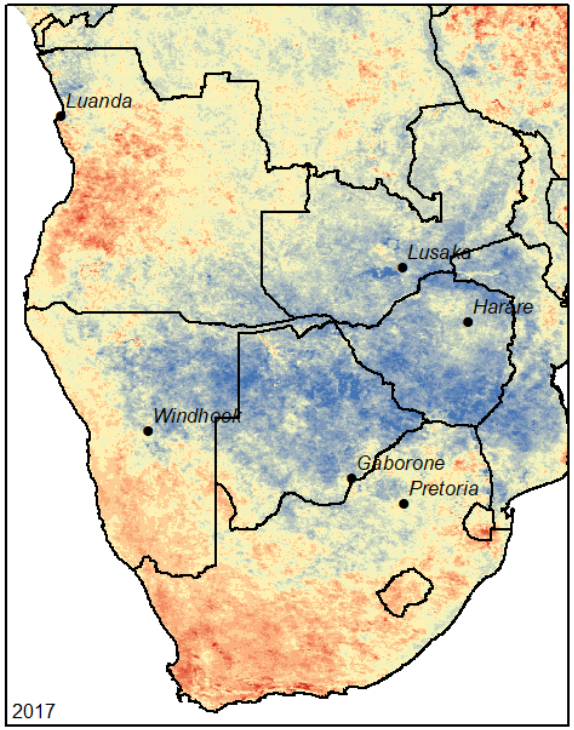
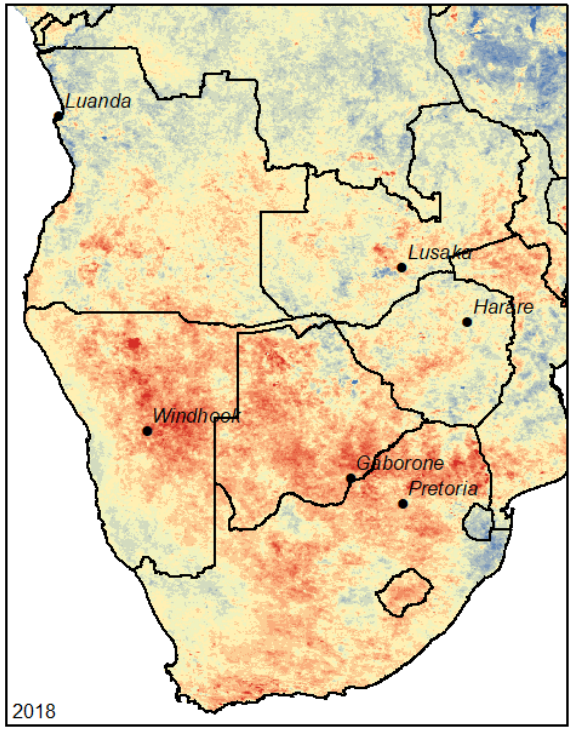
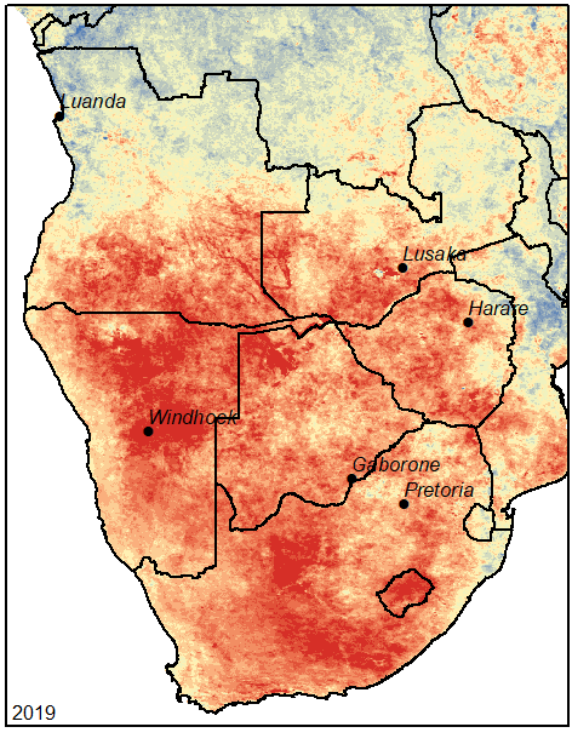
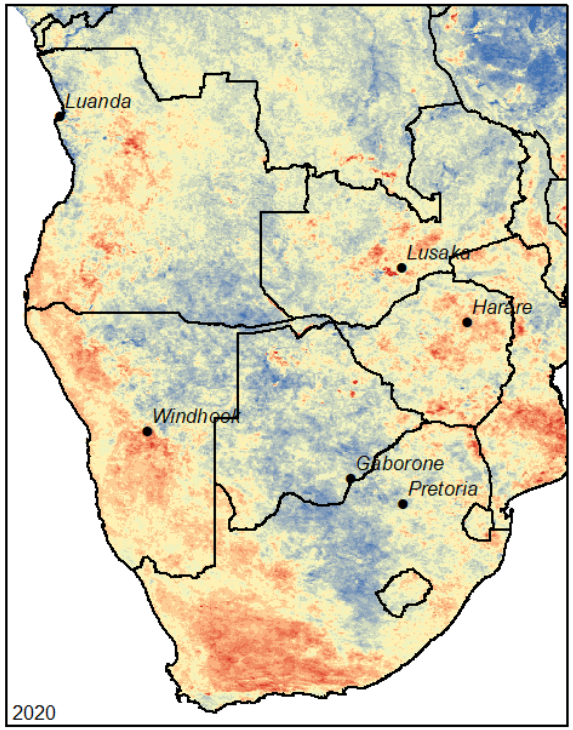
SASSCAL Info Map

