

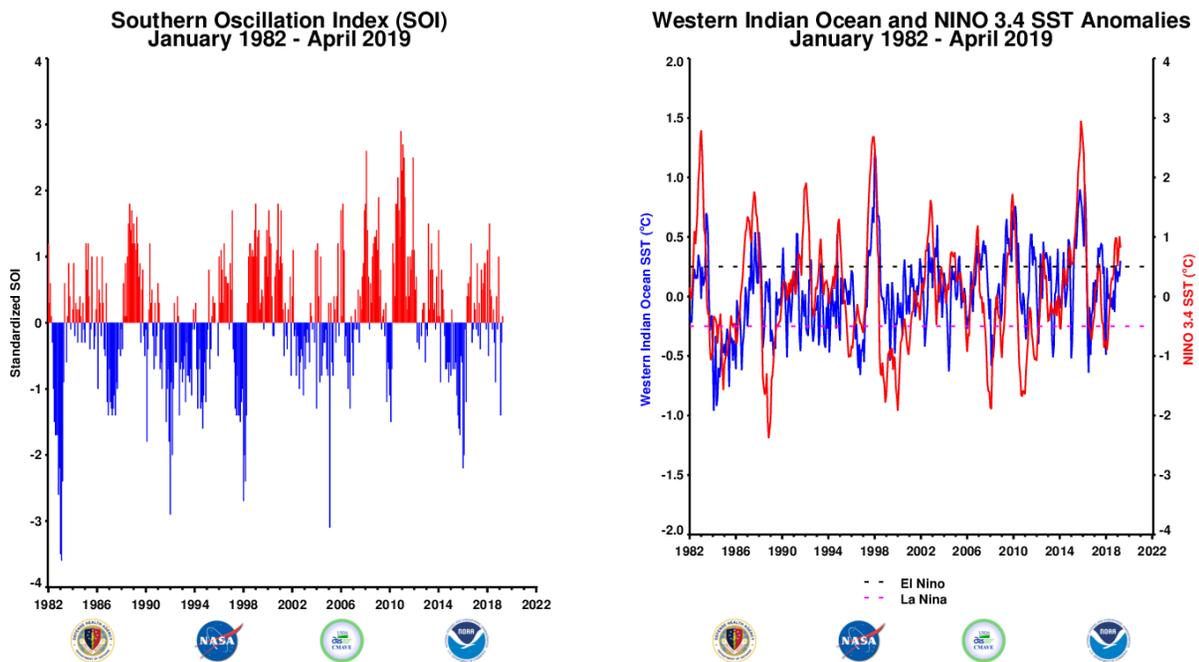
# Rift Valley fever fever Monitor



This section of the report will provide a rolling three month update on a monthly basis of the state of the climatic and ecological indicators used in monitoring areas at risk to RVF activity. These indicators include, global SST anomalies patterns, Equatorial Western Indian Ocean (WIO) and Eastern Pacific Ocean (EPO: NINO 3.4) SST anomalies, Southern Oscillation Index (SOI) and Outgoing Longwave Radiation (OLR) anomalies, Rainfall and anomalies, Normalized Difference Vegetation index anomalies and RVF risk map for Africa and the Arabian Peninsula.

