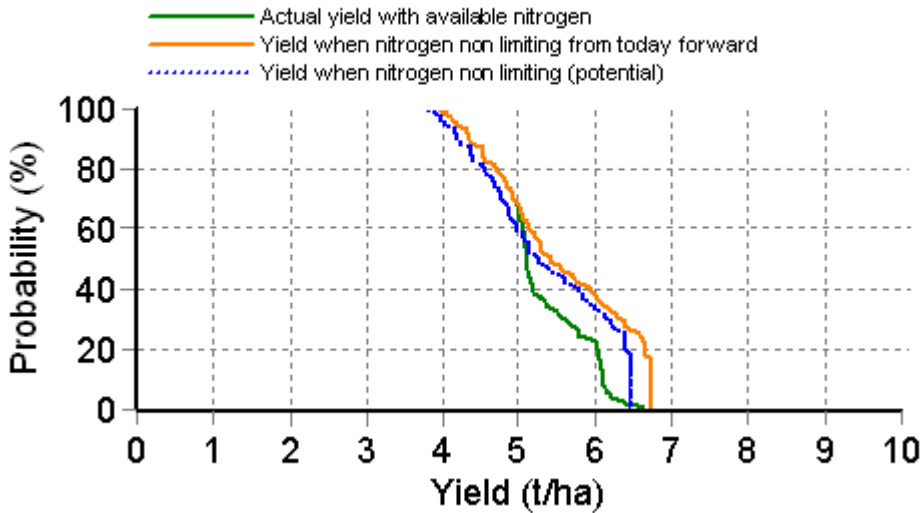


Crop Report

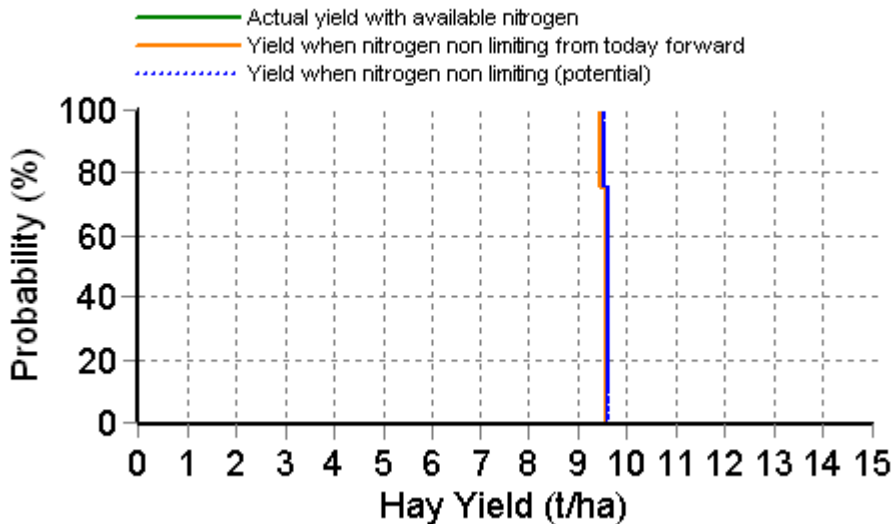
Report name: Block 501W Crop Report (Complete) Weather station used: Wagga Wagga
 Report date: 08/10/2013 Agricultural Institute
 Last climate date available: 6/10/2013 Rainfall records used: Weather station
 Client name: EH Graham Centre Soil type: Red Kandosol (Dirnaseer No544)
 Paddock name: Block 501W Maximum rooting depth: 100 cm
 Report generated by: EH Graham Centre Stubble type: Wheat
 Date sown: 15-Apr Stubble amount: 4000 kg/ha
 Crop type: Wheat Number of tillage operations: 0
 Variety sown: Wedgetail Stubble % incorporated into the top 10cm: 0 %
 Sowing density: 70 plants/m2 Initial conditions date: 01-Apr
 Rainfall since 1-Apr: 247 mm
 Date of last rainfall entry: ?
 Expected maturity date: 14-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 year of the climate record. The yield results are used to produce this graph.

