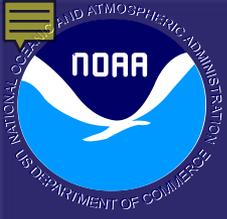


El Nino, Teleconnections, and Weather Evolution this Spring

Severe Weather Awareness is Critical

**A note for
Severe Weather Awareness Week 2010 in the RGV**

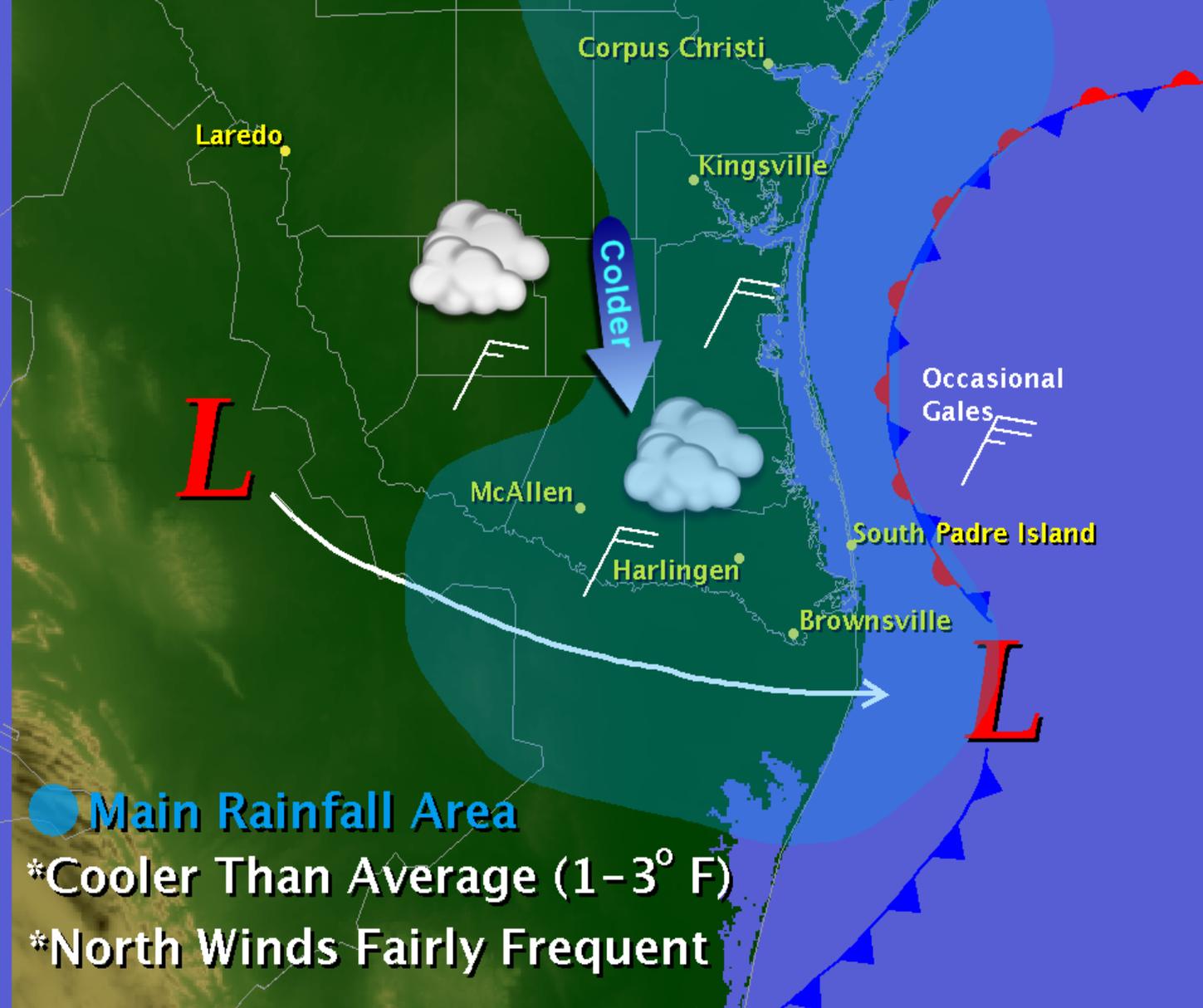


The Weather So Far

Winter 2009/10

