

A tale of two Decembers

Believe it or not, temperatures in Nebraska this December averaged mostly warmer than normal. We did begin the month on the warm side. Temperatures reached as high as 71°F (in Chadron on Dec. 4) and in the mid-60s to high-50s elsewhere. This was followed by a cold front passage, and temperatures fell to more seasonable highs (30s). During the last 10 days of the month, the furnace got turned off and temperatures plummeted. An Arctic airmass that settled into the eastern two-thirds of the contiguous U.S. brought unseasonably cold weather. Many daily minimum temperature records were broken during the last week of 2017. Temperatures in the teens and even 20s below zero were reported throughout the state. Wind chill factors were in the -40 range. The lowest reported temperature for the month was 26°F at Spencer, in Boyd County just north of the Niobrara River.

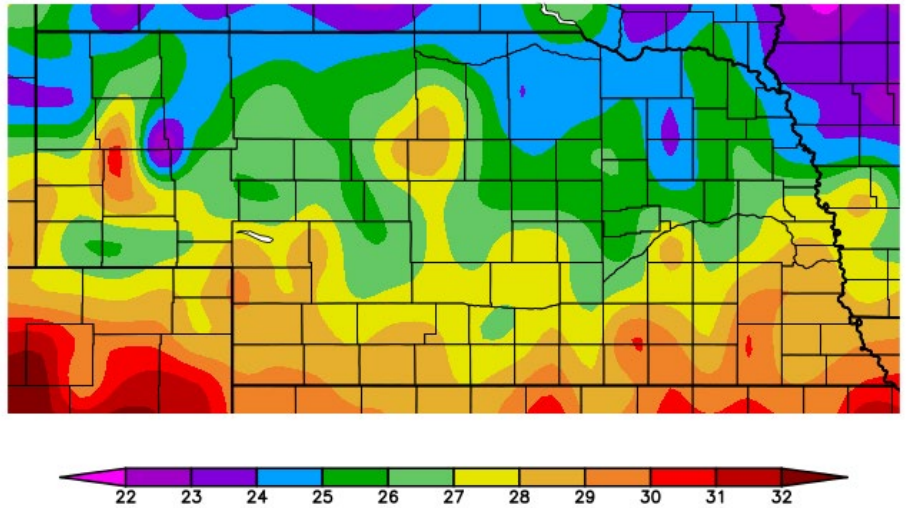
The statewide average temperature was 27°F, which is 2.1 degrees above average for the period of record (1895 to 2017). This ranks as 75th warmest on record for Nebraska.

Air temperatures took a dive late in the month, but what about soil temperatures? To start off 2018, the bare soil temperature at 4-inch depth was mostly below freezing, aside from a few locations with temperatures at 33 or 34°F. Locations without snow cover to insulate the ground reported temperatures in the low 20s.

Precipitation

Both rain and snow fell this December around the state. Conditions were generally dry in the east and south with roughly a quarter inch of precipitation (liquid water equivalence). This amounts to about half an inch less than average. The month was generally wetter than normal in the

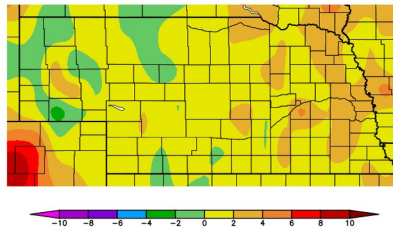
TEMPERATURE (F)



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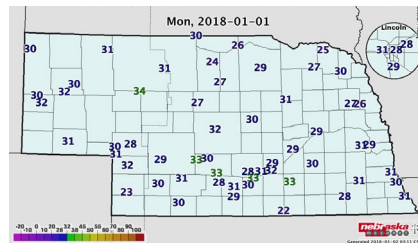
All maps generated using December provisional data.

DEPARTURE FROM NORMAL TEMPERATURE



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WEEKLY AVERAGE 4-INCH BARE SOIL TEMPERATURE (F)



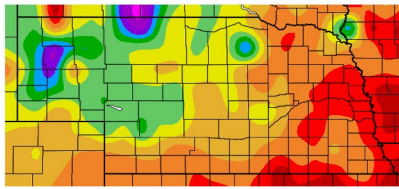
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December extremes

Nebraska's statewide weather network operated by the University of Nebraska-Lincoln, the Nebraska Mesonet, cataloged the following extremes this December:

