Status of Drought Briefing: March 2021

Maps:

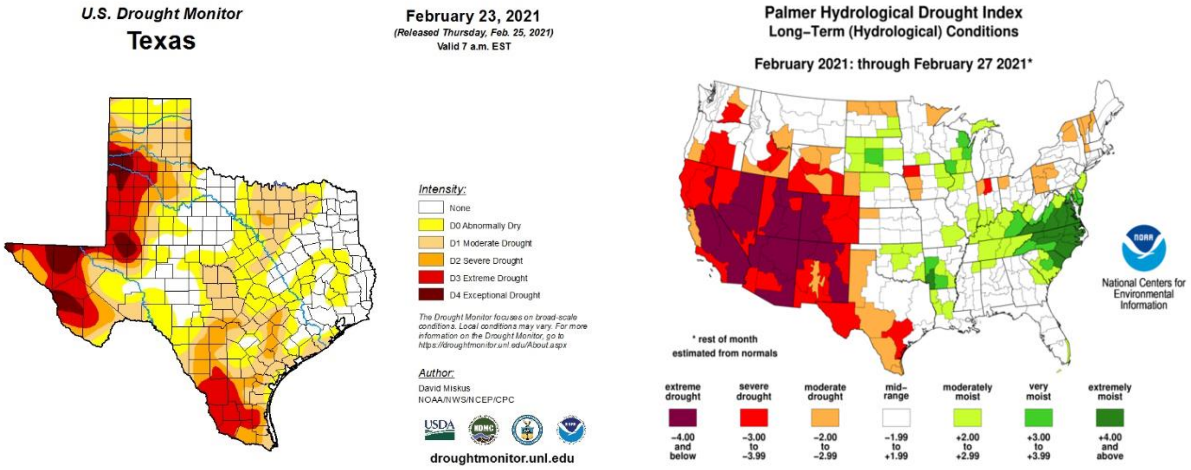
Below are the latest maps including the *US Drought Monitor* map for Texas and the *Palmer Hydrological Drought Index* map. The US Drought Monitor map indicates that our District is within drought condition "Moderate Drought" and the Palmer Hydrological Drought Index indicates "Severe Drought" conditions. These maps have been collected and will be part of the District's 2021 Annual Report.

District Drought Triggers:

As of March 2nd, the Pedernales River drought trigger indicates **0** consecutive days of discharge flows above the drought stage 'Alarm' and **0** consecutive days below the drought stage 'Critical'. The Blanco River drought trigger indicates **0** consecutive days of discharge flows above the drought stage 'Alarm' and **0** consecutive days of discharge flows below the drought stage 'Critical'. To move out of drought stage 'Alarm' or into drought stage 'Critical', both rivers must have 60 consecutive days of flow above or 30 consecutive days of flow below the drought stage, respectively. The District's third trigger, the Palmer Hydrological Drought Index, shows 'Severe Drought' conditions.

Recommended Drought Stage:

The drought recommendation for HTGCD is to remain in Drought Stage 'Alarm – 20% Curtailment' until further notice.



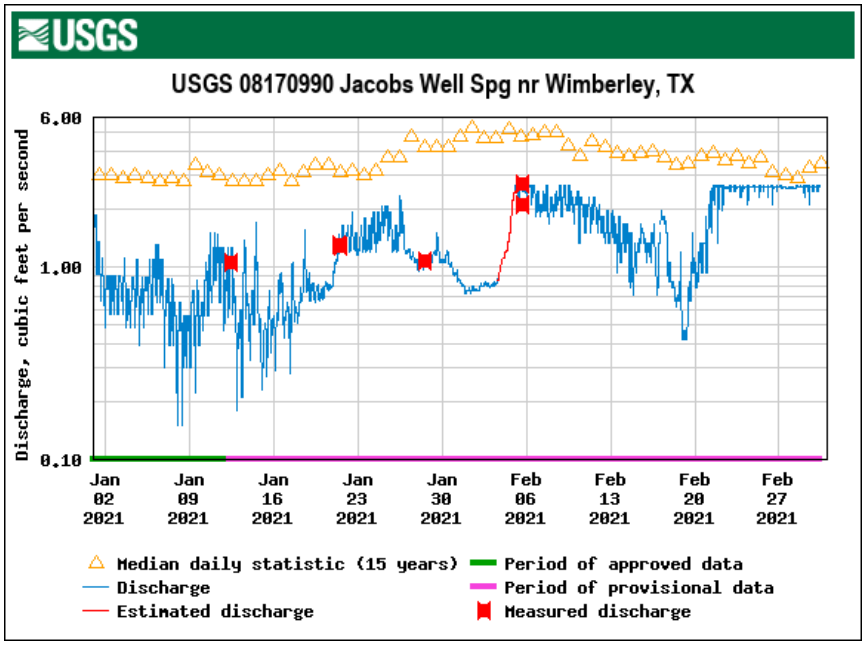
Jacob's Well Groundwater Management Zone Drought Triggers:

At the end of every month, the average discharge rate at Jacob's Well is calculated in order to determine which drought cutback amount will be applied to the Jacob's Well GMZ for the following month. The

running 10-day average as of February 28th indicates that the discharge at Jacob's Well is **2.20** cubic feet per second. The trigger for the 30% Curtailment is an average discharge below 3 cubic feet per second.

