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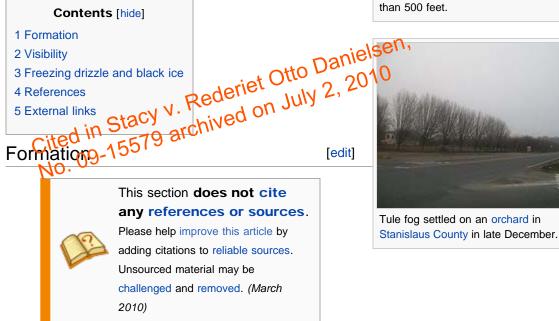
Tule fog

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Tule fog (pronounced /'tu:li:/) is a thick ground fog that settles in the San Joaquin Valley and Sacramento Valley areas of California's Great Central Valley. Tule fog forms during the late fall and winter (California's rainy season) after the first significant rainfall. The official time frame for tule fog to form is from November 1 to March 31. This phenomenon is named after the tule grass wetlands (tulares) of the Central Valley. Accidents caused by the tule fog are the leading cause of weather-related casualties in California.



Dense Tule fog in Bakersfield, California. Visibility in this photo is less



Tule fog is a radiation fog, which condenses when there is a high relative humidity (typically after a heavy rain), calm winds, and rapid cooling during the night. The nights are longer in the winter months, which creates rapid ground cooling, and thereby a pronounced temperature inversion at a low altitude.

In California, tule fog can extend from Bakersfield to Red Bluff. Tule fog occasionally drifts as far west as the San Francisco Bay Area, even drifting westward out the Golden Gate, opposite to the usual course of summertime ocean fog.

It is formed when cold mountain air flows downslope into the valley during the night, pooling in the low areas until it fills the valley to the "brim" formed by the Coast Ranges and the Sierra Nevada. This occurs because most areas in the Great Central Valley have little or no air drainage below the level of mountain passes. Because of the density of the cold air in the winter, winds are not able to dislodge the fog and the high pressure of the warmer air above the mountaintops presses down on the cold air trapped in the valley, resulting in a dense, immobile fog that can last for days or at times for weeks undisturbed. Tule fog often contains light drizzle.

Tule fog is a low cloud, usually below 1,000 feet in altitude and can be seen from above by driving up into the foothills of the Sierra Nevada to the east or the Coast Ranges to the west. Above the cold, foggy layer, the air is typically warm, dry and clear. Once tule fog is formed, turbulent air is necessary to break through the temperature inversion layer. Daytime heating sometimes evaporates the fog in some areas, although the air remains chilly and hazy below the inversion and reforms right after sunset. Tule fog usually remains longer in the southern and eastern parts of the Central Valley because more winter storms affect the northern Central Valley.

Visibility

Visibility in tule fog is usually less than an eighth of a mile (about 600 feet or 200 meters), but can be as little as a foot (about 30cm.) Visibility can vary rapidly; in only a few feet visibility can go from 10 feet to near zero.^[1]

The variability in visibility is the cause of many chainreaction pile-ups on roads and freeways. In one such accident on Interstate 5 near Elk Grove south of

Sacramento, 25 cars and 12 big-rig trucks collided inside a fog bank in December 1997. Five people died and 28 were injured. In February 2002, two people were killed in an 80-plus car pile-up on State Route 99 between Kingsburg and

Selma. The visibility at the time of the accident was zero. On the morning of November 3, 2007, heavy tule fog caused a massive pile-up that included to passenger vehicles and 18 big rig trucks on Northbound State Route 99 between Tower and Fresh? Visibility was cut to about 200 feet at the time of the accident. There were two fatalities and 39 injuries in the crash.^[2]

Freezing drizzle and black ice

Lack this bility in tule fog is hazardous enough, but these fog events are often accompanied by drizzle and freezing drizzle. Because of the lack of sunlight penetrating the fog layer, temperatures may struggle to climb above freezing, and episodes of freezing drizzle occasionally accompany tule fog events during winter. Such events can leave an invisible glaze of black ice on roadways, making travel especially treacherous.

References

- 1. ^ http://www.wrh.noaa.gov/hnx/newslet/winter00/fogseason.htm
- 2. ^ abc30.com: Highway 99 Back Open After Massive Pileup 11/03/07 🗗

External links

- Page on tule fog d from the National Oceanic and Atmospheric Administration (NOAA)
- Forecasting Radiation Fog 🗗 University Corporation for Atmospheric Research

Categories: Fog | Central Valley of California

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