# May 2025 Water Supply Briefing



# **Briefing Overview**

Soil Moisture / April Streamflow

**Observed Precipitation** 

**Snowpack Conditions** 

Water Supply Forecasts

May Forecast Error

**Upcoming Weather** 

**Contacts & Questions** 



# **Soil Moisture Conditions / April Observed Flow**

April Observed Flow

Antecedent Soil Moisture



#### Soil Moisture Impacts on Water Supply / Runoff

Above normal  $\rightarrow$  positive impact (increased runoff efficiency) Below normal  $\rightarrow$  negative impact (decreased runoff efficiency)

#### Spring runoff timing and magnitude factors:

snowpack conditions, spring weather, soil moisture conditions

Locations that experienced more favorable April observed flows generally corresponded to areas with better soil moisture conditions.

The Dolores and San Juan basins in southwest CO are exceptions - well below normal snowpack conditions limited runoff.

# **Precipitation Summary**

Most Areas: much drier than normal Exceptions: Upper Green, Central AZ Monthly Precipitation - April 2025 Averaged by Basin, Major Contributing Areas % Average ■ >500% 300-500% 200-300% 150-200% 130-150% 110-130% 100-110% 90-100% **70-90% 50-70% 30-50%** 0-30%

April 2025



Water Year 2025 CBRFC Precipitation (Major Contributing Areas) Percent of 1991-2020 Average						
UPPER COLORADO RIVER BASIN						
	Apr	Oct-Apr				
Above Lake Powell	60	86				
Green Rive	er Basin					
Above Fontenelle	99	105				
Above Flaming Gorge	77	100				
Yampa/White	56	94				
Duchesne	52	85				
Price/San Rafael/Dirty Devil	64	100				
Colorado River	Headwaters	;				
Above Kremmling	56	93				
Eagle	62	92				
Roaring Fork	55	82				
Above Cameo	56	88				
Southwest	Colorado					
Gunnison	55	83				
Dolores	62	81				
San Juan	69	70				
LOWER COLORAD	O RIVER BA	SIN				
Virgin	40	55				
Little Colorado	117	51				
Verde	126	53				
Salt	62	35				
Upper Gila	29	26				
GREAT BASIN						
Bear	60	95				
Weber	45	87				
Six Creeks	55	92				
Provo/Utah Lake	56	91				
Sevier	68	76				

Prepared by NOAA, Colorado Basin River Forecast Center Salt Lake City, Utah, www.cbrfc.noaa.gov Prepared by NOAA, Colorado Basin River Forecast Center Salt Lake City, Utah, www.cbrfc.noaa.gov 100-110%

90-100%

70-90%

50-70%

30-50%

0-30%

### **Precipitation Summary**

% Average

300-5001

200-300%
150-200%

130-150%

110-130%

90-100%
90-100%
70-90%
50-70%
30-50%
0-30%

d by NOMA, Colorado Basin River Fareca Sait Lake City, Utah, www.cbrit.noaa.gov >500%







**Snowpack Conditions** 

May 6 SWE Conditions

NRCS SNOTEL Observed (Squares)

Snow water equivalent (SWE) conditions as a percent of normal (median) declined during the past month due to snowmelt and well below normal April precipitation.



### Water Year 2025 UCRB Snowpack Evolution

CBRFC Hydrologic Model SWE Above Lake Powell (Major Contributing Areas)



# **CBRFC Model Snow Adjustments**

#### **UCRB Elevation Summary**

- CBRFC Model: 3,500-14,000'
- SNOTELs: 8,500-11,500'

#### Model Snow Adjustment Guidance

Model Performance Internal Snow Update Process Satellite Snow Cover ASO SWE Runoff Efficiency Analysis Other SWE Datasets Internal iSnobal Snow Model

#### **Notable April Model Snow Adjustments**

Gunnison: removed SWE above 11,000' White/Yampa: removed SWE above 9,500' Colorado Headwaters: adjusted SWE distribution

#### April 29 CODOS Report

Dust-on-snow severity has remained mild this spring



#### ASO Flight Coverage



# May 1 Water Supply Forecasts

Water supply forecasts are below to well below normal.



