Characterizing New Hampshire Climate

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Background

Climate can be quantified as the average of weather for a place over a period of time. Average weather conditions, or "climatic normals," are most often drawn from 100 or 30-year periods.

Basic statistics are used in climate study to analyze, interpret and contextualize weather data over time, and to further draw conclusions from and about long-term climate trends.

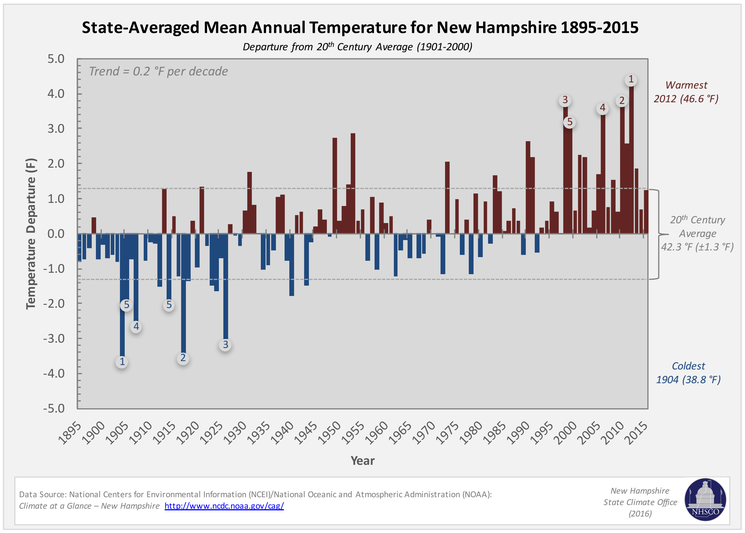
Statistics most often used when analyzing climate data:

- **Mean**: Represents the central value of a dataset. In climate this is considered the baseline about which individual values vary.
- **Standard Deviation**: Measure of the variability within a dataset providing a range about the mean to evaluate outliers. Used to quantify expected variability versus extremes.
- **Departure**: Refers to the difference between the mean and an individual value. In climate this represents how an individual value (month, year etc…) compares to what is expected.
- **Trend**: Evaluates the tendency toward higher or lower than the mean value over time. Used in climate to evaluate change in climate system processes.

Mean Annual Temperature

Mean annual temperature is often used to describe the general temperature characteristics of a location. The average of 20th century mean annual temperatures for New Hampshire is 42.3 ± 1.3ºF.

- Over the past 20 years, the state has been overall warmer than average 11 times including the five warmest years on record.
- It has been over 70 years since New Hampshire had a year colder than expected when compared to the 20th century average.
- When compared to the 20th century average, there is an increased tendency, or trend, toward warmer temperatures.

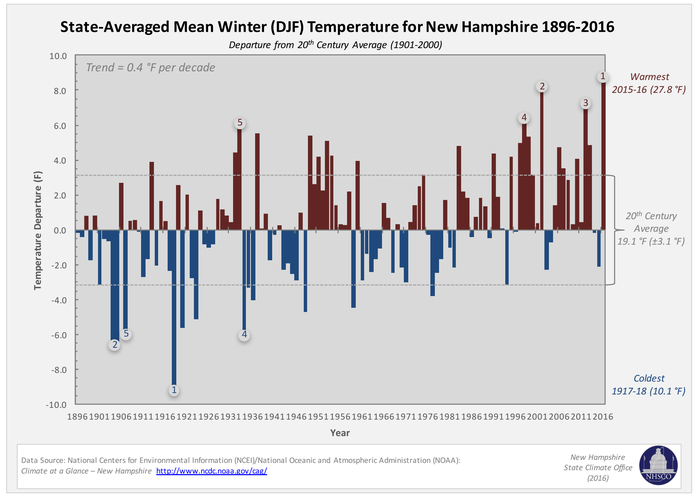


A Tale of Two Winters

Overall, 6 of the top 10 warmest winters in New Hampshire have occurred since 1996.

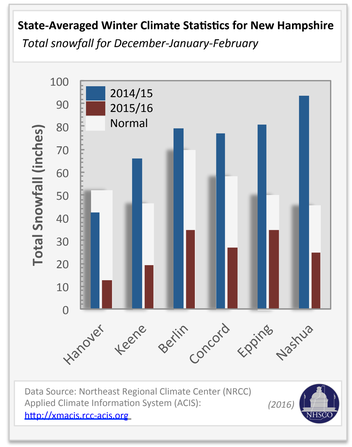
December 2014 – February 2015

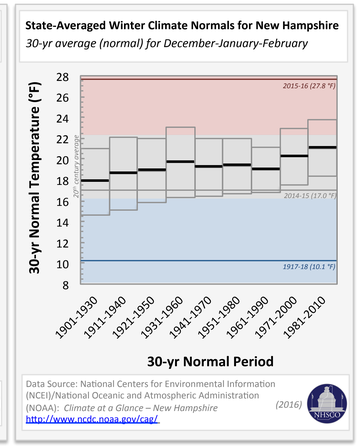
- The average temperature of 17.0ºF was within the normal range of variability.
- Intra-seasonal variability included a warmer than average December (28.7ºF) and the second coldest February (8ºF) on record.
- Total winter snowfall was well above the average across southern parts of the state, the majority of which fell during the month of February.
- Nashua, NH received 93.6 inches of snow over the winter and 43.7 inches February.



December 2015 – February 2016

- The average temperature of 27.8ºF was the warmest winter on record.
- December 2015 also ranked as the warmest December on record with an average monthly temperature of 35.1ºF.
- Total winter (DJF) snowfall was far below average, especially in western parts of the state (i.e. Hanover with only 12.7 inches over the winter).





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