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Pecos River 2024 Annual Operating Plan

April 18, 2024

Eric Joseph, Reclamation & Garret Ross, USACE















Pecos River Basin Major Irrigation Facilities

- Santa Rosa Dam
- Sumner Dam
- Brantley Dam
- Avalon Dam

- FSID: Fort Sumner Irrigation District
- CID: Carlsbad Irrigation District



Facility Information

| Dam | Agency Owner/Operator | | Authorized Purpose | | |
|------------|---|---|---|--|-------------------------------------|
| | Reclamation | USACE | Water Supply | Recreation | Flood Control |
| Santa Rosa | |  |  |  | <input checked="" type="checkbox"/> |
| Sumner |  | |  |  | <input checked="" type="checkbox"/> |
| Two Rivers | |  | | | <input checked="" type="checkbox"/> |
| Brantley |  | |  |  | <input checked="" type="checkbox"/> |
| Avalon |  | |  | | |



Hydrology Terms



- Hydrograph: graph of flowrate over time
- cfs: cubic feet per second (flowrate)
- ac-ft: acre-feet (volume), amount of water needed to cover one acre to depth of one foot
- 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

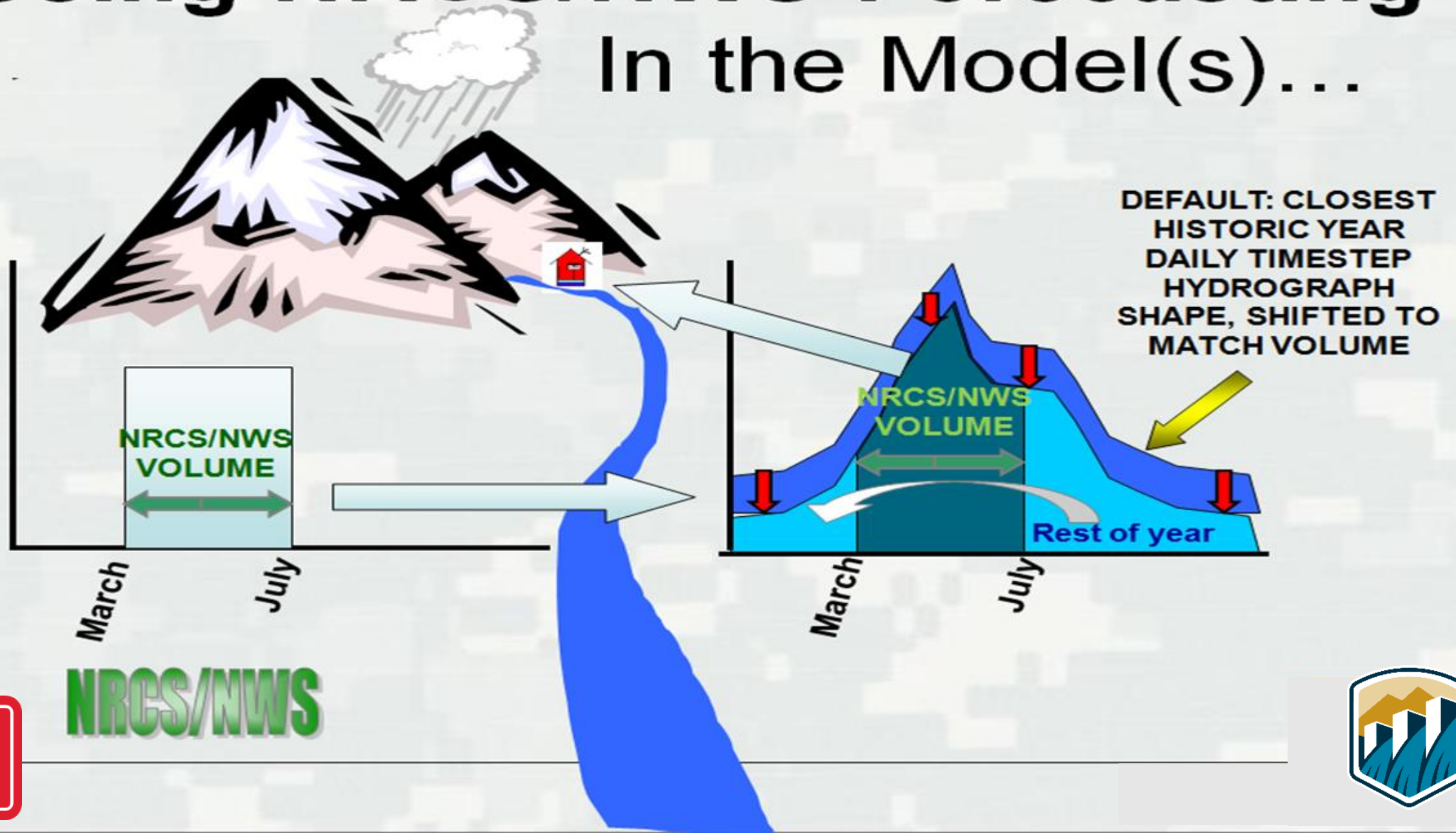


AOP Model Forecast



- 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
- Reservoir operations based on nature (headwater flows) and policies
 - Policy 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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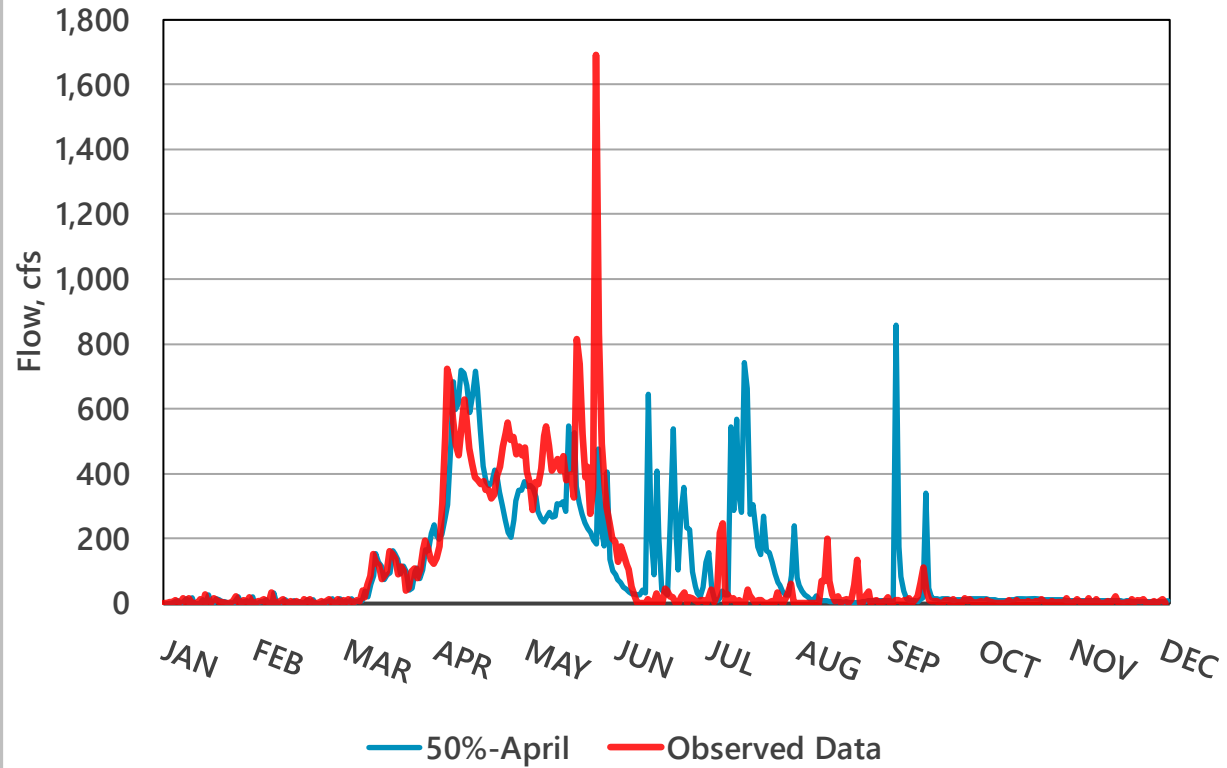
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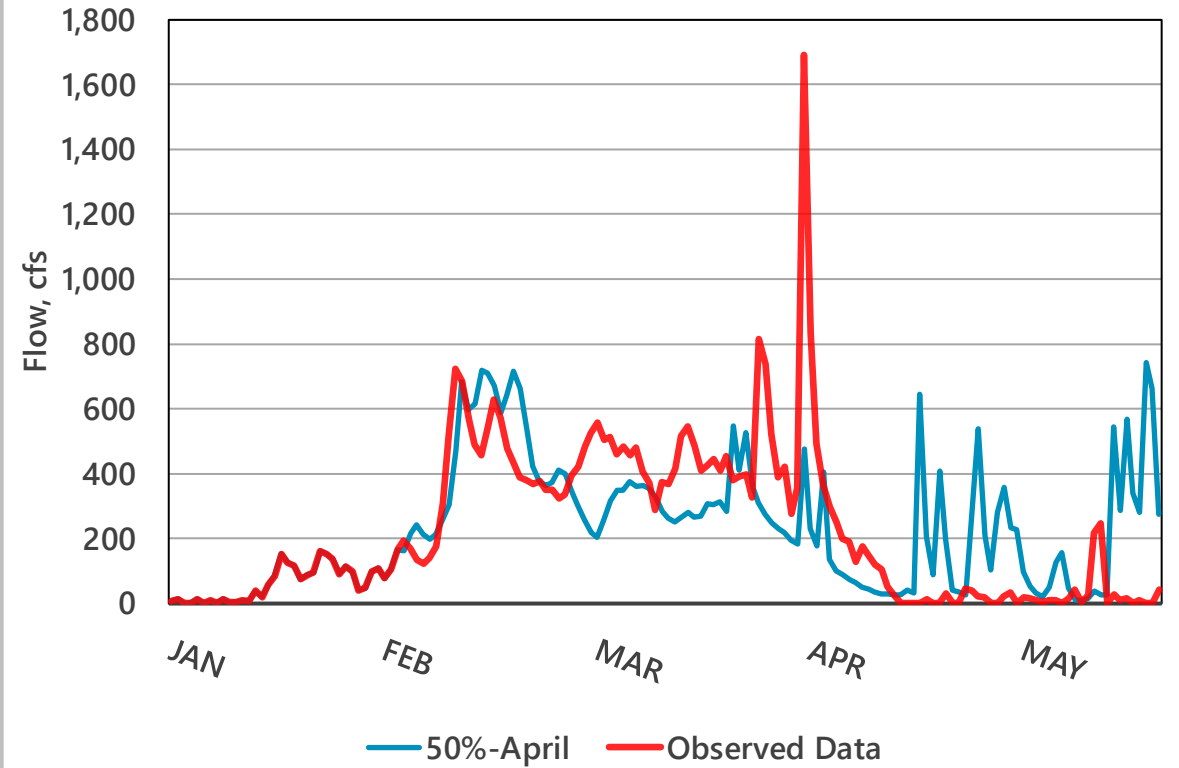
2023: The Year in Review

