“To provide weather and flood warnings, public forecasts and advisories for all of the United States...and its territories...for the protection of life and property.

National Weather Service

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Natural Hazard Risk Assessment Information For:
Oregon County Missouri

Information Provided By
WFO Springfield, Mo

2009 Update
Includes data and information through December 2008
Overview of Weather Hazards in Southwest Missouri
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This document is intended to provide general information on severe weather that has affected Oregon County and the communities within the county.

By Gene Hatch
Meteorologist Intern WFO Springfield, Mo.

<table>
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<tr>
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Links for Climate information
- www.crh.noaa.gov/sgf/
- www.cpc.ncep.noaa.gov/
- www4.ncdc.noaa.gov
- web.missouri.edu/~moclimat/
- mrcc.sw.illinois.edu/
- agebb.missouri.edu/weather/index.htm
Jan. 8th-1997. Six inches or more of snow fell over much southwest, south central and central Missouri from noon on the eighth to noon on the ninth. The heaviest snow fell in a band from Cassville to Springfield north to Hermitage where up to ten inches was recorded. Damage estimates at 670K dollars were due to the cost of snow removal. Mar. 12th-1961. A tornado touched down at 745 am in southern Greene County and moved north-east from near Plainview road towards the KWTO towers. The tornado blew down 2 of KWTO's towers, damaged the roof on the Disney school and damage 3 other homes. Apr. 23rd-1967. A severe thunderstorm formed over the northwest portion of the city of Springfield, MO spawning a tornado. The weather service office measured a wind gust of 63 mph as the tornado moved through the center of the city. Nearly 1000 homes and businesses were destroyed with one fatality and 9 injuries reported. May 4th-2002. Three tornadoic supercell thunderstorms formed over southeast Kansas and moved across the Missouri Ozarks, spawning 13 tornadoes. This was a very rare event for this part of Missouri since many of the tornadoes experienced across this area are short lived small tornadoes. Jul. 19th-1970. An F3 tornado 600 yards wide left 7 injured and nearly 500K dollars of property damage during its 5 mile long track through Oregon county Missouri. Oct. 18th-1984. During the evening thunderstorms produced an F3 tornado in Oregon county Missouri. During its 26 mile long track one person was killed and another injured. Property damage estimates were near 3 million dollars. Dec. 24th-1982. During an unseasonal period of severe weather, thunderstorms over Oregon county Missouri produced an F4 tornado. The tornado keep up F4 intensity for 43 miles before dropping to F2 intensity and continuing its progress for an additional 33 miles. During its 35 minute life span it killed 1 person, injured 8 others and did over 10 million dollars of damage.
Severe Weather in Oregon County

In 2000, a private company looked at 277 cities across the United States. They rated each city on variations in temperature, precipitation and other factors. Of all the cities in their study Springfield, Missouri rated number one as the city with the most variable weather in the U.S.

From www.weatherpages.com

Oregon County Missouri is located on the Ozark Plateau along the eastern edge of tornado alley. Because of its location Oregon County is subjected to severe thunderstorms, heavy rainfall, winter storms, flooding, ice storms, droughts, tornadoes and other wind storms.

When does severe weather occur?

Severe weather in the Ozarks can occur in any month of the year. While the months of April through June are the peak severe weather season, there is a secondary peak from September to November.

Severe thunderstorms in Oregon County have dropped hail up to 2 3/4” in diameter, created winds in excess of 70 miles an hour and rainfall rates greater than 2” in an hour. While southwest Missouri receives nearly 11 tornadoes a year, Oregon County averages an event every 3 1/2 years.

Number of Tornadoes in Oregon Co. (1950 to 2008)

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<th>F0/F1</th>
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<th>F3</th>
<th>F4</th>
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<td>4</td>
<td>2</td>
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56% 25% 13% 1% 0%

During the winter season Oregon County averages 11.4 inches of snow. With the most snow in one season at 42.3 inches, falling during the 1975 to 1976 winter season. Ice storms also affect the county during the winter season causing significant damage to homes, trees and utilities.

Dam Failure

Dams in Oregon County

Oregon County contains 8 dams. While the majority of these dams are small and used primarily for storm water management, irrigation and recreation, some are a part of local reservoirs. All of the dams in Oregon County are of earthen construction and there have been no recorded failures.

Where are they Located

- Mc Cormack Dam: Cormack Hollow Creek, Greer
- Snow Lake Dam: Janes Creek, Pocahontas, AR.
- Nuwer Lake Dam: Frederick Creek, Couch
- Taylor Lake Dam: Whites Creek, Riverton
- Hix Lake Dam: Piney Creek, Alton
- Young Lake Dam: Piney Creek, Alton
- S. Jones Lake Dam: Diles Creek, Dalton, AR.
- Wendt Lake Dam: Pocahontas, AR.

All of the dams in Oregon County are less than 100 feet high. Many are located on private land and fall under private ownership.

Spillway gates open to relieve water after heavy rainfall.
Excessive heat is the leading cause of weather fatalities in the nation. With the variability of the weather in southwest Missouri, it is not surprising that excessive heat impacts Oregon county on almost a yearly basis.