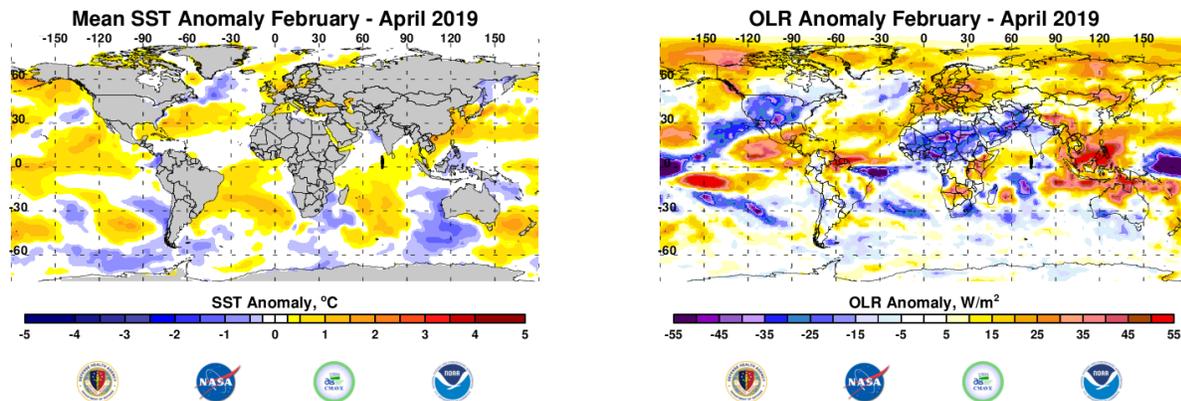
April 2019

## 1. SOI and SST Indices



The SOI has further weakened in April to -0.1 from -0.3 in March to -0.3 continuing the month-to-month variability observed in the last several months. The oceanic indices eastern equatorial Pacific have continued to weaken although still positive: NINO1&2 at 0.08, NINO3 at 0.67, NINO 3.4 at 0.82 and NINO4 at 0.73. The western Indian Ocean SST index has increased to 0.3 from 0.17 in March indicating an infusion of warm water from the southern Indian Ocean as the season progresses. Overall, all the monitoring indices indicate continuing weak warm ENSO conditions prevailing at the moment. Current NOAA CPC forecasts indicate that weak El Niño conditions are likely to continue through the Northern Hemisphere summer (70% chance) and persist in the fall (50-60% chance).

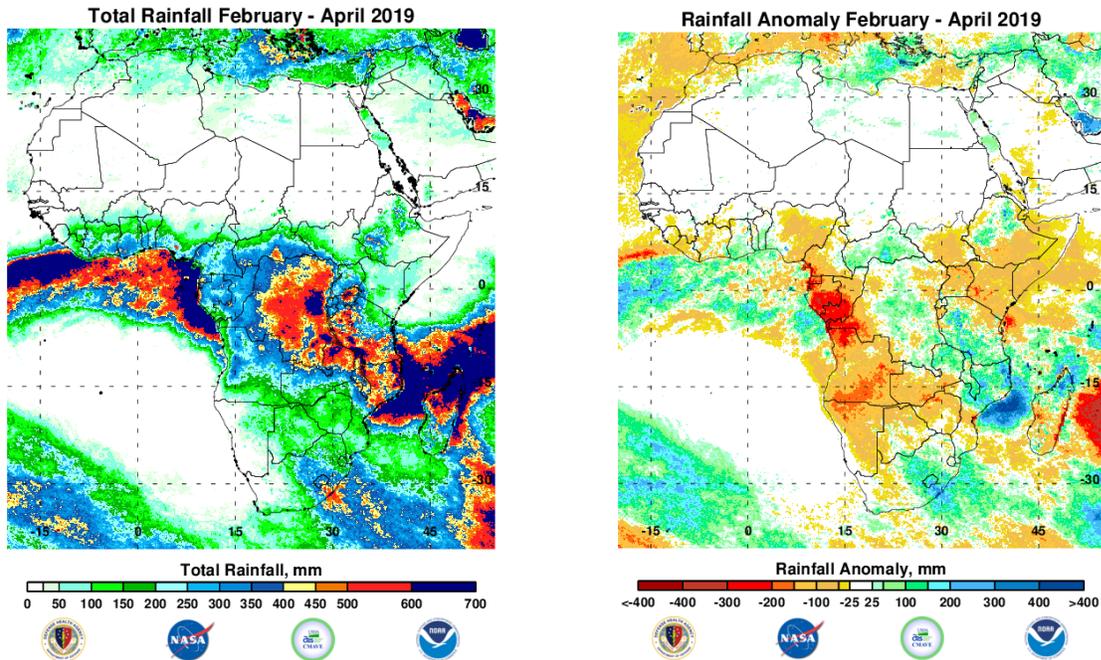
## Global SST and OLR Anomalies



The February - April 2019 seasonal SST anomalies show a similar pattern to the previous season with warmer than normal conditions the equatorial Pacific Ocean with seasonal temperatures approximately  $1.5^{\circ}\text{C}$  above normal along the equator concentrated in the central - eastern equatorial Pacific American coast and extending towards North America. However, the region to the immediate south - off coastal Chile has continuing area of negative SSTs. Western equatorial Indian Ocean temperatures are above normal extending to the main anomaly in southern Indian Ocean east of Madagascar at  $2.0^{\circ}\text{C}$ . Monthly and weekly SST anomalies can be found [here](#).