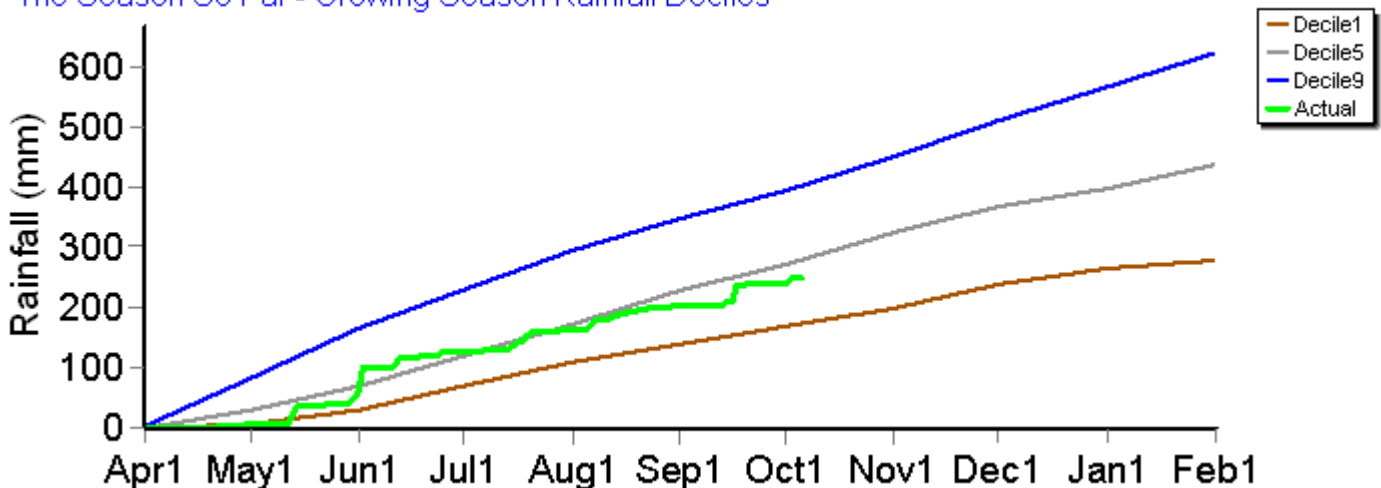
Hay Yield Outcome



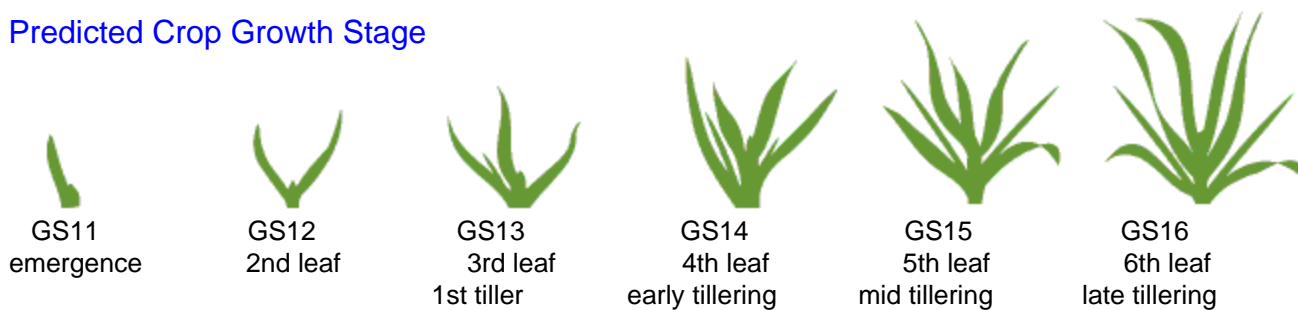
This graph show the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is 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: 11883 kg/ha

