)	Daily N use (kg/ha)	Water available to roots above stress threshold (mm)	Water available to roots above crop lower limit (mm)	N available to roots (kg/ha)
11-Nov	83.4	0.0	0.7	0.1	-23.5	11.9	76.7
12-Nov	84.0	0.0	0.7	0.1	-24.2	11.2	76.6
13-Nov	84.5	0.0	0.6	0.1	-24.9	10.5	76.5
14-Nov	85.0	0.0	0.6	0.1	-25.5	9.9	76.3
15-Nov	85.6	0.0	0.6	0.1	-26.1	9.3	76.2
16-Nov	86.2	0.0	0.5	0.1	-26.7	8.7	76.1
17-Nov	86.7	0.0	0.5	0.0	-27.2	8.2	76.0
18-Nov	87.0	0.0	0.5	0.0	-27.7	7.7	76.1
19-Nov	89.4	0.0	0.5	0.0	-28.0	7.3	76.0
20-Nov	89.8	0.0	0.1	0.0	-23.7	6.9	74.8

The water available to roots above the stress threshold is the amount of PAW (mm) above one third of the total water holding capacity of this soil. If the water values are below this stress threshold the water available to roots above the stress threshold will be negative.

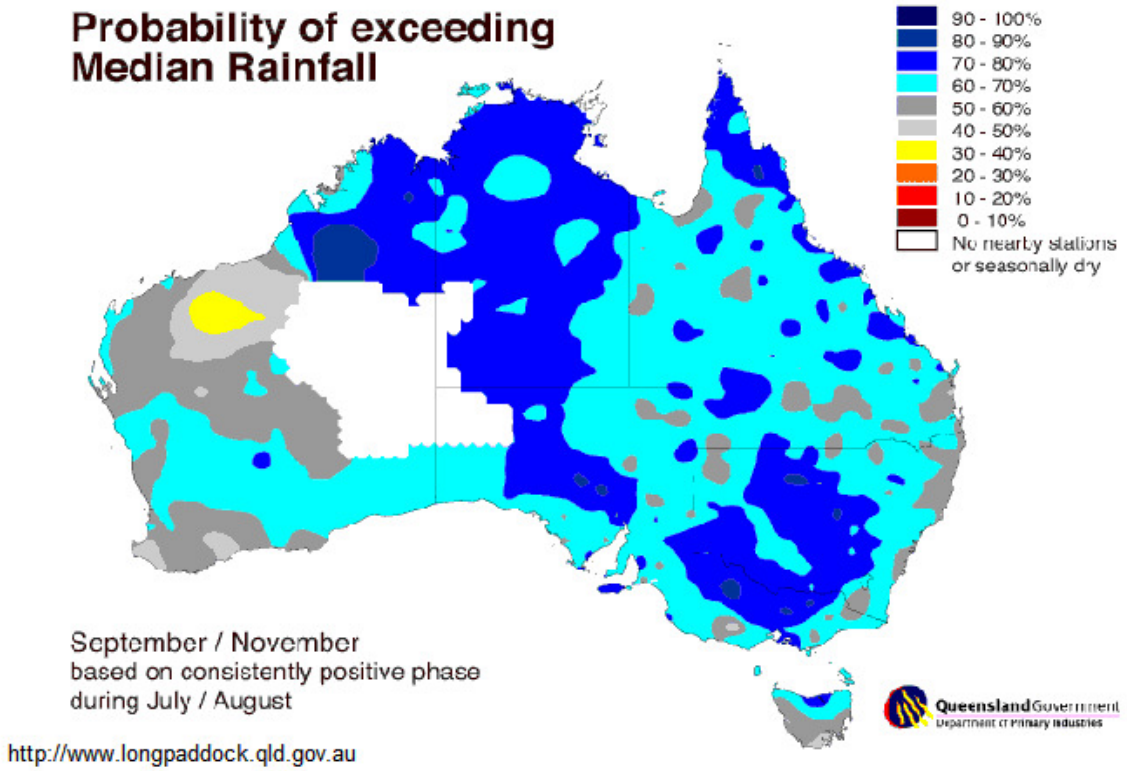
How much rainfall can I expect?
The Bureau of Meteorology Forecast for the next 3 months



National Seasonal Rainfall Outlook: probabilities October to December 2010

Issued by the bureau of Meteorology 23rd September 2010

Queensland Department of Environment and Resource Management (DERM) 3 month rainfall forecast based on the current phase of the SOI

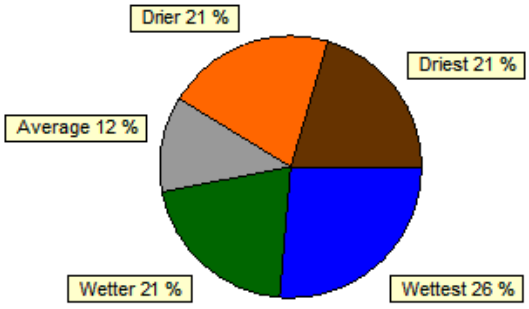


SOI Phase and analogue years

The SOI is currently in the Positive phase. The 30 day mean SOI for September was 25.8, in August it was 17.0.

The years in history with the same SOI phase:
1892, 1893, 1894, 1906, 1909, 1910, 1916, 1917, 1920, 1924, 1928, 1938, 1942, 1943, 1945, 1947, 1950, 1954, 1955, 1956, 1960, 1962, 1964, 1967, 1971, 1973, 1974, 1975, 1981, 1988, 1996, 1998, 2000, 2008

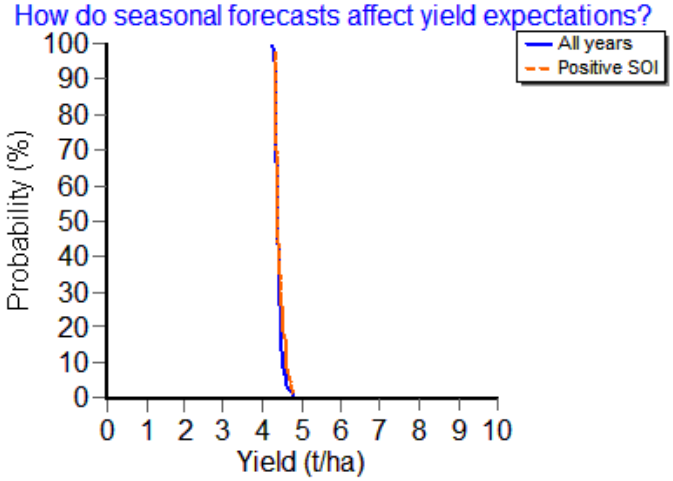
How much rainfall can I expect?
The SOI seasonal forecast for the next 3 months.



The SOI is an index that compares the atmospheric pressure between Tahiti and Darwin. SOI Phases are determined by comparing average monthly SOI values of the past two months. Phases of the SOI have been shown to be related to rainfall variability in a range of locations in Australia and around the world.

	Rainfall
Driest	0 to 24 mm
Drier	24 to 35 mm
Average	35 to 59 mm
Wetter	59 to 81 mm
Wettest	81 to 184 mm

How do seasonal forecasts affect yield expectations?



The 30 day mean SOI for September was 25.8, in August it was 17.0.

Yield outcomes of the current SOI Phase ARE NOT significantly different from yield outcomes of all years. Significance is determined on a 90% probability threshold. (PValue=0.325)

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