Outgoing Longwave Radiation (OLR) anomalies are used here as a proxy for tropical deep convection (rainfall). Reduced convection is shown in yellow to light brown and brown shades and increased/intense convection is shown by shades of blue. The February - April 2019 OLR anomalies shows some characteristic evidence of warm ENSO teleconnections with drier than average conditions throughout the western equatorial Pacific and evidence of convection activity in the central equatorial Pacific just east of the dateline. The western equatorial Pacific Ocean particularly the Indonesian Basin extending westwards into across the Indian Ocean has reduced convection with positive OLR anomalies ( $+55\text{W}/\text{M}^2$ ) and areas surrounding this region are drier than normal including northern Australia. In the higher latitudes drier than normal conditions continue to persist across Western Europe into central Russia. Most of northern Brazil - Central America, interior Southern Africa and East Africa also show pronounced dry conditions. Globally, most of the intense convective activity is centered over continental US over the last three months ( $-55\text{W}/\text{M}^2$ ).

## 2. Seasonal Rainfall and Cumulative Rainfall Anomalies

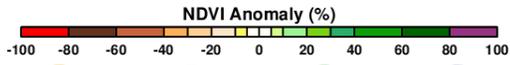
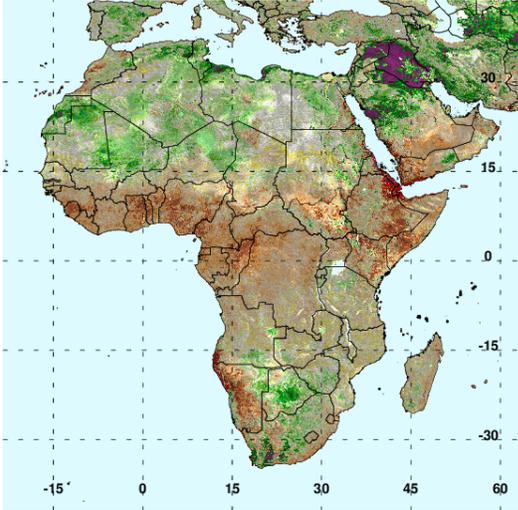


The majority of rainfall over Africa from February - April 2019 is now concentrated within the equatorial zone between 15S and 10N, with maximum totals of 700mm from the Congo basin towards southeastern Africa. Seasonal totals were near normal over most of the continent. Maximum above normal rainfall is observed over the southeastern Congo basin, Tanzania, northern Zambia, Malawi and northern Mozambique with totals as high as 300mm above normal over the three-month period. Areas of rainfall deficit persist in Gabon, SE Cameroon, western Congo, and East Africa and over countries of the southwestern Africa region.

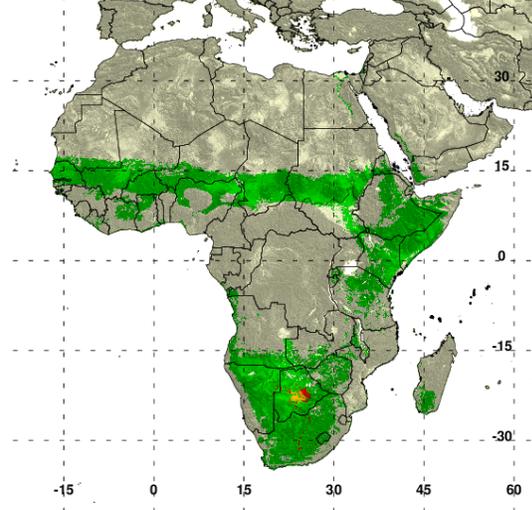
## 3. NDVI anomalies and RVF Risk Map

February - April 2019 NDVI anomalies for Africa show that most of the continent has diminished vegetation conditions except for a few isolated areas in northwestern Africa, parts of the Sahel, central Botswana and parts of central South Africa with positive anomalies on the order of  $\sim +40\%$ . The RVF risk map in this report was derived from thresholding NDVI anomaly data to detect areas persistent of above normal NDVI. Periods of widespread and prolonged heavy rainfall lead to flooding of dambos and anomalous green up in vegetation, creating ideal ecological conditions for the emergence of RVF vectors. During February - April 2019, the RVF persistence model identifies areas of risk projected for May 2019 with the isolated risk areas over central South Africa and central Botswana. Enhanced vector surveillance is advised all the areas mapped to be at risk.

