Salt River & Verde River Watersheds Water Supply Update

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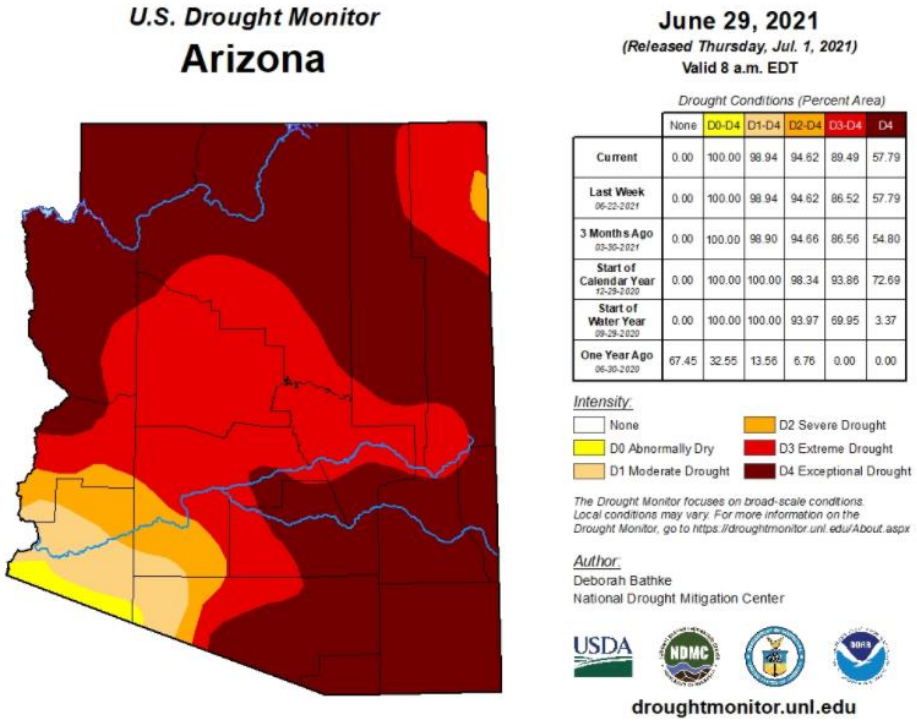
Stephen Flora, Senior Hydrologist

ADWR Drought ICG Meeting – November 10, 2021

Conditions at Start of Monsoon Season



**Winter (Jan-May) of 2021 Salt/Verde inflow was 104,156 AF (19% median) and was 2nd lowest on record.*

SRP Reservoir Status
June 29, 2021

Total System Storage: 1,541,364 (67%)

(Last year – 93%)

Verde River: 79 cfs

Verde Storage: 86,096 af (30%)

23% **C.C. Cragin Dam**
3,409 af

Salt River/Tonto Creek: 87 cfs

Salt Storage: 1,455,268 af (73%)