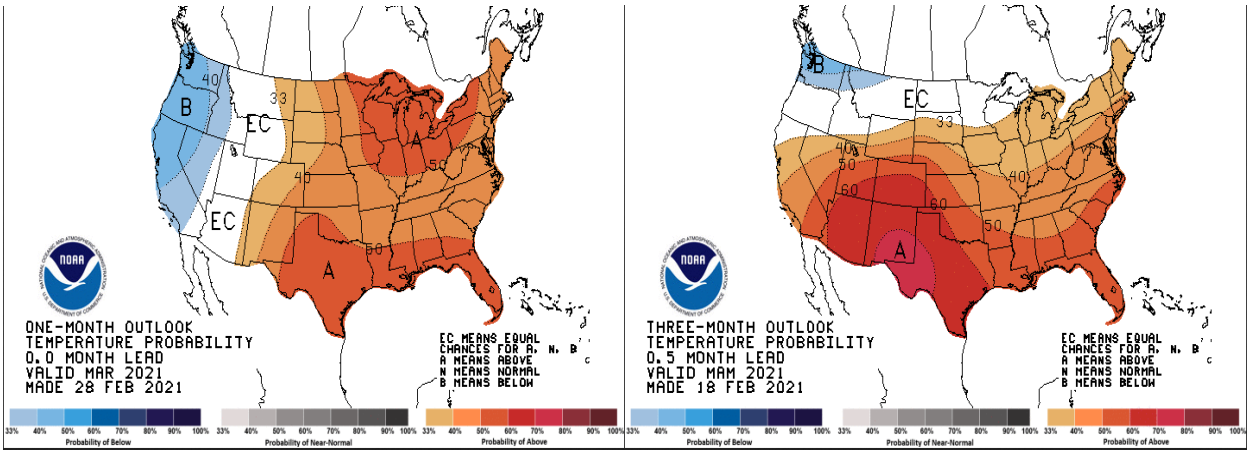
Recommended Drought Curtailment for Jacob's Well GMZ:

The drought recommendation for the Jacob's Well GMZ is to apply a 30% Curtailment for the month of March.

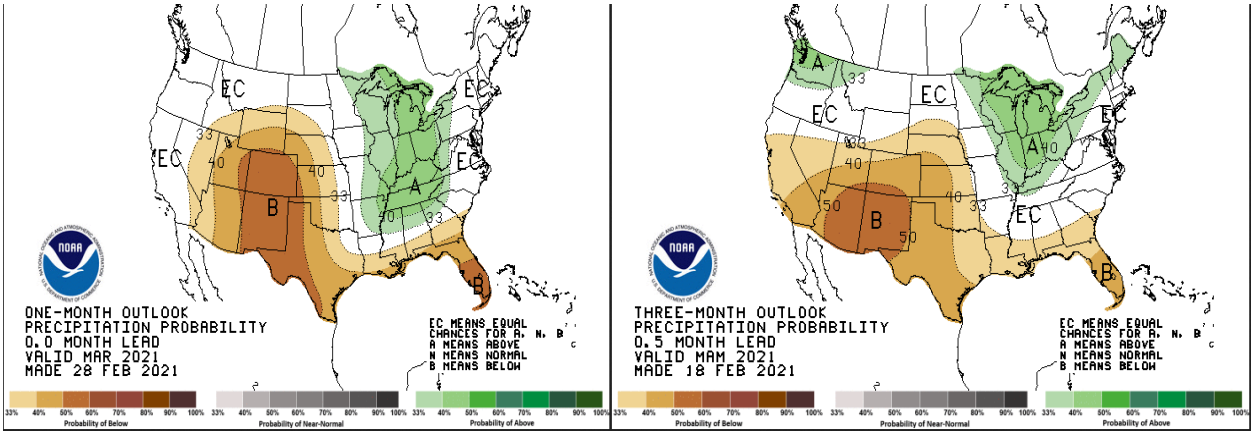


NOAA Forecasts:

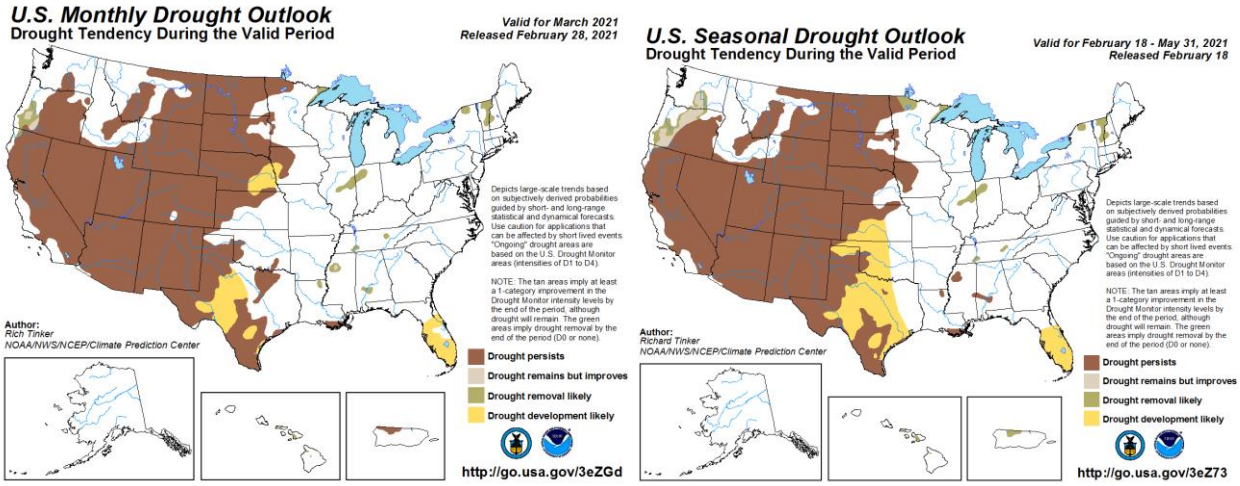
Temperature – According to the one-month temperature outlook provided by NOAA, there is a 50-60% chance that average temperatures will be higher than those typically observed at that time of year. The three-month outlook indicates a 60-70% chance that average temperatures will be higher than those typically observed at that time of year.



