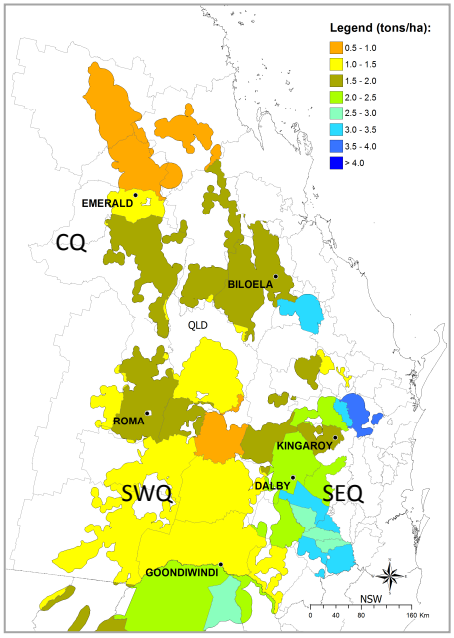
SEASONAL CROP OUTLOOK

Wheat – October 2015 (Final)

SUMMARY

The winter crop season is nearing an end. Depsite the lingering El Niño, prospects continue to favour an average yielding crop close to the long-term median expectation for Queensland as a whole. However, as expected, some variation exists across the region. Specifically, CQ has likely crop yield outcomes falling in the bottom 30% of all years and the deviation of final predicted yield is 21% below the long-term median. In contrast, the exceptions for SWQ and SEQ fall within the 60th and 51st percentiles, realtive to all years. This is 12% and 1% above the long-term median yield for SWQ and SEQ, respectively. Harvesting has started for early planted crops in most regions and the current rainfall outlook indicates an increased chance of a dry finish to the winter crop season.



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

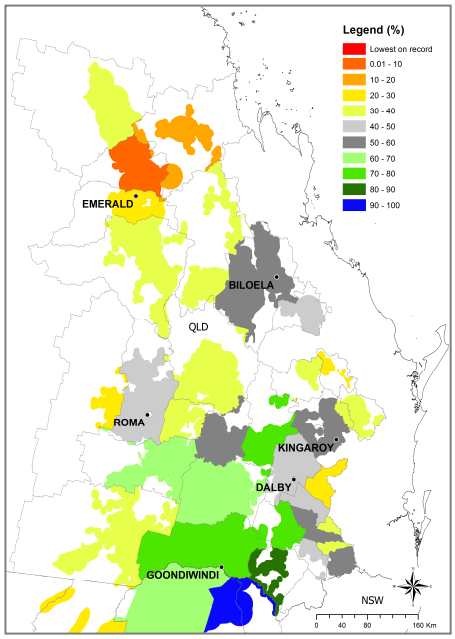
GENERAL CONDITIONS

Rainfall recorded during September was average to below average for most of the state's main cropping areas. This secured the overall crop outlook across the state. The exception was for most parts of Central QLD (CQ), which received below average rainfall during this period. Most crops in CQ and SWQ have reached maturity and harvesting has commenced in most areas. Although some late plantings occurred in SEQ, crop growth in most areas of SEQ is at the grain-filling stages and rainfall during this stage can still be important in determining the final yield outcome. However, as much of the season has now passed, rainfall during October has less overall effect. The recent pattern of the SOI remains "consistently negative" for the August/September period, and indicates slightly reduced (<40%) 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 likley to peak late 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 2: Forecast median shire yield ranked relative to all years (%)

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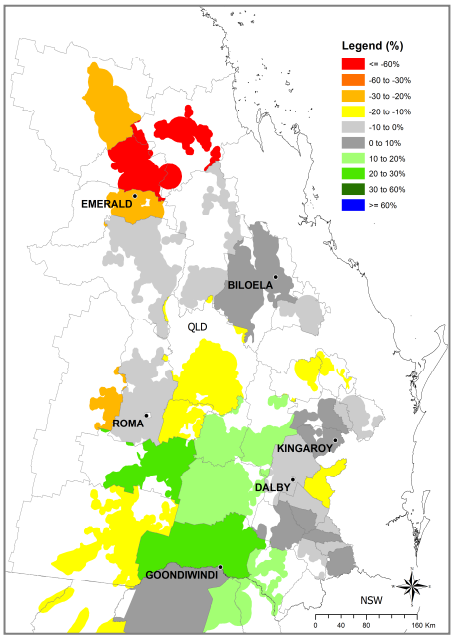
Maps 2 & 3 are derived by considering conditions up to the end of September this year and projecting forward based on rainfall conditions in years from the historical record with SOI phase similar to this year - "consistently negative" in August/September. The calculation of benchmark yields and outlook 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 within the lower 30th percentile relative to all years. Only the Dawson-Callide area of CQ is ranked slightly better than climatology (50th - 60th percentile) relative to all years (Map 2). Most of southern QLD cropping yield outcomes are ranked close to, or above, the 60th percentile relative to all years.

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 (Map 2). The worst effected regions are north of Emerald having a forecast median very much below (< 30%) the long-term expectation. The remainder of CQ and SEQ have predicted yield outcomes close to average (-10% to 10%), while most of South Western QLD has above average (>20%) yield outcomes. 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 now converged, with the growing season reaching maturity in most areas of QLD.



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

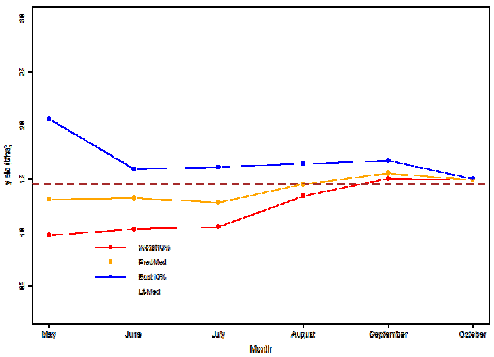
Poor Crop Chance

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 1.49 t/ha (53rd percentile), which is similar to the long-term median of 1.45 t/ha (Graph A). At present, the forecast indicates a close to average-yielding crop for the state.



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 (DFY% - Percent deviation of forecast median yield from long-term median):

Region	Median (50%)	DFY (%)	Percentile (%)	Lt median
CQ	1.04	-21	25th	1.32
SEQ	2.38	1	51st	2.36
SWQ	1.43	12	60th	1.28

Simulated predicted yield for CQ is 1.04 (t/ha), which is 21% below the long-term median, while SEQ and SWQ have yield outcomes of 2.38 and 1.43 t/ha, which are close to and slightly above the long-term median expectation, respectively. The SOI phase of "consistently negative" at end of September indicates slightly 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 due to peak towards the end of 2015, has had variable impact on likely winter crop prodcution across the state's cropping region.

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)

Working together with the Queensland Government