2023 Runoff Comparison

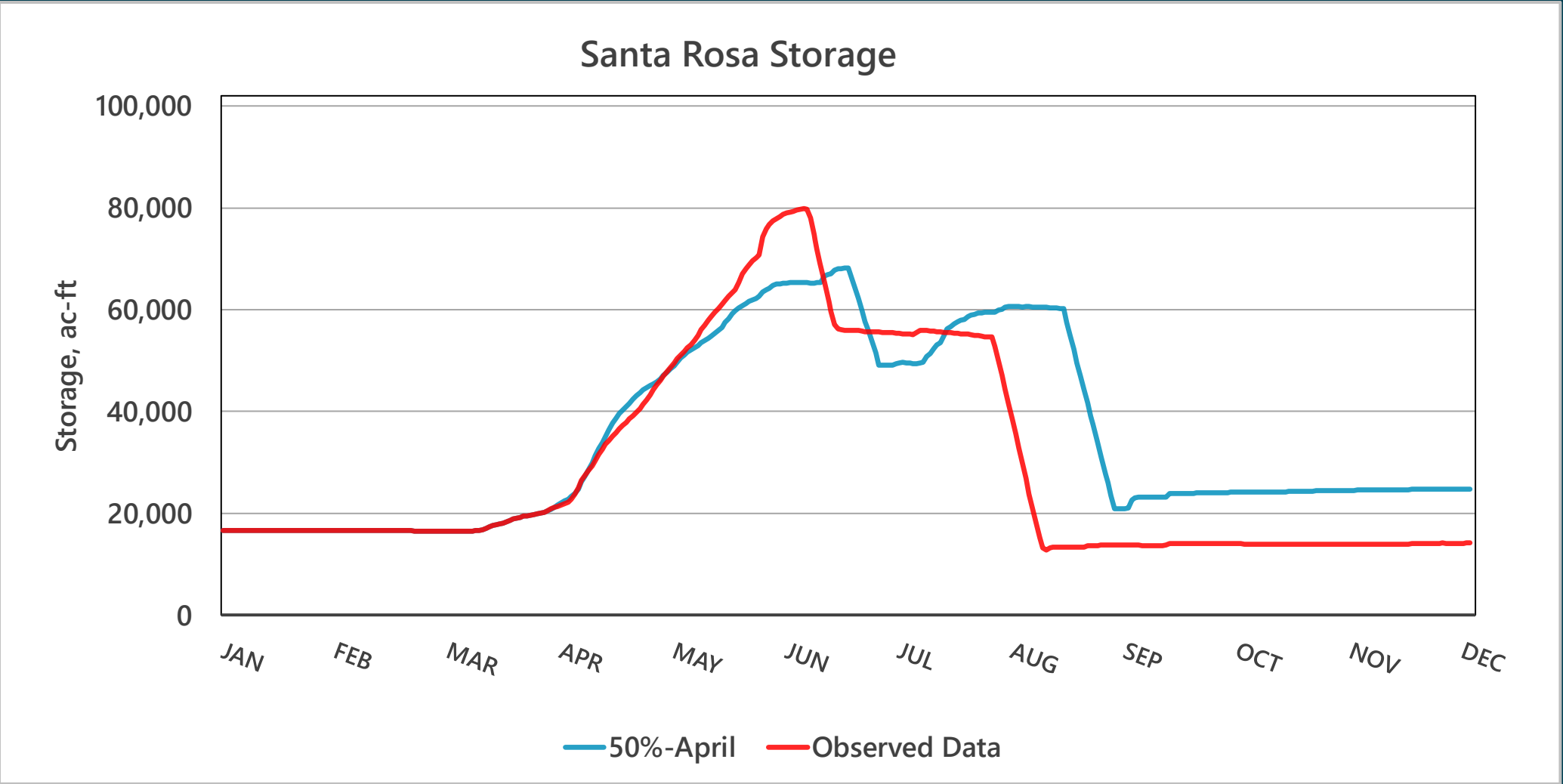
Santa Rosa Inflow



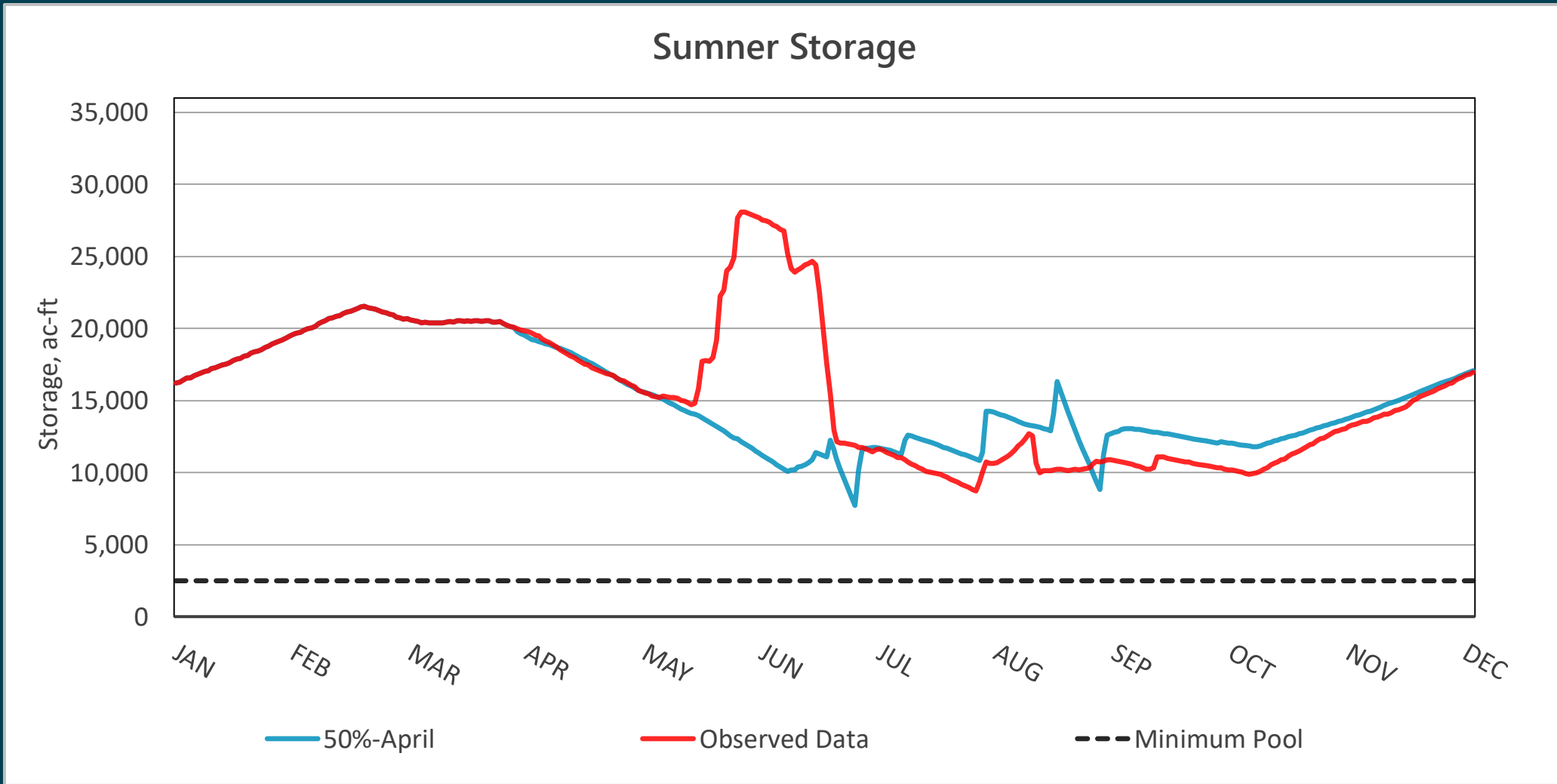
Santa Rosa Inflow January - July



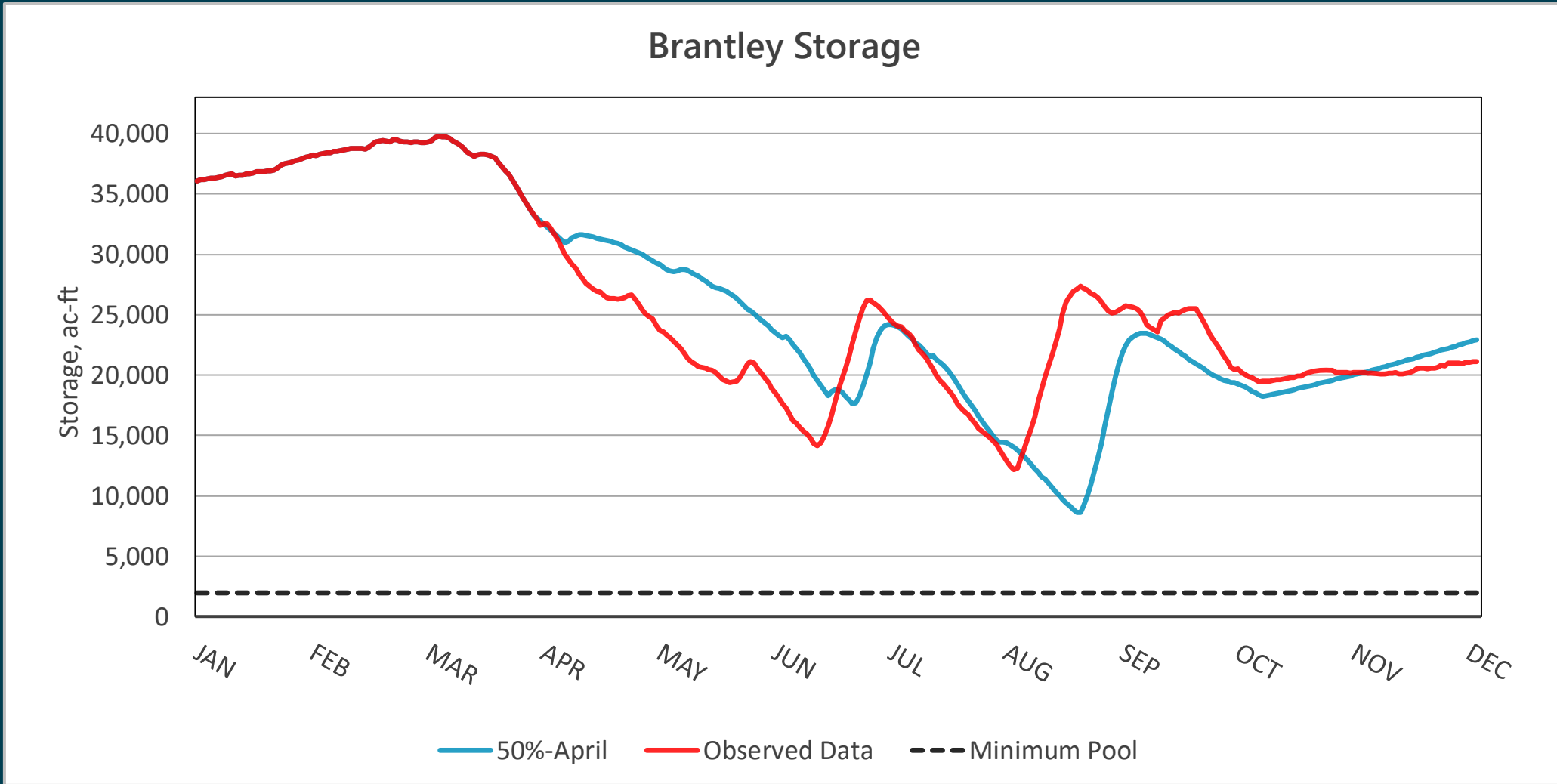
