



# Crop Report

20-Jul-2016

Toni Nugent: Graham Centre Field Site

Crop: Wheat

Cultivar: Gregory

Sowing details: 155 plants/m<sup>2</sup> on 14-May

Expected maturity date: 21-Nov

### Paddock Details

Initial conditions date: 2-Mar

Soil: Red Kandosol (No498-Generic)  
1500 mm max rooting depth

Stubble: 0 kg/ha of Wheat  
No till

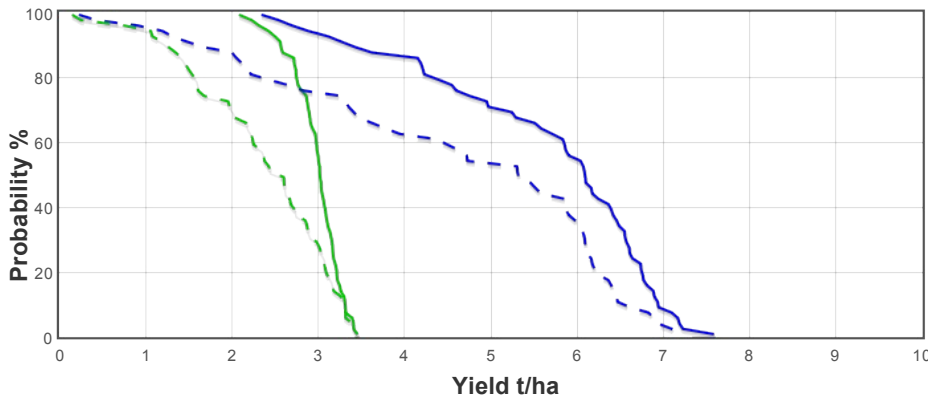
### Weather Details

Rainfall since 2-Mar: 289.6mm

Rainfall records used: Wagga Wagga AMO Weather station

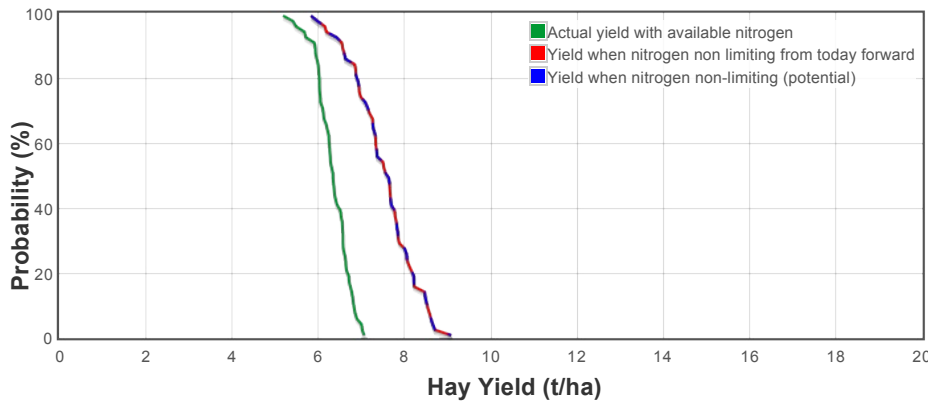
## Grain Yield Outcome

- Nitrogen limited Yield
- Water limited Yield
- Nitrogen limited Yield with Frost and heat Effects
- Water limited Yield with Frost and heat Effects



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.

