

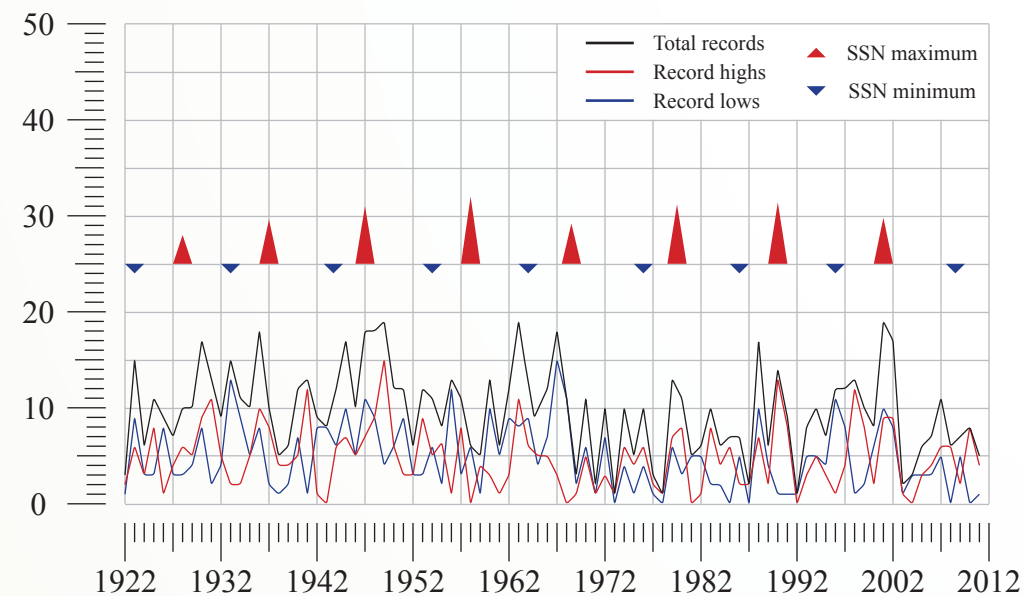
## A Statistical Tale, Part 2

A year ago in *A Statistical Tale* I looked at the supposed relationship of temperatures to carbon dioxide levels and concluded that the relationship was so weak as to be scientifically meaningless. I also noted that there is no consistent relationship between solar activity (measured as sunspot number, SSN) and temperature either. Clearly climate is too complex to be reliably explained using current modeling. As a result, using climate modeling to direct future economic policy is both ignorant and dangerous.

At that time I had wanted to look at the pattern of temperature extremes, but unfortunately the NOAA website data only went back two months. Ten months later, I had finally compiled a full year of data which is presented here along with two graphs and a compilation which I created to make the data easier to understand.

With regards to increasing temperatures, a look at the *Normal and Record Temperatures* chart on page two shows that record temperatures extend far outside the norms. I looked up the dates for the most extreme record temperatures and found that they were rather random. If there was truly consistent warming, the extreme lows should have tended toward the 1922 end of the range and the extreme highs should have tended toward the 2011 end of the range. They didn't. A look at the *Number of Record Low/High Temperatures* tabulation on page three shows that ratio of record highs to lows is a little higher in the last 45 years than it was in the previous 45 years, but that there hasn't been much of a change. Closer examination of the data there and in the *Distribution of Record Temperatures* chart on this page shows an alternation of periods where either hot or cold records predominate. If there is anything to be gotten out of this chart, it is that the number of extreme temperatures diminishes about ten years after the sunspot activity declines. But, it's hardly compelling enough to make a great deal of.

### Distribution of Record Temperatures for Allentown, Pennsylvania



I'd like to comment on official temperatures. There is presumably an increasing "heat island" effect around urban areas where the temperatures are measured. During the late Spring and early Summer, the official temperature often exceeded the temperature at my home by about 3-4 degrees from noon to midnight. This implies a large, local heat sink is affecting the official measurement. Conversely, daily lows throughout the year are sometimes several degrees warmer where I live. This may be due to being several hundred feet higher in altitude rather than urbanization.

