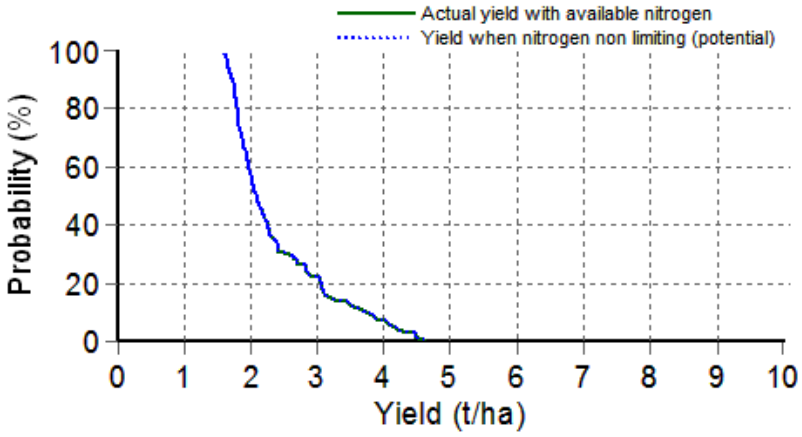
Crop Report

Report name: [Loxton 2] Crop report
Report date: 17/09/2010
Last climate date available: 15/09/2010
Client name: MSF
Paddock name: Loxton Swale
Report generated by: MSF
Date sown: 02-Jun
Crop type: Wheat
Variety sown: Yitpi
Sowing density: 120 plants/m2

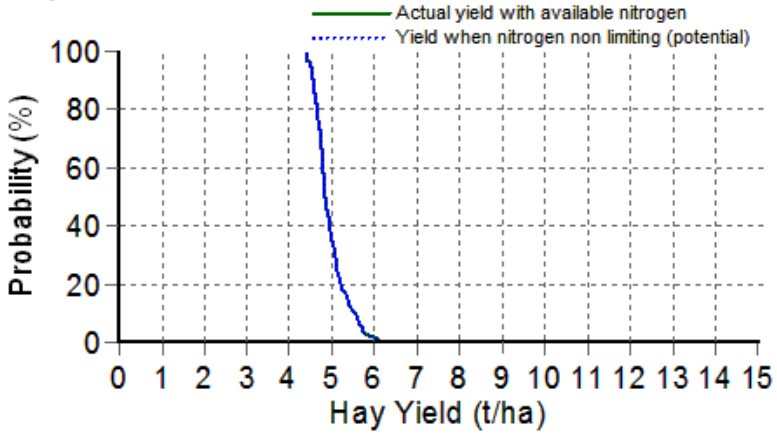
Weather station used: Loxton
Rainfall records used: Weather station
Soil type: Loxton-Severe SSC
Maximum rooting depth: 180 cm
Roots constrained by EC: yes
Stubble type: wheat
Stubble amount: 250 kg/ha
Start of growing season: 01-Apr
Initial conditions date: 21-Apr
Growing season rainfall to date: 187.7 mm
Date of last rainfall entry: ?
Expected harvest date: 18-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.

