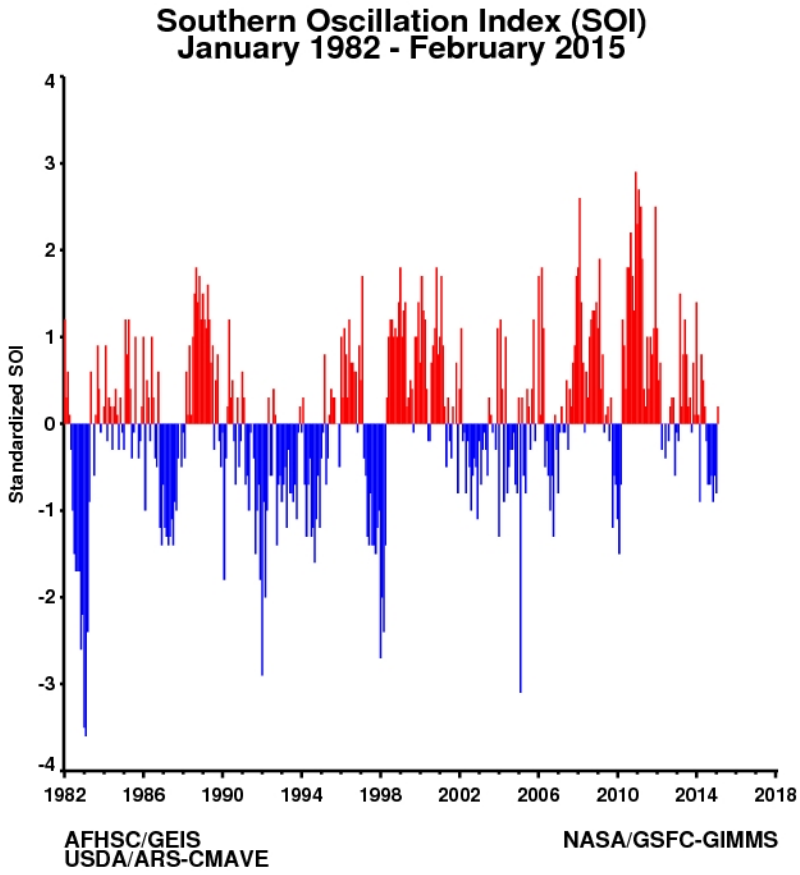
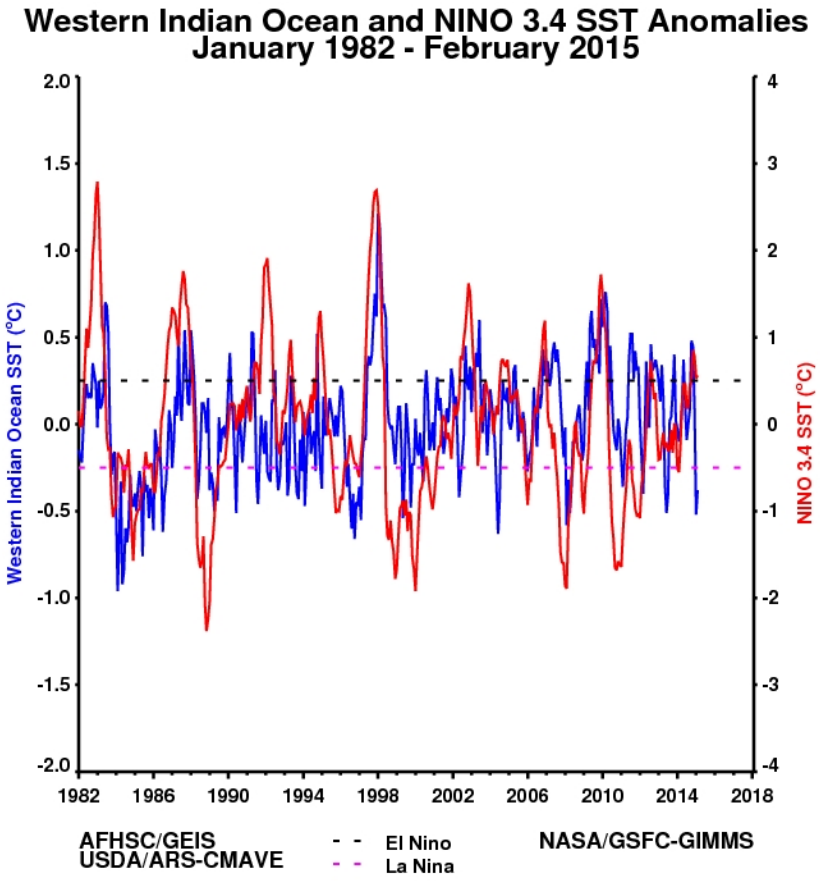
This section of the report will provide a rolling three month update on a monthly basis of the state of the climatic and ecological indicators used in monitoring areas at risk to RVF activity. These indicators include, global SST anomalies patterns, Equatorial Western Indian Ocean (WIO) and Eastern Pacific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

