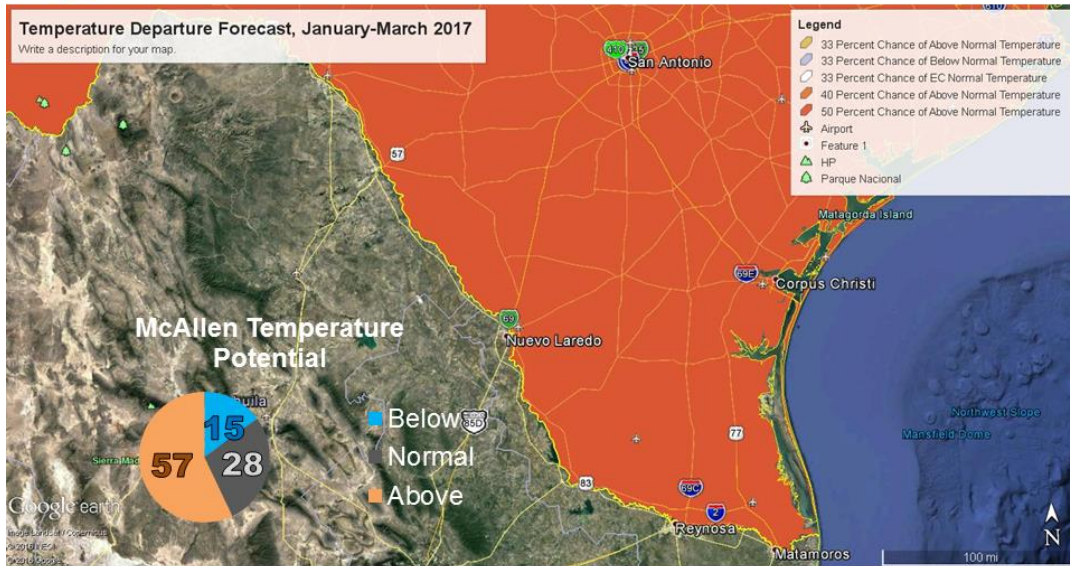




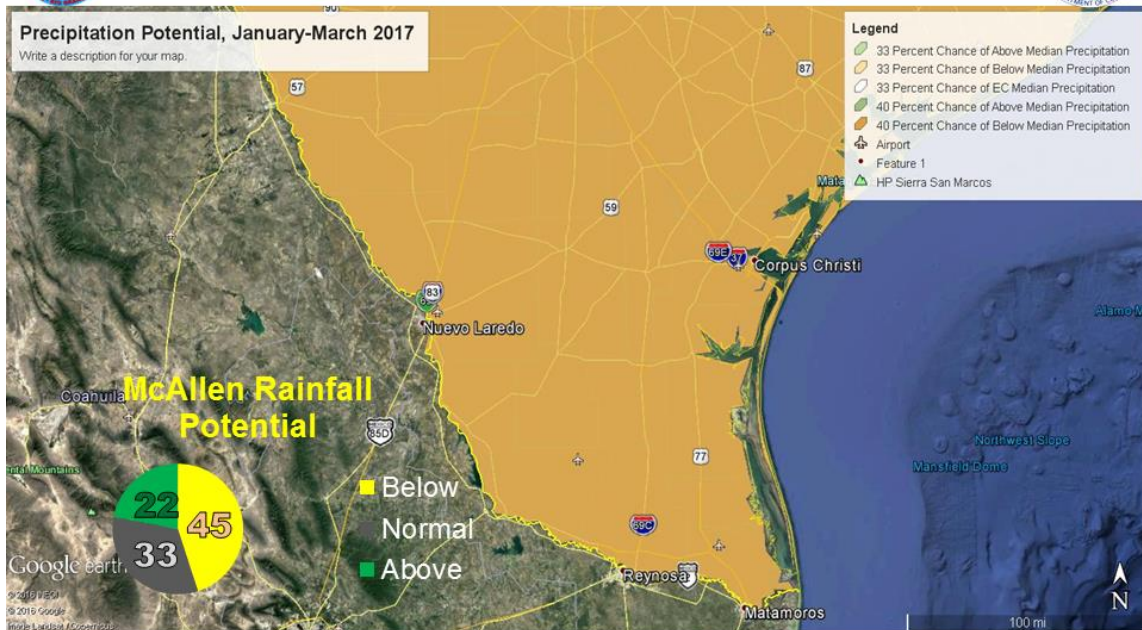
# Overall Warmth Expected to Continue into Early Spring for RGV