Horseshoe Reservoir 1%

Bartlett Reservoir 48%

68% **Theodore Roosevelt Dam**

Bartlett Release: 131 cfs

Stewart Mtn Dam 94%

95%

92% **Horse Mesa Dam**

Stewart Mtn Release: 1,285 cfs

Mormon Flat Dam

Flow over Granite Reef: 0 cfs

Current Inflow – 166 cfs
Current Outflow – 1,431 cfs

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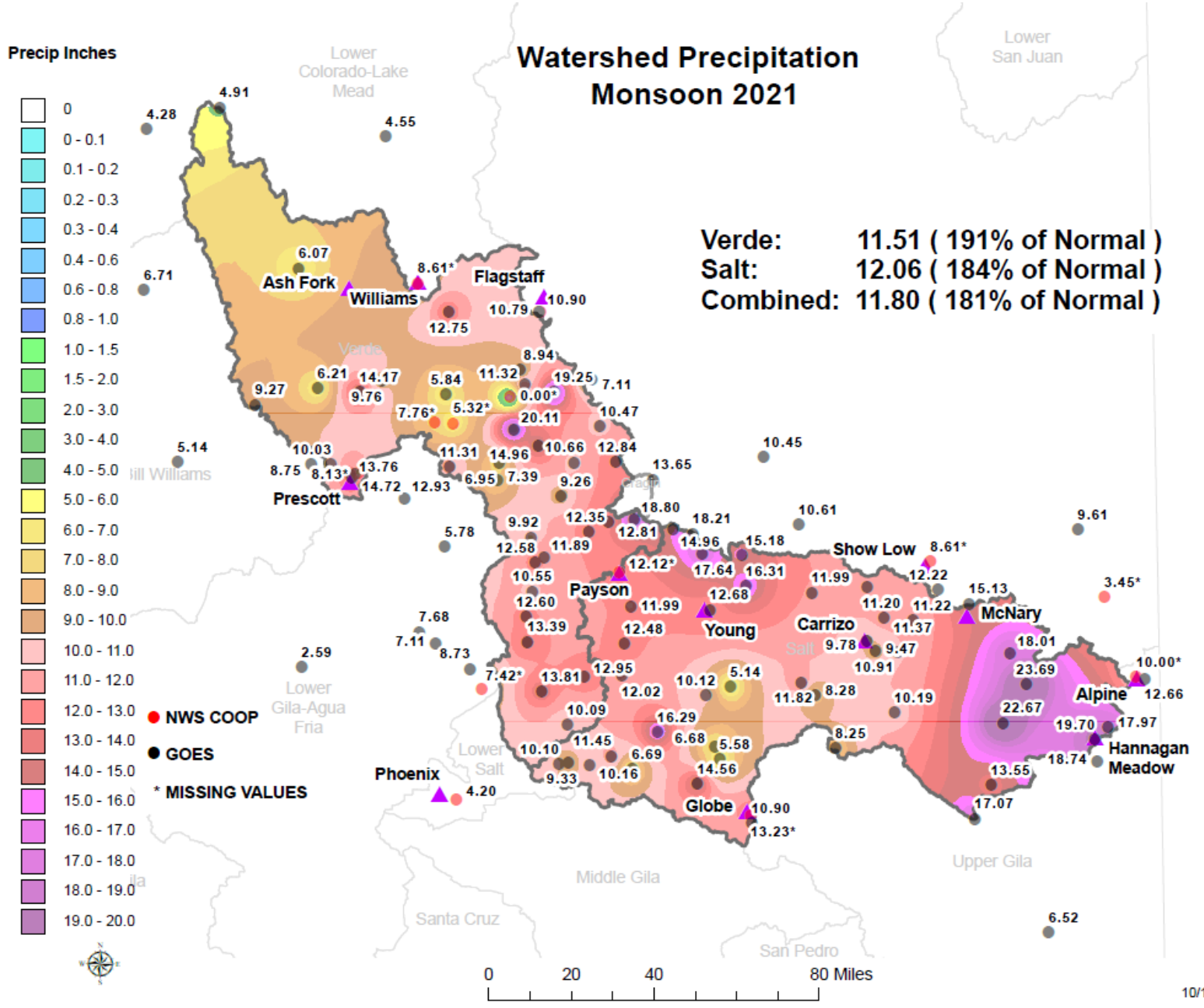
Monsoon Precipitation for Salt and Verde Watersheds

Average Precipitation Ranking
Salt and Verde Watershed
(in inches)
06/16 Through 10/01

Date: 10/1/2021 10:13 AM

Rank	Year	Accumulated Precipitation
1	1919	12.76
2	2021	11.80
3	1983	11.77
4	1984	11.46
5	1921	10.23
6	2014	10.17
7	1904	10.10
8	1946	9.92
9	1931	9.57
10	1911	9.41



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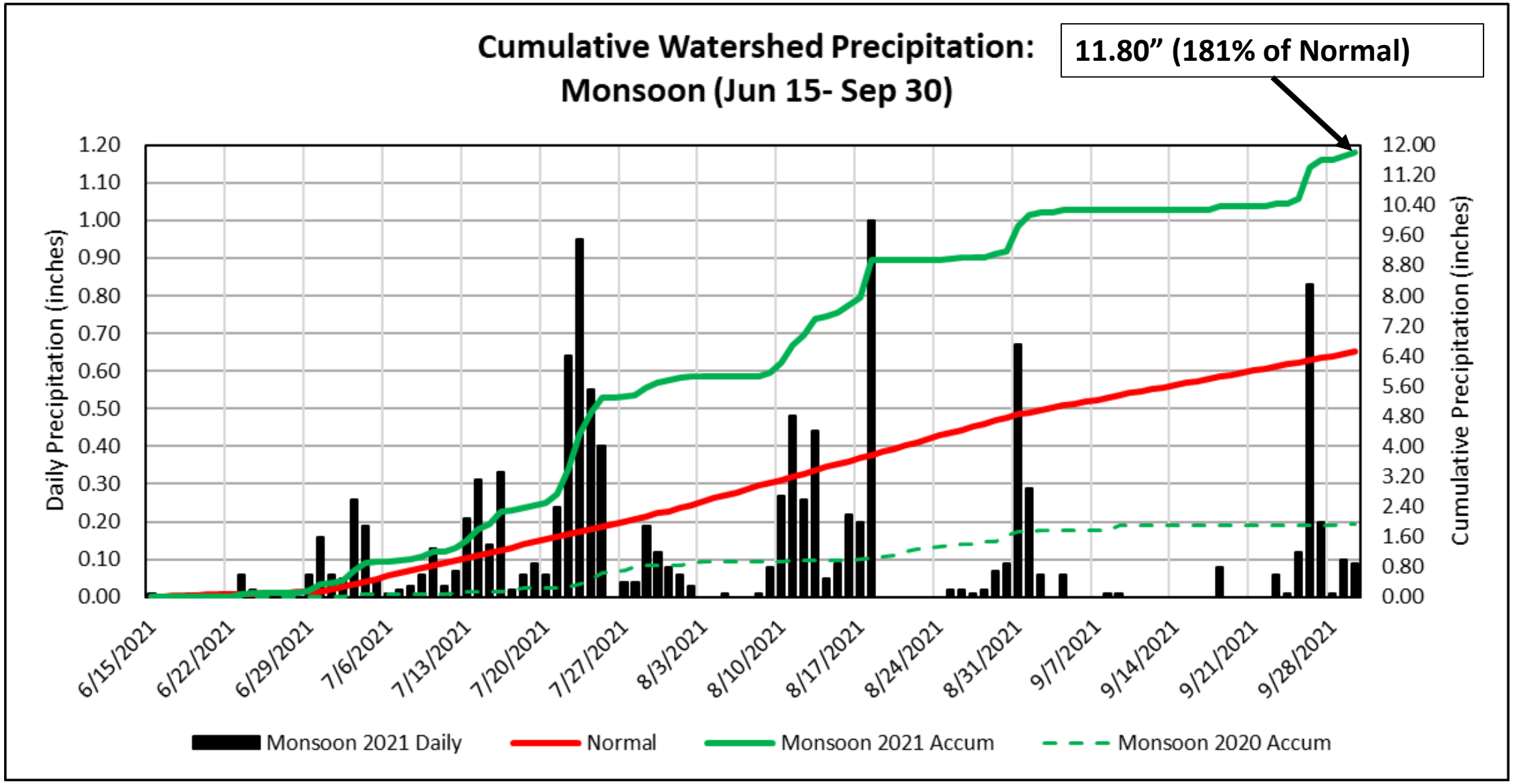