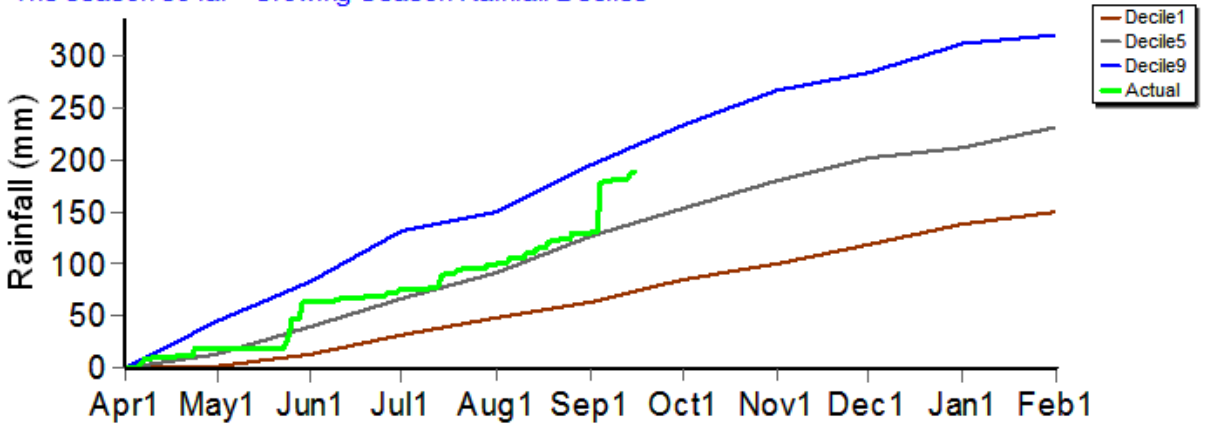
Hay Yield Outcome

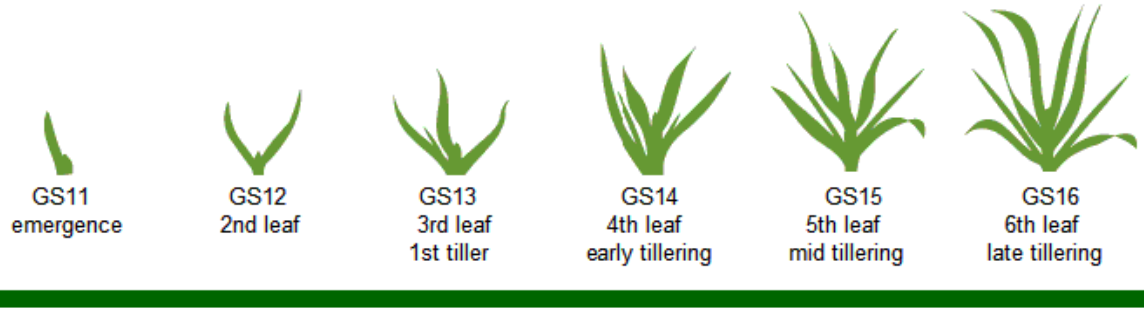


This graph show the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is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

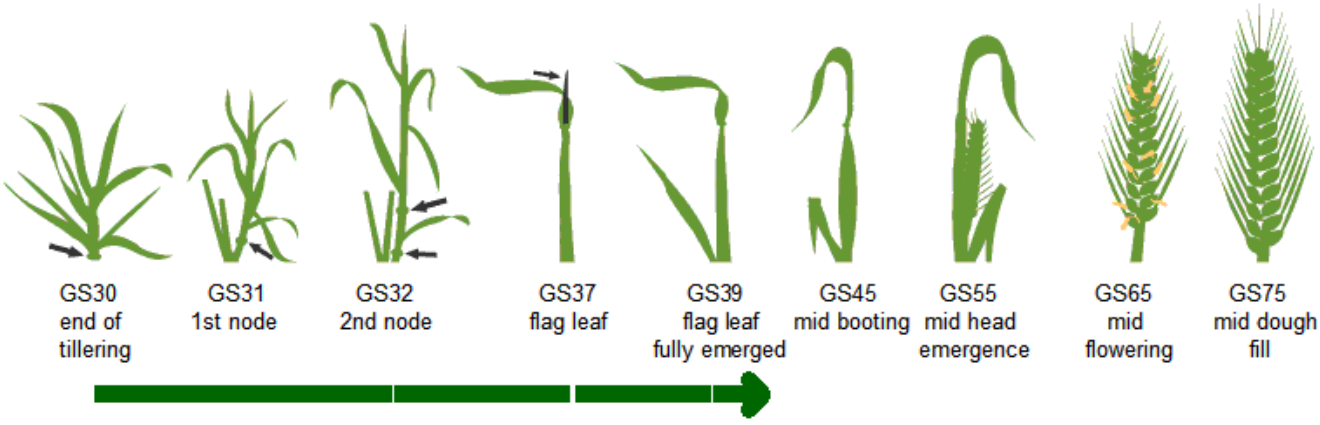
Current dry matter: 4297 kg/ha

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	18-Sep	26-Sep	3-Oct	16-Oct
Median	20-Aug	24-Aug	27-Aug	8-Sep	12-Sep	19-Sep	29-Sep	7-Oct	23-Oct
Latest	20-Aug	24-Aug	27-Aug	8-Sep	12-Sep	20-Sep	2-Oct	12-Oct	31-Oct

Percentage of years in which frost occurs

Mild	
Minimum temperature between 2 and 0°C during flowering (Z60-69)	5%
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	61%
Moderate	
Maximum temperature between 34 and 36°C	43%
Severe	
Maximum temperature above 36°	29%