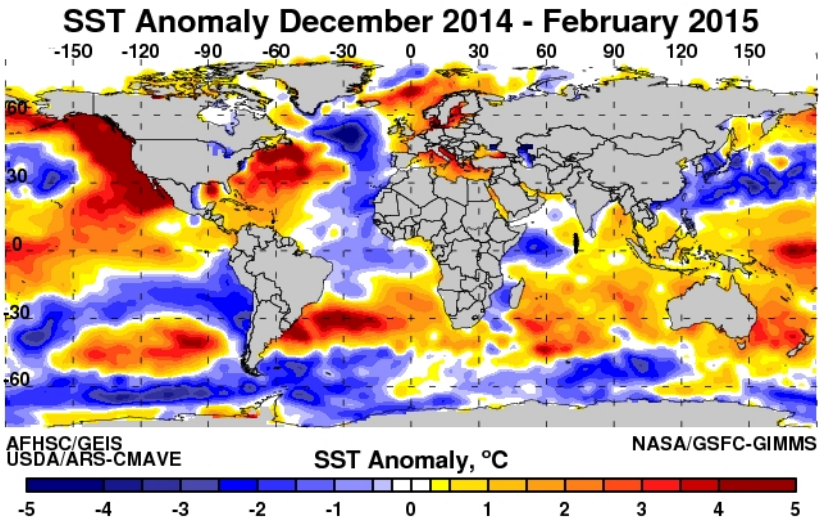
**February 2015**

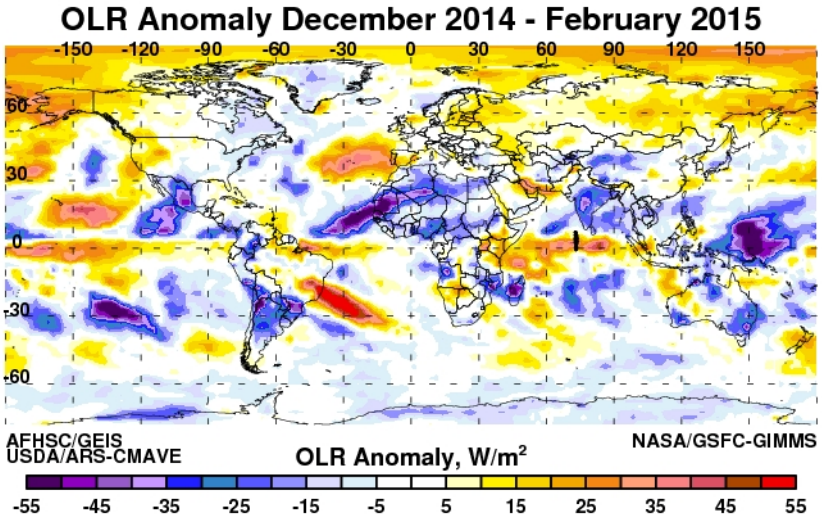
1. SOI and SST Indices





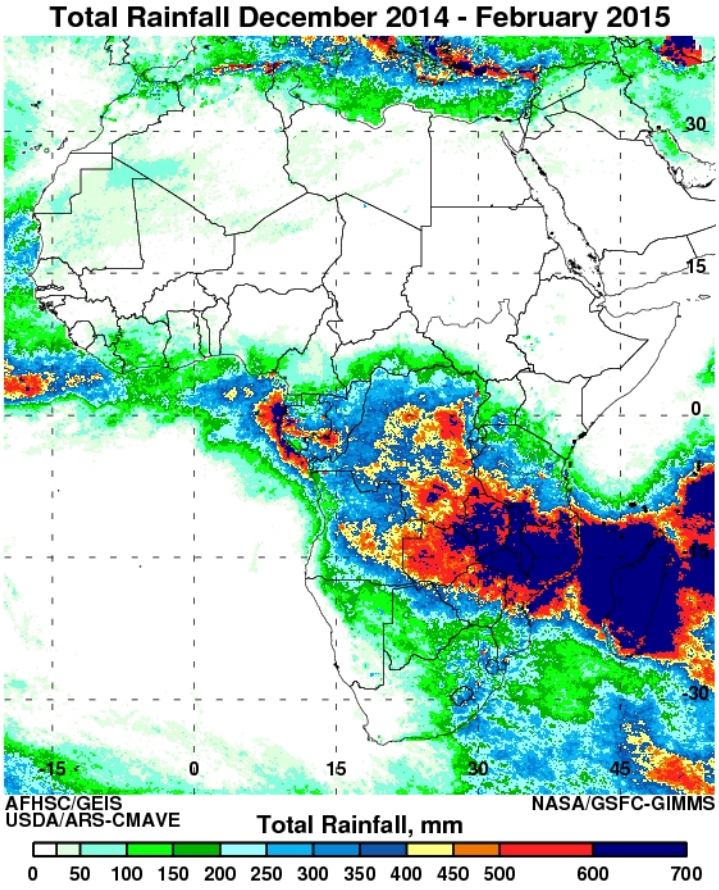

The SOI index continued with the trend towards normal with a value of 0.2 in February indicating the prevalence of neutral conditions. However, monthly SST anomalies in NINO 3.4 and NINO 4 monitoring regions have remained positive or increased with values of +0.57°C and 1.02°C respectively in February. The western Indian Ocean basin is currently undergoing a cooling pattern with the WIO SST index at -0.38°C indicating the prevalence of colder than normal conditions over this ocean basin. The recent persistent above-average sea surface temperatures (SST) (below) in the central equatorial Pacific region are consistent with the development of El Niño conditions. There has been weak coupling between the warm Ocean and the atmosphere and, the frequency and strength of low-level westerly wind anomalies has increased over the equatorial Pacific during the last month and a half. Convection was enhanced over the western equatorial Pacific to the Date Line over the last 3 months as shown by OLR departures below. Currently a majority of model forecasts predict weak El Niño conditions (50-60% chance) during the rest of the spring season in 2015 with no significant impacts expected as spring season contributes to progressively lower probabilities of El Niño. In some locations, certain impacts often associated with El Niño may appear during the Northern Hemisphere spring 2015 season.

