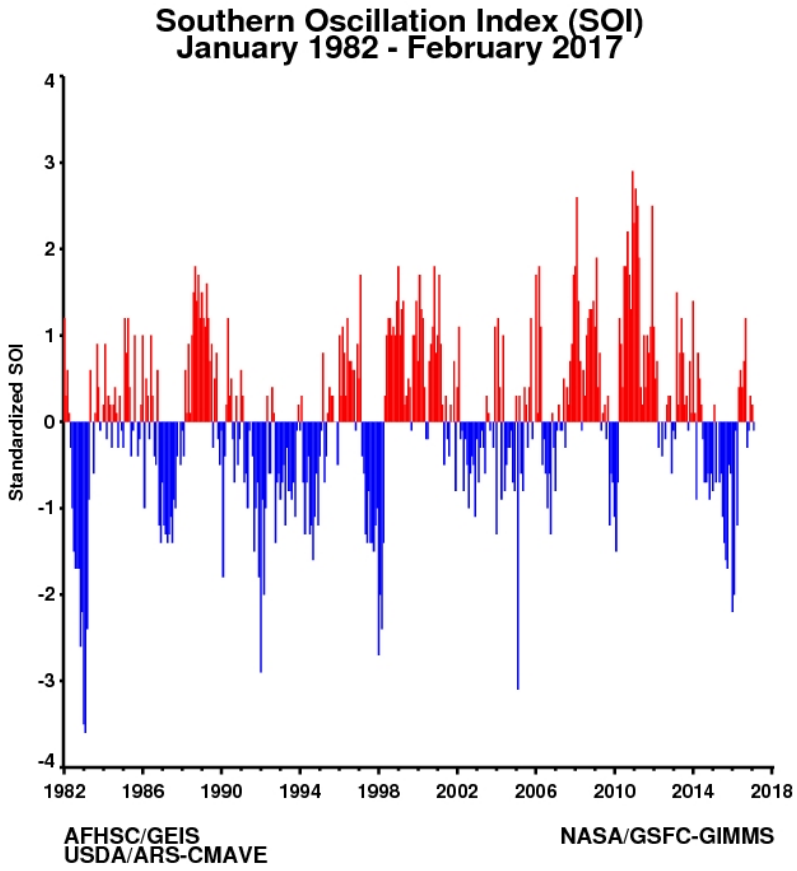
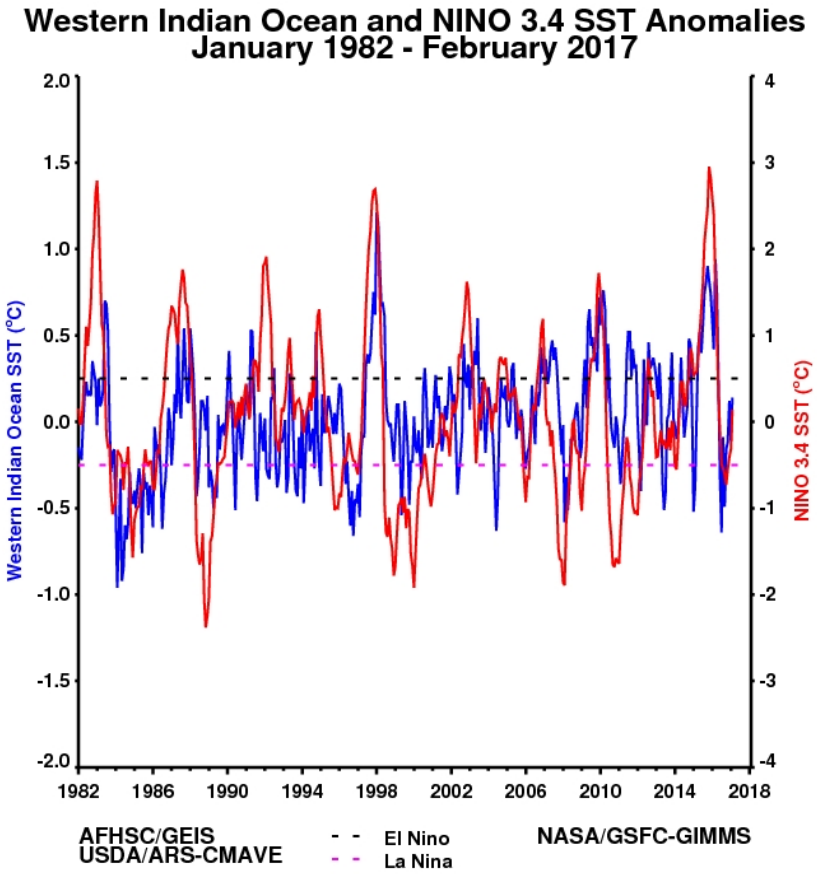
This section of the report will provide a rolling three month update on a monthly basis of the state of the climatic and ecological indicators used in monitoring areas at risk to RVF activity. These indicators include, global SST anomalies patterns, Equatorial Western Indian Ocean (WIO) and Eastern Pacific 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.

