STONE FRUIT

VULNERABILITY RATING
(Low—High)

PROGNOSIS

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

THE FUTURE OF STONE FRUIT GROWING IN THE CRADLE COAST REGION

Stone fruits grown in the CCNRM region are primarily cherries and apricots with some nectarines, peaches and plums also produced.

Fruit growing in the CCNRM region is concentrated in the Kentish, Latrobe, Devonport and Central Coast LGAs. 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]. Changes in rainfall expected in the fruit growing region of the Cradle Coast is projected to increase in summer and winter by up to 10% and slightly decrease in spring but little change is expected during autumn. The increase in rain during summer could cause crop loss due to fruit splitting and increased risk of rots and moulds[2].

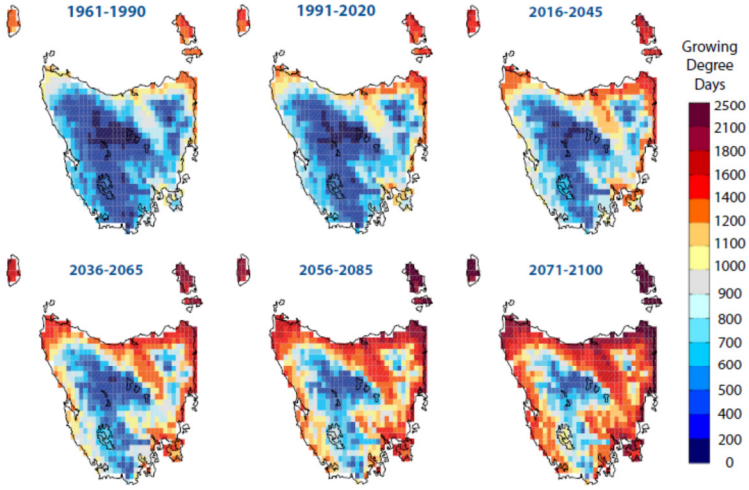

Figure 1. Annual growing degree days under the A2 emissions scenario. Source: Holz et al., 2010

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

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

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measure of the heat required to grow and ripen crops [1]. Under climate change the number of GDDs are projected to increase across the region (Figure 1).

Likely to be the most detrimental climate impact on stone fruit in the region, is the projected changes in winter chill hours. 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°C or above 9 °C. The predicted decrease is expected to have negative impacts on the productivity of current cultivars and fruit viability[1]. Cherries, for example, require at least 800 chilling hours to ensure even bud break in the spring[3].

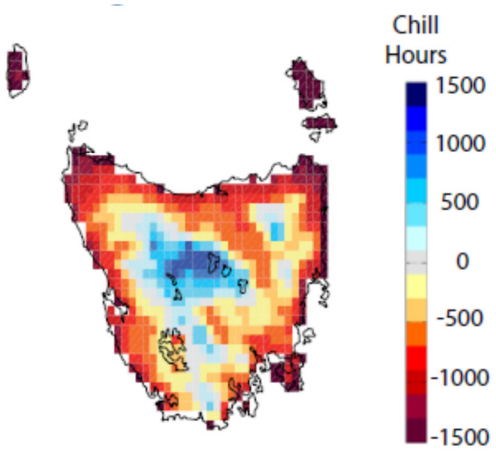

Figure 2. Change in annual chill hours under the A2 emissions scenario for 1961-1990 to 2071-2100.

Under the A2 emissions scenario chill hours at low altitutes are expected to decrease significantly (Figure 2). At Spreyton chill hours are projected to decrease by around 40% by 2085[1] which will add significant pressure on fruit growers to manage their crops.

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 stone fruit 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 landuse change which may arise in areas currently limited by temperature.

[3] Smith R.W. 2012

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Image: Holz, GK, Grose MR, Bennett JC, Corney SP, White CJ, Phelan D, Potter K, Kriticos D, Rawnsley R, Parsons D, Lisson S,Gaynor SM & Bindoff NL 2010, *Climate Futures for Tasmania: impacts on agriculture technical report*, Antarctic Climate and Ecosystems Cooperative Research Centre, Hobart, Tasmania

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