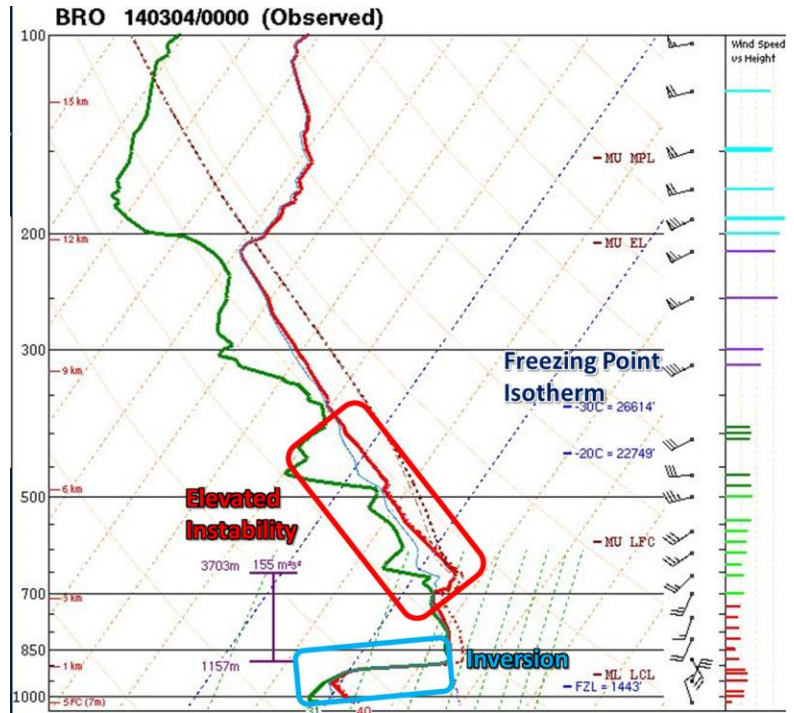


The “Lion” of March Ate the “Lamb” of Spring

March 2nd to 3rd 2014 Temperature Change Highest of Remarkable Season

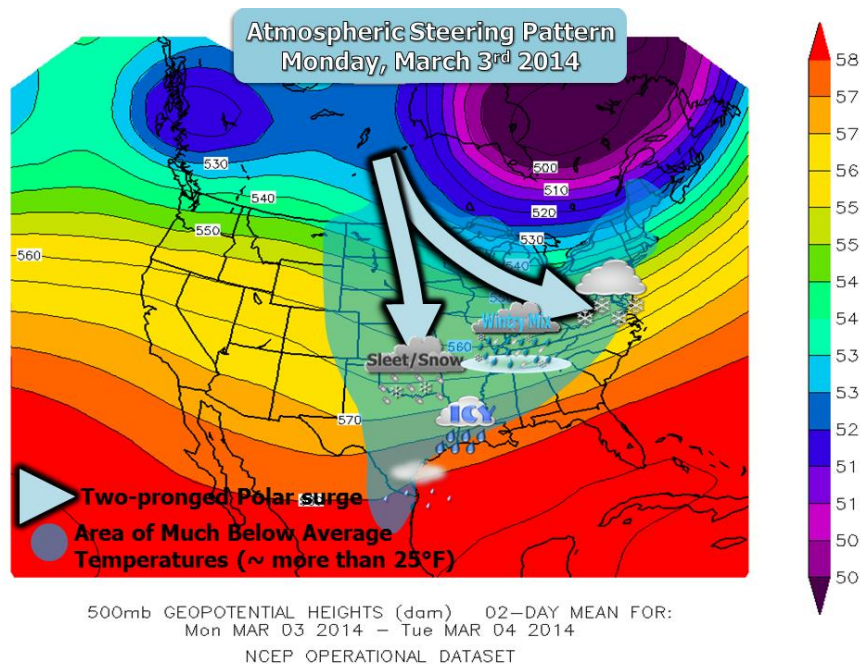
Perhaps the green-up of trees, grasses, and brush in late February was merely a tease. Just when it appeared that the Rio Grande Valley was headed into milder spring weather, the North Pole had other ideas. Yet another surge of air from the Canadian Northlands destroyed warm to hot and humid conditions on Sunday, March 2nd,

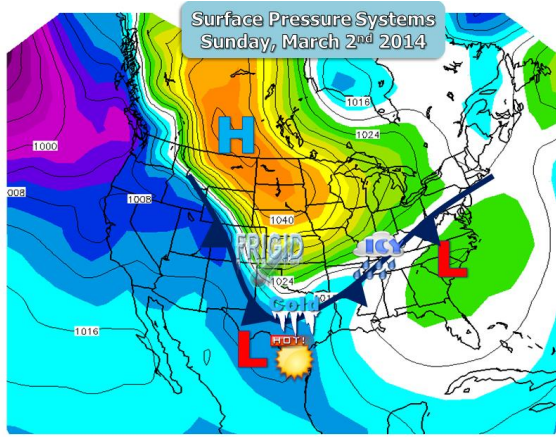
and replaced them with yet another cold winter day on March 3rd. Winter 2013/2014 played its final trick on the region in a big way; temperature differences between balmy Sunday, March 2nd (top of first page) and 2 PM Monday, March 3rd (bottom of first page) fell more than 50 degrees, by far the largest afternoon-to-afternoon dip and “breaking” the season’s largest at Harlingen (41 degrees) set on January 24 to 25 and again on February 10 to 11. Factoring in the biting north wind, especially near the coast, the “feels like” difference was nearly 60 degrees across the Rio Grande Valley! Occasional light rain and drizzle added to the misery between Harlingen and McAllen on the 3rd. An upper level disturbance added more energy to the mix and destabilized the mid-levels of the atmosphere above the temperature inversion (right) and kicked off amplified thunder and lightning strikes embedded within scattered to numerous cells, which dropped up to half an inch of rain near the coast overnight on the 3rd. The cold air locked in for Tuesday, March 4th, with calendar day temperatures not reaching 50 for a daytime average about 25 degrees below normal. Milder air would filter into the Valley on the 5th.