Global Warming was renamed Global Climate Change when the inadequacy of the original "scientific" temperature predictions came to light. Warnings of extreme weather took the place of warming to justify regulating carbon dioxide. Within the last few years, the amount of hurricane activity has been grossly over predicted and dramatized at least twice. Fortunately, this tabulation of record temperatures gives a 90 year look at one facet of extreme weather. As the *Number of Record Low/High Temperatures* tabulation on page three shows, 501 records were set between 1922 and 1966, and only 370 records were set between 1967 and 2011. This large reduction suggests our weather has become less extreme, not more. In fact, the *Distribution of Record Temperatures* chart on this page shows we have been experiencing exceptionally quiet weather since 2002 according to records going back to 1922.

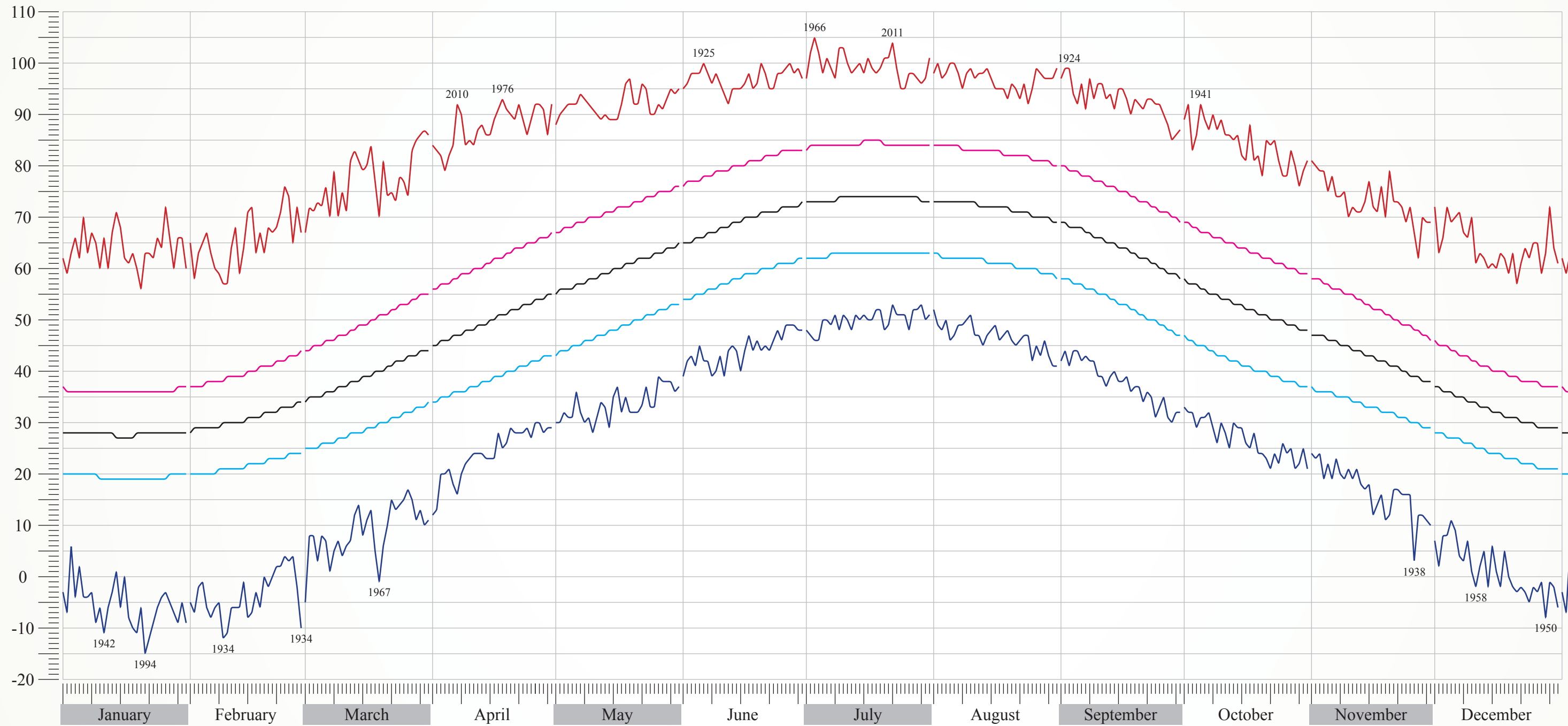
We have also been experiencing a simultaneous anomaly in sunspot activity. It's hard to tell how odd this anomaly is going to be until after a few more years have passed. This year should have been the next SSN maximum, but levels have only risen to about 15% of the normal maximum. So, we are experiencing a wider trough than usual or else the peak sunspot activity has fallen significantly. We most recently saw something like this in 1810 and 1820. If sunspot activity remains low indefinitely, we could be facing another "little ice age."

