# **Probabilistic Snowfall** Understanding Uncertainty

The probabilistic snowfall products are intended to provide a range of snowfall possibilities. This complements the existing NWS forecast in order to better communicate forecast uncertainties before and during winter weather events. For example, you may see your local forecast saying 3-6 inches of snow. This is the NWS official forecast, but there is still uncertainty.

The probabilistic information can help you understand more about this uncertainty to make informed decisions. This range of possibilities is important to consider when planning and making your decisions. For example, your forecast is for 6-10 inches of snow, but there is still a reasonable chance you could see 12 inches. So, you may want to consider having extra batteries, flashlights, and food on hand in case the storm produces more snow and has higher impacts than the official forecast.

The Probabilistic Snow Page is broken down into three parts: Expected Snowfall and Percentile Graphics, Probability of Exceedance Graphics, and Probability Tables.



## **Expected Snowfall and Percentile Graphics**

This is when the forecast was created. This is important to check to make sure you have the most up-to-date information.

This is the expected amount of snow to **most likely** fall and accumulate.

This is when the forecast is valid. This is the amount of snow expected to fall between 5 AM Nov 19th and 5 PM Nov 20th.

Interpretation of this graphic: The most likely (or expected) outcome is 2.5" of snow at Jackson, WY.

#### **Expected Snowfall and Percentile Graphics (continued)**



This is the forecast **low end amount** of snowfall, meaning there is a 90% chance of snow being GREATER than this amount.

Interpretation of this graphic: Jackson, WY is expected to see at least 1 inch of snow. In fact it's very likely (90% chance) that they'll see even more.

This is the forecast **high end amount** of snowfall meaning there is a 90% chance of snow being less than this amount.

Interpretation of this graphic: Jackson, WY is expected to see no more than 4 inches of snow. In fact it's very likely (90% chance) that they'll see less."



The overall interpretation: The range of possibilities for forecast snowfall at Jackson, WY is between 1" and 4". The most likely (or expected) snowfall is 2.5"; however as little as 1" or as much as 4" may fall. When the "high end" and "low end" numbers are closer together, there is greater confidence in the snow amounts. When they are farther apart, there is less confidence and more uncertainty in the forecast.

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## **Probability of Exceedance Graphics**



These represent the likelihood of exceeding a set threshold of snowfall. In this example: Caribou, ME has a 62% chance of seeing any accumulating snow, with only a 9% chance of seeing 1" or more of snowfall accumulation.

Interpretation: It is likely that Caribou, ME will have accumulating snowfall, but it is not likely to reach 1".

### **Probability Tables**

A probability table is a text-based table for cities and towns that prefer text to a map. A wide range between minimum and maximum amounts indicates large uncertainty in the forecast, while a narrow range indicates high confidence in the forecast. Selecting a county displays a list of specific cities within the county and shows the probability of snow amounts exceeding a particular threshold for each location. The higher percentages in the two circled columns indicate that the areas will likely see at least some snow on the ground.

Snowfall Totals by Location Experimental - Leave feedback 01/26/2021 0700AM to 01/29/2021 0700AM What's this?											
	Sm	~	Chan	no of s	laoing	More	Snow	Than	_		
	Low End	chance of seeing Plote show Than									
Location	Snowfall	Snowfall	Snowfall	C>=0.1"	>=1	>=2"	>=4"	>=6"	>=8-	>=12"	>=18"
Bayard, WV	0	<1	2	73%	30%	5%	0%	0%	0%	0%	0%
Charlottesville, VA	0	<1	2	57%	29%	8%	0%	0%	0%	0%	0%
Elkton, MD	0	0	<1	20%	0%	0%	0%	0%	0%	0%	0%
Frederick, MD	0	0	<1	20%	0%	0%	0%	0%	0%	0%	0%
Fredericksburg, VA	0	<1	<1	44%	7%	0%	0%	0%	0%	0%	0%
Hagerstown, MD	0	0	<1	17%	0%	0%	0%	0%	0%	0%	0%
Harrisonburg, VA	0	<1	2	59%	27%	6%	0%	0%	0%	0%	0%
Inner Harbor, MD	0	0	<1	22%	0%	0%	0%	0%	0%	0%	0%
Leonardtown, MD	0	<1	<1	36%	4%	0%	0%	0%	0%	0%	0%
Martinsburg, WV	0	0	<1	17%	0%	0%	0%	0%	0%	0%	0%
National Mall, DC	0	0	<1	29%	0%	0%	0%	0%	0%	0%	0%
Oakland, MD	0	<1	2	76%	37%	9%	0%	0%	0%	0%	0%
Staunton, VA	0	<1	2	63%	41%	19%	1%	0%	0%	0%	0%
Winchester, VA	0	0	<1	33%	0%	0%	0%	0%	0%	0%	0%