The Season So Far - Growing Season Rainfall Deciles

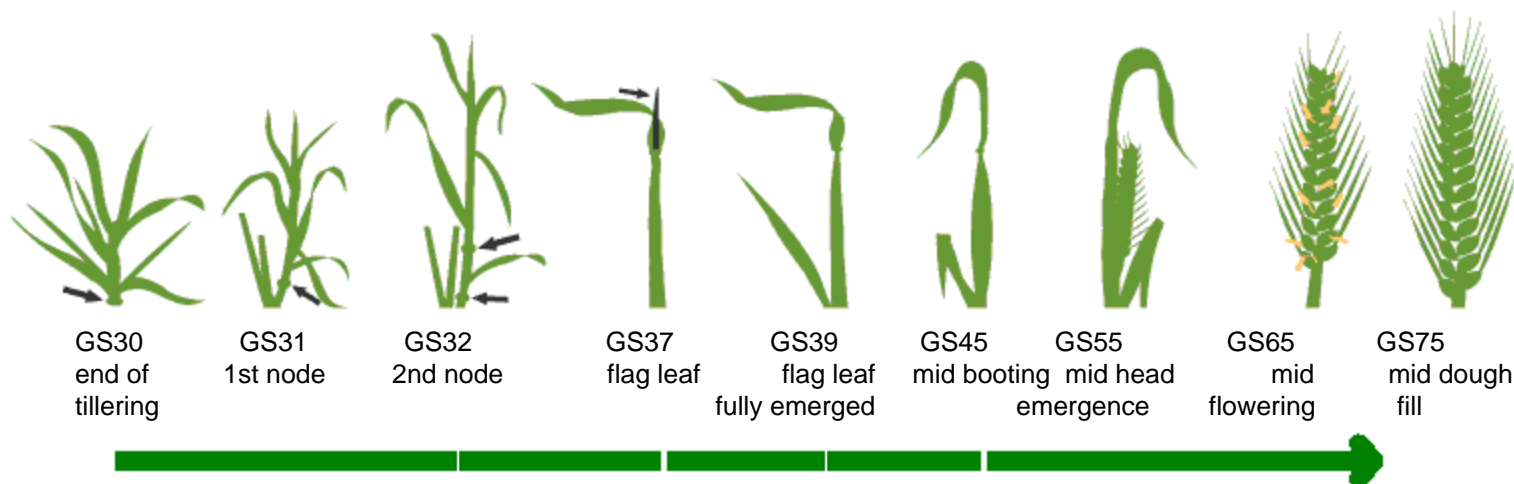


Simulated and Predicted Crop Growth Stage



Predicted

	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
Earliest	26-Apr	7-May	13-May	22-May	31-May	8-Jun
Median	26-Apr	7-May	13-May	22-May	31-May	8-Jun
Latest	26-Apr	7-May	13-May	22-May	31-May	8-Jun



Predicted

	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
Earliest	26-Aug	29-Aug	2-Sep	7-Sep	10-Sep	16-Sep	23-Sep	29-Sep	15-Oct
Median	27-Aug	30-Aug	2-Sep	8-Sep	10-Sep	16-Sep	23-Sep	30-Sep	18-Oct
Latest	27-Aug	30-Aug	2-Sep	8-Sep	10-Sep	16-Sep	23-Sep	30-Sep	22-Oct

Probability and Incidence of Frost and Heat Shock

Percentage of years in which frost occurs during flowering

Category	Percentage
Mild Minimum temperature between 2 and 0°C during flowering (Z60-69)	100%
Moderate Minimum temperature between 0 and -2°C during flowering and early grain fill (Z60-75)	1%
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)

Category	Percentage
Mild Maximum temperature between 32 and 34°C	28%
Moderate Maximum temperature between 34 and 36°C	10%
Severe Maximum temperature above 36°	3%

