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# 2025 Rio Grande Annual Operating Plan

April 21, 2025





# Agencies & Major Users

- Reclamation: Bureau of Reclamation
- USACE/Corps: US Army Corps of Engineers
- IBWC: US Section International Boundary and Water Commission
- NRCS: Natural Resources Conservation Service
- Santa Fe: City of Santa Fe
- Water Authority: Albuquerque Bernalillo County Water Utility Authority (ABCWUA)
- MRGCD: Middle Rio Grande Conservancy District
- EBID: Elephant Butte Irrigation District
- EP1: El Paso County Water Improvement District (includes City of El Paso)



# Operating Rules

- Treaty/1906 Convention: between the U.S. and Mexico, signed 1906
- Rio Grande Compact: agreement between Colorado, New Mexico, and Texas apportioning Rio Grande water between the three states
- Article VII restrictions: restricts storage of Rio Grande water in post 1929 reservoirs (El Vado) when usable storage in Elephant Butte and Caballo is less than 400,000 ac-ft, with some exceptions
- Project Authorizations: each Project (Dam) has its own set of federal laws that apply to its storage and release of water
- Operating Agreement: between EBID, EP1, Reclamation, signed in 2008



# Types of Water

- Native/natural Rio Grande water: water from the Rio Grande Basin, includes Rio Chama
- San Juan-Chama water: water imported from San Juan Basin of Colorado River into Rio Grande Basin through the San Juan-Chama Project
- Supplemental water: water leased by Reclamation to augment flows in support of Rio Grande Silvery Minnow
- P&P water: water for the Prior & Paramount lands of the Six Middle Rio Grande Pueblos





# Hydrology Terms

- cfs: cubic feet per second (flowrate)
- ac-ft: acre-feet (volume), amount of water needed to cover one acre to depth of one foot
- Hydrograph: graph of flowrate over time
- Runoff forecast: predicted streamflow volumes for March through July provided by Natural Resources Conservation Service (NRCS)
- SNOTEL: Snow Telemetry (SNOTEL) network composed of automated data collection sites located in remote, high-elevation mountain watersheds used to monitor snowpack, precipitation, temperature, and other climatic conditions



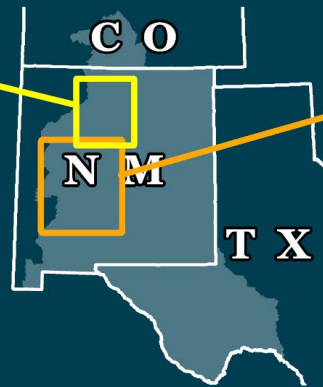
0 50 Miles

### Assets of Interest

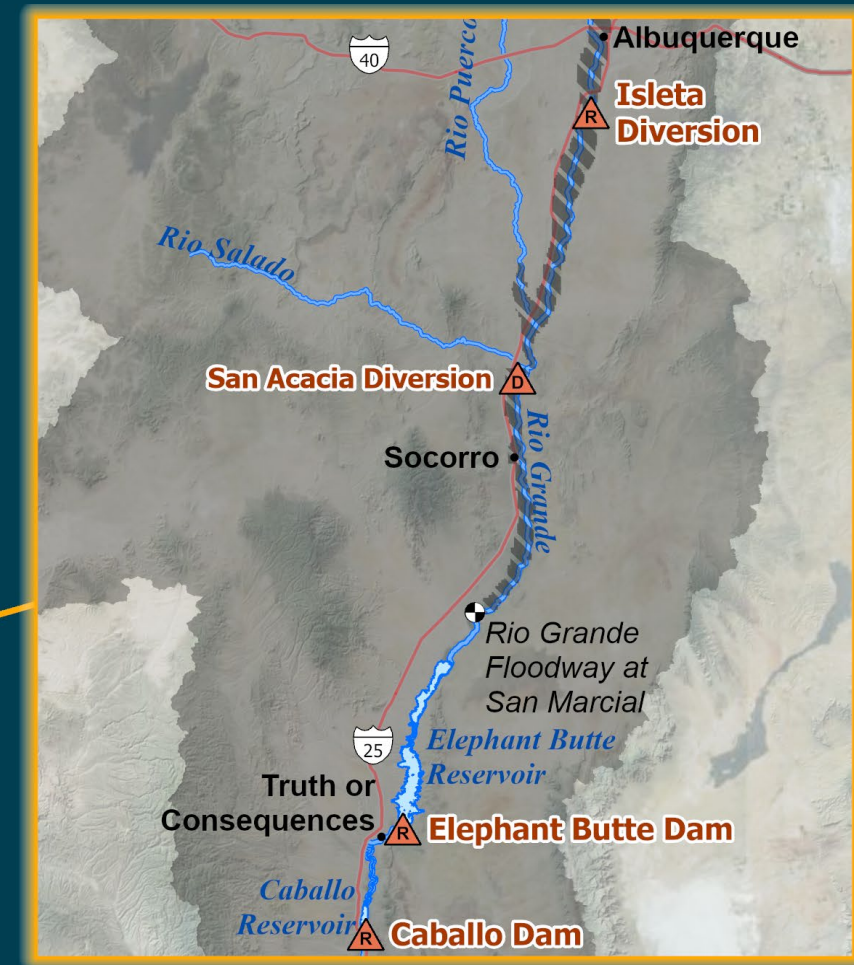
- U.S. Bureau of Reclamation Dam
- U.S. Army Corps of Engineers Dam
- Middle Rio Grande Conservancy District Dam
- Reservoirs

### Other Features of Interest

- Streamgauge
- Rivers and Major Tributaries
- Tributaries
- Benefitted Lands
- Rio Grande Watershed (HUC 6)
























Data Attribution: USCB, USGS, USDA, and Esri's Living Atlas



0 50 Miles



# Dam Information

Dam	Agency Owner/Operator		Authorized Purposes				
	Reclamation	USACE	Rio Grande Water Supply	San Juan-Chama Water Supply	Recreation	Flood Control	Sediment Control
Heron							
El Vado							
Abiquiu						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cochiti						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Jemez						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Elephant Butte						<input checked="" type="checkbox"/>	
Caballo						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



# What Drives the Process?

## Volume forecast from NRCS

- Based on snowpack, soil moisture, and other possible antecedent conditions

Select similar year based on similar volume and/or expected runoff shape/timing

Can alter hydrograph to best match forecast conditions

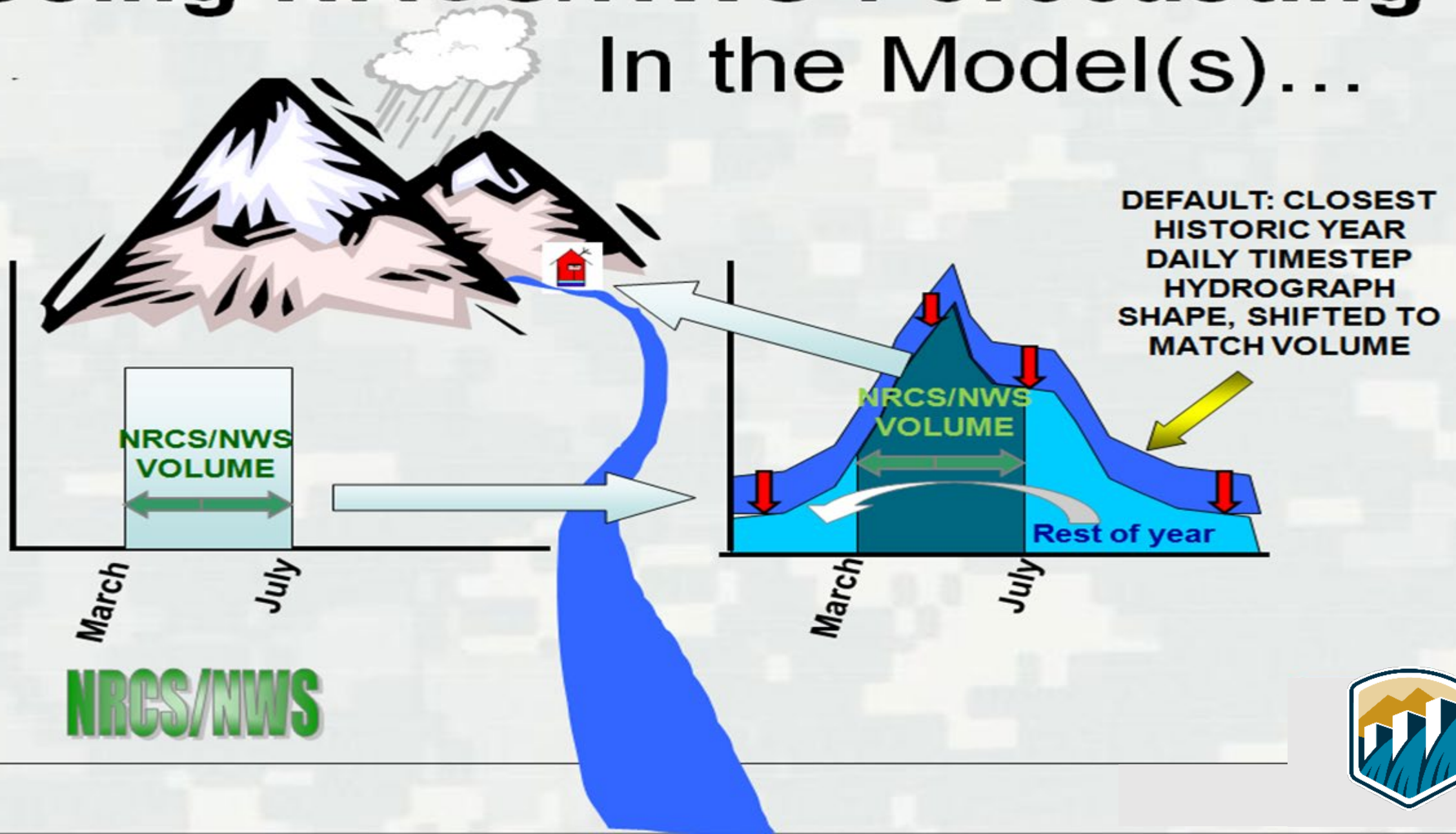
- e.g. move hydrographs earlier or later based on warm spring vs. cool spring

Reservoir operations based on nature (headwater flows) and policies

- Compact restrictions
- Flood control and channel capacity
- Timing of water deliveries
- Demand plans from water users and historical data



# Using NRCS/NWS Forecasting In the Model(s)...





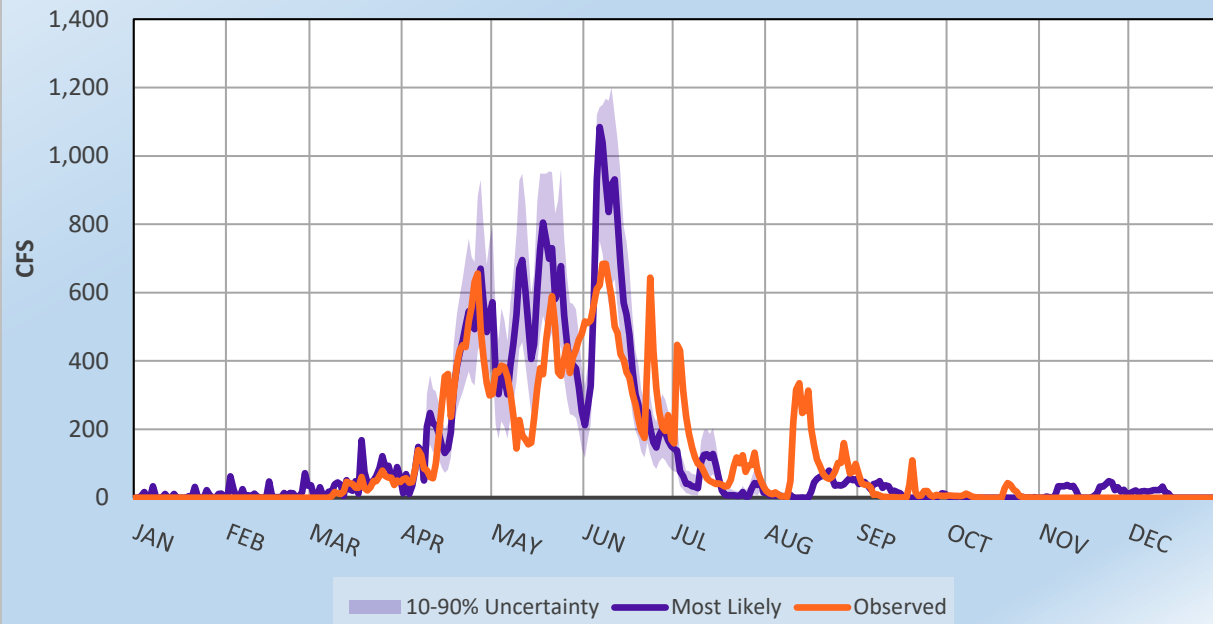


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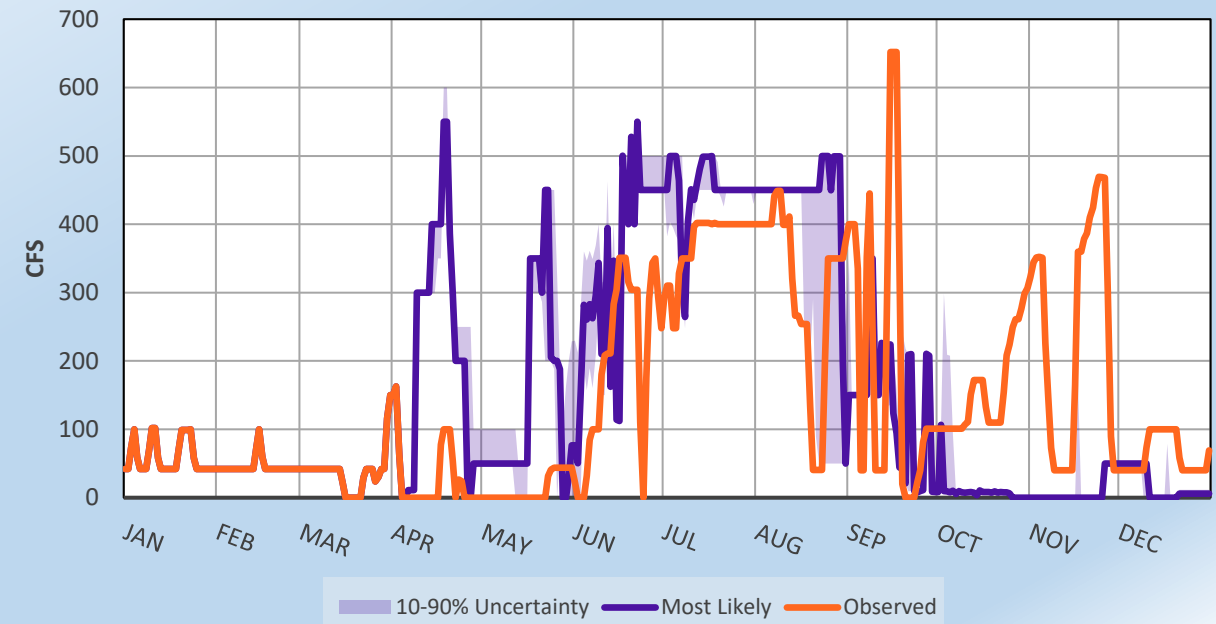
# 2024: The Year in Review



