

Global Climate Review of 2014

W. Thiaw, T. Diliberto, N. Novella, M. Robjhon,
E. Bekele, C. Oonariya, and V. Kumar,

Climate Prediction Center

National Centers for Environmental Prediction

University Research Park, College Park, MD

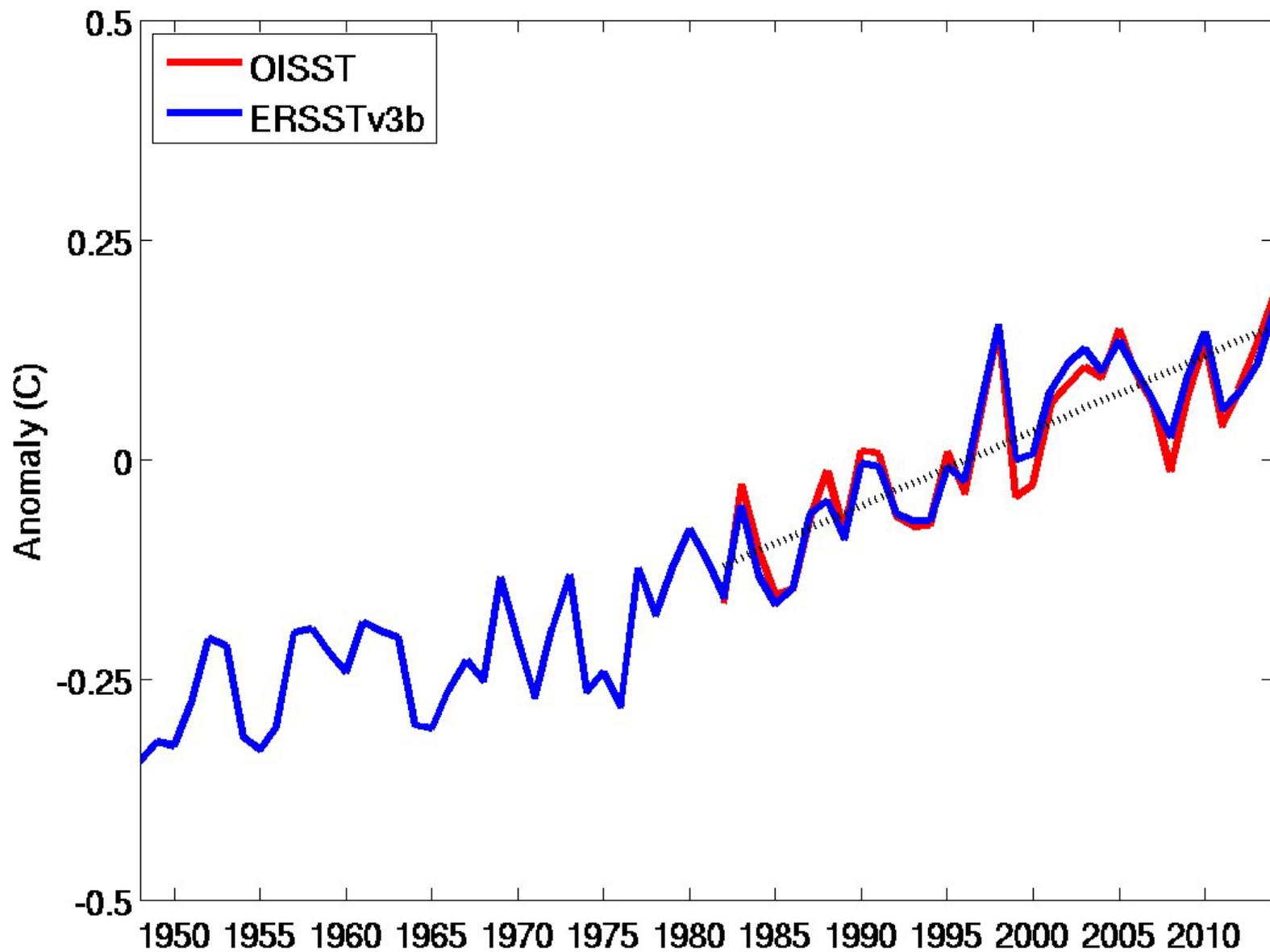
Outline

- Surface Temperature
- Precipitation
- Tropical Storm Activity

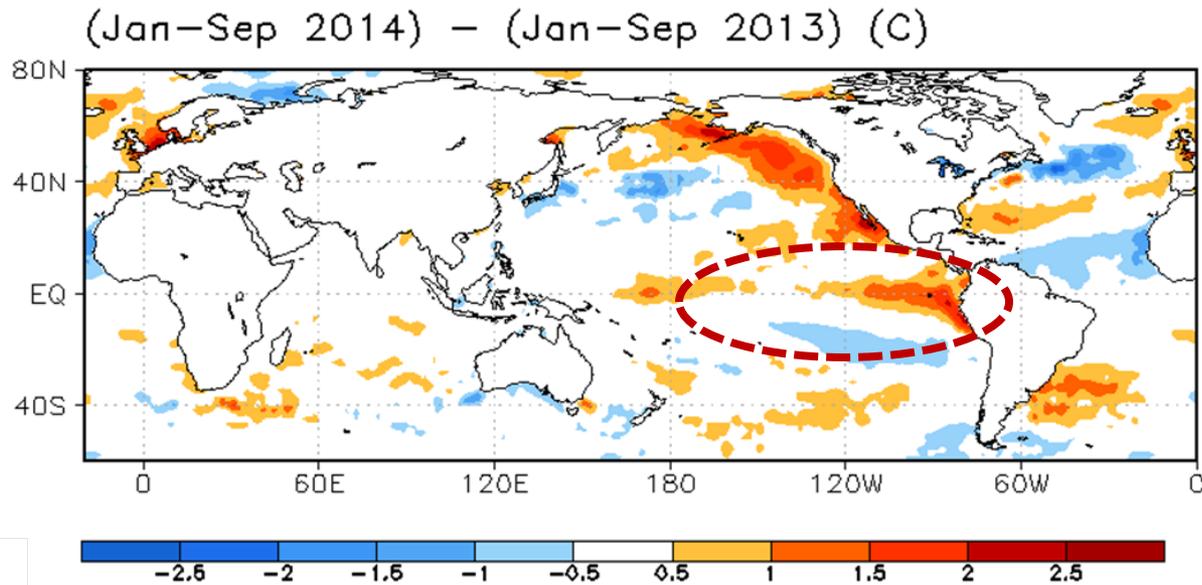
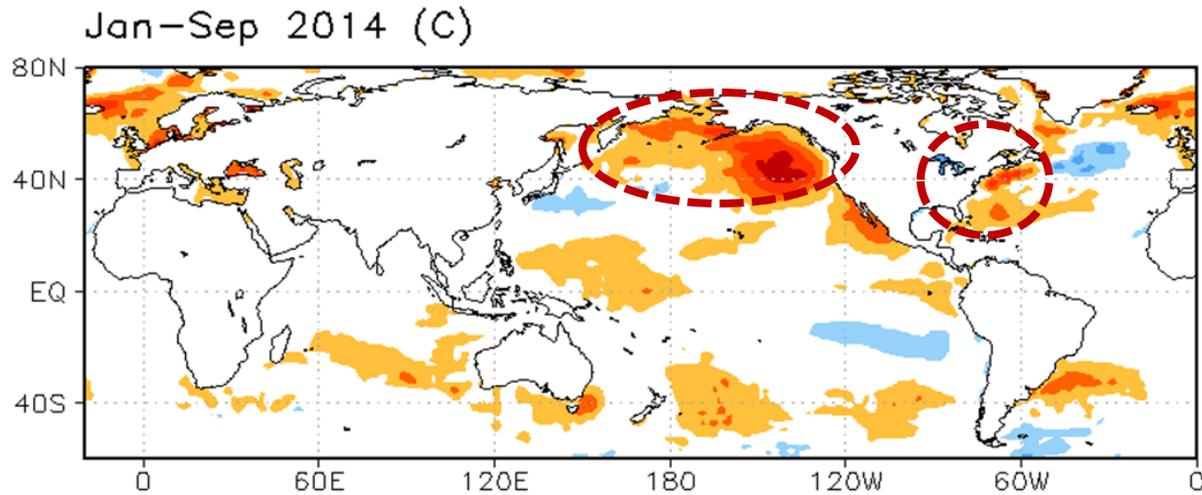
Selected extreme events

- Drought hit Northeast Brazil for three consecutive years. Wiped out crops and livestock causing food prices to rise.
- Torrential rains caused flooding in India and Pakistan and epidemic threat
- Dengue fever outbreak in China considered worst in 10 years

