

# Wisconsin's Climate

THE COCORAHS 'STATE CLIMATES' SERIES

## Wisconsin: A Land of Four Seasons

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Located in the Upper Midwest, Wisconsin is prone to large seasonal contrasts, not only in terms of air temperature but also in precipitation types and amounts. Summers can be hot, with temperatures often reaching above 90 degrees Fahrenheit, with frequent thunderstorms that produce locally heavy rainfall. On the other hand, winters are typically cold, with temperatures falling well below zero in some locations. While the state receives less precipitation in winter, most of the precipitation falls as snow, either from winter storms or from lake-effect snowfall. Spring and fall are transition seasons that can exhibit large variability not only in temperature but also in terms of precipitation totals and type.

Annual precipitation totals vary across the state, ranging from approximately 28 inches in lakeshore counties of Lake Michigan and sections of northern Wisconsin, to nearly 34 inches in western sections of the state. Although the state does not have rugged relief that would cause large variations in precipitation, location does play a role in the variations. Southern Wisconsin receives more rainfall as warm and humid tropical air from the Gulf of Mexico flows northward to fuel summer thunderstorms and winter storms tracking close to the state. The stabilizing influence of Lakes Michigan and Superior during summer tends to reduce summertime rain showers and thunderstorms, resulting in somewhat less precipitation, especially along the Door Peninsula in northeast Wisconsin. However, the higher topography in the Northern Highland region of Wisconsin south of Lake Superior helps contribute to higher wintertime precipitation due to lake-effect snow carried across the region.

Across the state, nearly 70 percent of the precipitation falls during the six-month growing season (April through September), with the remaining 30 percent during the other six months. Warm tropical air from the Gulf of Mexico floods northward across southern and central Wisconsin beginning in spring and does not retreat until autumn.

While precipitation is greater in summer, precipitation does fall during winter, with some northern counties receiving more of their precipitation as snow due to the proximity to Lake Superior. State residents usually expect precipitation approximately one day in three during the year, as between 110 to 130 days per annum have measurable precipitation (0.01 inches or greater), while precipitation of one inch or more would be expected on five to eight days

during the year.

Thunderstorms are typically a summertime phenomenon in Wisconsin, with southwestern counties experiencing approximately 40 days during the year when thunder is heard, while northeastern counties usually have slightly fewer than 30 thunderstorm days per year. Usually, June and July are the months with the greatest number of thunderstorm days across the state.

Occasional large hail and torrential rain are also reported with these thunderstorms. On average, Wisconsin experiences between one and two hail days annually, or days when hail has been reported. Large hail events are typically most frequent during the months of May through July. However, in April 2006 up to 4.25-inch- diameter hail fell during a spring thunderstorm near Lake Mills in south central Wisconsin.

Summertime rainfall can be considerable, especially when rainshowers and thunderstorms move slowly across the region. In August 2007, an observer near La Crosse reported an unofficial 24-hour rainfall total of 11.75 inches, which would have broken the official all-time state record of 11.73 inches.

Snow falls across the Badger State when air temperatures fall. Statewide average snowfall is slightly more than 50 inches of snow for the snow season (July through June), with over 160 inches found across the traditional Snowbelt found along the steep western slope of the Gogebic Range in the counties immediately south of Lake Superior. Topography enhances the lake-effect snow that would fall on prevailing cold winds from the north passing across the relatively warm waters of Lake Superior. With warmer conditions and the location of the winter storm tracks, southern counties receive only about 40 inches.

For more information on the climate of Wisconsin, visit the Wisconsin State Climatology Office at: <http://www.aos.wisc.edu/~sco/>.

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