



# Showers vs. Rain or Snow?

## What's the difference?



Juneau

As you may have noticed, the National Weather Service offices around the country use different terminology when describing precipitation. Within a single forecast there may very well be multiple ways that rain or snow is described. It can be anything from numerous rain showers to periods of rain to snow likely. So why do we not just call it straight rain or snow? What determines when we use different terminology? Read below to find out!

The webcam image on the right is an example of the sky on a day where the atmosphere is unstable and showers would be used in the forecast. Note the cumulus clouds and peaks of blue sky and sun.

### The Stability of the Atmosphere is the Key!

Forecasters assess the atmosphere throughout the forecast period to determine whether the atmosphere will be stable or unstable. Simply stated, stability is how much resistance a layer of air will have rising vertically.

**Stable air** decreases the ability for it to move vertically resulting in stratus clouds and steady rain or snow.

**Unstable air** increases the ability for air to move vertically resulting in cumulus clouds and showers developing

Forecasters determine how stable the atmosphere is by assessing how quickly air temperature changes as you go up in the atmosphere.



### So what are general expectations you can have on a day with showers vs. rain or snow in the forecast?

#### Showers

- Precipitation will be characterized by the suddenness in which it starts and stops as well as by rapid changes in intensity
- Cumulus clouds (fluffy white ones) with vertical development will be prevalent
- The sky may rapidly change in appearance with peaks of blue and sun alternating with times of complete overcast.

#### Rain or Snow

- Precipitation, in general, is relatively continuous and uniform in intensity
- Clouds will have little vertical development but are spread out horizontally and cover a large area of the sky
- Sky condition usually changes little throughout the day



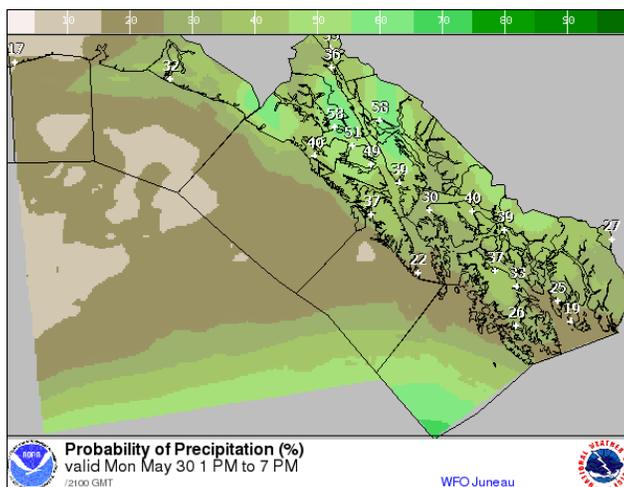
The webcam image above is an example of the sky on a day when the atmosphere is stable and rain or snow would be used in the forecast. Note the solid stratus overcast clouds.



# Probability of Precipitation (POP)



**What is POP?** The probability of precipitation (POP), is defined as the likelihood of occurrence (expressed as a percent) of a measurable amount of liquid precipitation (or the water equivalent of frozen precipitation) during a specified period of time at any given point in the forecast area. Measurable precipitation is equal to or greater than 0.01 inches. Unless specified otherwise, the time period is normally 6 hours. There are 13 forecast areas, or zones, in Southeast Alaska between Cape Suckling and Dixon Entrance. NWS forecasters use such categorical terms as *occasional*, *periods of*, or *intermittent* to describe a precipitation event that has a high probability of occurrence (80%+), but is expected to be of an "on and off" nature.



## How can you interpret POP and incorporate it into your planning when looking at our forecast?

Take the forecast below for example...

Rain. High near 60. Southeast wind around 10 mph. Chance of precipitation is 80%.

**What does the "80%" mean? Is it going to rain 80 percent of the time? Is it going to rain over 80 percent of the forecast area or zone?**

**Since POP is describing the chance of precipitation occurring at *any* point you select in the area, an 80 percent chance of rain means...**

**There is an 80 percent chance that 0.01" or more of rain will occur at any given point in the forecast area or zone**

The image above is an example of the graphic POP forecast produced by the National Weather Service office in Juneau

**Do you know what percentage POP equates to the wording you see in the forecast? Here is a quick reference table.**

| POP         | Rain (Stratiform)       | Showers (Convective)          |
|-------------|-------------------------|-------------------------------|
| 14% or less | None                    | None                          |
| 15-24%      | Slight Chance           | Isolated                      |
| 25-54%      | Chance                  | Scattered                     |
| 55-74%      | Likely                  | Numerous                      |
| 75-100%     | Rain or Periods of Rain | Showers or Widespread Showers |