



COLORADO

Colorado Water Conservation Board

Department of Natural Resources
1313 Sherman Street, Room 718
Denver, CO 80203

TO: Reservoir Coordinating Committee (RCC) and Environmental Account
Committee (EAC) Members

FROM: Kara Scheel, Endangered Species Recovery Program Manager
Colorado Water Conservation Board

DATE: November 8, 2022

SUBJECT: Summary of Flow Conditions and Select Water Storage Information for the
South Platte River Basin

The following summarizes climate conditions in the South Platte basin in Colorado over the summer and fall season that have shaped the available water supply in the South Platte River Basin. Additional and up-to-date information for the next several months may be found at the links provided in the reference section.

Drought Status

The majority of Colorado is experiencing some level of drought condition. In the South Platte River Basin, drought conditions increase in severity from the headwaters of the South Platte to the Nebraska border (Figure 1). Over the last six months, drought conditions near the headwaters of the South Platte have improved while drought conditions worsened in northeast Colorado (class 1 and 2 degradation). The drought condition in much of the state has greatly improved (Figure 2).

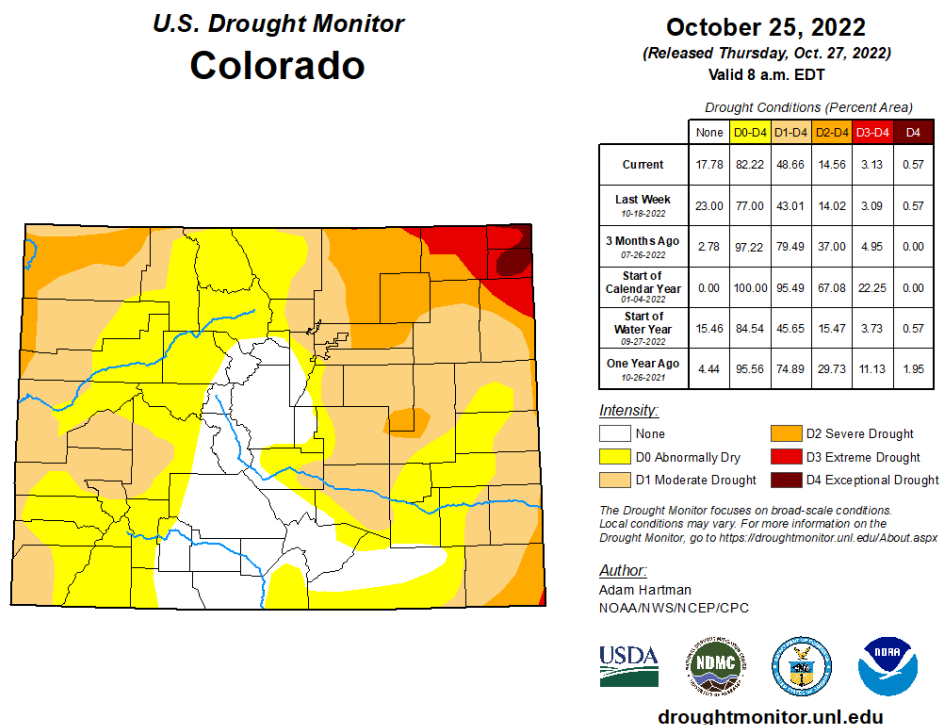
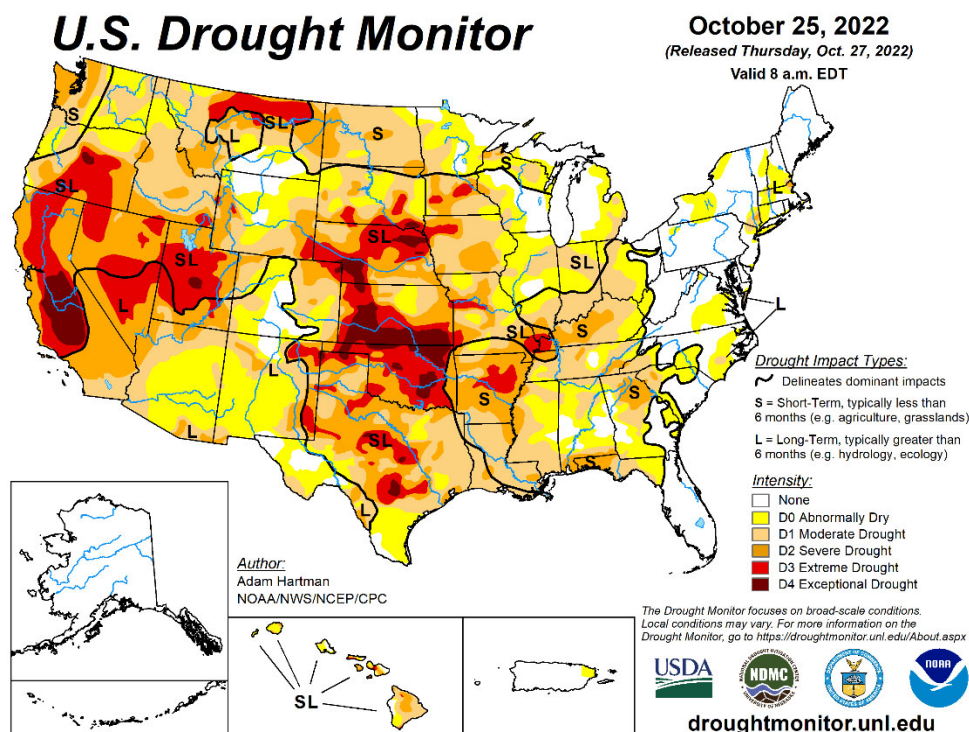


