

Colorado River Basin Water Supply Briefing

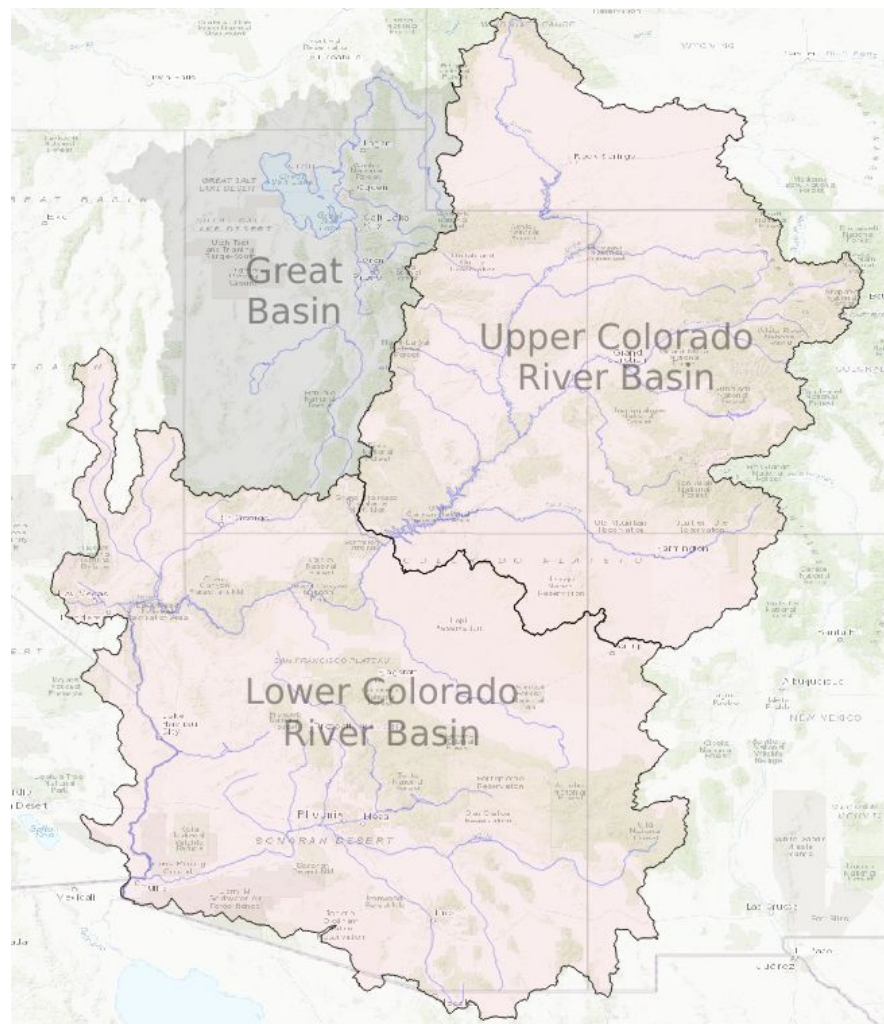
January 8, 2020

Cody Moser - Hydrologist
Colorado Basin River Forecast Center

Phone: 1-877-929-0660

Passcode: 1706374

Please mute your phone until the question period



Today's Presentation

Weather Review

Soil Moisture Conditions

Current Snowpack

2020 Water Supply Forecasts

Early Season Forecast Error

Upcoming Weather

Contacts & Questions

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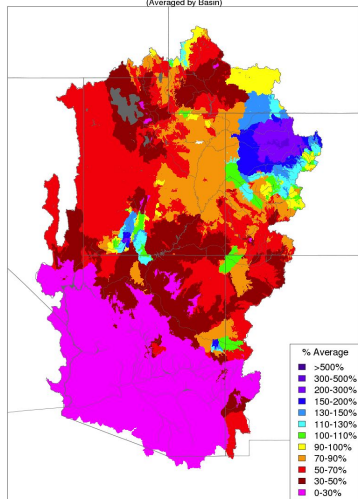
Please mute your phone until the question period

2019 Monsoon Season Review

- Coming into the monsoon season, the weather pattern featured an unusually persistent trough over the western US
- The 2019 monsoon season in the southwest US was the 9th driest and 3rd hottest on record, with records dating back to 1895
- An unfavorable mid-level weather pattern (partially caused by the waning influences of El Niño) and a decrease in tropical storm activity combined to make this one of the driest monsoons on record

June

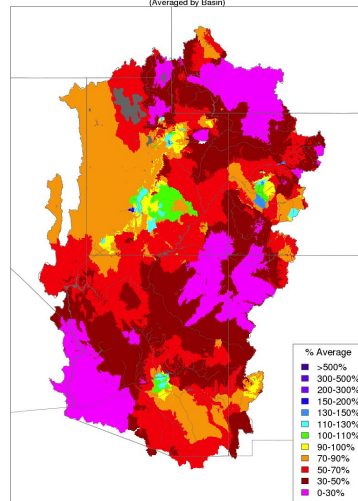
Monthly Precipitation - June 2019
(Averaged by Basin)



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

July

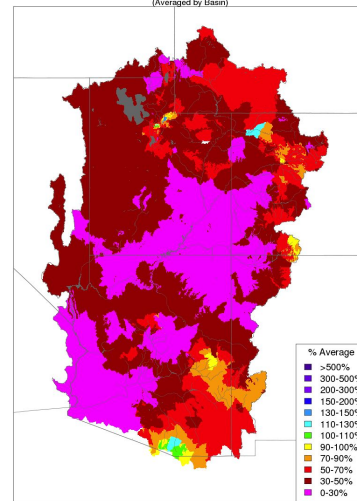
Monthly Precipitation - July 2019
(Averaged by Basin)



Prepared by NOAA, Colorado Basin River Forecast Center
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August

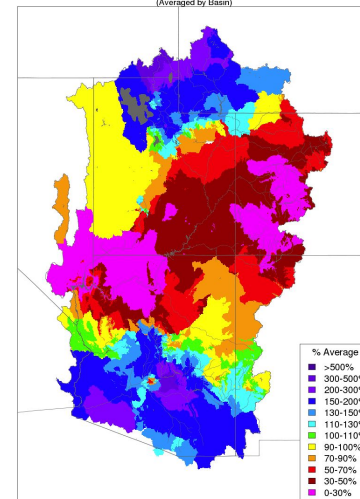
Monthly Precipitation - August 2019
(Averaged by Basin)



Prepared by NOAA, Colorado Basin River Forecast Center
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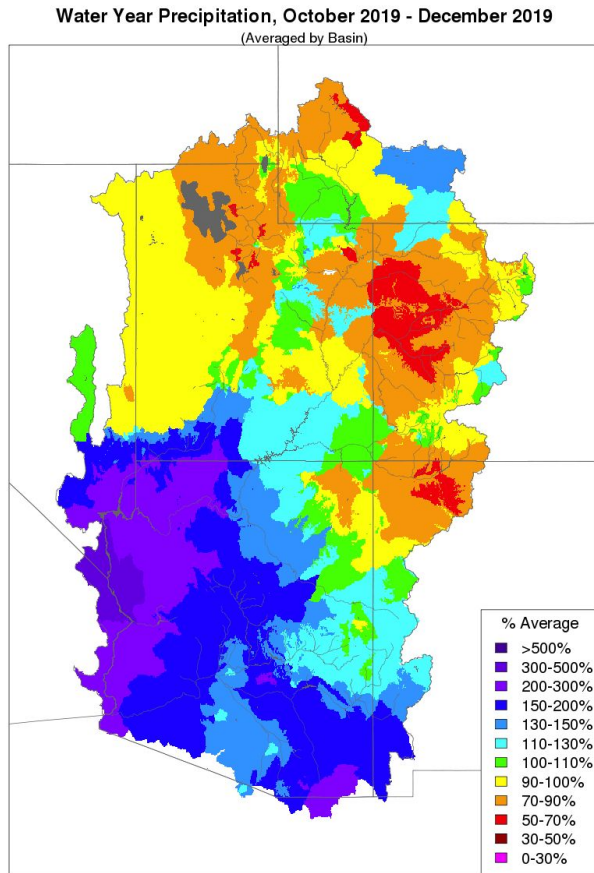
September

Monthly Precipitation - September 2019
(Averaged by Basin)



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Water Year 2020 (October - December) Precipitation



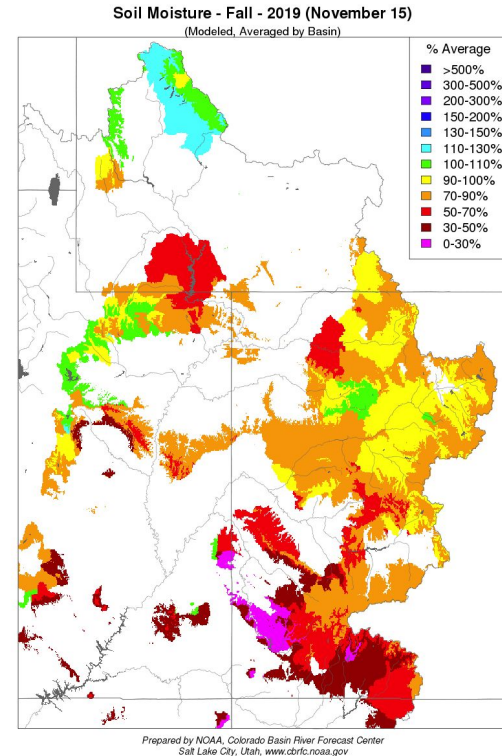
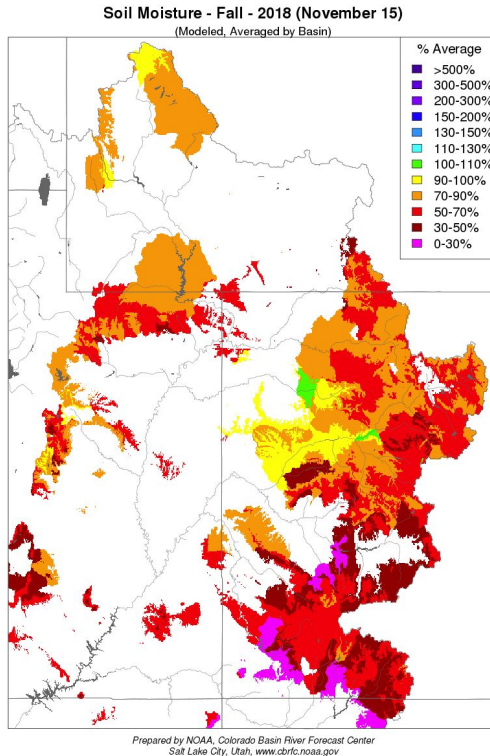
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Water Year 2020 Oct-Dec Precip Summary

<u>Basin</u>	<u>Precip (% Avg)</u>
Upper Green	85%
Duchesne	100%
Price/San Rafael	95%
Yampa/White	90%
Upper CO Mainstem	90%
Gunnison	90%
Dolores	95%
San Juan	95%
Lake Powell	90%
Virgin	150%
Verde	165%
Salt	125%
Little Colorado	140%
Upper Gila	125%

Soil Moisture Conditions - Upper Colorado

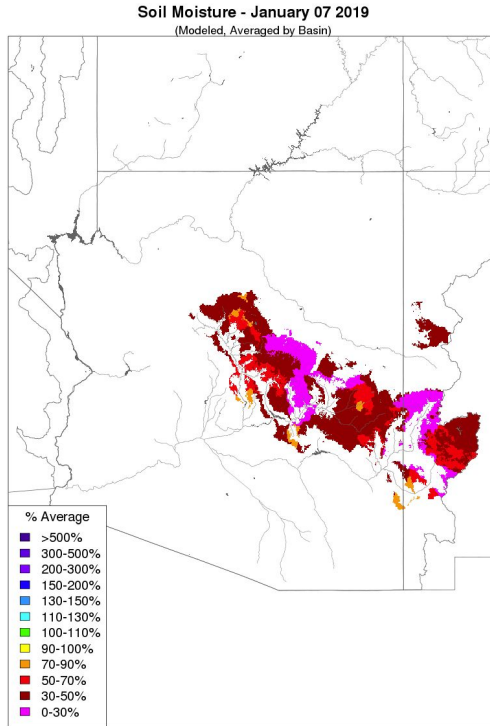
Hydrologic model soil moisture conditions are improved compared to a year ago, but still below average throughout most of the Upper Colorado Basin.



