

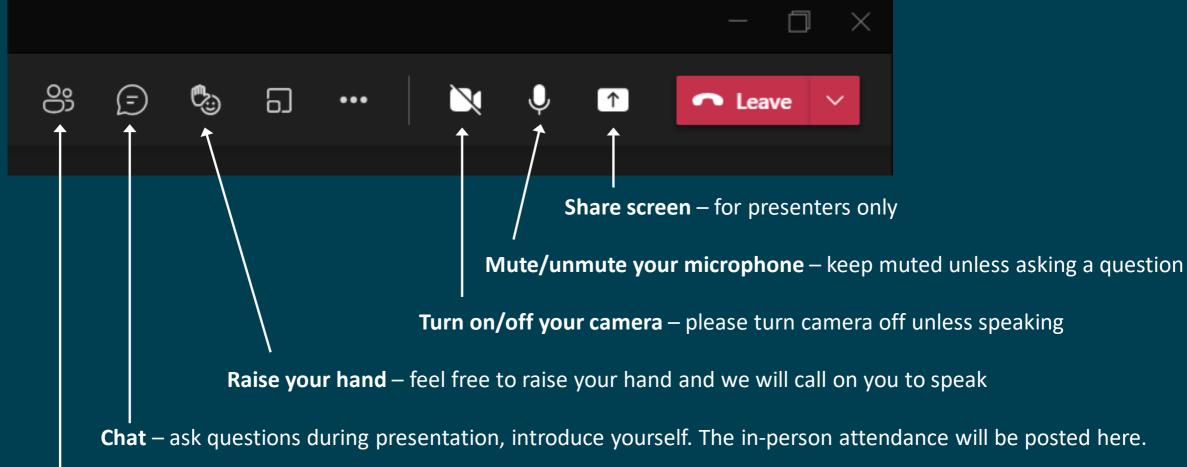
Navajo Unit Operations Coordination Meeting

August 20th 2024

1:00 PM

Farmington Civic Center / Microsoft Teams

Microsoft Teams Video Conferencing



Participant list – see list of those who have logged on the Teams call.



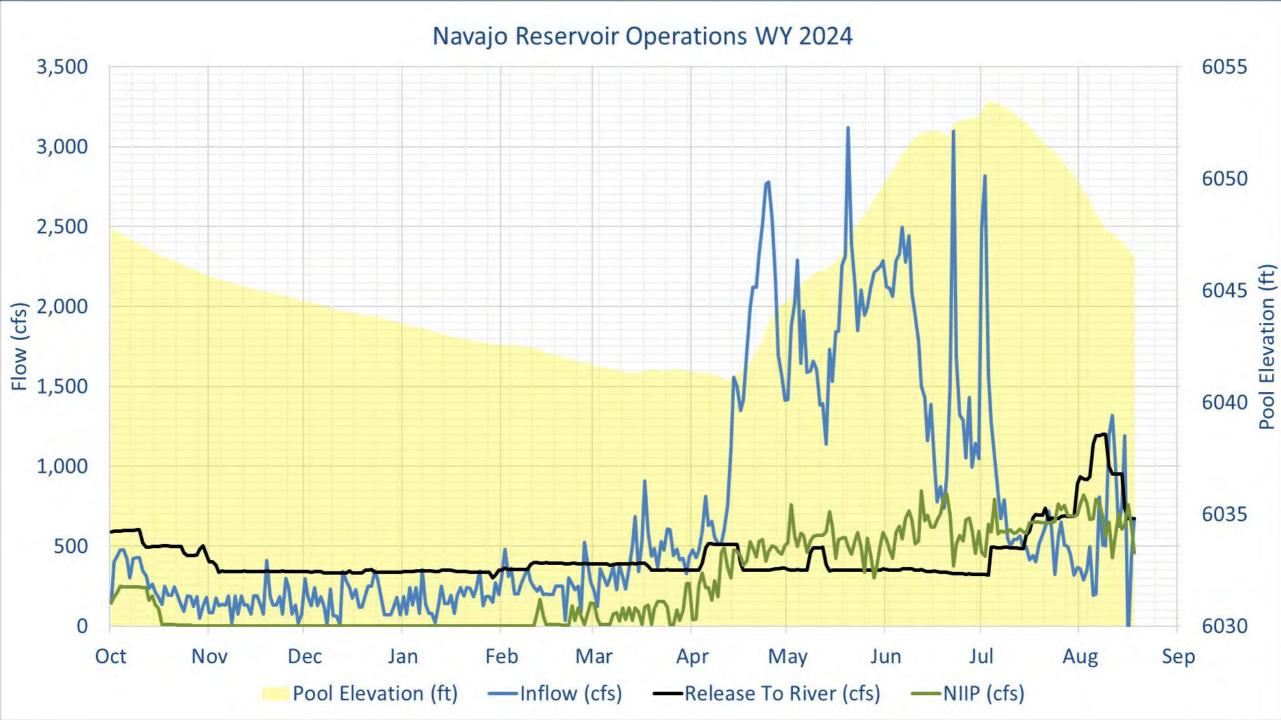


Agenda

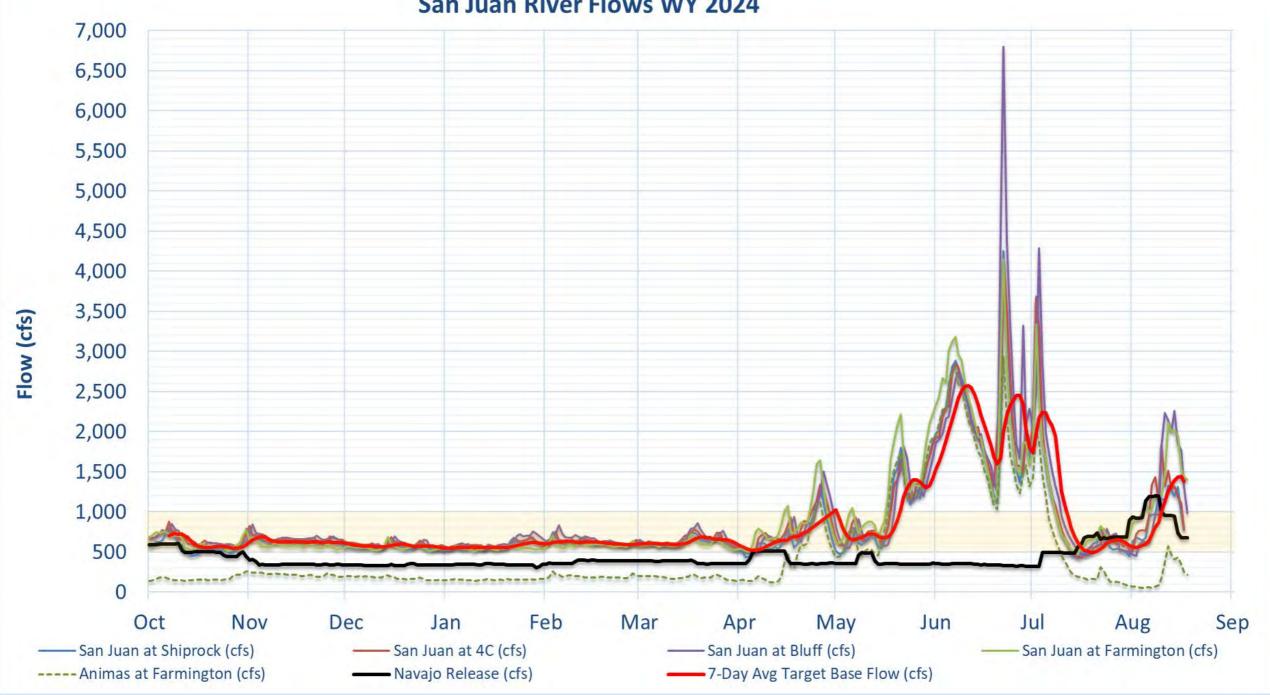
- Introductions
- WY 2024 Operations to date
- Seasonal Weather Outlook
 – Erin Walter, NWS
- Spring Runoff Forecast
 — Wolfgang Hanft, CBRFC
- WY 2024 and WY2025 planned operations
- NMISC and TNC release update Colleen Cunningham, NMISC
- Maintenance Update
- SJRIP Update
- Comments and Reports