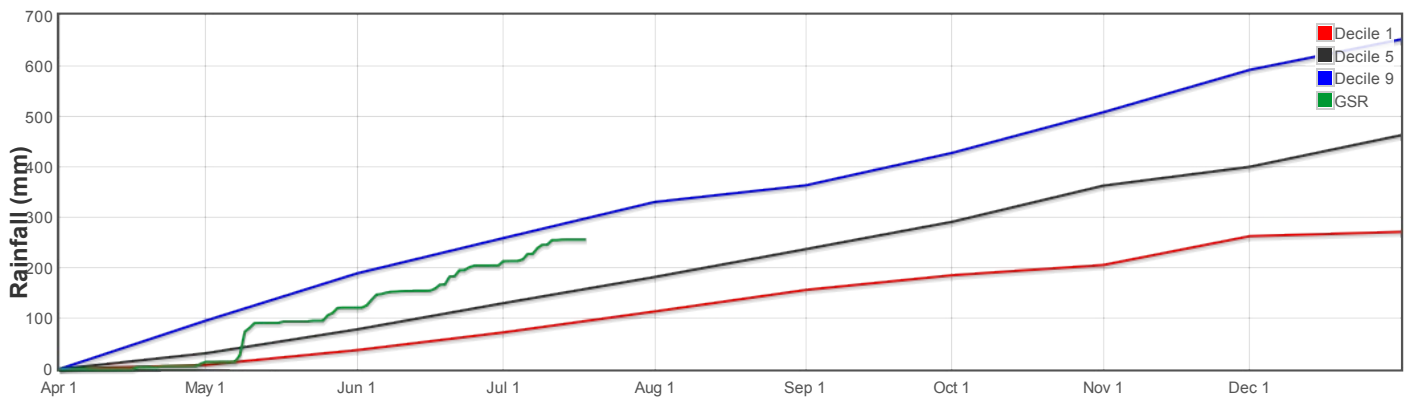
## Hay Yield Outcome



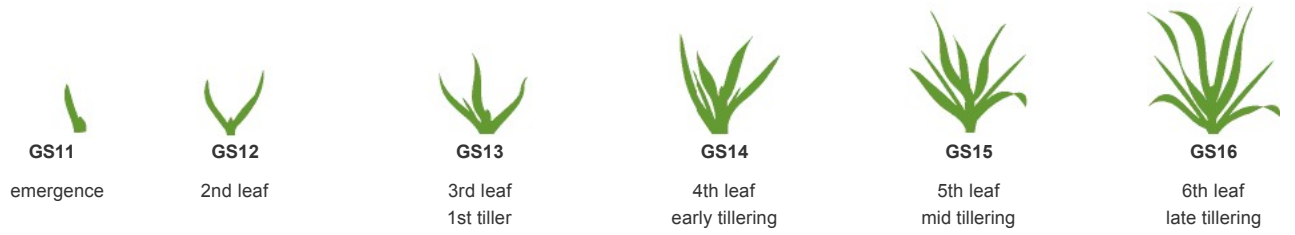
This graph shows the probability of exceeding a range of hay yield outcomes this season. It takes into account the same factors as the grain yield graph above. When above ground dry matter is below 2t/ha, hay yield is assumed to be 70% of dry matter, with a moisture content of 13%. When dry matter is 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: 327.8kg/ha

## The Season So Far - Growing Season Rainfall Deciles



# Simulated and Predicted Crop Growth Stage



Predicted



Earliest	24-May	12-Jun	23-Jun	6-Jul	16-Jul	25-Jul
Median	24-May	12-Jun	23-Jun	6-Jul	16-Jul	27-Jul
Latest	24-May	12-Jun	23-Jun	6-Jul	16-Jul	29-Jul