Globally Averaged SST anomaly

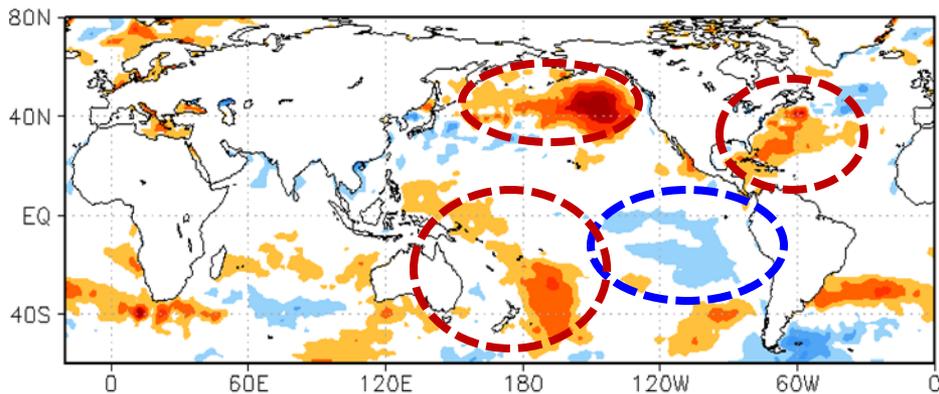


Sea Surface Temperature, NOAA/OI

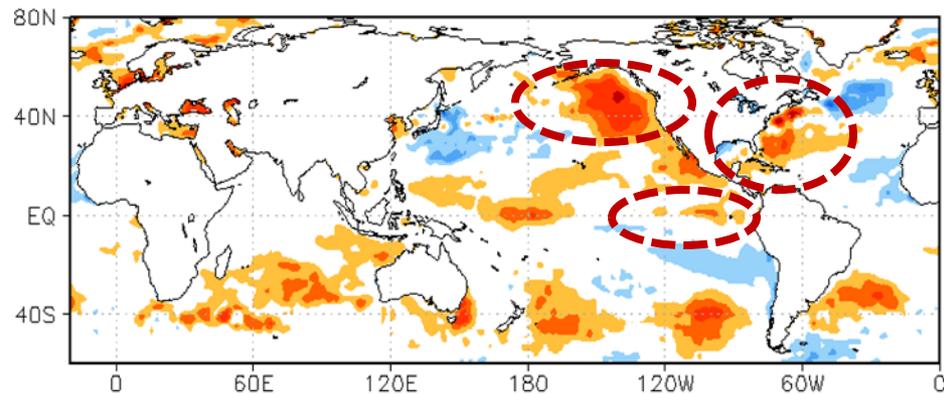


Sea Surface Temperature, NOAA/OI

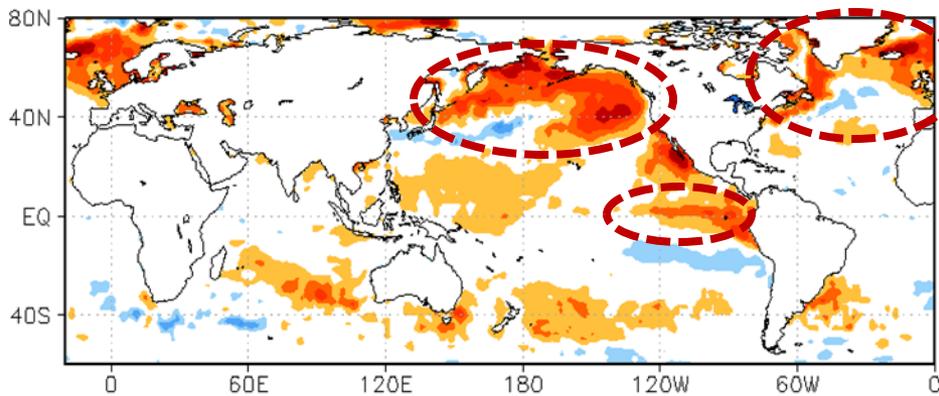
Dec-Feb 2014 (C)



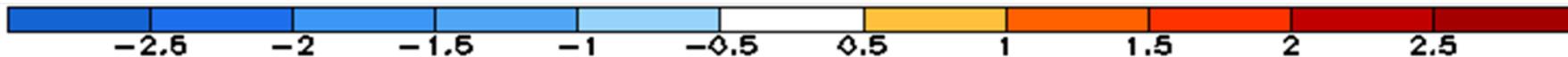
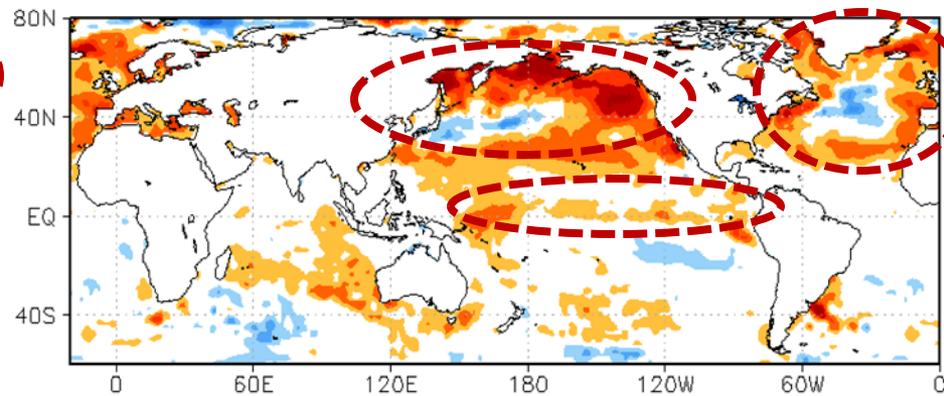
Mar-May 2014 (C)



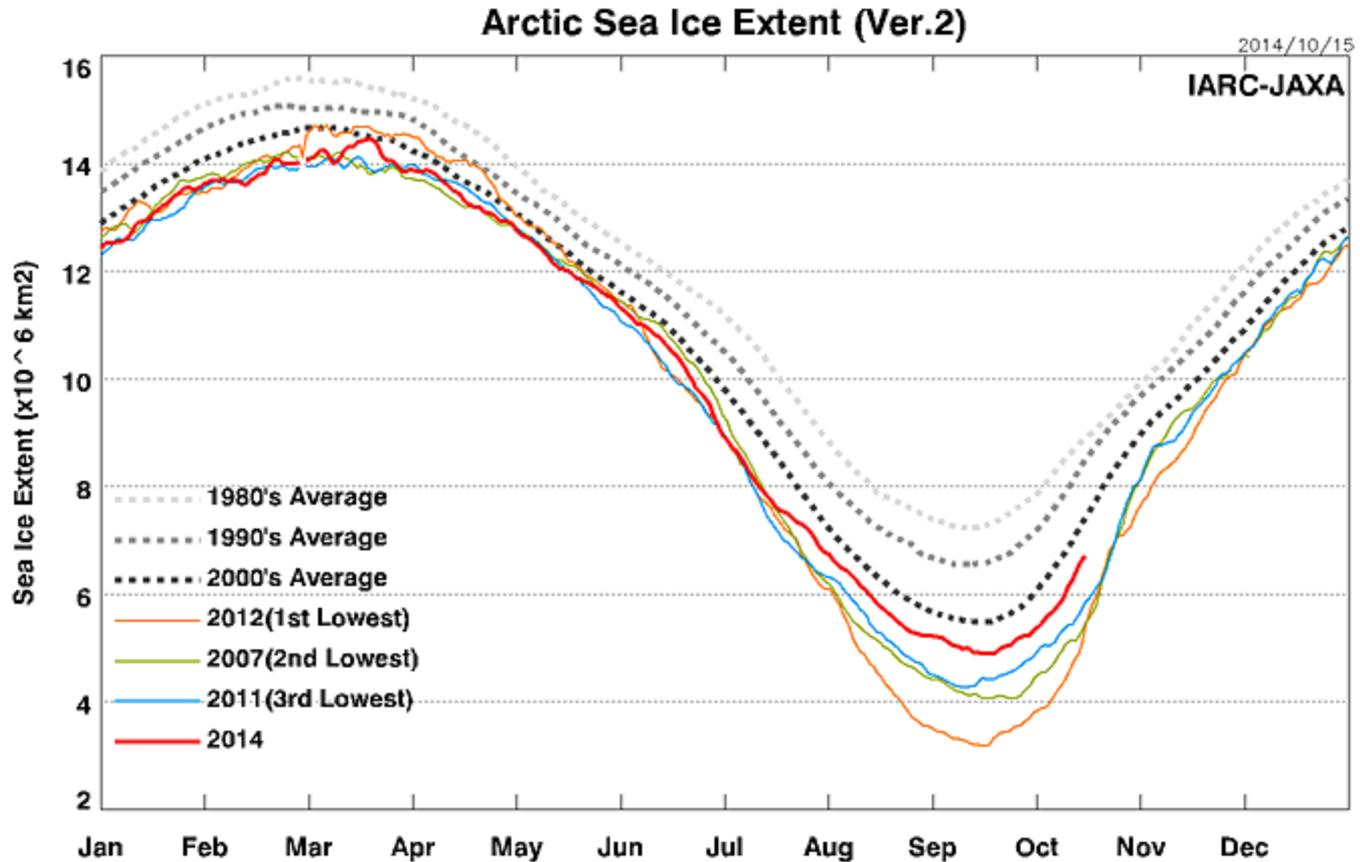
Jun-Aug 2014 (C)