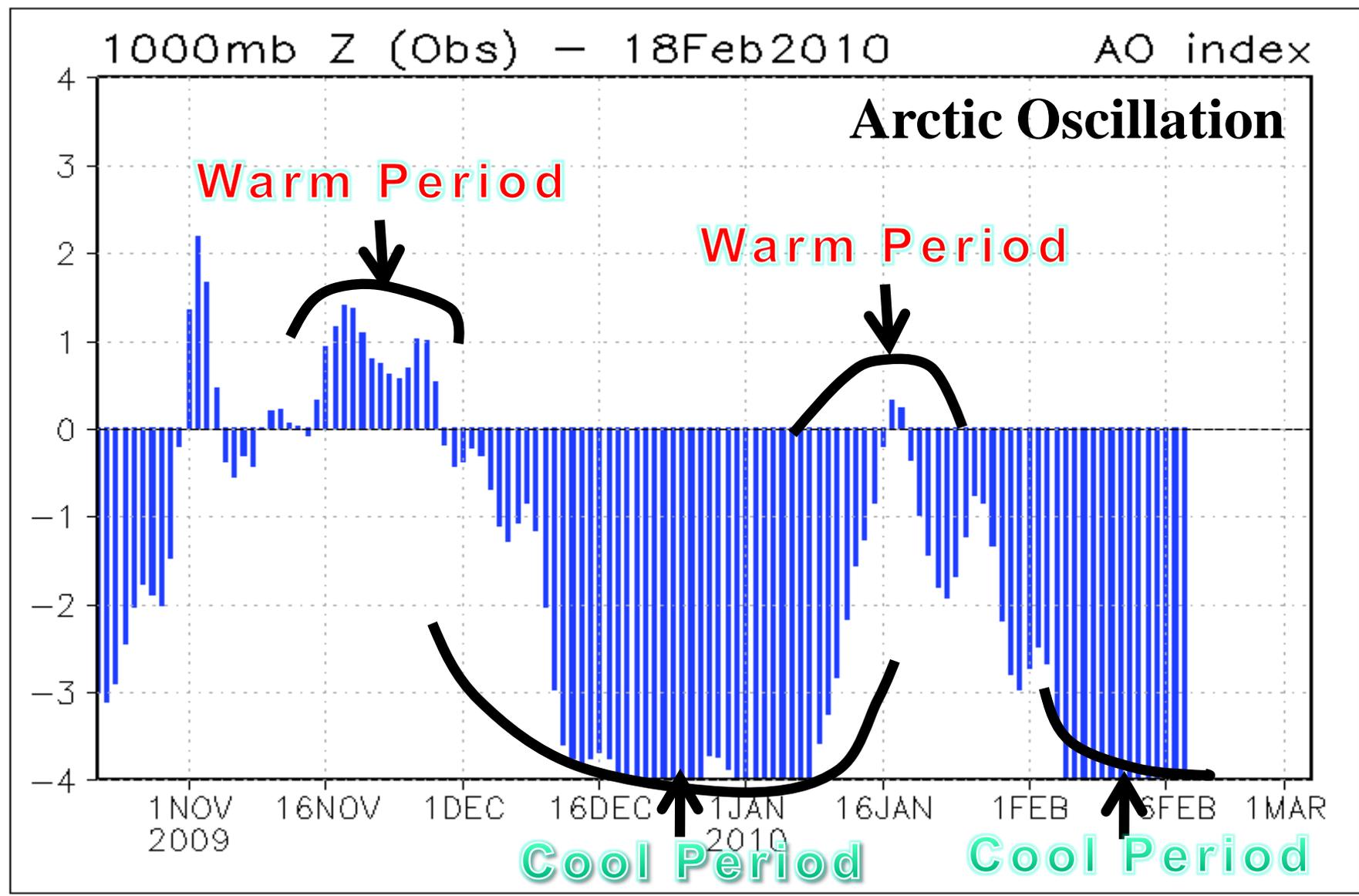
- **December: Cool, Cloudy, and Wet.**
- **January: Cool start, Freezing temperatures January 9-10. Warm, Humid, and Breezy 17-28th before cooldown**
- **February so far: Generally Cloudy, Cool, with good rains Lower RGV north to King Ranch**