*Note that 2020 Monsoon Season had lowest precipitation on record (1.93”, 30% of normal)

Water Year 2021 Cumulative Watershed Precipitation = 17.09” (94% of normal)

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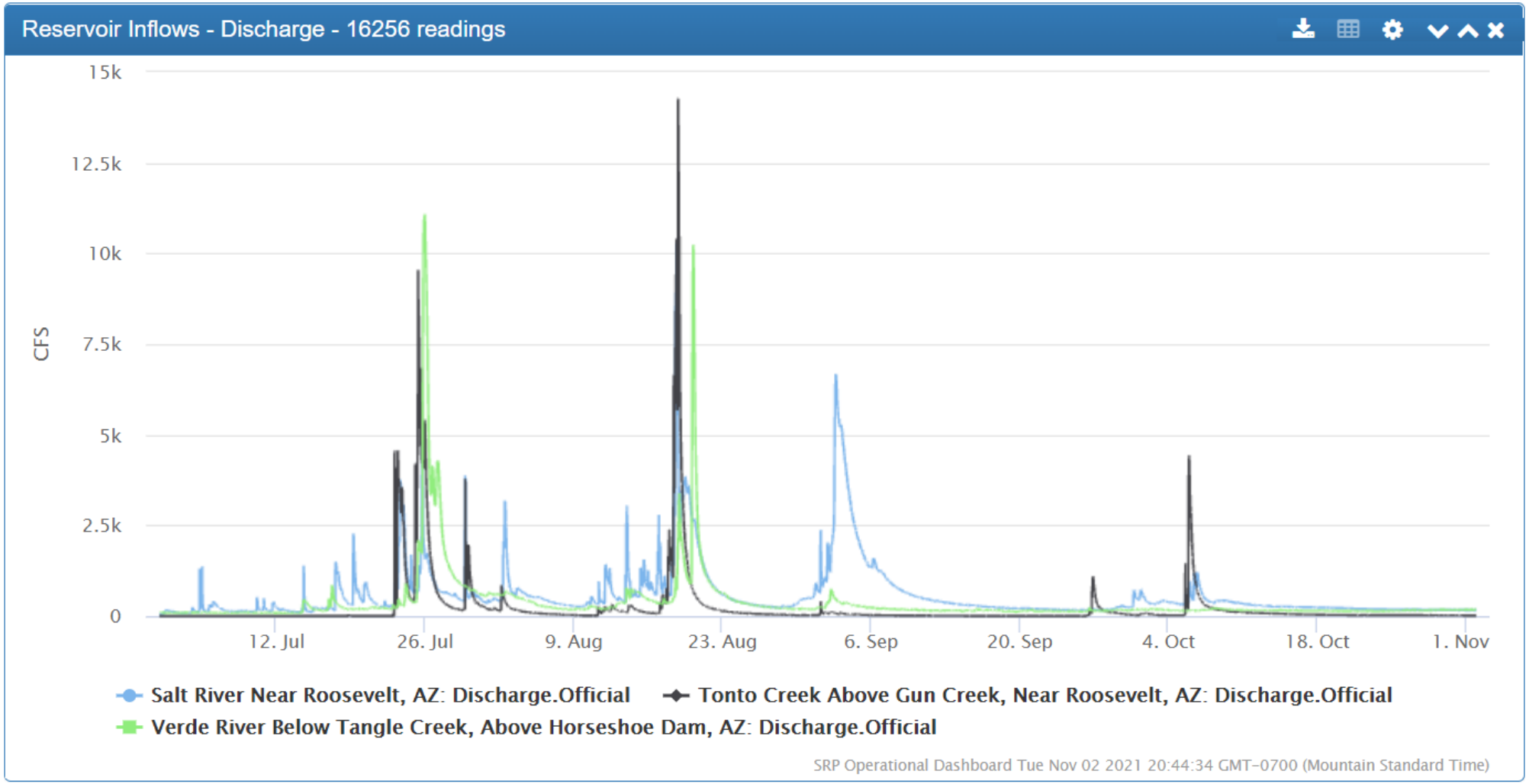
Monsoon Season 2021 (July – Sept) - Salt, Tonto, Verde Streamflow