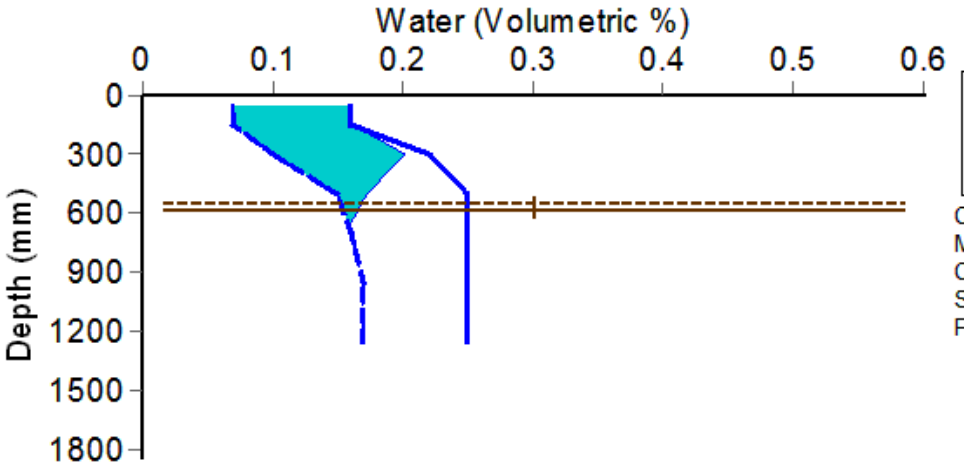
Incidence of frost for this growing season

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 = 551 mm
Median final root depth = 581 mm
Current crop PAW = 45 mm
Soil PAW = 42 mm
PAWC = 128 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

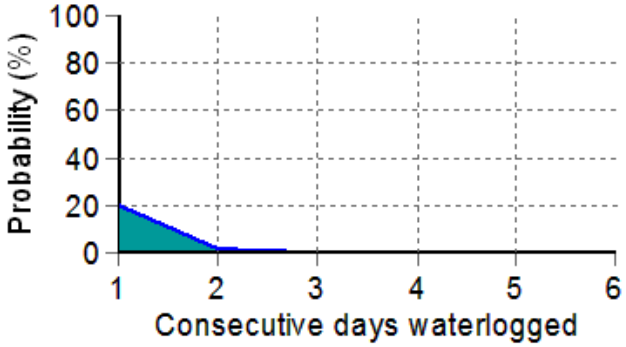
Water Budget

Initial PAW status @ 21-Apr	34 mm
Rainfall since 21-Apr	176.5 mm
Irrigations	2-Jun: 3 mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
Evaporation since 21-Apr	117 mm
Transpiration since 21-Apr	52 mm
Deep drainage since 21-Apr	0 mm
Run-off since 21-Apr	4 mm
Current PAW status:	**42 mm**

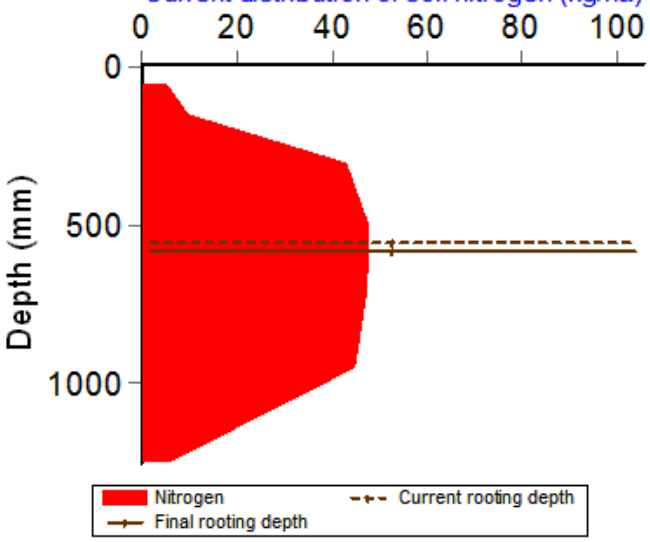
Nitrogen Budget

Initial N status @ 21-Apr	302 kg/ha
Mineralisation since 21-Apr	14 kg/ha
N applications	2-Jun: 4 kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
Total N in plant	112 kg/ha
De-nitrification since 21-Apr	1 kg/ha
Leaching	0 kg/ha
Current N status:	**206 kg/ha**