Rio Grande Valley Average for January-March (based on 1981-2010)  
**Wake-Up Temperature: Lower to Mid 50s**  
**Afternoon Temperature: Mid 70s**



# Dry Trends to Continue into Spring



Rio Grande Valley Average for January-March (based on 1981-2010)  
**Precipitation: Ranges from 2 ½ inches Starr/Zapata to 4 ½ inches Along Coast**

**Warm and Generally Low Rainfall to Begin 2017**  
**Drought to Gradually Worsen as Winter Turns to Spring**

**A Few "Wild Cards" Could Still Bring Nippy Weather/Freeze into Mid Feb**

## **Overview**

The forecast of warmer than average temperatures and drier than average rainfall remains on track to begin 2017. Confidence remains high for this outcome, in light of December's expected 4 to 6°F above average temperature – yet another Top Five warmest for many – and general pattern trends that favor warmer over colder weather through at least mid-January. As expected, December featured “gray ‘northers” – two in total on the 8<sup>th</sup> and again between the [18<sup>th</sup> and 19<sup>th</sup>](#), each which brought temperatures down 10 to 20°F below average. Alas, it was only a matter of a day or two in each case to surge well above average; for the closing week of 2016, afternoon temperatures generally ranged through the 80s and morning temperatures in the 60s to lower 70s, some 10 to 20°F above average for long stretches.

How many “gray ‘northers” are left? And will there be a Valley-wide freeze (December 19<sup>th</sup> came close with the season's first ranchland freeze). Here is the current thinking through the middle of February:

- One or two more “gray ‘northers” that leave chilly winds and drizzle or light rain in their wake, with day and night temperatures in the 30s, 40s or 50s.
- A “blue ‘norther” with just enough of a tap from western Canada to bring early morning temperatures to or below freezing, even in the more populated Rio Grande Valley.
- No “killing” freezes similar to December 1983 and 1989 are expected, which ensures semi tropical established plants and crops will make it through the next two months and need only limited protection from cold weather.

## **What to Watch For: Big Picture**

Overall, by the end of March headed deep into spring 2017, the following situations are expected to predominate:

- Though some rain will fall during the period, it should not be enough to quench the increasingly thirsty soil. If fronts come through “dry” vs. “wet”, - or even drizzly/slate gray vs. truly rainy, the northwest wind and much lower humidity, combined with either Pacific (warm with low humidity) or Canadian (cool with low humidity), drought levels may increase to moderate to severe in many areas by March.
- We still can't rule out another Texas Gulf low (or “Texas Nor'easter) through mid-February. The first one occurred on Saturday and Sunday, December 3<sup>rd</sup> and 4<sup>th</sup>. The bulk of the heaviest precipitation in that case bypassed the Valley, but did drop between 1.5 and 3 inches across the northern ranchlands, and between 4 and 14 inches from the Coastal Bend through Houston. Just one event farther south could put the Valley in the jackpot – and provide seasonal rainfall (first page) in just a two to three day period.
- Wildfire behavior conditions are potentially an important story especially by March, but perhaps as early as mid to late February. Cured or near-cured rangeland from Brooks through Zapata County in late December could turn to dried out tinder with little or no rainfall and the possibility of dry fronts with low humidity and still mild to warm temperatures behind them, especially in February and March. Farther south, warm and dry conditions could quickly turn marginally dry grasses into very dry grasses, including Hidalgo and Starr County. The King Ranch of Kenedy County was abnormally dry in late December and here, too, dryness could become an issue by the start of spring.

