

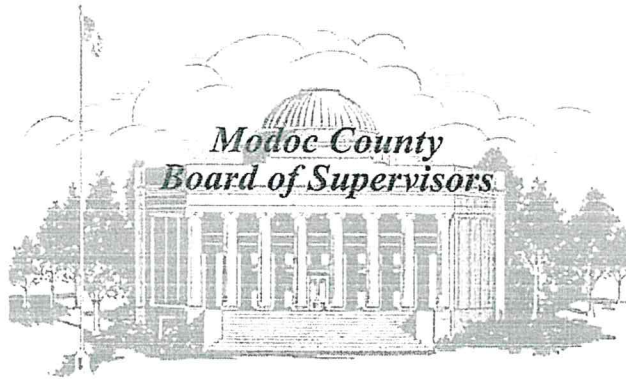
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April 26, 2021

California Department of Water Resources (DWR)
1416 9th Street
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RE: Public Comment on the draft California's Groundwater (Bulletin 118) Update – 2020

The County of Modoc requests to have the following comments taken into consideration for the draft California's Groundwater (Bulletin 118) Update – 2020:

DWR, the State Water Board, are working together to improve recharge opportunities (WRP Action 3.4) with streamlined approaches (WRP Action 3.5) (Pg. 1-7)

The County of Modoc is encouraged by this statement as we have found the permitting process to be lengthy and difficult. We recommend increased support from DWR staff to assist rural counties with limited resources to obtain winter recharge permits and assessments of available water for recharge opportunities. The consideration of waivers for the cost of a permit may increase the ability for smaller rural areas to conduct projects. The \$2,500 per acre foot cost for off-season recharge projects in conjunction with electrical costs, meter installation and more make the projects financial infeasible for many areas.

DWR will continue to collect, compile, and analyze data and information from basins and non-basin areas that are not subject to SGMA compliance. (Pg.1-11)

The non-basin areas should be considered for inclusion into the basin boundaries. The watershed areas surrounding a basin contribute to groundwater recharge which occurs in a basin. The County of Modoc recommends the upland watersheds of mountain valley groundwater basins be identified as significant recharge areas for the groundwater basins.

Many of California's large reclamation and reservoir water projects begin in the upper and middle watersheds of the fractured rock non-basin areas, where groundwater flow contributes to streamflow and ultimately helps to recharge downstream groundwater basins. (Pg. 2-19)

The County of Modoc supports storage for additional recharge opportunities in Modoc County and downstream groundwater basins.

But unfortunately, many of the state's meadows in the non-basin areas do not function as such because of impairment from cattle-grazing, timber harvesting, and road building dating back to the mid-1800's (Cain 2007). (Pg.2-19)

This statement is misleading and out of context. The County of Modoc recommends the removal of this sentence from the document and replaced with "But unfortunately, non-functioning meadows whether caused by nature or historical human uses have reduced value for recharge of ground water". The article goes on to state:

"However, a quote from the 1933 Annual Grazing Report of the Modoc National Forest reveals that the managers felt responsibility towards the well-being of the livestock ranchers over meadow health and protection: The proper thing to do is to reduce the number of stock to meet forage conditions. This we have been planning to do for several years, but because of ... the precarious condition of all the stockmen concerned we feel that it is a most inopportune time to make reductions (as quoted in Menke et al. 1996)."

Great strides have been made through partnerships between permit holders and the federal and state agencies. In Modoc County the stockmen were the drivers of setting land aside and the development of the Modoc National Forest. Ranchers have a direct connection to the land and are one of the most important stewards of natural resources. The articles below show the improvement in water quality related to grazing and management practices which have restored many of the meadows throughout California.

[Potential Grazing Related Water Quality Impairments in California – UC Rangelands \(ucdavis.edu\)](#)

[Riparian Conditions on National Forest Grazing Allotments – UC Rangelands \(ucdavis.edu\)](#)

Forest Ecosystems (Pg. 2-19)

There is no content in this document on the relationship of proper forest management and the increase in groundwater recharge. The below article provides supporting information for the direct correlation of forest management actions and the increase in groundwater recharge. The County of Modoc recommends the inclusion of this topic as catastrophic forest fires are increasing throughout California due to improper management of federal and state lands and this mismanagement is contributing to the degradation of water quality in watersheds. In the 1980's forest timber harvesting was slowed due to environmental concerns and the effects of these actions may be contributing to the decrease in groundwater recharge.

