



# NWS Pittsburgh Winter SKYWARN Spotter Training



# Our Vision and Mission Statements

National Weather Service (NWS) Pittsburgh

## NWS MISSION, VISION & CORE PRINCIPLES

### VISION

A Weather-Ready Nation: Society is prepared for and responds to weather, water, and climate-dependent events.

### MISSION

Provide weather, water and climate data, forecasts, warnings, and impact-based decision support services for the protection of life and property and enhancement of the national economy.

- The NWS has **SOLE** responsibility for issuing watches and warnings across the country.
- The NWS actively engages with a variety of sectors to provide user-specific weather information to enable effective achievement of their goals. This includes local, state, and federal emergency management; forestry services; aviation operations; utility companies; and more.
- Engaging in community outreach aimed at helping them become **READY, RESPONSIVE, and RESILIENT** to hazardous weather events.
  - ◆ On average, the nation experiences 650 deaths and near \$15 billion in damage losses due to the impacts of hazardous and extreme weather.



# About The NWS Pittsburgh Office

National Weather Service (NWS) Pittsburgh



- Dedicated team of 21 employees comprising of
  - ◆ 13 Operational Meteorologists/Forecasters
  - ◆ 2 Electronics/IT Personnel
  - ◆ 3 Administrative Meteorologists
  - ◆ 1 Observation Program Leader
  - ◆ 1 Service Hydrologist
  - ◆ 1 Administrative Assistant
- Office is open 24 hours a day, 7 days a week, 365 days a year
- One of 122 NWS Forecast Offices across the United States, Puerto Rico, and Guam



# Areas of Responsibility

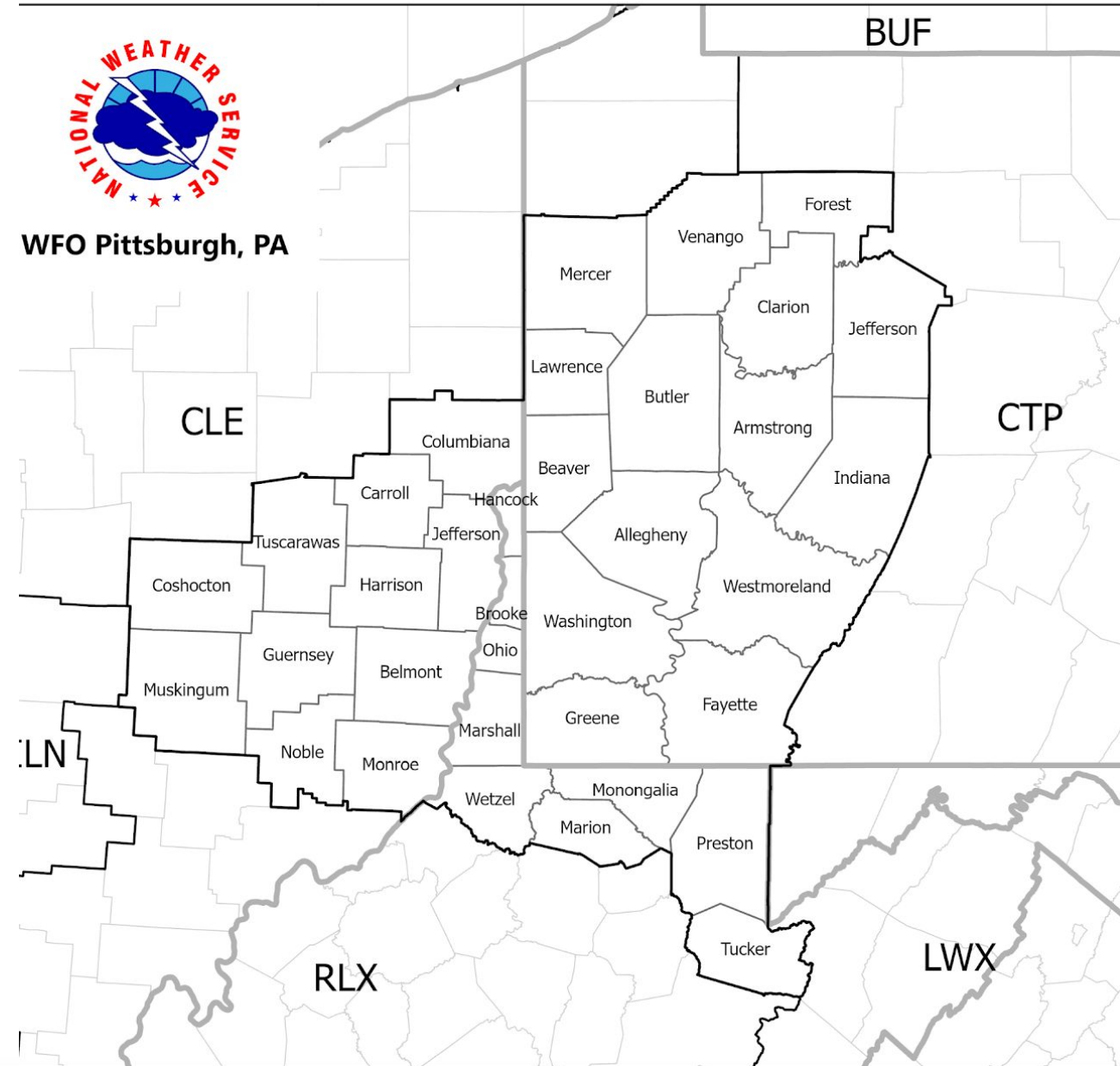
## National Weather Service (NWS) Pittsburgh

→ The National Weather Service (NWS) Pittsburgh office is responsible for all weather support across portions of:

- ◆ Eastern Ohio
  - Coshocton, Muskingum, Tuscarawas, Guernsey, Noble, Carroll, Harrison, Belmont, Monroe, Columbiana, and Jefferson Counties
- ◆ Northern West Virginia
  - Hancock, Brooke, Ohio, Marshall, Wetzel, Monongalia, Marion, Preston, and Tucker Counties
- ◆ Western Pennsylvania
  - Mercer, Lawrence, Beaver, Washington, Greene, Venango, Butler, Allegheny, Forest, Clarion, Armstrong, Jefferson, Indiana, Westmoreland, and Fayette Counties

→ This includes weather information for 9 airports and multiple rivers plus their tributaries.

## WFO PBZ Counties



WFO Pittsburgh, PA



# Winter SKYWARN Outline

**Typical Winter Storm Patterns**

**Forecasting and Weather Monitoring Tools**

**Winter Hazards**

**Winter Hazard Climatology**

**Winter Weather Products**

**Snowfall Measuring and Reporting**



# Winter SKYWARN Outline

## Typical Winter Storm Patterns

Forecasting and Weather Monitoring Tools

Winter Hazards

Winter Hazard Climatology

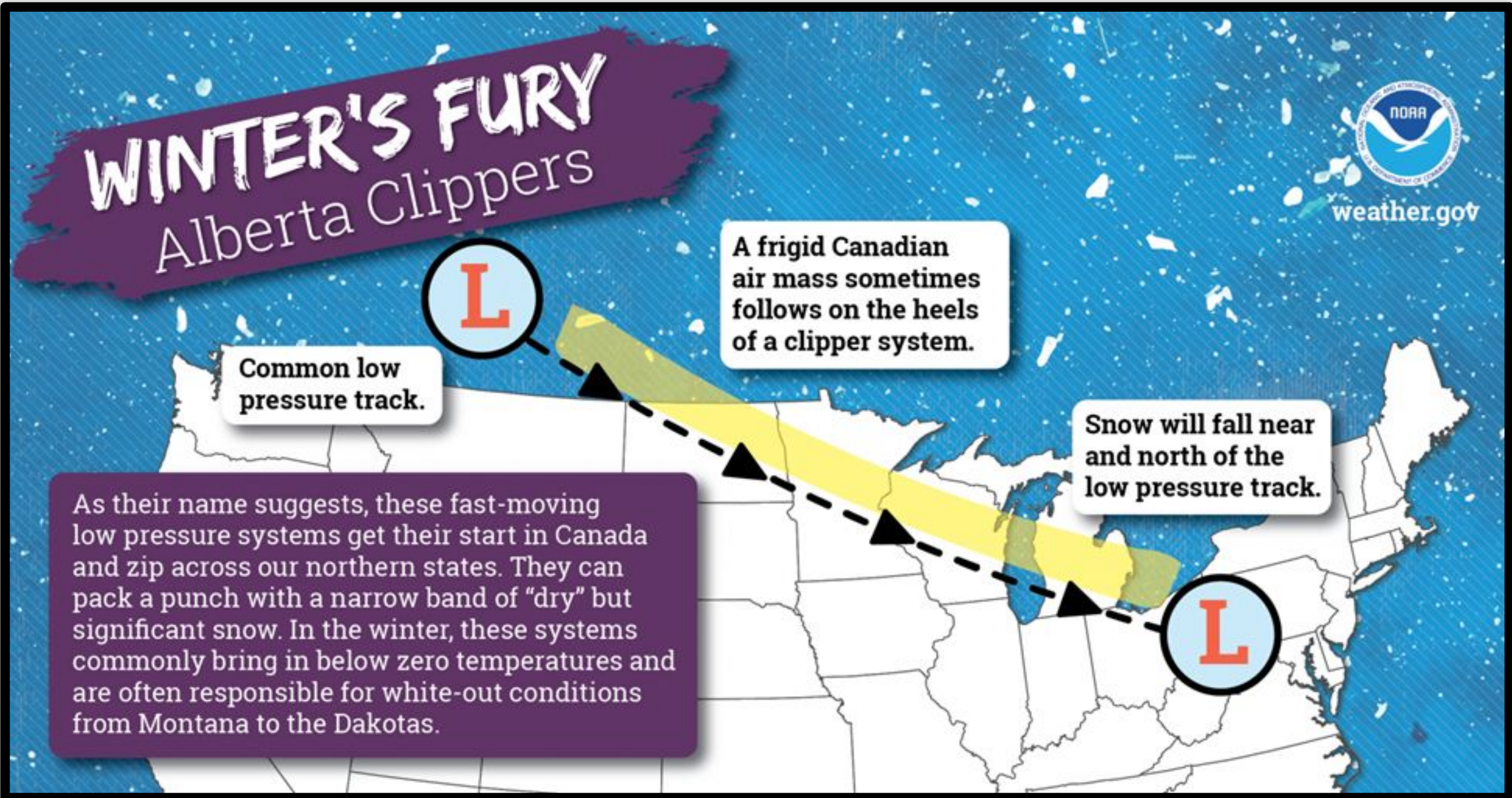
Winter Weather Products

Snowfall Measuring and Reporting





# Winter Storm Patterns - Alberta Clipper





# Winter Storm Patterns - Colorado Low

## WINTER'S FURY Colorado Low

There's nothing more wintry than a Colorado low, which spins up on the east side of the Rockies. From Denver to Chicago -- or Cleveland to Pittsburgh, if forecasters are calling for a foot of snow, there's a decent chance a Colorado low is the culprit.

Snow will fall north of the low pressure track.

These systems can drop snow from the Rockies to the Atlantic.

Common low pressure track.



weather.gov



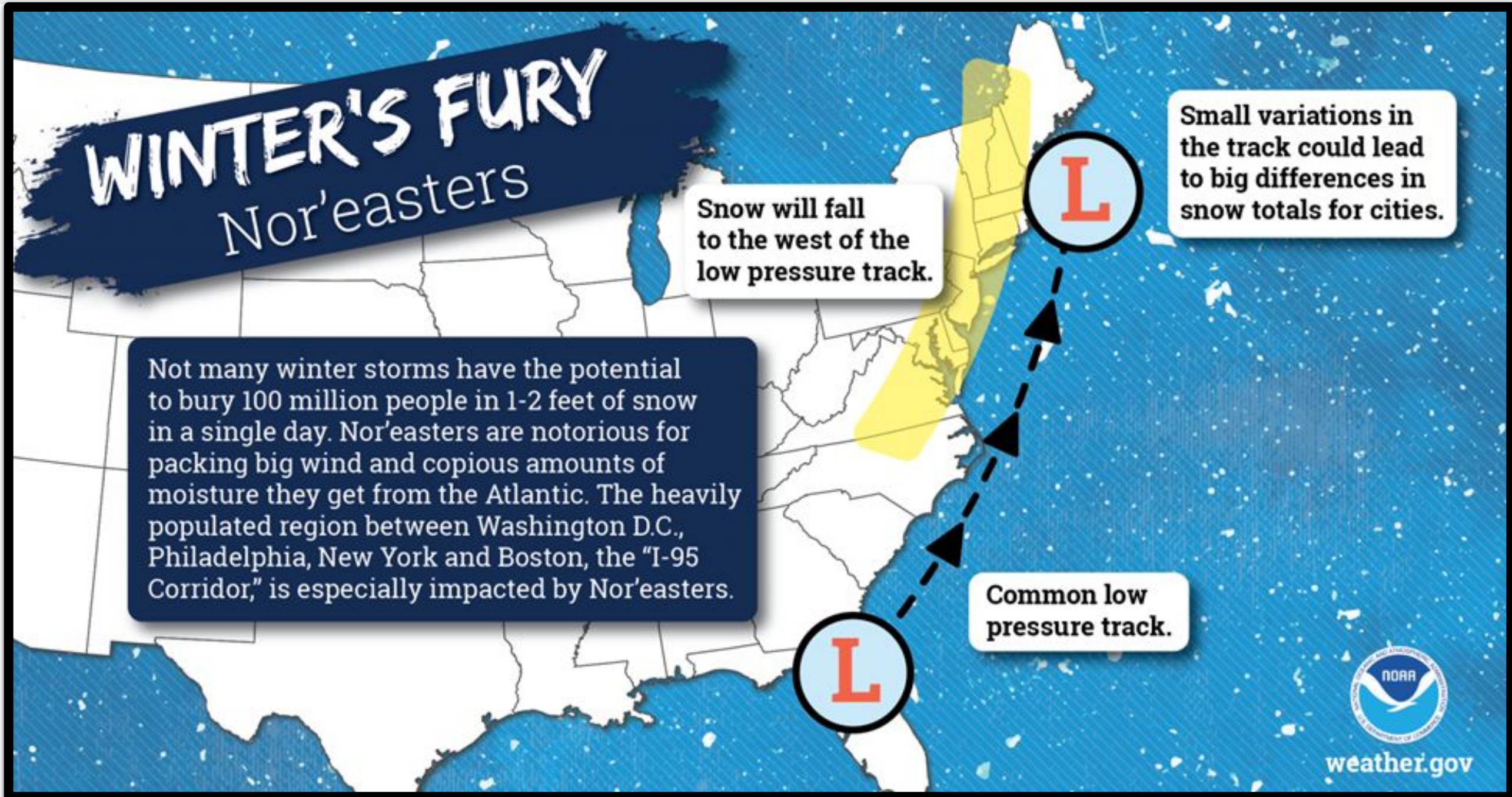
National Oceanic and Atmospheric Administration

U.S. Department of Commerce

National Weather Service  
Pittsburgh, PA

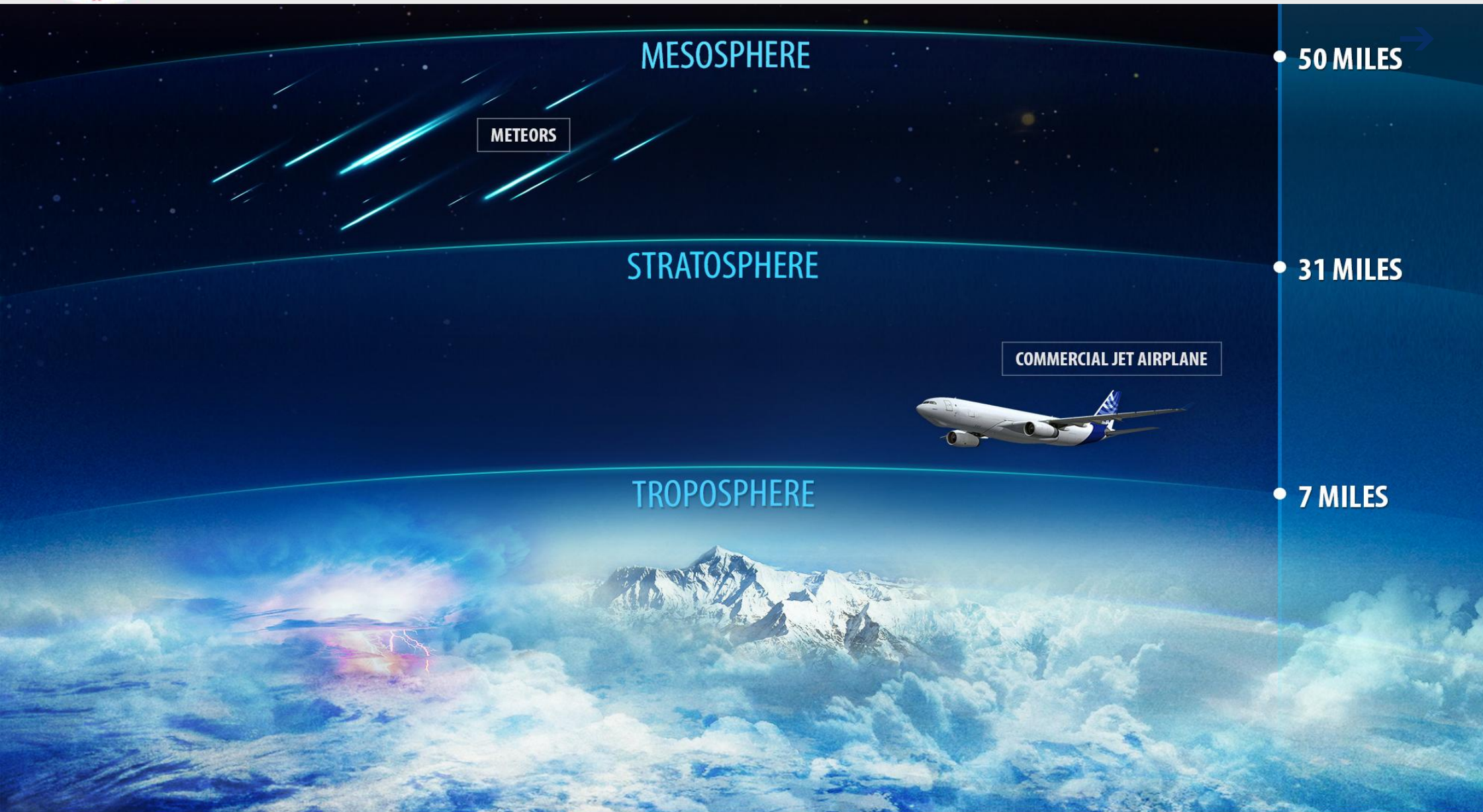


# Winter Storm Patterns - Nor'easter





# Layers of the atmosphere



- ◆ Upper layers of the atmosphere can influence weather near the surface.
- ◆ The “polar vortex” is in the stratosphere and changes to the vortex can and do impact the polar jet.

NOAA Satellite and Information Service

[www.nesdis.noaa.gov](http://www.nesdis.noaa.gov)



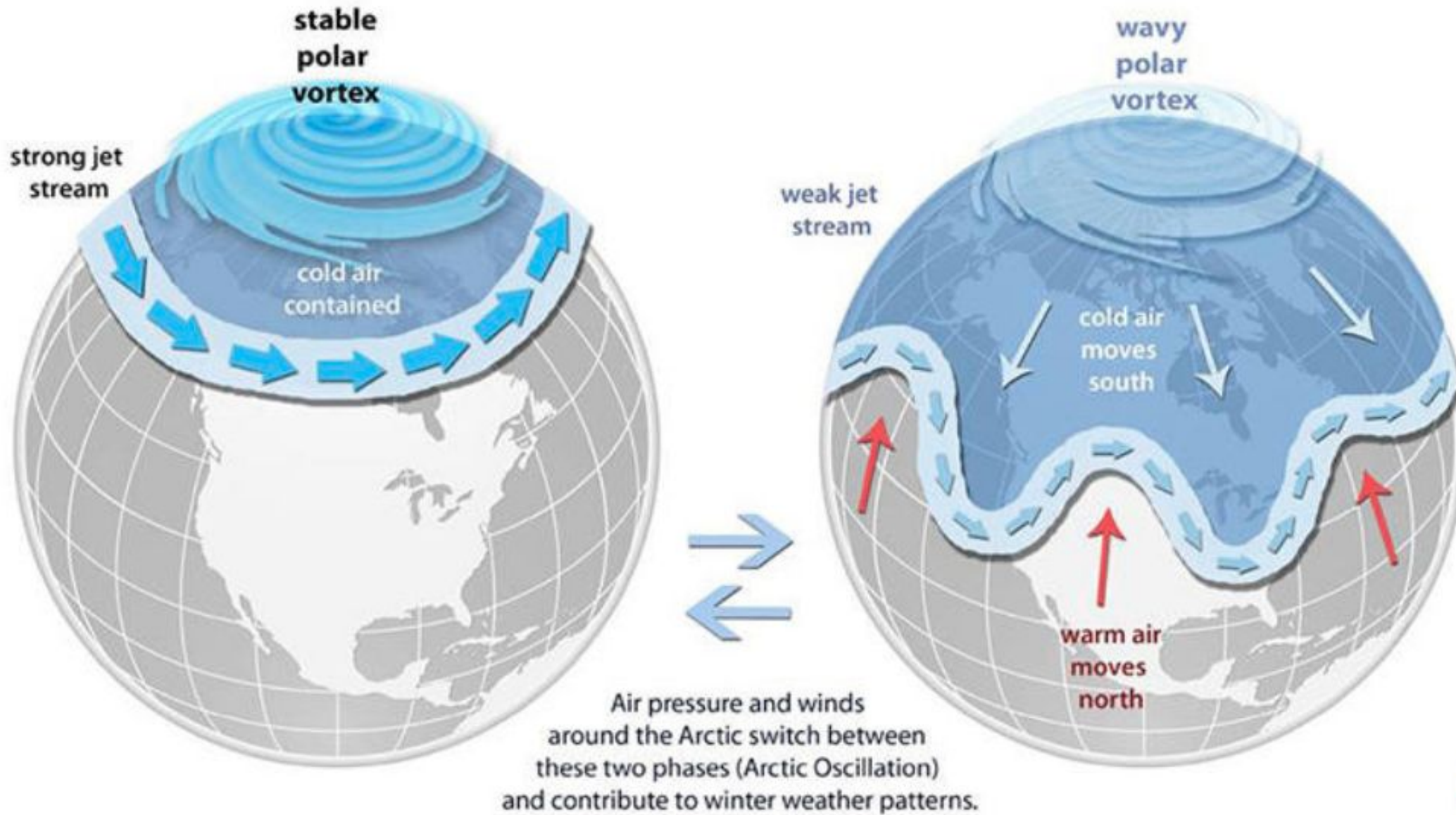
National Oceanic and Atmospheric Administration  
U.S. Department of Commerce

National Weather Service  
Pittsburgh, PA



# Winter Storm Patterns - Polar Vortex

## The Science Behind the Polar Vortex



- **NOT** a storm system!
- **NOT** new!
- Definition:
  - ◆ A large area of low pressure and cold air that surrounds both of the Earth's poles.
- So what does it do?
  - ◆ Expansion of this area of cold air can occasionally break out of the polar region and advance southward into the United States.
  - ◆ Results in significantly colder than normal temperature for a period of time.





# Winter SKYWARN Outline

Typical Winter Storm Patterns

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Snowfall Measuring and Reporting





# Forecasting/Monitoring Winter Weather

## Weather Forecast Models

### National Blend of Models

A nationally consistent and skillful suite of calibrated forecast guidance based on a blend of both National Weather Service and external numerical weather prediction model data and post-processed model guidance.

A highly accurate, skillful and consistent starting point for the gridded forecast.

Probabilistic and bias-corrected weather elements across several service areas.

Providing forecasters with a suite of information to use for their forecasts.

An important part of the efforts to evolve NWS capabilities to achieve a Weather-Ready Nation.

