

# Winter Weather Awareness For the Rio Grande Valley



# WHAT IS WIND CHILL?

Wind Chill measures how wind and cold feel on exposed skin. As the wind increases, heat is carried away from your body at a very fast rate, lowering the body temperature.

- When there is a **Wind Chill Advisory** in effect for the RGV expect...
- Wind Chill Indexes @ or less than 30° with winds greater than 10 mph.

(Less than 25° for Zapata, Jim Hogg, Brooks & Kenedy counties)

- When there is a **Wind Chill Warning** in effect for the RGV expect...
- Wind Chill indexes @ or less than 15° with winds greater than 10 mph.

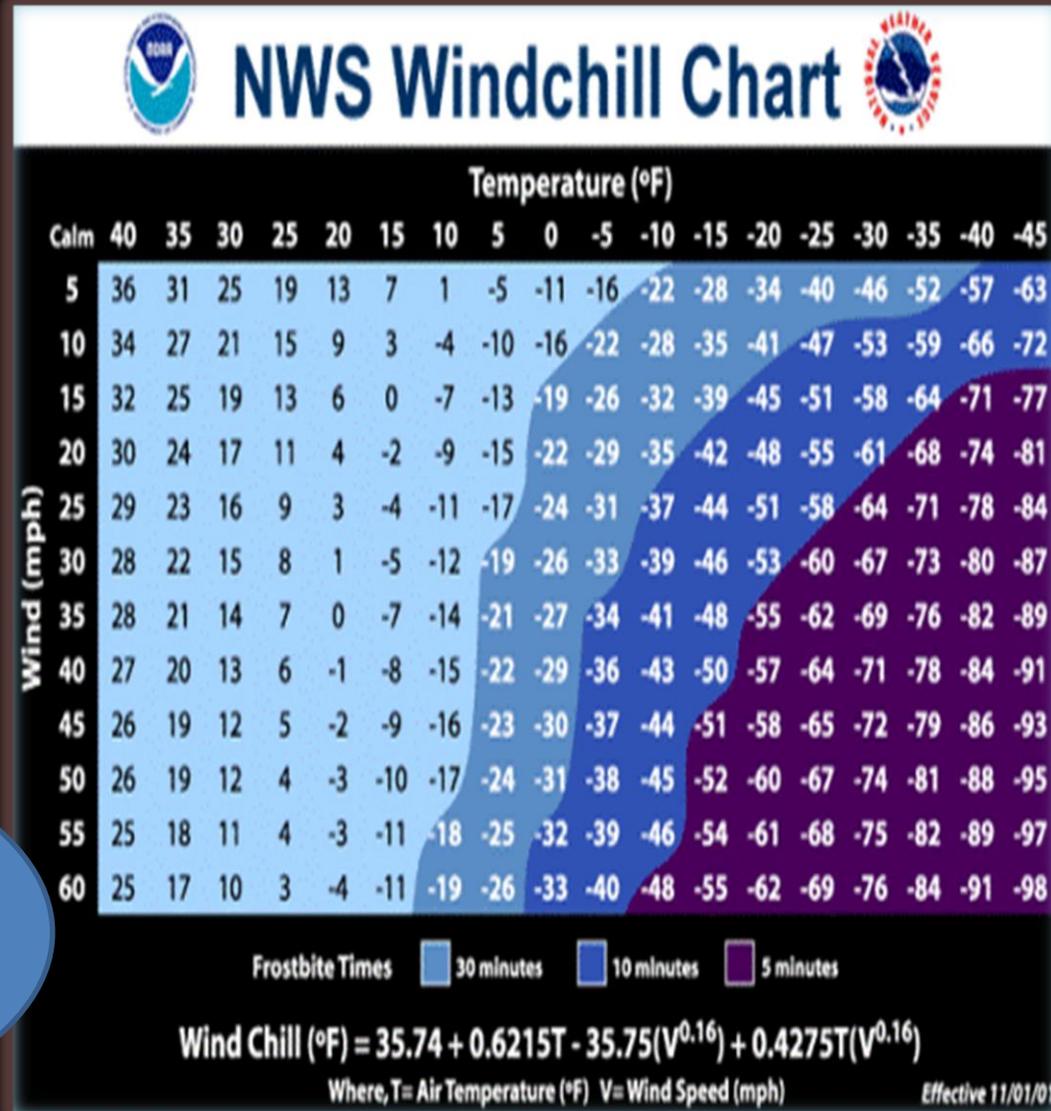
(Less than 15° for Zapata, Jim Hogg, Brooks & Kenedy counties)