Precipitation – According to the one-month precipitation outlook provided by NOAA, there is a 40-50% chance that average rainfall rates will be lower than those typically observed at that time of year. The three-month outlook indicates a 40-50% chance that average rainfall rates will be lower than those typically observed during that time of year.

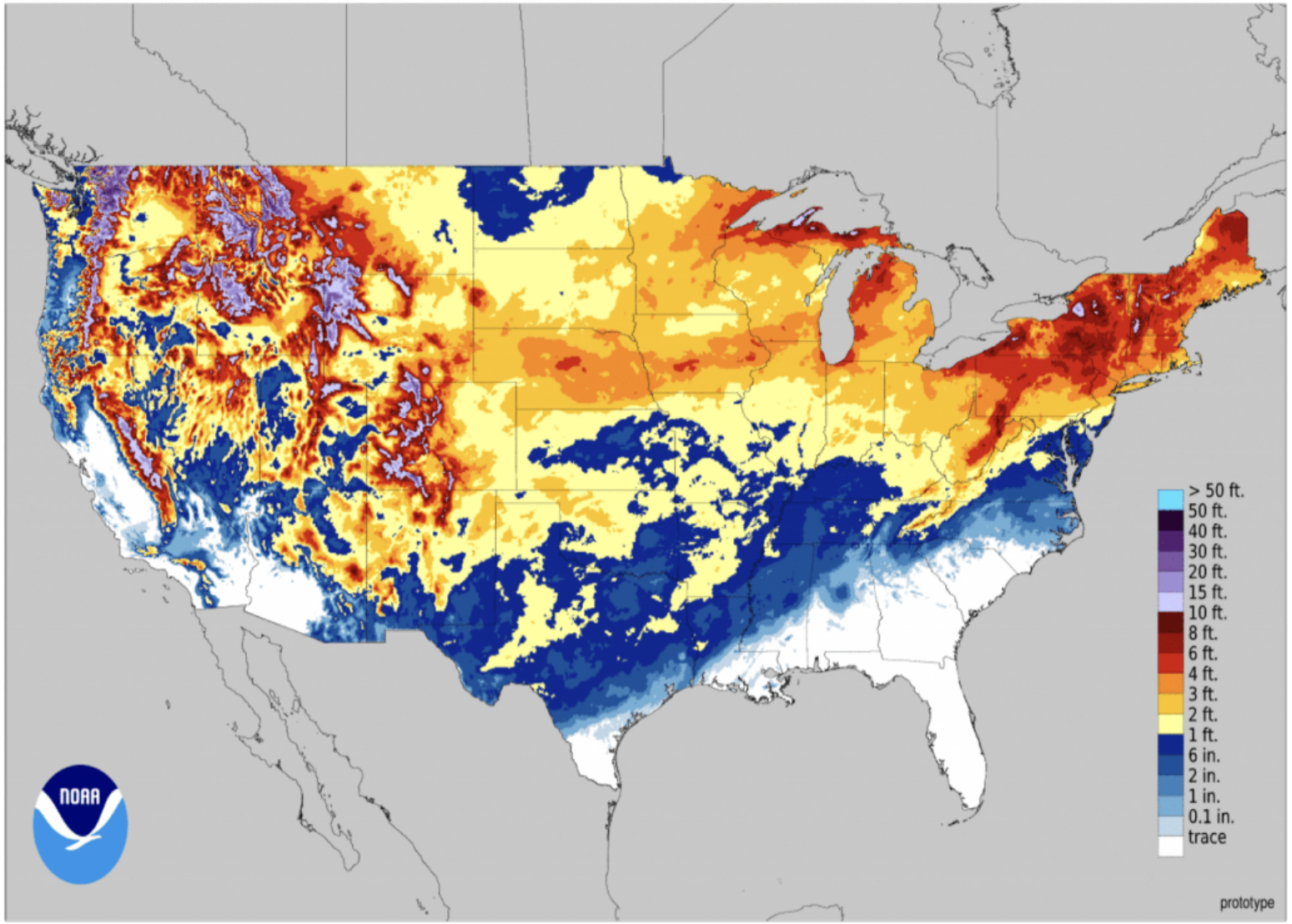


Drought - The monthly drought outlook provided by NOAA predicts that drought conditions will likely persist for HTGCD through March 2021. The seasonal drought outlook predicts that drought conditions will likely persist for HTGCD through May 2021.



National Snowfall Analysis: accumulation from 2020-09-30 to 2021-02-20

Issued 2021-02-20 20:10:52 UTC



March 2021 Water Level Report

On February 24th & 25th, the District conducted its monthly Monitoring Run to gather water level data from our monitor well network. Across the District, most wells saw stability or a small increase in water levels from the previous month. The increases observed varied from well to well.