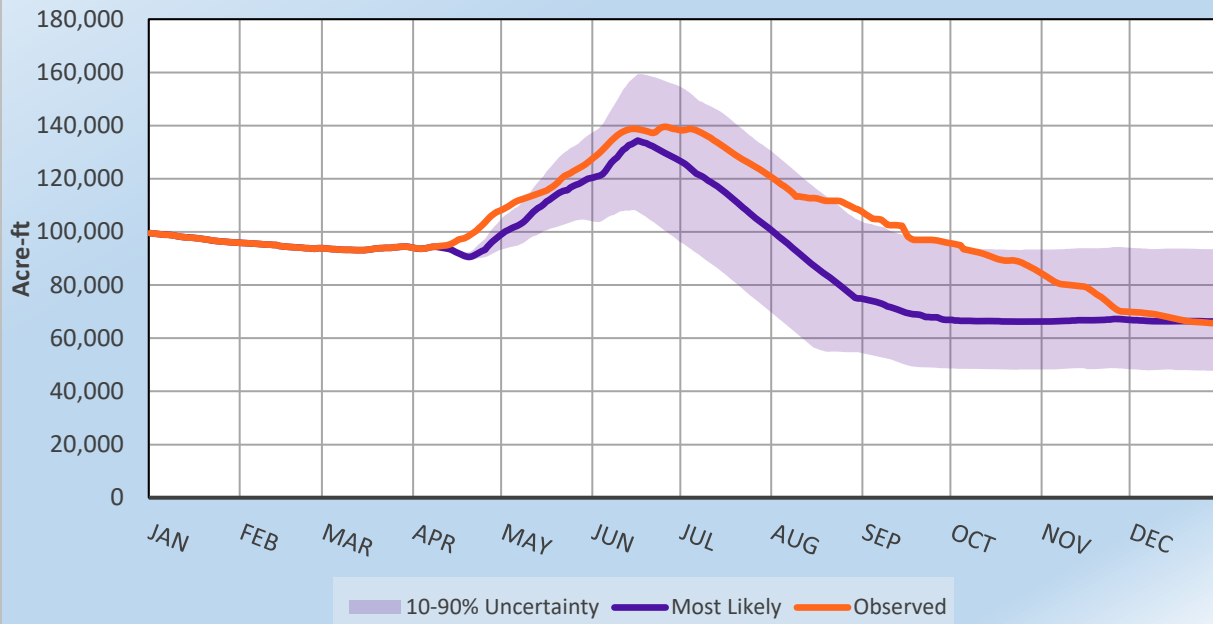
### 2024 Heron Inflow



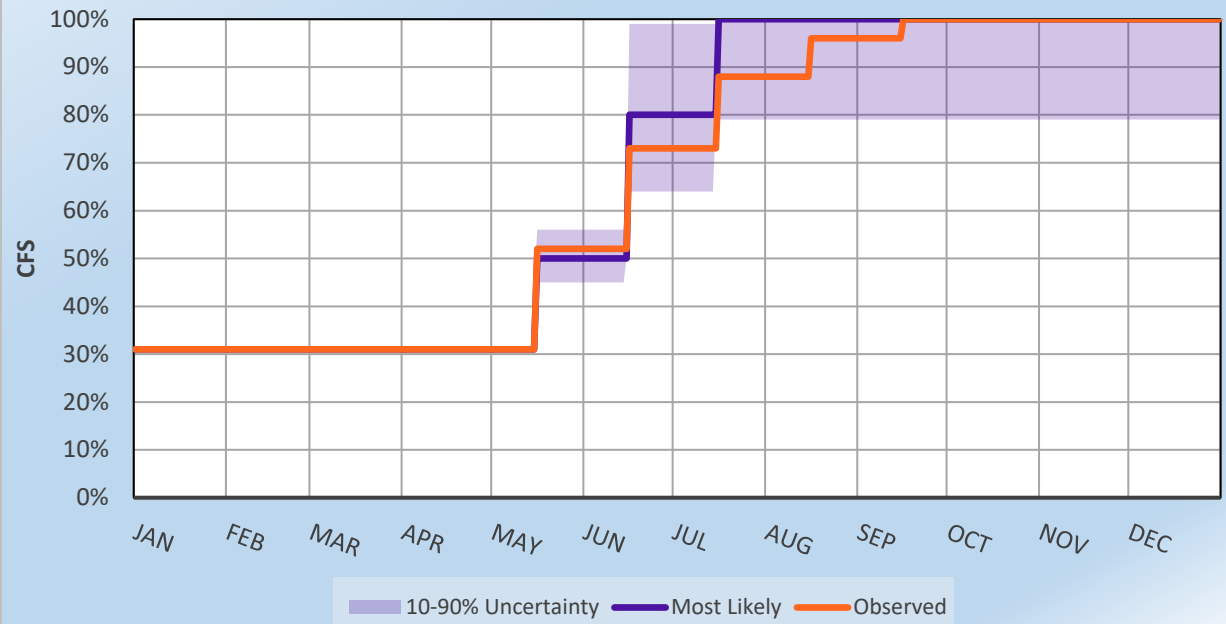
### 2024 Heron Outflow



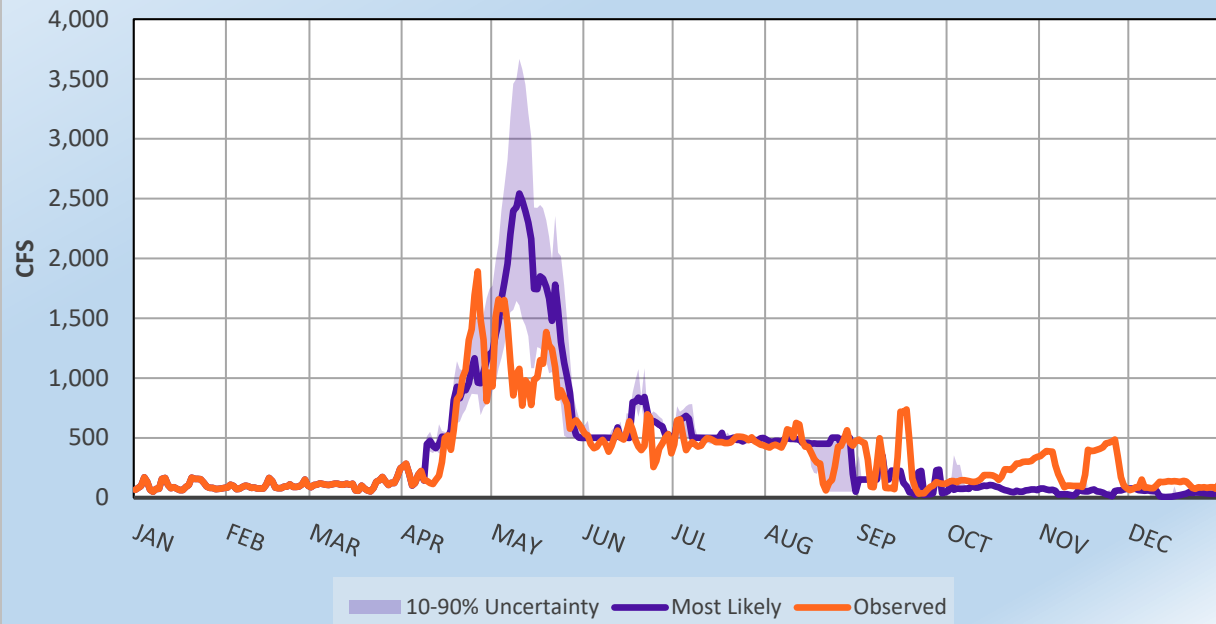
### 2024 Heron Storage



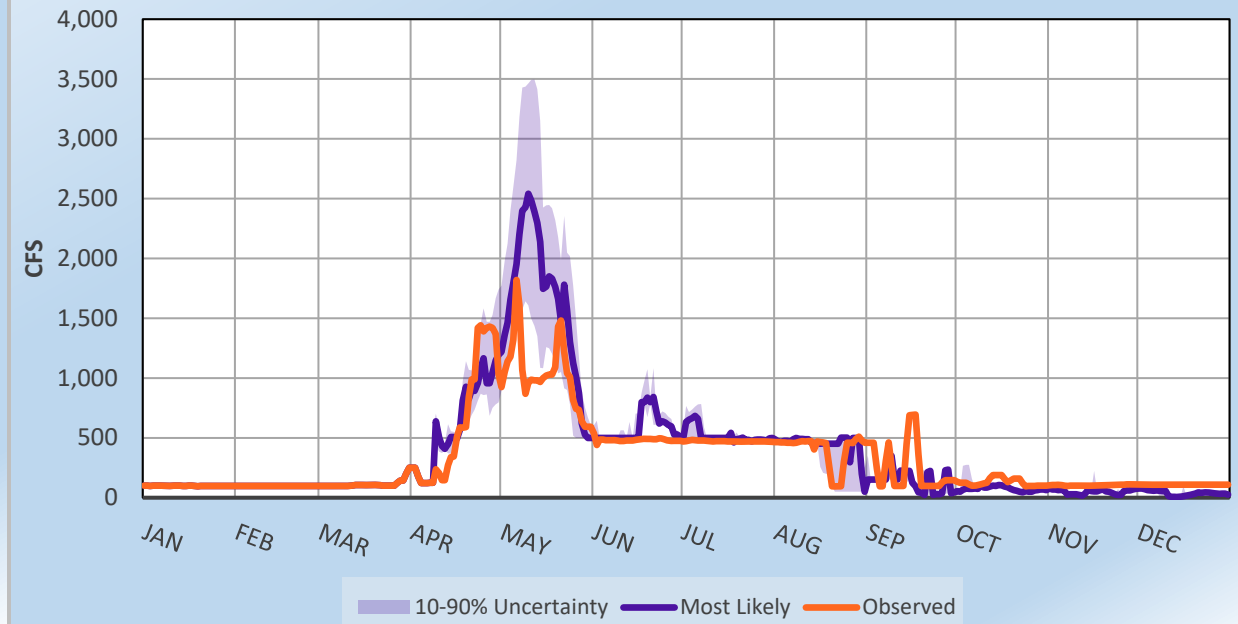
### 2024 SJCP Allocation



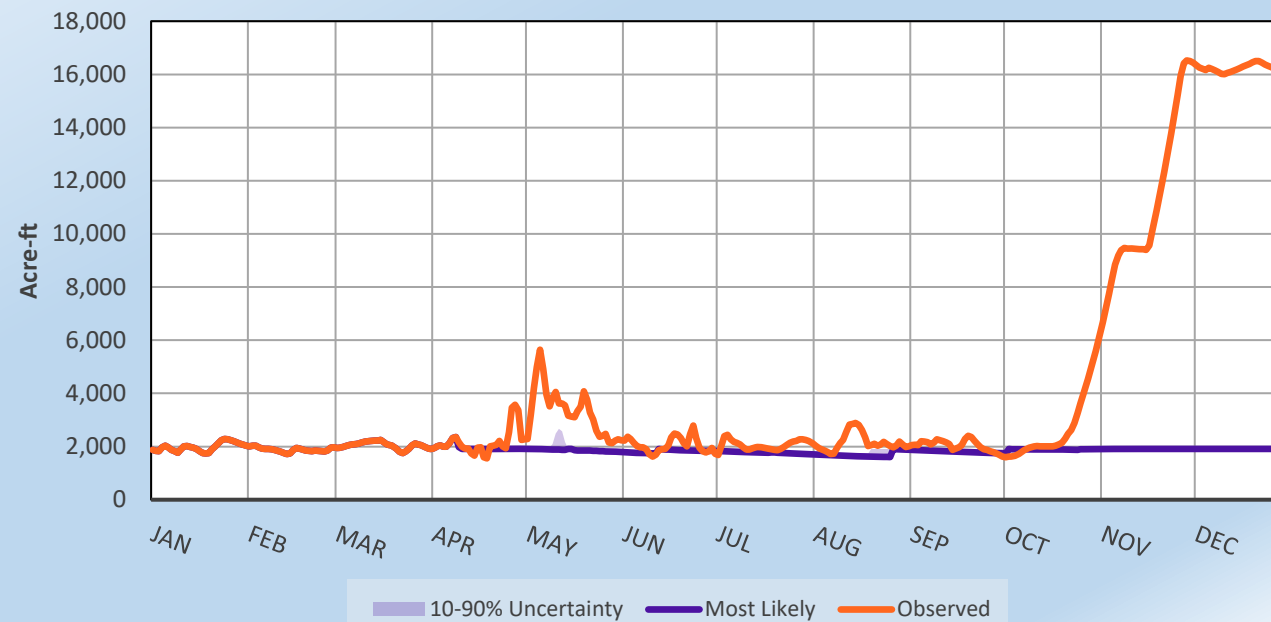
### 2024 El Vado Inflow



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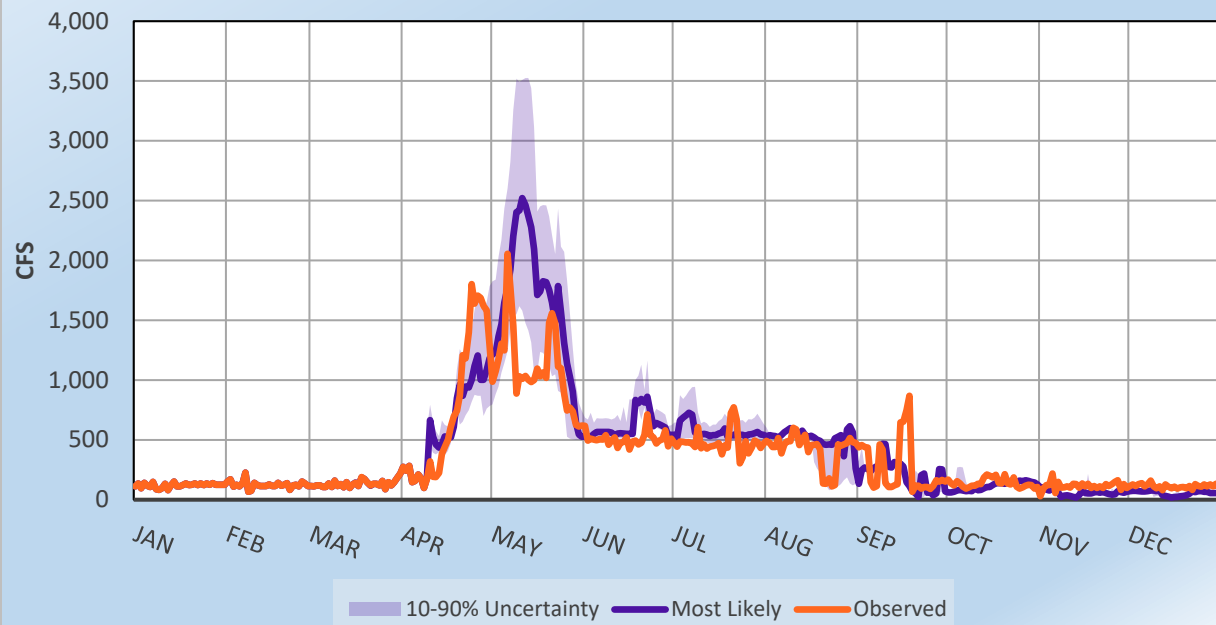


