

CLIMATOLOGICAL DATA

15 MARYLAND AND DELAWARE SECTION

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GENERAL SUMMARY

This July was warm and wet. The first half of the month was dry and sunny; the second half was humid and mostly cloudy, with almost daily rains or showers. Monthly sunshine was 5 per cent below normal. A tornado occurred in the early morning of the 15th.

Monthly rainfalls of 9 to 15 inches over the central and southern Eastern Shore and over southern Maryland were the greatest of record for July. Over the remainder of the section rainfall totals were 4 to 9 inches.

Flood waters from Wilson Creek on the 23d inundated the business section of Oakland to a depth of 5 feet by noon; damage \$50,000. Flood waters from Red Clay Creek on the 23d inundated a 50-sq. mile area northwest of Wilmington, and carried away farm crops, trees, livestock, a wooden-covered bridge near Ashland, Del., a new iron bridge on the Yorklyn-Old Kennett Road, and the bridges near Fox Chase, Del.

Growing crops were mostly good to excellent. During the first half of the month harvesting early peas ended and harvesting wheat and rye began in western Maryland; harvesting wheat and rye ended and harvesting oats began in eastern and central divisions; haying, digging early potatoes, and harvesting early tomatoes, cabbage, string beans, cucumbers, and early tree fruits were in progress; pastures and grasses were fair to good. The heavy rains of the second half of the month damaged tomatoes, tobacco, and grains in shock; blighted late potatoes in Garrett County; interrupted haying, harvesting crops and fruits, threshing, cultivating, and other outdoor operations; improved pastures and grasses to good to excellent. In western Maryland harvesting oats and late peas began during the third decade and harvesting wheat and rye ended during the last week. Corn made rapid and vigorous growth, tasseled, and was earing. Sugar corn advanced to the cutting stage. Sweet potatoes were making. — J. B., jr.

TEMPERATURE

The monthly mean for the section, 75.9°, is 0.6° above normal. The highest monthly mean was 79.4° at Solomons; the lowest, 68.2°, at Mt. Savage Summit, Oakland, and Sines. The highest temperature, 99°, occurred at Cumberland on the 8th; the lowest, 42°, at Oakland and Sines on the 5th. The greatest local monthly range was 52° at Hancock; the least, 28°, at Delaware Breakwater. The greatest daily range was 42° at Western Port on the 7th.

PRECIPITATION

The monthly average for the section, 7.33 inches, is 3.11 inches above normal. The greatest monthly amount was 15.04 inches at Crisfield; the least, 3.75 inches, at Woodstock. The greatest 24-hour amount was 8.20 inches at Crisfield on the 23-24th. The average number of days with 0.01 inch or more of precipitation, 12, is 2 above normal.

MISCELLANEOUS PHENOMENA (WITH DATES)

Lightning fired shirt factory at Brookview, eastern Dorchester

County, on 14th, loss \$10,000; fired barn and contents in the eastern suburbs of Baltimore and barn and contents at Harrisonville on 17th; damaged property at La Plata on 20th, loss \$1,000.

Thundergusts, high: 11, 12, 13, 15, 17, 18, 23, 29.

Thunderstorms: 9 to 15, 17 to 31.

Tornado: 15th. Developed 3 a.m., 1 mile west of Manchester, in extreme northeastern Carroll County, moved east-northeastward, and terminated at 3:45 a.m., 4 miles north of Delta, in extreme southeastern York County, Pa. Path of destruction was 30 miles long and from one-quarter mile to several miles

(Continued on next page)

