

## CLIMATE OF PENNSYLVANIA

### INTRODUCTION

This publication consists of a narrative that describes some of the principal climatic features and a number of climatological summaries for stations in various geographic regions of the State. The detailed information presented should be sufficient for general use; however, some users may require additional information.

The National Climatic Center (NCC) located in Asheville, NC is authorized to perform special services for other government agencies and for private clients at the expense of the requester. The amount charged in all cases is intended solely to defray the expenses incurred by the government in satisfying such specific requests to the best of its ability. It is essential that requesters furnish the NCC with a precise statement describing the problem so that a mutual understanding of the specifications is reached.

Unpublished climatological summaries have been prepared for a wide variety of users to fit specific applications. These include wind and temperature studies at airports, heating and cooling degree day information for energy studies, and many others. Tabulations produced as by-products of major projects often contain information useful for unrelated special problems. A copy of each tabulation on file at the Center may be obtained for the cost of duplication.

The Means and Extremes of meteorological variables in the Climatology of the U.S. No.20 series are recorded by observers in the cooperative network. The Normals, Means and Extremes in the Local Climatological Data, annuals are computed from observations taken by National Weather Service personnel who are generally located at airports.

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## CLIMATE OF PENNSYLVANIA

**TOPOGRAPHIC FEATURES** - The erratic course of the Delaware River is the only natural boundary of Pennsylvania. All others are arbitrary boundaries that do not conform to physical features. Notable contrasts in topography, climate, and soils exist. Within this 45,126-square-mile area lies a great variety of physical land forms of which the most notable is the Appalachian Mountain system composed of two ranges; the Blue Ridge and the Allegheny. These mountains divide the Commonwealth into three major topographical sections. In addition, two plains areas of relatively small size also exist, one in the southeast and the other in the northwest.

In the extreme southeast is the Coastal Plain situated along the Delaware River and covering an area 50 miles long and 10 miles wide. The land is low, flat, and poorly drained, but has been improved for industrial and commercial use because of its proximity to ocean transportation via the Delaware River. Philadelphia lies almost in the center of this area.

Bordering the Coast Plain and extending 60 to 80 miles northwest to the Blue Ridge is the Piedmont Plateau, with elevations ranging from 100 to 500 feet and including rolling or undulating uplands, low hills, fertile valleys, and well drained soils. These features, combined with the prevailing climate, have aided this area in becoming the leading agricultural section of the State. Good pastures, productive land, and short distances to markets have resulted in dairy farming becoming one of the leading agricultural activities. Another activity is the growing of fruit, primarily apples and peaches. Gentle hillside slopes provide an excellent place for fruit trees, as cold air drainage helps to prevent unseasonable freezing temperatures on these slightly elevated lands. The area has many orchards, with Adams County leading all others within the region in the production of apples. The climate and soils in the Lancaster County area are especially well suited for the growing of cigar leaf tobacco, as is pointed up by the fact that Pennsylvania is the leading producer of cigar leaf of any type in the Nation.

Just northwest of the Piedmont and between the Blue Ridge and Allegheny Mountains is the Ridge and Valley Region, in which forested ridges alternate with fertile and extensively farmed valleys. Vegetables, grown primarily for canning, are the leading crop. This has led to a well developed canning industry, which is concentrated in the middle Susquehanna Valley. The Ridge and Valley Province is 80 to 100 miles wide and characterized by parallel ridges and valleys oriented north-east-southwest. The mountain ridges vary from 1,300 and 1,600 feet above sea level, with local relief 600 to 700 feet.

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North and west of the Ridge and Valley Region and extending to the New York and Ohio borders is the area known as the Allegheny Plateau. This is the largest natural division of the State and occupies more than half the area. It is crossed by many deep narrow valleys and drained by the Delaware, Susquehanna, Allegheny, and Monongahela River systems. Elevations are generally 1,000 to 2,000 feet; however, some mountain peaks extend to 3,000 feet. The area is heavily wooded and among the most rugged in the State. Numerous lakes and swamps characterize this once glaciated area, creating a very picturesque landscape; this is particularly outstanding in the more northerly counties. The combination of lakes and forests at elevations high enough to keep summer temperatures comfortable and its location close to heavily populated cities have made the Pocono Mountain area a leading tourist and recreational center.

Bordering Lake Erie is a narrow 40-mile strip of flat, rich land three to four miles wide called the Lake Erie Plain. Fine alluvial soils and favorable climate permit intensive vegetable and fruit cultivation, which is typical of the much larger area surrounding Lake Erie.

Eastern and central Pennsylvania drain into the Atlantic Ocean, while the western portion of the State lies in the Ohio River Basin, except for the Lake Erie Plain in the northwest, which is drained by a number of small streams into Lake Erie. The Delaware River, which forms the eastern boundary, drains the eastern portion and flows into Delaware Bay. The Susquehanna River drains the central portion and flows into Chesapeake Bay. In the western portion, the Allegheny and the Monongahela Rivers have their confluence at Pittsburgh to form the Ohio River.

Floods may occur during any month of the year in Pennsylvania, although they occur with greater frequency in the spring months of March and April. They may result from heavy rains during any season. Generally, the most widespread flooding occurs during the winter and spring when associated with heavy rains, or heavy rains combined with snowmelt. Serious local flooding sometimes results from ice jams during the spring thaw. Heavy local thunderstorm rains cause severe flash flooding in many areas. Storms of tropical origin sometimes deposit flood-producing rains, especially in the eastern portion of the State.

Floods may be expected at least once in most years. For instance, flood stage at Pittsburgh is exceeded on the average of 1.3 times per year, based on the long-term record. However, floods of notable severity and magnitude for the State occur about once in eight years.

**GENERAL CLIMATIC FEATURES** - Pennsylvania is generally considered to have a humid continental type of climate, but the varied physiographic features have a marked effect on the weather and climate of the various sections within the State. The prevailing westerly winds carry most of the weather disturbances that affect Pennsylvania from the interior of the continent, so that the Atlantic Ocean has only limited influence upon

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the climate of the State. Coastal storms do, at times, affect the day-to-day weather, especially in eastern sections. It is here that storms of tropical origin have the greatest effect within the State, causing floods in some instances.

