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Climate Impact Company Weekly ENSO Diagnostics

Issued: Monday, September 11, 2017

Headline: La Nina Risk Increasing

Discussion: One reason for the abundant number of tropical systems in the North Atlantic tropics this season is the low shear environment caused by a rapid trend toward La Nina in the equatorial East Pacific. The Nino34 SSTA has dipped into the La Nina threshold (***Fig. 1***) but the most important contribution to the climate pattern is related to the rapid deceleration of equatorial East Pacific warmth during the past 2-3 months causing the climate pattern change. Multivariate ENSO index also identifies the rapid decline from an El Nino climate a couple months ago to neutral in August (***Fig. 2***). The statistical decline in both indices is the driver to the lowering Atlantic shear (despite no formal presence of La Nina.

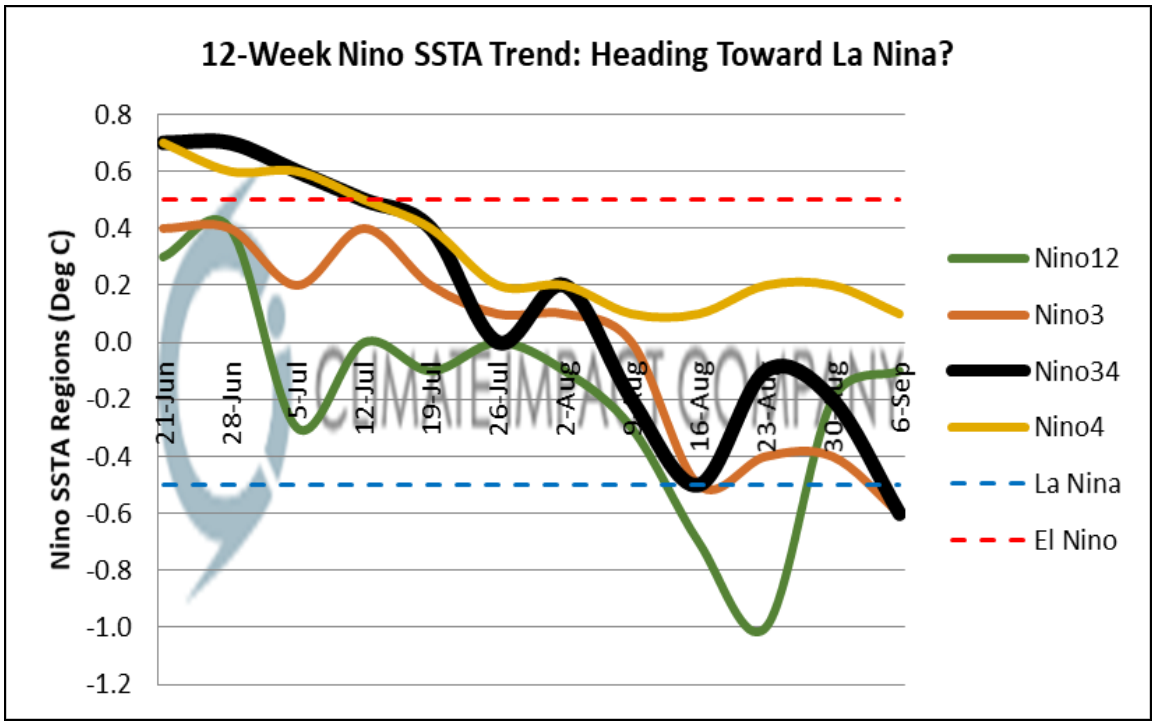

Fig. 1: *The Nino SSTA regions have cooled in recent weeks and Nino34 SSTA has dipped below the La Nina threshold.*