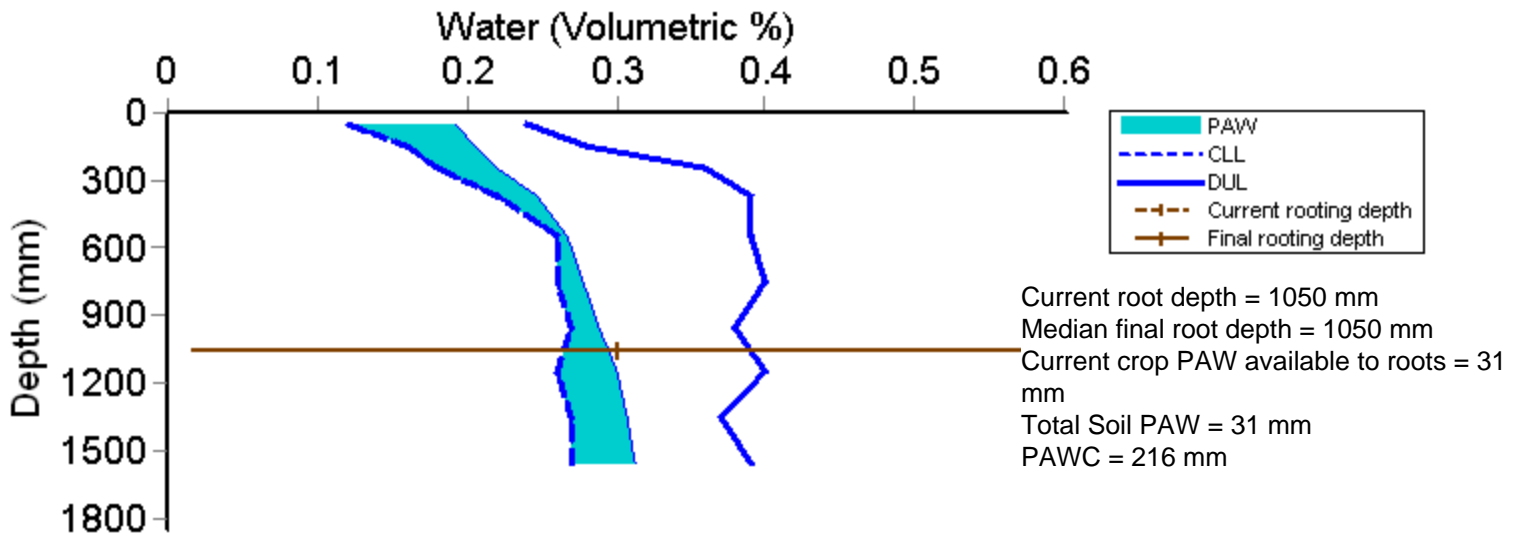
Incidence of frost for this growing season, during flowering

Category	Incidence
Mild Minimum temperature between 2 and 0°C during flowering (Z60-69)	3
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)

Category	Incidence
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



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 @ 1-Apr	43 mm
Rainfall since 1-Apr	247 mm
Irrigations	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
	: mm
Evaporation since 1-Apr	76 mm
Transpiration since 1-Apr	158 mm
Deep drainage since 1-Apr	0 mm
Run-off since 1-Apr	3 mm

Current PAW status: 31 mm

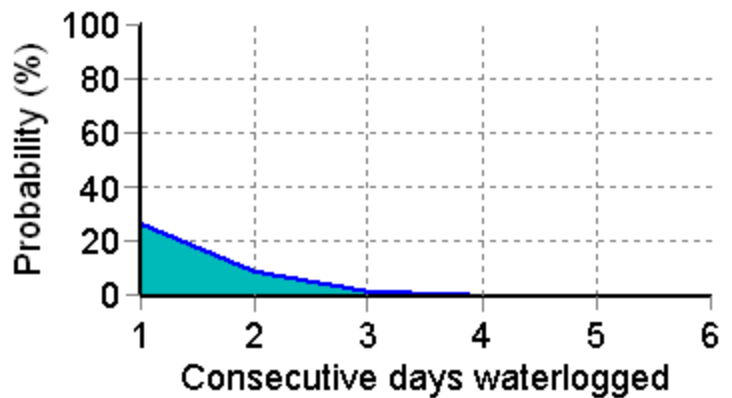
Nitrogen Budget

Initial N status @ 01-Apr	200 kg/ha
N mineralisation since 01-Apr	7 kg/ha
N tie up since 01-Apr	25 kg/ha
N applications	21-Apr: 6 kg/ha
	2-Jul: 46 kg/ha
	16-Aug: 46 kg/ha
	: kg/ha
	: kg/ha
Total N in plant	225 kg/ha
De-nitrification since 01-Apr	1 kg/ha
Leaching	0 kg/ha