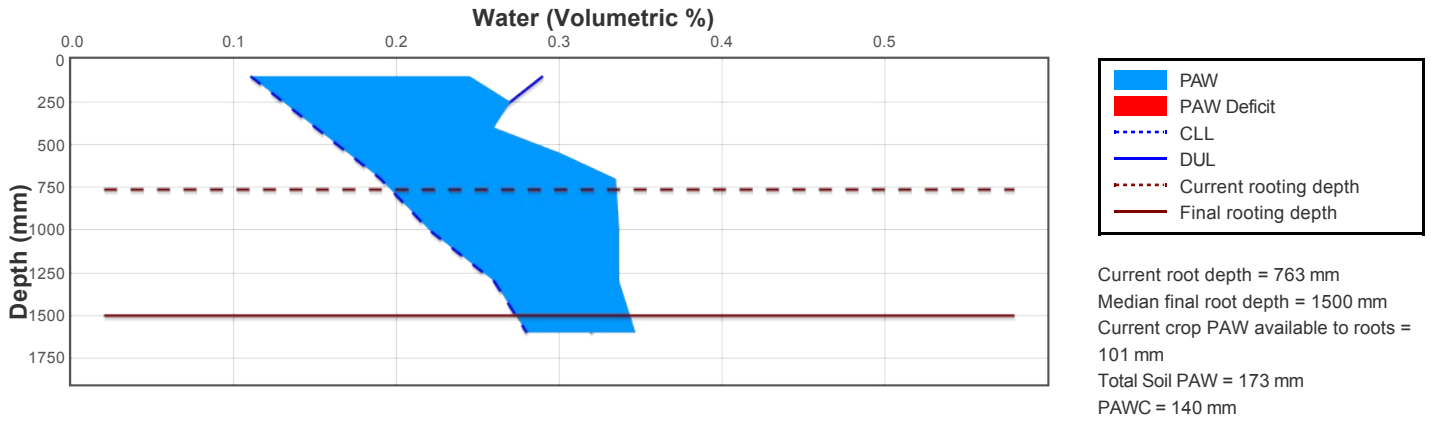
Predicted

Earliest	10-Aug	13-Aug	19-Aug	1-Sep	6-Sep	12-Sep	24-Sep	3-Oct	19-Oct
Median	16-Aug	19-Aug	24-Aug	6-Sep	11-Sep	20-Sep	1-Oct	10-Oct	28-Oct
Latest	20-Aug	23-Aug	29-Aug	12-Sep	18-Sep	27-Sep	8-Oct	19-Oct	9-Nov

## Probability and Incidence of Frost and Heat Shock

Frost damage during flowering				Heat damage during grain fill			
Severity	Probability		This Season	Severity	Probability		This Season
mild 2 to 0°C during flowering		70%	0	mild 32 to 34°C		30%	0
moderate 0 to -2°C during flowering/early grain fill		16%	0	moderate 34 to 36°C		21%	0
severe Less than -2°C during flowering/grain fill		1%	0	severe Above 36°C		1%	0

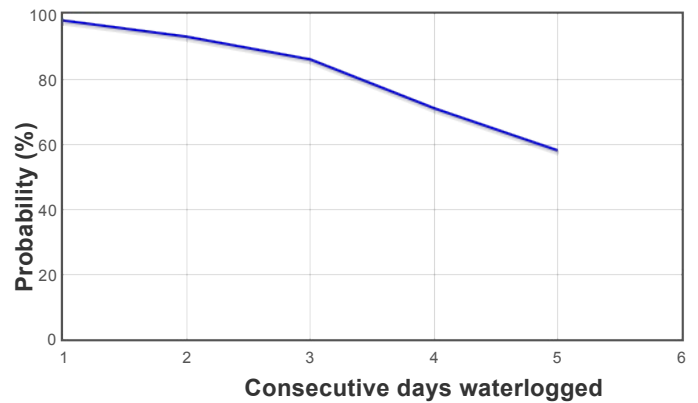
## Current Distribution of PAW



## Water Budget

Initial PAW status @ 2-Mar	80 mm
Rainfall since 2-Mar	289.6 mm
Irrigations	
Evaporation since 2-Mar	102 mm
Transpiration since 2-Mar	3 mm
Deep drainage since 2-Mar	59 mm
Run-off since 2-Mar	31 mm
<b>Current PAW status:</b>	<b>173 mm</b>

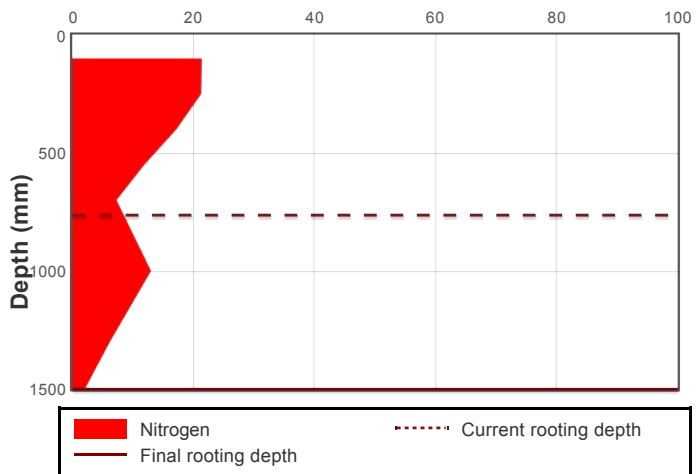
## Probability of Future Waterlogging Events



