

# Local Climatological Data

Annual Summary With Comparative Data

1982



## WILMINGTON, DELAWARE

### Narrative Climatological Summary

Delaware is part of the Atlantic Coastal Plain consisting mainly of the flat low land with many marshes. Small streams and tidal estuaries comprise the drainage of the state. Wilmington, at the northern end of the state, marks the beginning of low rolling hills extending northward and northwestward into Pennsylvania. The Delaware River, the Delaware Bay, and the Atlantic Ocean are along the eastern boundary of the state. The broad Chesapeake Bay lies 35 miles, or less, to the west of the western boundary of nearly the entire state. These large water areas influence to a considerable extent the climate of the Wilmington, Delaware, region.

Summers are warm and humid and winters are usually mild. During the summer maximum temperatures are usually in the eighties. The maximum temperature reaches 100° on the average of one year in six. During the coldest part of the year, January, the normal daily average temperature is 32°. On the average, zero temperatures may be expected one year in four. Most of the winter precipitation falls as rain. Seasonal snowfall has been as little as 1 inch, and there has been a season with nearly 50 inches snowfall. Snow is frequently mixed with rain and sleet. Snow seldom remains on the ground more than a few days.

The average date for the last occurrence in spring of temperature as low as 32° is mid-April. The average date for the first occurrence in fall of temperature as low as 32° F. is late October. The average freeze-free period is approximately 200 days.

The proximity of large water areas and the inflow of southerly winds cause the relative humidity to be quite high all year. During the summer months the average relative humidity is approximately 75 percent. Fog is relatively frequent and may occur in any month. Light southeast winds blowing up the Delaware Bay favor the formation of fog. Light north-northeast winds bring in smoke from Philadelphia and from the heavy industry area located along the Delaware River north of Wilmington.

Rainfall distribution throughout the year is fairly uniform; however, the greatest amounts normally come during the summer months. Mostly, the summer rainfall comes in the form of thunderstorms. Moisture deficiencies for crops occur occasionally, but severe droughts are rare. During the fall, winter, and spring seasons, much of the rainfall comes as a result of storms forming over the southern states, or the south Atlantic and then moving northward along the Atlantic Coast. During the late summer and early fall, hurricanes occasionally cause heavy rainfall, but winds seldom reach hurricane force in Wilmington. Heavy rains occasionally cause minor flash flooding, but the streams and rivers of northern Delaware are not subject to major flooding. Strong easterly and southeasterly winds sometimes cause high tides in the Delaware Bay and the Delaware River, resulting in the flooding of lowlands and damage to bay front and river front properties.

