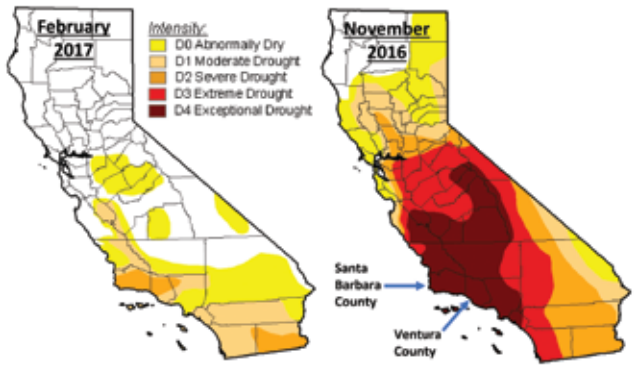
By Ken Melban
Vice President of Industry Affairs

California's Water Conditions and the Importance of Lake Oroville

U.S. DROUGHT MONITOR – CALIFORNIA

Drought Conditions (Percent Area)	None	D0	D1	D2	D3	D4
Current 3/21/17	61.66	21.47	12.69	4.19	0.00	0.00
Last Week 2/14/2017	43.94	31.86	16.78	6.68	0.73	0.00
3 Months Ago 11/22/2016	12.03	14.93	12.77	17.47	21.76	21.04



California's Water Conditions

With California's 2017 hydrological conditions off to a historic start, almost all avocado growers have received a long overdue break from irrigation demands. This has resulted in a short-term cost savings for growers either because they haven't had to purchase agency water or pump water from their own wells.

Due to the strong atmospheric river conditions over the last few months, most reservoirs throughout California are close to capacity, aquifers are slowly being recharged and snow pack levels are nearing record depths. This is obviously great news for California. However, water-related challenges remain in specific areas of the state, and some are more obvious than others.

The U.S. Drought Monitor for California (box to the left) provides a very compelling illustration of how rapidly California's drought conditions have improved. In November, 2016, almost 75 percent of California was classified as being in Moderate, Severe, Extreme, or Exceptional drought conditions. Of that nearly 43 percent was considered Extreme to Exceptional drought, including almost all avocado producing areas. Now, in just three months, none of California is in Extreme or Exceptional drought conditions, with almost 62 percent of California now completely out of the drought.

Most avocado growing regions remain in Moderate to Severe drought conditions, but that's a major improvement from November, 2016. At the time of this writing a significant series of storms have just made their way through California resulting in very heavy rainfalls in the areas of Santa Barbara and Ventura Counties. A total of 7.6 inches of rainfall was recorded at the California Avocado Commission's Pine Tree Ranch in Ventura County during the period of February 17 – 20. This is great news and these storms, as evidenced by the Drought Monitor, have significantly improved the hydrological conditions within those two counties and throughout California. We are not out of the woods yet, but things are looking much better.

The Importance of Lake Oroville to Southern California

The Metropolitan Water District (Metropolitan), which serves nearly 19 million people, receives an average of 30 percent of its annual supply from the State Water Project (SWP). In a typical year, Metropolitan, the largest contractor on the SWP system, receives about 50 percent of the SWP's deliveries. Roughly 50 percent of California's avocado acres are located within the Metropolitan service area, although not all are irrigated entirely by Metropolitan supplies.

Lake Oroville, located in northern California 450 miles from downtown Los Angeles, is where the SWP begins. As the hydrological conditions dramatically improved over the last few months, Lake Oroville continued to fill, ultimately reaching capacity. But it didn't stop there — and because of the deluge of rain and snow, water began to spill over Lake Oroville's spillway. In addition, for the first time since it was completed in 1968, water began to spill over Lake Oroville's emergency spillway. A significant area of concrete washed out of the spillway and earth was cascading down from the emergency spillway. There was concern the Lake Oroville Dam would fail, and in February emergency evacuations were ordered for nearly 200,000 residents in the potential pathway. As of this writing it appears Lake Oroville Dam will not fail, thereby averting an unimaginable catastrophe. However, there remain significant questions as to the structural integrity of both the spillway and the emergency spillway; it's very likely significant fixes must be made as soon as possible. The extent of the damage and any necessary fix is still undetermined, but once the weather stabilizes experts will assess the damage and determine next steps. It is possible work will begin this summer to repair the Lake Oroville Dam. How long that could take is unknown. Currently Metropolitan has been guaranteed 60 percent of their SWP allocation and that number is expected to increase.

The other source of imported water for Metropolitan is from the Colorado River (CR), which has much higher salinity levels than the SWP supply. Typically, Metropolitan blends both SWP and CR supplies throughout the year. When the SWP supply has been very low, growers have received water supplies with much higher salinity levels. In mid-February, Metropolitan operations announced that all remaining deliveries to customers for 2017 are expected to come from the SWP. This is great news for avocado growers and would result in a better quality of supply for 2017.

Unfortunately, however, because of the situation with Lake Oroville, water supplies could now become less certain. Metropolitan is counting on deliveries of at least 60 percent of the SWP allocation. If the Lake Oroville supply must be reduced to allow for structural fixes to the dam, it's possible Metropolitan will receive reduced SWP deliveries. This will not only impact Metropolitan's volume of supply but also their ability to deliver only SWP supply for this year.

It's too early to project how this may impact Metropolitan's supplies, but who could have predicted that the amount of water that brought most of California out of drought conditions would also reveal a significant infrastructure problem within the SWP? Or that repairs to the Oroville Dam may result in a reduction of SWP deliveries even though there is a historic water supply? All of this would be very hard to believe, if it weren't true.