CW3E Post-Event Summary: 27–30 Oct 2019
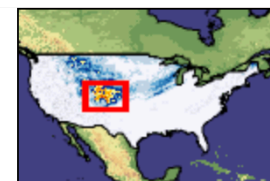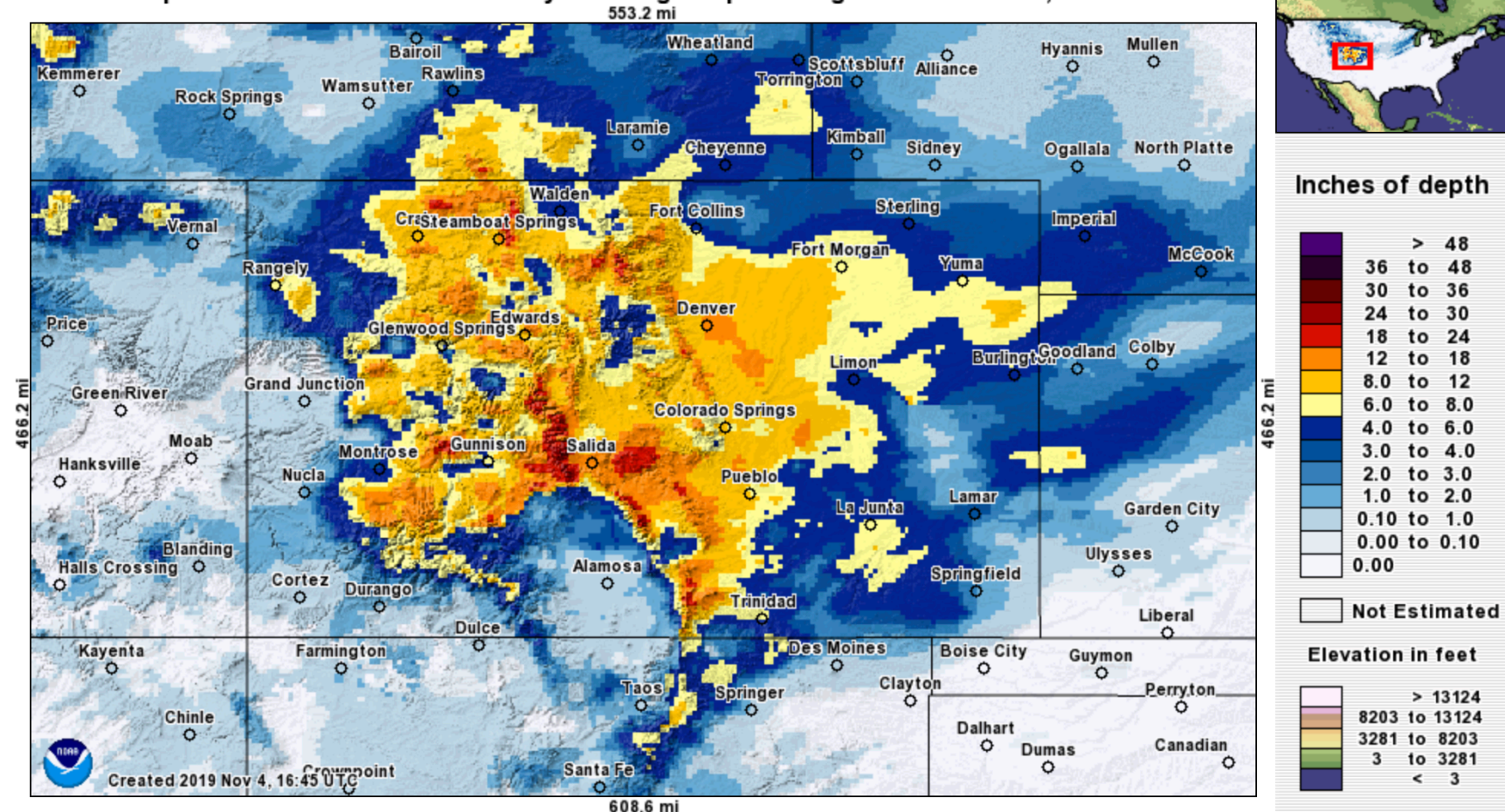
Center for Western Weather and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY AT UC SAN DIEGO