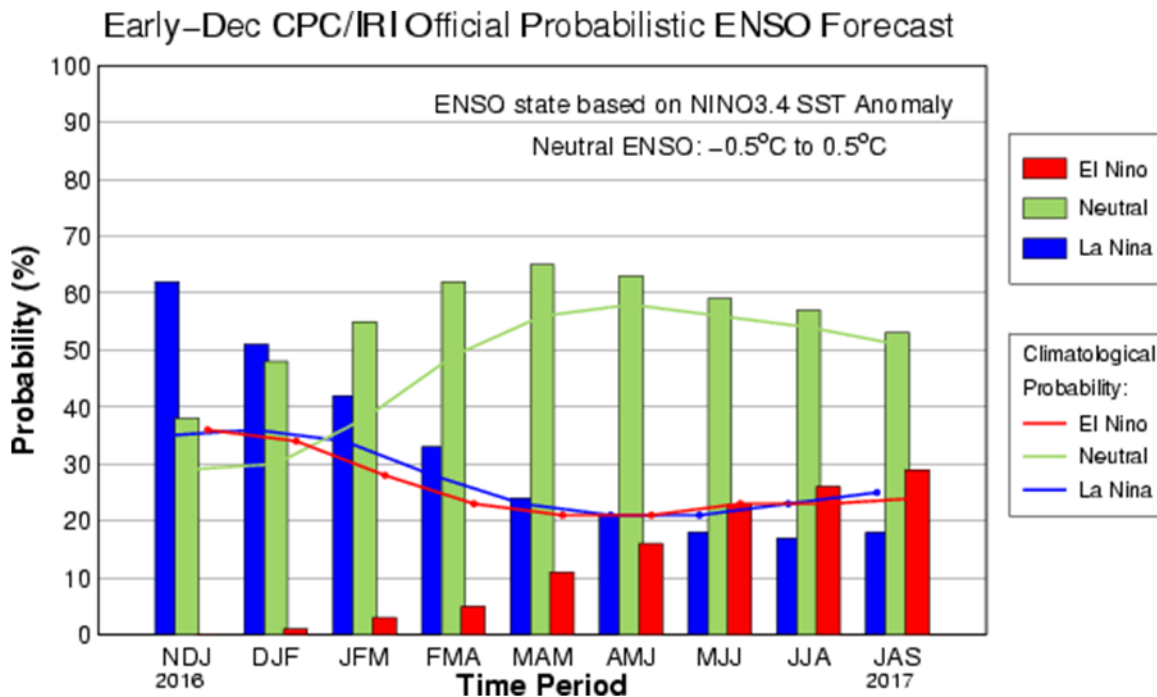
## **Teleconnections: Where Do They Go From Here?**

El Niño/Southern Oscillation (ENSO), the “800 lb. gorilla” in the room, is often cited as a large contributor to seasonal outlooks due to fairly decent correlations on the whole from past seasons. ENSO isn't the only game in town – and as shown during the winter and early spring of 2015/16 (above), other smaller scale teleconnections can throw “monkey wrenches” into the mix. La Niña – albeit weak – is expected for the winter season before easing out to neutral by the end of it, with neutral conditions prevailing into early spring. For the January-March period, the combination of the weak La Niña with still above average sea surface temperatures in the eastern subtropical Pacific is expected to maintain the upper level ridging along or just west of the coast of Baja California, with a generally west to east flow prevailing across the southwestern states, the northern Gulf coast, and Florida.