2023 Santa Rosa Storage Comparison



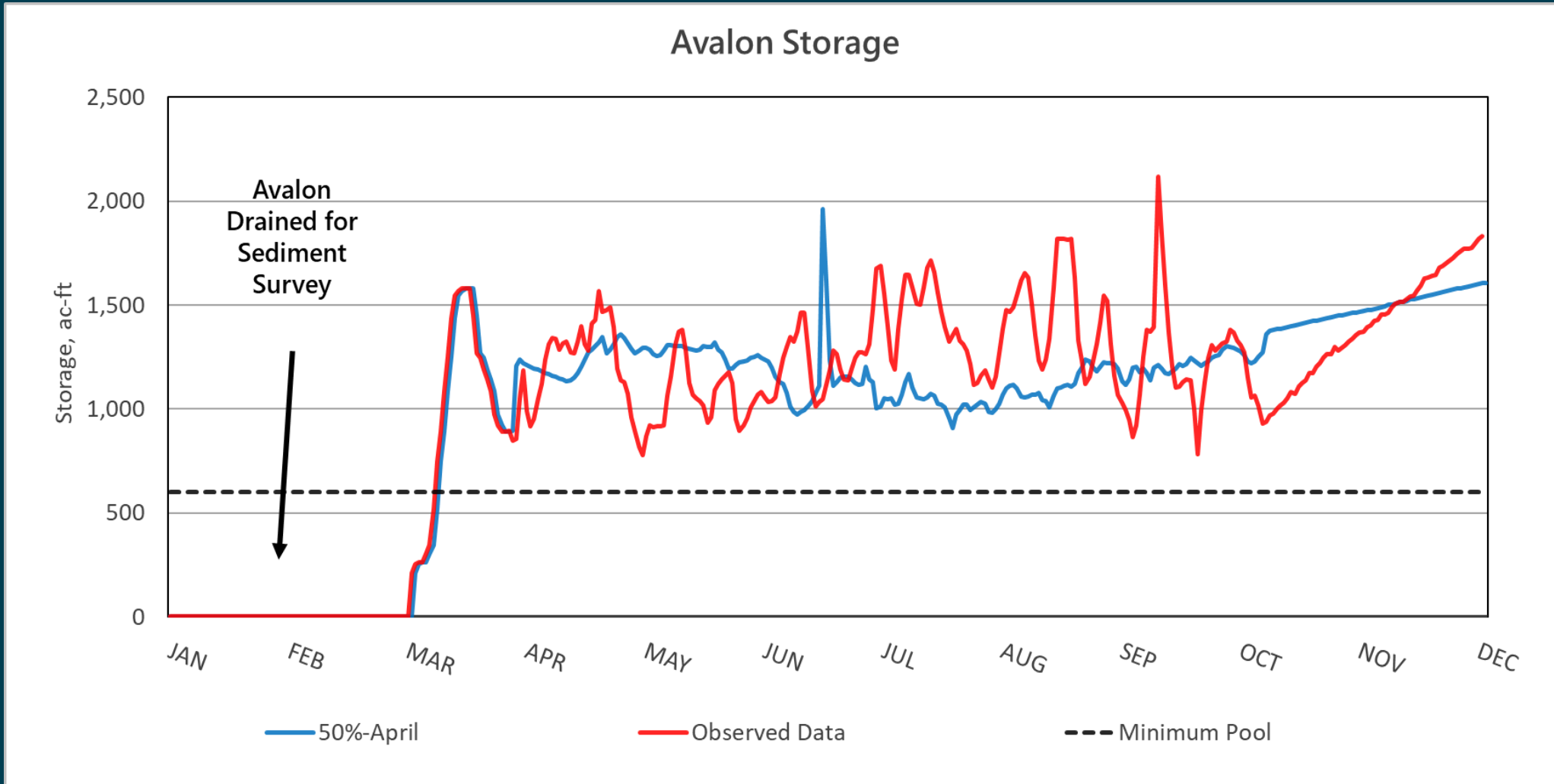
2023 Sumner Storage Comparison



2023 Brantley Storage Comparison



2023 Avalon Storage Comparison





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