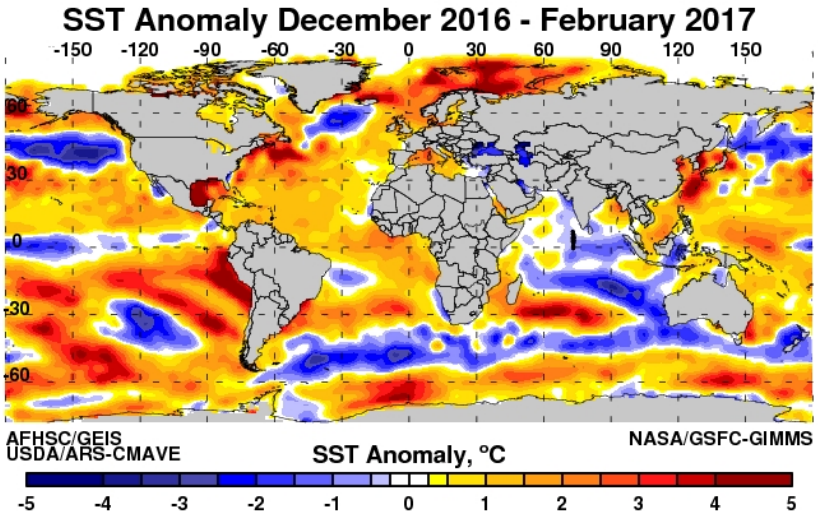
February 2017

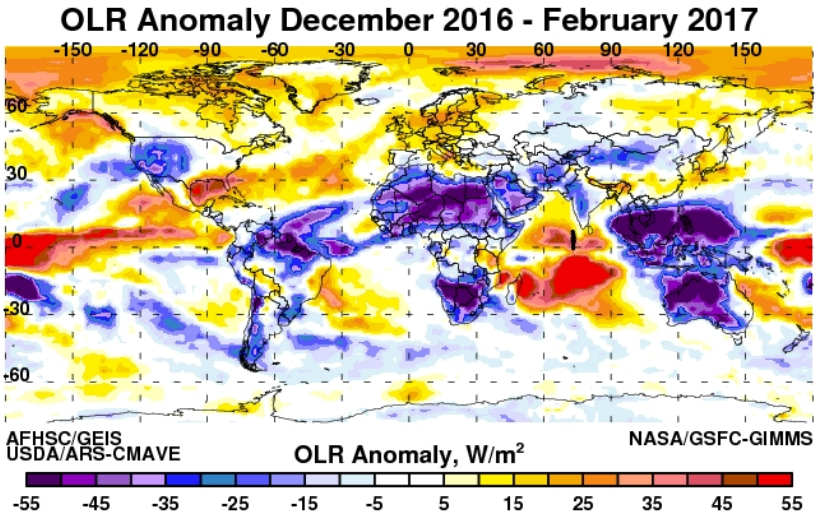
1. SOI and SST Indices





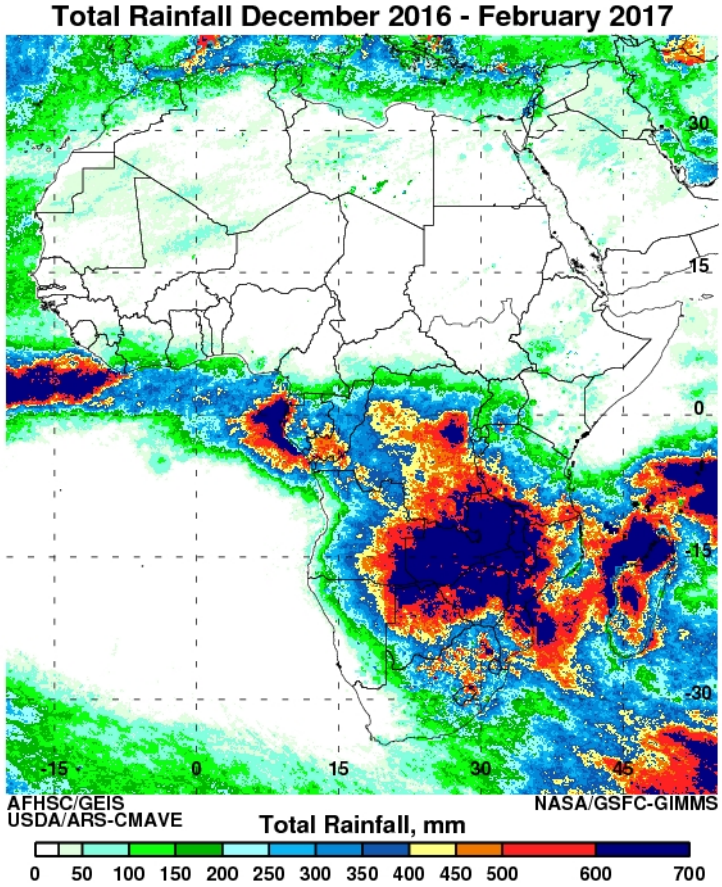
The SOI value remains near normal values although negative at -0.1 in February from +0.2 in January continuing the slight month to month variability that has been observed in the recent months. The ocean temperature conditions show ENSO-neutral conditions are persisting with sea surface temperature (SST) anomalies in most NINO regions showing slight positive values except the NINO4 region where slight negative SST anomalies are persisting: NINO 3.4 (+0.14°C), NINO 4 (-0.07°C), NINO3(-0.63°C) and NINO1&2 SST (+1.62°C). The increase in SST anomalies in the 3 regions is pronounced tending towards early development of warm ENSO conditions. The SST anomalies in western Indian Ocean are now near normal but slightly positive in concert with the NINO indices at +0.14°C. Overall, the coupled ocean-atmosphere system reflects with ENSO neutral conditions that are projected to last through the spring season: March - May 2017 and summer with 3-month average Niño-3.4 index between -0.5°C and +0.5°C. Current consensus forecasts indicate a 75% chance for ENSO neutral conditions to persist through the summer and a 50-55% chance for El Niño conditions to emerge during the July - December 2017 period.