What dangers do global warming and/or extreme weather actually pose? While hot and cold weather can kill, we have the ability to adapt to different situations. Even without modern infrastructure, humans were able to spread over most of the planet and survive for millennia. Agriculture has served as the foundation of our wealth for a long time, so disruptions in this area pose a greater risk, especially as population increases. Crop failures can be caused by unexpected frosts. Long dry or wet periods also cause problems. Moderate dry spells can be dealt with simply by irrigating. Long wet periods are more of a problem due to rotting and less sun for plant growth. Timing is a critical factor. Ideally, we'd like a mix of rainy and sunny weather which turns over on a weekly basis and no untimely frosts. Basically, we need a balance.

This year was interesting. Weather patterns tended to linger much longer than usual. We had enough rain, but it hung around too long in August and September and caused flooding. The associated lack of sun wiped out the middle part of our tomato, pepper, and eggplant crops. Fortunately, it came after our potatoes were done growing, so those did well. I could theorize that the reduced sunspot activity was responsible for the atmosphere stagnating a bit. Certainly more cloud cover caused more uniform temperatures and less atmospheric activity. Maybe this is what a "little ice age" looks like including a reduction in sunlight and plant growth. Grapes were once grown in England, but that changed centuries ago with the climate. Perhaps the problem was a lack of sun, rather than lower temperatures! Coincidentally our own vines grew vigorously but produced no grapes this past season.

In conclusion, there are many things that make climate work. One of the major inputs, solar activity, is neither fully predictable nor could we influence its level if we thought it should be different. When individual people make decisions on what to grow, they use their own experience, hedge their bets, and make instantaneous decisions according to conditions on the ground. When big government tries to do the same thing, it makes decisions based on old knowledge and rigid policy. Yet the administrators have the presumption to think they can plan a decade ahead. Perhaps that is why countries with centralized planning can't avoid famines.

# Normal and Record Temperatures for Allentown, Pennsylvania



- Record high temperatures from 1922 to 2011
- Normal high temperatures from 1981 to 2010
- Normal mean temperatures from 1981 to 2010
- Normal low temperatures from 1981 to 2010
- Record low temperatures from 1922 to 2011

Note: Years of exceptionally high or low temperatures are included to show relatively random distribution of events. This chart was compiled in late October, 2011, so it is possible some additional records may be set in 2011.

