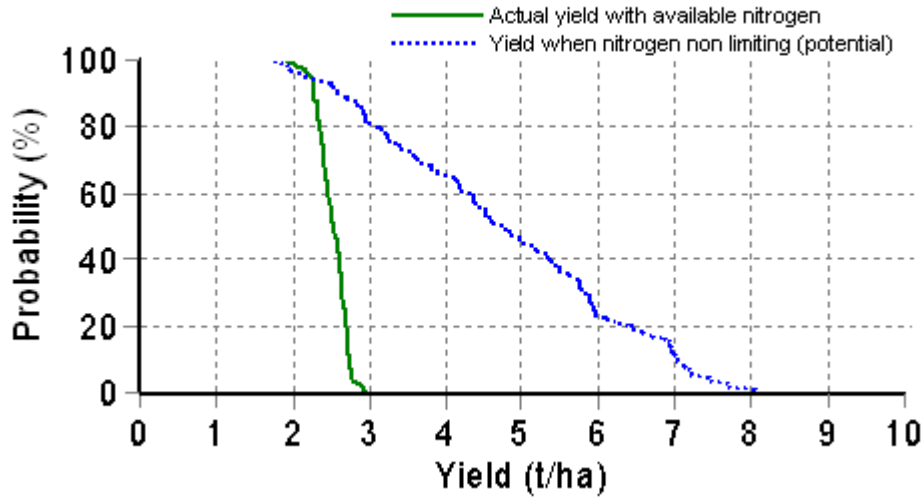


# Crop Report

Report name: [Block 510C] Crop report  
 Report date: 22/08/2011  
 Last climate date available: 21/08/2011  
 Client name: EH Graham Centre  
 Paddock name: Block 510C  
 Report generated by: EH Graham Centre  
 Date sown: 14-May  
 Crop type: Wheat  
 Variety sown: Wedgetail  
 Sowing density: 89 plants/m<sup>2</sup>

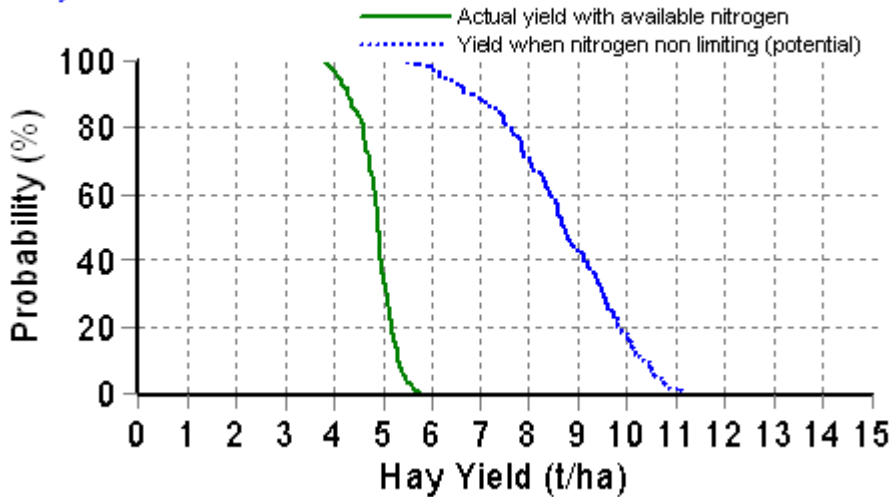
Weather station used: Wagga Wagga AMO  
 Rainfall records used: Weather station  
 Soil type: Dirnaseer Red Kandosol  
 Maximum rooting depth: 180 cm  
 Roots constrained by EC:  
 Stubble type: canola  
 Stubble amount: 2500 kg/ha  
 Start of growing season: 01-Apr  
 Initial conditions date: 12-May  
 Growing season rainfall to date: 159.4 mm  
 Date of last rainfall entry: ?  
 Expected harvest date: 24-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.

