

Chance of Rain Survey for People in the United States.

Survey administered to general public, in April & May, 2015 via online (Survey Monkey).

Full survey results are at weatherthings.com/pops.html

These are open-ended comments from 13% of the 1088 survey-takers.

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1. Forecasters seem to be wrong a lot!
2. Being in the Washington DC area, I'm more concerned about the cold and adverse weather, since this tends to effect traffic and driving conditions. THAT was when I was working. We are retired, now. Weather fashion suggestions are helpful. "Grab your umbrella, today." "Light jacket weather." "Best bundle-up!" "Go back to bed, area schools are closed, today!" ". . . you'll thank me, later!" :)
3. Guesswork. The emphasis should be on what you actually know about the rainfall and when it will occur. Using drama to report what may occur or has occurred is not reporting. We only need the facts.
4. I think KCCI News 8 in Des Moines Iowa does the best job!
5. I like to know the timing of the rain event...when is it expected abd how long it will last, in addition to the % chance there well be rain.
6. The forecasts were more descriptive and helpful than the percentages, because the percentages would be different for the individual sections of "your area".
7. To me, a good forecast would specify in text the intensity of the rain (e.g., drizzle, light rain, rain heavy at times, etc) and a probability based on statistics and areal coverage
8. where can i view the results of this survey and/or the correct answers?
9. I think that the criteria for 'rain chance' forecast should be standardized, but even if that were to happen, there's always going to be someone who will complain!
10. "Chance of rain" means something different to me than "Chance of brief showers" or "Chance of thunderstorms in late afternoon" etc
11. Please read "Probability Theory: The Logic of Science" by Edwin Jaynes (you will appreciate section 13.5 on weather forecasting)
12. I'm so confused now. I look at the rain percentage on an hour-by-hour basis for my zip code. I assumed it was the statistical odds that it would rain any amount in that area in that hour of time. A rain percentage for a whole day is useless.
13. The distinctions offered were not generally how I think of a chance of rain, or even % chance of rain.
14. You made me think! 100% chance and you only get a trace of rain seems like "false advertising", but what % do you use? Thanks for the fun survey.
15. There is not likely chances of rain at 0 or 100%, statistically that doesn't make sense.
16. Hourly forecasts are super helpful! :)
17. n/a
18. In reality I just want to see a few runs of the model so this ambiguity does not exist.

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19. I think meteorologists should report "chance of any rain" and then some composite number that represents the heaviness/duration/impact of the rain on your day
20. .Maybe we shouldn't have a chance of rain system? Maybe we should have another way of conveying it. Like if it's likely a downpour tell people it's umbrella and raincoat weather but if it's going to be a light drizzle once in the day tell folks there'll be a light rain but you won't really need any rain gear as it'll be so light/short?
21. I always look at the chance of rain and the expected amount. I will more likely prepare for a 60% chance of 4" downpour than a 90% chance of 0.001" drizzle.
22. Ack! As soon as you added in the idea of how much of "my forecast area" is going to be affected by rain, it threw off my thinking about how to capture that in a percentage chance. Man, I wish you luck with the findings from this survey; such a compelling point to understand better!
23. This seems a lot more complex than I thought it was. Helpful survey to make me think about how weather is forecast.
24. "east central" Huh? Mid atlantic...
25. Everywhere else will not get rain, however, in your area there will be rain
26. That man in the image was just sweating a lot from the sun.
27. thanks for asking
28. I've always wondered if everyone followed the same criteria. I know the general public doesn't really understand what the percentage actually means. I'm interested to see the results. Thanks for this.
29. I just want to know if I need to take an umbrella. If it is going to rain, then tell me it will. If you aren't sure, then there is a 50% chance of rain.
30. I usually just look at the POP as a 50/50, 100% chance or its not going to rain. Forecast are now becoming remarkably localized so I don't think the Weather service can issue a % chance of rain covering the entire forecast area accurately.
31. Great topic! As a math teacher this was always a controversial subject. Nice to hear both sides.
32. I like in Oklahoma how we are usually told "where" the chances of rain may occur and how much rain. For example: 60% chance in the panhandle of heavy rain. 100% chance of quick moving, isolated storms along I40" I feel I have a much better ideas of what to expect with more information such as "slight, moderate, & high" risk of severe storms or tornadoes.
33. Great idea to survey both what public interprets and what meteorologists intend! Communication depends on shared vocabulary!
34. 100% chance of rain means my forecaster is sure it will rain somewhere in the forecast area during the time period indicated. I don't need to be rained on myself for that forecast to be a good one. Seems pretty simple to me!