PRESSURE, HUMIDITY, SUNSHINE, WIND, DEGREE DAYS

Stations	Atmospheric pressure reduced to sea level				Wind			Mean relative humidity			Cooling-degree days (base 75°)
	Highest	Date	Lowest	Date	Average hourly velocity	Maximum velocity	Direction	7:30 a. m.	Local "n"	7:30 p. m.		Percentage of sunshine
Aberdeen, Md.	30.15	31	29.72	2	7.7	21	sw.	23	83	75	81
Annapolis, Md.	30.11	22	29.73	14	6.6	.....	.....	.....	79	69	80
Baltimore, Md.	30.12	22	29.73	14	9.0	39	se.	12	76	53	67
Elkins, W. Va.	30.15	10	29.79	14	4.5	21	sw.	17	53	58	74
Harrisburg, Pa.	30.10	25	29.71	14	6.1	27	w.	29	80	56	61
Norfolk, Va.	30.17	30	29.78	3	9.0	29	se.	28	81	60	71
Philadelphia, Pa.	30.14	24	29.75	14	11.2	37	nw.	11	79	60	65
Pittsburgh, Pa.	30.12	30	29.78	14	7.9	22	sw.	1	83	54	58
Washington, D. C.	30.11	22	29.72	14	5.0	27	w.	29	81	57	68

COMPARATIVE DATA FOR JULY

Year	FOR MARYLAND					FOR DELAWARE					
	Temperature			Precipitation		Temperature			Precipitation		
	Mean	Highest	Lowest	Average	Average snowfall with .01 in. or more	Mean	Highest	Lowest	Average	Average snowfall with .01 in. or more	
1895.....	71.0	102	32	3.40	0.0	8	72.5	100	52	3.04	0.0
1896.....	75.7	99	40	5.39	0.0	11	77.2	99	53	4.71	0.0
1897.....	75.6	102	41	6.82	0.0	12	75.9	94	59	8.46	0.0
1898.....	77.4	109	32	3.53	0.0	9	77.5	99	51	4.09	0.0
1899.....	75.6	100	37	3.45	0.0	10	76.9	98	52	6.11	0.0
1900.....	77.2	106	35	3.25	0.0	8	78.7	100	54	2.69	0.0
1901.....	78.7	106	40	5.41	0.0	11	80.2	104	59	5.62	0.0
1902.....	75.7	104	43	3.76	0.0	10	76.4	104	52	3.22	0.0
1903.....	75.1	100	41	5.63	0.0	11	75.3	100	50	4.20	0.0
1904.....	73.4	102	35	5.19	0.0	12	74.2	98	51	5.97	0.0
1905.....	75.2	101	42	7.68	0.0	14	75.9	101	56	5.25	0.0
1906.....	73.9	96	42	5.08	0.0	12	74.9	95	55	6.95	0.0
1907.....	74.6	99	39	3.98	0.0	9	75.9	96	53	3.66	0.0
1908.....	76.5	102	38	4.80	0.0	11	78.2	100	52	5.46	0.0
1909.....	73.1	98	32	1.57	0.0	5	73.9	98	49	2.12	0.0
1910.....	75.9	98	42	2.43	0.0	8	77.0	95	51	3.53	0.0
1911.....	76.9	106	35	2.67	0.0	6	78.0	102	49	2.87	0.0
1912.....	74.2	99	43	5.40	0.0	11	75.4	98	51	4.44	0.0
1913.....	75.6	102	38	2.86	0.0	9	77.2	98	50	2.22	0.0
1914.....	74.3	101	35	2.74	0.0	10	75.3	99	53	5.43	0.0
1915.....	74.2	103	36	3.51	0.0	12	76.4	100	55	3.11	0.0
1916.....	75.9	100	42	5.46	0.0	10	76.4	98	53	5.91	0.0
1917.....	74.8	102	45	6.41	0.0	14	75.8	100	56	6.07	0.0
1918.....	72.4	99	38	3.16	0.0	9	74.0	97	48	2.84	0.0
1919.....	75.5	105	41	7.38	0.0	12	75.7	105	47	10.90	0.0
1920.....	72.8	98	37	4.65	0.0	9	74.3	96	48	4.89	0.0
1921.....	77.6	101	45	4.32	0.0	10	78.4	98	58	3.50	0.0
1922.....	74.7	99	43	5.83	0.0	12	75.3	96	56	6.39	0.0
1923.....	73.9	101	39	4.48	0.0	11	73.6	97	49	5.58	0.0
1924.....	72.9	100	42	2.86	0.0	7	73.7	94	52	3.31	0.0
1925.....	74.6	100	36	5.04	0.0	10	76.2	98	49	5.24	0.0
1926.....	74.8	107	38	5.21	0.0	12	75.9	102	51	10.47	0.0
1927.....	74.0	100	39	3.64	0.0	10	75.0	96	48	5.46	0.0
1928.....	75.5	99	40	4.22	0.0	10	76.7	98	51	4.88	0.0
1929.....	74.2	101	34	1.76	0.0	7	75.6	102	46	1.28	0.0
1930.....	76.9	108	38	1.41	0.0	6	78.3	110	50	3.00	0.0
1931.....	77.5	103	44	4.70	0.0	12	78.9	100	55	3.12	0.0
1932.....	74.6	99	41	3.10	0.0	9	76.2	91	53	2.44	0.0
1933.....	74.0	102	37	5.34	0.0	8	75.0	99	50	5.50	0.0
1934.....	78.4	107	42	2.97	0.0	8	78.7	101	52	7.19	0.0
1935.....	76.9	101	42	4.23	0.0	10	77.1	97	53	4.33	0.0
1936.....	75.8	109	38	4.20	0.0	10	76.1	105	55	4.01	0.0
1937.....	74.8	100	39	3.96	0.0	10	76.0	97	53	2.64	0.0
1938.....	75.8	99	42	7.00	0.0	14	76.7	96	50	9.69	0.0
Period.....	75.1	109	32	4.16	0.0	10	76.4	110	46	4.62	0.0

