University of California
Agriculture and Natural Resources
UC Cooperative Extension

August 2018

TEHAMA, GLENN, COLUSA, AND SHASTA COUNTIES
1754 WALNUT ST, RED BLUFF, CA 96080
(530)-527-3101
Email: aefulton@ucanr.edu

Water & Land Resource Manager

Allan E. Fulton
UC Irrigation and Water Resources Farm Advisor
Tehama, Glenn, Colusa, and Shasta Counties

Prepared by Cindy McClain and Starryne Lefdal
Office Manager/Ag Secretary, Tehama County
Office Manager/Ag Secretary, Glenn County

Recent Groundwater Levels in Tehama and Glenn Counties

Allan Fulton, UC Irrigation and Water Resources Advisor

Groundwater levels in Tehama and Glenn Counties are summarized in Tables 1 and 2 (See insert), respectively, from the spring of 2015 through the spring of 2018. Summer levels for 2018 are usually collected during the first two weeks of August each year, so they are not yet available. This timeframe represents a period of highly variable climatic and hydrologic conditions. During this relatively short period we experienced some of the most extreme drought and wet years on record.

Spring groundwater levels are collected by the California Department of Water Resources, Northern Region in cooperation with local agencies in early March while summer levels are generally taken in mid-August (exceptions are footnoted). These levels provide a short term perspective. Most measurements in these tables are excerpts from a larger public online database called the CASGEM (California Statewide Groundwater Elevation Monitoring). It is maintained by the California Department of Water Resources. In some instances, groundwater level data was provided from local public agencies.

Static (non-pumping) groundwater levels are presented in Tables 1 and 2 as the depth to groundwater below ground surface and are measured in feet. Some of the measurements are taken in dedicated monitoring wells that are constructed specifically for monitoring and pumping is greatly restricted to infrequent and very small volumes for sampling water quality. When a dedicated monitoring well is not available for monitoring, irrigation or domestic wells are used as an alternative and efforts are made to take measurements when the wells are not pumping and have not been in operation for some time to attain static levels.

A review of the data shows that groundwater levels are variable between years, season and among different areas within Tehama and Glenn Counties. Many variables influence the depth to groundwater. Topography or ground surface elevation is one variable. Foothill areas in eastern, western, or northern portions of the valley may have higher land elevations than in the center of the valley. An example of this is seen in the Bowman sub-basin of Tehama County where groundwater levels in the Hooker Creek Road area are deeper than 100 feet below ground surface. Proximity to the Sacramento River and its tributaries and the availability of surface water will also influence the depth to groundwater. Areas in closer proximity to the river or streams will generally have shallower depths to groundwater. Similarly, areas that distribute surface water for irrigation are likely to have shallower depths to groundwater. Examples of this are the LeClaire and Decker Avenue area adjacent to Antelope Creek in Tehama County and areas of Glenn County adjacent to the Sacramento River and in southern portions of the Glenn County between Highway 99W and the eastern boundary of Glenn County. Drought, wet years, and changes in land and water use are also variables affecting groundwater levels. Drought reduces river and stream flows and their capacity to replenish groundwater. Wet years enhance river and stream flows and increases the availability of surface water for irrigation, which in turn, lessens the demand for groundwater. Changes in land use also influence water demand and groundwater levels.

Static groundwater levels in the spring provide insight into groundwater recharge from the previous fall/winter season and give an indication whether groundwater storage is increasing, stable, or declining. Summer groundwater levels show the effects of regional pumping. They also provide limited insight about how deep water wells should be constructed and how deep pumps should be set to secure a reliable water supply but it needs to be understood that groundwater levels during the most intensive pumping season are very dynamic and can be site specific so these data only provide a rough indicator. Working directly with a professional well driller and pumping plant designer will provide much more accurate information for specific circumstances.

Publicly Available On-line Sources of Groundwater Information

CASGEM—California Statewide Groundwater Elevation Monitoring
http://wdl.water.ca.gov/groundwater/casgem/online_system.cfm

SGMA Groundwater Management – California Department of Water Resources
https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management

Tehama County Flood Control and Water Conservation District
http://www.tehamacountypublicworks.ca.gov/flood/gsa.html

Glenn County Groundwater Authority
https://www.countyofglenn.net/dept/ag-commissioner/water-resources/glenn-groundwater-authority

Colusa County Groundwater Management
https://www.countyofcolusa.org/index.aspx?NID=677

Butte County Groundwater Management
https://www.buttecounty.net/waterresourceconservation/GroundwaterManagementPlan.aspx

Meeting Announcement

AB 589 (Bigelow)
Water diversion: monitoring and reporting training
Thursday, August 30, 2018

Sponsored by Glenn Range Association

Senate Bill 88 requires all water right holders - who have previously diverted or intend to divert more than 10 acre-feet per year (including riparian and pre-1914 claims) or are authorized to divert more than 10 acre-feet per year (under a permit, license, or registration) - to measure and report the water they divert.