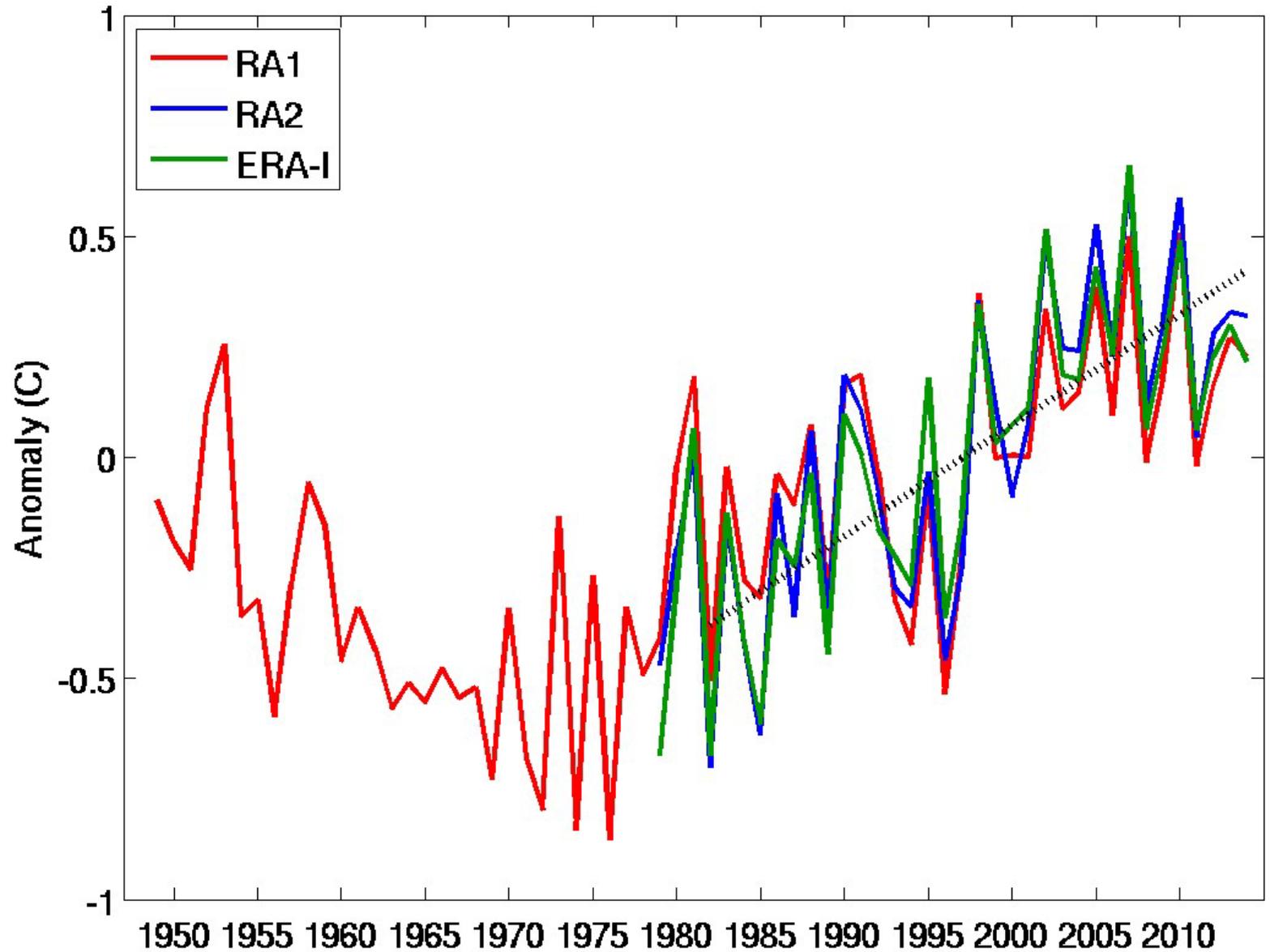
Sep 2014 (C)



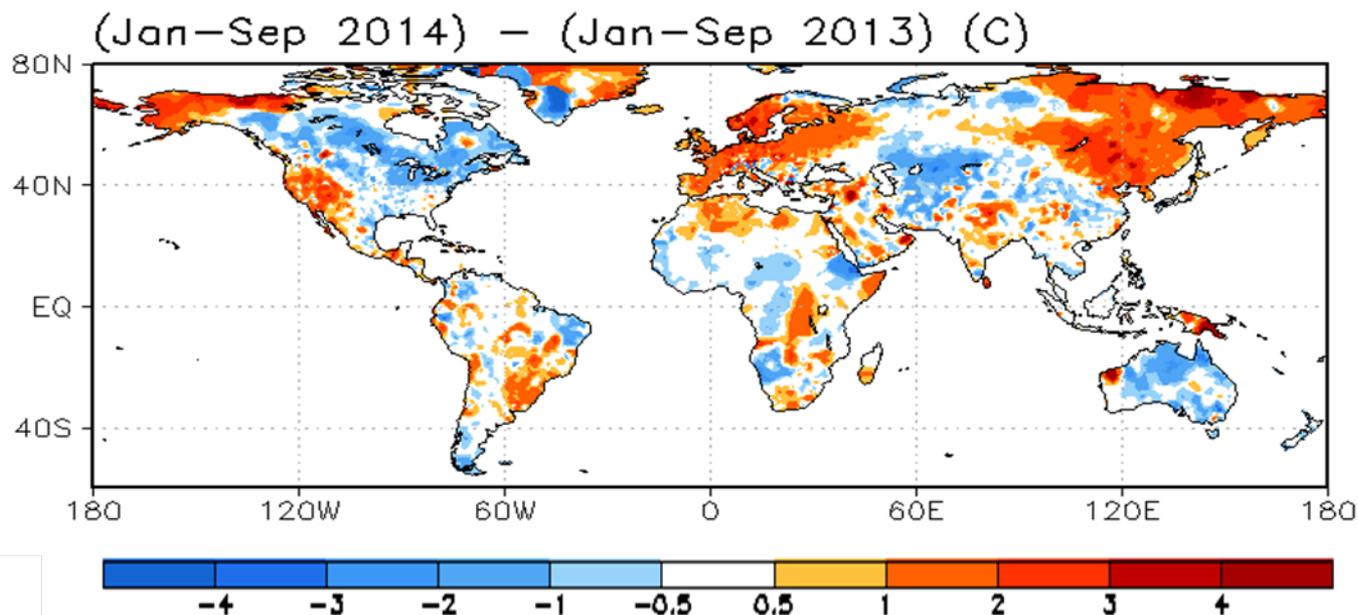
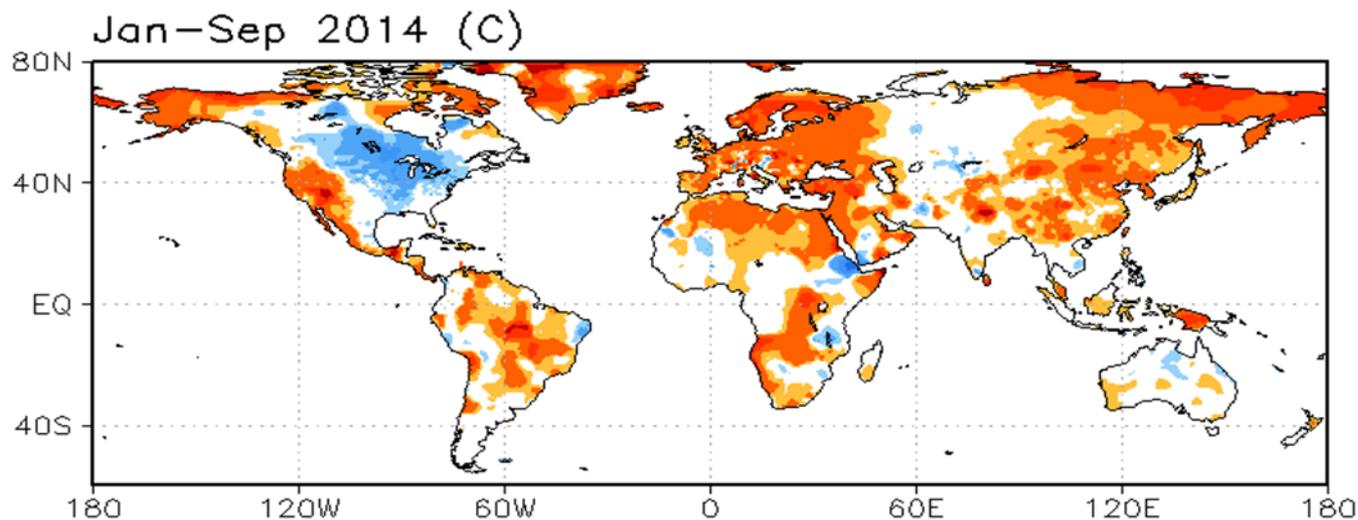
Arctic Sea Ice Extent



