

HYDROLOGIC SERVICE AREA (HSA)

Austin/San Antonio (EWX)

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

REPORT FOR:
MONTH YEAR

December 2022

TO: Hydrologic Information Center, W/OS31
NOAA's National Weather Service
1325 East West Highway
Silver Spring, MD 20910-3283

SIGNATURE

Chris Morris

DATE

January 13, 2023

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

An X inside this box indicates that no flooding occurred within this hydrologic service area.

The month started on a cool note as surface high pressure over the region kept temperatures below normal across south central Texas. This trend quickly reversed through much of the early half of the month as southerly winds in the low-levels of the atmosphere kept conditions warm and moist. We did see a weak cold front move through on December 3rd, with only a few showers noted across the Hill Country and Interstate 35 corridor. We did see some locally heavy rainfall during the evening hours on December 10th. Ahead of a cold front and upper level weather system, very moist air and a surface trough led to several rounds of thunderstorms from northeast Bexar county into northern Lee county. CoCoRaHS, automated gauge reports and radar data showed the heaviest totals fell in northeast Bexar county near St. Hedwig, where an automated gauge reported 8.39" of rainfall. A fairly broad area of 4-6" totals extended into southern Guadalupe county, with some pockets of 2-4" reported over northern Caldwell and Bastrop counties. Runoff from these storms resulted in a rapid rise on Martinez Creek near Saint Hedwig which crested at 22.96 ft and minor flooding downstream at Cibolo Creek at Sutherland Springs with a crest of 25.79 ft.

On the 12th through the 15th, a large upper low moved from the southwestern US into the Central Plains, with an unstable pattern bringing daily rain chances to South Central Texas. The central and eastern 2/3 of the area benefited from the cloudy skies and long periods of patchy light rain and drizzle, but the rainfall totals were mainly less than 1/10 inch through the period, with the exception of areas along Hwy 77 receiving closer to 1/2 inch. Mostly cloudy and mild days followed through the 17th with no rainfall.

On the 18th, a shallow trough took shape over the southwestern US and tracked east across Texas through the 19th. On the morning of the 19th, more beneficial rains arrived over the Central and eastern 2/3 of the area. Areas from Hwy 281 and I-35/I-37 averaged 1/4 to 1/2 inch while the Austin metropolitan area and areas along Hwy 77 received 1/2 inch to 2 inches. These rains offered some rare improvement to the drought that has targeted the eastern Hill Country and San Antonio metropolitan area that has been at exceptional (D4) drought status for the past few months.

No significant rainfall occurred in the final one-third of December. However, a significant event did occur in the form of a strong cold air surge that arrived on the 22nd of the month. The temperatures for the 22nd through the 24th would normally have been capable of setting records; however two events in past history, one in 1989 and another in 1983 prevented any record lows or record low maximum temperatures from being broken. A slow warming trend and dry weather finished out the month and year.

The December rainfall impacts on the drought status for EWX were minimal overall. Areas east of a Georgetown to Cuero line enjoyed an average improvement of drought status by 1 category; the remainder of South Central Texas maintained the status quo. Impacts on area lakes were slightly downward over the Hill Country, with Lake Amistad and Lake Buchanan rising slightly.

For additional rainfall, stream, soil moisture, or drought information please refer to the links provided below.

Daily, Monthly and Yearly summaries of precipitation and departure from normal are available from the West Gulf River Forecast Center at: <http://www.weather.gov/wgrfc/>

Or from the Precipitation Analysis page at: <http://water.weather.gov/precip/>

Streamflow conditions are available from the United States Geological survey at: <http://waterdata.usgs.gov/tx/nwis/rt>

Soil moisture conditions are available from the Climate Prediction Center at: http://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml

National Integrated Drought Information System: <http://www.drought.gov/>

Rainfall and Reservoir Data:

Austin/San Antonio HSA:

	Monthly Rainfall	Monthly Average	2022 Rainfall Through Month	1991-2020 Normal Through Month	Percent of Normal
Austin – Bergstrom	1.67”	2.61”	25.38”	35.57”	71%
Austin – Mabry	1.95”	2.72”	26.59”	36.25”	73%
Del Rio	Trace	0.71”	15.99”	19.82”	81%
San Antonio	0.47”	2.00”	11.51”	32.38”	36%

Nearby offices:

	Monthly	Monthly	2022 Rainfall	1991-2020	Percent of
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	Rainfall	Average	Through Month	Normal Through Month	Normal
College Station	5.54"	3.71"	35.12"	41.75"	84%
Corpus Christi	0.32"	1.93"	25.83"	31.74"	81%
Laredo	0.17"	1.07"	16.30"	21.35"	76%
San Angelo	1.03"	0.89"	13.70"	20.93"	65%
Victoria	1.42"	2.34"	25.02"	40.41"	62%
Waco	0.55"	2.87"	20.76"	36.40"	57%

***The monthly averages and normal values are for the period 1991-2020**

HSA Reservoir Elevations:

	Conservation Elevation (feet)	End of Month Elevation (feet)	Monthly Change (Feet)
Lake Buchanan	1020	1002.97	0.08
Lake Travis	681	639.92	-0.72
Canyon Lake	909	898.92	-0.65
Medina Lake	1064.2	984.36	-1.00
Lake Amistad	1117	1081.30	0.44

Hydro products:

River Flood Warning (FLW) – 2

River Flood Statement / Flood Advisory (FLS) – 21

(14 Urban / Small Stream Flood Advisory / 7 River Flood Statement)