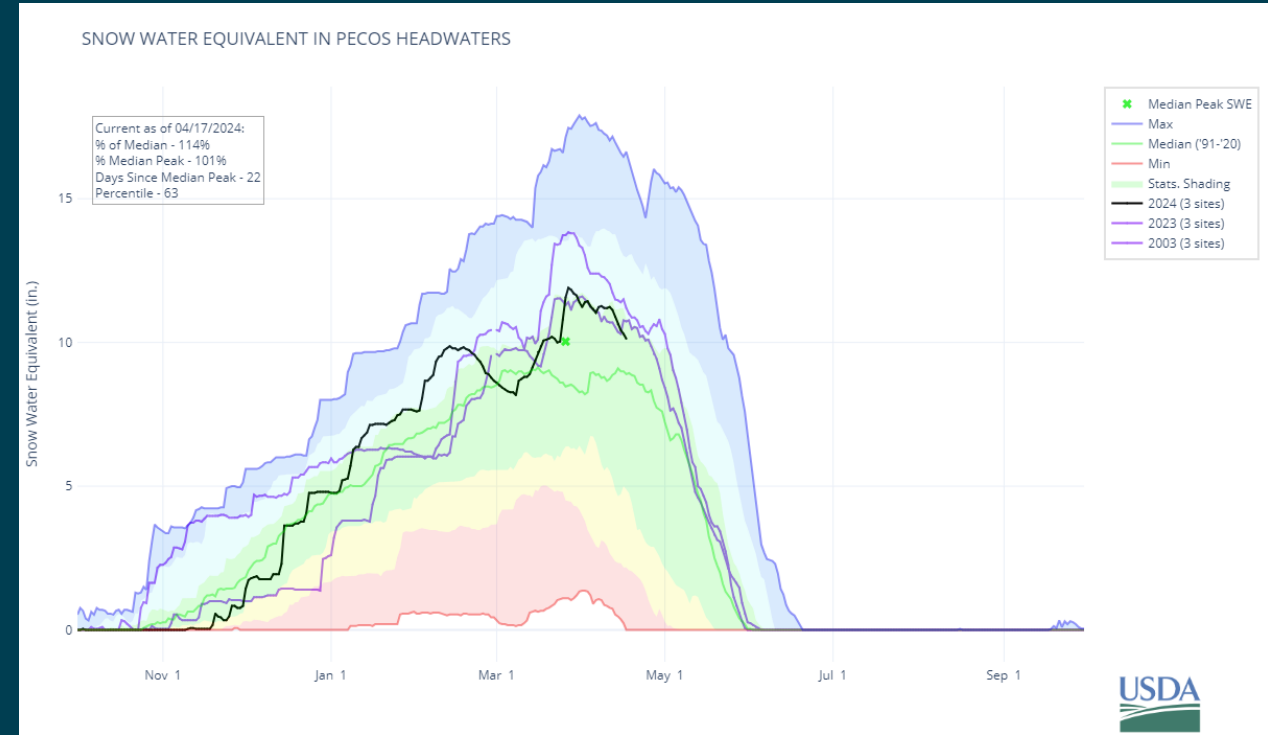
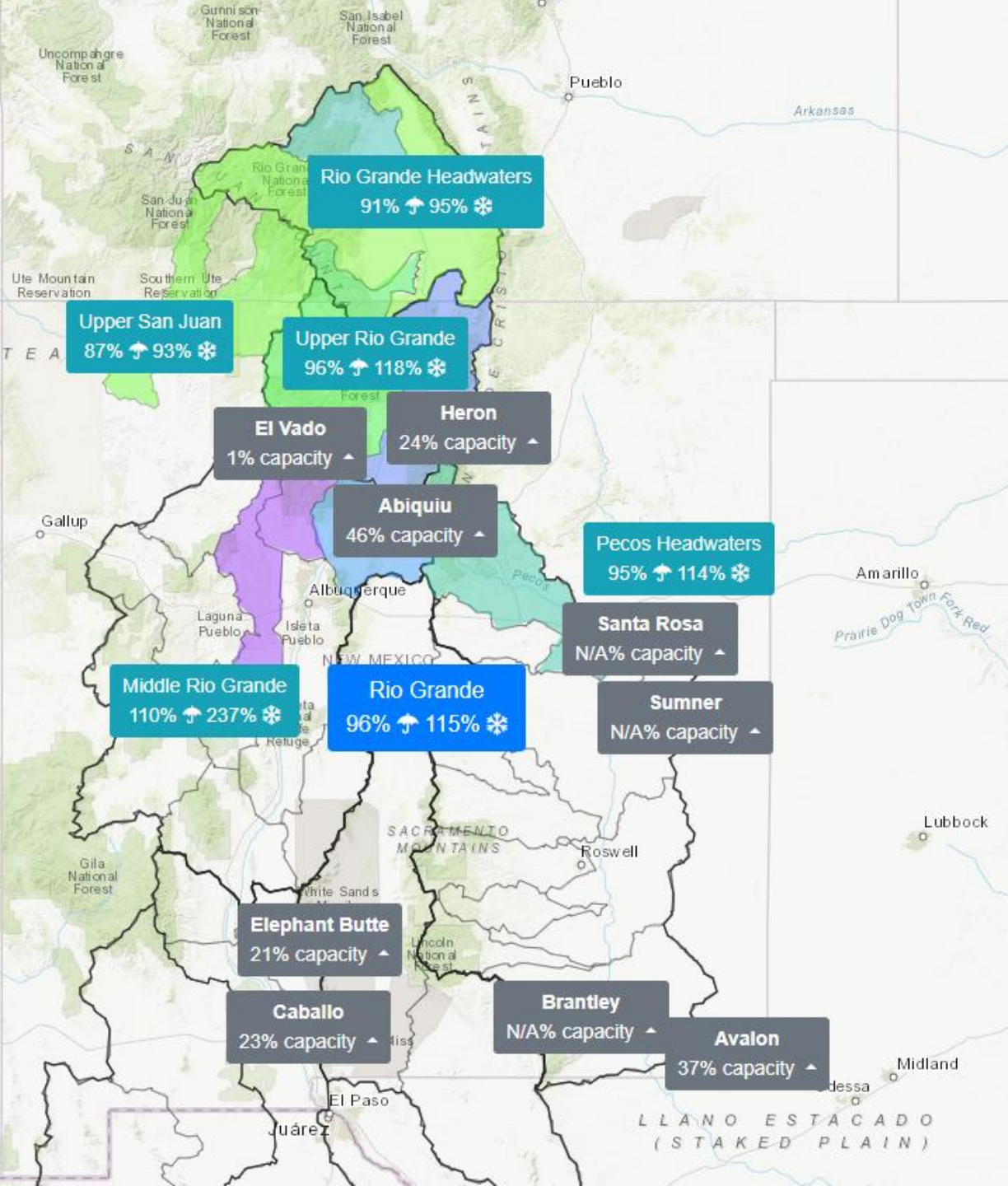
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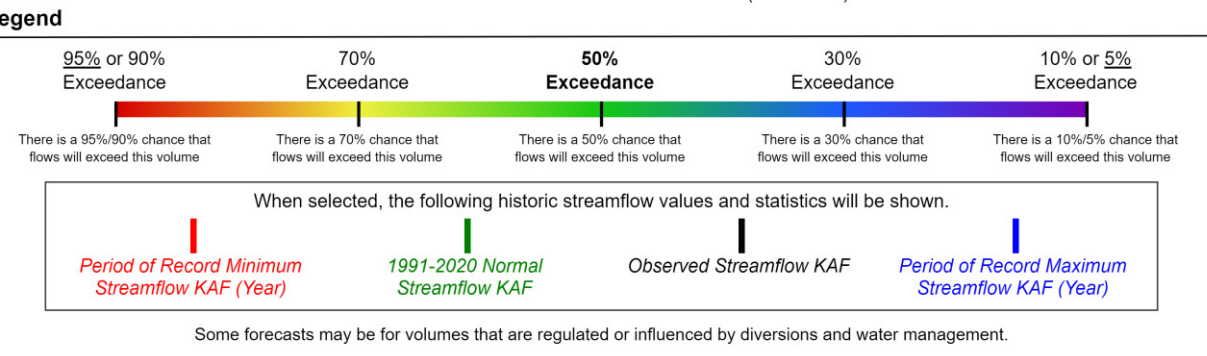
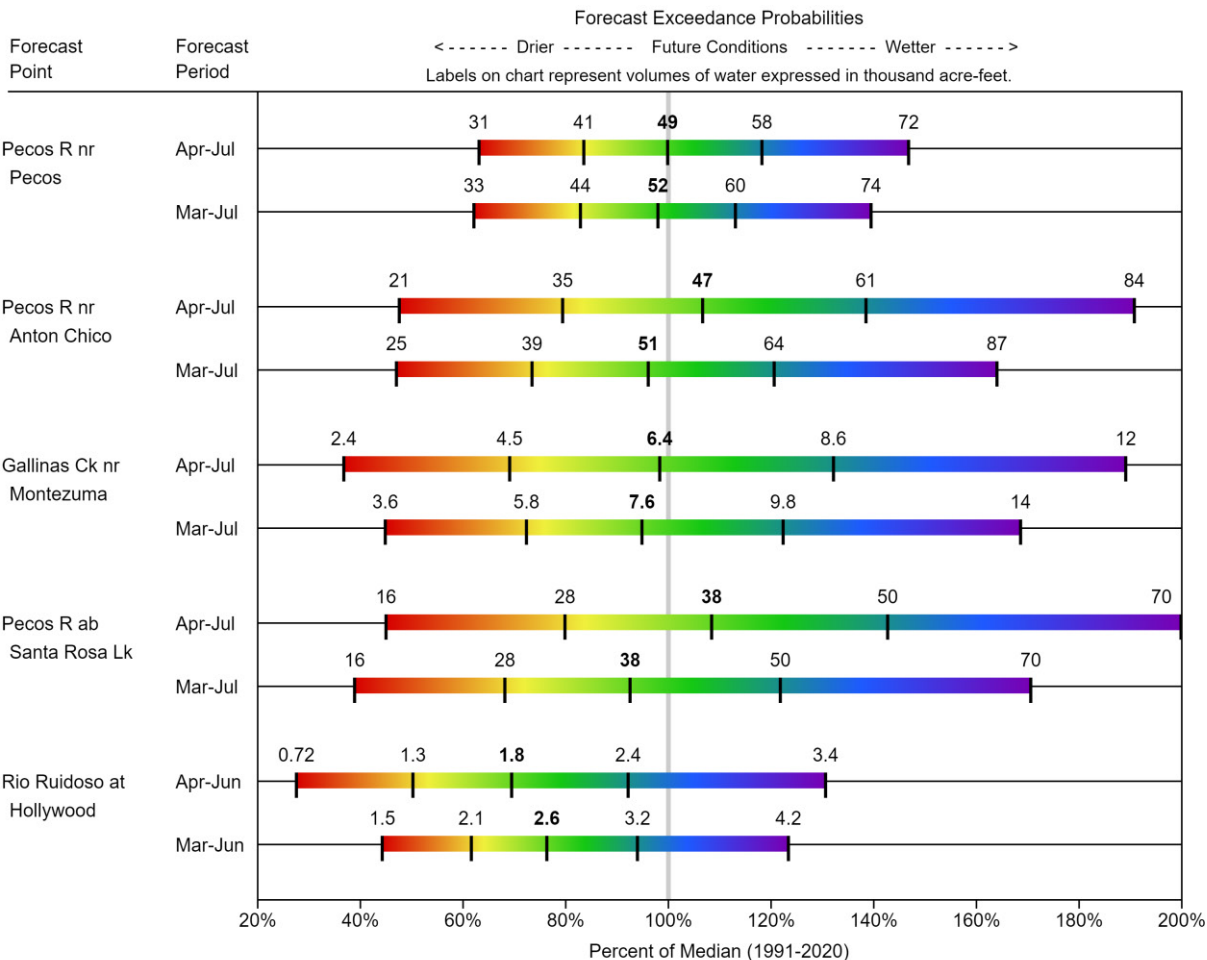