Globally Averaged Land T anomaly

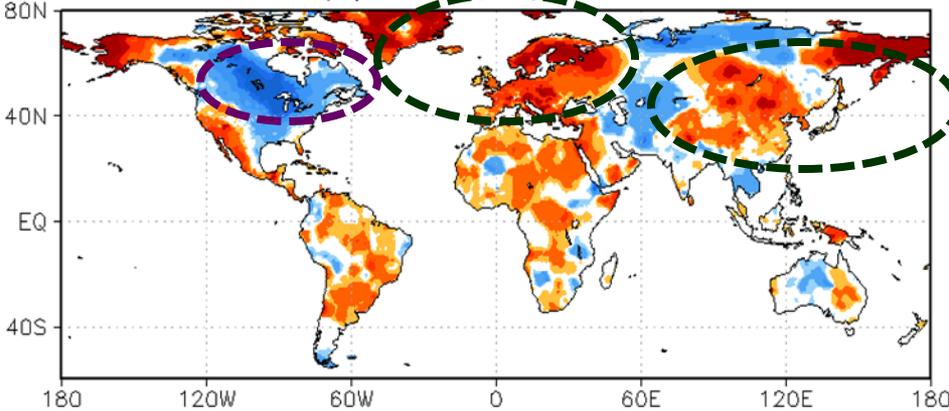


Land Surface Temperature, CAMS-GHCN

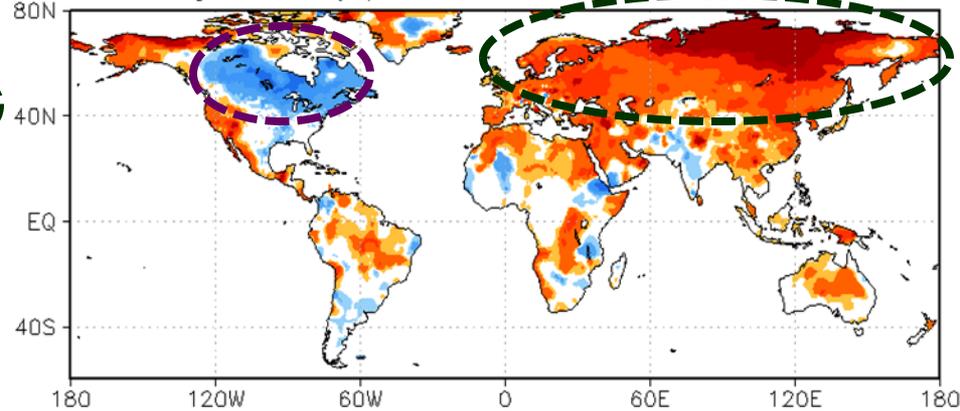


Land Surface Temperature, CAMS-GHCN

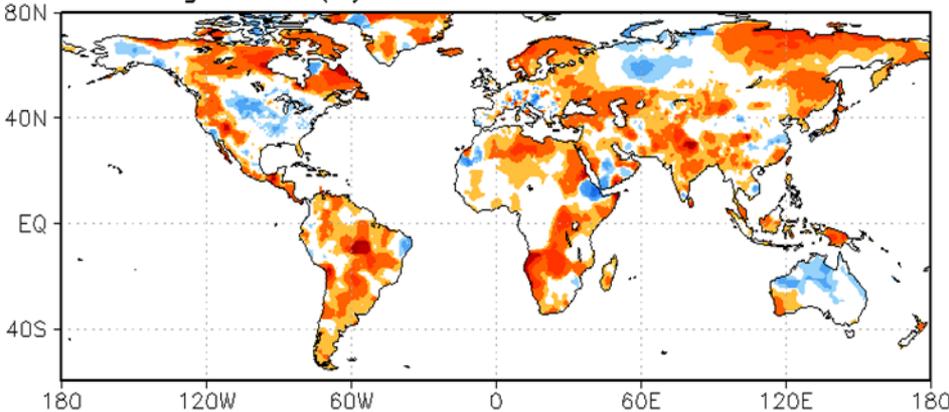
Dec-Feb 2014 (C)



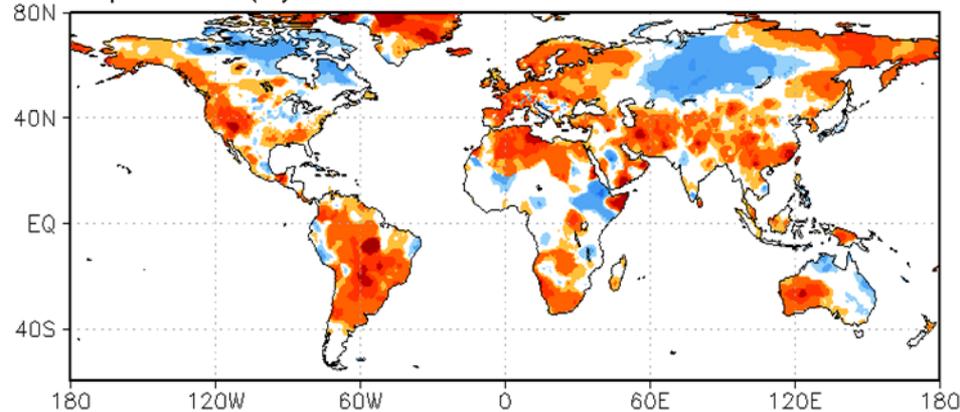
Mar-May 2014 (C)



Jun-Aug 2014 (C)

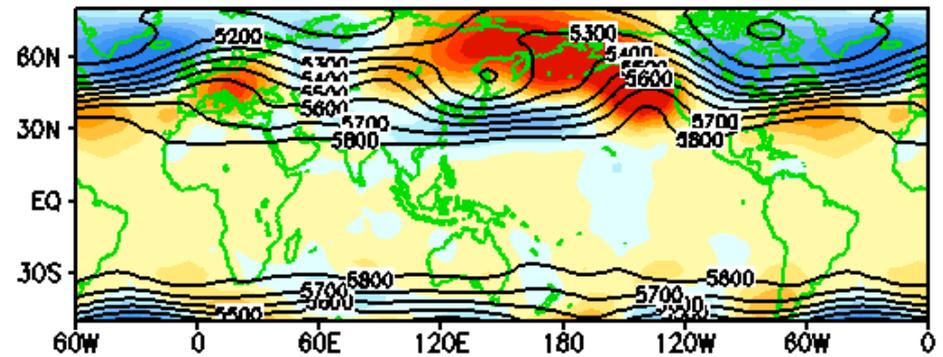


Sep 2014 (C)

