

DSR C 661  
72  
8: 49

Research Report - Temperatures 90° or Above

Introduction Temperatures of 90° or above at the Mohonk Lake Cooperative Weather Station are of potential interest in relation to broader aspects of climate trends. Such temperatures have a bearing on the activities of fauna and the growth of plants. Records of hot days or runs of above average maximum temperatures are subjects of comment.

When Mohonk temperatures are considered, the atypical location of this station should be kept in mind. In general, Mohonk maximums are not as high as those recorded on clear days in the valleys below or along the Hudson. I suspect that during the passage of frontal systems Mohonk may be high enough to experience the cooling effect of upper level westerlies. Secondly, the Mohonk instrument box has *always* been located under trees rather than in the open. The Mohonk station thermometers have always been read at 5 p.m. Eastern Standard Time. This means that if the temperature is still 90° or above "at observation," that reading may be the recorded maximum for the following day, even though the actual temperature was lower.

Method For this study the monthly weather reports (April through September) were examined and the date of the thermometer reading for each maximum daily temperature at 90° or above was recorded. These form Appendix 1. For each decade, the total number of days and the highest temperature were noted for each month. "Runs" of three or more consecutive days were indicated by brackets. The three-day run was chosen as the minimum with the thought that such a series would overcome the carry over of the maximum temperature from one day to another. This compilation is summarized in Appendix 1. No 90° or above maxima were recorded in October during the 80 years, and only one was recorded in April in 1976.

Summary

Occurrence of 90° days during 80 years: 1896-1975

1. Extent of season  
7 May (1930) to 22 September (1914)  
(also 18 April 1976)
2. Total for 80 years=137 days  
Average=1.7 days per year
3. Occurrence by month, per decade

May	.6	days
June	2.1	"
July	7.8	"
Aug.	5.4	"
Sept.	1.2	"
	<hr/>	
	17.1	days

4. Highest temperatures recorded
- |       |    |                                  |
|-------|----|----------------------------------|
| May   | 91 | (1914 on 26th)                   |
| June  | 95 | (1919 on 3rd, in run of 3 days)  |
| July  | 97 | (1966 on 3rd, in run of 3 days)  |
| Aug.  | 98 | (1948 on 27th, in run of 5 days) |
| Sept. | 95 | (1953 on 2nd, in run of 7 days)  |

also-

- |      |    |                             |
|------|----|-----------------------------|
| Apr. | 91 | (1976 on 18th)              |
| Oct. | 85 | (1941 on 5th & 1963 on 7th) |

5. Summers with the most days of 90° or above temperatures 3 or more times the 1.7 average
- |                            |
|----------------------------|
| 10 days in 1953            |
| 8 days in 1955             |
| 7 days in 1936, 1944, 1966 |
| 6 days in 1918, 1919, 1925 |
| 5 days in 1914, 1918       |

6. Summers with no 90° or above temperatures, by decades

<u>1896-1955</u>	<u>1906-1915</u>	<u>1916-1925</u>
1896	1907	1916
1897	1908	1920
1899	1912	1922
1902	1915	
1903		
1904		
<u>1926-1935</u>	<u>1936-1945</u>	<u>1946-1955</u>
1928	1938	1947
1931	1939	1950
1932	1940	1951
1933	1941	
1934	1942	
1935	1945	
<u>1956-1965</u>	<u>1966-1975</u>	
1956	1967	
1958	1970	
1959	1971	
1960	1972	
1961	1974	
1963	1975	

7. Decades rated by number of 90° days
- |           |         |           |
|-----------|---------|-----------|
| 1896-1905 | 10 days | cool      |
| 1906-1915 | 16 days | average   |
| 1916-1925 | 27 days | warm      |
| 1926-1935 | 12 days | cool      |
| 1936-1945 | 18 days | average   |
| 1946-1955 | 36 days | hot       |
| 1956-1965 | 6 days  | very cool |
| 1966-1975 | 12 days | cool      |

8. "3-day runs" of consecutive 90° or above days
- |       |                                     |
|-------|-------------------------------------|
| May   | none                                |
| June  | 1 of 3 days                         |
|       | 1 of 6 days (1925)                  |
| July  | 6 of 3 days                         |
|       | 3 of 4 days (½ in August)           |
| Aug.  | 3 of 3 days                         |
|       | 1 of 4 days                         |
|       | 1 of 5 days                         |
|       | 1 of 7 days (1953, 3 days in Sept.) |
| Sept. | (1 of 3 days as above)              |

Record "run" August 28-Sept. 3, 1953  
Range 90° to 95° - 7 days.

Of note

Decades with most high temperatures had more runs.  
Hottest day of the 8 decades was in the hottest decade.  
The decade with the most 90° days, 1946-1955, was followed  
by the decade with the fewest such days.  
Five of the eight decades had 6 summers with no 90° tem-  
peratures.

Daniel Smiley

The Mohonk Trust  
Mohonk Lake  
New Paltz NY 12561

Appendix 1. Temperatures - 90° and above - F°  
 Recapitulation

	May			June			July			August			Sept.			Days per Decade	Runs	Earliest			Latest			No 90° or above					
	Days	Highest	Runs	Days	Highest	Runs	Days	Highest	Runs	Days	Highest	Runs	Days	Highest	Runs			Month	Day	Year	Month	Day	Year						
1896-1905	0	-	-	0	-	-	7	95	-	3	92	1/3	0	-	-	10	1/3	July	1	1901	Aug	11	1900	1896	1899	1903	1897	1902	1904
1906-1915	2	91	-	0	-	-	9	96	1/4	2	90	-	3	93	-	16	1/4	May	26	1914	Sept.	22	1914	1907	1909	1915	1908	1912	
1916-1925	0	-	-	10	95	1/3 1/6	8	93	1/2+ 1/3	8	94	1/2+ 1/3	1	90	-	27	3/3 1/4+ 1/6	June	3	1919	Sept.	2	1921	1916	1922	1920			
1926-1935	1	90	-	1	90	-	6	94	1/3	2	90	-	2	90	-	12	1/3	May	7	1930	Sept.	4	1929	1928	1932	1934	1931	1933	1935
1936-1945	0	-	-	2	90	-	6	96	1/4	10	94	1/4	0	-	-	18	2/4	June	25	1943	Aug	20	1937	1938	1940	1942	1939	1941	1945
1946-1955	0	-	-	3	92	-	14	94	2/3	16	98	1/3 1/4* 1/5	3	95	1/3*	36	3/3 1/5 1/7*	June	26	1952	Sept.	3	1953	1947	1951	1950			
1956-1965	1	90	-	1	91	-	4	92	-	0	-	-	0	-	-	6	-	May	19	1962	July	21	1957	1956	1959	1961	1958	1960	1963
966-1975	1	90	-	0	-	-	8	97	2/3	2	91	-	1	91	-	12	2/3	May	29	1969	Sept	4	1973	1967	1971	1974	1970	1972	1975

80 Years	5	91	-	17	95	1/3 1/6	62	97	1/2+ 6/3 2/4	43	98	1/2+ 3/3 1/2+ 1/4 1/5	10	95	1/3*	137													
----------	---	----	---	----	----	------------	----	----	--------------------	----	----	-----------------------------------	----	----	------	-----	--	--	--	--	--	--	--	--	--	--	--	--	--

+ split run - July 30, 31, Aug 1, 2, 1917  
 \* split run - Aug 28, 29, 30, 31, Sept 1, 2, 3 1953

Apr 18 1976  
 91°