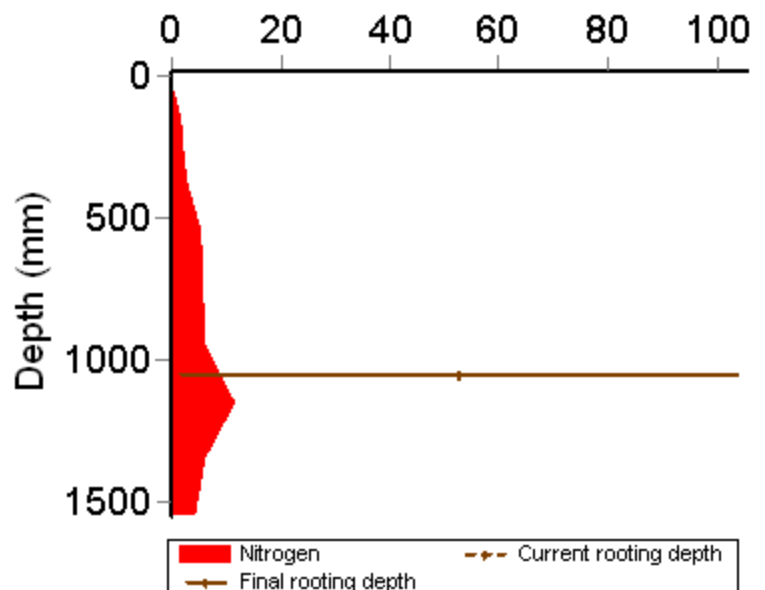
Current N status: 48 kg/ha

Median N mineralisation to maturity = 2 kg/ha
 Median N tie up to maturity = 0 kg/ha

Probability of Future Waterlogging Events

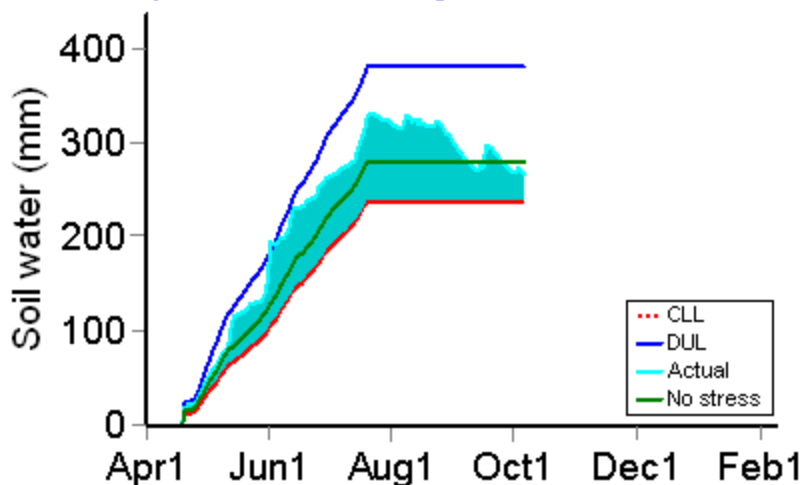


Current distribution of soil nitrogen (kg/ha)

