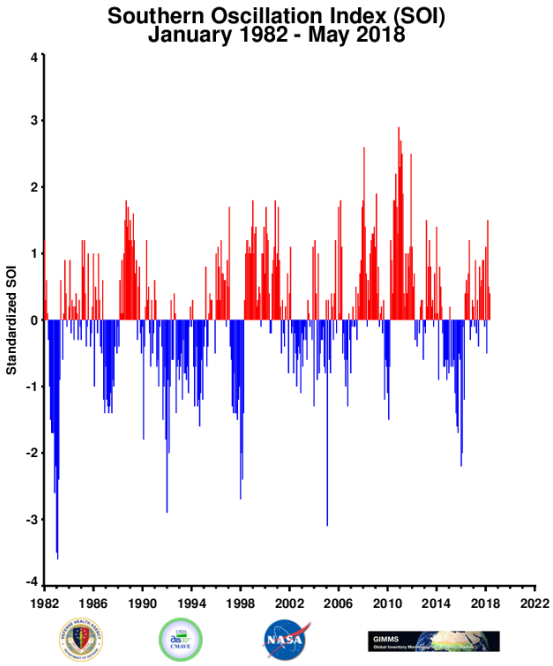
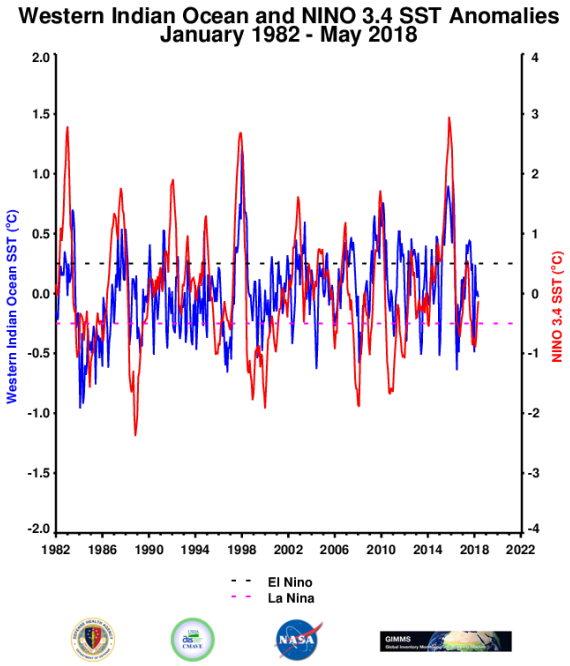
Rift Valley fever Monitor

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.