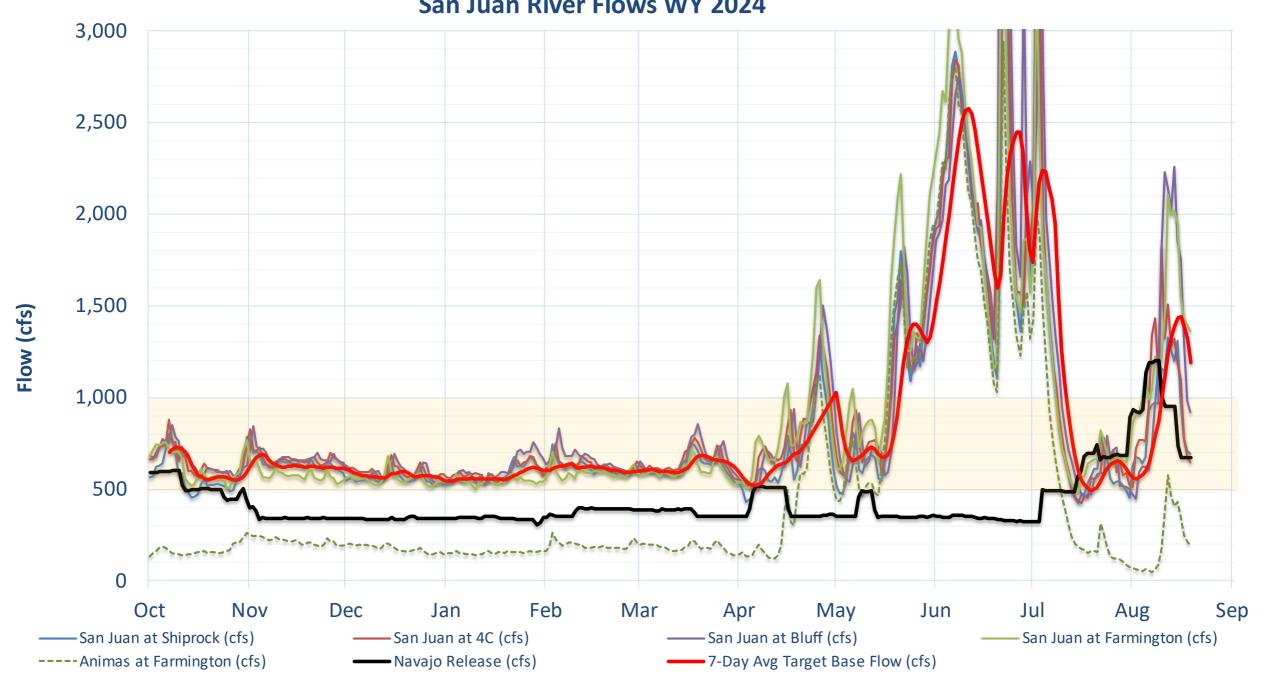


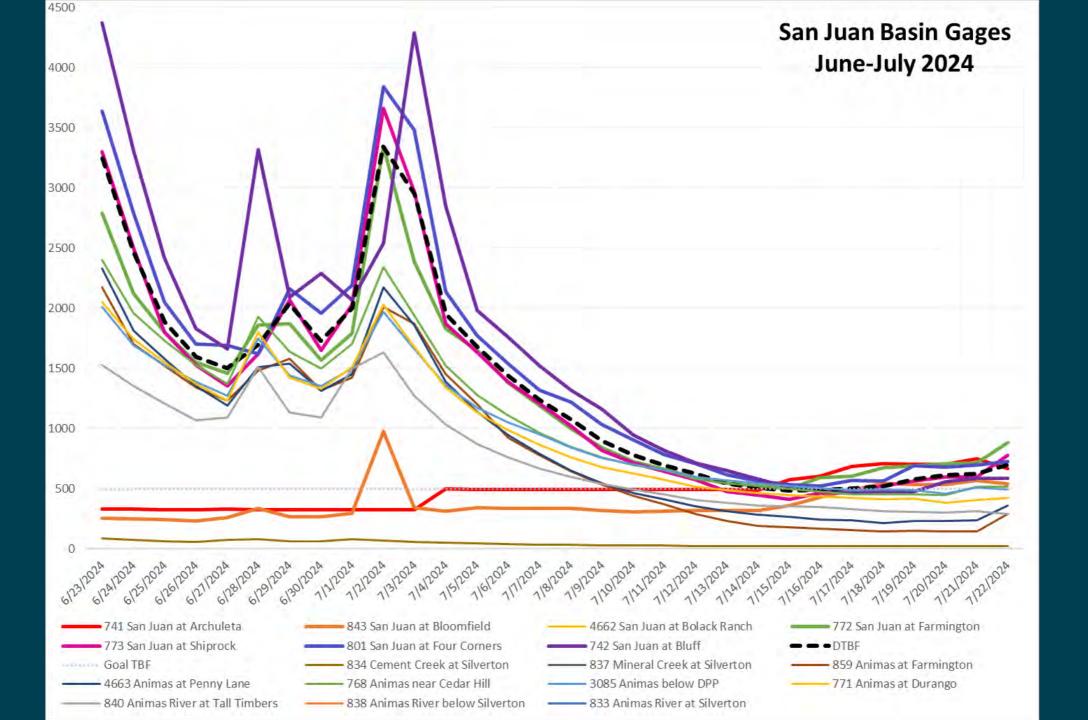


San Juan River Flows WY 2024



San Juan River Flows WY 2024





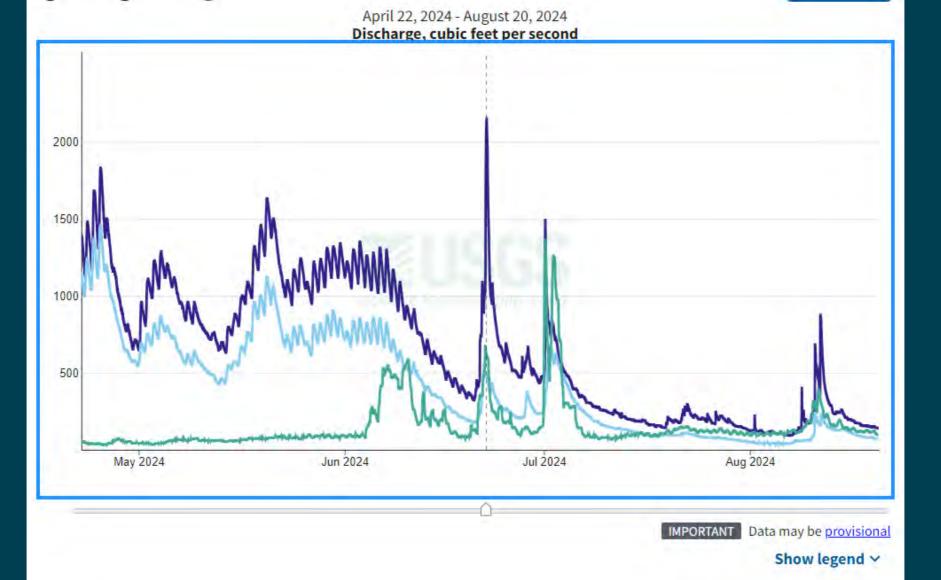


San Juan River Near Bluff, UT - 09379500

June 15, 2024 - August 20, 2024 Discharge, cubic feet per second



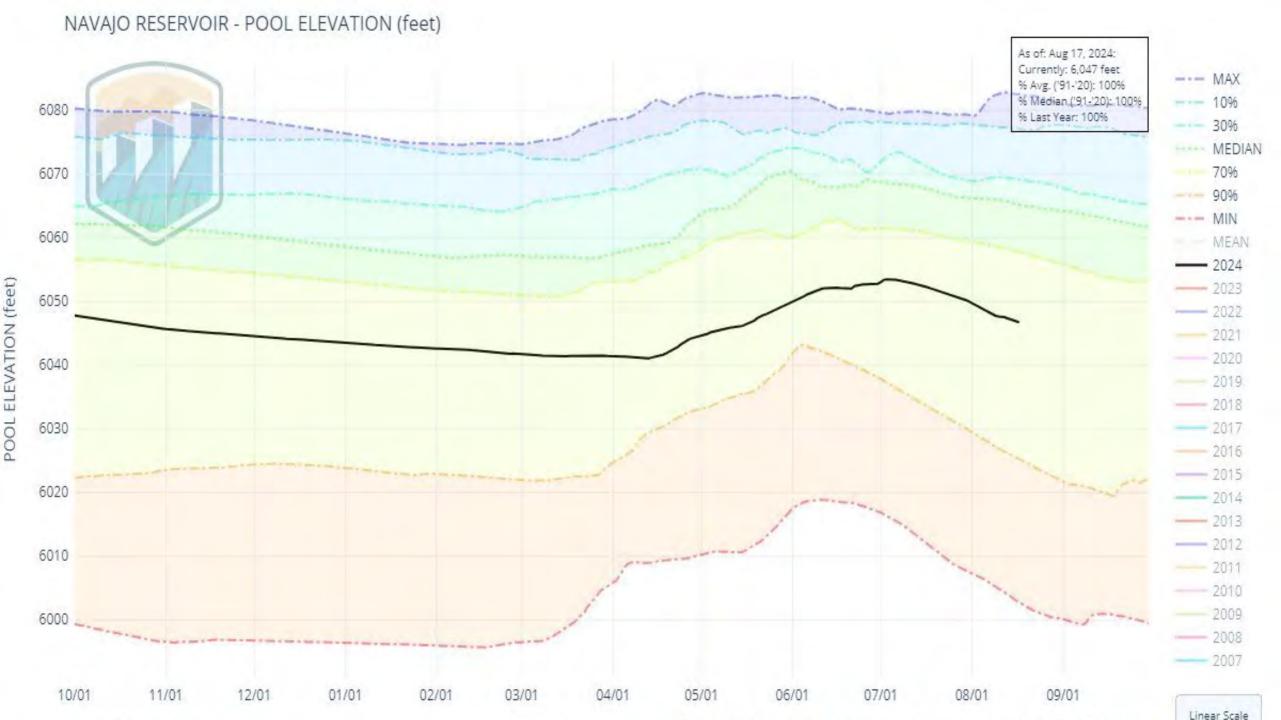


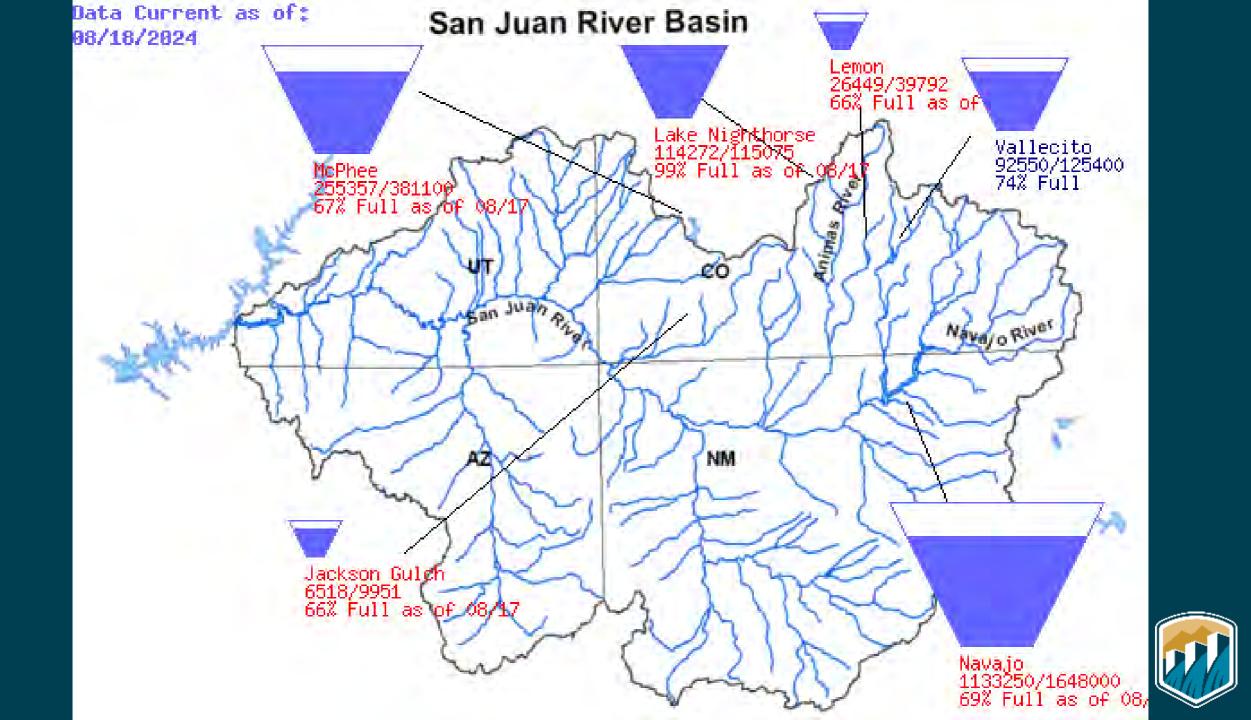


Selected values

Location	Value - ft3/s	Status	Time
San Juan River Near Carracas, Co 09346400	2090	Provisional	Jun 22 07:45 AM MDT
Piedra River Near Arboles, Co <u>09349800</u>	492	Provisional	Jun 22 07:45 AM MDT
Los Pinos River at LA Boca, Co 09354500	620	Provisional	Jun 22 07:45 AM MDT



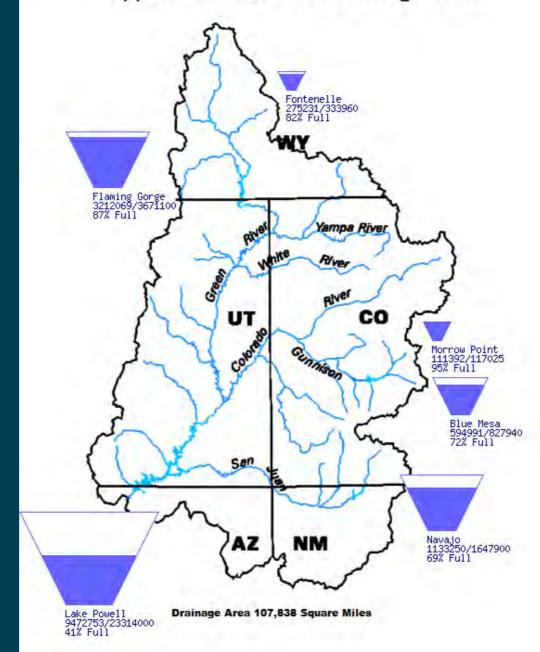








Upper Colorado River Drainage Basin





