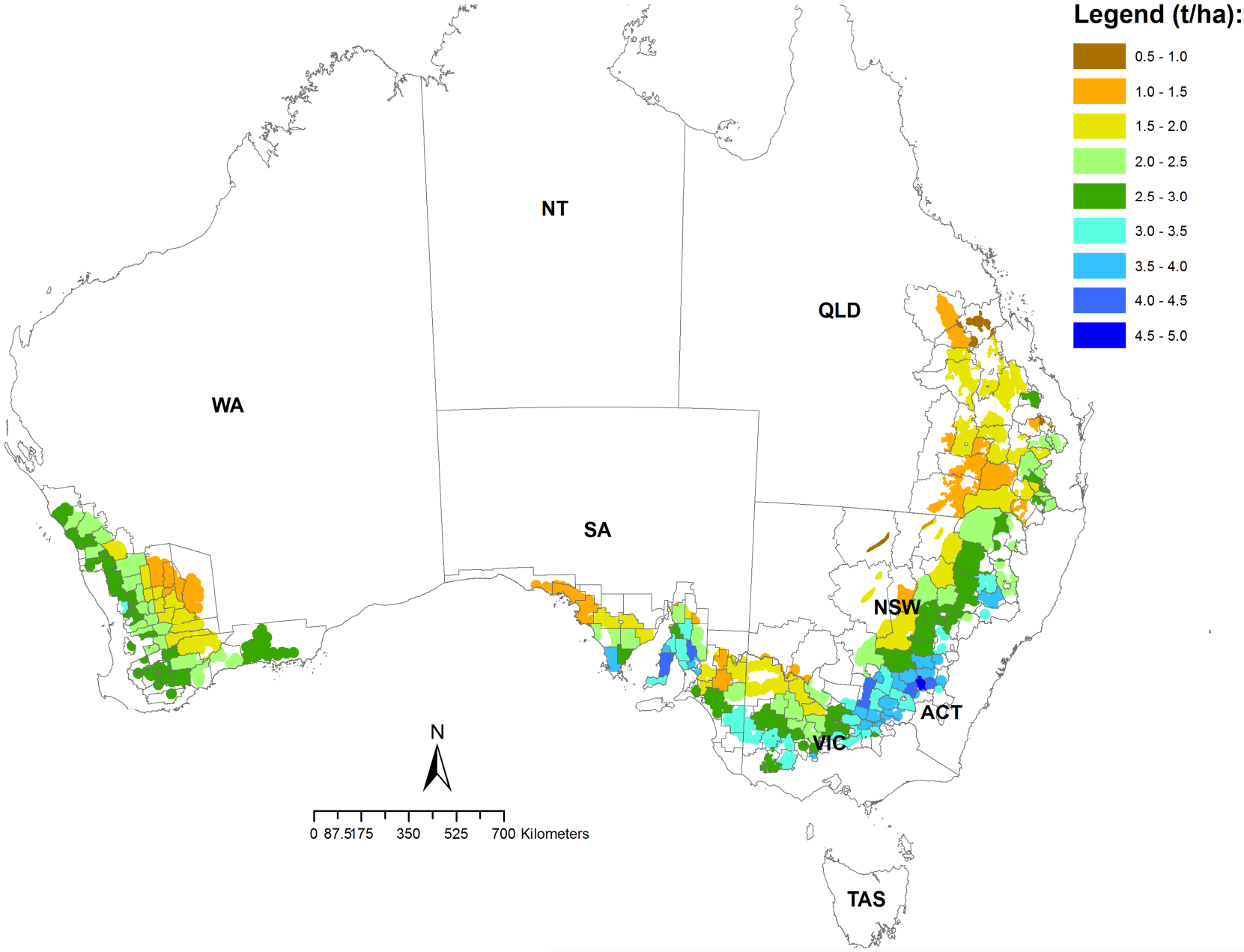
Simulated shire wheat yield long-term median (OZ-Wheat MII, from 1901-2015)



