

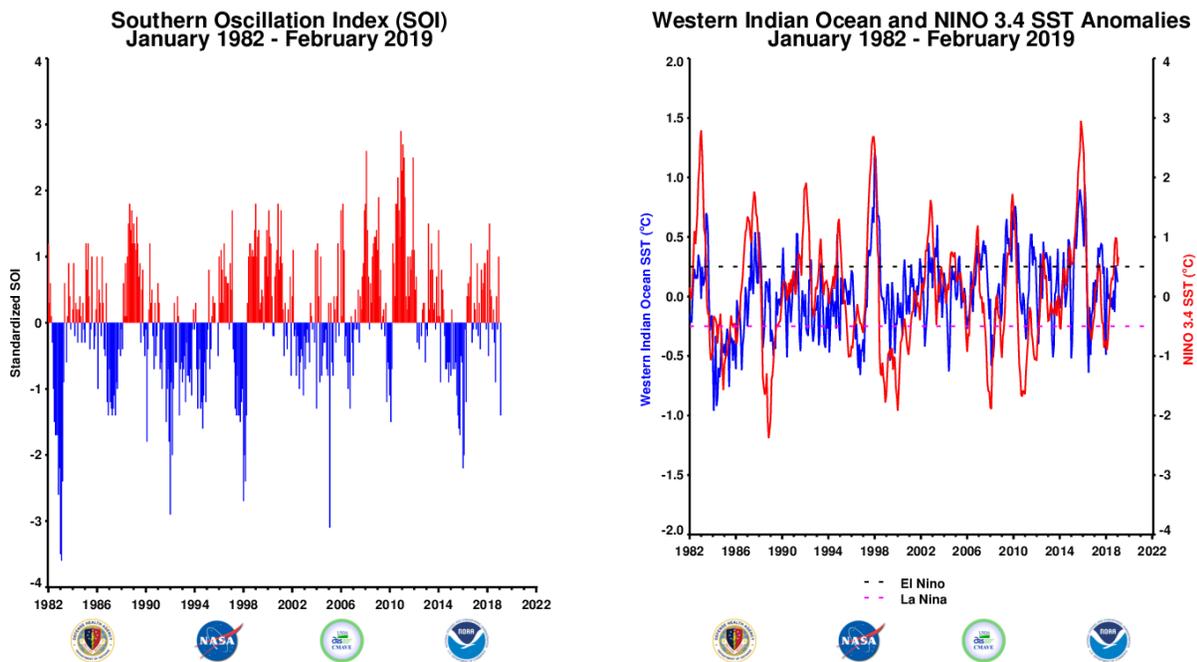
# Rift Valley fever fever Monitor



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.

## February 2019

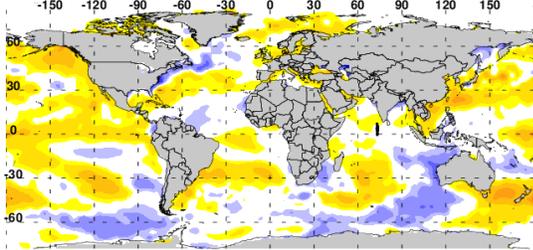
### 1. SOI and SST Indices



The SOI has retreated into negative territory with a value of -1.4 in February from neutral value in January continuing the month-to-month variability observed in the last several months. This reflects a dramatic strengthening of warm ENSO conditions that had weakened in the last two months. The oceanic indices in eastern equatorial Pacific have strengthened except far in the eastern Pacific: NINO1&2 at 0.29, NINO3 at 0.52, NINO 3.4 at 0.96 and NINO4 at 0.66. The western Indian Ocean SSTs continue to weaken at to 0.29 in February from 0.58 in January. Current NOAA CPC forecasts indicate that weak El Niño conditions are likely to continue through the Northern Hemisphere spring 2019 (~80% chance) and summer (~60% chance).

