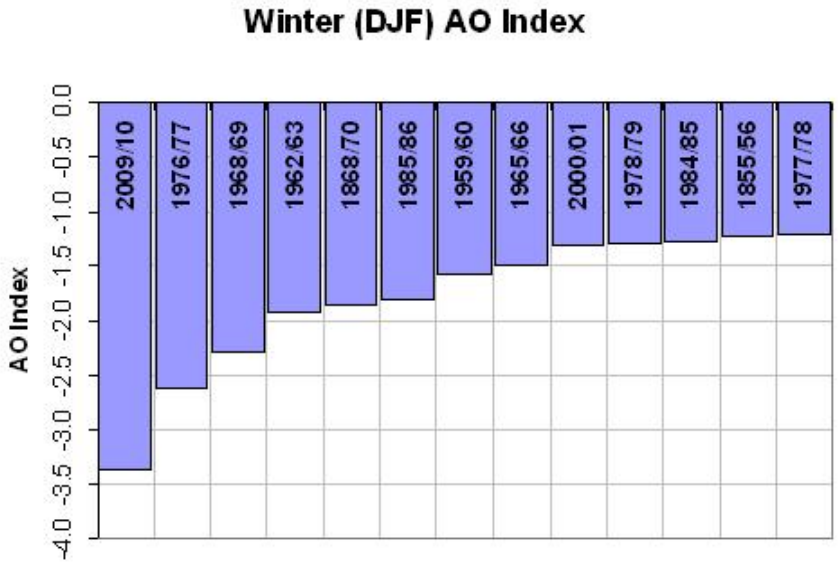
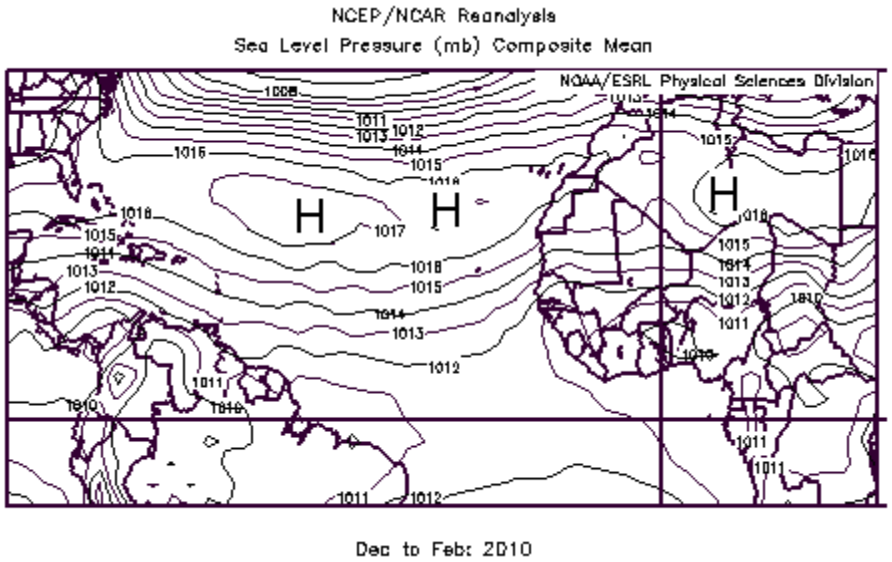
Cold Mid-Latitude Winter May have Implications on Hurricane Season