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35. 50%
36. I think it should be the statistical likelihood of rain impacting outdoor activity (ie more than just drizzle for a few seconds)
37. Great survey. Makes you think about what rain chances mean or should mean. It's a hard task to have to do.
38. I think this study has merit, but I wonder about the utility of such questions from a hindsight perspective. As a meteorologist, I should always want to include 100% if I know (or knew) that it was going to rain (had rained). Otherwise, I'm making up my own definition of PoP.
39. There's a 40% chance of rain, chances are higher for wherever the dude in Purple is. The chances lower as you head towards the tree
40. I'll be interested in seeing the results of this. Very interesting. Never have been a fan of PoPs
41. I try to avoid using direct percentages since a 7-day can cover such a large area. Chance to me is more "some areas may see showers, some areas may be dry." More of a statistical chance and less emphasis on how much rain will fall.
42. Feel like question 3 biases the submitters by putting the two most likely correct answers as the first two answers
43. There are right answers to these questions, so why cant you tell us the score?
44. I think, for example the question that says there's 10% chance thunderstorm rains 2 inches, you guys can say there's a 10% chance of rain but where that is will be heavy rain. It's the same as saying isolated thunderstorms. Also, yes I feel when the percentage of rain is higher I would typically think the whole day will be rainy. Maybe if you're going to put 100% chance of rain focus that 100% on what time. So if it's 100% but it's not until late evening say 100% of PM showers. So you can still keep the certainty but specify what it is so people can better plan their days. If I see 100% chance of rain I'm personally thinking its a rain out type day
45. Question 3 I didn't know if 1 is low & 5 high or vice versa.
46. RICK SMITH ROCKS
47. Sunny with a chance of rain.
48. To my understanding, the % chance of rain is the % of days in the past with similar conditions that it also rained.
49. I would say there is a 25% chance of a statistically valid result, maybe, give or take...
50. How did I do?

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51. I've always thought that POP was more a measure of how likely it is that a spoy will get rain not related to the amount of rain.
52. 30%
53. I had been told that it was the percentage of days with similar conditions that experienced rain in the past.
54. Thanks for the chance to participate.
55. It is important for meteorologists to communicate what a given PoP actually means, and that an isolated thunderstorm dumping rain on a small area on a 10% PoP day does not mean it was a bad forecast.
56. I like to think of it as the chance that i might get wet that day. alternatively, the % of meterologists who think it will rain there.
57. The language used by NOAA (chance of showers, isolated thunderstorms, accumulation less than...) all communicate the scenarios quite well compared to using a single POP.
58. Among many products in meteorology, POP's are just another area of confusion that lead to false interpretations by the lay public. The textbook definition of POP's does not take into account many important factors. There needs to be a better representation of POP's by meteorologists to remove that confusion in the future.
59. Living in a tropical climate where it rains almost every day, percent or rain means percent of area that will get rain ...other areas it means different things.
60. Na
61. To me the chance of rain is the odds of getting any amount of rain and any given length of time during a particular day.
62. The order you present your items in the first few questions IS leading. be SURE to justify this in your research design and publications. It likely matters deeply. If you don't believe me, reorder the list and send back out.
63. 100% chance of rain where the person is!
64. Chance of rain should have context, isolated, interment and so on. The difficulty is detereming the forecast area and how that impacts where I am. It is easy to blame the weatherman of you don't read discussions
65. A fast moving shower can often be worked around someone's day..however, knowing a gray, washout day is in store can greatly affects one's day. It's also surprising how many think the high for the day will be achieved mid afternoon and kids get dressed for school in shorts but a cold storm blows through and drops the temp to say 50 by lunchtime b/c the high was at 8:00am! Lol
66. It Is a calculated number of experience and computer data