Hydrologic Statement (RVS) – 0

Flash Flood Watch (FFA) – 0

Flash Flood Warning (FFW) – 1

Flash Flood Statement (FFS) – 3

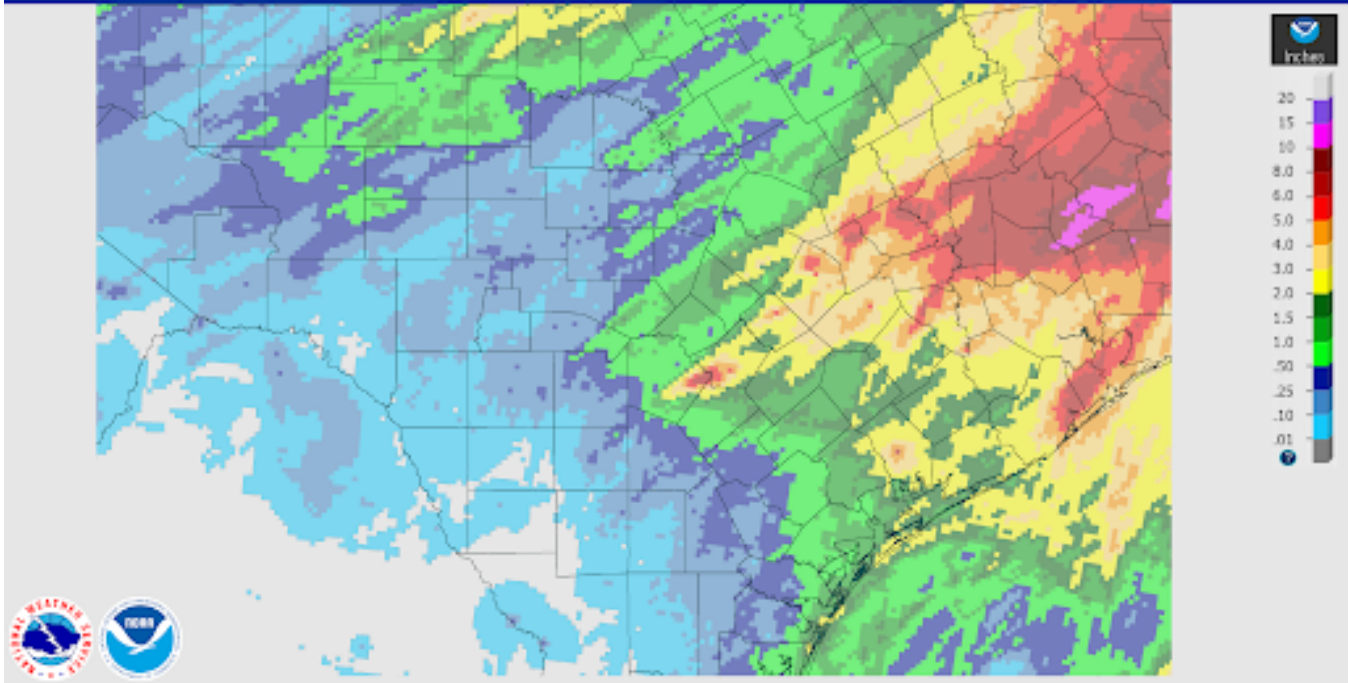
Hydrologic Outlook (ESF) – 6

- 1 AHPS Probabilistic Forecast for Brazos River
- 1 AHPS Probabilistic Forecast for Colorado River
- 1 AHPS Probabilistic Forecast for Guadalupe River
- 1 AHPS Probabilistic Forecast for San Antonio River
- 1 AHPS Probabilistic Forecast for Pecos River
- 1 AHPS Probabilistic Forecast for Nueces River

December 2022 - Observed Rainfall (Inches)

December 01, 2022 Monthly Observed Precipitation

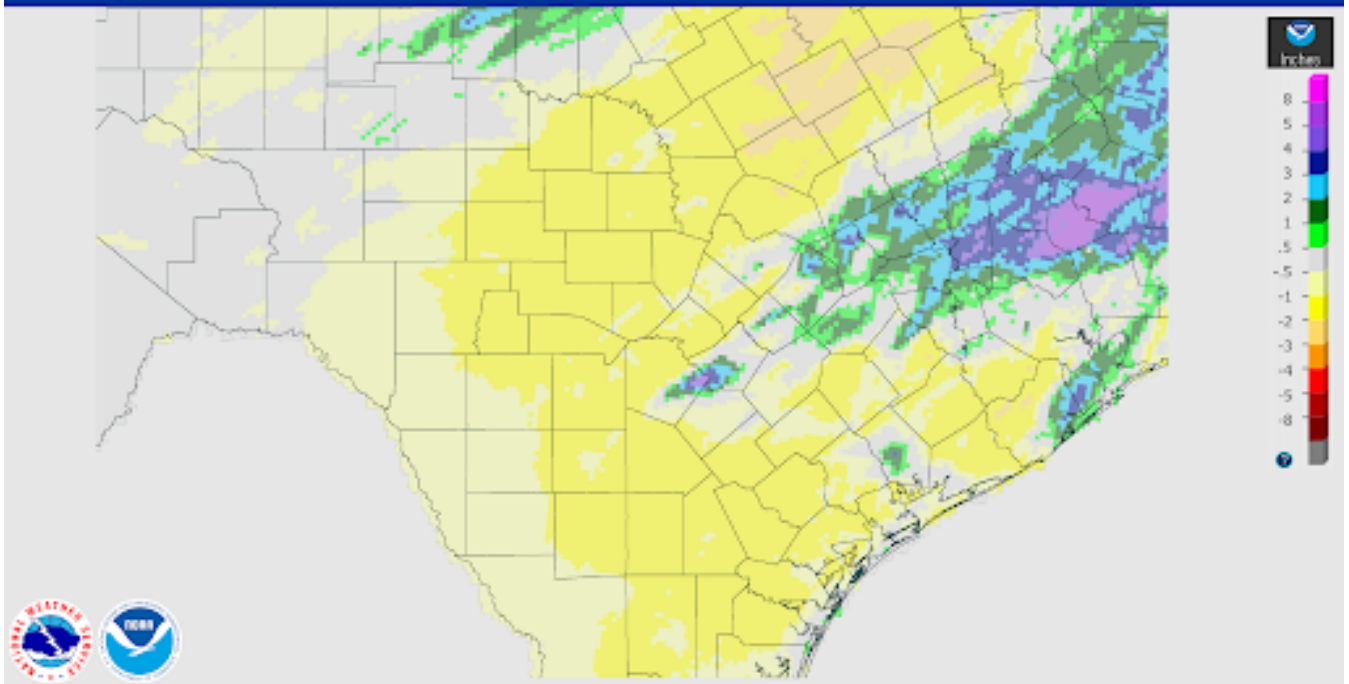
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Valid on: January 01, 2023 12:00 UTC