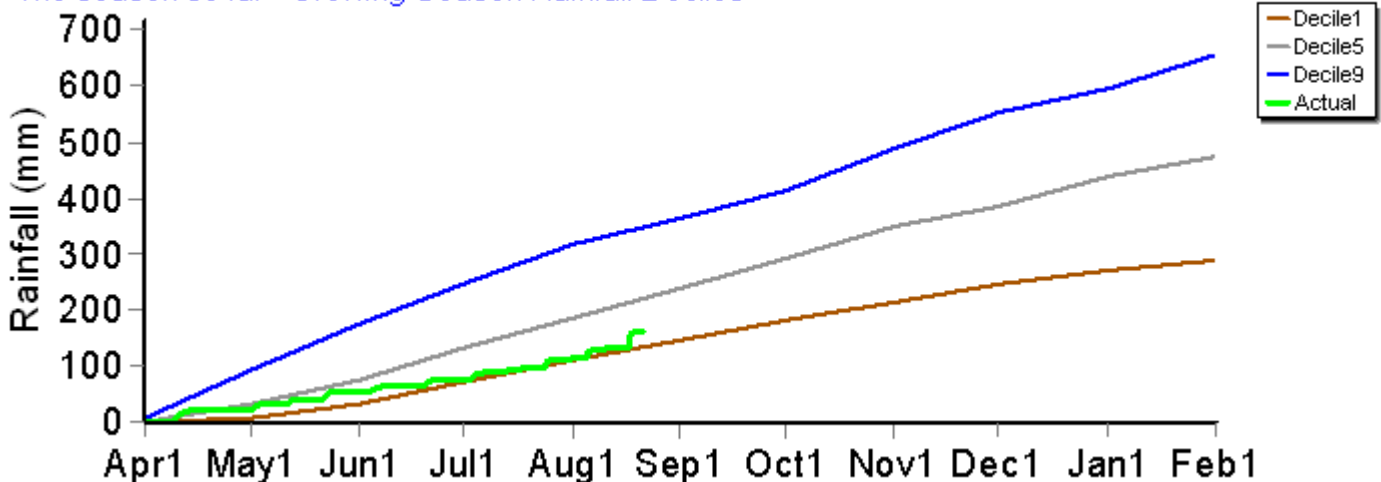
## Hay Yield Outcome

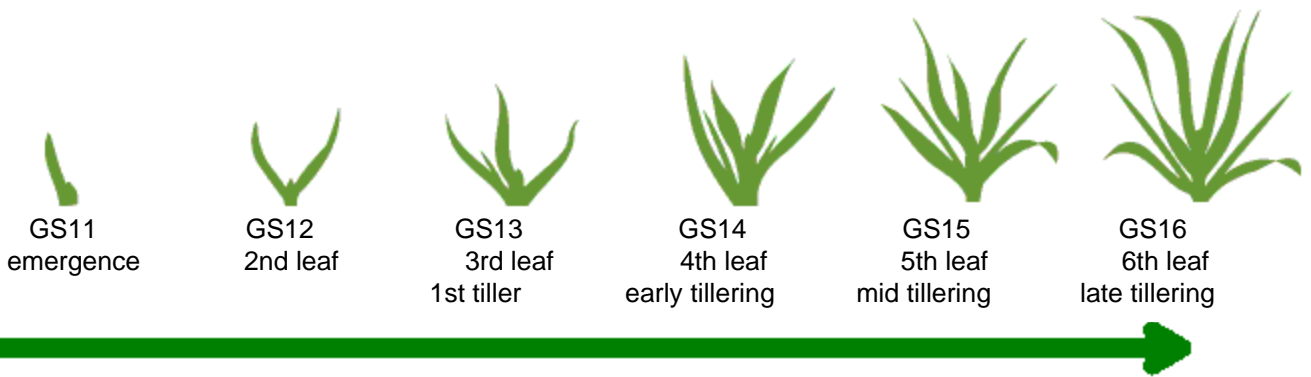


This graph show the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is 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: 2071 kg/ha