## Frostbite

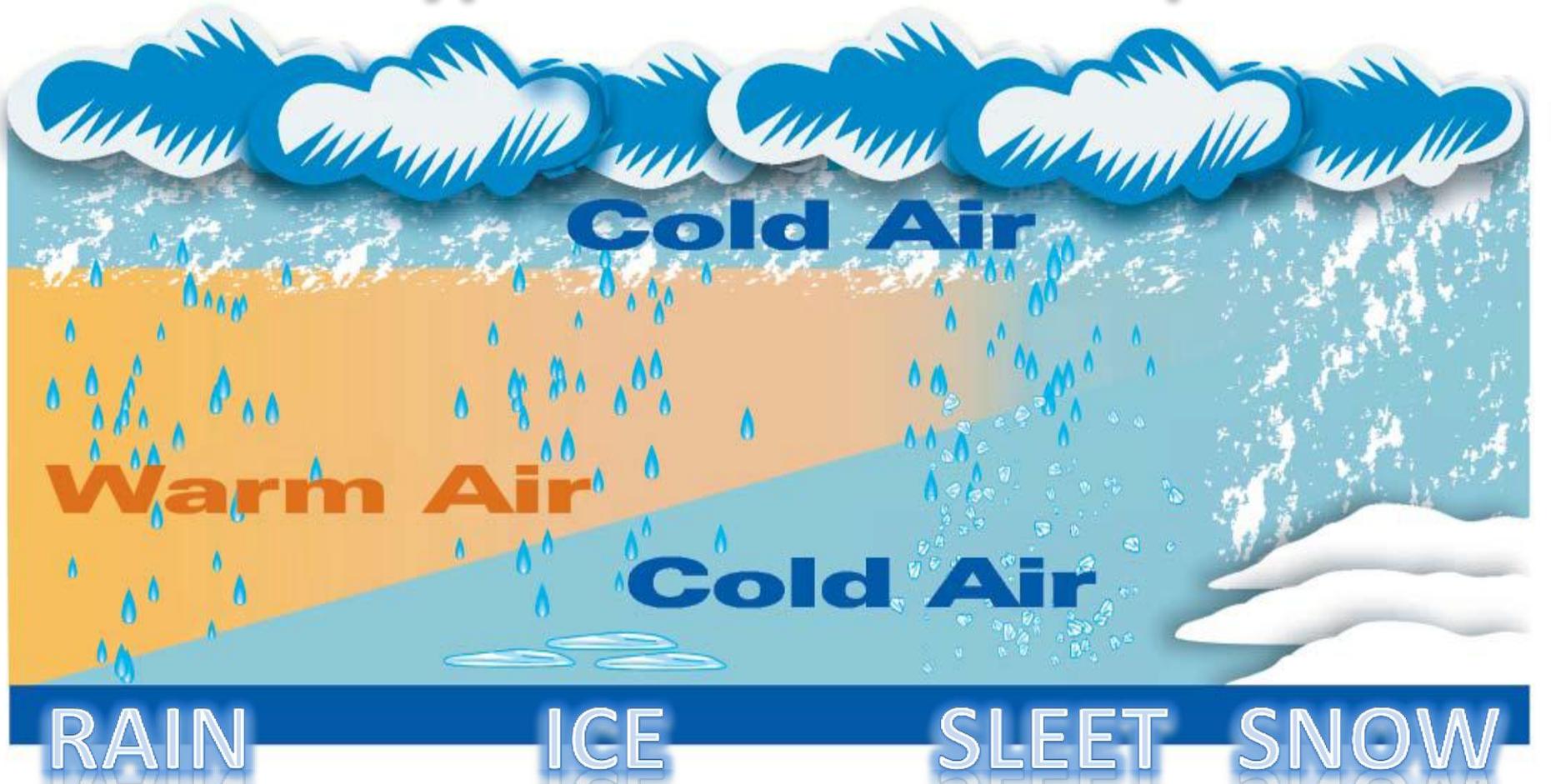
Is damage to the body tissue caused by extreme cold.

## Signs

Loss of feeling and white or pale appearance in extremities, such as toes, fingers, ear lobes, or the tip of the nose.



# Different Types of Winter Precipitation...



Snow begins to melt to rain as it falls through a deep warm layer. The cold air layer is so shallow precipitation stays as rain.

Ice (Freezing Rain) occurs when a layer of air below 32°F (0°C) at and just above the ground allows the rain to instantly freeze on elevated surfaces including bridges, vehicles, power lines, etc. **Ice is the most dangerous winter weather precipitation type.**

Begins as snow that melts as it falls through a shallow warm layer, then refreezes into frozen pellets before hitting the surface.

Snow falls when temperatures are below 32°F(0°C) through entire atmosphere and no melting occurs.

# Freezes & Killing Freezes

## Freezes

When temperatures fall to 32°F (0°C) or lower for a couple hours or more, native plants and crops can be stressed or killed, depending on how low the temperatures fall, the length of the cold, and even the affect of wind on crop protection. Minor freezes occur somewhere in Deep South Texas and the Lower Rio Grande Valley each year, but are typically infrequent.

