

Quick Guide: Observations, Projections, and Impacts

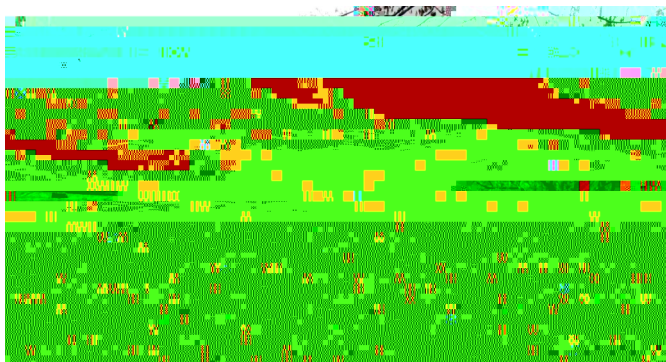
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Very heavy precipitation events are more common, increasing 71% from 1958-2012 in the Northeast²

There was a 2.5°F (approx.) increase in annual average temperature in VT over the past century¹

The VT growing season has increased by 3.7 days/decade³

Winter extreme minimum temperatures have become less cold across the Northeast¹



PROJECTED

Projections are all for the Lake Champlain Basin for the 2040-2069 time span⁴:

- Increase in annual precipitation by almost another 3 inches
- An increase in annual mean temperature of 5.6°F, with average winter temps increasing by 6.7°F
- Heat index will increase by almost four-fold (degree days)
- Growing season will increase by four weeks
- Expect 18 more days per summer that are over 90°F, and 32 fewer days below 50°F

A decrease in maple sap production by seven days per year

POTENTIAL IMPACTS

- Increased erosion and loss of nutrients from fields
- Increased likelihood of damaging floods
- Wet soils resulting in reduced yields, increased compaction, and sub-optimal timing of field operations
- Increased need and demand for irrigation
- Increased pest and weed pressure
- Reduced yield/quality of cool season crops
- Increased risk of heat stress in livestock
- Increased risk of spring frost damage for fruit growers
- New opportunities and crops with extended growing season

References and Resources

¹National Oceanic and Atmospheric Administration, National Climatic Data Center: www.ncdc.noaa.gov

²Karl, T. R., J. T. Melillo, and T. C. Peterson, 2009. *8* *#* *#* *@* *...* *...* T.R. Karl, J.T. Melillo, and T.C. Peterson, Eds. Cambridge University Press, 189 pp.

³Galford, G.L., A. Hoogenboom, S. Carlson, S. Ford, J. Nash, E. Palchak, S. Pears, K. Underwood, and D.V. Baker, Eds. 2014. *#* *†* *7* *#* *#* *...* *...* Gund Institute for Ecological Economics, 219 pp.

⁴Guilbert, J., B. Beckage, J.M. Winter, R.M. Horton, T. Perkins, and A. Bombliès. 2014. Impacts of projected climate change over the Lake Champlain basin in Vermont. *K* *...* *U* *#* *...* 53:1861-1875.