Figure 1: Much of the South Platte River Basin is currently experiencing some level of drought conditions

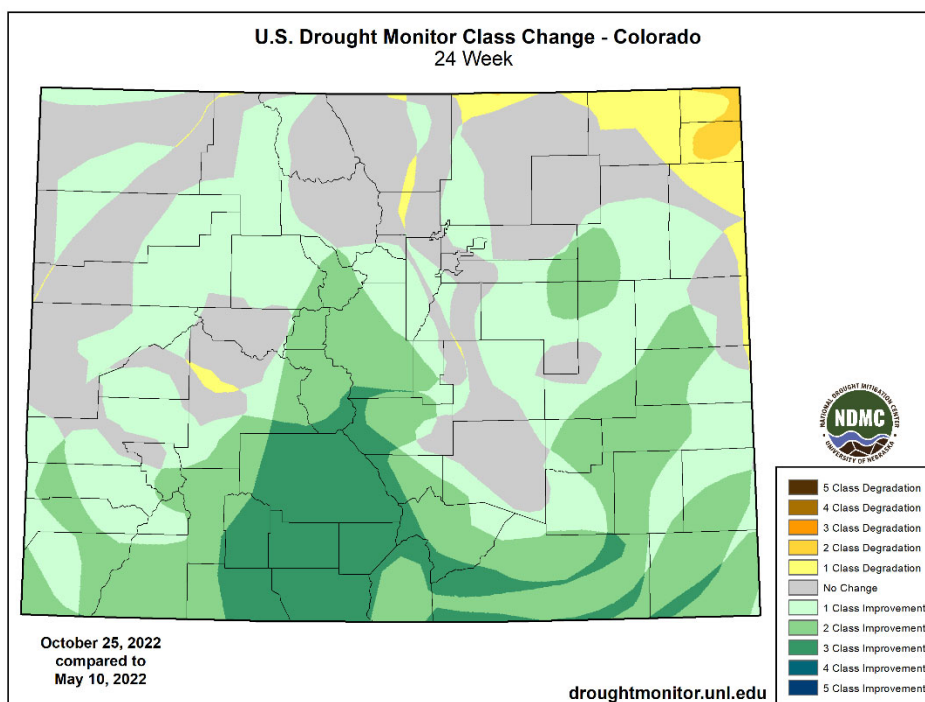
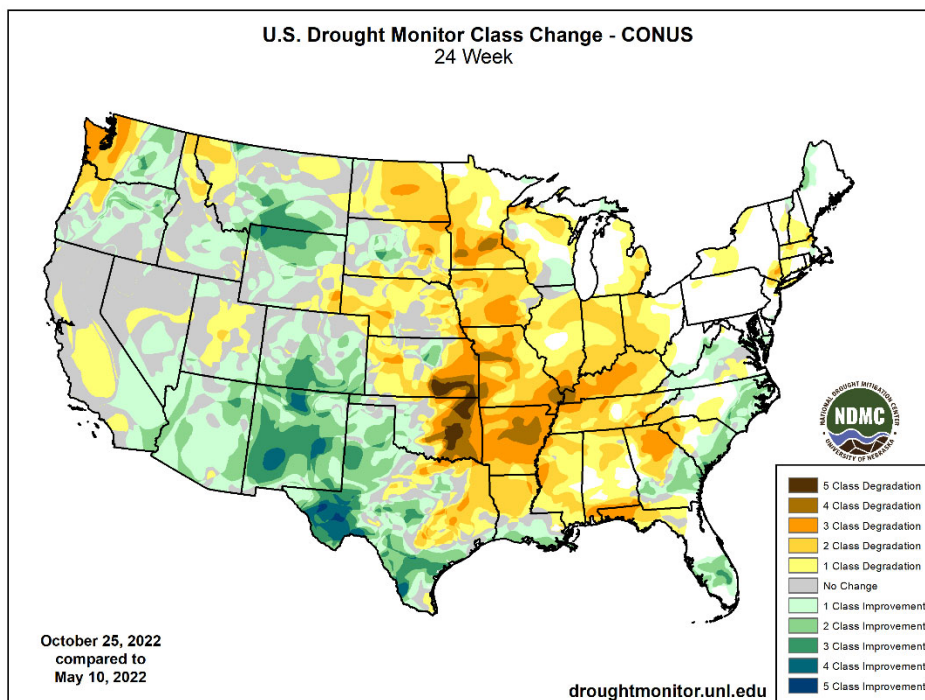


Figure 2: Drought monitor class change across the country and in Colorado.

Snow Water Equivalent

Although much too early in the season to draw conclusions about water supply, Snow on the western slope of Colorado is off to a good start, receiving some early productive storms. The South Platte Basin is sitting at 61% of median (Figure 3).