### NBM Inputs

- WRF MEM2
  - WRF ARW
  - RAP
  - RAPX
  - HRRR
  - HRRRX
  - GFS GMOS
  - NAM GMOS
  - EKDMOS/BMOS
  - GLMP
  - WW3D (0.5)
  - WW3E (0.5)
  - WW3D-Regional
  - GLW
  - HWRF
  - HMON
  - wTCM
- GEFS
  - GFS
  - NAM-Parent
  - SREF
  - NAM-Nest
  - NEMS NMMB
  - WRF ARW
  - CMC GDPS
  - CMC RDPS
  - CMC REPS
  - CMC GEPS
  - ECMWF D
  - ECMWF E
  - NAV GEM D
  - NAV GEM E
  - FN MOC
  - ACCESS-G

- ▶ NOAA
- ▶ Canadian Meteorological Centre
- ▶ European Centre for Medium-Range Weather Forecasts
- ▶ U.S. Navy Fleet Numerical Meteorology and Oceanography Center
- ▶ Australia Bureau of Meteorology

→ Combining numerous computer weather simulations allows for the creation of probabilistic information.

→ If vast majority of models forecast similar event outcome, this causes **High Confidence**. If these models depict a wide range of potential outcomes (think low end snow forecast of 1” and high end of 20”), this causes **Low Confidence**.

→ Meteorologists utilize this range of information to communicate range of possibilities, where uncertainty exists, and better framing of how a winter system may play out.





# Forecasting/Monitoring Winter Weather

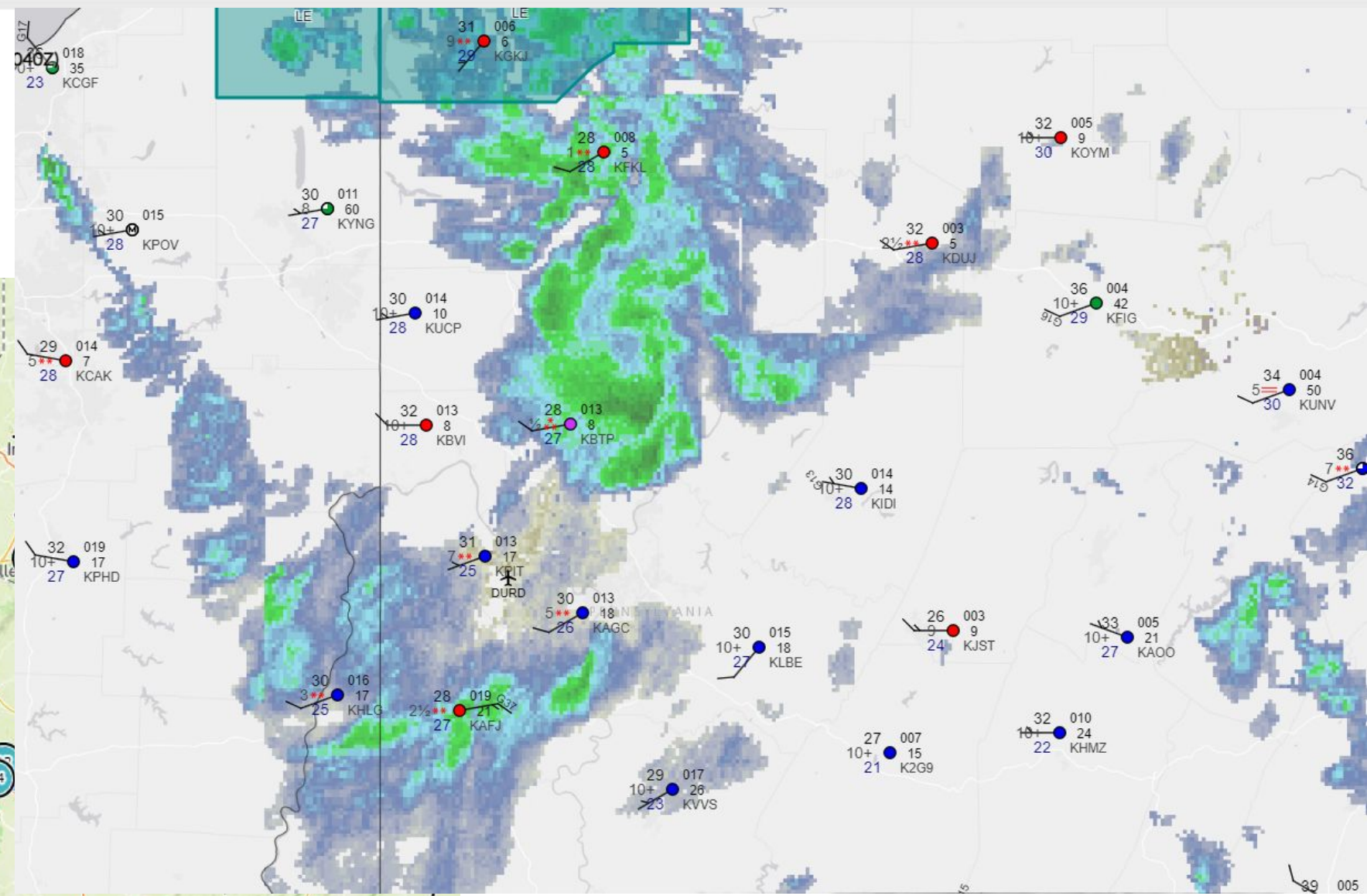
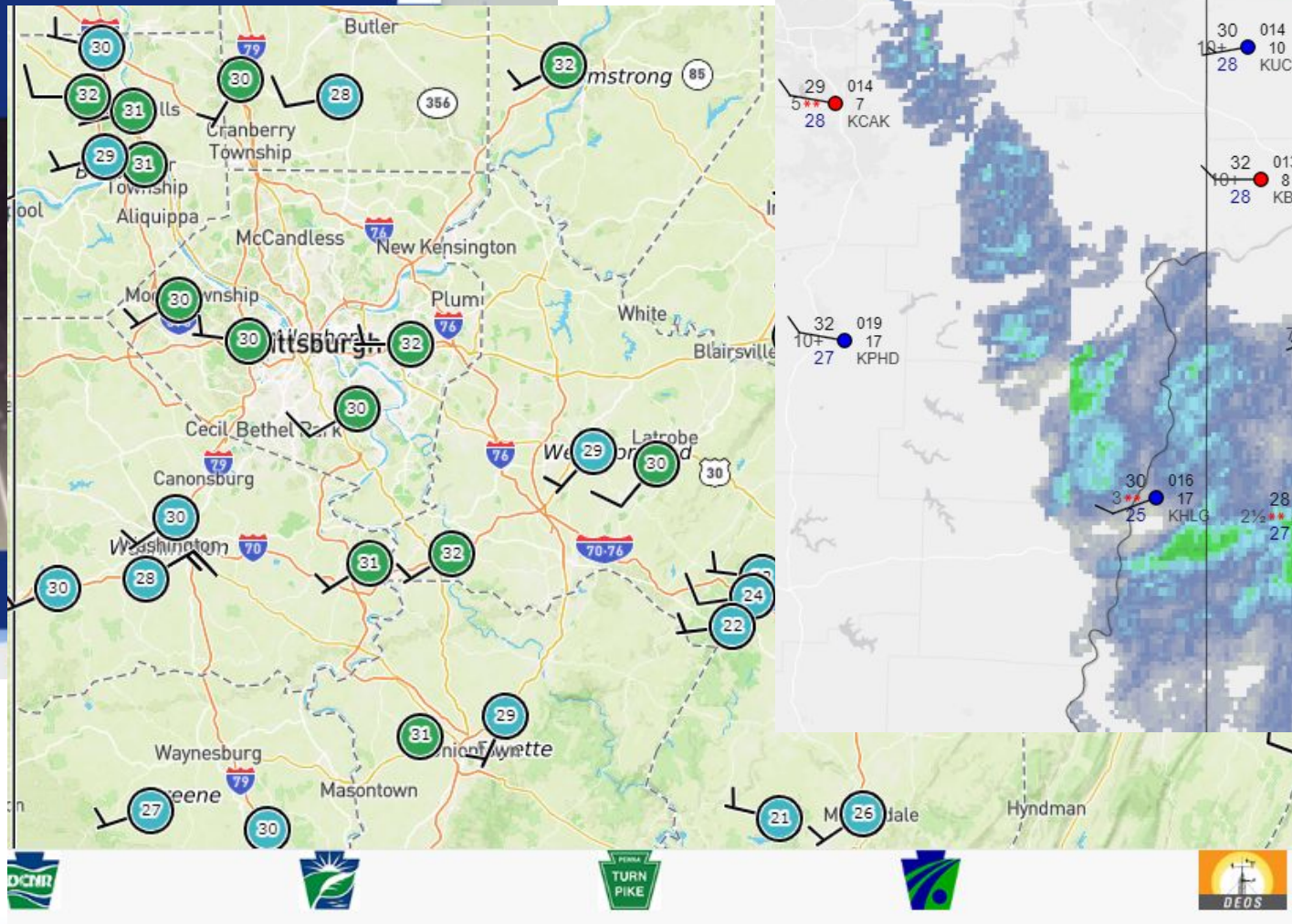
## Surface Observations

**511** Travel Info to Go

Select a Region

Need Help?

**WV-43**  
Goodwin Hill Road

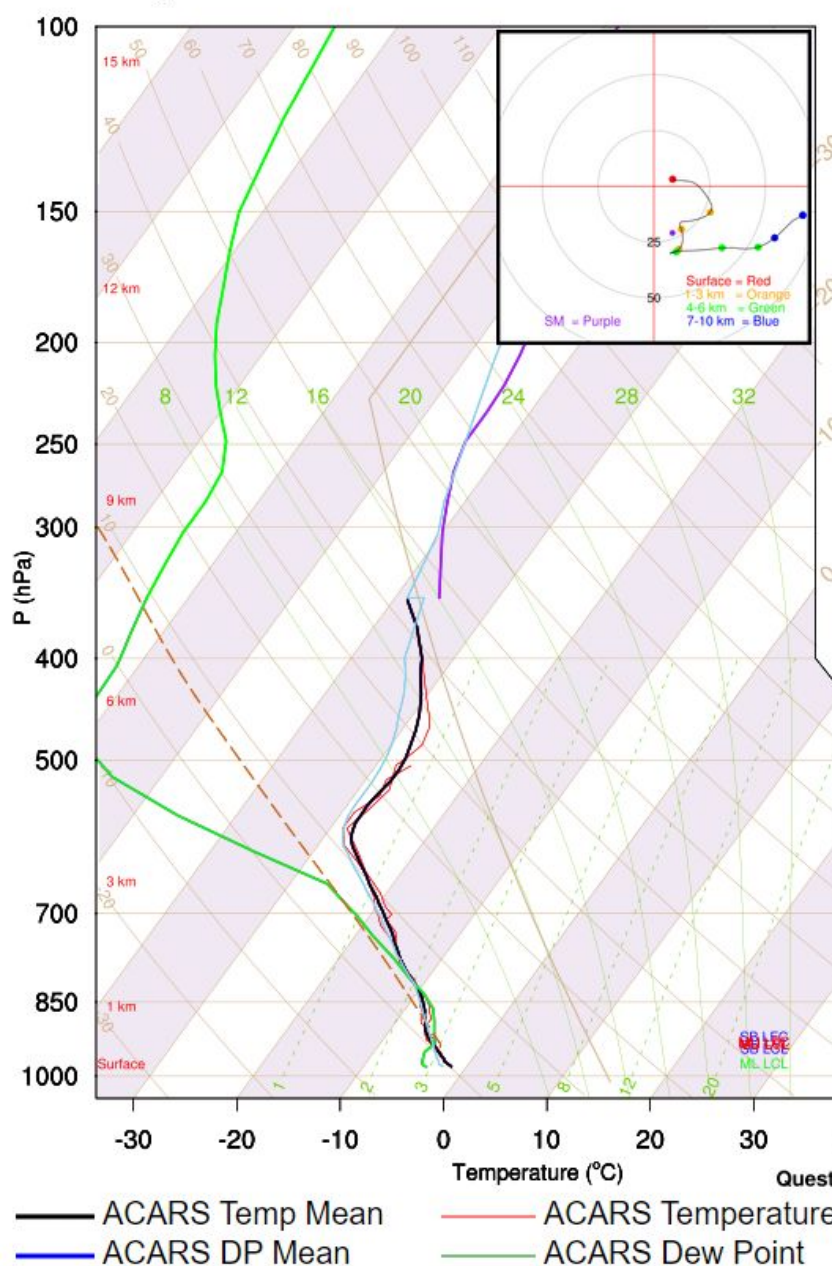




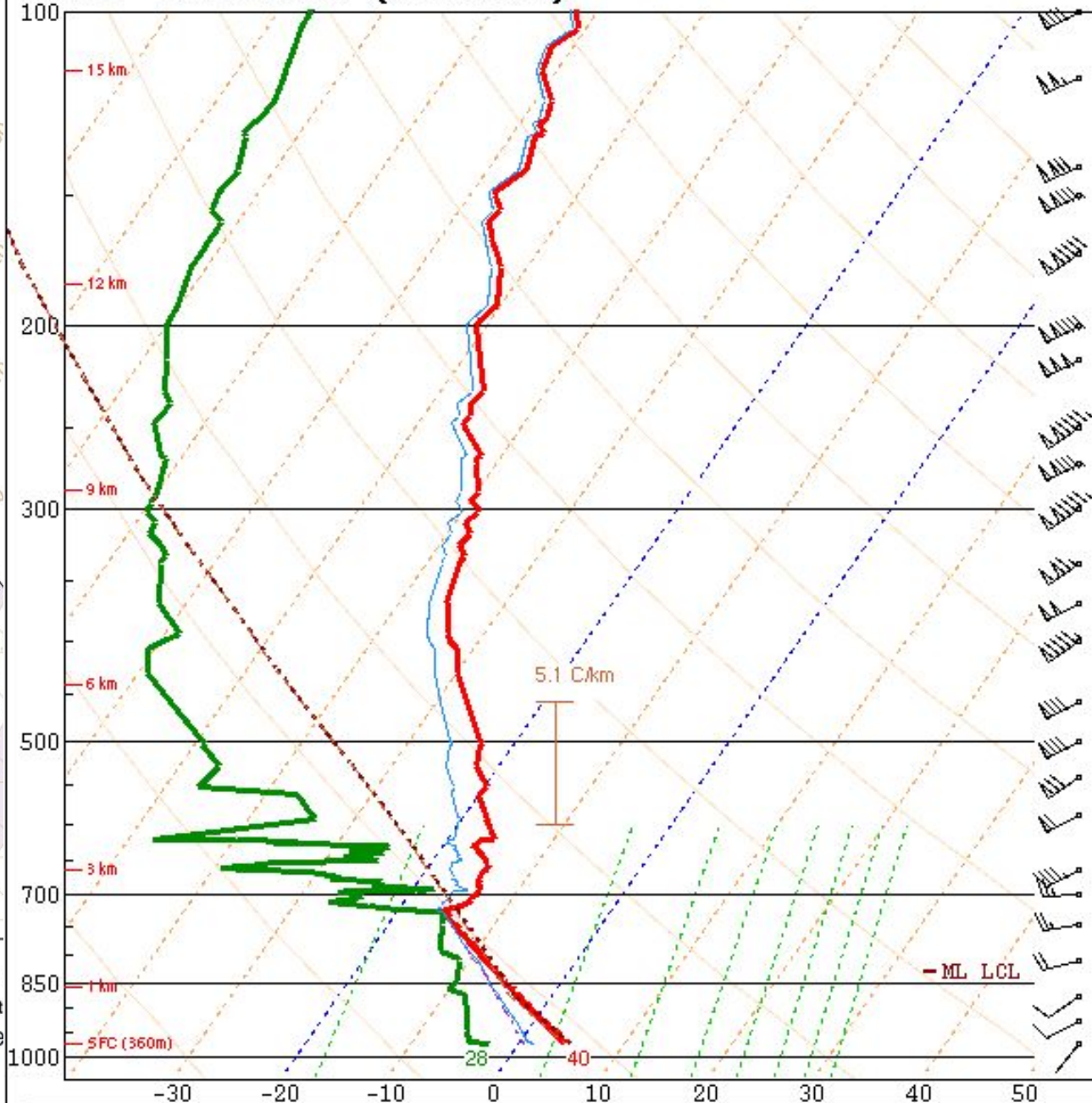
# Forecasting/Monitoring Winter Weather

## Upper Air Soundings

Pittsburgh ACARS 1 hrs ends: 10:35 UTC - 1 NOV 2023



PIT 231101/0000 (Observed)



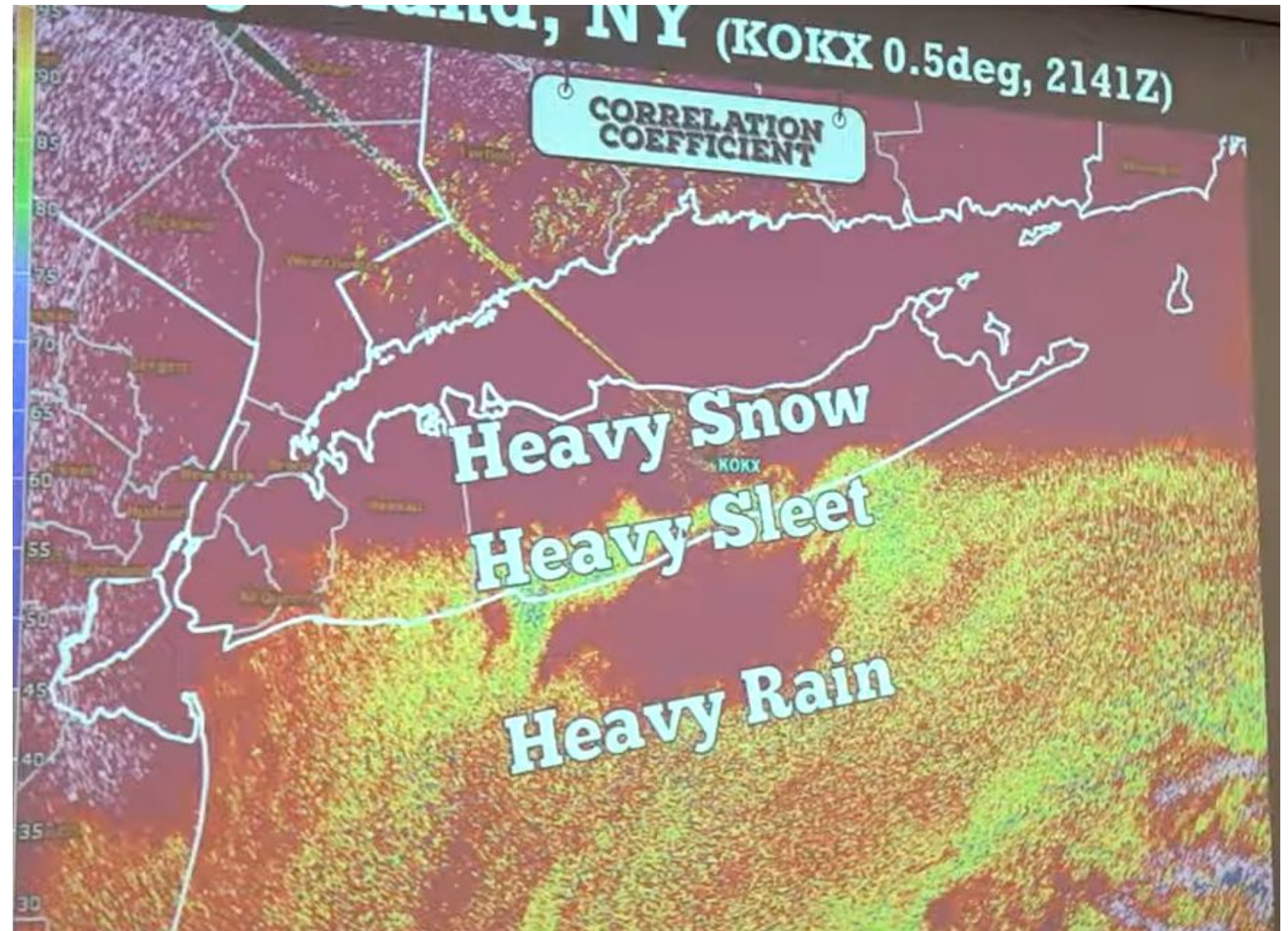
- Upper air balloon launches occur 2 times a day, every day.
- Additional vertical observations can be gathered from instruments on airplanes.
- Collects observational weather data like temperature, moisture, and wind from the surface through approximately 34,000 meters (~100,000 ft) in the air.
- Data from both types of soundings allows for diagnoses of potential precipitation type, moisture depth, and snowfall characteristics



# Forecasting/Monitoring Winter Weather

## Pittsburgh Radar

- The Pittsburgh radar has ability to distinguish size and shape of falling precipitation.
- This aids in helping to distinguish between precipitation types, especially during events where multiple precipitation types may be occurring.
- Only helpful, though, if radar does not overshoot precipitation. If precipitation clouds are too low to the ground, the radar won't pick up on it.





# Winter SKYWARN Outline

Typical Winter Storm Patterns

Forecasting and Weather Monitoring Tools

**Winter Hazards**

Winter Hazard Climatology

Winter Weather Products

Snowfall Measuring and Reporting





# Winter Hazards - Heavy Snow

**SNOW:RATIO**

The percentage of water within a sample of snow is called "snow ratio". An old rule of thumb was that for every 10 inches of snow, there would be 1 inch of water (10:1).

However, snow ratios can vary dramatically around the country and from event to event.

Variables that affect snow ratio

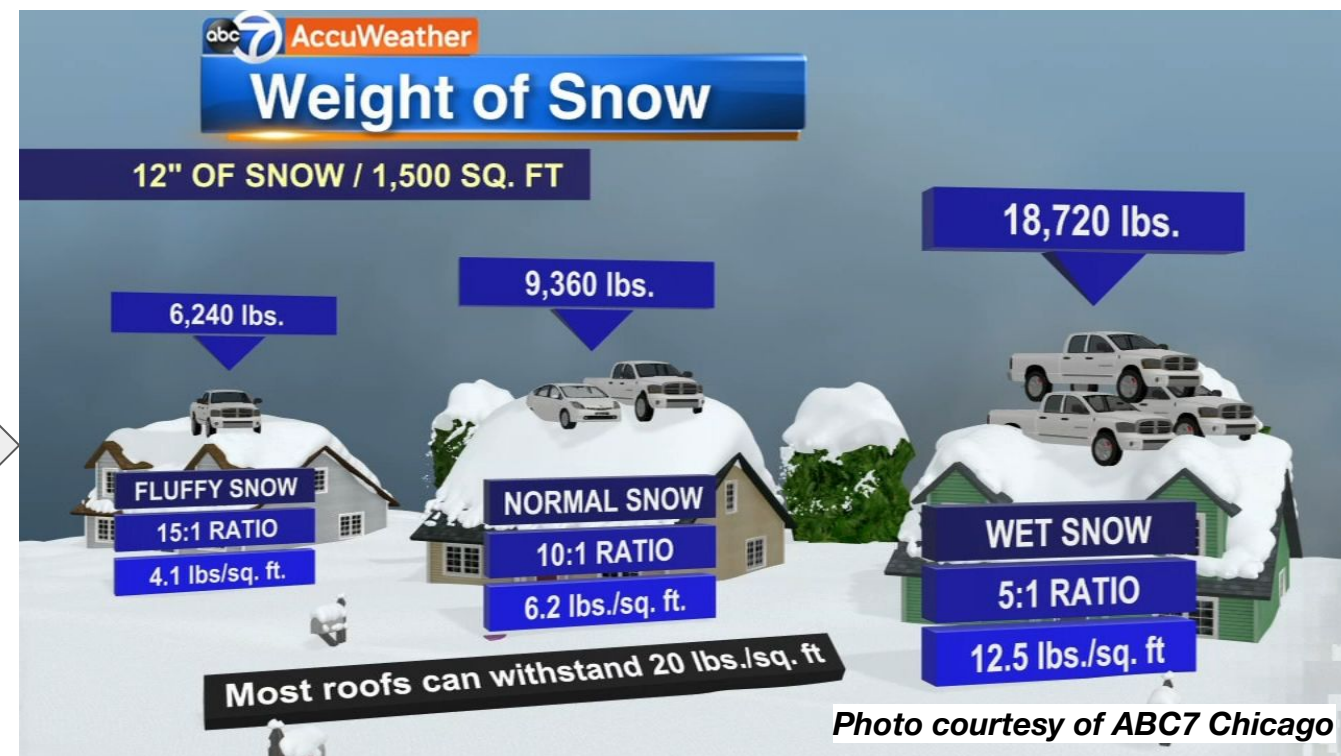
- Snow can have different amounts of liquid in it, leading to changings in potential weight
- ◆ Dry Snow: Generally when the "Snow Ratio" is higher than 10:1
  - ◆ Wet Snow: Generally when the "Snow Ratio" is lower than 10:1

**Heavy Snow** can be a **Health Risk**

- ❄️ Heavy wet snow can put a big strain on the heart
- ❄️ Stay hydrated and take frequent breaks
- ❄️ Only move small amounts with each shovel pass

Take it slow when shoveling snow

weather.gov/winter





# Winter Hazards - Heavy Snow

## How to monitor for heavy, wet snow potential

### Snow and Ice Potential Forecasts

Weather.gov > Pittsburgh, PA > Snow and Ice Potential Forecasts

Pittsburgh, PA  
Weather Forecast Office



Visit

[weather.gov/pittsburgh/winter/](https://weather.gov/pittsburgh/winter/)



Click the **highlighted tab** seen here



Click the **Winter Storm Severity Index (WSSI)**



Click on the **“Snow Load”** tab



The **Snow Load Index** shown indicates potential infrastructure impacts (like downed trees/power lines) due to the weight of snow.