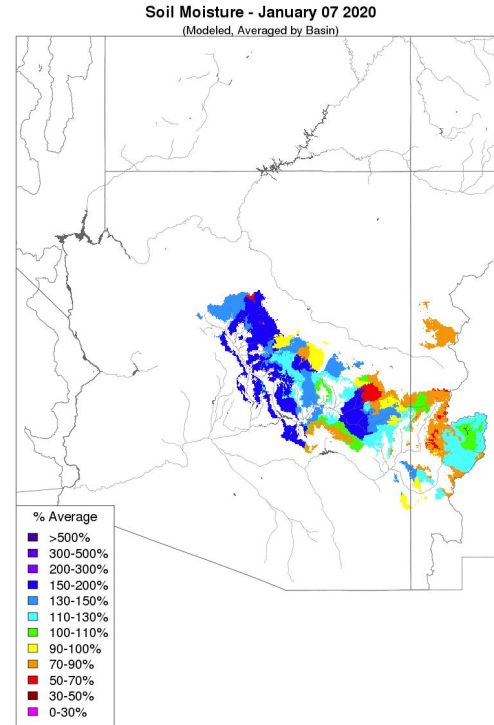
Soil Moisture Conditions - Lower Colorado

Hydrologic model soil moisture conditions are improved compared to a year ago.

Lower Colorado River Basin winter soil moisture conditions have improved considerably over the past several weeks from recent precipitation events.



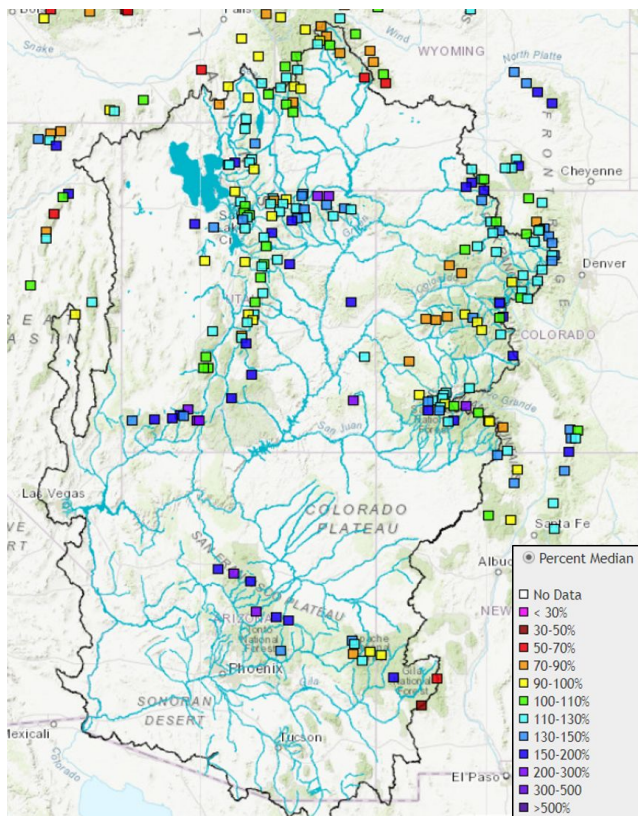
Prepared by NOAA, Colorado Basin River Forecast Center
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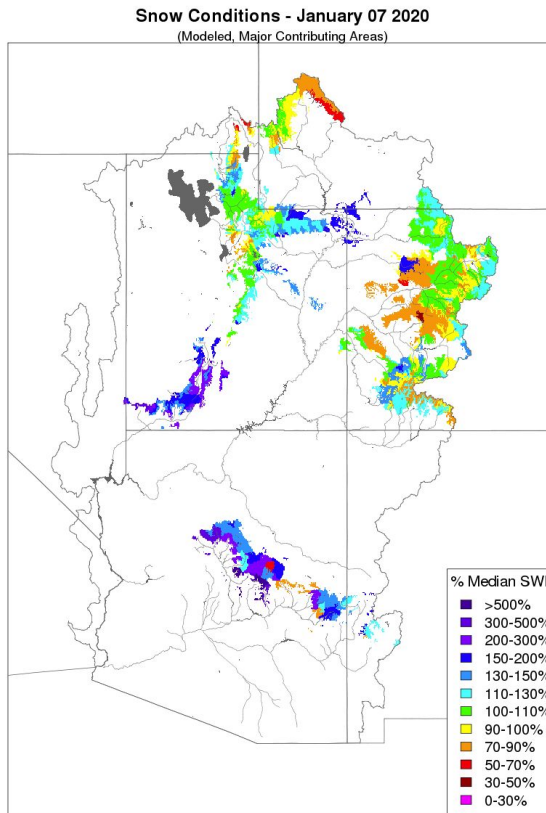
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Early January Snow Conditions

SNOTEL (Observed)



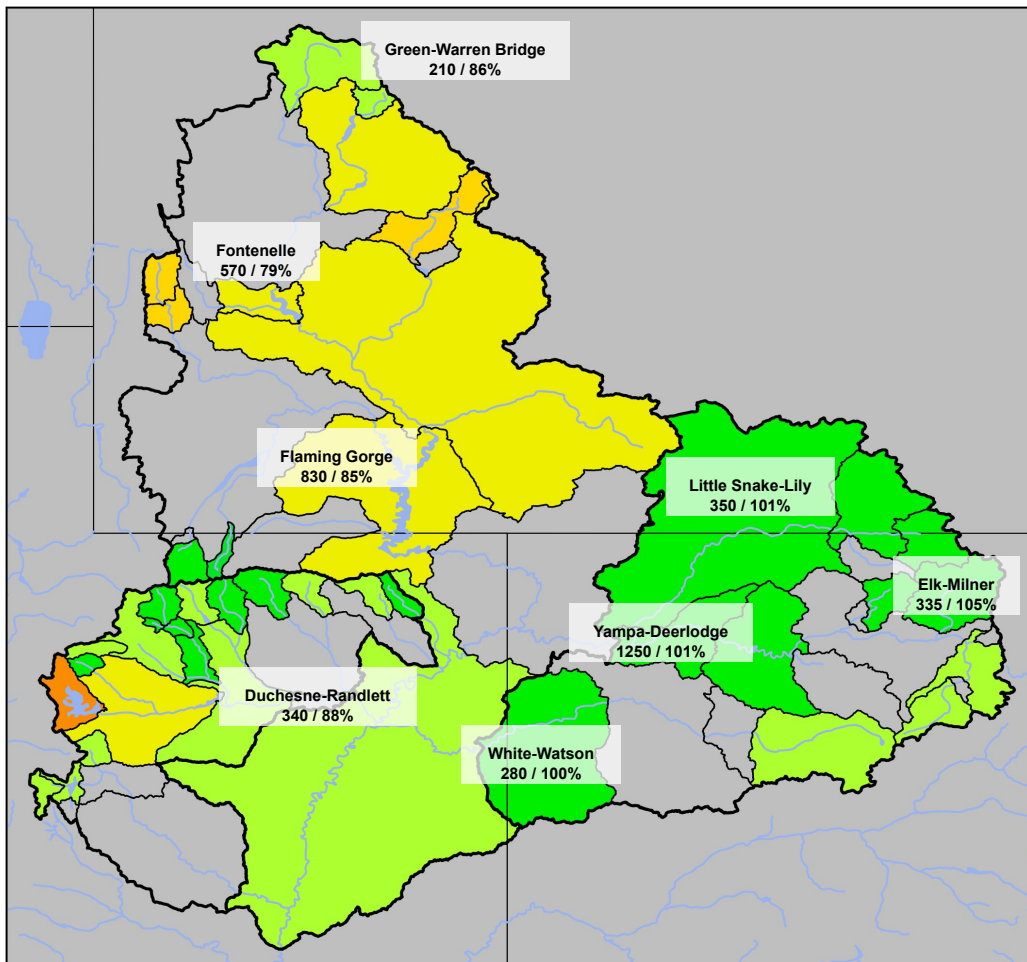
CBRFC (Model)



Jan7 SWE Summary

<u>Basin</u>	<u>SWE (% Median)</u>
Upper Green	105%
Duchesne	135%
Price/San Rafael	115%
Yampa/White	115%
Upper CO Mainstem	110%
Gunnison	100%
Dolores	125%
San Juan	110%
Lake Powell	110%
Virgin	175%
Verde	185%
Salt	115%
Little Colorado	145%
Upper Gila	100%

Jan 1st Water Supply Forecasts: Green, Yampa, White, Duchesne



January 1st 2020 Forecasts

Volume (kaf) / % of 1981-2010 avg

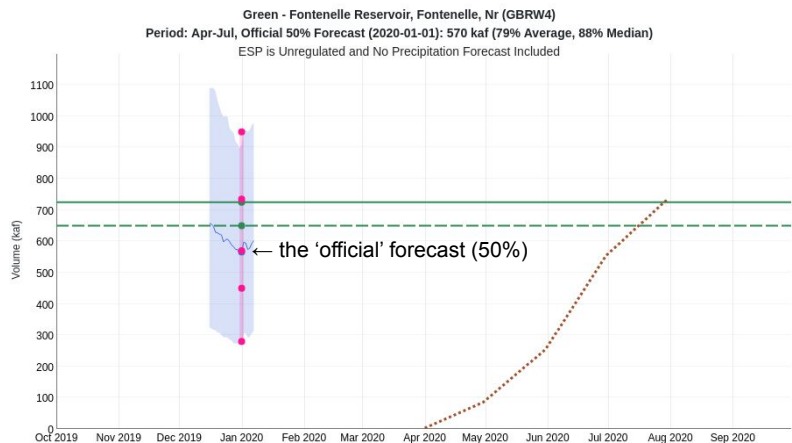
Forecast Ranges

Upper Green: 70 - 110%

Yampa/White: 90 - 105%

Duchesne: 65 - 100%

Upper Green Water Supply Forecasts & Snow Conditions



2020/01/01:

Average: 725

Median: 650

ESP: 566

Official 10: 950

Official 30: 735

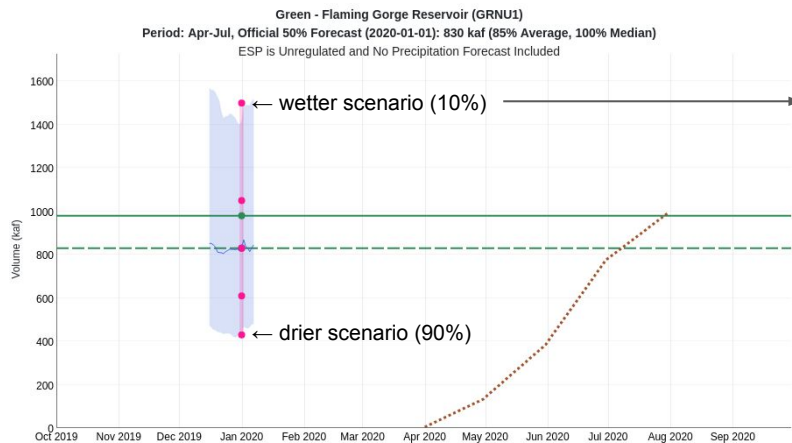
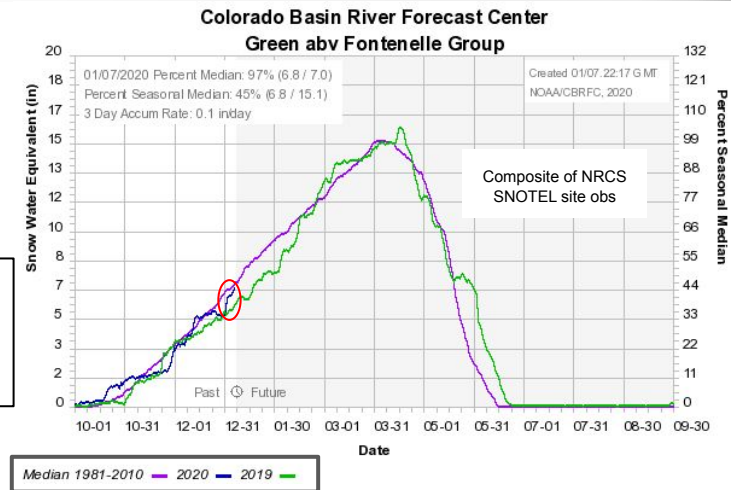
Official 50: 570

Official 70: 450

Official 90: 280

Since Jan 1:

- SWE has increased ~2"
- SWE %median increased from 80% to 97%
- ESP guidance increased ~30 kaf



2020/01/01:

Average: 980

Median: 830

ESP: 831

Official 10: 1500

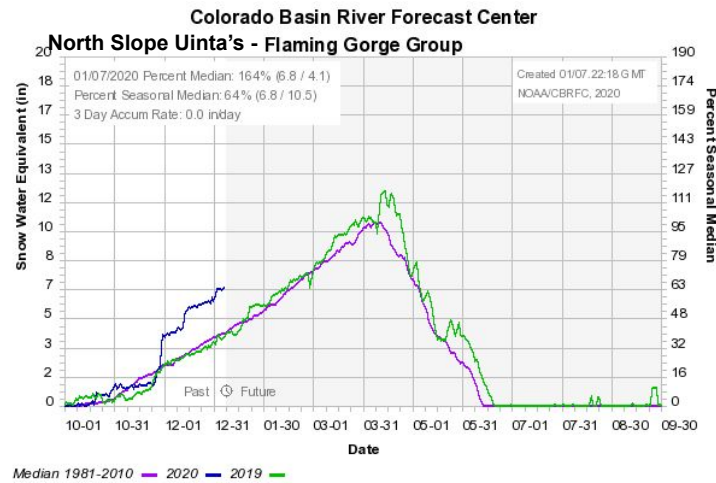
Official 30: 1050

Official 50: 830

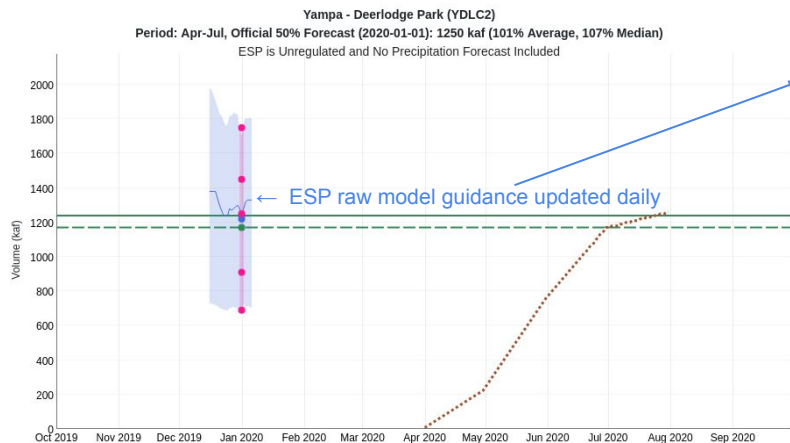
Official 70: 610

Official 90: 430

Difference in %average forecast between Fontenelle and Flaming Gorge due partly to better snowpack conditions in the North Slope of the Uinta Mountains.

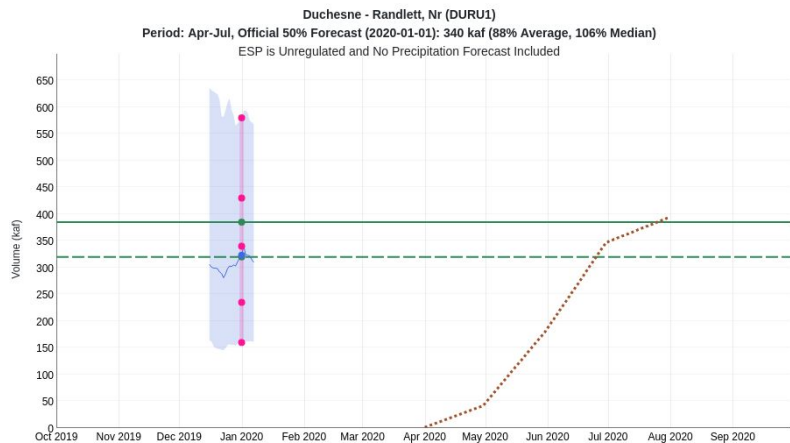
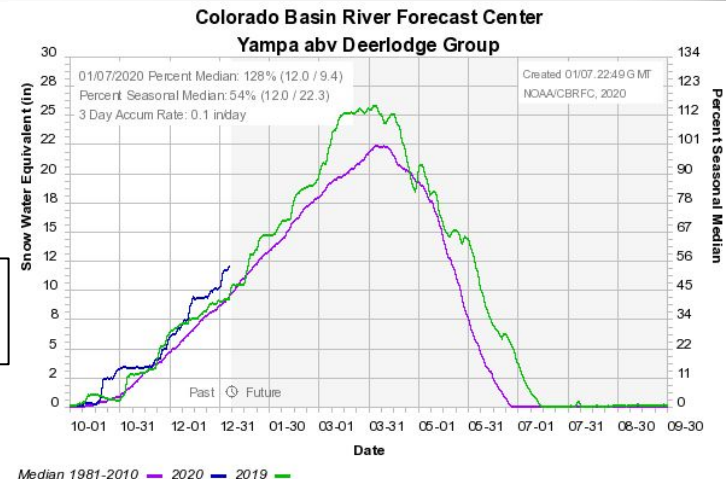


Yampa & Duchesne Water Supply Forecasts & Snow Conditions



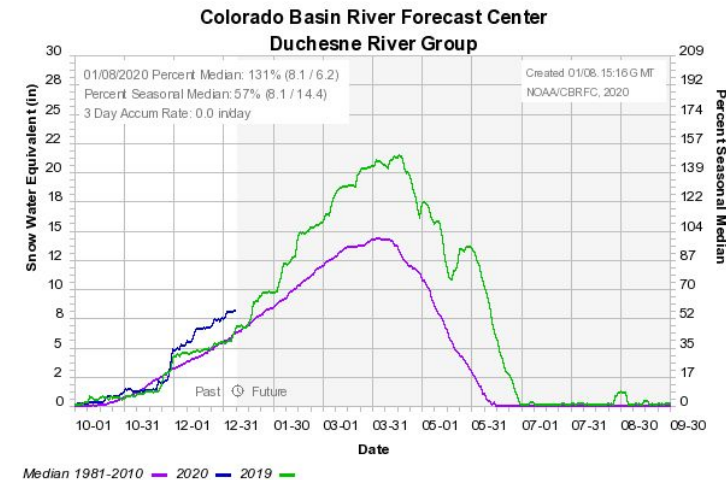
2020/01/01:
 Average: 1240
 Median: 1170
 ESP: 1220
 Official 10: 1750
 Official 30: 1450
 Official 50: 1250
 Official 70: 910
 Official 90: 690

Yampa River Basin has seen improvements in snow conditions and ESP guidance since January 1.



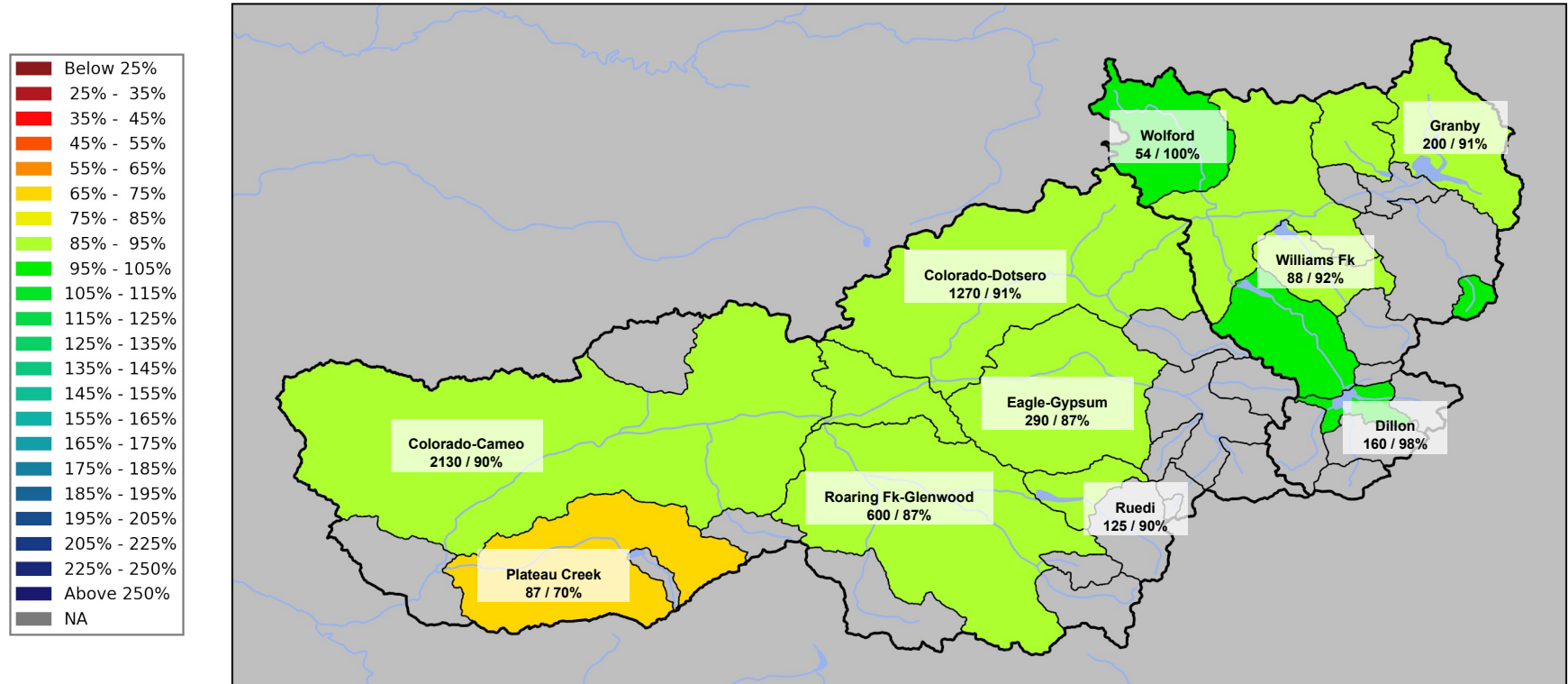
2020/01/01:
 Average: 385
 Median: 320
 ESP: 323
 Official 10: 580
 Official 30: 430
 Official 50: 340
 Official 70: 235
 Official 90: 160

