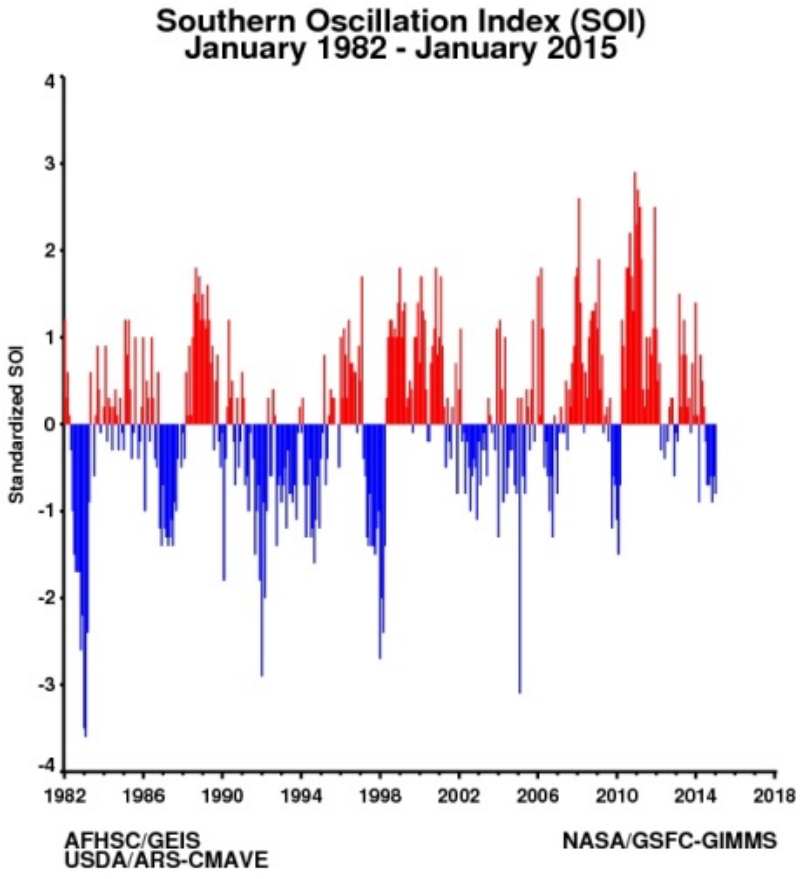
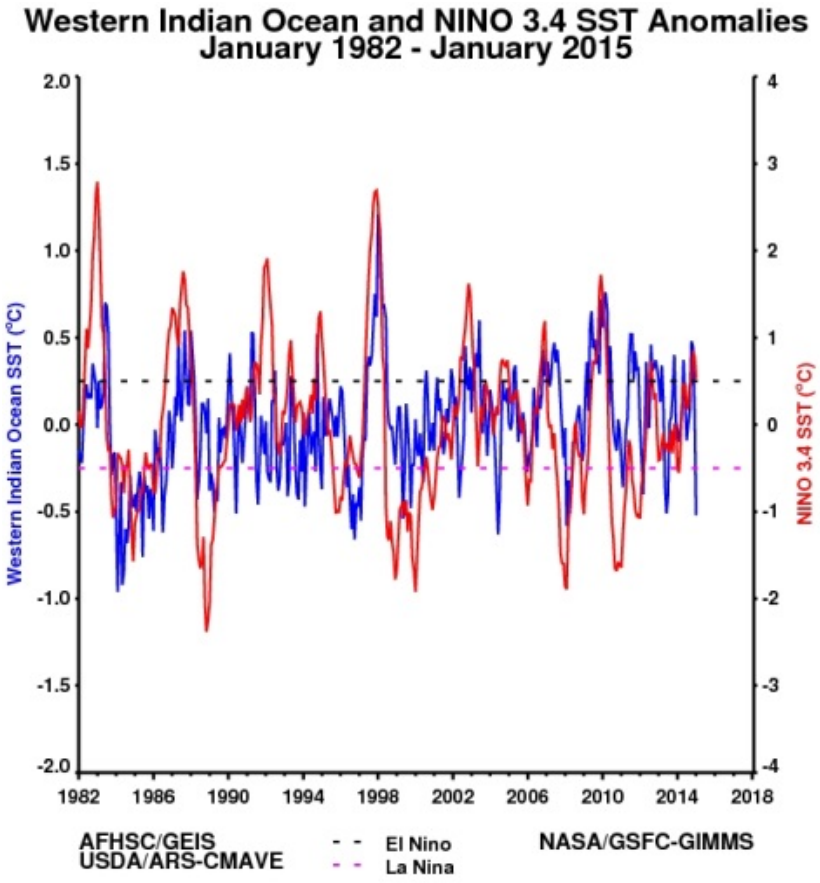
This section of the report will provide a rolling three month update on a monthly basis of the state of the climatic and ecological indicators used in monitoring areas at risk to RVF activity. These indicators include, global SST anomalies patterns, Equatorial Western Indian Ocean (WIO) and Eastern Pacific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