Assembly Bill 589 allows any diverter, as defined, who has completed a course on measurement devices and methods administered by the University of California Cooperative Extension, including passage of a proficiency test to be considered a "Qualified Individual" who may install and maintain measuring devices or implement methods of measurement that are used for their own annual diversions as required by the California State Water Resources Control Board.

Who should attend: Anyone who is required to attend training addressing water diversion, monitoring and reporting as required by AB 589.

Pre-registration is required by August 20th; no on-site registration will be available.
Pre-registered cost: $25 via credit card (check option available). *Fee is non-refundable.*

Sign in: 12:00 – 12:30pm **Program:** 12:30 – 4:00pm

Location: Elk Creek Grange, 151 Church St., Elk Creek, CA. 95939

Online registration (PREFERRED) with a credit card & for more information, go to
http://ucanr.edu/survey/survey.cfm?surveynumber=25271

***Or* mail registration with payment; must be received by August 20th**

Water Measurement/Reporting MAIL IN Registration Form

Please print

Name: _____ Company: _____ Phone: _____
Email: _____
Name: _____ Company: _____ Phone: _____
Email: _____

Use this form to pay by check only. Fee is non-refundable.

Make checks payable to: UC Regents

Pre-register by returning this form with check for $25.00 per person by August 20th to:

Water Measurement/Reporting
U.C. Cooperative Extension
PO Box 697
Orland, CA. 95963

For assistance with registration, please contact the UCCE Glenn County Office at 530-865-1107

For questions regarding the training, please contact the UCCE Tehama County Office at 530-527-3101

Contact us if you need special accommodations

University of California
Agriculture and Natural Resources

Water & Land Management

TEHAMA, GLENN, COLUSA, AND SHASTA COUNTIES

Newsletter

Cooperative Extension Work in Agriculture and Home Economics, U.S. Department of Agriculture, University of California, and County of Tehama, Cooperating.

University of California
Cooperative Extension
Glenn County
P. O. Box 697
Orland, CA 95963

Nonprofit Organization
U. S. Postage
Paid
Orland, CA 95963
Permit No. 63

Table 1. Spring and summer groundwater levels measured in Tehama County from 2015 – 18.