Oregon County averages 7 days a year with temperatures at or above 95 degrees. July and August are the two warmest months, which average 3 days at or above 95 degrees.

Longest periods without rainfall in Oregon County

- 44 days: 14 Sept 1963 – 27 Oct 63
- 41 days: 16 Aug 1976 – 25 Sept 76
- 39 days: 29 Sept 1964 – 6 Nov 64
- 36 days: 3 Aug 1967 – 7 Sept 67
- 33 days: 8 Mar 1967 – 9 Apr 67

While no major wildfires have affected Oregon County, small grass fires do pose a hazard.

A twenty year study by the Missouri Department of Conservation, from 1970 to 1989 determined that over 4000 fires occurred during that time in the Eminence fire district which includes Shannon, Oregon, Carter, and Ripley counties. This represented nearly 7% of the wildfires in the state with over 43,000 acres burned.

There are numerous ways wildfires can be started, but when dealing with weather related phenomenon, namely lightning, only 0.8% of the wildfires in the Eminence fire district were the result of lightning.

Historical Tornadoes of Oregon County

- Apr 29, 1909 (F3) 14 inj, 9 dead
- Mar 28, 1924 (F2) 1 inj, 0 dead
- Nov 25, 1926 (F4) 2 inj, 0 dead
- May 1, 1933 (F3) 22 inj, 0 dead
- Jan 29, 1947 (F3) 1 inj, 0 dead
- Jan 29, 1947 (F4) 15 inj, 1 dead
- Jul 19, 1970 (F3) 7 inj, 0 dead
- Dec 24, 1982 (F3) 4 inj, 0 dead
- Oct 18, 1984 (F2) 1 inj, 0 dead

For the Record

- Has experienced two F4 tornadoes.
- No F5 tornadoes.
- Most recent Tornado January 8, 2008 (F0)
- 10 deaths and 71 injuries since 1880.
Severe Hail, Lightning, Wind and Winter Weather

With any thunderstorm, lightning will be present and the safest place to be is indoors. In August of 2002, four people were killed near Willard in Greene County during a funeral. As a thunderstorm moved into the area, the victims sought shelter under a tree.

Nationally, Missouri ranks 27th in Lightning fatality rate, 44th in injuries and 38th in property damage related to lightning. During the period from 1960 to 1994, the total number of lightning casualties in Missouri was 165. This is nearly five casualties per year in the state.

Winter weather across the Ozarks comes in many forms. Freezing rain or drizzle, sleet and snow are common occurrences during the winter season. In the past the Ozarks have had up to 54 inches of snow, Sleet storms that produced inches of sleet and ice storms that laid a covering of one to two inches of ice on most surfaces. While the immediate impact of theses storms is to travel, winter storms cause hundreds of thousands of dollars in damages across the region on a near yearly basis.

21 Feb 2001: Sleet, freezing rain and embedded thunderstorms caused ice accumulations from one quarter, up to two inches in places across southwest, central and south central Missouri. The heaviest ice accumulations occurred along and north of Highway 66, and along the I-44 corridor. Howell-Oregon electric cooperative reported numerous power outages due to the ice around the communities of Willow Springs, Birch Tree, Mountain View, Winona, Eminence and Dora.

Flooding

From 1993 to 2002 Flooding has occurred in Oregon County in every year. While usually nuisance flooding such as water on city streets, significant flooding has caused numerous problems in the county. During the previous decade, only one injury and no deaths have been attributed to flooding in Oregon County. Oregon County contains numerous low water crossings.

Typically, flooding in the county is caused by heavy rainfall associated with high rain producing thunderstorms which move very slowly. In towns, rainfall of one to two inches will cause streets and ditches to flood and make some low water crossings impassable. When rainfall rates reach 3 to 4 inches, major flooding can occur, and amounts over four inches creates significant flooding that affects most of the county.

Flooding in Oregon County

14 Nov 1993: Eleven Point River flash flooded over parts of Highway 99 damaging the road surface and shoulders. Three feet of water was over the road in some spots. Highway 142 was also closed due to flash flooding by a small creek on the west edge of Thayer.

12 July 2002: This was the third major flood event to occur within a 10 day period. Some communities reported over a foot of rain since the beginning of May. This area of excessive rainfall fell over mostly southern Missouri, south of Interstate 44 from the night of May 16, through the morning of May 17th. Over an inch of rain fell over a broad area of southern Missouri, with bands of three to six inches from Joplin to Carthage, Powell to Cassville, Ozark to Mansfield, and from Licking to Akers in northern Shannon County. Even though there were three days of dry weather, runoff was not complete from the previous flooding event, therefore, flash flooding developed quickly.

14 Apr 2002: A broad area of one to three inches of rain fell over Howell and Oregon counties during the late evening of April 14th. The Eleven Point River basin received one to three inches of rainfall. This flooded areas along Highway 142 near Calm plus recreational and camping facilities over eastern Oregon county. In Howell county, flash flooding that occurred earlier due to excessive rainfall in a short period of time, continued to have flooded low water crossings, county, and secondary roads.