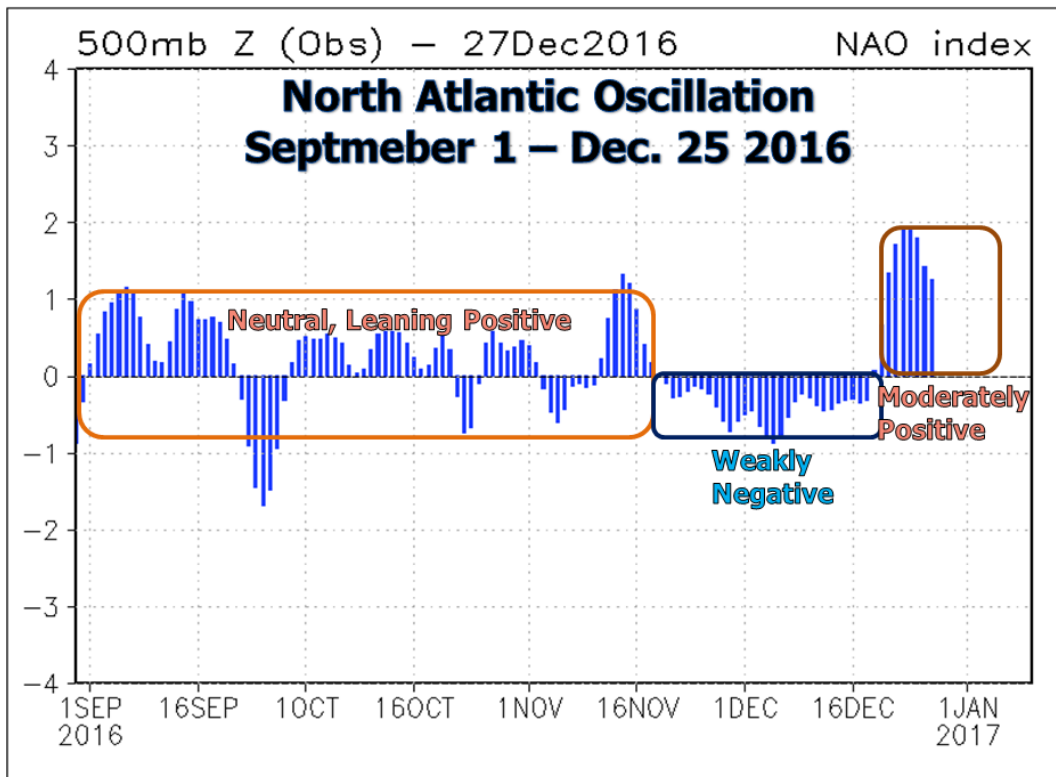
The Pacific-Decadal Oscillation (PDO), which was strongly positive through the first half of 2016 had eased back to weakly positive as of October – but then quickly rose into a strongly positive state for November. Unlike during the winter of 2014, when a weakly positive PDO followed a prolonged *negative* PDO, we have a bit more confidence that the prolonged positive PDO leading into 2017 will be a factor in maintaining the above average ridging west of Baja California which should be enough to verify the above average temperature forecast. The November surge adds more confidence to the January-March 2017 temperature forecast.

The North Atlantic Oscillation (NAO) has also been sitting near neutral since the end of August – though went through a brief positive “spike” in mid to late December. How it evolves could also influence the outcome of Winter 2016/17. Still, only a prolonged positive (+NAO) or negative (-NAO) – and one that shows a strong value – may correlate with enhancing warmth (+NAO) or chill (-NAO). Because this oscillation is generally predictable out to two weeks, there is little confidence in how it will evolve. For what it’s worth, there was negative lean to close November and head through mid-December – and with that, more robust cold fronts finally reached the Valley and helped dip the above normal departure to just a few tenths of a degree, Valley-wide.

This also explains why, while there is confidence in the warmer and drier than average winter 2016/2017 period verifying, there remains somewhat lower confidence on *embedded weather events* which could make the season more memorable for *opposite* impacts. The best example of this in recent years was during the winter of December 2010 – February 2011. That winter indeed ended up warmer and drier than average, but will be remembered by many for the very cold start that culminated in an [early February Ice Storm](#) that closed the region down for several days.



Above: Probabilistic ENSO forecast through early autumn 2017, showing weak La Niña should dissipate to neutral by winter’s end and continue into spring.



North Atlantic Oscillation (NAO) trends for autumn and early winter 2016/17. Brief period of moderately positive phase in late December was forecast to return toward neutral by the end of the year. The strongest “gray ‘norther” of the winter season occurred at the transition point from negative to positive, but much warmer than average temperatures followed.