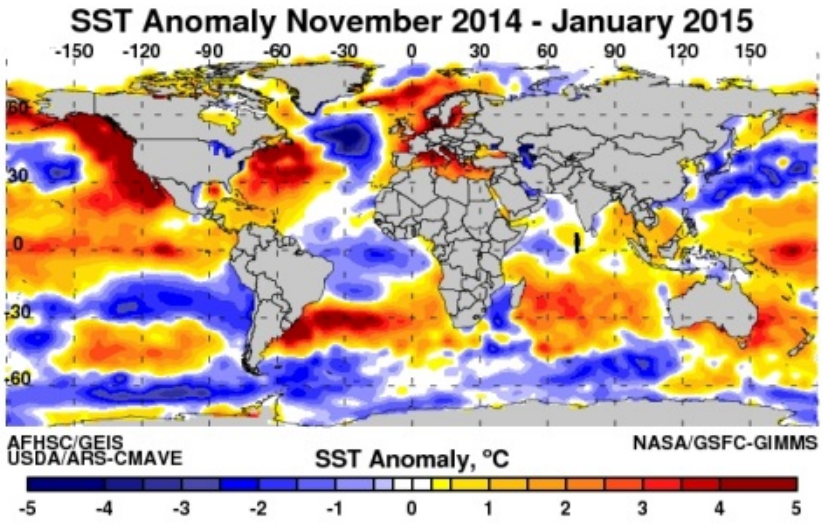
January 2015

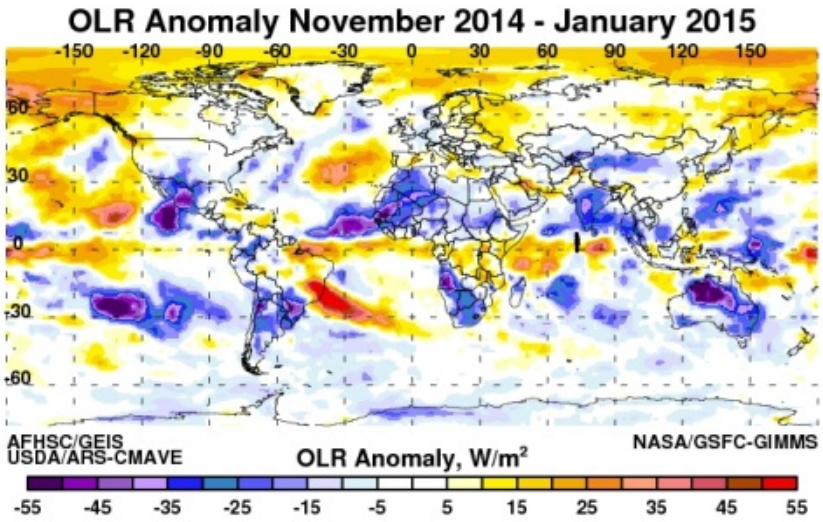
1. SOI and SST Indices





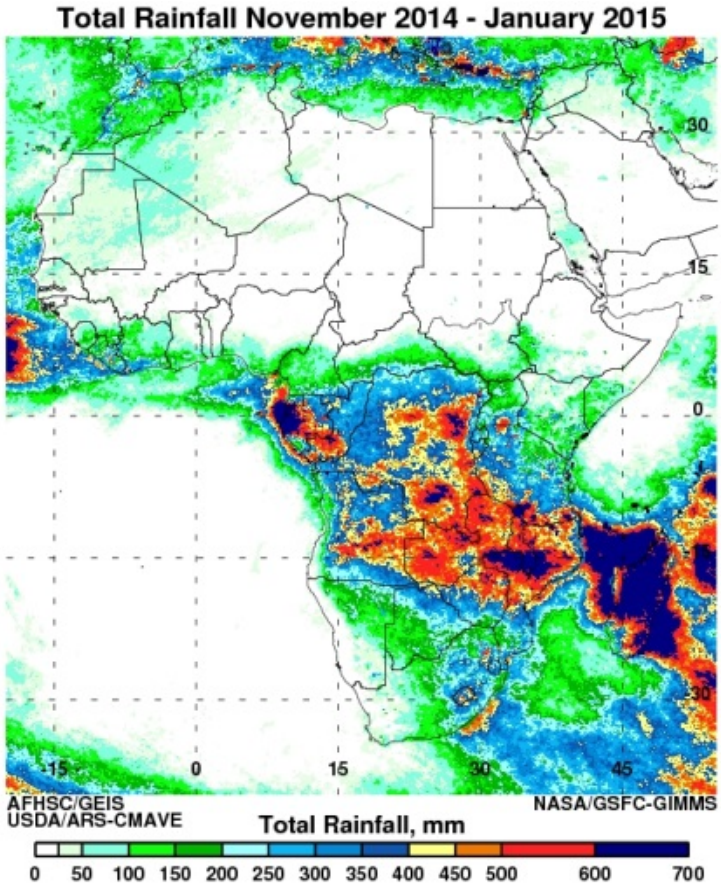
The SOI index continued with the trend towards normal but remained negative with a value of -0.8 in January indicating persistence of below normal conditions as has been the case since early fall 2014. Monthly SST anomalies in all NINO monitoring regions have decreased but still warmer than normal, with NINO3.4 SST anomalies at ~ +0.53°C in January. In western Indian Ocean recent warming pattern has dramatically decreased and January shows a cooling pattern with the WIO SST index at -0.52°C indicating the prevalence of colder than normal conditions over this ocean basin. Even though above-average sea surface temperatures (SST) (below) and in all the NINO regions of the equatorial eastern equatorial Pacific were consistent with of El Niño conditions, the overall atmospheric circulation continued to show show very limited coupling with the anomalously