- Widespread increase in runoff response this summer on Salt/Tonto/Verde (peak flows of 10,000 cfs or more in July and August)
- Burns scar runoff response – Telegraph Fire, Bush Fire, Backbone Fire, Rafael Fire



Burn Scar Runoff Cameras – July 2021

Cottonwood Creek into Saguaro Lake 7/25/2021

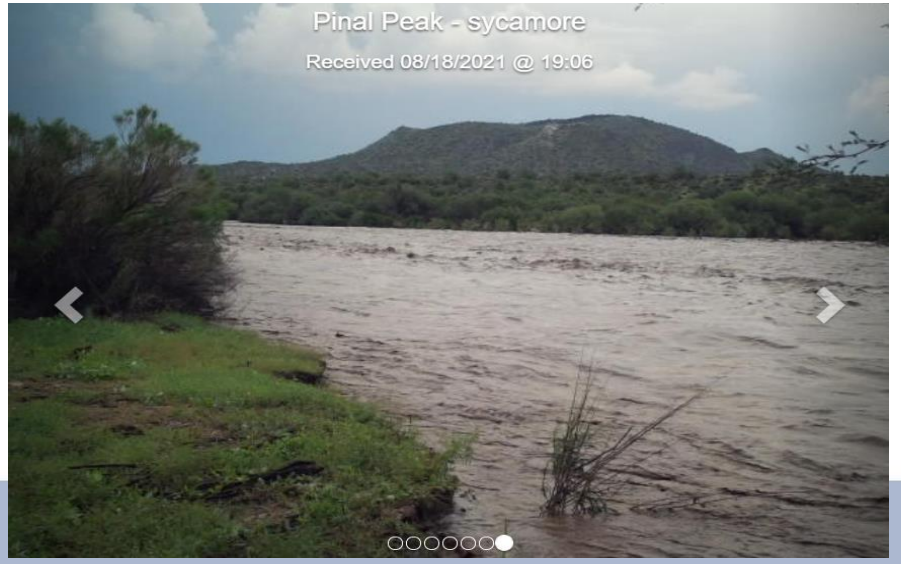
- Small to moderate inflows into Saguaro and Canyon lake observed July 25 and managed with available storage

Kitty Joe Creek 7/23/2021

Slate Creek 7/23/2021

Local Inflows into the Verde River below Bartlett Dam (Aug 2021)

