

Making Use of Past, Current, and Future Climate Information Available From National Institute of Water and Atmospheric Research — An Overview®

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As it is with growing anything (including propagating plants), there are decisions being made by the grower at all times of the year which impact (hopefully positively) the health of the plants, their susceptibility to harmful elements, and their productivity. Many of these decisions are related to the weather and climate, and in some instances (for example frost protection measures) a decision can be of critical importance. Other decisions are more strategic, involving planning for next season or 1, 2, or even 20 years into the future.

Decision-making (or “good decision making” at least) is all about weighing up pros and cons based on the information you have at hand. If your information is poor, then the impact of your decision has a higher likelihood of being less than optimum (or even completely opposite to what you intended — e.g., the plant dies). If your information is good and useful, then your rational decision is likely to result in the effect you intended.

Climate data and information (when I use the term “climate information” I mean products derived from climatic data, e.g., expert analyses and interpretations, maps or line plots, etc.) are often used for decisions being made by growers — for example, estimating the likelihood of disease-causing weather in spring (e.g., blackspot or mildew). There are multiple levels and sources of climate data and information available from the National Climate Centre (NCC) at National Institute of Water and Atmospheric Research Ltd (NIWA) (much of which is either free or can be provided at a minimal cost). For example:

- Up-to-date meteorological data (including historical records) are available for free from NIWA for every climate station in New Zealand (go to <<http://cliflo.niwa.co.nz>>).
- Estimates of daily values of several climate variables for locations where there are no measurements (choose “Special Data Sets — Virtual Climate Station Data” from <<http://cliflo.niwa.co.nz>>).
- Line plots of the rainfall accumulation, soil moisture status, heat unit accumulation, and other variables for the growing season to date (and how this season compares to last year and the long-term average) for several locations around the country (available from <<http://climate-explorer.niwa.co.nz>> via subscription).
- Maps of the month-to-date and last-15-days rainfall, temperature, heat accumulation and soil moisture status, updated every day (available from <<http://climate-explorer.niwa.co.nz>> for free).
- Summaries of the climate of the previous month / season / year (go to <<http://www.niwa.co.nz/our-science/climate/publications/all/cs>>).

- Forecasts for the next 15 days of rainfall, air and earth temperature (see example below, as Fig. 1), wind, and solar radiation (available from <<http://climate-explorer.niwa.co.nz>> via subscription).
- Rainfall, temperature, soil moisture, and river flow outlooks for the coming 3 months for all of New Zealand (free at <<http://www.niwa.co.nz/our-science/climate/publications/all/seasonal-climate-outlook>>).
- Climate change projections for New Zealand for 50 and 100 years into the future (see <<http://www.niwa.co.nz/our-science/climate/information-and-resources/clivar/scenarios>>).
- General information on New Zealand climate (go to <<http://www.niwa.co.nz/our-science/climate/information-and-resources/clivar>>).

At NIWA we believe knowledge is there to be shared, which is why we make as much information as we can publicly available. The National Climate Centre assists New Zealanders through the provision of climate information to understand our natural environment, to help prepare for exposure to climate risks, and to maximise use of the climate as a resource.

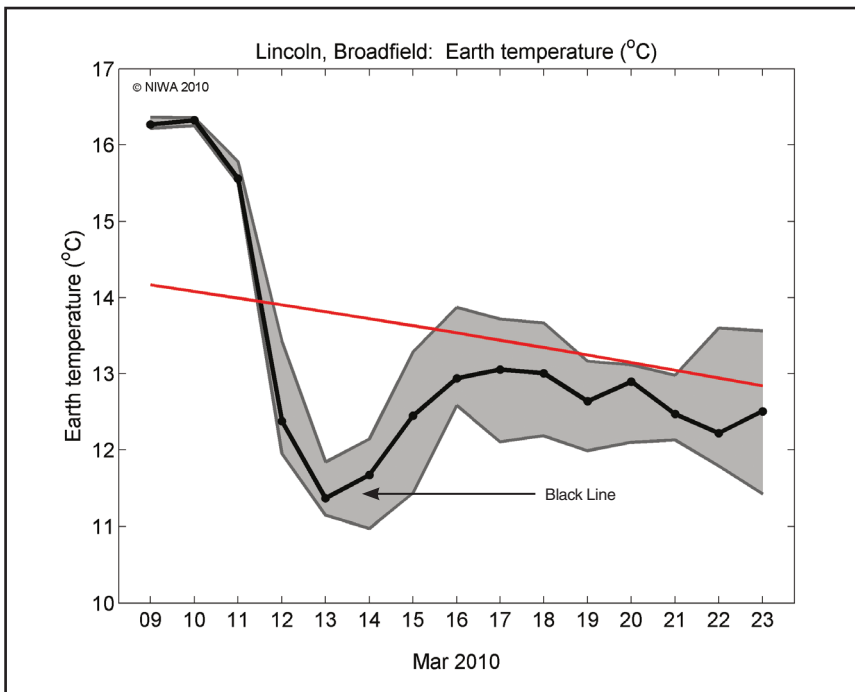


Figure 1. Forecast of 10-cm earth temperature at 9 AM on the date shown for Lincoln, Broadfield. The solid black line is the median forecast and the grey shading shows the interquartile range (25th to 75th percentile; i.e., an indication of the forecast uncertainty) from a set of 21 different forecasts for each day. The red line indicates the long-term average 10-cm earth temperature at 9 AM for the site and time of year.