Current Hazards    Current Conditions    Radar    **Forecasts**    Rivers and Lakes    Climate and Past Weather    Local Programs

[Probabilistic Snowfall Forecasts](#)   
 [Ice Accumulation Forecasts](#)   
 [Onset/End-Timing Graphics](#)   
 **[Winter Storm Outlook and Winter Storm Severity Index](#)**   
[Snow Load](#)   
[Snow Accumulation](#)   
[Flash Freeze](#)   
[Blowing Snow](#)   
[Nearby Long Range Forecast](#)

### Winter Storm Severity Index (WSSI)



#### Winter Storm Severity Index (WSSI)

The WSSI does not depict official warnings and should always be used in context with official NWS forecasts and warnings. For a users guide and more information about the WSSI, please select from the dropdown menu below. [Click Me for Additional Information](#)

[\\*NEW\\* Rolling 24 HR WSSI Display located here](#)  
[Probabilistic WSSI \(ProbWSSI\) Display Located here](#)

[Overall Impact](#)   
[Snow Amount](#)   
**[Snow Load](#)**   
[Snow Accumulation](#)   
[Flash Freeze](#)   
[Blowing Snow](#)

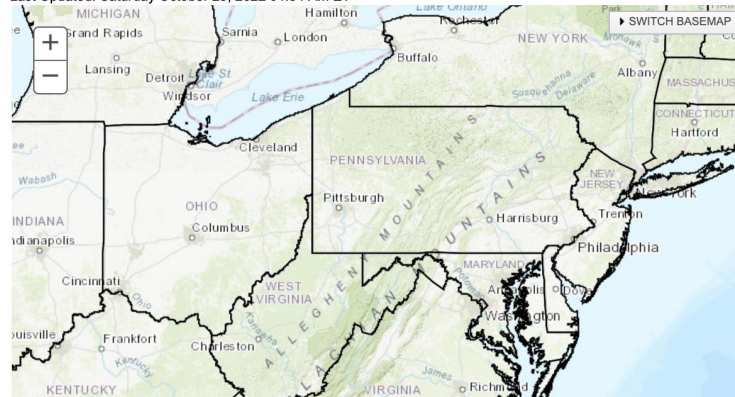
Ground Blizzard

Overall Impact: Maximum impact from any of the components.

Days 1-3    Day 1    Day 2    Day 3

Select Zoom Area:

Winter Storm Severity Index - Effective From Sat, Oct 29, 2022 01 AM ET Through Mon, Oct 31, 2022 08 PM ET  
Last Updated: Saturday October 29, 2022 01:34 AM ET

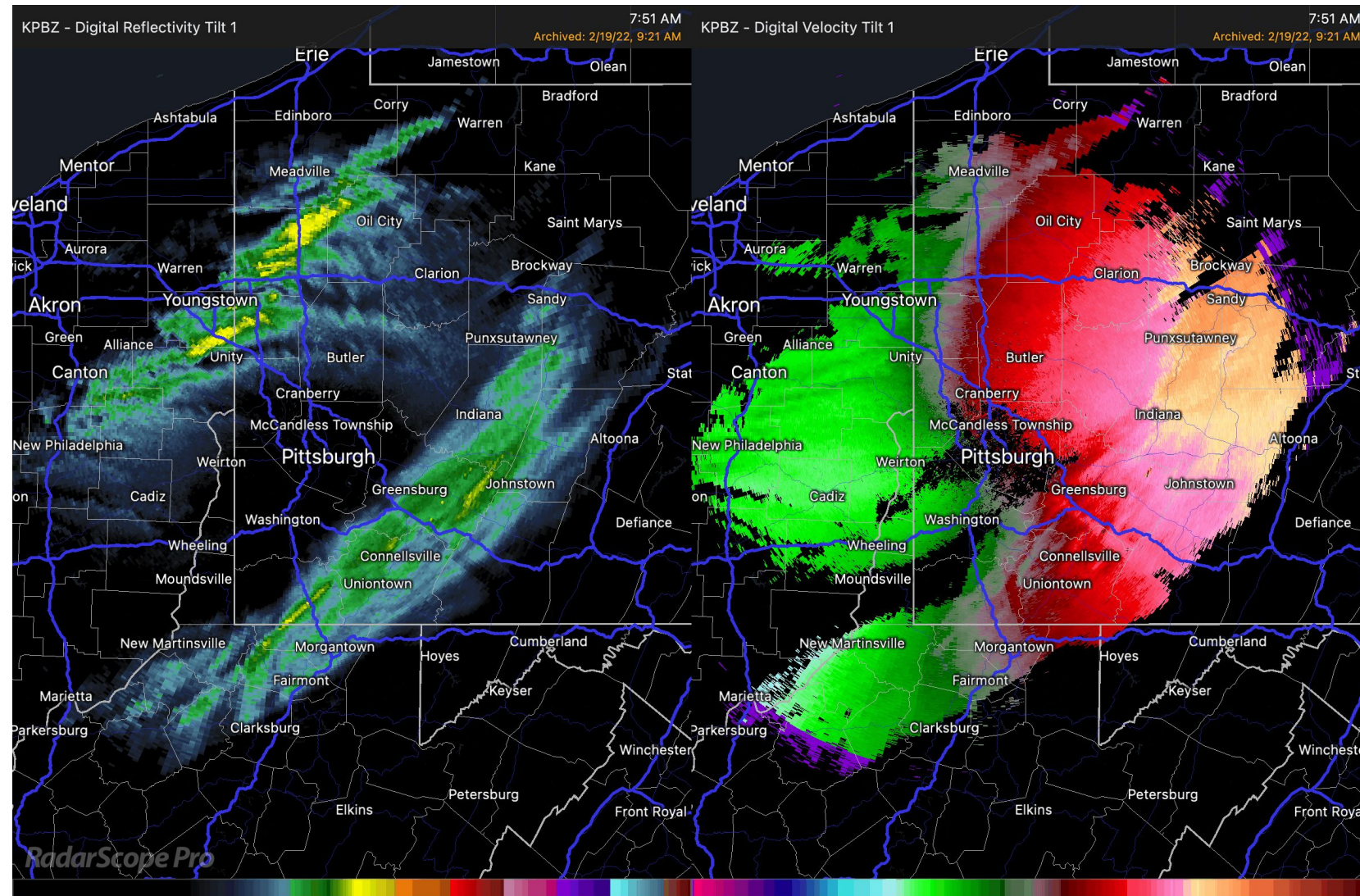


Potential Winter Storm Impacts	
<b>Winter Weather Area</b>	Expect Winter Weather. • Winter driving conditions. Drive carefully.
<b>Minor Impacts</b>	Expect a few inconveniences to daily life. • Winter driving conditions. Use caution while driving.
<b>Moderate Impacts</b>	Expect disruptions to daily life. • Hazardous driving conditions. Use extra caution while driving. • Closures and disruptions to infrastructure may occur.
<b>Major Impacts</b>	Expect considerable disruptions to daily life. • Dangerous or impossible driving conditions. • Avoid travel if possible. • Widespread closures and disruptions to infrastructure may occur.
<b>Extreme Impacts</b>	Expect substantial disruptions to daily life. • Extremely dangerous or impossible driving conditions. Travel is not advised. • Extensive and widespread closures and disruptions to infrastructure may occur. • Life-saving actions may be needed.





# Winter Hazards - Convective Snow Bands



- Convective snow bands develop when the environment mirrors that of thunderstorm environments with stronger vertical motion (thus, the name “convective”).
- One example of a convective snow band is a Snow Squall, defined as:

What is a

## SNOW SQUALL?

- Intense burst of snow and winds
- Short duration (1-3 hours)
- Whiteout visibility
- Rapidly deteriorating road conditions

*Radar image from the February 2022 Snow Squall*



# Winter Hazards - Convective Snow Bands

## Previous Snow Squall Events

FEBRUARY 14, 2016 LOCAL THE SUNBURY TIMES 10

### 3 killed, scores injured in I-78 pileup

**Investigators believe 'passing snow squalls' contributed to deadly crash.**

Associated Press  
**FREDERICKSBURG** — A pileup involving dozens of vehicles on a Pennsylvania interstate that killed three people and sent scores to hospitals appears to have been related to a passing snow squall, authorities said Saturday.

Trooper Justin Summa said three fatalities had been confirmed following the Saturday crash, which involved at least 50 commercial and private vehicles. Police said more than 40 people were transported to several hospitals following the crash on Interstate 78 in Bethel Park.

The pileup left tractor-trailers, box trucks and cars tangled together across three traffic lanes and into the snow-covered median about 7.5 miles northwest of Philadelphia.

Megan Manlove of Penn State Hershey Medical Center said 50 patients had been brought in from the crash, three in critical condition, three with moderate to severe injuries and four with minor injuries.

Trooper Adam Root said investigators believe that "passing snow squalls played a role in causing the crash."

PennLive.com reported that some witnesses reported sudden without conditions to anyone and the accident were "on a warm, dry bus" but were being taken to a hospital as a precaution.

"It just turned real white," Raul Jardine of Allentown said, adding that all he could see were the brake lights of the car in front of him, so he slowed down and was hit from behind.

Police said more than 70 people were taken to a warming shelter operated by the American Red Cross at a firehouse in the area.

"We're keeping them warm, keeping them fed and hopefully going to provide them with some rental cars," Trooper Summa said.

The Penn State-Lehigh Valley men's basketball team was heading to a game in New Kensington when the team's chartered bus was hit by a tractor-trailer, the university said. Officials said there were no serious injuries to anyone and the accident were "on a warm, dry bus" but were being taken to a hospital as a precaution.



Vehicles pile up at the site of a fatal crash near Fredericksburg on Saturday. The pileup left tractor-trailers, box trucks and cars tangled together across several lanes of traffic and into the snow-covered median.

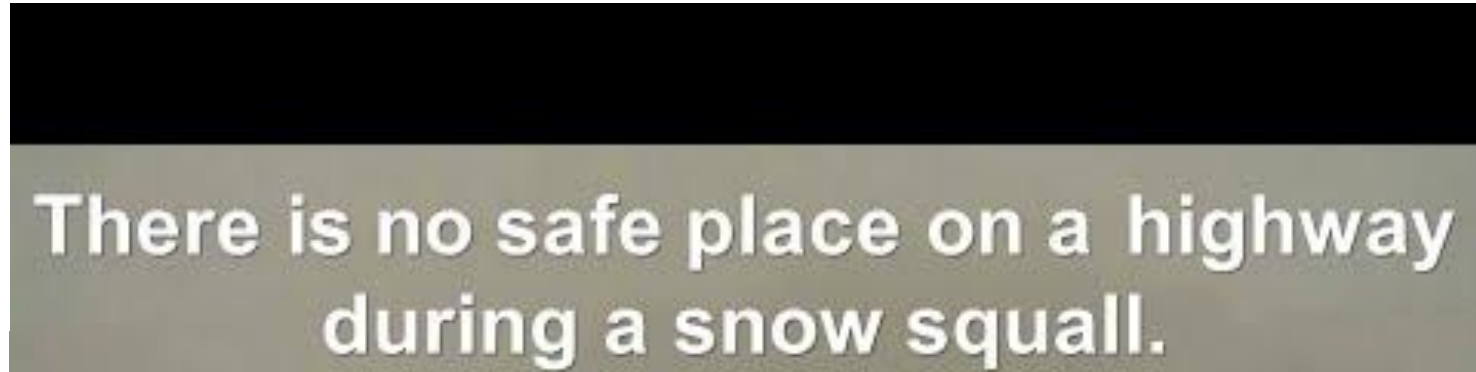


Photo courtesy of Mike Moyer from a March 28, 2022 squall event along I-81 in Schuylkill County. 80 cars were involved and 6 people died.

February 14th, 2016 snow squall event - Fredericksburg, PA

**Standard-Speaker**  
 Serving Luzerne, Carbon, Schuylkill, Columbia and Monroe counties since 1868  
 www.standard-speaker.com

MONDAY, DECEMBER 2, 2002 HAZLETON, PENNSYLVANIA 50 CENTS

**Forecast**  
 Light Snow  
 High in Lower 30s  
 Details, page 4

**50-vehicle pileup closes I-80**

**Drivers hit snow squall, black ice; several injured**

**Motorists crawl along Interstate 80 in Sugarloaf following a multi-vehicle accident farther down the road.**

**Drivers involved in Sunday's traffic jam along Interstate 80 westbound were a result of a snow squall.**

**Police say the snow squall was a result of a weather-related, multi-vehicle crash Sunday east of Bloomsburg.**



**PRESS-ENTERPRISE**  
 SCHUYLKILL COUNTY, PENNSYLVANIA  
 SUNDAY, MARCH 28, 2022

**Ice bites I-81 drivers**

**Whiteout led to accidents**

**Snow squalls light locally**

**More than 80 cars were involved in a multi-vehicle pileup on Interstate 81 Sunday morning, leaving several people injured and one person dead.**

**Police say the snow squall was a result of a weather-related, multi-vehicle crash Sunday east of Bloomsburg.**

December 1, 2002 snow squall event - Fredericksburg, PA

December 27, 2001 snow squall event - Hazleton, PA



# Winter Hazards - Ice



■ At or Below 32°F

■ Above 32°F

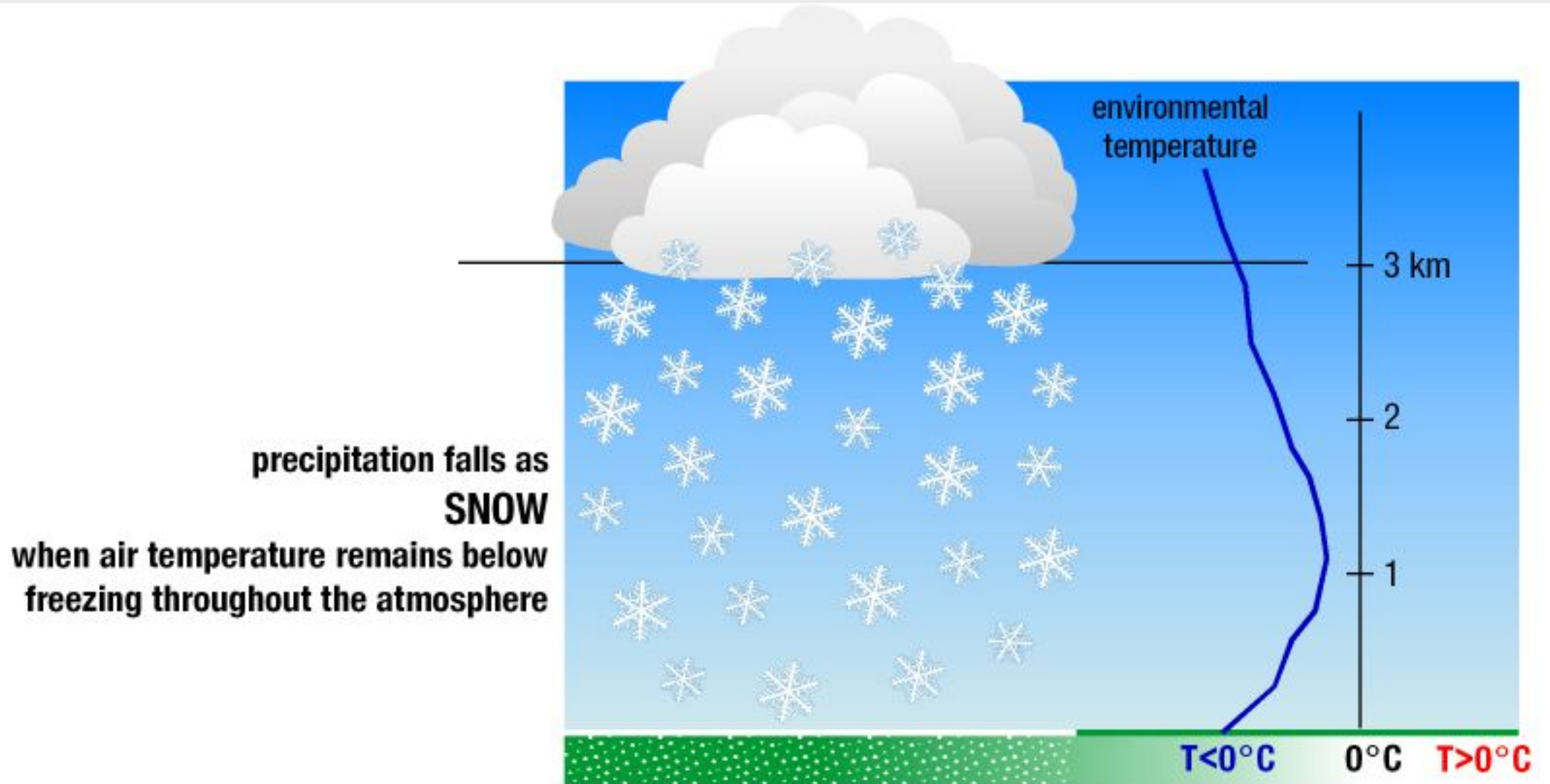
[weather.gov](http://weather.gov)