Data Current as of: 08/20/2023 Upper Colorado River Drainage Basin Fontenelle 315119/333960 94% Full Flaming Gorge 3302594/3671100 90% Full Yampa River THIS TIME Morrow Point 110801/117025 95% Full Blue Mesa 711171/827472 86% Full Navajo 1216518/1647900 74% Full NM Lake Powell 8993197/23314000 39% Full Drainage Area 107,838 Square Miles



Water Year 2024 Totals

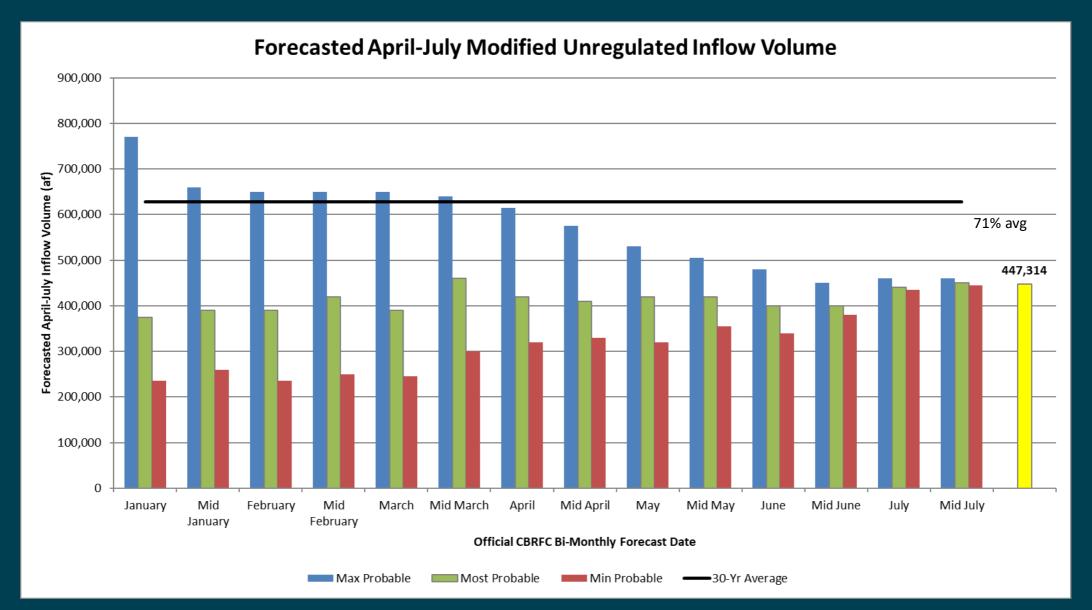
Water Year 2024 is October 1, 2023-September 30, 2024

So far this water year:

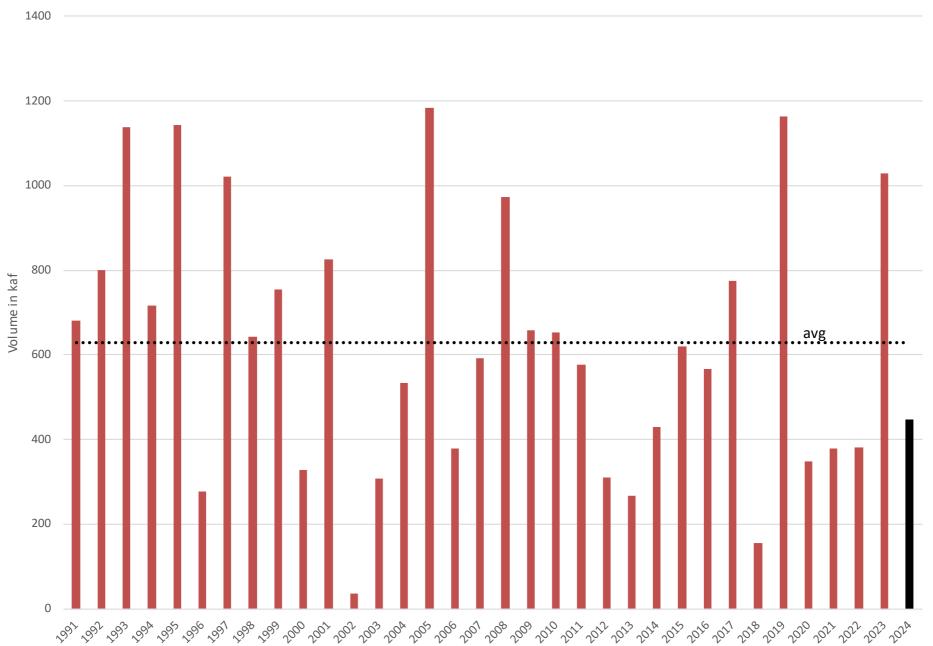
- Navajo Modified Unregulated Inflow has totaled 560 kaf
- Navajo Release has totaled 275 kaf
- Calculated Evaporation has totaled 21 kaf
- NIIP has diverted 162 kaf
- San Juan-Chama has diverted 71 kaf