General Weather Pattern December 2009 – February 2010



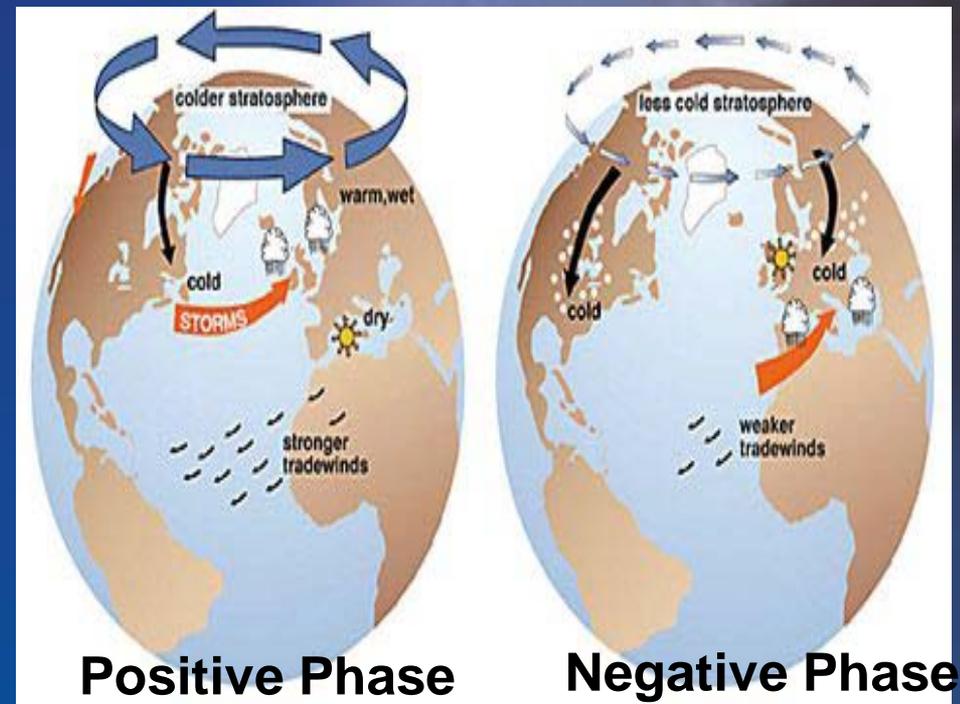
- Main Rainfall Area
- *Cooler Than Average (1–3° F)
- *North Winds Fairly Frequent

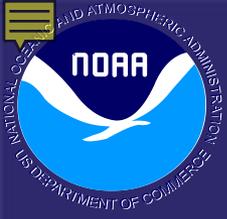
Why? More than El Nino



Arctic Oscillation (AO) What's Going On?

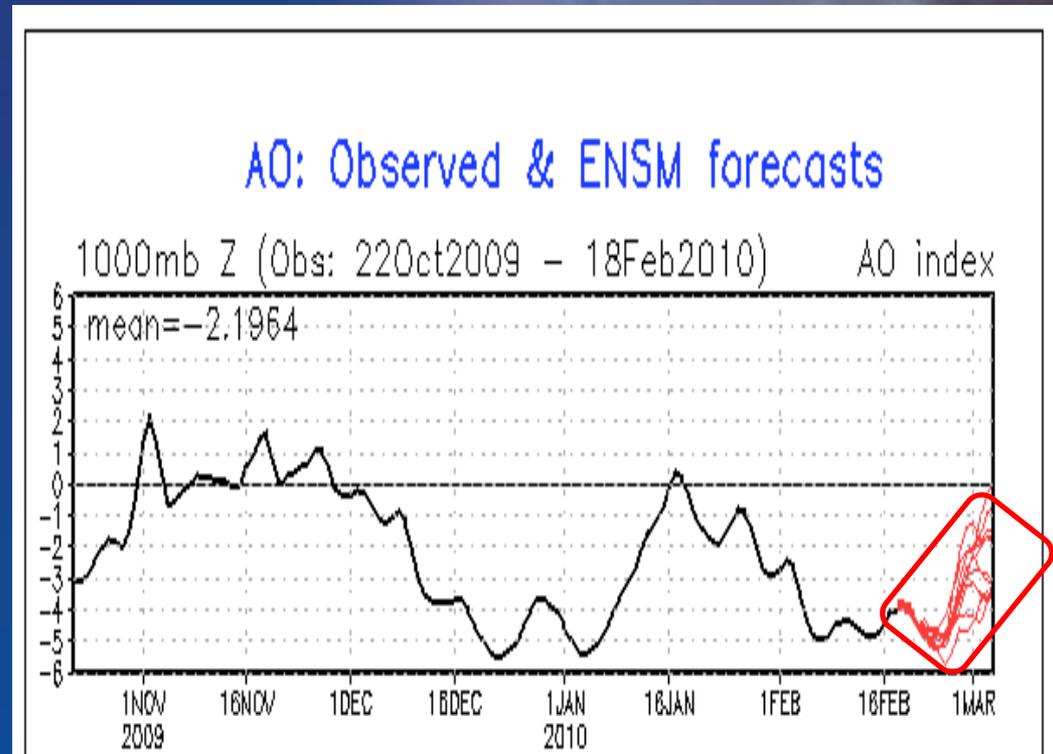
- **Positive Phase:** Sea Level Pressures Lower Across the Polar Latitudes; Cold air “locked up” in the Arctic
- **Negative Phase:** Sea Level Pressures are Higher Across the Polar Latitudes; Cold Air Dives South Across Continents
- **Bottom Line:** Persistent, Strongly Negative Phase AO has contributed to repeated cooling temperatures across Texas. El Niño has provided moisture.