Still ~3 months to go in the snow accumulation season →

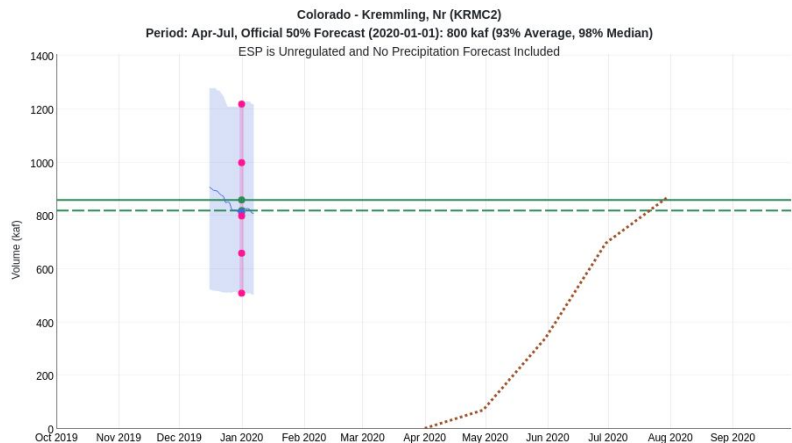


Jan 1st Water Supply Forecasts: Upper Colorado River Mainstem

Forecast Ranges: Granby to Kremmling: 90 - 100% of average
Kremmling to Cameo: 85 - 95% of average



Upper Colorado Mainstem Water Supply Forecasts & Snow Conditions

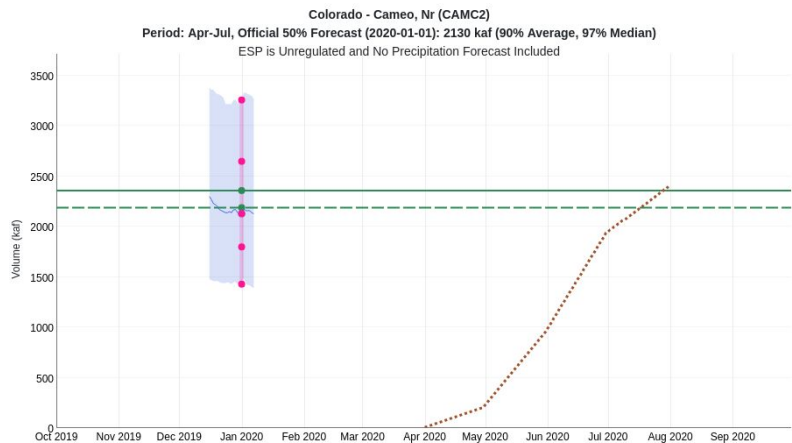
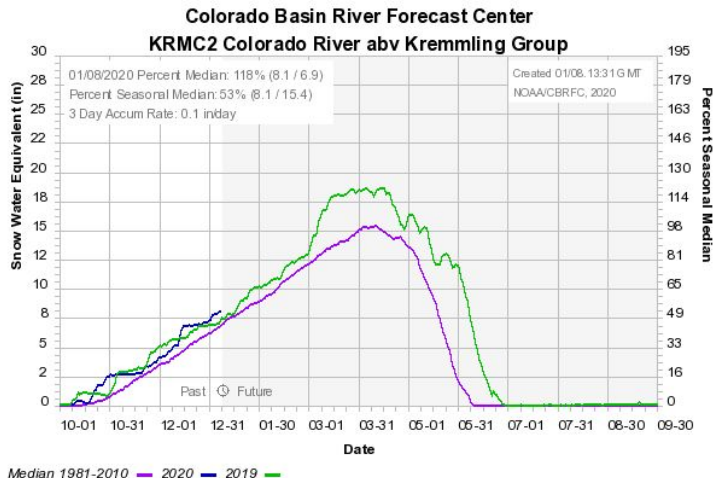


2020/01/01:
Average: 860
Median: 820
ESP: 814
Official 10: 1220
Official 30: 1000
Official 50: 800
Official 70: 660
Official 90: 510

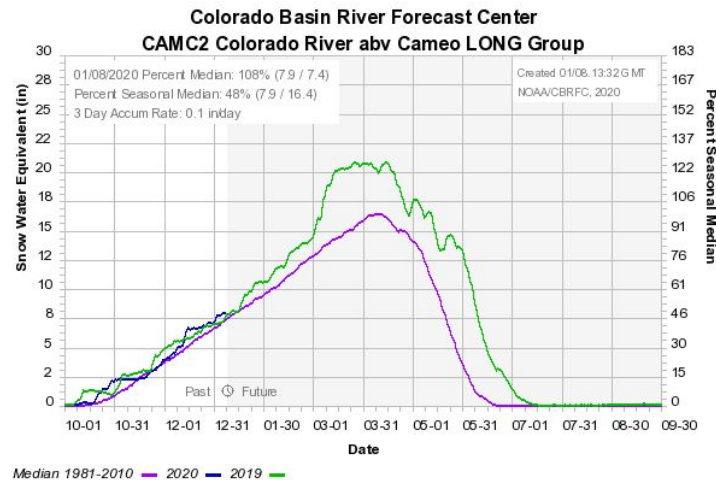
Jan1 Forecasts

2019: 760 / 88%

2020: 800 / 93%

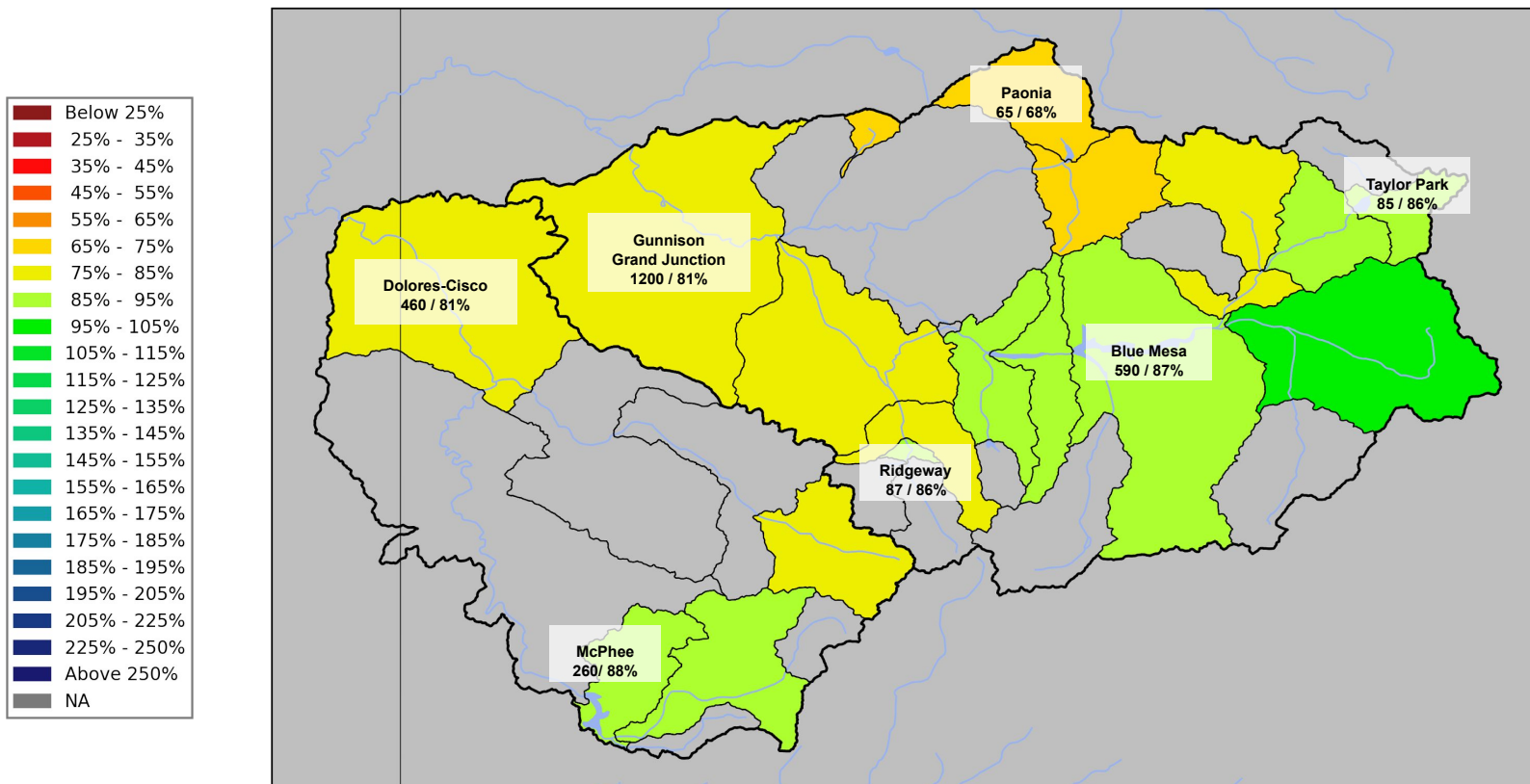


2020/01/01:
Average: 2360
Median: 2190
ESP: 2130
Official 10: 3260
Official 30: 2650
Official 50: 2130
Official 70: 1800
Official 90: 1430



