



Mid-Atlantic Network

Weather & Climate Resource Brief



Fredericksburg & Spotsylvania NMP

Appomattox Court House National Historical Park & Booker T. Washington National Monument 2014 Status & Trends

In 2014, five weather observing stations were selected to report the weather of Appomattox Court House National Historic Park and Booker T. Washington National Monument. The parks are located in the Western Piedmont climate division of Virginia.

2014 was characterized by:

- Lower than average temperatures with a particularly cold winter and cool summer.
- A relatively normal growing season (approximately 200 days).
- A relatively average year for precipitation across all seasons.

Temperature: In 2014, annual temperatures were below the 30-year normal despite a warm spring. Overall, 2014 tied as the 32nd coldest year in the 120 year record for the Western Piedmont.

The winter began colder than normal with temperatures more than 6°F (3°C) lower than long-term averages in some locations. February and March were also unusually cold and the 2014 winter ultimately ranked as the 13th coldest since the late 1800's. Given the cold winter, the number of sub-freezing days for the year was above normal.

In contrast to the cold winter, the spring season (April – June) was unseasonably warm and tied as the 20th warmest on record for the Western Piedmont.

The trend reversed again in summer with temperatures often 2-3°F (1-2°C) below normal. The number of hot days was notably below normal, with Lynchburg seeing only half what is usual. The fall season's temperatures were generally close to normal, with deviations only slightly above long-term averages. The growing season during 2014 was ap-

Objective

Document current status and long-term trends in air temperature and precipitation at multiple temporal scales (e.g., daily, monthly, seasonal, annual, and decadal) and spatial scales (e.g., individual stations and aggregated stations such as climate divisions) utilizing existing weather and climate monitoring programs and datasets.

proximately 200 days long which is very close to normal.

Precipitation: Despite some unusual precipitation amounts during certain months, total precipitation for the year (and each season) was essentially average for the Western Piedmont.

The year began normally but February was wetter than average. Snowfall for the year was more than normal, in some locations by greater than 50 percent. Nevertheless, total precipitation for the winter months was average.

The spring was slightly wetter than nor-

Climate Change

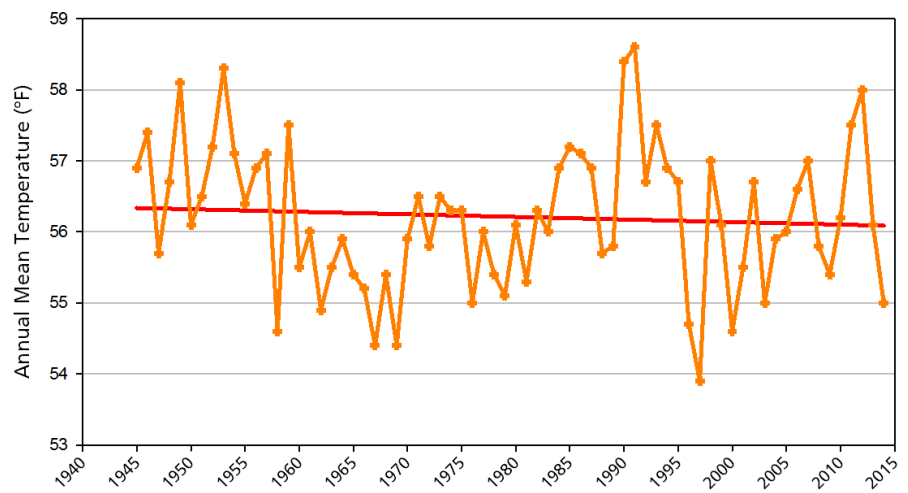
Climate change will affect natural and cultural resources in parks across the country. In order to characterize the extent of the threat, the National Park Service recently completed a climate change exposure assessment for 289 parks. In the study, recent climate conditions were compared to historical normals (i.e. post 1901). For both Appomattox Courthouse NHP and Booker

T. Washington NM, none of the recent precipitation metrics assessed were considered to be abnormal. In contrast, multiple recent temperature statistics were vastly different than those in the past (e.g. higher recent annual mean temperatures and much warmer recent summer seasons). For details, please see <http://www.nps.gov/sub-jects/climatechange/climateexposure.htm>.



Long-term Trends

A trend assessment of many weather metrics was conducted in 2014. The annual mean temperature for a nearby weather station (Lynchburg, 1945-2014) is shown to the right. The trend line (in red) indicates that annual mean temperatures have decreased slightly at Lynchburg. This is a single station and weather data can be highly variable. Temperatures at the station can also be influenced by local conditions. Results should be interpreted with caution.



2014 Status & Trends...

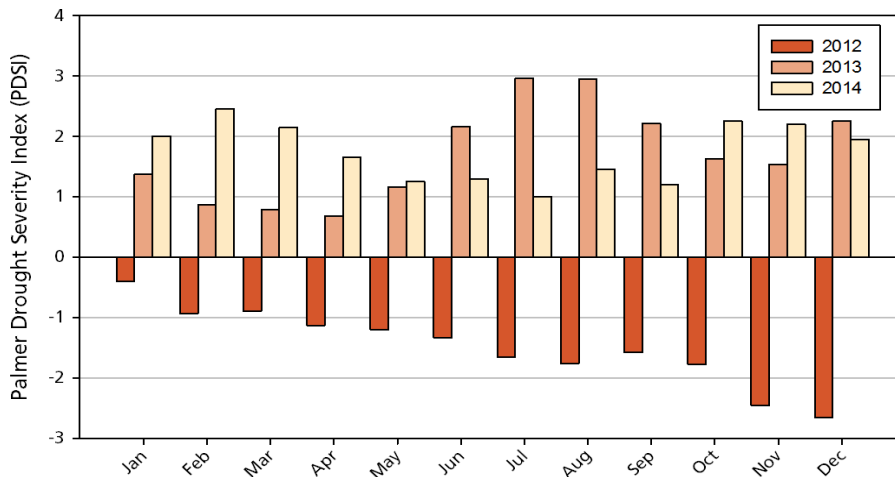
mal, being the 49th wettest since 1895. In total, the summer was also near normal, though it was highly variable between

months. For instance, Huddleston only had 39 percent of normal precipitation in July but received 185 percent of average in August. The wettest day of the year occurred during the summer,

with 3.9 in (99 mm) of rain on July 24th. Ultimately, it was the 55th driest summer on record. Autumn was also typical with precipitation in almost all locations reporting normal amounts during each month. There were no direct effects of tropical storms during 2014.

Drought: Despite a few dry months, soil moisture remained moist for the entire year in the Western Piedmont. Compared with 2013, this year was moister in the winter and fall though somewhat drier during summer months. In contrast, 2012 was drier throughout the year.

The full report can be found at: http://science.nature.nps.gov/im/units/midn/monitor/weather_climate.cfm.



Palmer Drought Severity Index (PDSI) for the Western Piedmont, 2012–2014. Positive values indicate periods of above normal precipitation (0 to 2: near normal; 2 to 3: moderate moisture; >3: very moist) and negative values indicate periods of drought (0 to -2: near normal; -2 to -3: moderate drought; <-3: severe to extreme drought).

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Management Applications

- Illustrate the effects of local climate change.
- Document how yearly weather compares to long-term average.
- Help interpret natural resource observations in relation to that year's weather.
- Provide a baseline for future comparisons.



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Parks monitored: Appomattox Court House NHP • Booker T. Washington NM • Eisenhower NHS • Fredericksburg & Spotsylvania NMP • Gettysburg NMP • Hopewell Furnace NHS • Petersburg NB • Richmond NBP • Shenandoah NP • Valley Forge NHP

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