NDVI Anomaly February - April 2019



RVF Potential May 2019

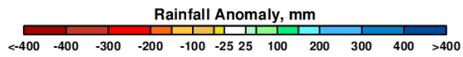
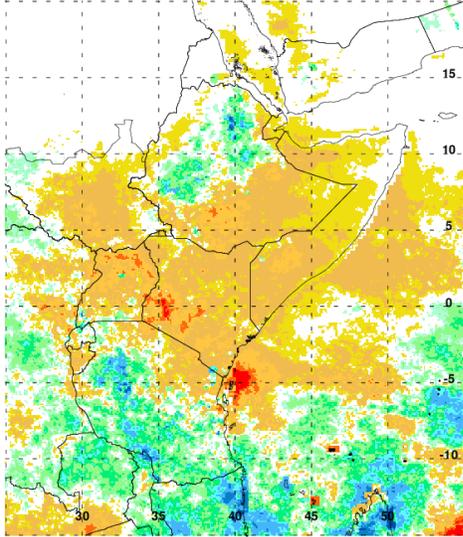


■ RVF risk areas, humans and livestock present  
■ RVF potential risk areas, humans and livestock absent  
■ Documented RVF epizootic areas (epidemic in animal populations in the past)

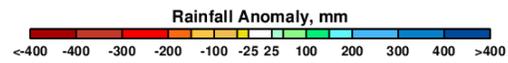
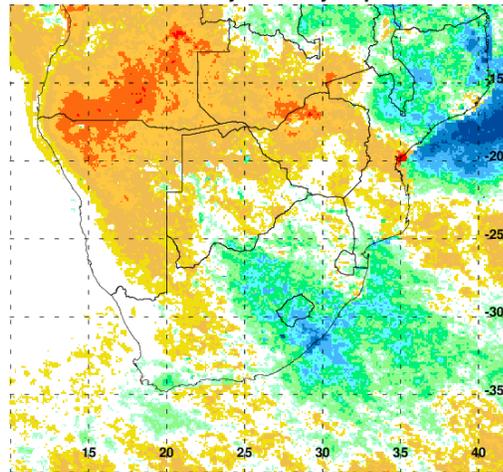


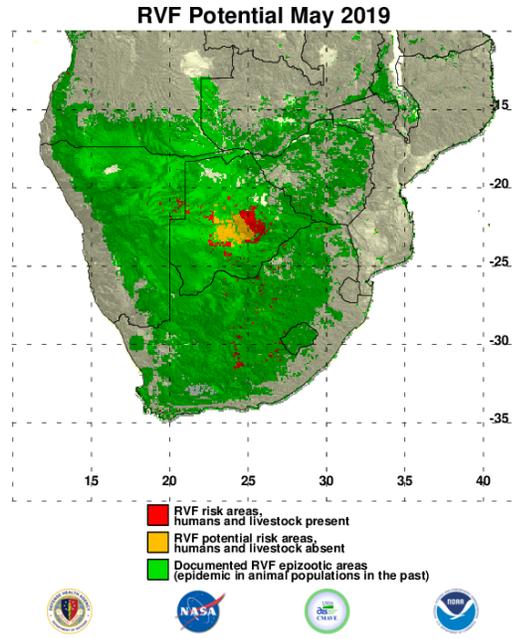
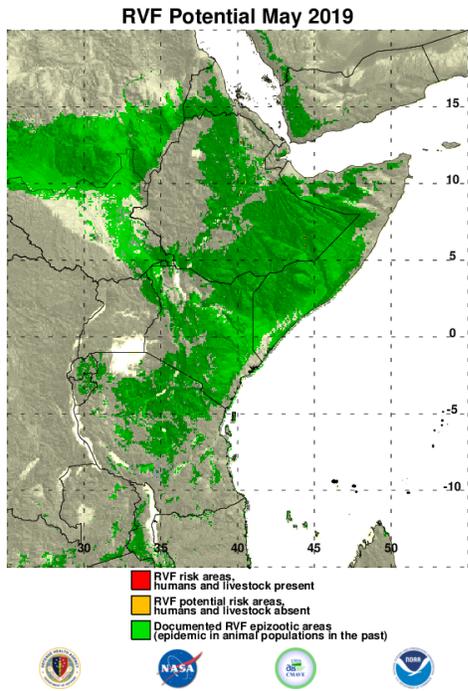
#### 4. Region of Focus: East Africa / Southern Africa

Rainfall Anomaly February - April 2019



Rainfall Anomaly February - April 2019





[https://www.ars.usda.gov/southeast-area/gainesville-fl/center-for-medical-agricultural-and-veterinary-entomology/docs/rvf\\_monthlyupdates/](https://www.ars.usda.gov/southeast-area/gainesville-fl/center-for-medical-agricultural-and-veterinary-entomology/docs/rvf_monthlyupdates/)