May 2018

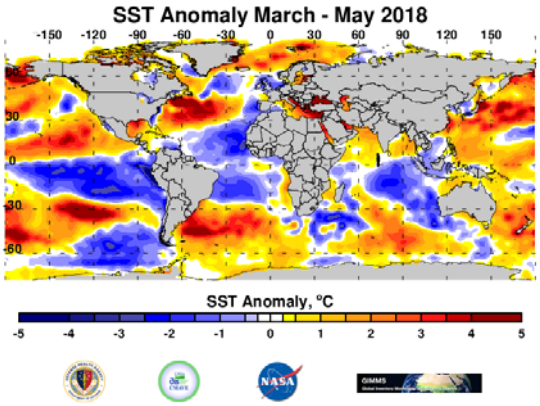
1. SOI and SST Indices

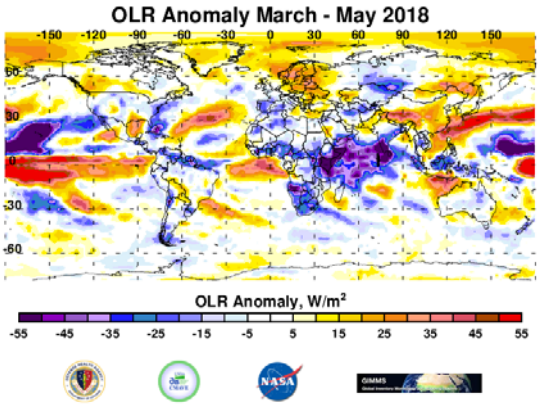




The SOI is within range of normal condition with a value of 0.4 in May. This suggests that at the moment the system is in ENSO-neutral conditions. This is further confirmed by all the oceanic indices in eastern equatorial Pacific are all within the neutral range to some degree with the following values in May: NINO1&2 at -0.53, NINO3 at -0.15, NINO3.4 at -0.13 and NINO4 at 0.22. The western Indian Ocean also remained in neutral range with an anomaly value of -0.03 in May. Overall, the indicators show that the ocean-atmosphere system is near neutral conditions. The current climate model predictions indicate that ENSO-neutral (50% chance) will persist through the summer and with a 50% chance for El Niño to develop during the fall in and increasing to 65% during northern hemisphere winter 2018-2019.

2. Global SST and OLR Anomalies

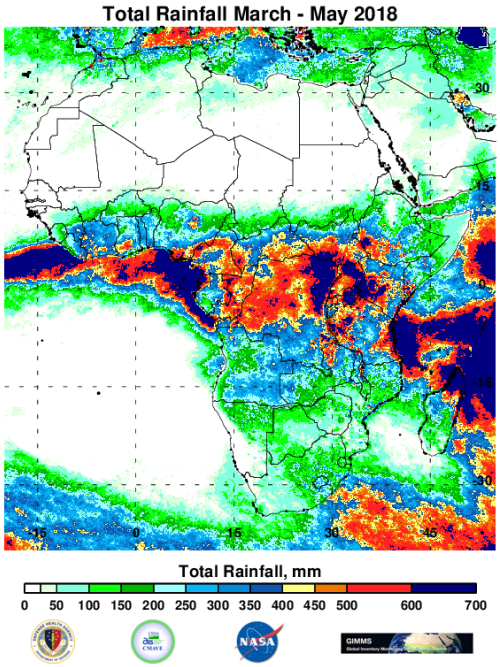


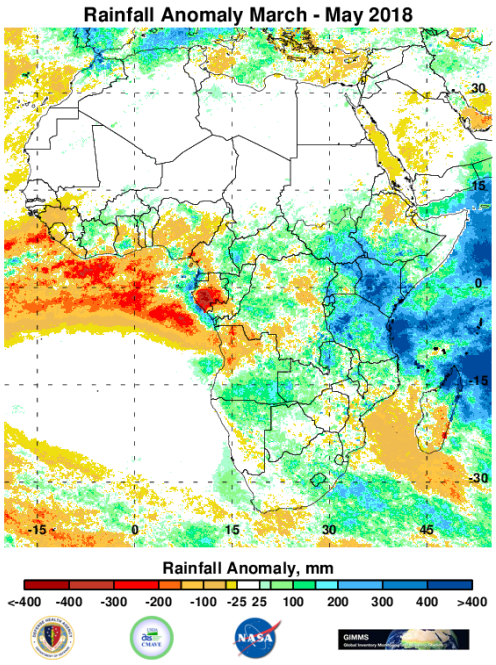


The March - May 2018 SST anomalies show cooler than normal conditions the equatorial Pacific Ocean with seasonal temperatures approximately 3.5°C below normal along the equator off the South American coast. Western Indian Ocean temperatures were slightly colder than normal but continuing to approach normal levels, but with the northern sector of this ocean (Gulf of Aden and Arabian Sea) being warmer than normal. The southeastern Indian Ocean cold anomaly remains with a maximum value of 3.5°C below normal, however the region of temperatures 3 or more degrees below normal has diminished. The Atlantic and Indian Ocean basins surrounding southern Africa are dominated by negative SST anomalies that tend to suppress convection over the sub-continent. 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 March - May 2018 OLR anomalies show drier than average conditions throughout the eastern equatorial Pacific coincident with the cold ocean temperatures, with a maximum anomaly of +55 watts per square meter in the central equatorial Pacific east of the dateline. The western equatorial Pacific Ocean particularly the Indonesian Basin and western Australia has reduced convection with negative OLR anomalies (-25 W/M*2) and areas surrounding this region are now drier than normal. In the higher latitudes drier than normal conditions have dissipated except for northwestern Alaska and northeastern Russia. Global most of the intense convective activity has been centered over the western Indian Ocean region and East and Southern Africa