Heavy snowfall puts an exclamation mark on an unusually cold and snowy October in central Colorado
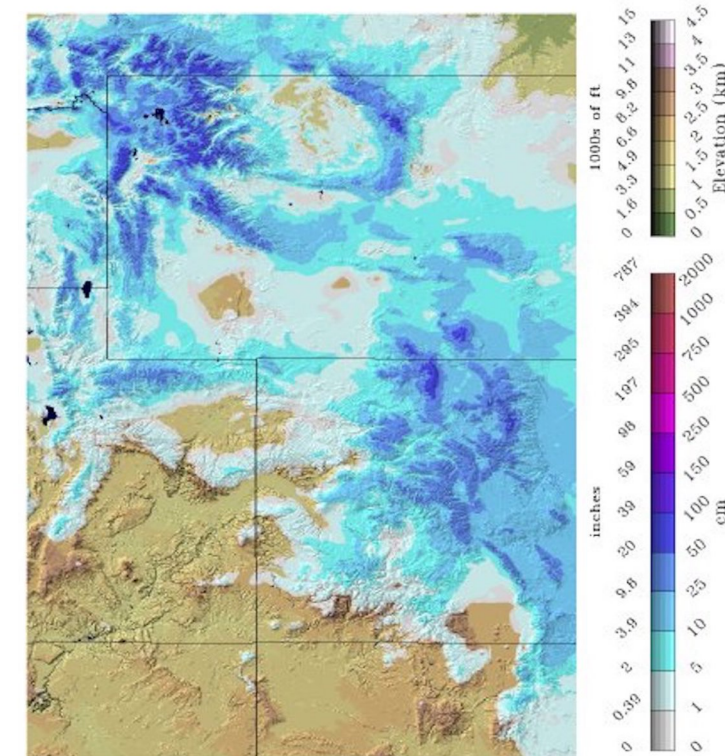
- An unsettled weather pattern produced 6–12 inches of snow throughout much of Colorado during 27–30 October
- Denver recorded its 12th snowiest and 4th coldest October since 1872

Interpolated Observed Snowfall Analysis during 72h preceding 2019 October 30, 12:00 UTC