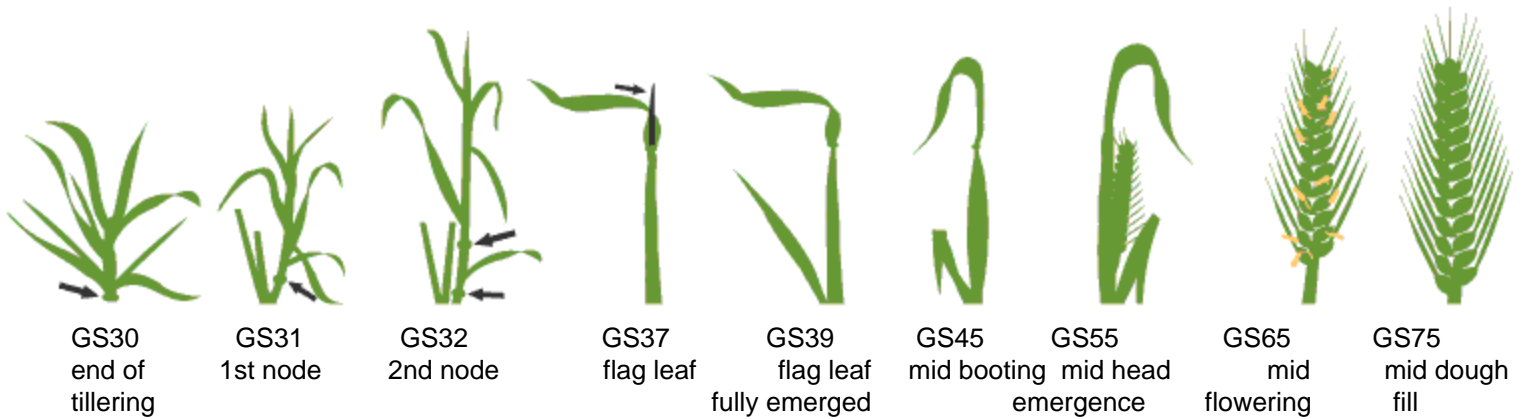
## The season so far - Growing Season Rainfall Deciles





**Predicted**

<b>Earliest</b>	24-May	5-Jun	17-Jun	28-Jun	7-Jul	20-Jul
<b>Median</b>	24-May	5-Jun	17-Jun	28-Jun	7-Jul	20-Jul
<b>Latest</b>	24-May	5-Jun	17-Jun	28-Jun	7-Jul	20-Jul



**Predicted**

<b>Earliest</b>	2-Sep	5-Sep	8-Sep	14-Sep	16-Sep	21-Sep	27-Sep	5-Oct	21-Oct
<b>Median</b>	6-Sep	9-Sep	12-Sep	21-Sep	24-Sep	29-Sep	6-Oct	12-Oct	29-Oct
<b>Latest</b>	9-Sep	12-Sep	16-Sep	27-Sep	1-Oct	7-Oct	14-Oct	21-Oct	10-Nov

*Percentage of years in which frost occurs during flowering*

<b>Mild</b>	