## Number of Record Low/High Temperatures from 1922 to 2011 for Allentown, Pennsylvania

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Total	Total	Total	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Total	Total	Total
1922				0/2			1/0						1/2	3			1967	0/2	1/0	3/0	1/1	1/0			5/0	1/0	1/0	2/0	15/3	18			
1923			3/1	2/0		0/4		1/0	1/0		2/0	0/1	9/6	15			1968	4/0	1/0				1/0	3/0	1/0		1/0		11/0	11			
1924	0/1						1/0	0/2			2/0		3/3	6			1969					0/1				1/0	1/0		2/1	3			
1925			0/1	1/0	1/1	0/6	1/0						3/8	11			1970	1/0	1/0	1/0		1/0	2/0			0/4		0/1	6/5	11			
1926			2/0		1/0	1/0				0/1	1/0	3/0	8/1	9	24/20	44	1971								1/0			0/1	1/1	2	35/10	45	
1927			0/1			1/0		2/0	0/1	0/2			3/4	7			1972		1/0	0/2		1/0	1/0			2/0	2/0	0/1	7/3	10			
1928	1/0			1/2			1/0			0/1	0/3		3/6	9			1973								0/1			0/1	0/1	1			
1929			0/1	0/2		2/0			0/2	1/0	1/0		4/5	9			1974	1/2	0/1	0/2	0/1						3/0		4/6	10			
1930	0/1	0/3		1/0	0/1		1/2	3/2		1/0	2/0		8/9	17			1975	0/1							1/0	0/1	0/2		1/4	5			
1931				1/0	1/0		0/1		0/4		0/5	0/1	2/11	13	20/35	55	1976		0/3		1/3	1/0		1/0			1/0	4/6	10	16/20	36		
1932	0/3					2/0			1/1		1/0	0/1	4/5	9			1977			0/1	1/1							1/2	3				
1933				2/0		2/1	1/0	2/0		4/1	2/0		13/2	15			1978				0/1							0/1	1				
1934		3/0	5/0	1/0	0/1	0/1							9/2	11			1979	0/1	4/0	0/1		0/1	1/0		1/0		0/1	0/2	0/1	6/7	13		
1935	2/0	3/0	0/1					0/1			0/3		5/5	10			1980						1/0	0/2	1/0	0/3		1/3	3/8	11			
1936		3/0		2/0	1/4		1/3	0/1		1/1		0/1	8/10	18	39/24	62	1981	2/0			1/0				2/0			5/0	5	15/18	33		
1937		0/1				0/1	0/1	0/3	0/1	2/1			2/8	10			1982	1/0			3/0				1/0			0/1	5/1	6			
1938		0/2								0/1	1/1		1/4	5			1983		0/1			1/0			0/1	0/6		1/0	2/8	10			
1939					1/2		1/1		0/1				2/4	6			1984			1/0			0/1		1/0	0/1		0/2	2/4	6			
1940			1/0	1/0	0/2	1/0	1/2		0/1	2/0		1/0	7/5	12			1985		1/2		0/2				0/1	0/1		1/6	7				
1941				0/4	0/2	0/1	0/2	1/0	0/1	0/2			1/12	13	13/33	46	1986			0/1					1/0	2/1		2/0	5/2	7	15/21	36	
1942	5/0			0/1					1/0			2/0	8/1	9			1987			0/1		0/1						0/2	2				
1943		2/0	1/0	2/0			1/0		1/0	1/0			8/0	8			1988			1/2			2/2	0/1	2/1	1/0	2/0	0/1	2/0	10/7	17		
1944					0/1		1/0	3/5		1/0		1/0	6/6	12			1989		0/1						1/1		1/0	2/0	4/2	6			
1945	1/0	1/0	0/6	1/0	1/0	3/0	1/0	1/0	0/1			1/0	10/7	17			1990	0/1	0/2	0/4	0/3					1/0		0/1	0/2	1/13	14		
1946		0/1					3/0		2/0	0/3		0/1	5/5	10	37/19	56	1991		0/3	0/1		0/2				0/2		1/0	1/8	9	16/32	48	
1947	0/1			2/0	2/0	1/0	1/0	1/1	4/0	0/5			11/7	18			1992						1/0					1/0	1				
1948	4/0	1/0	1/1	1/0	0/2	1/1		0/4			0/1	1/0	9/9	18			1993			2/0		0/1	1/0		1/0	1/0	0/2	5/3	8				
1949	0/1	0/1	1/0		2/2	0/1	0/3	0/2	1/0	0/3	0/1	0/1	4/15	19			1994	5/0			0/1		0/2				0/2	5/5	10				
1950	0/2		1/0	2/0		1/0				0/2	0/2	2/0	6/6	12			1995	0/2			1/0			0/1		1/0	1/0	1/0	4/3	7			
1951	0/1				0/2			2/0		3/0	4/0		9/3	12	39/40		1996		2/0			3/1		1/0			3/0	2/0	11/1	12	26/12	38	
1952						0/1		1/0	0/1	1/0	1/0	0/1	3/3	6		79	1997	0/1	0/2			2/0		2/0	0/1	2/0	2/0	8/4	12				
1953		0/1					2/1	0/4	0/3	1/0			3/9	12			1998	0/2		0/3		0/1			1/0	0/1		0/5	1/12	13			
1954	1/0	0/1		2/0			0/3			1/1	2/0		6/5	11			1999	0/1	0/1				1/0	0/5	1/0		0/1	2/8	10				
1955		1/0					0/3	0/3			1/0		2/6	8			2000			0/2				1/0	1/0	2/0		6/2	8				
1956			1/0	2/0	4/0	0/1		2/0		3/0			12/1	13	26/24	50	2001			1/0	2/0	0/3		4/0	1/1	1/0	1/1	10/9	19	27/35	62		
1957						1/4		2/0		0/1	0/3		3/8	11			2002	0/2			0/2	5/0		1/0	0/4			8/9	17				
1958						2/0				2/0		2/0	6/0	6			2003									1/0	0/1		1/1	2			
1959	0/2								1/1		0/1		1/4	5			2004	1/0					1/0				1/0	3/0	3				
1960			6/0	0/3						1/0	3/0		10/3	13			2005	0/1				1/0					0/2	2/0	3/3	6			
1961	2/0	1/0		1/0		1/1							5/1	6	25/16	41	2006	0/1		0/1							3/0	0/2	3/4	7	18/17	35	
1962		1/0		1/0	0/3		2/0		2/0	2/0		1/0	9/3	12			2007	0/1		1/0	1/0		1/0	1/0		1/1	0/4	5/6	11				
1963	2/1	1/0	0/2	0/1	1/0		1/1	1/0	2/0	0/6			8/11	19			2008	0/1	0/1				0/1		0/1		0/2	0/6	6				
1964		1/0	0/1			1/1		4/0	0/1	1/0	2/1	0/2	9/6	15			2009		0/1	0/1	1/0	1/0		2/0			1/0	5/2	7				
1965		0/1	2/0		0/1	1/1	1/0		0/1			0/1	4/5	9			2010			0/2	0/1	0/2		0/3				0/8	8				
1966					1/0	1/1	2/4	1/0		1/0		1/0	7/5	12	37/30	67	2011		0/1		0/1	1/0	0/1	0/1				1/4	5	11/25	36		
Total	18/13	18/11	24/15	26/15	16/24	22/26	24/27	25/28	18/20	18/29	27/20	24/13	260/241			45 yrs.	Total	15/19	11/19	10/24	12/17	18/13	13/7	16/13	17/10	19/20	21/8	13/16	14/25	179/191		45 yrs.	
																	Total	33/32	29/30	34/39	38/32	34/37	35/33	40/40	42/38	37/40	39/37	40/36	38/38	439/432		90 yrs.	