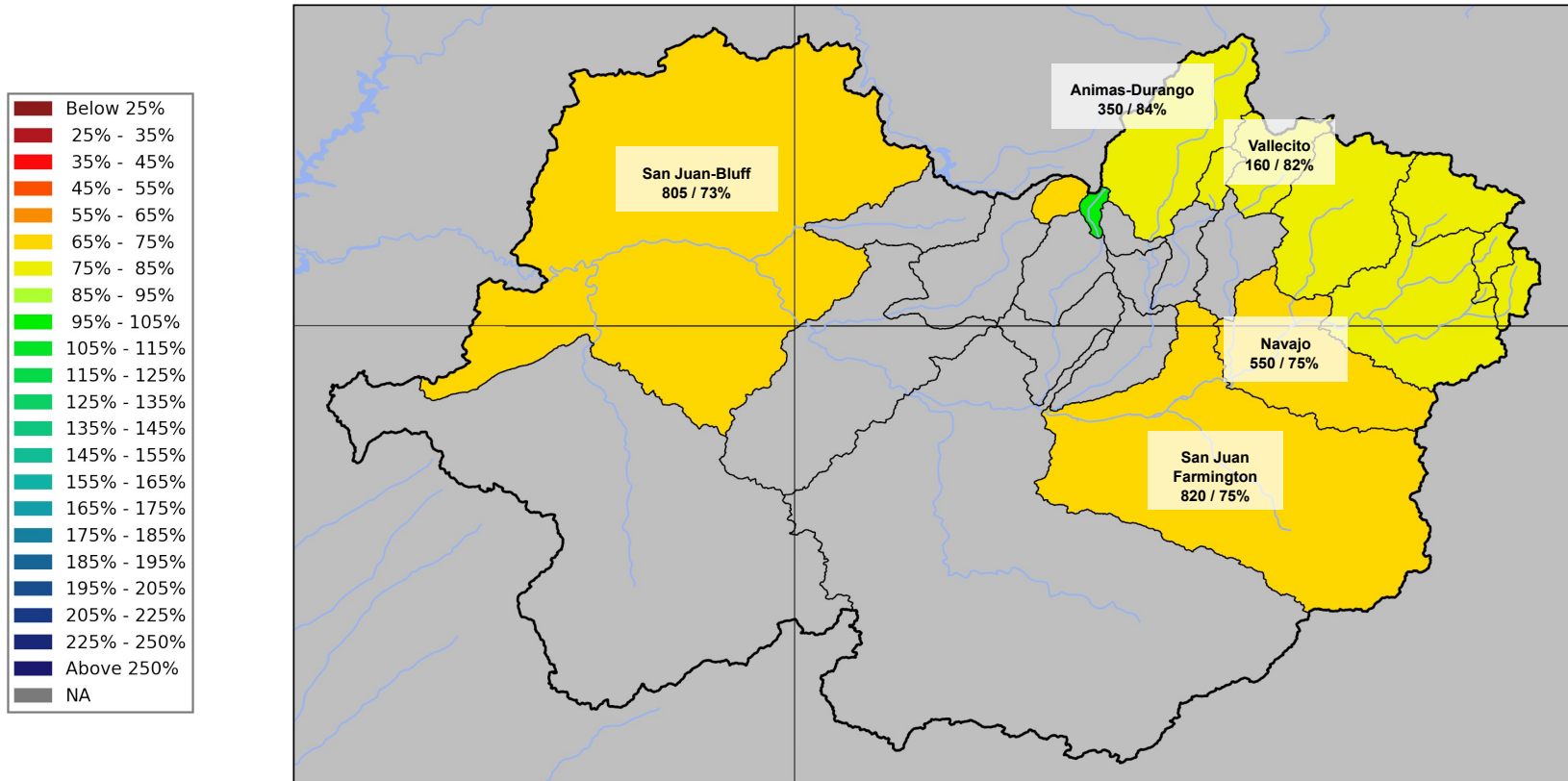
Jan 1st Water Supply Forecasts: Gunnison, Dolores

Forecast Ranges: Gunnison: 70 - 95% of average
Dolores: 80 - 90% of average

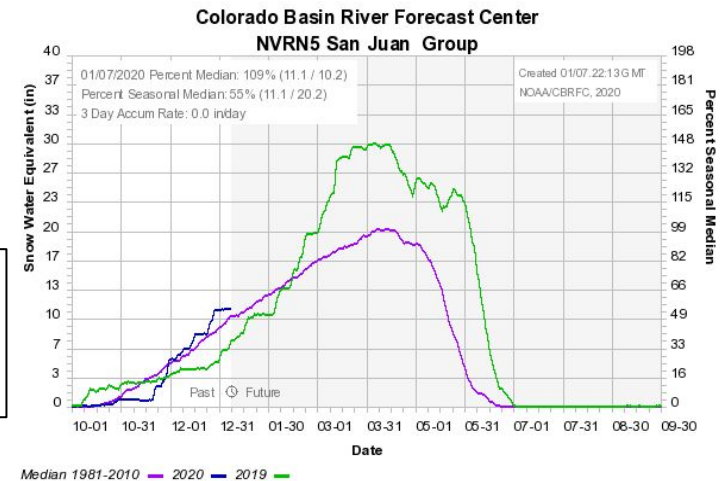
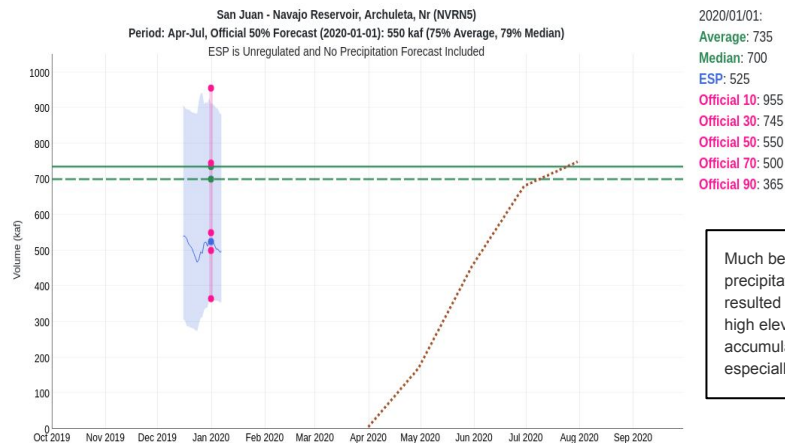
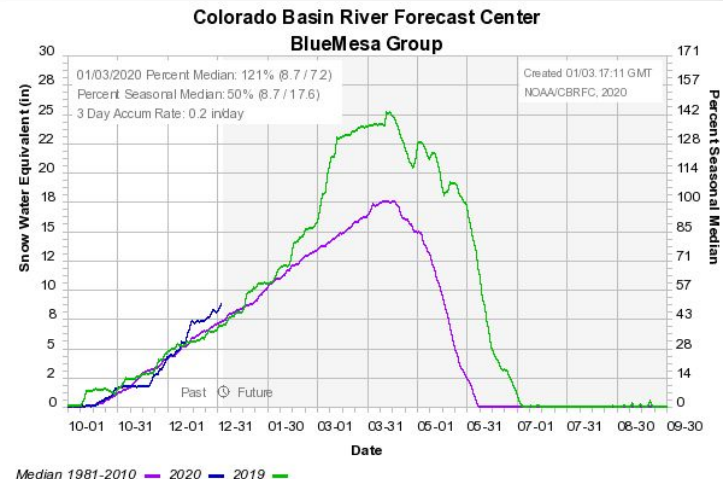
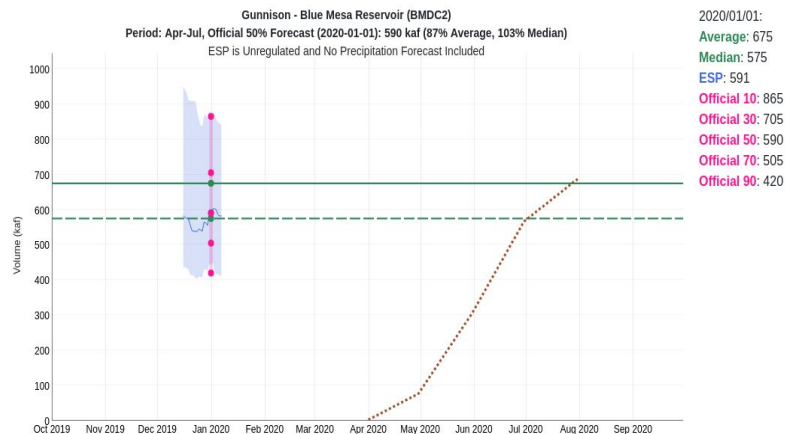


Jan 1st Water Supply Forecasts: San Juan

Forecast Range: 75 - 85% of average

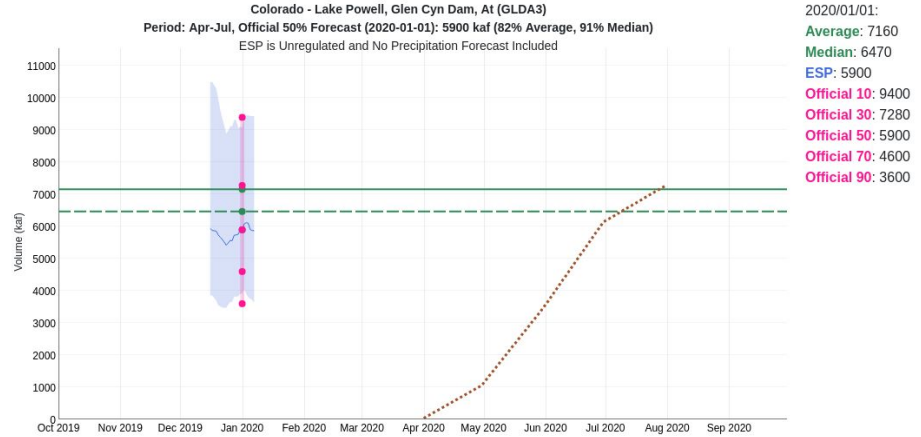
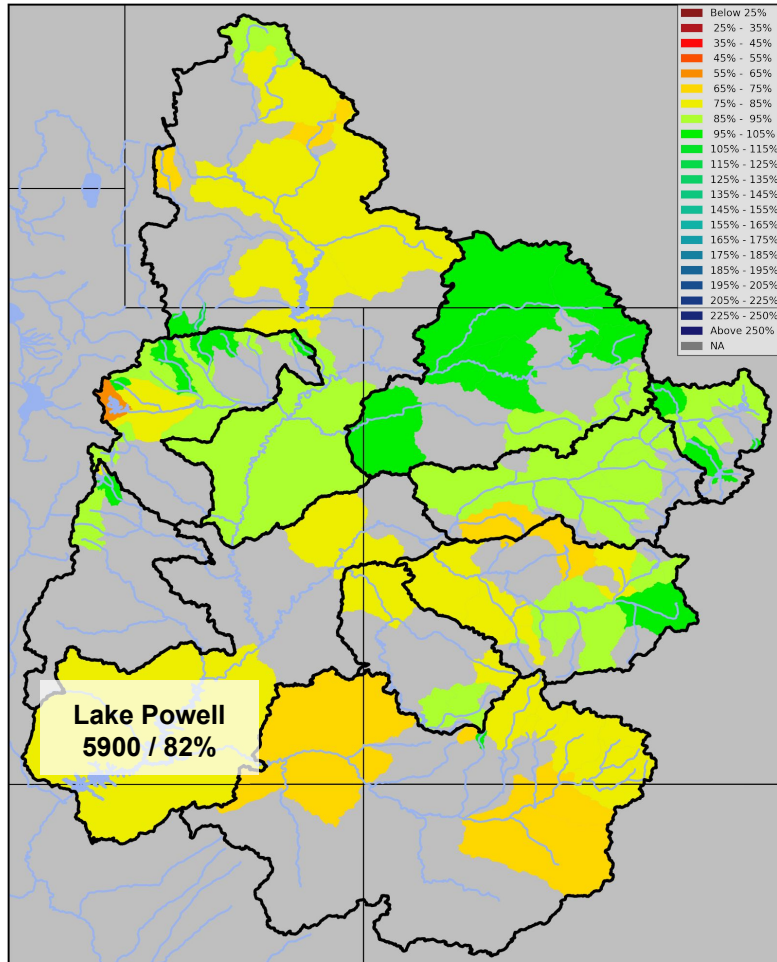


Southwest Colorado Water Supply Forecasts & Snow Conditions



Much below average October precipitation in SW Colorado resulted in a slow start to the high elevation snow accumulation season, especially the San Juan Basin.

