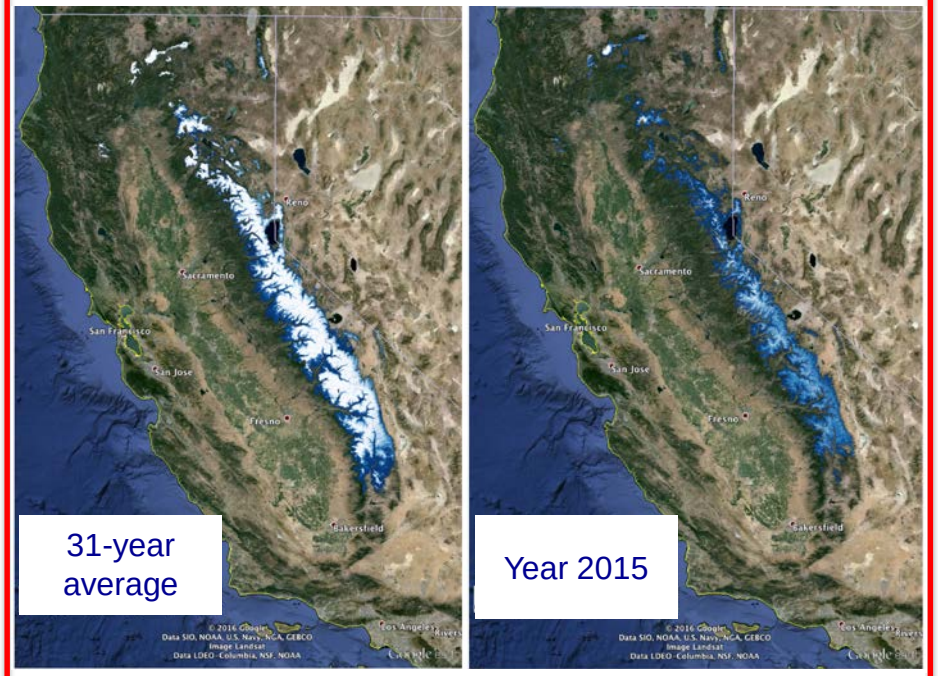
Sierra Nevada snowpack deficit in winter 2015 depicted by a Landsat-era Reanalysis

The reanalysis dataset is unique for its temporal extent (1985-present, using data from Landsat-5, 7, and 8), its high spatio-temporal resolution (daily on 90m by 90m grid), and its accuracy.

How much water volume is stored in Sierra Nevada snow? How does it vary inter-annually?

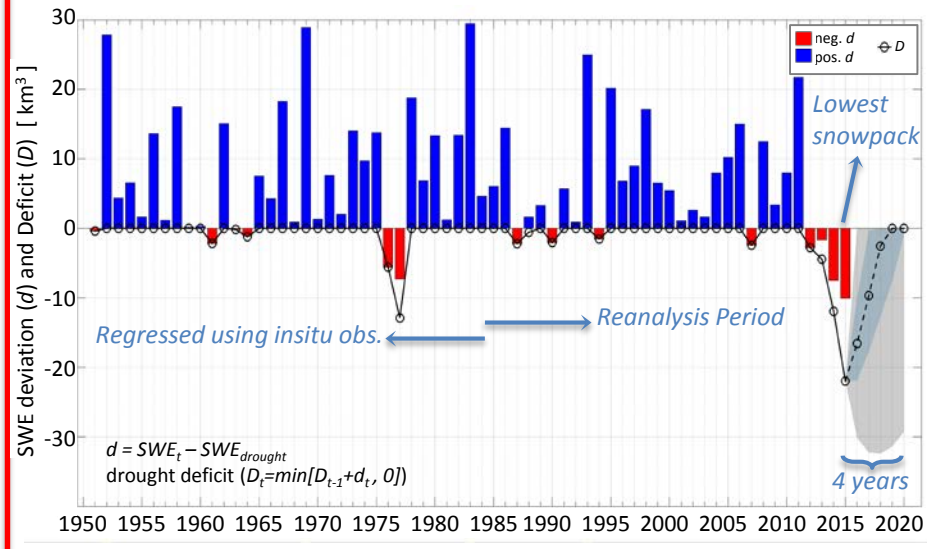


Range-wide peak Snow Water Equivalent (SWE) [m]

- Average stored peak volume: 18.6 km^3
- Average day-of-peak: March 15th
- Very high degree of spatial and interannual variability (in both peak volume and peak timing)

How severe and what are the prospects for recovery from the ongoing drought? Was El Niño the "drought-buster"?

- 2015 showed the largest accumulated snowpack deficit in the record
- 2015 was extremely dry (return period of over 600 years)
- The expected recovery time is more than four years



Despite the strong El Niño in 2015-2016, there was no significant replenishment of snow water equivalent.