

POTATO PRODUCTION

VULNERABILITY RATING
(Low—High)



PROGNOSIS

With increasing temperatures and growing degree days and a reduction in frost risk, the potato industry is set to expand into new territory across the region. However, increased intensity in rainfall as well as longer dry periods will bring the need for increased erosion control and create water management challenges for growers.

THE FUTURE OF POTATO GROWING IN THE CRADLE COAST REGION

Potatoes are the main vegetable crop grown in the CCNRM region, accounting for \$44 million of the region's gross agricultural enterprise in 2010-11.

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 State¹. Changes in rainfall, however, will vary across the region (Figure 1.)

In zone 1 rainfall is expected to increase up to 20% in winter and spring and decrease by 10-20% during summer and autumn. In zone 2 there will be an increase in summer and winter rainfall by up to 10% and a slight decrease in the spring, however, little change is expected during autumn¹.

These changes in rainfall are expected to generate more intense downpours along with longer dry periods¹ which could have detrimental impacts on the potato industry. This increase in rainfall intensity is also likely to increase the risk of soil erosion².

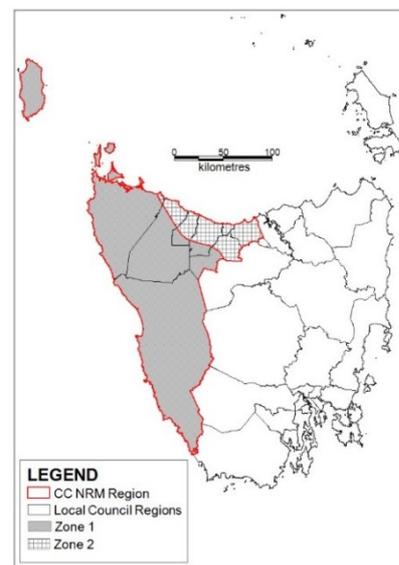


Figure 1. Cradle Coast Region depicting Zones 1 & 2.

¹ Holz et al., 2010

² Cotching 2011

Potatoes grown for processing and seed require more than 130 and 90 frost free day's respectively². Frost risk days are projected to decrease significantly across the entire region¹ (Figure 2).

Potatoes also need more than 1125 growing degree days (a measure of the heat to grow and ripen crops¹) and require overnight temperatures to drop below 20°C for at least 4 hours each night². The number of tropical nights (where the minimum temperature is greater than 20°C) is projected to increase by 6 nights per year in the Smithton and Latrobe areas by 2085 which may have an impact on growing locations. Growing degree days are also expected to increase across the region¹ (Figure 3).

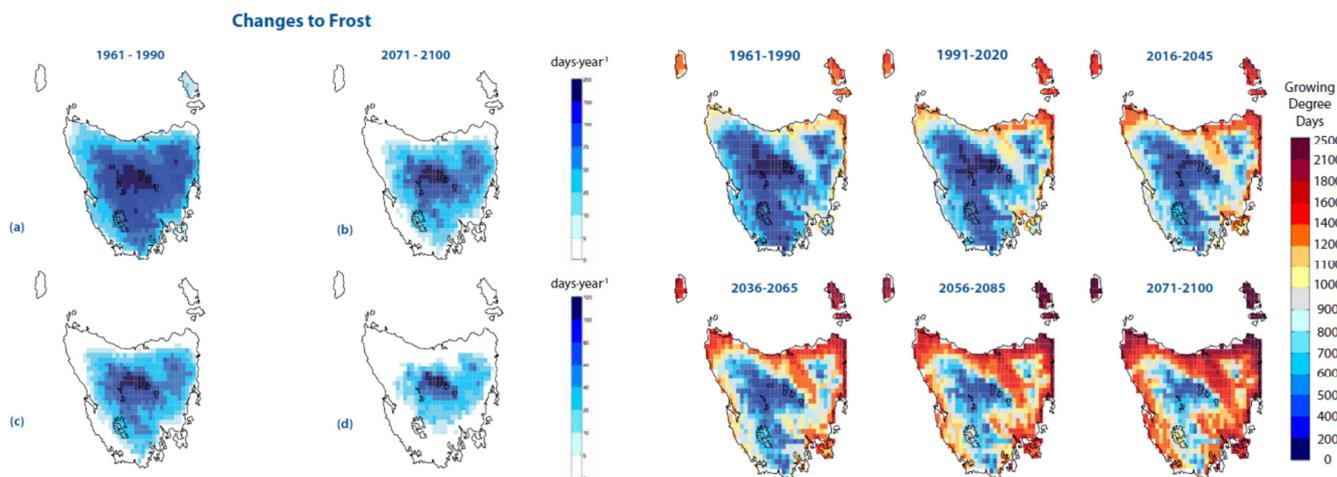


Figure 2. Frost incidence under the A2 emissions scenario. (a) and (b) days with less than 2°C per year (c) and (d) days with less than 0°C per year. Source: Holz et al., 2010.

Figure 3. Annual growing degree days under the A2 emissions scenario. Source: Holz et al., 2010.

ADAPTATION OPTIONS FOR POTATO PRODUCERS

- ⇒ Water management through increasing capacity to capture runoff as drier summers place additional pressure on irrigation systems.
- ⇒ Managing soil erosion risk through landscaping including the use of cereal straw on rip lines.
- ⇒ Adapting planting times and changing to better adapted cultivars.
- ⇒ Exploring potential for land use change, particularly in regions currently limited by temperature and to combat an increase in tropical nights.
- ⇒ Precision agriculture up take including controlled traffic farming (CTF) systems.

⇒ Awareness of and monitoring for pests and disease.

It is expected that generally a combination of adaptation strategies will work best and there will be overlap between the benefits of adaptation to various sectors.

REFERENCES

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Image: Cotching B., 2011, *Potato growing in Tasmania*, Wealth from Water factsheet, Tasmanian Institute of Agriculture



Australian Government

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