### 2024 El Vado Storage

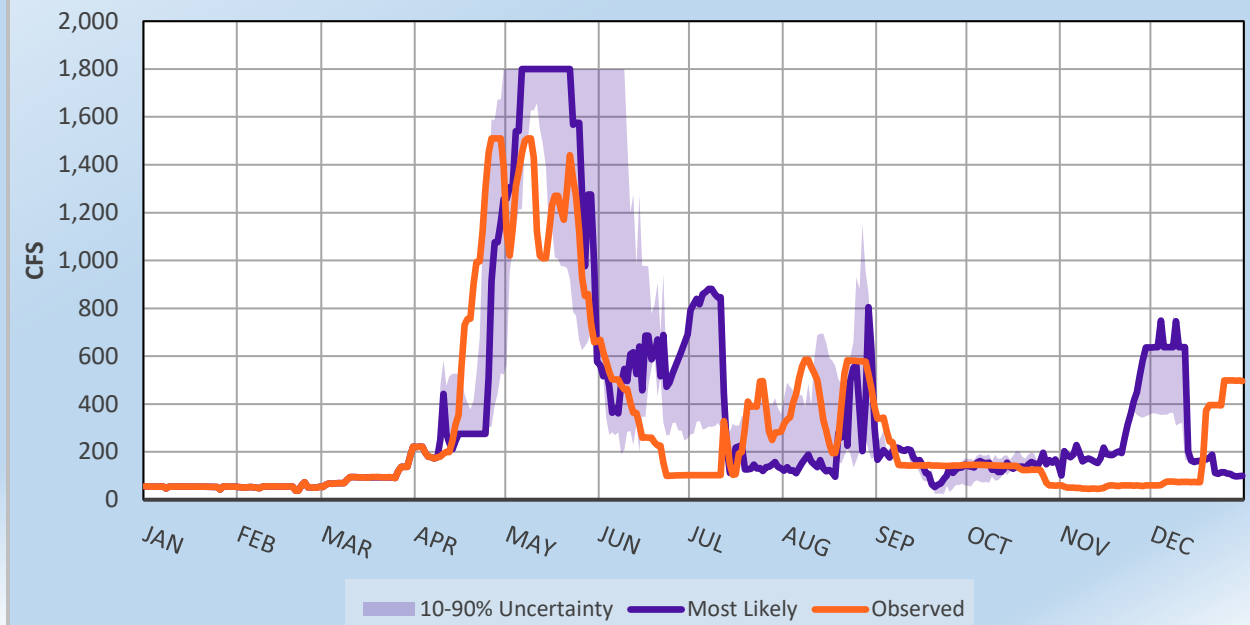




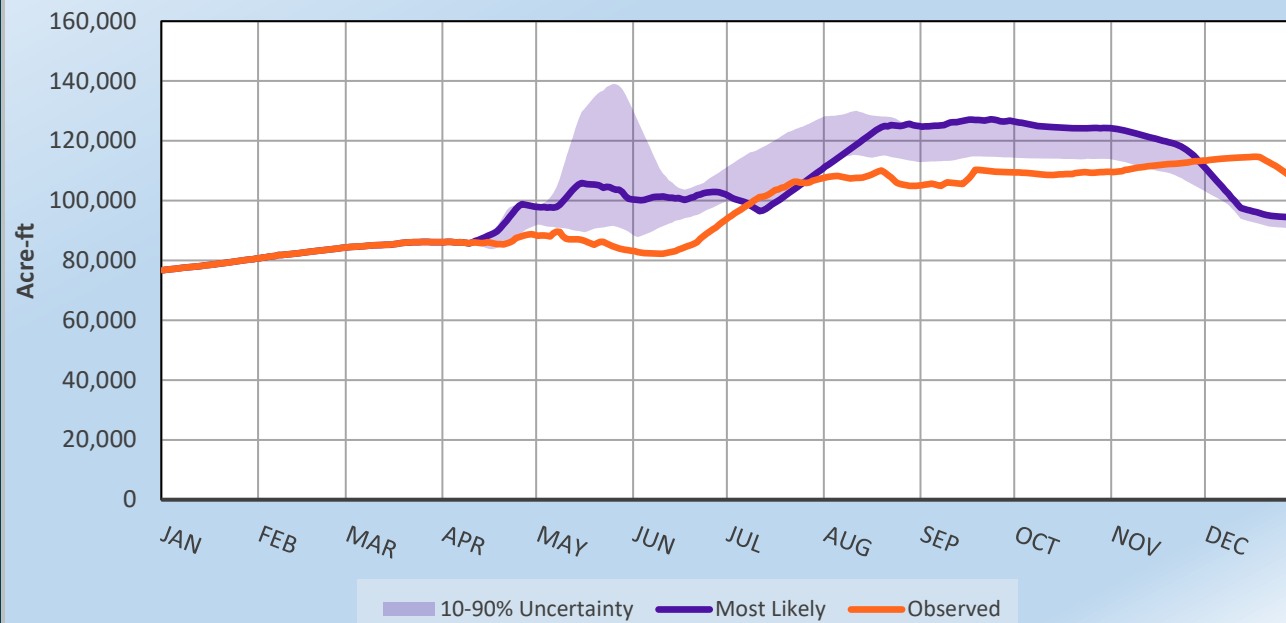
### 2024 Abiquiu Inflow



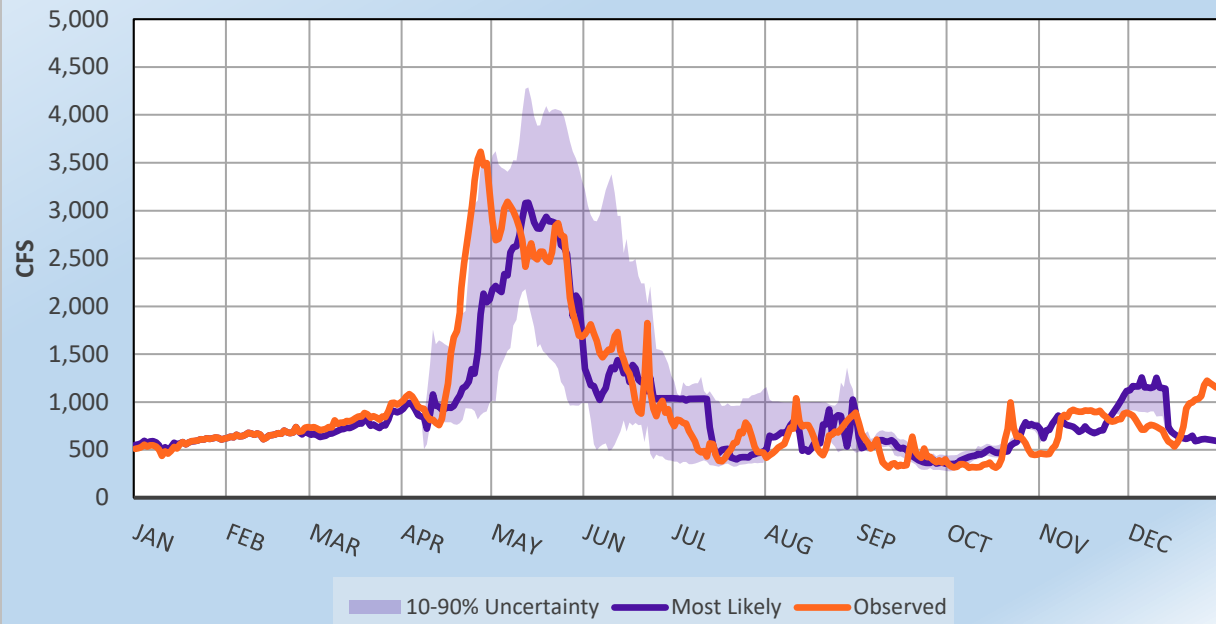
### 2024 Abiquiu Outflow



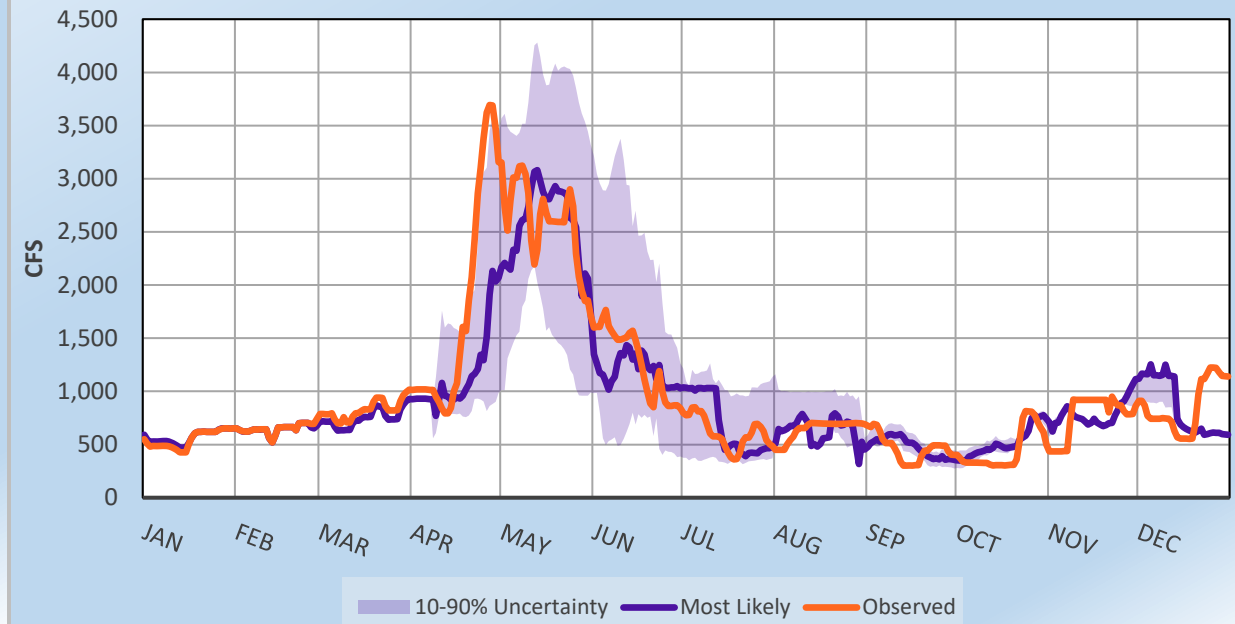
### 2024 Abiquiu Storage



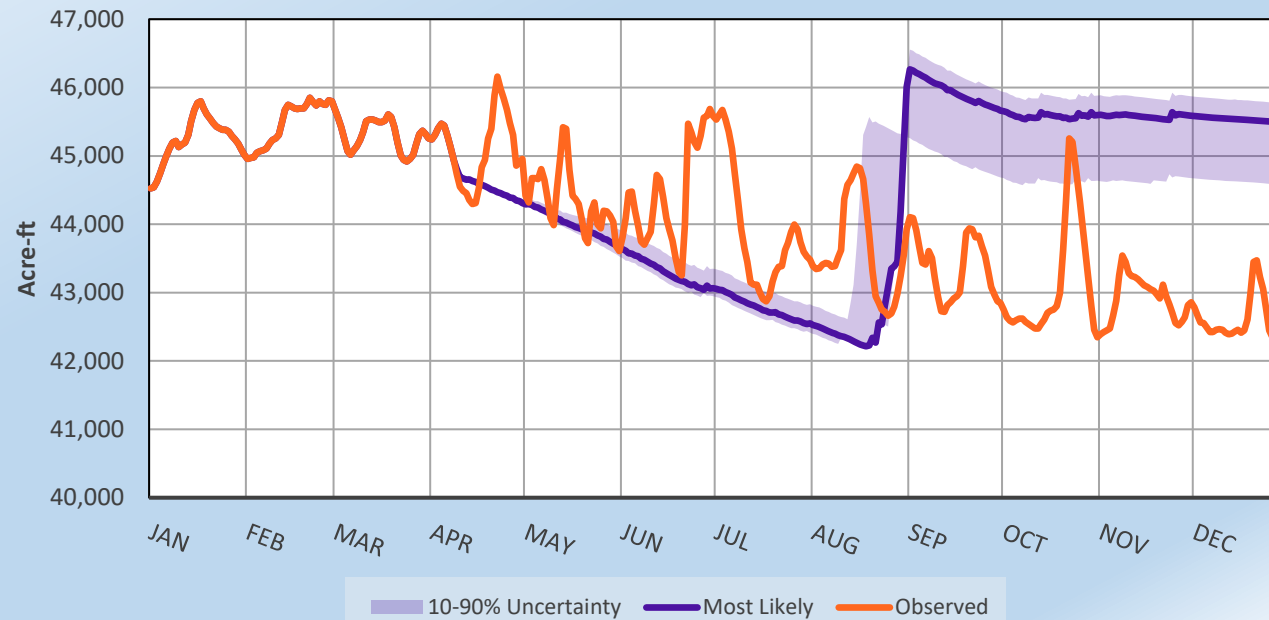
### 2024 Cochiti Inflow



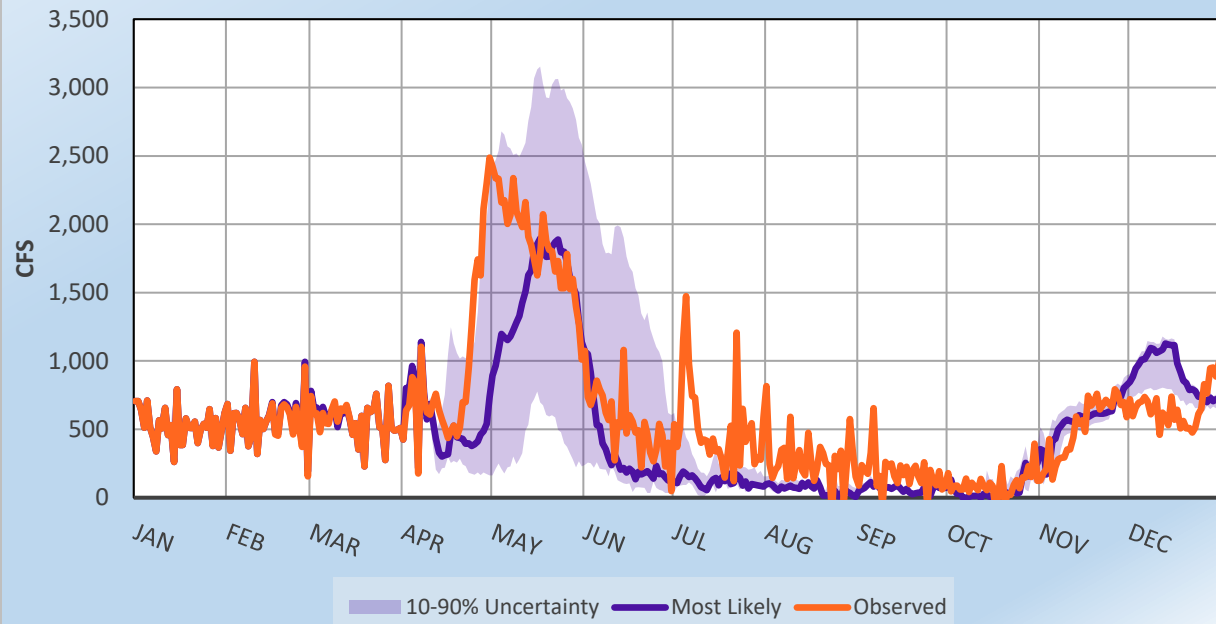
### 2024 Cochiti Outflow



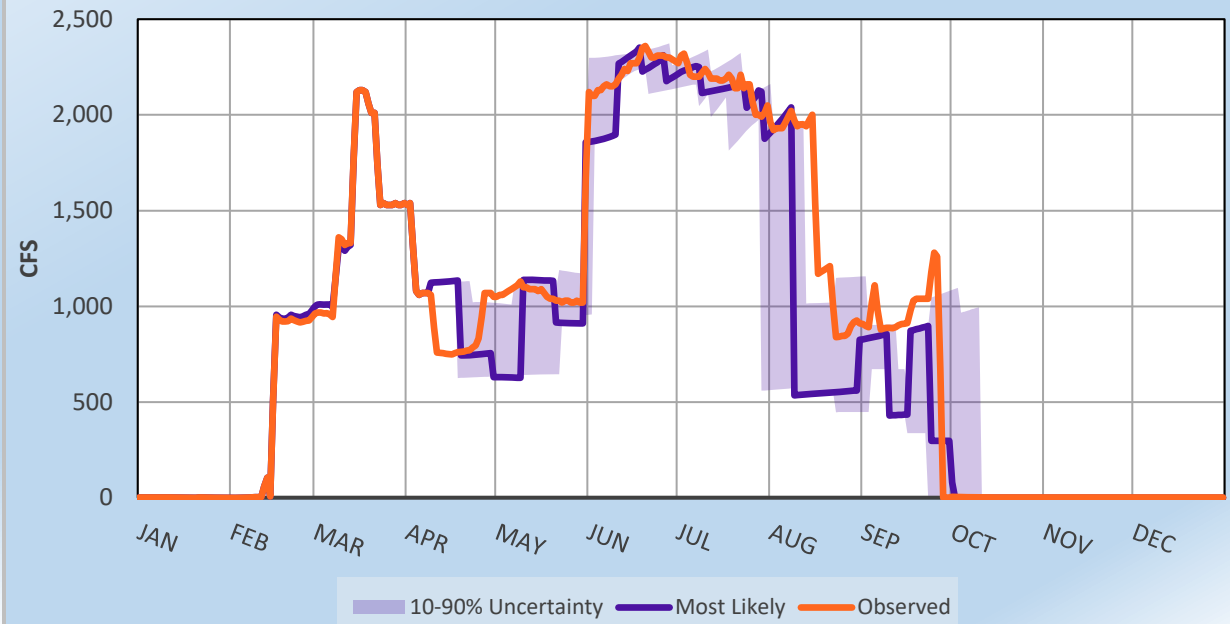
### 2024 Cochiti Storage



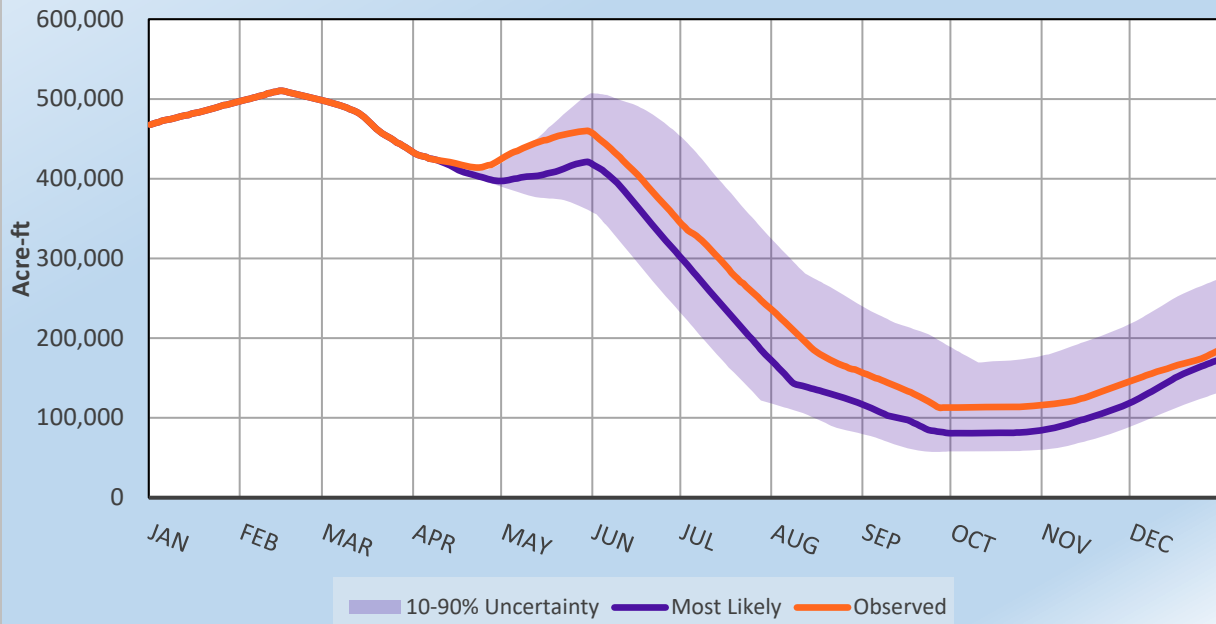
### 2024 Elephant Butte Inflow



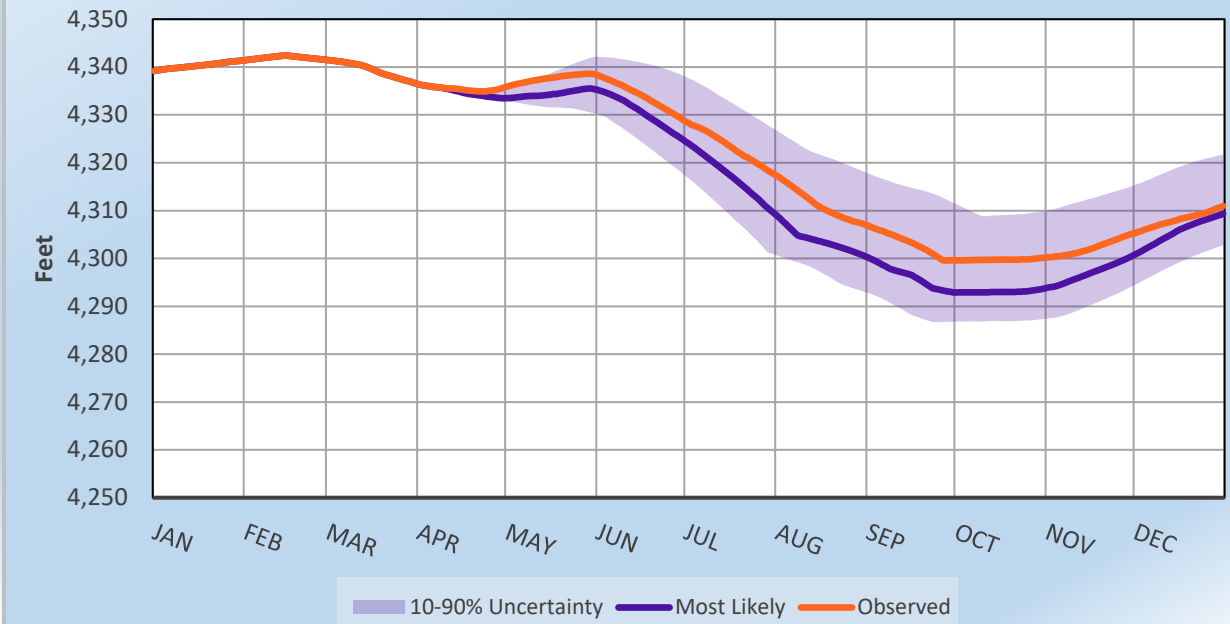
### 2024 Elephant Butte Outflow



### 2024 Elephant Butte Storage

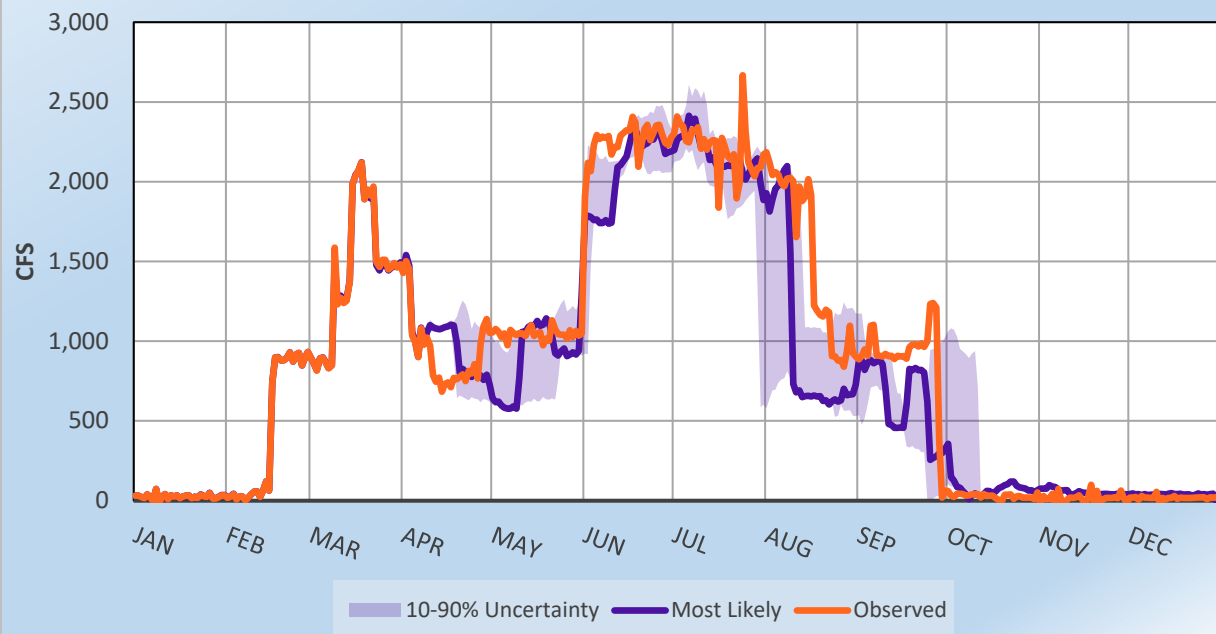


### 2024 Elephant Butte Pool Elevation

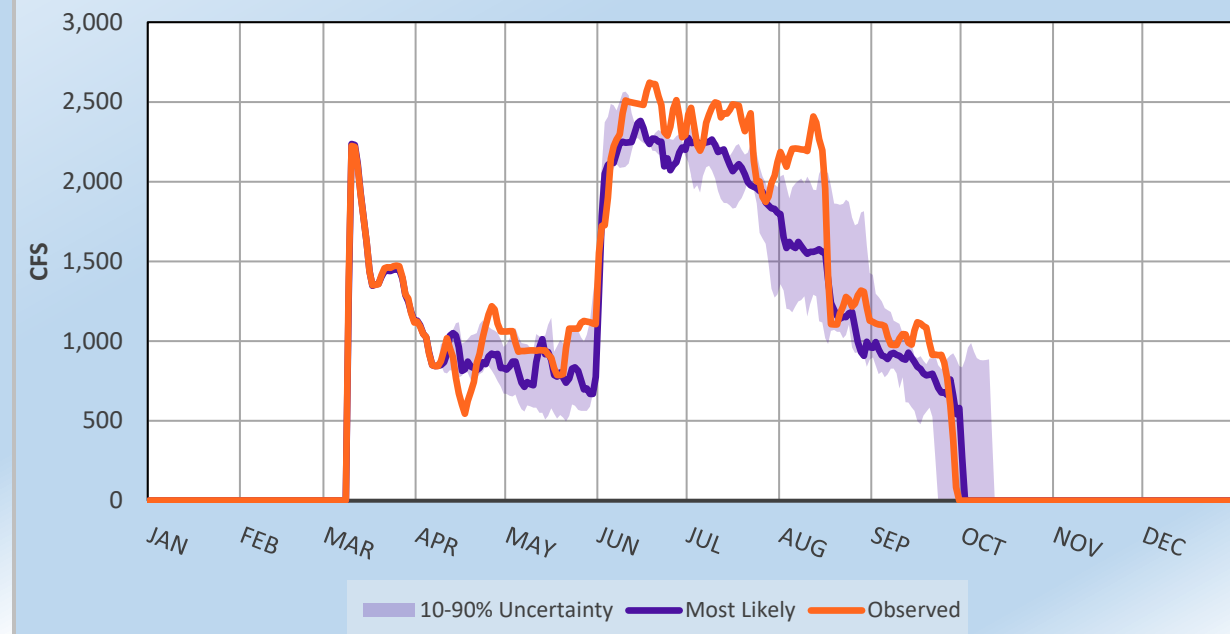