Climatological Data for July 1938

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in degrees Fahr.						Precipitation, in inches				Number of days			Prevailing direction of wind	OBSERVERS		
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)	With precip., 0.01 in. or more	Clear			Partly cloudy	Cloudy
<i>Maryland</i>																				
Aberdeen	Harford	26	20	77.0	+1.3	96	11	59	5	28	5.31	+1.17	1.25	0.0	18	4	15	12	sw.	U. S. Army
Annapolis	Anne Arundel	45	23	77.6	-0.1	93	12	63	4	21	7.27	+2.74	2.40	0.0	15	5	13	13	sw.	U. S. Navy
Baltimore*	Prince Georges	14	68	79.1	+1.9	97	11	62	4	27	4.87	+0.23	1.44	0.0	18	5	13	13	sw.	U. S. Weather Bureau
Bell	Montgomery	151	18	76.4	+0.6	97	11	50	5	37	4.31	-0.04	0.92	0.0	16	11	12	8	sw.	Bureau Plant Industry
Boysd.	Dorchester	375	19	76.6	+1.1	97	11	50	5	40	5.25	+1.75	1.61	0.0	13	14	12	5	sw.	Ralph F. Staley
Cambridge (near)	St. Marys	13	45	76.2	+1.7	95	11	54	4	30	9.69	+5.45	2.53	0.0	13	15	6	10	sw.	Matt Harding
Charlotte Hall	Prince Georges	167	18	77.0	+0.2	93	11	55	5	29	8.81	+4.55	2.00	0.0	15	13	8	10	sw.	A. D. V. Burr
Chesertown	Prince Georges	230	38	76.4	+0.5	93	11	54	5	28	8.80	+4.49	2.00	0.0	17	11	9	11	sw.	U. S. Magnetic Obs'y.
Cheltenham	Prince Georges	35	33	78.5	+2.4	97	10	57	4	31	6.01	+1.17	1.45	0.0	15	14	9	8	sw.	J. J. Coop
Chesutown	Washington	630	41	74.6	+0.5	93	11	48	5	37	3.84	-0.08	1.27	0.0	15	13	14	4	se.	D. Paul Oswald
Chewsville	do.	560	41	77.2	+0.5	96	11	60	4	27	6.60	+2.03	1.55	0.0	14	14	8	9	sw.	Mrs. Anna Bevan Cahill
Cleary Spring	Kent	80	41	77.2	+0.5	96	11	60	4	27	6.60	+2.03	1.55	0.0	14	14	8	9	sw.	Walter B. Harris
Coleman	Prince Georges	160	52	77.2	+1.6	96	11	50	5	36	4.63	+0.71	0.95	0.0	14	12	11	8	sw.	Thos. H. White
College Park	Harford	40	3	75.7	.....	93	11	54	5	31	9.72	.....	3.35	0.0	12	12	10	9	.....	Susquehanna Electric Co.
Conowingo Dam	Somerset	5	19	78.8	+1.3	93	18	58	4	21	15.04	+10.89	8.20	0.0	18	14	9	8	sw.	Arthur B. Cochrane
Crisfield	Allegany	623	68	76.5	+2.0	99	8	51	5	39	6.86	+3.78	1.84	0.0	12	12	12	7	nw.	Paul Stein
Cumberland	Harford	360	48	76.0	+1.2	94	11	55	4	31	7.79	+3.31	2.70	0.0	13	9	16	6	.....	Fred. C. Jones
Darlington	Baltimore	12	4	78.3	.....	96	8	58	4	26	6.24	.....	1.55	0.0	18	6	12	13	sw.	U. S. Airway Station
Dundalk	Talbot	35	48	78.0	+1.7	95	11	56	5	27	11.58	+7.36	1.97	0.0	14	14	8	9	sw.	Clement E. Bray
