

SEASONAL CROP OUTLOOK

Wheat – September 2015

SUMMARY

The current El Niño, which is on track to develop even further towards the end of 2015, had variable impact on the likely winter crop production across the state's cropping region with average to above average rainfall in many areas during August. Overall, current soil water conditions and the seasonal rainfall outlook indicate that chances now remain high for an overall average wheat crop for the 2015 winter season for Queensland. More specifically, while most of CQ has predicted crop yield outcomes ranked in the bottom tercile (33%) of all years, most parts of South Western QLD have yield outcomes close to the top 25% of all years (60th to 80th percentile). This regional variation is also reflected in the deviation of final predicted yield from the long-term median. Note that almost all atmospheric and ocean indicators of ENSO are currently indicating an El Niño event continuing to strengthen towards the spring/summer of 2015. This is likely to increase the chances of a dry finish to the winter crop season.

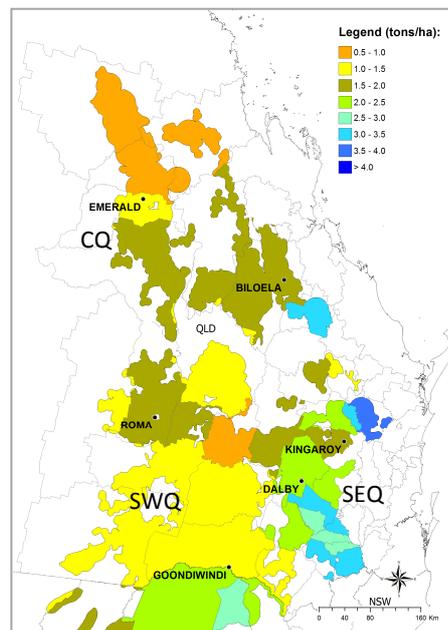
GENERAL CONDITIONS

Average to above average rainfall conditions were recorded during August for most of the south western cropping areas of Queensland. This further improved the overall crop outlook across those parts of the state's cropping region. The exception was for most parts of Central QLD (CQ), which received below average rainfall during this period. Widespread above average rainfall is now needed to improve the current crop prospects across mainly CQ, while average rainfall will be sufficient to secure the good crop prospects in the southern parts of QLD and NNSW. The recent pattern of the SOI remains "consistently negative" for the July-August period, and indicates a highly reduced chance of above average rainfall in most parts of the QLD cropping region, over the next 3-months (www.longpaddock.qld.gov.au). This is likely to result in a dry finish to the cropping season. The Bureau's ENSO Tracker remains in an El Niño event (since 12 May, www.bom.gov.au), which is likely to strengthen further during late spring/summer of 2015.

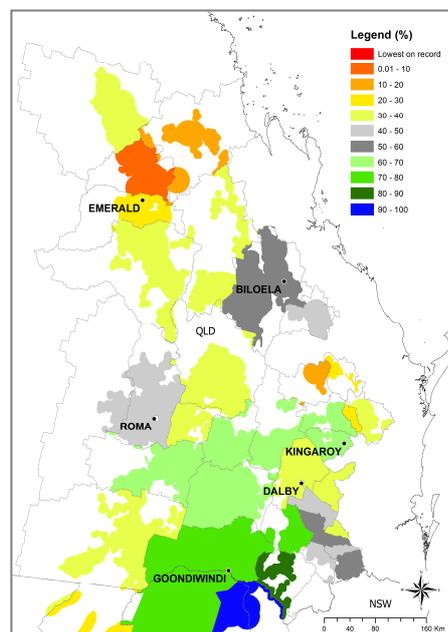
OUTLOOK

This regional wheat crop outlook is based on the assumption of cropping after summer fallow. The benchmark for this outlook is the simulated long-term median shire wheat yield within the broad cropping region of Queensland (Map 1). The median yield is based on predicted performance over the past 115-years using an agro-climatic model for wheat with long-term rainfall records (see descriptive note for more details).

The percentile and percentage departure of the forecast median for this season from the long-term median shire wheat yield are given in Maps 2 & 3. Any areas coloured in light grey, yellow and red are expected to have crops below to very much below the long-term median yield expectation, whereas areas coloured dark grey, green and blue are expected to be above to very much above the long-term shire wheat yield median expectation.



Map 1: Long-term median simulated shire yield (112 years)



Map 2: Forecast median shire yield ranked relative to all years (%)

Maps 2 & 3 are derived by considering conditions up to the end of August this year and projecting forward based on rainfall conditions in years from the historical record with SOI phase similar to this year - “consistently negative” in July/August. The calculation of benchmark yields and outlook chances do not take into account effects of poor crop nutrition or damage due to pests, diseases, frosts or extreme events.

Forecast yield outcomes vary geographically with almost all of Central QLD (CQ) cropping region falling below the 30th percentile of all years, except for the Dawson-Callide area, which is ranked slightly better than climatology (60th - 70th percentile) relative to all years (Map 2).