Note: The following data format is used in this chart: *number of record lows/number of record highs*. The last two total columns show subtotals of five year periods.



## Raw Temperature Data for Allentown, Pennsylvania

Date	Low		Mean	High		Record Years		Date	Low		Mean	High		Record Years	
	Record	Normal	Normal	Normal	Record	Low	High		Record	Normal	Normal	Normal	Record	Low	High
January 1	-3	20	28	37	62	1968	2005	February 1	-5	20	28	37	65	1935	1989
January 2	-7	20	28	36	59	1968	1979	February 2	-7	20	29	37	58	1961	1983
January 3	6	20	28	36	63	1945	1997	February 3	-2	20	29	37	63	1955	1991
January 4	-4	20	28	36	66	1981	1950	February 4	-1	20	29	37	65	1945, 1985	1991
January 5	2	20	28	36	62	1970	1963	February 5	-6	20	29	38	67	1996	1991
January 6	-4	20	28	36	70	1968	2007	February 6	-8	20	29	38	63	1996	1938, 2008
January 7	-4	20	28	36	63	1942	2008	February 7	-6	20	29	38	60	1935	1938
January 8	-3	20	28	36	67	1942	1998	February 8	-5	21	29	38	59	1935	1965
January 9	-9	20	28	36	65	1942	1930, 1998	February 9	-12	21	30	38	57	1934	1990
January 10	-6	19	28	36	60	1942	1924	February 10	-11	21	30	39	57	1934	1990
January 11	-11	19	28	36	66	1942	1975	February 11	-6	21	30	39	64	1962	2009
January 12	-6	19	28	36	60	1968	1932	February 12	-6	21	30	39	68	1979	1999
January 13	-3	19	28	36	67	1981	1932	February 13	-6	21	30	39	59	1967	1937
January 14	1	19	27	36	71	1974	1932	February 14	-1	21	30	39	64	1979	1946
January 15	-6	19	27	36	68	1948	1995	February 15	-8	22	31	40	71	1943	1949
January 16	0	19	27	36	62	1994, 2004	1995	February 16	-7	22	31	40	72	1943	1954
January 17	-8	19	27	36	61	1982	1990	February 17	-3	22	31	40	63	1979	1976
January 18	-10	19	27	36	63	1954	2006	February 18	-6	22	31	41	67	1979	2011
January 19	-11	19	28	36	60	1994	1949	February 19	0	22	32	41	63	1936	1997
January 20	-6	19	28	36	56	1994	1951	February 20	-2	23	32	41	68	1936	1930
January 21	-15	19	28	36	63	1994	1959	February 21	0	23	32	41	67	1936	1930, 1953
January 22	-12	19	28	36	63	1961	1959	February 22	2	23	32	42	68	1968	1974
January 23	-9	19	28	36	62	1961	1999	February 23	2	23	33	42	71	1972	1985
January 24	-6	19	28	36	66	1948	1967	February 24	4	23	33	42	76	1948	1985
January 25	-4	19	28	36	64	1935, 1963	1967	February 25	3	24	33	43	74	1964	1930
January 26	-3	19	28	36	72	1948	1950	February 26	4	24	33	43	65	1970	1976
January 27	-5	20	28	36	66	1994	1974	February 27	-2	24	34	43	72	1963	1997
January 28	-7	20	28	36	60	1935	2002	February 28	-10	24	34	44	67	1934	1976
January 29	-9	20	28	37	66	1963	2002	February 29	?	24	34	44	?	?	?
January 30	-5	20	28	37	66	1928	1947	.	.	.	.	.	.	.	.
January 31	-9	20	28	37	60	1948	1974	.	.	.	.	.	.	.	.

