

Relation Between Noise Pollution And Bat Activity in NYC

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Research Question

Does noise pollution correlate with lower bat species richness in the parks of the Bronx Fordham area compared to the Madison Square Park and the Sagamore Hill National Historical Site?

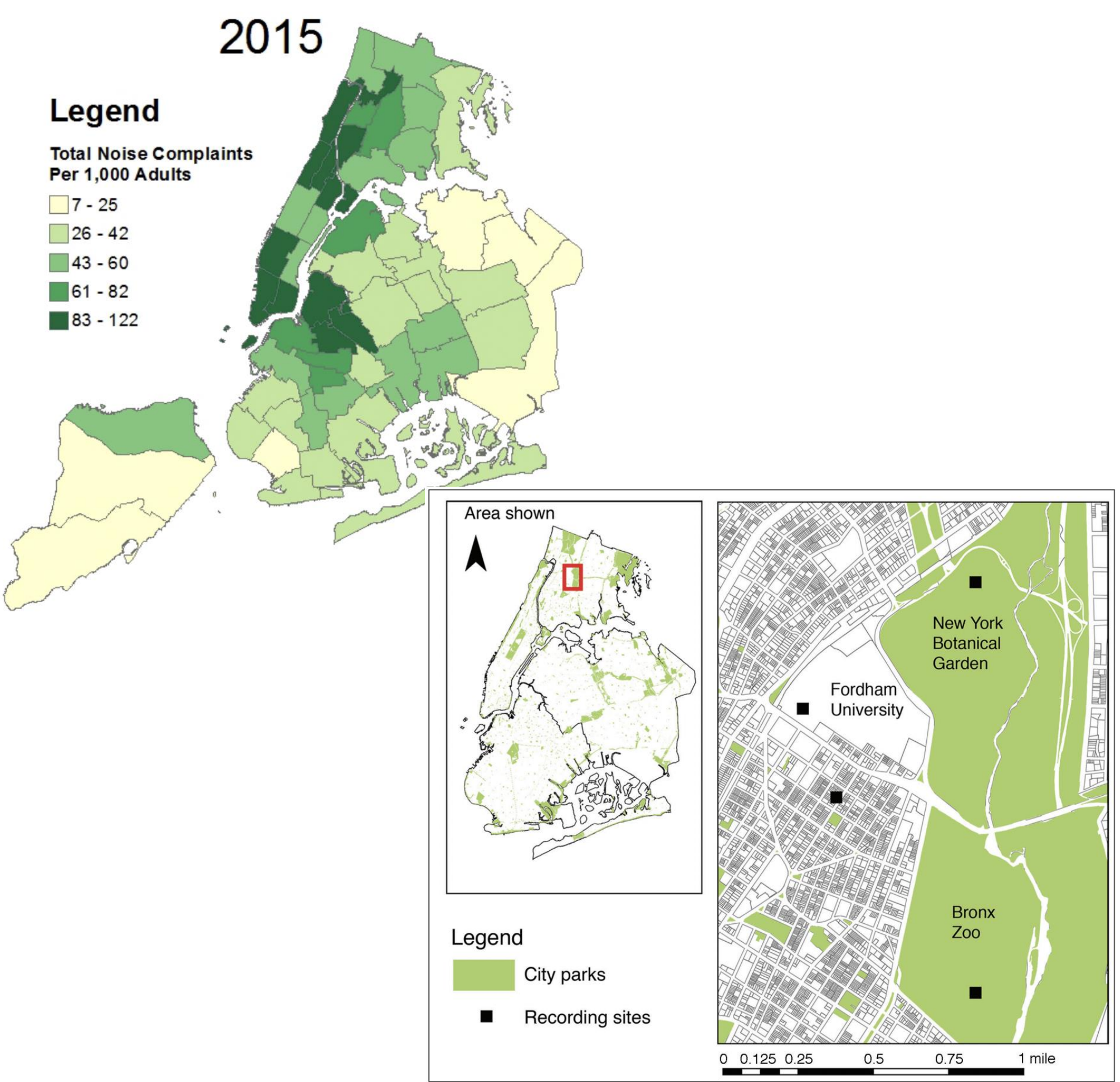


Introduction

New York City, being the densely populated and bustling urban area it is, experiences an overwhelming amount of noise pollution across its five boroughs. This noise—which is largely caused by heavy traffic, constant construction, and public transport—negatively affects wildlife that rely on sound to traverse their environments and engage in various biological processes. One particular species impacted is bats, which thrive in many of the city’s parks. Therefore, our study aims to explore potential correlations between levels of noise pollution and bat species richness.