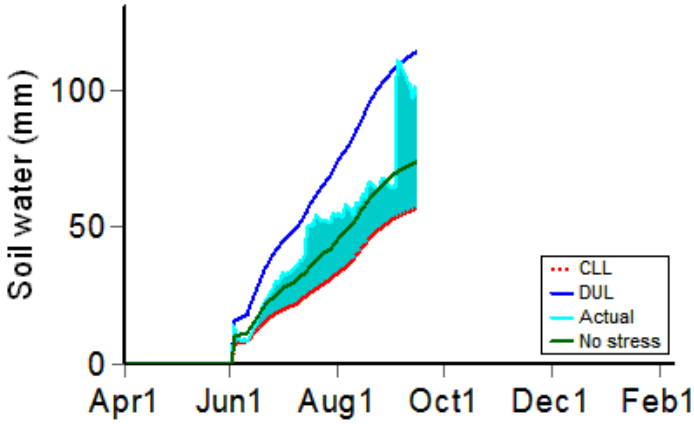
Probability of Future Waterlogging Events



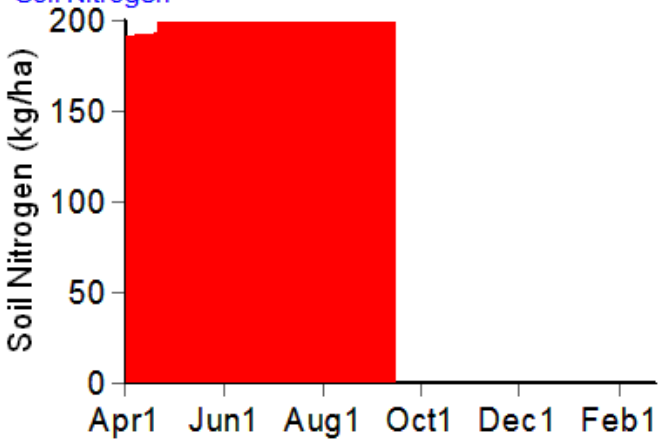
Current distribution of soil nitrogen (kg/ha)



