BERRY GROWING

VULNERABILITY RATING

(Low—High)

PROGNOSIS

The vulnerability of berries to the significant reduction in projected chill hours will place substantial pressure on berry growing in the region. In dealing with chill hour changes and increased rainfall in the region berry growers may be required to invest in crop protection infrastructure which may not be viable for all.

THE FUTURE OF BERRY GROWING IN THE CRADLE COAST REGION

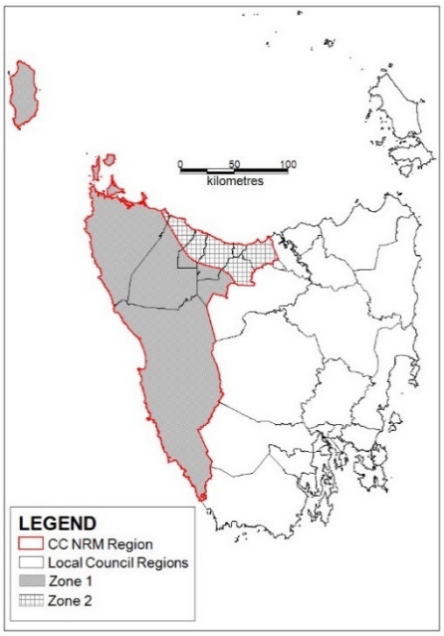

Figure 1. Cradle Coast region depicting Zones 1 and 2.

Berries grown in the CCNRM region are primarily strawberries, raspberries, blackberries, blackcurrants and blueberries. Fruit growing in the CCNRM region is concentrated in zone 2 (Figure 1).

The entire Cradle Coast NRM region is projected to have an increase in temperature of 2.6 to 3.3°C, which is similar to the rest of the state[1].

Rainfall in zone 2 is projected to increase in summer and winter by up to 10% and slightly decrease in spring but little change is expected during autumn[1].

The increase in rain during summer could cause crop loss due to fruit splitting and increased risk of rots and moulds[2].

[1] Holz et al., 2010
[2] Tasmania Climate Change Office, 2014

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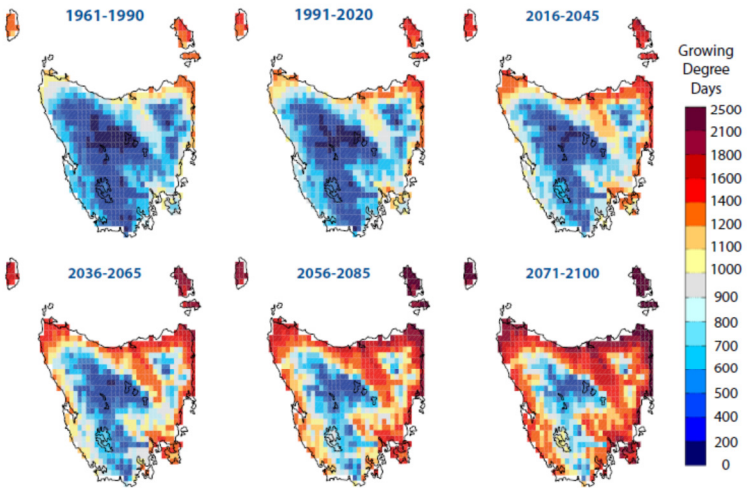

Another major contributing factor to fruit growing is the number of growing degree days (GDD). Growing degree days, also referred to as growing degree units, is a measure of the heat required to grow and ripen crops[1]. Under climate change the number of GDDs is projected to increase across the region (Figure 2).

Figure 2. Annual growing degree days under the A2 emissions scenario. Source: Holz et al., 2010

The most detrimental climate impact on the productivity of current berry cultivars and viability is likely to be the projected changes in winter chill hours[4]. Chill hours, or chill units, are a measure of a plants cumulative exposure to chilling temperatures which, for the model used[1], do not occur below 0^{O}C or above 9 ^{O}C. Under the A2 emissions scenario chill hours at low altitutes are expected to decrease significantly (Figure 3). At Spreyton, chill hours are projected to decrease by around 40% by 2085[1] which will add significant pressure on fruit growers to manage the current chill hour requirements of their berry crops, in particular Raspberries and Blackcurrents (Figure 4).