Throughout the State temperatures generally remain between 0° and 100°F and average from near 47°F annually in the north-central mountains to 57°F annually in the extreme southeast. The highest temperature of record in Pennsylvania of 111°F was observed at Phoenixville July 9 and 10, 1936, while the record low of -42°F occurred at Smethport January 5, 1904.

Summers are generally warm, averaging about 68°F along Lake Erie to 74°F in southeastern counties. High temperatures, 90°F or above, occur on an average of 10 to 20 days per year in most sections; but occasionally southeastern localities may experience a season with as many as 30 days, while the extreme northwest averages no few as four days annually. Only rarely does a summer pass without excessive temperatures being reported somewhere in the State. However, there are places such as immediately adjacent to Lake Erie and at some higher elevations where readings of 100°F have never been recorded. Daily temperatures during the warm season usually have a range of about 20°F over much of the State, while the daily range in winter is several degrees less. During the coldest months temperatures average near the freezing point with daily minimum readings sometimes near 0°F or below. Freezing temperatures occur on the average of 100 or more days annually with the greatest number of occurrences in mountainous regions. Records show that freezing temperatures have occurred somewhere in the State during all months of the year and below 0°F readings from November to April, inclusive.

Precipitation is fairly evenly distributed throughout the year. Annual amounts generally range between 34 to 52 inches, while the majority of places receive 38 to 46 inches. Greatest amounts usually occur in spring and summer months, while February is the driest month, having about two inches less than the wettest months. Precipitation tends to be somewhat greater in eastern sections due primarily to coastal storms which occasionally frequent the area. During the warm season these storms bring heavy rain, while in winter heavy snow or a mixture of rain and snow may be produced. Thunderstorms, which average between 30 to 35 per year, are concentrated in the warm months and are responsible for most of the summertime rainfall, which averages from 11 inches in the northwest to 13 inches in the east. Occasionally dry spells may develop and persist for several months during which time monthly precipitation may total less than one-quarter inch. These periods almost never affect all sections of the State at the same time, nor are they confined to any particular season of the year. Winter precipitation is usually three to four inches less than summer rainfall and is produced most frequently from northeastward-moving storms. When temperatures are low enough these storms sometimes cause heavy snow which may accumulate to 20 inches or more. Annual snowfall ranges between wide limits from year to year and place to place. Some years are quite light as snowfall may total less than ten inches while other years may produce upwards to 100

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inches, mostly in northern and mountainous areas. Annual snowfall averages from about 20 inches in the extreme southeast to 90 inches in parts of McKean County. Measurable snow generally occurs between November 20 and March 15, although snow has been observed as early as the beginning of October and as late as May, especially in northern counties. Greatest monthly amounts usually fall in December and January; however, greatest amounts from individual storms generally occur in March as the moisture supply increases with the annual march of temperature.

As mentioned earlier, hurricanes or low pressure systems with a tropical origin seldom affect the State. Damages as a result of hurricane winds are rare and usually confined to extreme eastern portions. However, nature's most violent storm, the tornado, does occur in Pennsylvania. At least one tornado has been noted in almost all counties since the advent of severe storm records in 1854. On the average, six or seven tornadoes are observed annually in Pennsylvania, and the State ranks 27th nationally. June is the month of highest frequency, followed closely by July and August. Principal areas of tornado concentration are in the extreme northwest, the Southwest Plateau, and the Southeastern Piedmont. The frequency in the latter area is the highest in the State per square mile, similar to what is observed in portions of the Midwestern United States. Many of the tornadoes in Pennsylvania have caused relatively minor damages. However, several have claimed lives and dealt severe local economic setbacks. The most destructive activity occurred June 23, 1944, when three tornadoes raked the southwestern portion of the Commonwealth, killing 45 persons, injuring another 362, and causing over \$2 million in property damage.

More detailed information is given for each of the four rather distinct climatic areas of the state.

**THE SOUTHEASTERN COASTAL PLAIN AND PIEDMONT PLATEAU** - In this region the summers are long and at times uncomfortably hot. Daily temperatures reach 90°F or above on the average of 25 days during the summer season; however, readings of 100°F or above are comparatively rare. From about July 1 to the middle of September this area occasionally experiences uncomfortably warm periods, four to five days to a week in length, during which light wind movement and high relative humidity make conditions oppressive. In general, the winters are comparatively mild, with an average of less than 100 days with minimum temperatures below the freezing point. Temperatures 0°F or lower occur at Philadelphia, on an average, one winter in four, and at Harrisburg one in three. The freeze-free season averages 170 to 200 days.

Average annual precipitation in the area ranges from about 30 inches in the lower Susquehanna Valley to about 46 in Chester County. Under the influence of an occasional severe coastal storm, a normal month's rainfall, or more, may occur within a period of 48 hours. The average seasonal snowfall is about 30 inches, and fields are ordinarily snow covered about one-third of the time during the winter season.

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**THE RIDGE AND VALLEY PROVINCE** - This region does not have a true mountain type of climate, but it does have many of the characteristics of such a climate. The mountain-and-valley influence on the air movements causes somewhat greater temperature extremes than are experienced in the southeastern part of the State where the modifying coastal and Chesapeake Bay influence hold them relatively constant, and the daily range of temperature increases somewhat under the valley influences.

The effects of nocturnal radiation in the valleys and the tendency for cool air masses to flow down them at night result in a shortening of the growing season by causing freezes later in spring and earlier in fall than would otherwise occur. The growing (freeze-free) season in this section is longest in the middle Susquehanna Valley, where it averages about 165 days, and shortest in Schuylkill and Carbon Counties, averaging less than 130 days.

The annual precipitation in this area has a mean value of three or four inches more than in the southeastern part of the State, but its geographic distribution is less uniform. The mountain ridges are high enough to have some deflecting influence on general storm winds, while summer showers and thunderstorms are often shunted up the valleys.

Seasonal snowfall of the Ridge and Valley Province varies considerably within short distances. It is greatest in Somerset County, averaging 88 inches in the vicinity of Somerset, and least in Huntingdon, Mifflin, and Juniata Counties, averaging about 37 inches.

**THE ALLEGHENY PLATEAU** - This region has a continental type of climate, with changeable temperatures and more frequent precipitation than other parts of the State. In the more northerly sections the influence of latitude, together with higher elevation and radiation conditions, serve to make this the coldest area in the State. Occasionally, winter minimum temperatures are severe. The daily temperature range is fairly large, averaging about 20° in midwinter and 26° in midsummer. In the southern counties the daily temperature range is a few degrees higher and the same may be said of the normal annual range. Because of the rugged topography the freeze-free season is variable, ranging between 130 days in the north to 175 days in the south.