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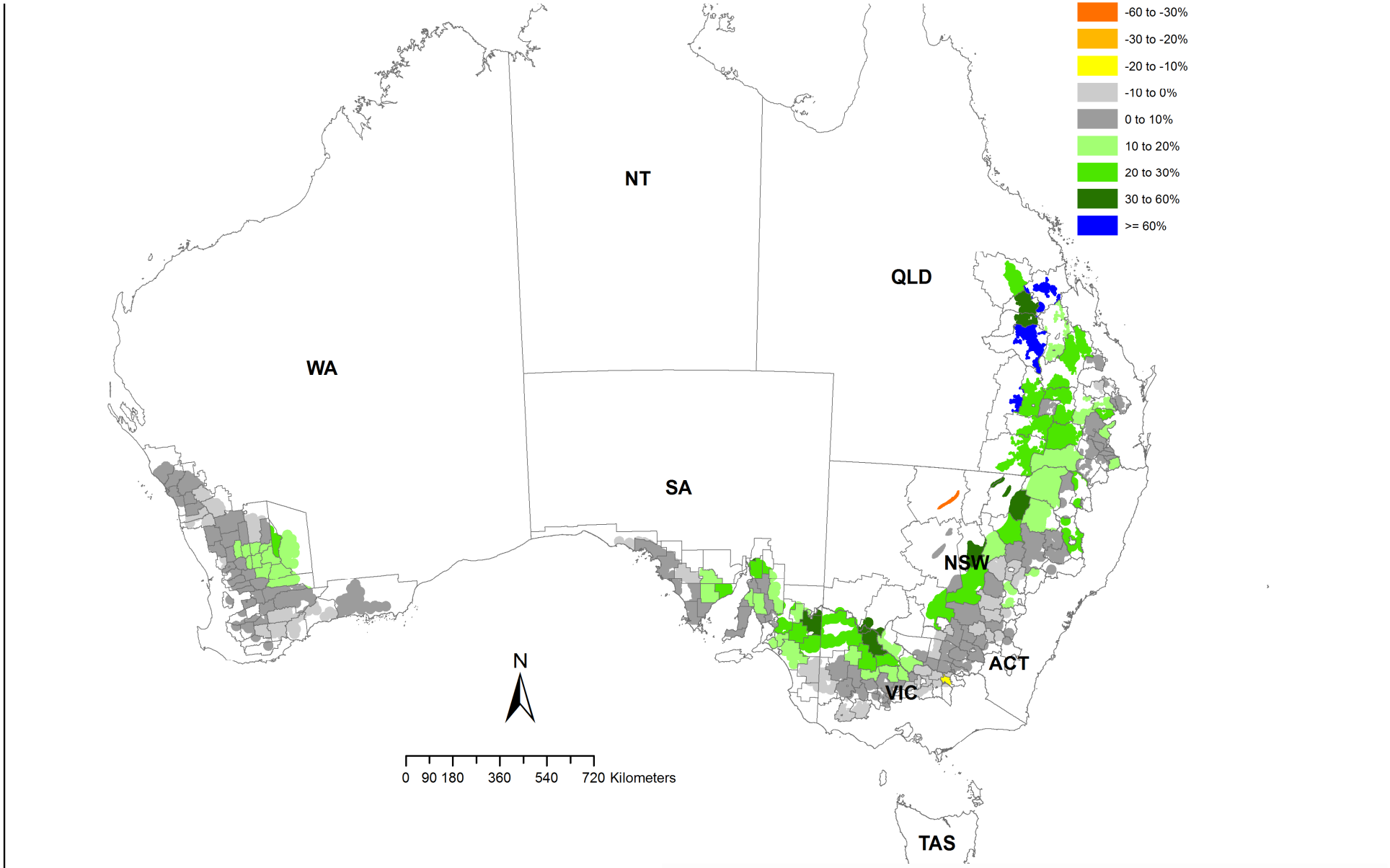
Percentage departure of the current forecast median shire yield from the long-term shire median yield, given SOI phase was "rapidly rising" at the end of September (OZ-Wheat MII).