Final April-July Modified Unregulated Inflow









Navajo Unit August Operations Meeting

Climate Outlook

August 20th, 2024



Erin Walter, Service Hydrologist

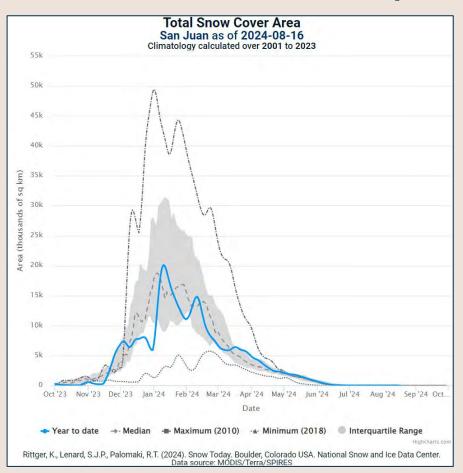
NWS Grand Junction, CO

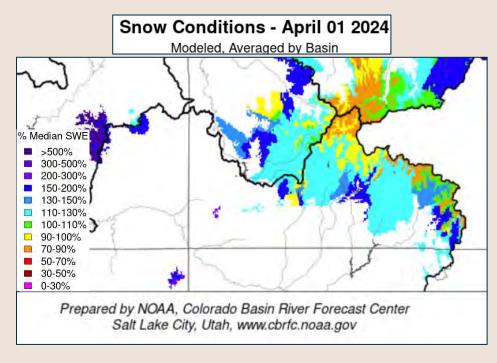
Spring & Summer Recap





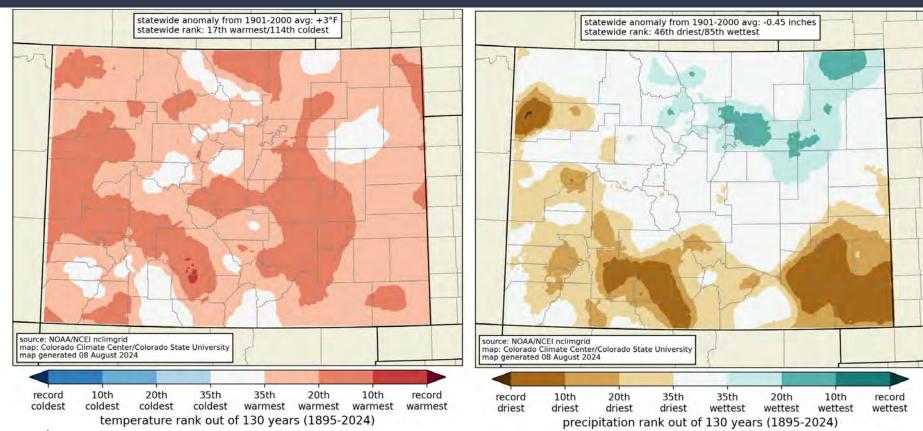
Water Year 2024







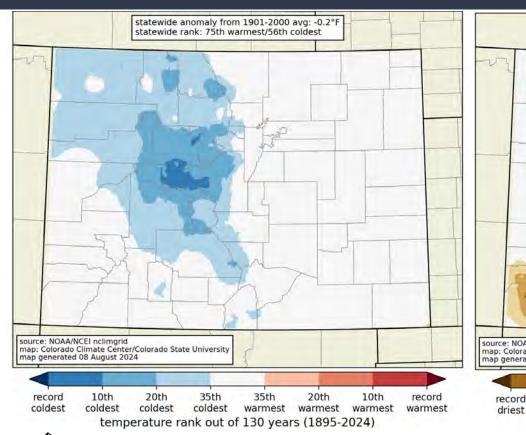
Temperature/Precipitation Rank: April 2024

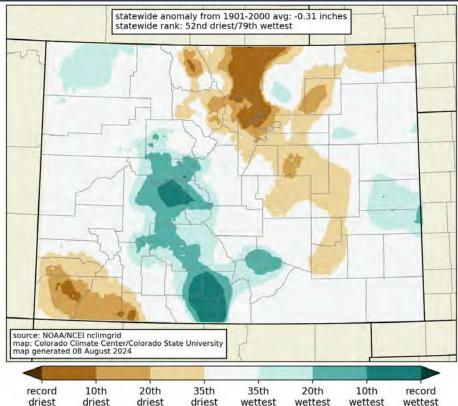






Temperature/Precipitation Rank: May 2024

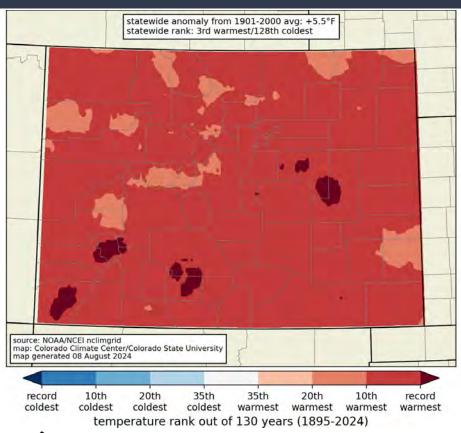


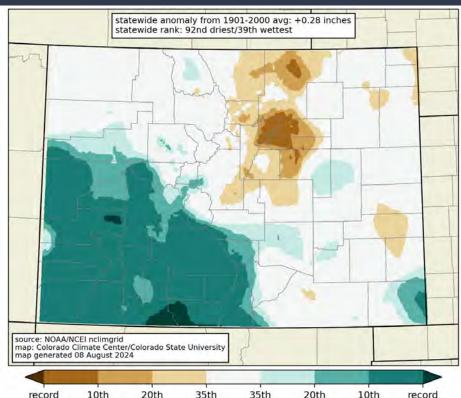






Temperature/Precipitation Rank: June 2024





driest

driest

driest

driest

precipitation rank out of 130 years (1895-2024)





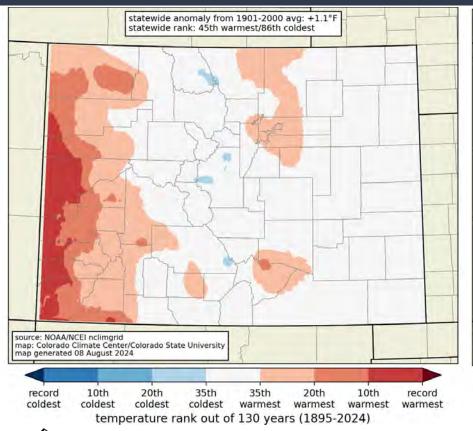
wettest

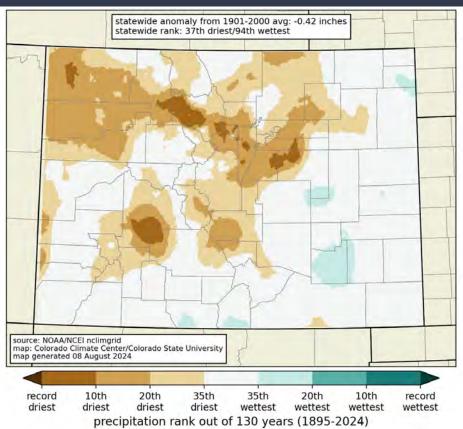
wettest

wettest

wettest

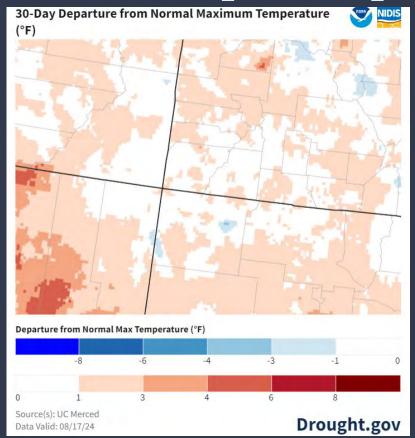
Temperature/Precipitation Rank: July 2024

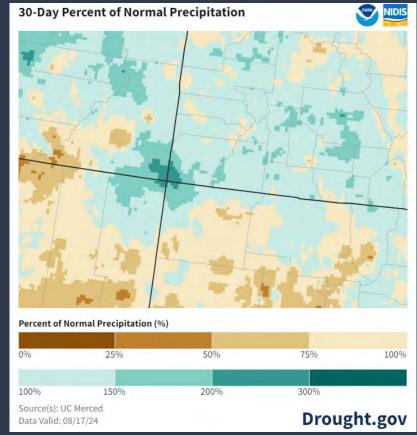






Recent Temp/Precipitation:



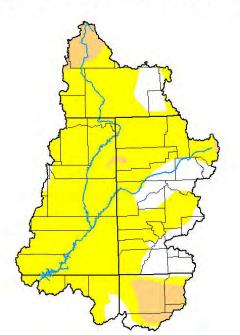






Drought Monitor

U.S. Drought Monitor
Upper Colorado Watershed

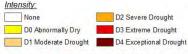


August 13, 2024

(Released Thursday, Aug. 15, 2024) Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	16.40	83.60	8.08	0.01	0.00	0.00
Last Week 08-06-2024	14.76	85.24	8.82	0.01	0.00	0.00
3 Month's Ago 05-14-2024	52.61	47.39	9.22	1.10	0.00	0.00
Start of Calendar Year 01-02-2024	32.84	67.16	36.31	12.22	5.28	0.00
Start of Water Year 09-26-2023	47.51	52.49	25.39	8.75	3.15	0.00
One Year Ago 08-15-2023	46.97	53.03	25.98	2.00	0.00	0.00