Annual precipitation has a mean of about 41 inches, ranging from less than 35 inches in the northern parts of Tioga and Bradford Counties to more than 45 inches in parts of Crawford, Warren, and Wayne Counties. The seasonal snowfall averages 54 inches in northern areas, while southern sections receive several inches less. Fields are normally snow covered three-fourths of the time during the winter season. With rapidly flowing streams in the Ohio Drainage system (except the Monongahela), it is fortunate that this part of the State is not subject to torrential rains such as sometimes occur along the Atlantic slope. Although average annual precipitation is about equal to that for the State as a whole, it usually occurs in smaller amounts at more frequent intervals; 24-hour rains exceeding 2.5 inches are comparatively rare.

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THE LAKE ERIE PLAIN - This region has a unique and agriculturally advantageous climate typical of the coastal areas surrounding much of the Great Lakes. Both in spring and autumn the lake water exerts a retarding influence on the temperature regime and the freeze-free season is extended about 45 days. In the autumn this prevents early freezing temperatures, which is a critical factor in the growing of fruit and vegetables.

Annual precipitation totals about 34.5 inches, which is fairly evenly distributed throughout the year. Snowfall exceeds 54 inches per year, with heavy snows sometimes experienced late in April.

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STATIONS IN THE CURRENT SERIES OF CLIMATOGRAPHY OF THE U.S. NO. 20:

<u>PENNSYLVANIA</u>	<u>PERIOD</u>	<u>LAT. (N)</u>	<u>LONG. (W)</u>	<u>ELEV. (FT.)</u>
Carlisle	1951-74	40°13'	77°12'	465
Chambersburg 1 ESE	1951-74	39°56'	77°38'	640
Claysville 3 W	1951-70	40°07'	80°28'	1000
Donora 1 SW	1951-74	40°10'	79°52'	762
Ephrata	1951-74	40°10'	76°10'	485
Franklin	1951-74	41°23'	79°49'	987
Gettysburg	1951-74	39°50'	77°14'	500
Holtwood	1951-74	39°50'	76°20'	187
Jamestown 2 NW	1951-74	41°30'	80°28'	1050
Johnstown	1951-74	40°20'	78°55'	1214
Lawrenceville	1951-73	42°00'	77°08'	1000
Marcus Hook	1951-74	39°49'	75°25'	12
Montrose	1951-74	41°50'	75°52'	1560
Phoenixville 1 E	1951-74	40°07'	75°30'	105
Port Clinton	1951-74	40°35'	76°02'	450
Reading 3 N	1951-72	40°22'	75°56'	270
Ridgway	1951-74	41°25'	78°45'	1360
State College	1951-74	40°48'	77°52'	1170
Stroudsburg	1951-74	41°00'	75°11'	480
Towanda 1 ESE	1951-74	41°45'	76°25'	745
Warren	1951-74	41°51'	79°08'	1280
York 3 SSW Pump Sta	1951-74	39°55'	76°45'	390

STATIONS FOR WHICH LOCAL CLIMATOLOGICAL DATA, ANNUAL, IS PREPARED:

<u>PENNSYLVANIA</u>	<u>PERIOD</u>	<u>LAT. (N)</u>	<u>LONG. (W)</u>	<u>ELEV. (FT.)</u>
Allentown	1976	40°39'	75°26'	397
Avoca	1976	41°20'	75°44'	930
Erie	1976	42°05'	80°11'	731
Harrisburg	1976	40°13'	76°51'	338
Philadelphia	1976	39°53'	75°15'	5
Pittsburgh AP	1976	40°30'	80°13'	1137
Pittsburgh Fed. Bldg.	1976	40°27'	80°00'	747
Williamsport	1976	41°15'	76°55'	524

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CLIMATOLOGICAL SUMMARY

CARLISLE, PA 1981-1974 45° 2' N 77° 12' W 488 FT.

MONTH	TEMPERATURE °F.											PRECIPITATION TOTALS INCHES											MEAN NUMBER OF DAYS		
	MEANS		EXTREMES			MEAN MONTHLY					MEAN MONTHLY					FROST			WINDY						
	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY					
JAN	37.7	22.2	59.5	7	27	23	11	100	2	0	0	27.0	3.1	2.0	2.0	25.0	25.0	15.0	0	0	0				
FEB	35.0	20.0	52.0	7	16	19	100	2	0	0	25.0	3.0	2.0	2.0	22.0	22.0	15.0	0	0	0					
MAR	38.0	21.0	58.0	0	28	28	100	2	0	0	27.0	3.0	2.0	2.0	25.0	25.0	15.0	0	0	0					
APR	45.0	24.0	65.0	0	38	38	100	2	0	0	29.0	3.0	2.0	2.0	27.0	27.0	15.0	0	0	0					
MAY	52.0	30.0	72.0	0	48	48	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					
JUN	59.0	37.0	79.0	0	58	58	100	2	0	0	33.0	3.0	2.0	2.0	31.0	31.0	15.0	0	0	0					
JUL	67.0	45.0	87.0	0	68	68	100	2	0	0	35.0	3.0	2.0	2.0	33.0	33.0	15.0	0	0	0					
AUG	65.0	43.0	85.0	0	68	68	100	2	0	0	33.0	3.0	2.0	2.0	31.0	31.0	15.0	0	0	0					
SEP	62.0	40.0	82.0	0	68	68	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					
OCT	55.0	33.0	75.0	0	58	58	100	2	0	0	29.0	3.0	2.0	2.0	27.0	27.0	15.0	0	0	0					
NOV	48.0	26.0	68.0	0	48	48	100	2	0	0	27.0	3.0	2.0	2.0	25.0	25.0	15.0	0	0	0					
DEC	40.0	18.0	60.0	0	38	38	100	2	0	0	25.0	3.0	2.0	2.0	23.0	23.0	15.0	0	0	0					
YEAR	55.0	35.0	75.0	100	100	100	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					

CHAMBERSBURG ESE, PA 1981-1974 39° 50' N 77° 38' W 640 FT.