Easton	Cecil	28	12	76.6	+0.3	96	11	54	4	34	6.51	+2.48	1.32	0.0	15	15	8	8	sw.	H. W. Bouchelle
Elkton	Frederick	720	72	77.0	.....	94	11	56	4	28	7.51	+3.35	1.30	0.0	16	7	.....	.....	.....	Mt. St. Mary's Seminary
Emmitsburg	Harford	450	69	76.0	+1.8	94	11	56	4	28	7.51	+3.35	1.30	0.0	16	7	.....	.....	.....	Miss Dora Curtis
Fallston	Calvert	120	22	77.2	+1.2	95	10	57	4	28	7.39	+2.44	2.59	0.0	16	11	11	9	sw.	Thos. J. Bourne
Ferry Landing	Frederick	325	69	77.2	+0.5	97	11	50	5	37	6.25	+2.22	1.37	0.0	13	15	12	4	sw.	August T. Brust
Frederick	Garrett	1,980	20	69.2	0.0	88	8	46	5	32	6.70	+2.36	2.15	0.0	13	11	12	8	sw.	Joab J. Friend
Friendsville	Allegany	1,950	37	72.0	+0.2	90	10	52	4	33	4.23	+0.42	1.77	0.0	14	12	12	7	w.	Thos. F. Lewis
Frostburg	Cecil	25	2	77.1	.....	95	11	58	4	29	7.04	.....	2.20	0.0	9	13	9	9	sw.	Capt. N. L. Riggan
Georgetown	Garrett	2,320	45	68.8	+0.8	89	8	49	5	31	7.04	+3.01	1.79	0.0	18	11	12	8	w.	Floyd J. Miller
Grantsville	Montgomery	200	50	77.4	+1.6	98	11	49	5	39	3.98	+0.04	1.01	0.0	13	12	10	9	sw.	John E. Bissett
Great Falls	Washington	540	14	75.0	+0.3	98	8	46	5	41	4.33	+1.03	1.21	0.0	13	.....	.....	.....	.....	Marvin K. Murray
Hancock (City)	do.	550	28	75.0	+0.3	98	8	46	5	41	3.96	+0.66	0.71	0.0	12	14	12	5	.....	American Fruit Growers
Hancock (Tonoloway)	Calvert	160	3	76.8	.....	94	11	55	5	27	8.95	.....	2.19	0.0	15	13	7	11	se.	Elmer O. Bowen
Huntingtown	Washington	420	35	76.0	0.0	97	10	48	5	40	5.10	+1.28	0.98	0.0	15	15	11	5	sw.	J. A. Miller
Kedysville	Charles	190	24	76.2	-0.3	95	17	55	5	30	9.79	+5.22	3.34	0.0	15	12	8	11	sw.	Walter M. Page
La Plata	Prince Georges	300	44	76.4	+1.0	97	11	58	6	30	4.95	+0.77	1.11	0.0	17	12	11	8	sw.	Evan G. Chaney
Laurel	Baltimore	340	12	75.5	-0.1	95	11	49	5	36	6.65	+3.45	1.65	0.0	13	15	9	7	sw.	Clarence J. Thomson, Jr.
Lutherville	do.	840	14	74.8	+0.2	92	11	53	4	26	8.38	+3.40	1.80	0.0	13	15	10	6	sw.	Chester L. Fulton
Maryland Line	Kent	27	41	76.4	+0.2	94	11	56	4	30	7.15	+2.43	1.40	0.0	13	14	9	8	sw.	Henry L. Higman
Mount Savage Summit	Garrett	2,852	6	68.2	.....	86	8	50	4	27	4.63	.....	1.75	0.0	14	11	13	7	w.	U. S. Airway Station
Oakland	do.	2,420	41	68.2	+0.9	87	8	42	5	38	9.38	+4.72	3.76	0.0	19	11	13	7	w.	R. E. Weber
Oxford	Talbot	10	2	78.0	.....	91	11	61	4	21	9.72	.....	2.03	0.0	14	15	8	8	sw.	Henry Wilcox
Parkton	Baltimore	780	8	75.0	.....	93	11	53	4	30	5.74	.....	1.49	0.0	13	.....	.....	.....	.....	C. W. Hendrix