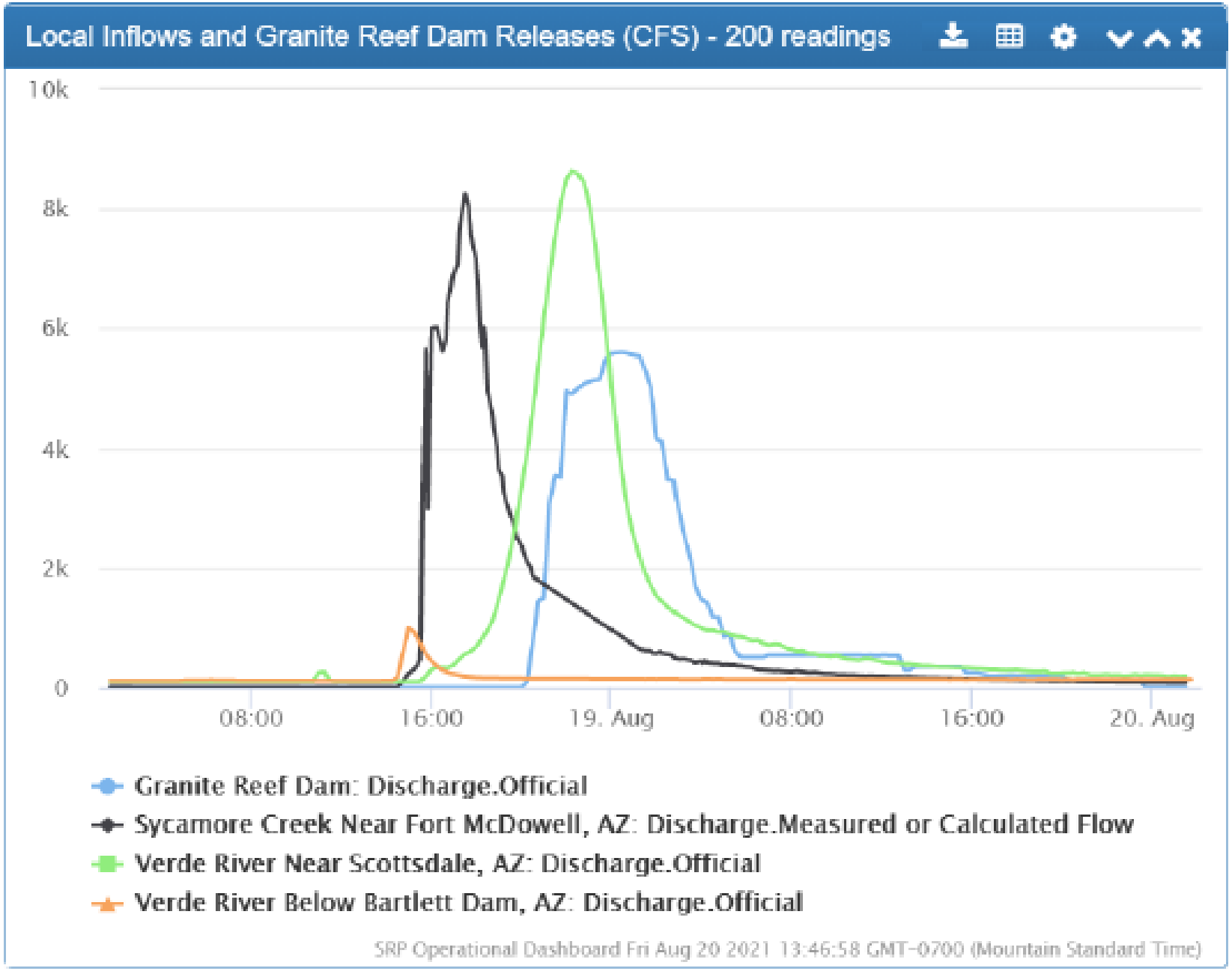
Kitty Joe Creek - Peak Flow image @ 13:17 (8/18)



Sycamore Creek near Confluence with the Verde River Image @ 19:06 (8/18). Peak up to 8,250 cfs

Granite Reef Releases

- Local runoff resulted in a peak flow of 8,600 cfs at Verde River near Scottsdale on Aug 18
- Releases up to 5,600 cfs from Granite Reef Diversion
- Local runoff event with similar releases also occurred on Aug 12
- A total of 9,250 acre-feet of water has been spilled from Granite Reef Dam in August due to local inflows below reservoirs



Winter 2021 vs Summer 2021 Reservoir Inflows

	Winter 2021 Inflows (AF) Jan 1 – May 31	Summer 2021 Inflows (AF) July 1 – Sept 30	July-Sept % median
Salt River near Roosevelt	43,058	123,348	184%
Tonto Creek above Gun Creek	4,257	53,626	1,120%
Verde River below Tangle Creek	56,841	80,924	202%
Total (SRP reservoir inflow)	104,156	257,898	233%

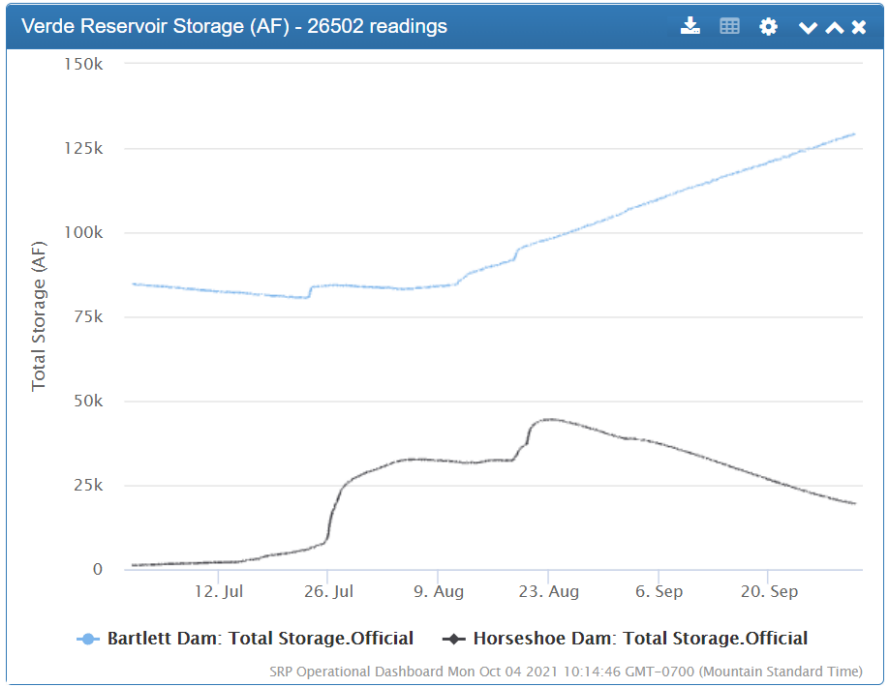
- Winter 2021 inflows (Jan – May) into SRP reservoirs of 104,156 AF is 2nd lowest on record (2018 – 100,013 AF).
- July-September 2021 inflows into SRP reservoirs is 257,898 AF, which is 233% of normal, is the 10th highest summer monsoon season inflow on record. July inflows were 3rd highest on record with Tonto Creek the highest on record.
- Water Year 2021 total inflows was 420,756 AF (46% of median).

