

How is the frequency of Snipe's "Drumming" affected by Wind Speed and Time?

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Introduction

Iceland is a place common for breeding for different birds, like the Common Snipe (*Gallinago gallinago*). The snipe's mating call isn't produced vocally, they use two of their tail feathers, known as the pen feathers. They stick out farther than the other tail feathers and when they dive the air goes between them creating a "drumming" noise. Because their call is reliant on wind, how does wind or time of day affect it?



Figure 1
The arrows in this image are directing your attention to the snipe's pen feathers. These feathers create the gap, that causes the "drumming"



Figure 2
Each of the four sample locations

Methods

Observations were taken from four different locations on Skalanes' property, roughly 200 feet away from each other (see Figure 2). Every other hour starting at 6:45 am was spent in the field collecting data, listening for the snipes "drumming" for ten minutes at each location. Overall, the observations took fourteen hours over two days. To find the wind speed, max gust, and the temperature I used a Kestrel 2500 Weather Meter. The meter was run for the full ten minutes of observation and tick marks were made every time snipe 'drumming' was heard.

Data were organized into, Drumming Instances vs. Portion of Day (see Figure 3), Wind Speed vs. Portion of Day (see Figure 4), and "Drum" vs. Wind (see Figure 5). Portion of the day was broken into eight sections, with portion 1 being early morning and portion 8 being late evening. Because Iceland experiences 24 hours of light at the time of year this study was conducted, dawn and dusk were not useful indicators of timing my observations.

Results

Drumming Instances versus the Portion of the Day (see Figure 3) shows a spike in activity roughly around 5p.m. Wind Speed versus the Portion of the Day (see Figure 4) shows a significant decrease in the wind speed around the same time. Based upon the data, there is a trend that when the wind speeds are lower there is more "drumming" from the snipes. Conversely, when the wind speed is increased there's less "drumming". Time of day also showed a correlation with "drumming", but this also coincides with lower wind speeds.