December 2022 - Departure from Normal Rainfall (Inches)

December 01, 2022 Monthly Departure Precipitation

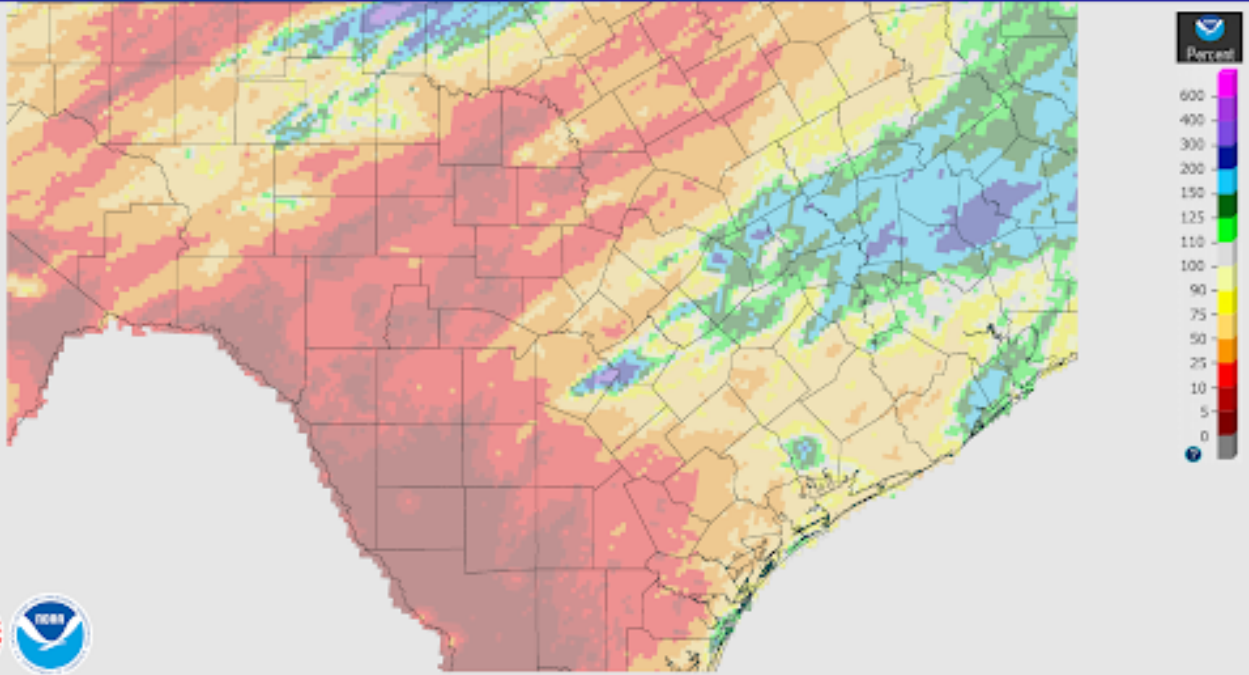
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December 2022 - Percent of Normal Rainfall

December 01, 2022 Monthly Percent Precipitation

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Valid on: January 01, 2023 12:00 UTC



December 2022 - Streamflow Comparison with Historical Flows

December 2022