### Global SST and OLR Anomalies

Mean SST Anomaly December 2018 - February 2019

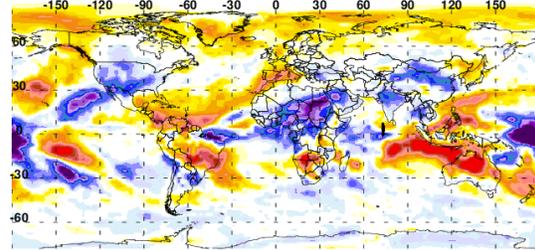


SST Anomaly, °C

-5 -4 -3 -2 -1 0 1 2 3 4 5



OLR Anomaly December 2018 - February 2019



OLR Anomaly, W/m<sup>2</sup>

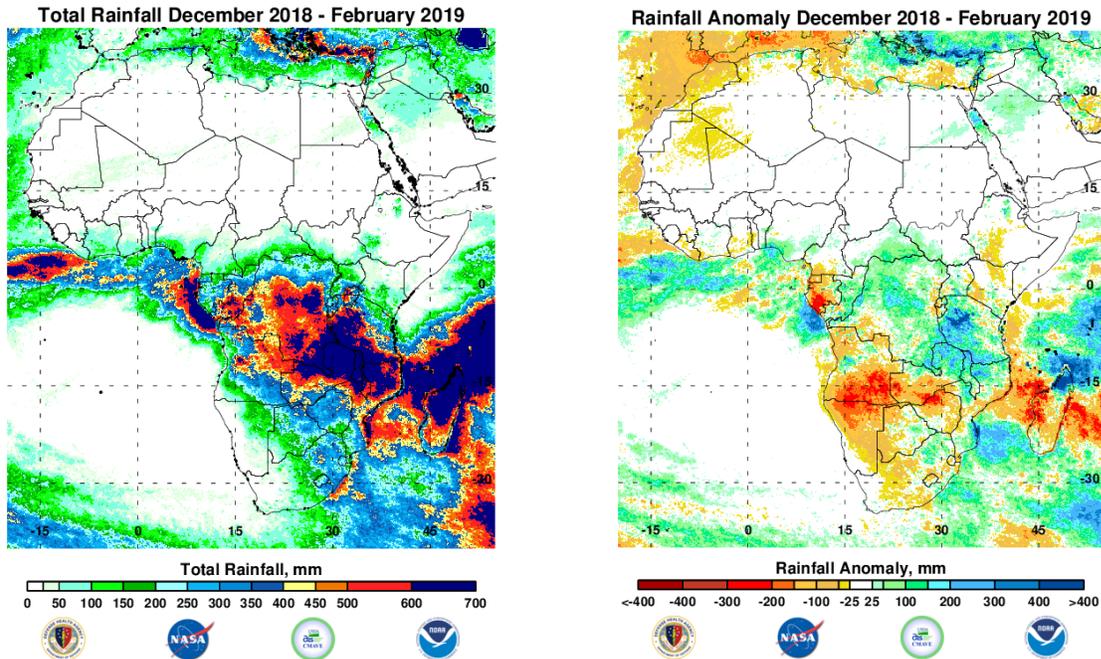
-55 -45 -35 -25 -15 -5 5 15 25 35 45 55



The December - February 2018/2019 SST anomalies show a similar patterns to the previous season with warmer than normal conditions the equatorial Pacific Ocean with seasonal temperatures approximately 1.5°C above normal along the equator off the northern South American coast. However, the region to the immediate south has a limited area of negative SSTs. Western Indian Ocean temperatures are now neutral with the warm anomaly shifting eastwards towards India. The southeastern Indian Ocean cold anomaly has expanded in area between 0-30S covering the western Indonesian Basin. Positive SST anomalies are now enhanced southeast of Madagascar. 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 December - February 2018/2019 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 (+50W/M\*2) and areas surrounding this region are now drier than normal. In the higher latitudes drier than normal conditions are present in Western Europe and a large area of eastern and northeastern Russia, central-eastern Brazil and the southern Africa region. Globally, most of the intense convective activity has been centered across continental US exemplified by extensive flooding in the Midwest. Most of Central America and Australia show high positive OLR anomalies (+50W/M\*2) indicative of drought conditions.