# Meteorological Data For The Current Year

Station: WILMINGTON, DELAWARE 8 13781		GREATER WILMINGTON AIRPORT Standard time used: EASTERN										Latitude: 39° 40' N		Longitude: 75° 36' W		Elevation (ground): 74 feet		Year: 1982															
Month	Temperature °F					Degree days Base 65 °F					Precipitation in inches					Relative humidity, pct.					Wind					Average station pressure mb							
	Averages			Extremes			Water equivalent			Snow, ice pellets					Resultant					Fastest mile		Sunrise to sunset			Temperature °F								
	Daily maximum	Daily minimum	Monthly	Highest Date	Lowest Date	Heating	Cooling	Total	Greatest in 24 hrs.	Date	Total	Greatest in 24 hrs.	Date	(Local time)	Hour 01	Hour 07	Hour 13	Hour 19	Direction	Speed m.p.h.	Direction	Speed m.p.h.	Percent of possible sunshine	Ave. sky cover, tenths, sunrise to sunset	Clear	Partly cloudy	Cloudy	Temperature Maximum	Temperature Minimum				
JAN	32.5	15.8	24.2	57 4	-10 17	1259	0	3.75	1.62	3-4	14.6	5.3	13	68 70 60	64	30	5.3	11.4	33	27	5	6.6	9	6	16	12	0.1 inch or more	0	27	3 1015.9			
FEB	42.5	25.9	39.2	62 16	15 26	855	0	2.71	0.36	2-3	9.5	2.4	9	74 73 55	64	35	4.4	10.2	25	06	17	7.3	5	5	18	10	0	0	23	3 1019.6			
MAR	51.2	32.4	41.8	64 31	20 28	715	0	2.87	1.05	7	0.4	0.2	7	71 73 52	64	29	2.8	10.5	28	30	26	6.4	7	11	13	12	0	0	15	3 1016.6			
APR	62.5	38.7	50.6	81 17	18 7	426	0	5.41	1.23	3	2.6	1.5	9	63 65 44	50	28	5.2	12.5	39	29	4	4.6	13	8	9	9	0	0	8	3 1014.2			
MAY	75.8	54.2	65.0	86 31	44 11	69	75	3.72	2.16	28-29	0.0	0.0	77 76 51	62	02	0.8	8.5	21	35	12	6.0	8	11	12	12	0	0	0	3 1014.2				
JUN	78.9	60.8	69.9	90 16	54 24	163	4.70	2.45	12-13	0.0	0.0	86 82 61	70	30	1.0	8.6	20	30	20	6.8	7	9	14	16	0	0	0	0	1010.5				
JUL	86.9	67.7	77.3	95 19	56 2	0	391	2.70	1.23	23	0.0	0.0	85 81 57	69	24	7.5	23	32	19	13	10	8	9	9	0	0	0	0	0	0	1013.5		
AUG	82.5	61.5	72.0	90 5	43 29	14	238	4.68	2.37	17	0.0	0.0	85 85 57	67	27	2.5	7.9	29	28	17	5.2	13	8	10	7	0	0	0	0	0	1014.6		
SEP	76.9	57.8	67.4	88 2	46 24	29	107	2.30	1.04	26-27	0.0	0.0	88 89 59	73	36	0.7	7.9	23	16	27	6.0	8	11	11	7	0	0	0	0	0	1015.6		
OCT	66.9	45.1	56.0	83 8	28 18	105	32	1.97	1.52	25-26	0.0	0.0	85 87 54	73	32	2.2	8.6	26	03	25	5.7	7	15	9	6	0	0	0	0	0	1017.6		
NOV	57.7	37.2	47.5	79 2	19 28	51.9	1	3.87	1.43	4-5	T	T	28	83 87 57	71	28	9.2	30	31	13	6.5	5	10	15	8	0	0	0	0	0	1020.3		
DEC	50.1	32.5	41.5	72 5	9 13	724	0	2.39	0.91	15-16	5.8	5.2	12	80 83 66	74	29	2.5	9.0	29	35	9	7.1	6	6	19	11	0	0	0	0	0	1019.6	
YEAR	63.7	44.1	53.9	95 19	-10 17	4927	1009	41.07	2.45	12-13	27.9	5.3	13	79 79 56	67	30	2.3	9.3	39	29	4	6.1	101	110	154	119	9	25	37	16	16	103	3 1016.0