Drumming Instances vs. Portion of Day

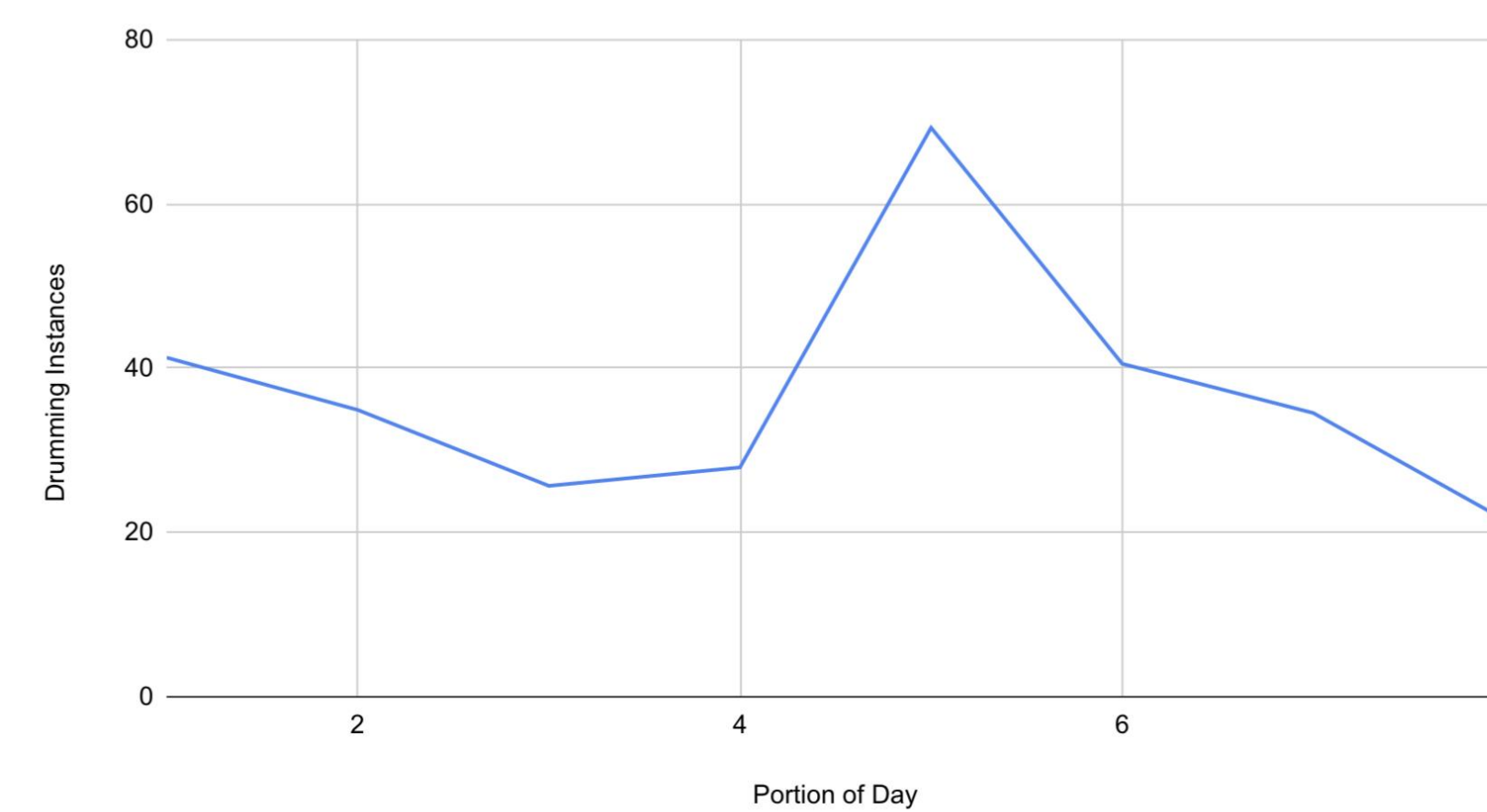


Figure 3
How many times the snipes "drumming" was heard versus the portion of the day.

Wind Speed vs. Portion of Day

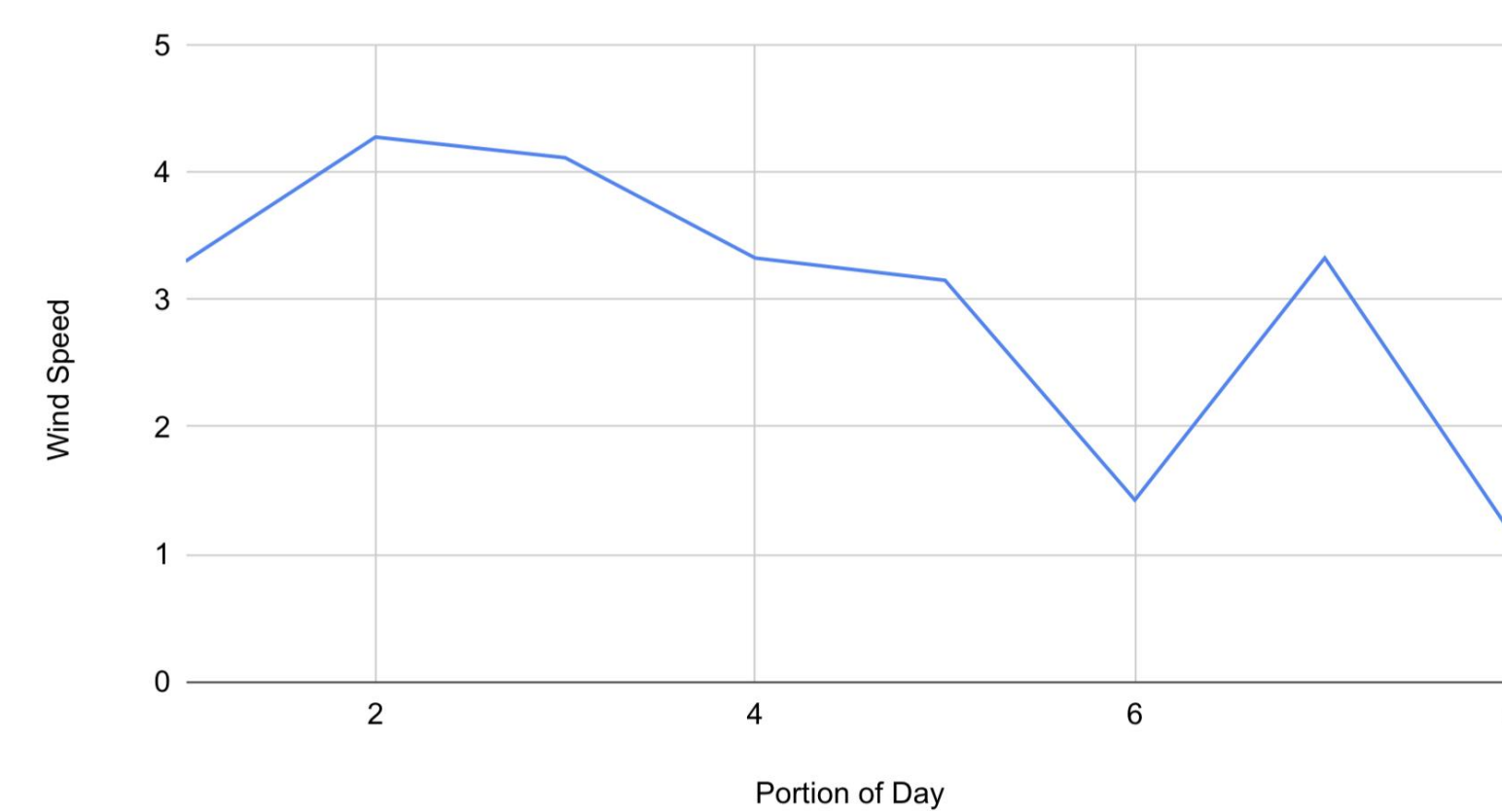


Figure 4
The wind speed during the portion of the day.