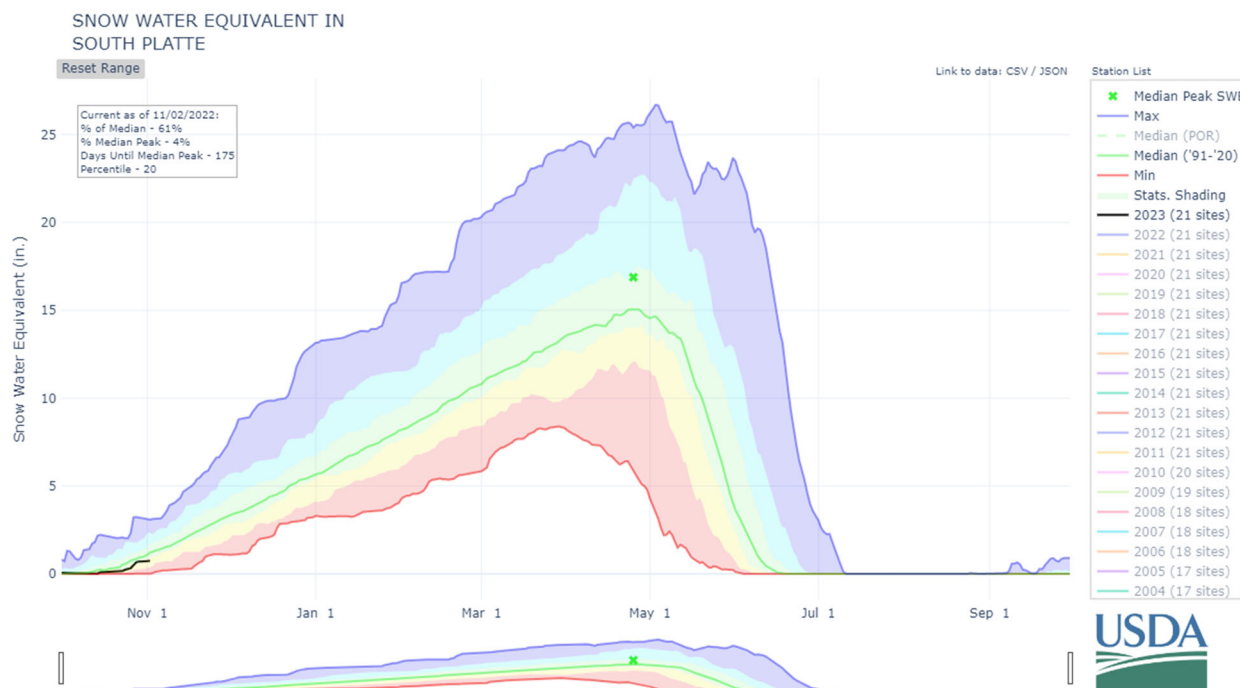
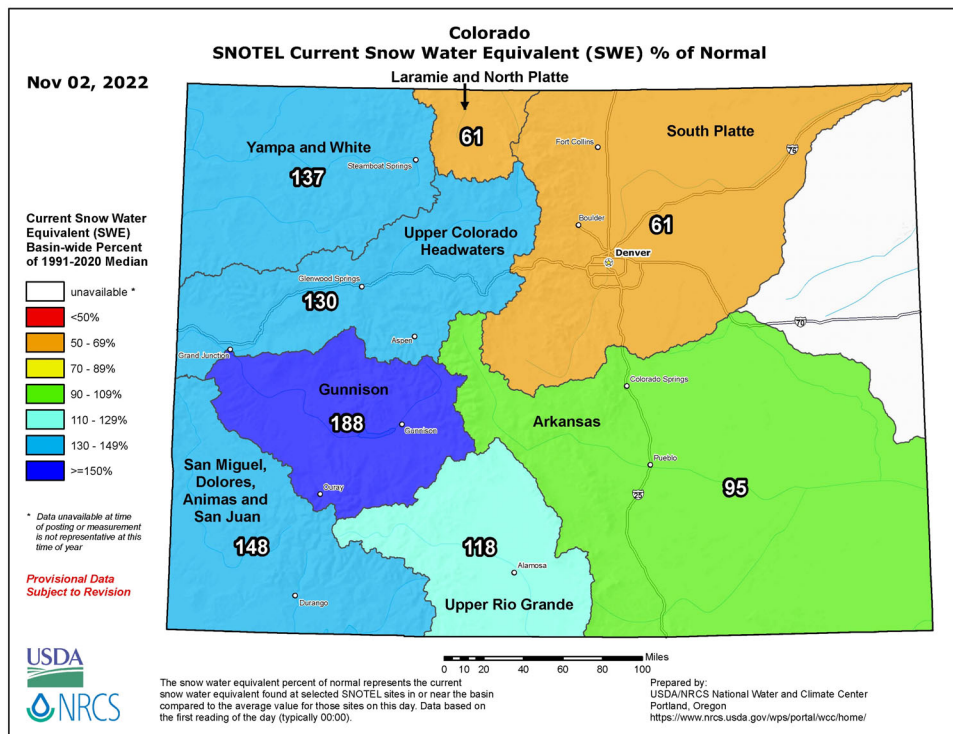
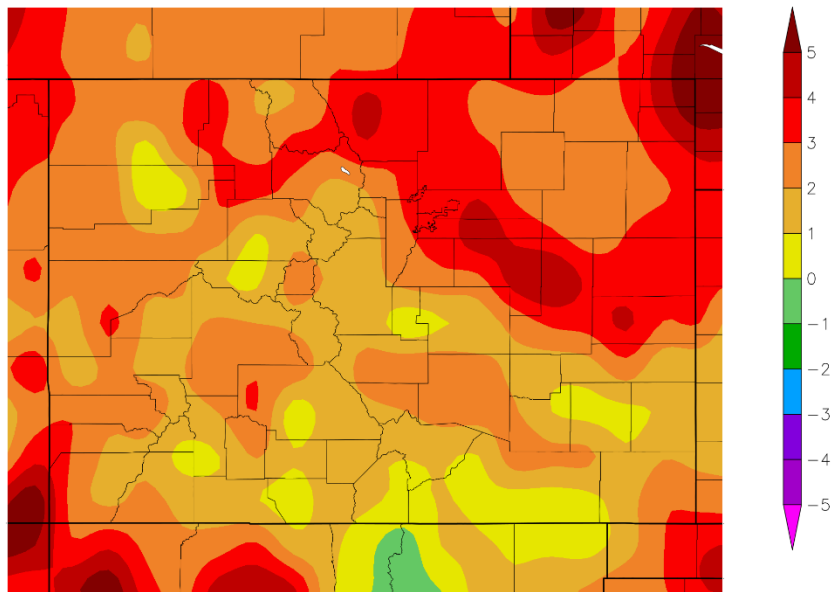