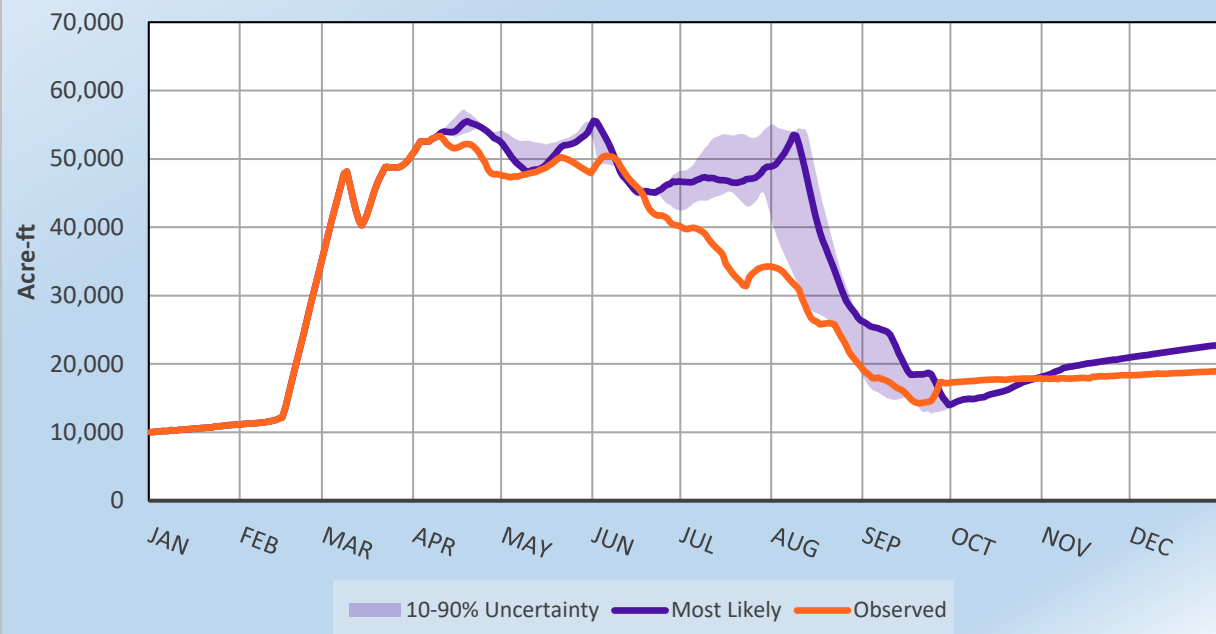
### 2024 Caballo Inflow



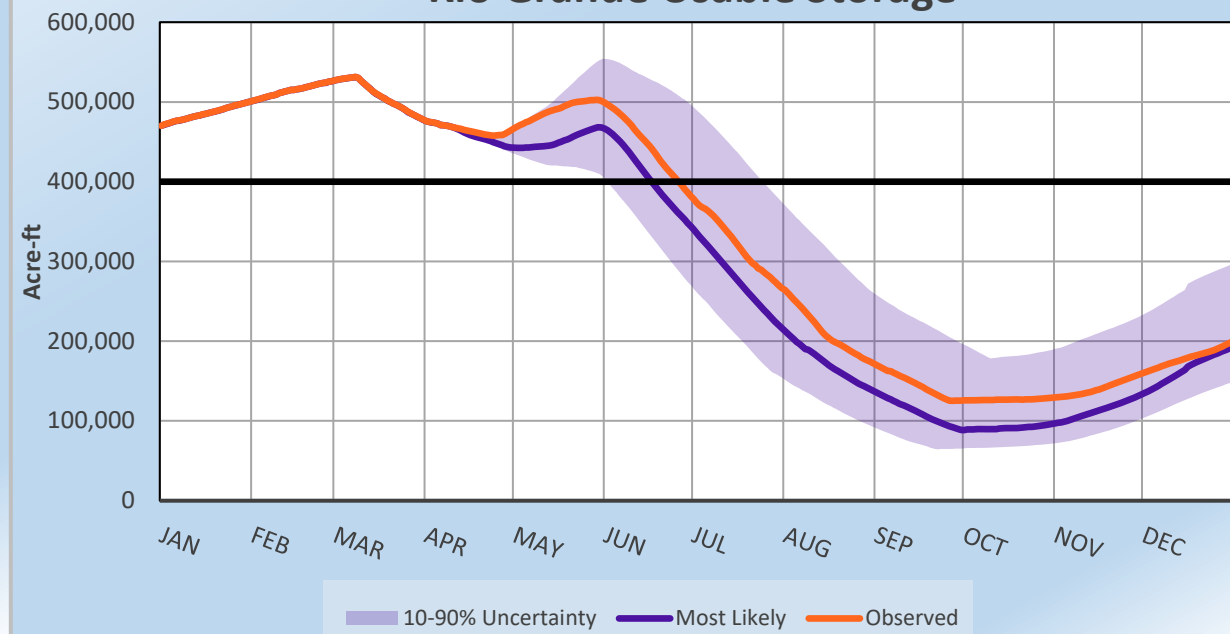
### 2024 Caballo Outflow



### 2024 Caballo Storage



### Rio Grande Usable Storage

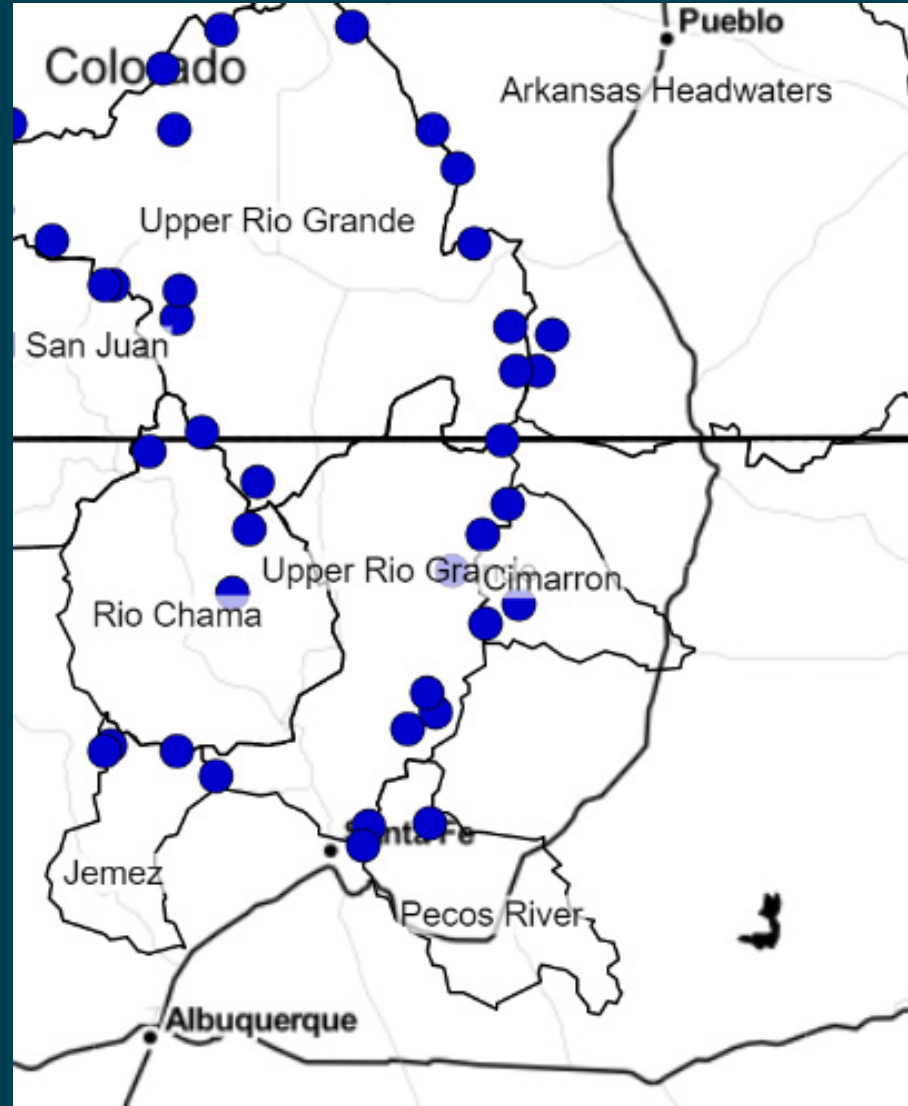




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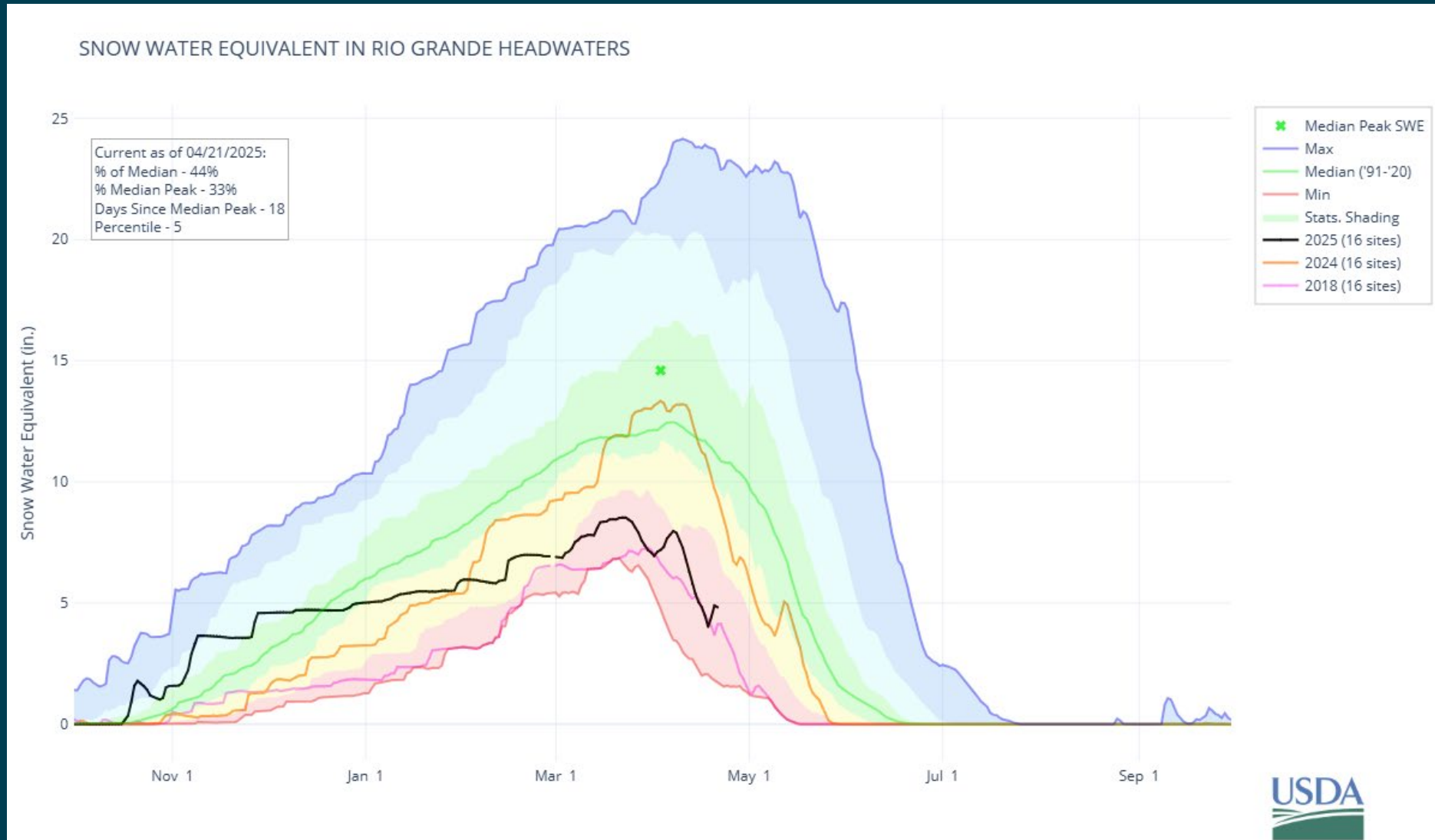
# Current Snow Conditions

# SNOTEL Locations

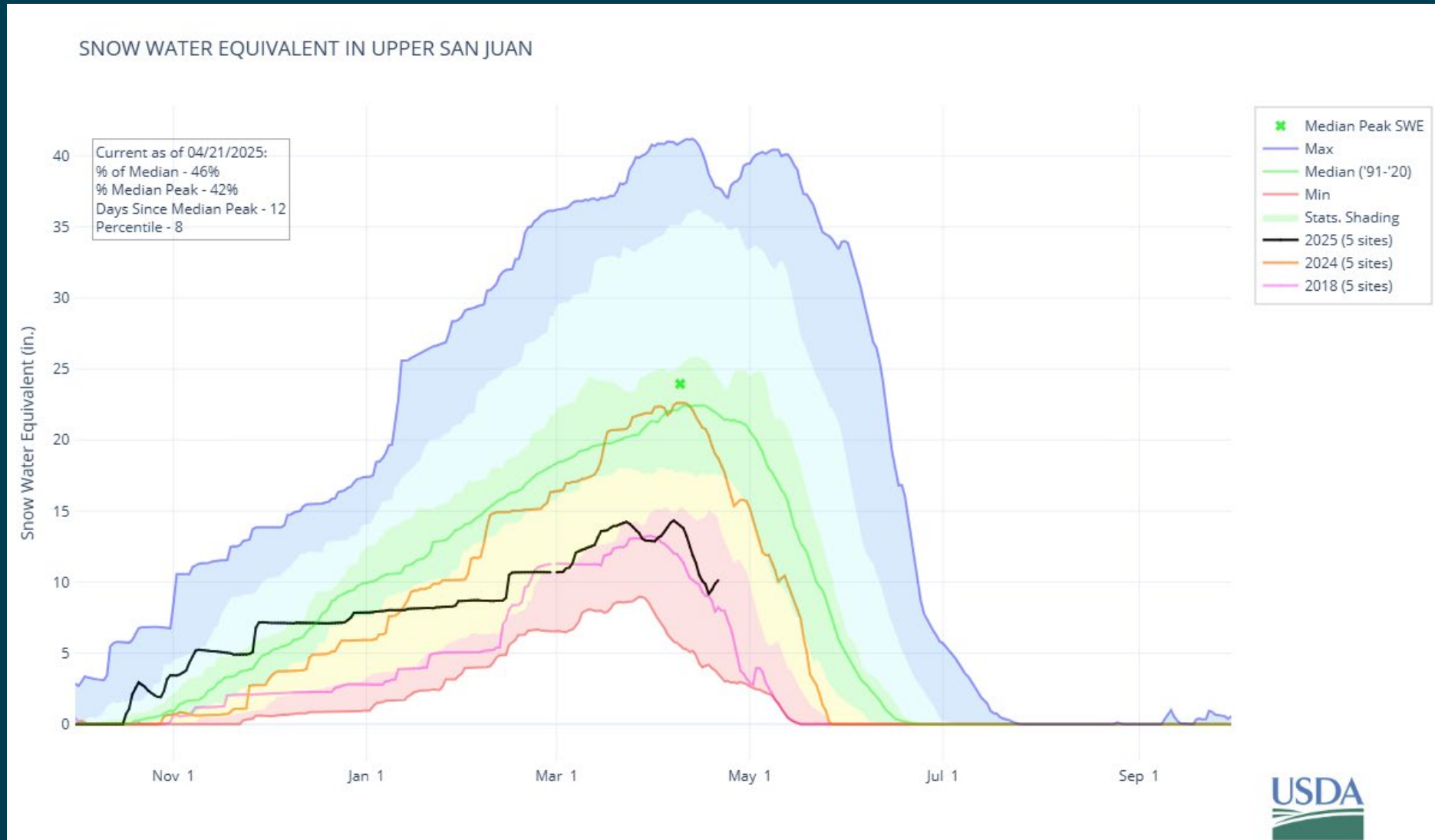




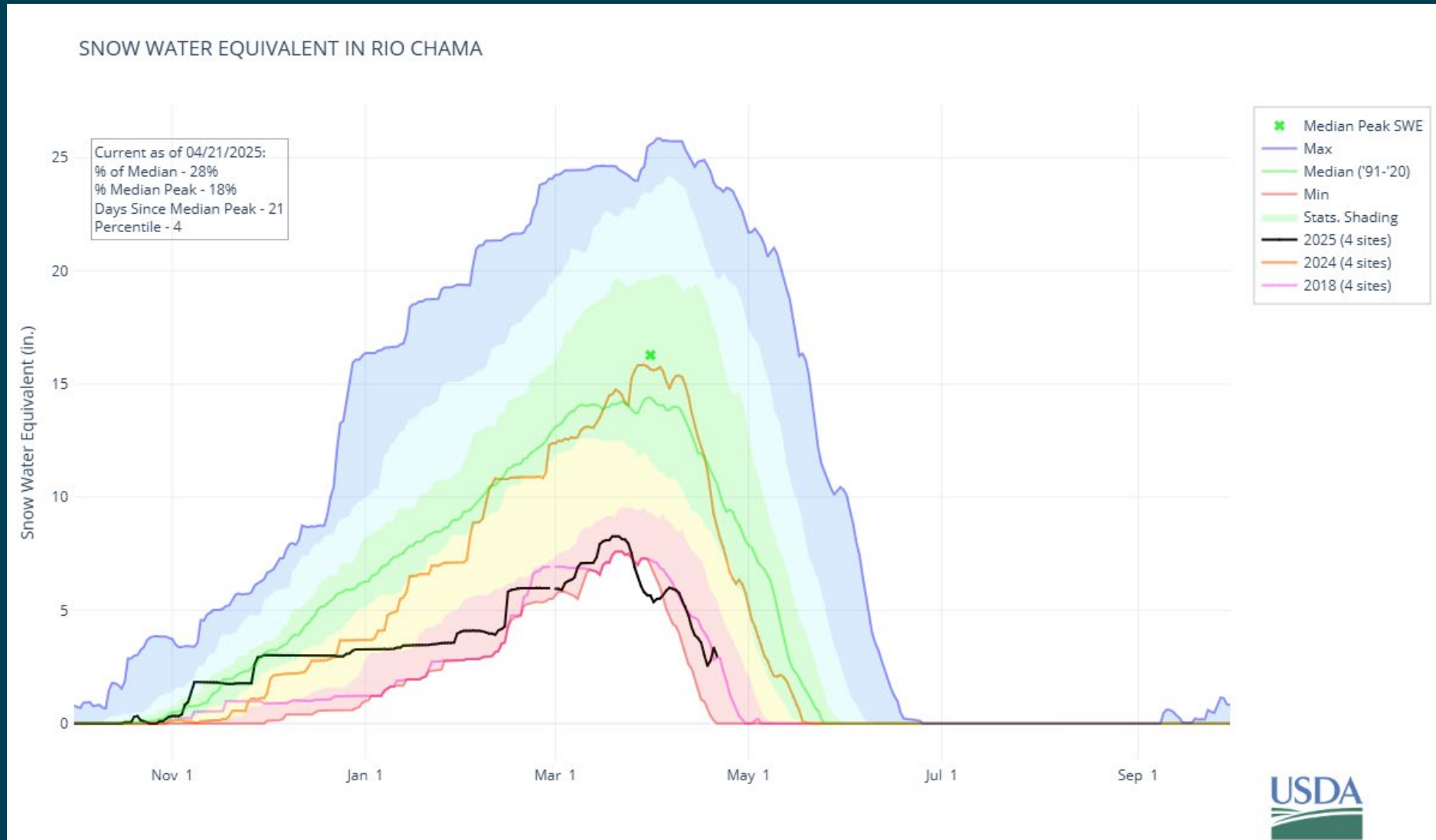
# Rio Grande Headwaters



# Upper San Juan

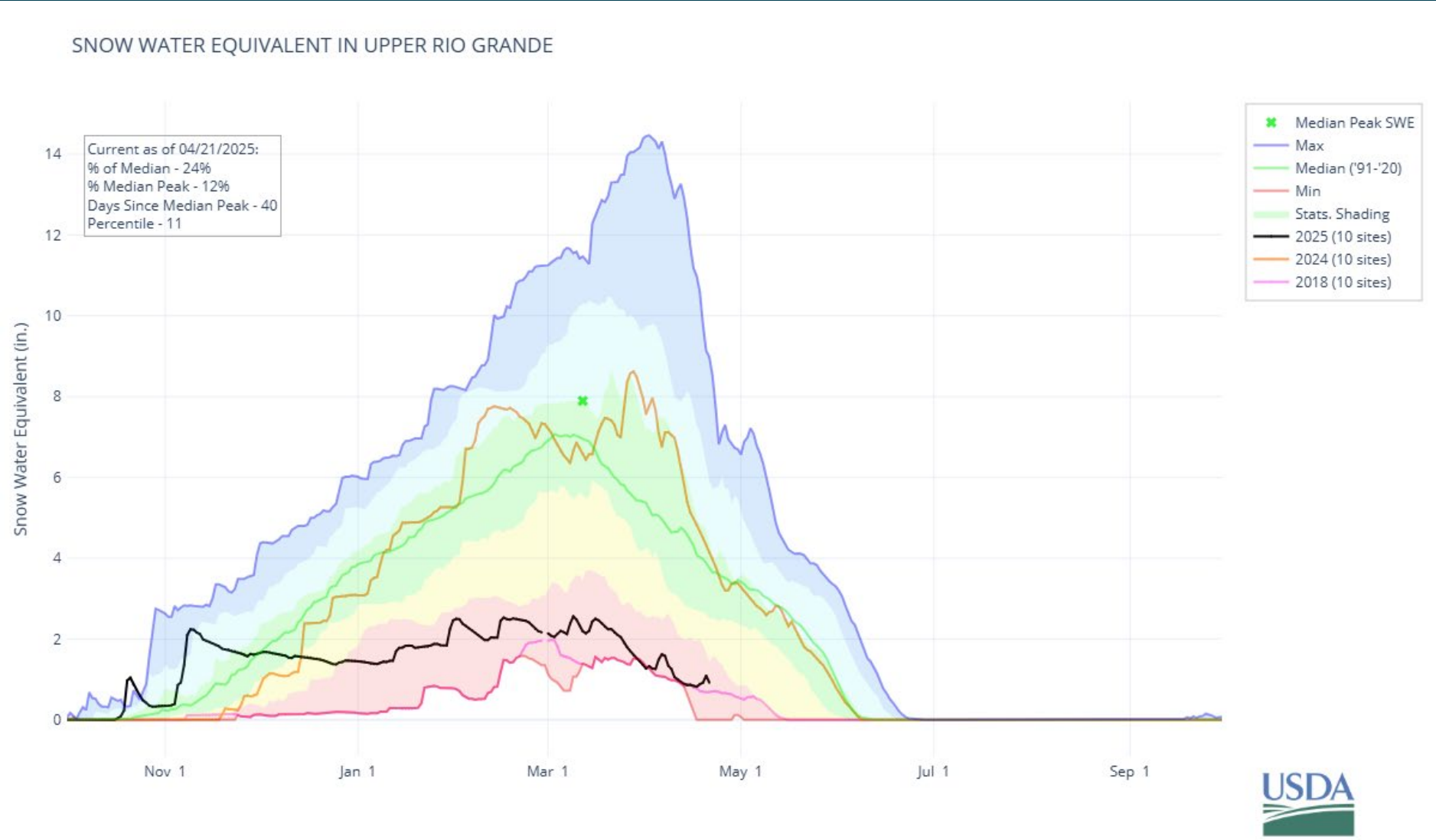


# Rio Chama

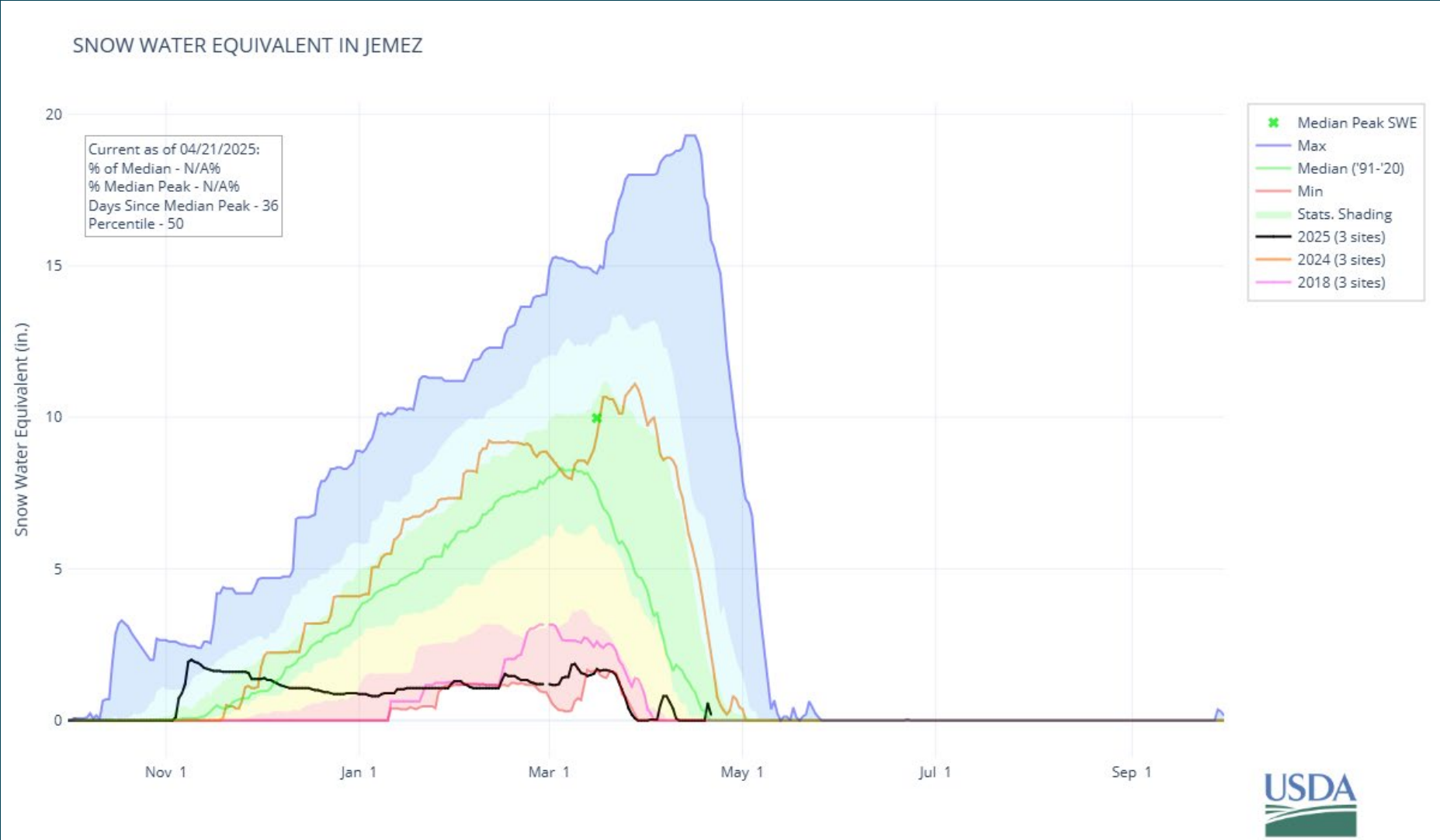




# Sangre de Cristos



# Jemez







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# 2025 Projected Water Operations