## Normals, Means, And Extremes

Month	Temperatures °F					Normal Degree days Base 65 °F		Precipitation in inches					Relative humidity pct.					Wind					Mean number of days					Average station pressure mb											
	Normal		Extremes					Water equivalent					Snow, ice pellets					Resultant			Fastest mile		Sunrise to sunset																
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year	Heating	Cooling	Normal	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs.	Year	Maximum monthly	Year	Mean speed m.p.h.	Precip. direction	Speed m.p.h.	Direction	Year	Pct. of possible sunshine	Mean sky cover, tenths, sunrise to sunset	Clear	Partly cloudy	Cloudy	Heavy fog, visibility 1/4 mile or less	90° and above	32° and below	22° and below	0° and below						
(a)	35	35	35	35	1950	-10	1982	1023	0	2.85	0.41	1978	0.52	1981	2.12	1978	17.2	1966	11.2	1966	73 75 60	68	10.0	NNW	46	29	1957	6.6	7	7	17	11	2	4	0	0	1015.1		
J	40.2	23.8	32.0	75	1950	-10	1982	1023	0	2.75	0.72	1979	0.83	1980	2.29	1966	27.5	1979	16.5	1979	72 74 57	65	10.5	NNW	46	29	1956	6.8	7	7	14	9	2	4	0	0	1015.7		
F	42.2	24.9	33.6	74	1954	-6	1979	879	0	3.74	6.22	1980	0.81	1966	3.11	1973	20.3	1950	15.6	1958	71 73 53	62	11.2	NNW	43	29	1971	6.3	7	7	15	11	1	2	0	0	1013.7		
M	51.1	32.0	41.6	88	1948	6	1980	725	0	3.20	6.57	1973	1.12	1963	2.56	1961	2.6	1982	1.5	1982	72 72 49	59	10.6	NNW	45	29	1963	6.3	7	9	18	11	1	2	0	0	1012.9		
A	63.0	41.5	52.3	91	1974	18	1982	381	0	3.30	7.04	1974	1.12	1963	2.56	1961	2.6	1982	1.5	1982	70 70 53	64	9.0	S	45	27	1957	6.5	6	10	15	12	0	0	0	0	0	1012.1	
M	73.1	51.6	62.4	95	1962	30	1978	128	43	3.35	7.35	1948	0.22	1960	2.35	1968	0.0	1963	1.7	1963	74 76 53	64	8.5	S	40	23	1960	6.0	7	11	12	10	0	0	0	0	0	1012.7	
J	81.6	61.1	71.4	99	1952	41	1972	0	3.24	7.49	1972	0.44	1954	4.35	1972	0.0	1972	0.0	1972	82 78 58	65	8.5	S	40	23	1960	6.0	7	11	12	10	0	0	0	0	0	1012.7		
J	85.5	66.1	75.8	102	1966	50	1979	0	4.31	7.51	1958	0.16	1955	6.24	1952	0.0	1952	0.0	1952	83 79 54	66	7.8	NW	48	27	1963	6.0	8	11	12	9	0	0	0	0	0	1013.0		
A	83.9	64.3	74.1	101	1955	43	1974	0	3.98	12.09	1955	0.25	1972	4.11	1971	0.0	1971	0.0	1971	84 83 56	70	7.5	S	46	35	1971	5.8	9	10	12	9	0	0	0	0	0	1014.7		
S	78.2	57.6	67.9	100	1953	36	1974	32	123	3.42	9.53	1960	0.82	1970	5.62	1960	0.0	1970	0.0	1970	84 85 55	71	7.9	S	40	07	1956	5.7	10	8	12	8	0	0	0	0	0	1015.0	
O	67.8	46.5	57.2	91	1951	24	1976	254	12	2.60	6.41	1971	0.21	1963	3.88	1966	2.5	1979	82 84 54	70	8.3	NW	58	20	1954	5.4	11	8	12	8	0	0	0	0	0	1016.0			
N	55.2	36.2	45.7	85	1950	14	1955	579	0	3.49	7.84	1972	0.49	1976	3.83	1956	11.9	1953	11.9	1953	77 80 56	69	9.2	NW	46	16	1950	6.3	8	8	14	9	0	0	0	0	0	1016.2	
D	43.0	26.3	34.7	72	1982	2	1980	939	0	3.32	7.90	1969	0.19	1955	2.22	1969	21.5	1966	12.4	1966	75 76 60	69	9.5	NW	44	29	1962	6.5	8	7	16	10	1	0	0	0	0	1015.9	
YR	63.7	44.3	54.0	102	JUL	-10	1982	4940	1015	40.25	12.09	1955	0.16	1955	6.24	1952	27.5	1979	16.5	1979	78 78 55	66	9.2	NW	58	20	1954	6.2	96	104	165	117	6	31	37	19	17	102	1 1014.4

Means and extremes above are from existing and comparable exposures. Annual extremes have been exceeded at other sites in the locality as follows: Highest temperature 107 in August 1918; lowest temperature -15 in February 1934; maximum monthly precipitation 14.91 in August 1911; minimum monthly precipitation 0.06 in October 1924; maximum precipitation in 24 hours 6.53 in August 1945; maximum snowfall in 24 hours 22.0 in December 1909.