Current Snow Conditions

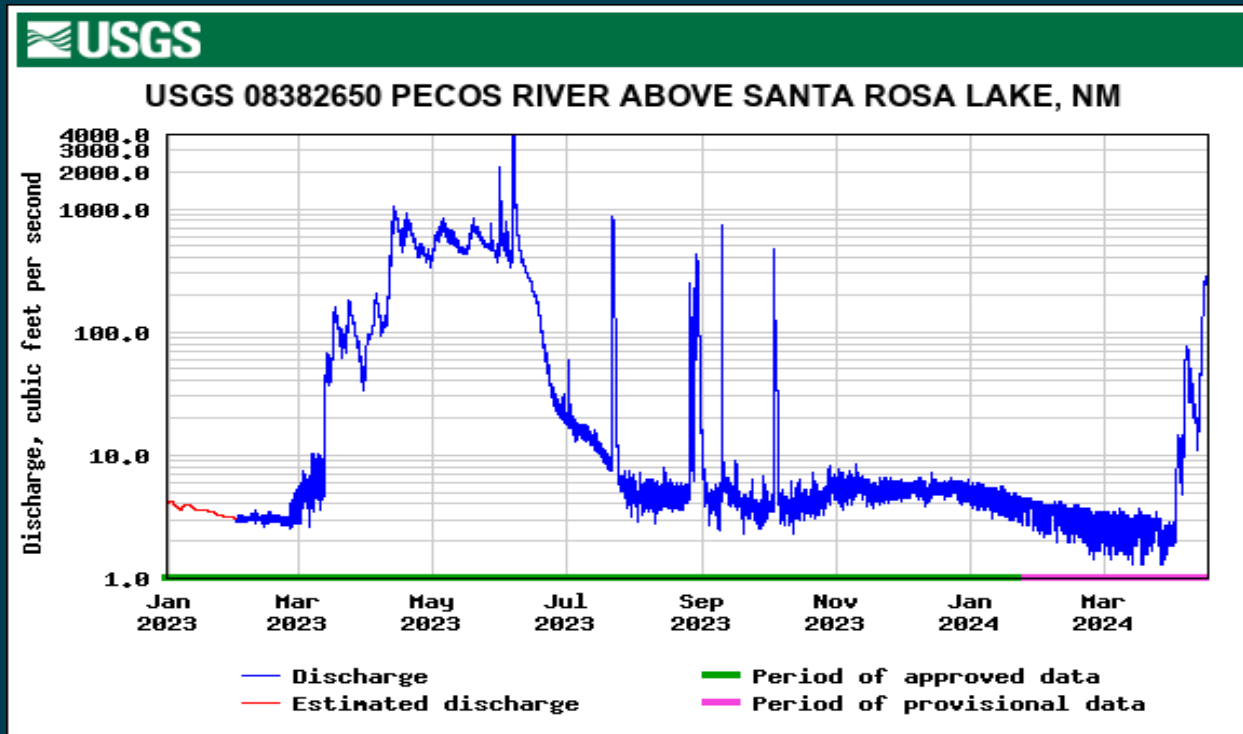
2024 Snow Conditions



PECOS
Water Supply Forecasts
April 1, 2024



Streamflow Forecast





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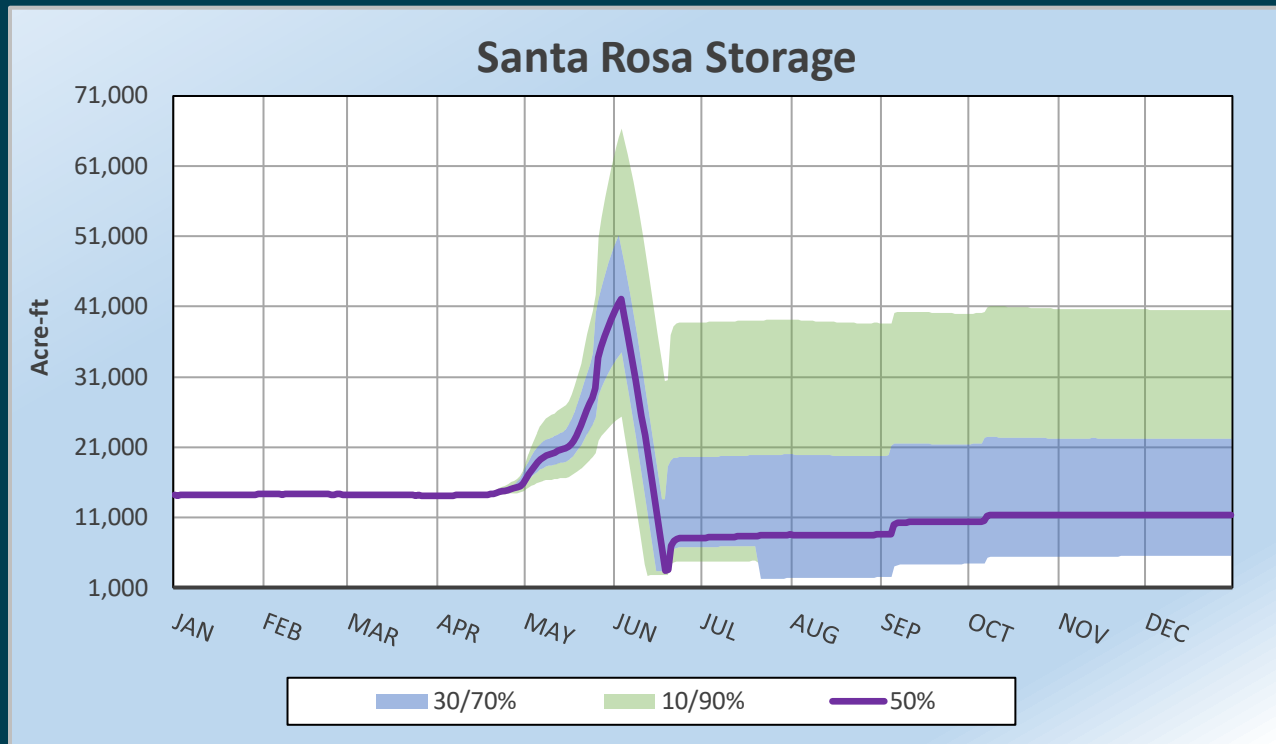