Well ID No.	General Location	Spring 2015	Spring 2016	Summer 2016	Spring 2017	Summer 2017	Spring 2018
ANTELOPE SUB-BASIN		**------ (feet below ground surface) ------**					
26N02W17E001M	LeClaire & Decker Ave	18.2	14.2	20.2	12.9	21.1	18.0
27N02W31C001M	Bray & Craig Ave	27.9	26.6	38.4	27.4	37.1	31.1
27N03W16K003M	Roundup Ave	34.4	32.5	49.1	21.2	42.6	35.2
27N03W23D001M	Hogsback Rd & Hwy 99E	29.9	28.6	43.5	22.7	35.0	33.5
BOWMAN SUB-BASIN							
28N04W04P001M	Hooker Creek Rd & Hooker Rd	124.5	123.0	127.7	122.0	125.2	130.6
29N03W18M001M	Lake California Drive	25.3	24.2	27.7	22.5	NA	24.6
29N04W15E002M	Draper Rd & Oak Lane	38.3	35.0	36.0	32.6	35.8	33.9
29N04W20A003M	Bowman Rd & Learning Way	41.6	40.4	45.8	39.8	43.1	38.5
29N04W28D001M	Hooker Creek & Jeffries Rd	102.4	101.5	104.5	99.3	102.4	100.3
29N04W35B001M	I-5 & Snively Rd	88.0	87.5	86.3	84.7	82.4	85.1
CORNING EAST SUB-BASIN							
23N02W16B001M	Near Cattle Drive	46.8	NA	62.6	NA	60.5	45.7
23N02W28N004M	5th & Moller Ave	49.7	46.4	81.4	35.3	75.0	47.4
23N03W05G001M	Liberal Ave & Cushman Lane	52.3	61.6	NA	NA	84.5	NA
23N03W13C006M	Capay & Hall Rd	52.8	54.6	69.8	50.5	67.9	54.0
23N03W24A002M	Capay Rd & Sour Grass Creek	50.4	49.5	70.5	42.4	67.4	49.1
23N03W25M004M	Ingram Ave & TC Canal	71.9	72.2	91.1	66.3	87.5	72.0
24N02W29N003M	New York & Hall Rd	48.3	44.1	73.6	36.8	68.5	46.1
24N03W03R002M	Highway 99W & Finnell Ave	49.0	51.9	67.5	43.0	61.4	49.7
24N03W29Q001M	Chittenden Rd & Mt. Shasta Ave	89.1	92.2	110.4	89.0	105.9	98.6
24N04W14N002M	Corning Rd & Freeman School House Rd	98.6	101.1	124.7	99.5	123.5	105.9
DYE CREEK SUB-BASIN							
26N02W14G001M	Foothill Rd	81.3	82.9	82.0	80.4	81.3	NA
26N02W15C001M	68th Ave & Hwy 99E	37.3	37.7	NA	33.3	38.0	NA
26N02W16C001M	68th Ave & Schafer Ave	18.7	16.7	22.3	13.5	21.0	20.4
26N02W21Q001M	9th Ave & Hwy 99E	20.9	17.3	25.1	15.4	22.6	16.7
26N02W29R001M	5th Ave	4.3	4.5	4.5	4.9	4.8	4.9
LOS MOLINOS SUB-BASIN							
25N01W32P001M	Leninger Rd & Deer Crk	81.3	81.1	83.4	80.5	83.1	82.4
25N02W09G001M	Buena Vista Ave	39.4	36.4	44.4	33.3	40.6	41.4
RED BLUFF EAST SUB-BASIN							
25N03W10L001M	Rodeo & Central Ave	55.2	48.5	100.7	41.0	99.9	50.1
25N03W11B001M	99W & Gerber Rd	35.8	26.0	69.2	20.4	68.2	30.6
25N03W19N001M	Gyle Rd	88.5	78.1	116.5	72.9	121.2	83.2
26N03W17B001M	Cody Drive	64.3	61.3	68.0	NA	NA	60.0
26N04W25J001M	Ottman Ave & Paskenta Rd	66.0	64.0	66.2	59.9	NA	63.1
27N04W35E001M	Live Oak & Red Bank Rd	119.3	116.0	NA	114.4	NA	116.5
RED BLUFF WEST SUB-BASIN							
27N04W05G002M	Hwy 36	46.4	43.7	57.0	41.1	55.2	46.1
ROSEWOOD SUB-BASIN							
29N05W14L001M	Old Gold Rd	36.9	35.7	37.6	29.6	34.6	35.2
29N05W21H001M	Farquhar Rd	149.2	142.0	144.5	148.9	142.7	146.8
29N05W33A004M	Farquhar Rd	41.8	40.1	46.6	38.2	44.0	40.0
VINA SUB-BASIN							
24N01W05J003M	Reed Orchard Rd	NA	92.3	94.8	91.9	95.0	93.0
24N01W05Q002M	Reed Orchard Rd	50.3	51.8	48.3	45.7	46.8	52.1
24N02W12P001M	Vina Rd	33.6	32.0	37.4	30.3	36.9	33.4
24N02W25G001M	South Ave & Stephens Rd	26.8	27.6	NA	19.0	NA	26.7

[1] NA indicates groundwater level measurement was not available or the measurement was questionable.

[2] Currently groundwater levels are not monitored in South Battle Creek, Bend, and Corning West groundwater sub-basins.

Table 2. Spring and Summer groundwater levels measured in Glenn County from 2015 – 18.