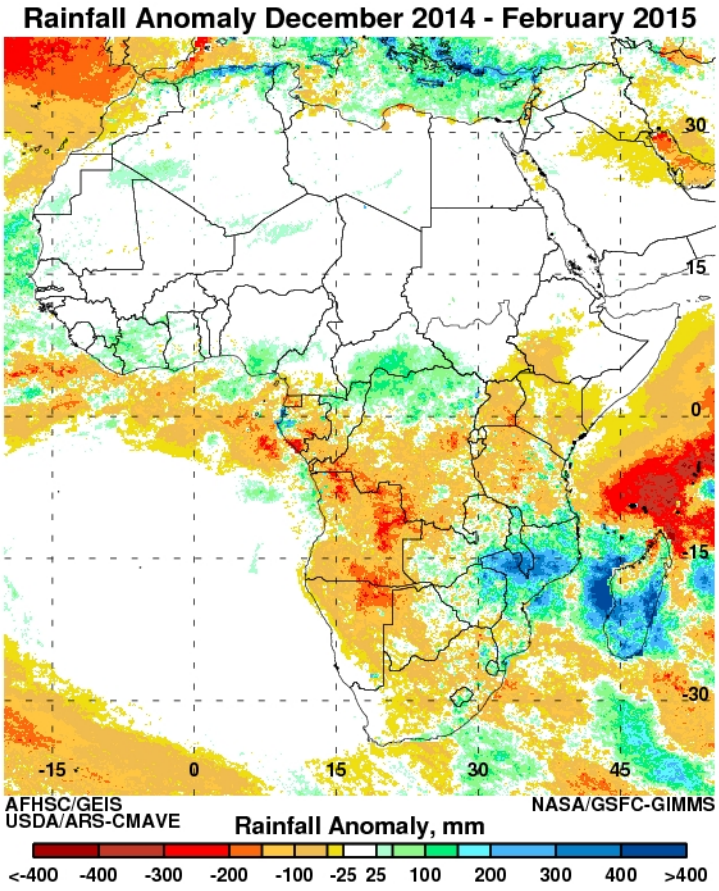



The entire equatorial Pacific Ocean shows a pattern of above normal seasonal SSTs (three month values: +0.5°C to +2.0°C) except for the region from 30°S to 1°S (off the South American coast) with below-normal SSTs during the December 2014 to February 2015. The western equatorial Indian Ocean between the equator and 30°N has now developed a pool of cold SSTs except for the southern Indian Ocean that is dominated by positive SSTs. 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, and south Indian Ocean off the southern Africa landmass which show significant positive and negative anomalies on the order of -/+1.0°C to -/+2.0°C. 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 2014 to February 2015 period, drier-than-average conditions (>+35W/M2) continue to persist over the parts of

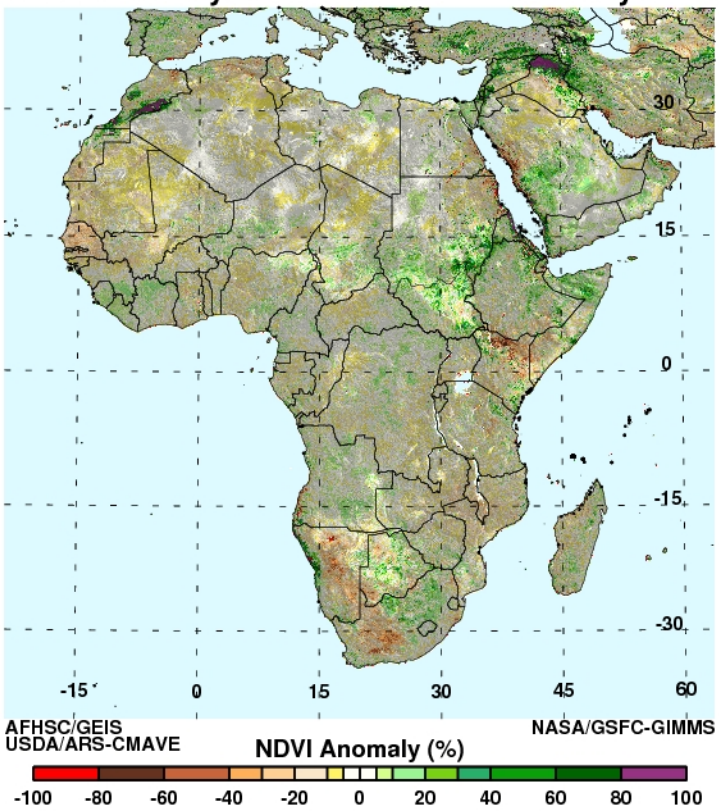
central Pacific Ocean, and drier than average conditions have emerged over the western equatorial Indian Ocean Basin and eastern Brazil. Enhanced cooler than average conditions (-50W/M2) are observed over the areas to the immediate east of the Indonesian Basin to the Date Line, convective conditions persist over India between 70°E and 90°E, western Africa, southeastern Africa, southern Brazil and Argentina and central America(Mexico). These patterns of depressed and enhanced convective activity coincide well with the patterns of SST departures. Monthly and weekly anomalies can be found here. Rainfall and associated anomalies (below) for Africa from December 2014 to February 2015 show rainfall over the entire sub-Saharan region south of 5°N with a maxima along 5°S. Areas of above normal rainfall (+50 to 200mm) are limited to eastern Zimbabwe, Mozambique and Malawi.