warm water. Therefore the combined atmospheric and oceanic state remains in ENSO-neutral state. As in the last five months, nearly all model forecasts predict weak El Niño conditions during the February - April 2015 period. If El Niño emerges, the prediction consensus favors a weak event (3-month values of the Niño-3.4 index between 0.5°C and 0.9°C), with 50-60% chance of El Niño conditions during the next two months, with ENSO-neutral favored thereafter during Northern Hemisphere spring 2015.

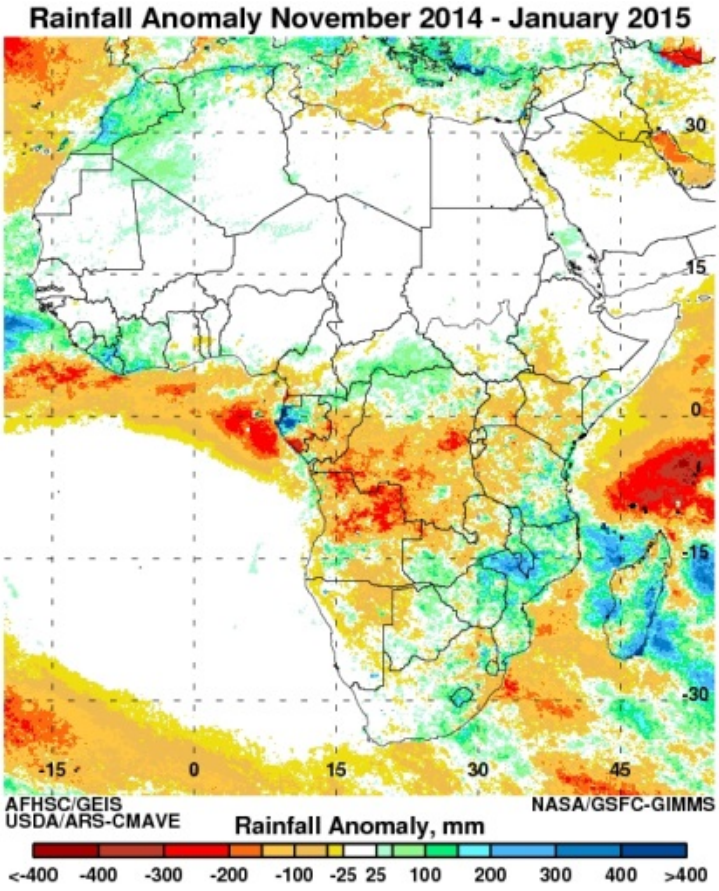




The entire equatorial Pacific Ocean shows a pattern of above normal seasonal SSTs (three month values: +0.5°C to +2.0°C) except for the region from 30°S to 1°S (off the South American coast) with below-normal SSTs during the November 2014 to January 2015. The western equatorial Indian Ocean between the equator and 30°N is now developing 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 November 2014 to January 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