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67. Just make it consistent. A broadcasters chance of rain HAS to mean the same thing as the weather channels, or the NWS, and etc. And please make whatever you decide public and transparent!
68. thank u for all the hard work y'all do, I need a job are y'all hiring
69. Hope it works!
70. ...deleted inappropriate comment...
71. Chance of rain, radar help figure out weather.
72. I am not sure of the formula, but a "percentage" alone is not what I look for. Many times details are put into each period of the forecast. I also read the forecast discussion to have a better understanding of what is coming and how they determined the percentage and the overall forecast.
73. Go 'Noles!
74. Instead of a single percentage number use words; More precise phrases, like the ones used in survey's scenarios.
75. Some meteorologists interpret a 20% chance of rain as "20% of the area will get rain," which seems inaccurate to me. I'd rather know the overall statistical odds, unless the forecast can get specific enough to tell me I'm going to be among that 20%. Thanks for doing the survey, the results will help make forecasts more useful.
76. Definitely made me think more about how percentages may mean different things! Normally if I see 50/60 i think "it's going to rain" and look for additional info about how much rain/how heavy etc.
77. less than 10%
78. Thanks for trying, but you'll never get everybody to understand the % chance concept of rain. :)
79. Question #6 is very tricky based on my belief of what the percentage of rain means.
80. The chance of rain tells you just that - what is the chance that it WILL rain. The amount of rain is totally different. So the chance that rain will fall is 100%, but the amount is only 1 inch. That is the information that would help me most. Currently when I hear a 20% chance of rain, to me that means it probably won't. When I hear 90% chance, that means that it probably will, but it doesn't tell me if it's a drizzle all day, or if it is thunderstorms all day. The amount or type of rain is also an important piece of information to have.
81. 20
82. It would be helpful to add another number which indicates anticipated intensity and duration of rainfall for the area
83. Being from the Houston area, I always want to know WHERE the rain will occur. If I'm South of Houston and the forecast is 40% of rain but primarily North of Houston, I know my chances are much lower.

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84. Interesting survey. Thanks for asking.
85. Wouldn't a 50% chance probability that rain will occur and 50% of the coverage area will see rain theoretically be the same thing?
86. I'm a meteorologist. Rain chances should remain subjective with an explanation.
87. This is a tough question, for sure. Ultimately it's about whether I get wet or not. Even a light passing rain is rain...100%. Scattered...if I get wet...is 100%. So, percentage is only a part of the equation especially in a large Metro area covering hundreds of square miles.
88. Wherever we have lived, it always seems like on a day when there is 20% chance of rain we get rain. When it is 40-60% we don't get rain. When we have been new to an area, people have said the same thing. I do not understand that and wish meteorologists could explain that phenomenon better. Also, a rain percentage cannot give an accurate outlook for the day, all forecasts need to have a short written summary for how the expected weather will happen throughout the day- such as sunny all day except for a 30 minute period of rain in the afternoon or sunny with scattered showers for parts of the area.
89. We should all be interpreting the rain chance the same way, or at least know how the forecaster is interpreting it.
90. It seems to me that any percentage of rain means that there is a likelihood of rain.
91. Most of the general public and users of weather information do not understand what true POP means. Infact, some forecasters do no understand what POP really means. I have slowly changed the way I forecast and explain the forecast by getting away from POP and using more descriptive words or phrases that the public and users of the forecast can understand very easily. Words like ... isolated, widely scattered, scattered, likely, numerous, widespread are words that people can understand unlike a 30% chance of rain showers.
92. Personal bias; I have a knowledge of statistics.
93. NA
94. The last question was a hard one. For the one area bound to get the rain, I'd guess it was a 100% chance, if you were certain it would happen there. But for the overall area, it sounded like a 0% chance.
95. Thanks for asking and offering an opportunity for citizen input! Much appreciated by a southern Vermont Skywarn Spotter.
96. Here 20% chance means a lot of rain. 80% sometimes rain sometimes none. The local weather here is poor. I usually go online to get my forecast from NWS or weather underground apps.
97. I know that pop means the chance that anywhere in the area gets rain, but being a stats junkie, it's hard for me to turn off the usual "chance" equals likelihood of rain in my head.
98. I've always perceived rain chances as what the likelihood is that it will rain at a certain area.