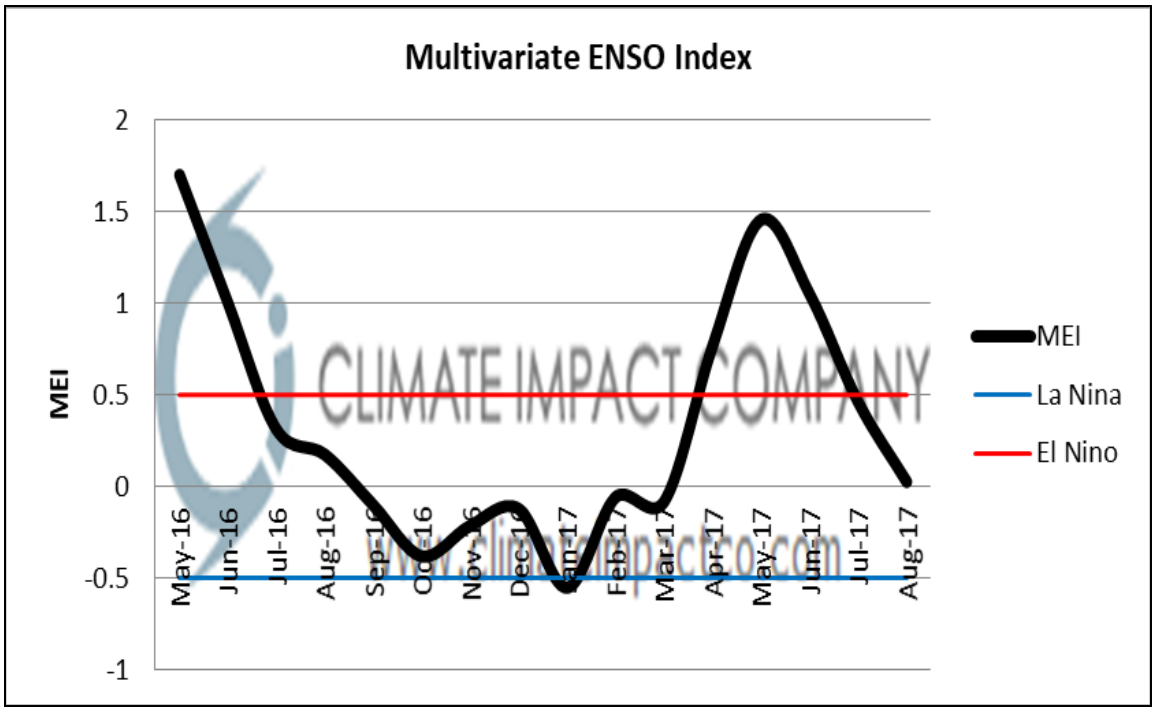

Fig. 2: *Multivariate ENSO index has produced a strong decline in an El Nino-like global climate to start northern hemisphere summer to neutral phase in August.*

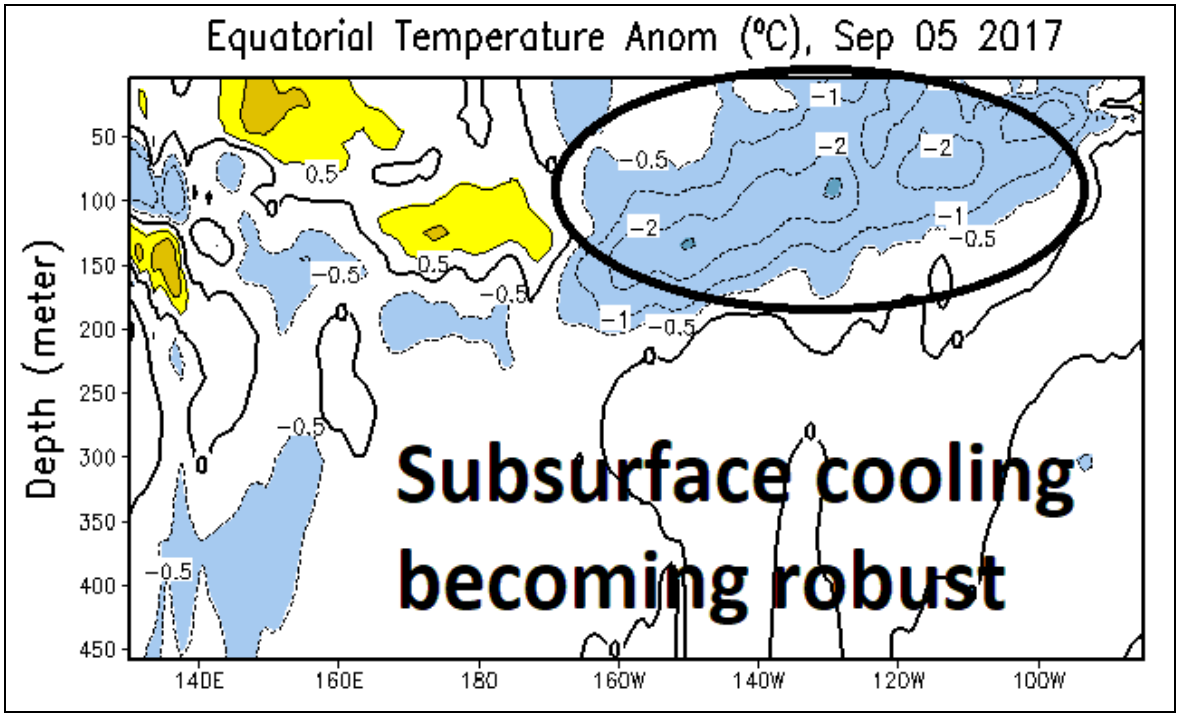

Fig. 3: *The subsurface equatorial East Pacific has cooled dramatically and foreshadows La Nina ahead.*