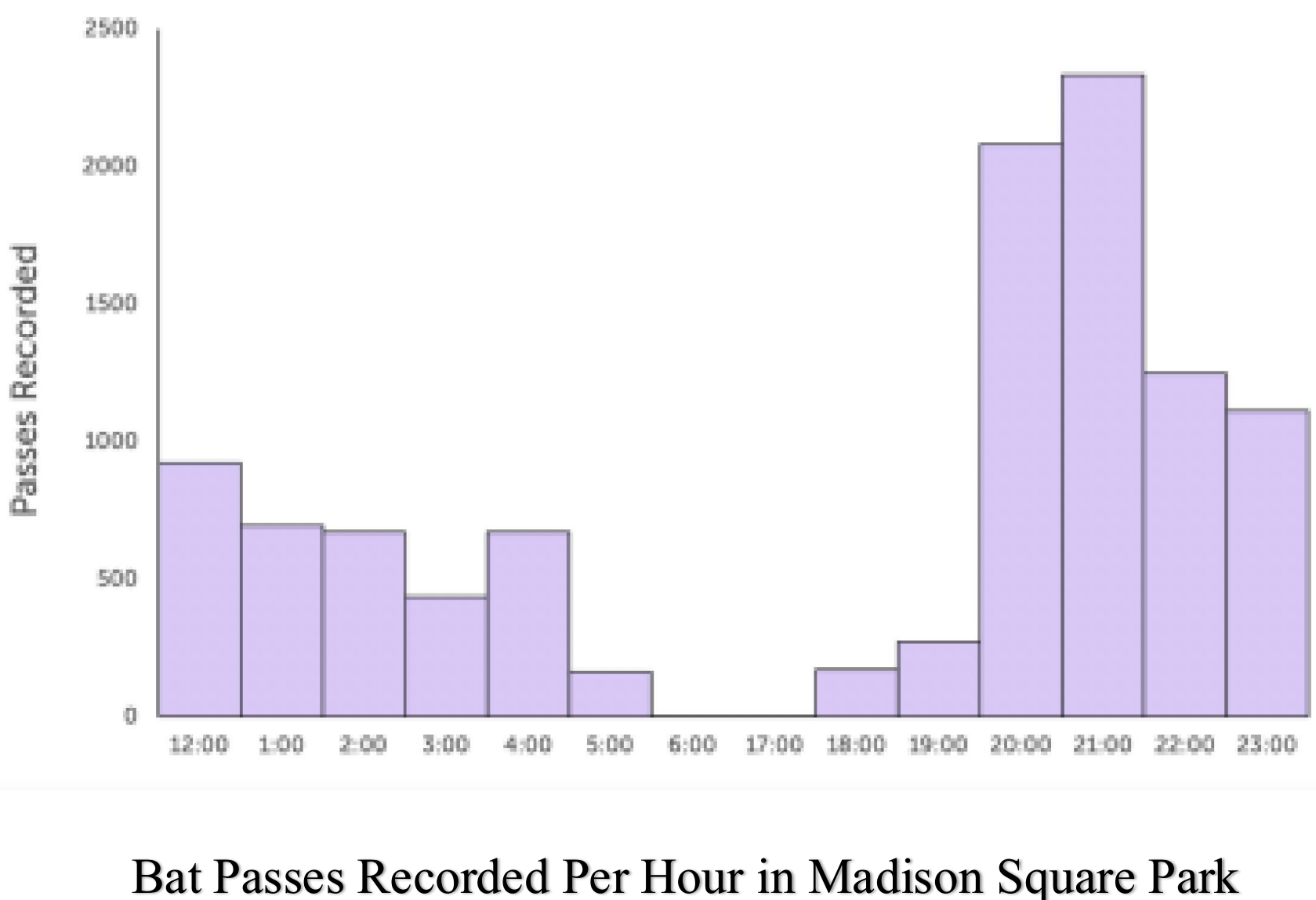
