Introduction

The purpose of our project is to show how rainwater from nearby rain gauges can affect some of the water measurements in nearby Dillard's Creek and also how the Chowan River may be affected by the quality of the water coming into the river from Dillard’s Creek. We are interested in studying the water quality because we know the river has had some recent problems.

Research problem

Does the conductivity and pH of rain water near Dillard’s Creek affect the water quality of this creek? Most of the water to Dillard’s Creek comes from rainwater running off the land into this creek.

Hypothesis

We think the pH of Dillard’s Creek will be slightly less after a rainfall in the area and the conductivity will also be lower because the rainwater will wash out some of the pH and the conductivity.

Methods and materials

Equipment:
- pH paper
- pH meter
- Conductivity meter
- Thermometer
- Lifevest, Goggles, Gloves
- Bucket and Rope
- Nalgene bottles

We started by measuring pH, and conductivity from our rain gauges from CoCoRAHS and then we went out into the Chowan River and Dillard’s Creek and measured pH, conductivity, wind speed, and direction and cloud cover. We collected the water samples in special bottles and then tested for pH and conductivity in class.

Data

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Wind Speed (mph)</th>
<th>Wind Direction</th>
<th>Water Temp F</th>
<th>Cloud Cover %</th>
<th>pH</th>
<th>Conductivity μS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/31/19</td>
<td>Site A - Arrowhead Beach Front</td>
<td>7</td>
<td>W</td>
<td>61</td>
<td>100</td>
<td>7.4</td>
<td>72</td>
</tr>
<tr>
<td>3/31/19</td>
<td>Site B - Boat Ramp at Mouth of Dillard’s Creek</td>
<td>missing data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/31/19</td>
<td>Site C - Dillard’s Millpond</td>
<td>1</td>
<td>E</td>
<td>71</td>
<td>20</td>
<td>7.11</td>
<td>76</td>
</tr>
</tbody>
</table>

Discussion of Results

We had a few problems while conducting our experiment. One of the more prominent problems was consistency, we had trouble getting to our sites weekly. This caused some issues in our data collection since we were only able to collect from a few local sources. The data proved accurate compared to local environmental information. We started collecting data in March. Our data was interesting to observe.

Conclusion

Our hypothesis was undecided because we did not have enough data to look at for any connections between rain water and the pH and conductivity of Dillard’s Creek or the Chowan River.

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