The subsurface eastern equatorial Pacific continues to cool and now indicates a robust cool signature (***Fig. 3***) which foreshadows La Nina ahead. The NCEP CFS V2 Nino34 SSTA forecast indicates a strong La Nina ahead for northern hemisphere winter 2017-18 (***Fig. 4***).

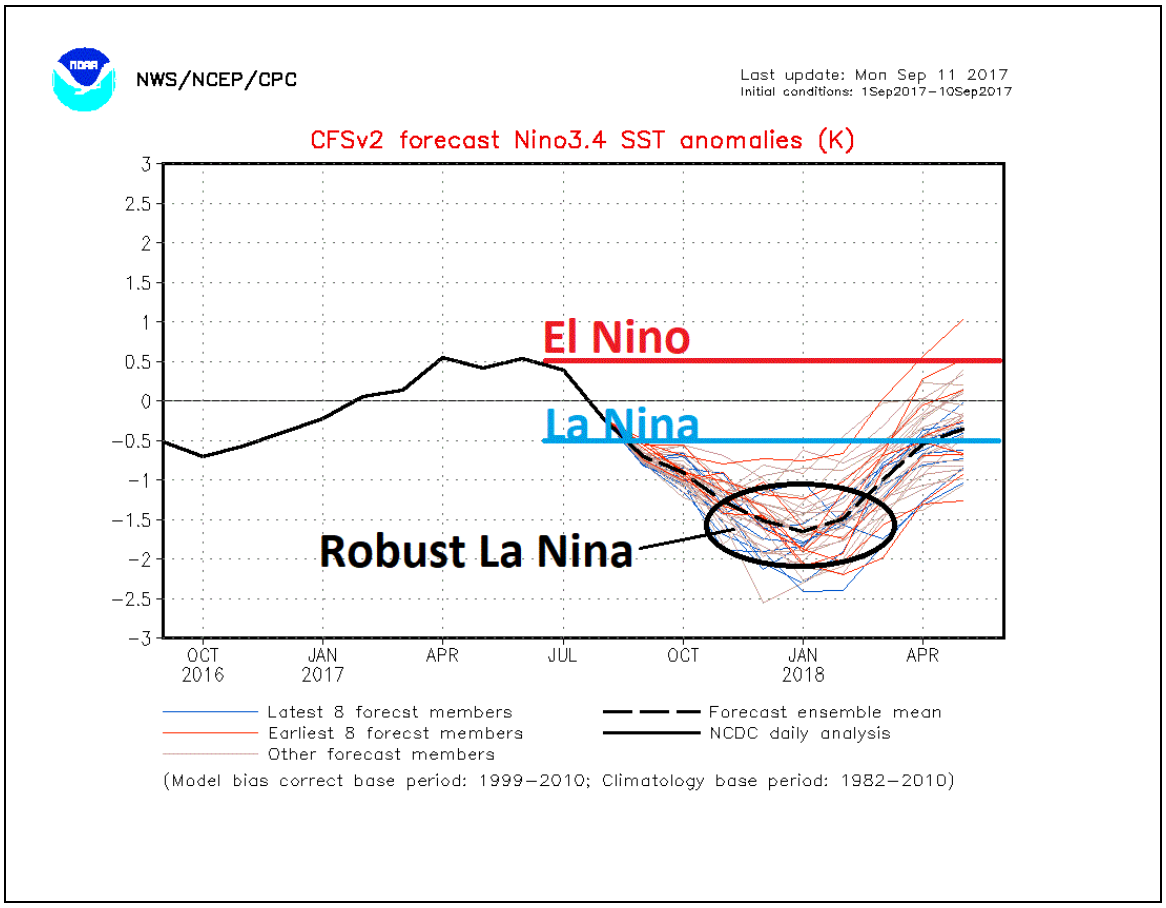

Fig. 4: *The NCEP CFS V2 forecast indicates a robust La Nina climate during winter.*

A wintertime La Nina climate varies depending on other component of the climate system. However, the long-term La Nina winter climate for the U.S. favors a colder-than-normal climate in the North-Central U.S., warmer-than-normal climate in the South and East U.S., wet (and snowy) Northwest plus the Ohio Valley/Great Lakes region and dryness across the southern states (***Fig. 5-6***). During La Nina the U.S. wintertime snowfall pattern favors above normal snow in the Northwest and marginally above normal in New England and parts of the Upper Midwest with below normal snowfall in the Great Plains and Mid-Atlantic region (***Fig. 7***).

