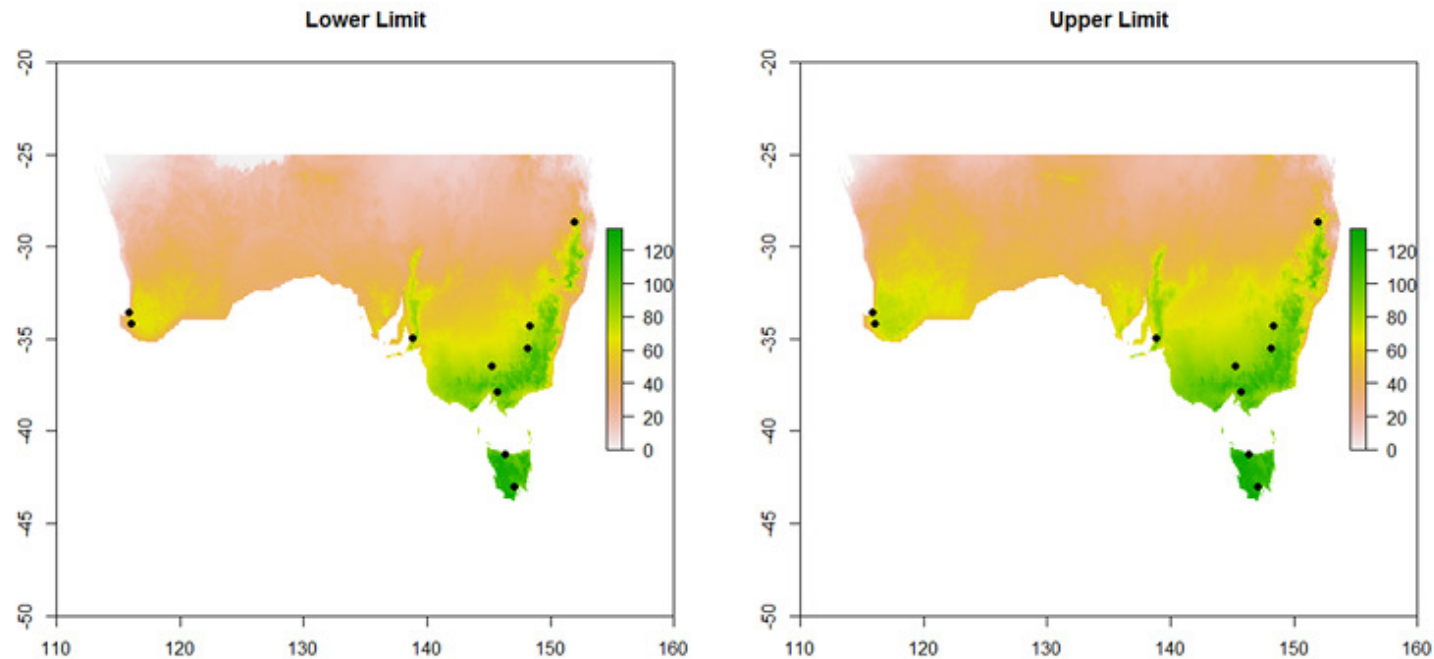


## Range in chill portions (CP) calculated from 1911 – 2012



Location	Applethorpe QLD	Batlow NSW	Young NSW	Donnybrook WA	Lenswood SA	Manjimup WA	Huonville TAS	Spreyton TAS	Tatura VIC	Yarra Valley VIC
Lower Limit (10 <sup>th</sup> percentile)	69	100	81	52	91	64	105	94	81	94
Upper Limit (90 <sup>th</sup> percentile)	85	111	93	71	106	84	117	114	94	109

### How were these maps made?

Winter chill was estimated across Australia using the Dynamic chill model (Fishman et al. 1987) which creates chill portions (CP). Chill was evaluated from 1 March – 31 August for 1911 – 2012 using gridded temperature data calculated using quality controlled Bureau of Meteorology weather stations (Jones et al. 2009).

### References

Fishman S, Erez A, Couvillon GA (1987) The temperature dependence of dormancy breaking in plants—mathematical analysis of a two-step model involving a cooperative transition. *J Theor Biol* 124:473-483.

Jones D, Wang W, Fawcett R (2009) High-quality spatial climate data-sets for Australia. *Australian Meteorological and Oceanographic Journal* 58:233-248.



Crisp red in bloom (Photo courtesy Dr Rebecca Darbyshire, UoM)

### How to interpret these maps

Winter chill was calculated for each year 1911 – 2012. To represent the spread in historical data, the 10<sup>th</sup> and 90<sup>th</sup> percentiles are shown to represent 'lower' and 'upper' limits, or the range of likely chill accumulation.

The 10<sup>th</sup> percentile can be considered as the minimum amount of chill a location can reliably achieve 9 out of 10 years. The lower limit value should be used as a guide for tree selection. Varieties with chill requirements less than the lower limit will likely meet requirements at least 90% of the time.

The 90<sup>th</sup> percentile can be considered as the upper most chill that a location will accumulated. This high value of chill is only expected in 1 out of 10 years. Varieties with chilling requirements at the upper limit would only be expected to meet their chilling requirements 10% of the time.