# Important Model Assumptions

## 2018 hydrograph shape

### P&P

- Storage call is 39,000 acre-ft
- Max storage in El Vado of 25,500 acre-ft and max storage in Abiquiu of 20,000 acre-ft

### El Vado Reservoir

- Store to 6,820 ft and hold for 30 days; afterwards can vary between 6,800 – 6,820 ft
- Plan to stay above 6,810 ft to avoid clogging issues of outlet works

### Caballo operations

- EBID, EP1, and Mexico expected start date of May 30
- EBID expected end date late June/early July and EP1 and Mexico expected end date of August
- Most recent similar year for expected irrigation supply was 2022
- Mexico supply is currently at 22% and may slightly increase
- Total release between 231 KAF (26%) and 307 KAF (35%) with most likely 249 KAF (28%)



# 2025 vs 2024 April Streamflow Forecasts

	2025			2024	
Location	af	%*	↑or↓ 25vs24	af	%*
Rio Grande @ Del Norte	310,000	65%	↓	445,000	93%
Rio Blanco @ diversion	27,000	56%	↓	42,000	88%
Navajo River @ diversion	29,000	52%	↓	48,000	86%
El Vado Inflow	62,000	33%	↓	150,000	81%
Nambe Falls Inflow	2,500	44%	↓	5,400	96%
Rio Grande @ Otowi	169,000	30%	↓	400,000	71%
Jemez River @ Jemez	8,400	29%	↓	39,000	134%
Rio Grande @ San Marcial	7,700	2%	↓	220,000	64%

\*Percentage based on the 1991-2020 Median

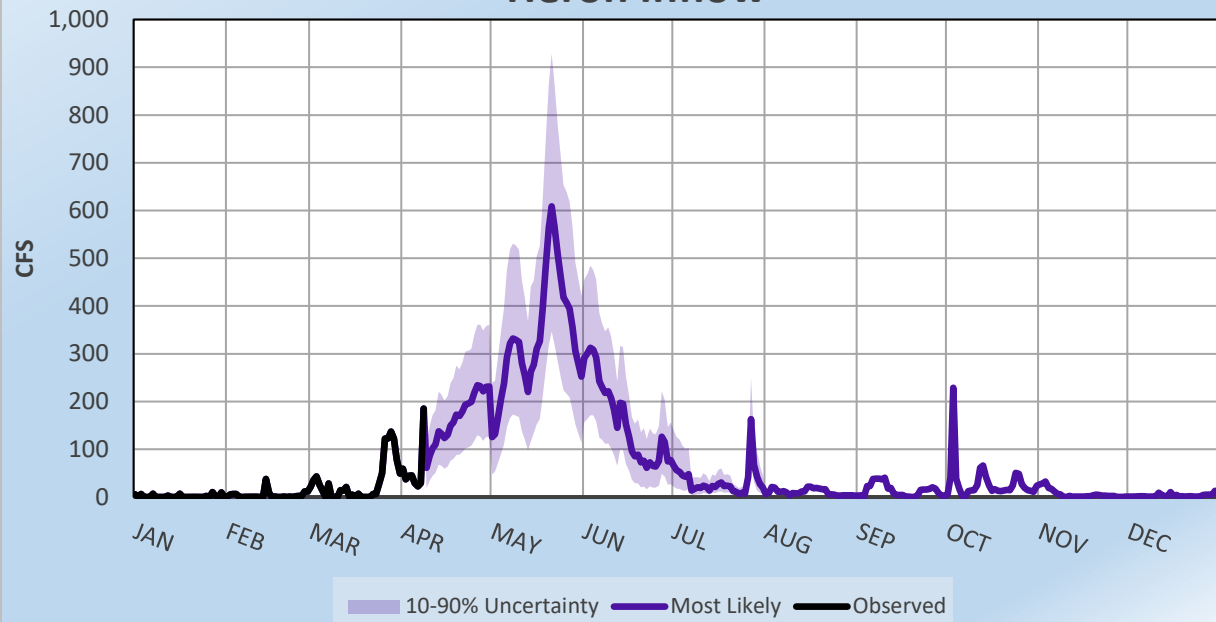




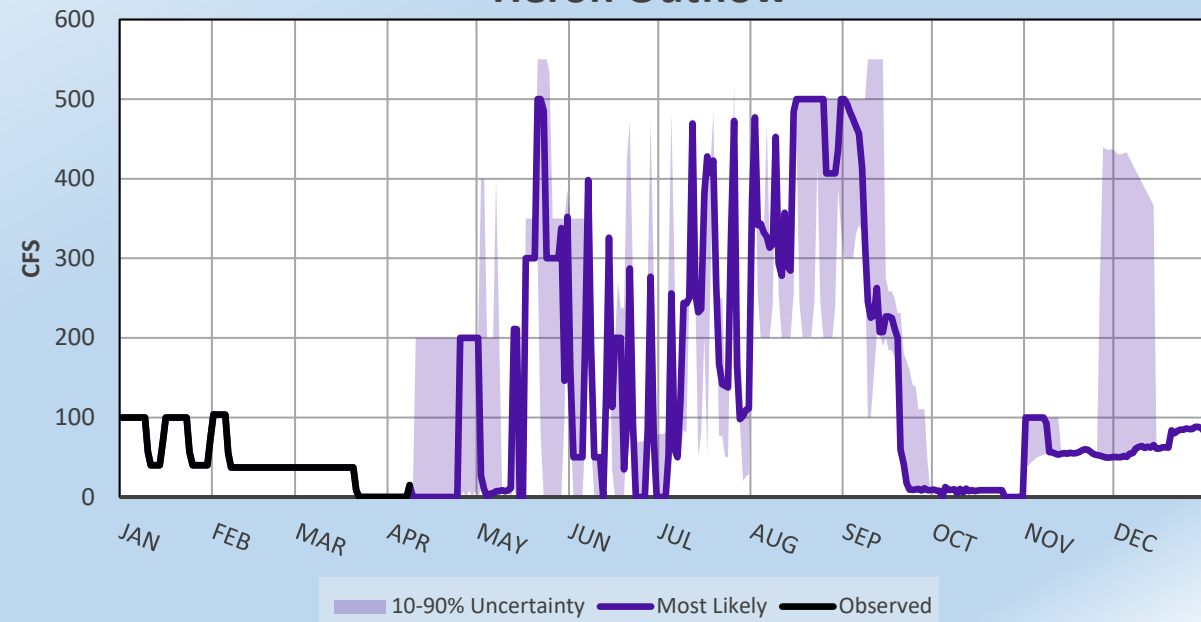
# Heron Dam



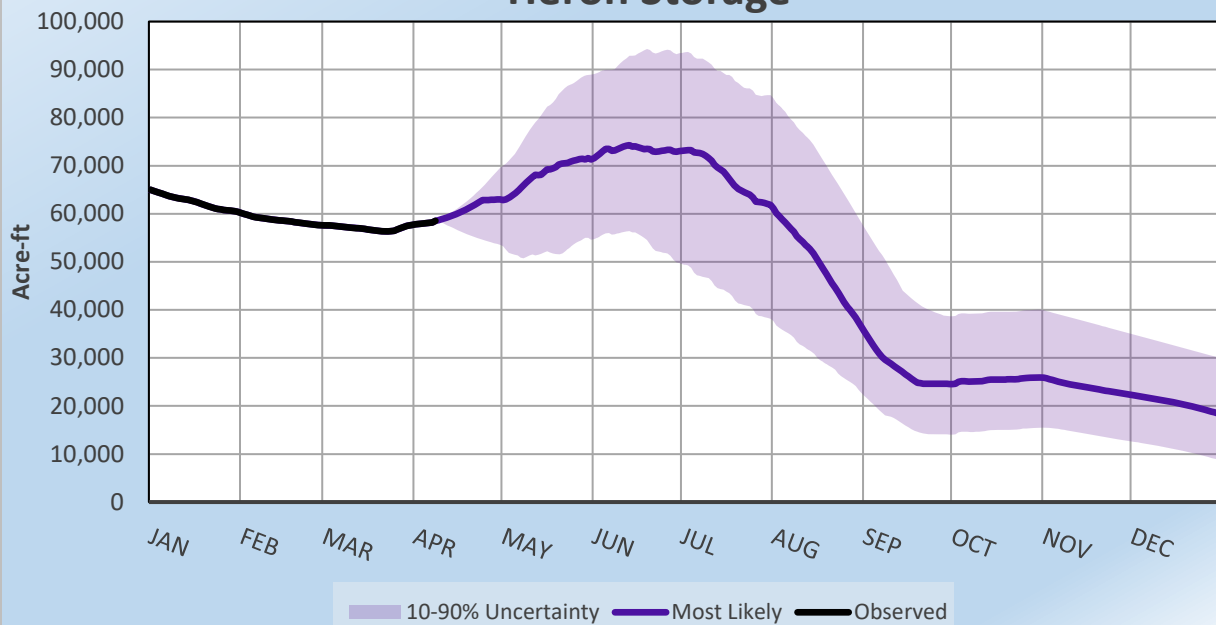
### Heron Inflow



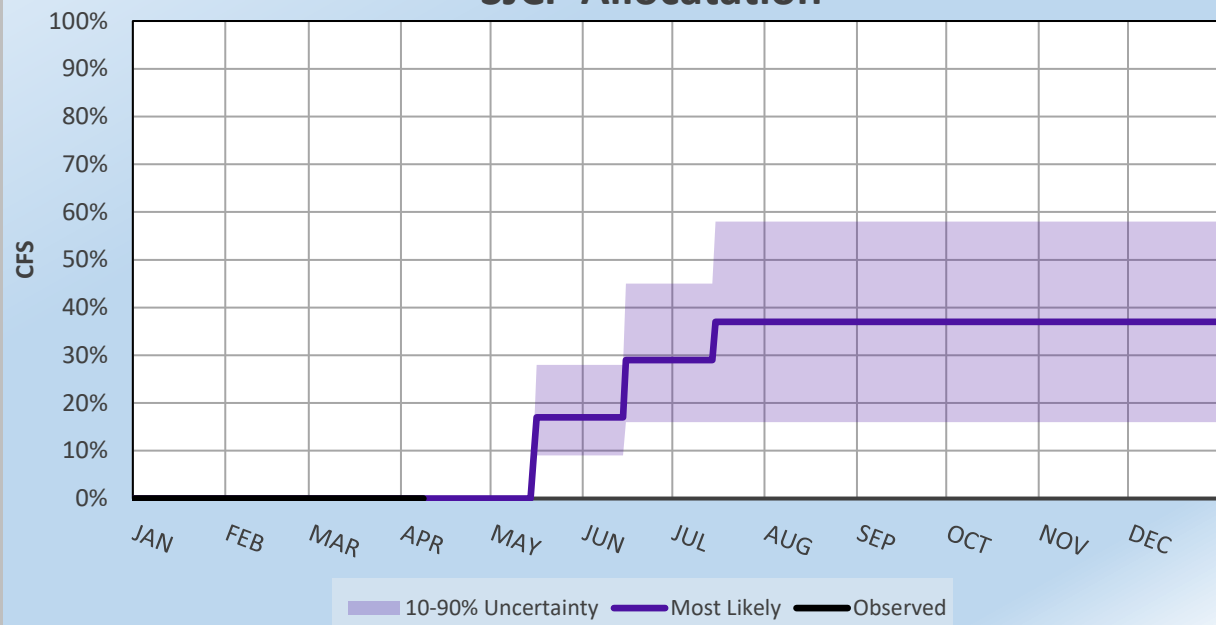
### Heron Outflow



### Heron Storage



### SJCP Allocation



# El Vado Dam





# El Vado Storage Evaluation Plan

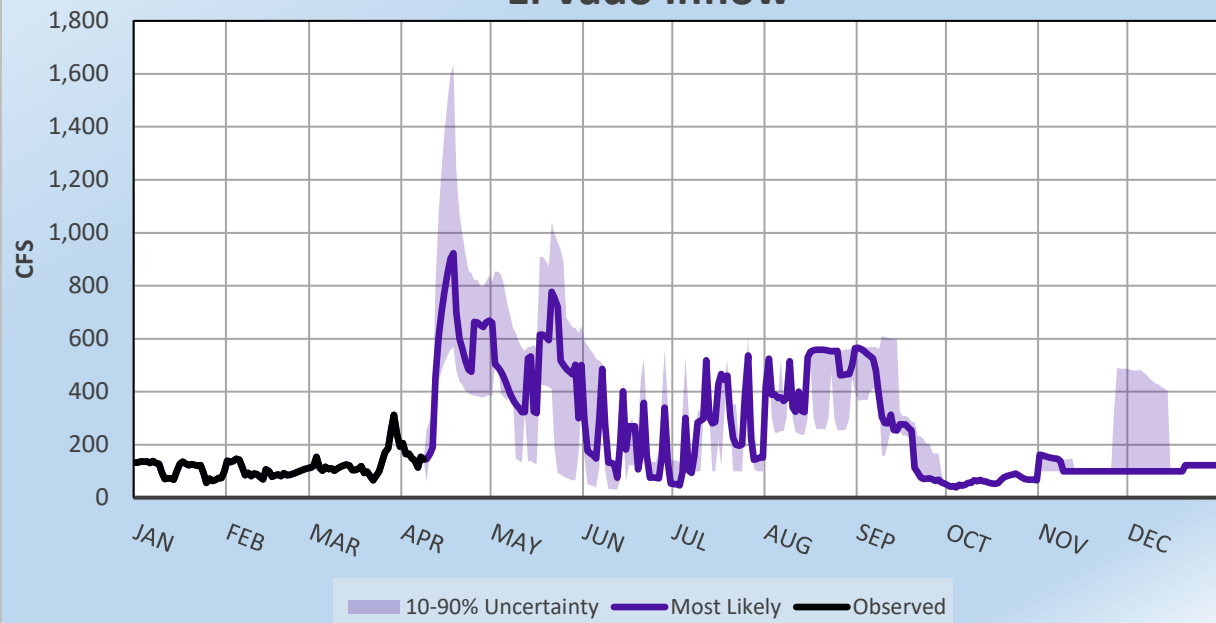
- “First fill” is standard after construction
- Construction restriction was 6,785 ft (1,912 af)
- Staged filling (roughly 191,000 af total storage)
  - ✓ Elevation 6,800 ft (roughly 9,400 af), minimum of 10 days
  - ✓ Elevation 6,810 ft (roughly 16,300 af), minimum of 1 month
  - Elevation 6,820 ft (roughly 25,200 af), minimum of 1 month



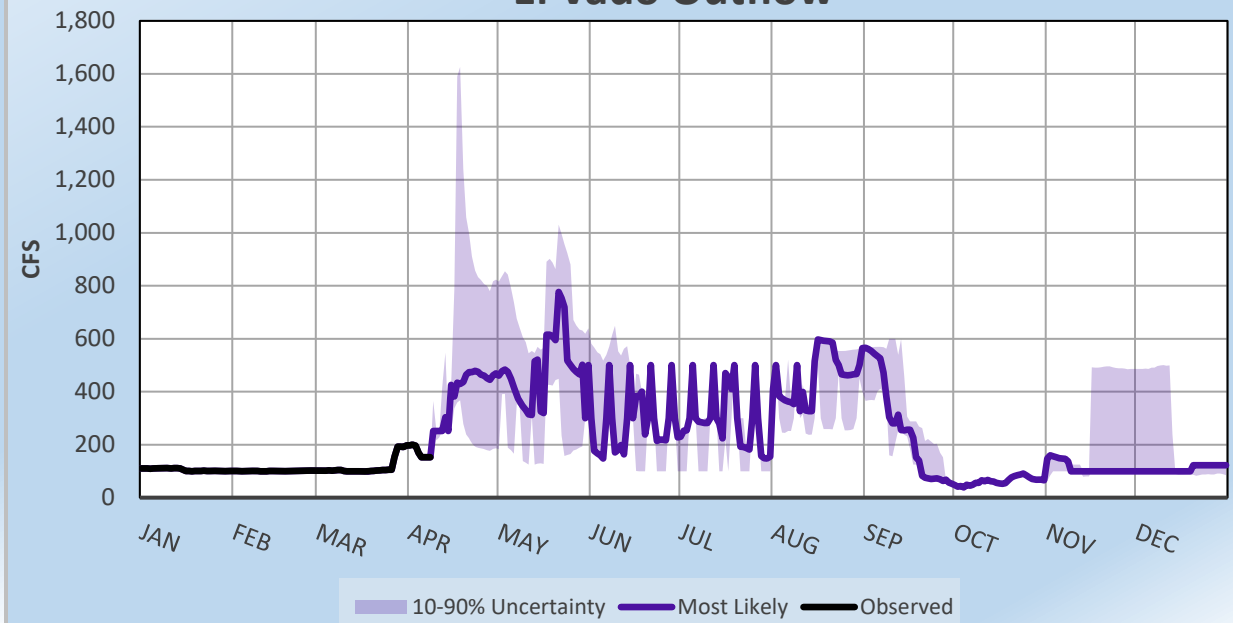
- Stage 1 (6,800 ft) successfully ended November 15
- Stage 2 (6,810 ft) was also successful
- Instrumentation to measure movement of face plates would likely be impacted by further increases → elevation will remain at 6,810 ft



