

# NATURAL RESOURCES

## Temperature and Precipitation

This section provides climate and weather information for Champaign County, Illinois. The information is from the Illinois Climate Network, which provides enhanced temporal weather observations on atmospheric pressure, air temperature, relative humidity, wind speed and direction, solar radiation, precipitation, and soil temperatures. The Illinois Climate Network is a 19-station array of automated weather sites scattered across Illinois and operated by Illinois State Water Survey staff. Two sites are located in Champaign County. One is in Champaign, and the other is in Bondville. Data from the Champaign site is presented here.

Table 69 provides information for Champaign, Illinois for the year 2011. Heating and cooling degree days measure the extent to which temperatures fall below or above 18.3 C or 65 F. For example, if the average

temperature on a given day was 47 F, 65 minus 47 equals 18 heating degree days. An average temperature of 82 F would equal 17 cooling degree days. These daily figures are summed for the month and year and give an indication of the need for artificial heating or air-conditioning.

Table 70 contains the average precipitation totals and average temperatures by month for January to December while other averages from 1981 - 2010 are shown in Table 71.

Information about average wind direction, and prevailing wind speed over the period of time from 1981 to 2010 is included in Table 71.

Details about the Illinois Climate Network, the Illinois State Water Survey, and the Water and Atmospheric Resources Monitoring Program is available online at [www.sws.uiuc.edu/warm](http://www.sws.uiuc.edu/warm).

**Table 69: Champaign Weather Summary: 2011**

Month	Temperature in Degrees			Total Precipitation in Inches	Heating Degree Days	Cooling Degree Days	Average Wind Speed in mph	Hours of Wind > 8 mph
	Maximum	Minimum	Average					
January	46.5	-4.4	23.0	1.3	1,329.9	0.0	5.2	91.0
February	62.8	-11.5	30.5	3.8*	977.3	0.0	6.1	150.0
March	73.5	23.8	56.9	5.4	701.3	0.0	8.1	132.0
April	82.6	33.2	53.5	8.5	334.2	7.6	6.1	189.0
May	89.5	35.1	62.5	4.8	183.2	110.9	4.3	65.0
June	94.4	54.8	73.0	4.2	0.8	251.5	3.4	36.0
July	99.8	60.9	80.2	1.6	0.0	483.3	2.7	0.0
August	97.3	55.3	75.4	1.8	0.0	333.4	2.6	10.0
September	100.5	41.7	63.5	2.8	109.7	86.8	3.3	9.0
October	86.7	31.1	54.8	2.6	304.8	20.4	3.5	62.0
November	72.2	23.6	45.7	5.1	570.7	0.0	7.3	284.0
December	58.3	12.4	35.1	3.1	--	--	6.3	--
Annual	100.5	-11.5	54.5	45.0	--	--	4.9	--

Source: Illinois Climate Network Data, Illinois State Water Survey, Water and Atmospheric Resources Monitoring Program

Notes: \* Revised due to error in reporting

**Table 70: Average Precipitation and Temperature for Champaign, Illinois**

Month	Precipitation in Inches	Avg. Temperature in degrees F.
Jan	2.05	24.8
Feb	2.13	29.0
Mar	2.86	40.0
Apr	3.68	51.9
May	4.89	62.5
Jun	4.34	72.2
Jul	4.70	74.9
Aug	3.93	73.4
Sep	3.13	66.2
Oct	3.26	53.9
Nov	3.68	41.3
Dec	2.73	28.9
Annual	41.38	--

Source: Illinois Climate Network Data, Illinois State Water Survey, Water and Atmospheric Resources Monitoring Program.