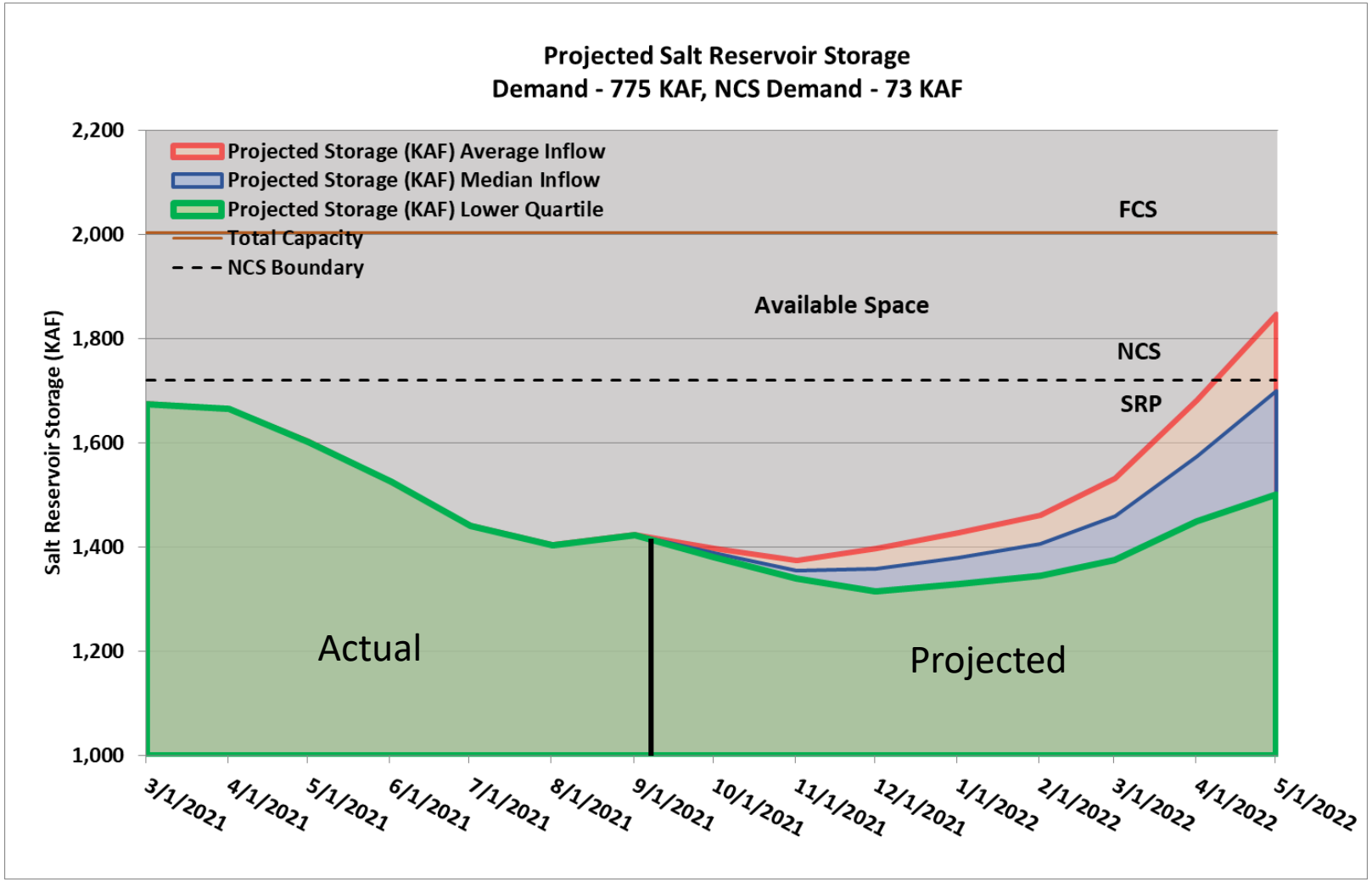
Highest July – Sept Inflow

Rank	Year	Runoff
1	1919	592,578
2	1921	493,013
3	1923	345,713
4	2006	272,894
5	1927	264,739
6	1988	262,467
7	1916	260,782
8	1992	258,927
9	1955	258,773
10	2021	257,898