By Joseph D'Aleo, March 13, 2010

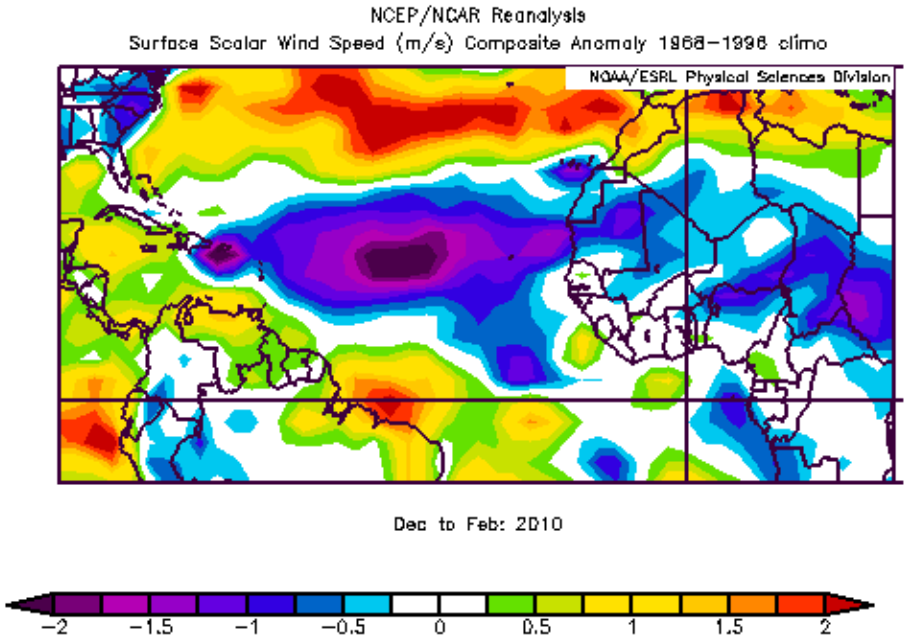
The blocking high pressure in the Polar Regions that dominated the winter and produced the record low arctic oscillation and a bitter winter in Mid-Latitudes of the Northern Hemisphere had effects further south that could have implications this hurricane season.



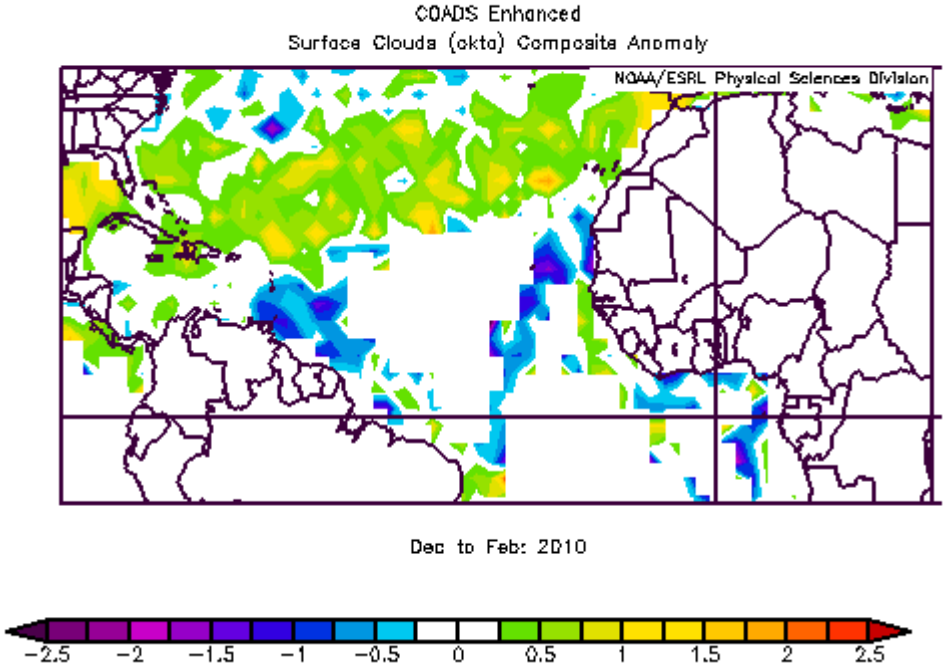
This pushed the subtropical high south of normal and made it weaker than normal. Winds were less than normal and cloudiness and precipitation were suppressed in the subtropics.