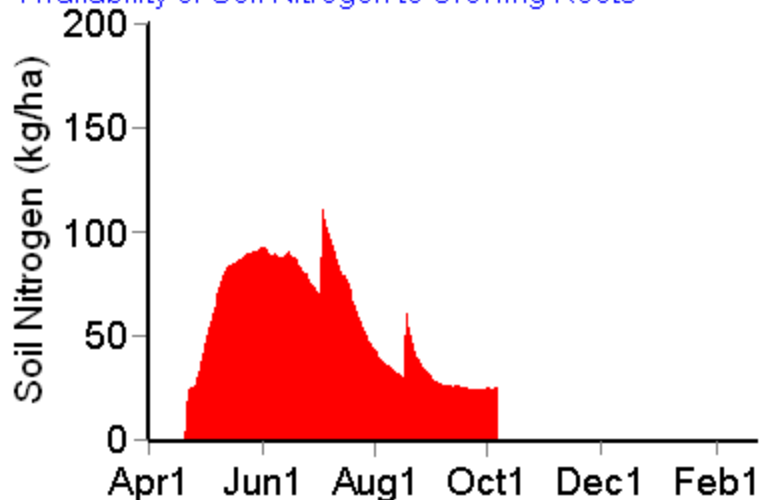


Current Crop Available N = 25 kg/ha
 Total Soil N = 48 kg/ha

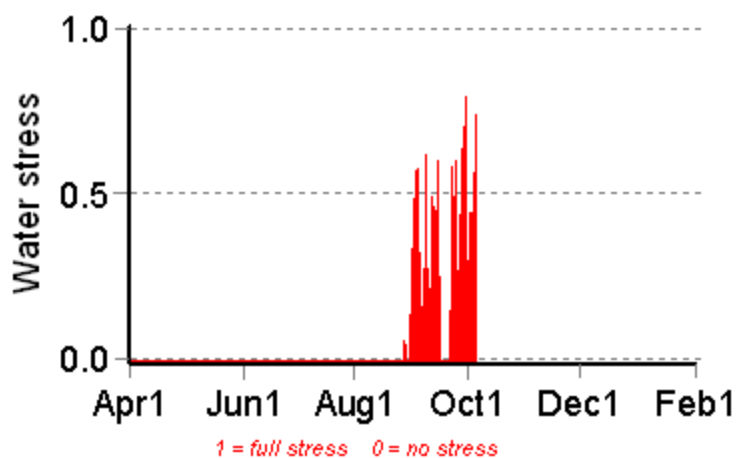
Availability of Water to Growing Roots



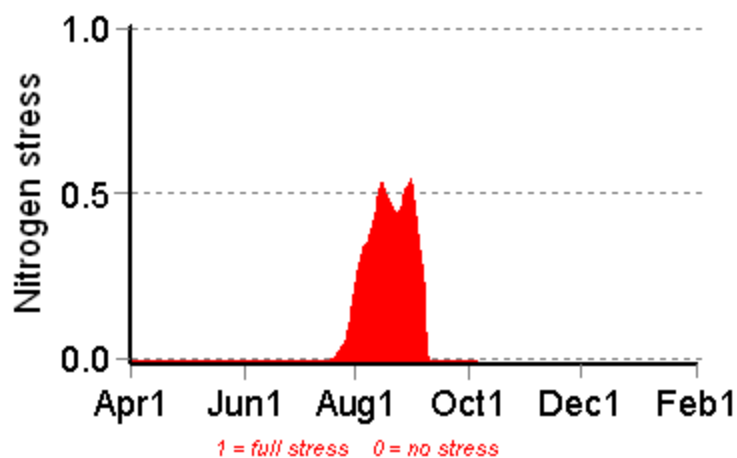
Availability of Soil Nitrogen to Growing Roots



Water Stress



Nitrogen Stress



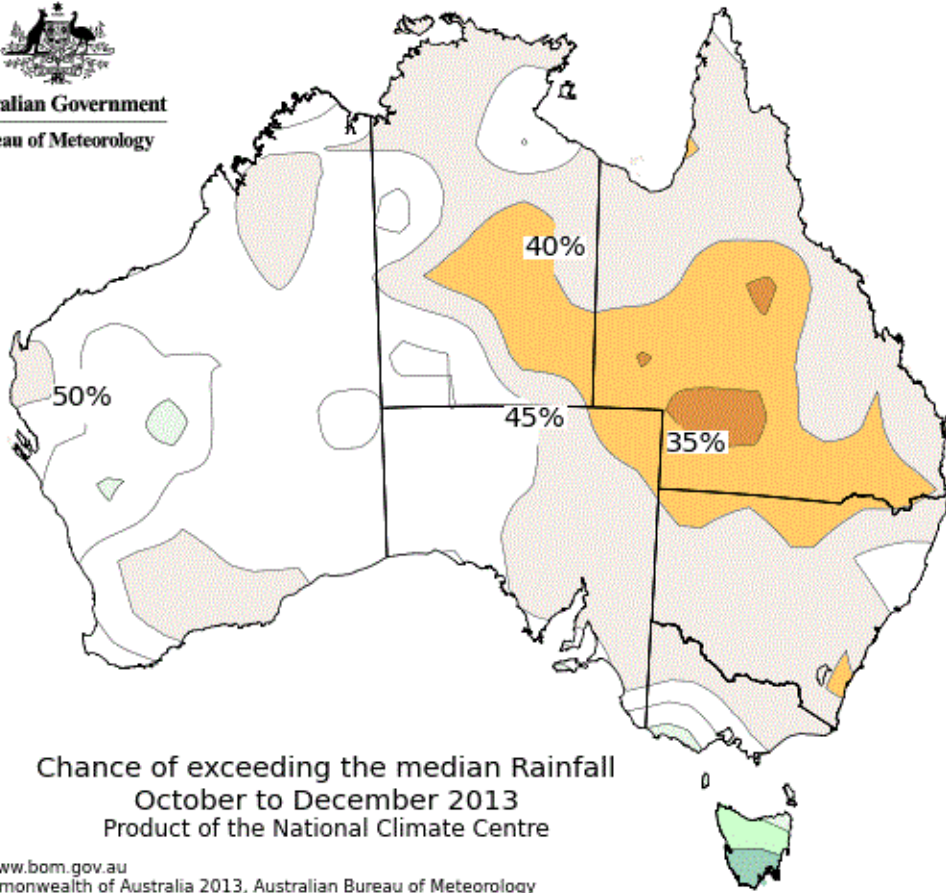
Brief periods of mild to moderate stress do not necessarily lead to reduced yield. To see the likely impacts of additional nitrogen fertiliser rates use the Nitrogen and Nitrogen Profit reports.