SRP Reservoir Storage – Monsoon Season 2021

- Verde storage increased from 30% to 52%
- Salt storage remained level this summer
- Fall River swap to delivers from the Verde River occurred the week of October 25





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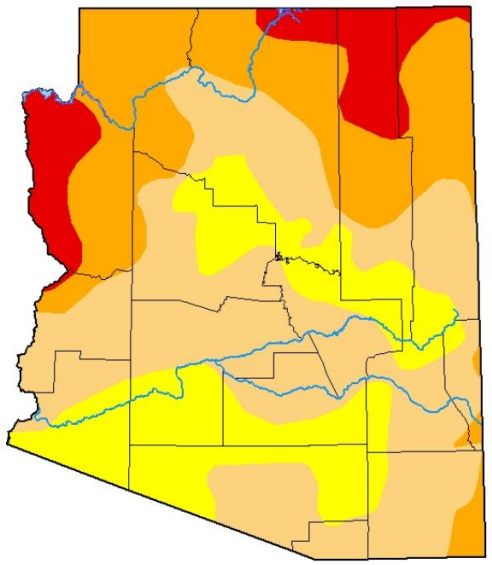
Current Conditions

U.S. Drought Monitor
Arizona



October 26, 2021
(Released Thursday, Oct. 28, 2021)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	76.78	34.08	8.89	0.00
Last Week 10-19-2021	0.00	100.00	76.83	34.08	9.00	0.00
3 Months Ago 07-27-2021	0.00	100.00	98.93	94.64	51.65	8.65
Start of Calendar Year 12-29-2020	0.00	100.00	100.00	98.34	93.86	72.69
Start of Water Year 09-28-2021	0.00	100.00	80.38	40.02	13.69	0.00
One Year Ago 10-27-2020	0.00	100.00	100.00	95.01	83.85	8.70

Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

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:
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NCEI/NOAA

USDA NDMC

droughtmonitor.unl.edu

SRP Reservoir Status
November 2, 2021

Total System Storage: 1,583,088 (69%)

(Last year – 79%)

2020 monsoon – SRP storage decreased 11%
2021 monsoon – SRP storage increased 3%

Verde River: 172 cfs

Verde Storage: 142,312 af (50%)

30% **C.C. Cragin Dam**
4,537 af

Salt River/Tonto Creek: 181 cfs

Salt Storage: 1,440,776 af (72%)

