

.....December 2021 Climate Summary for the Denver Area.....



Snow Squall passing over the Flatirons near Boulder, CO on the morning of the 15th

Denver experienced dry weather and above normal temperatures through much of December. Towards the middle of the month, a pattern change allowed several Pacific storm systems to move across the region, bringing periods of heavy snow and much needed precipitation to the mountains. Despite copious amounts of moisture associated with these systems, areas east of the mountains saw mainly gusty winds and dry weather due to a downsloping flow. During this stretch, there was one notable weather event that occurred on the 15th. A strong upper level low ejecting out of the Desert Southwest moved across North Central and Northeastern Colorado during the day. A Snow squall associated with this system raced across North Central and Northeastern Colorado during the morning hours with strong winds developing across the Front Range Urban Corridor and Plains during the late morning and early afternoon.



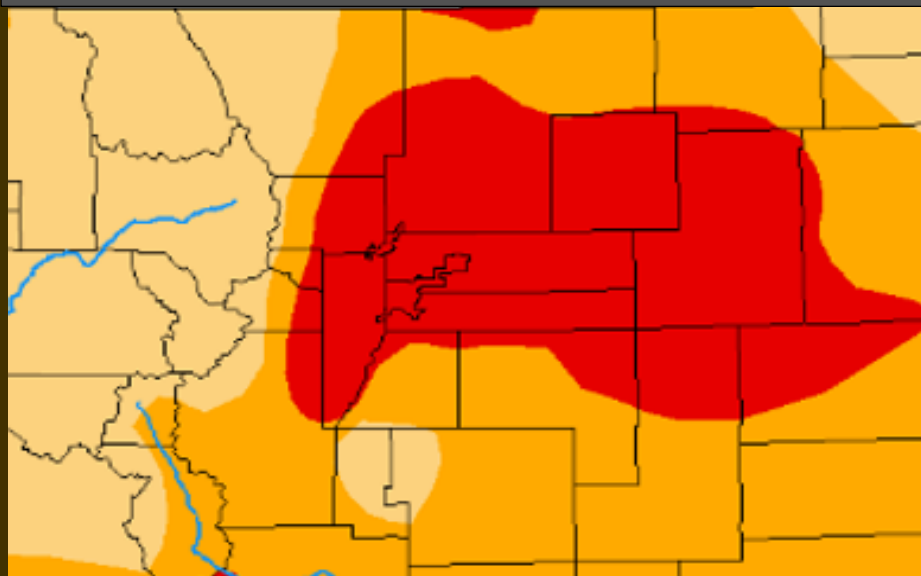
Wind Reports (mph)

December 15th, 2021

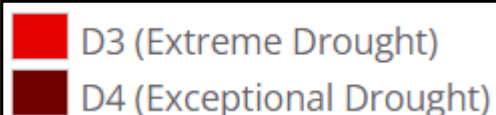
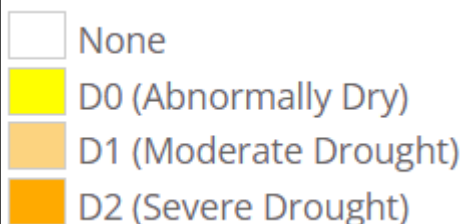
3 Nne White Ranch Open	95	3 Sw Rocky Flats	94	2 Wsw Louisville	93
3 Ssw Boulder	91	2 Sw Broomfield	89	2 S Cheesman Reservoir	87
2 Nw Rocky Flats	87	3 Ese Buckeye	86	Floyd Hill	85
6 Sw Carr	84	2 Nne Natural Fort	83	1 Ssw Pleasant View	83
8 S Holyoke	81	1 Ne Arvada	81	2 Nnw Genesee	80
1 Wsw Pleasant View	80	4 Se Pinecliffe	79	3 Wnw Loveland	79
1 Ne Aspen Springs	79	2 Nnw Marshall	79	4 Ene Nederland	79
1 Nnw Akron	78	1 Ssw Meeker Park	78	4 Wsw Johnstown	78
11 Wnw Westplains	78	Akron	78	2 S Eldorado Springs	77
2 Ese Sterling	75	2 E Sterling	75	3 Ese Pinecliffe	75
1 Ne Crisman	74	2 Se Holyoke	74	5 S Lyons	73
2 Nne Ward	73	1 N Glen Haven	73	1 N Georgetown	73
3 Ene Nederland	72	2 Ssw Laporte	72	5 N Pawnee Pass	71
2 N Mead	71	3 Se Tolland	71	Virginia Dale	70
2 Nne Rocky Flats	70	1 Ese Akron	70	3 Wnw Arvada	69
3 E Union	69	3 Nw Campion	69	3 Ssw Boulder	69
Downieville	68	1 S Hygiene	68	1 Nne Bailey	68
5 S Estes Park	68	1 Nnw Briggsdale	68	2 Wnw Brookvale	68
2 Ssw Broomfield	68	2 Sse Pleasant View	68	1 Ne Ward	67
2 Ssw Boulder	67	Nunn	67	Fort Morgan Airport	67

The persistent dry and breezy conditions resulted in worsening drought conditions across the Front Range Urban Corridor and Plains. During the mid morning hours of December 30th, very strong winds developed over the foothills and adjacent plains. This was the result of a mountain wave that developed as very strong westerly winds raced over the Front Range Mountains and descended down the foothills and nearby plains. The mountain wave remained nearly unchanged through the rest of the day, resulting in very persistent and extremely high winds that focused very close to the base of the foothills, along Highway 93 and points east to around Superior and at times, Louisville.