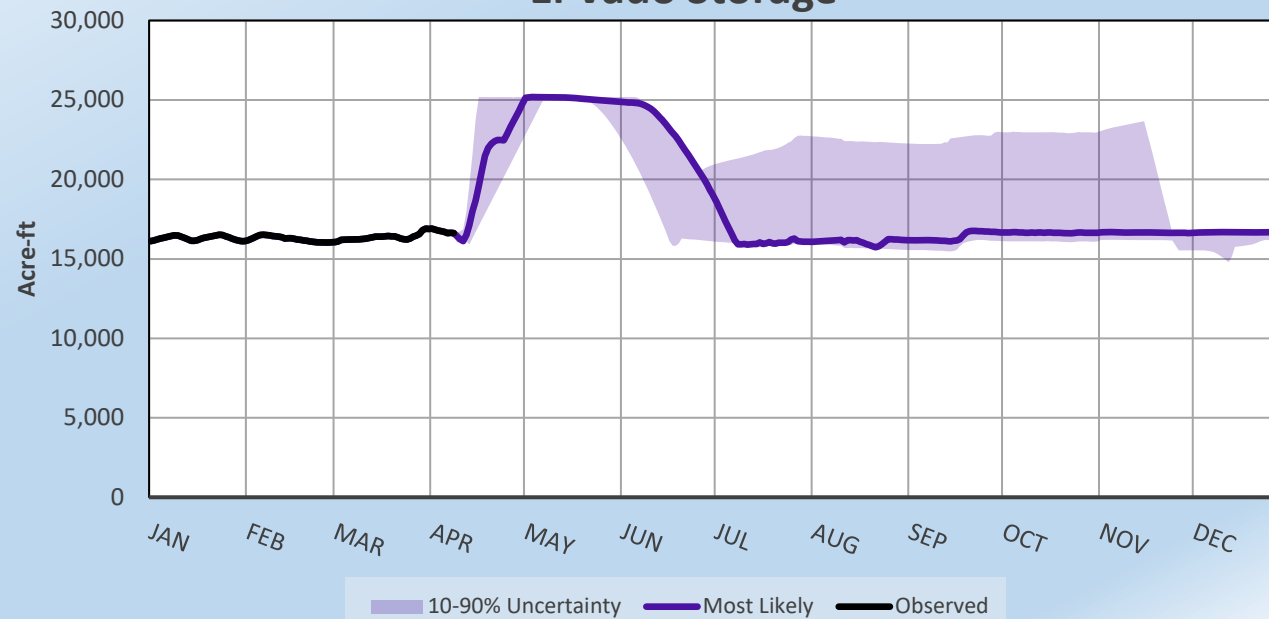
### El Vado Inflow



### El Vado Outflow



### El Vado Storage

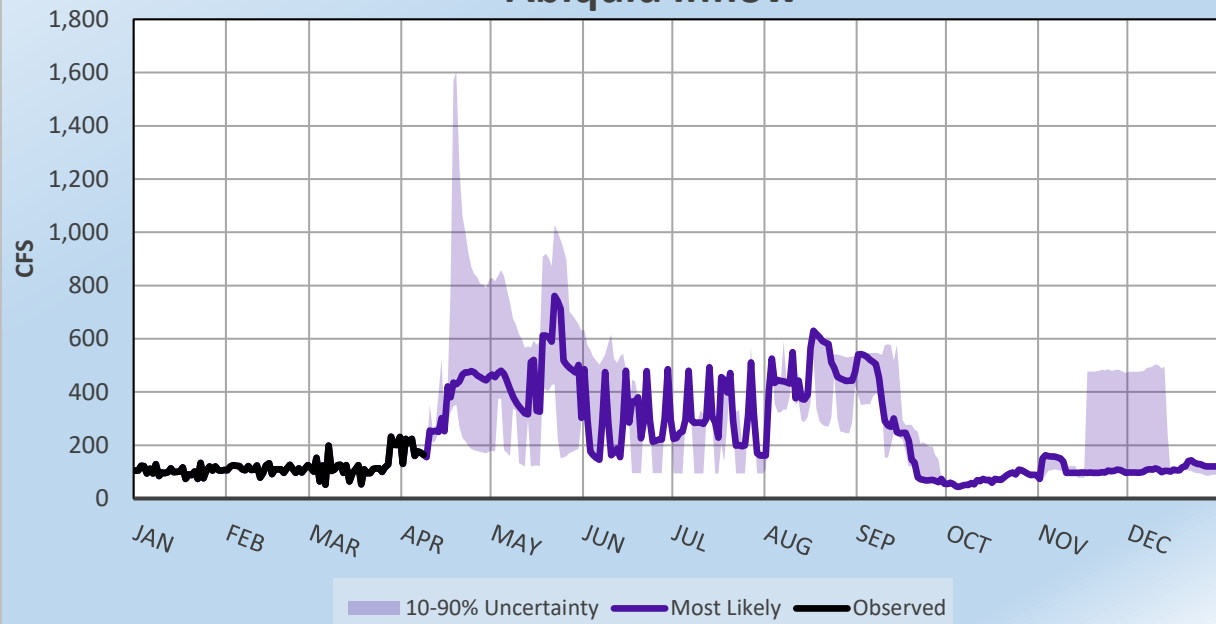


# Abiquiu Dam

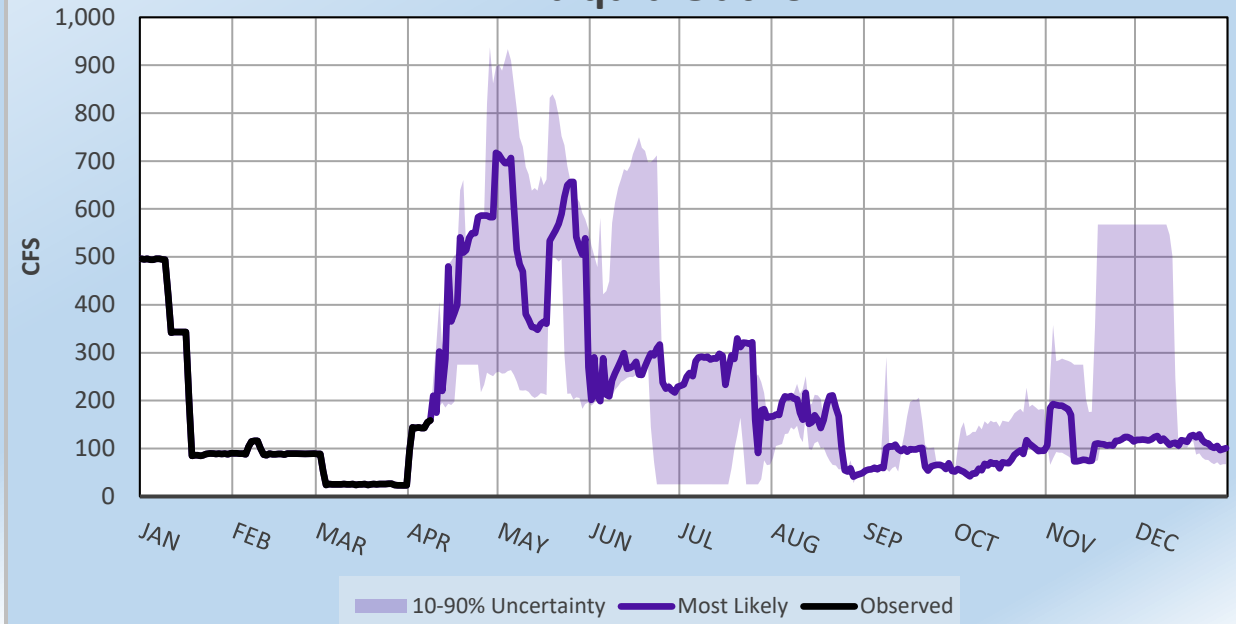




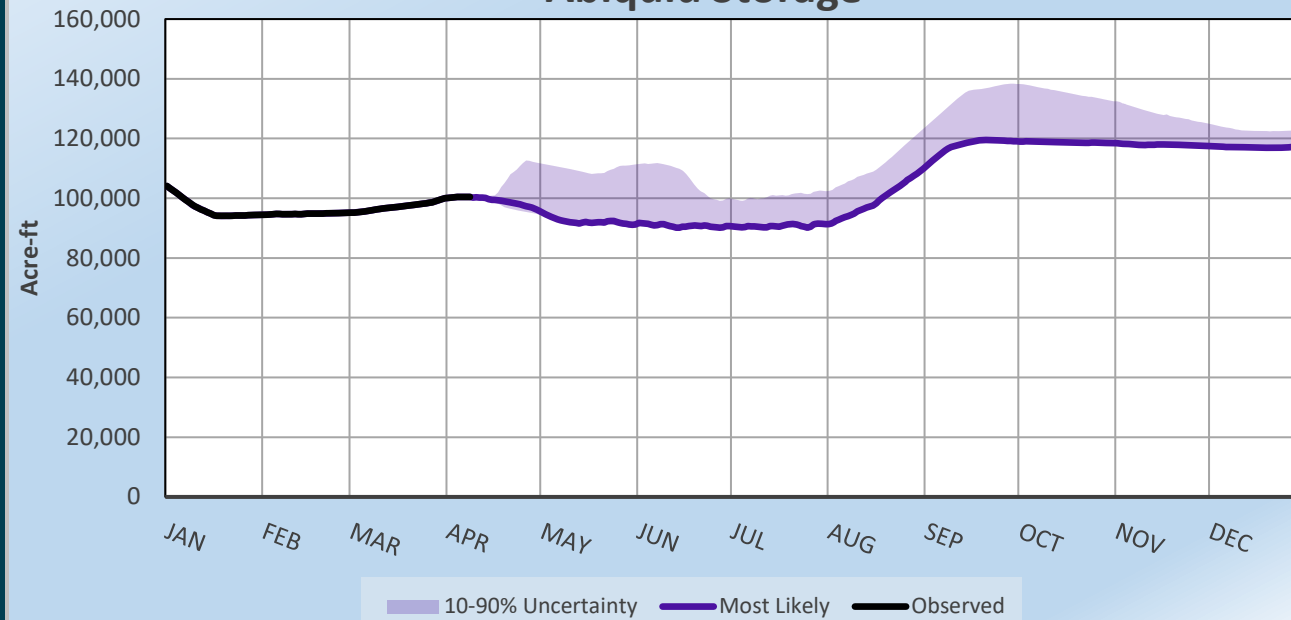
### Abiquiu Inflow



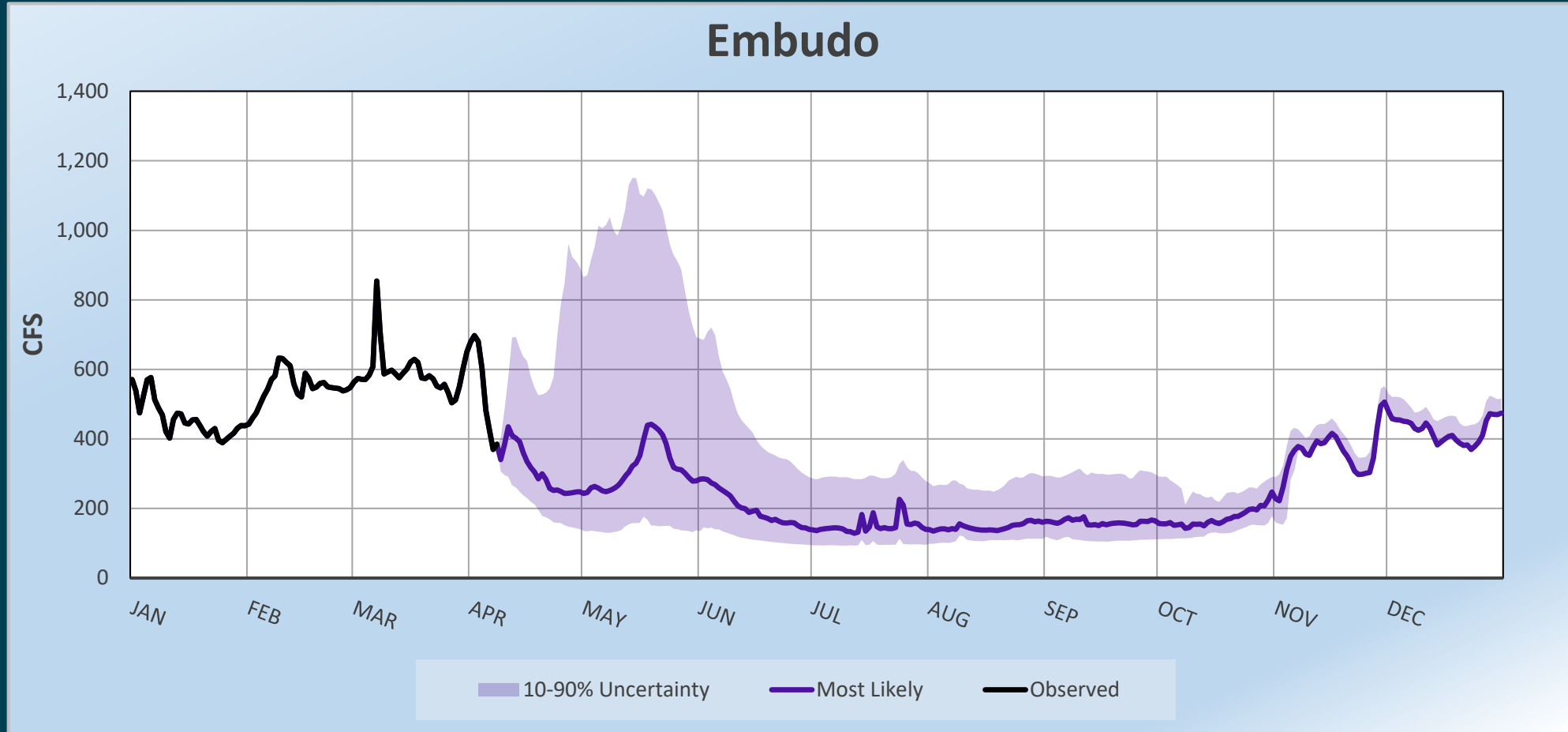
### Abiquiu Outflow



### Abiquiu Storage



# Estimated 2025 Flows at Embudo

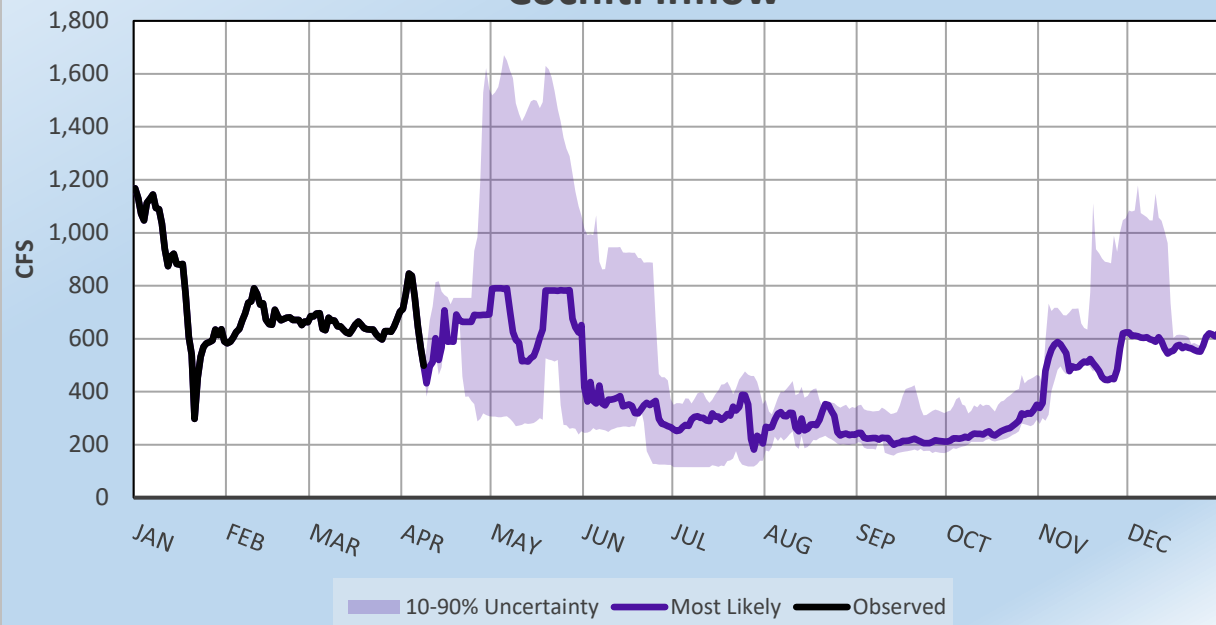


# Cochiti Dam

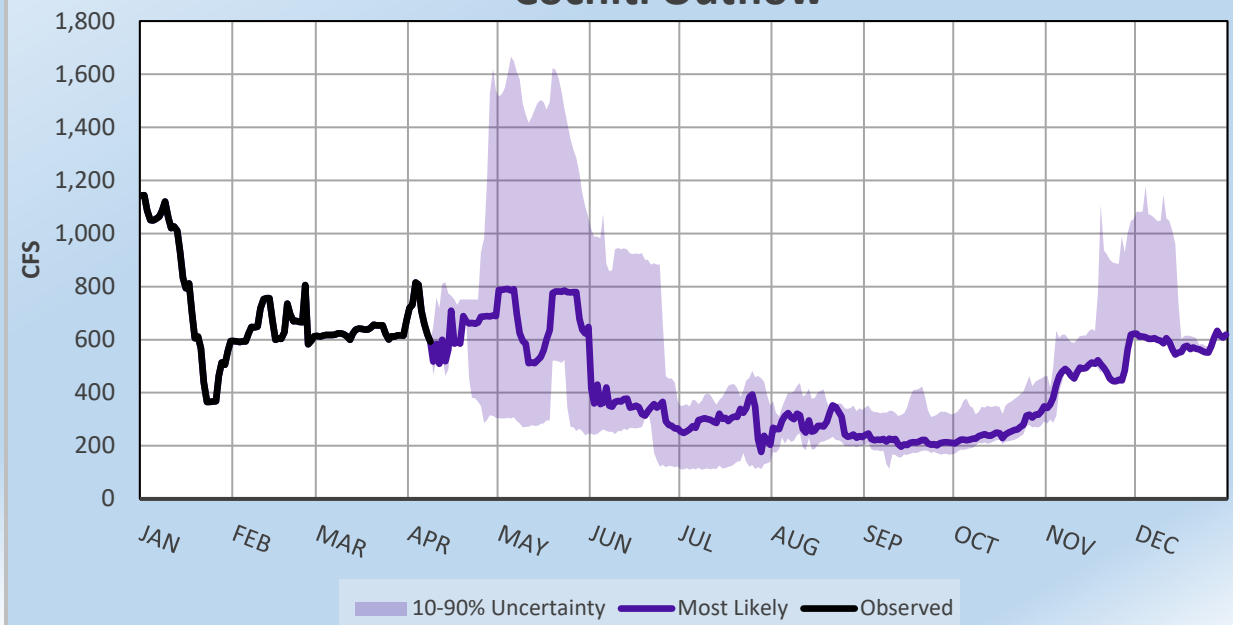




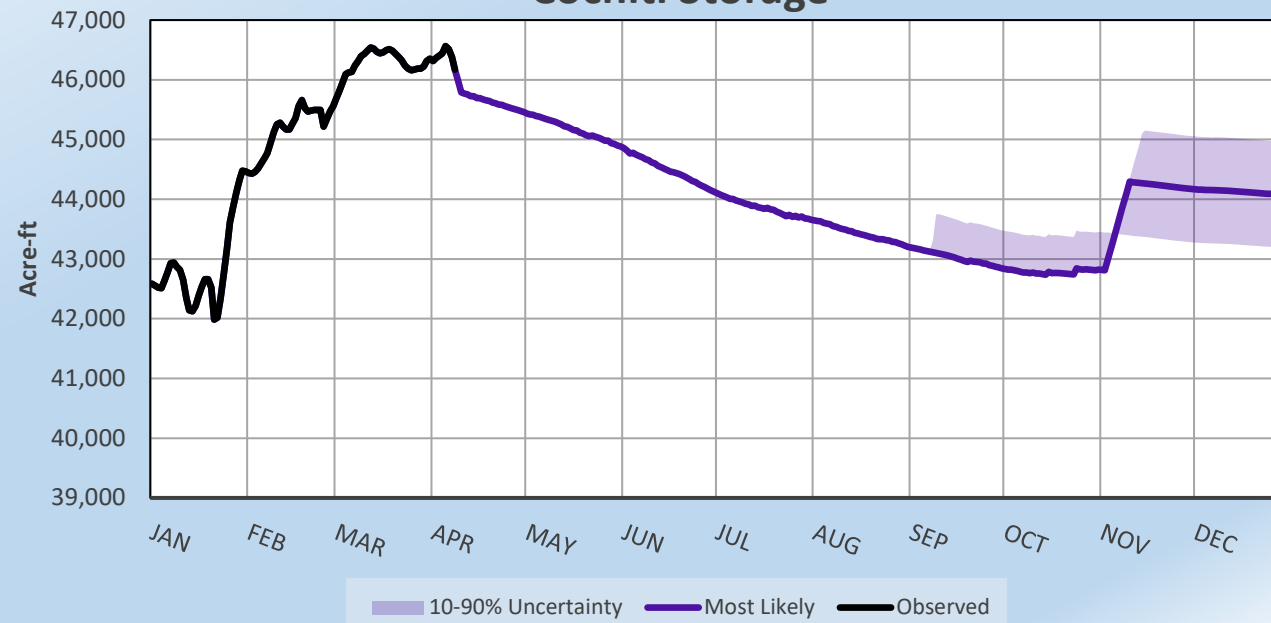
### Cochiti Inflow



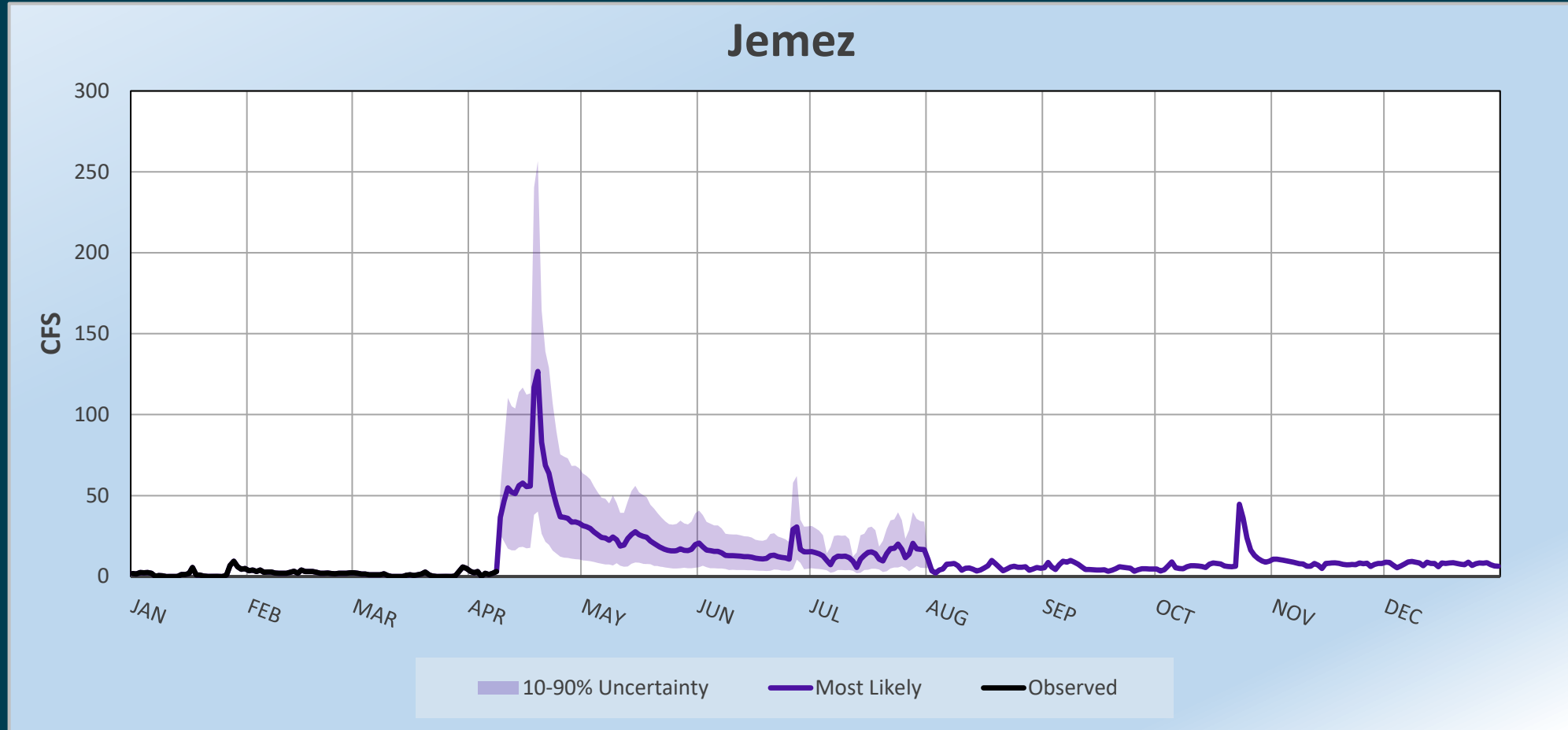
### Cochiti Outflow



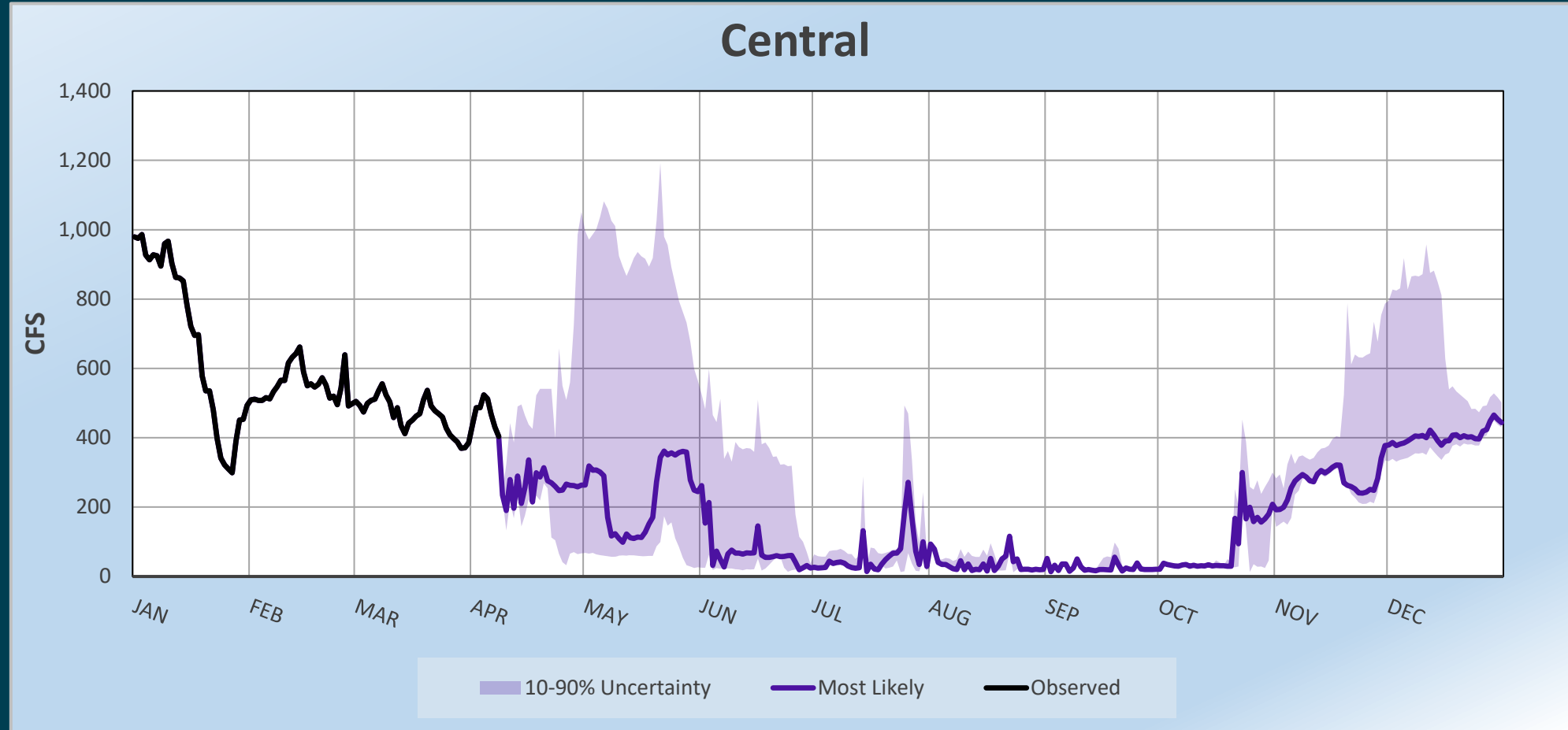
### Cochiti Storage



# Estimated 2025 Jemez Canyon Dam Outflow

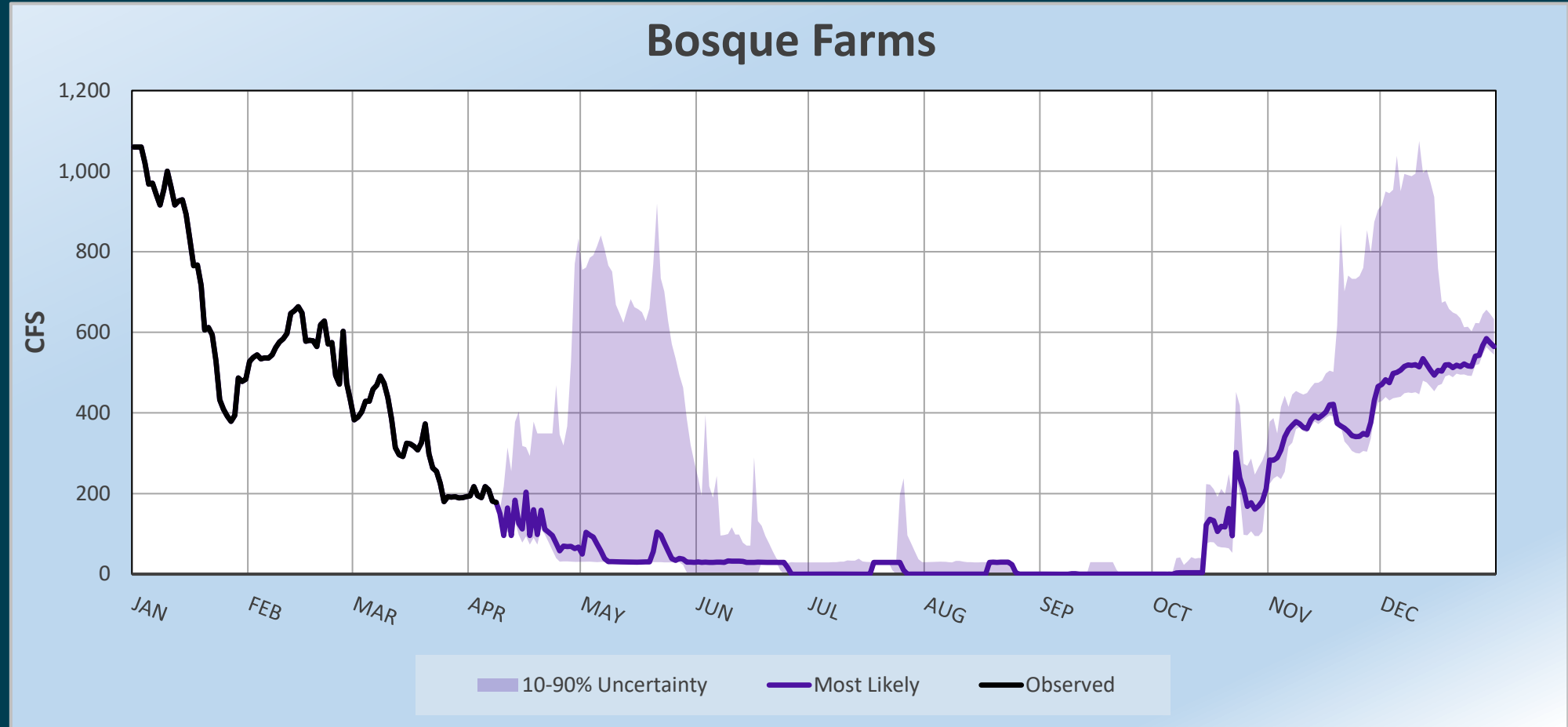


# Estimated 2025 Flows at Central

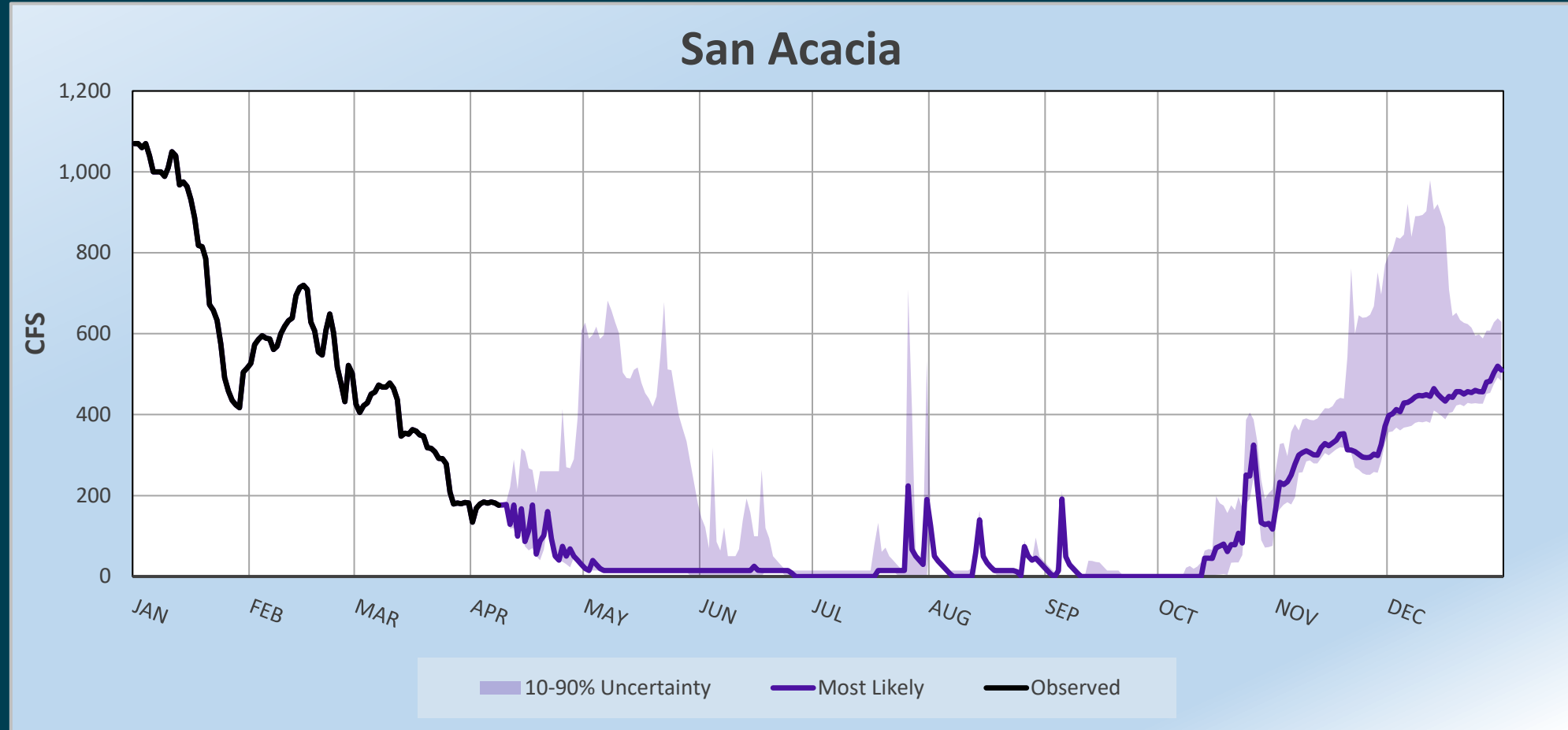




# Estimated 2025 Flows at Bosque Farms



# Estimated 2025 Flows at San Acacia

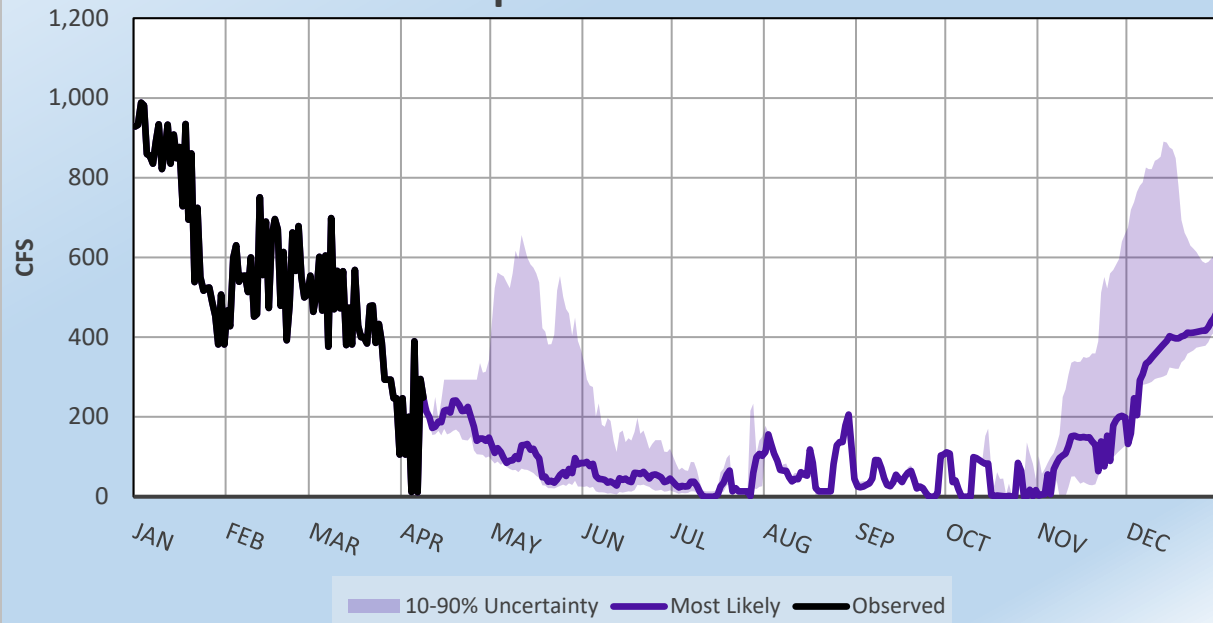


# Elephant Butte Dam

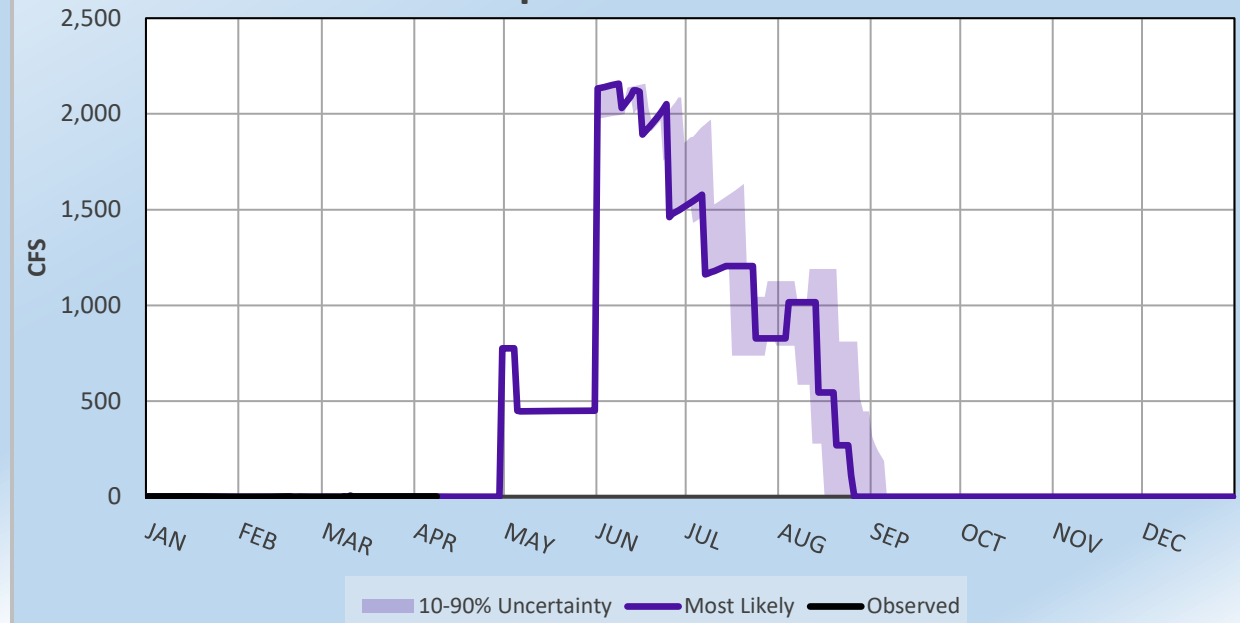