Figure 3. Snow Water Equivalent in Colorado

Temperature

The South Platte River Basin has experienced above normal temperatures for much of the year, but especially in the last 120 days (Figure 4). Water year 2022 was the 6th hottest year on record for the entire state (Figure 6).

Departure from Normal Temperature (F)
7/6/2022 – 11/2/2022

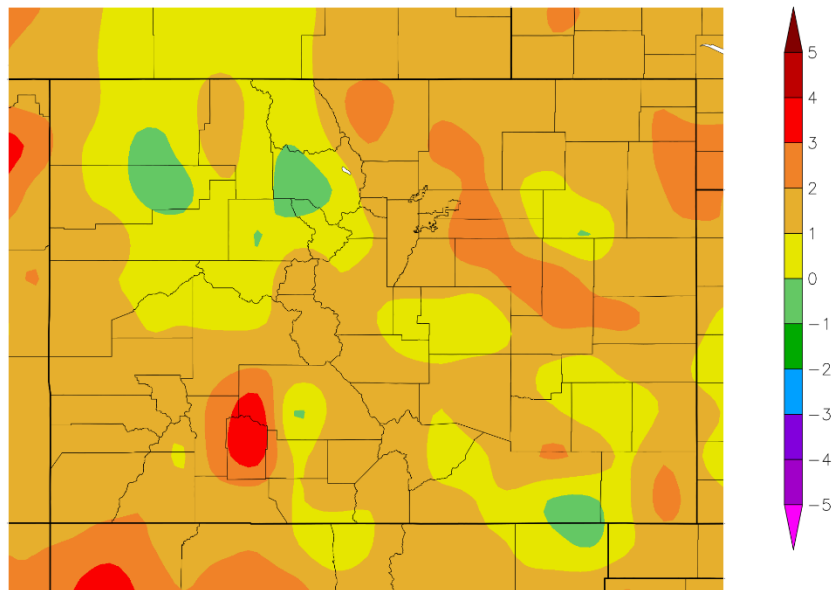


Generated 11/3/2022 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 4: Departure from Normal Temperature in Colorado in Last 120 days

Departure from Normal Temperature (F)
11/1/2021 – 10/31/2022



Generated 11/2/2022 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 5: Departure from Normal over last year

average temperature rank: 12 months ending September 2022 (Oct-Sep)

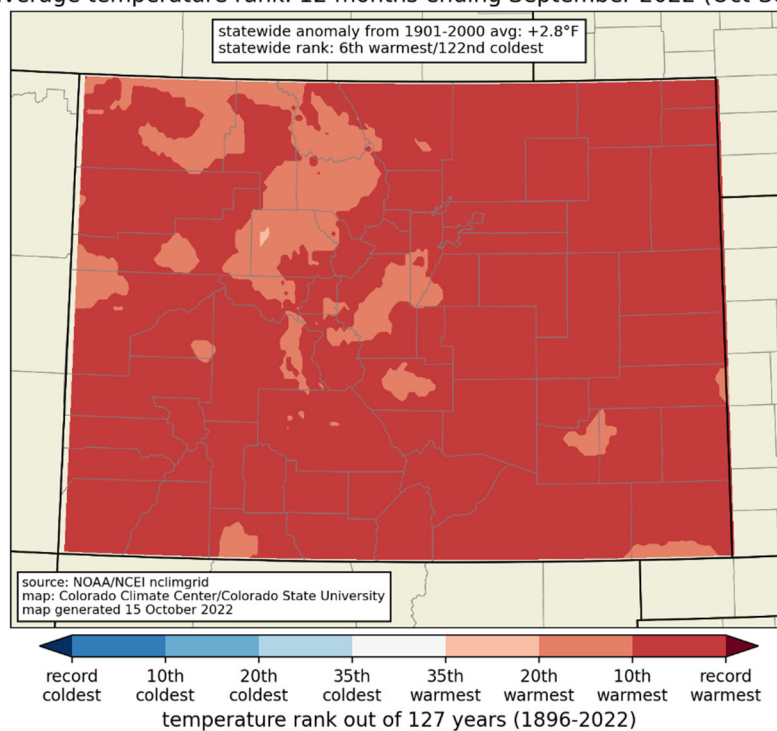


Figure 6. Average temperature rank for Oct 1, 2021- Sept 30, 2022

Precipitation

Precipitation for the majority of the South Platte basin in water year 2022 (October 1, 2021 - September 30, 2022) was below normal, with some exceptions for the headwaters. Precipitation on much the eastern plains of the basin is around 71-90% of normal with some areas experiencing as low as 51-70% of normal (Figure 7). In addition, October was a very dry month for most of the basin (Figure 8).