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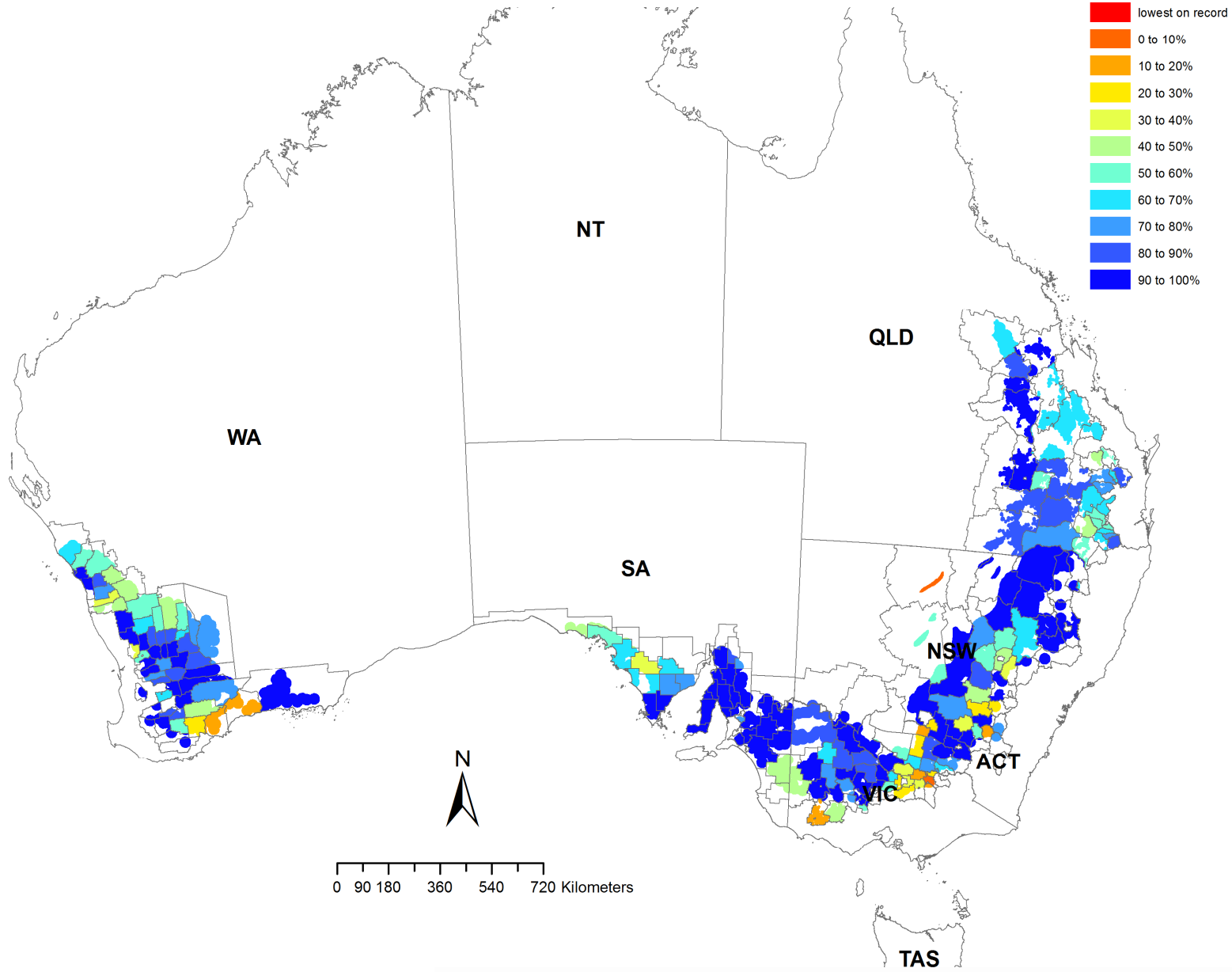
Forecast median shire yield ranked relative to all years (%) (OZ-Wheat MII), given the SOI phase was "rapidly rising" at end of September.



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1st October 2016 – State and National wheat outlook range (Worst10 and Best10 refer to the 10th and 90th percentile yields) and Forecast Median (PredMed) is the predicted median yield from forecast distribution, while Ltmed = Long-term median yield from all years; Pred%= Predicted Percentile ranking of Forecast Median (PredMed) relative to all years; DFY%= Deviation Percentage of Forecast Median from Long-term Median.

Region	Worst10	PredMed	Best10	NoP10	NoP50	NoP90	Ltmed	Pred%	DFY%
AUS	2.52	2.52	2.53	2.52	2.52	2.53	2.31	100	9
NSW	2.93	2.93	2.94	2.93	2.93	2.94	2.64	100	11
QLD	2.02	2.03	2.05	2.02	2.03	2.05	1.68	91	21
SA	2.59	2.61	2.63	2.59	2.61	2.63	2.38	83	10
VIC	2.79	2.79	2.79	2.79	2.79	2.8	2.51	92	11
WA	2.35	2.35	2.35	2.35	2.35	2.35	2.26	89	4
CQ	2.06	2.07	2.07	2.06	2.07	2.07	1.5	88	38
SWQ	1.83	1.83	1.83	1.83	1.83	1.83	1.51	86	21
SEQ	2.26	2.28	2.34	2.25	2.29	2.33	2.13	65	7

OZ-Wheat MII: regional scale crop simulation model developed by UQ QAAFI.

Descriptive note:

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.