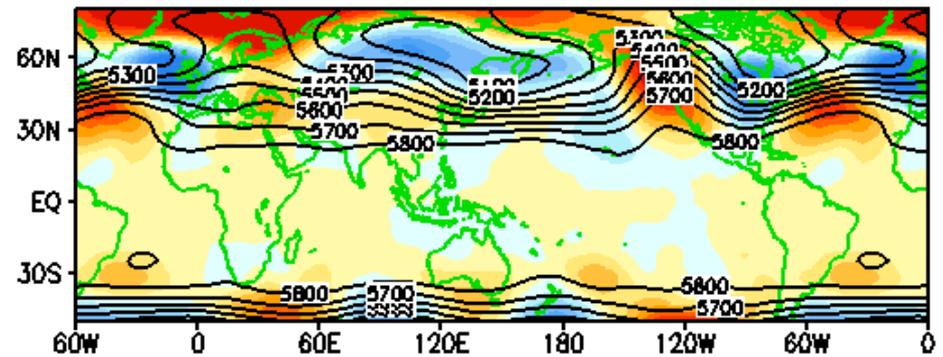


Atmopsheric Circulation

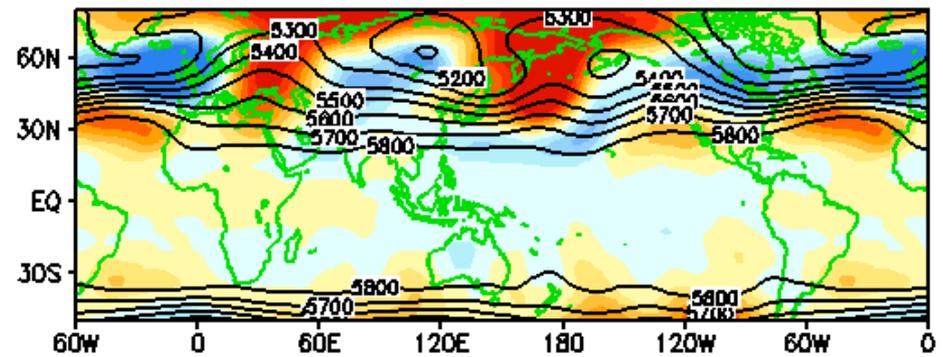
500-hPa Heights, Dec. 2013



500-hPa Heights, Jan. 2014



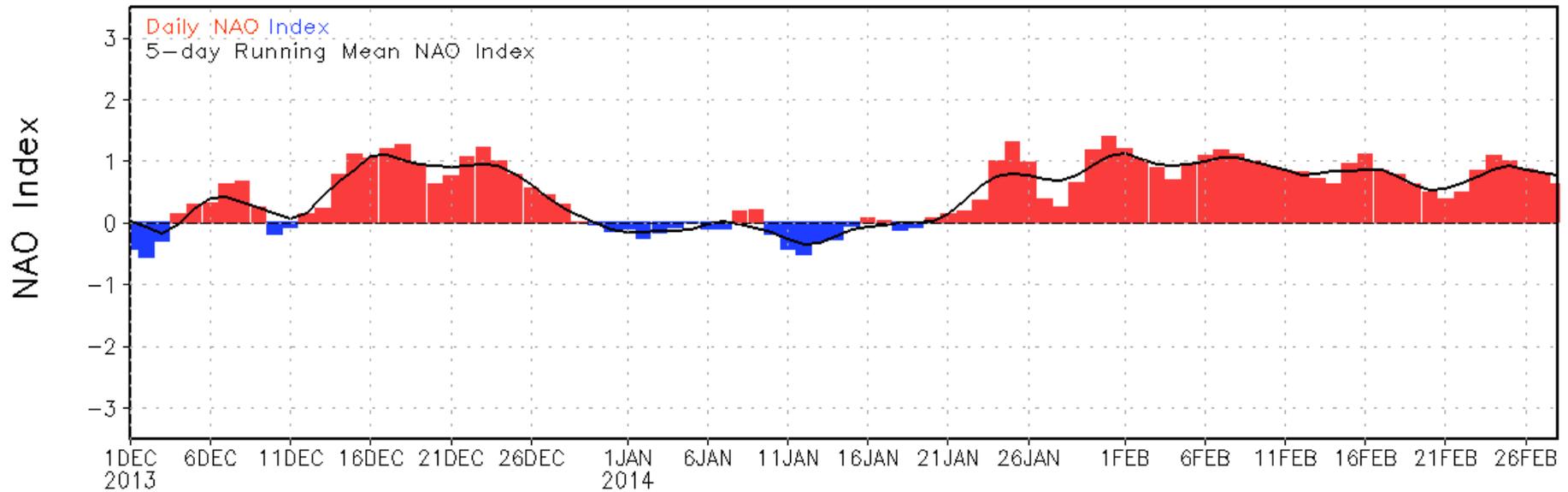
500-hPa Heights, Feb. 2014



-120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120

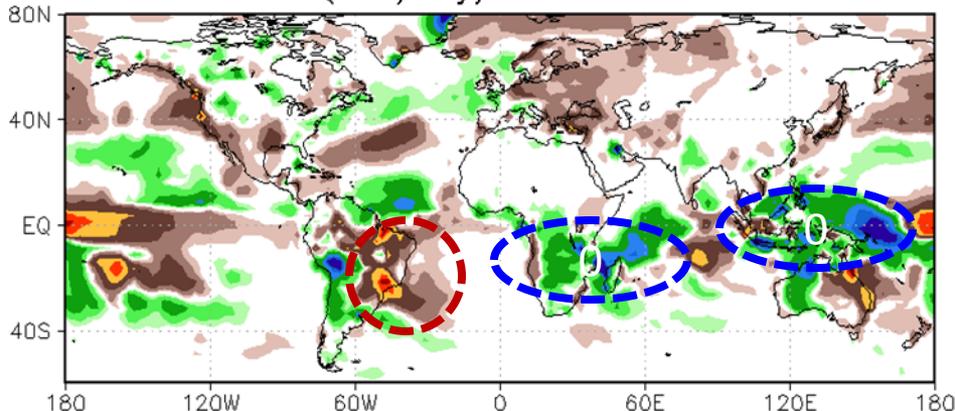
The North Atlantic Oscillation

December 2013 – February 2014

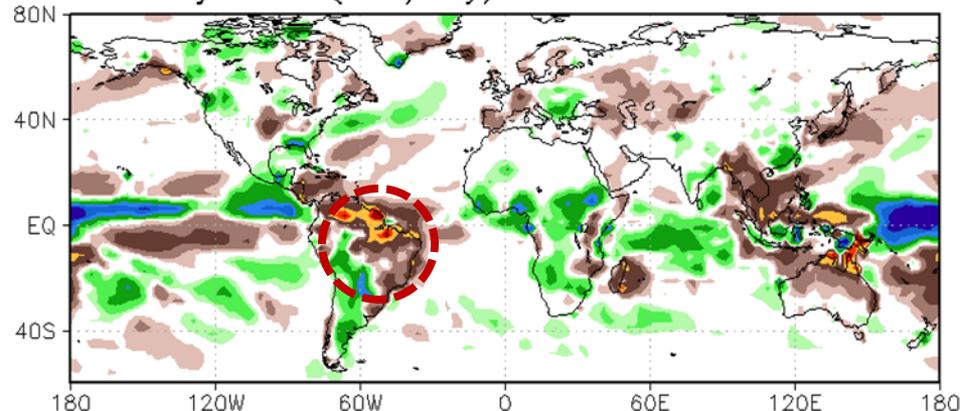


Seasonal P Anomaly CAMS/OPI, 2014

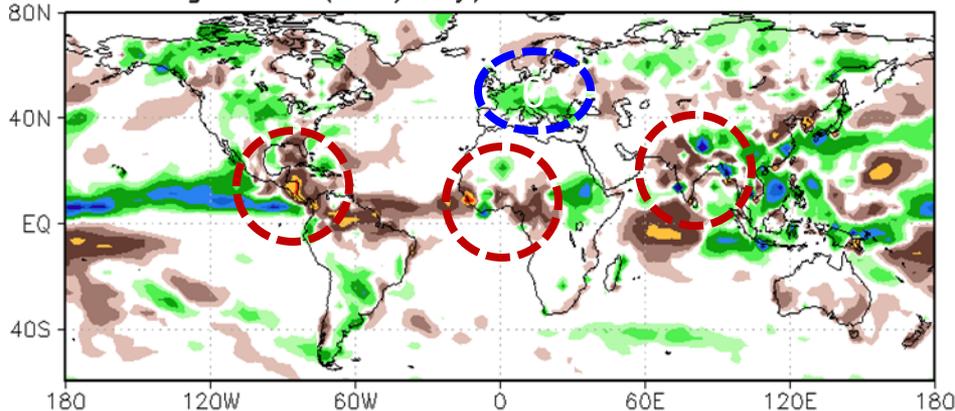
Dec-Feb 2014 (mm/day)



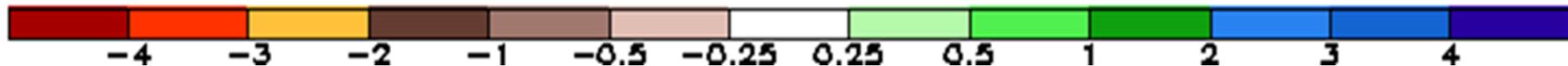
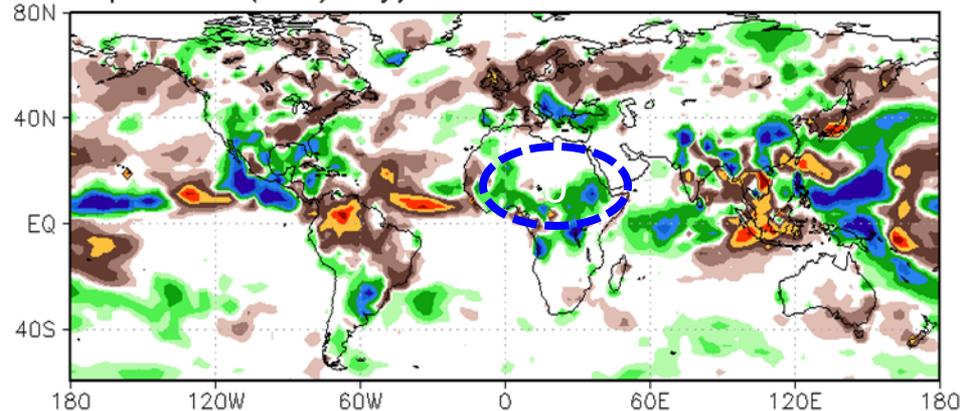
Mar-May 2014 (mm/day)