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

Curtis Riganti National Drought Mitigation Center

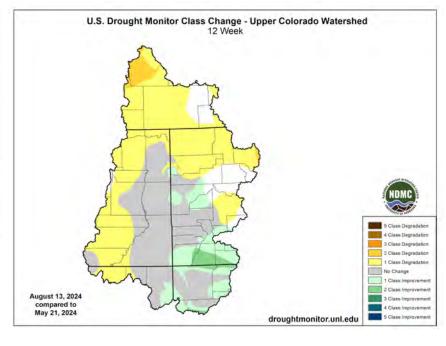








droughtmonitor.unl.edu







Short Term Forecast





7-Day Forecast Over Southwest Colorado

Maximum	Temperature	Forecast	(°F)
MIGAIIIIGIII	I CITIDCI atule	I UICCUST	

	maximum reinperature refeduct (1)														• /																
	8/2	20		8/	21			8/2	22		8/23				8/24					8/	25			8/	26			8/:			
	Tu	ie		Wed			Thu					Fri			Sat			Sun					M	on			Tu				
	12pm	6pm	12am	16am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	n 6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	брт	12am	6am	12pm	16pm	Maximum
Columbine Basin SNOTEL	63	60	49	58	61	57	46	48	54	50	43	46	53	49	42	47	52	49	42	47	54	52	41	52	57	54	43	53	58	55	63
Dolores	86	83	61	77	84	81	60	70	77	75	56	69	76	75	56	68	76	74	54	66	76	74	53	70	79	77	53	72	81	79	86
Durango	90	85	65	81	89	84	62	76	82	78	60	71	80	76	58	71	80	76	57	71	80	78	56	74	84	80	58	76	84	81	90
Farmington	94	90	74	84	93	88	72	75	82	79	68	74	83	80	68	75	84	83	68	73	84	84	67	74	86	85	67	75	86	87	94
Miller Mtn	64	63	51	60	62	60	50	55	56	54	48	51	54	53	45	50	54	52	45	49	55	54	44	54	58	58	46	56	58	58	64
Pagosa Springs	87	82	63	78	86	80	61	75	81	73	59	70	78	73	57	69	78	73	57	69	78	75	55	72	81	78	56	73	82	77	87
Silverton	77	74	52	70	73	67	50	64	68	63	48	62	68	64	47	62	67	64	47	63	69	67	44	65	72	69	46	66	72	69	77
Wolf Creek Summit	66	63	52	62	65	62	51	57	60	55	49	53	57	54	47	52	57	55	47	52	57	55	46	55	61	59	47	55	60	58	66

-865564546353625261516-5-0-5-101520253035404550558085707580859095-000\$10152040





7-Day Forecast Over Southwest Colorado

Dain	Forecast	Danne	(:b)
Rain	FORECAST	Kannes	LINCHEST
1/4111	I UICCUST	Nullucs	1111011037

	Num i orcouet numges (monet														.01100	01100)												
	8/2	20 8/21						8/	22			8	/23			8/	24			8/	25			8/2		8/27		
. 1	Tu	e	Wed					Thu					Fri				at			Su	un			Mo	Tue			
	12pm	6pm	12an	12am 6am 12pm 6pm			12am	6am	12pm	6pm	12am 6am		2am 6am 12pm 6pn		12am 6am 12pm 6pm		12am 6am 12pm 6pm				12am	6am	6pm	12am	Total			
Columbine Basin SNOTEL	0	0	0	0	<.1"	<.1"	.125"	.125"	.125"	.125"	.125"	<.1"	.125	.255"	.125"	.125"	.125"	.125	0	0	<.1"	0	0	0	0	0	0	2-3"
Dolores	0	0	0	0	<.1"	<.1"	<.1"	<,1"	.125"	.125"	<.1"	<.1"	<.1"	.125"	.125"	<.1"	<.1"	<.1"	0	0	<.1"	0	0	0	0	0	0	.5-1"
Durango	0	0	0	0	<.1"	<.1"	<.1"	<.1"	<.1"	.125"	.125"	<.1"	<.1"	.125"	.125"	<.1"	.125"	<.1"	0	0	0	0	0	0	0	0	0	1-1.5"
Farmington	<.1"	0	0	0	0	<.1"	<.1"	0	<.1"	<.1"	<.1"	<.1"	<.1"	.125"	<.1"	0	0	<.1"	0	0	0	0	0	0	0	0	0	.255"
Miller Mtn	<.1"	0	0	0	<.1"	<.1"	<.1"	<.1"	.125"	.125"	<.1"	<.1"	.125	.125"	.125"	<.1"	.125"	<.1"	<.1"	<.1"	<.1"	0	0	0	0	0	0	1.5-2"
Pagosa Springs	0	0	0	0	<.1"	<.1"	<.1"	0	.125"	<.1"	<.1"	<.1"	.125	.125"	<.1"	<.1"	.125"	<.1"	0	<.1"	<.1"	0	0	0	0	0	0	.5-1"
Silverton	<.1"	0	0	<.1"	<.1"	<.1"	<.1"	<.1"	.125"	.125"	<.1"	<.1"	<.1"	.125"	<.1"	<.1"	.125"	<.1"	0	<.1"	<.1"	0	0	0	0	0	0	1-1.5"
Wolf Creek Summit	<.1"	<.1"	0	0	<.1"	<.1"	<.1"	0	.125"	<.1"	<.1"	<.1"	.125	.125"	.125"	<.1"	.125"	<.1"	0	0	<.1"	0	0	0	0	0	0	1-1.5"

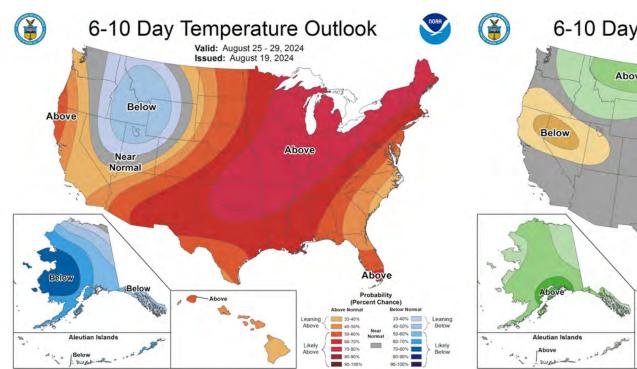
0.01 0.10 0.25 0.50 1.00 1.50 2.00 3.00 4.00 8.00 8.00 10 0015.0020 0080.0050 00

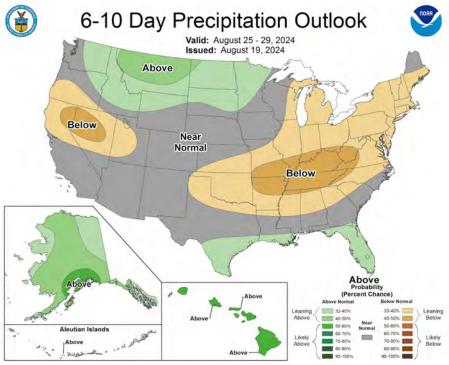




6 to 10 Day Outlook

Climate Prediction Center



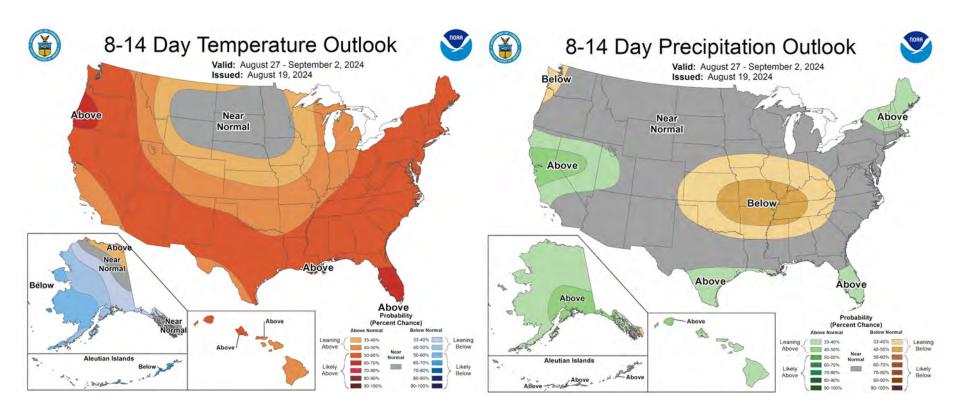






8 to 14 Day Outlook

Climate Prediction Center







Fall/Winter Outlook

Seasonal & Subseasonal

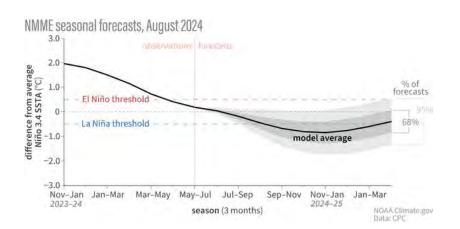




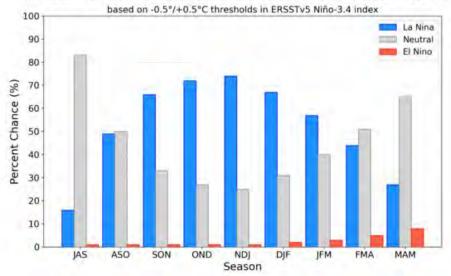
La Niña Watch

Climate models/forecasts have been trending toward a weaker & delayed development of La Niña

Model consensus: La Niña will likely form this year and last through winter



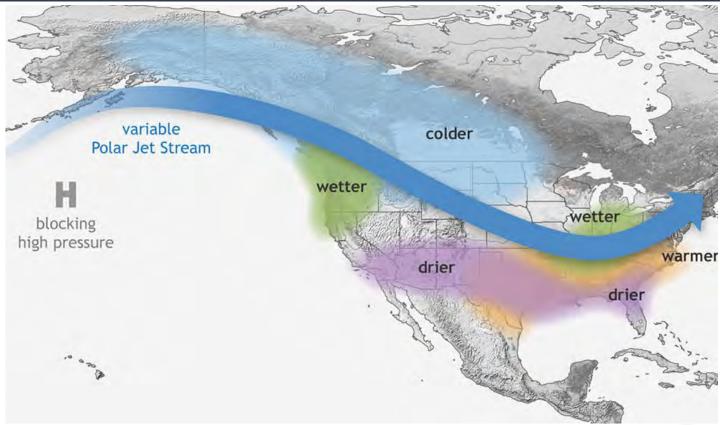
Official NOAA CPC ENSO Probabilities (issued August 2024)







La Niña Watch

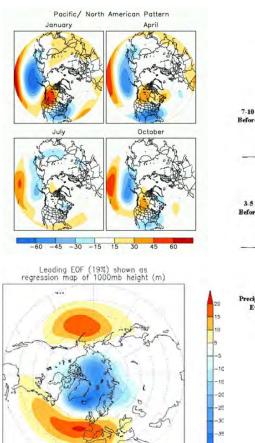


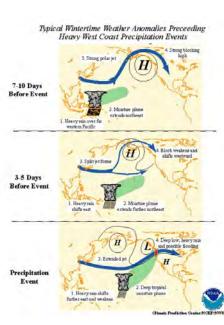




But don't forget the other oscillations!