3. Seasonal Rainfall and Cumulative Rainfall Anomalies

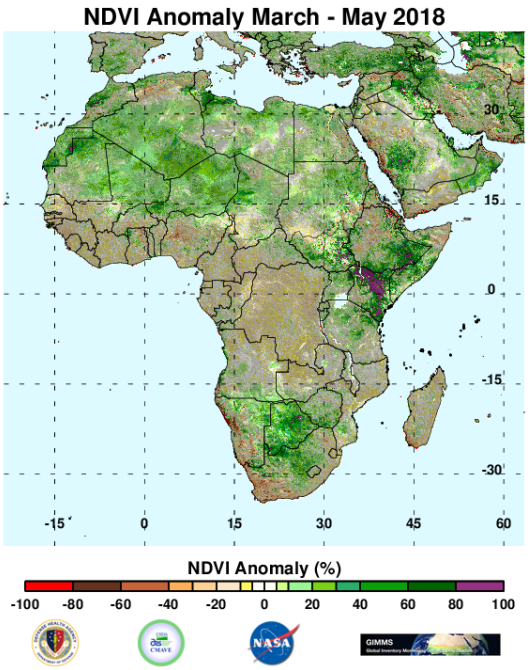


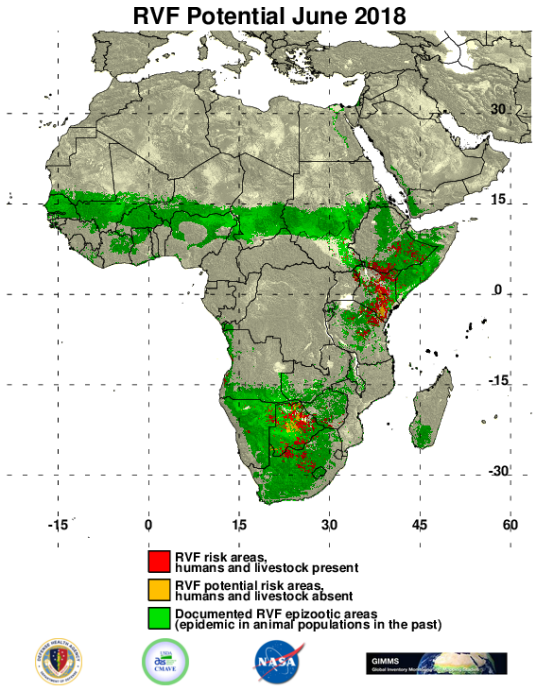


The majority of rainfall over Africa from March - May 2018 is now still centered in the equatorial belt, with maximum totals of 700mm from the southern Congo Basin through Tanzania northeastwards into Uganda, Kenya and eastwards into the Indian Ocean. Seasonal totals were near normal over most of the continent. East Africa is the region of maximum above normal rainfall that extends southwards into Zambia, Zimbabwe and central Mozambique with totals as high as 400mm above normal over the three-month period. Small areas of rainfall deficits persist in northeastern Congo and Gabon. Extreme flood conditions have been reported in many parts of Eastern Africa and persisted through March-May.