## Hard and Killing Freezes

On rare occasions, a **hard freeze** occurs, defined as at least two hours of temperatures below 28°F (-2.5°C) over a relatively wide area (i.e., half of a county, a large city, etc.) During a hard freeze, unprotected cold sensitive plants and crops will be damaged, and some killed outright. The most critical of hard freezes are **killing** freezes, which feature a long duration of temperatures well below freezing for many hours (generally 10 hours or more), often combined with a continuing northerly wind that does not allow crops to retain necessary surface moisture to help insulate them from the chill.



1989 December Freeze  
Laguna Madre Frozen



The average first freeze in the Lower Rio Grande Valley occurs around the New Year, and the average last freeze occurs in late January.

# Ice Storms



February 2011 Ice Storm

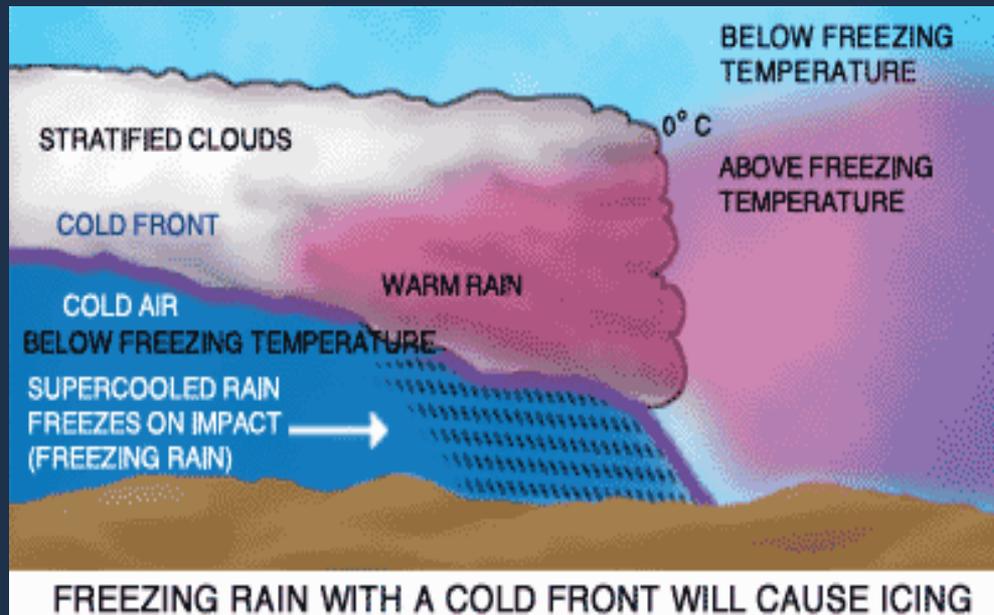
This are storms that are made up of freezing rain, which is a form of precipitation composed of rain that turns into ice upon contact with the ground.



Rio Grande Valley Ice Storm of 2011

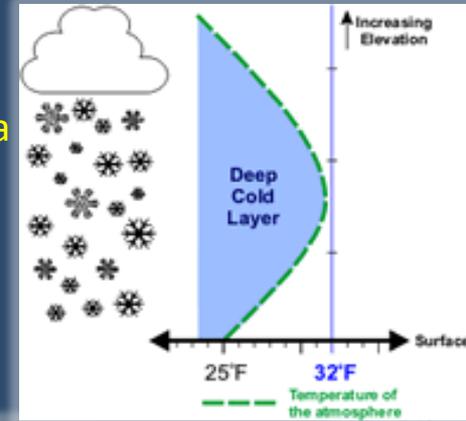
This kind of storm usually occurs when the ground is cold enough for ice to form, but air not too far above the ground is above 32°F (0°C).

A large dome of Arctic high pressure spread from the Great Plains southward into the Rio Grande Valley and well into Mexico late on February 1st 2011 and continued into February 2nd, 2011. Freezing temperatures arrived in the Brush Country and the King Ranch shortly after midnight and continued to plunge into the Rio Grande Valley before daybreak. Cloud cover behind the front kept temperatures from rising much above freezing for most of the day. The arctic air continued to plunge deep into the Valley on February 3rd and 4th, pushing temperatures back below freezing once again. A weak upper level disturbance combined with just enough moisture to develop freezing drizzle and light freezing rain across the lower Valley shortly after daybreak on the 3rd, spreading west and north throughout the day. More than a quarter inch of ice accumulated across much of the region, with some areas receiving more than one inch of ice. The ice caused almost 200 automobile accidents, roads to be closed, school districts to cancel classes, and left nearly 65,000 customers without power across the region.