Minimum temperature between 2 and 0°C during flowering (Z60-69)	33%
<b>Moderate</b>	
Minimum temperature between 0 and -2°C during flowering and early grain fill (Z60-75)	4%
<b>Severe</b>	
Minimum temperature less than -2°C during flowering and grain fill (Z60-79)	1%

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

<b>Mild</b>	
Maximum temperature between 32 and 34°C	41%
<b>Moderate</b>	
Maximum temperature between 34 and 36°C	21%
<b>Severe</b>	
Maximum temperature above 36°	7%

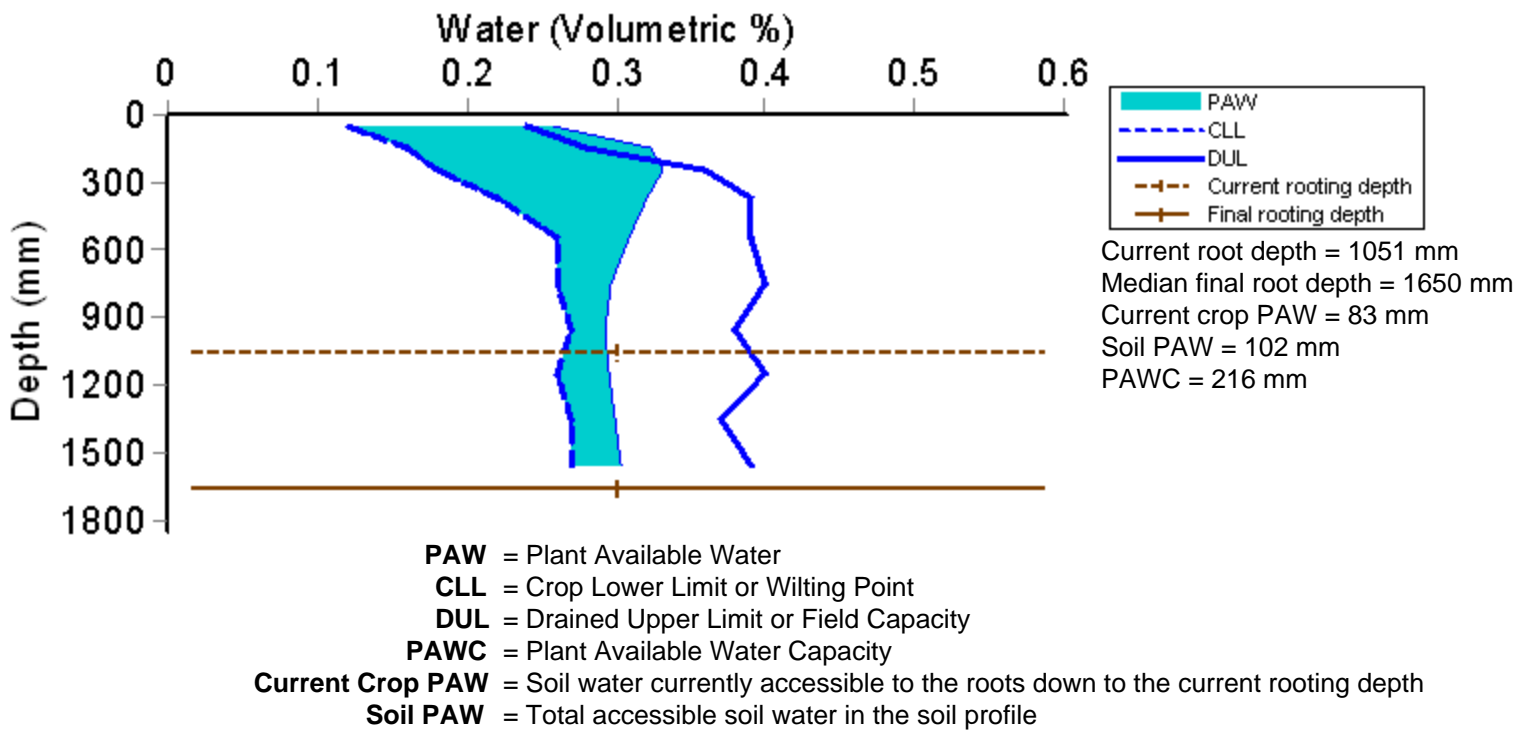
*Incidence of frost for this growing season, during flowering*