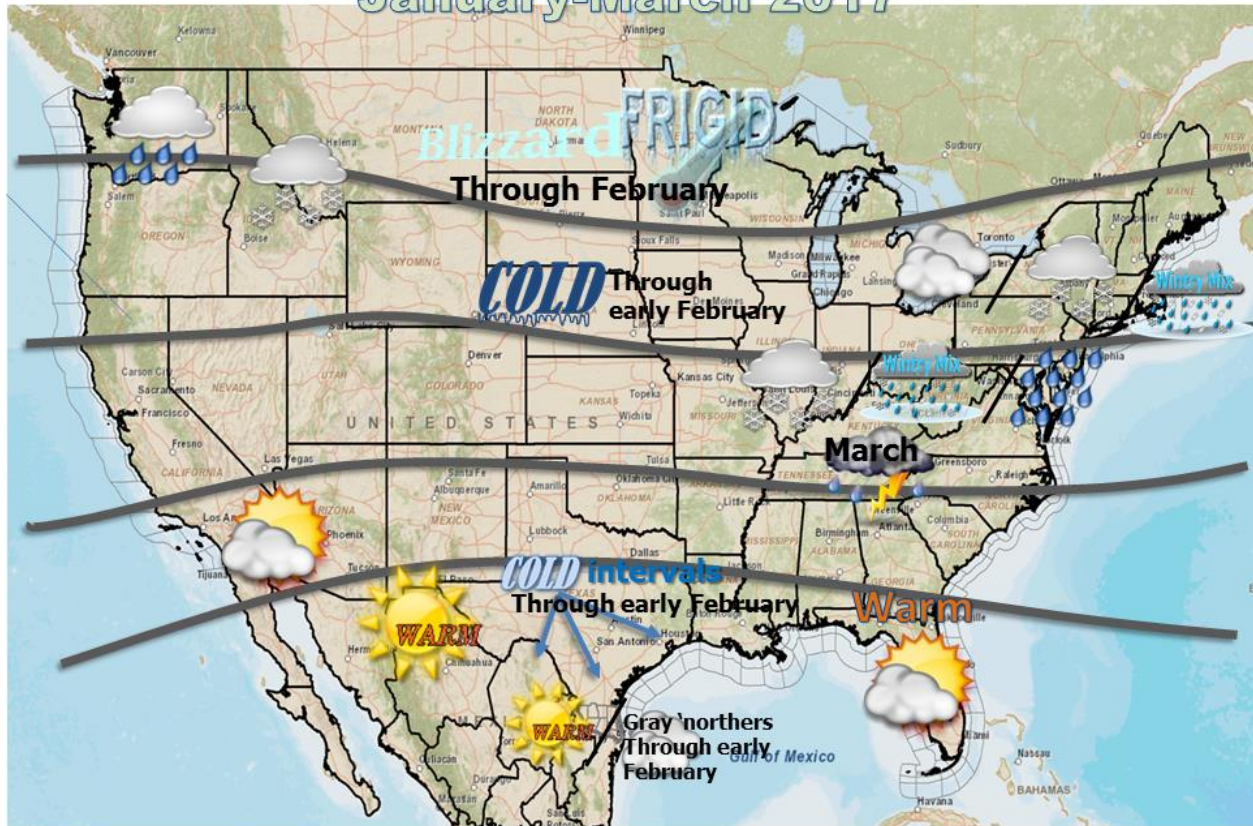
### **Pattern Matters**

Given all these factors, we expect the U.S. weather steering pattern from January to March look as shown below – and very similar to the forecast pattern of December 2016 through February 2017. Should the eastern tropical Pacific cool a little, and the western U.S. ridge poke farther north than in 2015/16 [which would allow a potential “tap” of surface arctic air to come into the Lower 48 east of the Rockies, favoring the north central and Midwest states], periodic cooler to even cold and wetter (drizzle/light rain, at least) weather could continue to touch the Rio Grande Valley at times in January and early February. Such is the “wild card” (blue arrows over south and central Texas) in this forecast – but any intrusions should be gone by the end of February. Based on persistence – July through October 2016 shattered temperature records and returned some level of drought to the Valley, the continued warm Eastern Pacific which has maintained the northwest Mexico through eastern subtropical Pacific ridge, and a weak La Niña - we’re favoring more fair and mild to warm days with the periodic return of the “Valley Wind Machine” – as we’ve already seen several times in December – but with the continued likelihood of pattern-busting cold fronts, and the possibility of a one week period of colder to much colder than average temperatures embedded within the first half of the period, into early February.

