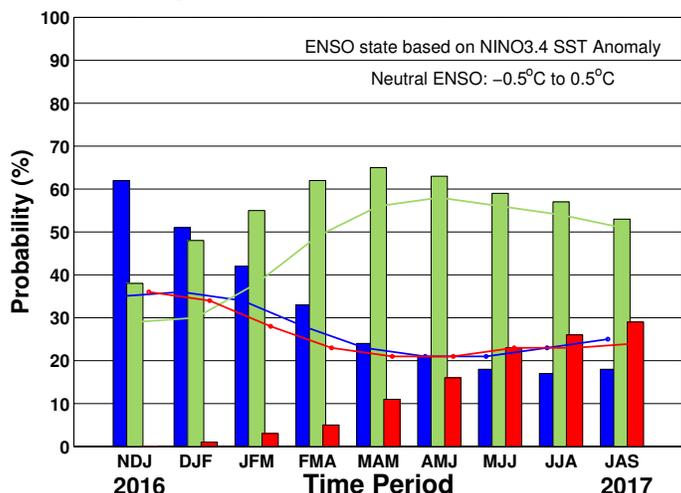


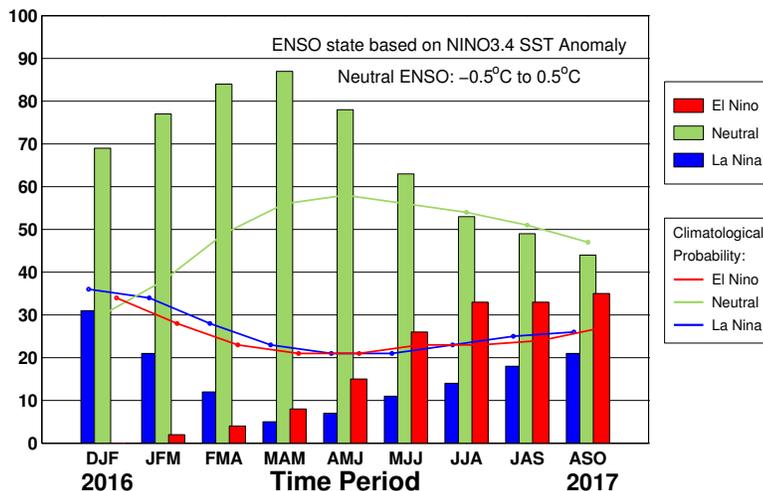
ENSO QUICK LOOK Dec 15, 2016 A monthly summary of the status of El Niño, La Niña and the Southern Oscillation, or “ENSO”, based on NINO3.4 index (120-170W, 5S-5N)

During mid-December 2016 the tropical Pacific SST anomaly was near -0.5°C , the threshold for weak La Niña. Also, most of the atmospheric variables across the tropical Pacific have been consistent with weak La Niña conditions, although subseasonal atmospheric variability weakened some of them in late November. The upper and lower atmospheric winds have been suggestive of a strengthened Walker circulation, and the cloudiness and rainfall have also been consistent with weak La Niña conditions. The collection of ENSO prediction models indicates SSTs near the threshold of La Niña persisting through mid-winter, then weakening to cool-neutral by later winter.

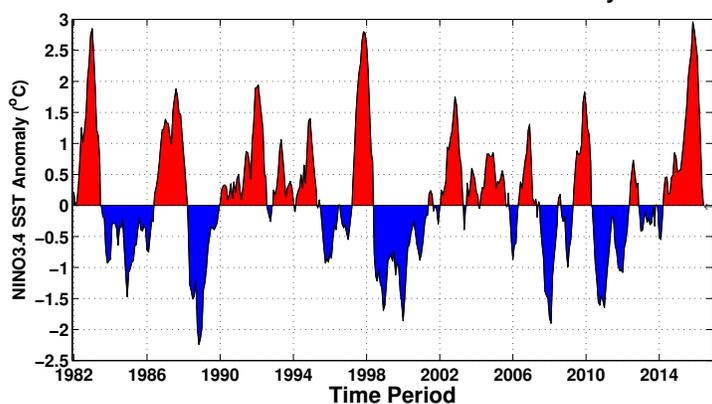
Early-Dec CPC/IRI Official Forecast¹



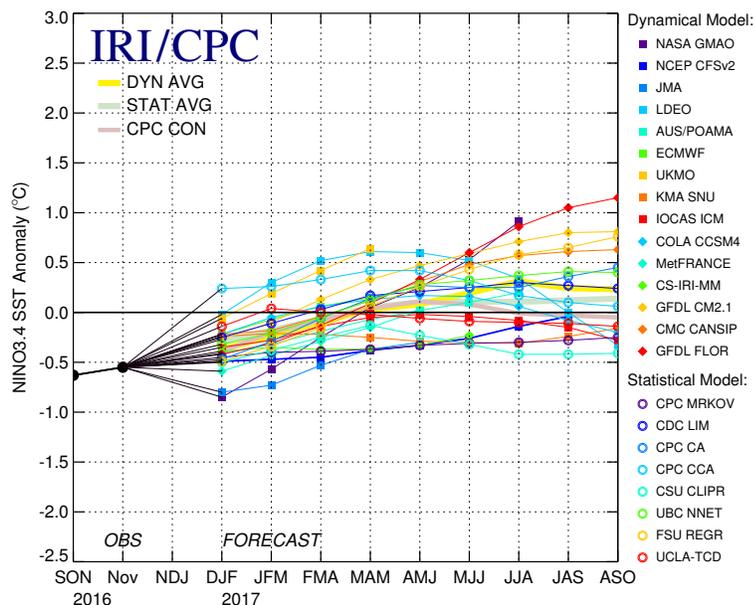
Mid-Dec IRI/CPC Model-Based Forecast²



Historical NINO3.4 SST Anomaly



Mid-Dec 2016 Plume of Model ENSO Predictions



Historically Speaking

- El Niño and La Niña events tend to develop during the period Apr-Jun and they:*
- Tend to reach their maximum strength during Dec-Feb
 - Typically persist for 9-12 months, though occasionally persisting for up to 2 years
 - Typically recur every 2 to 7 years