"The resulting increase in soil moisture increases the flow of water in the unsaturated zone, which in turn may increase runoff and groundwater recharge. The net effect will depend on the characteristics of a given hydrogeologic landscape—such as its bedrock geology, surficial geology, soil type, and topography."

"Soil moisture increase and higher water table after harvest may also lead to an increase in the net rate of groundwater recharge, although the amount of recharge depends on the ability of subsurface to store and transmit water."

Smerdon, B.D., T.E. Redding, and J. Beckers. 2009. An overview of the effects of forest management on groundwater hydrology. BC Journal of Ecosystems and Management 10(1):22–44. www.forrex.org/publications/jem/ISS50/vol10_no1_art4.pdf

The state's 2011-2016 average annual groundwater extraction volume for the agriculture, urban, and managed wetlands sectors was 19.1 maf. (Pg. 3-2).

The County of Modoc has established many data gaps in our small basin, so it is difficult to understand how a state quantification of groundwater extraction can be made. The document details assumptions in many areas and calculations. The County of Modoc feels that assumptions should not be made, as groundwater is a critical and economic issue for many individuals. Until these data gaps can be filled, extreme caution should be made in regards to publishing numbers for hydrologic areas without sound science and data to support the determination.

Even though the ration of domestic-well to irrigation-well installation from 1977 through 2018 is approximately 5:1, the irrigation wells produce, on average, 83 percent of the groundwater used in the state. (Pg. 3-33)

The document continually downplays the use and effect urban groundwater usage has on the status of groundwater in California. As the state continues to grow, equity needs to be placed on all users not just agriculture.

“The need for groundwater management became apparent beginning in the 1940's with rapidly declining groundwater levels concomitant with land subsidence occurring in various parts of the state.” (Pg 4-1)

Land subsidence seems to be only related to groundwater within this document. Man-made causes include groundwater pumping, mining, oil and gas production, river channelization, and surface loading. The County of Modoc recommends the addition of potential sources of land subsidence to the document.

As the practice of unmanaged extraction of groundwater resources persisted for decades, aquifers were drained lower and lower to meet increasing water demands. It became apparent that groundwater was not an infinite resource and unfettered use had led to adverse conditions that threatened the quality and sustainability of the resource. (Pg. 4-1)

This is a generalized statement, there are many areas in California where there are healthy aquifers or aquifers which recover during wet periods. The County of Modoc recommends adjustments to include the positive areas within California.

Some of the water efficiency practices currently being implemented include controlling drainage problems through alternative use of lands, using recycled water that otherwise would not be used beneficially, improving on-farm irrigation systems, and lining or piping ditches and canals that will reduce current levels of groundwater recharge. (Pg.4-9)

While improvements in irrigation efficiency are positive, the unintended consequences of reducing flood irrigation are being seen in the reduction of groundwater recharge this method

provided. The efficiency factor of irrigation methods needs to consider the benefits they are reducing such as recharge.

Because of the short time between the passage of SGMA and the deadline for updating basin prioritization, DWR applied the CASGEM 2014 Basin Prioritization results as the initial SGMA 2015 Basin Prioritization, which categorized 127 of the 515 groundwater basins in the state as high and medium priority. (Pg.4-29)

The short time of implementation also reduced the ability for the public to provide input on the method used to establish the basin prioritization. The County of Modoc would like to see an improvement of the matrix by including negative points for component 1 and the removal of component 8. As detailed below for Appendix A.

DWR, with the engagement of the California Department of Fish and Wildlife and The Nature Conservancy, developed a database application on natural communities commonly associated with groundwater to aid in identifying potential groundwater dependent ecosystems (GDE) to be included in their GSP planning. (Pg. 4-36)

The County of Modoc would like to understand how The Nature Conservancy became the leading representative of defining Groundwater Dependent Ecosystems. There are many other non-profit organizations who are directly engaged in groundwater and ecosystems and it seems there should have been a broader equity in the development of this partnership.

DWR collaborated with the California Department of Fish and Wildlife and The Nature Conservancy to review the compiled dataset. (Pg. 4-68)

The County of Modoc would like to understand how The Nature Conservancy became the leading representative of defining Groundwater Dependent Ecosystems. There are many other non-profit organizations who are directly engaged in groundwater and ecosystems and it seems there should have been a broader equity in the development of this partnership.

