My name is Joe Ratliff and I live in Grass Valley, on a five acre parcel, approximately 10 miles south of Winnemucca.

I am a retired water resources specialist and talking to you today to express my serious concerns regarding the significant draw downs of groundwater aquifers that have been occurring in Grass Valley (which is located in state hydrographic basin 071) for a number of years. These precipitous drops in ground water levels are being caused by a number of complex hydrological, climatic and water usage factors.

I have been regularly monitoring my domestic well since December 1, 2004. The static water level on that date was 161 feet. On February 26, 2016, I took a reading and it is at the lowest depth (182 feet) since I have been residing there. Therefore, during a time frame of approximately only 11 years, the ground water aquifer at my location has dropped 21 feet!

During this period, I have always practiced strict water conservation measures such as limiting landscaping irrigation, using restrictive water outlets, minimal flushing of low-use toilets, use of washing machine, elimination of dish washer, washing vehicles, and last but not the most enjoyable, sponge baths in lieu of showers.

My current well is the second which has been drilled on the property after the original shallower well went dry in 1995. Many of the other residents in this area have also had to either deepen their domestic wells or drill new ones.

To verify that my well readings are not an anomaly, but do actually represent similar conditions which have been occurring in other wells in this area, I obtained water level data from the State Division of Water Resources. They have been monitoring agricultural and irrigation wells in this basin for a number of years and have data on 70 wells. The proportional drop in static water levels for the majority of these wells correspond very closely with my well. For the same time period I took my readings (2004-2016), water levels in some of these wells dropped as much as 9 to 18 feet. But, what is really shocking is that if you look at longer time frames going back to 1991, the water level reductions in many of these wells are even more ominous: 20.2 feet to 42.4 feet.

Obviously, water usage and discharge rates in basin 071 have been over allocated and far exceed natural recharge amounts, especially during the extreme/exceptional droughts and the record setting temperatures which have been occurring in recent years.

I live in close proximity to very extensive agricultural operations which utilize large pivot systems. They irrigate thousands of acres of high water consumptive crops (e.g. alfalfa, etc.). The Division of Water Resources states that agricultural irrigation, alone, in Humboldt County accounts for almost 92 % of the total amount of water consumed annually. Whereas, in stark contrast, domestic and quasi-municipal use amounts to a paltry 2 %.

When these agricultural operations commence irrigating in early spring, my static water level drops rapidly because of the extensive cones of aquifer depression these large systems create. Since my current static level is 182 feet (when no irrigation is occurring), I am afraid that the well may go dry this year, during the growing season, because the pump is set at 200 feet just 15 feet above the bottom. If I have to drill, yet another deeper well (to at least 300 feet), it will cost me more than $12,000.00. And, I am a retired senior on a substantially reduced fixed income.

During the 15 years I have been a resident in Grass Valley, this area has also experienced a continuous increase in the construction of private homes requiring the drilling of even more wells. This is adding to the problems associated with the lowering of the ground water aquifers by agricultural irrigation overuse and the long term drought conditions. These building permits are being arbitrarily granted by both Humboldt and Pershing Counties, in the midst of some of the worse, long term droughts and record high temperatures in Nevada's history. As far as I know, neither the counties, nor the city of Winnemucca, have enacted any significant water conservation measures and/or drought contingency plans during this period.

The U.S. Drought Monitor, as of February 23, 2016 has this area currently classified as under extreme drought conditions, which is the second worse rating possible. And, this is taking into account that we have received above normal rainfall in 2015-2016. Unfortunately, our local snow pack amounts are below normal for this same period. Most importantly, it is snow depths and moisture content of the snow which are the prime components in helping to stabilize or increase natural recharge rates and reduce drought.

As of February 2 of this year, the U.S Geological Survey reports that, even with the increased moisture created in this area by the current El Nino weather conditions, that more than 38% of the western U.S. remains under drought conditions. And, this includes both Humboldt and Pershing Counties, and all of hydrological basin 071.

Comments, Suggestions and Recommendations

1. Because agricultural irrigation operations in Humboldt and Pershing Counties, by far, are the largest consumers of water, mandatory conservation measures must be enforced starting with the upcoming growing season. At least a 25% reduction in water use would be minimal and a 35-50% reduction would be more appropriate.

2. Since the State is requiring that most water rights consumers install flow meters on their wells by April 1, 2016, these meters should be monitored regularly by Division of Water Resources personnel, and not just the requirement that the user's submit quarterly reports.

3. That the State gives the Division of Water Resources the necessary enforcement capabilities, legal channels and tools to order the respective, local municipalities that they prepare and invoke strict water management plans and conservation measures including specific watering days for lawns and landscaping, warnings and citations for violations and wasting water, and educational efforts aimed at promoting sensible and effective water conservation and management.

Furthermore, the State should order that a moratorium be placed on new building permits by these municipalities until well monitoring, water use data, and weather information indicates that the ground water aquifers are stabilizing and/or are rising, and that long term drought conditions have diminished.

4. There exists a Nevada State Water Plan. It was prepared years ago, and concerning it's discussion of water conservation, there are some very disturbing statements in the plan. I quote a few of the more serious issues. ”At this time, the State has no comprehensive program for promoting and encouraging conservation, or for assisting water use entities in developing water conservation strategies”. “The beneficial use rule (use it or lose it) as it applies to certificated water rights does not encourage conservation”. “The State has not funded the water conservation program”. “There are no specific staff to help water systems develop water conservation plans....”, etc., etc., etc..

Since we are continuing to suffer from major drought conditions, record high temperatures, and with Nevada being the driest state in the nation, the State must prepare a current, comprehensive, state-wide water conservation and management plan. This document should incorporate the best scientific data and information now available concerning the state's water resources.

The State also must provide adequate funding to carry out the implementation of the plan.

5. Over the long term, the State should put a serious effort into a much-needed reformation of the obsolete and outdated Nevada Revised Statutes (NRS's) which govern water rights laws and regulations.

For example, currently under the beneficial use rule, if a water rights user does not annually use the full amount of their appropriated water, they may have to forfeit that amount. This “use it or lose it” doctrine provides absolutely no incentives for conserving water. They should be encouraged to use less water. There is a “credit rule” available for water users, but most people aren't aware of it or using it. The beneficial use rule should be abolished and replaced with an objective and scientific method of managing the state's scarce water resources.

Water should not be construed as a commodity to be bought and sold on the open market for profit. It is a basic necessity and God-given privilege of all living entities and should be revered, protected and conserved whenever possible. Quite simply, it should be illegal to buy and sell water rights.

Water rights and use should not be transferable from one location to another or from one hydrographic basin to another. This is especially vital in situations involving enormous amounts of water such as southern Nevada's proposed importation of water from eastern Nevada locations. We just don't know enough about the complexities of surface and ground water systems to be allowing such large transfers to take place.

6. The application for a water rights permit should not be approved, or denied by a single person such as the Division of Water's State Engineer. Such an important and long-term decision should be made by a board or committee comprised of an interdisciplinary group of water rights specialists, hydrologists, scientists, public and private individuals, and so forth.

7. The Division of Water Resources State Engineer is an official who is appointed by the standing governor. This is too important of a position, with such major responsibilities and long term impacts to our natural resources and economy, to be left to the leanings of a relatively brief governorship. Therefore, the state should require that future openings be filled through standard hiring practices and protocols. Additionally, the requirements for this position should include that all prospective applicants must meet a broad, interdisciplinary spectrum of education, skills and experience.