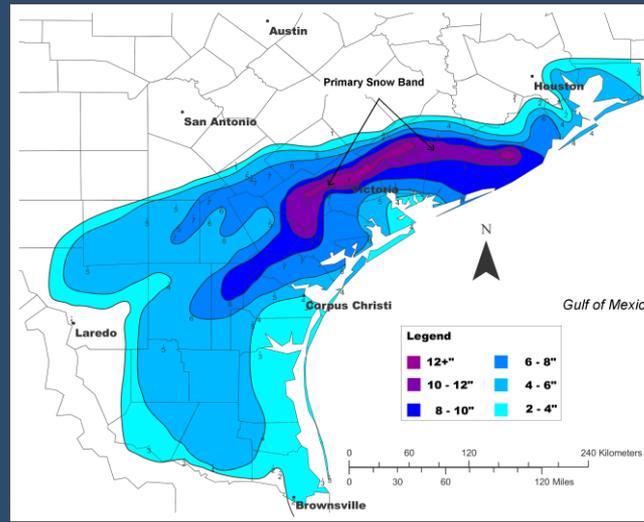
# SNOW

Snow forms when water vapor within a cloud condenses into ice crystals when temperatures are below freezing (32°F/ 0°C). As illustrated on the graphic (right), a deep layer of cold air with temperatures below freezing maintains the ice crystals, and they reach the ground as snow flakes. This type of winter precipitation is rare in the Rio Grande Valley since cold air typically sinks to the surface while warmer, more humid air lifts over the “dome” of cold air. Precipitation forming higher in the atmosphere often melts to rain before refreezing into ice or sleet.



## White Christmas 2004

A strong cold front and arctic air mass swept through South Texas in late December 2004, setting the stage for a Christmas most residents can only “dream” about. The front moved through the Valley on December 22<sup>nd</sup> and a surge of arctic air followed the initial front, dropping temperatures into the 30s and low 40s late on December 23<sup>rd</sup>. Afternoon temperatures on Christmas Eve Day were in the upper 30s to low 40s. Widespread rain tapered off during the evening and temperatures fell below freezing. An upper level disturbance brought additional moisture from the Pacific Ocean overnight; snow began across South Texas after 10 PM. The snow continued through 4 AM Christmas morning, and left behind the first White Christmas ever recorded in the Rio Grande Valley.



More than a foot of snow fell over portions of the Coastal Bend (right).

# Dense Fog

**Dense Fog** is a very important hazard for the Rio Grande Valley during the months of December and January. When there 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 or area . If you are driving, you will not see very far in front of you. This may hinder you from assessing danger on the road ahead.

## How Fog forms?

Fog is a cloud that forms 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 beams will reflect off the fog, further 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.



# Be Prepared for Winter Weather !!

Have a **NOAA Weather Radio** - is the best means to receive warnings from the National Weather Service. This radio will automatically alert you when a watch or warning is issued for your county.

## Listen for:

**Watch:** Severe winter weather conditions are possible within a day or two (36 to 48 hours).

**Advisory:** Winter weather conditions are expected to cause significant inconveniences and may be hazardous. BE CAUTIOUS!!

**Warning:** Life threatening severe winter weather is imminent or will begin within a day (24 hours).

## Have available:

- Flashlights
- Extra batteries
- NOAA Weather Radio
- Extra food & Water
- First- aid supplies
- Extra medicine
- Extra baby items
- Charge mobile phone
- Fire extinguisher

## Winter Storm Kit:

- Mobile phone, charger
- Blankets /Sleeping bags
- Non-perishable food
- Battery Booster cable
- Extra clothing to keep dry
- Tissues, paper towels
- Windshield scraper & brush

## For Pets:

Have extra water, food and shelter.



# Additional Information...

[weather.gov/rgv](http://weather.gov/rgv)

- [Facebook](#)
- [Twitter](#)
- [National Winter Weather Awareness](#)
- [Local Winter Weather Awareness](#)
- [NOAA Weather Radio](#)

National Weather Service Weather Forecast Office  
Brownsville, TX

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Top News of the Day

- Come Join Us at Boo at the Zoo 2012 October 30th and Halloween!
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Tonight Rest of the Weekend

**Mostly Cloudy And Cooler**

Seas 5 to 7 Feet Nearshore  
Small Craft Advisory In Effect Until 1 am  
High Risk Rip Currents  
Seas 6 to 10 Feet Offshore

Low Temperatures

441 PM CDT Sat Oct 27 2012  
National Weather Service  
Brownsville, TX

Show Descriptions

Watches & Warnings Observations Forecast Graphics Rivers & Lakes Climate Submit Storm Report

Click on the map below for the latest forecast.

Read watches, warnings & advisories  
Small Craft Advisory  
Hazardous Weather Outlook

Zoom Out

**During this Winter Weather  
season...**



**Be Prepared & Be SAFE!!**