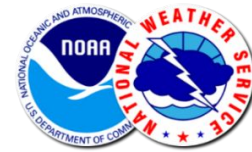


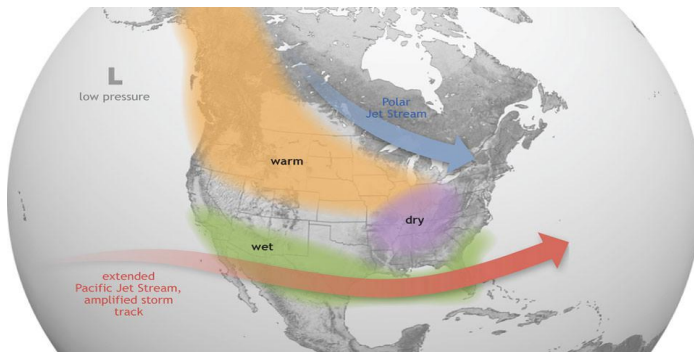
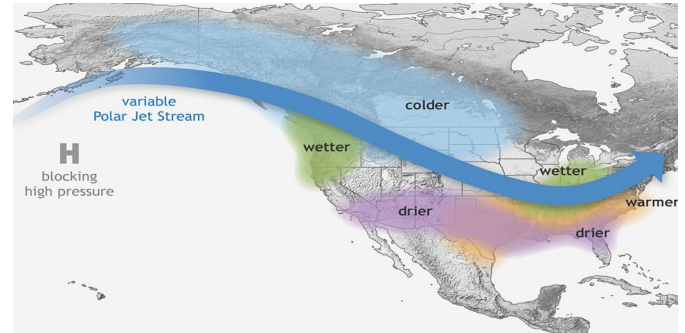
# Winter Spotter Guide



## Climatology for Southeast Wyoming & Western Nebraska

### La Niña:

- Temperatures tend to be near seasonal, but toward the colder side.
- Snowfall totals average drier than normal, but are still near seasonal.
- Higher snow totals possible in mountains and western slopes
- Often windier than average.



### El Niño:

- Temperatures tend to be near seasonal, but toward the warmer side.
- Snowfall averages slightly wetter than normal for eastern slopes and the High Plains, especially for Feb-Apr.
- Often less windy than average.

## Different Types of Weather Systems

### Clipper Systems

- Form on the east side of the Canadian Rockies.
- Typically bring light to moderate snowfall.
- Brings colder temperatures and northwest winds.

### Colorado Low

- Most common in late winter to early spring.
- Typically results in widespread heavy snowfall, potentially blizzards.
- As the low pressure develops over eastern Colorado, it will develop easterly winds and pull in moisture from the Gulf of Mexico.

### Overrunning Frontal System

- Warm moist air moves over arctic cold front.
- Can bring moderate to heavy snow.

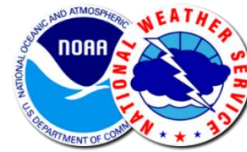
### Upslope Flow (Winds)

- As moist air rises and cools, water vapor condenses, resulting in clouds and precipitation.
- This causes the windward side of the mountains/hills/ridges to receive more snow than surrounding areas.
- Overall, enhances snow.