Snow Depth 2019-10-31 06 UTC

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- Heavy snowfall during the 27–30 October period was associated with a series of low pressure systems that moved across the Four Corners region
- The presence of a dipole sea-level pressure pattern (high pressure to the north; low pressure to the south) led to cold-air damming and upslope flow along and east of the Front Range in central Colorado
- At 00 UTC (6 PM LST) 28 October, central Colorado was located near the equatorward entrance region of a 250-hPa jet streak, a favorable region for quasi-geostrophic forcing for ascent
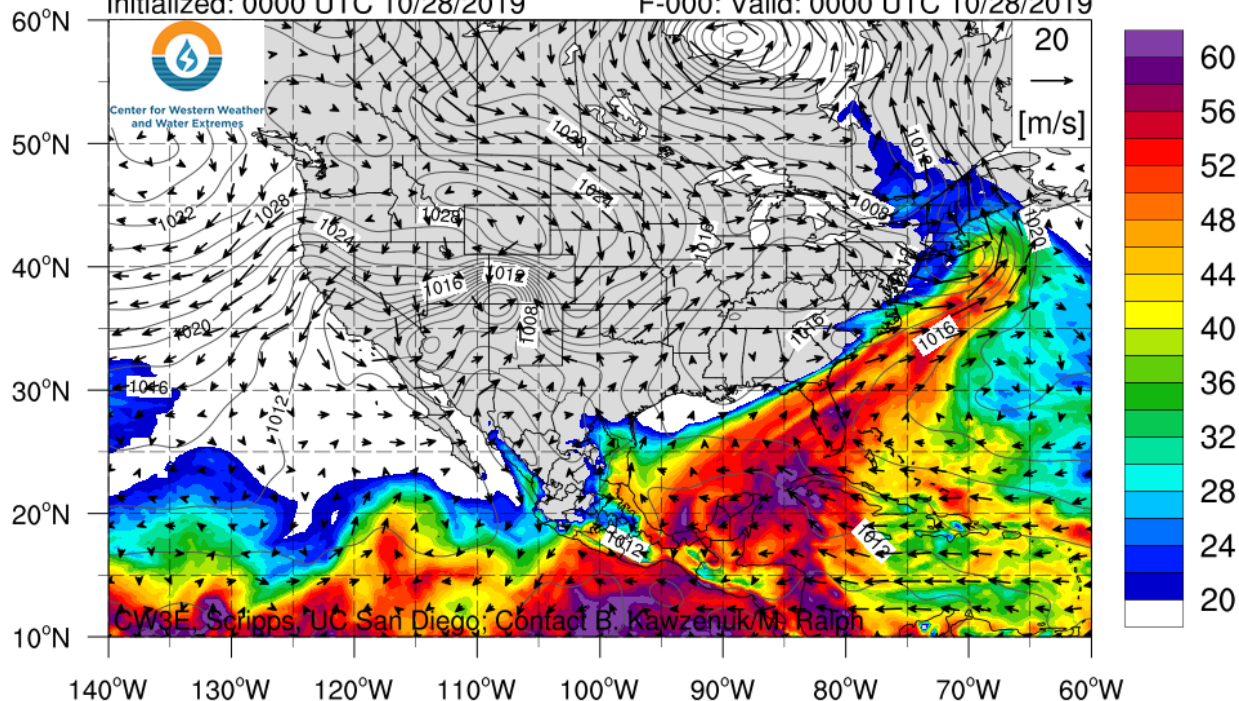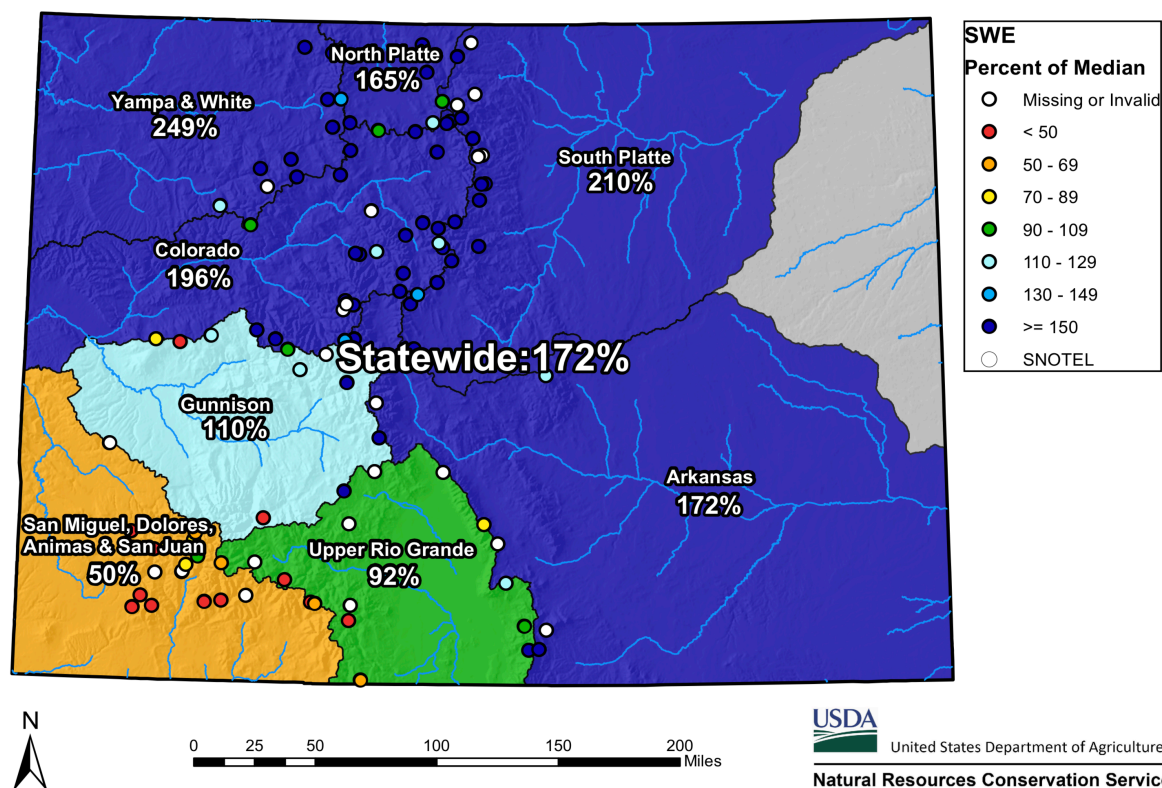
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- As of early November, snow water equivalent (SWE) was significantly above the long-term (1981–2010) median throughout much of Colorado
- SWE was below the long-term median in extreme southwestern Colorado, where severe drought conditions had persisted (as of 29 October)
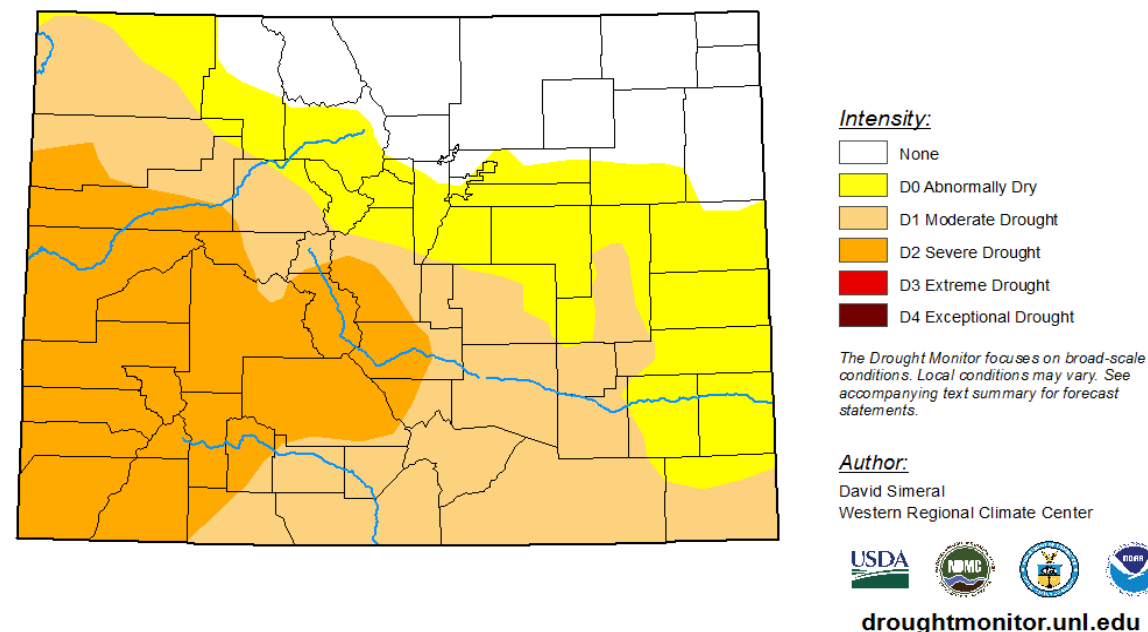