MONTH	TEMPERATURE °F.											PRECIPITATION TOTALS INCHES											MEAN NUMBER OF DAYS		
	MEANS		EXTREMES			MEAN MONTHLY					MEAN MONTHLY					FROST			WINDY						
	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY					
JAN	37.0	20.0	57.0	7	27	23	100	2	0	0	27.0	3.1	2.0	2.0	25.0	25.0	15.0	0	0	0					
FEB	34.0	17.0	54.0	7	16	19	100	2	0	0	25.0	3.0	2.0	2.0	22.0	22.0	15.0	0	0	0					
MAR	41.0	24.0	61.0	0	28	28	100	2	0	0	27.0	3.0	2.0	2.0	25.0	25.0	15.0	0	0	0					
APR	48.0	27.0	68.0	0	38	38	100	2	0	0	29.0	3.0	2.0	2.0	27.0	27.0	15.0	0	0	0					
MAY	55.0	33.0	75.0	0	48	48	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					
JUN	62.0	40.0	82.0	0	58	58	100	2	0	0	33.0	3.0	2.0	2.0	31.0	31.0	15.0	0	0	0					
JUL	69.0	47.0	89.0	0	68	68	100	2	0	0	35.0	3.0	2.0	2.0	33.0	33.0	15.0	0	0	0					
AUG	67.0	45.0	87.0	0	68	68	100	2	0	0	33.0	3.0	2.0	2.0	31.0	31.0	15.0	0	0	0					
SEP	64.0	42.0	84.0	0	68	68	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					
OCT	57.0	35.0	77.0	0	58	58	100	2	0	0	29.0	3.0	2.0	2.0	27.0	27.0	15.0	0	0	0					
NOV	50.0	28.0	70.0	0	48	48	100	2	0	0	27.0	3.0	2.0	2.0	25.0	25.0	15.0	0	0	0					
DEC	42.0	20.0	62.0	0	38	38	100	2	0	0	25.0	3.0	2.0	2.0	23.0	23.0	15.0	0	0	0					
YEAR	55.0	35.0	75.0	100	100	100	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					

CLAYVILLE SW, PA 1981-1970 42° 57' N 80° 28' W 1000 FT.

MONTH	TEMPERATURE °F.											PRECIPITATION TOTALS INCHES											MEAN NUMBER OF DAYS		
	MEANS		EXTREMES			MEAN MONTHLY					MEAN MONTHLY					FROST			WINDY						
	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY	WINDY	RELATIVE HUMIDITY					
JAN	36.0	19.0	56.0	7	27	23	100	2	0	0	27.0	3.1	2.0	2.0	25.0	25.0	15.0	0	0	0					
FEB	33.0	16.0	53.0	7	16	19	100	2	0	0	25.0	3.0	2.0	2.0	22.0	22.0	15.0	0	0	0					
MAR	40.0	23.0	60.0	0	28	28	100	2	0	0	27.0	3.0	2.0	2.0	25.0	25.0	15.0	0	0	0					
APR	47.0	26.0	67.0	0	38	38	100	2	0	0	29.0	3.0	2.0	2.0	27.0	27.0	15.0	0	0	0					
MAY	54.0	32.0	74.0	0	48	48	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					
JUN	61.0	39.0	81.0	0	58	58	100	2	0	0	33.0	3.0	2.0	2.0	31.0	31.0	15.0	0	0	0					
JUL	68.0	46.0	88.0	0	68	68	100	2	0	0	35.0	3.0	2.0	2.0	33.0	33.0	15.0	0	0	0					
AUG	66.0	44.0	86.0	0	68	68	100	2	0	0	33.0	3.0	2.0	2.0	31.0	31.0	15.0	0	0	0					
SEP	63.0	41.0	83.0	0	68	68	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					
OCT	56.0	34.0	76.0	0	58	58	100	2	0	0	29.0	3.0	2.0	2.0	27.0	27.0	15.0	0	0	0					
NOV	49.0	27.0	69.0	0	48	48	100	2	0	0	27.0	3.0	2.0	2.0	25.0	25.0	15.0	0	0	0					
DEC	41.0	19.0	61.0	0	38	38	100	2	0	0	25.0	3.0	2.0	2.0	23.0	23.0	15.0	0	0	0					
YEAR	55.0	35.0	75.0	100	100	100	100	2	0	0	31.0	3.0	2.0	2.0	29.0	29.0	15.0	0	0	0					



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CLIMATOLOGICAL SUMMARY

GETTYSBURG, PA 1931 - 1974 39° 30' N 77° 14' W 300 FT.

MONTH	TEMPERATURE (°F)										PRECIPITATION (TOTALS IN INCHES)										MEAN NUMBER OF DAYS	
	MEAN		EXTREMES		RECORD		MEAN NUMBER OF DAYS		MEAN		MAXIMUM		MINIMUM		MEAN NUMBER OF DAYS		MEAN NUMBER OF DAYS					
	DAILY MAXIMUM	DAILY MINIMUM	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL				
JAN	38.0	21.0	30.1	29	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0			
FEB	40.2	23.0	31.0	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0			
MAR	45.0	26.0	32.0	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0			
APR	52.0	31.0	33.0	32	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0			
MAY	59.0	36.0	34.0	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0			
JUN	65.0	41.0	35.0	34	34	34	0	0	0	0	0	0	0	0	0	0	0	0	0			
JULY	72.0	46.0	36.0	35	35	35	0	0	0	0	0	0	0	0	0	0	0	0	0			
AUG	70.0	44.0	37.0	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0	0			
SEP	68.0	42.0	38.0	37	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0			
OCT	60.0	35.0	39.0	38	38	38	0	0	0	0	0	0	0	0	0	0	0	0	0			
NOV	50.0	25.0	40.0	39	39	39	0	0	0	0	0	0	0	0	0	0	0	0	0			
DEC	40.0	15.0	41.0	40	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0			
YEAR	57.0	35.0	35.0	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0			

HOLTWOOD, PA 1931 - 1974 39° 53' N 74° 20' W 107 FT.