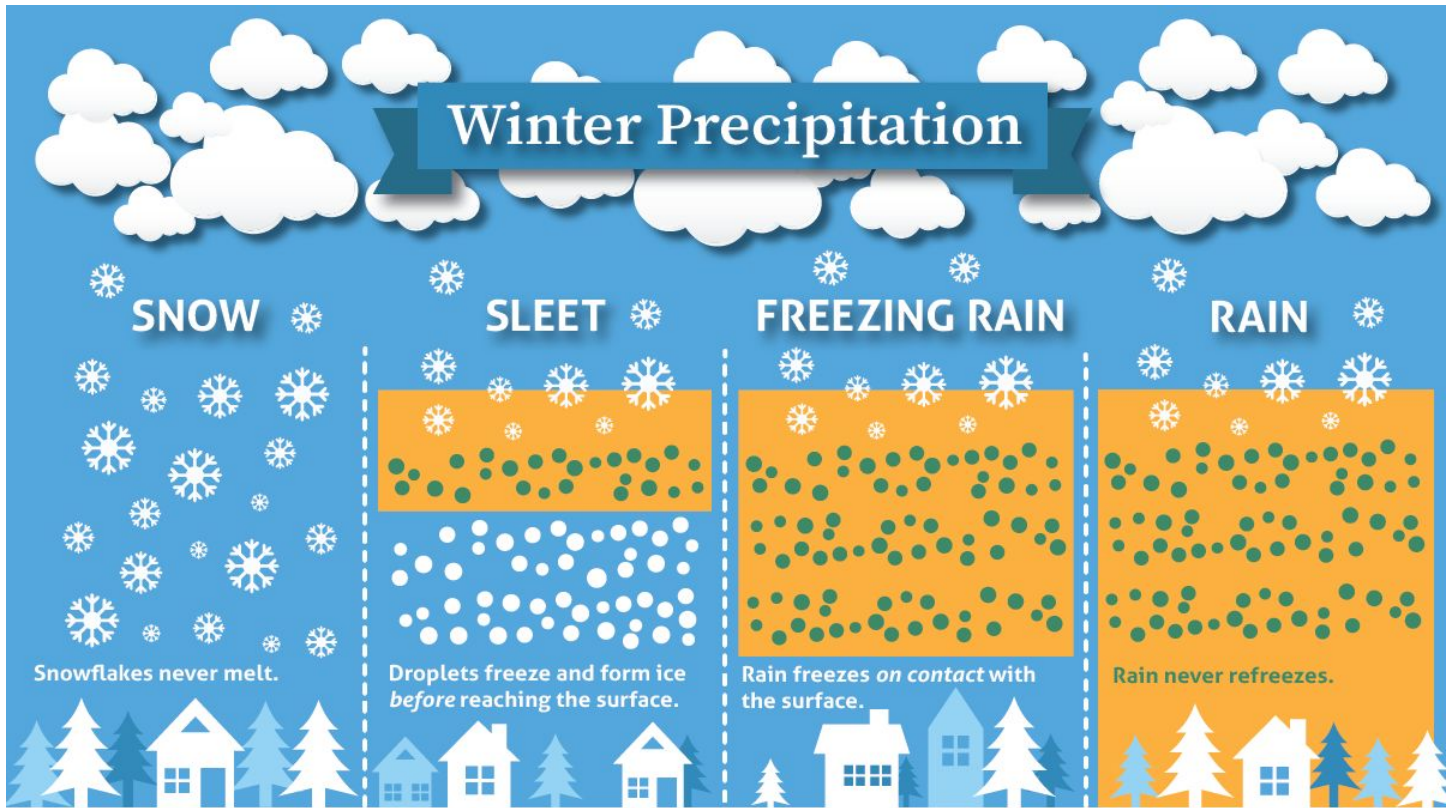
### Downslope Flow (Winds)

- As air descends down a mountain/hill/ridge, it accelerates and is compressed by the increasing air pressure, which results in warming.
- Frequent wind gusts 40+ mph possible.
- Overall, diminishes snow.

# Winter Spotter Guide



## Precipitation Types



 At or Below 32°F

 Above 32°F

[weather.gov](https://www.weather.gov)



- Snow is the most common during the winter time in southeast Wyoming and western Nebraska.
- Significant freezing rain is uncommon in southeast Wyoming and western Nebraska. However, light icing can occur a few times a year.

## Temperature & Hazards:

|  | Definition & Criteria  | Potential Impacts  |
|--|--|--|
| <b>Freeze Watch &amp; Warning*</b>               | Temperatures 28° to 32° degrees (or colder) are likely.  | Impacts to temperature sensitive plants, outdoor gardens, equipment, and animals.      |
| <b>Frost Advisory*</b>                           | Temperatures 33° to 36° degrees are likely.  |  |
| <b>Wind Chill Watch, Warning, &amp; Advisory</b> | Warning: Wind Chills less than -30° F likely.<br>Advisory: Wind Chills between -20° and -29° F likely. | Impacts to people and animals outdoors. Frostbite and hypothermia will set in quickly. |

*\*Only issued once for the first freeze/frost of the season and a second time for unusually late freezes late spring.*