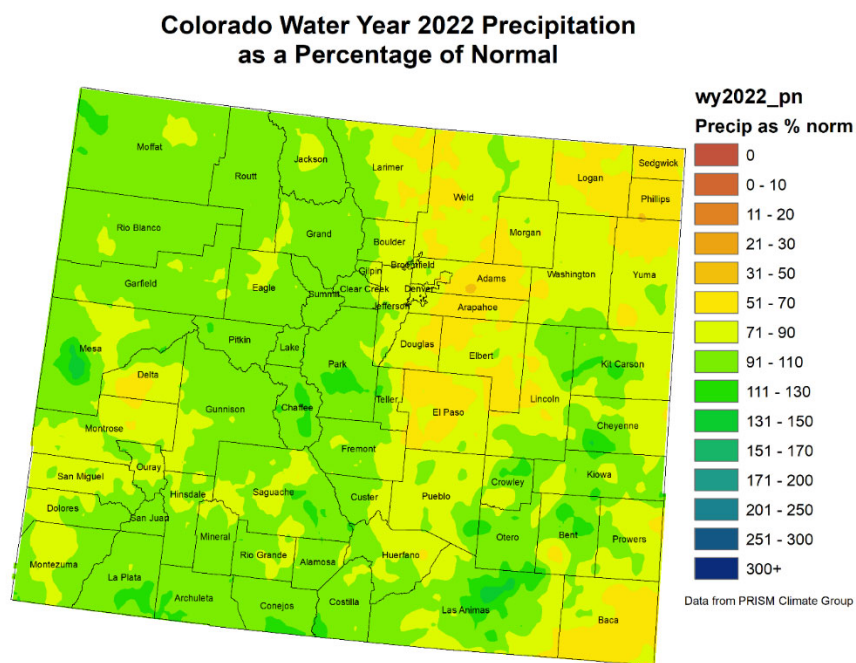


Figure 7: Precipitation in October 1, 2021 – September 30, 2022 as a percent of normal

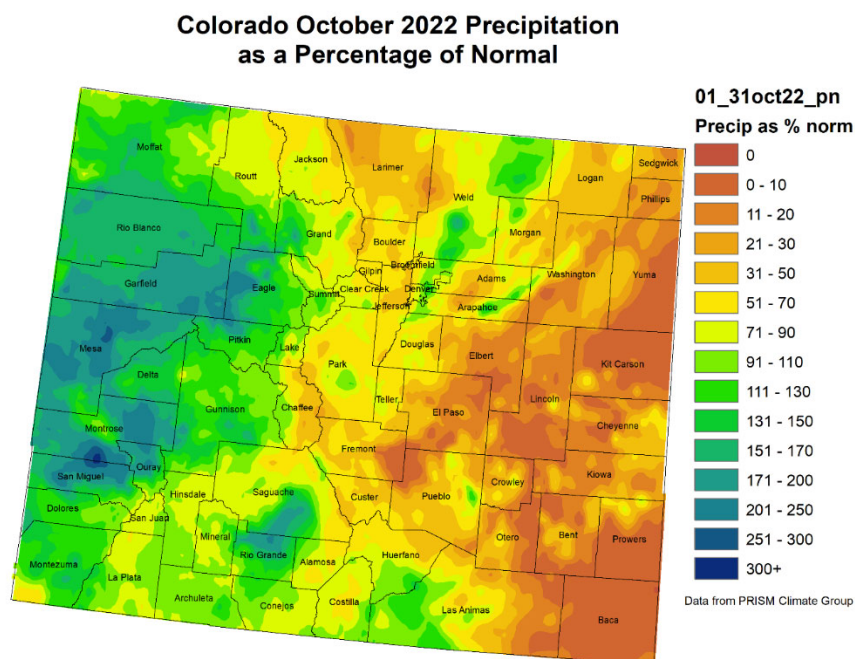


Figure 8: Precipitation totals October 2022

Reservoir Storage

Figure 9 shows reservoir storage on the South Platte below the Kersey gage in water year 2022 as compared to water year 2021. Reservoir storage below Kersey for much of the year was below values of the previous year. Table 1 shows reservoir storage at individual reservoirs throughout the basin. On October 1, 2022, the basin's reservoir storage was at 96% of median.