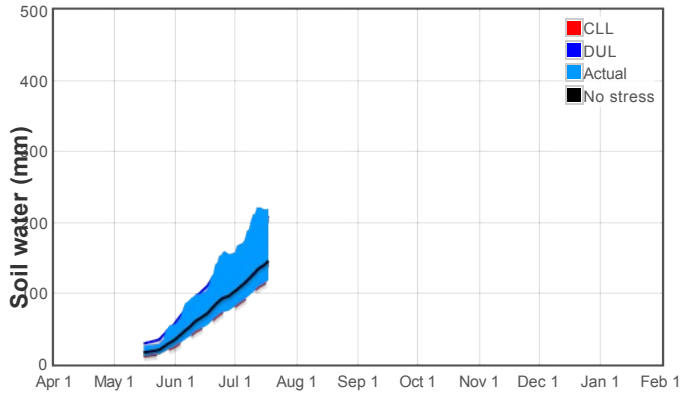
## Nitrogen Budget

Initial N status @ 2-Mar	89 kg/ha
N mineralisation since 2-Mar	6 kg/ha
N tie up since 2-Mar	2 kg/ha
N applications	
14-May : 12 kg/ha	
Total N in plant	17 kg/ha
De-nitrification since 2-Mar	11 kg/ha
Leaching	0 kg/ha
<b>Current N status:</b>	<b>77 kg/ha</b>
Median N mineralisation to maturity = 0.0565 kg/ha	
Median N tie up to maturity = 0 kg/ha	

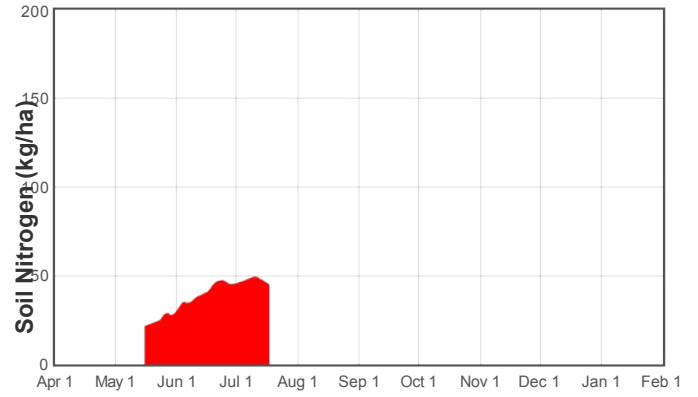
## Current distribution of soil nitrogen (kg/ha)



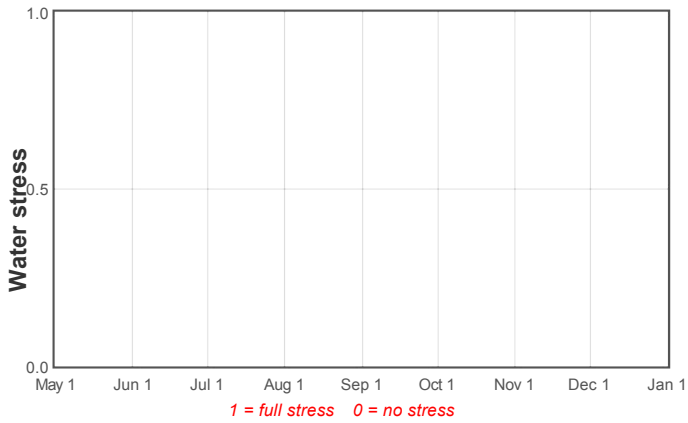
## Availability of Water to Growing Roots



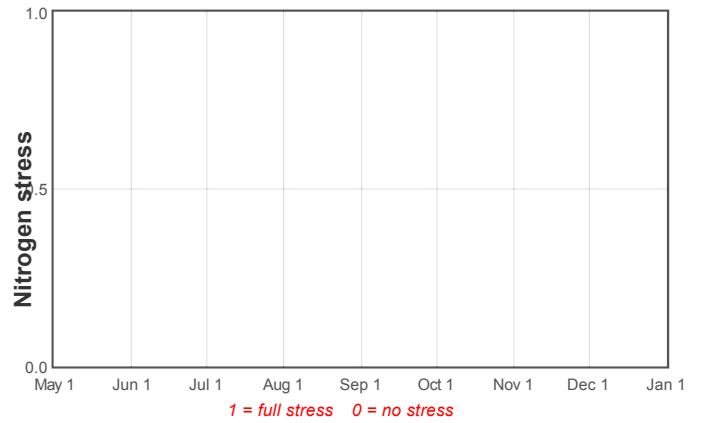
## Availability of Soil Nitrogen to Growing Roots