Drum vs. Wind

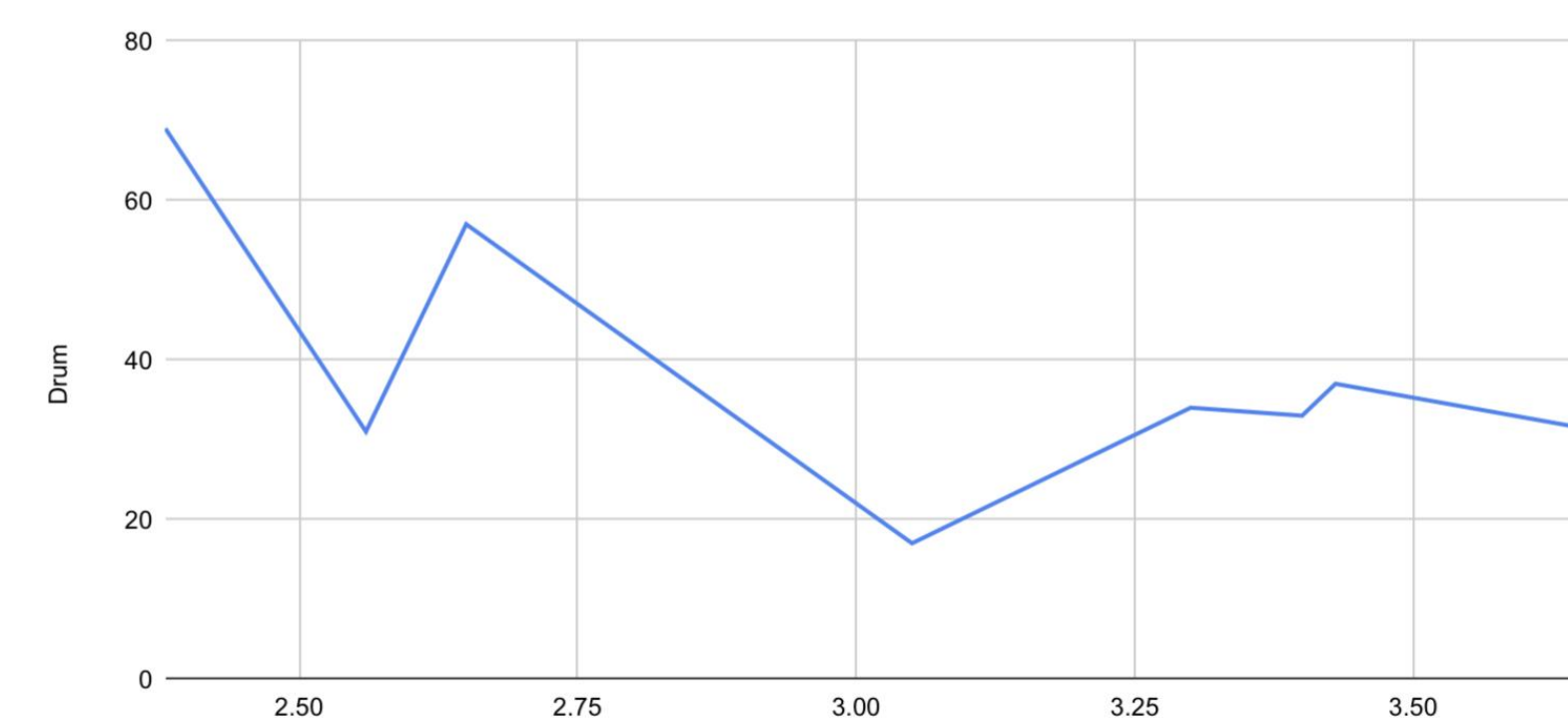


Figure 5
How much the "drumming" was heard versus the speed of the wind.

Conclusion

The results showed a trend in frequency and wind speed, but also at the time of day, though I can't parse those out because the time of day may also just be a time when wind is low.

The biggest challenge of this experiment was the arctic terns (see Figure 6), they are very active in the mornings and evenings. Their calls sound like screeching, during these times it becomes hard to focus on listening for the snipes "drumming". The terns' calls could be a place of error, not only them. It rained heavily the morning of the second day, it was difficult to hear the snipes then too. There is also the possibility of mishearing their "drumming" and counting too many or not counting all of them.

To better figure out if wind is a heavy factor in drumming display frequency, future data need to be taken for more days throughout the breeding season and audio recordings can help check observation fidelity after being in the field. Recordings may also help remove the noise of the Arctic terns, and better identify individual drumming instances. These trends indicate that climate may have an effect on breeding displays, and therefore success, in snipes. Future directions include: How does the frequency of the "drumming" compare to other climates? And how might wind speed of an area affect breeding location selection.



Figure 6 The Arctic Terns

References

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