Perryville	Cecil	40	3	77.4	-0.5	97	11	49	5	36	8.05	.....	3.70	0.0	15	.....	.....	.....	.....	J. H. Tullis
Picardy	Allegany	1,030	12	74.4	-0.5	97	11	49	5	36	5.02	+2.50	0.83	0.0	12	13	12	6	w.	American Fruit Growers
Pleasant Hill	Baltimore	660	14	77.0	.....	94	11	53	4	32	5.18	+1.57	1.84	0.0	12	15	9	7	sw.	Walter P. Quintin, Jr.
Princess Anne	Somerset	17	63	77.0	+0.9	94	11	53	4	32	12.36	+8.21	4.60	0.0	13	3	19	9	sw.	James R. Stewart
Ridgely	Caroline	67	48	77.3	+0.9	95	11	55	4	30	10.79	+6.42	3.48	0.0	13	11	11	9	sw.	Albert White
Rock Hall	Kent	20	25	76.8	-0.3	95	11	55	5	29	6.09	+1.69	1.55	0.0	13	14	9	8	sw.	Charles J. Jendel
Salisbury	Wicomico	31	33	77.4	+0.6	95	12	52	4	33	9.75	+5.79	4.00	0.0	13	12	11	8	sw.	Brady C. Bounds
Sines (Deep Creek)	Garrett	2,000	14	68.2	+0.4	90	17	42	5	39	7.49	+3.19	2.98	0.0	18	11	13	7	sw.	C. E. MacMurray
Snow Hill	Worcester	20	23	76.8	+0.9	94	11	52	4	33	11.20	+7.60	1.80	0.0	9	10	12	9	sw.	Richard Leake
Solomons	Calvert	30	37	79.4	+1.3	94	11	62	4	25	9.57	+5.44	1.33	0.0	16	14	13	4	sw.	Chesapeake Biological Lab.
State Sanatorium	Frederick	1,460	30	74.2	+0.2	94	11	55	5	32	6.06	+2.04	1.40	0.0	12	9	13	9	sw.	T. R. Price
Stevensville	Queen Annes	12	12	77.4	-0.1	94	11	55	5	28	5.65	+1.81	1.40	0.0	15	12	11	8	.....	Guy L. Seaman
Takoma	Montgomery	320	40	77.7	+2.2	98	11	58	4	31	7.41	+3.33	1.46	0.0	15	12	11	8	.....	S. Elmer Parks
Towson	Baltimore	475	27	74.2	+0.5	97	11	49	5	42	5.92	+1.59	1.19	0.0	13	7	15	9	sw.	Norris Bruce
Western Port	Allegany	1,000	45	74.2	+0.5	97	11	49	5	42	4.09	+0.50	1.45	0.0	15	.....	.....	.....	.....	Harry J. Mathias
Westminster	Carroll	770	29	75.1	-0.1	95	11	50	4	34	4.83	+0.78	1.23	0.0	11	15	11	5	sw.	Woodstock College
Woodstock	Baltimore	415	69	75.4	+0.2	97	11	48	5	39	3.75	-0.45	0.76	0.0	15	13	11	7	sw.	.....
<i>Dist. of Columbia</i>																				
Washington**	do.	72	68	78.4	+1.6	96	10	60	5	27	5.06	+0.35	1.13	0.0	17	6	11	14	sw.	U. S. Weather Bureau
<i>Delaware</i>																				
Bridgeville	Sussex	45	48	76.5	+0.5	94	10	54	4	32	11.24	+6.31	2.51	0.0	16	12	12	7	sw.	William M. Ray
Delaware Breakwater	do.	40	3	75.2	.....	89	28	61	4	21	9.32	.....	1.87	0.0	17	10	13	8	sw.	U. S. Airway Station
Delaware City	New Castle	10	52	77.2	+0.6	93	11	58	5	26	8.19	+4.13	2.75	0.0	16	15	8	8	sw.	James E. Maden
Dover	Kent	34	51	77.6	+1.0	95	11	58	4	29	13.43	+8.96	4.52	0.0	16	14	10	7	sw.	Arthur G. Livingston