Forecast of the AO (early March)

- Forecast: Steady, then possible AO rise to begin March
- Rising AO with moderate El Niño: Potential Severe Weather Sooner
- Continued Negative AO with moderate El Niño: Delay in Severe Weather, but still bears watching

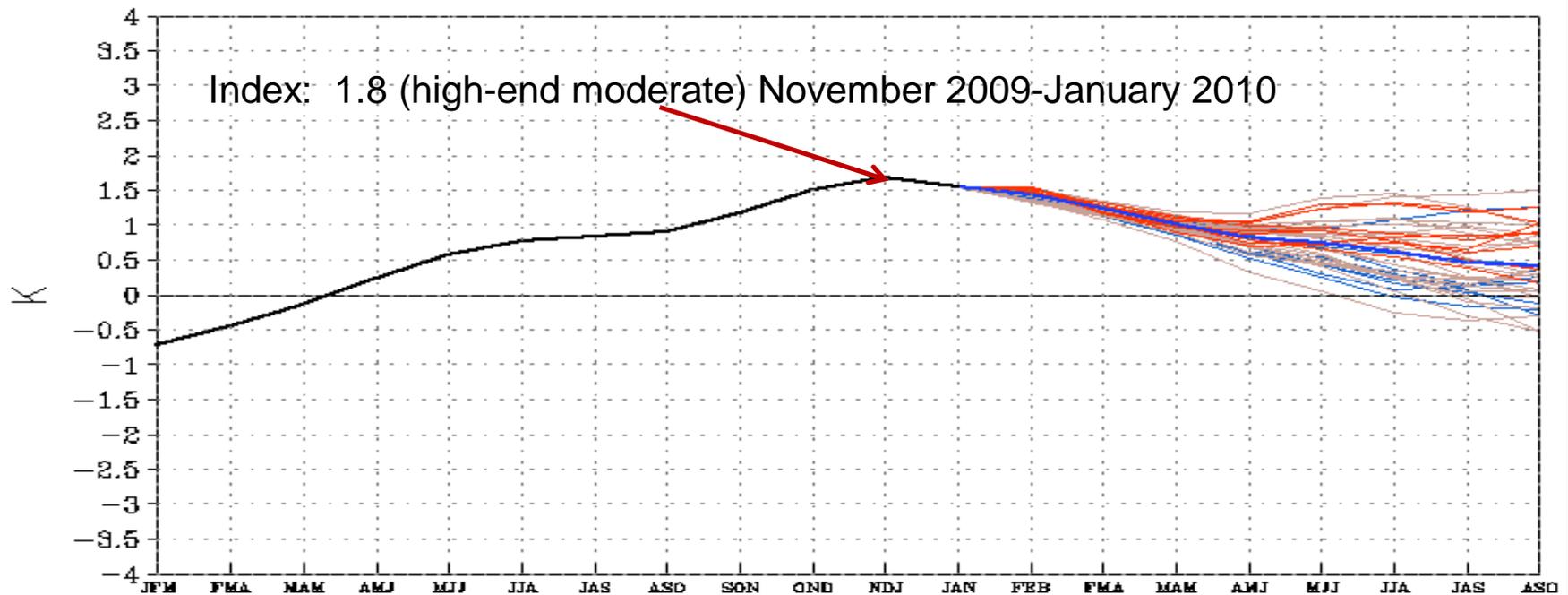


Ensemble Mean AO Forecast Through early March

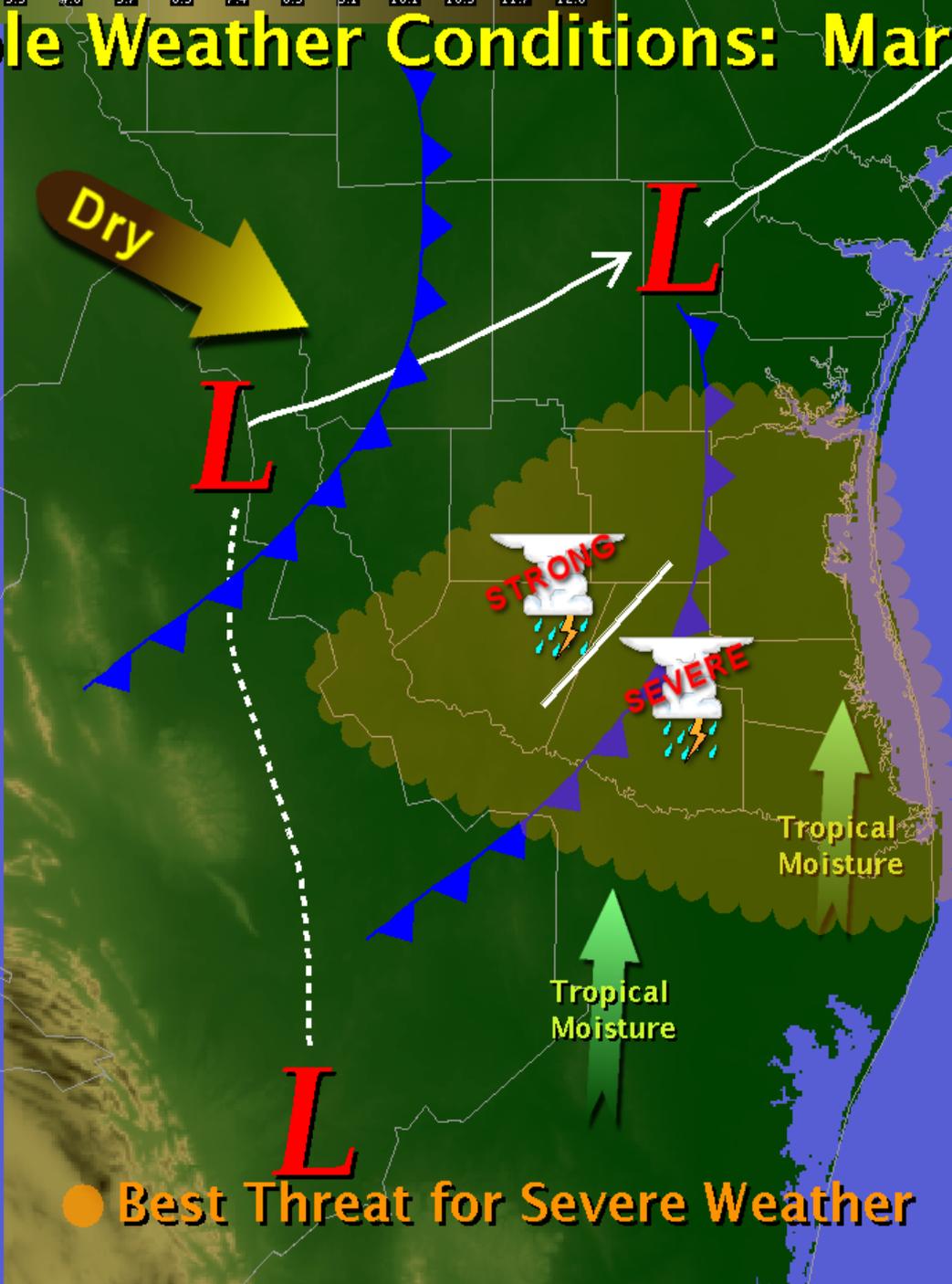


El Niño: Into Spring

The CFS ensemble mean (heavy blue line) predicts El Niño will last through the Northern Hemisphere summer 2010.