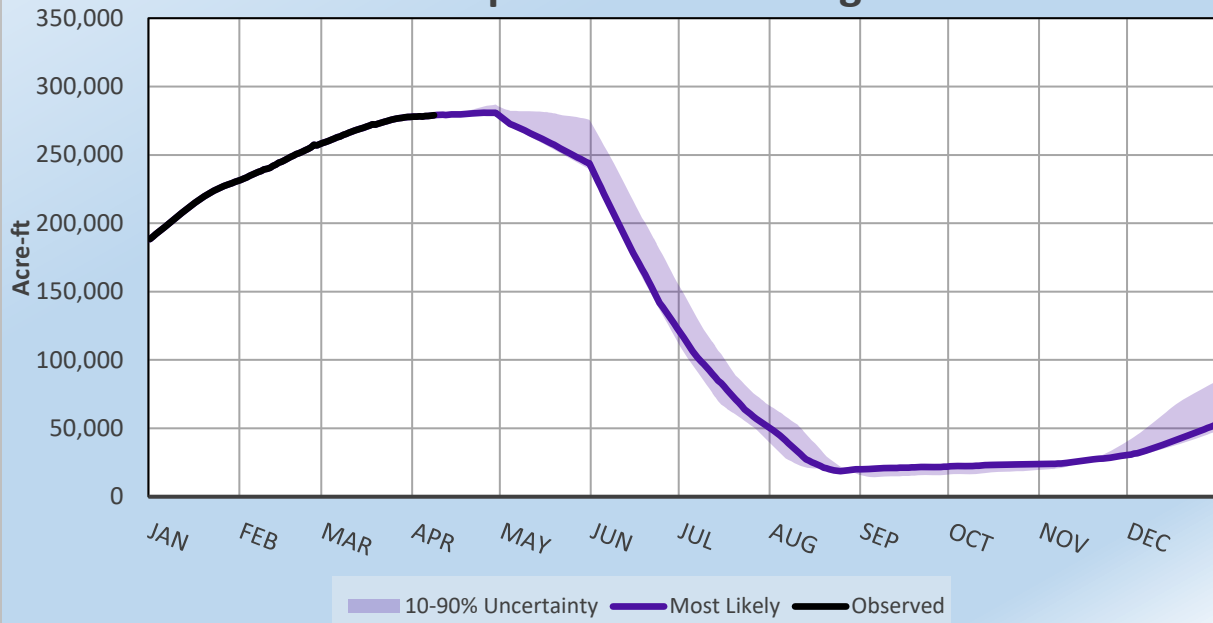
### Elephant Butte Inflow



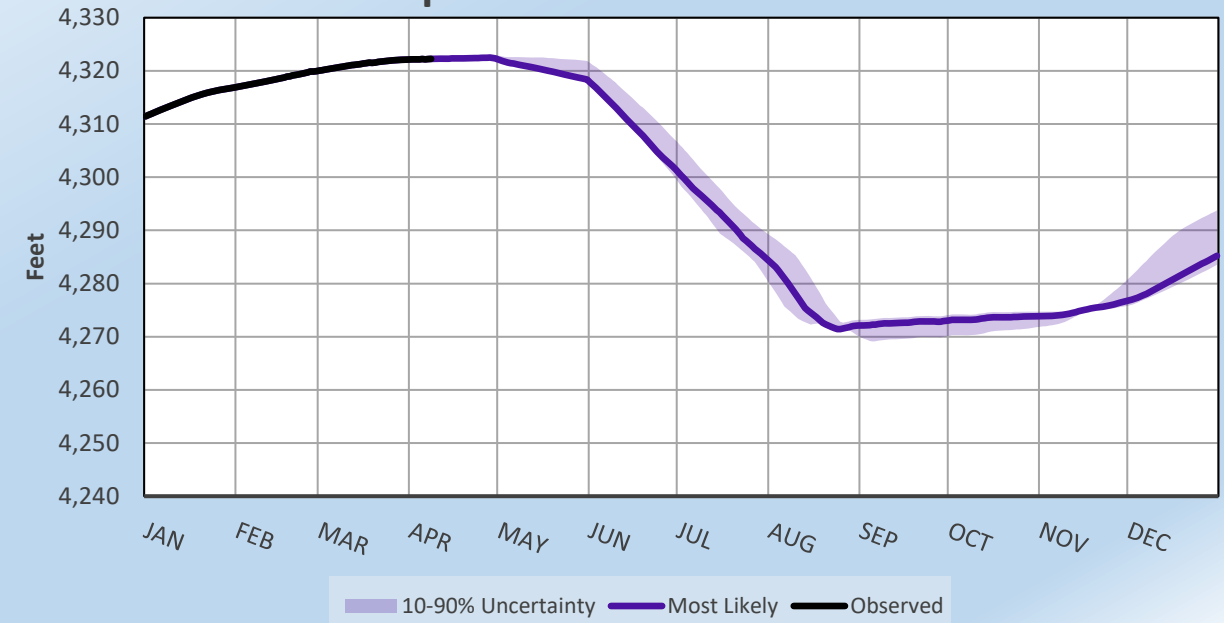
### Elephant Butte Outflow



### Elephant Butte Storage



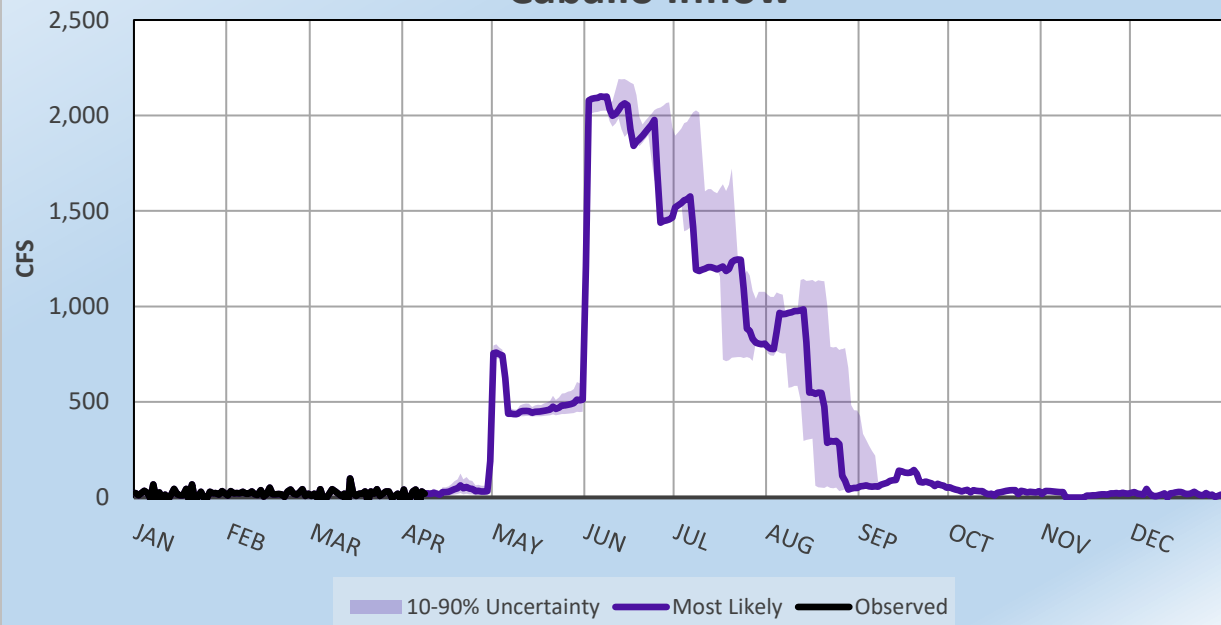
### Elephant Butte Pool Elevation



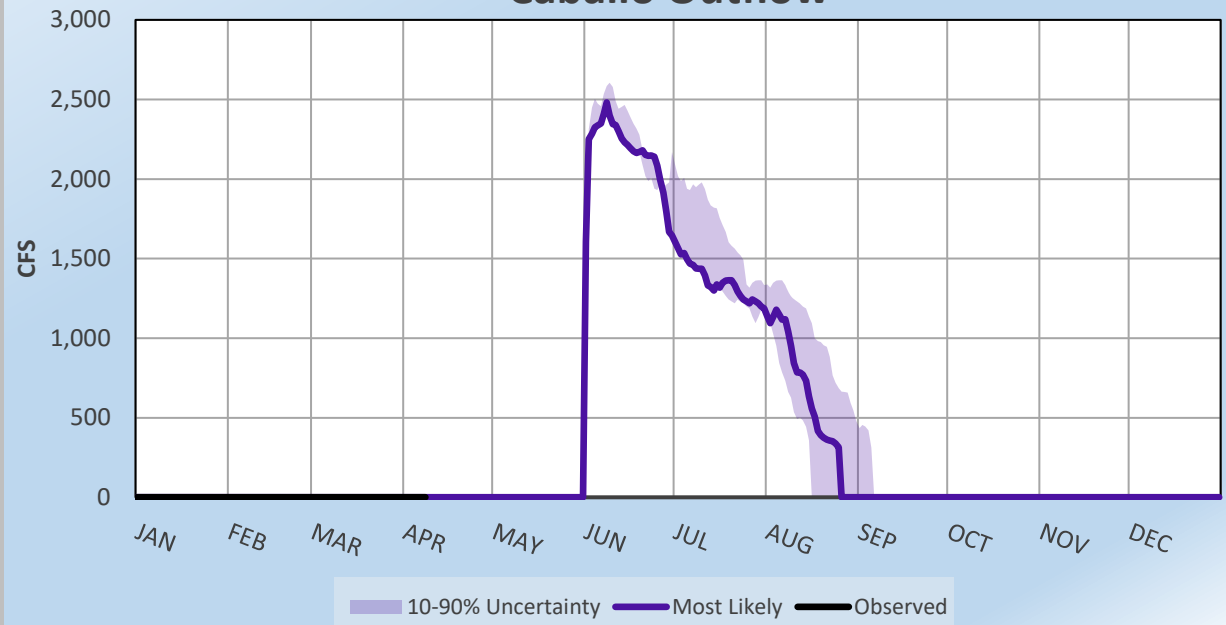
# Caballo Dam



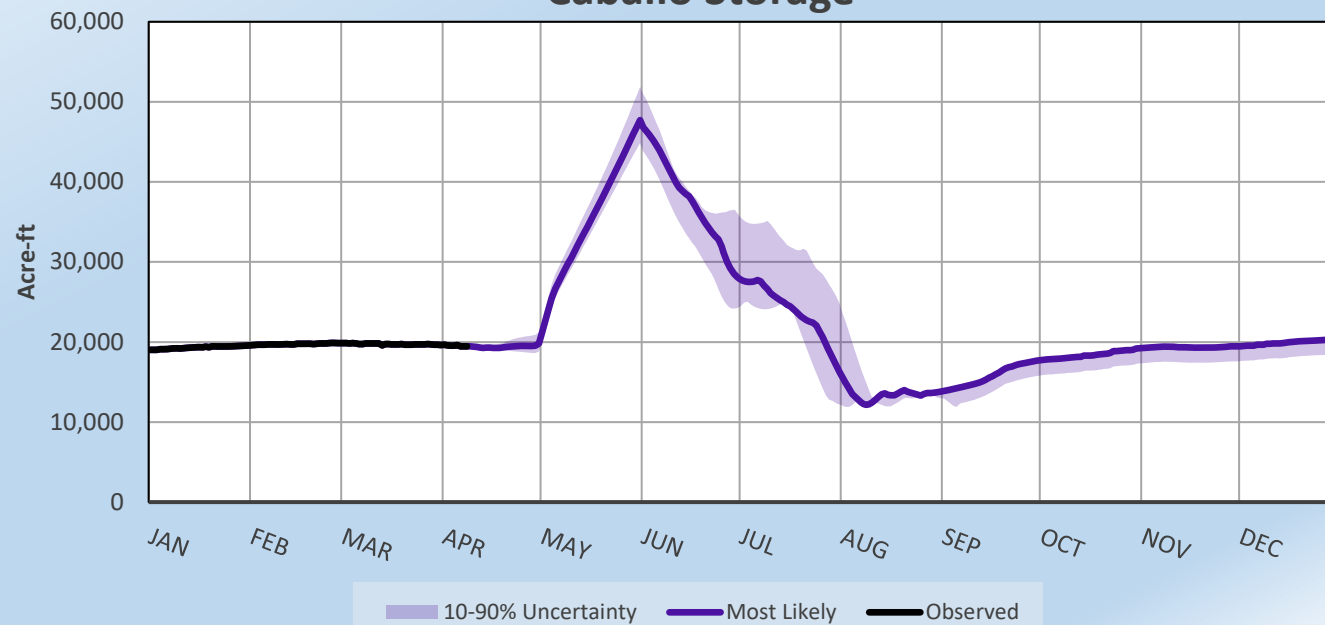
### Caballo Inflow



### Caballo Outflow

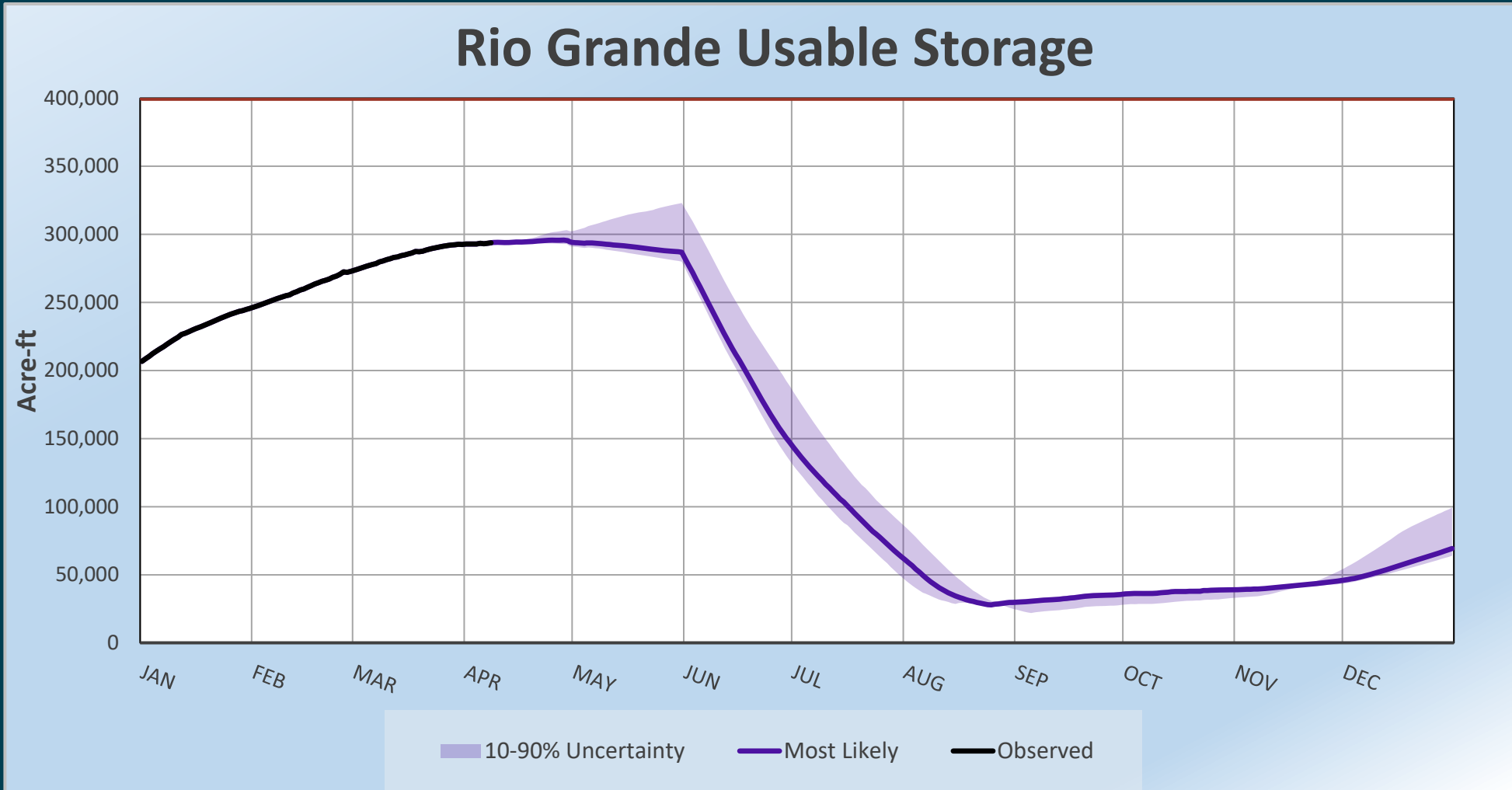


### Caballo Storage





# Estimated 2025 Rio Grande Usable Storage



**In Article  
VII all year**



# Rio Grande AOP Dashboard



<https://www.usbr.gov/uc/albuq/water/index.html>

## Albuquerque Water Operations

### Data

#### HydroData

Reservoir Data (storage, inflow, releases, elevation & more)

Gage Data (flow, flow volume & side inflows.)

#### Tools and Dashboards

Middle Rio Grande Water Management Toolbox

Water Operations Dashboard

[Rio Grande Annual Operating Plan \(AOP\) Projections](#)