## 2. Seasonal Rainfall and Cumulative Rainfall Anomalies

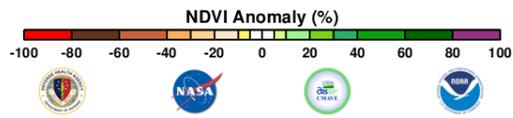
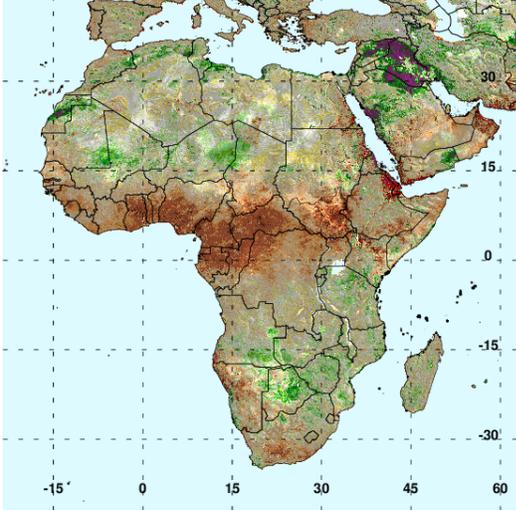


The majority of rainfall over Africa from December - February 2018/2019 is now centered south of the equator between 30S and 0, with maximum totals of 700mm from the along the equator from the Congo basin towards southeastern Africa. Seasonal totals were near normal over most of the continent. Maximum above normal rainfall is observed over the Congo basin, Tanzania, northern Zambia, Malawi and northern Mozambique with totals as high as 400mm above normal over the three-month period. Areas of rainfall deficits persist in Gabon, SE Cameroon, eastern Africa and over the western southern Africa region south of 15S.

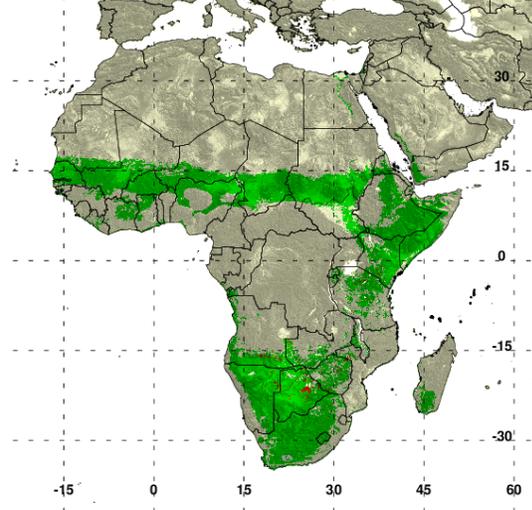
## 3. NDVI anomalies and RVF Risk Map

December - February 2018/2019 NDVI anomalies for Africa show that most of continent has diminished vegetation conditions except for a few isolated areas in northwestern Africa, parts of the Sahel, western Tanzania and northern Mozambique with positive anomalies on the order of  $\sim +40\%$ , including central and northern Botswana. 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 December - February 2018/2019, the RVF persistence model identifies areas of risk projected for March 2019 to the residual risk area over southern Kenya, central Tanzania, northwest South Africa and central and northern Botswana. Given the higher than normal rainfall conditions in some of these regions, enhanced vector surveillance is advised all the areas mapped to be at risk.

**NDVI Anomaly December 2018 - February 2019**

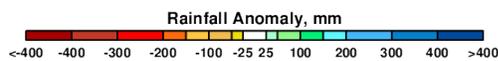
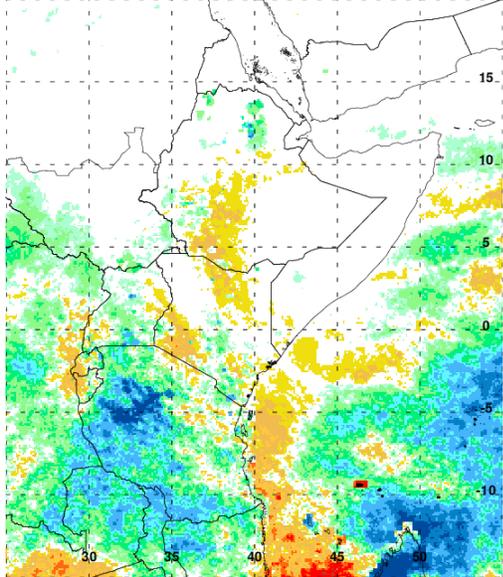