## Water Stress



## Nitrogen Stress



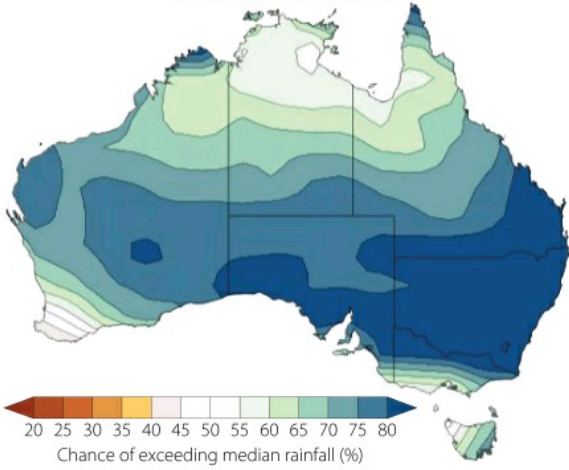
Brief periods of mild to moderate stress do not necessarily lead to reduced yield. To see the likely impacts of additional nitrogen fertiliser rates use the Nitrogen and Nitrogen Profit reports.

## Median projected crop performance and requirements for the next 10 days assuming no rain and no added fertiliser

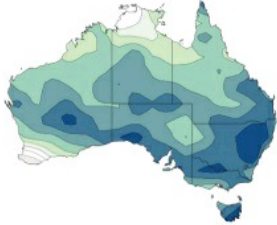
Date	Growth Stage	Evap. (mm)	Water use (mm)	N use (kg/ha)	Water avail. to roots above stress threshold (mm)	Water avail. to roots above CLL (mm)	N avail. to roots (kg/ha)	Mineralisation (kg/ha)	N tie up (kg/ha)
20-Jul	15.5	0.4	0.2	0.9	69.9	97.8	43.6	0.0	0.0
21-Jul	15.6	0.4	0.2	1.0	68.8	96.9	43.0	0.0	0.0
22-Jul	15.7	0.4	0.2	1.0	68.1	96.5	42.6	0.0	0.0
23-Jul	15.7	0.3	0.3	1.2	67.4	96.0	42.1	0.0	0.0
24-Jul	15.8	0.3	0.2	1.2	66.8	95.7	41.6	0.1	0.0
25-Jul	15.9	0.3	0.3	1.3	66.3	95.5	40.8	0.1	0.0
26-Jul	16.0	0.3	0.2	1.2	66.0	95.4	40.3	0.1	0.0
27-Jul	16.0	0.3	0.2	1.3	65.6	95.2	39.4	0.1	0.0
28-Jul	16.0	0.3	0.3	1.3	65.3	95.3	38.8	0.1	0.0
29-Jul	16.0	0.3	0.2	1.4	65.0	95.2	38.2	0.1	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.

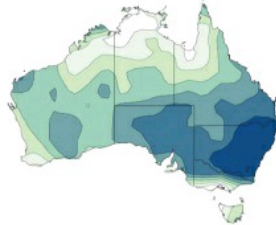
### 3 MONTH CLIMATE OUTLOOK FROM JULY TO SEPTEMBER



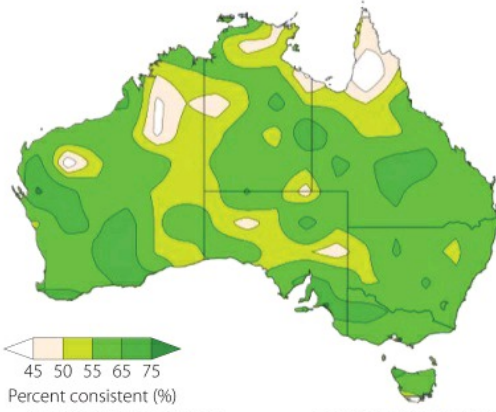
### JULY CLIMATE OUTLOOK



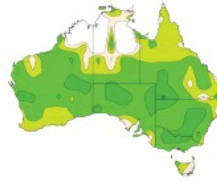
### AUGUST CLIMATE OUTLOOK



### PAST ACCURACY FROM JULY TO SEPTEMBER



### PAST ACCURACY FOR JULY



### PAST ACCURACY FOR AUGUST