Horseshoe Reservoir 2%

Bartlett Reservoir 78%

Bartlett Release: 852 cfs

67% **Theodore Roosevelt Dam**

Stewart Mtn Dam 92%

Stewart Mtn Release: 8 cfs

95% 90% **Horse Mesa Dam**

Mormon Flat Dam

Flow over Granite Reef: 0 cfs

Current Inflow – 353 cfs
Current Outflow – 860 cfs

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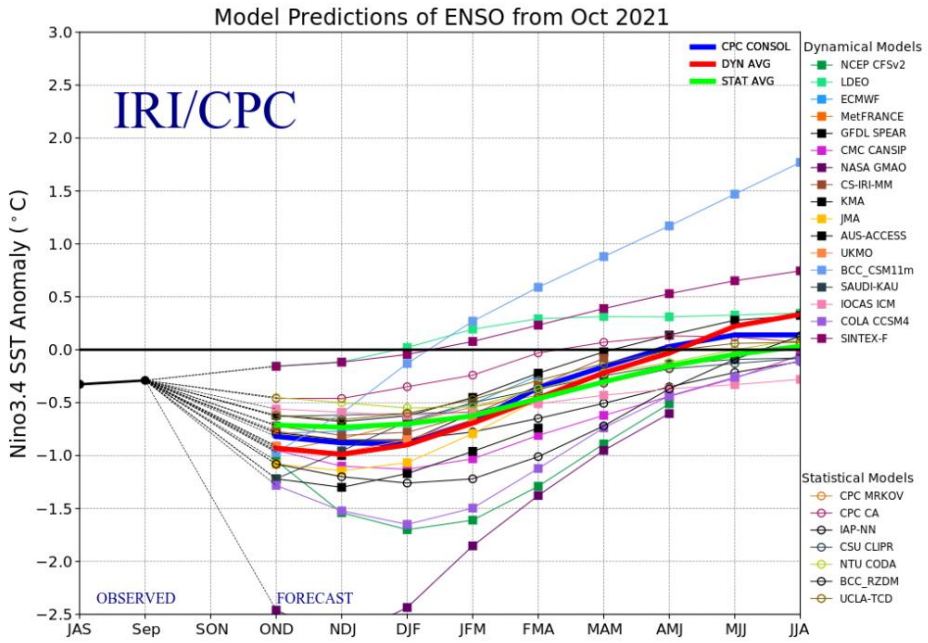
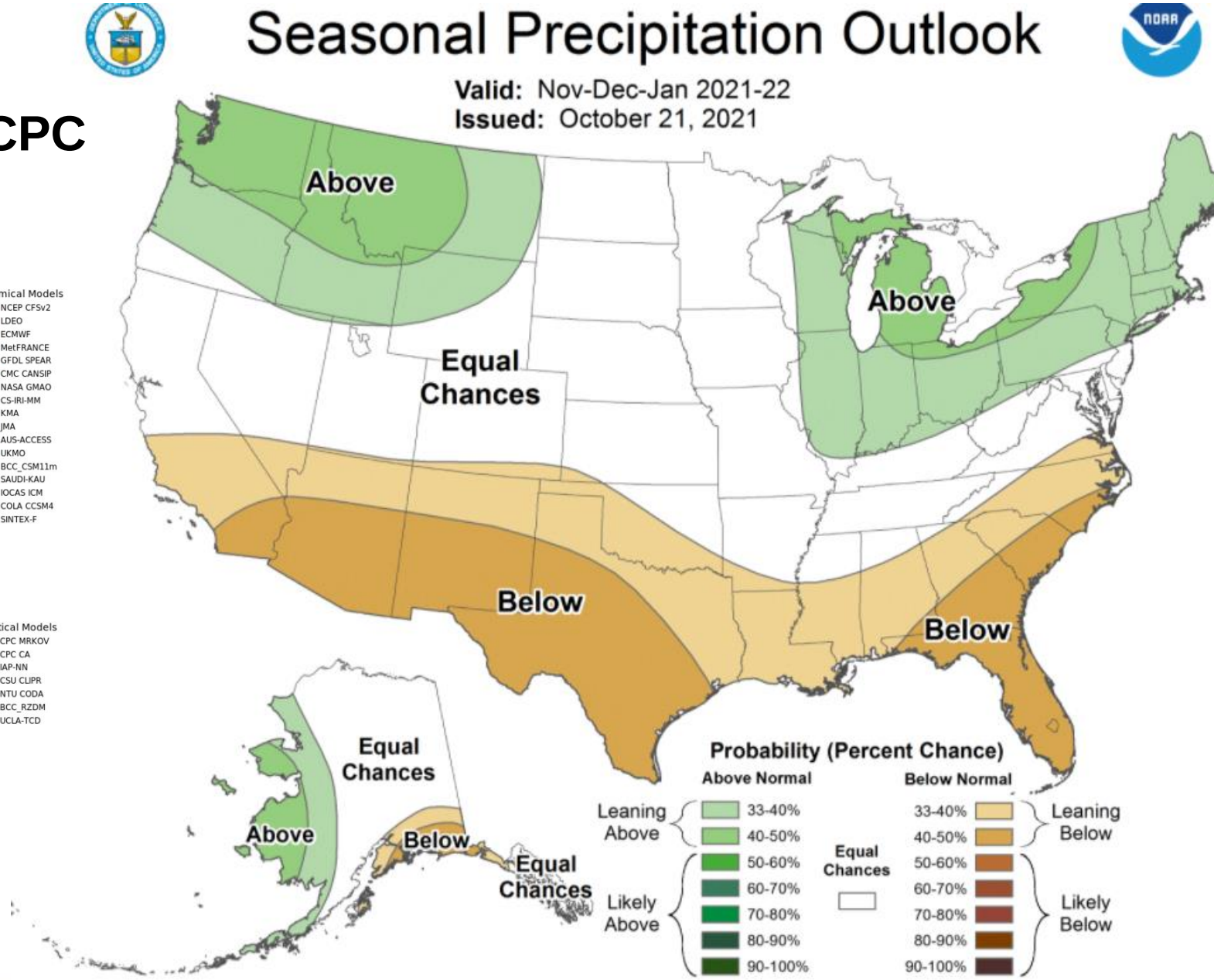
Winter Weather Outlook – CPC





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Salt/Verde Watershed & SRP Reservoirs Summary

- Total SRP Surface Water Supply is currently in good condition at 69% total storage capacity as of Nov 2.
- Monsoon Season Salt/Verde inflow totaled 257,898 AF (233% of median, 10th highest) and watershed average precipitation was 11.8” precipitation (2nd highest).
- SRP reservoirs increased 3% over peak demand summer monsoon season. Local inflows below reservoirs resulted in 9,250 AF of water spilled from Granite Reef Diversion dam.
- Short-term drought conditions throughout the Salt/Verde watershed have significantly improved and runoff efficiencies improved going into fall. La Nina conditions into the winter tend to have greater chance for drier winter.

Questions?

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