



## California Drought— Lessons for Underwriters?

Rain, Rain Don't Go Away. Come again another day soon!

by Elizabeth Berge, Gen Re, Chicago

Having lived in the Bay Area for a few years, I actively follow all things California except the Golden State Warriors. So I have been reading a lot about the drought in California and other western states all last year. The UC Davis Center for Watershed Sciences estimates the “total statewide economic cost of the drought in 2014 will be \$2.2 billion, with a total loss of 17,100 seasonal, part-time and full-time jobs.”<sup>1</sup> Experts anticipate these numbers to substantially increase once the data is analyzed. In addition, UC Davis Center estimates over 500,000 acres of land fallowed in Central Valley as a result of the severe drought conditions.<sup>2</sup> NASA satellite data shows it will take about 11 trillion gallons of water (around 1.5 times the maximum volume of the largest U.S. reservoir) to recover.<sup>3</sup>

California has been in a State of Emergency since Governor Brown declared it last January 2014. Emergency state officials have been working to ensure California is able to cope with the myriad issues that come along with the drought.

Unlike Las Vegas, what happens in California doesn't stay in California. The effects will be felt around the world

in higher food prices. Agriculture is a \$45 billion industry in the state, being responsible for half the fruits and vegetables grown in the U.S.<sup>4</sup> Various sources estimate that California grows 99% of the nation's almonds (and 80% of the world's almonds!), 99% of its artichokes, 97% of its kiwis and plums, 95% of its broccoli and celery, 91% of its lemons, 90% of its tomatoes, and so on.

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### About This Newsletter

Created for our clients, our *Property Matters* publication provides an in-depth look at timely and important topics affecting commercial and personal lines of property insurance.

While food inflation in the U.S. this past year has been higher than the average in recent years, currently it is still in line with longer-term averages as farmers, wholesalers and retailers are passing as little cost increase on as they can. This may not be feasible for much longer and some foods have experienced severe prices increases (with California producing 94% of U.S. lemon production, the retail price was up over 42% last year and the production volume was down 4.5%).<sup>5</sup> The longer-term impact of the drought will be felt for years to come.

Farmers are selling cattle, letting fields go fallow and according to a recent report by NPR's Dan Charles, "Some farms have bulldozed their citrus trees to save water during the summer, which may lead to citrus shortages during the winter season."<sup>6</sup> Farmers have bulldozed almond trees in some areas as well, and the repercussions of that will be felt for years as it takes two to four years for an almond tree to bear nuts.

The drought actually had its beginnings more than 10 years ago and is now one of the most severe droughts on record. The polar vortex of this past winter that made life miserable for people in the Midwest, including my current home of Chicago, apparently is a contributing factor to the continuation of the drought as it has kept storms away from the coast.

Droughts are classified on a scale of D0 (Abnormally Dry) to D4 (Exceptional Drought). As of mid-November, 55% of California was in D4 conditions. More than 37 million residents of California have been affected by the drought (D1–D4)—that leaves only 3% of the state not living in a drought area!<sup>7</sup> According to NOAA, 2014 was the warmest on record in California, Nevada and Arizona,<sup>8</sup> and that heat is exacerbating the drought.

The *New Republic* wrote that last February "the state announced that 17 rural communities were within 100 days of running out of drinking water, given current patterns of water supply and demand."<sup>9</sup> In a number of towns, homeowners' wells have dried up and they are relying on outside donations for their daily water. In these affected towns, according to an AP report, "Girl Scouts

have set up collection points while local charities are searching for money to install tanks next to homes. Officials truck in water for families in greatest need and put a large tank in front of the local firehouse for residents to fill up with water for bathing and flushing toilets."<sup>10</sup>

Though it seems counterintuitive, the drought also has significantly increased the cases of West Nile Virus in the state. Year to date, there have been "more than twice as many cases as there were last year at this time, and more than triple the five-year average in the state," according to the *Washington Post*.<sup>11</sup>

This information has, hopefully, given an overview of the drought situation. Also hopefully, with heightened attention and requirements to reduce water usage, plus some rain soon, the drought will end before too much longer. That is not the current forecast, though.

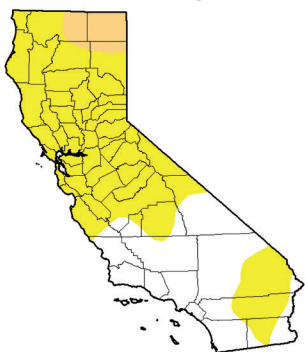
Now, let's spend some time on the insurance implications for property writers in the state.

## Wildfire

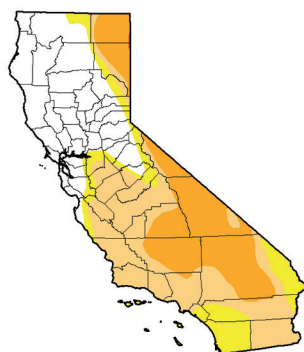
Wildfire is a peril underwriters always need to think about when underwriting fire policies in California and many other states. The drought, however, has led to increased frequency and severity. The moisture level in the leaves of smaller plants is well below the typical 45% of the leaves' total weight. This means they catch fire much more easily, and this also allows fire to spread to the tree canopy much more easily. There had been as many as 19 wildfires simultaneously burning in the state that were each greater than 300 acres in size (occurring from July through September),<sup>12</sup> with the King Fire burning in the El Dorado National Forest between Sacramento and Lake Tahoe being one the largest and most out of control.