Opportunities and Challenges (Pg. 4-106)

This section details the challenges associated with the implementation of the Sustainable Groundwater Management Act. As a remote rural county, our challenges will be much different to that of a central valley farmer. Our growing season is much shorter (101 days) and the crops produced tend to be low value. The economic impact in this section is generalized to encompass the entire state as a whole. We feel the economic impact needs to be assessed on a regional level. Agriculture is one of the only economic activities in the Big Valley basin and Tululake Sub basin. The suggested actions would bankrupt many farmers in the basins and the GSA's are small local governments who have significant financial challenges. The counties in this area are categorized a disadvantaged and severely disadvantaged communities. The addition of SGMA to these rural areas will continue to increase the severity of rural decline.

Built and Natural Infrastructure (Pg. 4-106)

The development of additional storage in the Northern portion of California could assist in providing additional water to other portions of the state. The passing of Proposition 1 was a

promise of water storage and to date there is no new storage being built in California with \$510 million dollars allocated. The County of Modoc supports the investigation of additional storage of water through the building of reservoirs and dams.

Estimates on Water Availability for Recharge (Pg. 4-110)

The County of Modoc supports Managed Aquifer Recharge (MAR) and Flood-Managed Aquifer Recharge (Flood-MAR) the use of floodwaters for recharge. We recommend the process to receive permits to conduct recharge activities is improved and simplified. We have found significant challenges in obtaining a permit some of which includes the length of time from application and approval. The County of Modoc would like to recommend a waiver for GSA's to obtain permits for recharge projects.

Land Subsidence Monitoring (Pg. 5-20)

The methods provided in the document have some flaws as they do not differentiate subsidence from the modification of land for farming practices or construction. The Lassen and Modoc GSA's have identified several areas which were identified by continuous global positioning (CGPS) as subsidence to be the leveling of fields for pivot construction and in one instance the construction of a CalTrans building. While this is valuable technology, field verification may be needed to rule out man-made triggers of subsidence.

Appendix A: Methods and Assumptions

Although large-scale mapping and regional studies provide a good statewide approximation of alluvial basin boundaries, additional refinement of alluvial basin boundaries using local-scale studies, exploration, and mapping are recommended and encouraged. (Pg. 3)

The watershed surrounding a basin should be a factor in the basin boundary as it states on page 2-19 of the document that "Many of California's large reclamation and reservoir water projects begin in the upper and middle watersheds of the fractured rock non-basin areas, where groundwater flow contributes to streamflow and ultimately helps to recharge downstream groundwater basins." The upper watershed areas are an important factor and the County of Modoc recommends the addition of this in the determination of a basin boundary.

Smerdon, B.D., T.E. Redding, and J. Beckers. 2009. An overview of the effects of forest management on groundwater hydrology. BC Journal of Ecosystems and Management 10(1):22–44. www.forrex.org/publications/jem/ISS50/vol10_no1_art4.pdf

The basin prioritization process (California Water Code Section 10933[b]) directs DWR to consider, to the extent data are available, the following eight components:

- 1. The population overlying the basin.**
- 2. The rate of current and projected growth of the population overlying the basin.**
- 3. The number of public supply wells that draw from the basin.**
- 4. The total number of wells that draw from the basin.**
- 5. The irrigated acreage overlying the basin.**

6. The degree to which persons overlying the basin rely on groundwater as their primary source of water.

7. Any documented impacts on the groundwater within the basin, including overdraft, subsidence, saline intrusion, and other water quality degradation.

8. Any other information determined to be relevant by the department.

(Pg. 6)

1. **The population overlying the basin.** The population of a basin is calculated in the matrix but there is no way to factor in the decrease of a population. Modoc and Lassen County have seen a decrease in their population and the matrix should have the ability to provide a credit due in this area.

8. **Any other information determined to be relevant by the department.** This component seems like an overreach and leaves much room for interpretation in place of sound science to determine a basin ranking. The County of Modoc recommends the removal of this criteria from the Bulletin 118 basin prioritization.

Appendix H. Hydrologic Region, Basin, and County Data

This appendix is scheduled to be released with the final release of California's Groundwater Update 2020. The County of Modoc would like to have an opportunity to review the County data prior to the final release of the document.

End of comments

We thank you for the opportunity to provide comments on the document and look forward to working with the Department of Water Resources on opportunities to improve groundwater management in California and Modoc County.

Sincerely,



Ned Coe,
Chair of the Board