MONTH	TEMPERATURE (°F)										PRECIPITATION (TOTALS IN INCHES)										MEAN NUMBER OF DAYS	
	MEAN		EXTREMES		RECORD		MEAN NUMBER OF DAYS		MEAN		MAXIMUM		MINIMUM		MEAN NUMBER OF DAYS		MEAN NUMBER OF DAYS					
	DAILY MAXIMUM	DAILY MINIMUM	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL				
JAN	37.0	20.0	30.0	29	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0			
FEB	39.0	22.0	31.0	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0			
MAR	44.0	25.0	32.0	31	31	31	0	0	0	0	0	0	0	0	0	0	0	0	0			
APR	51.0	30.0	33.0	32	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0			
MAY	58.0	35.0	34.0	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0			
JUN	64.0	40.0	35.0	34	34	34	0	0	0	0	0	0	0	0	0	0	0	0	0			
JULY	71.0	45.0	36.0	35	35	35	0	0	0	0	0	0	0	0	0	0	0	0	0			
AUG	69.0	43.0	37.0	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0	0			
SEP	67.0	41.0	38.0	37	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0			
OCT	59.0	34.0	39.0	38	38	38	0	0	0	0	0	0	0	0	0	0	0	0	0			
NOV	49.0	24.0	40.0	39	39	39	0	0	0	0	0	0	0	0	0	0	0	0	0			
DEC	39.0	14.0	41.0	40	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0			
YEAR	56.0	34.0	35.0	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0			

JAMESTOWN 2 NW, PA 1931 - 1974 41° 27' N 69° 10' W 1030 FT.

MONTH	TEMPERATURE (°F)										PRECIPITATION (TOTALS IN INCHES)										MEAN NUMBER OF DAYS	
	MEAN		EXTREMES		RECORD		MEAN NUMBER OF DAYS		MEAN		MAXIMUM		MINIMUM		MEAN NUMBER OF DAYS		MEAN NUMBER OF DAYS					
	DAILY MAXIMUM	DAILY MINIMUM	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL				
JAN	32.0	16.0	29.0	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0			
FEB	34.0	18.0	30.0	29	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0			
MAR	40.0	24.0	31.0	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0			
APR	47.0	30.0	32.0	31	31	31	0	0	0	0	0	0	0	0	0	0	0	0	0			
MAY	54.0	36.0	33.0	32	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0			
JUN	61.0	42.0	34.0	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0			
JULY	68.0	48.0	35.0	34	34	34	0	0	0	0	0	0	0	0	0	0	0	0	0			
AUG	66.0	46.0	36.0	35	35	35	0	0	0	0	0	0	0	0	0	0	0	0	0			
SEP	64.0	44.0	37.0	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0	0			
OCT	56.0	38.0	38.0	37	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0			
NOV	46.0	28.0	39.0	38	38	38	0	0	0	0	0	0	0	0	0	0	0	0	0			
DEC	36.0	18.0	40.0	39	39	39	0	0	0	0	0	0	0	0	0	0	0	0	0			
YEAR	53.0	31.0	35.0	100	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0			

\* METRIC VALUES GIVEN



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CLIMATOLOGICAL SUMMARY

**MONTROSE, PA 1881-1974 41° 20' N 79° 22' W 1860 FT.**

MONTH	TEMPERATURE (°F)											PRECIPITATION (TOTAL INCHES)										
	MEAN			EXTREMES			WIND NUMBER OF DAYS					WIND VELOCITY (MPH)					WIND DIRECTION (DEGREES)					
	DAILY MAXIMUM	DAILY MINIMUM	WINDY	RECORD HIGHEST	RECORD LOWEST	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	
JAN	39.1	12.4	57.5	68	57	76	100	61	20	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	38.0	12.0	51.8	67	54	67	102	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	37.0	21.0	58.2	72	34	89	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APR	55.4	35.0	65.2	86	74	89	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
MAY	64.4	41.7	69.1	87	64	92	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JUN	74.0	51.0	69.0	99	50	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JULY	79.7	56.1	67.0	99	33	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUG	78.0	54.0	65.0	99	31	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEP	67.0	47.0	62.7	88	31	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCT	57.0	37.0	60.0	80	21	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOV	44.0	28.0	50.0	71	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	35.0	19.1	45.0	63	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YEAR	54.5	34.0	54.0	88	33	57	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**PHOENIXVILLE, PA 1881-1974 40° 07' N 79° 38' W 103 FT.**

MONTH	TEMPERATURE (°F)											PRECIPITATION (TOTAL INCHES)										
	MEAN			EXTREMES			WIND NUMBER OF DAYS					WIND VELOCITY (MPH)					WIND DIRECTION (DEGREES)					
	DAILY MAXIMUM	DAILY MINIMUM	WINDY	RECORD HIGHEST	RECORD LOWEST	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY
JAN	35.1	11.0	55.0	71	37	65	110	65	15	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	35.2	21.0	52.0	70	35	65	102	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	49.0	29.0	60.0	80	18	79	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APR	61.1	38.0	67.0	90	37	83	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAY	70.0	49.0	67.0	92	39	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JUN	81.0	67.0	74.0	100	57	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JULY	87.0	67.0	79.0	109	59	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUG	87.0	64.0	79.0	109	59	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEP	77.0	57.0	70.0	100	59	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCT	66.0	47.0	62.0	90	39	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOV	53.0	37.0	56.0	80	24	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	43.0	24.0	54.0	71	10	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YEAR	64.0	41.0	64.0	100	52	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**PORT CLINTON, PA 1881-1974 40° 33' N 76° 02' W 430 FT.**

MONTH	TEMPERATURE (°F)											PRECIPITATION (TOTAL INCHES)										
	MEAN			EXTREMES			WIND NUMBER OF DAYS					WIND VELOCITY (MPH)					WIND DIRECTION (DEGREES)					
	DAILY MAXIMUM	DAILY MINIMUM	WINDY	RECORD HIGHEST	RECORD LOWEST	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY
JAN	36.7	15.0	55.0	67	29	70	102	63	18	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	36.7	16.0	52.0	70	24	70	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	47.0	29.0	58.0	81	24	77	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APR	60.7	34.0	67.0	90	27	81	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAY	70.0	49.0	67.0	92	39	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JUN	81.0	67.0	74.0	100	57	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JULY	87.0	67.0	79.0	109	59	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUG	87.0	64.0	79.0	109	59	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEP	77.0	57.0	70.0	100	59	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCT	66.0	47.0	62.0	90	39	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOV	53.0	37.0	56.0	80	24	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	43.0	24.0	54.0	71	10	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YEAR	61.0	38.0	61.0	100	52	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\* ALSO UNRECORDED DAYS

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CLIMATOLOGICAL SUMMARY

READING 3 N, PA 1931-1972 40° 22' N 79° 08' W 270 FT.