Daily Precipitation for July 1938

Table with columns for Stations, Drainage basin, Day of month (1-31), and Total. Rows list various Maryland and Delaware locations with their respective precipitation data for each day of July 1938.

Except as otherwise indicated, observations are generally made late in afternoon, near sunset, and precipitation recorded is for the 24 hours ending at time of observation.
***Regular Weather Bureau station; precipitation is for the 24-hour period, midnight to midnight.
**Precipitation is for 24-hour period, midnight to midnight.
|||Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.
T. Trace, or less than 0.01 inch.
§Northwest of Frostburg.
§§Prettyboy Dam.
§§§Municipal Building.
§§§§Porter Reservoir.
*Precipitation included in following measurement.

Daily Temperatures for July 1938

Table with columns for Stations, Day of month (1-31), and Mean. Rows list Delaware locations (Bridgeville, Delaware Breakwater, Delaware City, Dover, Milford, Millsboro, Odessa, Wilmington) with their maximum and minimum temperatures for each day of July 1938.

Daily Temperatures for July 1938—Continued

Table with columns for Stations, 1-31, and Mean. Rows list various Maryland locations such as Aberdeen, Annapolis, Baltimore, etc., with their respective temperature readings for each day of the month.

§§ Instruments are read in morning; maximum temperature then read is charged to preceding day, on which it almost always occurs. Temperatures at Aberdeen, Annapolis, Baltimore, Conowingo Dam, Dundalk, Sines, and Washington are from midnight to midnight; other stations, except Cheltenham, Cumberland and Salisbury are for 24-hour period ending late in afternoon, near sunset.