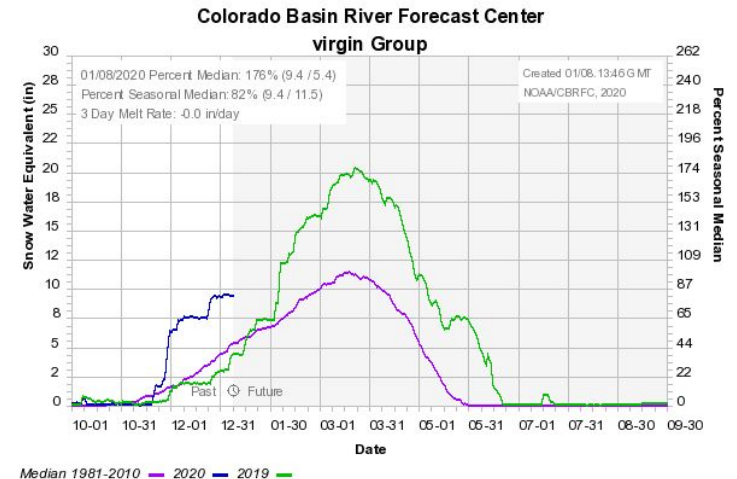
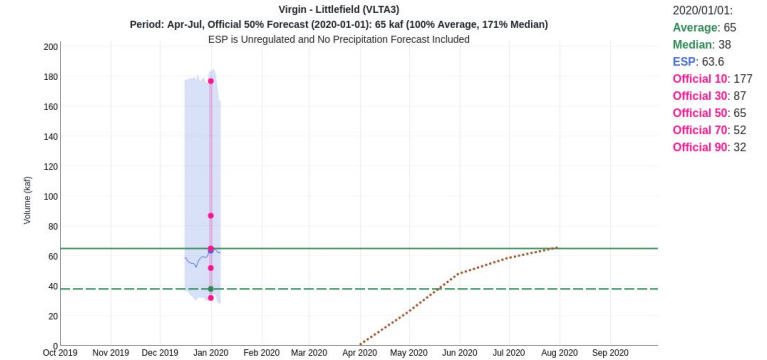
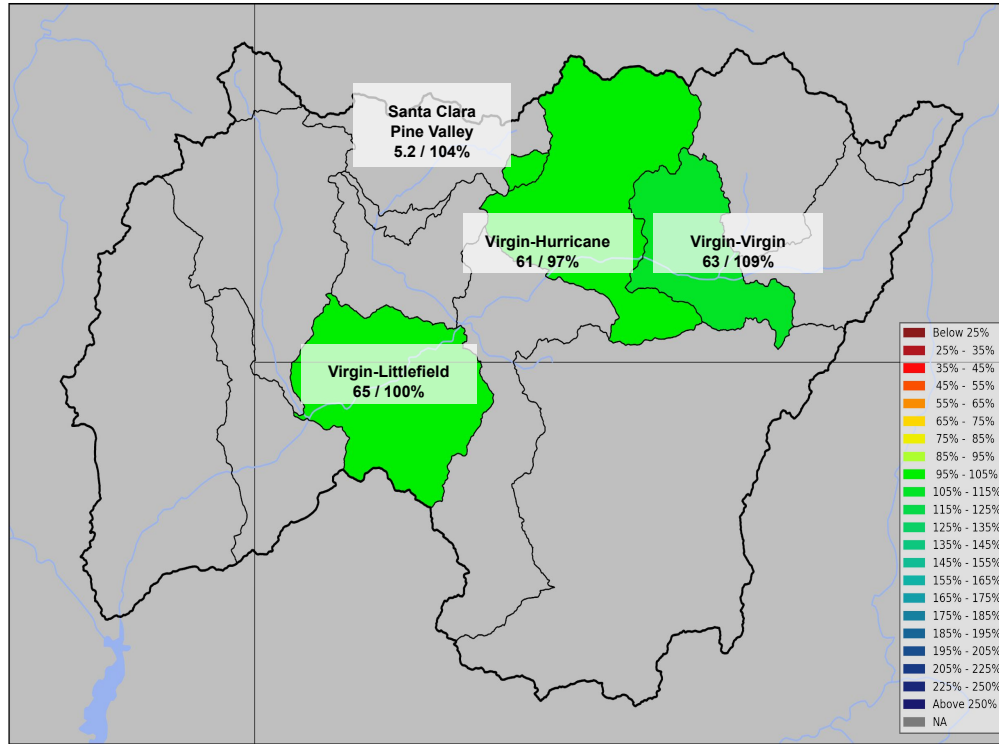
Jan 1st Water Supply Forecasts: Upper Colorado (Lake Powell)



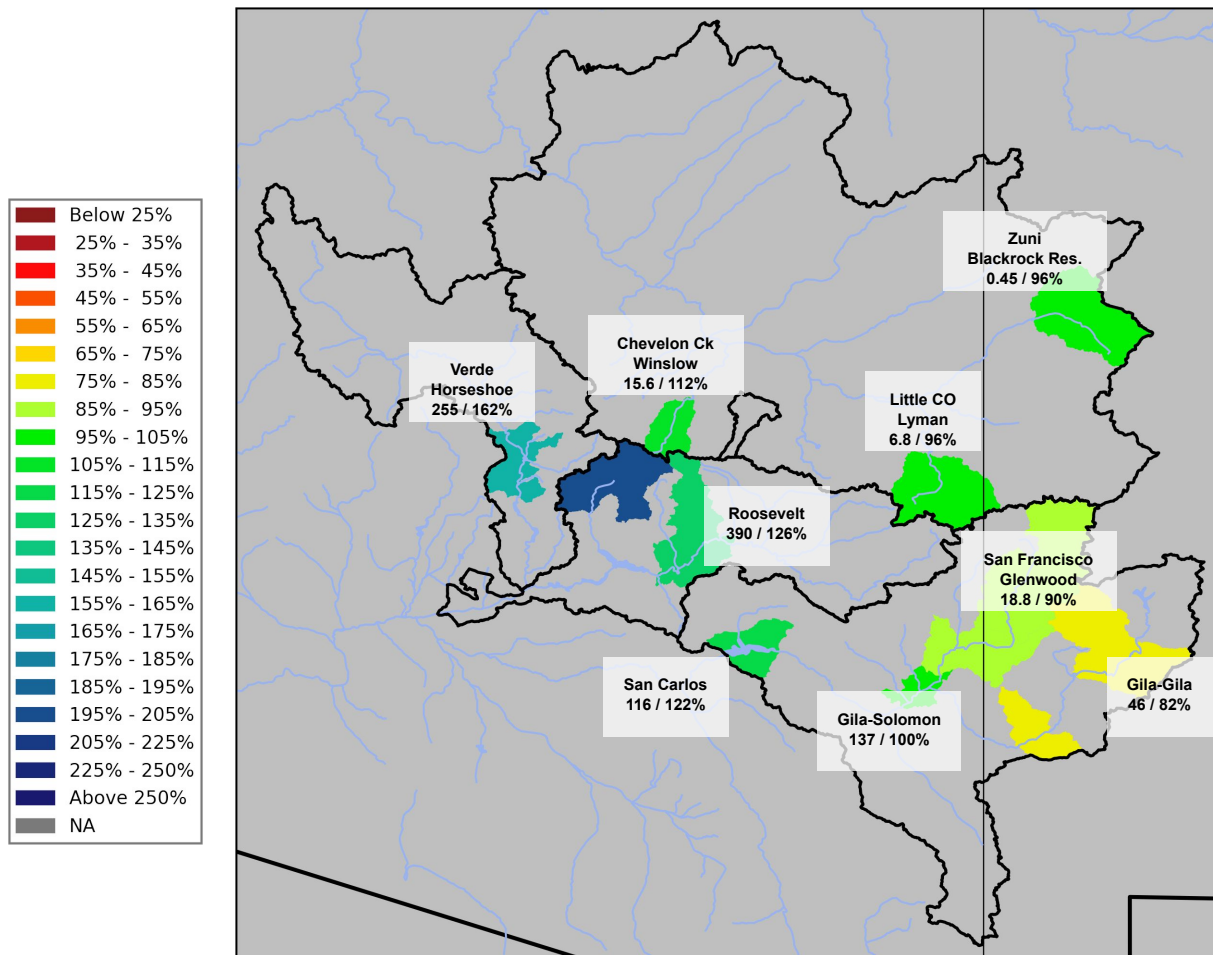
Lake Powell summarizes the hydrologic conditions throughout the Upper Colorado River Basin.