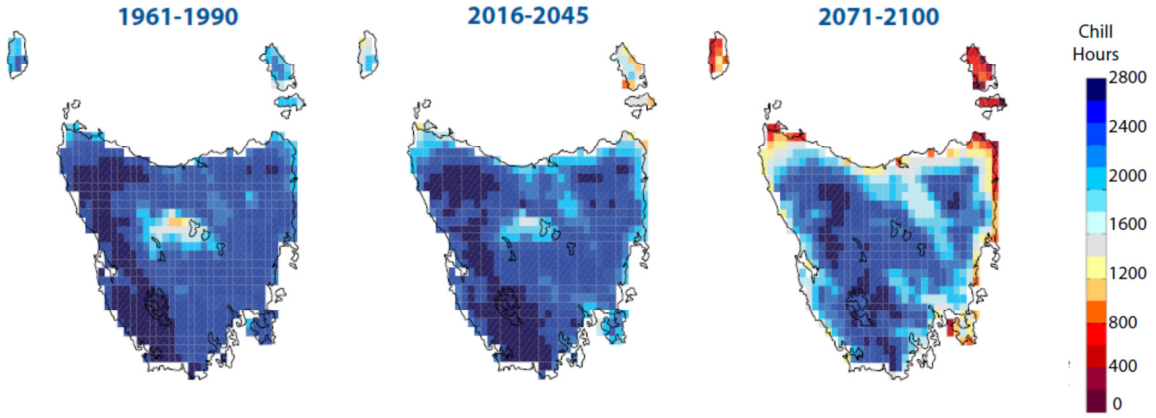

Figure 3. Annual chill hours under the A2 emissions scenario. Source: Holz et al., 2010

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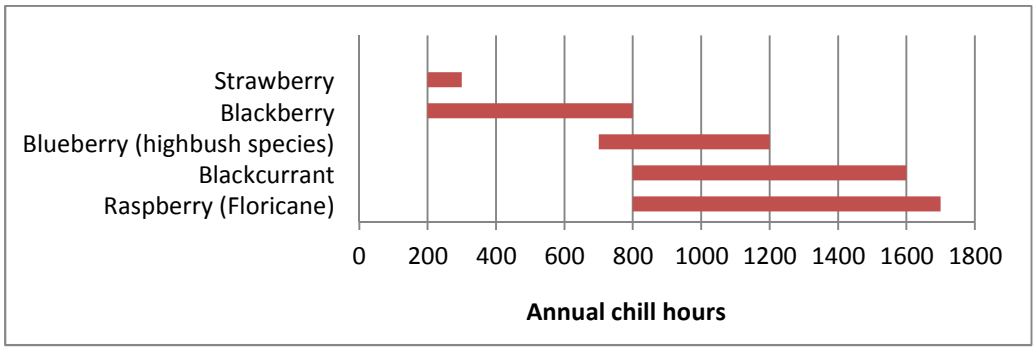

Figure 4. Annual chill hour requirements for berries. Chill hour data sourced from Kerslake and Buntain, 2012, Buntain and Sparrow, 2012, Vagiri, 2012, Pritts, 2012 and Nesbit et al., n.d.

ADAPTATION OPTIONS FOR FRUIT GROWERS

For growers to continue to prosper under a changing climate there are several adaptation pathways;

⇒ Investigating the potential to introduce new varieties of berries capable of growing in warmer conditions.

⇒ Use of chemical dormancy breakers to combat decreasing winter chill.

⇒ Adapting to increasing rainfall through crop protection.

⇒ Continued management of frost risk as it is likely to occur earlier than in the current climate.

⇒ Understanding and managing disease and considering the introduction of disease resistant crops.

⇒ Exploring the potential for land use change which may arise in areas currently limited by temperature.

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Image: Kerslake and Buntain, 2012, Blueberry growing in Tasmania, Wealth from Water factsheet, Tasmanian Institute of Agriculture

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