Confidence, however, had decreased on this possibility and now favors more “on-off” type events that last up to three days before warm air returns with a vengeance.

Elsewhere in Texas, dry weather is expected to be dominant, and drought is expected to remain a critical factor across the southeast U.S. through February. Southern California will see continued devastating effects from the record drought which shows no signs of quitting. A mixed bag of weather is expected elsewhere, from an endless summer of sultry tropical breezes in south Florida to more periodic frigid temperatures for Big Sky Country through the Upper Midwest. Winter will relax its cold grip slowly on the northern Plains/Big Sky by March. Farther south and east, the Ohio and Tennessee Valleys may begin looking for heavier rain events, potential flooding, and even strong thunderstorms in late February and March.

## Expected Steering Pattern January-March 2017



### Outlook: January through March 2017

**January and February** should see a continued “Jekyll and Hyde” pattern, with Dr. Jekyll (the warmer version) winning out. One or two more “gray ‘northers” with weak upper level energy undercutting the western U.S. ridge would produce a few days of blustery chilly weather (temperatures in the 40s and 50s) with light rain or drizzle could be expected. A dry front with a northwest Canadian source region could bring modified arctic air and a potential light freeze to the Rio Grande Valley and a harder freeze across the ranchlands. Could there even be ice or snow? The “arctic door” has already opened twice; December 8-9 and 18-19. Given the teleconnections mentioned earlier, additional surges of even colder air from January to early February could be enough to produce an ice or sleet event; after all, a recent three-year rhythm (February 2011, January 2014) could mean something in early 2017. We’re not saying this will happen; only to not be totally shocked in a “one-off” type event occurs in January through early to mid February.

### Preparedness, Awareness

Just enough rain from mid-November through mid-December, combined with recent gray ‘northers to reduce evaporation rates and/or provide some light drizzle to keep moisture locked in, should be enough to hold drought degradation at bay into January. However, if Texas Gulf lows fail to form far enough south – if at all – enough dry air and eventual late season warming, especially combined with any dry freezes, will cure fine fuels (ungrazed rangeland and grasses) and could create potential for erratic behavior of any wildfires that start, particularly in February and beyond.

Otherwise, should December’s “roller-coaster” pattern persist into January and February, residents will need to have all sort of seasonal clothing at the ready – for day to day changes and even hour to hour shifts. Strong winds ahead of and behind any ‘northers will continue to stir up beach surf and create periodic run up and beach erosion during the “off season”, and should any fronts with polar-based air come through dry, a Valley-wide freeze can’t be ruled out through early February. Flooding rains are not high on the hazard list given the expected lack of a deep and prolonged feed of tropical moisture this winter.

- **Chilly Weather, Freezes, Ice?** The “wildcards” mentioned above bore some fruit in December, and could continue into early February. Continue the following practices through February:
  - Keep cool weather clothes handy, and be prepared to have them on hand should more sharp cold fronts arrive. Apparent temperatures have already crashed more than 30 degrees from one afternoon (Dec. 7) to the next (Dec. 8), and a 40 to 50°F drop occurred between the 17<sup>th</sup> and 18<sup>th</sup>. Another couple of fronts in January and February could produce similar results. In March, 2014, feels-like temperatures crashed from near 90 down to near 30 degrees in less than 24 hours!
  - If you have tender tropical vegetation, set aside blankets and light coverings now to be ready in case freeze warnings are issued during December and January
  - Keep your vehicle checked for the following:
    - Brake pads/shoes – always important on rain-slick roads after dry spells
    - Windshield wipers/blades – dry rotting is common here, so frequent replacement ensures visibility.
    - Tires. Check tread wear and inflation pressures frequently, and repair/replace/inflate as necessary
    - Coolant. Anti-freeze is a necessity in both summer and winter, and sharp weather changes can cause stress on older vehicles’ cooling systems. Change as needed
    - Battery. Summer heat, humidity, salt air wear down batteries here more than most other places in the country. A cold snap could add further stress and the last thing you’d want is a stalled vehicle on a very cold day.
  - Keep the Elderly and Infirm in mind. Sharply cold weather can be taxing and even injurious on those acclimated to our semi-tropical climate. If you have family or friends with no heating capability, be sure to educate them on home safety – i.e. small heating units or space heaters – well before the cold arrives.
  