**RVF Potential March 2019**

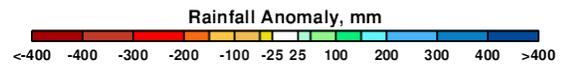
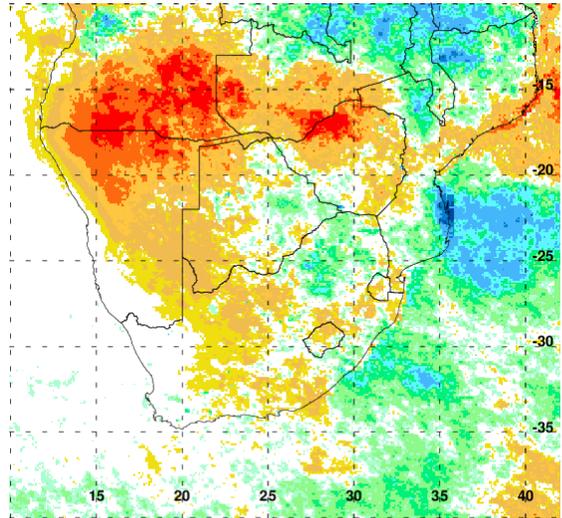


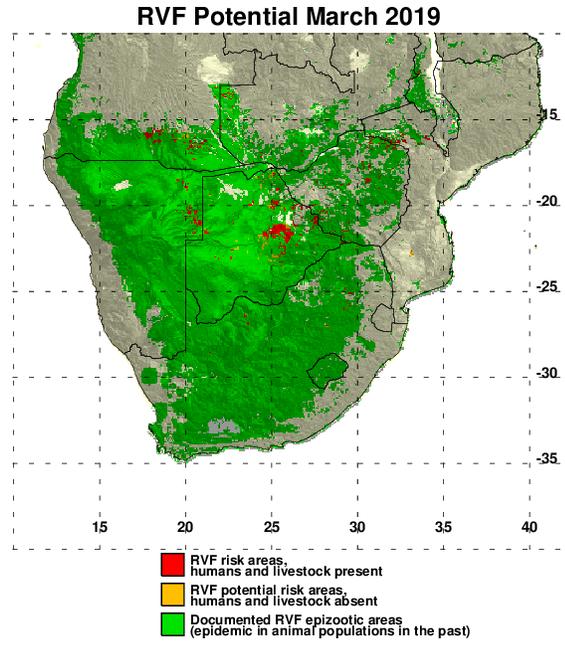
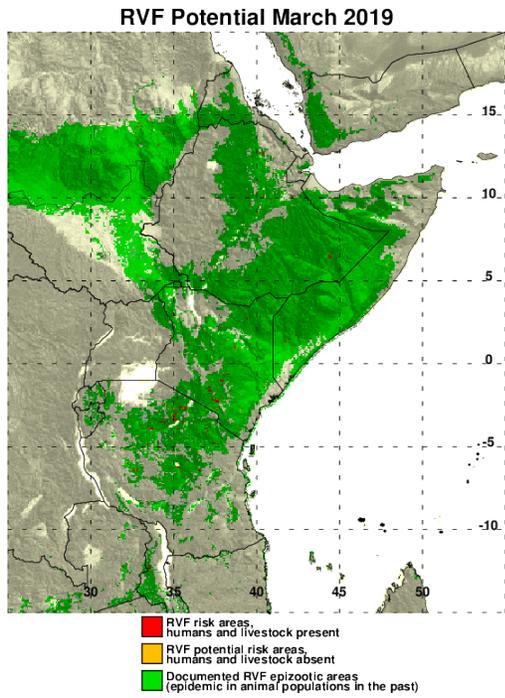
**4. Region of Focus: East Africa / Southern Africa**

**Rainfall Anomaly December 2018 - February 2019**



**Rainfall Anomaly December 2018 - February 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/)