#### Basin Overview

HydroData Rio Grande Basin Map (current reservoir capacity & current and historical snow and precipitation charts)

HydroData Upper Colorado Basin Maps

Weekly Hydrology Summary

Teacup Diagrams

Real-Time-Data Text Files:

## Rio Grande AOP - Gages

Inputs

Gages

Reservoirs

Other Results

Read Me



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### Gage

☒ Lobatos

☐ Embudo

☐ Azotea Tunnel

☐ El Vado Local Inflow

☐ Below El Vado

☐ Below Abiquiu

☐ Otowi

☐ Below Cochiti

☐ Below Jemez

☐ Central

☐ Bosque Farms

☐ San Acacia Floodway

☐ US Hwy 380

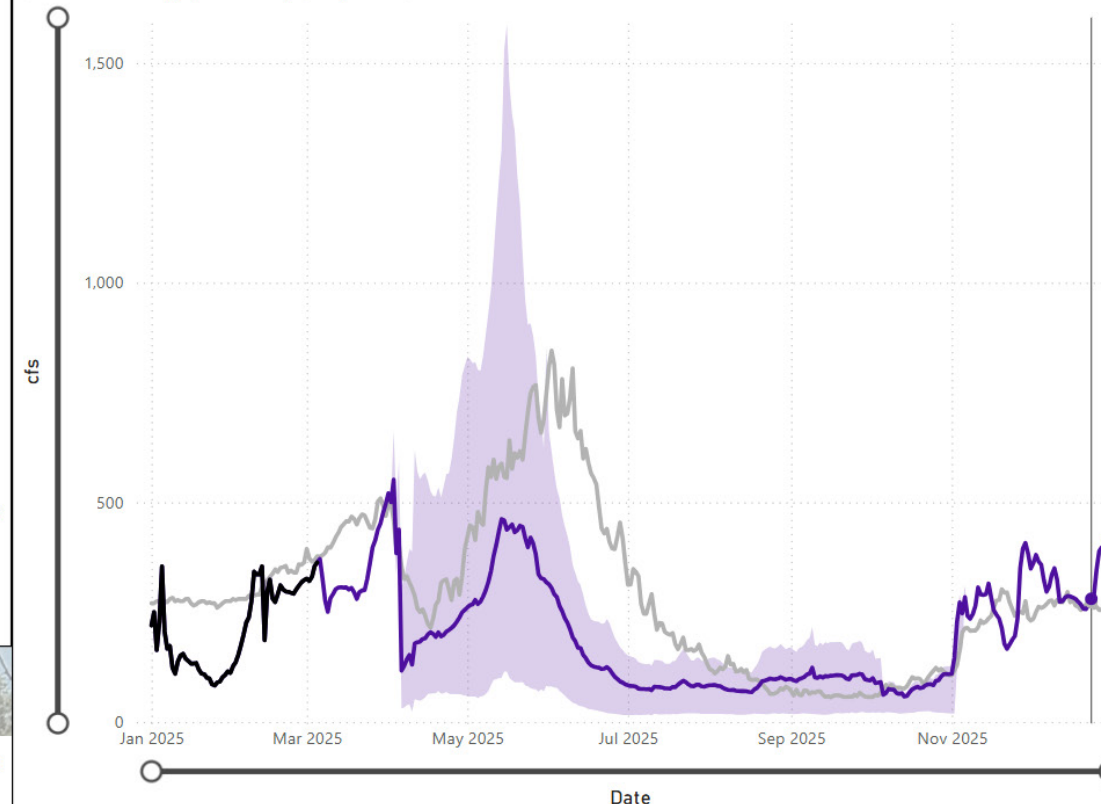
☐ San Marcial Floodway

☐ Below Elephant Butte

☐ Below Caballo

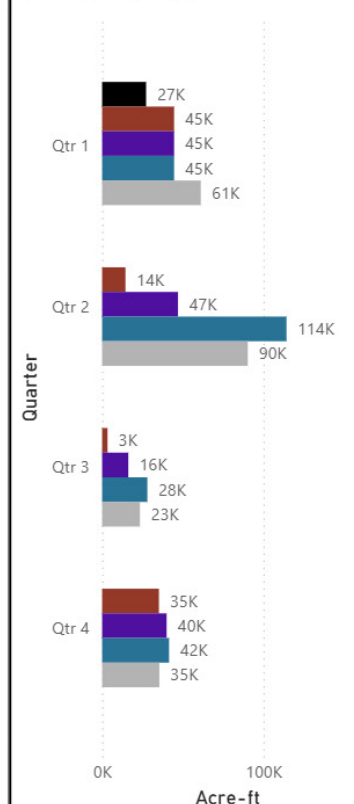
### Lobatos

● Historical Average (1991-2020) ● Projected ● Observed



### Flow Volume

● Obs ● 90% (Low) ● Most Probable



NOTE: Results are subject to change



# Questions / Comments

Slide deck will be posted at:  
<https://www.usbr.gov/uc/DocLibrary/plans.html>



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