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

Date	Growth Stage	Evap. (mm)	Water use (mm)	N use (kg/ha)	Water available to roots above stress threshold (mm)	Water available to roots above CLL (mm)	N available to roots (kg/ha)	Mineralisation (kg/ha)	N tie up (kg/ha)
8-Oct	71.0	0.7	1.3	0.1	-17.9	25.2	25.1	0.0	0.0
9-Oct	71.8	0.7	1.2	0.1	-19.2	23.8	25.1	0.0	0.0
10-Oct	72.2	0.7	1.2	0.1	-19.5	23.5	25.0	0.0	0.0
11-Oct	72.6	0.7	1.1	0.1	-19.8	23.2	24.9	0.0	0.0
12-Oct	73.1	0.6	1.1	0.1	-20.1	22.9	24.8	0.0	0.0
13-Oct	73.5	0.7	1.2	0.1	-20.3	22.7	24.8	0.0	0.0
14-Oct	73.9	0.7	1.1	0.1	-21.0	22.0	24.7	0.0	0.0
15-Oct	74.4	0.7	1.0	0.1	-21.2	21.9	24.6	0.0	0.0
16-Oct	74.8	0.7	1.0	0.1	-21.3	21.8	24.6	0.0	0.0
17-Oct	75.3	0.7	1.0	0.1	-22.0	21.1	24.5	0.0	0.0

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



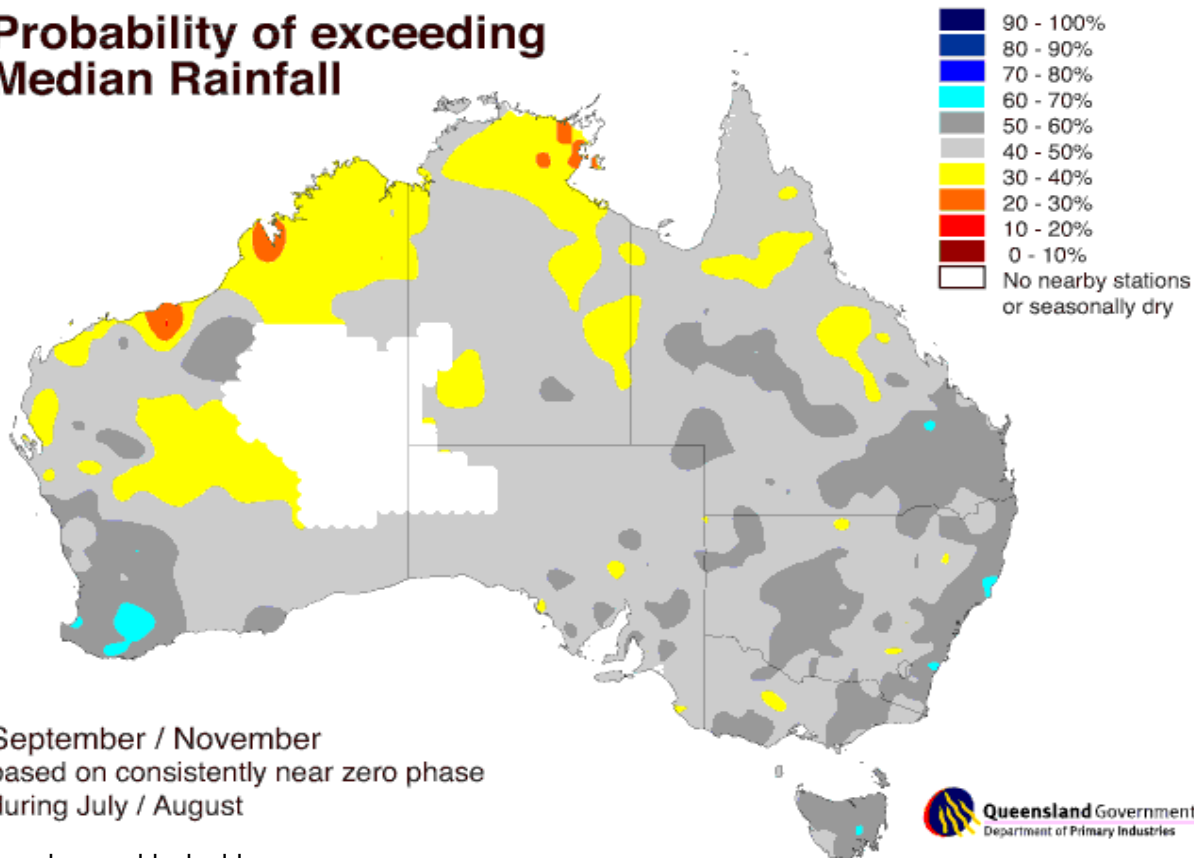
Model Run: 16/09/2013
Issued: 17/09/2013