Jan 1st Water Supply Forecasts: Virgin River Basin

Forecast Range: 90 - 110% of average



Jan 1st Water Supply Forecasts: Lower Colorado River Basin



January - May Forecast Period
% of 1981-2010 Median

Forecast Ranges

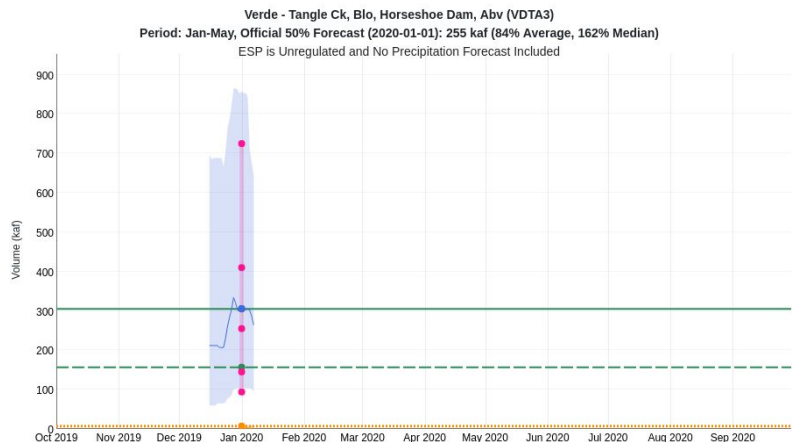
Little Colorado: 95 - 110%

Upper Gila: 80- 100%

Salt: 125 - 200%

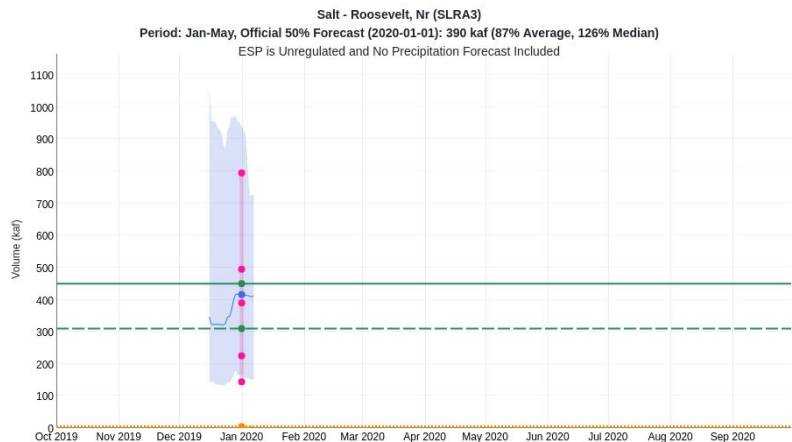
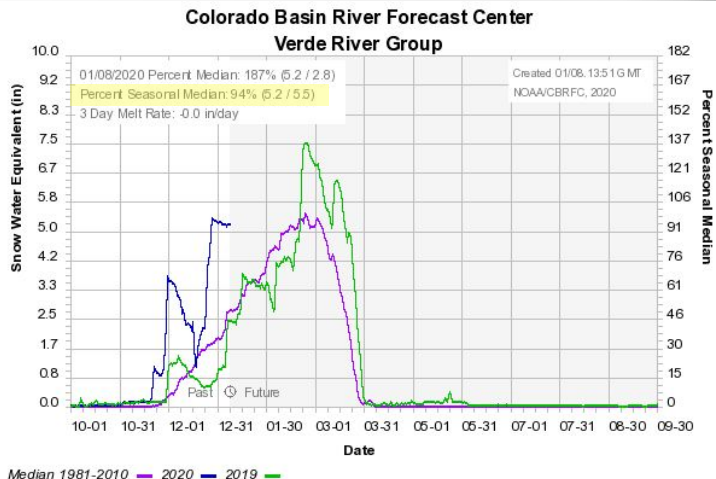
Verde: 160%

Lower Colorado Water Supply Forecasts & Snow Conditions



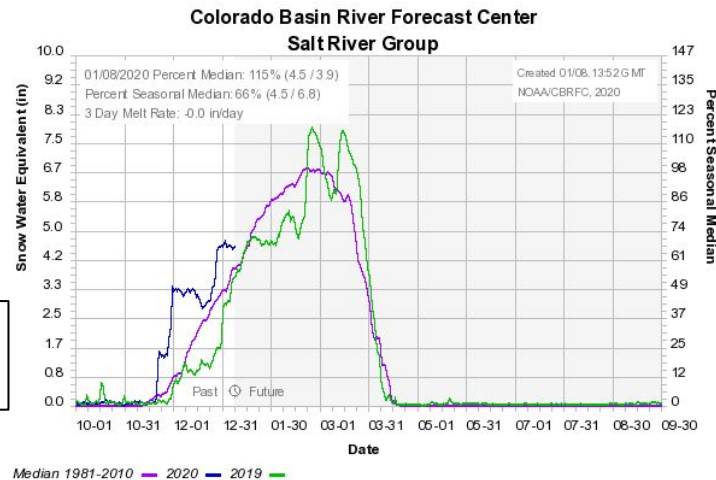
2020/01/01:
Average: 305
Median: 157
Observed Total: 7.36
ESP: 306
Official 10: 725
Official 30: 410
Official 50: 255
Official 70: 145
Official 90: 94

SWE near seasonal median peak ->



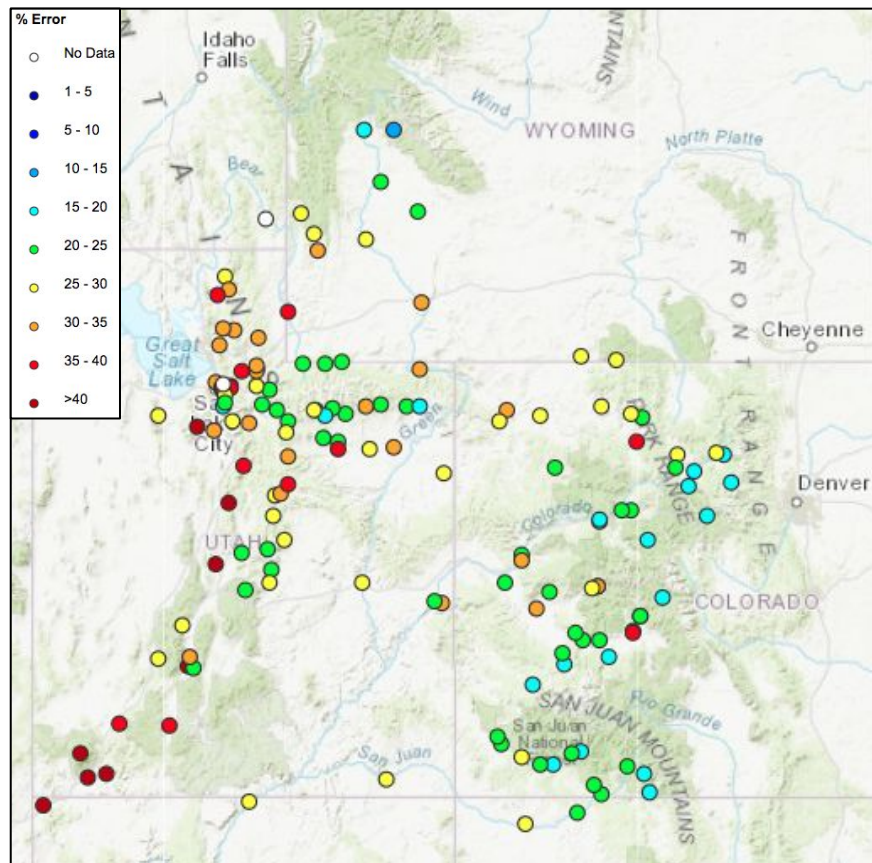
2020/01/01:
Average: 450
Median: 310
Observed Total: 4.69
ESP: 416
Official 10: 795
Official 30: 495
Official 50: 390
Official 70: 225
Official 90: 144

Jan-May forecast period;
start showing accumulated
volume on Jan 1st.



Historical (1981-2010) Forecast Verification

January Forecast Error: April-July Volume



Location

Green River - Warren Bridge	19%
Fontenelle Reservoir	28%
Yampa River - Deerlodge	27%
Blue River - Dillon Reservoir	16%
Colorado River - Cameo	21%
Blue Mesa Reservoir (Gunnison)	23%
McPhee Reservoir (Dolores)	25%
Navajo Reservoir (San Juan)	25%
Lake Powell	27%
Virgin River at Virgin	44%

Avg January Forecast Error

Forecasts are better than just going with average
Error tends to decrease each month into the spring

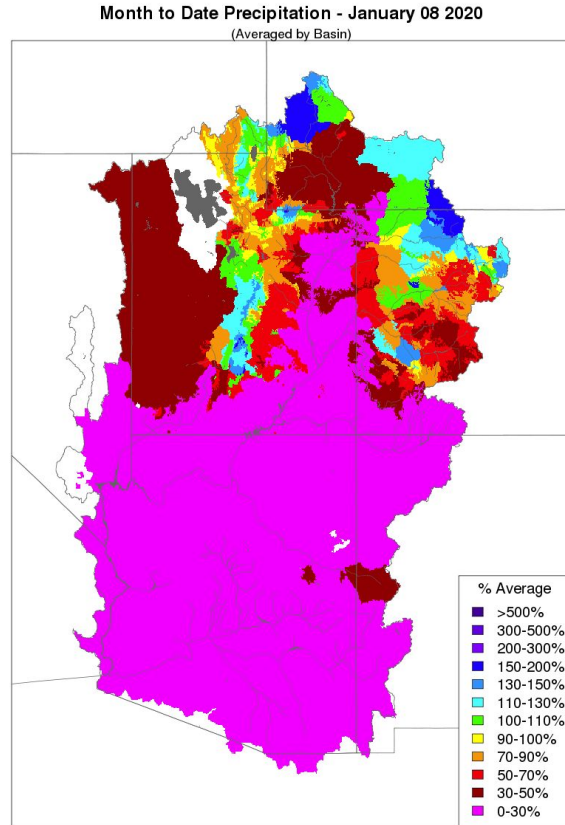
Where Forecasts are Better:

- Headwaters
- Primarily snow melt basins
- Known diversions / demands

Where Forecasts are Worse:

- Lower elevations (rain or early melt)
- Downstream of diversions / irrigation
- Little is known about diversions / demands

January 2020 Month-To-Date Precipitation



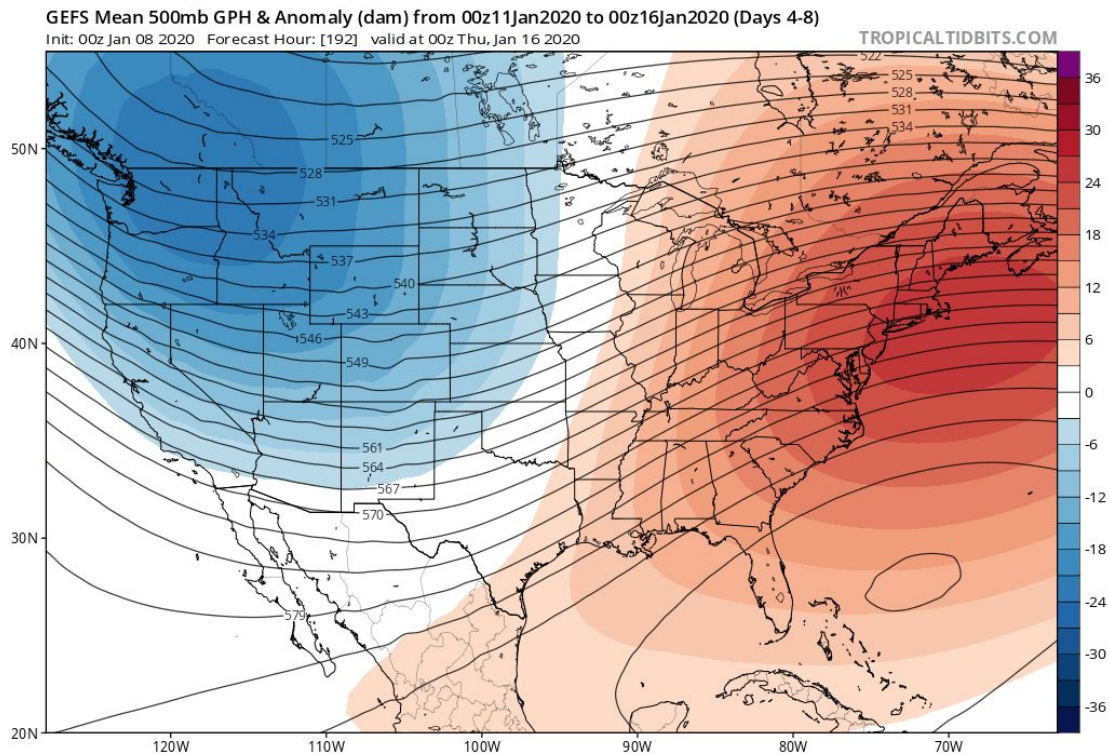
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Recent precipitation during the first week of January has had a positive impact to water supply guidance in parts of the Upper Green, White/Yampa, and Upper Colorado headwaters