Percentage departure of the forecast median yield from the long-term expectation is shown in Map 3. The impact pattern is very similar to that of the predicted percentile (Map 2). Note that this forecast does not take into account those areas that could not be planted due to a lack of sowing rainfall. It should be noted that at this stage, the range of likely yield outcomes for the 2015 season (see State Outlook section) has narrowed considerably, with the growing season reaching flowering and beyond in most areas the projected forecast.

POOR CROP CHANCE

At present, some areas north of Emerald in CQ are showing a highly increased chance (>30%) of predicted shire yield being lower than the worst 10% yield level of all years (data not shown).

It should be noted that these values are calculated as broad indicators for shire scale. They do not apply to farm level.

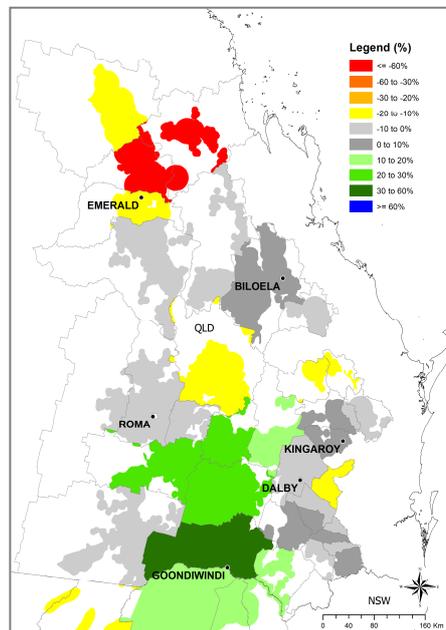
STATE OUTLOOK

The current state wheat outlook shows a forecast median yield at the end of August this year of 1.55 t/ha (57th percentile), which is similar to the long-term median of 1.45 t/ha (Graph A). There is however, a 10% chance that the state yield could be lower than 1.50 t/ha or higher than 1.67 t/ha. At present, the forecast indicates a close to average-yielding crop for the state.

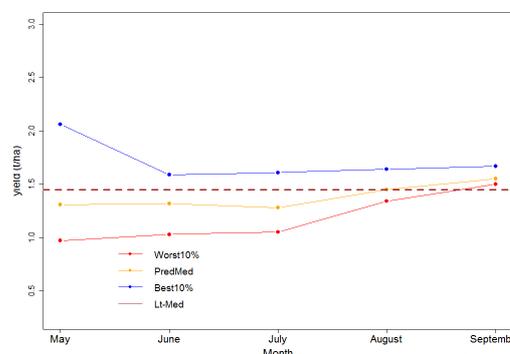
At regional level, Southwest Qld (SWQ), Southeast Qld (SEQ) and Central Qld (CQ) (see Map 1), the forecast yield (t/ha) ranges are as follows:

Region	Median (50%)	DFY (%)	Percentile (%)	Lt median
CQ	1.06	-20	28	1.32
SEQ	2.39	1	51	2.36
SWQ	1.52	19	67	1.28

Simulated predicted yield for CQ is 1.06 (t/ha), which is 20% below the long-term median, while SEQ and SWQ have yield outcomes of 2.39 and 1.57 t/ha, which are close to and slightly above the long-term median expectation, respectively. The SOI phase of “consistently negative” at end of August indicates reduced chances of above average rainfall over the next 3-months for most of QLD’s cropping region. This is likely to result in a dry finish to the season which could improve quality of grain harvested for those regions that had a good start to the season. The range of possible outcomes have narrowed further for all regions as crop maturity is approached. The current El Niño, which is on track to develop even further towards the end of 2015, has had variable impact on likely winter crop production across the state’s cropping region.



Map 3: Percentage departure of the forecast shire median yield from the long-term shire median wheat yield.



Graph A: State level yield forecast trajectories (10th, 50th and 90th percentiles).

DESCRIPTIVE NOTE:

The seasonal wheat outlook is based on the integration of (i) a simple agro-climatic wheat stress index model (Oz-Wheat) (i.e. Bare fallow routine - Ritchie, 1972; Wheat stress index model adapted from - Fitzpatrick and Nix, 1969; Nix and Fitzpatrick, 1969), which is sensitive to water deficit or excess during the growing season, (ii) actual climate data up to the forecasting date and (iii) projected climate data after that date. These projected data are drawn from historical analogue years based on similarity to the prevailing phase of the Southern Oscillation Index (SOI) (Stone et al., 1996). The Oz-Wheat model is run from 1 October the year before sowing in order to account for the influence of the summer fallow on starting soil moisture conditions. The model input parameters for each shire (i.e. potential available water content, planting rain & stress index period) have been selected based on the best fit when calibrated against actual shire wheat yields from the Australian Bureau of Statistics (ABS) for the period 1975 - 1999. Spatial correlation when predicting the shire wheat yields for the 2000 season, which was independent of the training period, was 0.8 across all main wheat producing shires in Australia (245 in total). (Potgieter et al., 2006)