# Winter Hazards - Snow

## Example Vertical Temperature Profile

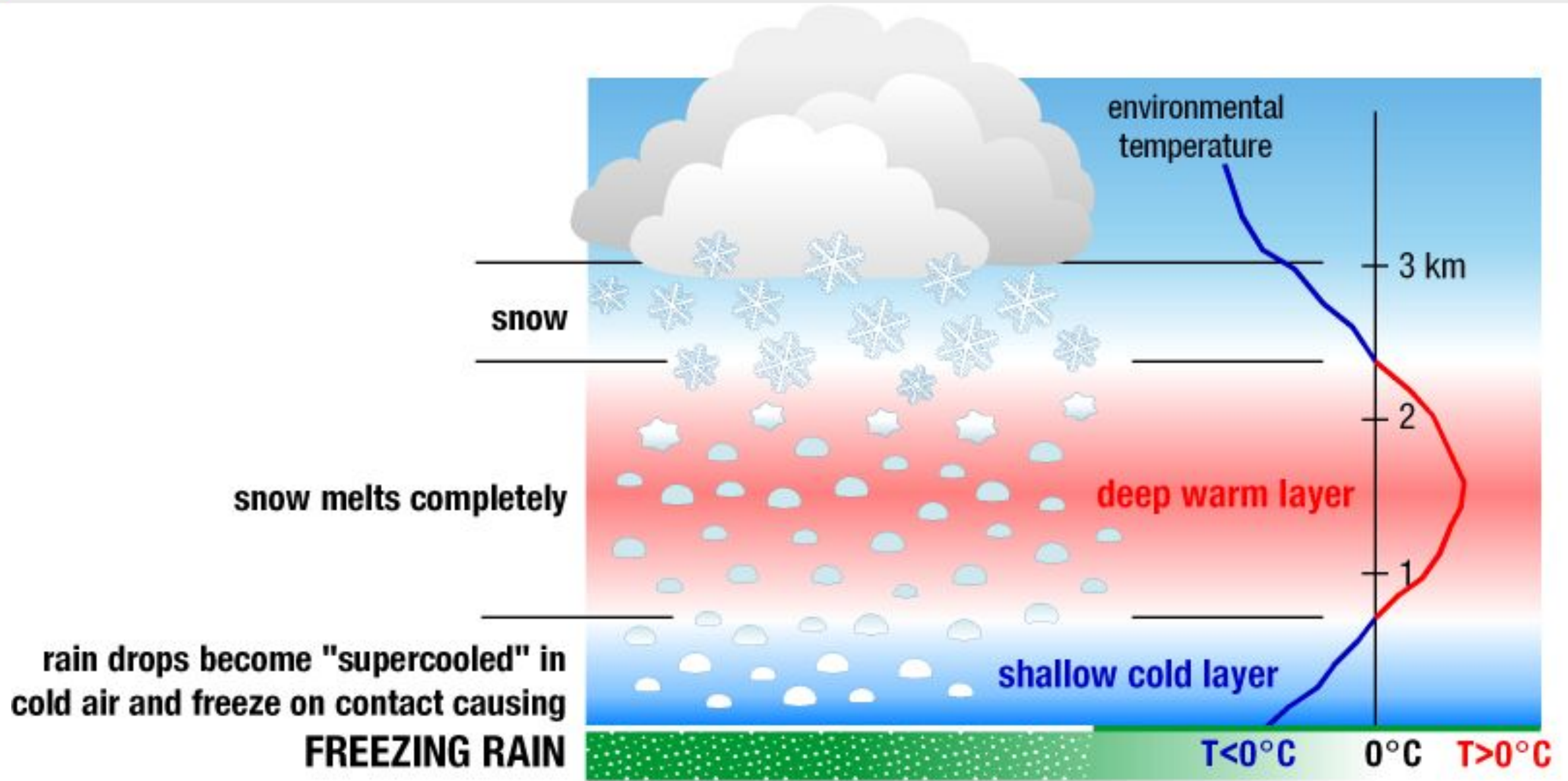






# Winter Hazards - Freezing Rain

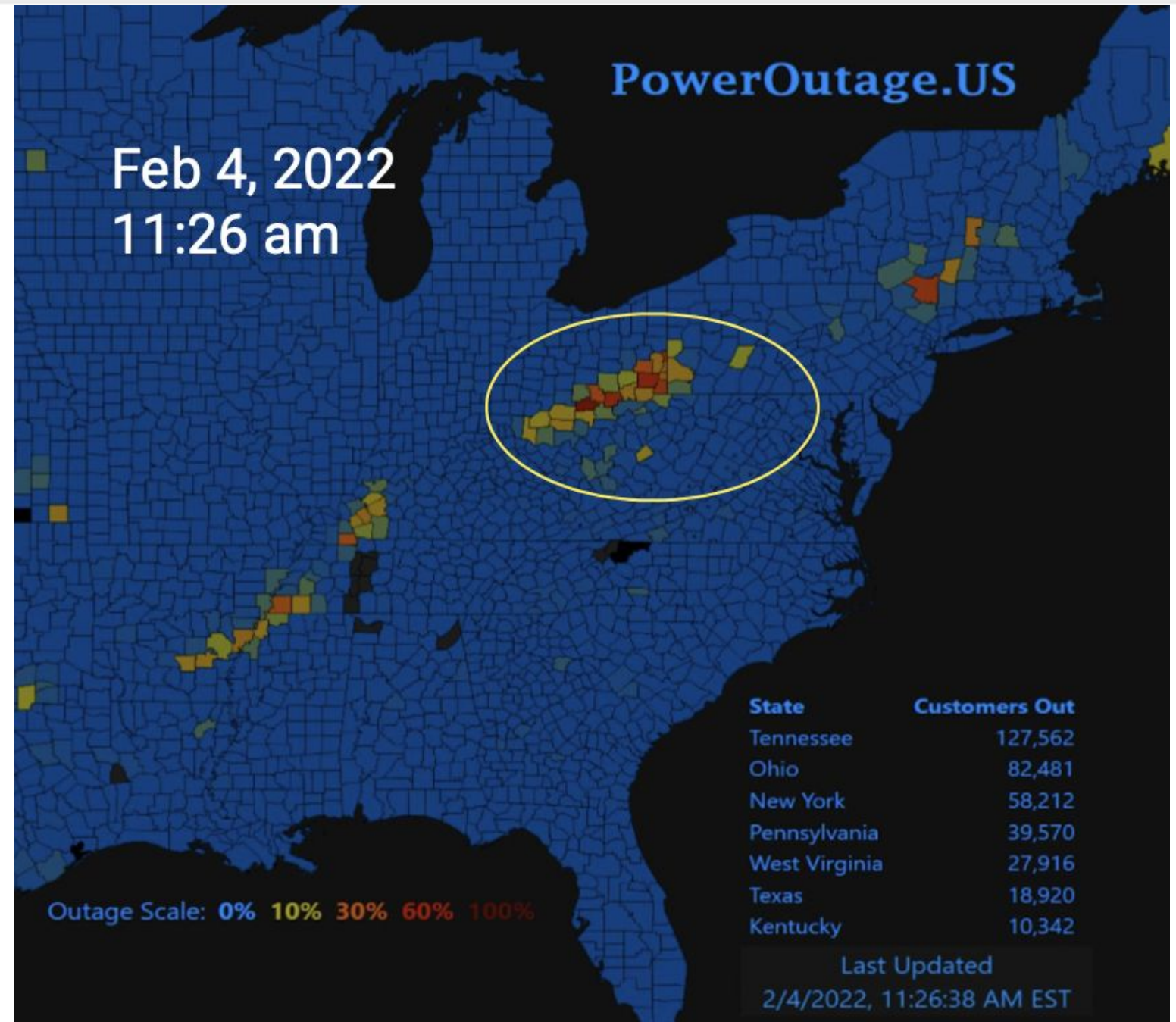
## Example Vertical Temperature Profile





# Winter Hazards - Freezing Rain

## Examples of Freezing Rain Impact - February 4, 2022 Ice Storm





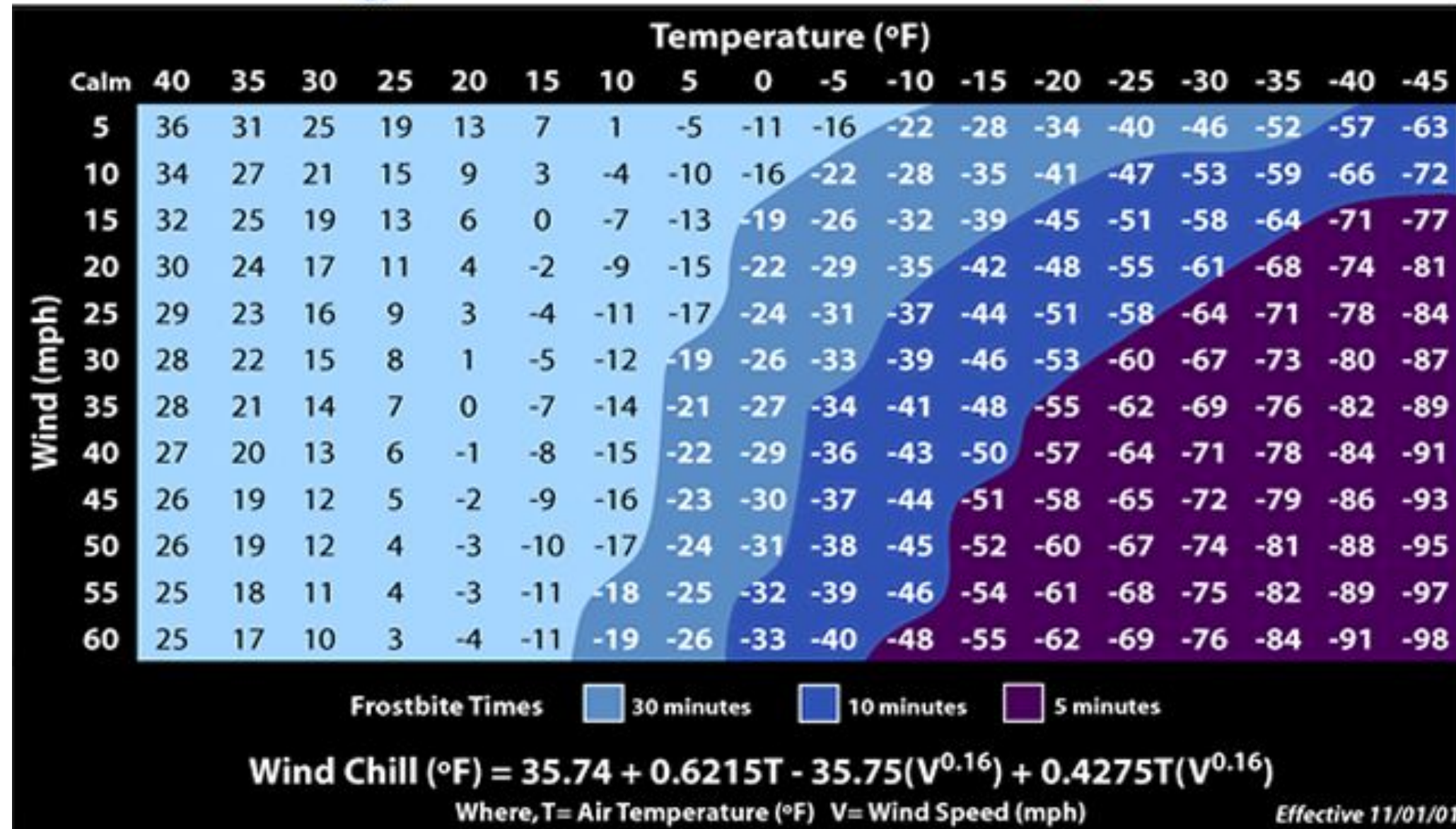
# Winter Hazards - Cold



## Wind Chill Chart



- Wind chill is the “feels like” temperature on the body based on the combination of the air temperature and wind speed.
- Impacts from cold events can occur either due to the extreme degree temperature falls, the extreme wind chill temperature seen, or even the duration in which temperature remains significantly below freezing.





# Winter Hazards - Flooding

Flooding?! YES, FLOODING!

- Factors that contribute to increased flooding potential in the winter:
  - ◆ **Frozen Ground and/or Saturated Grounds** - Rainfall more quickly turns into run off
  - ◆ **Ice Jams**- ice builds up in river bends or near bridges to block water flow

## Watch out for *Ice Jams*

- Ice jams are accumulations of ice in a stream that obstruct flow
- Once formed, water can rise several feet in a matter of minutes
- NEVER attempt to cross flooded roads or drive around barricades



Point at Pittsburgh Flood of 1996

- ◆ **Rainfall** - Similar to summer time events, too much rain can lead to flooding
- ◆ **Snowmelt**- Presence of a snowpack can quickly melt with heavy rain/rapid warm up that adds potentially multiple inches of water in conjunction with rain.



weather.gov



National Oceanic and Atmospheric Administration

U.S. Department of Commerce

National Weather Service  
Pittsburgh, PA



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**Winter Hazard Climatology**

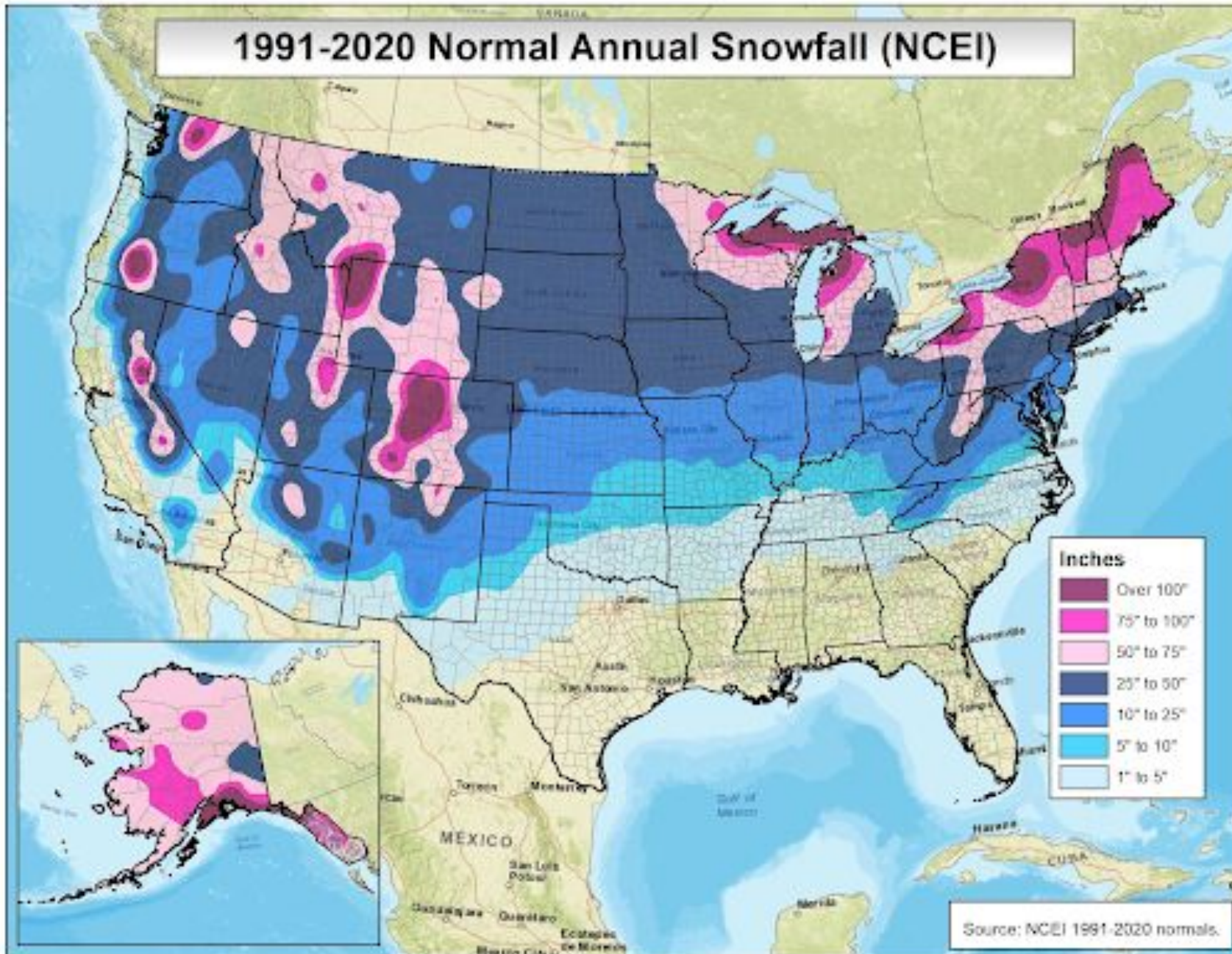
Winter Weather Products

Snowfall Measuring and Reporting





# Winter Climatology - Snow



→ “Normal” is based on a 30-year sample data set that is updated every 10 years.

→ Average Annual Snowfall for Pittsburgh: **44.1"**

- ◆ October - 0.4"
- ◆ November - 2.4"
- ◆ December - 7.7"
- ◆ January - 13.3"
- ◆ February - 11.7"
- ◆ March - 7.6"
- ◆ April - 1.0"

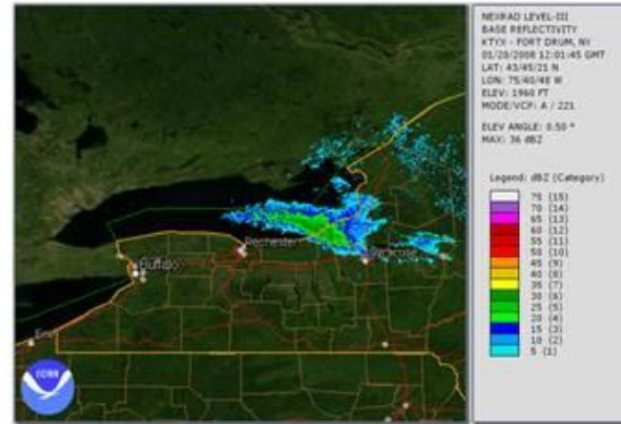


# Winter Climatology - Snow

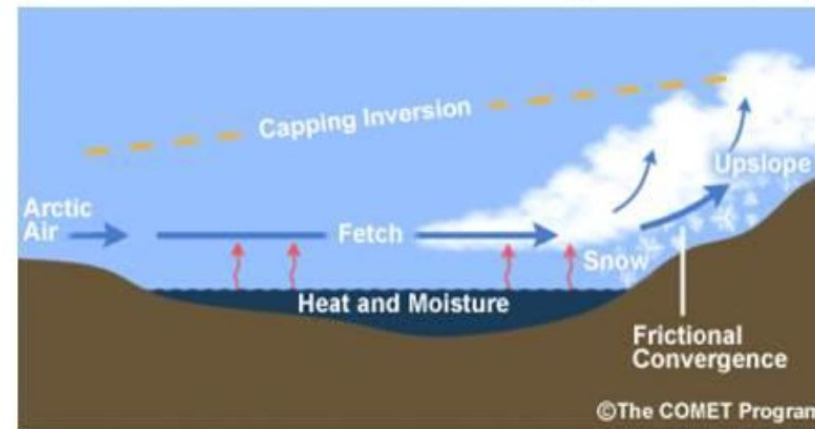
Why does northwest PA and the higher terrain east/southeast of PA get more snow?

## Lake-Effect Snow

- Cold air above warm, moist air above lake (convection)
- Longer fetch means heavier snow
- Can form multiple bands or a single band
- Most intense single bands can drop 6 inches per hour

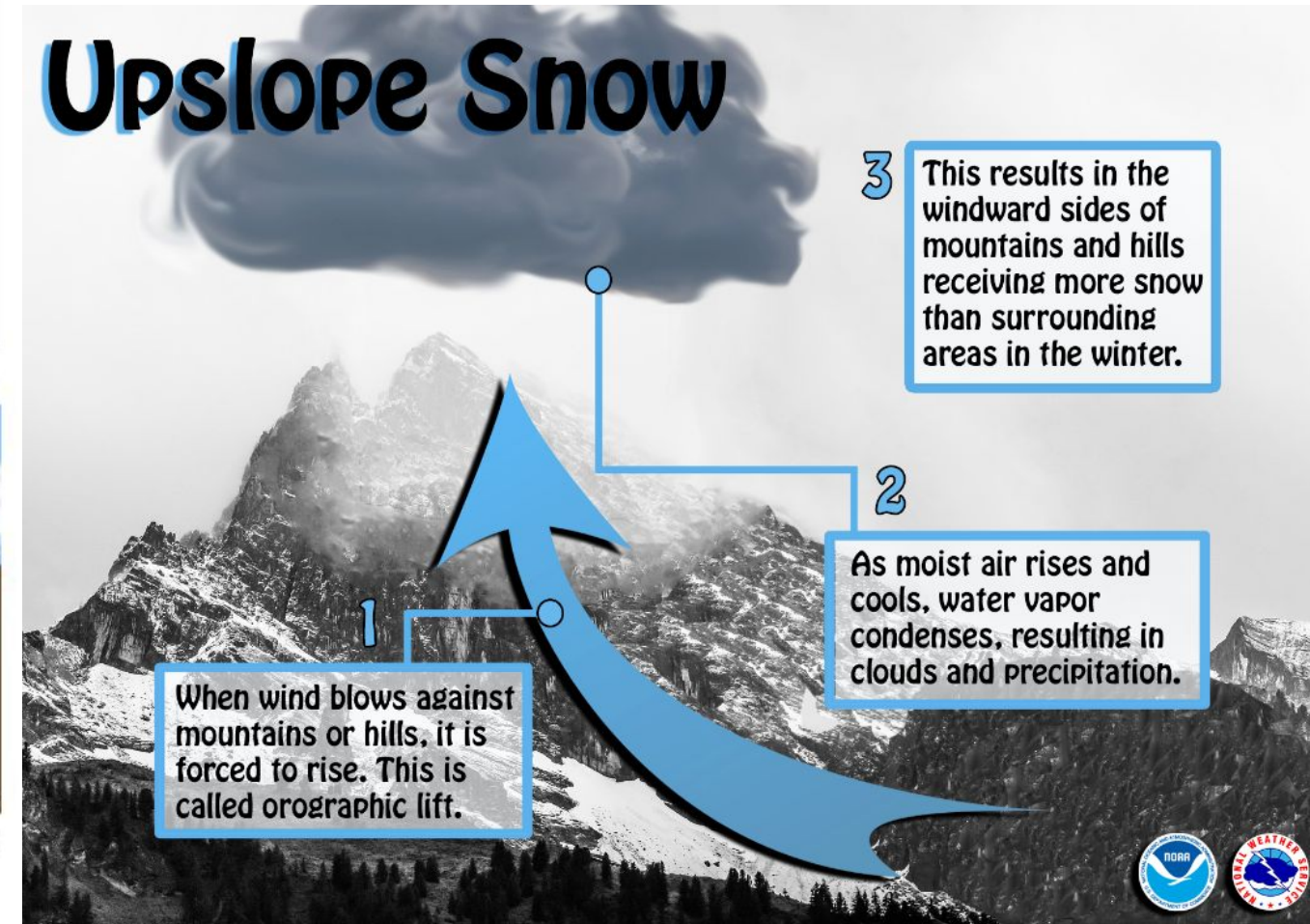


(Source: NOAA, 2008)



(Source: COMET, 2005)

## Upslope Snow





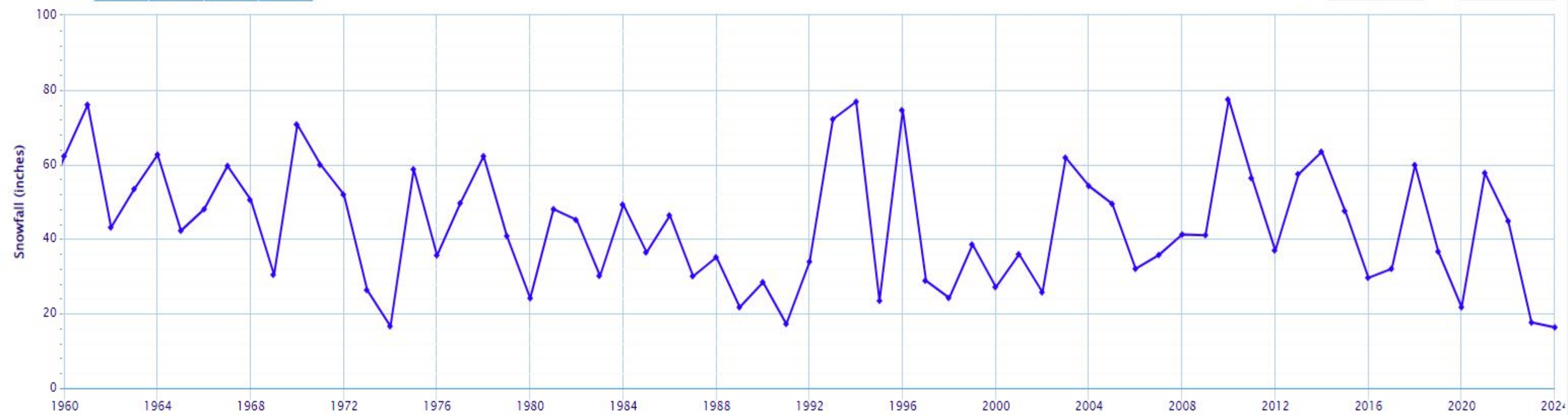
# Winter Climatology - Snow

Total Snowfall - Oct through Sep - Pittsburgh Area, PA (ThreadEx)

Use navigation tools above and below chart to change displayed range

Zoom 1 yr 10 yrs 30 yrs All

From 1959 To 2024



➔ Above is a chart plotting seasonal total snowfall at Pittsburgh since 1960 (arbitrary cut off).



# Winter Climatology - Snow

How frequent to various 24 hour snowfall accumulations occur?

Snowfall	Number of Days
Greater than or = 1"	15 times a year
Greater than or = 6"	Once every 2.5 years
Greater than or = 8"	Once every 4 years
Greater than or = 12"	Once every 15 years
Greater than or = 18"	Once in March 1993





# Winter Climatology - Snow

## Other Pittsburgh Snowfall Statistics

- Largest Seasonal Snowfall: **82"** (1950-1951)
  - ◆ 77.4" fell during the 2009-2010 season, the 3rd most on record
- Largest Monthly Snowfall: **48.7"** (February 2010)
  - ◆ Previous record was 40.2" in January 1978
- Largest single snowstorm: **27.4"** (November 24-26, 1950) →
- Largest Calendar Day Snowfall: **23.6"** (March 13, 1993)
- Highest Snow Depth: **26"** (January 22, 1978)

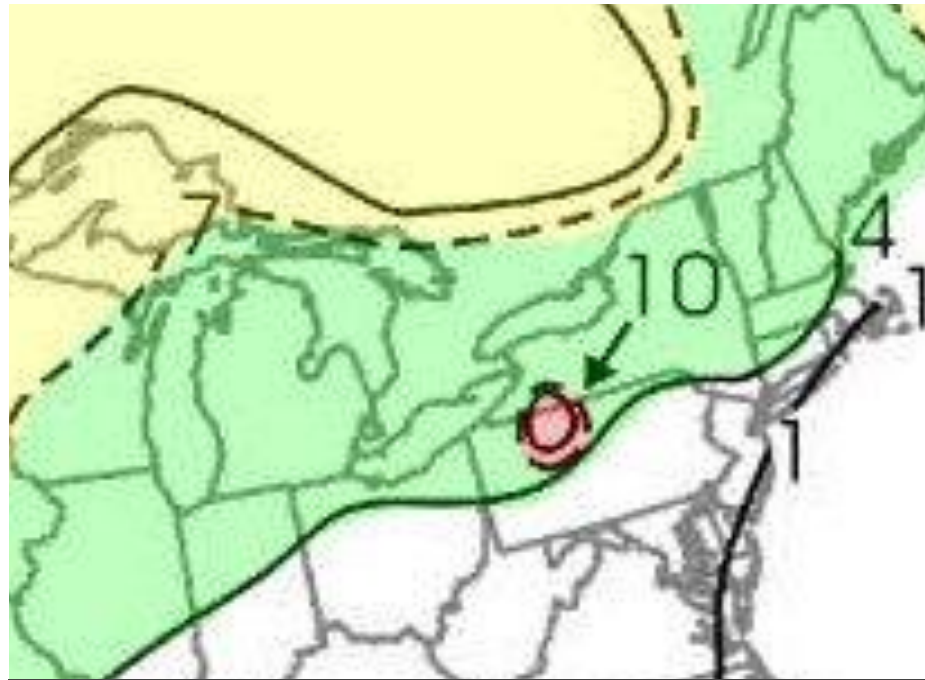




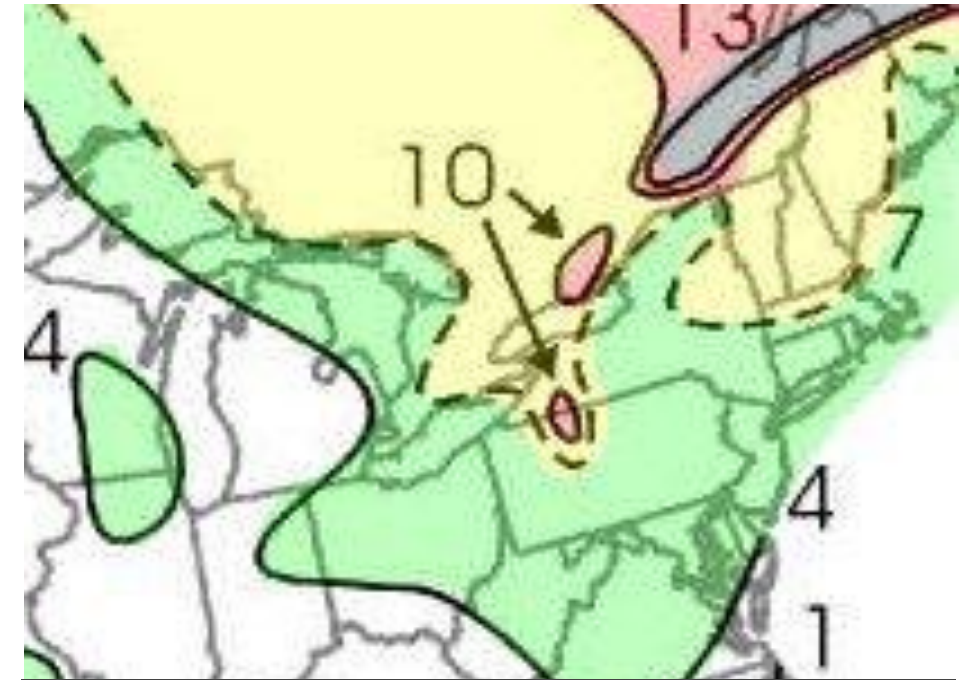
# Winter Climatology - Other Frozen Precipitation



**Freezing Rain**



**Freezing Drizzle**



**Sleet**

(Per Year)

**Green:**  $\geq 4$  days

**Yellow:**  $\geq 7$  days

**Red:**  $\geq 10$  days





# Winter Climatology - Historical Flood Crests

<u>Observed Crest (25 ft flood stage)</u>	<u>Date</u>
46.00 ft	3/18/1936
38.50	3/15/1907
36.60	12/31/1942
35.82	6/24/1972 <i>*Only crest outside winter-spring (Hurricane Agnes)</i>
35.40	3/01/1922
35.10	4/27/1937
34.60	1/20/1996
34.50	1/26/1937
34.30	1/09/1913
33.40	3/07/1945



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**Winter Weather Products**

Snowfall Measuring and Reporting





# Timeline of NWS Winter Products

## → 4-7 Days in Advance:

- ◆ Written discussion of upcoming events via the [Area Forecast Discussion](#) from Pittsburgh office
- ◆ Graphical images noting winter impacts
  - [Hazardous Weather Outlook](#) via Pittsburgh Office
  - [Winter Weather Outlook](#) via the NWS Weather Prediction Center (WPC)
  - [Experimental Probabilistic Winter Storm Severity Index](#) via WPC
- ◆ Social media posts highlighting probabilistic information about upcoming events

## → 2-3 Days in Advance:

- ◆ *Key:* If event has a high probability of meeting warning criteria, then a **Winter Storm Watch** may be issued.
- ◆ Greater detail, areas of uncertainty, and more via the [Area Forecast Discussion](#)
- ◆ Suite of tables, graphs and images showing probabilistic information at: [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)
- ◆ Continued use of social media to lay out expectations, scenario variations and early action planning
- ◆ Additional graphical imaging of note:
  - [Winter Storm Severity Index](#) via WPC
  - [Experimental Probabilistic Winter Storm Severity Index](#) via WPC
  - [Experimental Winter Storm Outlook](#) via WPC

## → 12-36 Hours in Advance:

- ◆ *Key:* Consideration given for potential issuance of **Winter Storm Warning** vs. other hazard products.
- ◆ Increased social media presence to include onset/ending timeline, high-impact periods, and more.