National Seasonal Rainfall Outlook: probabilities October to December 2013

Issued by the bureau of Meteorology 17th September 2013

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



September / November
based on consistently near zero phase
during July / August



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

SOI Phase and analogue years

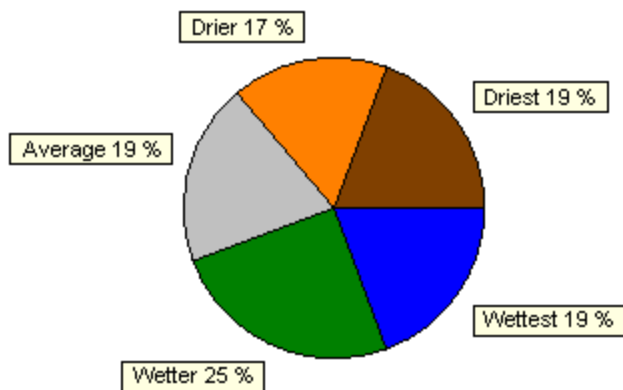
The SOI is currently in the Zero phase. The 31 day mean SOI for August was -0.2. In July it was 7.4.

The years in history with the same SOI phase:

1895, 1897, 1898, 1904, 1905, 1907, 1912, 1913, 1915, 1918, 1919, 1927, 1929, 1930, 1931, 1933, 1937, 1944, 1948, 1952, 1959, 1961, 1963, 1966, 1968, 1978, 1980, 1984, 1985, 1986, 1992, 1995, 1999, 2003, 2004, 2007

How much rainfall can I expect?

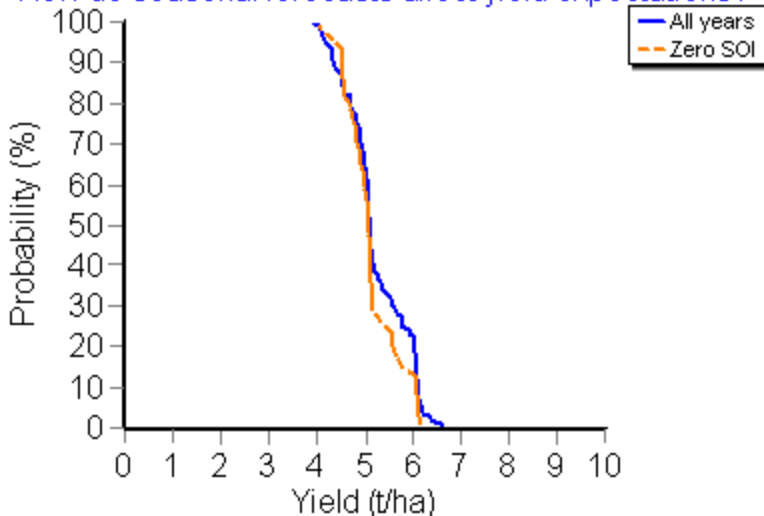
The SOI seasonal forecast for the next 3 months.



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 65 mm
Drier	65 to 93 mm
Average	93 to 123 mm
Wetter	123 to 174 mm
Wettest	174 to 359 mm

How do seasonal forecasts affect yield expectations?



The 31 day mean SOI for August was -0.2. In July it was 7.4.

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=0.427)