**Table 71: Annual Averages: 1981-2010**

<b>Temperature</b>	
Coldest Month - January	
High	32.9F
Low	16.7F
Warmest Month - July	
High	85.0F
Low	64.9F
Number of Heating Degree Days	
	5,869
Number of Cooling Degree Days	
	1016
<b>Precipitation</b>	
Driest Month - January	
	2.05"
Wettest Month - May	
	4.89"
<b>Average Wind Direction</b>	
January	W
April	S
July	SW
October	SW
Annual	S
<b>Average Wind Speed</b>	
January	7.9
April	7.9
July	4.5
October	5.6
Annual	5.0

Source: Illinois State Climatologist, Official 19981-2010 Climate Normals.

## Soils and Farmland

Table 72 lists the most prominent soils found in Champaign County. Data is presented on the number of acres, percent of land occupied, slope, important farmland determination, productivity index, and limitations. Information was gathered from the Champaign County Land Evaluation and Site Assessment System 2012 and is based on data contained in the Champaign County Soil Survey, USDA, 1978.

The productivity indices for major grain crops express the estimated yields as a percentage of the average yields obtained under basic management. Soil productivity is strongly influenced by the capacity of a soil to supply the nutrient and soil-stored water needs of a growing crop in a given climate.

Prime farmland is land that is best suited for food, feed, forage, fiber and oil seed crops. It may be cropland, pasture, woodland, or other land, but it is not urban, built up land, or water areas. It is either used for food or fiber or is available for those uses. Prime farmland produces the highest yields with minimum inputs of energy and economic resources, and farming it results in the least damage to the environment. Prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The level of acidity or alkalinity is acceptable to water and air. It is not excessively erodible or saturated with water for long periods and is not frequently flooded during the growing season.

Table 72 identifies the major soils of Champaign County. The soil series “Drummer” accounts for almost 40 percent of the land in Champaign County. Other soil series in Champaign County include: Flanagan (15.7%), Elliot (4.8%), Ashkum (4.6%), Dana (3.6%), Raub (3.6%), Elburn (2.8%), Catlin (2.7%), Brenton (2.6%) and Varna (1.3%). The majority of the soil series are deemed “Prime”

with the exception of Drummer and Ashkum. The soil series Drummer and Ashkum are “Prime if Drained.” All soil series have some type of limitation. The most common forms of limitations are susceptibility to erosion and excess water.

**Table 72: Major Soils in Champaign County**

Soil Series	Acres	% of Land	Slope	Important Farmland Determination	Productivity Index Local	Limitations
Drummer	254,484	39.8	0-2	Prime if Drained	144	some limitations, excess water is the dominant hazard or limitation
Flanagan	100,553	15.7	0-2	Prime	144	few limitations that restrict use
Elliot	30,730	4.8	0-6	Prime	125	some limitations, susceptibility to erosion is dominant problem
Ashkum	29,196	4.6	0-2	Prime if Drained	127	some limitations, excess water is the dominant hazard or limitation
Dana	22,974	3.6	2-5	Prime	131	some limitations, susceptibility to erosion is dominant problem
Raub	22,903	3.6	0-2	Prime	134	few limitations that restrict use
Elburn	17,641	2.8	0-2	Prime	143	few limitation that restrict use
Catlin	17,385	2.7	2-5	Prime	138	some limitations, susceptibility to erosion is dominant problem
Brenton	16,465	2.6	0-2	Prime	141	few limitations that restrict use
Varna	13,985	1.3	2-4	Prime	116	some limitations, susceptibility to erosion is dominant problem

Source: Champaign County, Illinois, Land Evaluation and Site Assessment System

**Table 73: Champaign County Farmland Acreage by Type: 2010**

Farmland Type	2010	
	Total Acres	Percent Distribution
Homesite	3,984.06	0.62%
Cropland	52,9824.42	82.92%
Other Farmland	38,147.30	5.97%
Permanent Pasture	556.54	0.09%
Contributory Wasteland	8,624.17	1.35%
Non-Contributory Wasteland	0.0	0.0%
Non-Agricultural Land	49,682.44	7.78%
Non-Agricultural Land Right-Of-Way	8,158.61	1.28%

Source: Champaign County Assessment Office, Champaign County GIS Consortium