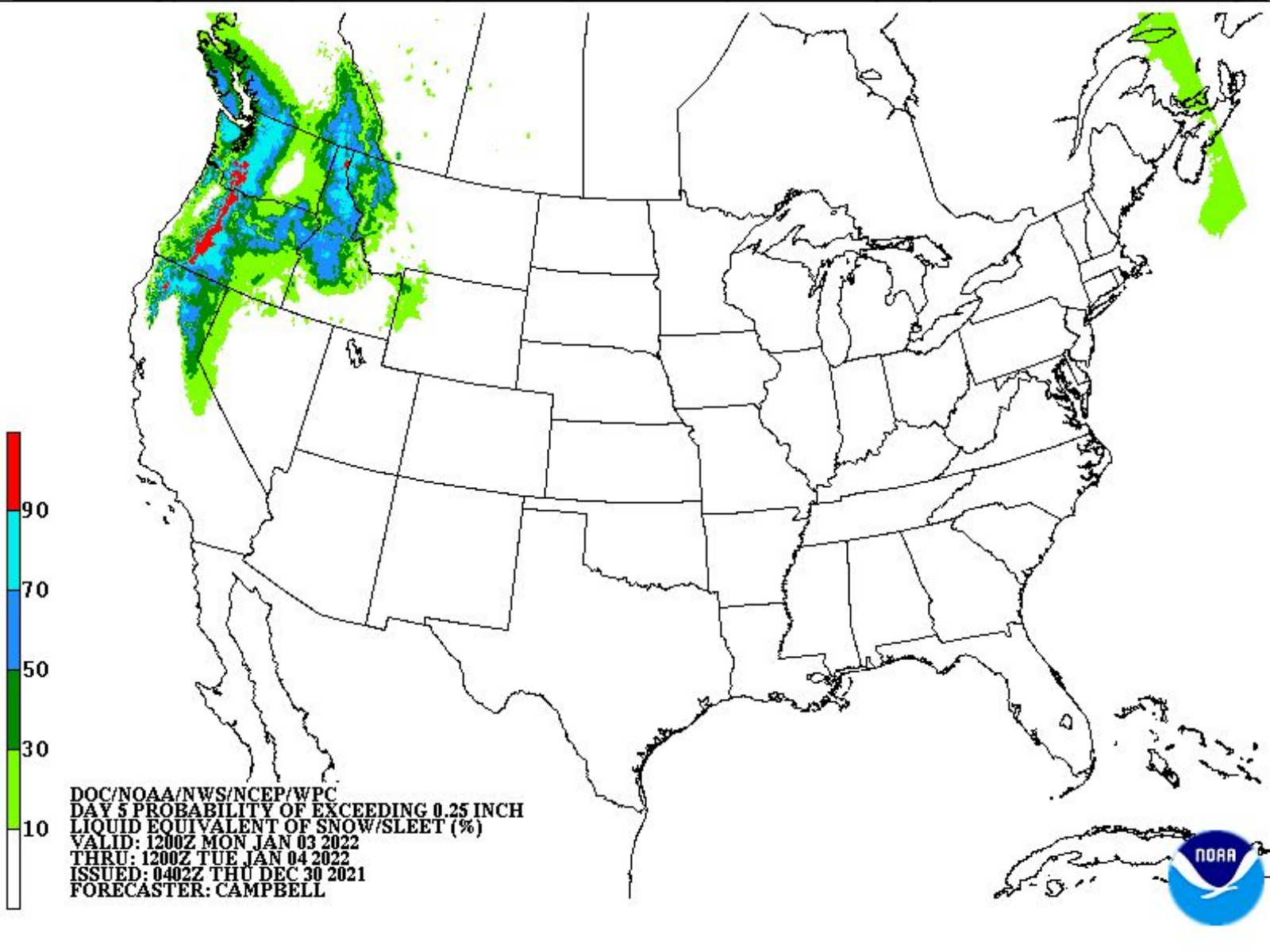
# NWS Weather Prediction Center (WPC) Products

## Winter Weather Outlook

Winter Weather Forecasts [Legacy Page:](#)

Valid 12Z 10/01/2022 - 12Z 10/02/2022

Day 1 Day 2 Day 3 | **Day 4** Day 5 Day 6 Day 7 ?



- **Goal:** Support advanced planning of hazardous winter weather for all National Weather Service partners
- **What is it?** A web-based, graphical, probabilistic forecast depicting the probability of winter precipitation (snow & sleet) exceeding 0.25” water equivalent over a 24-hour period (7am to 7am EST).

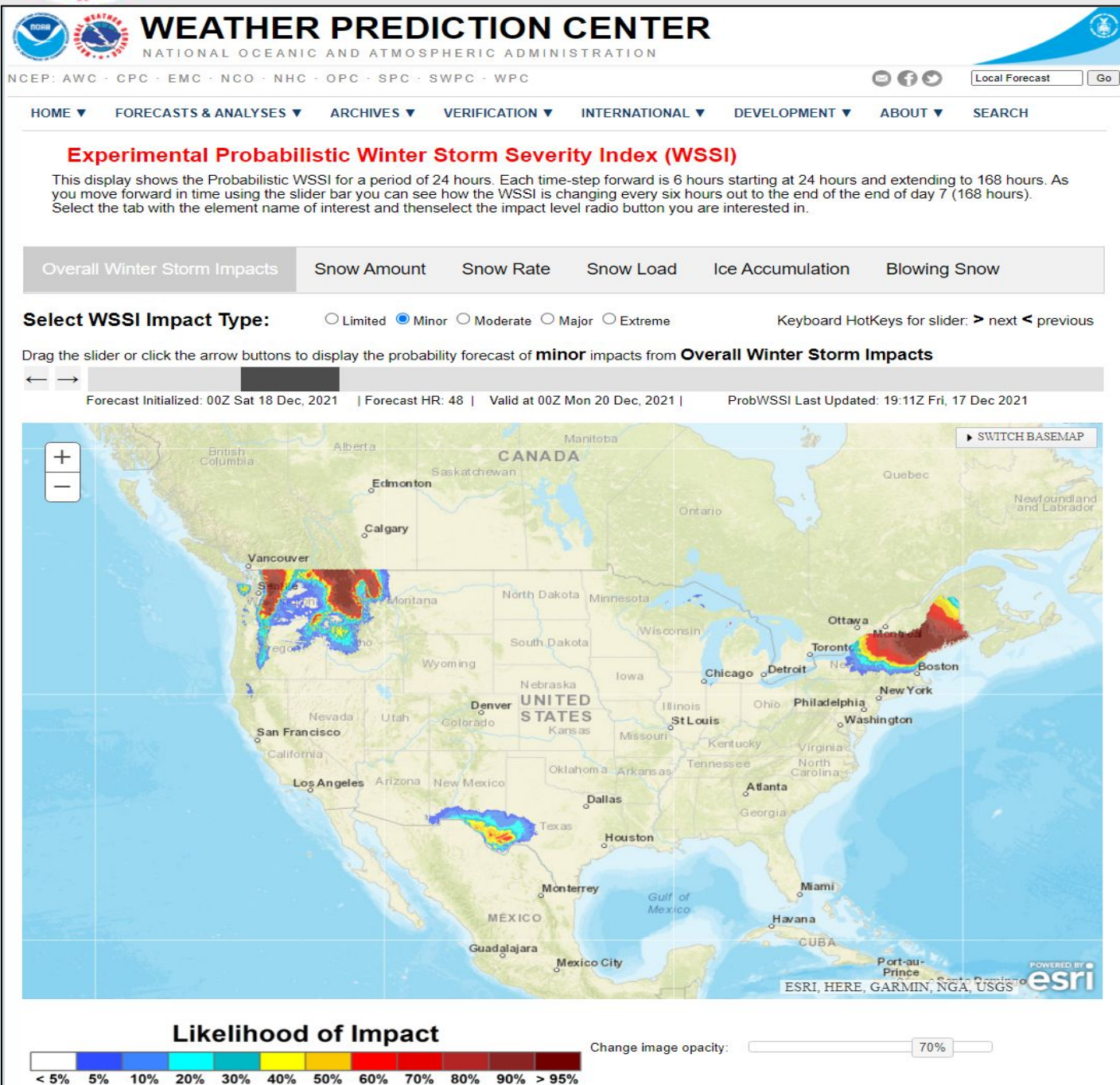
For reference, using a 10:1 Snow to Liquid Ratio (SLR), that would equate to probability of exceeding **2.5”** of snow and sleet.

- **How often is it updated?** There are four separate graphics produced twice daily showing the forecasts for Days 4, 5, 6 and 7.



# NWS Weather Prediction Center (WPC) Products

## Probabilistic Winter Storm Severity Index (ProbWSSI)



→ **Goal:** Combine the benefits of probabilistic weather forecasts with robust social science research to better align thresholds of winter storms on community impacts.

→ **What is it?** A graphical forecast of both the individual and composite effects of the previously described 6 components to show percentile thresholds for likelihood of impact.

This remains experimental but became live for public use as of November 2023 (last month).

→ **How often is it updated?** The images encompass a 6 hour period out to 7 days, updated every 6 hours.

Utilize the scrolling bar as well as the tabs at the top to cycle through different options and different time periods.



# NWS Pittsburgh Forecast Products

Winter Weather Webpage - [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)

**Snow and Ice Potential Forecasts**  
Weather.gov > Pittsburgh, PA > Snow and Ice Potential Forecasts

Pittsburgh, PA  
Weather Forecast Office

Current Hazards   Current Conditions   Radar   Forecasts   Rivers and Lakes   Climate and Past Weather   Local Programs

[Probabilistic Snowfall Forecasts](#)   
 [Ice Accumulation Forecasts](#)   
 [Onset/End-Timing Graphics](#)

[Winter Storm Outlook and Winter Storm Severity Index](#)   
 [Snow and Ice Observations](#)   
 [Medium/Long Range Forecast](#)

Quick Page Navigation

**Snow Amount Potential**  
*Experimental - Leave feedback*  
10/31/2023 0200PM to 11/01/2023 0800PM

**Expected Snowfall - Official NWS Forecast**  
Point   Range

What's this?

**High End Amount**  
1 in 10 Chance (10%) of Higher Snowfall

What's this?

**Low End Amount**  
9 in 10 Chance (90%) of Higher Snowfall

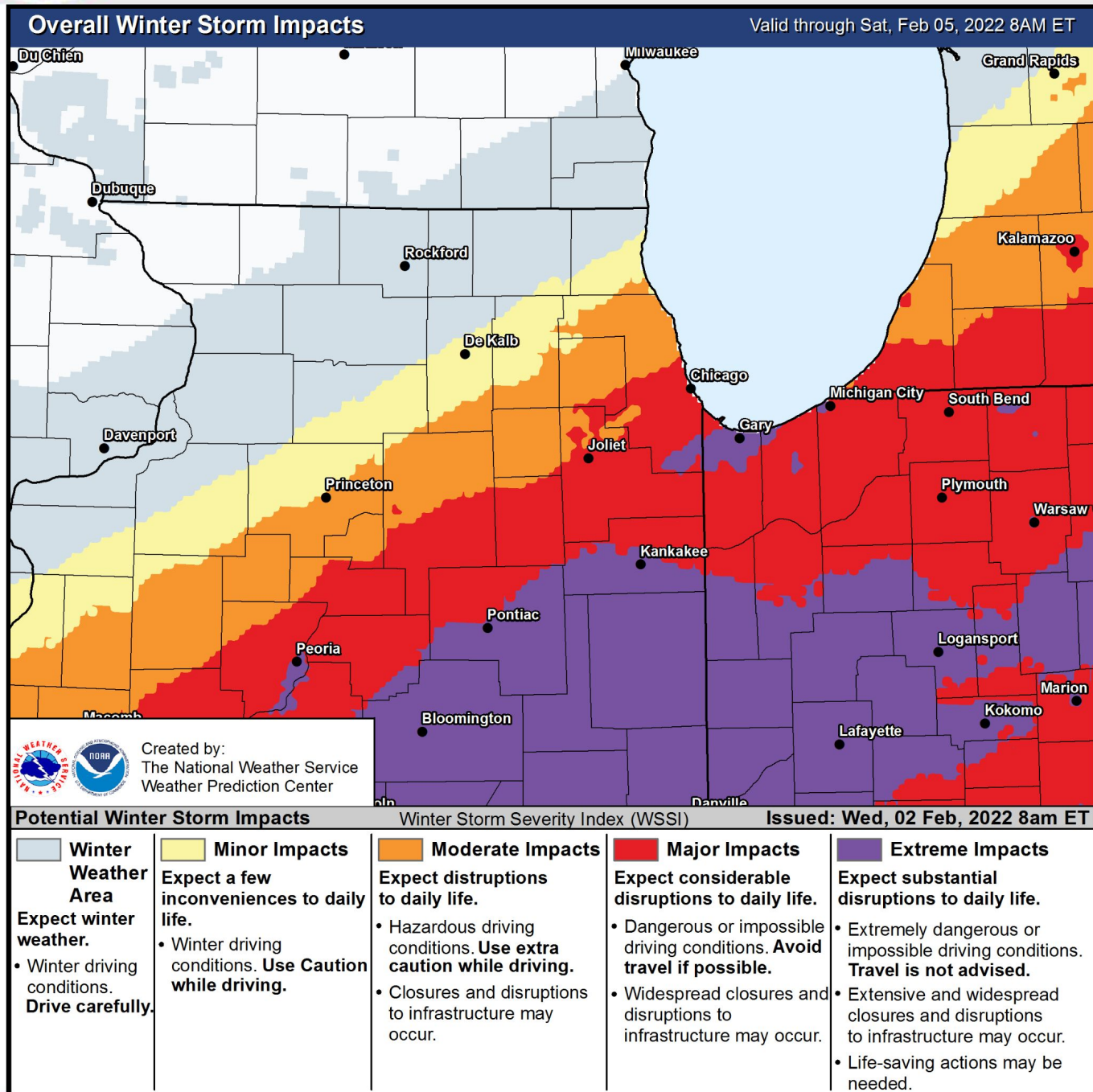
What's this?

- **Probabilistic Snowfall Forecasts:** Images and tables that show latest forecasted amounts, range of possibilities, and probabilities of seeing X amount.
- **Ice Accumulation Forecasts:** Images of the latest forecasted ice accumulation as well as low/high end potentials.
- **Onset/End-Timing Graphics:** Two images that show approximate timing for when event may begin and end.
- **Winter Storm Outlook and Winter Storm Severity Index:** Quick links to WPC webpage holding those products previously described.
- **Snow and Ice Observations:** Quick links to reported snow and ice amounts.
- **Medium/Long Range Forecast:** Latest images and links to find Days 4-14 forecast outlooks.



# NWS Weather Prediction Center (WPC) Products

## Winter Storm Severity Index (WSSI)



→ **Goal:** Forecast the potential severity of community impacts from winter storms, which could include tree damage, property damage, transportation impacts, and disruptions to daily life.

- **What is it?** A graphical, composite forecast showing the potential maximum impacts based on 6 components:
- ◆ **Blowing Snow-** Indicates the potential disruption due to blowing and drifting snow.
  - ◆ **Flash Freeze-** Indicates the potential of flash freezing during or after precipitation events.
  - ◆ **Ground Blizzard-** Indicates the potential travel-related impacts of strong winds interactive with pre-existing snow cover.
  - ◆ **Ice Accumulation-** Indicates potential infrastructure impacts due to combined effects and severity of ice and wind.
  - ◆ **Snow Amount-** Indicates the potential impacts due to the total amount of snow or snow accumulation rate.
  - ◆ **Snow Load-** Indicates potential infrastructure impacts due to the weight of snow.

→ **How often is it updated?** The images encompass a 24 hour period out to 3 days, updated every 2 hours.



# NWS Pittsburgh Forecast Products

Winter Weather Webpage - [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)

## Expected Snowfall Overnight

Saturday night through Sunday morning.



## Onset Time of Snow Tonight



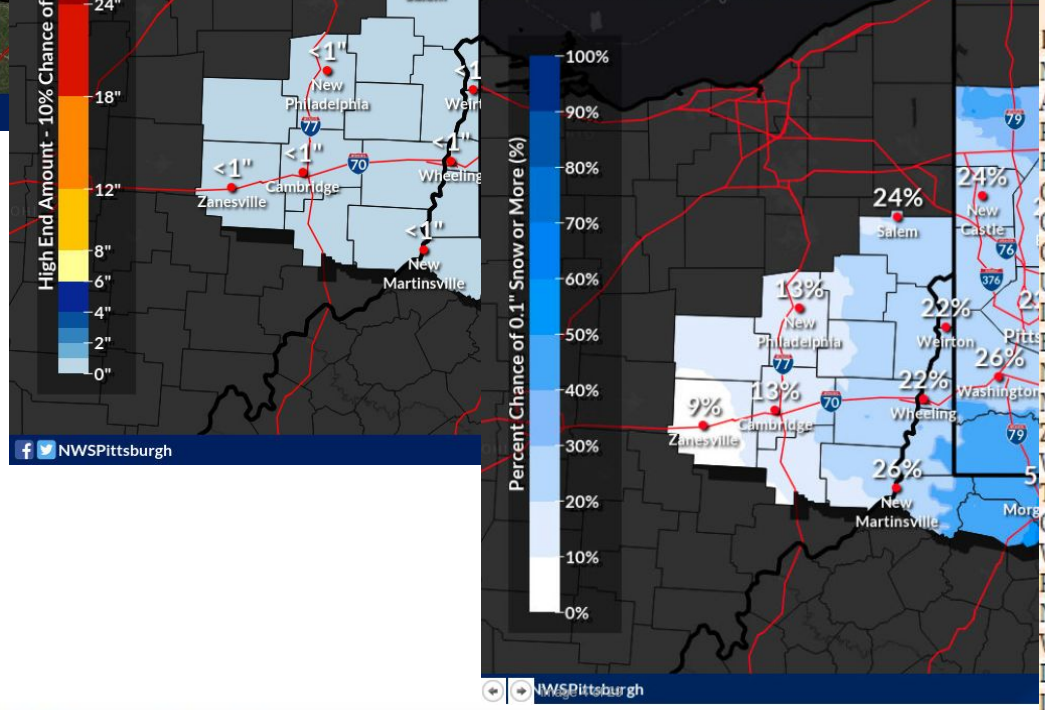
## High End Amount - 1 in 10 Chance (10%) Of Higher Snowfall

Valid 2 PM Tue Oct 31, 2023 through 8 PM Wed Nov 01, 2023 EDT



## Percent Chance of 0.1" Snow or More

Valid 8 PM Tue Oct 18, 2022 through 8 PM Wed Oct 19, 2022 EDT



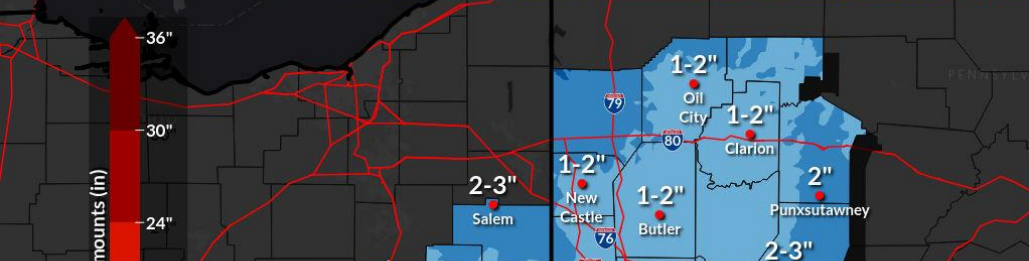
Location	Snow Amount Potential			Chance of Seeing More Snow Than							
	Low End Snowfall	Expected Snowfall	High End Snowfall	>=0.1"	>=1"	>=2"	>=4"	>=6"	>=8"	>=12"	>=18"
Moon/Pittsburgh Intl Airport, PA	4	8	11	98%	96%	94%	84%	66%	44%	8%	0%
Pittsburgh, PA	3	7	11	98%	97%	94%	83%	64%	42%	9%	0%
Butler, PA	4	9	12	98%	96%	93%	84%	68%	47%	8%	0%
Clarion, PA	4	8	11	98%	96%	93%	83%	66%	43%	5%	0%
Columbiana, OH	1	7	10	90%	86%	81%	66%	47%	28%	4%	0%
Coshocton, OH	0	4	7	81%	74%	65%	43%	22%	9%	1%	0%
Uniontown, PA	2	6	10	98%	95%	91%	75%	53%	32%	7%	0%
Indiana, PA	3	7	10	99%	97%	94%	82%	59%	34%	5%	0%
Brookville, PA	3	7	11	98%	96%	93%	82%	62%	38%	6%	0%
New Castle, PA	2	8	10	93%	90%	86%	72%	53%	32%	3%	0%
Morgantown, WV	2	5	10	98%	96%	91%	73%	50%	28%	5%	0%
Zanesville, OH	0	4	7	83%	76%	66%	43%	21%	8%	0%	0%
Wheeling, WV	3	7	11	98%	96%	92%	80%	61%	37%	6%	0%
Terra Alta, WV	3	6	12	98%	96%	93%	81%	63%	43%	14%	1%
Canaan Valley State Park, WV	5	9	14	99%	98%	97%	91%	79%	61%	25%	2%
Parsons, WV	3	5	11	99%	98%	95%	82%	61%	40%	11%	1%
New Philadelphia, OH	0	5	9	85%	79%	72%	54%	34%	18%	2%	0%
Washington, PA	3	7	12	97%	96%	92%	80%	62%	42%	11%	0%
Donegal, PA	3	6	11	98%	97%	93%	79%	57%	35%	8%	0%
Latrobe, PA	3	6	11	98%	96%	93%	80%	58%	36%	8%	0%