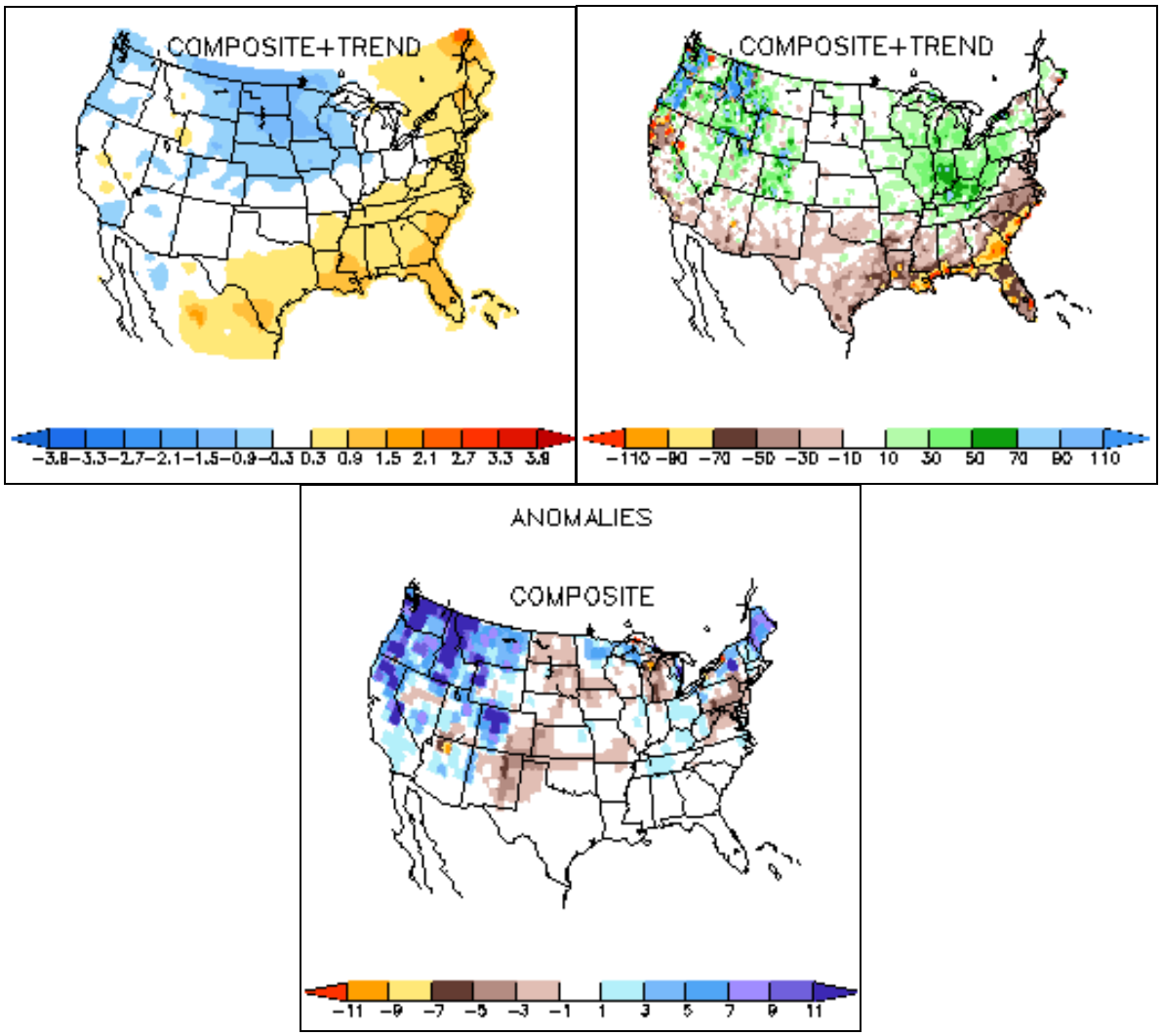

Fig. 5-7: *According to NOAA…temperature (top left), precipitation (top right) and snowfall (bottom) DEC/JAN/FEB anomalies caused by La Nina.*