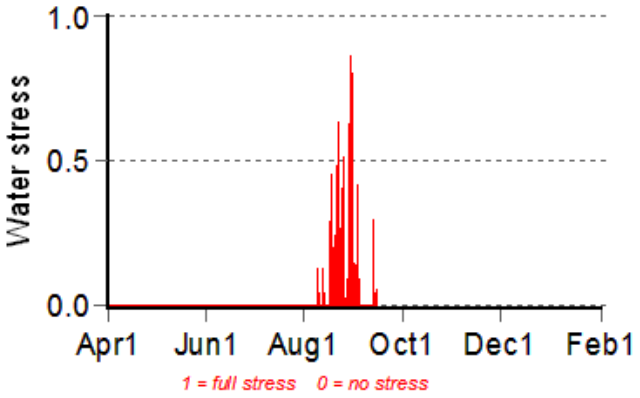
Availability of Water to Growing Roots



Soil Nitrogen



Water Stress



Nitrogen Stress

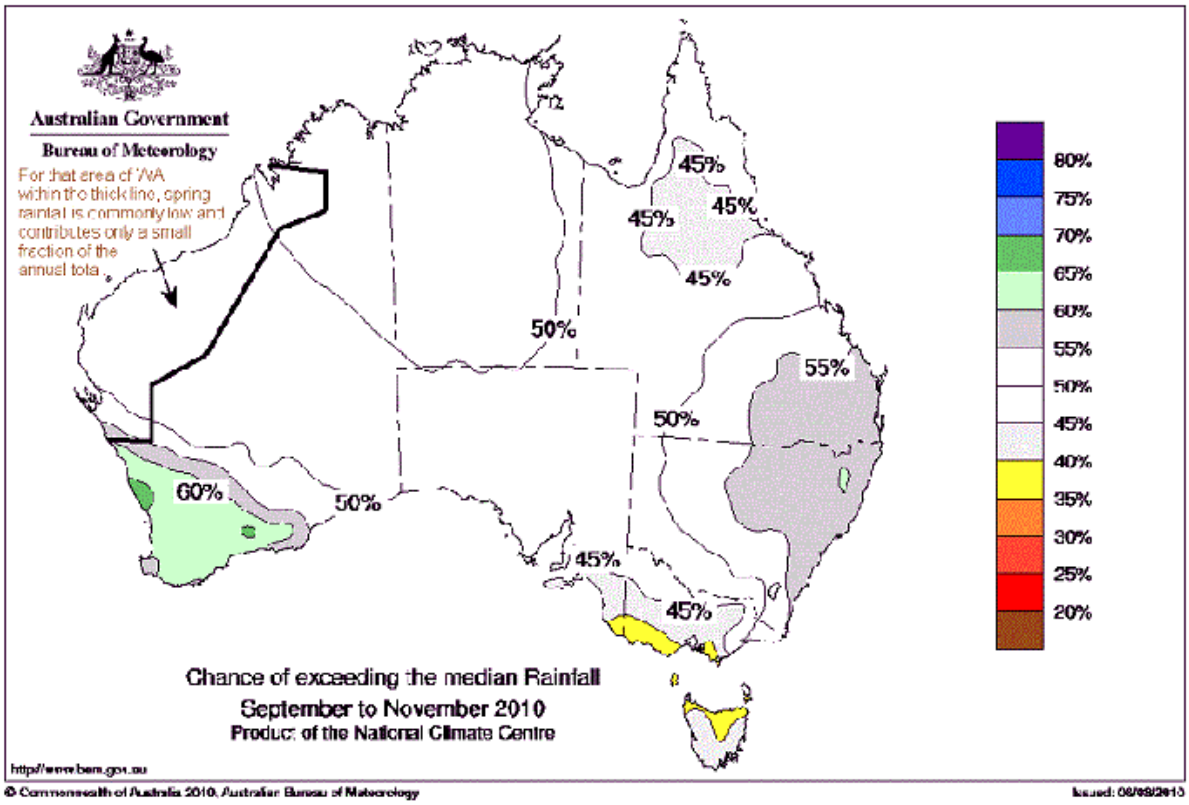
Brief periods of mild to moderate stress do not necessarily lead to reduced yield. To see the likely impacts of additional nitrogen fertiliser rates use the Nitrogen and Nitrogen Profit reports.

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)
17-Sep	44.2	0.8	2.2	1.2	19.5	36.7	91.7
18-Sep	45.2	0.8	2.0	1.1	17.2	34.5	91.4
19-Sep	46.3	0.8	1.9	0.6	15.2	32.5	90.9
20-Sep	47.4	0.9	1.7	0.4	13.0	30.3	90.6
21-Sep	48.4	0.8	1.6	0.0	11.1	28.4	90.9
22-Sep	49.5	0.8	1.5	0.0	9.1	26.5	91.1
23-Sep	50.6	0.8	1.4	0.0	7.2	24.7	91.2
24-Sep	51.5	0.9	1.3	0.0	5.5	23.0	91.4
25-Sep	52.7	0.9	1.2	0.0	4.1	21.6	91.5
26-Sep	53.7	0.9	1.2	0.0	2.8	20.3	91.8

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.