2024 Projected Water Operations



Annual Operation Plan (AOP) Forecast

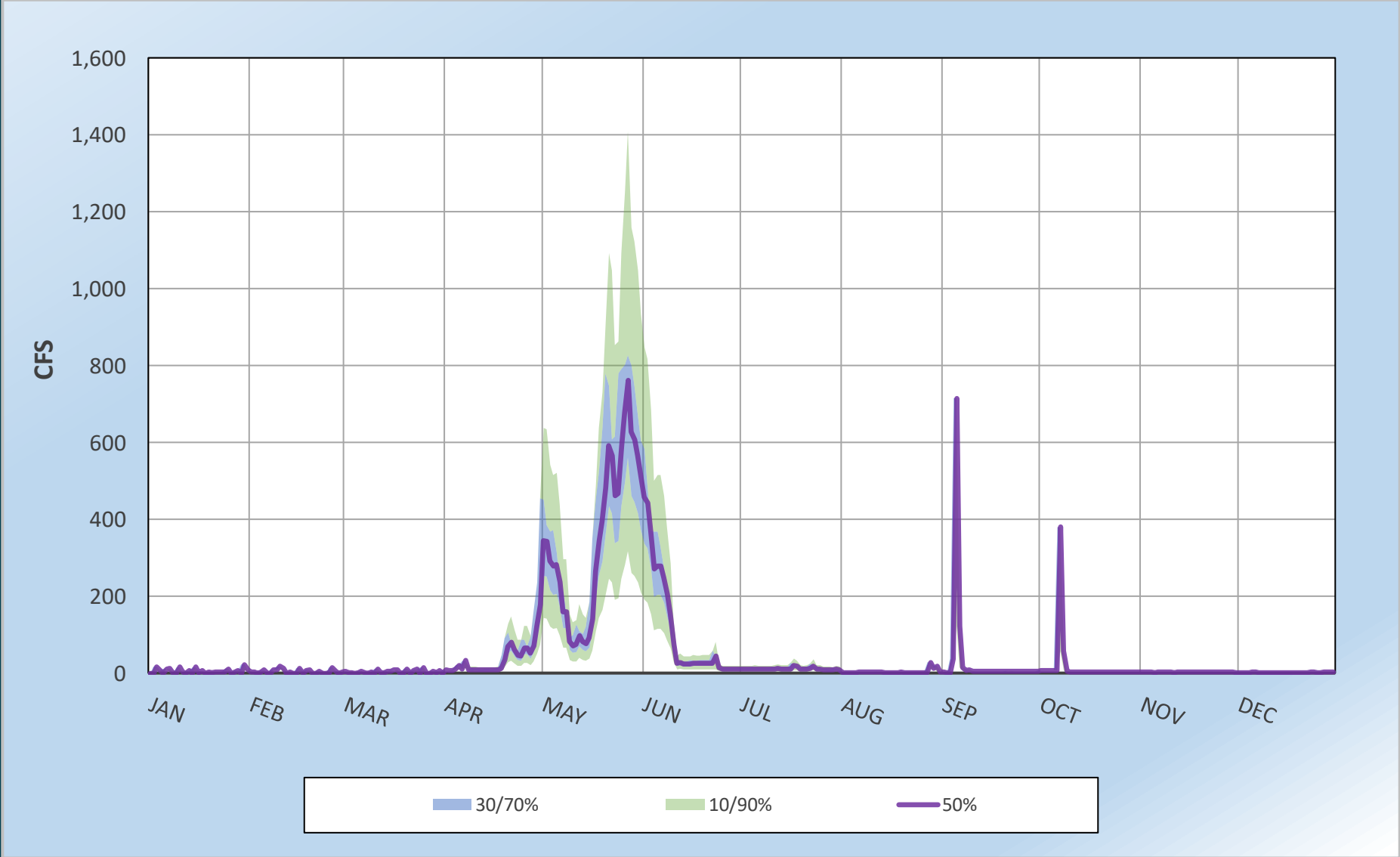
- 5 forecast runs displayed by bands of exceedance



- Observed data through April 1
- Purple line is the most likely (50% exceedance run)
- Purple shading is between the 30% and 70% exceedance runs
- Green shading is between the 10% and 90% exceedance runs

Exceedance run example - there is a 70% chance that the total volume during the forecast period will exceed the 70% forecast and a 30% chance that flow volume during the period will be lower.

