National wheat yield forecast: June 2017

At this early stage of the winter cropping season, the national wheat yield outlook is for an average yielding crop. However, large variation in likely yield outcomes exists between states. Specifically, QLD & NSW have predicted median yield outcomes close to the long-term average, while VIC and SA are having predicted median yield outcomes above to very much above the long-term median yield, respectively. The exception is for WA, which are having a predicted median yield outcome below the long-term expected yield for that region. Note: large variation exist between shires within each state.
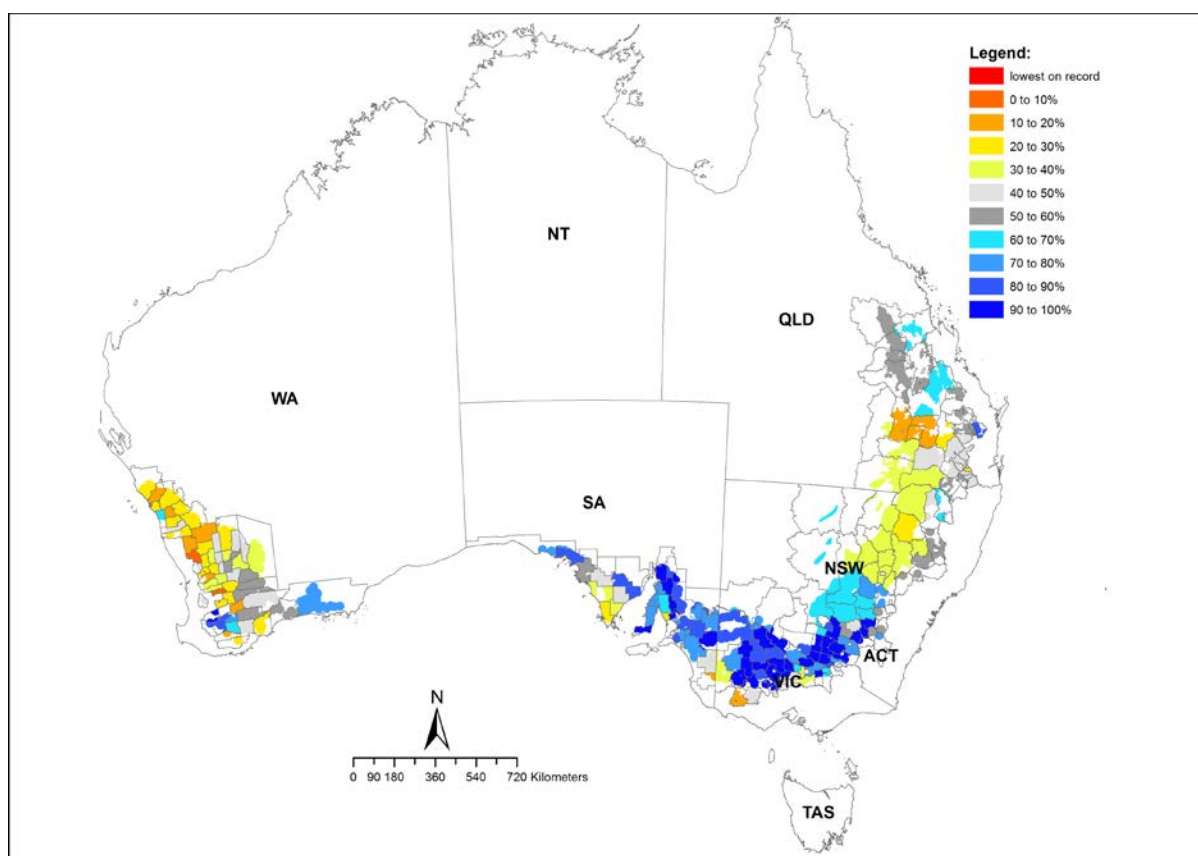

Figure 1: Forecast median shire yield ranked relative to all years (%), given the SOI phase was "rapidly rising" during April-May. Any areas coloured in light green to dark red are expected to have crops below to very much below the long-term median yield expectation, whereas areas coloured from cyan to dark blue are expected to be above to very much above the long-term shire wheat yield median expectation. Grey shaded areas are showing predicted shire yield outcomes similar to climatology.

Descriptive note:

This forecast was derived from integrating starting soil water conditions and the seasonal rainfall outlook based on the southern oscillation index at the start of June. The OZ-Wheat MII model, a regional scale crop simulation model, was used for this analysis.

The seasonal wheat outlook is based on the integration of (i) a simple agro-climatic wheat stress index model (Oz-Wheat MII) (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 – 2000, 2005 & 2010 (MII). Cross validated spatial correlation when predicting the shire wheat yields for the 2000 season (MI) was 0.8 across all main wheat producing shires in Australia (Potgieter et. al., 2006, MI). For the updated MII 75% of the 237 shire have R2 > 0.60.