# Winter Spotter Guide



## Hazards

|                         | Definition  | Criteria   | Potential Impacts   |
|-------------------------|---|--|---|
| Winter Storm Watch      | Dangerous winter weather is <i>possible</i> in the next 24 to 48 hours.                           | Valleys: 6+ inches<br>Mtns: 12+ inches   | Heavy Snow<br>Blowing Snow<br>Drifting Snow<br>Sleet<br>Freezing Rain<br>Snow Squalls |
| Winter Storm Warning    | Dangerous winter weather is <i>expected</i> within the next 12 to 36 hours.                       |  |   |
| Winter Weather Advisory | <i>Potentially</i> dangerous winter weather is <i>expected</i> within the next 12 to 36 hours.    | Valleys: 3 inches<br>Mtns: 6 inches  | Snow<br>Light Drifting Snow<br>Snow Squalls   |
| Blizzard Warning        | Severe winter weather is expected within the next 12 to 36 hours – including whiteout conditions. | Visibility less than ¼ mile for 3+ hours with frequent wind gusts 35+ mph                    | Heavy Snow<br>Ground Blizzard/<br>Blowing Snow<br>Drifting Snow                       |
| Snow Squall Warning*    | Intense bursts of snow and wind that have a short duration and cause whiteout conditions.         | Visibility less than ¼ mile for 15 minutes or more, flash freeze                             | Whiteout Conditions<br>Flash Freeze   |
| Ice Storm Warning       | Ice Accumulation greater than ¼ (0.25) inch   | Ice accumulation can topple power lines, cause travel impacts, and down large tree branches. |   |
| High Wind Watch         | Strong wind gusts are <i>possible</i> .   | Sustained winds 40+ mph for 1+ hour or wind gusts 58+ mph (50 knots).                        | Blowovers/Blow Offs of Light and High Profile Vehicles<br>Tree Branches Downed        |
| High Wind Warning       | Strong wind gusts are <i>likely</i> or already occurring.   |  |   |

### \*Two Different Snow Squall Warnings:

- 1: Basic Snow Squall Warning issued late at night or very early in the morning or in less populated areas will not activate the Wireless Emergency Alerts on your phone and NOAA Weather Radio.
- 2: **SIGNIFICANT** Snow Squall Warning issued in a high traffic time and/or affecting a more populated area WILL activate the Wireless Emergency Alerts on your phone and NOAA Weather Radio.

Two main wind-prone areas of southeast Wyoming: Arlington (Interstate-80 between Laramie and Rawlins) and Bordeaux (Interstate-25 between Cheyenne and Wheatland).

Avalanches are most common when there are strong winds and/or blowing snow, a heavy snowfall or rain in the last 24 hours, and/or significant warming or rapidly increasing temperatures. But, they can happen *at any time* in deep snowpack on slopes steeper than 25°.



# Winter Spotter Guide



## Preparing for a Winter Storm

### Prepare Your Home



Make your home winter ready. Buy needed supplies before the storm arrives. Have a plan in case you lose power or are unable to leave your home.

### Prepare Your Vehicle



Make your vehicle weather ready. Be sure to include a safety kit, cold weather gear, and all the necessities you may need to deal with the storm ahead.

### Monitor the Forecast



Stay up-to-date with the latest forecast information as the storm approaches. Monitor your favorite source for weather information. [weather.gov/cys](http://weather.gov/cys)

### Have a Plan



Before the weather threatens, be sure to have a communications plan, change travel plans, and prepare for the impacts to your routine.

#### Before you go, be sure to check your car's...

- Antifreeze levels
- Battery & ignition system
- Brakes
- Exhaust system
- Fuel & air filters
- Heater & defroster
- Oil
- Headlights and hazard lights
- Thermostat
- Windshield wipers & fluid

#### prepare.

#### Your Emergency Supply Kit should include...

- Cell phone charger
- First aid kit
- Jumper cables
- Spare tire
- Road flares
- Full tank of gas
- Sand or kitty litter
- Tow rope
- Blankets
- Snow shovel & brush
- Flashlight
- Extra winter clothing
- Water
- Snacks

#### pack.

#### Check the weather forecast and road conditions before you go at...

- Weather Forecast: [weather.gov/cys](http://weather.gov/cys)
- Road Forecast & Current Conditions Wyoming: [wyoroad.info](http://wyoroad.info)
- Road Forecast & Current Conditions Nebraska: [511.nebraska.gov](http://511.nebraska.gov)
- Current Road Conditions: Dial 5-1-1

#### plan.

[weather.gov/winter/safety](http://weather.gov/winter/safety)



# Winter Spotter Guide



## How to Measure Snow:

1

### Supplies

Ruler or yardstick  
Ideally a whiteboard and flag

2

### Planning

Find an open area away from tall objects, but sheltered from the wind

3

### Set-up

Set up before snow begins  
Put your board out and mark it with the flag

4

### Measuring Snow

Record your total to the nearest tenth of an inch.  
Wipe the board off after measuring. If significant drifting, take multiple measurements and average.

5

### When Snow Stops

Measure as soon as the snow stops to avoid lower totals due to melting, settling, and drifting. *Do not measure a drift!*

6

### Reporting

Don't forget to send us your snow report!  
Include your snow amount (ex: 3.5 inches), period of time over which the snow fell (ex: 3 hours or "since 9AM yesterday"), and location (ex: 4N of Cheyenne, WY)  
Even better if you can include a picture!

307-772-2468 | 1-800-269-6220 | [weather.gov](https://www.weather.gov)

@NWSCheyenne US National Weather Service Cheyenne