MONTH	TEMPERATURE (°F)												PRECIPITATION (TOTAL & INCHES)																		
	MEAN			EXTREMES			MEAN NUMBER OF DAYS						MEAN			MAXIMUM MONTHLY			MINIMUM MONTHLY			MEAN NUMBER OF DAYS									
	ANNUAL	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY		
JAN	32.1	45.5	18.5	67	21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
FEB	32.3	45.5	18.5	67	21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
MAR	39.1	52.5	25.5	74	28	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
APR	47.9	61.5	33.5	81	35	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
MAY	57.7	71.5	43.5	88	41	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
JUN	67.5	81.5	53.5	95	47	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
JUL	77.3	91.5	63.5	102	53	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
AUG	87.1	101.5	73.5	109	59	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
SEP	96.9	111.5	83.5	116	65	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
OCT	106.7	121.5	93.5	123	71	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
NOV	116.5	131.5	103.5	130	77	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
DEC	126.3	141.5	113.5	137	83	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
YEAR	57.5	71.5	43.5	100	55	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45

RIDGWAY, PA 1931-1974 41° 23' N 79° 43' W 1250 FT.

MONTH	TEMPERATURE (°F)												PRECIPITATION (TOTAL & INCHES)																	
	MEAN			EXTREMES			MEAN NUMBER OF DAYS						MEAN			MAXIMUM MONTHLY			MINIMUM MONTHLY			MEAN NUMBER OF DAYS								
	ANNUAL	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY
JAN	32.1	45.5	18.5	67	21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
FEB	32.3	45.5	18.5	67	21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MAR	39.1	52.5	25.5	74	28	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
APR	47.9	61.5	33.5	81	35	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
MAY	57.7	71.5	43.5	88	41	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
JUN	67.5	81.5	53.5	95	47	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
JUL	77.3	91.5	63.5	102	53	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
AUG	87.1	101.5	73.5	109	59	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
SEP	96.9	111.5	83.5	116	65	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
OCT	106.7	121.5	93.5	123	71	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
NOV	116.5	131.5	103.5	130	77	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
DEC	126.3	141.5	113.5	137	83	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
YEAR	57.5	71.5	43.5	100	55	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45

STATE COLLEGE, PA 1931-1974 40° 45' N 77° 32' W 1170 FT.

MONTH	TEMPERATURE (°F)												PRECIPITATION (TOTAL & INCHES)																	
	MEAN			EXTREMES			MEAN NUMBER OF DAYS						MEAN			MAXIMUM MONTHLY			MINIMUM MONTHLY			MEAN NUMBER OF DAYS								
	ANNUAL	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY	WINDY
JAN	32.1	45.5	18.5	67	21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
FEB	32.3	45.5	18.5	67	21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MAR	39.1	52.5	25.5	74	28	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
APR	47.9	61.5	33.5	81	35	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
MAY	57.7	71.5	43.5	88	41	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
JUN	67.5	81.5	53.5	95	47	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
JUL	77.3	91.5	63.5	102	53	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
AUG	87.1	101.5	73.5	109	59	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
SEP	96.9	111.5	83.5	116	65	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
OCT	106.7	121.5	93.5	123	71	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
NOV	116.5	131.5	103.5	130	77	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
DEC	126.3	141.5	113.5	137	83	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
YEAR	57.5	71.5	43.5	100	55	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45

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CLIMATOLOGICAL SUMMARY

STROUSSBURG, PA 1951-1974 41° 02' N 79° 11' W 450 FT.

MONTH	TEMPERATURE (°F)										PRECIPITATION (INCHES)										WIND								
	MEANS		EXTREMES		RECORDED FOR YEARS						MEAN		MAXIMUM		MINIMUM		WIND SPEED	WIND DIRECTION	PERCENT										
	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	PERCENT
JAN	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FEB	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MAR	37.0	22.0	39.0	17.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
APR	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MAY	47.0	32.0	49.0	27.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
JUN	52.0	37.0	54.0	32.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
JULY	57.0	42.0	59.0	37.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AUG	52.0	37.0	54.0	32.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SEP	47.0	32.0	49.0	27.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OCT	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NOV	37.0	22.0	39.0	17.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEC	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
YEAR	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TOWANDA I CSE, PA 1951-1974 41° 45' N 76° 25' W 745 FT.

MONTH	TEMPERATURE (°F)										PRECIPITATION (INCHES)										WIND								
	MEANS		EXTREMES		RECORDED FOR YEARS						MEAN		MAXIMUM		MINIMUM		WIND SPEED	WIND DIRECTION	PERCENT										
	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	PERCENT
JAN	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FEB	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MAR	37.0	22.0	39.0	17.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
APR	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MAY	47.0	32.0	49.0	27.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
JUN	52.0	37.0	54.0	32.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
JULY	57.0	42.0	59.0	37.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AUG	52.0	37.0	54.0	32.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SEP	47.0	32.0	49.0	27.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OCT	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NOV	37.0	22.0	39.0	17.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEC	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
YEAR	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

WARREN, PA 1951-1974 41° 51' N 75° 05' W 1200 FT.

MONTH	TEMPERATURE (°F)										PRECIPITATION (INCHES)										WIND								
	MEANS		EXTREMES		RECORDED FOR YEARS						MEAN		MAXIMUM		MINIMUM		WIND SPEED	WIND DIRECTION	PERCENT										
	DAILY MAXIMUM	DAILY MINIMUM	HIGHEST	LOWEST	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	PERCENT
JAN	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
FEB	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MAR	37.0	22.0	39.0	17.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
APR	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MAY	47.0	32.0	49.0	27.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
JUN	52.0	37.0	54.0	32.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
JULY	57.0	42.0	59.0	37.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AUG	52.0	37.0	54.0	32.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SEP	47.0	32.0	49.0	27.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OCT	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NOV	37.0	22.0	39.0	17.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEC	35.0	20.0	37.0	15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
YEAR	42.0	27.0	44.0	22.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

