

Snow in September?

By Jim Lee

Believe it or not, there have been at least nine years in which snow has been recorded in Iowa in the month of September, most recently in 1995, as detailed in Table 1 at the end of this document. The most remarkable of these events is the very early snowfall of September 16, 1881, which was amazing not only for its earliness in the season but also for the extent and amount of snowfall. The track of the surface low pressure center associated with this storm system is illustrated in Figure 1, a reprint of the original "War Department Weather Map" from September of 1881. At the time weather observations and reports were filed by the U.S. Army Signal Service, the progenitor of the modern National Weather Service. In the report of the Chief Signal Officer for that month, the development of the low pressure center is detailed as follows:

"This storm, which pursued a very anomalous track, was first evident in Texas, where on the 14th it moved in a track nearly due east. At the midnight observation, while the storm center was near New Orleans, a barometric depression extended from the Gulf of Mexico to the Lake Superior region. At the same time [an area of high pressure] prevailed with fair weather in New England. These conditions were unfavorable to an eastern progress of the storm, and on the 15th the depression moved in a northerly course to Lake Michigan. On the 16th, with diminishing energy, the storm center moved into Iowa and Minnesota, and on the 17th into Manitoba. The track on the 16th and 17th is very remarkable, and probably for a storm of such energy will have no parallel in the history of the Signal Service."

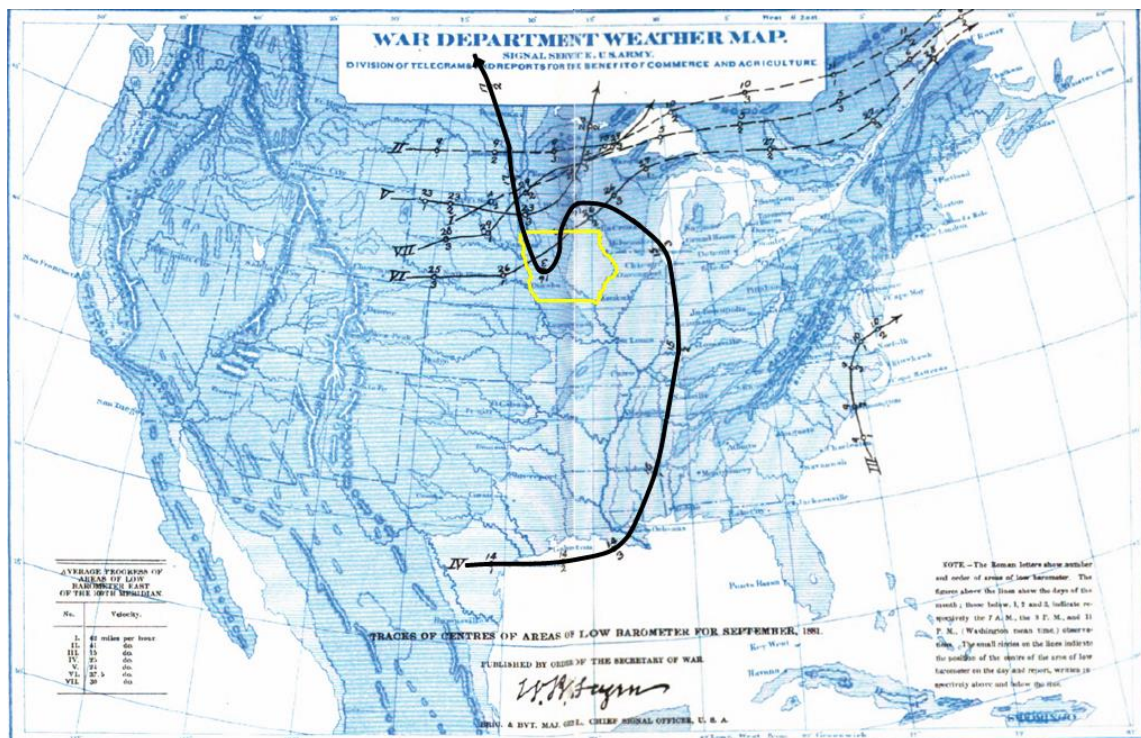


Figure 1. Highlighted track of the low pressure center from September 14-17, 1881.

On September 14, as the low moved across the Gulf of Mexico, fair weather prevailed across most of Iowa until a cold front moved through late in the day. At Des Moines the high temperature was 80 degrees but then the official observer wrote that, "Low stratus clouds moved rapidly from north and northwest during the afternoon and evening." On the 15th, as the low pressure center moved northward toward Chicago, it pulled down unseasonably cool air behind the front into Iowa and spread a cold rain across much of the upper Midwest. At Des Moines the temperature fell through the day, with a high of 58 degrees measured early in the morning. The observer noted, "Cloudy and threatening weather prevailed during the day, low stratus clouds moved from the north."

By the morning of September 16, the low pressure center was moving slowly westward into southern Minnesota and northern Iowa, pushing cold air even further southward into the central U.S. Frost was noted as far south as Arkansas and Texas and at Fort Gibson, Oklahoma ice formed on standing water. Across eastern Nebraska, southern Minnesota, and about the northwestern two thirds of Iowa the colder air allowed rain to mix with or change entirely over to snow at times, mostly in the morning. At Des Moines the high temperature for the day was only 46 degrees and the observer recorded that, "Few flakes of snow was observed." Further north and west the snow was heavier, in some areas melting as it fell but in others managing to accumulate for a short time. At Algona an estimated 4 inches of snow fell in the morning, breaking some tree branches, but all melted by noon. The snow was observed as "quite heavy" at Creston, while "several inches" were noted between Des Moines and Atlantic and 4-6 inches were estimated on the Rock Island Railroad between Stuart and Avoca.

This stands as one of only two occasions on which fairly widespread, measurable snow has fallen in Iowa in the month of September, the other being on September 25, 1942. In that storm most of the state received snow with amounts ranging up to 4 inches at Allison, Forest City, Mason City, and Millerton and scattered tree and utility line damage noted across the state.

Table 1. Years in which snow has been recorded in Iowa in September.

- 1881 – widespread measurable snowfall on the 16th (see above)
- 1895 – "first snowflakes" noted at Madrid on the 28th
- 1912 – "few flakes" observed at Storm Lake and Marshalltown on the 17th and 18th
- 1938 – flurries reported at Orleans and Maquoketa on the 18th and 19th
- 1939 – traces of light snow and sleet across northern IA, 0.1" at Sheldon and 0.2" at Sibley, on the 29th and 30th
- 1942 – widespread measurable snowfall on the 25th (see above)
- 1961 – light snow across northwestern half of IA on the 30th, a few measurable amounts ranging up to 3.0" at Swea City
- 1985 – a few flakes at Des Moines on the 24th, widespread wintry mix with 0.5" at Audubon and Storm Lake on the 29th and 30th
- 1995 – a few flakes and ice pellets mixed with rain across northern IA on the 22nd