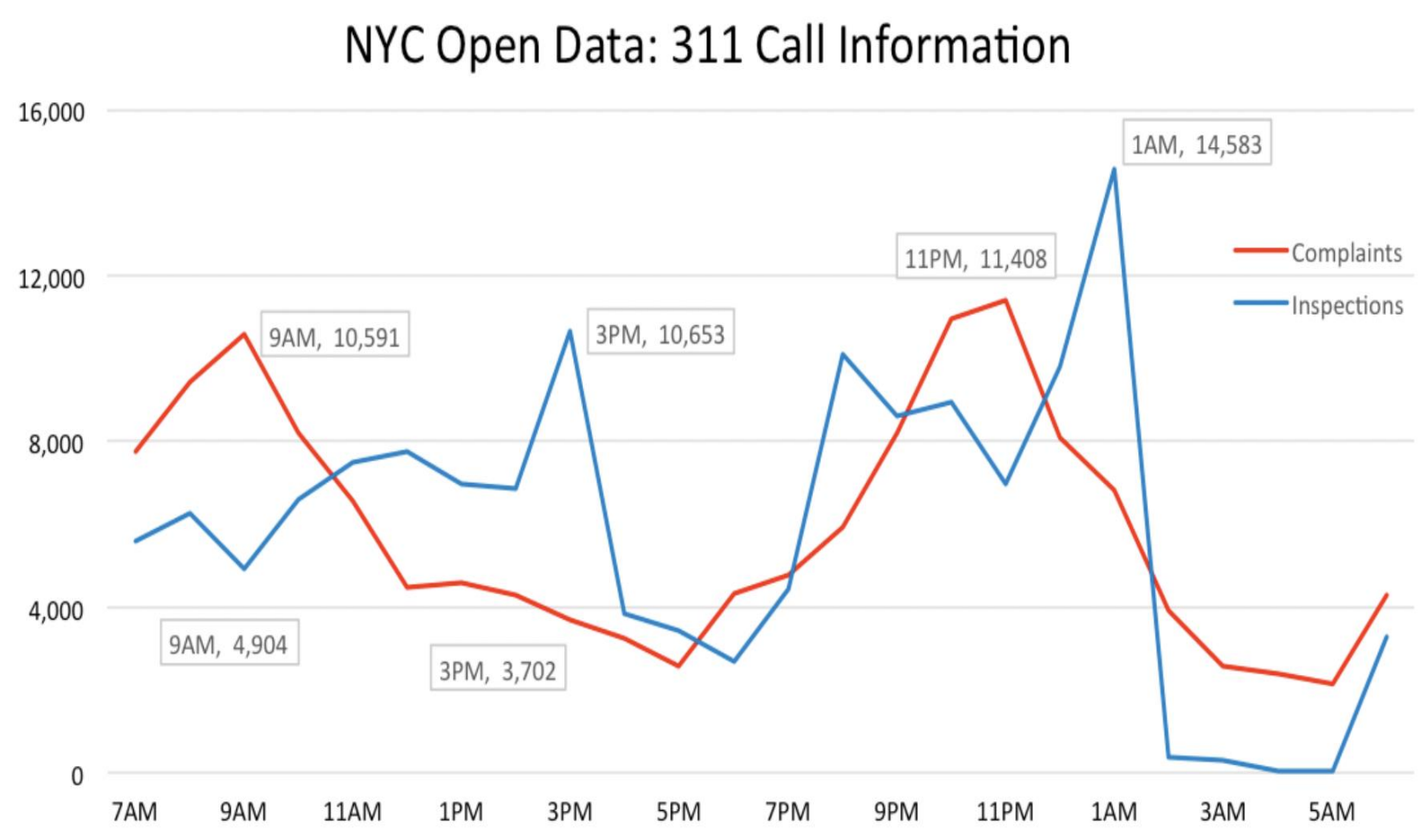