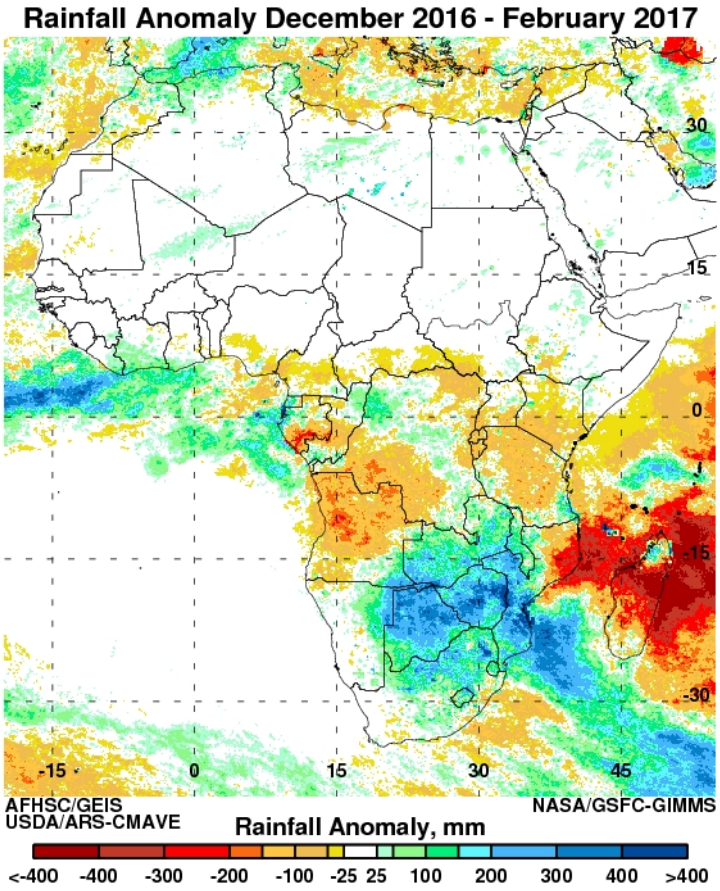




The equatorial Pacific Ocean seasonal SST anomalies show that the cold pattern that has dominated this region in the last several months is now dissipating except in the central sector of equatorial Pacific where anomalies remain at <-1.0°C) over during the December - February period. Positive anomalies have emerged in the extreme eastern equatorial Pacific region, centered just south of the equator along the South America coast. The western Pacific Ocean around the Indonesian basin shows weakened above normal SSTs and development of a cold anomaly pool west and southwest of this region. This cold pool covers most of the central Indian Ocean basin extending towards southwestern Australia. Other regions of significant anomalies include the north Pacific Ocean, north Atlantic, equatorial Atlantic off the West African coast, the Pacific Ocean off the California coast, southwest Atlantic Ocean off Argentina and Brazil which show significant positive and negative anomalies on the order of -/+1.0°C to -/+2.0°C. In general there lingering effects of the La Niña SST anomalies are evident globally. 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. Some impacts from the current SST

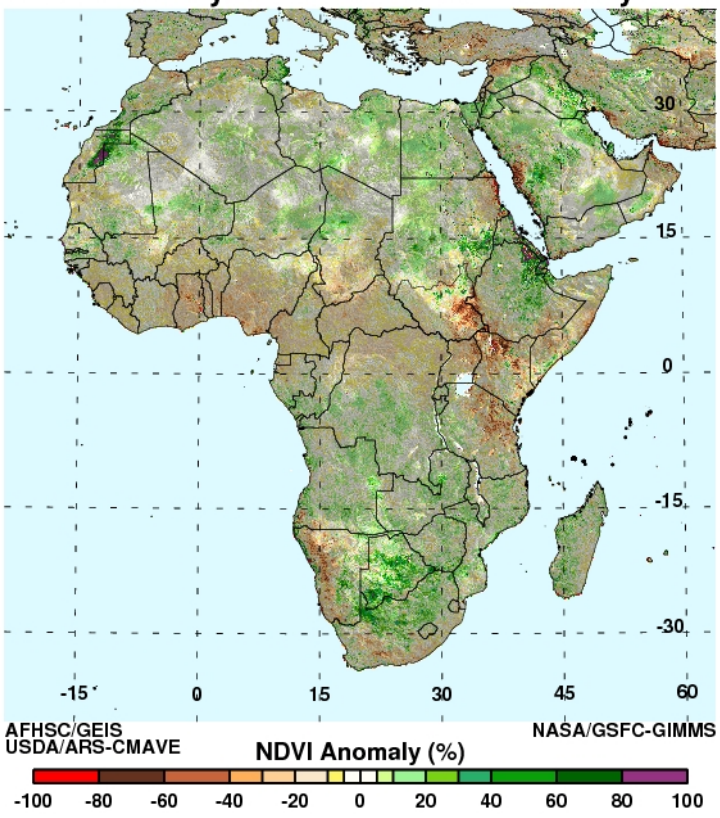
anomaly patterns can be observed in the pattern of global convective activity illustrated by the OLR departure patterns here. During the December 2016 to February 2016 period, drier-than-average conditions (>+55W/M2) are prevailing over the central to eastern equatorial Pacific Ocean basin. The entire western Pacific including Australia and the Indonesian basin show large negative OLR anomalies indicative of continued deep convective activity. Drier the normal conditions continue to persist over extreme northern hemisphere including Alaska, Canada, and northern Europe. Western and southwestern US show persistent negative OLR anomalies indicative continued convection and precipitation conditions in this region, while the eastern and southern US show positive OLR anomalies indicative of diminished precipitation and dry conditions. Negative OLR anomalies continue to dominate North Africa and Middle East and extending into central Asia. The western equatorial Indian Ocean basin extending into eastern Africa shows positive OLR anomalies indicating reduced convective activity and dry conditions. Accordingly, southern Africa and the southern half of South America show negative OLR anomalies suggesting enhanced convective activity. These patterns of depressed and enhanced convective activity coincide well with the patterns of SST departures and reveal certain impacts often associated with the cold ENSO events. Monthly and weekly anomalies can be found here. Rainfall and associated anomalies (below) for Africa from December 2016 to February 2016 show rainfall concentrated over south-central and southeastern Africa with maximum values of 700mm. Areas of above normal rainfall (+50 to 400 mm) are limited to southern Africa region with values at ~ +400mm over the three month period especially in Botswana, northeast and central South Africa, southern Mozambique, Zimbabwe and Zambia.