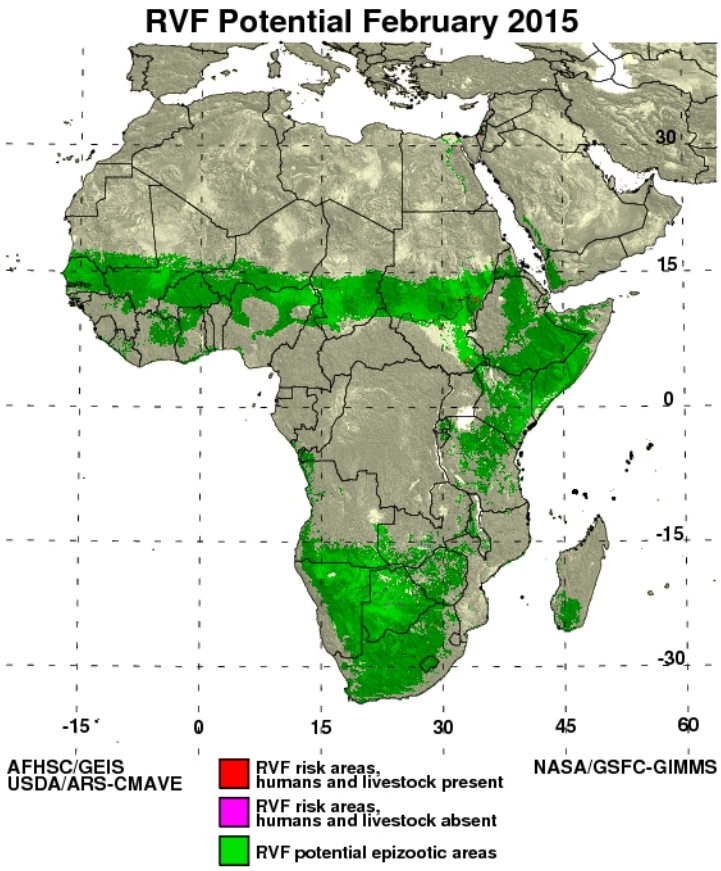





Cumulative NDVI anomalies for Africa for December 2014 to February 2015 show persistent positive anomalies concentrated eastern Sudan, Eritrea, eastern Ethiopia and northern Somalia, northwestern Kenya, Botswana and NW South Africa even though the patterns are not spatially coherent. The RVF risk map 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 2014 to February 2015, the RVF persistence model does not identify any areas where ecological conditions would support the emergence of RVF vectors. Therefore there is no risk of ecologically coupled RVF activity.

## NDVI Anomaly December 2014 - February 2015




RVF Potential February 2015
30
15
0
-15
-30
-15
0
15
30
45
60
AFHSC/GEIS
USDA/ARS-CMAVE
RVF risk areas, humans and livestock present
RVF risk areas, humans and livestock absent
RVF potential epizootic areas
NASA/GSFC-GIMMS