Drought Conditions Dec 28, 2021 from the U.S. Drought Monitor



Drought Classification



High Wind Reports December 30th, 2021

Arvada 115 MPH 1206 PM

Rocky Flats Hwy 93 and 72 110 MPH 1123 AM

3 SSW Boulder 108 MPH 0225 PM

2.8 NE White Ranch Open Spac 103 MPH 0126 PM

1 NE Crisman 102 MPH 1120 AM

2 NW Rocky Flats 98 MPH 1155 AM

3 NW Marshall 90 MPH 0125 PM

Glen Haven 89 MPH 0827 AM

470w014 Wadsworth 81 MPH 0348 PM

Livermore 79 MPH 0846 AM

1.7 NE Rocky Flats (CDPHE) 78 MPH 1215 PM

Boulder 75 MPH 0215 PM

Winter Park Eagle Wind 73 MPH 0345 AM

I-70 at C470 73 MPH 1224 PM

Wondervu 72 MPH 0956 AM

Atoc - Univ. Colorado Campus 71 MPH 1050 AM

Genesee 71 MPH 1212 PM

Lafayette 70 MPH 1001 AM

Lyons 3W 70 MPH 1042 AM

Longmont 68 MPH 1147 AM

Louisville 68 MPH 0200 PM



At approximately at 11:41 am, The Marshall Fire started and raced quickly eastward due to the very strong winds and extremely dry grasses. By noon, some of the strongest winds from this wind event were occurring, with a peak gust of 115 mph reported at the base of the foothills, just east of the intersection of Highway 93 and Highway 72. Between 12 noon and 2 pm, the stronger winds were shifting slightly east, through all of Superior and most of Louisville. At 2 pm (plot below), a wind gust to 68 mph was recorded near Coal Creek Golf Course in Louisville, a community that would see devastation with hundreds of homes burned. The fire had already moved through much of Superior, and was spreading quickly through the Louisville area.

View of the east side of Marshall Fire. This picture was taken from Broomfield



Winds eventually calmed down through the late afternoon and evening hours, but unfortunately much of the destruction had been done.

TEMPERATURES :

The average temperature at Denver International Airport for the month of December was 38.4 degrees F, which is 7.2 degrees above the normal of 31.2 degrees. This makes December 2021, the 12th warmest December on record. The highest temperature of the month was 73 degrees on the 1st which tied the record for the date. The coldest temperature of 4 degrees occurred on the 18th.

TWELVE WARMEST DECEMBER AVERAGE TEMPERATURES IN DENVER WEATHER HISTORY SINCE 1872: DEGREES F

- 43.8 - 1933
- 41.2 - 1980
- 40.9 - 1939
- 40.5 - 1889
- 39.7 - 1906
- 39.6 - 1946
- 39.5 - 1957, 1881
- 39.2 - 1890
- 38.8 - 1896, 1875
- 38.4 - 2021

TEN COLDEST DECEMBER AVERAGE TEMPERATURES IN DENVER WEATHER HISTORY SINCE 1872: DEGREES F

- 17.4 - 1983
- 21.2 - 1909
- 22.1 - 1878
- 22.7 - 1873
- 23.1 - 1913
- 23.7 - 1932
- 24.1 - 2009
- 24.3 - 1914
- 24.6 - 1978
- 24.8 - 1884

PRECIPITATION:

Denver only received 0.16 inches of precipitation during the month. This is 0.19 inches below the normal of 0.35 inches. The highest daily precipitation amount of 0.12 inches was measured on the 31st.

TEN WETTEST DECEMBER PRECIPITATION TOTALS IN DENVER WEATHER HISTORY SINCE 1872: INCHES

- 5.21 - 1913
- 2.84 - 1973
- 2.34 - 1982
- 2.32 - 1883
- 1.70 - 1876
- 1.56 - 1891
- 1.50 - 1960
- 1.42 - 1924
- 1.40 - 1918
- 1.32 - 1892

ELEVEN DRIEST DECEMBER PRECIPITATION TOTALS IN DENVER WEATHER HISTORY SINCE 1872: INCHES

- 0.00 - 1881
- 0.00 - T - 1905
- 0.01 - 1906, 1895
- 0.03 - 2018, 1977, 1931
- 0.04 - 2004, 1890
- 0.05 - 2002, 1995

SNOWFALL:

4.8 inches of snow was measured at Denver International Airport, the majority of which fell on the 31st. This is 1.8 inches below the December average of 6.6 inches.