- Madden / Julian oscillation (MJO)
 - o 30-60 day cycle
 - Influence the ENSO cycle intensity & development
 - In the US: increase the frequency & intensity of heavy precip event along the West Coast (i.e. Atmospheric River events)
- Pacific / North American Pattern (PNA)
 - Influences the main path for winter storms moving inland across the west
- North Atlantic Oscillation (NAO)
 - Mainly impacts eastern US but can have rippling effects upstream
- Arctic Oscillation (AO)



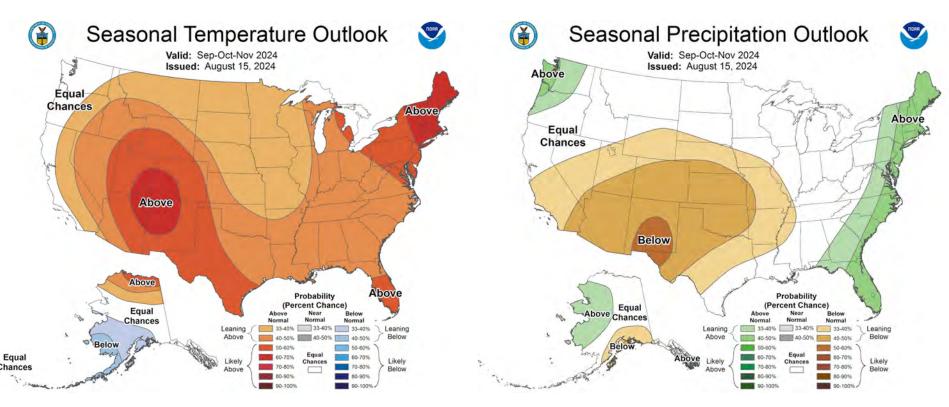






Seasonal Outlook

Climate Prediction Center

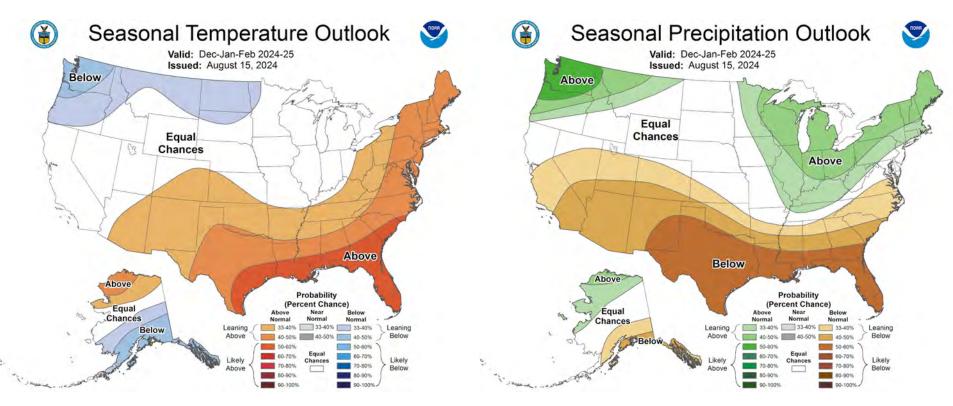






Seasonal Outlook

Climate Prediction Center







Thank You!

email: erin.walter@noaa.gov

office phone: 970-256-9463

cell phone:720-384-7792





Navajo Operations Meeting August 20, 2024

Water Year 2024 Runoff Review

Wolfgang Hanft
Hydrometeorologist
Colorado Basin River Forecast Center
National Weather Service/NOAA

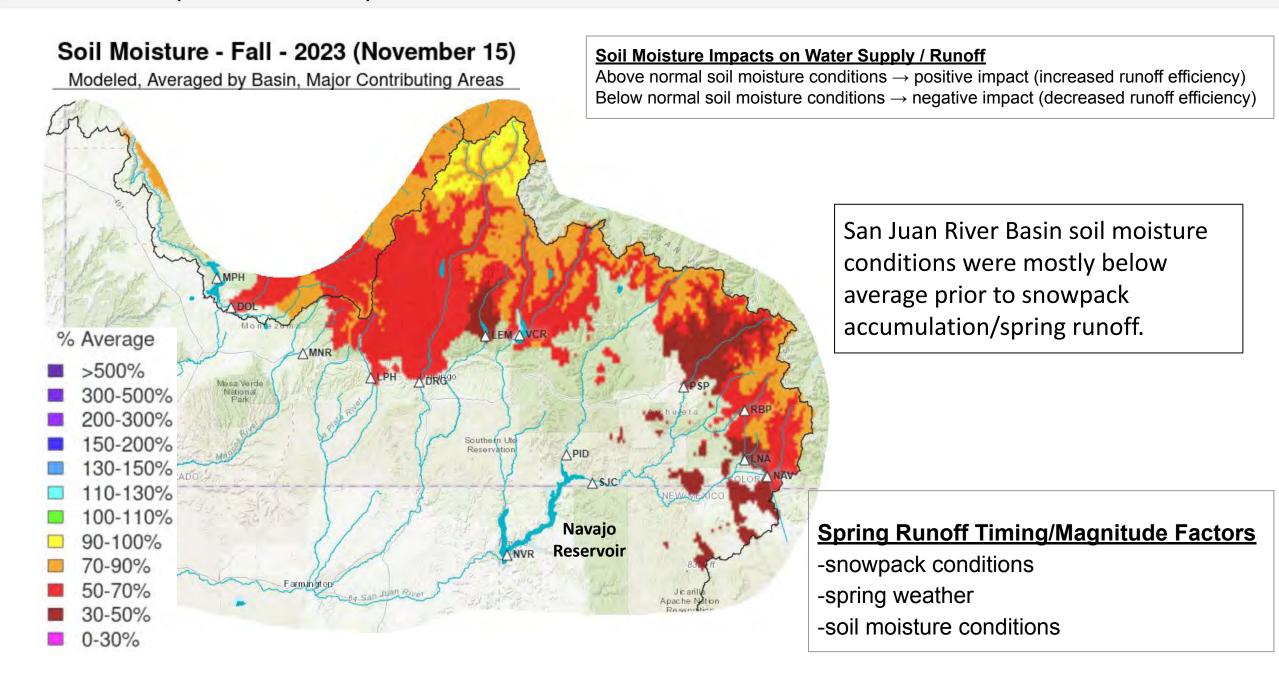




Outline

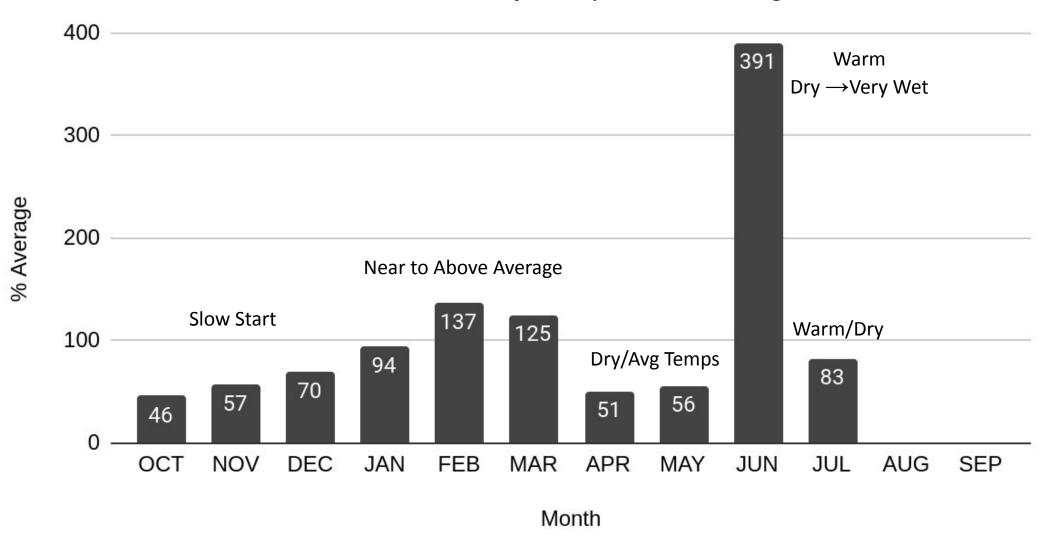
- Water Year 2024 Hydrologic Conditions Summary
 - Soil Moisture
 - Precipitation
 - Snow
- 2024 Water Supply Forecast Evolution
- 2024 Water Supply Forecast Performance
- August conditions

