

CANOLA (RAPESEED)



VULNERABILITY RATING

(Low—High)



PROGNOSIS

With changes to temperature, rainfall and frost risk, the canola industry is set to expand into new territory across the region. However, as a result of increased rainfall intensity and longer periods of drought throughout the region, growers will need to focus on erosion control and water management.

THE FUTURE OF CANOLA IN THE CRADLE COAST REGION

Canola (*Brassica napus*) is grown in the region for oil and seed and is a common rotation crop in cereal cropping systems. The predominant variables for crop growth are frost, moisture stress and heat stress which all have an impact on grain yield and the content and quality of oil¹. Moisture stress and heat stress are linked, with plants likely to suffer greater heat stress during times of moisture stress¹.

Canola is sown mid-April to late June² and currently sowing any later in the season is detrimental to flowering as the hot weather causes flower abortion and moisture stress¹.

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 state³. 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

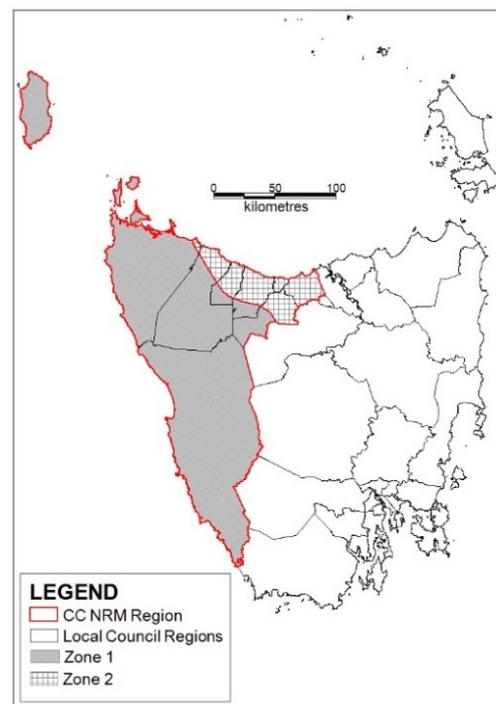


Figure 1. Cradle Coast region depicting Zones 1 and 2.

¹ McCaffery et al., 2009

² Hall, 2006

³ Holz et al., 2010

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 impacts on the canola industry, particularly as canola has a low tolerance to waterlogging¹. This increase in rainfall intensity is also likely to increase the risk of soil erosion. The increase in summer rain projected in zone 2 could also present harvesting challenges due to high humidity⁴.

Canola is also susceptible to frost, in particular when pods are small¹. Frost risk days are projected to decrease significantly across the entire region¹ (Figure 2) and may allow growers to consider new growing sites.

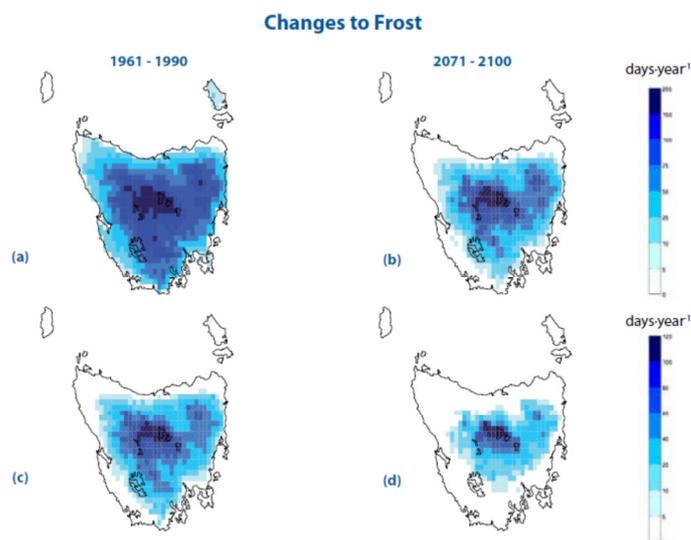


Figure 2. Frost incidence under the A2 emissions scenario. (a) and (b) days with less than 2°C per year (c) and (d) days

ADAPTATION OPTIONS FOR CANOLA PRODUCERS

- ⇒ Adapting planting times and changing to better adapted cultivars.
- ⇒ Managing soil erosion risk through landscaping including the use of cereal straw on rip lines.
- ⇒ Exploring potential for land use change, particularly in regions currently limited by temperature and frost incidence and summer rainfall during harvesting in zone 1.
- ⇒ Precision agriculture up take including controlled traffic farming (CTF) systems.
- ⇒ Water management through increasing capacity to capture runoff as drier summers place additional pressure on irrigation systems in zone 1.
- ⇒ 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 for various crops.

⁴ D. Armstrong (personal communication 29.4.2014)

REFERENCES

Hall, E, 2006, *Species for Profit - A Guide for Tasmanian Pastures and Field Crops*, Edited by Jonathan Knox, Robin Thompson and Sarah Campbell, Department of Primary Industries Water and Environment, Tasmania, pp. 108

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

McCaffery, D., Potter, T. Marcroft, S. and Pritchard, F., 2009, *Canola Best Practice Management Guide for South-Eastern Australia- GRDC Coretext*

Image: Hall, E, 2006, *Species for Profit - A Guide for Tasmanian Pastures and Field Crops*, Edited by Jonathan Knox, Robin Thompson and Sarah Campbell, Department of Primary Industries Water and Environment, Tasmania, pp. 108



Australian Government