Colorado Basin River Forecast Center Water Supply Forecasts May 1, 2025							
UPPER COLORADO RIVER BASIN							
Basin	Volume (KAF)	<u>%Average</u> (1991-2020)	Period				
ake Powell	3500	55	Apr-Jul				
Green River Basin							
Green-Flaming Gorge Reservoir	750	78	Apr-Jul				
/ampa-Deerlodge	800	67	Apr-Jul				
Juchesne-Tabiona	78	76	Apr-Jul				
Colorado River Headwaters							
Colorado-Kremmling	790	91	Apr-Jul				
agle-Gypsum	285	85	Apr-Jul				
Roaring Fork-Glenwood Springs	460	70	Apr-Jul				
Colorado-Cameo	1800	79	Apr-Jul				
Southwest Colorado							
Junnison-Blue Mesa Reservoir	460	72	Apr-Jul				
Oolores-McPhee Reservoir	106	42	Apr-Jul				
san Juan-Navajo Reservoir	275	44	Apr-Jul				
Animas-Durango	245	64	Apr-Jul				
GREAT BASIN / UTAH							
Bear-UT/WY State Line	80	73	Apr-Jul				
Veber-Oakley	80	72	Apr-Jul				
Big Cottonwood Creek	24	71	Apr-Jul				
Provo-Woodland	79	82	Apr-Jul				
Sevier-Hatch	14.5	27	Apr-Jul				
/irgin-Virgin (*Regulated)	18.9	34	Apr-Jul				

# Apr 1 $\rightarrow$ May 1 Trend in the Water Supply Outlook



CBRFC web map layer shows trend in the water supply outlook: -decreases in most basins -minor increases in Upper Green headwaters



### **Upper Colorado River Basin Water Supply Summary**





# Lake Powell Water Supply Forecast

#### 2025 Water Supply Forecast - Colorado - Lake Powell, Glen Cyn Dam, At (GLDA3)



#### **Upper Green River Basin - Flaming Gorge Reservoir**





#### White/Yampa River Basin - Yampa-Deerlodge





UTC

#### **Colorado River Headwaters - Cameo**





2025 Water Supply Forecast - Colorado - Cameo, Nr (CAMC2)



#### **Gunnison River Basin - Blue Mesa Reservoir**





#### **Dolores River Basin - McPhee Reservoir**





# San Juan River Basin - Navajo Reservoir





10-01 11-01 12-01 01-01 02-01 03-01 04-01 05-01 06-01 07-01 08-01 09-01 UTC

#### **Great Basin: Bear & Weber River Basins**

2025 Water Supply Forecast - Bear - Utah-Wyoming State Line, Nr (BERU1)

Official 50% Fcst (2025-05-01): 80 kaf (73% Avg, 79% Med), (19% of Yrs Below Fcst, 67 Highest Flow / 82 Tot Yrs)

ESP 50% Fcst (2025-05-06): 79 kaf (72% Avg, 78% Med), (19% of Yrs Below Fcst, 67 Highest Flow / 82 Tot Yrs)

ESP is Unregulated and No Precipitation Forecast Included

Observed Volume: 14.2 kaf (13% Average, 14% Median)

180







Model Snow Plot - Weber - Oakley, Nr (OAWU1) - NOAA/CBRFC Created: 2025-05-07 13:41Z

27 >10,000 ft 8,500-10,000 ft 24 < 8.500 ft 21 Ē 18 15 12 9 11-01 01-01 03-01 05-01 07-01 09-01 UTC

### Great Basin: Big Cottonwood Creek & Provo River Basin







Model Snow Plot - Provo - Woodland, Nr (WOOU1) - NOAA/CBRFC



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NOAA / Colorado Basin I

ESP 50% Fcst (2025-05-06); 79 kaf (83% Avg. 94% Med) Observed Volume: 21 kaf (22% Average, 25% Median)



### **Historical Forecast Verification**

May Forecast Error: April-July Volume



<u>Location</u>	<u>Avg May Forecast Error</u>
Green River - Warren Bridge	10%
Fontenelle Reservoir	16%
Yampa River - Deerlodge	16%
Blue River - Dillon Reservoir	12%
Colorado River - Cameo	13%
Blue Mesa Reservoir (Gunnison)	14%
McPhee Reservoir (Dolores)	16%
Navajo Reservoir (San Juan)	19%
Lake Powell	16%
Virgin River at Virgin	12%

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

# LCRB: Jan-May Water Supply Projections (May 6 Model Run)

Forecast Range: 0-35%



Many locations in the LCRB experienced one of their driest winters (Dec-Jan-Feb) on record.