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99. More accuracy of any weather, rain, shine, sleet, etc., and over a longer period out, would be very useful for planning various life activities. Keep trying :)
100. Some feel that if the chance of rain is high, that the rain will be heavy; while others feel if the chance is low the rain will be light. It all depends where the rain occurs in a given area...as you can have it where one area gets "dumped on", and the rest stays dry...or just light rain area wide makes for a dreary day. Educating the public toward weather facts is the best thing...as those who feel that "bad forecasts are more often right than others" have never had to agonize and analyze over weather data.
101. I teach meteorology at a university
102. I liked the questions.
103. I do not know anything about chance of rain percentages. However I do not want to move furniture or plan any outdoor event without checking the chance of rain and looking at movements of cold fronts on radar. By doing that homework I know that I can mow the yard in morning rather than afternoon or move furniture unprotected in the afternoon rather than morning. Chance of rain percentage is not a know all measurement.
104. Honestly my main concern isn't rain or how much. All I want to hear is severe storm or non severe No Tornado Activity
105. To me, a "chance" for rain is the likelihood of some measurable precipitation in my general area; it has nothing to do with amount other than the fact that is is likely to be measurable. A 10% chance should mean one in ten.
106. I've learned that with POPs you have to consult the meteorologist issuing the POP to get their interpretation of what it is. As this survey suggests, it doesn't mean the same thing for everyone. I don't like them....period. I am forced to use them because it is the viewing public's security blanket. They are so used to seeing them, if you take them away....there will be mutiny. Can't we come to a common ground on something that EVERYONE will be able to understand with ONE universal definition?
107. Finally understood issue with thunderstorm question .
108. % chance of rain has to mean % chance it will rain a measurable amount on a day.
109. Just tell me how likely it is for me to get rained on... don't overthink it.
110. I think that pops are a pretty useless way to convey information. People consistently misinterpret single numbers. Pops should be eliminated from the met's vocabulary and replaced with efforts to create more vivid narratives and descriptions of the day's weather.
111. To me a percentage tells me that is the chance of rain my area will get. 100% says my area will absolutely get rain. Is it's 100%, I then want to know the timing of the storm and how much.
112. Interesting study. I know I care more about when, where, and how much it will rain versus if. Can I plan my day around the rain? What happens if I plan my day around it, but the forecast or my planning is bad? How screwed am I? It was hard to choose %s for the examples, but maybe that is due to how extreme they were.

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113. L

114. I would like to see multiple indices in the forecast: 1) Forecast confidence level (Statistical chance of rain) 2) Length of time it will be raining 3) Amount of rain that will fall 4) Aerial coverage of rainfall instead of trying to put all of that information into one number.

115. I would qualify the rain chance with modifiers such as isolated TSTMs or scattered showers or morning precipitation and the like.

116. It is going to rain.

117. I think when people look at a forecast, most people are trying to decide how the weather will affect their lives. Statistics are the real driving force for forecasting, but in terms of the public people just want to know how to plan their lives. How long the rain will last and disrupt activities is the biggest question people want to have answered by a forecast.

118. To me, there is a difference between a chance of rain for the area and a chance of rain for my location specifically. This needs to be made more clear in forecasts.

119. Questions 6-9 don't use the same language as the rest of the questions and don't contain enough information about what is meant by "rain percentage" to be helpful. Good luck getting meaningful data from a bad survey...

120. Improve the questions by indicating which is higher, 1 or 2. Improve the "you be the..." questions by indicating whether or not the computer models are 100% accurate, as part of the % chance is due to uncertainty. My answers assumed forecast was a perfect forecast.

121. I was lucky. We've had meteorologists in S CT that actually Explained those squiggles on the Map! This way, those of us who were paying attention absorbed the information correctly and if we were Really listening, we learned a little about the weather map each time too!

122. Thanks for all you do to keep us informed and safe in our unpredictably predicted daily lives.

123. The people adapt to the meteorologists of the area in which they live. Don't standardize weather forecasting!

124. Most of the questions give inadequate data to answer the questions in an intelligent manner. Other questions do not give the proper response options. Poorly written survey, in my honest opinion.

125. It's the chance of any rain in the area during the time period. Not the amount or rate, those would be additional values

126. Contrary to the questions and scenarios. "Chance of rain" is the likely hood that it will rain. 1/10th of an inch or 10" the results are the same, it rained. Percentages simply help gauge how possible it is that it will actually rain.

127. It was fun! It is kind of hard predicting the weather here in Colorado half the time but you can always count on a afternoon or evening thundershower in the spring/summer!

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- 128. I believe rain chances are solely on the possibility of it raining any. I don't think amount plays much of a role on predicting the overall chance
- 129. Apparently, predicting rainfall percentages alone isn't the best way to communicate. Location, location, location!
- 130. Forecast doesn't mean for sure! People need to understand it is only a prediction.
- 131. If it's going to rain for sure, I would think that is 100% chance using probability
- 132. HARD JOB FOR ALL!!
- 133. This survey is ridiculous...it has nothing to do with how much. Is it going to rain...yes or no...what are the chances?
- 134. You all do a great job!
- 135. I don't like to hear from my local channel what is going to happen on the other side of the state. I want to know what is going to happen in my area. With all the local channel broadcasting there ought to be a way to get a closer view.
- 136. Besides just a percentage I would also give a detailed description like the forecasts from the survey explaining in more detail where the rain will fall, how much, when, etc.
- 137. When where how much then %chance
- 138. saw the post on KCCI

Author note-

This survey was intended to spur discussion, while gauging diversity of perspectives, and it did!