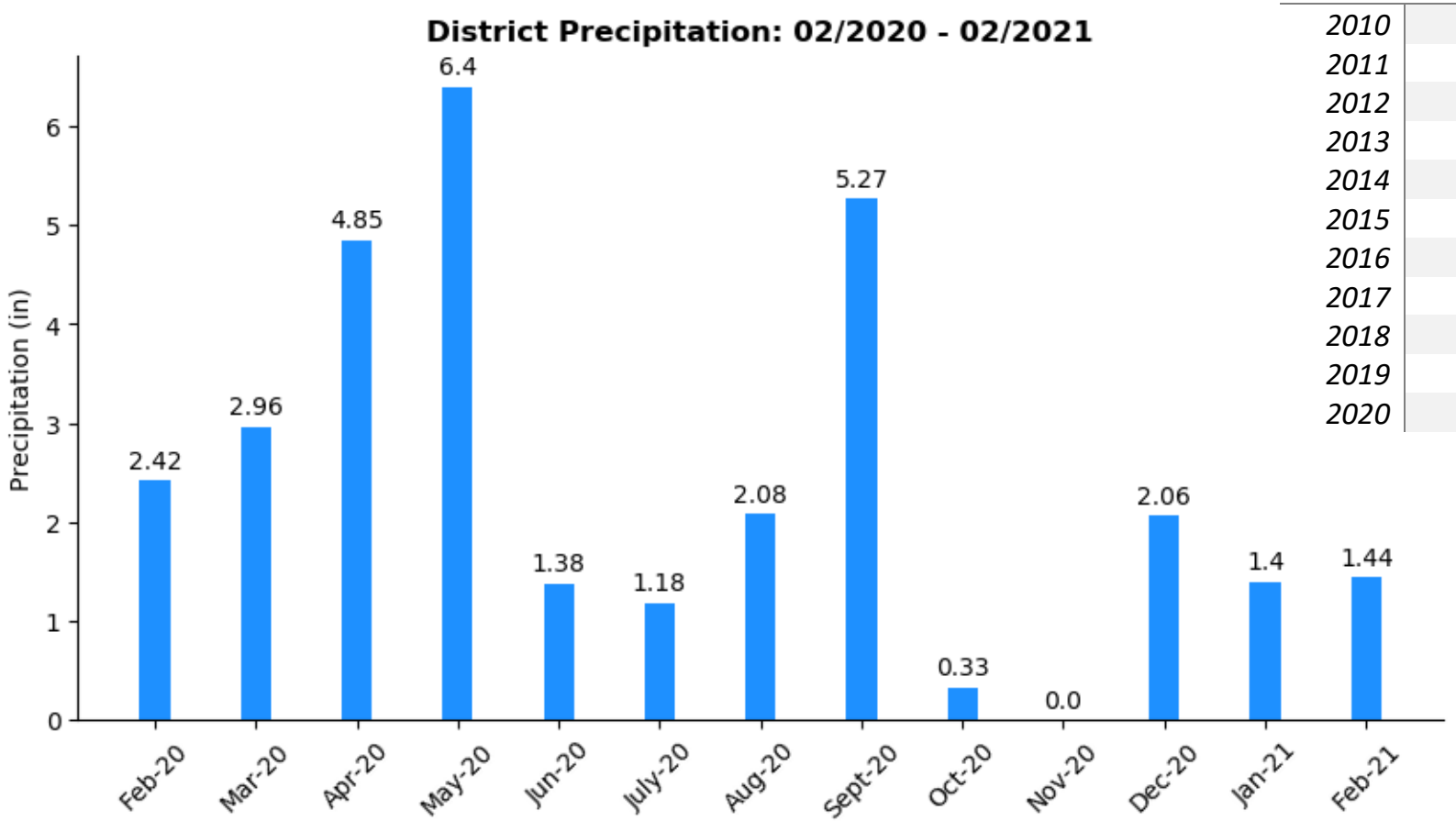
Of particular interest are the wells located in the northwestern portion of the District, north of Onion Creek and south of Hamilton Pool Road. Last August, many of these long-standing monitor wells were showing historically low water levels. The water levels for these wells **have remained stable** for the past month, with the changes in depth being smaller than 3 feet for all wells. A table of these wells, along with their monthly readings, is included below:

Well Name	Well Address	Jan. Depth	Feb. Depth	Change	Period of Record
Roman	W. Fitzhugh Rd.	308	**308***	0	6 years
Hegemier	Stagecoach Ranch Rd.	239.6	**241.4**	-1.8	8 years
Whit Hanks	Mt. Gainor Rd.	190.4	**191.8**	-1.4	13 years
Jack Brown	Farrell Ln.	412.4	**414.7**	-2.3	17 years
Henly Church	Henly Loop	382.2	**382.2**	0	21 years

*Note that the Roman well is currently dry and we are unable to get water levels lower than the pump depth.

Additionally, the Skipton Dedicated Monitoring Well located in this area also reflects stability in water levels. The level changed from 405.51 feet in January to 405.67 in February; a negligible change in water levels in line with other measurements in the area. The Skipton well provides a strong data point for current water level trends because we know the details of the well's construction and we can confirm that those water levels are coming solely from the Middle Trinity aquifer.