NOAA data for Allentown, PA  
 Normal data includes 1981 to 2010  
 Record data includes 1922 to 2011





## Raw Temperature Data for Allentown, Pennsylvania (continued)

Date	Low		Mean	High		Record Years		Date	Low		Average	High		Record Years	
	Record	Normal	Normal	Normal	Record	Low	High		Record	Normal	Normal	Normal	Record	Low	High
July 1	48	62	73	83	97	1943	1931, 41, 63	August 1	52	63	73	84	98	1964, 1998	1955
July 2	47	62	*	84	102	2007	1966	August 2	49	63	73	84	100	1947	1955
July 3	46	62	*	84	105	2001	1966	August 3	48	62	73	84	97	1927	1930
July 4	46	62	*	84	102	1933	1949	August 4	50	62	73	84	98	1966	1930, 1944
July 5	50	62	*	84	98	1922, 1968	1955, 99, 2010	August 5	46	62	73	84	100	1951	1955
July 6	50	62	*	84	101	2001	2010	August 6	47	62	73	84	100	1951, 1957	1924
July 7	49	63	*	84	99	1968, 2001	2010	August 7	49	62	73	84	98	1964	1924
July 8	51	63	73	84	97	2000	1937	August 8	49	62	73	83	95	1930, 80, 2001	1989, 1997
July 9	48	63	74	84	103	1963	1936	August 9	50	62	73	83	98	1989	2001
July 10	51	63	74	84	103	1953	1936	August 10	51	62	73	83	99	1964, 72, 99	1949
July 11	50	63	74	84	100	1996	1936	August 11	47	62	73	83	97	1972	1949
July 12	48	63	74	84	98	1945, 2002	1966	August 12	47	62	72	83	98	1930	1944
July 13	51	63	74	84	99	2001	1966	August 13	45	62	72	83	98	1930	1944, 2002
July 14	50	63	74	84	100	2009	1954	August 14	47	61	72	83	99	1941	2002
July 15	51	63	74	85	98	1930, 40, 2009	1995	August 15	48	61	72	83	97	1964	1988
July 16	50	63	74	85	101	1946	1988	August 16	49	61	72	83	95	1945	1935, 1944
July 17	50	63	74	85	99	1946	1999	August 17	46	61	72	83	95	1979	1944, 2002
July 18	52	63	74	85	98	1925	1953, 1999	August 18	47	61	72	82	95	1981	2002
July 19	52	63	74	85	99	1924	1930	August 19	48	61	72	82	93	1963, 1981	1937
July 20	48	63	74	84	101	1997	1980	August 20	46	61	71	82	96	1944	1983
July 21	49	63	74	84	101	1965, 1966	1930, 1980	August 21	45	60	71	82	95	2000	1937
July 22	53	63	74	84	104	1944, 1966	2011	August 22	46	60	71	82	93	1988	1937
July 23	51	63	74	84	99	1939	1955	August 23	47	60	71	82	96	1923	1936
July 24	51	63	74	84	95	1947	1999	August 24	47	60	71	82	92	1952, 57, 71	1947
July 25	51	63	74	84	95	1953	1939, 49, 99	August 25	42	60	70	81	95	1927	1948
July 26	48	63	74	84	98	1976	1940	August 26	45	60	70	81	99	1944	1948
July 27	52	63	74	84	98	1946, 1962	1955	August 27	43	59	70	81	98	1944	1948
July 28	52	63	74	84	97	1962	1941, 1949	August 28	46	59	70	81	97	1968, 1988	1948, 53, 73
July 29	53	63	73	84	96	1928	1954	August 29	43	59	70	81	97	1982	1953
July 30	50	63	73	84	97	1968, 1997	1940	August 30	41	59	69	80	97	1934, 1986	1953
July 31	51	63	73	84	101	1936	1954	August 31	41	58	69	80	99	1934	1953