Well ID Number	General Location	Spring 2015	Spring 2016	Summer 2016	Spring 2017	Summer 2017	Spring 2018
		----- (feet below ground surface) -----					
22N03W34A01M	Rd 20 & Rd M	24.2	22.2	32.0	11.3	19.1	24.6
22N03W30C01M	Between Rds 15 & 17 & Rd DD	124.8	131.0	135.6	130.7	135.6	133.7
22N03W21F02M	Rd 14 & Rd HH	24.2	23.4	28.4	17.2	25.8	30.5
22N03W17E01M	Rd 200 & Cedar Ave	14.5	14.0	15.9	NA	16.7	23.7
22N03W12Q03M	Rd 9 & Rd O	42.4	38.8	63.3	33.7	58.1	42.4
22N02W31C01M	Rd 20 & Rd P	32.3	32.2	50.8	17.0	40.3	31.6
22N02W21D01M	6th Ave & Hwy 32	NA[b]	26.7	NA	21.2	27.7	30.8
22N02W20Q01M	Rd 16 & Rd XX	17.4	15.7	18.4	10.8	18.7	19.0
22N02W11Q01M	Rd 9 & Between 1st & 2nd Aves	32.3	25.6	50.2	18.9	48.5	30.9
22N01W29K01M	Rd 206 & Hamilton City	19.5	15.3	24.6	8.1	21.3	19.9
21N04W24A03M	Rd 28 & Rd D	158.1	168.0	NA	169.8	NA	173.0
21N03W31H01M	Rd 31 & Rd F	100.4	109.2	129.0	107.8	124.4	112.3
21N03W24P01M	Rd 30 & Rd P	NA	65.7	NA	56.8	NA	55.8
21N03W12C02M	Rd 25 & Rd NN	42.0	46.0	54.9	33.2	34.7	38.8
21N02W31M01M	Rd 33 & Rd P	44.8	50.5	71.1	40.3	NA	44.2
21N02W23G01M	Rd 29 & Rd V	34.8	35.9	NA	26.4	NA	39.3
21N02W09M02M	Rd 25 & Rd S	NA	56.3	61.7[a]	42.5	NA	56.8
21N02W02B02M	Rd V V & Rd 24	34.4	30.5	49.1	20.8	39.1	30.6
21N01W04N01M	Rd 23 & Rodgers Ranch Road	21.0	18.0	25.0	12.3	20.4	21.6
20N04W12F02M	Rd 35 & Rd D	69.0	78.0	78.8	76.5	76.5	73.8
20N03W33J01M	Rd 45 & Rd J	16.1	21.5	NA	10.0	NA	21.6
20N03W23G02M	Rd 39 & Rd P	29.9	36.9	45.3	23.8	38.2	41.7
20N03W17P01M	Rd 39 & Rd H	29.4	39.8	56.8	26.6	57.3	46.4
20N03W12C01M	Rd 35 & Rd P	45.1	48.8	57.1	42.7	53.8	46.0
20N02W29G01M	Rd 44 & Rd S	7.2	5.8	3.2	5.4	3.2	7.3
20N02W13G01M	Rd 37 & Rd WW	5.9	1.6	1.3	3.3	1.1	5.9
20N02W11A03M	Rd 35 & Rd W	26.1	17.5	29.7	12.5	28.6	18.0
20N02W11A02M	Rd 35 & Rd W	16.0	11.5	14.0	9.5	12.5	NA
20N02W11A01M	Rd 35 & Rd W	11.2	3.6	2.8	4.8	4.1	9.8
20N02W02J01M	Rd 34 & Rd W	12.7	6.9	3.2	8.1	3.2	12.9
19N03W26P01M	Rd 60 & Hwy 99W	2.0	2.6	2.4	0.4	1.6	2.2
19N02W36H01M	Rd 61 & Between Hwy 45 & Rd WW	9.4	6.1	5.3	2.4	4.9	11.9
19N02W34F01M	Rd U & Rd 61	4.5	1.5	4.1	1.4	3.7	5.0
19N02W29Q01M	Rd 60 & Rd SS	4.4	1.2	4.6	1.8	3.9	4.8
19N02W13J01M	Rd 56 & Between Hwy 45 & Rd WW	11.4	9.5	15.6	3.3	13.4	13.2
19N01W27R01M	Hwy 162 & Rd Y	9.5	14.4	30.5	4.4	24.8	15.3
18N02W36B01M	Dodge Road & Hwy 45	11.8	9.1	11.0	3.0	10.5	13.6
18N02W18K01M	Norman Rd & Lambert Lane	10.5	6.4	NA	6.1	NA	8.3
18N01W22L01M	Rd 69 & Rd Y	NA	7.3	6.0	NA	10.6	8.8
18N01W17G01M	Rd 67 & Levee Rd	17.9	16.0	21.9	5.0	NA	19.0
18N01E05D01M	Hwy 162 & Rd Z	6.7	NA	5.6	3.4	6.0	3.2
KWD-1	Rd 65 & D	26.0	27.0	25.0	20.0	26.0	27.0
KWD-2	Rd 60 & Rd B	19.0	26.0	26.0	18.0	17.0	13.0
KWD-3	Hwy 162 & Rd D	20.0	16.0	26.0	13.0	76.0[a]	34.0
GWD-1	Rd 45 & Rd D	47.0	50.0	66.0[a]	39.0	60.0	60.0
GWD-2	Rd 45 & Rd D	38.0	77.0[a]	65.0[a]	49.0	67.0	79.0
GWD-3	Rd 43 & Rd D	37.0	48.0	67.0	26.0	58.0	67.0
CALWater 002-01	Within the City of Willows	19.0	23.0	35.0	16.0[c]	26.0	24.0

[a] Measurement taken shortly after pumping had stopped so levels may not be static. In other instances levels were difficult to measure due to oil in the pumping column or were taken during a slightly different timeframe (example: summer levels are usually measured in August but may have been taken in June or July.

[b] NA indicates levels were not measured because well was not accessible.