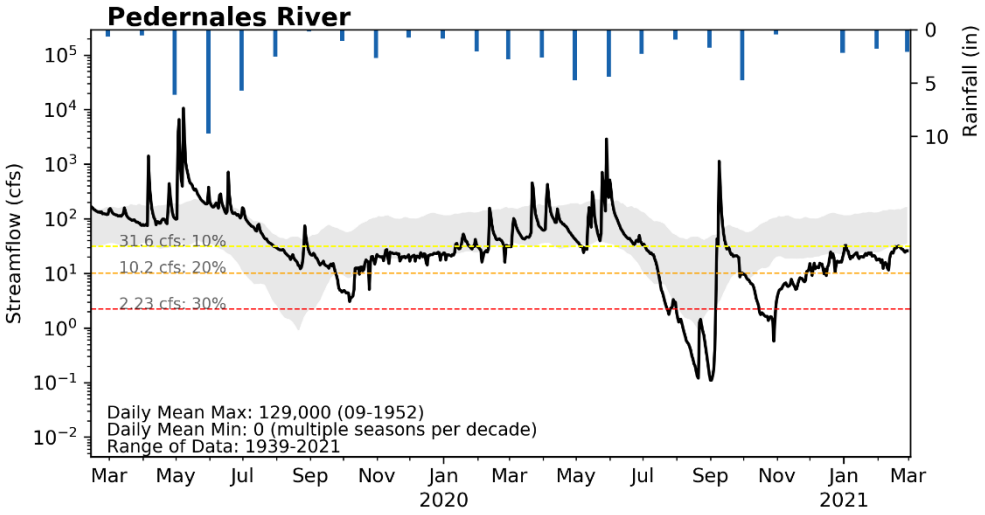
It will be critical to monitor these trends as get closer to the hot months of the year. It will be especially interesting to observe water levels when August arrives again to compare them to last year's historically low readings. Hopefully we don't have a repeat of last years numbers. I'll be looking forward to giving another update after next month's Monitoring Run.

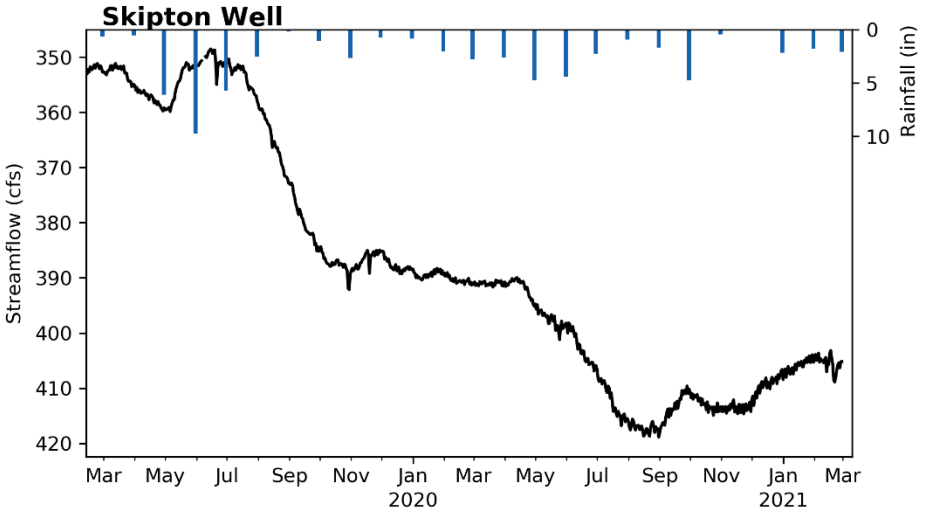


YEAR	PRECIP (IN)
2010	39.8
2011	18.9
2012	25.3
2013	42.5
2014	28.5
2015	48.2
2016	46.9
2017	31.7
2018	39.5
2019	33.7
2020	33.3