TEN SNOWIEST DECEMBERS IN DENVER WEATHER HISTORY SINCE 1872: INCHES

- 57.4 - 1913
- 30.8 - 1973
- 29.4 - 2006
- 27.1 - 1982
- 21.5 - 1987
- 20.9 - 2007
- 19.6 - 1918
- 18.4 - 1924
- 17.8 - 1960
- 17.5 - 1891

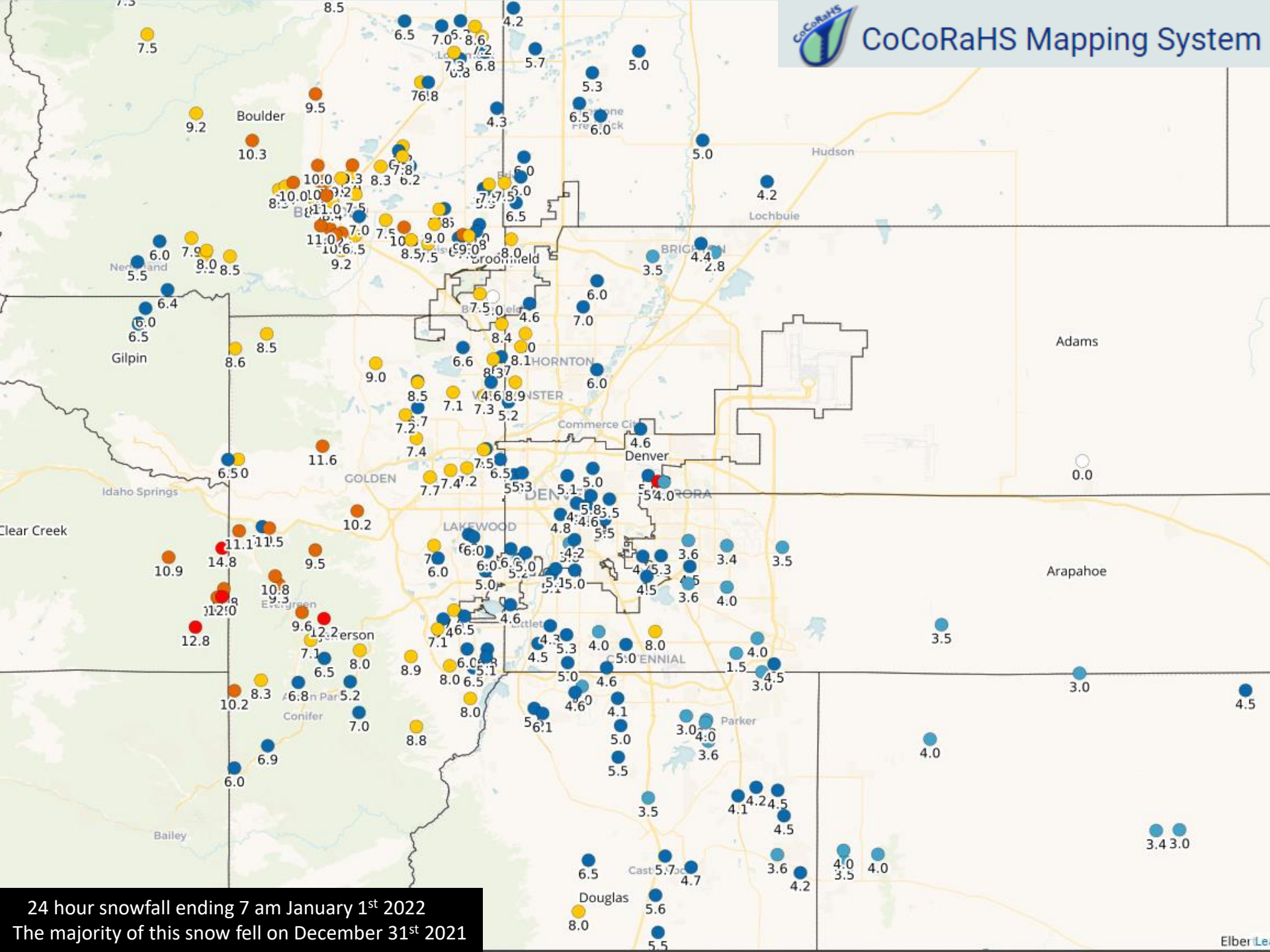
TEN LEAST SNOWIEST DECEMBERS IN DENVER WEATHER HISTORY SINCE 1872: INCHES

- TRACE- 2002, 1906, 1905
- 0.1 - 1928
- 0.4 - 1890
- 0.5 - 2018, 1935
- 0.6 - 1995
- 0.7 - 1977, 1895

No thunder was observed at Denver International Airport with 3 days having dense fog with a visibility at or below ¼ mile during the month. A peak wind of 60 mph from the West-northwest was recorded on the 15th.



Slick roads in Longmont after the first decent snow of the 2021/2022 snow season hits the Front Range Urban Corridor



24 hour snowfall ending 7 am January 1st 2022

The majority of this snow fell on December 31st 2021