- **Coastal and Marine Hazards.** A full-throated Gale dominated the Gulf with frequent 34+ knot winds, 14+ foot rough seas, 7 to 10 foot surf waves, and plenty of tidal “run-up” to further erode beaches on South Padre Island on December 8-9 and again on December 18-19. In fact, the December 8-9 event combined with light rain and a tidal surge from the north in Bahia Grande to confuse [brown pelicans](#) into “dropping” onto SR 48 east of the Port of Brownsville during the evening of the 8<sup>th</sup>. Cooler nearshore waters followed by a period of warm and humid return can bring thick “sea fog” with visibility reduced to near zero. Prepare for winter’s potential rough waters by:
  - Planning boating/fishing excursions carefully, and having a postpone/cancel plan ready for cases when fronts are forecast to surge through
  - Be alert to rapid sea fog development, particularly when warm, humid, breezy weather returns to land after a prolonged cool-down. That same air mass traveling over now cool Gulf waters can produce sea fog which can rapidly form and sustain itself for a few days in worse case scenarios
  
- **Land Fog.** Dense fog was a frequent visitor to the Valley in December. Winter is the season of fog for the Rio Grande Valley, most prevalent when cold conditions moderate slowly on the ground, while warmth and humidity surges just above the ground. The denser air near the ground can keep winds near calm, and the difference in dew point temperatures from the ground (lower) to just above ground (higher) can produce the cloud on or just above the ground – fog. With another few “gray ‘northers” likely through January and into February, and other fronts pulling up just short of the region (or dissipating over it), multi-day late night through mid-morning fog events can be expected. The following graphic shows safety tips that can reduce the possibility of a local vehicle pile-up.

# Dense Fog

Dense Fog is a very important hazard for the Rio Grande Valley during the months of December and February. When a **Dense Fog Advisory** is issued, expect reduced visibilities less than  $\frac{1}{4}$  of a mile or less for 2 hours or more covering more than  $\frac{1}{2}$  of the zone's population.

If you are driving, you will not see very far in front of you. This will hinder you from seeing any danger on the road ahead.

## How Fog forms?

Fog is clouds that form at ground level, the result of calm winds, moisture in the atmosphere and cool temperatures.

## Safety Tips:

- Reduce speed
- Drive with lights on **low beam**. High beam will be reflected off the fog impairing visibility.
- Listen for traffic. Open your window a little to hear better.
- Use the right edge of the road or painted road markings as a guide.
- Do not stop** on a heavily traveled road.



- **Wildfire Behavior.** The worsening drought and drying of fine fuels (grasses) and “long period” fuels such as brush and trees (mesquite, live oak) may be sufficient to increase the threat for erratic wildfire behavior and spread, especially by late winter (February) and becoming a more critical issue by March. A series of drying breezy to windy fronts with post-frontal sunshine and mild to warm air would quickly worsen the situation for rapid wildfire spread later this winter and early next spring. Farmers and ranchers should continue to follow safety precautions, including parking vehicles on dirt or pavement, not driving them in high grasses on dry, windy/breezy days, and refraining from using welding/grinding equipment in or near high grass/brush. [Be Firewise!](#) Remember, [only you can prevent wildfires](#).

For all your winter safety tips, check out our Awareness “slide guides” here, in [English](#) and [En Español](#).