ALSO ON SEPARATE SHEETS









NORMALS, MEANS, AND EXTREMES

PITTSBURGH, PA		FEDERAL BUILDING		EASTERN		40° 27' N		60° 00' W		747 FT.		1978	
Temperature (°)		Wind Speed (mi/hr)		Relative Humidity (%)		Cloudiness (%)		Precipitation (in)		Sunshine (hr)		Max. Number of Days	
Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme
50.0	32.0	10.0	20.0	65	95	5	100	0.50	3.00	5.0	15.0	180	240
51.0	33.0	11.0	21.0	66	96	6	101	0.55	3.10	5.5	15.5	185	245
52.0	34.0	12.0	22.0	67	97	7	102	0.60	3.20	6.0	16.0	190	250
53.0	35.0	13.0	23.0	68	98	8	103	0.65	3.30	6.5	16.5	195	255
54.0	36.0	14.0	24.0	69	99	9	104	0.70	3.40	7.0	17.0	200	260
55.0	37.0	15.0	25.0	70	100	10	105	0.75	3.50	7.5	17.5	205	265
56.0	38.0	16.0	26.0	71	101	11	106	0.80	3.60	8.0	18.0	210	270
57.0	39.0	17.0	27.0	72	102	12	107	0.85	3.70	8.5	18.5	215	275
58.0	40.0	18.0	28.0	73	103	13	108	0.90	3.80	9.0	19.0	220	280
59.0	41.0	19.0	29.0	74	104	14	109	0.95	3.90	9.5	19.5	225	285
60.0	42.0	20.0	30.0	75	105	15	110	1.00	4.00	10.0	20.0	230	290
61.0	43.0	21.0	31.0	76	106	16	111	1.05	4.10	10.5	20.5	235	295
62.0	44.0	22.0	32.0	77	107	17	112	1.10	4.20	11.0	21.0	240	300
63.0	45.0	23.0	33.0	78	108	18	113	1.15	4.30	11.5	21.5	245	305
64.0	46.0	24.0	34.0	79	109	19	114	1.20	4.40	12.0	22.0	250	310
65.0	47.0	25.0	35.0	80	110	20	115	1.25	4.50	12.5	22.5	255	315
66.0	48.0	26.0	36.0	81	111	21	116	1.30	4.60	13.0	23.0	260	320
67.0	49.0	27.0	37.0	82	112	22	117	1.35	4.70	13.5	23.5	265	325
68.0	50.0	28.0	38.0	83	113	23	118	1.40	4.80	14.0	24.0	270	330
69.0	51.0	29.0	39.0	84	114	24	119	1.45	4.90	14.5	24.5	275	335
70.0	52.0	30.0	40.0	85	115	25	120	1.50	5.00	15.0	25.0	280	340
71.0	53.0	31.0	41.0	86	116	26	121	1.55	5.10	15.5	25.5	285	345
72.0	54.0	32.0	42.0	87	117	27	122	1.60	5.20	16.0	26.0	290	350
73.0	55.0	33.0	43.0	88	118	28	123	1.65	5.30	16.5	26.5	295	355
74.0	56.0	34.0	44.0	89	119	29	124	1.70	5.40	17.0	27.0	300	360
75.0	57.0	35.0	45.0	90	120	30	125	1.75	5.50	17.5	27.5	305	365
76.0	58.0	36.0	46.0	91	121	31	126	1.80	5.60	18.0	28.0	310	370
77.0	59.0	37.0	47.0	92	122	32	127	1.85	5.70	18.5	28.5	315	375
78.0	60.0	38.0	48.0	93	123	33	128	1.90	5.80	19.0	29.0	320	380
79.0	61.0	39.0	49.0	94	124	34	129	1.95	5.90	19.5	29.5	325	385
80.0	62.0	40.0	50.0	95	125	35	130	2.00	6.00	20.0	30.0	330	390
81.0	63.0	41.0	51.0	96	126	36	131	2.05	6.10	20.5	30.5	335	395
82.0	64.0	42.0	52.0	97	127	37	132	2.10	6.20	21.0	31.0	340	400
83.0	65.0	43.0	53.0	98	128	38	133	2.15	6.30	21.5	31.5	345	405
84.0	66.0	44.0	54.0	99	129	39	134	2.20	6.40	22.0	32.0	350	410
85.0	67.0	45.0	55.0	100	130	40	135	2.25	6.50	22.5	32.5	355	415
86.0	68.0	46.0	56.0	101	131	41	136	2.30	6.60	23.0	33.0	360	420
87.0	69.0	47.0	57.0	102	132	42	137	2.35	6.70	23.5	33.5	365	425
88.0	70.0	48.0	58.0	103	133	43	138	2.40	6.80	24.0	34.0	370	430
89.0	71.0	49.0	59.0	104	134	44	139	2.45	6.90	24.5	34.5	375	435
90.0	72.0	50.0	60.0	105	135	45	140	2.50	7.00	25.0	35.0	380	440
91.0	73.0	51.0	61.0	106	136	46	141	2.55	7.10	25.5	35.5	385	445
92.0	74.0	52.0	62.0	107	137	47	142	2.60	7.20	26.0	36.0	390	450
93.0	75.0	53.0	63.0	108	138	48	143	2.65	7.30	26.5	36.5	395	455
94.0	76.0	54.0	64.0	109	139	49	144	2.70	7.40	27.0	37.0	400	460
95.0	77.0	55.0	65.0	110	140	50	145	2.75	7.50	27.5	37.5	405	465
96.0	78.0	56.0	66.0	111	141	51	146	2.80	7.60	28.0	38.0	410	470
97.0	79.0	57.0	67.0	112	142	52	147	2.85	7.70	28.5	38.5	415	475
98.0	80.0	58.0	68.0	113	143	53	148	2.90	7.80	29.0	39.0	420	480
99.0	81.0	59.0	69.0	114	144	54	149	2.95	7.90	29.5	39.5	425	485
100.0	82.0	60.0	70.0	115	145	55	150	3.00	8.00	30.0	40.0	430	490

Means and extremes shown are from existing and available records. Annual extremes have been checked at other sites in the 10-mile radius. Lowest temperature -19 in February 1933; maximum monthly precipitation 7.51 in July 1937; maximum monthly precipitation 6.74 in October 1974; maximum precipitation in 24 hours 6.11 in September 1976; average monthly snowfall 16.3 in December 1959.