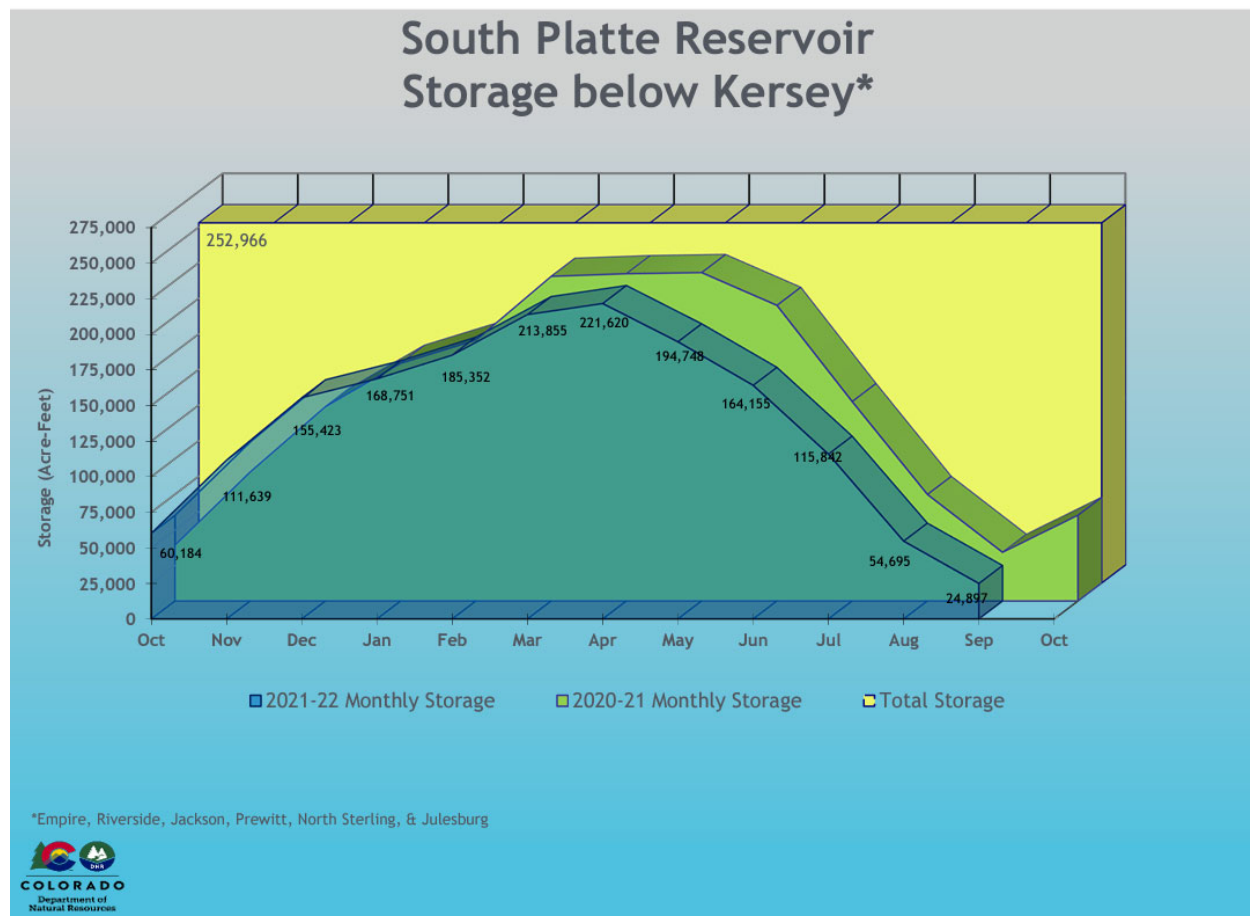


Figure 9: Reservoir storage below Kersey compared to the previous year in the South Platte River Basin

Table 1. South Platte Storage, as of October 1, 2022

South Platte	Current (KAF)	Last Year (KAF)	Median (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Median % Capacity	Current % Median	Last Year % Median
Antero Reservoir	20.0	19.8	19.3	19.9	101%	99%	97%	104%	102%
Barr Lake	3.4	6.3	11.6	30.1	11%	21%	39%	30%	55%
Black Hollow Reservoir	3.9	4.0	3.0	6.5	60%	61%	46%	130%	132%
Boyd Lake	23.5	31.1	29.6	48.4	49%	64%	61%	79%	105%
Cache La Poudre	0.2	0.4	2.7	10.1	2%	4%	27%	7%	16%
Carter Lake	71.7	80.6	51.7	108.9	66%	74%	47%	139%	156%
Chambers Lake	5.0	3.6	4.0	8.8	57%	41%	45%	125%	91%
Cheesman Lake	74.7	76.3	65.9	79.0	95%	97%	83%	113%	116%
Cobb Lake	15.3	18.4	14.6	22.3	69%	82%	65%	105%	126%
Elevenmile Canyon Reservoir	100.3	100.0	99.7	98.0	102%	102%	102%	101%	100%
Empire Reservoir		4.0	6.1	36.5		11%	17%		66%
Fossil Creek Reservoir	4.0	4.2	4.4	11.1	36%	38%	40%	91%	95%
Gross Reservoir	15.5	24.1	23.8	29.8	52%	81%	80%	65%	101%
Halligan Reservoir	2.7	1.5	1.1	6.4	42%	23%	16%	257%	143%
Horsecreek Reservoir	1.5	2.3	2.7	14.7	10%	16%	18%	56%	85%
Horsetooth Reservoir	87.6	118.7	86.1	149.7	59%	79%	58%	102%	138%
Jackson Lake Reservoir	1.2	11.0	10.8	26.1	5%	42%	41%	11%	102%
Julesburg Reservoir	0.9	6.1	6.6	20.5	4%	30%	32%	14%	93%
Lake Loveland Reservoir	2.4	6.1	7.1	10.3	23%	59%	69%	34%	85%
Lone Tree Reservoir	2.6	3.6	3.0	8.7	30%	41%	34%	87%	118%
Mariano Reservoir	0.1	0.3	0.6	5.4	2%	5%	11%	17%	48%
Marshall Reservoir	4.5	4.5	5.2	10.0	45%	45%	52%	87%	86%
Marston Reservoir	8.5	10.9	8.3	13.0	65%	84%	64%	102%	131%
Milton Reservoir	3.1	7.0	7.5	23.5	13%	30%	32%	41%	93%
Point Of Rocks Reservoir	4.5	4.8	8.9	70.6	6%	7%	13%	51%	53%