# NWS Pittsburgh Forecast Products

Winter Weather Webpage - [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)

**Expected Snowfall - Official NWS Forecast**  
 Weather Forecast Office Pittsburgh, PA  
 Valid 7 AM Mon Dec 18, 2023 through 1 PM Tue Dec 19, 2023 EST  
 Issued Dec 17, 2023 3:56 AM EST



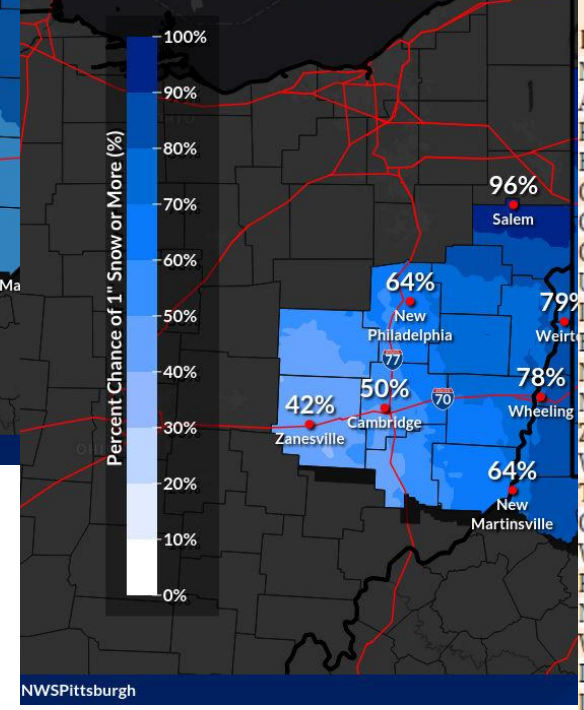
**Onset Time of Snow Tonight**  
 Weather Forecast Office Pittsburgh, PA  
 Issued Oct 31, 2023 1:15 PM EDT



**High End Amount - 1 in 10 Chance (10%) Of Higher Snowfall**  
 Weather Forecast Office Pittsburgh, PA  
 Valid 7 AM Mon Dec 18, 2023 through 1 PM Tue Dec 19, 2023 EST  
 Issued Dec 17, 2023 3:56 AM EST



**Percent Chance of 1" Snow or More**  
 Valid 7 AM Mon Dec 18, 2023 through 1 PM Tue Dec 19, 2023 EST



Location	Snow Amount Potential			Chance of Seeing More Snow Than							
	Low End Snowfall	Expected Snowfall	High End Snowfall	>=0.1"	>=1"	>=2"	>=4"	>=6"	>=8"	>=12"	>=18"
Moon/Pittsburgh Intl Airport, PA	4	8	11	98%	96%	94%	84%	66%	44%	8%	0%
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# NWS Pittsburgh Forecast Products

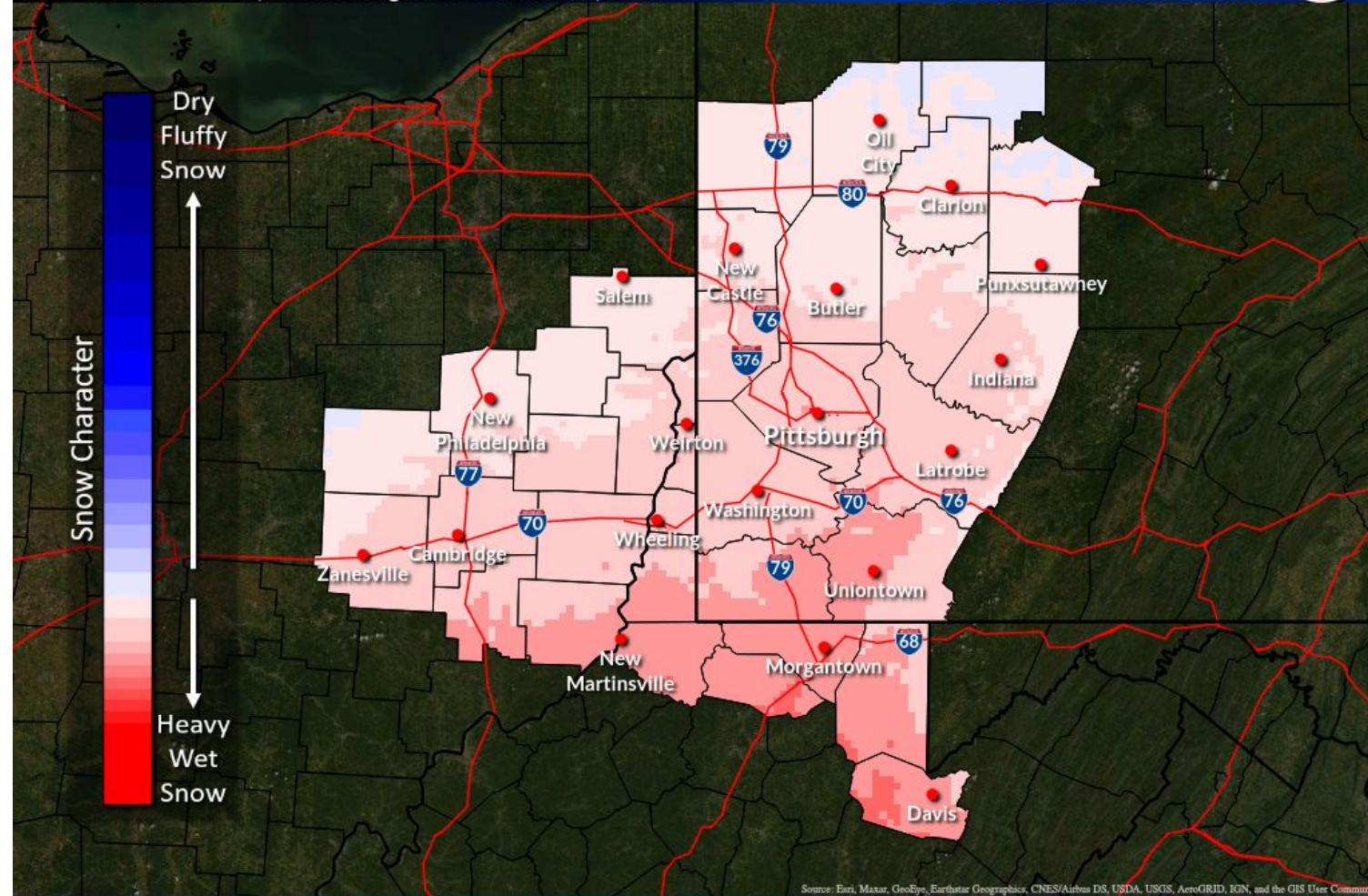
Winter Weather Webpage - [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)

**\*\* NEW \*\***

## Snow Character (Wet or Dry)

Valid 8 AM Tue Oct 31, 2023 through 2 PM Tue Oct 31, 2023

Weather Forecast Office  
Pittsburgh, PA  
Issued Oct 29, 2023 8:32 PM EDT



f NWSPittsburgh

weather.gov/Pittsburgh

## Snow Character (Wet or Dry)

- Image will be found under “Other Snow/Ice Information” tab and covers 6 hour periods.
- Ensemble model driven guidance on potential how wet/dry snow is using snow to liquid ratios (SLRs)
  - ◆ SLRs < 10:1 ~ = a heavy, wet snow
  - ◆ SLRs > 15:1 ~ = a dry, powdery snow
- Remember...
  - ◆ A wet/heavy snow can be more difficult to shovel or plow and poses risks to infrastructures like power lines and roofs if accumulations too high.
  - ◆ A dry/fluffy snow is more easily blown by wind and can more easily reduce visibility (either falling or within snow already on ground).



# NWS Pittsburgh Forecast Products

Winter Weather Webpage - [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)

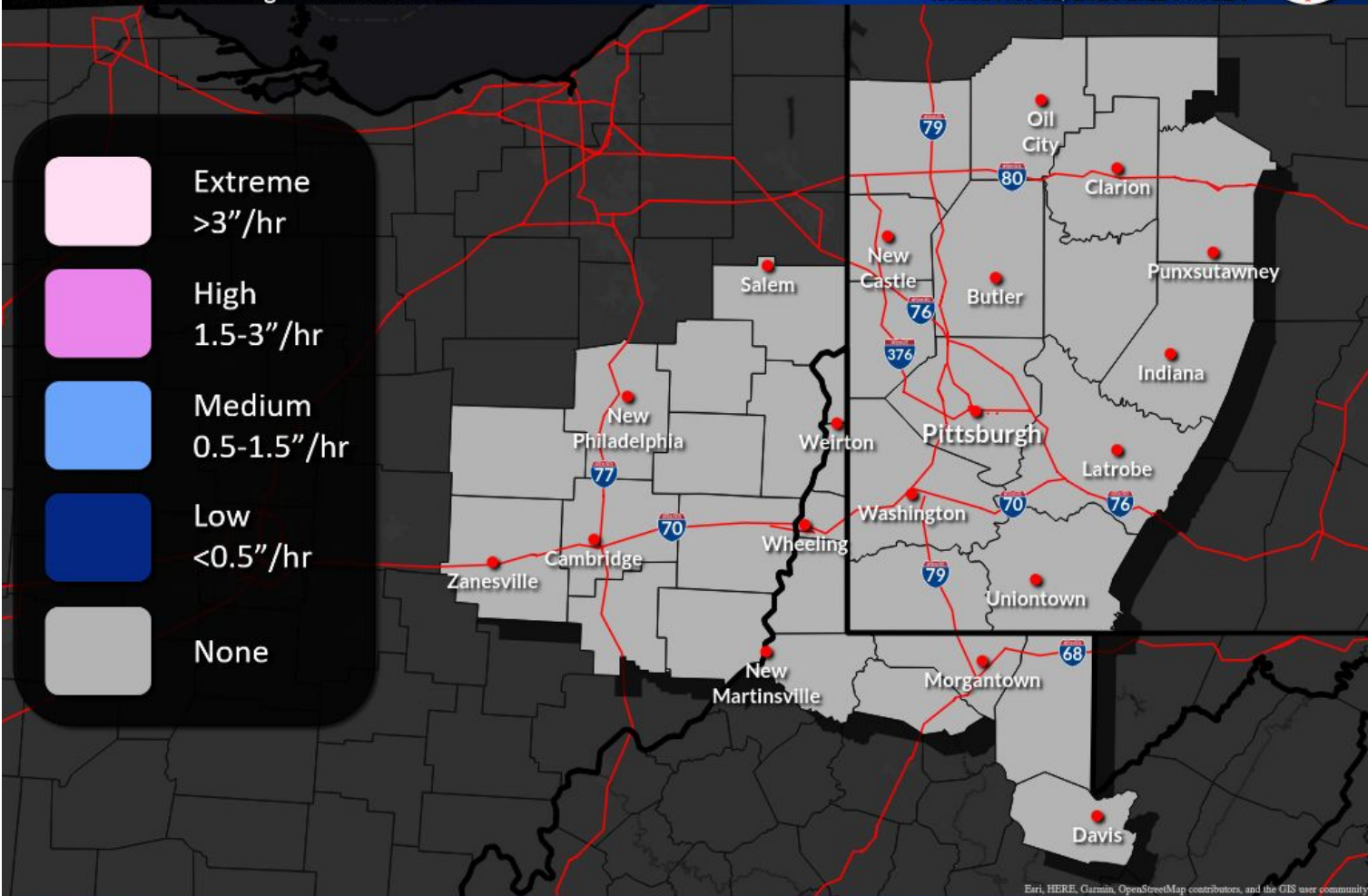
**\*\* NEW \*\***

## Peak Hourly Snow Rate (in/hr)

Weather Forecast Office  
Pittsburgh, PA  
Issued Nov 02, 2023 2:12 PM EDT



Valid Thu 2:00PM through Thu 8:00PM EDT



## Peak Hourly Snow Rate

→ **\*\*TEXT\*\***

NWSPittsburgh

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



# NWS Pittsburgh Hazard Products

Full Suite of Products and Definitions Found at: [weather.gov/pbz/wwacriteria](https://weather.gov/pbz/wwacriteria)

## WINTER STORM WATCH

Significant winter weather is possible



Snow/ice amounts may meet warning criteria within the next few days.

Monitor the latest forecast and be prepared!

## WINTER STORM WARNING

Severe winter weather is occurring/imminent



Significant snow/ice amounts will pose a threat to life and property.

Take necessary precautions and avoid travel!

## WINTER WEATHER ADVISORY

Expect some travel difficulties



Snow/ice amounts will not meet warning criteria but will cause travel problems.

Exercise caution, especially if you must travel!

## EXTREME COLD WATCH

An Extreme Cold Watch is issued when dangerously cold air, with or without wind, is possible.

Check the forecast, and be prepared in case a Warning is issued.

Be Prepared

## EXTREME COLD WARNING

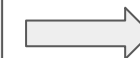
An Extreme Cold Warning is issued when dangerously cold air, with or without wind, is expected.

Conditions could lead to frostbite or hypothermia. Limit time outside, dress in layers, and cover up exposed skin.

Take Action!

weather.gov

Wind Chill Watch



Extreme Cold Watch

Wind Chill Warning



Extreme Cold Warning

Wind Chill Advisory



Cold Weather Advisory

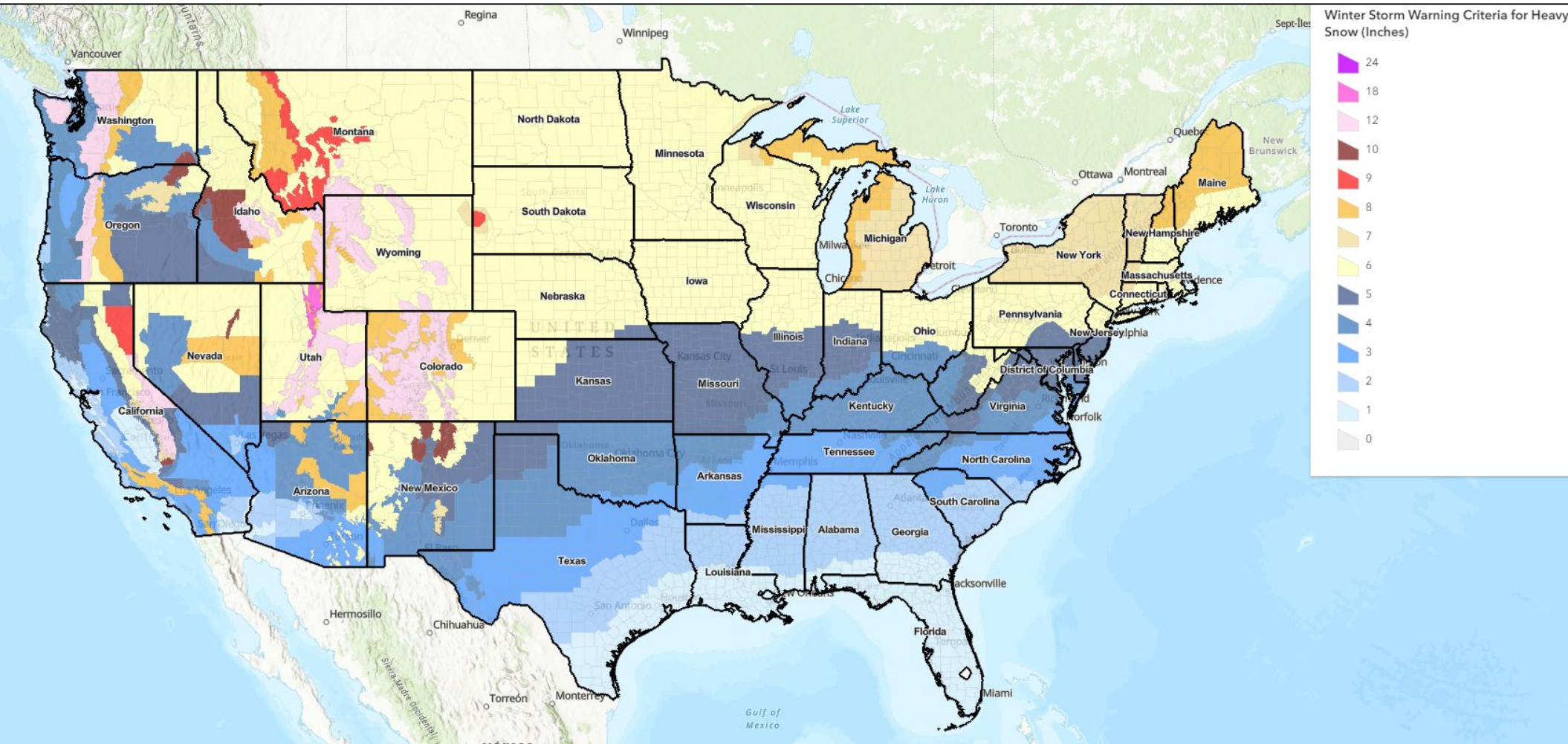




# NWS Pittsburgh Snowfall Criteria

Winter Weather Webpage - [weather.gov/pittsburgh/winter](https://weather.gov/pittsburgh/winter)

## **\*\* UPDATED - Modernized Winter Storm Warning/Advisory Criteria\*\***



★ **Goal:** Improve consistency in Winter Storm Watch/Warning issuance and public messaging among all forecast offices.

★ **What Changed?**  
No longer is criteria based on a 12 or 24 hour accumulation time scale. With time scales removed, this hazard products will focus more on event-based criteria.

For the NWS Pittsburgh forecast area, warning decision-making will be based on accumulations of **6"** or more or driven by the potential high-impact nature of an event.

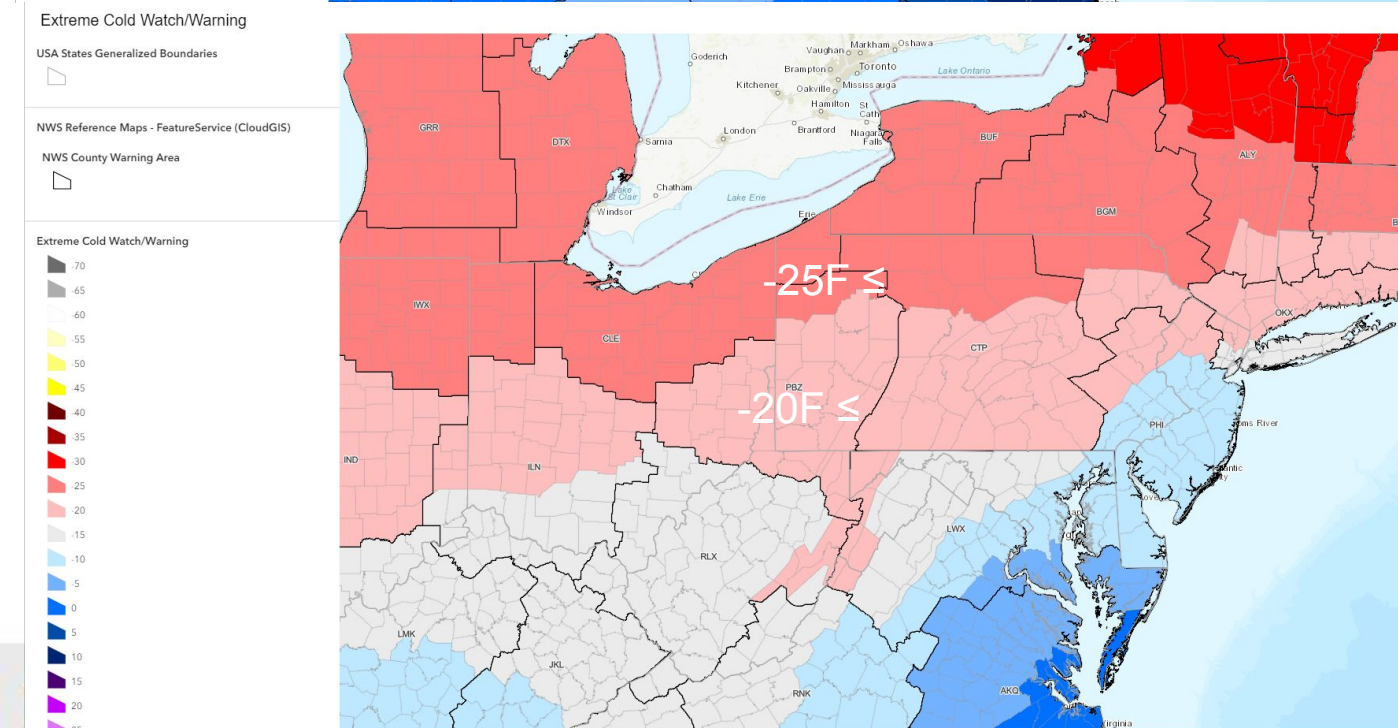
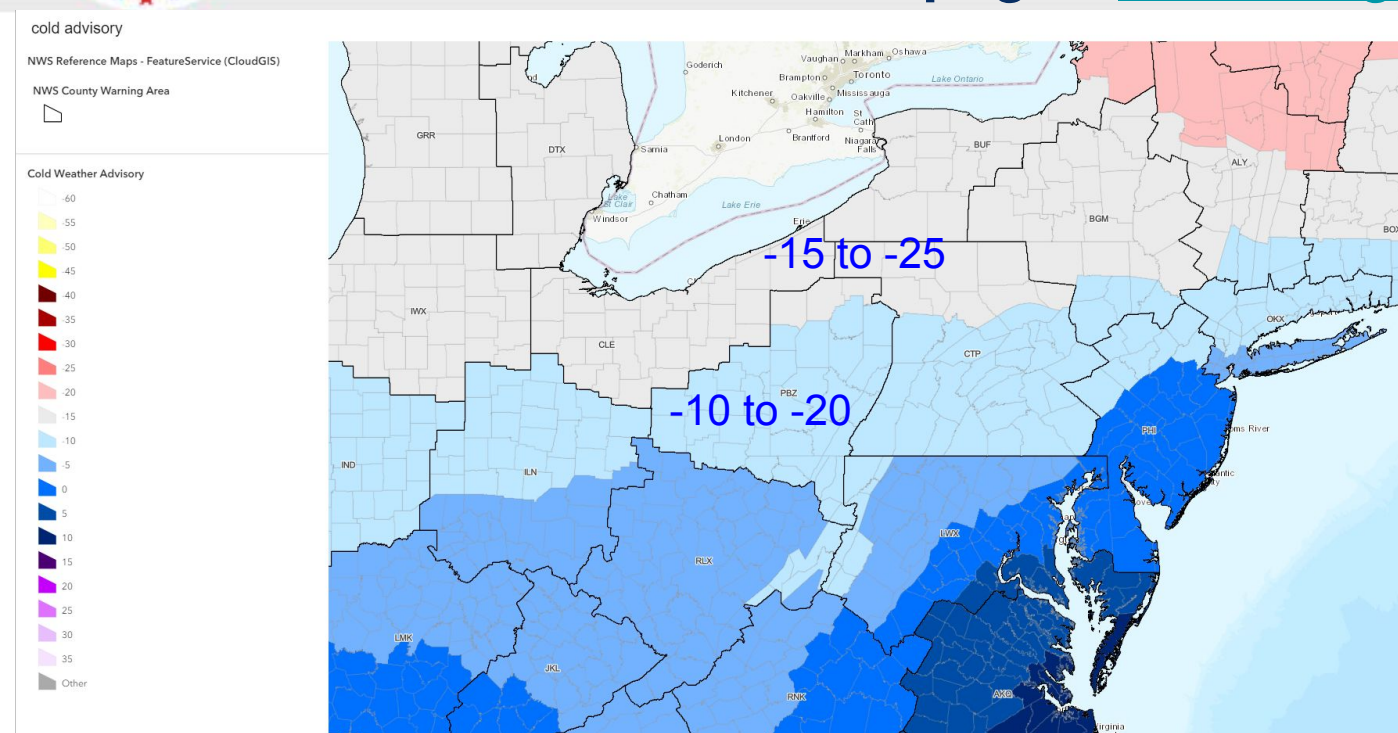