<b>Mild</b>	
Minimum temperature between 2 and 0°C during flowering (Z60-69)	0
<b>Moderate</b>	
Minimum temperature between 0 and -2°C during flowering and early grain fill (Z60-75)	0
<b>Severe</b>	
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)*

<b>Mild</b>	
Maximum temperature between 32 and 34°C	0
<b>Moderate</b>	
Maximum temperature between 34 and 36°C	0
<b>Severe</b>	
Maximum temperature above 36°	0

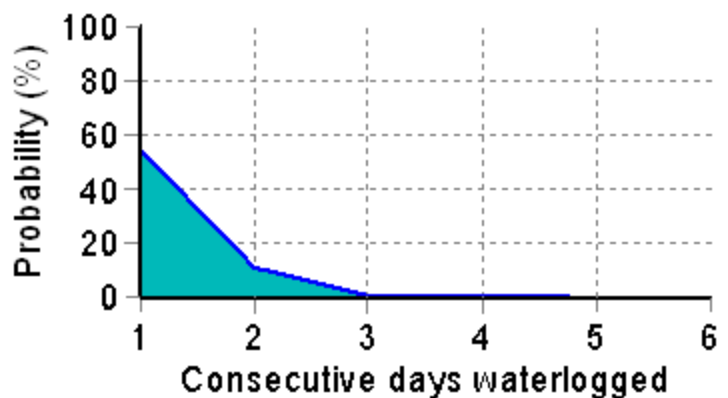
## Current distribution of PAW



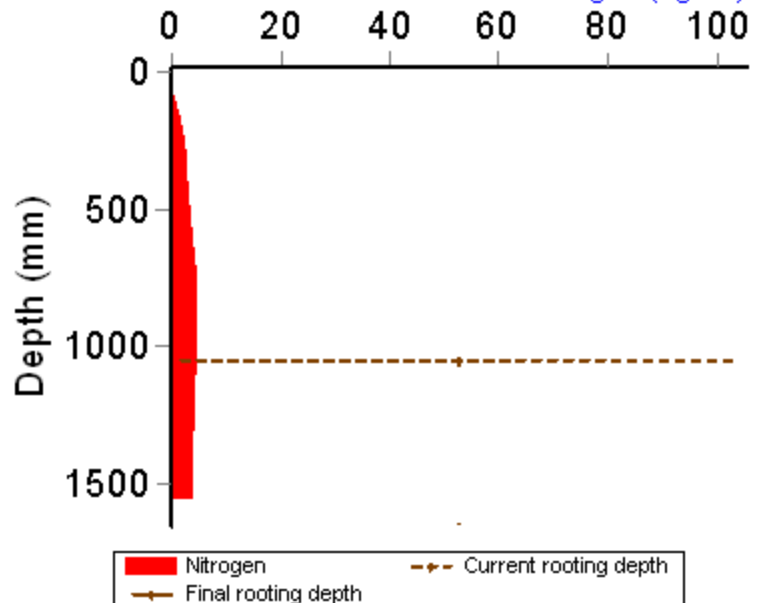
## Water Budget

Initial PAW status @ 12-May	78 mm
Rainfall since 12-May	126.8 mm
Irrigations	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
Evaporation since 12-May	75 mm
Transpiration since 12-May	27 mm
Deep drainage since 12-May	0 mm
Run-off since 12-May	0 mm
<b>Current PAW status:</b>	<b>102 mm</b>

## Probability of Future Waterlogging Events



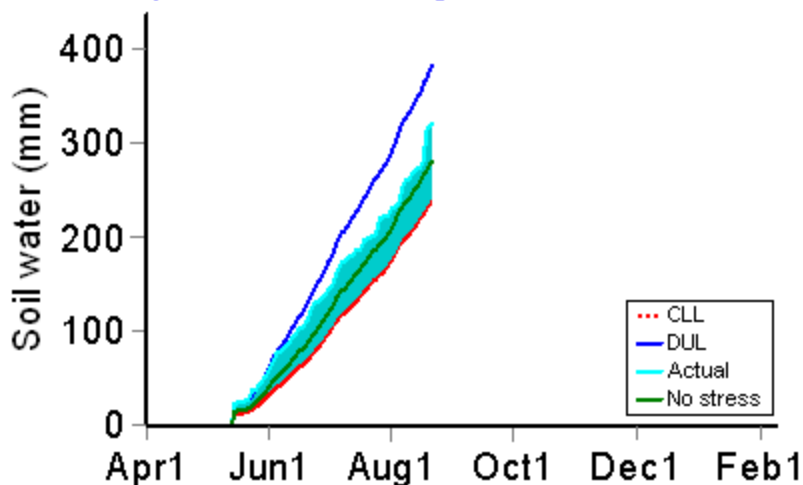
## Current distribution of soil nitrogen (kg/ha)



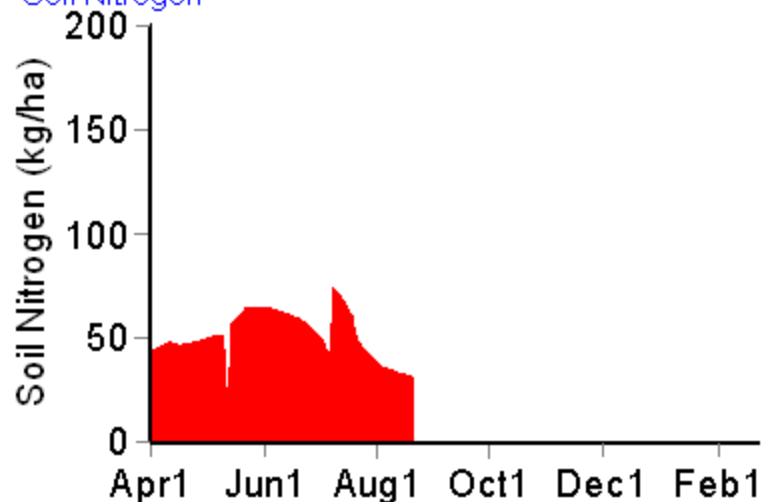
## Nitrogen Budget

Initial N status @ 12-May	44 kg/ha
Mineralisation since 12-May	-13 kg/ha
N applications	14-May: 30 kg/ha
	8-Jul: 32 kg/ha
	: kg/ha
	: kg/ha
	: kg/ha
Total N in plant	59 kg/ha
De-nitrification since 12-May	0 kg/ha
Leaching	0 kg/ha
<b>Current N status:</b>	<b>33 kg/ha</b>

