

Does Precipitation Affect How Many Dark-Eyed Juncos We See?

by Jonathan, Grade 8
Tualatin Academy, Hillsboro, OR
Mr. Kahler

Purpose

My search to find the answer to my question, "Does precipitation affect how many Dark-eyed Juncos we see?" began when I was complaining about having to sit in our birdwatching spot, being very cold and wet. I tended to see more birds while it was raining, than when it was not. This made me begin to wonder whether or not the birds' predators would be hiding more when it was raining, thus giving the birds more of a reason to venture out.

I came up with the hypothesis that if there is more than half a centimeter of precipitation, I will see more Dark-eyed Juncos. I think this is because the birds will not be deterred by the cold. Birds are endothermic, which means that they need to maintain a certain body temperature, even if the outside is cold. However, birds have many things to keep them warm like feathers and scales, which insulate the bird when it is cold.

Materials

- Pencil
- Bird tally sheets
- Binoculars
- Location to watch birds

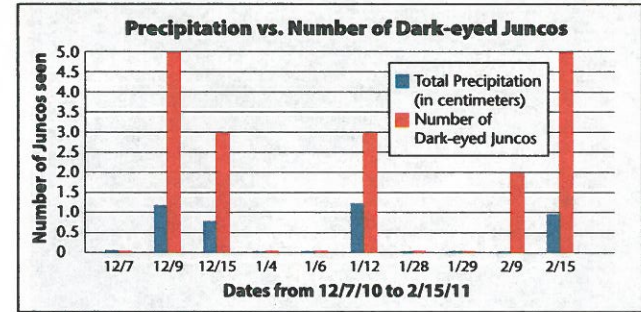
- Bird feeders
- Birdseed
- Weather station
- Field guide

Procedure

I thought about a question that I found to be interesting. I gathered information about my problem statement that helped me write my hypothesis. I also needed to determine my independent variable, which is the amount of precipitation that had fallen while we were collecting data. If there turned out to be more precipitation when we saw more birds out at the bird blind, then my hypothesis would be false. However, if there was more precipitation when my class saw more birds, then my hypothesis would be true. To support my hypothesis, the bird count would be higher when there was more than half a centimeter of precipitation.

The dependent variable in my report is the result of what happens with my independent variable. The dependent variable in the case of my study is the number of Dark-eyed Juncos me and my class observe during our observation period. If my hypothesis turns out to be true, then there will be more days where we see more birds when it rains more than half a centimeter than we would see if there was less precipitation that had fallen.

Results and Analysis



I collected my data over a period of 10 days throughout the months of November, December, January, and February. After I was finished recording my data on the bird tally sheet, I got to work transferring my data onto a graph using Microsoft Excel. That helped illustrate the patterns that emerged from the data. After I created the graph, I proceeded to find the average of both the number of birds I observed when there was more rain, as well as the average number of birds when there was less rain that had fallen during the observation period.

During the days with more than half a centimeter of rain, there was an average of four birds seen. During the days that there was less than a half a centimeter of rain, there was an average of 0.3 birds.

(cont'd. on page 5)

Precipitation (cont'd. from page 4)

Conclusion

Even before I was finished creating a graph from all the data that I collected, I began to see a pattern. As you can see, apart from one anomaly, my hypothesis appears to be correct. On the days that there was more rain, my class observed more birds than when it was dry. There were also days where neither birds nor rain appeared at the bird blind, but I included those days in my graph to make my study as complete and as thorough as I possibly could. There were many variables, such as wind, temperature, and amount of noise present that all could have influenced the results that I collected. I did find an answer to my question and discovered that birds do like to feed during a rainstorm, most likely due to the fact that there are fewer predators during a rainstorm than there would be when it was dry. The birds also may need to continue to move in order to keep

warm during the cold rain.

If I were to do this experiment again, I would most likely change my question so that it did not limit the study to only Dark-eyed Juncos, but include all species of birds. I would have done that because on some days there were no birds, and I think that broadening my sample would have made the experiment more accurate and would have given me more data. I also would have lowered the precipitation level at which the solution turns from true to false, to an amount such as a quarter of a centimeter, again to collect better data. I do think that my study was successful and that my hypothesis, "If there is more than half a centimeter of precipitation, then I will see more Dark-eyed Juncos," was correct and that Dark-eyed Juncos will in fact, feed during a rainstorm. 📖

Bibliography

- Voss, M.V. (2011, February 3). *Bird flight in rain*. Retrieved from: <http://www.newton.dep.anl.gov/askasci/zoo00/>

BirdSleuth asks...

Jonathan concluded that more birds visited during rain because of fewer predators or that birds may need to continue to move in order to keep warm during the cold rain. What do you think of these reasons? Can you think of other possibilities?



[zoo00785.htm](http://www.zoo00785.htm)

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