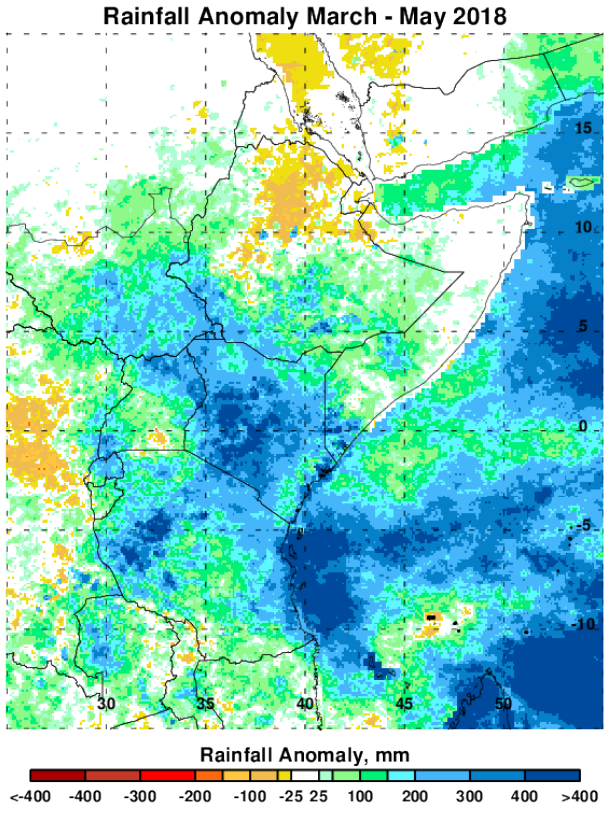
4. NDVI anomalies and RVF Risk Map

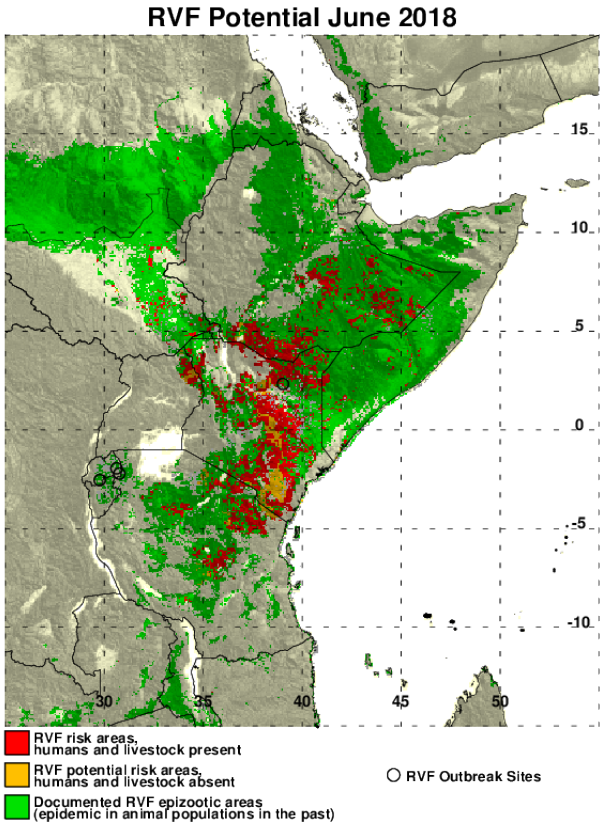
March - May 2018 NDVI anomalies for Africa above to near normal over most of the continent except along the equatorial belt of West Africa. Both East (Kenya, Uganda, Tanzania, southern Ethiopia and Somalia) and Southern (Botswana, South Africa and Zimbabwe) Africa show above normal vegetation (+70% to 100%). The areas of above normal NDVI in had above normal rainfall over the last three months. 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 March - May 2018, the RVF persistence model identifies areas of risk projected for June 2018 to be over southeastern Sudan, southern Ethiopia, northern Kenya, Tanzania, southern Madagascar, and scattered throughout the south in Angola, Namibia, Botswana, and central and northwestern South Africa. Given the higher than normal rainfall conditions in East Africa, enhanced vector surveillance is advised all the areas mapped to be at risk. During April to June so far have been confirmed reports of focal RVF activity in Wajir, Kenya, Jacobsdal, South Africa and Ngoma, Kirehe, and Kyonza Districts, East Province, Rwanda. Suspected activity has also been reported for Kitui, Kajiado and Marsabit counties of Kenya.





5. Region of Focus: East Africa





https://www.ars.usda.gov/southeast-area/gainesville-fl/center-for-medical-agricultural-and-veterinary-entomology/docs/rvf_monthlyupdates/