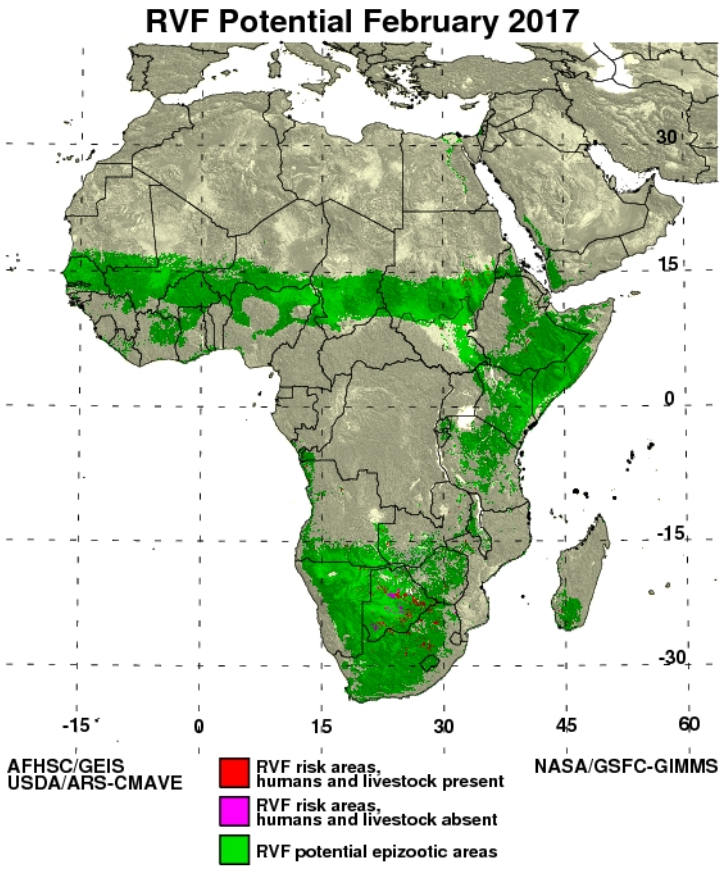




Cumulative NDVI anomalies for Africa for December 2016 to February 2016 show a patchwork of positive anomalies concentrated centered over Western Sahara, eastern Sudan and Botswana/South Africa. The RVF risk map below was derived from thresholding NDVI anomaly data to detect areas persistent of above 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 RVF vectors. For the period December 2016 to February 2016, the RVF persistence model identifies areas at risk in some areas South Africa and Botswana which have received above normal rainfall over the last three months. Given the elevated rainfall conditions that have prevailed in these countries, continued surveillance is advised in these areas.

NDVI Anomaly December 2016 - February 2017




RVF Potential February 2017
30
15
0
-15
-30
-15
0
15
30
45
60
AFHSC/GEIS
USDA/ARS-CMAVE
NASA/GSFC-GIMMS
RVF risk areas, humans and livestock present
RVF risk areas, humans and livestock absent
RVF potential epizootic areas