(a) Length of record, years, through the current year unless otherwise noted, based on January data.

(b) 70° and above at Alaskan stations.  
\* Less than one half.  
T Trace.

NORMALS - Based on record for the 1941-1970 period.  
DATE OF AN EXTREME - The most recent in cases of multiple occurrence.

PREVAILING WIND DIRECTION - Record through 1963.  
WIND DIRECTION - Numerals indicate tens of degrees clockwise from true north. 00 indicates calm.

FASTEAST MILE WIND - Speed is fastest observed 1-minute value when the direction is in tens of degrees.

## Average Temperature

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1943	31.9	34.8	42.6	47.4	63.4	75.4	75.0	75.2	67.0	54.5	44.3	33.6	53.8
1944	34.9	34.2	38.9	50.0	67.3	71.7	75.8	74.7	71.2	55.2	45.6	31.6	54.2
1945	26.1	33.4	51.6	55.4	60.2	71.0	74.2	71.6	70.2	54.7	47.3	30.0	53.8
1946	34.2	35.0	50.4	50.2	61.6	67.4	73.4	69.6	68.4	59.1	47.8	37.4	54.5
#1947	37.8	27.8	36.5	51.4	60.9	68.0	73.8	75.2	67.5	62.2	42.9	33.4	53.1
1948	25.5	31.0	43.4	51.0	61.4	70.6	75.7	73.6	66.8	54.2	49.4	36.3	53.2
1949	39.2	38.6	43.2	52.0	62.9	72.9	78.7	75.1	64.2	60.8	44.5	37.5	55.8
1950	42.7	33.6	48.6	48.3	60.1	69.7	74.0	72.5	63.4	57.6	45.0	32.4	53.1
1951	34.2	34.8	41.5	51.6	61.9	70.4	75.9	73.8	67.0	59.1	41.5	37.6	54.1
1952	37.0	37.6	40.5	54.6	61.0	73.4	78.4	74.3	67.4	52.4	45.5	37.4	55.0
1953	37.6	38.4	44.4	52.3	65.0	72.2	77.0	74.5	68.2	58.0	45.2	38.7	56.0
1954	31.3	40.4	41.5	55.6	60.6	72.0	76.2	72.9	68.3	59.6	43.8	35.1	54.8
1955	31.5	34.1	41.5	54.8	64.8	68.7	81.2	77.9	67.2	58.1	43.3	29.9	54.6
1956	31.8	37.5	38.6	49.9	59.9	71.7	73.4	73.4	64.6	56.8	45.2	41.3	53.7
1957	28.6	37.4	42.2	54.1	62.9	74.2	75.9	73.2	68.7	53.3	46.6	37.9	54.6
1958	30.8	27.3	39.0	53.4	60.7	67.4	76.5	73.0	65.8	54.9	45.8	36.2	52.0
1959	30.9	33.0	41.1	54.3	65.6	72.0	75.4	76.0	70.4	59.5	44.7	38.0	55.1
1960	35.1	35.9	32.8	56.4	60.6	71.0	73.1	74.9	68.0	53.5	45.9	28.4	53.1
1961	25.6	34.7	42.6	48.9	58.9	70.5	75.6	74.0	72.5	56.9	46.7	33.2	53.3
1962	31.2	31.3	41.2	52.2	64.2	71.5	72.6	72.9	63.6	56.7	42.5	30.3	52.5
1963	26.4	27.5	44.1	52.6	60.3	70.8	76.3	71.7	63.7	54.8	48.0	28.4	52.5
1964	33.2	31.6	43.1	49.4	64.3	72.1	75.8	71.5	67.2	52.8	47.6	37.3	53.8
1965	29.0	33.6	38.4	49.3	66.0	70.2	74.5	73.3	69.4	53.6	45.0	37.7	53.3
1966	29.3	31.9	42.9	47.9	60.3	72.5	77.2	74.8	65.3	53.6	46.6	34.8	53.1
1967	36.2	29.4	39.4	51.5	55.4	71.2	74.4	72.8	65.1	54.7	40.7	36.8	52.3
1968	24.0	30.5	44.6	54.1	59.6	71.4	76.7	77.1	69.7	59.0	47.0	34.2	54.3
1969	30.8	33.6	39.6	55.1	64.2	73.4	75.7	75.4	68.2	56.0	44.6	32.7	54.1
1970	24.5	33.5	38.9	51.9	64.8	71.7	76.6	76.7	72.1	60.4	48.5	35.9	54.6
1971	27.4	35.5	40.7	51.1	60.4	73.4	75.9	74.0	71.1	62.9	45.7	42.1	55.0
1972	36.1	32.6	41.3	50.0	62.5	68.6	76.9	75.5	69.6	53.5	45.2	41.6	54.4
1973	35.6	35.5	49.4	54.7	61.4	75.8	78.1	78.1	70.4	59.9	49.1	37.7	57.2
1974	36.2	33.1	44.3	55.5	62.4	70.4	76.7	76.1	66.5	53.2	46.6	38.9	55.0
1975	37.5	35.9	40.6	47.5	65.2	71.5	75.7	76.3	65.4	50.0	51.0	36.2	55.2
1976	27.7	41.2	46.5	54.7	59.9	72.4	74.2	73.7	66.9	52.5	40.4	31.0	53.4
1977	20.8	33.3	47.2	54.4	63.9	69.9	76.4	75.4	69.3	53.4	46.6	33.4	53.6
1978	27.2	22.8	37.6	50.3	60.3	70.6	73.4	77.1	66.7	54.1	46.8	37.2	52.0
1979	31.4	22.1	45.4	50.6	63.8	67.9	75.3	75.0	68.2	55.0	49.6	38.3	53.5
1980	32.4	29.9	40.0	54.6	64.9	68.9	77.7	78.2	71.3	54.8	43.3	33.1	54.1
1981	25.4	37.9	40.2	55.0	62.5	72.3	77.1	73.5	66.9	53.0	45.3	34.2	53.6
1982	24.2	34.2	41.8	50.6	65.0	69.9	77.3	72.0	67.4	56.0	47.5	41.3	53.9
RECORD	32.2	33.0	42.0	52.2	62.7	71.3	76.0	74.2	67.9	56.6	45.7	35.2	54.1
MEAN	40.0	41.3	51.4	62.7	73.3	81.5	85.6	83.7	77.6	65.5	54.4	42.9	63.4
MAX	24.4	24.7	32.6	41.6	52.0	61.0	66.3	64.7	58.1	46.6	36.9	27.5	44.7
MIN	24.4	21.9	29.5	42.3	53.0	61.8	63.4	61.6	50.0	41.6	30.0	18.0	40.9