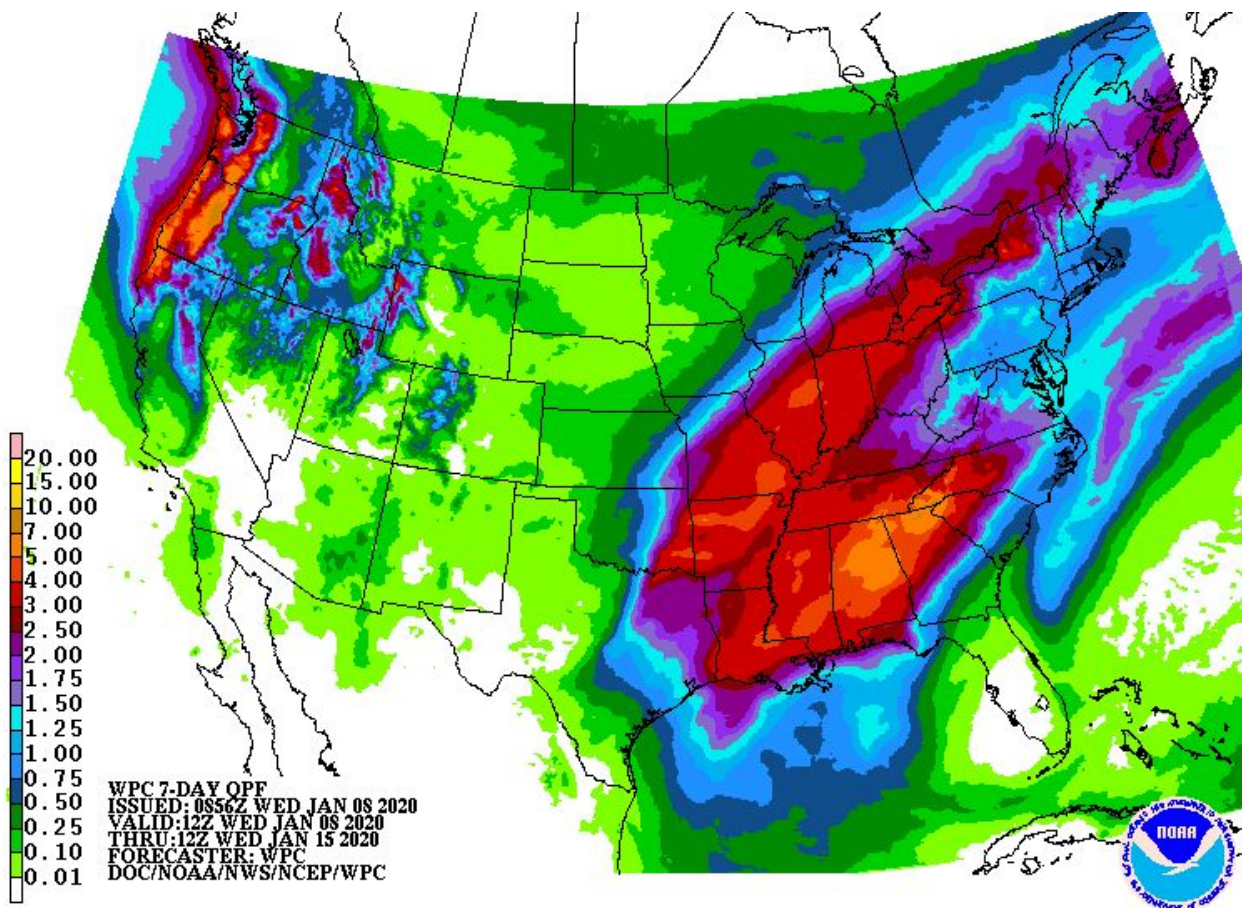
Upcoming Weather: Persistent Western Trough over next 7-10 days

Strongest storm systems to impact Upper Basin this weekend and again early next week.

Above normal precip likely through the middle of next week across northern Utah, Wyoming, and portions of Colorado.



Upcoming Weather: WPC January 8-14 Precipitation Outlook

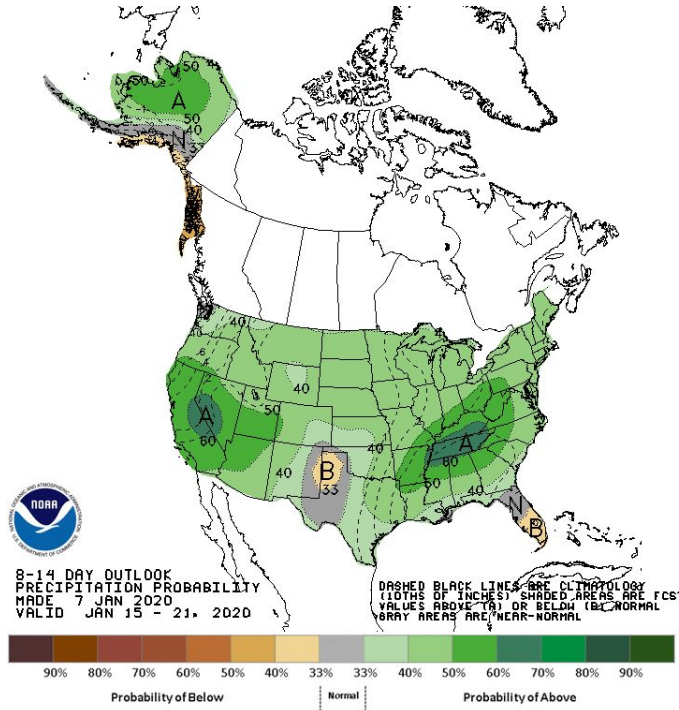


Upcoming Weather: 8-14 Day Outlook

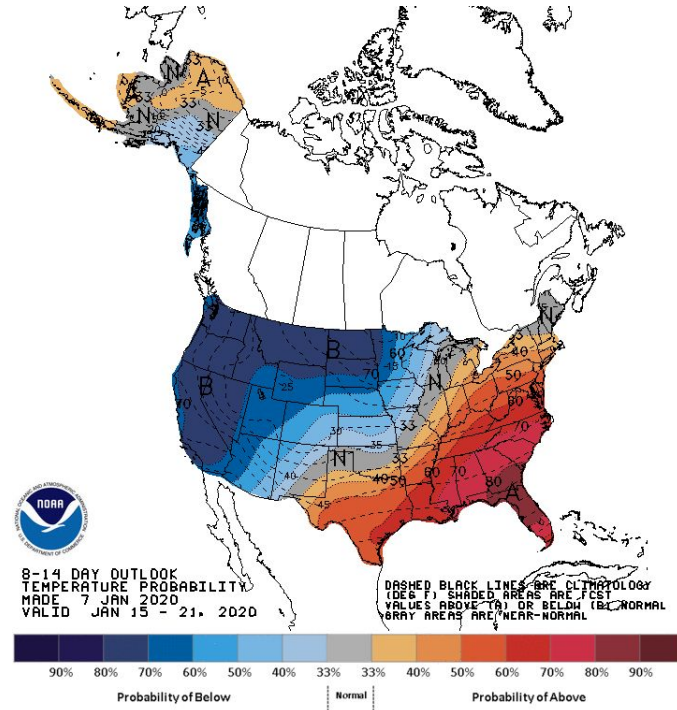
Increased probability of above average precipitation & below average temperature.

Confidence in the overall pattern of the extended period is higher than usual.

Precipitation Outlook



Temperature Outlook



Summary

- Wet water year 2019 was followed by a poor monsoon season
- Current soil moisture and snowpack conditions are improved compared to this time a year ago
- Still relatively early in the snow accumulation season
- Virgin & Lower Colorado water supply off to a great start
- Active weather period in the coming weeks expected to have positive impact to water supply

2020 Water Supply Briefing Schedule

**All Times Mountain Time (MT)*

Colorado River Basin

Wednesday	Jan 8 th	10 am
Friday	Feb 7 th	10 am
Friday	Mar 6 th	10 am
Tuesday	Apr 7 th	10 am
Thursday	May 7 th	10 am

Utah / Great Basin

Wednesday	Jan 8 th	11:30 am
Friday	Feb 7 th	11:30 am
Friday	Mar 6 th	11:30 am
Tuesday	Apr 7 th	11:30 am
Thursday	May 7 th	11:30 am

Peak flow forecast webinar Wednesday, March 18th, 10 am MT

Additional briefings scheduled as needed

All registration information has been posted to the CBRFC web page.

CBRFC Webinar Registration & Email List



COLORADO BASIN RIVER FORECAST CENTER

NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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News Wednesday, January 8, 2020: CBRFC Water Supply Webinars. Registration - [More Info...](#)

CBRFC Water Supply Forecast Webinars - Water Year 2020

The Colorado Basin River Forecast Center (CBRFC) produces water supply forecasts for the Colorado River and eastern Great Basins. CBRFC conducts December through June webinars explaining the forecasts and current conditions.

The webinar is composed of two parts - (1) a telephone conference call and (2) a web-based presentation. The conference call can be joined by dialing the number below prior to the start of the webinar and entering the provided access code when prompted.

Webinar Dial-In Information (same for all webinars):

Conference Call Phone Number: 1-877-929-0660

Access Code: 1706374

To view the web-based presentation, you will need to register prior to each webinar. Follow the links below to register for a webinar.

Early Season Water Supply Outlook Webinar (click to register):

[Wednesday, December 18 @ 10 am MT](#)

Colorado River Basin Water Supply Webinars:

[Wednesday, January 8 @ 10 am MT](#)

[Friday February 7 @ 10 am MT](#)

[Friday March 6 @ 10 am MT](#)

[Tuesday April 7 @ 10 am MT](#)

[Thursday May 7 @ 10 am MT](#)

Great Basin Water Supply Webinars:

[Wednesday, January 8 @ 11:30 am MT](#)

[Friday February 7 @ 11:30 am MT](#)

[Friday March 6 @ 11:30 am MT](#)

[Tuesday April 7 @ 11:30 am MT](#)

[Thursday May 7 @ 11:30 am MT](#)

Peak Flow Webinar:

[Wednesday, March 18 @ 10 am MT](#)

A notification email will be sent if a date or time change occurs. Additional webinars are scheduled as needed.

The webinar slides will be available from the [CBRFC presentations page](#) soon after each briefing.

<https://www.cbrfc.noaa.gov/>



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News Wednesday, December 18th, 10 am MT: CBRFC Early Season Water Supply Outlook Webinar. Registration -> [More Info...](#)
2020 Water Supply Forecast Webinar Schedule and Registration -> [More Info...](#)

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In the subject line please include: **email notification list**
If you would like to add any information about your area of interest and association or agency you represent please do so in the body of the email.
This information would help us maintain a more comprehensive contact list.

This list is used to provide notification when webinars are scheduled, water supply forecasts are updated, and for other news of interest to our stakeholders regarding CBRFC operations.

For questions or comments, including suggestions on additional CBRFC products or services we might provide, please contact us at cbrfc.webmasters@noaa.gov.

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[Email Updates](#)
[RSS](#)

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CBRFC Webpage

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CBRFC Water Supply Presentations

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Questions?