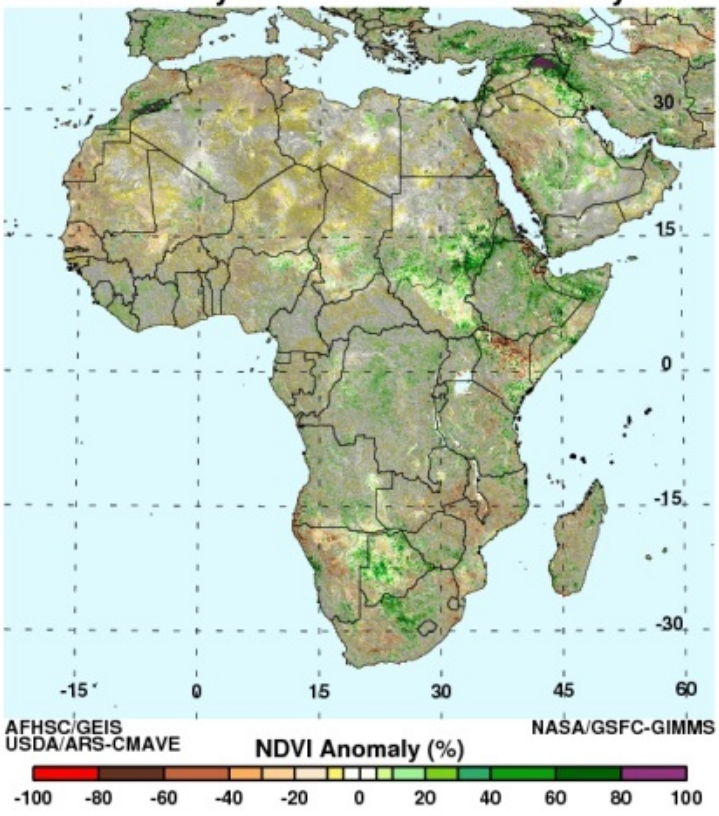
equatorial Indian Ocean Basin and eastern Brazil. Enhanced cooler than average conditions (-50W/M2) are observed over the areas to the immediate west of the Indonesian Basin especiaaly over India between 60°E and 95°E, western Africa, South Africa, southern Brazil and Argentina, central America(Mexico) and southwest US. 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 November 2014 to January 2015 show rainfall over the entire sub-Saharan region south of 5°N with maxima along 5°S. Areas of above normal rainfall (+50 to 200mm) are limited to eastern Zimbabwe, Mozambique and Malawi.

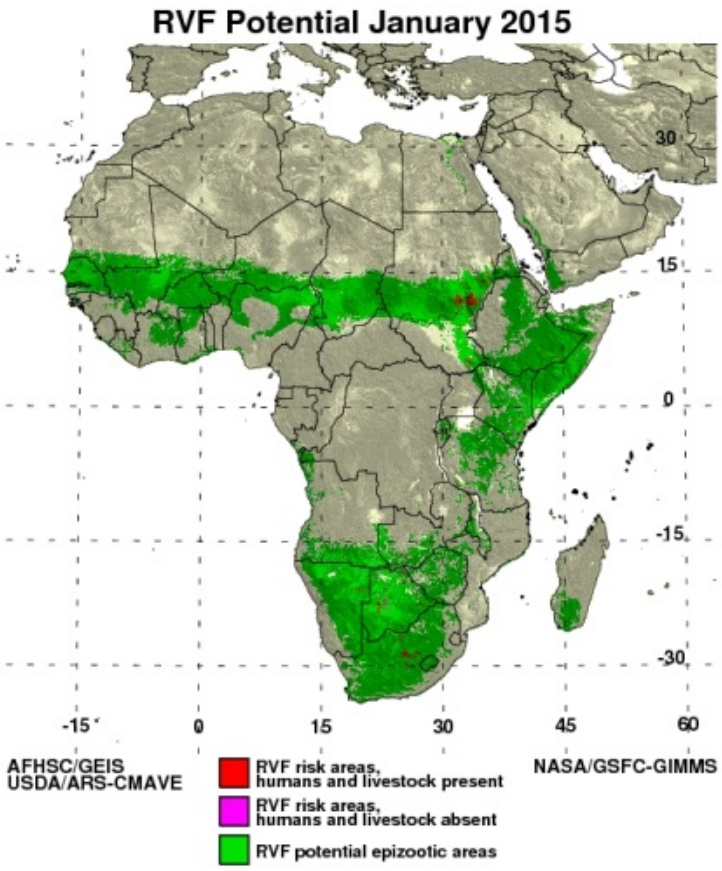




Cumulative NDVI anomalies for Africa for November 2014 to January 2015 show positive anomalies concentrated eastern Sudan, Eritrea, eastern Ethiopia, northern Somalia, northwestern Kenya, Botswana and NW South Africa even though the patterns are not spatially coherent. The RVF risk map below was derived 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 November 2014 to January 2015, the RVF persistence model identifies isolated areas in eastern Sudan where ecological conditions would support the emergence of RVF vectors. Enhanced surveillance is advised in these areas.

NDVI Anomaly November 2014 - January 2015




RVF Potential January 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