## Raw Temperature Data for Allentown, Pennsylvania (continued)

Date	Low		Mean	High		Record Years		Date	Low		Mean	High		Record Years	
	Record	Normal	Normal	Normal	Record	Low	High		Record	Normal	Normal	Normal	Record	Low	High
September 1	42	58	69	80	97	1967	1932, 1980	October 1	33	47	58	69	89	1930, 1993	1927
September 2	44	58	69	80	99	1949, 2001	1953, 1980	October 2	32	46	57	69	92	1997	1927
September 3	41	58	68	79	99	1967	1953	October 3	32	46	57	68	83	2003	1950, 2007
September 4	44	57	68	79	94	1946	1929, 1937	October 4	29	45	57	68	86	1974, 1996	1926, 2007
September 5	44	57	68	79	92	1997	1983	October 5	31	45	56	67	92	1996	1941
September 6	42	57	68	78	96	1988	1983	October 6	31	45	56	67	89	1958, 68, 96	1941
September 7	43	56	67	78	91	1962, 84, 2000	1985	October 7	32	44	55	67	87	1958	1946
September 8	42	56	67	78	97	1962	1939	October 8	29	44	55	66	90	1954	2007
September 9	42	56	66	77	93	1986	1959, 1964	October 9	26	43	55	66	87	2001	2007
September 10	39	55	66	77	96	1956	1983	October 10	30	43	54	66	89	1929	1949
September 11	39	55	66	77	96	1995	1983	October 11	28	43	54	65	86	1943	1949
September 12	37	55	65	76	93	1967	1931	October 12	25	42	54	65	86	1964	1928
September 13	39	54	65	76	94	1967	1952	October 13	30	42	53	65	85	2006	1954
September 14	40	54	65	76	91	1946	1931, 2008	October 14	29	42	53	64	86	1953	1975
September 15	38	53	64	75	95	1975	1927	October 15	29	41	53	64	82	2006	1947
September 16	38	53	64	75	95	1923	1991	October 16	26	41	52	64	81	1944	1938, 47, 63
September 17	39	53	64	75	93	1959, 86, 2007	1991	October 17	25	41	52	63	88	1937	1938
September 18	36	52	63	74	90	1990	1965	October 18	28	40	52	63	81	1937, 1974	1963
September 19	37	52	63	74	93	1943	1983	October 19	24	40	51	63	82	1974	1963
September 20	37	51	62	73	92	1993	1983	October 20	24	40	51	62	78	1972	1936
September 21	34	51	62	73	91	1956	1931, 1940	October 21	23	40	51	62	85	1972	1947
September 22	36	50	62	73	93	1997	1931, 1980	October 22	21	39	50	62	84	1940	1979
September 23	35	50	61	72	93	1947	1970	October 23	24	39	50	61	85	1997	1947
September 24	31	50	61	72	92	1963	1970	October 24	22	39	50	61	81	1969	2001
September 25	33	49	60	71	92	1963	1970	October 25	26	38	50	61	78	1962	1963
September 26	35	49	60	71	90	1932, 47, 67	1970, 2007	October 26	24	38	49	60	78	1952	1947, 1963
September 27	31	48	59	71	88	1947	1998	October 27	25	38	49	60	83	1988, 2006	1963
September 28	30	48	59	70	85	1947	1941	October 28	21	38	49	60	80	1936	1984
September 29	32	47	59	70	86	2000	1929, 1945	October 29	22	37	48	59	76	1940	1946, 1949
September 30	32	47	58	69	87	1942	1953, 1986	October 30	25	37	48	59	79	1962, 66, 67	1946
.	.	.	.	.	.	.	.	October 31	21	37	48	59	81	1988	1950



