

California State Senate Select Committee on Human Security

December 16, 2021 1:00 p.m.

California State Capitol Room 4203

Informational Hearing

The Western Drought: The Hidden Human Impacts

Introduction

Water is essential for life as we know it. Water plays many roles in today's society and fuels California's economy. Every household and business uses water in some sort of way to support daily human demand needed either to bathe, cook, clean or drink and in the mass production of agricultural and industrial products.

Research suggests that the state's economy is suffering and will continue to suffer from water scarcity, related to drought, water infrastructure deterioration and reduced water deliveries.

California faces many water challenges due to climate change and population growth. Because people living in poverty are often the ones hit the hardest by water scarcity and water access, it is important that we adapt and plan for the economic and social well-being of California residents as the water access is limited.

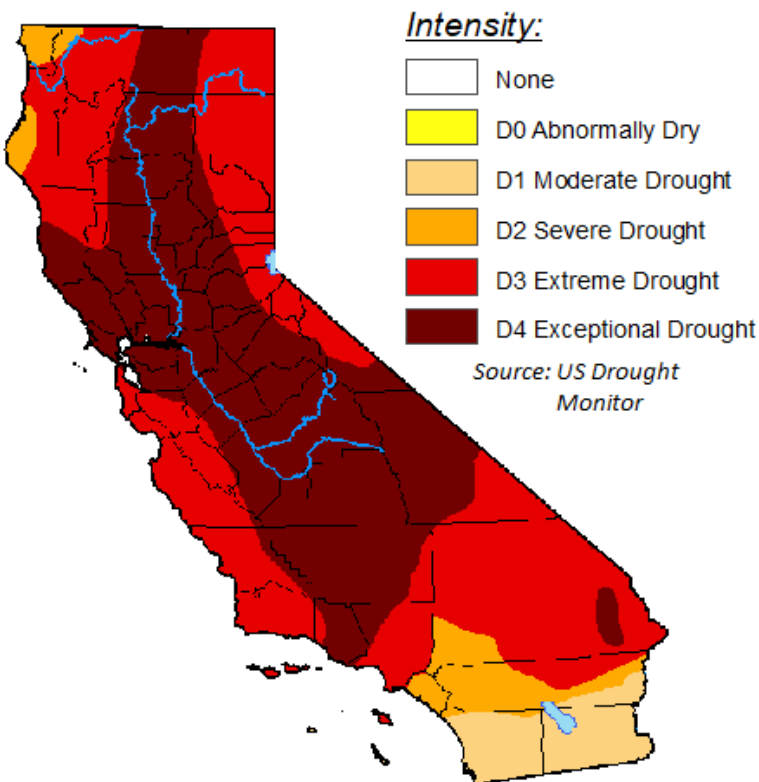
Human Right to Water

State and local governments play an essential role protecting and promoting human rights.

Human rights are internationally accepted norms that recognize and promote dignity, fairness

and equality for all people, as well as enable individuals, to meet their basic needs. Since 2012, California has defined access to “safe, clean, affordable, and accessible water” as a human right.¹ California became the first state in the nation to legally recognize the human right to water. Despite this, over 1 million Californians lack access to safe drinking water.² This is because many are being serviced by a water system that fails to consistently meet drinking water standards. Households in the San Joaquin Valley and Inland Empire are more likely to be among those that lack safe access.³

Figure 1 Drought Severity September 28, 2021



¹ Water Code, Section 106.3.

² “Expanding Access to Safe and Affordable Drinking Water in California: A Status Update,” by Gabriel Petek. LAO. Nov 2020. Available at <https://lao.ca.gov/reports/2020/4294/drinking-water-access-111020.pdf>.

³ CalEnviroScreen 4.0: Drinking Water Contaminants, by Laura August, et al. Available at <https://oehha.ca.gov/media/downloads/calenviroscreen/report/calenviroscreen40reportf2021.pdf#page=54>.

Drought

The United States Geological Survey states that “drought” has various meanings, depending on a person’s perspective.⁴ To a farmer, a drought is a period of moisture deficiency that affects the crops under cultivation--even two weeks without rainfall can stress the crops during certain periods of the growing cycle. To a meteorologist, a drought is a prolonged period when precipitation is less than normal. To a water manager, a drought is a deficiency in water supply that affects water availability and water quality. To a hydrologist, a drought is an extended period of decreased precipitation and streamflow. To California, it means that our most vulnerable regions will not have access to food, jobs and clean drinking water. Drought is a recurring feature in California. The state experienced a three-year drought in 2007 and a five-year drought in 2012. While conditions in the state improved in 2017, this year has seen the return of severe drought conditions.

Droughts have far-reaching impacts, including the wellbeing of communities large and small. And too often, these human impacts are overlooked. While we assess the hydrological impacts and the immediate loss of water to cities and towns, we sometimes miss the impacts that drought has on food security, health, labor and the communities themselves. Climate change will exacerbate these impacts, particularly in the most vulnerable regions and among the most vulnerable groups that are facing poverty and unequal access to water at the same time.