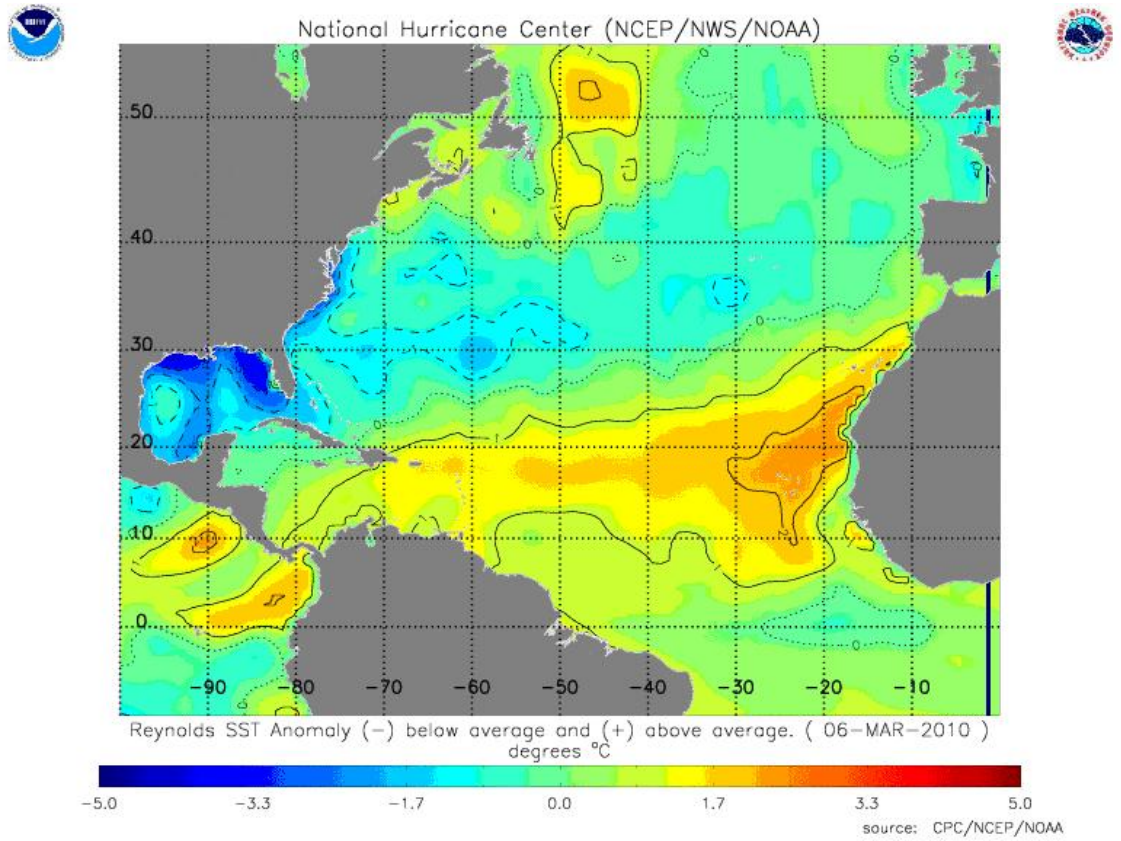
Mean winter pressure above – less than normal with center south of normal.



Mean winter surface winds – weaker than normal through lower subtropics which led to less mixing of water by weaker than normal winds (development of shallow pool of warm surface water) and less upwelling of cold water off Africa from normal stronger northerly winds.

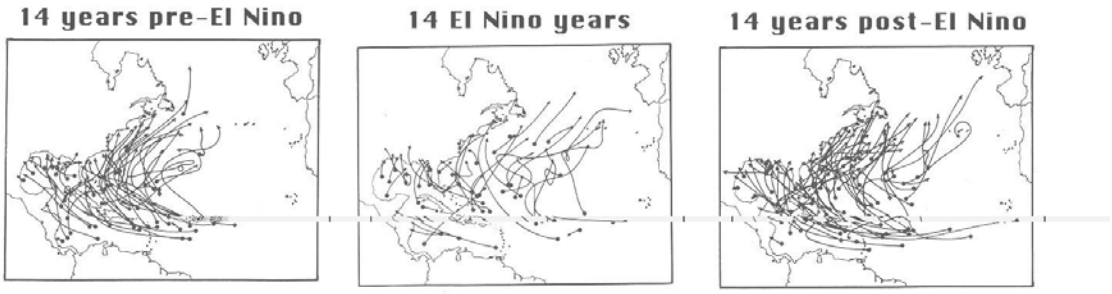


Also with the high pressure suppressed south of normal, cloudiness (above) was suppressed due to subsidence which further allowed more sunshine to warm the water (below).



Also last season tropical activity was suppressed by El Nino. Tropical storms are a heat compensation mechanism, removing excess tropical ocean heat built up through the summer and peaking in the late summer and early fall and transporting that heat north in the form of sensible and latent heat in tropical storms. Less heat was removed than in an active season.

The big question is whether El Nino hangs on long enough to affect this season. Seasons after El Nino years tend to see a big rebound in activity.



Most ENSO models suggests it dies this summer. However westerly wind bursts continue to maintain a suppressed thermocline in the central Pacific with Kelvin waves that carry warm water east. Looks like at least one more El Nino bounce though with the warmest waters more towards the central Pacific. Longer term, a negative PDO mode (temporarily weakened by El Nino), should ensure the next major ENSO event is La Nina perhaps later this year.