## Raw Temperature Data for Allentown, Pennsylvania (continued)

Date	Low		Mean	High		Record Years		Date	Low		Mean	High		Record Years	
	Record	Normal	Normal	Normal	Record	Low	High		Record	Normal	Normal	Normal	Record	Low	High
November 1	24	37	47	58	81	1923	1950	December 1	7	28	37	46	72	1967	2006
November 2	23	36	47	58	80	1923	1950	December 2	2	28	37	45	63	1967	1970, 80, 98
November 3	24	36	47	58	79	1951	2003	December 3	8	28	36	45	66	1976	1998
November 4	19	36	47	57	79	1951	1994	December 4	8	27	36	45	72	1940, 1966	1998
November 5	22	36	46	57	75	1952	1935, 1994	December 5	11	27	36	44	69	1926	2001
November 6	19	36	46	56	78	1991	1948	December 6	9	27	35	44	70	2002	2001
November 7	23	35	46	56	74	1954, 2009	1938	December 7	4	27	35	43	71	1926	1998
November 8	20	35	45	56	74	1960	1975	December 8	3	26	35	43	67	1926	1980
November 9	19	35	45	55	75	1967	1975	December 9	7	26	34	43	66	1989, 2002	1980
November 10	21	35	45	55	70	1956, 95, 2004	1931, 2002	December 10	1	26	34	42	70	1958	1946
November 11	19	34	44	55	72	1954, 1956	1935, 1949	December 11	-2	25	34	42	61	1958	1952, 1979
November 12	21	34	44	54	71	1926	1935	December 12	2	25	33	41	63	1988	1931
November 13	18	34	44	54	71	1996	1964	December 13	5	25	33	41	62	1960, 88, 95	1923
November 14	17	33	43	53	73	1986	1993	December 14	-2	24	33	41	60	2005	2001
November 15	18	33	43	53	77	1933, 86, 96	1993	December 15	6	24	32	40	61	1960, 2005	2008
November 16	12	33	43	52	72	1933	2005	December 16	1	24	32	40	60	1951	1971
November 17	14	33	42	52	71	1933	1928	December 17	-2	24	32	40	63	1951	2000
November 18	16	32	42	52	76	1933	1928	December 18	5	23	31	40	62	1945	2006
November 19	11	32	42	51	70	1924	1928, 1957	December 19	0	23	31	39	59	1951	1957
November 20	12	32	41	51	79	1924	1985	December 20	-2	23	31	39	63	1942, 1951	1957
November 21	17	32	41	50	73	1951	1931	December 21	-3	23	31	39	57	1942	1957
November 22	17	31	41	50	73	1964, 1969	1931	December 22	-2	22	30	38	61	1944	1998
November 23	16	31	40	49	72	1964, 2000	1931	December 23	-3	22	30	38	64	1960	1990
November 24	16	31	40	49	69	2000	1931	December 24	-5	22	30	38	62	1989	1990
November 25	16	30	39	49	72	1956, 1989	1979	December 25	-2	22	30	38	65	1983	1964
November 26	3	30	39	48	67	1938	1979, 1999	December 26	-3	21	29	38	65	1980	1964
November 27	12	30	39	48	62	1932	1959, 1988	December 27	-1	21	29	37	59	1948, 1950	1936, 1949
November 28	12	29	38	47	70	1930	1990	December 28	-8	21	29	37	63	1950	1982, 2008
November 29	11	29	38	47	69	1930, 1955	2005	December 29	-1	21	29	37	72	1933	1984
November 30	10	29	38	46	69	1929	1933	December 30	-2	21	29	37	64	1933	1984
.	.	.	.	.	.	.	.	December 31	-6	21	29	37	61	1963	1932, 65, 72