Prewitt Reservoir	7.2	10.0	10.9	28.2	25%	36%	39%	66%	92%
Ralph Price Reservoir	16.2	15.8	16.2	16.2	100%	98%	100%	100%	98%
Riverside Reservoir	8.0	1.5	10.2	55.8	14%	3%	18%	78%	15%
Spinney Mountain Reservoir	39.0	35.6	37.5	49.0	80%	73%	77%	104%	95%
Standley Reservoir	37.7	35.6	35.9	42.0	90%	85%	85%	105%	99%
Terry Reservoir	4.8	4.6	4.8	8.0	60%	58%	60%	100%	96%
Union Reservoir	10.7	11.3	10.1	13.0	82%	87%	78%	106%	112%
Windsor Reservoir	3.1	6.7	5.4	15.2	20%	44%	36%	57%	125%
Basin Index					55%	61%	56%	96%	109%
# of reservoirs					32	33	33	32	33

Long-Term Forecast

NOAA climate prediction center is showing that over the month of November, there is a higher probability of above normal temperatures and there are equal chances of below and above precipitation across most of the state of Colorado (Figure 10). The three month outlook shows a higher probability of above normal temperatures and equal changes of above and below normal precipitation (Figure 11) for the South Platte Basin.

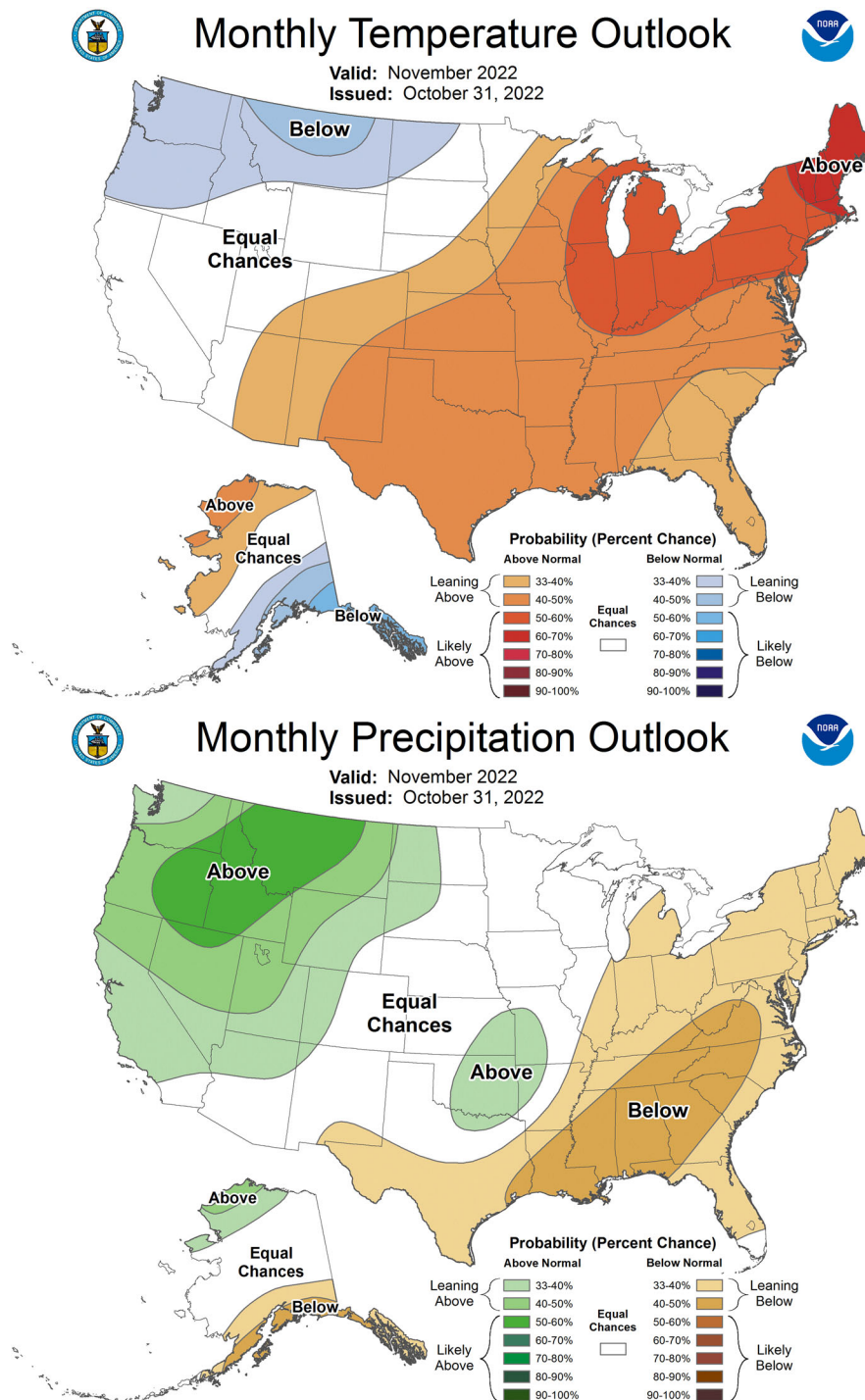


Figure 10: November 2022 temperature and precipitation outlook

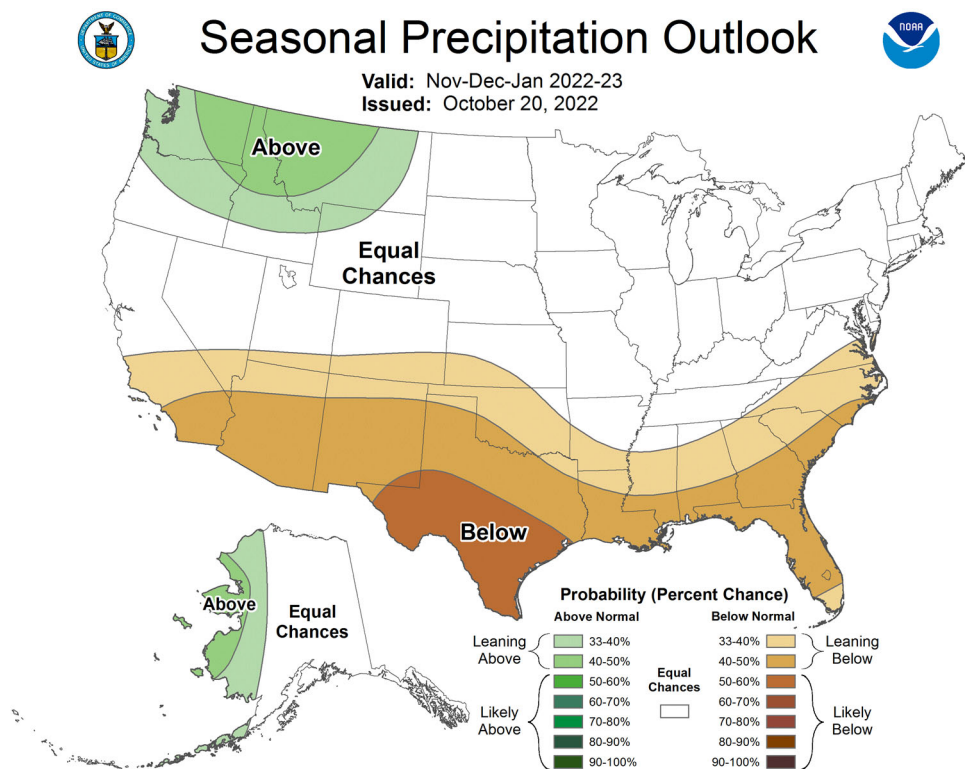
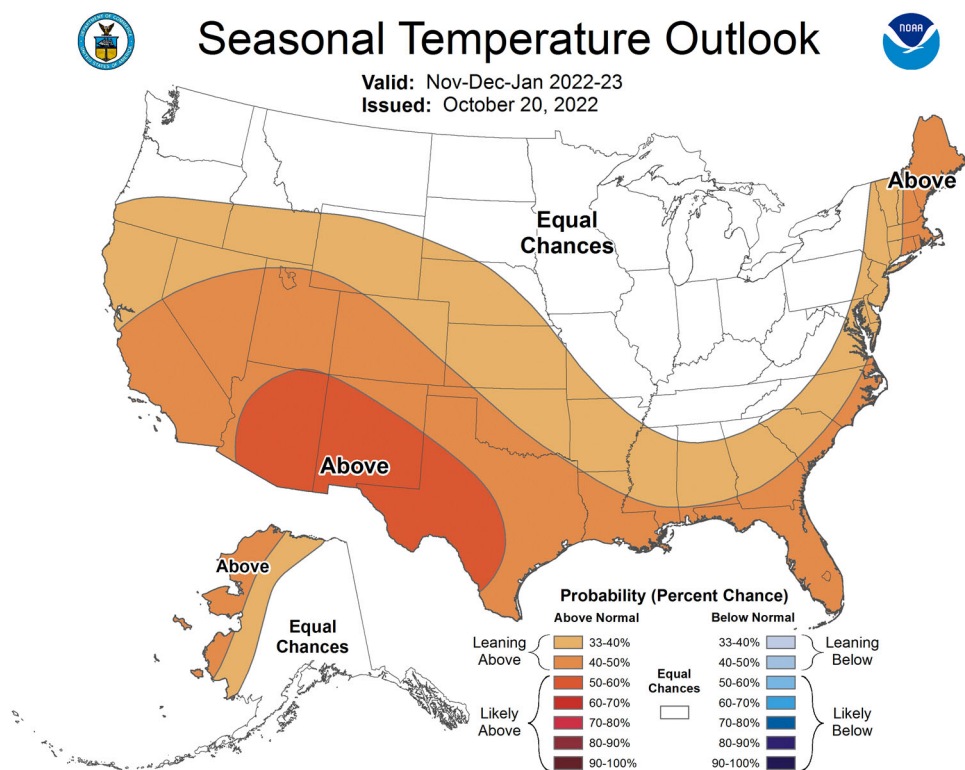


Figure 21: Three month temperature and precipitation outlook

References

30-day forecast: <https://www.cpc.ncep.noaa.gov/products/predictions/30day/>

Colorado Climate Center: <https://climate.colostate.edu/>

Colorado DWR, Division 1 office: <https://dwr.colorado.gov/division-offices/division-1-office>

Colorado DWR, Drought & Surface Water Supply Index:
<https://dwr.colorado.gov/services/water-administration/drought-and-swsi>

Colorado's Water Availability Task Force: <https://cwcb.colorado.gov/water-availability-flood-task-forces>

Drought Monitor: <https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>

Drought Monitor Class Change: <https://droughtmonitor.unl.edu/Maps/ChangeMaps.aspx>

High Plains Regional Climate Center: <https://hprcc.unl.edu/maps.php?map=ACISClimateMaps>

National Weather Service: https://www.weather.gov/bou/co_precipitationtemperature

NRCS, Water Supply and Data Products:
<https://www.nrcs.usda.gov/wps/portal/wcc/home/quicklinks/states/colorado/products/watersupply>

Snow Water Equivalent, Colorado: https://www.weather.gov/bou/co_snowpack

Snow Water Equivalent, South Platte Basin:
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/co/snow/products/?cid=nrcs144p2_063323

Three Month Precipitation and Temperature Outlooks:
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1