Land Surface Temperature (LST) of southern Africa



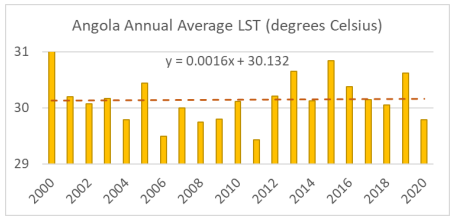


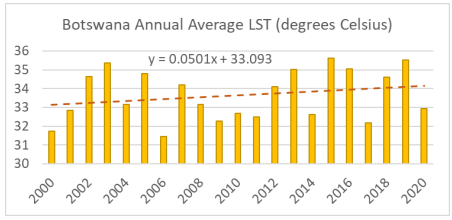


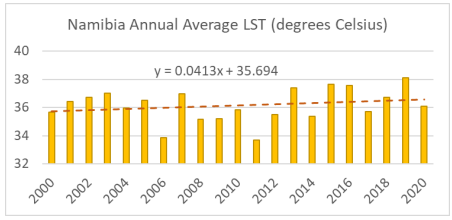


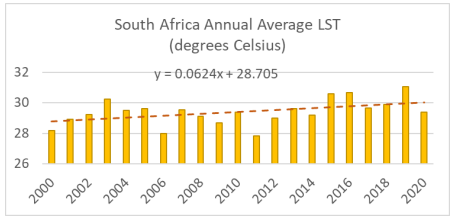
Average annual anomaly (degrees Celsius) of daytime temperature compared to average (2001 to 2016)

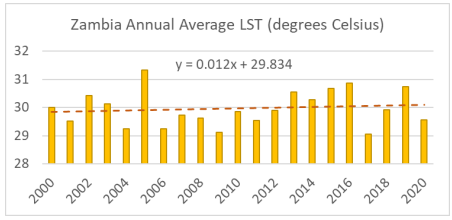
more than -3 | -2.5 to -2 | -1 to -0.5 | -0.5 to 0 | 0 - 0.5 | 1 to 1.5 | 2 to 2.5 | more than 3

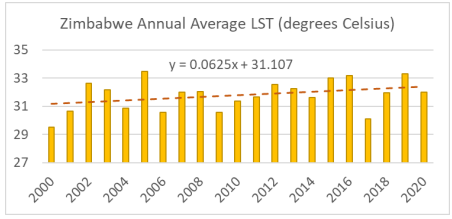












Data Source: MODIS MOD11C3 Monthly Daytime Land Surface Temperature (2000 to 2020) References: (1)NASA. 2021. Land Surface Temperature.

Affecting organisms and ecosystems at all scales, Land Surface Temperature (LST) is an essential variable to evaluate land surface–atmosphere exchange processes. LST is the brightness temperature of land surface driven by solar radiation and related to air temperature. It is often used as an indicator for monitoring the state of crops and vegetation and assessing plant stress.

As derived from a 20-year time series of the MODIS daytime LST product, the average annual LST of southern Africa over the past 20 years suggests an increasing trend, of daytime LST with the trend for South Africa showing a significant increasing trend (P-value = 0.03). Namibia appears to consistently have the highest annual average LST of southern Africa, while South Africa has the lowest average annual LST. The LST for December, in the middle of summer, suggests an increasing trend for Botswana, South Africa and Zimbabwe.