The world’s population is predicted to grow to 8.3 billion by 2030, and to 9.1 billion by 2050. This is expected to increase food demand by 50% at 2030 and 70% at 2050.⁵ The demand for

⁴ “Droughts: Things to Know,” by Water Science School. Available at https://www.usgs.gov/special-topic/water-science-school/science/droughts-things-know?qt-science_center_objects=0#qt-science_center_objects

⁵ “Water and Food Security,” United Nations Department of Economic and Social Affairs. Available at https://www.un.org/waterforlifedecade/food_security.shtml

water is expected to increase by 100% in 2050, which can be attributed to population growth, urbanization and the effects of climate change.⁶

Impacts

Food Insecurity

Water is a fundamental element to address food insecurity because we cannot grow food without water. The amount of water per crop varies based on species, and depends on geographical location, on local productivity, and the conditions of available water supply through rainfall or irrigation. In an average year, more than nine million acres of farmland in California are irrigated with approximately 34 million-acre feet of water.

This water allows California to produce more than 4000 commodities. Over a third of the country's vegetables and two-thirds of the county's fruits and vegetables are grown in California.⁷ However, although California is the greatest food-producing state in the country, approximately 10 million of California's children and adults face food insecurity.⁸ On average, one out of every four Californians does not know where their next meal will come from, and Black and Latinx families with children experience even greater levels of hunger. Drought only exacerbates hunger. During the drought in 2012, the state spent \$99 million on food and other assistance programs to drought-affected communities and farmworkers⁹

⁶ "Population Growth and the Food Crisis," by Dr. Nafis Sadik FAO. Available at <http://www.fao.org/3/u3550t/u3550t02.htm>

⁷ "California Agricultural Production Statistics," by California Department of Food and Agriculture. Available at <https://www.cdfa.ca.gov/Statistics/>

⁸ "Hunger Data," by California Association of Food Banks. Available at <https://www.cafoodbanks.org/hunger-data/>

⁹ "What Can We Learn from How the State Responded to the Last Major Drought?," by Gabriel Petek. LAO, May 2021. Available at <https://lao.ca.gov/reports/2021/4429/learn-from-last-drought-051321.pdf>.

Human Health

Drought also affects the human health of communities impacted by its occurrence. As storm-water systems dry up, areas with stagnant water can increase, leading to an increase in mosquitos and increased risk of vector-borne diseases, such as West Nile Virus. This can be exacerbated when conservation efforts reduce the amount of water flowing through wastewater systems, which requires an adequate level of water flow to properly treat and discharge waste.

Dust blown up from fallowed agricultural fields can lead to increased respiratory problems and can spread the fungus *Coccidioides immitis* which causes Valley Fever. This disease is transmitted when spores in the soil become airborne and are inhaled. This condition causes a range of symptoms, including fever, chest pain, coughing, rash and muscle aches.

Drought also takes a toll in community member's mental health. In particular, the implications of drought through the loss of livelihood, diminished social support, and not having basic needs met are significant. Rural communities, in particular, are disproportionately impacted due to lack of access to healthcare and mental health resources, and isolation. When families do not have access to clean and safe water, they often are faced with having to send their children to school without being able to shower and have clean clothes, which can lead to bullying and poor school outcomes. Drought also affects family relationships, through stress and worry, and partners and children having to be required to become involved with farming tasks due to the unprecedented changes that are required when regions are facing drought.

Labor

Drought can also cause financial hardship from increased debt incurred by farmers to reductions in hours for laborers or in losing their job altogether. Regions, like the Central Valley, are reliant

on agriculture production revenue and employment. When there is a decrease in water, it can result in a decline of farm production causing both direct job losses for agricultural workers, but also supporting positions, like agronomists, and those employed by manufacturers of irrigation equipment.

An economic impact analysis published in February 2020 forecasted that water supply shortage conditions for both groundwater and surface water supplies in the San Joaquin Valley might make it necessary to fallow up to one million acres of productive agricultural land in future years. To the extent that this fallowing is required, it will affect approximately 20% of all acres currently used in agriculture production in the San Joaquin Valley. The economic impact analysis states these productive acres is estimated on an annual basis to include a total lost crop value of \$7.2 billion, and an associated loss of \$1.9 billion in net income to farmers, job losses of 65,272, and an associated loss in workers income of \$1.7 billion. As fields are fallowed, farmworkers can end up unemployed, and food prices can increase. The analysis also adds that many households in disadvantaged communities are generally more likely to be employed in the agricultural sector, and thus, will be disproportionately impacted.

Planning for Tomorrow

As California works to improve water access and sustainability, an overriding concern is the potential for climate change to magnify many of the issues we are currently facing and that these improvements will not be enough. The ability to plan effectively will be essential—as global

temperatures change and California’s weather patterns and hydrological systems are affected in unpredictable ways, making forecasts that rely on historical records increasingly unreliable.¹⁰

Disadvantageous circumstances in the agriculture industry can result in adverse impacts in certain regions of the State, which can affect employment, population migration, stagnant or decreased wages and increased food prices. The most vulnerable residents in our State experience these impacts most directly.

There is no easy way to fix the water problem we have today, but we must work together to ensure equitable access to the most important resource needed to sustain life on this planet.

¹⁰ “Review of Water Supply Reliability Estimation Related to the Sacramento-San Joaquin Delta (DRAFT),” by the Delta Independent Science Board, Sept 2021. Available at <https://deltacouncil.ca.gov/pdf/isb/meeting-materials/2021-09-01-isb-draft-water-supply-review.pdf>.