Colorado SNOTEL Snow Water Equivalent (SWE) Update Map with Site Data
Current as of Nov 04, 2019

U.S. Drought Monitor
Colorado
October 29, 2019
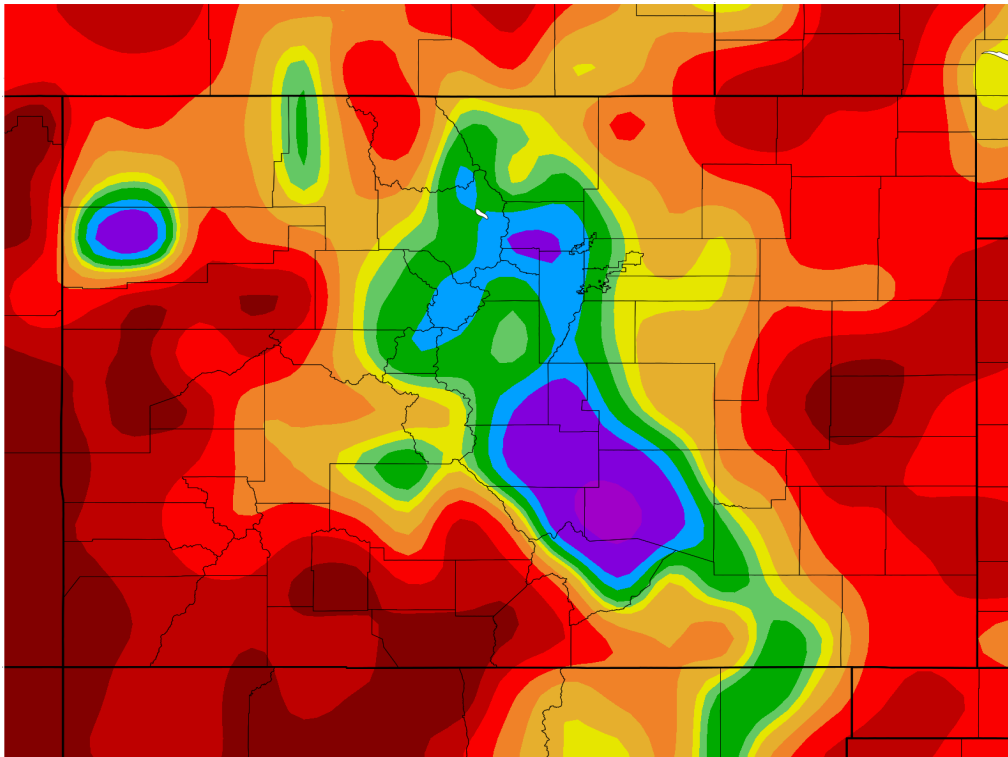(Released Thursday, Oct. 31, 2019)
Valid 8 a.m. EDT

Source: USDA | National Resources Conservation Service, https://www.wcc.nrcs.usda.gov

Source: National Drought Mitigation Center, https://droughtmonitor.unl.edu

- **Total October precipitation was above normal along and just east of the Front Range, but significantly below normal in southwestern and eastern Colorado**
- **October temperatures were below normal across the entire state, especially over northern and eastern Colorado (temperature anomalies between –4°F and –10°F)**

Percent of Normal Precipitation (%)
10/1/2019 – 10/31/2019

Departure from Normal Temperature (F)
10/1/2019 – 10/31/2019

Source: High Plains Regional Climate Center, https://hprcc.unl.edu