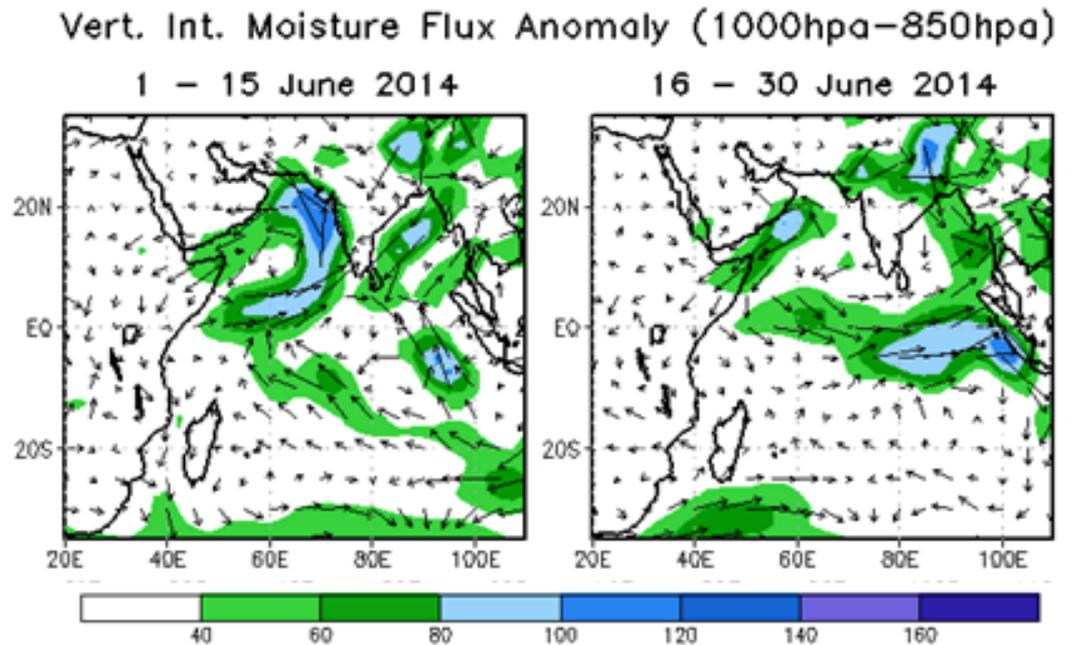
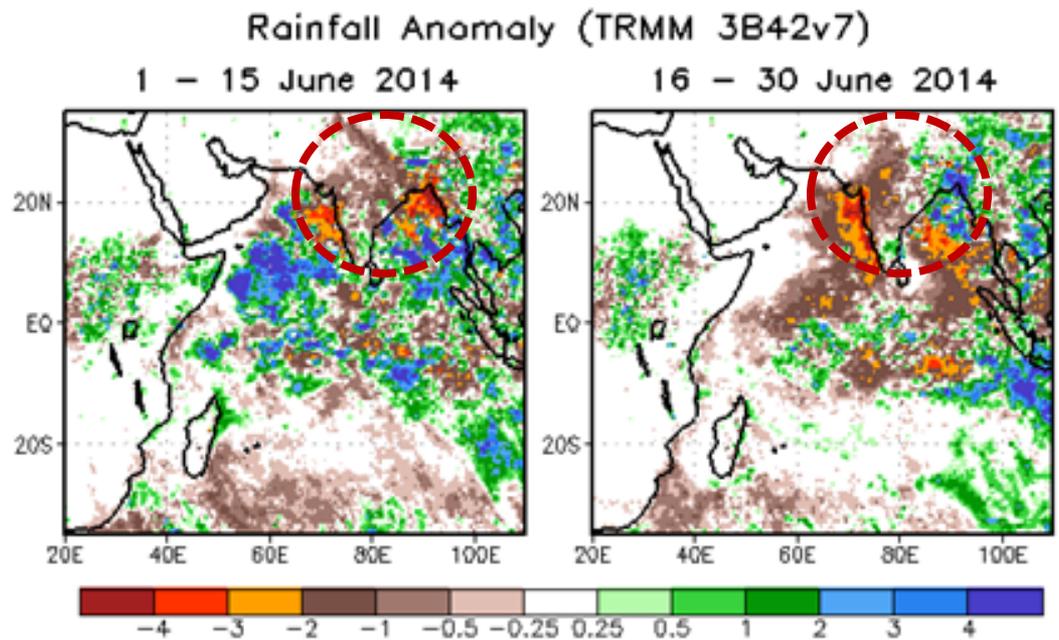
Jun-Aug 2014 (mm/day)



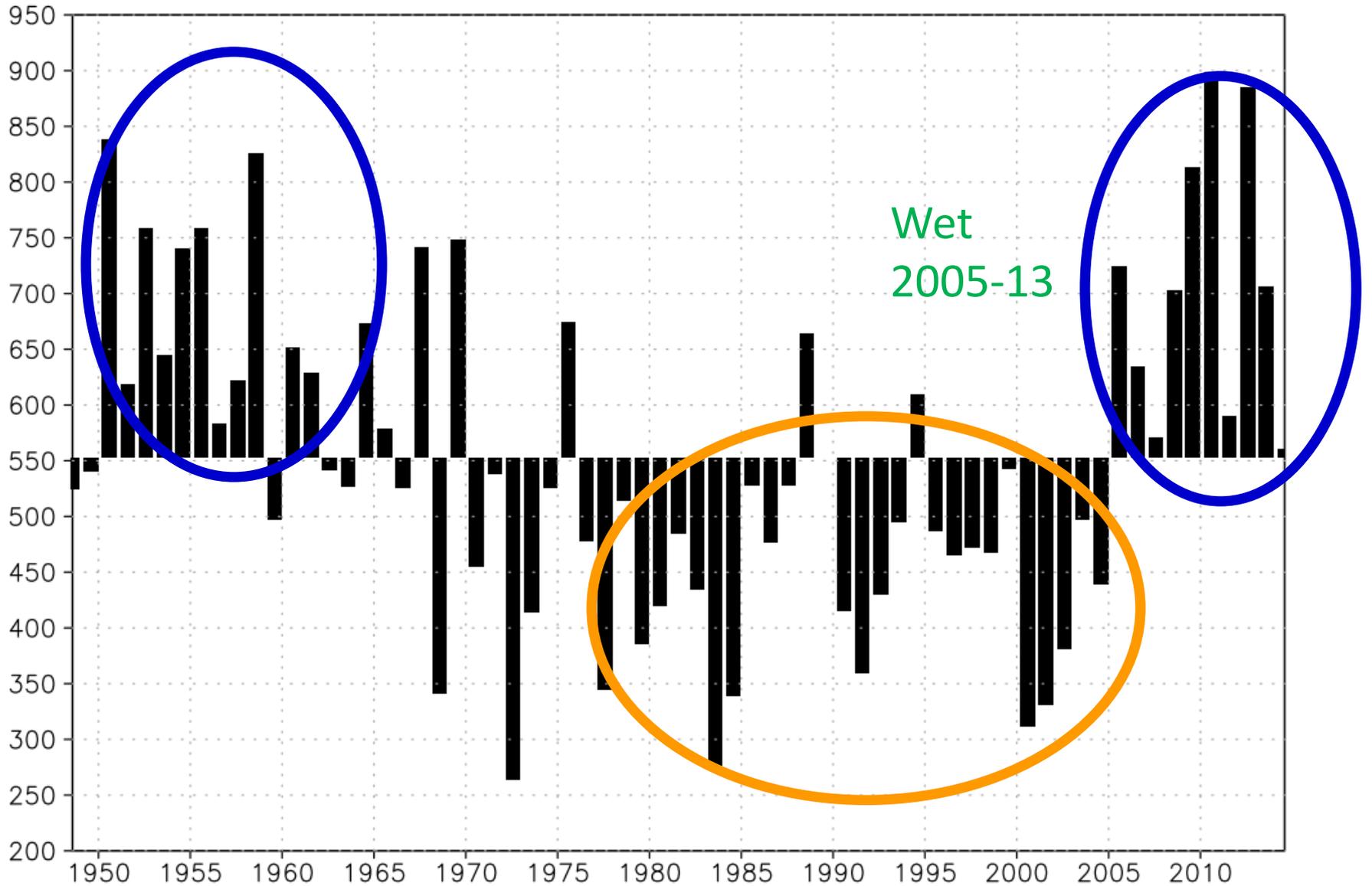
Sep 2014 (mm/day)