## Heating Degree Days

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1942-63	0	4	113	266	672	1072	1130	1044	641	370	180	10	5502
1943-54	0	3	104	195	502	1128	982	669	467	91	21	5128	
1944-65	0	9	49	372	514	854	1108	873	816	467	63	27	5152
1945-66	0	12	40	349	593	839	1103	921	767	507	186	24	5250
1946-67	0	0	94	346	545	931	888	991	788	402	295	5	5275
1947-68	0	0	80	327	723	864	1139	994	826	319	171	6	5750
1948-69	0	0	7	205	532	945	1052	974	780	298	92	1	4790
1949-70	0	0	41	289	606	993	1250	976	803	389	95	1	5342
1950-71	0	0	25	175	487	895	1159	921	766	411	153	3	4875
1951-72	0	2	23	93	585	702	869	935	732	443	105	27	4536
1952-73	0	0	20	356	586	716	902	920	747	322	143	0	4342
1953-74	0	0	15	179	469	839	866	887	635	300	137	7	4354
1954-75	0	0	65	362	553	805	847	808	753	520	94	5	4802
1955-76	0	0	56	177	416	886	1149	681	567	341	178	31	4486
1956-77	0	0	44	387	734	1047	1361	984	546	333	107	32	5479
1957-78	0	1	31	353	550	975	1165	1179	842	433	191	17	5737
1958-79	6	0	60	337	542	854	1037	1197	605	424	89	28	5179
1959-80	4	7	31	318	450	827	1004	1009	768	367	83	35	4851
1960-81	0	0	20	322	645	985	1222	752	763	299	135	4	5147
1961-82	0	0	57	370	585	947	1259	855	715	426	69	12	5295
1962-83	0	14	29	305	519	724	1040	1040	768	367	83	35	4851

