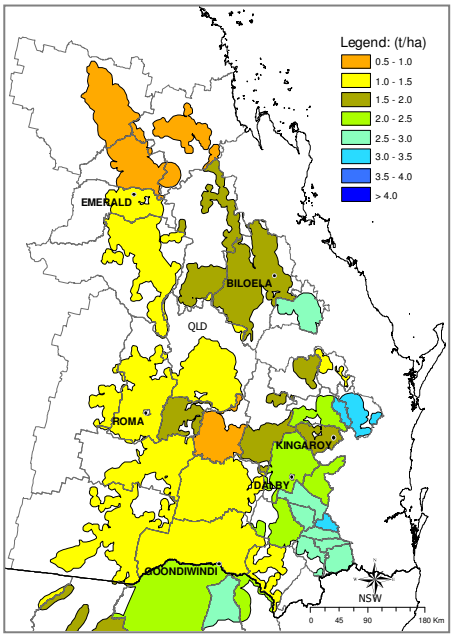
SEASONAL CROP OUTLOOK

Wheat – September 2014

SUMMARY

Current soil water conditions and the seasonal rainfall outlook (incorporating the Southern Oscillation Index) indicate that chances remain high for a below to very-much below median wheat crop for the 2014 winter season across most of Queensland. More specifically, allmost all regions are having predicted likley crop yield outcomes falling in the bottom 30% of all years. There is however some variation in the deviation of final predicted yield from the long-term median with some regions in CQ and SEQ having close to, or slightly above, the long-term shire yield expectations. Likely areas planted to winter crops are close to 29% and 23% of the total potential cropping land area available for QLD and NSW (North of Dubbo), respectively and further reflects the poor start to the winter crop season. Wide spread above average rainfall is now needed to improve the current shire wheat outlook in most of the state's cropping area. Although the chances of a fully developed El Niño has eased slightly, chances remain high (~50%) for the development of an El Niño event during the southern hemisphere early Summer of 2014/15.



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

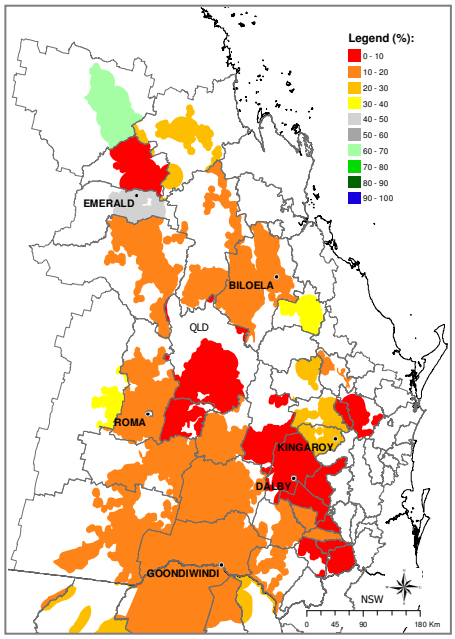
GENERAL CONDITIONS

The average to above average rainfall conditions experienced during August for most of the cropping areas of Queensland produced a brief respite in the protracted warmer and drier conditions that were observered during the previous 3-months. This further coincided with slightly above average temperatures and resulted in increased evapotranspiration and ensuing high crop water stress levels during that period across most of the state's cropping region. Widespread above average rainfall is now needed, especially for late planted winter crops that failed to establish good secondary roots, to improve the current crop prospects across the state. The recent pattern of the SOI ("rapidly falling" during July/August) indicates near average chances (50:50) of receiving above average rainfall for most of the wheat-growing regions over the next 3-months (www.longpaddock.qld.gov.au).

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 112-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 2: Forecast median shire yield ranked relative to all years (%)

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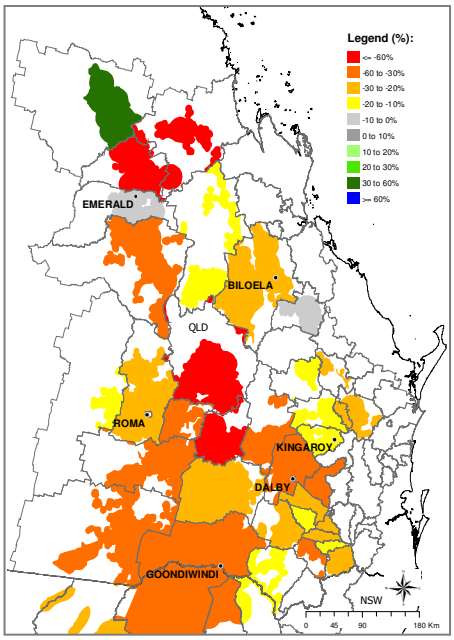
Maps 2 & 3 are derived by considering conditions up to the end of August this year and projecting forward based on rainfall conditions in years from the historical record with SOI phase similar to this year - "rapidly falling" in July/August. The calculation of benchmark yields and outlook chances do 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 the entire QLD cropping region falling below the 30th percentile of all years. The only exception are some parts of CQ which are 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 depicted in Map 2. Almost all cropping areas of QLD are having a forecast median very much below (< 30%) the long-term expectation. 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 2014 season (see State Outlook section) has narrowed considerably, with the growing season reaching flowering and beyond in most areas the projected forecast.



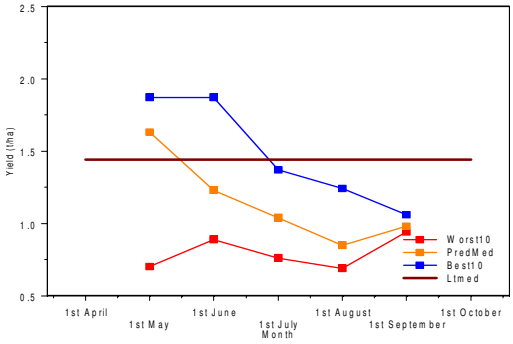
Map 3: Percentage departure of the forecast shire median yield from the long-term shire median wheat yield.

Poor Crop Chance

At present, almost all areas of the SEQ cropping region are showing a highly increased chance (>30%) of predicted shire yield being lower than the worst 10% yield level of all years while the remainder of the state's cropping region have improved to chances close to climatology (i.e. 10%) of falling below the worst 10% 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 2014 of 0.98 t/ha, which is well below the long-term median of 1.44 t/ha (Graph A). There is however, a 10% chance that the state yield could be lower than 0.94 t/ha or higher than 1.06 t/ha. At present the forecast indicates a high chance of below average-yielding crop for the state with almost the entire forecast distribution falling below the long-term median at state level.



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

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	Worst 10%	Median (50%)	Best 10%	Lt median
SWQ	0.69	0.76	0.91	1.27
SEQ	1.67	1.73	1.88	2.32
CQ	1.01	1.02	1.04	1.32

Forecast median wheat yields for all regions, i.e. SEQ (1.73 t/ha), CQ (1.02 t/ha) and SWQ (0.76 t/ha), although slightly improved from the previous month, remain well below the long-term median expectation. The SOI phase of "rapidly falling" at end of August indicates chances close to climatology (i.e. 50:50) of above average rainfall over the next 3-months for most of QLD's cropping region. The range of possible outcomes have narrowed considerably for all regions as crop maturity is approached. While the Bureau's ENSO tracker has gone into an El Niño "WATCH" status, chances remains significant at double the normal likelihood (~50%) for a late developing El Niño event (www.bom.gov.au).

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)