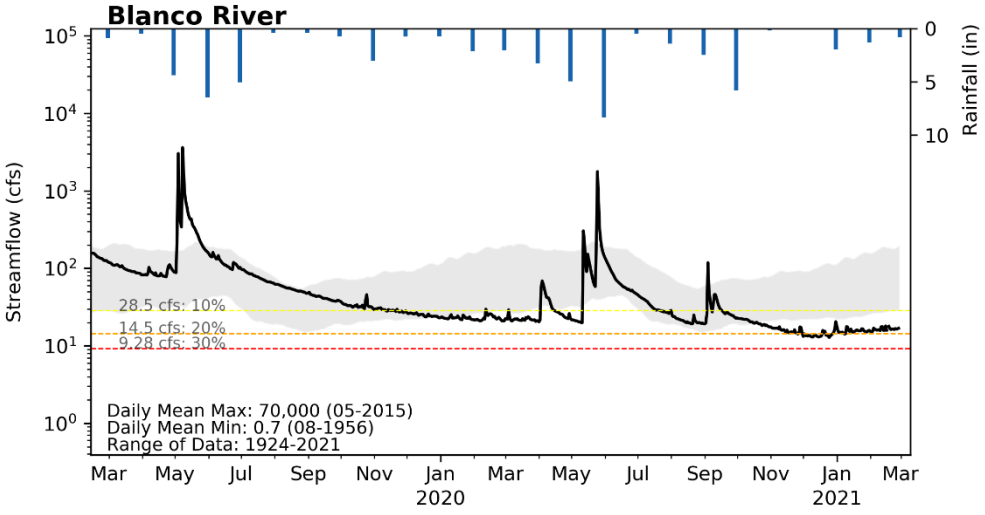
District Water Levels and Streamflow

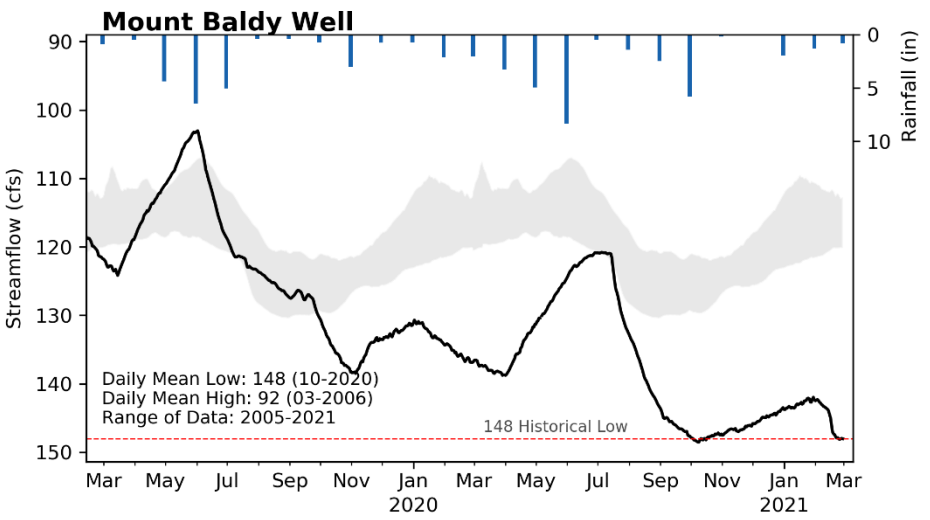
Northern Region

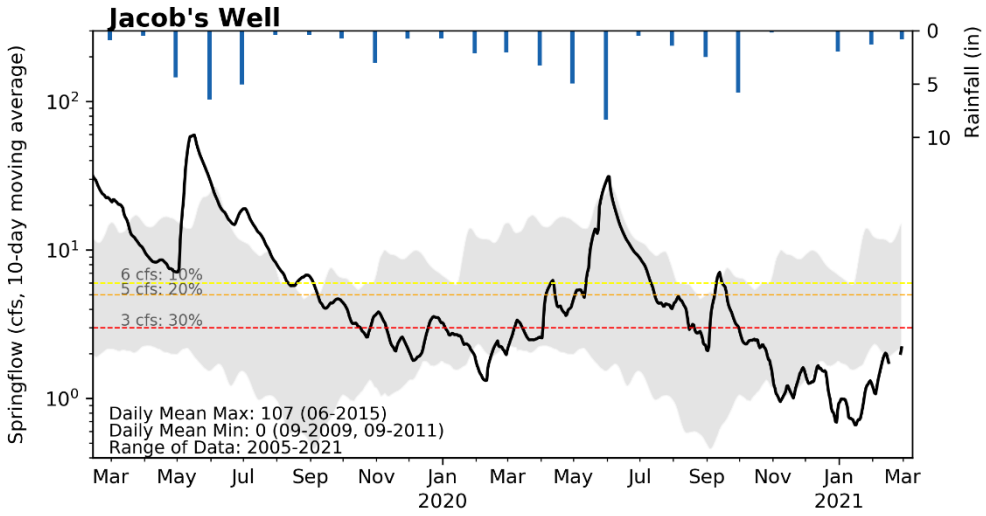




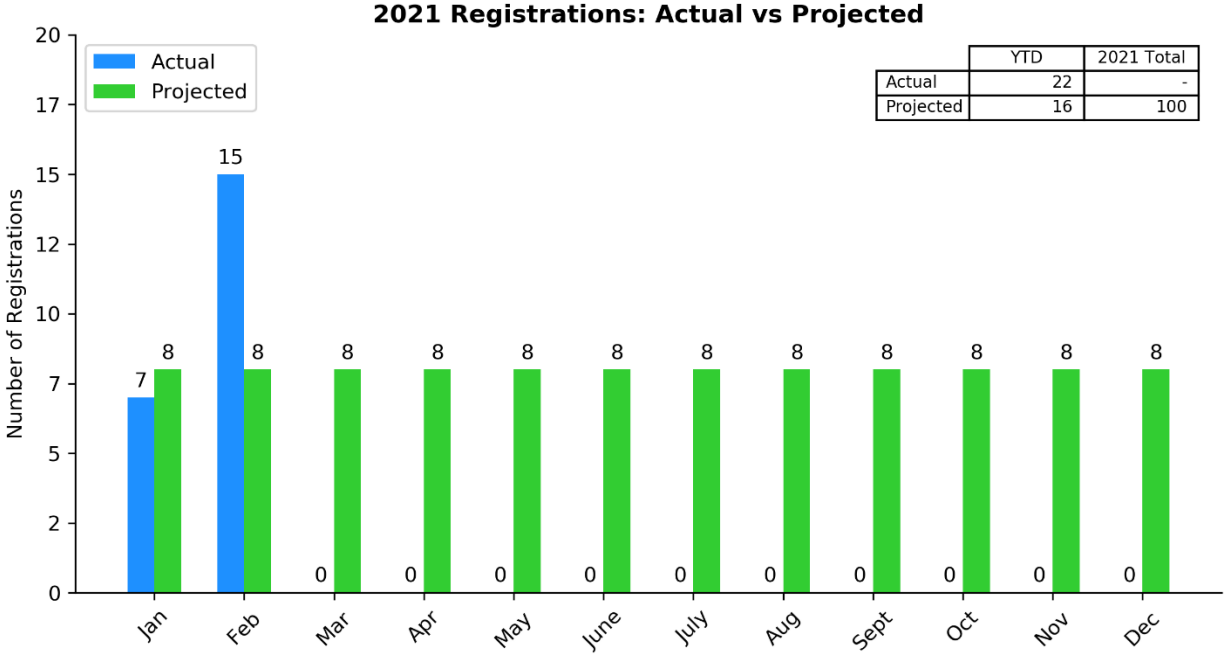
Southern Region





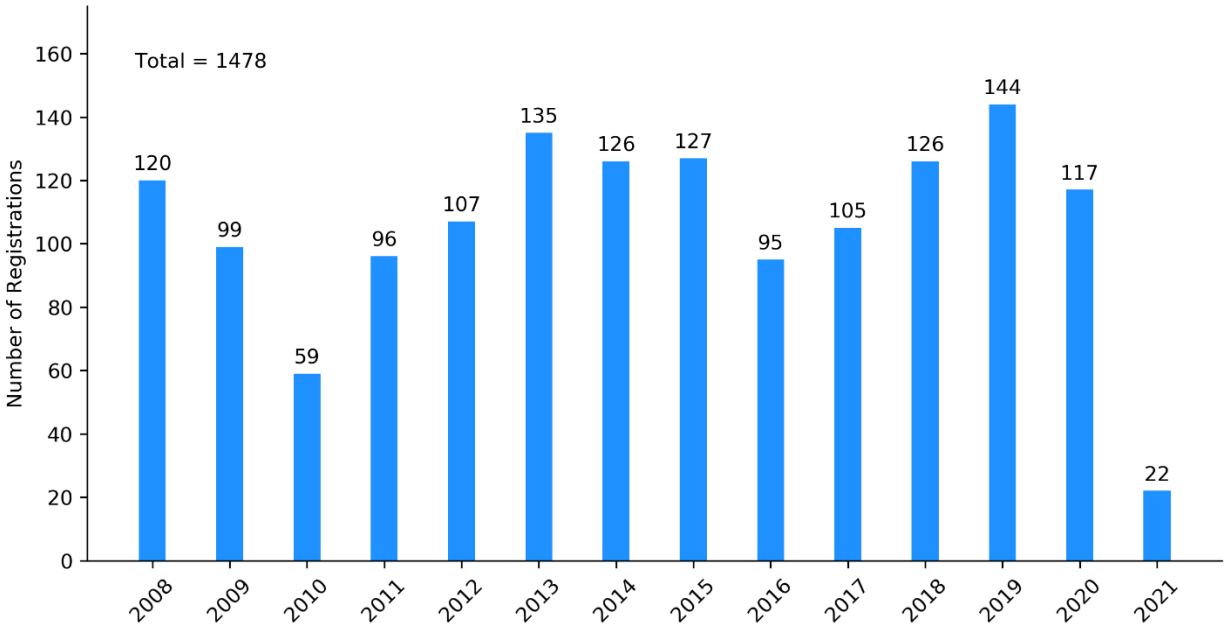

Jacob's Well
Springflow (cfs, 10-day moving average)
Rainfall (in)
10^2
10^1
10^0
0
5
10
6 cfs: 10%
5 cfs: 20%
3 cfs: 30%
Daily Mean Max: 107 (06-2015)
Daily Mean Min: 0 (09-2009, 09-2011)
Range of Data: 2005-2021
Mar
May
Jul
Sep
Nov
Jan
2020
Mar
May
Jul
Sep
Nov
Jan
2021
Mar