Possible Weather Conditions: March-April 2010



- ### What to Watch For:
- * Large Hail > 1 inch
 - * Damaging Wind Gusts
 - * Local Flooding Rains
 - * Frequent Lightning
 - * Potential for Damaging Tornadoes

● Best Threat for Severe Weather

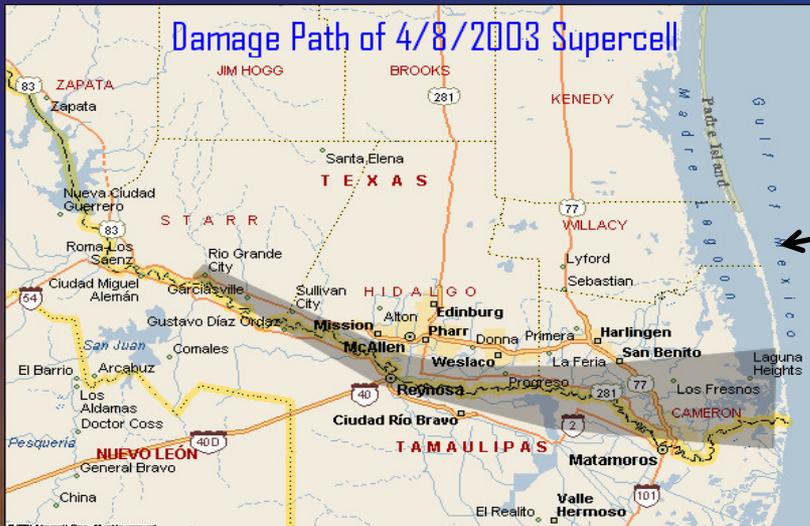


Getting Busy?

- Storm track “lifts” north – warm, humid air returns, while...
- Upper level disturbances remain close enough to increase atmospheric volatility
- Keep eyes on:
 - *El Niño and AO in March and April:*
 - Moderate El Niño + Rising AO could lead to hail and wind storms as the sun gets stronger and lower atmosphere warms faster than the upper atmosphere (March and April)
 - Moderate El Niño + Negative/Lower Index AO would maintain cooler than average conditions and may delay severe weather (April and May)



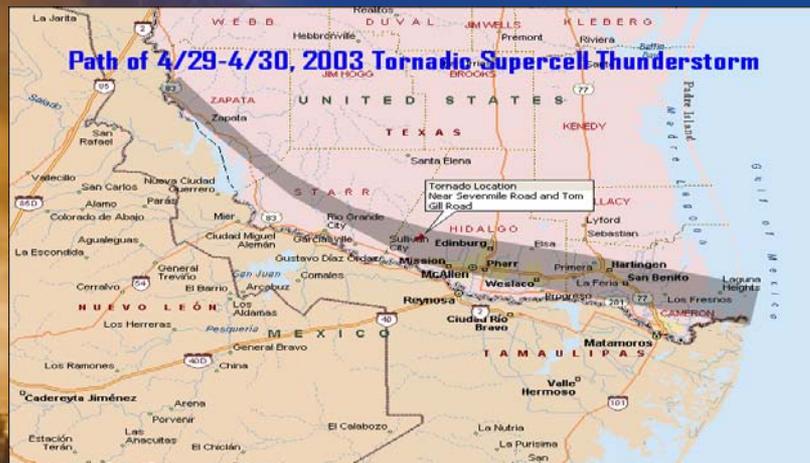
Spring 2003: Moderate El Niño Index, Low AO Rising by March



Brownsville/RGV
Hail and Wind
April 8 2003



Penitas Tornado
April 30, 2003





Could It Happen in 2009?

- Analogues can help predict future events, but are no guarantee. What we strongly suggest is that residents and business take advantage of severe weather awareness week to sharpen their knowledge of the hazards associated with thunderstorm wind, hail, flash flooding, lightning, and tornadoes to be ready in case Spring, 2009 becomes dangerous.

**Be Ready. Be
Prepared. Be Safe!**