Arizona Climate Update: Where are we now and where are we headed?

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Precipitation – last 12 months
Temperature – last 12 months
Precipitation – last 3 months
Temperature – last 3 months

Southwest - Mean Temperature
October-December 2020 Percentile

Rankings (1895-2010)

- RECORD WARMEST
- MUCH ABOVE NORMAL Top 10%
- ABOVE NORMAL Top 33%
- NEAR NORMAL
- BELOW NORMAL Bottom 33%
- MUCH BELOW NORMAL Bottom 10%
- RECORD COLDEST

WestWide Drought Tracker - U Idaho/WRCC Data Source - PRISM (Prelim), created 5 JAN 2021
Growing Degree Day Anomalies (10/1-1/23)

Gridded climate estimates from https://climatetoolbox.org/tool/Climate-Mapper
90-day Precipitation Totals (through Jan 26th)

https://water.weather.gov/precip/
Recent cool and wet conditions are helping improve short-term drought conditions

Total precip Jan 19-21st
Weather and Seasonal Climate Outlooks
Average mid-level atmo circulation

Cool/dry flow into AZ
La Niña pattern, but less confidence in below-average precip across SW

https://www.cpc.ncep.noaa.gov/products/predictions/WK34/
La Niña pattern expected to wind down quickly this spring

Mid-January 2021 IRI/CPC Model-Based Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: −0.5 °C to 0.5 °C

Neutral likely by April-May-June

https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current
Seasonal outlook is still relying heavily on La Niña pattern continuing through spring

https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1
SNOTEL - % of Median (through Jan 27th)
Lake Powell inflow streamflow outlook: ~53% of normal
Western Water Assessment December 2020 Briefing

“January 1st snow-water equivalent was below normal for much of the region, especially in Utah. As a result, early season forecasts of spring runoff volume are below normal to much-below normal for the entire region except northern Wyoming. The seasonal runoff forecast for the Lake Powell inflow is only 53% of normal.” (https://wwa.colorado.edu/climate/info-dashboard.html#flowcast)
Closing Points

- La Niña conditions have largely controlled the weather pattern across the SW since November.
- Warm and relatively dry conditions have persisted over the past couple of months.
- Low relative humidity has also led to strong diurnal temperature variations and cool overnight temps in low lying areas.
- Recent precipitation will be helpful for short-term drought conditions, but won’t erase long-term deficits.
- Recent wet conditions probably won’t continue with above-average temps and below-average precip expected for much of the rest of the spring (especially into March and April).
Thanks!

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