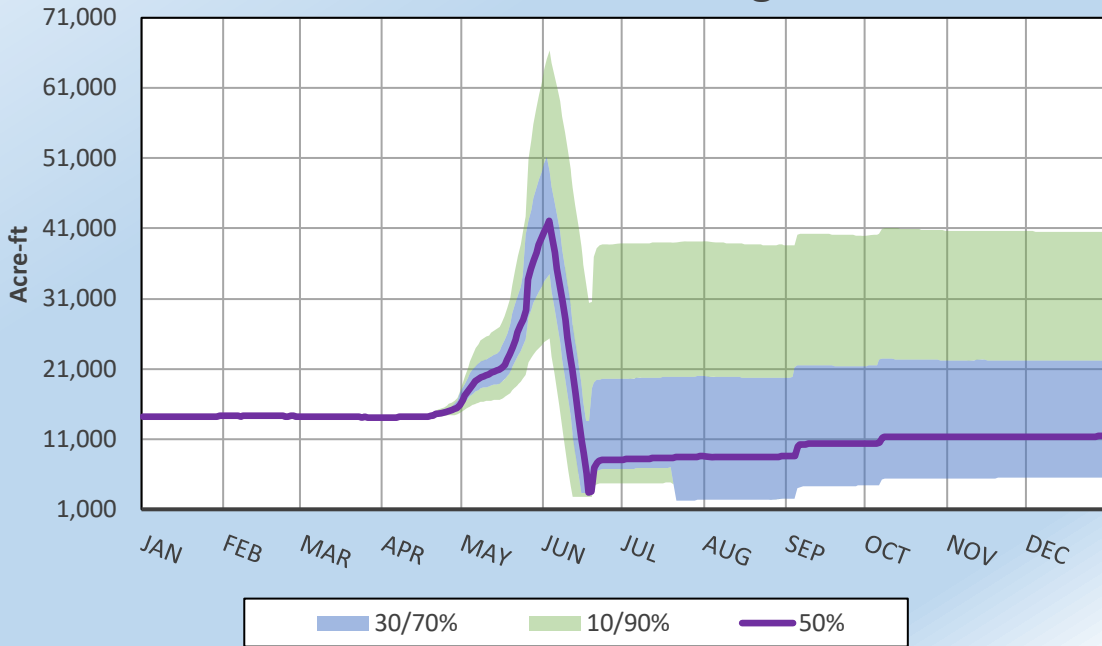
2024 Santa Rosa Reservoir Inflow



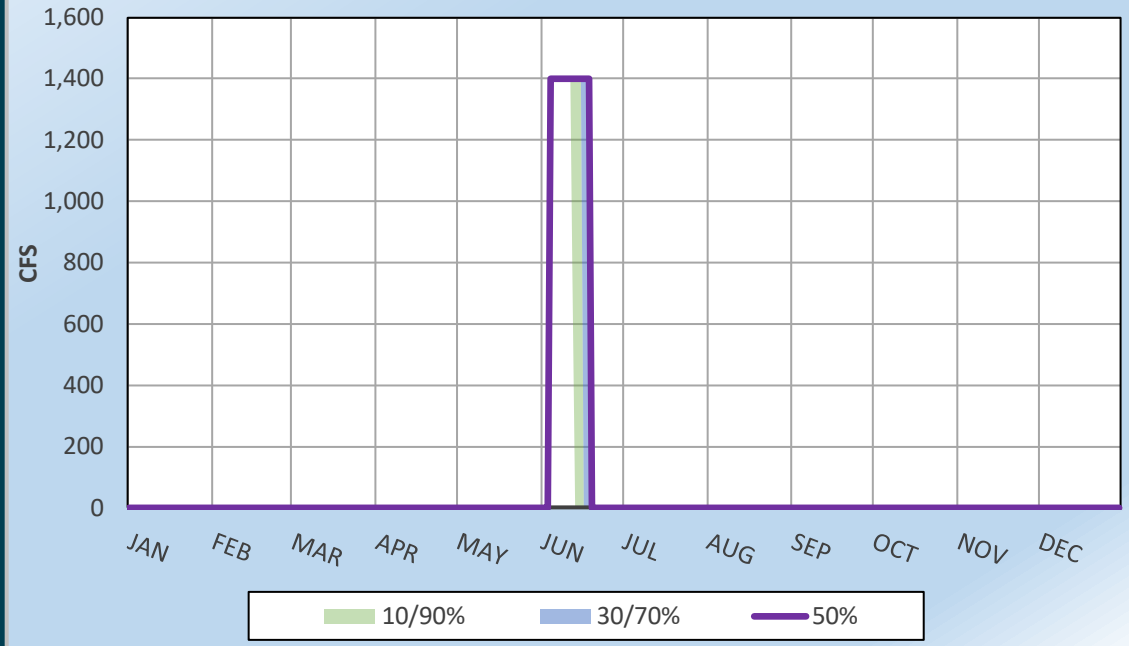
2024 Santa Rosa Operations



Santa Rosa Storage



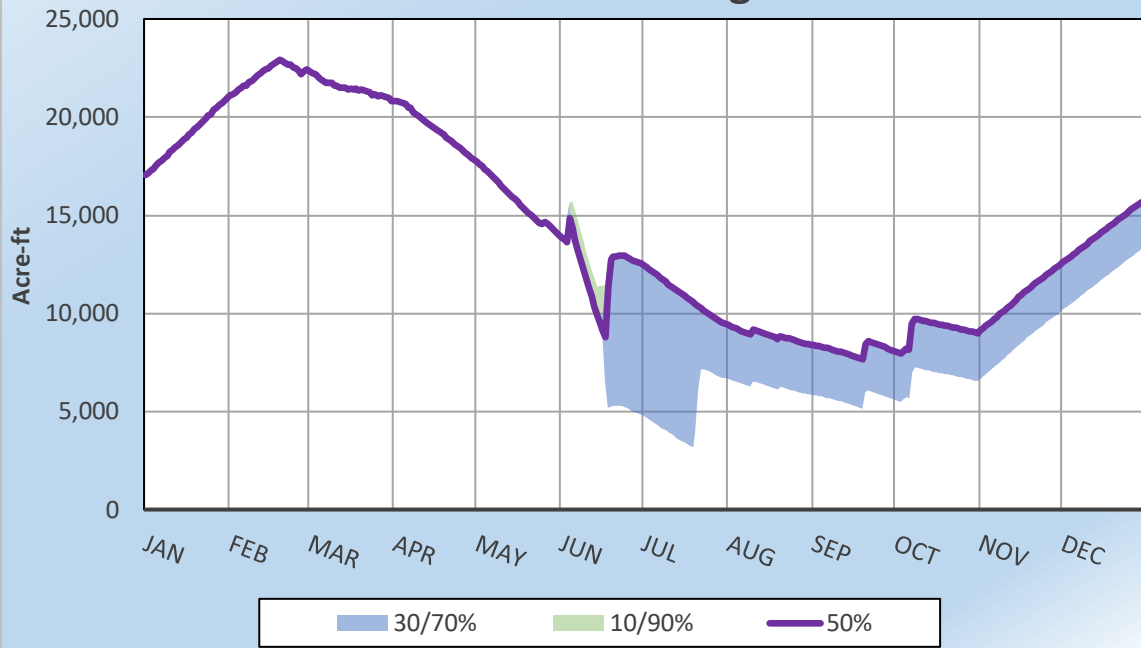
Santa Rosa Outflow



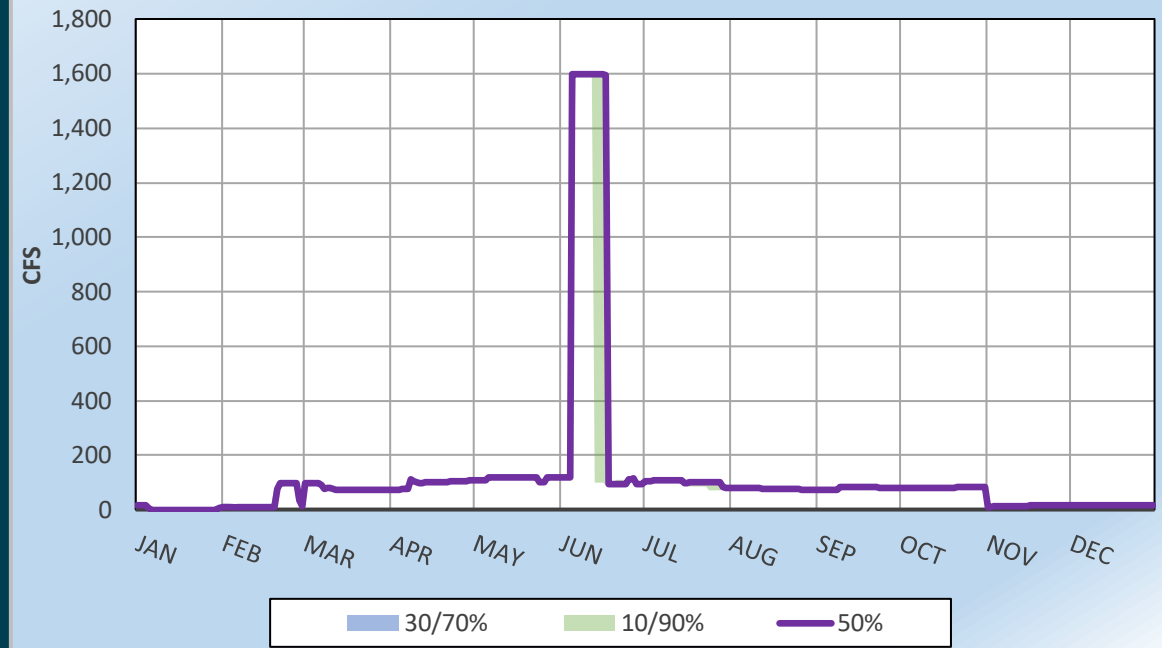
2024 Sumner Operations



Sumner Storage



Sumner Outflow

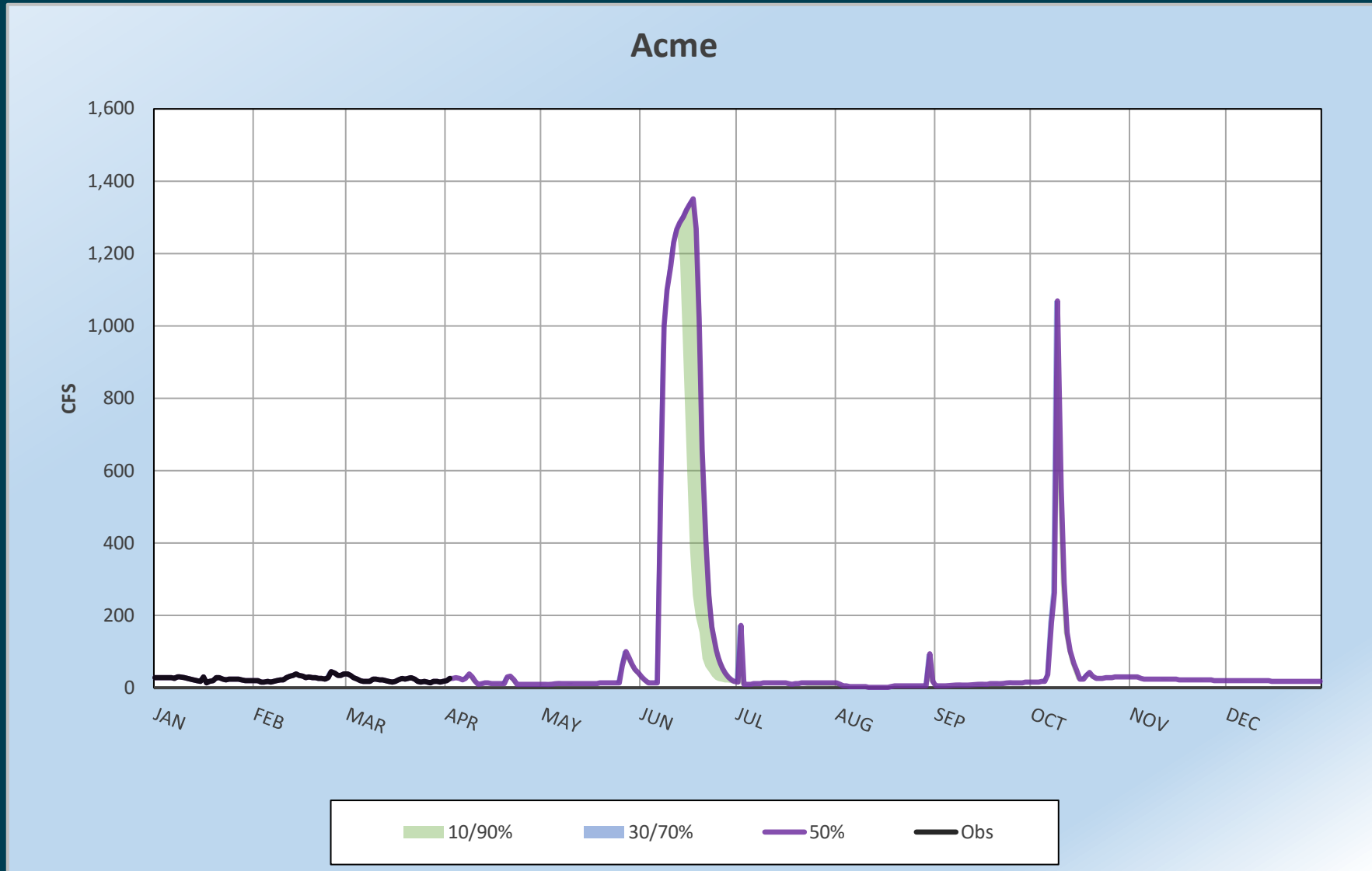




2024 Supplemental Water Use Plan

- Expect Normal conditions under the Biological Opinion
- Supplemental water supply
 - Sumner storage: 4,500 – 5,000 ac-ft
 - Bypass availability: early irrigation season based on runoff
 - Vaughan Conservation Pipeline: 3,974 ac-ft
- Target flows when bypass available Apr-Oct
 - 35 cfs at Pecos River Below Taiban Creek Near Fort Sumner, NM - 08385522
 - 5 cfs at Pecos River Near Acme, NM - 08386000