P anomaly and vertically integrated moisture flux anomaly

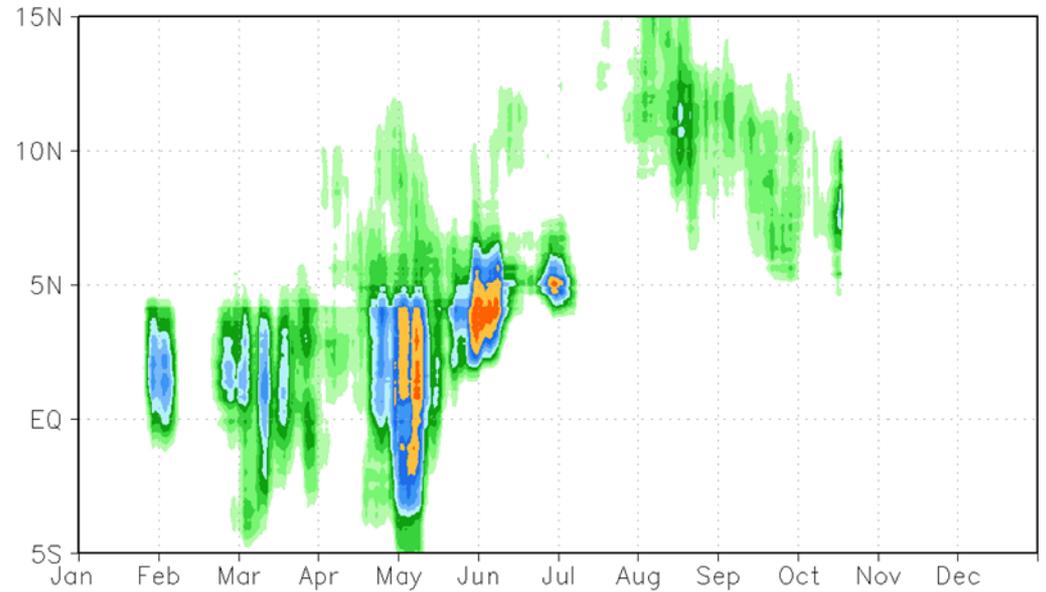


West African Monsoon



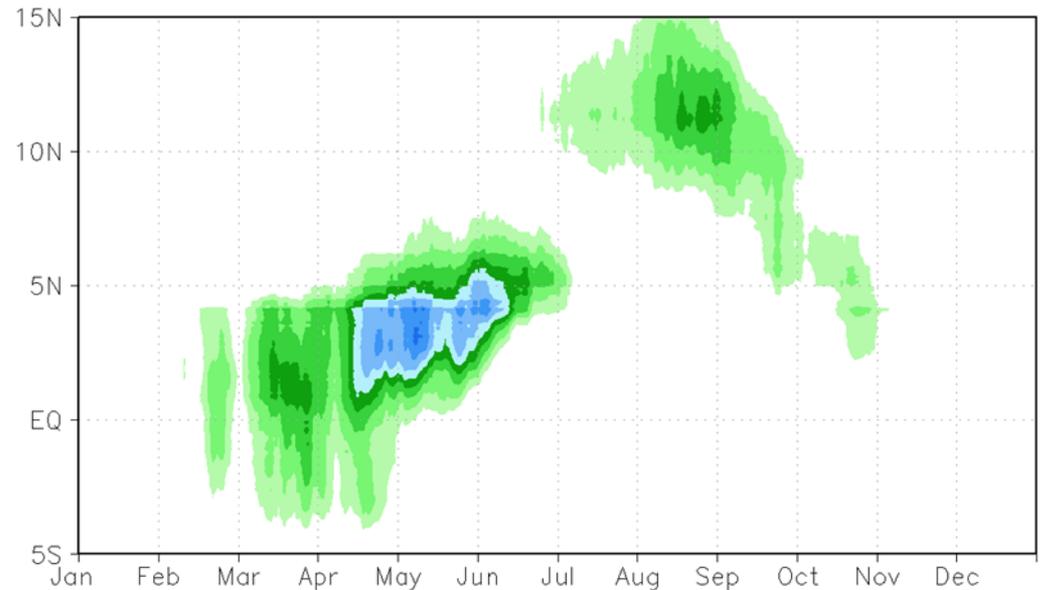
Evolution of West Africa daily precipitation 2014

ARC2 Time/Lat (Lon Ave= 10W-10E) 2014 (mm/day)



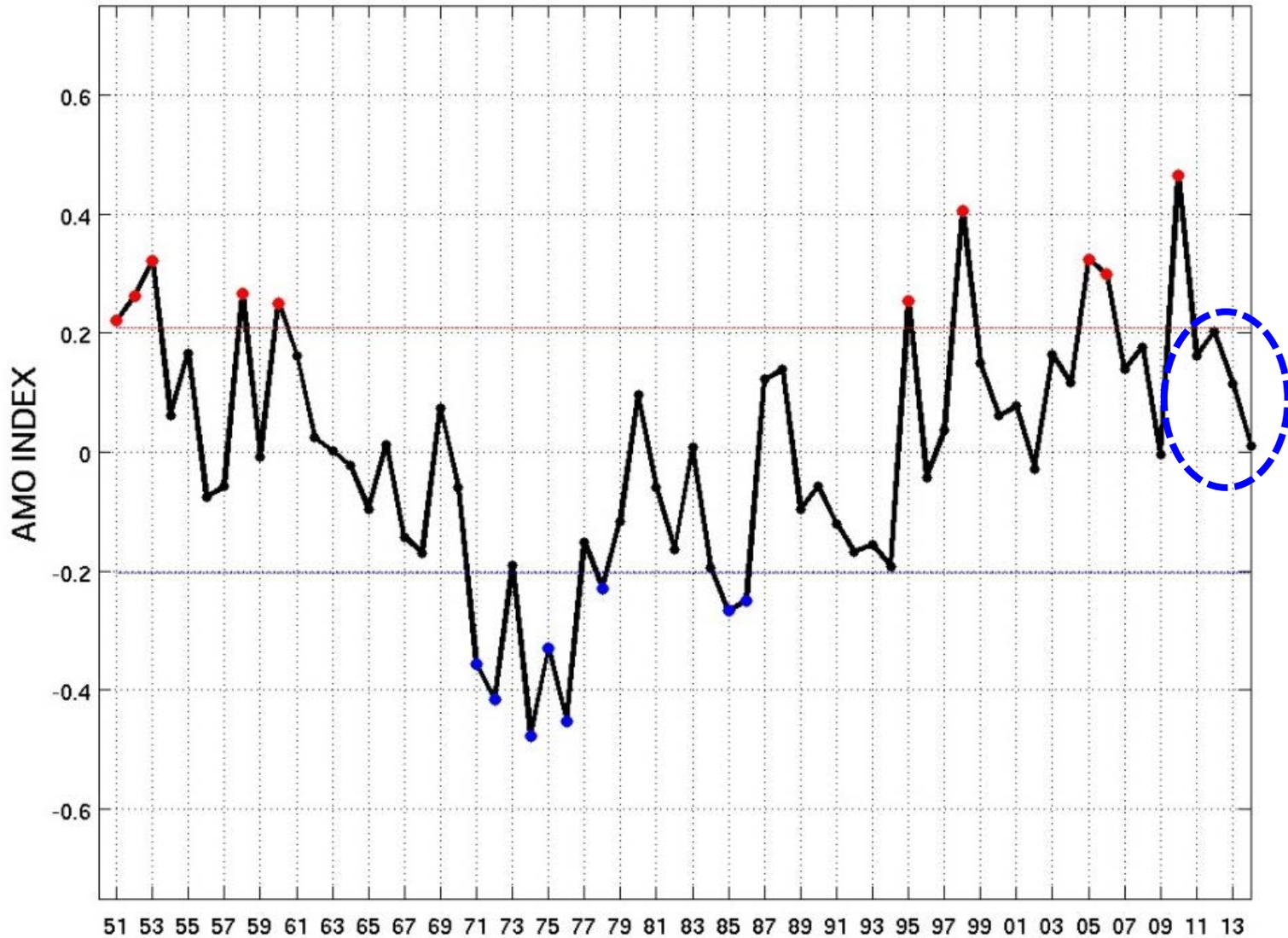
Mean: 2015-12

ARC2 Time/Lat (Lon Ave= 10W-10E) 2005-2012 (mm/day)

