

# Climate Change Research Programme

## REGIONAL MODELLING FOR MARLBOROUGH

Based on Representative Concentration Pathway (RCP) 8.5 out to 2040.

This snapshot is best read in conjunction with the full NIWA Climate Change projections.



Increase in GDD of 10-30 GDD per month



Increased diurnal shift



Rainfall - Overall decrease particularly from November to January (0-15%) but increases in February - April (0-10%). Fewer small rainfall events, more intense rainfall likely to occur in February and April



Hot days (>25°C) projected to start a month earlier (October) and finish a month later (April), and increase by 2-5 days per month during summer



Relative humidity - general decrease of 1-4% in relative humidity for inland areas, increase of 0-1% near the coast



Mean temperature increase of 0.5-1.0°C, with most warming in Autumn months



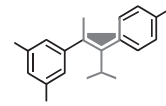
Soil Moisture Deficit (SMD) - impact depends on soil type, Water Holding Capacity (WHC), and topography. Likely increases of up to 4 SMD days per month for coastal areas and current winegrowing areas, from September to December



Increased Meteorological drought conditions. Overall increases of Potential Evapotranspiration Deficit (PED) (10-20mm), predominantly in November - January



Frost season will shorten, small decrease of 1-2 frost days during the early and late growing season



# Considerations

## WATER MANAGEMENT

- Irrigation efficiency and system design
- Soil moisture and WHC
- Winery water capture and re-use

## INFRASTRUCTURE (REGIONAL COUNCILS)

- Storm water, river flows and aquifers
- Road access/logistics in coastal areas
- Sea level rises, salinity, salt water intrusion and drainage
- Investment in water security (e.g. HIRDS, irrigation schemes, dams)
- Investment in solar power

## WATER SECURITY

- Storage
- Allocations and Access

## VINTAGE COMPRESSION

- Winery capacity
- Labour and accommodation bottlenecks
- Transport and logistics

## DATA MANAGEMENT

- Precision vineyard management systems
- Economics at block level – water budgeting tools etc
- Climate modelling

## POSSIBLE RESEARCH AREAS

- Soil health (Under-vine and mid-row/cover crops, organic matter and mulch)
- Vine stress and canopy management
- Phenology and early harvest (link to Lighter Wines programme)
- Preserving wine style / Typicity
- Varieties, clones, rootstocks
- Vineyard design - sites, row orientation, trellising
- Pests and disease management

## COLLABORATIONS

- Forming national and international partnerships to leverage the best and latest findings
- Comparisons to other wine growing regions