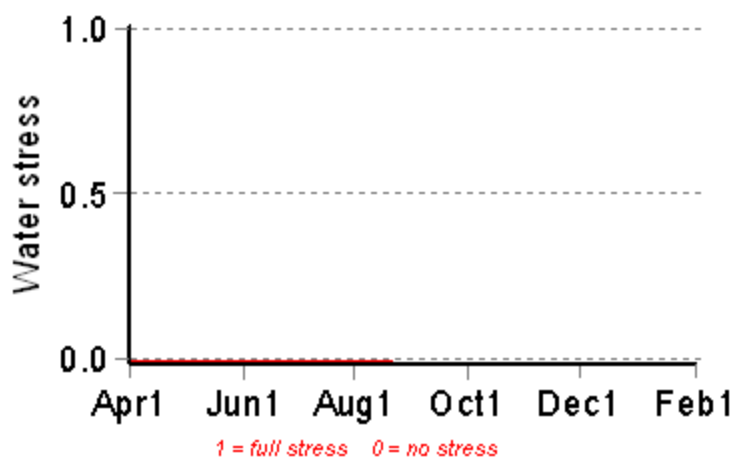
### Availability of Water to Growing Roots



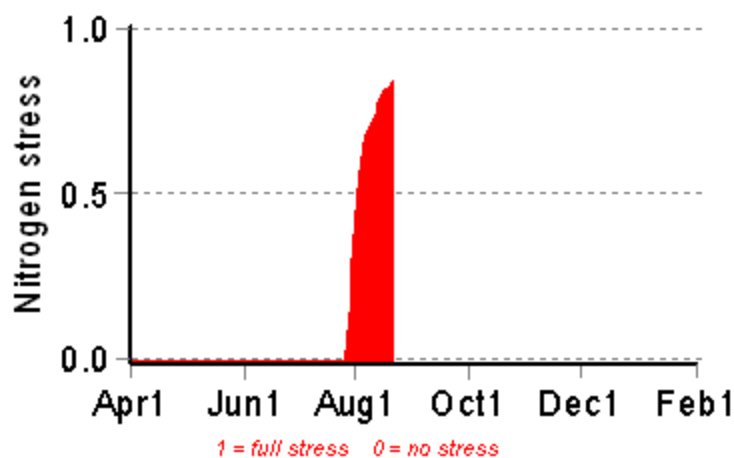
### Soil Nitrogen



### Water Stress



### Nitrogen Stress



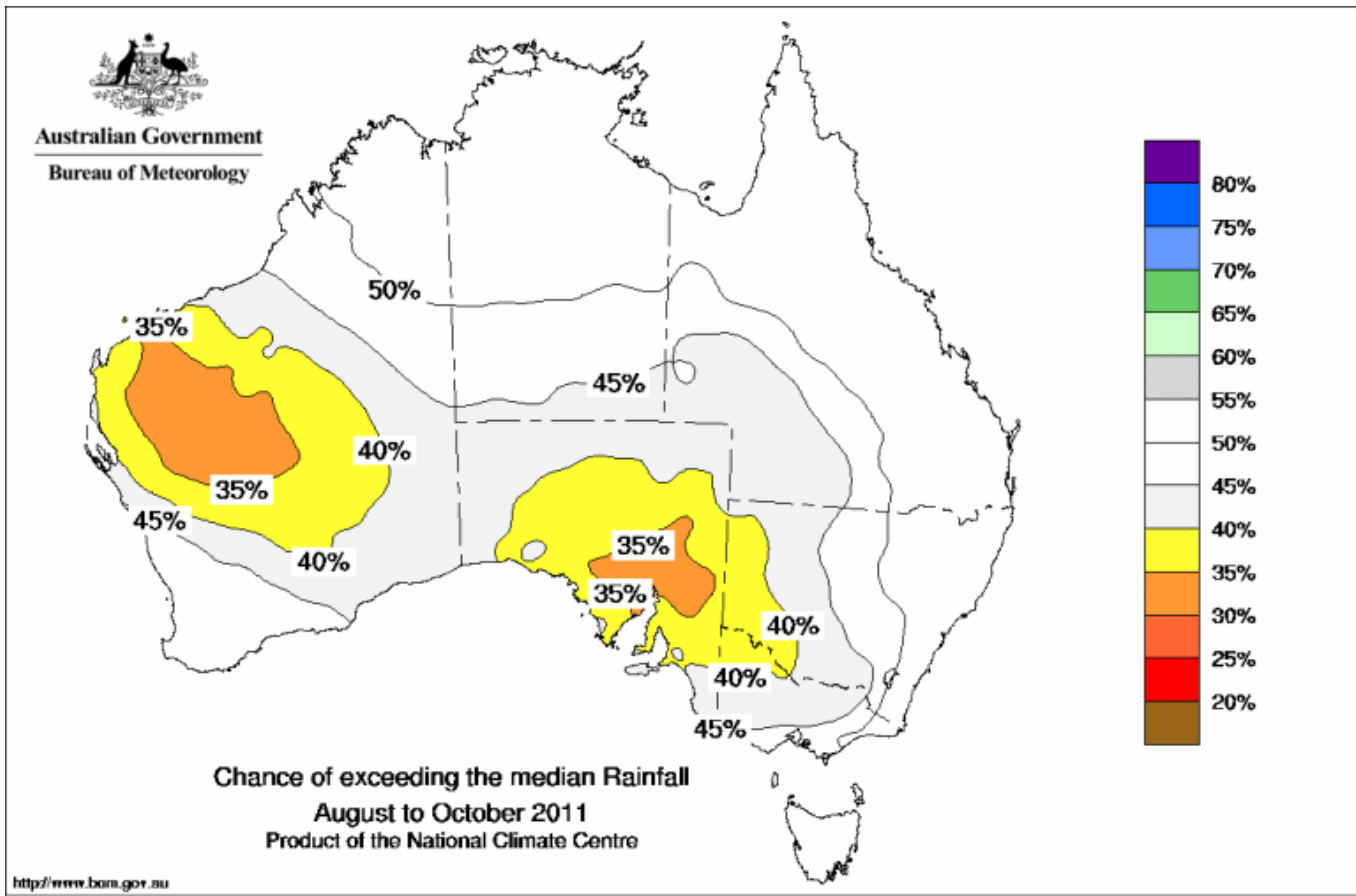
Brief periods of mild to moderate stress do not necessarily lead to reduced yield. To see the likely impacts of additional nitrogen fertiliser rates use the Nitrogen and Nitrogen Profit reports.