Fall 2023 (Antecedent) Model Soil Moisture Conditions

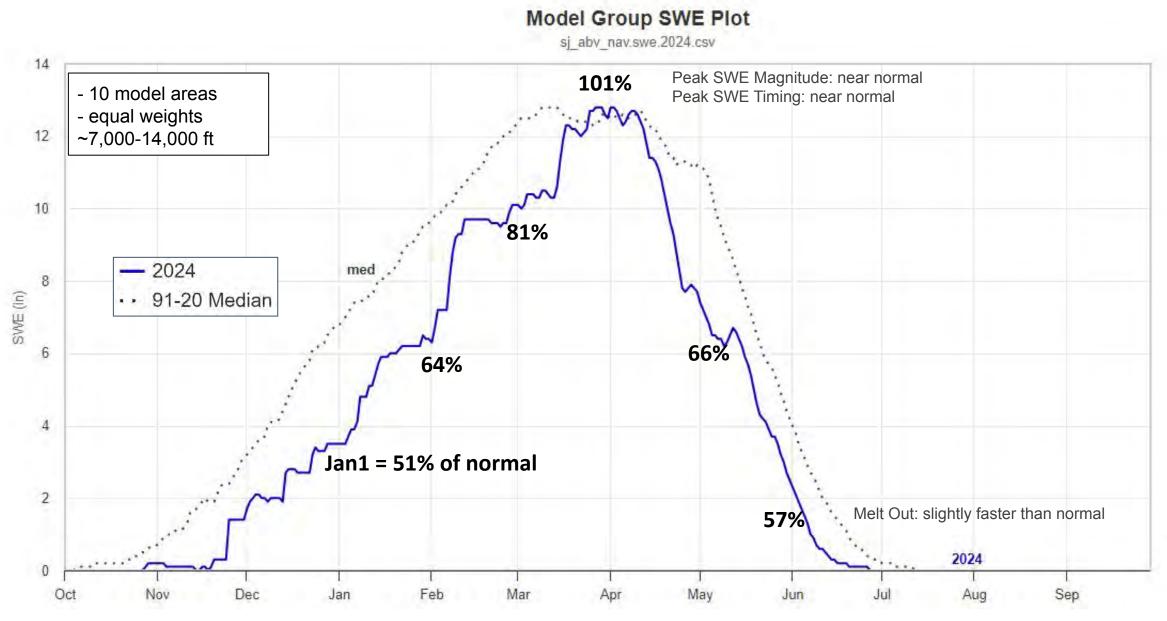


San Juan River Basin

Water Year 2024 Monthly Precipitation %Average

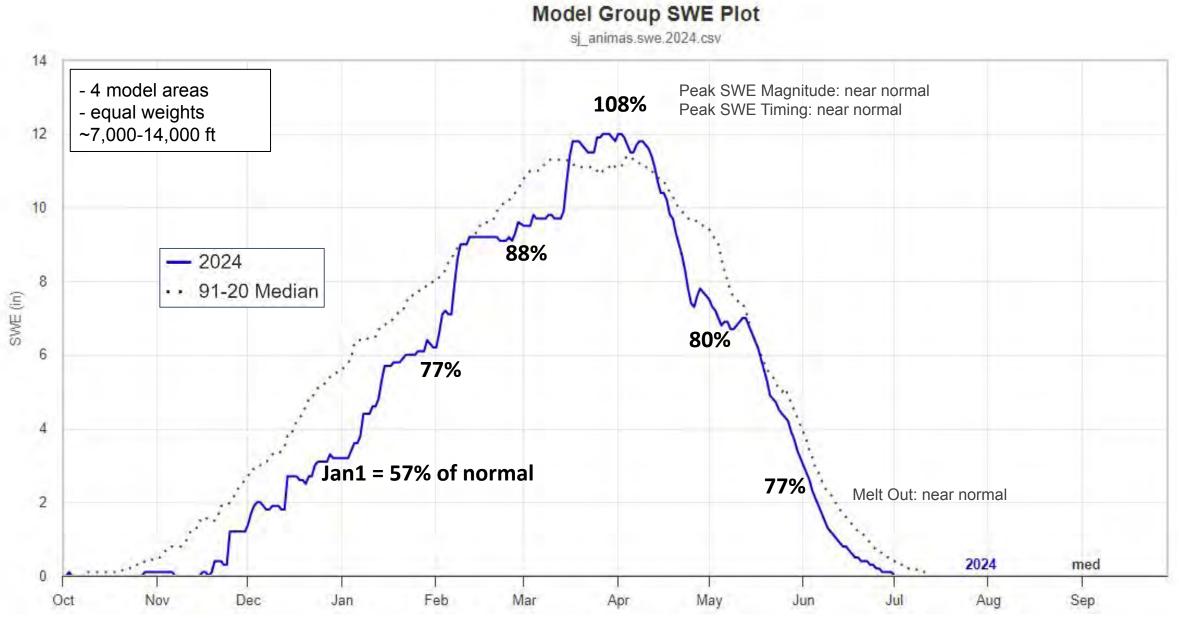


WY2024 Snow Water Equivalent (SWE) Above Navajo Reservoir



The CBRFC model builds a snowpack based on observed temperature and precipitation data from SNOTEL locations.

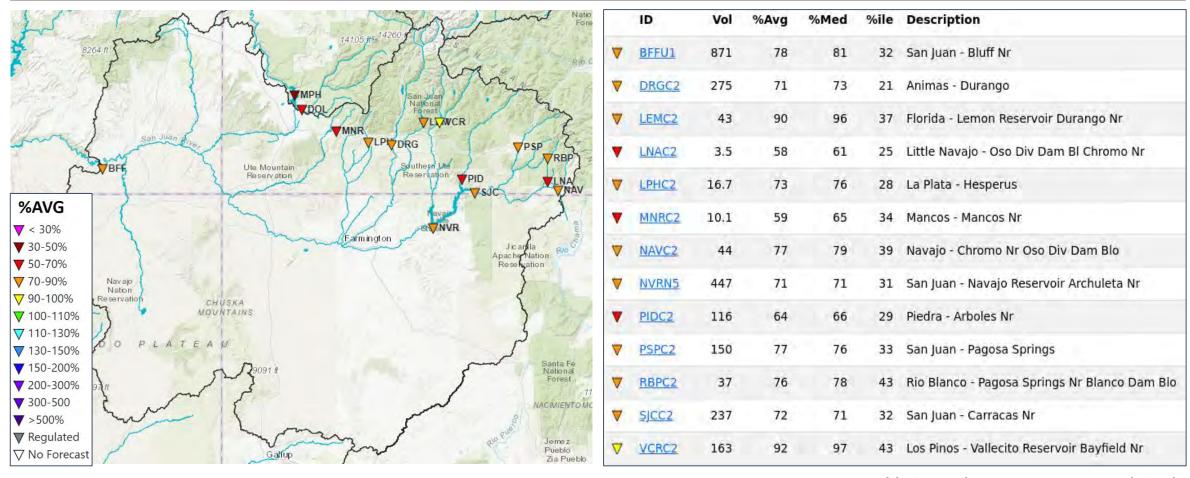
WY2024 Snow Water Equivalent (SWE) Animas-Durango



The CBRFC model builds a snowpack based on observed temperature and precipitation data from SNOTEL locations.

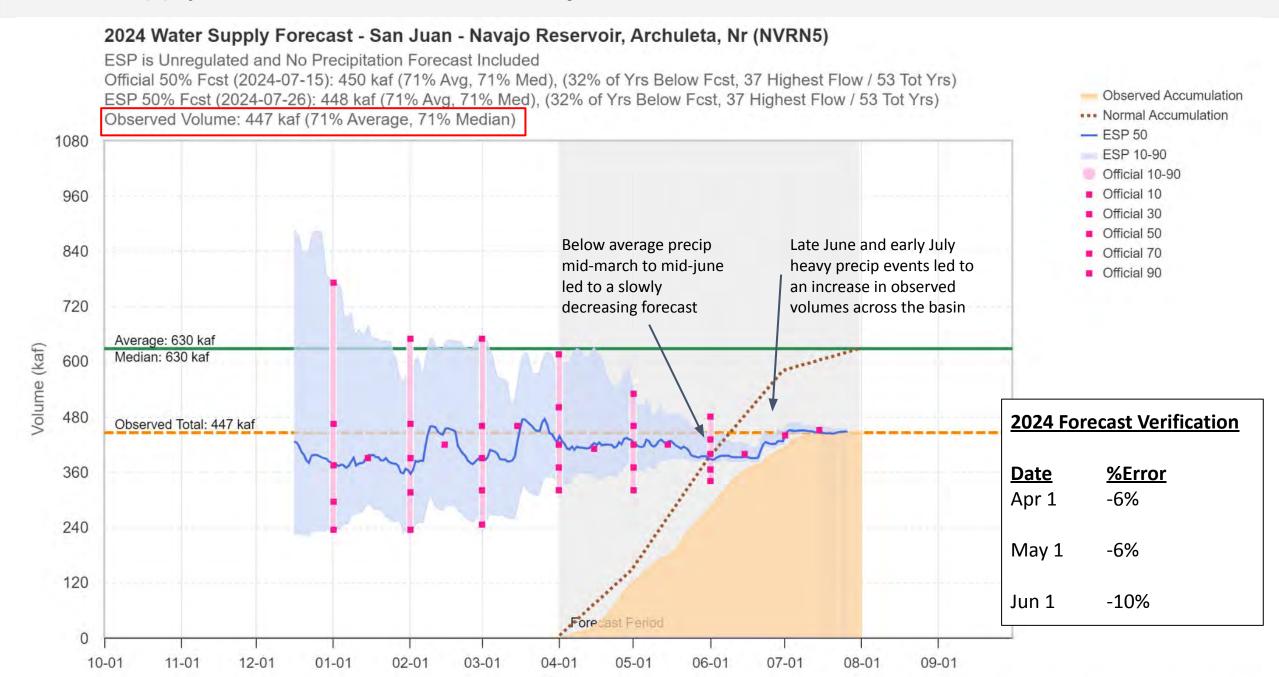
San Juan River Basin: 2024 April-July Observed Volumes

- -Below average observed volumes across the basin
- -Best: 92% of average, Worst: 58% of average