2021 Registrations: Actual vs Projected

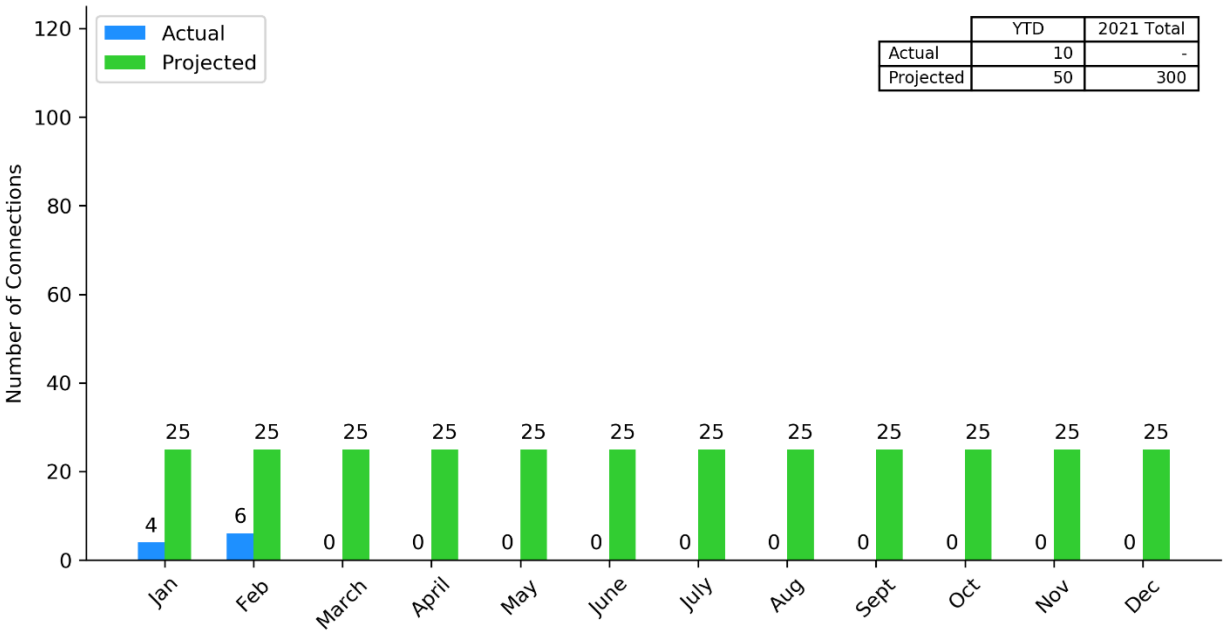


	YTD	2021 Total
Actual	22	-
Projected	16	100

Registrations: 2009 - 2021

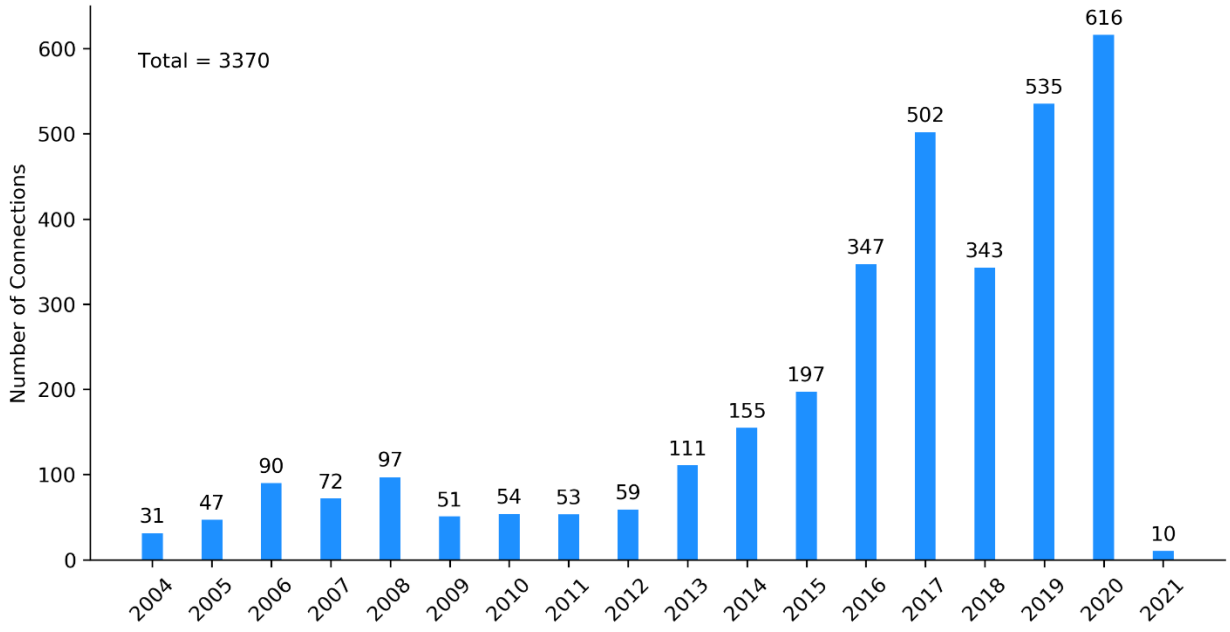


2021 PWS Connections: Actual vs Projected



	YTD	2021 Total
Actual	10	-
Projected	50	300

PWS Connections: 2004 - 2021



March 2021 – TCEQ Update

This is an update regarding the TCEQ projects that the District has been notified of since the previous board meeting on February 4th.

- On February 12th, the District received notice of the '740 Sports Park Road' project. The project is located at Sports Park Rd. and Ranch Road 12 and is described as the development of 1 Commercial Lot that will eventually include 1 building, 2 full-sized baseball fields, and 1 smaller youth baseball field. The District is currently working on its response to the TCEQ regarding this project.
- On February 26th, the District received notification of the 'Polo Club Business Park' project. This project will be developed at Canonade Dr. and W. Hwy. 290. It will be a commercial development that will eventually have 2 regional water quality and detention ponds. The District has not yet sent a response to the TCEQ regarding this project.
- Also on February 26th, we received notice about 'Driftwood Golf and Ranch Club Phase 2', located East of FM 967 and FM 1826. This is the second phase of the development of an 18-hole golf course along with a low-density residential subdivision. The District has not yet sent a response to the TCEQ regarding this project.

February Science Report

Unit 3 (Upper Glen Rose) implications on recharge throughout Barton Creek watershed

- Combining Unit 3 mapping with flow measurements, water quality, and water level data to investigate the potential for Barton Creek to be contributing to the Trinity Aquifer.
- Preliminary data analysis and literature review are complete, in the beginning stages of field work.

Investigating potential surface water contributions to the Trinity Aquifer throughout the Goldenwood and neighboring areas

- Water quality analysis of Middle Trinity wells producing near the Mount Bonnell Fault indicate a freshwater source. This freshwater may be coming from the surface via cross-formational flow with the Upper Glen Rose or Edwards.
- Preliminary data analysis is complete and working towards finding potential wells for water quality samples and water level measurements.

Pumping scenario model tool

- Writing a script that will run projected pumping scenarios quickly and efficiently.
- Gives the ability for anyone to run the model scenario; does not require any additional programs.

Aquifer and Surface Water Conditions 2-pager

- Map of the District showing historical water level percentiles for the current month with a brief description and explanation. Also assesses surface water and springs flow health with a brief description and explanation.

Monitoring Network review

- Assessing details of our monitoring network
- Goal is to add 2 more transducer monitoring well this year.

Ongoing Regional Collaborative Projects:

Jacob's Well Dye Trace

  - Collaboration with BSEACD, Meadows Center, EAA, and Hays County