### 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)
22-Aug	16.0	0.4	0.3	0.3	38.3	82.0	20.1
23-Aug	16.0	0.6	0.3	0.3	37.8	81.9	20.2
24-Aug	16.0	0.6	0.3	0.3	37.9	82.5	20.2
25-Aug	16.0	0.6	0.3	0.3	39.0	84.1	20.3
26-Aug	16.0	0.6	0.3	0.3	38.3	84.0	20.3
27-Aug	16.0	0.6	0.4	0.2	39.4	85.1	20.3
28-Aug	16.0	0.6	0.3	0.2	38.6	85.3	20.4
29-Aug	16.0	0.6	0.3	0.2	39.7	86.6	20.4
30-Aug	16.0	0.6	0.3	0.2	39.5	87.3	20.5
31-Aug	16.0	0.6	0.3	0.2	39.5	87.7	20.5

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

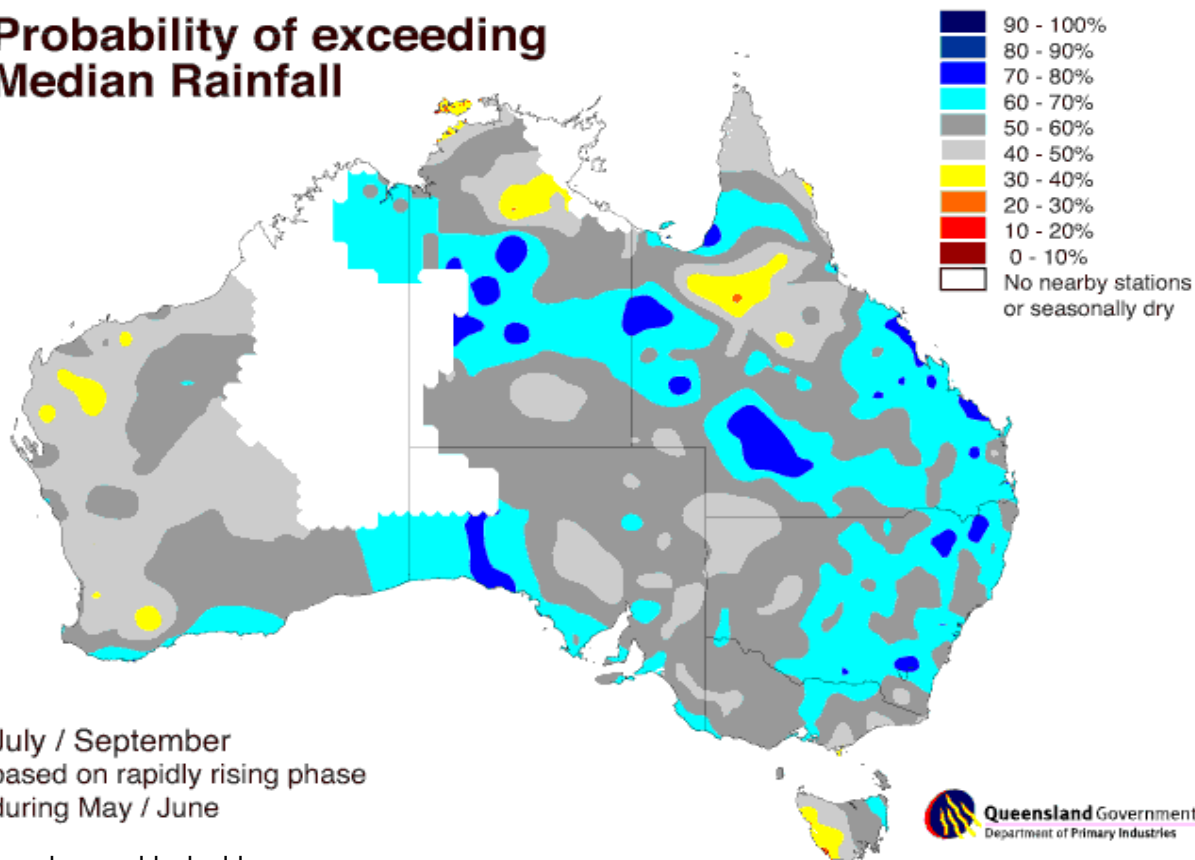


**National Seasonal Rainfall Outlook: probabilities August to October 2011**

Issued by the bureau of Meteorology 21st July 2011

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

**Probability of exceeding  
 Median Rainfall**