LCRB January-May volume projections are well below normal; some are near record low.

	ID	Vol	%Avg	%Med	%ile	Description
	CHWA3	0.02			9	Chevelon Ck - Winslow Nr Wildcat Cyn Blo
$\triangle$	CLDA3					Gila - San Carlos Reservoir Coolidge Dam At
	<u>GILN5</u>	15.9	22	31	2	Gila - Gila Nr
	GLHA3	25	11	24		Gila - Solomon Nr Head Of Safford Vly
	<u>GSFN5</u>	5.1	14	28	5	San Francisco - Glenwood Nr
	GVRN5	15.1	14	24	2	Gila - Virden Nr Blue Ck Blo
	LCLA3	0.88	11	15	5	Little Colorado - Lyman Lk Abv St. Johns Nr
	SFCA3	11.2	12	25		San Francisco - Clifton
	SLRA3	38	10	15		Salt - Roosevelt Nr
	TNRA3	2.8	4	7	2	Tonto Ck - Roosevelt Nr Gun Ck Abv
	VDTA3	53	19	34		Verde - Tangle Ck Blo Horseshoe Dam Abv

# **May Observed Precipitation**



01 Data File



A large area of low pressure is bringing rounds of showers, thunderstorms, and high elevation snow the first week of May.

## Upcoming Weather: 7-Day Precipitation Forecast (May 7-13)

day 1, end: 05-08 12 day 2, end: 05-09 12z day 3, end: 05-10 12; day 4. end: 05-11 12; day 7, end: 05-14 12z day 5, end: 05-12 12z day 6, end: 05-13 12z 7 day total Inches > 8 6-8 5-6 4-5 3-4 2.5-3 2-2.5 1.5-2 0.75 - 10.5-0.75 0.25-0.5 0.1-0.25 < 0.1

QPF Daily Totals (inches), issued: 05-07-2025 12z

As the current system departs in the coming days, expect temperatures to climb considerably above average.

Ample sunshine and mild low temperatures will greatly facilitate snowmelt in the high elevations. At the same time. chances for spotty showers and thunderstorms will linger.

Toward the middle of next week. a cold trough may put an abrupt end to the incoming stretch of warm weather. However. uncertainty in the path of that system remains.

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

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# Upcoming Weather: 8–14 Day Outlook (May 14–20)



# Summary

#### April Observed Flows



### May 6 SWE Conditions



#### May 1 Water Supply Forecasts



# **CBRFC Peak Flow Forecasts**

A few locations have already seen seasonal peak flow.

Several locations will likely peak in the next 10 days during the upcoming warm up.

Highest elevation locations are expected peak at a later date, and will be dependant on future weather. Peak flow forecasts at locations with minimal/no upstream regulation.



### **\*UPDATING TODAY/TOMORROW\***

Peak flow forecasts on mainstem rivers downstream of significant regulation.

Green River Colorado River Gunnison River San Juan River



# 2025 Water Supply Briefings



### CBRFC Water Supply Briefings - Webinar Schedule & Registration - Water Year 2025

The Colorado Basin River Forecast Center (CBRFC) produces water supply forecasts for the Colorado River Basin and eastern Great Basin. CBRFC briefings provide information on water supply forecasts and current hydrologic conditions.

Register for a webinar using the links below.

#### Colorado River & Great Basin Water Supply Briefing Webinars @ 10:00 am MT

- Friday January 10
- Friday February 7
- Friday March 7
- Monday April 7
- Wednesday May 7

#### Spring Peak Flow Briefing Webinar @ 10:00 am MT

• Wednesday March 19

Briefing material is available on the CBRFC presentations page.

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

#### **Basin Focal Points (Forecasters)**

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

CBRFC Water Supply Presentations https://www.cbrfc.noaa.gov/present/present.html

# **QUESTIONS?**