# NWS Pittsburgh Extreme Cold Criteria

Winter Weather Webpage - [weather.gov/pittsburgh/winter](http://weather.gov/pittsburgh/winter)

## **\*\* Extreme Cold Criteria Change \*\***

- ★ **Goal:** Emphasize cold is dangerous with or without wind. Develop new/consistent guidance that is based on climo and adjusted for impacts.
- ★ **What Changed?** Mercer, Venango, and Forest advisory criteria now -15F and -25F (use to be -10F and -25F).
- ★ Rest of area remains -10F for an advisory and -20F now for a warning (use to be -25F)

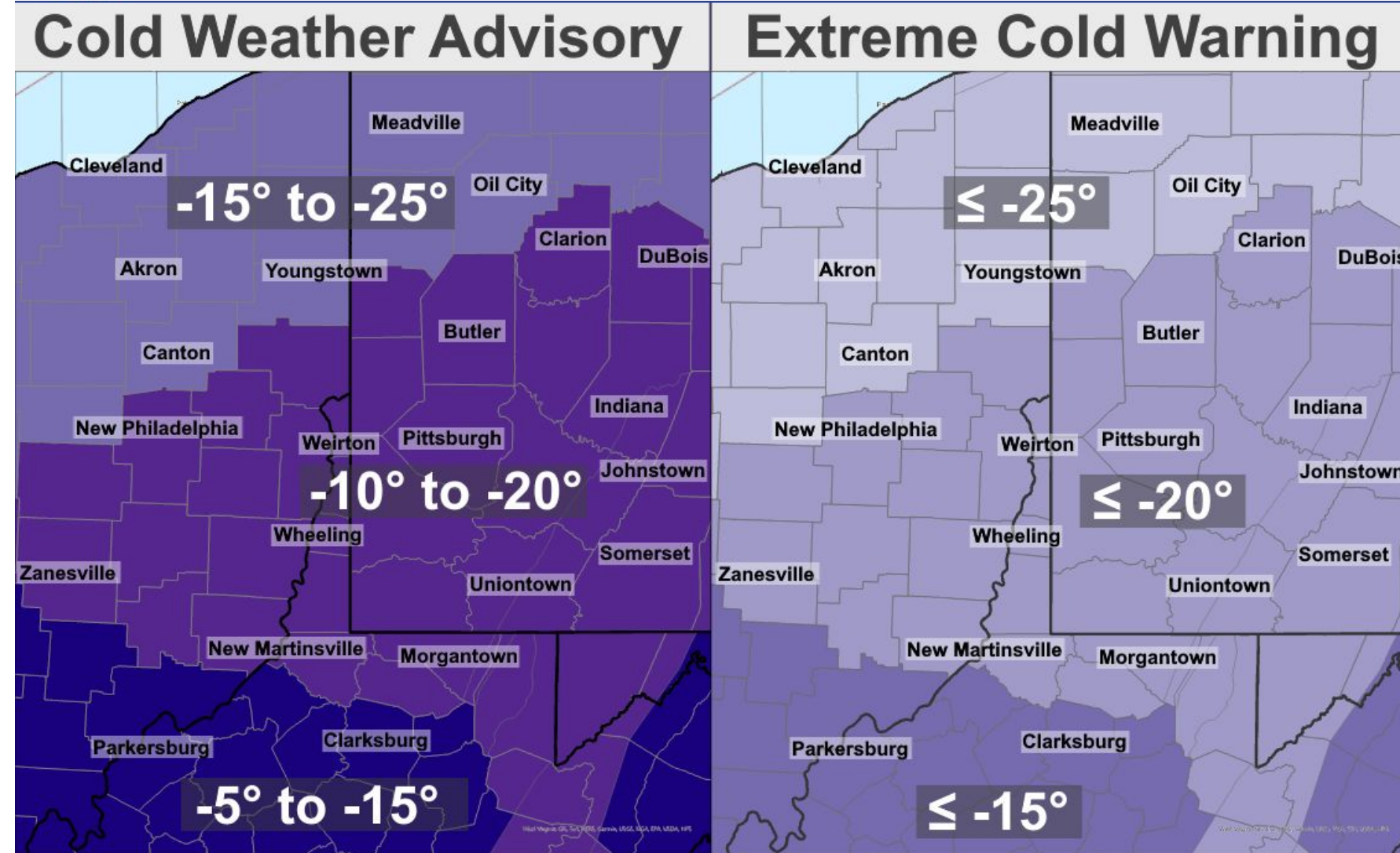




# NWS Pittsburgh Extreme Cold Criteria

Winter Weather Webpage - [weather.gov/pittsburgh/winter](http://weather.gov/pittsburgh/winter)

## **\*\* Extreme Cold Criteria Change \*\***



- ★ **Goal:** Emphasize cold is dangerous with or without wind. Develop new/consistent guidance that is based on climo and adjusted for impacts.
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- ★ Rest of area remains -10F for an advisory and -20F now for a warning (used to be -25F)



# NWS Pittsburgh Hazard Products

Winter Weather Criteria - [weather.gov/pittsburgh/wwacriteria](https://www.weather.gov/pittsburgh/wwacriteria)

## Watches

### Winter Storm Watch: [WS . A]

- Potential for a blizzard, heavy snowfall, or ice accumulation of at least 6 inches of snow with a confidence or greater of at least 6 inches of snow

### Extreme Cold Watch: [EC . A]

- Potential for reach Extreme Cold Warning criteria

## Warnings

### Winter Storm Warning: [WS . W]

- Snow accumulations 6 inches or greater; Freezing rain accumulations ¼ inch or greater.

### Blizzard Warning: [BZ . W]

- Sustained winds 35 mph or greater AND falling/blowing snow reducing visibility to less than ¼ mile for at least three hours.

### Ice Storm Warning: [IS . W]

- Freezing rain accumulations ¼ inch or greater resulting in significant, widespread power outages, tree damage, and dangerous travel.

### Lake Effect Snow Warning: [LE . W]

- Lake effect snow accumulations of 6 inches or greater in the northernmost portions of the forecast area.

### Snow Squall Warning: [SS . W]

- A short-duration (less than 15 minutes) snow squall causing dangerous and life-threatening conditions when temperatures are sub-freezing.

### Extreme Cold Warning: [EC . W]

- Lowest of either air temperature or wind chill that is -10°F or lower, or wind speeds 5 mph or greater.

## Advisories

### Winter Weather Advisory: [WS . Y]

- Snow accumulations of 3 inches, any freezing rain accumulations less than ¼ inch, or a high impact snow/ice event.

### Cold Weather Advisory: [CW . Y]

- Lowest of either air temperature or wind chill that is -10°F to -20°F (-15°F to -25°F for Mercer/Venango/Forest Counties) for at least 3 hours.



# Poll Question #1



# NWS Pittsburgh Hazard Products

Winter Weather Criteria - [weather.gov/pittsburgh/wwacriteria](https://weather.gov/pittsburgh/wwacriteria)

★ **Snow Squall Warning** - Brief (30-60 minutes) warning issued for short duration intense bursts of snow & wind leading to whiteout visibility & possible flash freezes on roads.

★ **What's New?**  
Up to 2 Impact-Based Warning Tags will be appended to the bottom of Snow Squall Warnings

- **General:** Used frequently for snow squall conditions but mitigating actions, combined with societal context, will reduce the threat to safe travel.
- **Significant:** Used only when snow squalls pose a substantial threat to safe travel, such that **WEA** is warranted to alert all devices in the path.

★ **Fact Sheet:**  
<https://www.weather.gov/media/safety/Snow-Squall-IBW.pdf>

...A SNOW SQUALL WARNING REMAINS IN EFFECT UNTIL 630 PM EST...

At 540 PM EST, a dangerous snow squall was located near Owls Head, moving east at 40 mph.

HAZARD...Flash freeze on roads and rapidly falling visibility due to intense bursts of heavy snow and gusty winds.

SOURCE...Radar indicated.

IMPACT...Dangerous and life-threatening travel conditions are expected to develop rapidly in the warning area.

Locations impacted include...  
Chazy, Mooers, Altona

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Slow Down! Rapid changes in visibility and road conditions may lead to dangerous driving conditions. Be alert for sudden whiteout conditions. &&

LAT...LON 4467 7395 4479 7419 4489 7403 4500 7419 4512 7345 4524  
TIME...MOT...LOC 1815Z 259DEG 51KT 4512 7345 4524

SNOW SQUALL...RADAR INDICATED  
SNOW SQUALL IMPACT...SIGNIFICANT  
\$\$

**Snow Squall Warning**

Valid Until  
1:45 PM MST Wednesday  
February 22, 2023

**Threat Information**

**Hazard**  
White out conditions in heavy blowing snow

**Impact**  
Dangerous life-threatening travel

**Potential Exposure**

Population: 11,027  
Highways: US-34  
US-40

*This is a life threatening situation! Delay or avoid travel!*

Map labels: Grand Lake, Granby, Tabernash, Fraser, Winter Park

Inset map labels: WY, NE, CO

Logos: NOAA, NWS, @NWSBoulder

## Poll Question #2



# Winter SKYWARN Outline

Typical Winter Storm Patterns

Forecasting and Weather Monitoring Tools

Winter Hazards

Winter Hazard Climatology

Winter Weather Products

**Snowfall Measuring and Reporting**





# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)

**'T.E.L.' US!**



Give us the  
**T**ime, **E**vent, & **L**ocation  
**(T.E.L.)**

## Spotter Winter Reporting Criteria

- Snowfall > 1"
- Anytime freezing rain occurs
- Wind gusts  $\geq$  50 mph
- Any impactful flooding





# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)

**'T.E.L.' US!**

## Spotter Winter Reporting Criteria

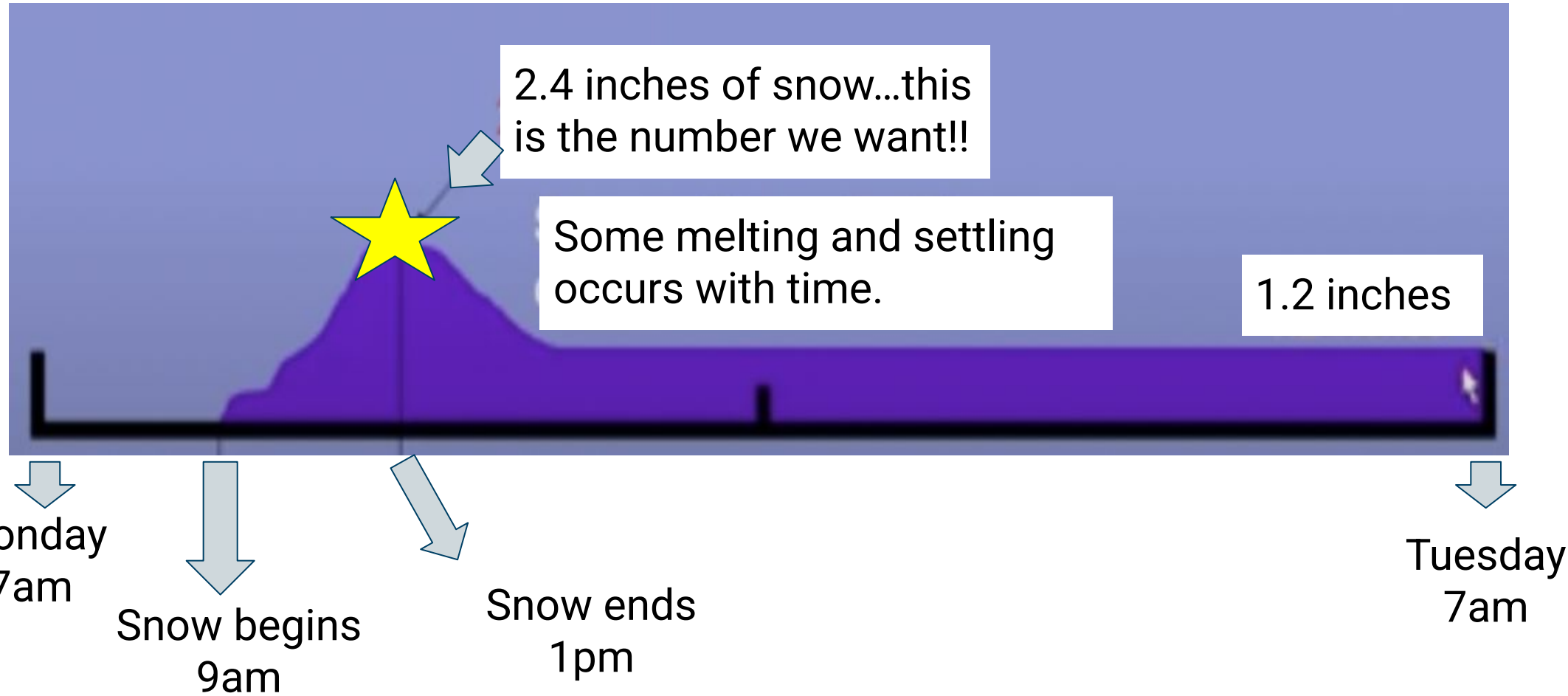
- Late reports are okay!
- Picture and videos are great. For snow, show a ruler for reference.
- Please remember to tell us where you are, even if it's just a highway and a city reference!





# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)



- ★ Measure on a snowboard, if possible. Other flat, non-heating surfaces can work too. Make sure to keep track between old snow that fell versus new snow.
- ★ If you are reporting multiple times to the office, make sure to say the total for the storm and the period of time it fell.
- ★ Try to take an average in an area free of high winds (which could cause drifts) and free of trees.
- ★ Round to a tenth of an inch (example: 1.3 inches, 0.9 inches).



# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)

**'T.E.L.' US!**



## Submit Report Online

Use this Web Based Form: [Submit Report](#)



## Submit River Ice Report Online

Use this Web Based Form for River Ice Only : [Submit Ice Report](#)



## Phone Recording Line

Call our phone recording line at [412-262-1988](tel:412-262-1988)



## Facebook

Post information on our Facebook page: [@NWSPittsburgh](#)



## X

Tag us in a post: [@NWSPittsburgh](#)



## Official Skywarn™ Spotter Email

Official Skywarn™ Spotters may email us at [PBZ-Skywarn@noaa.gov](mailto:PBZ-Skywarn@noaa.gov)



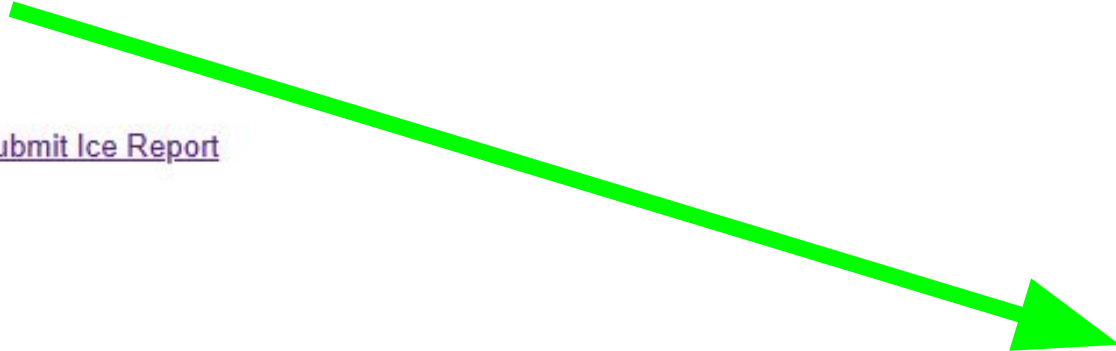
## CoCoRaHS

Report hail size, rain, and snow amounts through [CoCoRaHS](#)



## Mobile App

Send reports from your location via a smartphone app: [MPing](#)



**NOAA Storm Reports**  
Alerting the NWS to local weather

Report Type -> Details -> Location -> Review and Send

Please select a report type

Back Next

[Privacy policy for weather reports](#)

**NOAA Storm Reports**  
Alerting the NWS to local weather

Report Type -> Details -> Location -> Review and Send

Time at which you observed this weather  
1208 PM EDT

Date on which you observed this weather  
10/09/2024

Snowfall (inches):

I'm estimating the snowfall  
 I measured the snowfall  
 I don't have a reading, just some details below

Please provide any details such as if the snow is blowing or drifting

Back Next

[Privacy policy for weather reports](#)





# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)

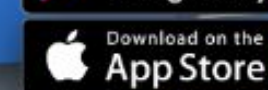
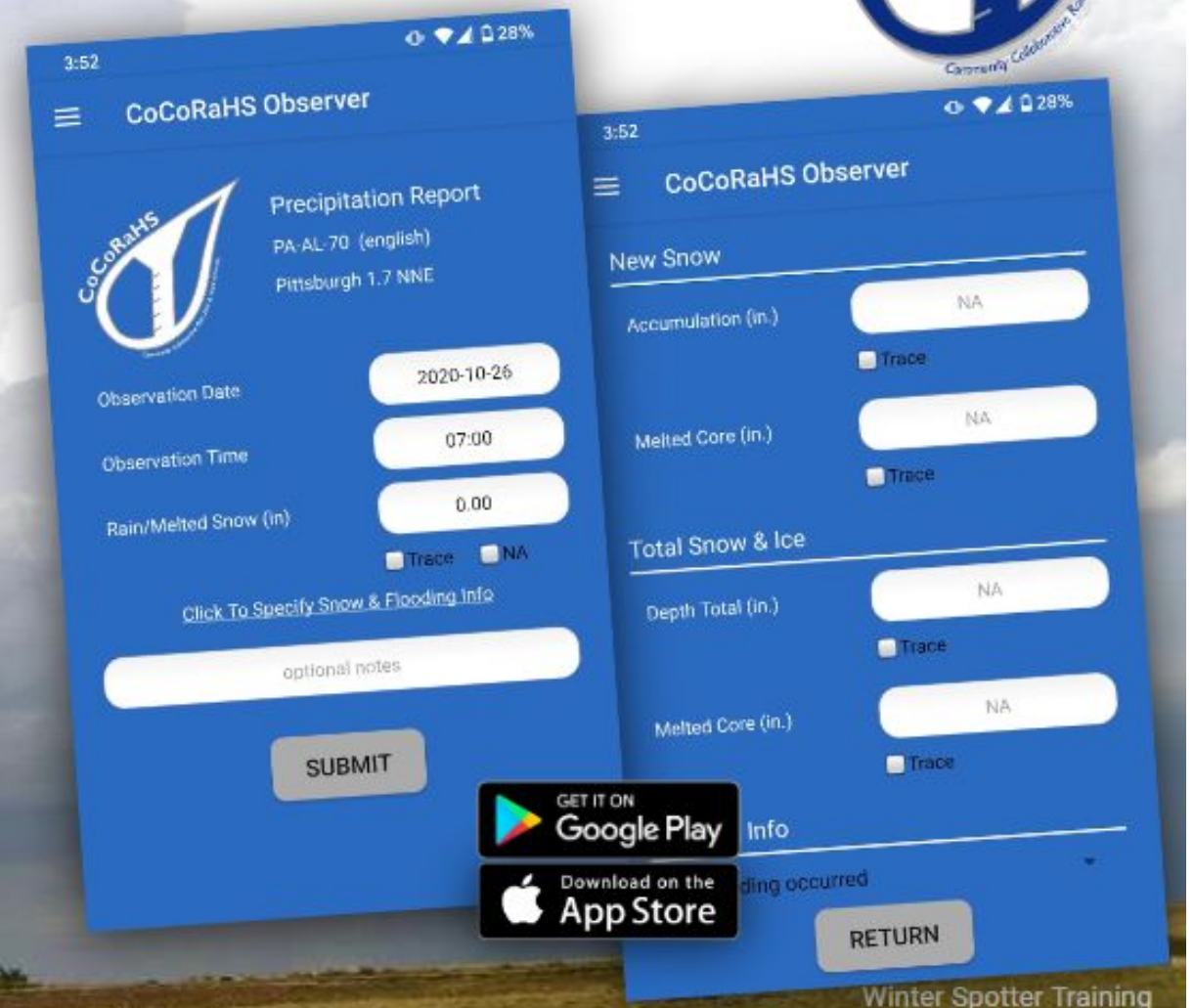
## Additional Reporting Methods: CoCoRaHS Community Collaborative Rain, Hail & Snow network



- A grassroots, non-profit, community based, high-density precipitation network
- Take daily precipitation measurements and send to the NWS

### A great help to the NWS!

For more info: [weather.gov/pbz](https://weather.gov/pbz) or  
[www.cocorahs.org](https://www.cocorahs.org)



Winter Spotter Training





# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)

## Additional Reporting Methods: CoCoRaHS Community Collaborative Rain, Hail & Snow network



- A grassroots, non-profit, community based, high-density precipitation network
- Take daily precipitation measurements and send to the NWS

### A great help to the NWS!

For more info: [weather.gov/pbz](https://weather.gov/pbz) or [www.cocorahs.org](https://www.cocorahs.org)





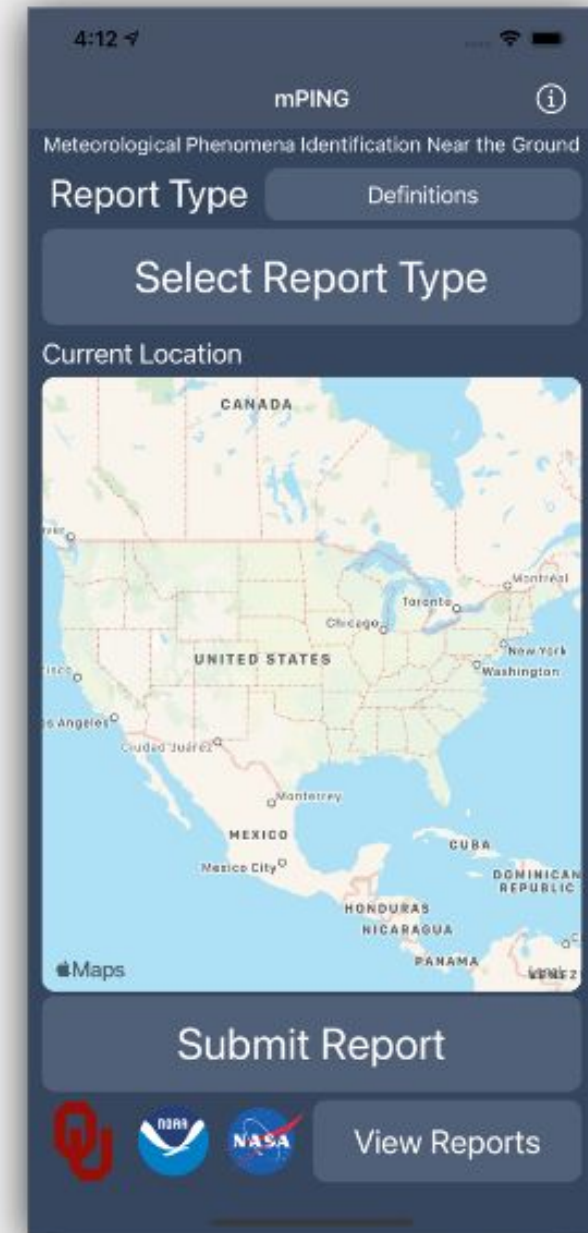
# Snowfall Measuring and Reporting

Report Here - [weather.gov/pittsburgh/reports](https://weather.gov/pittsburgh/reports)

## Additional Reporting Methods: mPING Precipitation Identification Near the Ground



- Tags Your Time & Location
- You Select the Weather Event
- Submit Report to the NWS!