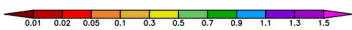
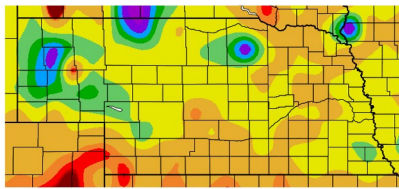
- Highest air temperature:** 68°F on Dec. 20 (Scottsbluff 2NW)
- Lowest air temperature:** -22°F on Dec. 31 (West Point 2W)
- Greatest 24-hour temperature change:** 50°F, starting at 52°F on Dec. 20 and ending at 2°F Dec. 21 (Scottsbluff2NW)
- Highest 1-day precipitation:** 0.22 inches on Dec. 18 at Plymouth 4E
- Highest 4-inch bare soil temperature:** 53°F on Dec. 4 (Nebraska City 3NW)
- Lowest 4-inch bare soil temperature:** 20°F on Dec. 31 (Guide Rock 3E)
- Highest 5-second wind gust:** 56 mph on Dec. 4 (Long Pine 20S)

DEPARTURE FROM NORMAL PRECIPITATION



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PRECIPITATION



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west with a monthly amount that totaled about half an inch. For a statewide average, precipitation was 0.34 inches, which is 0.26 inches less than average.

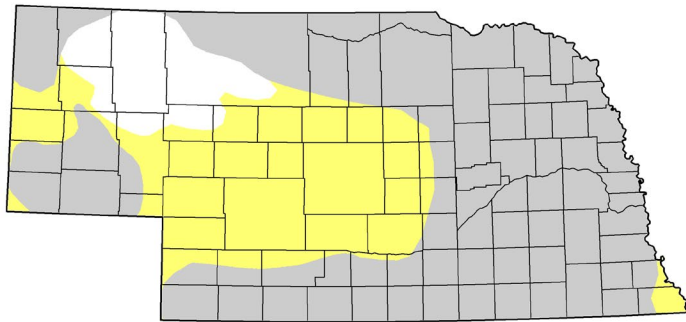
Snowfall amounts were highest in the west and lowest in the south and east. A few locations in the Panhandle reported more than 20 inches – 21 inches at Thedford and 24.1 inches at Brideport. Most locations reported in the 3- to 6-inch range for the monthly total. Snow cover blanketed much of the state to start of the new year.

Drought

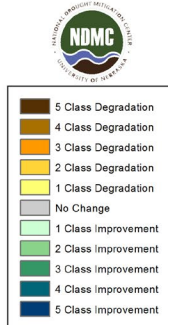
The general dryness in Nebraska since about mid-October has resulted in an expansion of the U.S. Drought Monitor D1 conditions (abnormal dryness). Nebraska went from 59 percent in D0 and 2 percent in D2 (moderate drought) at the beginning of December, to 88 percent in D0 at the start of January. The two pockets of moderate drought remained unchanged.

U.S. DROUGHT MONITOR | NEBRASKA

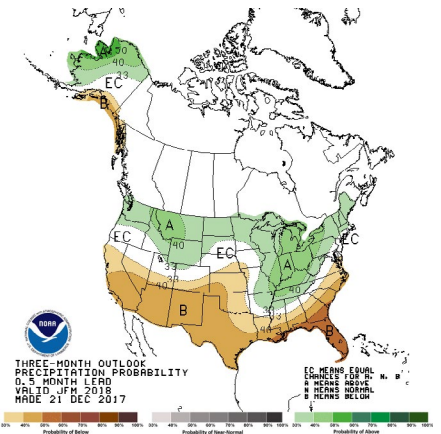
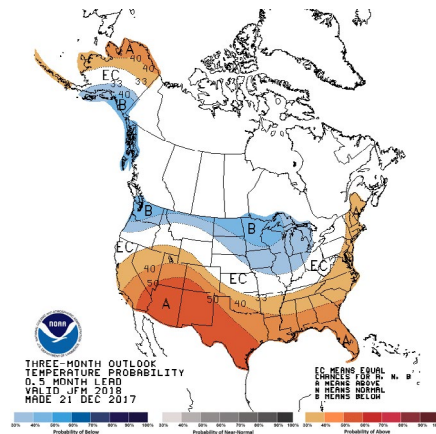
JAN. 2, 2018, COMPARED TO DEC. 5, 2017



January 2, 2018 compared to December 5, 2017



90-DAY OUTLOOK TEMPERATURE (LEFT) & PRECIPITATION



Outlook

The three-month outlook for January to March indicates a continuation of an increased chance for cooler and wetter conditions for the northern U.S. and warmer and drier conditions in the south. These are indicative of a La Nina forcing pattern. Northeast Nebraska remains at

the southern edge of the below-normal temperature probability. A slight adjustment from last month's outlook is the probability for dryness creeping up into southeast Nebraska. For a detailed winter outlook, [click here](#).

— Martha Shulski, Nebraska State Climate Office



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