

# WINE TASMANIA

## Adapting to a Changing Climate – Case Study

### ABOUT THE CASE STUDIES

These case studies illustrate how projected climate change may impact on a range of organisations in Tasmania. They provide insight into how some organisations are preparing for climate variability and climate change and show the potential opportunities that are emerging in Tasmania.

### ABOUT WINE TASMANIA

Wine Tasmania is the peak body for Tasmanian grape growers and winemakers. Wine Tasmania is an independent, non-profit organisation which is funded by members, sponsors and the Tasmanian and Australian Governments. Wine Tasmania represents in excess of 98 per cent of the Tasmanian wine grape production, with more than 90 state-wide industry members and 34 associated member businesses<sup>1</sup>.

As at 2012 the Tasmanian wine industry consisted of approximately 1 500 hectares under vine, 230 vineyards, 160 licensed wine producers and 29 wineries. The predominant grape variety in Tasmania is Pinot Noir (45 per cent), then Chardonnay (26 per cent), with smaller yields of Sauvignon Blanc, Riesling and Pinot Gris. The Tasmanian wine industry's contribution to Gross State Product in 2009-10 was approximately \$75 million. The industry employs approximately 1 000 people and is experiencing a growth rate of close to 10 per cent per annum.

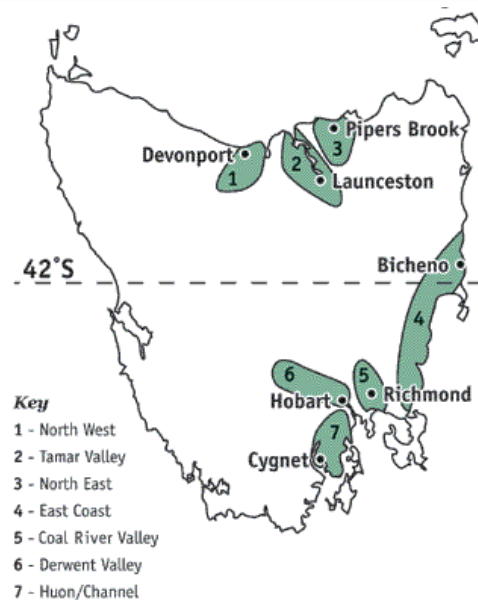


Figure 1: The wine regions of Tasmania

### CURRENT CLIMATE-RELATED PROJECTIONS AND VULNERABILITIES

Climate change projections show that the impacts for Tasmania are likely to be less extreme than what is likely to be experienced in other wine producing regions in Australia.

The Climate Futures for Tasmania (CFT) project<sup>2</sup> provides the State with a collection of climate change projections for a range of variables. The CFT projections outlined below are based on the Intergovernmental Panel on Climate Change (IPCC) A2 scenario<sup>3</sup> and are discussed in the context of their potential impact on the wine industry in Tasmania.

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Climate can have a significant impact on grapevines and affect both yield and fruit quality. Winegrowers will choose their growing locations based on a number of climate factors, as even subtle changes in a micro-climate across metres may affect flavour and yield. Tasmania's climate can place some restrictions on yield, however the quality of grapes grown allows for more delicate and concentrated wines to be made in the State.

### Temperature

Average temperatures across Tasmania are projected to rise by up to 2.9°C by 2100. The temperature change is relatively uniform for minimum and maximum temperatures as well as in geographical distribution across the State.

Higher than average temperatures can seriously stress vines and damage fruits, which has the potential to impact on the growing season, ripening and harvest.

### Rainfall

Average annual rainfall across the State is not expected to change significantly to 2100, although shifts in seasonal rainfall are anticipated. The East Coast is projected to see a 20-30 per cent increase in summer and autumn; the West Coast a 15 per cent increase in winter falls and an 18 per cent decrease in summer; while the Central region is projected to see reductions in all seasons.

High and prolonged rainfall presents considerable challenges for viticulture. Periods of high or

persistent rainfall can increase disease pressure, which must be managed to maintain fruit quality and yield. Excessive soil moisture can dilute flavours and other fruit quality parameters that then affect wine quality.

### Bushfire

It is likely that the changes in temperature, rainfall, wind speed and direction, soil moisture and other climate variables will see an increase in conditions conducive to bushfire across much of the State.

Bushfires can pose a direct threat to vineyard assets, equipment, staff safety and vines. Large bushfires which damage electricity networks also threaten irrigation and other energy-dependent systems. As well as these direct impacts, smoke from nearby bushfires (including burn-offs) may impact off-flavours of wine made from smoke-affected grapes. This is known as 'smoke-taint'. Bushfire, as with any other extreme event, may also temporarily lead to reduced tourism in affected regions, which would have a flow-on effect on cellar door sales.

### Storm events

Large storm events can damage vines, grapes and vineyard netting, affect electricity supply and disrupt transport networks. A storm in April 2008 with winds in excess of 170 kilometres per hour caused considerable loss and damage to the netting of a large number of vineyards in Tasmania's southern region<sup>4</sup>.

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### AS CLIMATE CHANGE BITES, TASMANIA RAISES A GLASS TO ITS GRAPE EXPECTATIONS

Forget the Hunter valley, the Tamar is where the action is, as Australia's big winemakers buy up vineyards in the Apple Isle.