## Cooling Degree Days

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	
1969	0	0	0	0	9	73	254	336	330	143	14	0	1162	
1970	0	0	0	0	2	97	211	365	371	244	38	0	1328	
1971	0	0	0	0	0	16	261	345	287	214	34	16	0	1173
1972	0	0	0	0	2	30	35	145	376	334	165	8	0	1063
1973	0	0	0	0	19	42	332	416	413	183	29	0	0	1434
1974	0	0	0	0	24	64	175	370	355	113	2	6	0	1109
1975	0	0	0	0	97	207	337	355	73	27	5	0	1101	
1976	0	0	0	0	37	25	265	291	278	106	6	0	0	1003
1977	0	0	0	0	50	20	156	360	328	166	5	0	0	1120
1978	0	0	0	0	48	168	273	365	317	7	0	0	0	1016
1979	0	0	0	0	4	57	123	327	324	138	16	0	0	990
1980	0	0	0	0	9	83	159	400	417	214	10	0	0	1283
1981	0	0	0	0	9	62	220	381	270	120	3	0	0	1073
1982	0	0	0	0	2	75	165	391	238	107	32	1	0	1009

## Snowfall

Season	July	Aug	Sept	Oct	Nov
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# STATION LOCATION

WILMINGTON, DELAWARE

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude North	Longitude West	Ground at temperature site	Elevation above Ground						Automatic Observing Equipment*	Remarks	
							Sea level	Wind Instruments	Extreme thermometers	Psychrometer	Sunshine Switch	Tipping bucket rain gage	Weighing rain gage	8" rain gage	
<b>COOPERATIVE</b>															
Wilmington, Delaware 6th and King Streets	4- 1-94	7-12-16		39° 45'	75° 33'	86							35'		Ordinary thermometer exposed outside N window; Sept. '09 max. and min. in use, exposure of thermometers poor.
Porter Reservoir Wilmington, Delaware 1.8 miles NNE of P. O.	3- 1-12	Present		39° 46'	75° 33'	260		3'					3'		Home made shelter in use; C. R. shelter September 1936, good exposure over sod. Precipitation record began 7-12-12.
Wilmington, Delaware 10th and King Streets 1 block S of P. O.	7-12-16	10-31-58	1.9 mi. SSW	39° 45'	75° 33'	99							47'		Precipitation only most of time.
<b>AIRPORT</b>															
Bellanca Field New Castle, Delaware 6.1 miles SSW Wilmington Post Office	4-20-31	6- 7-34		39° 40'	75° 36'										
DuPont Airport Wilmington, Delaware 3 miles WNW Wilmington Post Office	4-27-42	12- 8-42	6.8 mi. N	39° 46'	75° 36'										
New Castle County Airport Tower, Wilmington, Delaware, 5.6 miles SW of Post Office	5-19-47	11- 6-47	5.6 mi. SSW	39° 40'	75° 36'	75									Airway Observation by County Tower employees.
New Castle County Airport, Admin. Bldg.	11- 7-47	12- 5-47	125 yds. SW	39° 40'	75° 36'	73	75	5	5				3		Wind instruments of previous location used.
New Castle County Airport, Terminal Bldg.	12- 5-47	7-16-56	150 ft. NE	39° 40'	75° 36'	73	34	5	5				4		Exposure of instruments good.
New Terminal Building New Castle County AP *	7-16-56	Present	7/8 mi. SE	39° 40'	75° 36'	b74	20	s5	s5	NA	NA	5	4	a4	NA
															Exposure of instruments excellent. * Name changed to Greater Wilmington Airport in May 1961. a - Commissioned 1,000 feet from thermometer site 4-11-67. b - 78 feet to 4-11-67. s - Standby after 4-11-67.

SUBSCRIPTION:

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