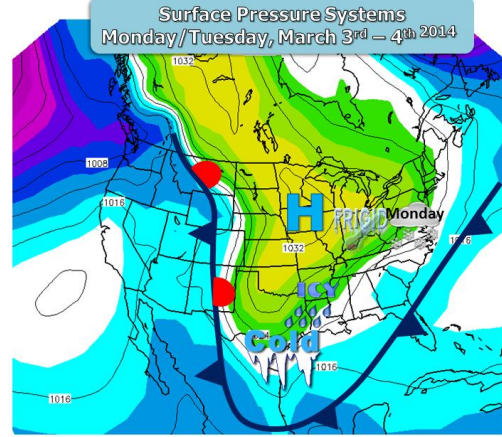
Why So Sharply Colder?

The answer is simple: Time of the season. The Rio Grande Valley is known for being the “National Hot Spot” in February and March, as our nearly tropical location combined with warming winds descending the Sierra Madre Oriental on days prior to late winter and spring cold fronts push temperatures well above normal. With “normal” temperatures several degrees higher in early March than in early January through mid-February, and a steadily increasing sun angle, pre-frontal heat “spikes” can routinely reach into the 90s. At the same time, the still-open door to the North Pole in early March 2014 developed a prodigious frigid surface high pressure cell. The “fight” between the very dense cold air and the much lighter subtropical air ahead of the front was no contest; the “Polar Express” became a “Bullet Train” of change. In portions of the Coastal Bend and the South Texas Brush Country, temperatures fell up to 40 degrees in less than 5 hours! Such a sharp change would be less likely without the sheer contrast of the two air masses.





SEA LEVEL PRESSURE (mb) 01-DAY MEAN FOR:
Sun MAR 02 2014
NCEP OPERATIONAL DATASET



SEA LEVEL PRESSURE (mb) 02-DAY MEAN FOR:
Mon MAR 03 2014 - Tue MAR 04 2014
NCEP OPERATIONAL DATASET

Left: Contrast between air masses within 400 miles north to south across Texas (i.e. San Angelo to McAllen) ranged from hot (lower 90s) to very cold (mid 20s) during the afternoon of March 2nd. By March 3rd, the front had driven well into northeast Mexico; temperatures at 2 PM were more than 50 degrees colder in McAllen (90 on the 2nd to the upper 30s on the 3rd).

Fortunately, frozen or freezing precipitation did not materialize across Deep South Texas or the Valley. The Valley was just a shade to warm, and the ranchlands had enough dry air to prevent any light drizzle to fall which may have coated trees and signs had it occurred on the morning of the 3rd. During the overnight thunderstorm cells on the 3rd, cold rain was the outcome due to the large area of saturation above the freezing point which would have melted any hail well before reaching the ground.

The cold snap marked the seventh time temperatures plunged more than 35 degrees in the Valley (using Harlingen as proxy). Is this an all-time seasonal record? More data will have to be analyzed, but we do know that this type of "seventh heaven" blew away the numbers for the previous nine years (below).

A [Not So] Magnificent Seven

Sharp Temperature Drops (**35 degrees or more**) from one day to the next this winter
(November 2013-March 3, 2014)
Harlingen/Valley International Airport

November 22:	88	November 23 (2 PM):	49	Change:	39 degrees colder
December 5:	83	December 6 (2 PM):	46	Change:	37 degrees colder
January 5:	76	January 6 (2 PM):	40	Change:	36 degrees colder
January 23:	78	January 24 (2 PM):	37	Change:	41 degrees colder
January 27:	80	January 28 (2 PM):	42	Change:	38 degrees colder
February 10:	82	February 11 (2 PM):	41	Change:	41 degrees colder
March 2:	88	March 3 (2 PM):	38	Change:	50 degrees colder

Previous Nine Seasons:

- 2012/2013: No Cases**
- 2011/2012: No Cases**
- 2010/2011: 1 case (February 1 to 2, 2 PM: 36 degrees colder)**
- 2009/2010: No Cases**
- 2008/2009: No Cases**
- 2007/2008: 1 case (November 21 to 22, 2PM: 35 degrees colder)**
- 2006/2007: 1 case (January 15 to 16, 2 PM: 36 degrees colder)**
- 2005/2006: 2 cases (December 7 to 8, 2 PM: 38 degrees colder;
February 17 to 18, 2 PM: 35 degrees colder)**
- 2004/2005: 1 case (December 22 to 23, 2 PM: 35 degrees colder)**