Oliver Milman, [www.theguardian.com](http://www.theguardian.com), Friday 2 August 2013

The Tamar valley on a wet winter morning doesn't immediately strike you as a destination Australia's leading winemakers would fight tooth and nail over. The valley, and the sinuous river at its base, is picturesque, but the weather is decidedly more Blighty than Barossa.

But Tasmania, particularly the state's north and east, is becoming a drawcard for grape growers precisely because of its bracing climes. The big wine players are heading south – driven, in large part, by climate change.

A study published by the Proceedings of the National Academy of Science found that up to 73% of Australian land used for viticulture could become unsuitable by 2050.

In a separate analysis of 44 vineyards across Australia, CSIRO lead researcher Dr Leanne Webb found that grapes in the older estates have been ripening an average of 1.7 days earlier each year over the past two decades.

"There will be regions that move away from viticulture, due to more frequent heatwaves," Webb told Guardian Australia. "Inland areas are

warming more quickly than the coasts, so places such as north-east Victoria and NSW will find many wines are not in the optimal conditions."

But while areas such as the Hunter valley in NSW and the Margaret River region in WA will have to worry about sunburnt grapes, swathes of chilly Tasmania will become amenable to winemaking. If climate change has an upside, it can be found in the rapidly expanding Tasmanian wine industry<sup>5</sup>.



Image: The Jansz Estate in the Tamar Valley, North-Eastern Tasmania. Credit: Rob Burnett

### ADAPTATION RESPONSES

Wine Tasmania recognises both the opportunities and risks associated with climate change and is taking steps to help identify and promote this information to its members.

#### Developing relationships

Wine Tasmania maintains a close relationship with research organisations, including the University of Tasmania, the Tasmanian Institute of Agriculture (TIA), the Grape and Wine Research and Development Corporation (GWRDC) and the CSIRO, to promote the industry's research needs and to obtain relevant research outputs.

Wine Tasmania has also developed relationships with the Tasmania Fire Service to reduce the chance of smoke taint during scheduled fuel reduction burns. In 2010 Wine Tasmania and Forestry Tasmania signed a formal agreement surrounding notification processes to minimise smoke taint risk during forestry burning. To help achieve this task, Wine Tasmania, in partnership with TIA and GWRDC, has created an online tool that helps landscape fire users to spatially identify a vineyard's harvesting status.

#### Education and information dissemination

Wine Tasmania employs a full-time industry development and extension officer (in partnership with TIA, funded through Tasmanian and Australian Government grants). The work of this role helps Wine Tasmania to inform its members about how climate change may affect

the industry and offer insight to those looking to invest in the region. The organisation has recently hosted information events where researchers from the CFT project have presented their findings. Wine Tasmania also maintains regular relevant updates for members affected by extreme events.

### OPPORTUNITIES

Based on projections that Tasmania will be less adversely affected by climate change, a number of leading cool climate wine producers in mainland Australia such as Brown Brothers and Shaw + Smith, as well as international producers such as Treasury Wine Estates, have already recognised the emerging opportunities and have invested in the State. This is supported by the wine industry magazine, *Drinks Business*, saying that Tasmania is 'second only to China as the best wine investment location in the world'.

The Tasmanian Government has recently released a guide for potential investors highlighting the opportunities that climate change presents for the sector<sup>6</sup>.



Image: Josef Chromy Vineyard in the Tamar Valley, North-Eastern Tasmania. Credit: [www.josefchromy.com.au](http://www.josefchromy.com.au)

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<sup>1</sup> For more information see

<http://winetasmania.com.au/about>

<sup>2</sup> For more information, including the full set of modelling outputs see

[http://www.dpac.tas.gov.au/divisions/climatechange/adapting/climate\\_futures/climate\\_futures\\_for\\_tasmania\\_reports](http://www.dpac.tas.gov.au/divisions/climatechange/adapting/climate_futures/climate_futures_for_tasmania_reports)

<sup>3</sup> The IPCC A2 emissions scenario is based on a high emissions future. The scenario is characterised by an increasing global population, regionally-oriented economic growth, and more independently operating nations. For more information, see the Intergovernmental Panel on Climate Change *Summary for Policymakers Emissions Scenarios*,

<http://www.ipcc.ch/ipccreports/sres/emission/index.php?idp=0>

<sup>4</sup> For more information see

<http://www.dpiw.tas.gov.au/inter.nsf/WebPages/CART-7JS2YK?open>

<sup>5</sup> For more information see

<http://www.theguardian.com/world/2013/aug/02/tasmania-climate-change-wine>

<sup>6</sup> For more information see

[http://www.development.tas.gov.au/search\\_results?cx=011025144587511080365%3AsIunkjd09j8&cof=FORID%3A11&ie=UTF-8&q=wine+investor+guide+2013&sa=Go&siteurl=www.development.tas.gov.au%2Feconomic%2Fresources&ref=www.development.tas.gov.au%2F&ss=5336j1360480j32](http://www.development.tas.gov.au/search_results?cx=011025144587511080365%3AsIunkjd09j8&cof=FORID%3A11&ie=UTF-8&q=wine+investor+guide+2013&sa=Go&siteurl=www.development.tas.gov.au%2Feconomic%2Fresources&ref=www.development.tas.gov.au%2F&ss=5336j1360480j32)