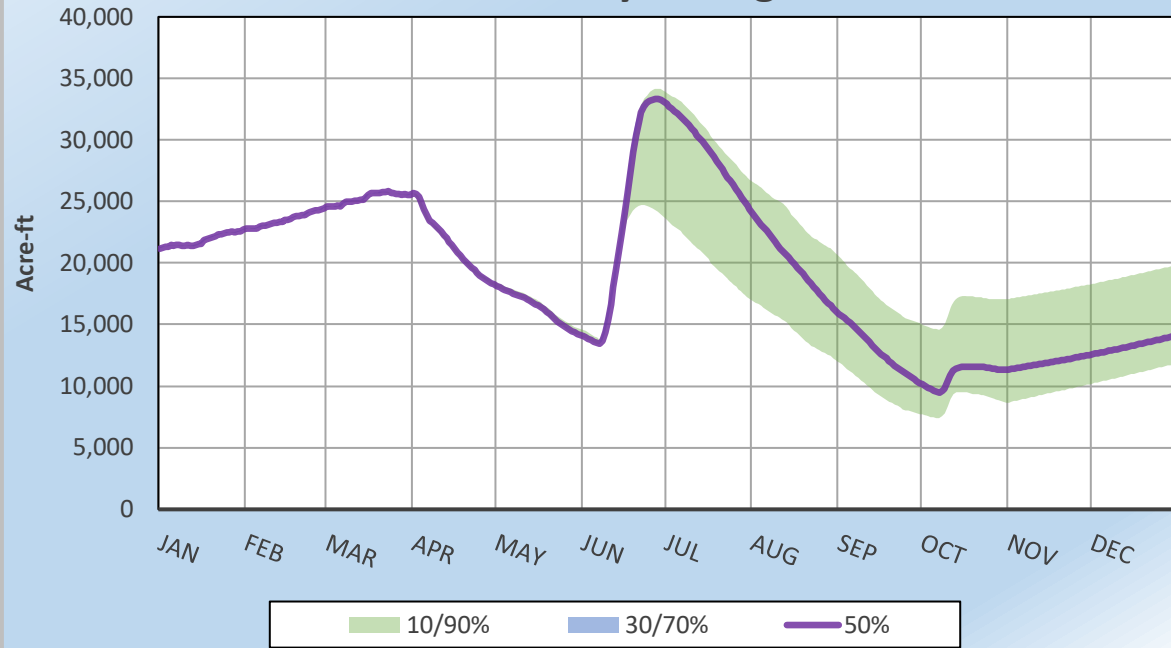
2024 Acme Flow



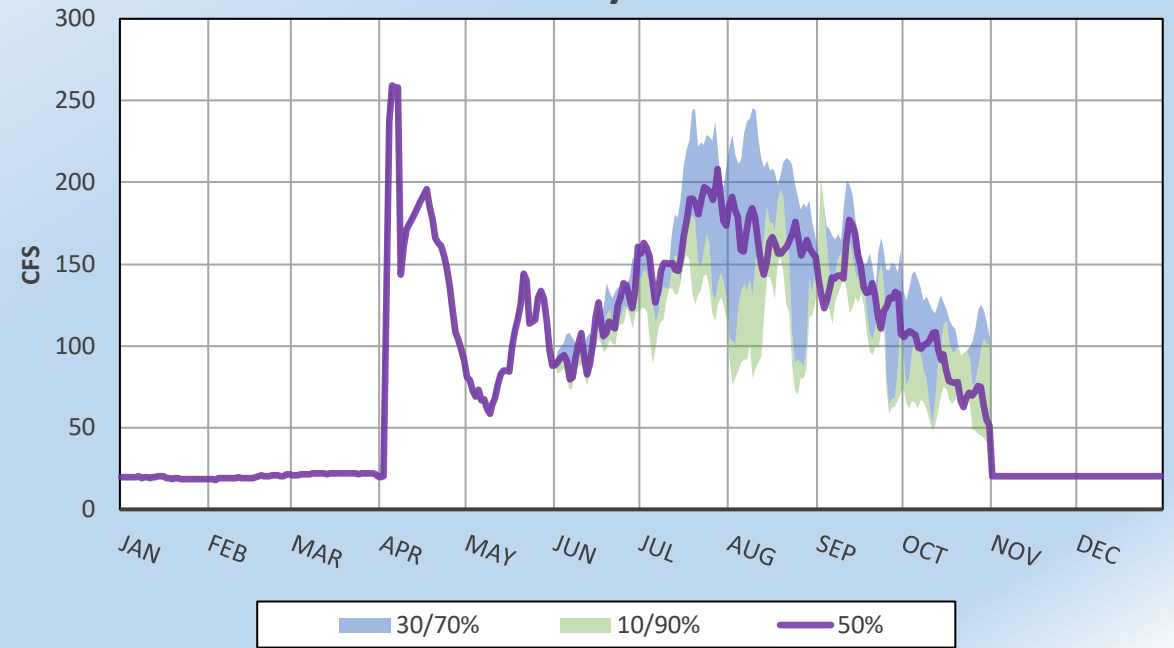
2024 Brantley Operations



Brantley Storage



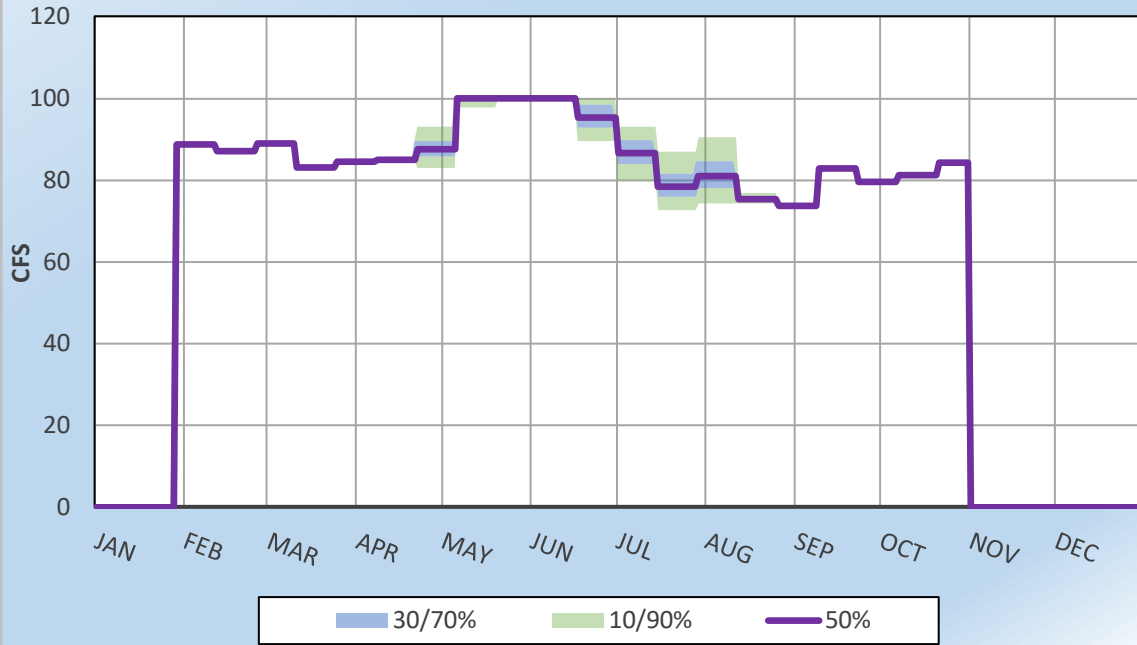
Brantley Outflow



2024 Irrigation Supply

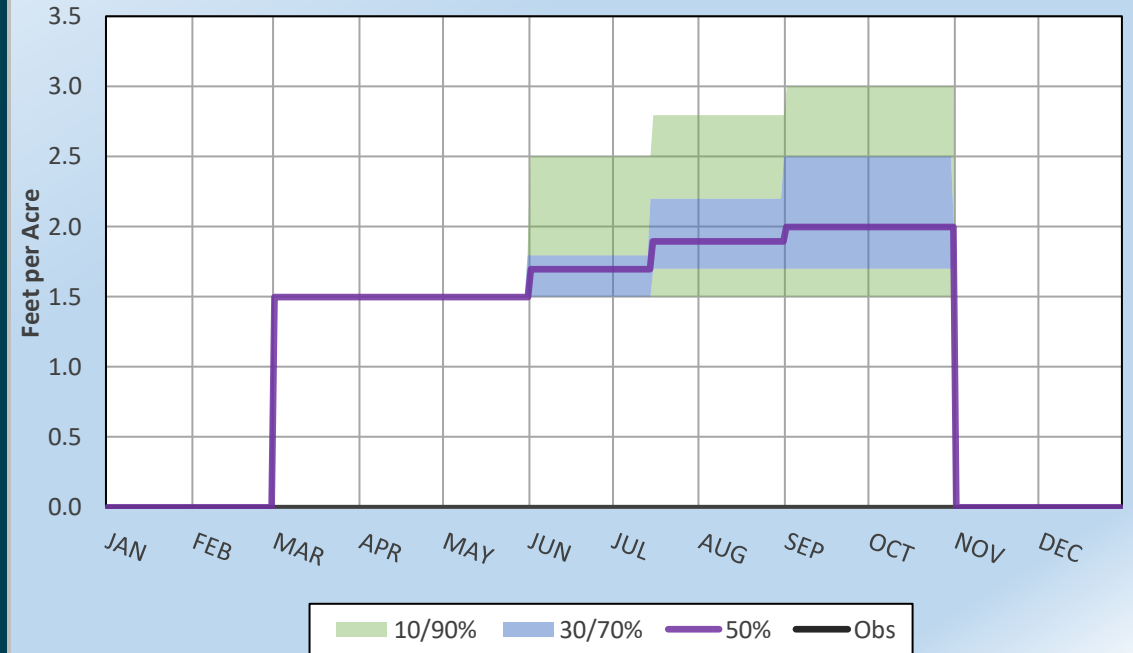


FSID Entitlement



FSID began season on February 21

CID Allotment



CID initial allocation of 1.5 ft began on March 31

Contact Information

Contact Information:

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