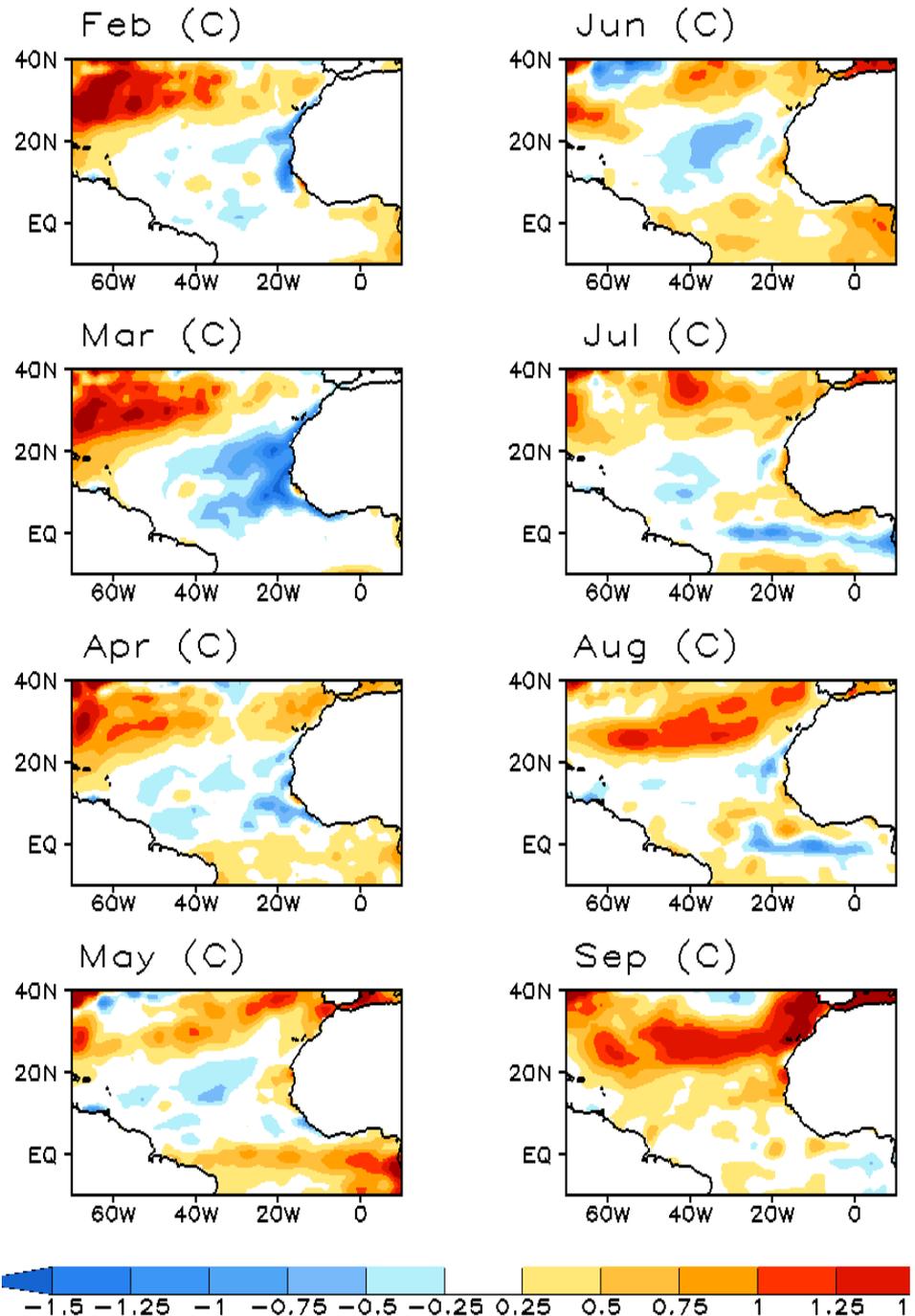


Atlantic Multi-Decadal Oscillation

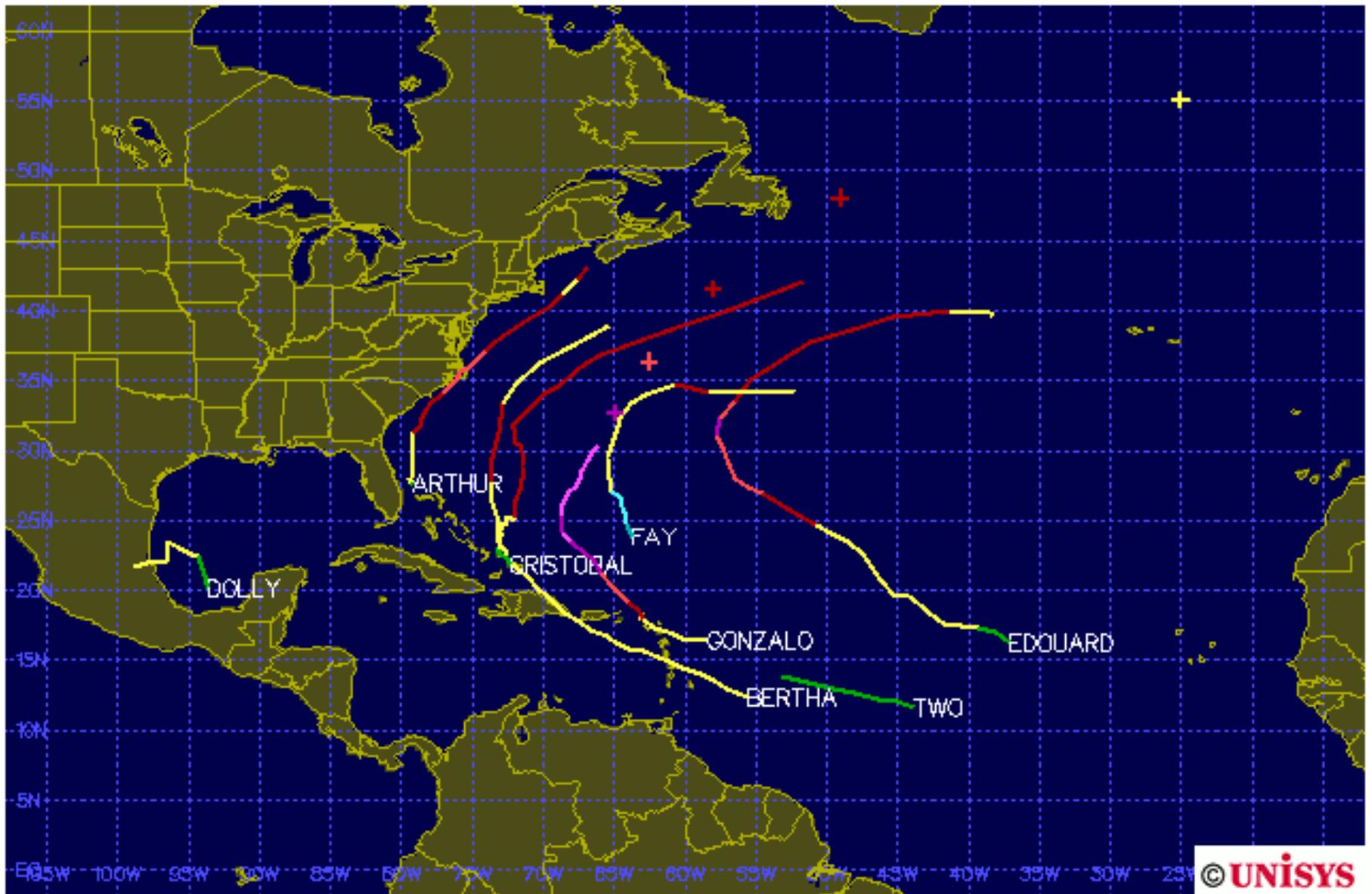
AMJ AMO Index: 1951-2014



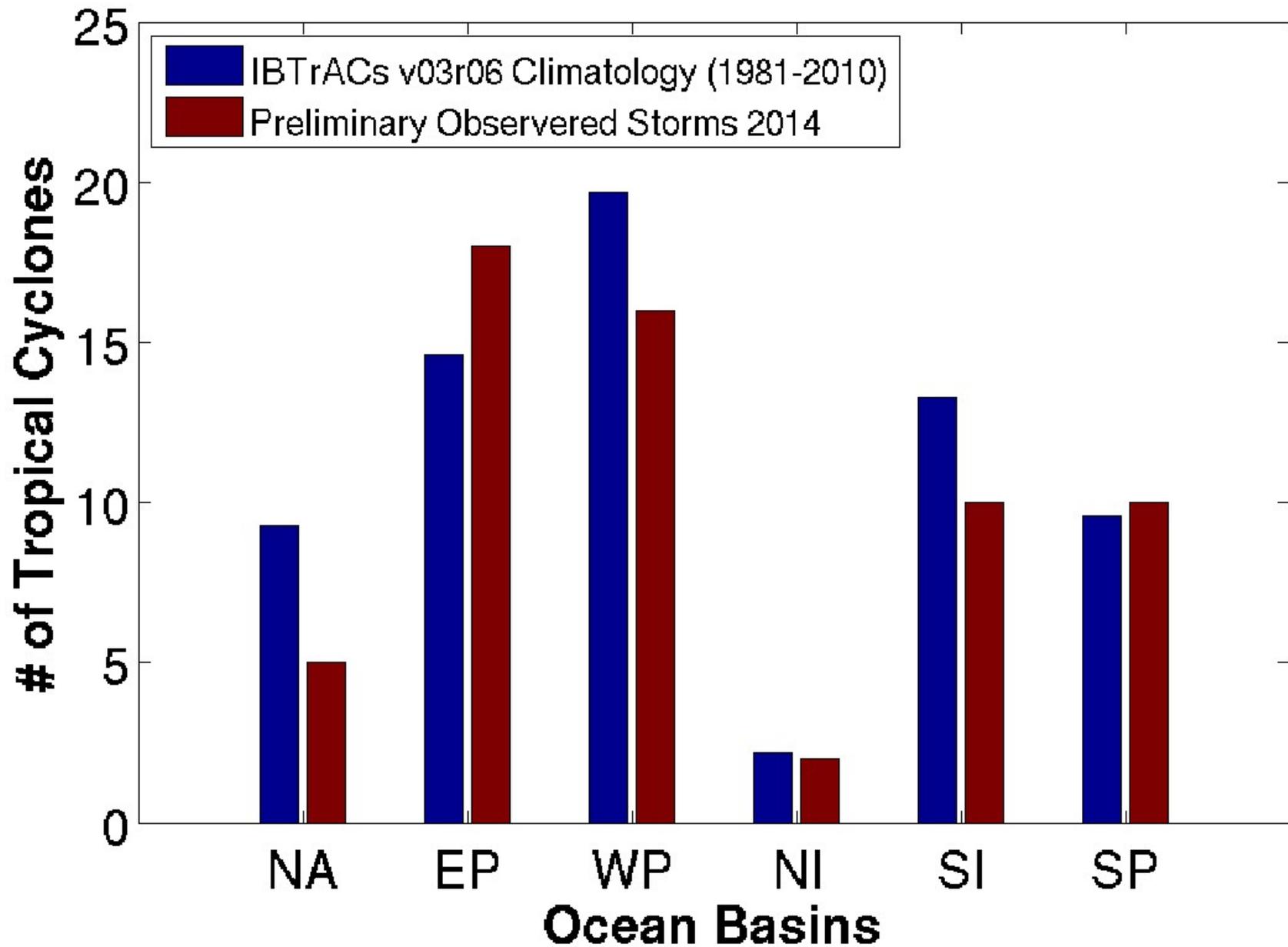
Evolution of tropical Atlantic SST



Atlantic Tropical Storm Tracks



Total Number of Tropical Cyclones (≥ 35 kts) Jan-Sep



Summary

- The global SST continued to rise reaching a record high in 2014. Northeast Pacific has been persistently warm. The tropics have also been warming and the development of El Nino is anticipated. Arctic sea ice extent improved over 2013 but still below average and 6th lowest record since 1978.
- The global land temperature decreased slightly in 2014. Cold outbreaks persisted over the eastern and central U.S. and Canada during the winter and spring seasons, while the western U.S., Europe and Asia were very warm. Other warm spots included northern Africa and South America.
- Severe droughts in Brazil, Central America, and the U.S. West Coast were noted. Precipitation was enhanced along the Pacific coast of South America, southern Africa and Indonesia during the southern hemisphere summer. The Indian monsoon and the West African monsoon were overall below average. Both also marked with delayed onsets to the rainfall season.
- The AMO index was in decline for the third year in a row. Atlantic hurricane activity was below average, while the East Pacific was above average.