The Relationship of Major Okefenokee Swamp Wildfires to Drought – Why consumptive water use by the proposed TPM LLC mine is a threat to the region

Dr. C. Rhett Jackson, John Porter Stevens Distinguished Professor of Water Resources, UGA.

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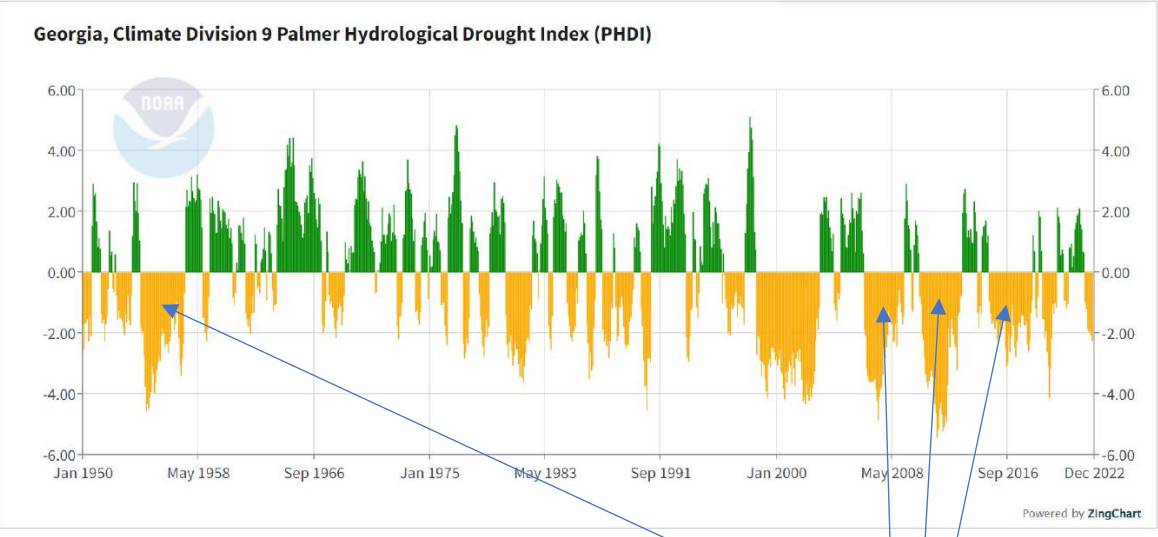
Below is the time series of the Palmer Hydrologic Drought index from 1950 to the present as calculated by the National Oceanic and Atmospheric Administration (NOAA) for Georgia Climate Division 9. Orange bars below the zero line denote relatively dry conditions, and green bars above the zero line denote relatively wet conditions. Droughts are more severe when the orange lines are deep and grouped together for long periods of time. In four of the five major droughts over the last 73 years, massive wildfires have burned in the swamp. During this period, no major wildfires have burned in the swamp outside of these severe drought periods. The fire record for the swamp goes farther back in time, but unfortunately the climate record does not. The fire record indicates that large wildfires also accompanied droughts in 1844, 1860, 1910, and 1932 (Cypert 1961). During the 1954-55 fires, swamp water levels were 3.5 to 3.9 feet lower than the average levels from 1941-1953 (Cypert 1961).



Droughts during which massive fires burned in the swamp (1954-55, 2007, 2011, and 2017).

By consumptively removing more than 0.87 cfs from the water budget of the southeastern compartment of the swamp, the mine will triple the frequency of severe drought as defined by periods of zero flow at the Moniac gage of the North Prong of the St Marys River. Should drought occur during the mine operations (which no one can predict), it is highly likely that the mine's water withdrawals will contribute to the formation of large wildfires which historically have left the swamp and burned private property.

Cypert, Eugene. 1961. The Effects of Fires in the Okefenokee Swamp in 1954 and 1955. *American Midlands Naturalist* 66(2):485-503.