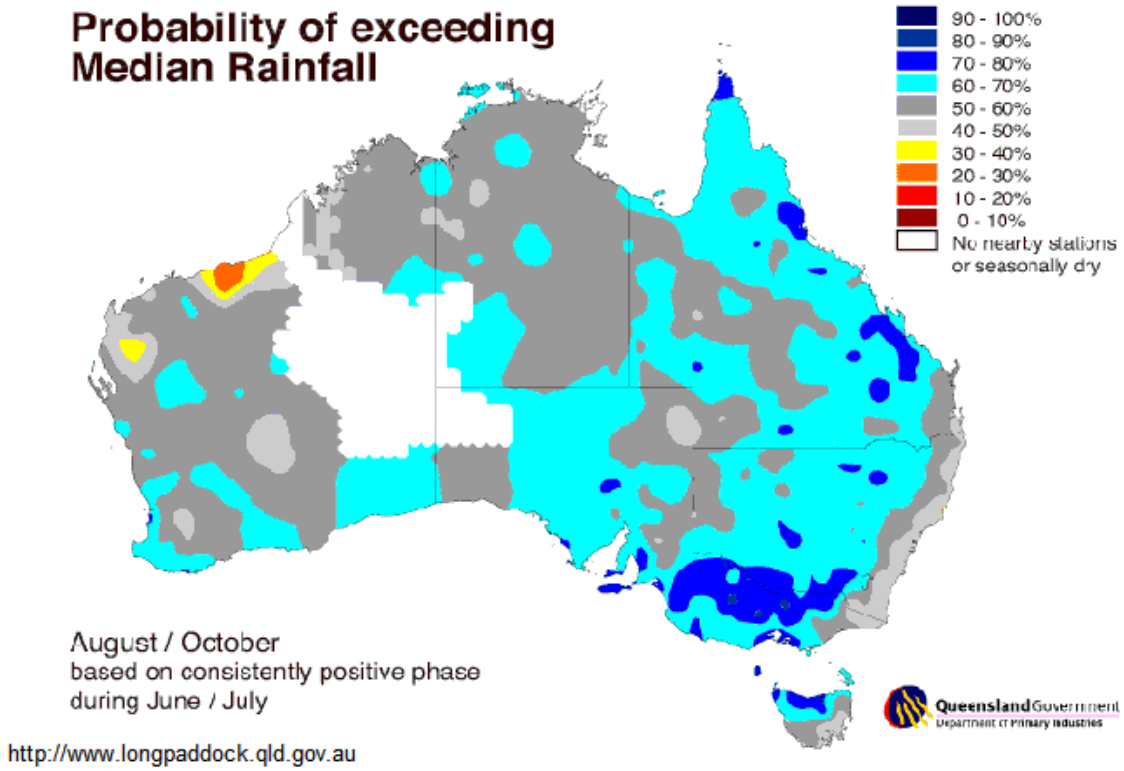
How much rainfall can I expect?
The Bureau of Meteorology Forecast for the next 3 months



National Seasonal Rainfall Outlook: probabilities September to November 2010

Issued by the bureau of Meteorology 24th August 2010

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



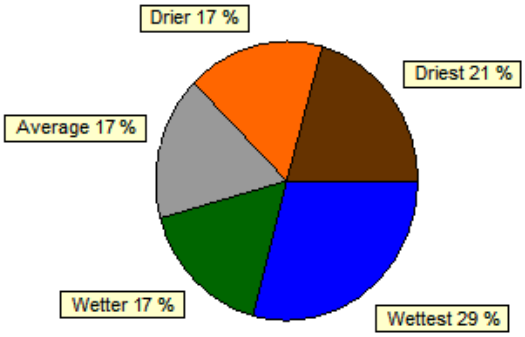
http://www.longpaddock.qld.gov.au

SOI Phase and analogue years

The SOI is currently in the Positive phase. The 31 day mean SOI for August was 17.0, in July it was 18.74.

The years in history with the same SOI phase:
1892, 1893, 1900, 1909, 1910, 1915, 1916, 1917, 1920, 1924, 1938, 1947, 1950, 1955, 1956, 1958, 1960, 1973, 1974, 1975, 1981, 1988, 1996, 1998

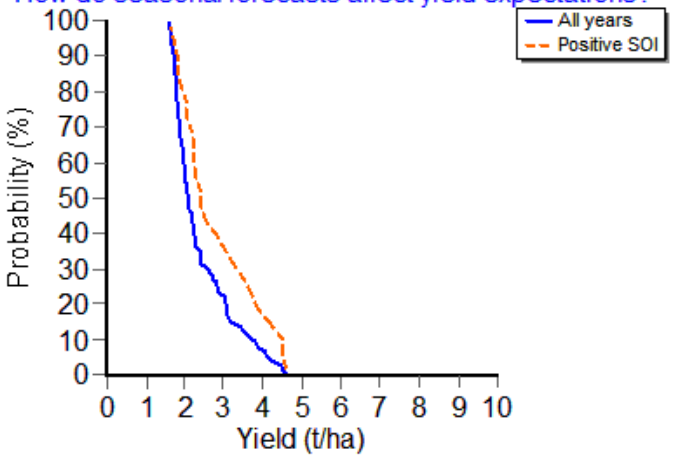
How much rainfall can I expect?
The SOI seasonal forecast for the next 3 months.



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 34 mm
Drier	34 to 56 mm
Average	56 to 71 mm
Wetter	71 to 93 mm
Wettest	93 to 210 mm

How do seasonal forecasts affect yield expectations?



The 31 day mean SOI for August was 17.0, in July it was 18.74.

Yield outcomes of the current SOI Phase ARE significantly different from yield outcomes of all years. Significance is determined on a 90% probability threshold. (PValue=0.031)