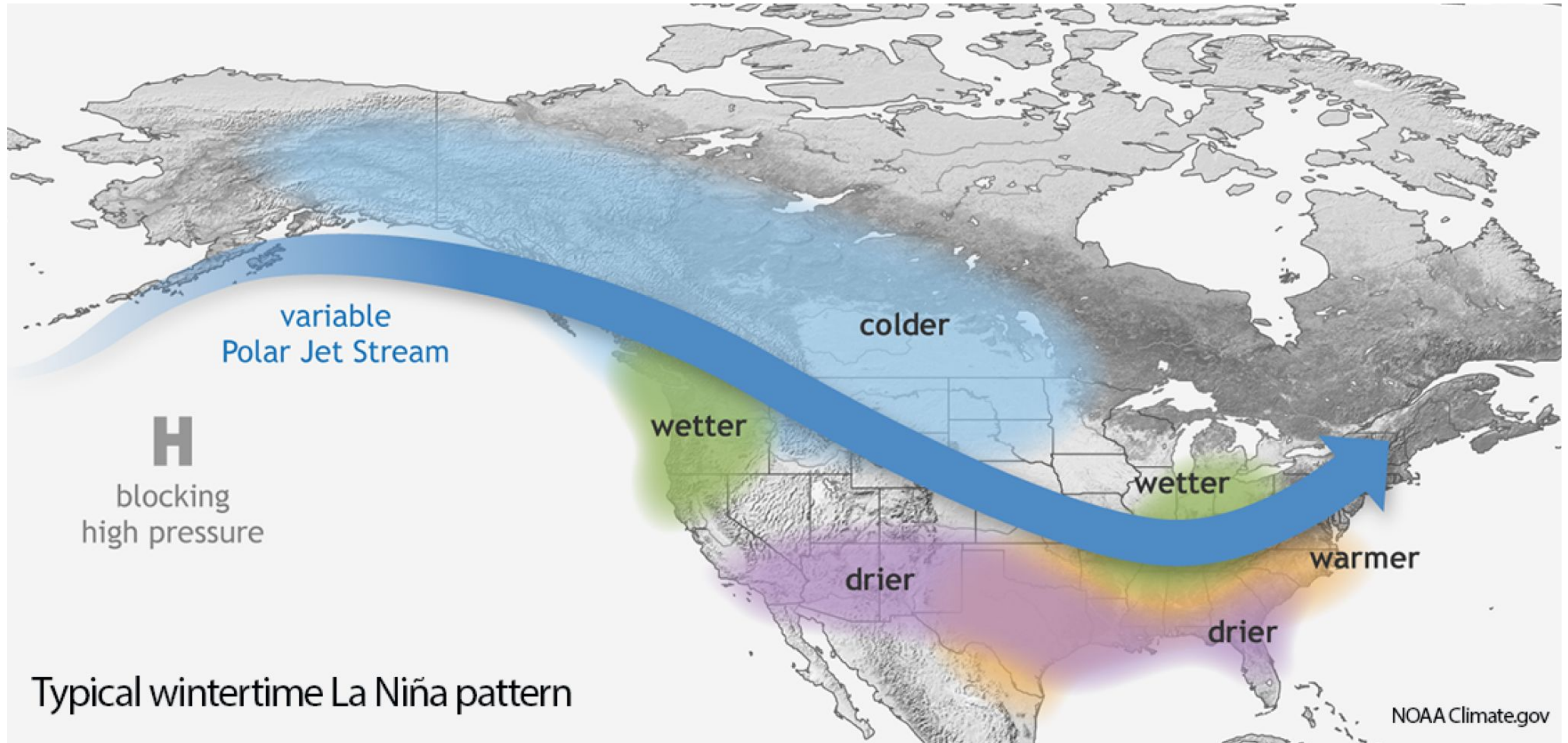
Winter Spotter Training





# 2024-2025 Winter Outlook

## La Nina Winter





# 2024-2025 Winter Outlook

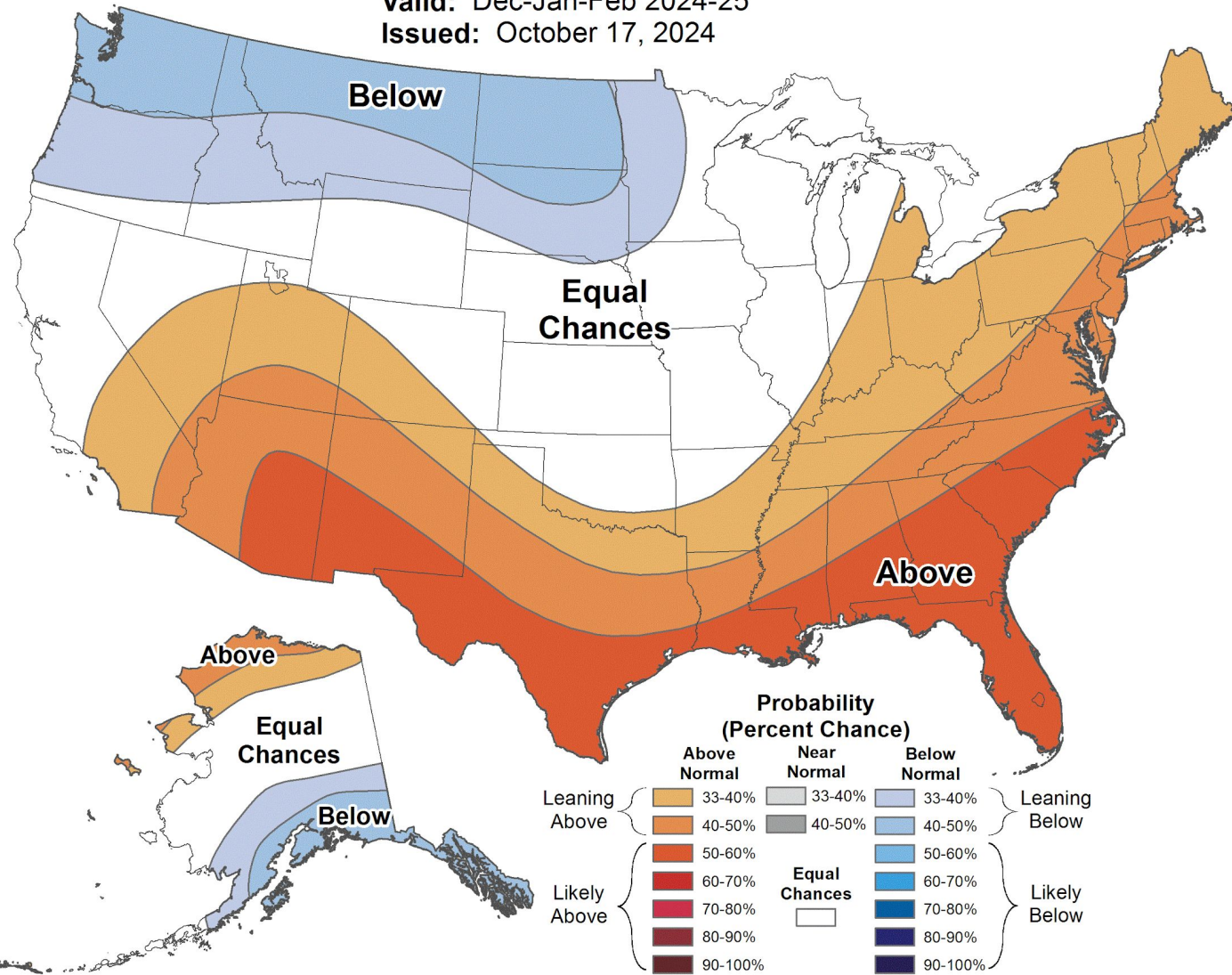
## La Nina Winter?



### Seasonal Temperature Outlook



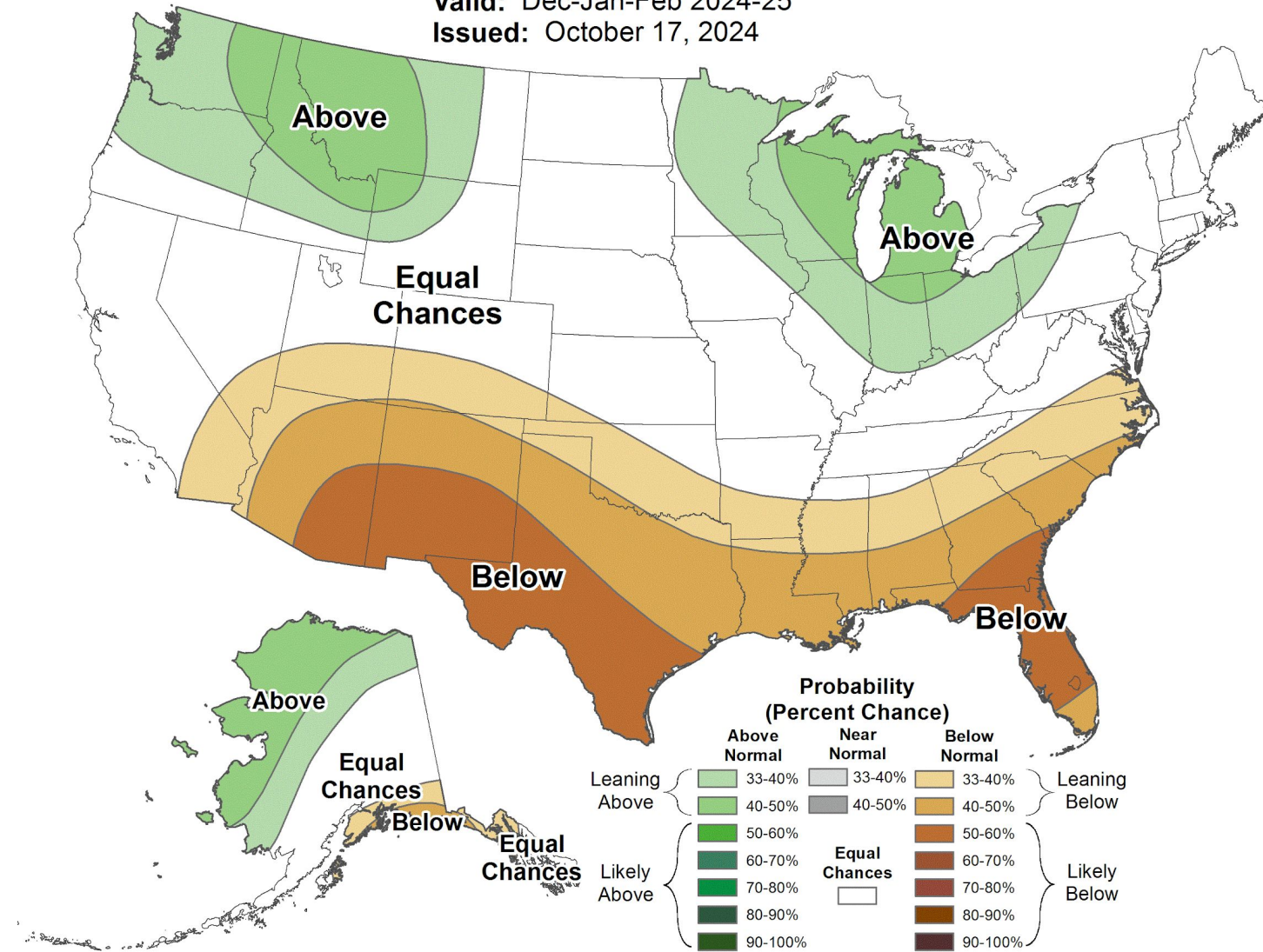
Valid: Dec-Jan-Feb 2024-25  
Issued: October 17, 2024



### Seasonal Precipitation Outlook



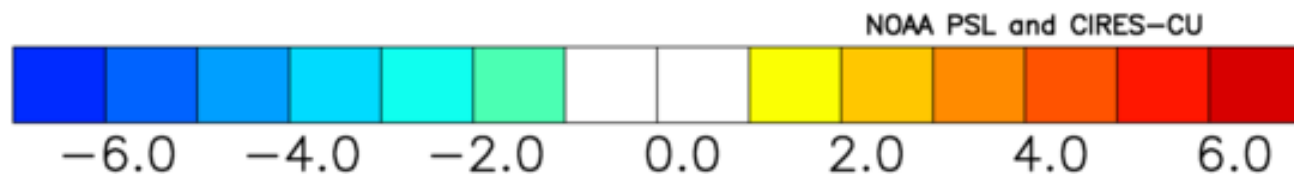
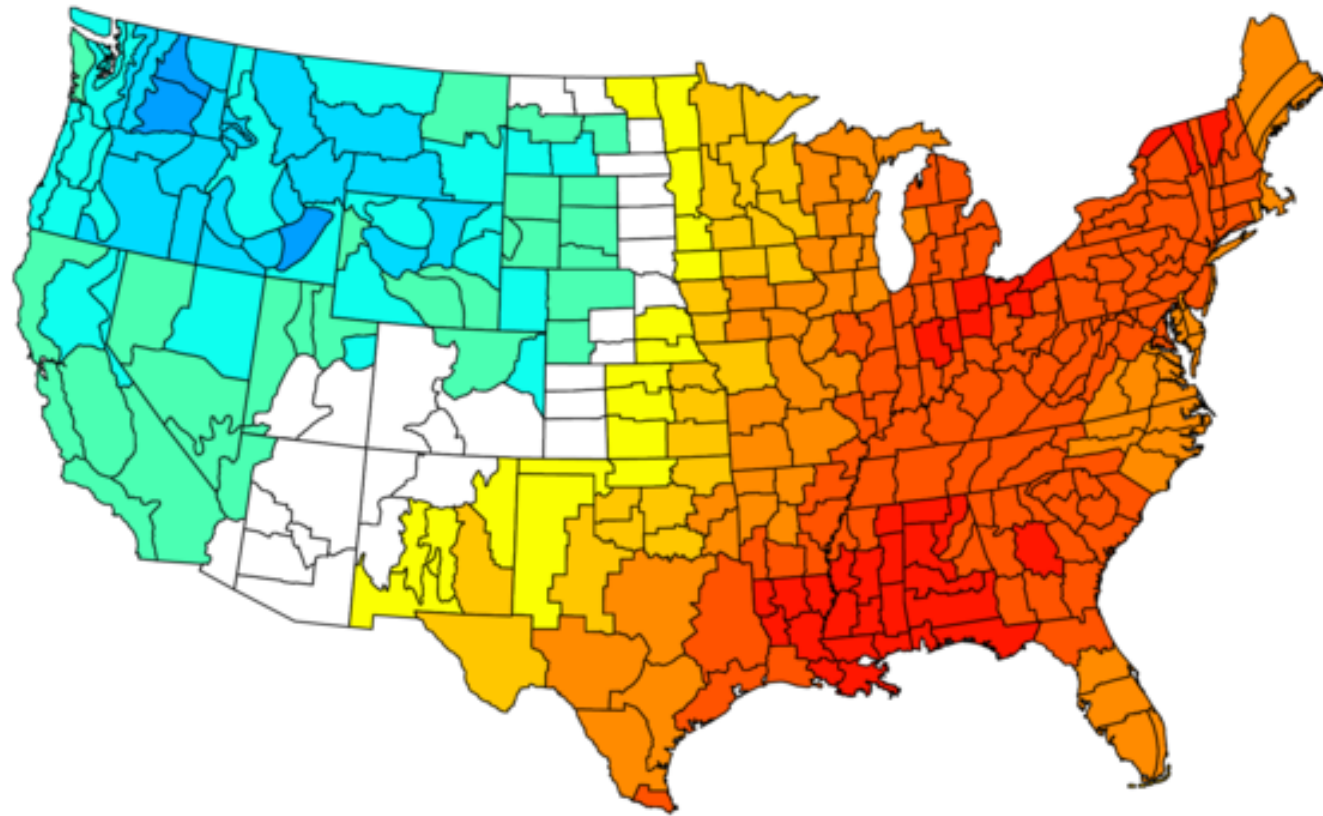
Valid: Dec-Jan-Feb 2024-25  
Issued: October 17, 2024



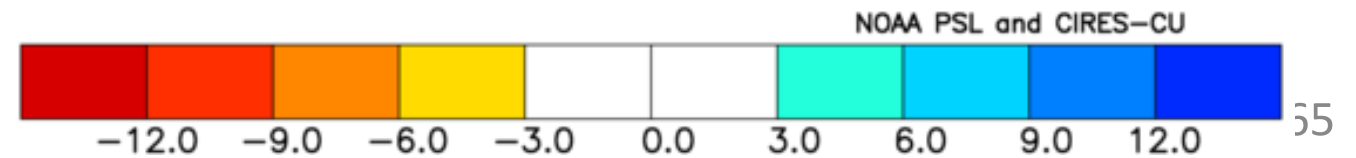
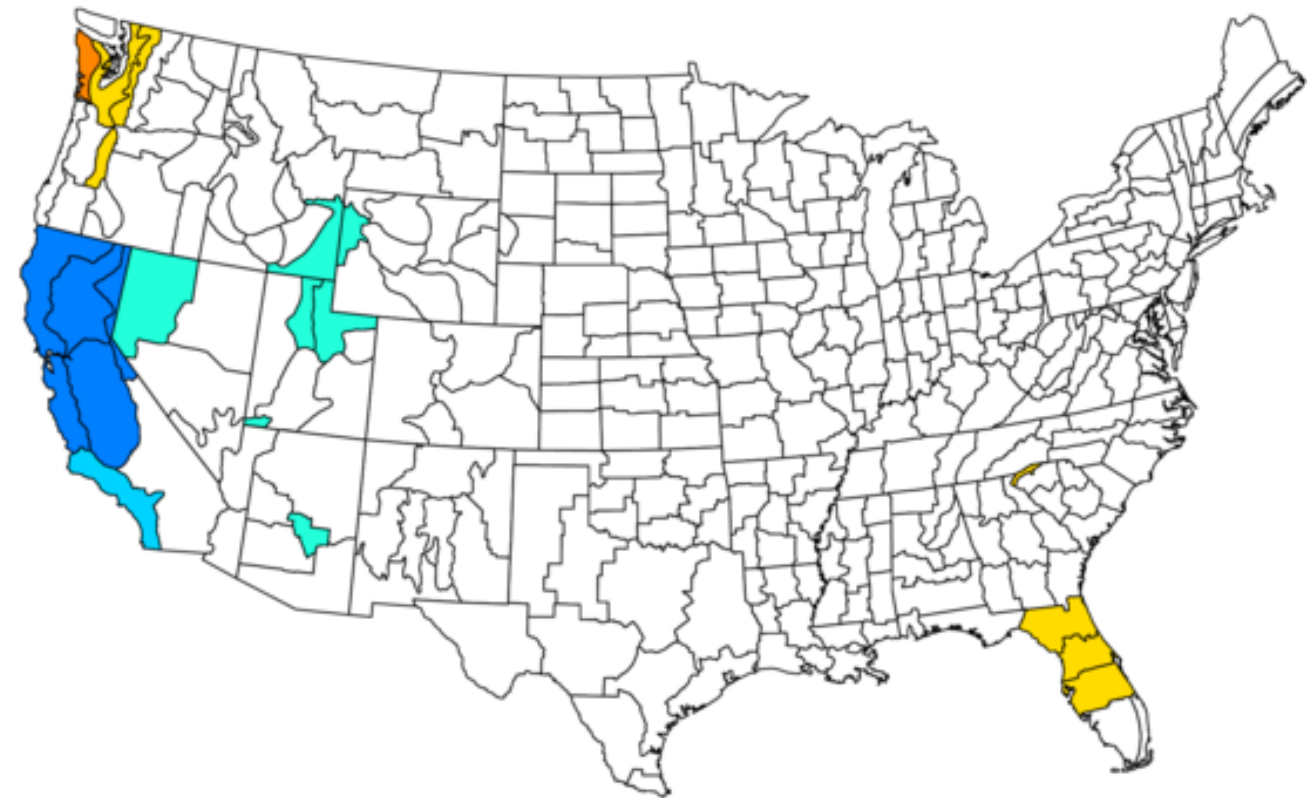
# Best Years (2016-17/2022-23)

Composites from the years that I think most closely mimic this year and the evolution of the current ENSO phase. Both of these winter are exhibiting what looks like longer term lower heights in the west and a lot of activity coming into the west coast. This is not a typical La Nina pattern, but if we stay right on the edge of La Nina and neutral that would likely weaken the Pacific high. Precipitation close to normal.

NOAA/NCEI Climate Division Composite Temperature Anomalies (F)  
Dec to Feb 2016-17, 2022-23  
Versus 1991-2020 Longterm Average



NOAA/NCEI Climate Division Composite Precipitation Anomalies (in)  
Dec to Feb 2016-17, 2022-23  
Versus 1991-2020 Longterm Average



Putting together all of the data, I came up with these 2 years as being pretty close to what we are seeing as we move toward winter. There was another year 1966-67. That year also followed a super El Nino and was an enso neutral winter. It also fell within a period of a strong positive QBO. However that was a cold year and I hesitate to use data that old, due to the changing climate. 2016-17 has so many similarities with where we currently are. Warm year, a weak La Nina that went back to neutral, followed a super El Nino, positive QBO, and an eerily similar dry summer-fall period. I think a lot of the data has leaned drier. The winter of 2016-17 was not dry, but was not wet either. Additionally, the data that occurred in the not too distant past showed a movement toward warmer winters. There were some exceptions but as we moved toward the end of the 20-teens and into the 2020s, winter got warmer. I don't feel super confident about 2023, but the ENSO has a very similar path as this year, the QBO is positive and like 2016-17 the summer and fall was very similar rainfall wise. 2022 wasn't as warm as this year or 2016, but it was by no means a cool year like 1966. The data is pretty self evident. A warm winter with well below normal snow. Interesting that both had colder Decembers before the thermostat went back up. At least 2016-17 had some snow.

## Best years

2016-17 warm year/neutral ENSO/weak La Nina to ENSO neutral/followed super El Nino/+QBO/dry summer-fall

2022-23 weak La Nina/to ENSO neutral/+QBO/dry summer-fall

This chart will look at the temperature/precipitation/snowfall for the winter months (DJF)

Normals (djf)					Normals (djf)					
	31.2	8.42	32.7							
	Ave Temp	Precipitation	Snowfall	Big snow	Days<0	Ave Temp	Precipitation	Snowfall	Big snow	Days<0
<b>2016-17 (djf)</b>	36.3	8.43	20.2			<b>2022-23 (djf)</b>	36.5	7.32	11.2	
December	33.6(-0.1)	3.43(0.59)	6.0(-1.7)	3.8		December	33.0(-0.7)	1.76(-1.08)	2.9(-4.8)	1.2
January	34.6(5.8)	3.54(0.58)	7.5(-5.8)	1.7		January	36.9(8.1)	4.02(1.06)	8.1(-5.2)	2.2
February	40.6(9.2)	1.46(-1.16)	6.7(-5.0)	3.2		February	39.7(8.3)	1.54(-1.08)	0.2(-11.5)	0.2



# Skywarn Certificates

## NWS Pittsburgh Skywarn

[Weather.gov](#) > [Pittsburgh\\_PA](#) > NWS Pittsburgh Skywarn

Pittsburgh, PA  
Weather Forecast Office

[Current Hazards](#) [Current Conditions](#) [Radar](#) [Forecasts](#) [Rivers and Lakes](#) [Climate and Past Weather](#) [Local Programs](#)



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[weather.gov/pbz/skywarn](http://weather.gov/pbz/skywarn)

OR

[weather.gov/pbz/skywarn-certificate](http://weather.gov/pbz/skywarn-certificate)

**Code: winter24SPOTTER**



### Instructions for generating your Skywarn™ certificate (in-person and online/virtual classes)

**NOTE:** These certificates are for SKYWARN classes conducted in Western PA, Eastern OH, and Northern WV only (covered by the NWS Pittsburgh office). You should have attended a recent NWS Skywarn™ class in person or online conducted by a NWS Pittsburgh staff member.

#### [Online Basic Skywarn Quiz and Certificate](#)

If you've taken the online/virtual variant of our Basic Skywarn class (conducted via Facebook Live, Go-To Webinar, or recorded on Youtube), please take [this quiz](#) to receive your SKYWARN certificate. Your certificate will be emailed to you with additional information.

#### [All Other Skywarn Certificates \(Password Required\)](#)

For all other NWS Pittsburgh spotter classes (Online or In-Person Advanced, In-Person Basic, River Ice, etc.) please use [this form](#) to receive your SKYWARN certificate. Your certificate will be emailed to you with additional information.

#### **How do I register for PBZ's SKYWARN Database?**

If you've taken a Skywarn class, but haven't already registered for our Skywarn Spotter Database, or you'd like to update you email address in our database, please [visit this form](#).



# Questions?

## Contact Information

### Web

- [weather.gov/pittsburgh](https://weather.gov/pittsburgh)
- 800-242-0510

### Facebook

- [facebook.com/NWSPittsburgh](https://facebook.com/NWSPittsburgh)

### X

- @NWSPittsburgh

