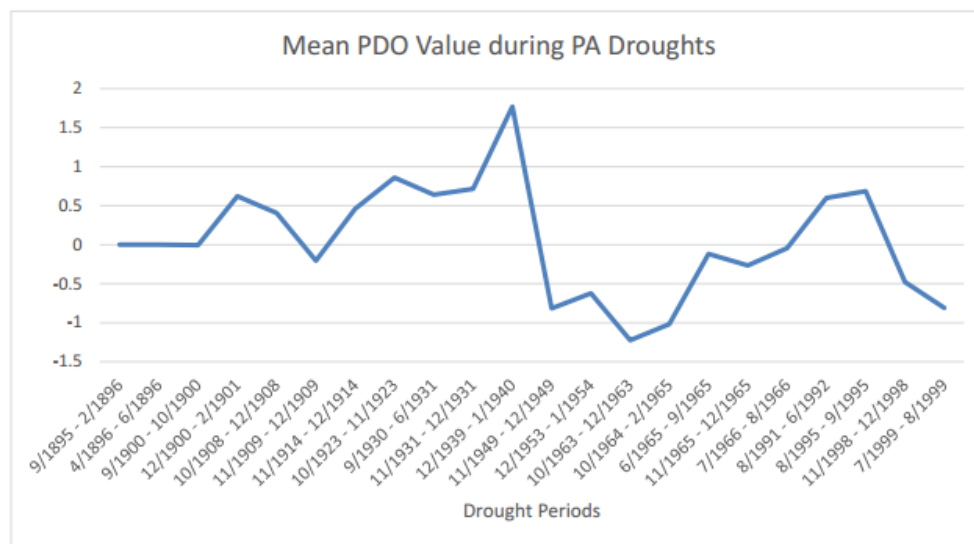


FEATURED CLIMATE HIGHLIGHT 1

By: Ben Reppert and Yale Williams

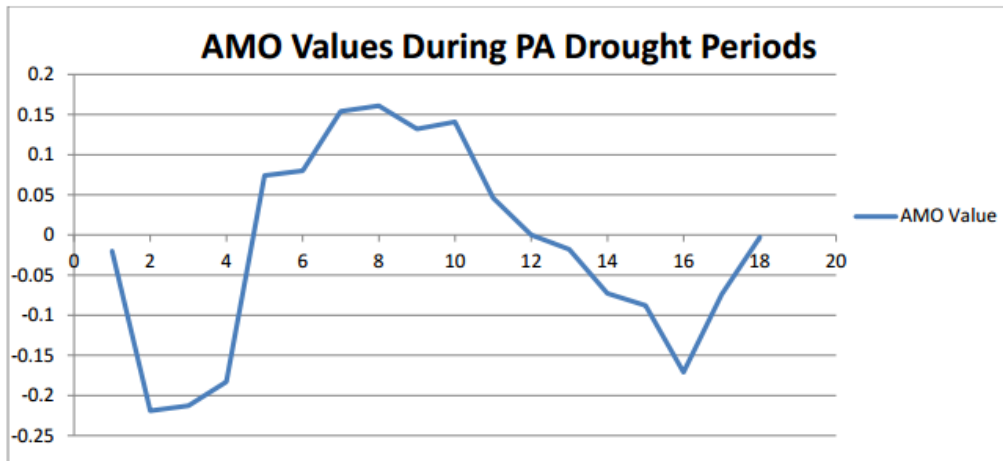
The PDO and PA Drought Periods

The PDO, that is the Pacific Decadal Oscillation, values throughout the drought periods fluctuated between -1.5 and 2. Most of the values in the earlier periods had positive PDO values (warmth in the north Pacific) with many of the later periods having negative values (cool in the North Pacific). The trend was positive from the 1900s to the 1930s, as well as the 1950s to the mid-1990s. The most recent trend is negative from the mid-1990s through the end of the decade, though drought has become less frequent since 2000. The most intense drought in the center of the state occurred with negative PDO values (50's and 60's).



The AMO Values and PA Drought Periods

A variable mode that occurs in the North Atlantic Ocean and can have important climate impacts is the Atlantic Multidecadal Oscillation, or the AMO. This phenomenon has been linked to changes in Atlantic tropical activity, and more frequently, droughts in the Northern Hemisphere. Based on observations, droughts that occur during a warm (positive) phase of the AMO tend to last longer, such as the Dust Bowl occurrence in the 1930s. Upon analyzing the average AMO values during the eighteen main drought periods in PA climate division 6 (central part of the state), an interesting trend came out of the data that clearly exposes the two distinct phases of this oscillation. The AMO entered its warm phase around 1930, and lasted for approximately 35-40 years. This time frame covered the longest recorded drought in the Susquehanna Valley, which lasted a year and half, from 1964-1966. The end of this drought was also just around the same time that the AMO flipped back into its cold phase for many more years to come, until the late 1990s. Since then, we have been in a warm phase to this day, and thankfully so far, have not had many abnormally dry periods during it, though one could be pending.



FEATURED CLIMATE HIGHLIGHT 2

By: Jacob DeFlicht

Throughout the years of 1905, 1924, 1962, 1967, and 2009, a slight correlation existed between a cooler than average July in Illinois and an overall dry July in Oregon. This analog forecast can then be used to forecast the precipitation and temperature anomalies for the same years in November, to analyze any possible correlation. During these five years, in November, the temperature anomalies in the eastern US were relatively cooler than normal, while much of the central and western portions of the US

remained warmer than average. In comparison with precipitation anomalies for each of those years in November, much of the northern tier and southeastern US remained drier than average, while the southwest and Carolina coast were anomalously wetter than normal.