The total number of acres burned is close to the average of 446,573 acres burned annually over the past 15 years. The unpredictable King Fire was the largest and burned a total of almost 98,000 acres, from September 13 through

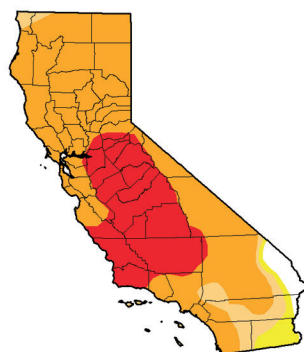
## California Drought Growth<sup>13</sup>



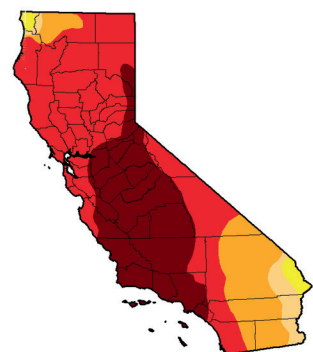
December 2011



December 2012



December 2013



December 2014

October 2, 2014, before it was finally contained. At one time it covered 128 square miles. It burned 12 single structures, 68 minor structures, and it had 12 injuries.<sup>14</sup> More than 5,000 fire fighters from many different states worked to control the King Fire and the others, with resources often stretched thin and conditions very challenging.

And what about the future? Though California has always experienced periodic droughts, a key finding of the National Climate Assessment released by the government indicates increased severity and intensity of both droughts and wildfires to be a likely outcome of climate change.

Facultative reinsurance can help smooth volatility when a company has many risks which aggregate in a wildfire area.

## Fire Fighting Water Supplies

For the most part, due to extensive water conservation efforts there has not been a significant impact to the availability of water for fighting fires—yet. However, Mark Svoboda, author of the Drought Monitor and a climatologist noted that “the state is dealing with a year-round fire season instead of a seasonal fire season,” and also a “once in a generation type of drought.” This obviously puts an enormous strain on not just water supplies, but everything else that goes into fire-fighting operations.”<sup>15</sup>

According to *The Almanac*, the Eiler fire, which burned approximately 32,000 acres last summer, took longer to control and additional structures burned after a town in Shasta County ran out of water. Helicopters had to travel further to reach water deep enough to lower buckets into.<sup>16</sup> This is something that property underwriters should keep in mind when underwriting risks in wildfire areas. Additionally, firefighting training exercises are using less water than previously—Will this result in less preparedness? Does the adage, you play like you practice apply here?

## Mudslide

Oddly, droughts can cause mudslides. The massive mudslide that occurred in September on Mt. Shasta was likely due to the drought, according to the U.S. Forest Service.<sup>17</sup> The lack of snow that normally insulates California’s glaciers led to rapid melting of a glacier and the resulting mudslide. As the mud slurry flowed down the mountain, it picked up an enormous amount of debris that included large boulders and entire trees. As this is a remote area, luckily there were no injuries or insured property damage from this event.

Similar types of drought-caused mudslides have happened previously in California, with one covering an area five miles

long, a mile wide and 10 feet deep. Mudslides are also a danger in areas burned by wildfires where even a small amount of rain can trigger flash flooding and mudslides along with accompanying debris.

In December 2014 mudslides in Corona, Camarillo Springs and other areas damaged a number of homes and also closed roads. According to KTLA 5 News, “mud and debris reached up to the roofs of some homes, while the thick mixture of mud and water flowed through shattered windows into other houses.”<sup>18</sup>

Property insurance policies often exclude mudslide under a Flood or Water exclusion, but sometimes mudslide is part of an Earth Movement exclusion, as the wording below illustrates.

### ISO Water Exclusion:

- (1) Flood, surface water, waves, tides, tidal waves, overflow of any body of water, or their spray, all whether driven by wind or not;
- (2) **Mudslide** or mudflow;

### Example of a Company Earth Movement Exclusion:

- J. **Earth movement**, whether natural or man-made, includes but is not limited to:
1. Earthquake;
  2. Landslide;
  3. Mudflow or mudslide;
  4. Sinking, rising or shifting of the earth.

Underwriters really do need to review the policy language to understand where the peril of mudslide falls and whether any buyback coverage is provided, for example under a Flood or Earth Movement Coverage Endorsement. Gen Re can help you. We do this all the time.

## Farm and Ranch Produce

As a result of the drought, some fruits, vegetables, nuts, dairy products, and meat may be experiencing significant price increase. Almonds, in particular, are susceptible to price swings as California is responsible for such a significant amount of the global supply. As mentioned earlier, the price of lemons has also jumped significantly. It is important for underwriters to review policy values and the valuation basis to ensure that stock values including any Peak Season Endorsements are adequate.

Facultative reinsurance can help when there is a peak season with values higher than your company wishes to retain.

Milt McGiffen, a University of California field crop expert, says not only will there be short-term price increases but “the longer-term impact is going to be you’re just not going to have as much production in the country. It’s part of an overall trend in the next 50 years.”<sup>19</sup>

## Conclusion

The December “Pineapple Express” storm which battered the entire west coast did bring significant rain and caused flash flooding and mud and debris slides to both northern and southern California. Over a two-day period the Bay Area received more than four inches of rain. The last time that happened was 15 years ago.<sup>20</sup> However, it will take much more rain before the drought comes to an end.

Many scientists predict we will continue to have extreme weather patterns in California. Regardless of any relation to global warming, there may be continued trends of volatility and insurers should think about their books of business. Gen Re can help. ■

### About the Author



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## Endnotes

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