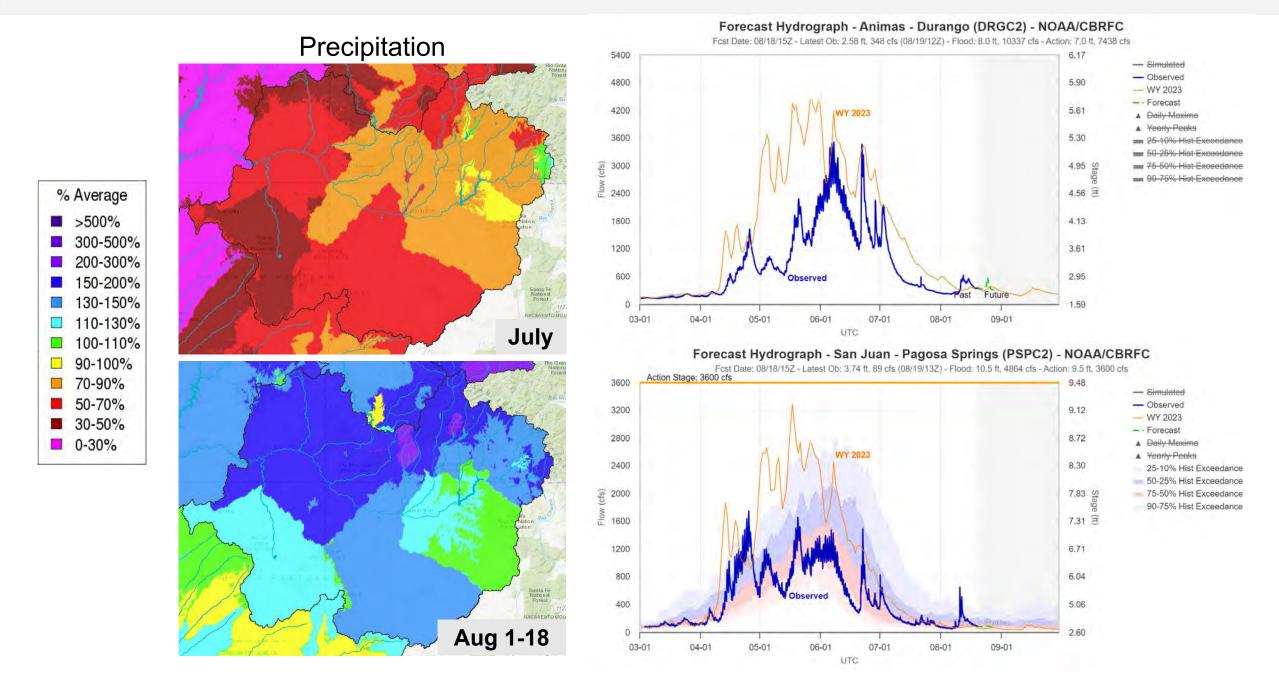


Note: volumes are unregulated Note: values are preliminary

Water Supply Forecast Evolution: Navajo Reservoir Inflow



Late August Conditions



Summary

- Water Supply Conditions:
 - April-July observed unregulated runoff volumes ranged from 58-92% of average.
 - After a slow start, two storms in February and March were critical
 - Near normal snow conditions in terms of peak snowpack and timing
 - Early season water supply forecasts were below normal due to very dry fall soil conditions
 - Current conditions
 - Monsoon activity has been mixed
 - Very wet end to June, hot and dry July, very active start to August
 - Streamflows have returned to near normal to below normal.
- Water Supply Forecasts
 - Forecasts increased from February to March due to precipitation, then decreased into June due to very dry conditions
 - Late season forecasts (June) had higher error than April and May forecasts.
 - This in not unexpected given the end of June precipitation.

Contact Information

Wolfgang Hanft

Colorado Basin River Forecast Center Hydrometeorologist - San Juan Basin Forecaster

Email: wolfgang.hanft@noaa.gov

Phone: 801-524-5130 x330

Operational Hydrologist

Available 7 days a week: 6:30am-4pm

Email: cbrfc.operations@noaa.gov

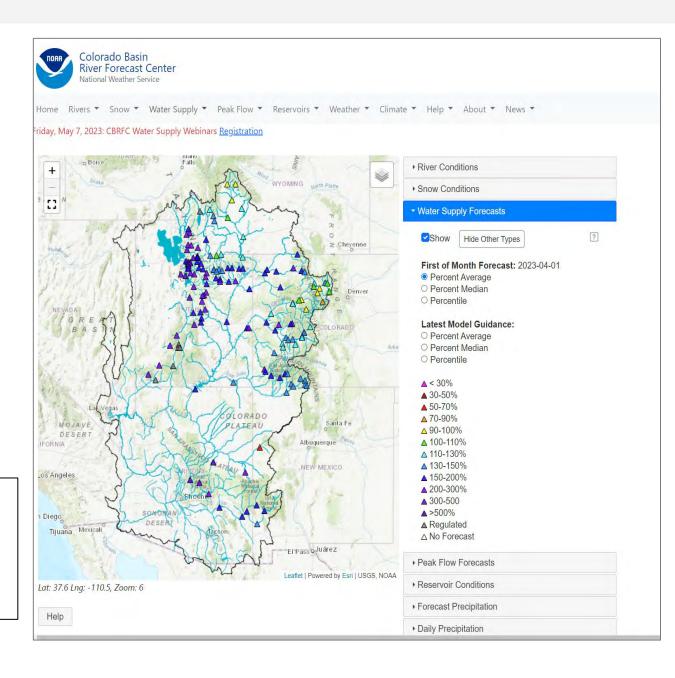
Phone: 801-524-4004

CBRFC Webpage

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

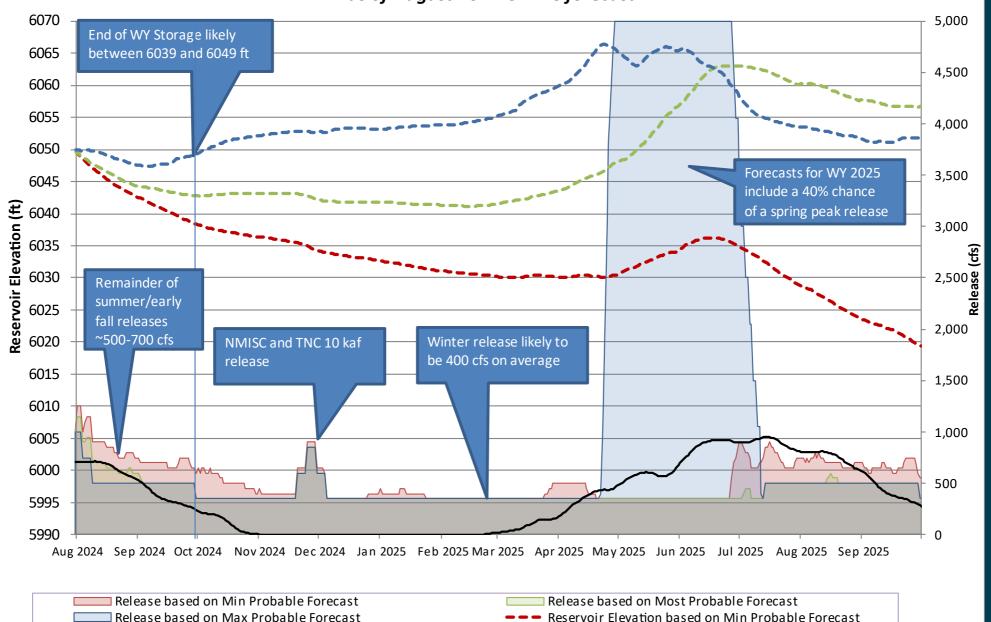
CBRFC Water Supply Presentations

https://www.cbrfc.noaa.gov/present/present.php





Navajo Reservoir Forecast Elevation and Release WY 2024-2025 as of August 2024 CBRFC forecast



Reservoir Elevation based on Max Probable Forecast

Reservoir Elevation based on Most Probable Forecast

NIIP.Diversion cfs



Projected Operations WY24-25

Based on current streamflow conditions, storage levels, and statistical outlooks based on 30 years of historical hydrology,

- Releases for remainder of summer, fall and winter will be made to meet the target baseflow in the critical habitat reach.
- Storage at the end of WY 2024 (September 30th) is expected to be between 1,044 kaf (63% full, 6039 ft) and 1,160 kaf (70% full, 6049 ft) with a median forecast of 1,090 kaf (66% full, 6043 ft)
- A 10 kaf release will be made for the NMISC and TNC's JAN subcontract in November- December over 15 days.
- 40% chance of having sufficient available water to conduct a spring peak release next spring in WY 2025
- <3% chance of falling below 5990 ft (min active storage) in WY2025





Maintenance Update

- An exploratory drilling project is underway on the dam face.
- You may see drill rigs and official personnel working along the face and crest of the dam through 2026.
- An extended road closure of NM 539 across the crest of the dam will begin September 11, 2024. Following completion of this work, the crews will move to a single-lane closure on NM 511 across the face of the dam.
- Road impacts are currently scheduled through May of 2025 and are subject to change. Please see the Navajo Dam Water Operations webpage for the most current information.





Next Meeting TBD!! Tues, August 20th

Links

- Navajo Project Notices: https://www.usbr.gov/uc/wcao/water/rsvrs/notice/nav-rel.html
- Navajo Monthly Forecast Update: https://www.usbr.gov/uc/water/crsp/cs/nvd.html

- UC Water Operations Home: https://www.usbr.gov/uc/water/index.html
- Teacups: https://www.usbr.gov/uc/water/basin/index.html
- 24-Month Study: https://www.usbr.gov/uc/water/crsp/studies/index.html
- DROA: https://www.usbr.gov/dcp/droa.html