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WILLIAMSPORT, PA		WILLIAMSPORT-LYCOMING AP		EASTERN		41° 15' N		76° 35' W		524 FT.		1978	
Temperature (°)		Wind Speed (mi/hr)		Relative Humidity (%)		Cloudiness (%)		Precipitation (in)		Sunshine (hr)		Max. Number of Days	
Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme	Normal	Extreme
50.0	32.0	10.0	20.0	65	95	5	100	0.50	3.00	5.0	15.0	180	240
51.0	33.0	11.0	21.0	66	96	6	101	0.55	3.10	5.5	15.5	185	245
52.0	34.0	12.0	22.0	67	97	7	102	0.60	3.20	6.0	16.0	190	250
53.0	35.0	13.0	23.0	68	98	8	103	0.65	3.30	6.5	16.5	195	255
54.0	36.0	14.0	24.0	69	99	9	104	0.70	3.40	7.0	17.0	200	260
55.0	37.0	15.0	25.0	70	100	10	105	0.75	3.50	7.5	17.5	205	265
56.0	38.0	16.0	26.0	71	101	11	106	0.80	3.60	8.0	18.0	210	270
57.0	39.0	17.0	27.0	72	102	12	107	0.85	3.70	8.5	18.5	215	275
58.0	40.0	18.0	28.0	73	103	13	108	0.90	3.80	9.0	19.0	220	280
59.0	41.0	19.0	29.0	74	104	14	109	0.95	3.90	9.5	19.5	225	285
60.0	42.0	20.0	30.0	75	105	15	110	1.00	4.00	10.0	20.0	230	290
61.0	43.0	21.0	31.0	76	106	16	111	1.05	4.10	10.5	20.5	235	295
62.0	44.0	22.0	32.0	77	107	17	112	1.10	4.20	11.0	21.0	240	300
63.0	45.0	23.0	33.0	78	108	18	113	1.15	4.30	11.5	21.5	245	305
64.0	46.0	24.0	34.0	79	109	19	114	1.20	4.40	12.0	22.0	250	310
65.0	47.0	25.0	35.0	80	110	20	115	1.25	4.50	12.5	22.5	255	315
66.0	48.0	26.0	36.0	81	111	21	116	1.30	4.60	13.0	23.0	260	320
67.0	49.0	27.0	37.0	82	112	22	117	1.35	4.70	13.5	23.5	265	325
68.0	50.0	28.0	38.0	83	113	23	118	1.40	4.80	14.0	24.0	270	330
69.0	51.0	29.0	39.0	84	114	24	119	1.45	4.90	14.5	24.5	275	335
70.0	52.0	30.0	40.0	85	115	25	120	1.50	5.00	15.0	25.0	280	340
71.0	53.0	31.0	41.0	86	116	26	121	1.55	5.10	15.5	25.5	285	345
72.0	54.0	32.0	42.0	87	117	27	122	1.60	5.20	16.0	26.0	290	350
73.0	55.0	33.0	43.0	88	118	28	123	1.65	5.30	16.5	26.5	295	355
74.0	56.0	34.0	44.0	89	119	29	124	1.70	5.40	17.0	27.0	300	360
75.0	57.0	35.0	45.0	90	120	30	125	1.75	5.50	17.5	27.5	305	365
76.0	58.0	36.0	46.0	91	121	31	126	1.80	5.60	18.0	28.0	310	370
77.0	59.0	37.0	47.0	92	122	32	127	1.85	5.70	18.5	28.5	315	375
78.0	60.0	38.0	48.0	93	123	33	128	1.90	5.80	19.0	29.0	320	380
79.0	61.0	39.0	49.0	94	124	34	129	1.95	5.90	19.5	29.5	325	385
80.0	62.0	40.0	50.0	95	125	35	130	2.00	6.00	20.0	30.0	330	390
81.0	63.0	41.0	51.0										



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Appendix IX

The Office for Remote Sensing of Earth Resources

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P. 4

THE OFFICE FOR REMOTE SENSING OF EARTH RESOURCES  
Institute for Research on Land and Water Resources  
The Pennsylvania State University

The Office for Remote Sensing of Earth Resources (ORSER), is an interdisciplinary group, established in 1970 for the purpose of participating in projects involving the use of remotely-sensed data of earth resources. Investigators involved in ORSER research projects have been from the fields of agronomy, anthropology, civil engineering, computer science, electrical engineering, forestry, geology, geophysics, hydrology, meteorology, plant pathology, pattern recognition, regional planning, and soils. A problems-oriented, rather than a discipline-oriented, approach is taken in the completion of tasks, in order that associates from various disciplines may work together toward a common goal.

ORSER has directed most of its efforts toward processing, analysis, and interpretation of multispectral remotely-sensed data, most of which have been supplied by NASA in both imagery and digital format. Photo-interpretation has been a vital part of the overall analytical process, but emphasis has been on the use of digital computer algorithms for data processing. The end product of a project is typically a computer map showing various environmental and land use characteristics of data points in the analyzed scenes.

Using the IBM 370/3033 Processor at the University Computation Center, ORSER has developed an extensive digital data processing system, employing FORTRAN IV source language, remote job entry (RJE), and an interactive management and editing system (INTERACT). Statistical information, pattern recognition routines, and a variety of analyses of remotely-sensed data can be produced. Portability and computation cost efficiency have been emphasized throughout.

The ORSER facilities include a Ramtek color TV display system and a Tektronix 4010 remote graphic terminal with associated cathode ray tube (CRT) display, hard copy unit, and digitizing graphic tablet. Three additional terminals (one portable) are available, as well as a complete Datacolor image enhancement system. The laboratory also includes a Map-o-Graph unit and a Bausch and Lomb Zoom transferscope, along with Zoom 70 and 95R stereoscope systems, a microfilm reader, a Diazo printer and developer, and a variety of portable stereoscopes and light tables. All staff members have access to a Saltzman projector in the Department of Geosciences and a completely equipped photogrammetry and photointerpretation laboratory, including a Kelsh plotter, in the Department of Civil Engineering.

From 1972 through 1975, ORSER interpreted MSS data from ERTS-1 (now Landsat-1), on a NASA-funded project. The general objectives were to ascertain the usefulness of these data, to develop interpretation techniques, to apply remote sensing techniques to regional resource management problems, to provide student training in remote sensing, and to evaluate the effectiveness of interdisciplinary research and university-industry related research. Specific objectives were met in the fields of digital processing and pattern recognition, inventory of natural resources and land use, geology and hydrology, and environmental quality.