## SOI Phase and analogue years

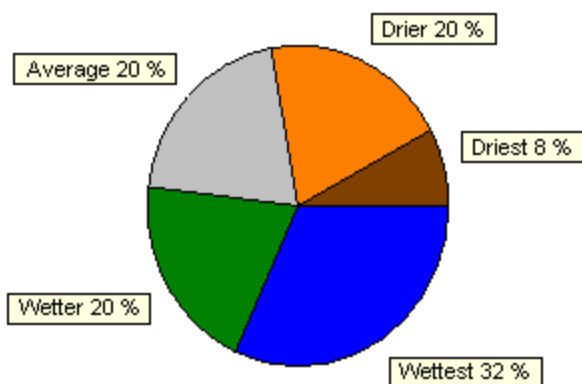
The SOI is currently in the Rising phase. The 31 day mean SOI for July was 9.1, in June it was 0.9.

The years in history with the same SOI phase:

1898, 1903, 1906, 1912, 1916, 1926, 1928, 1933, 1936, 1939, 1943, 1947, 1948, 1949, 1954, 1960, 1963, 1974, 1979, 1984, 1985, 1988, 1995, 1999, 2003

## How much rainfall can I expect?

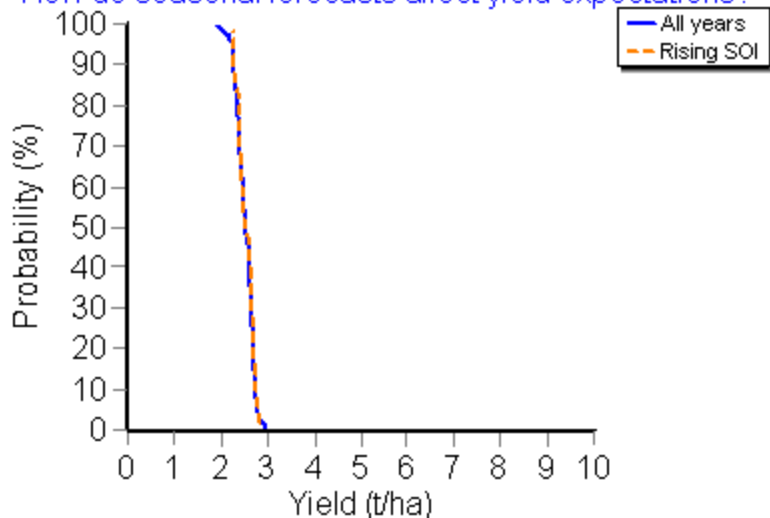
The SOI seasonal forecast for the next 3 months.



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 85 mm
Drier	85 to 117 mm
Average	117 to 149 mm
Wetter	149 to 194 mm
Wettest	194 to 324 mm

## How do seasonal forecasts affect yield expectations?



The 31 day mean SOI for July was 9.1, in June it was 0.9.

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=0.689)