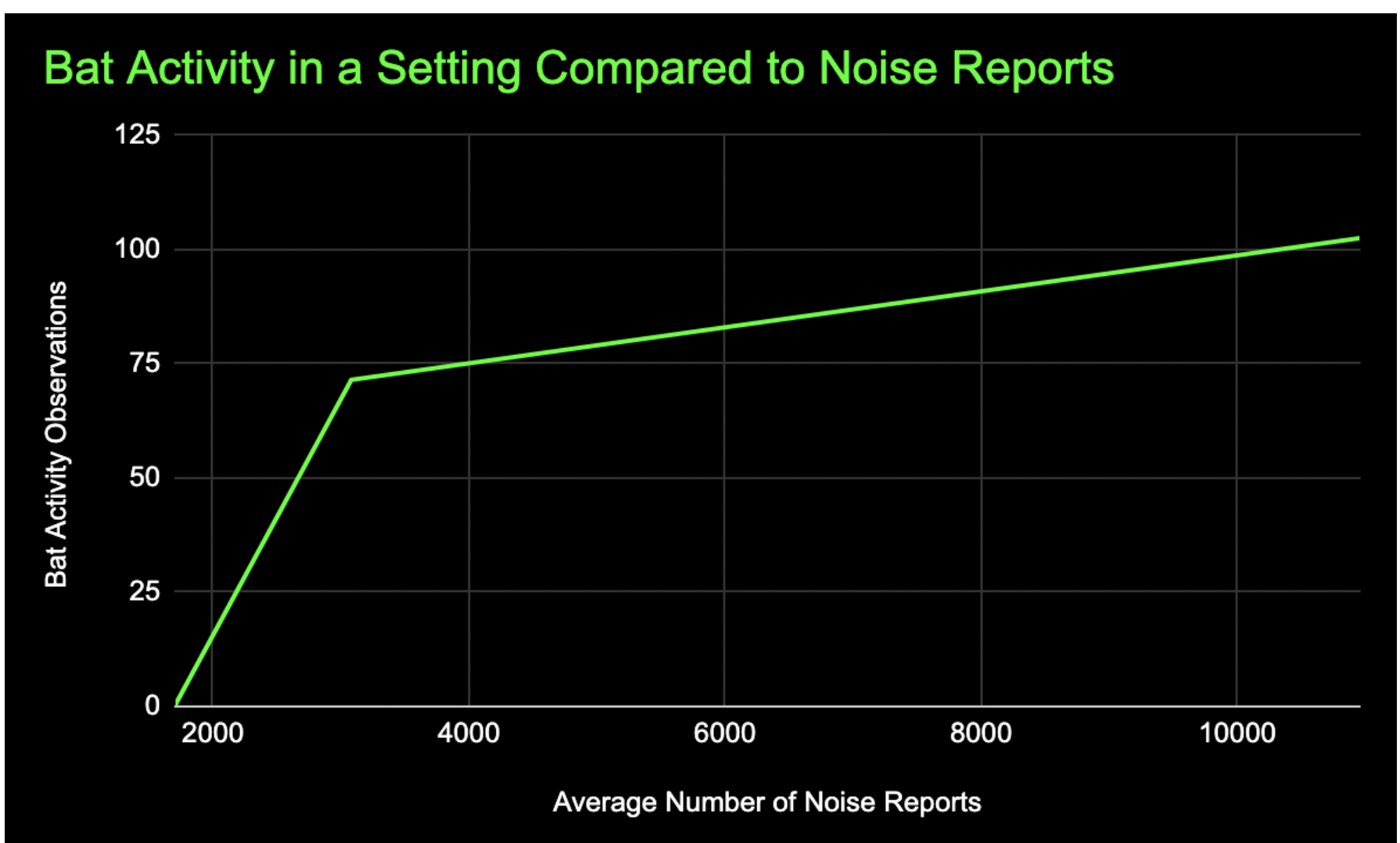
Methodology

To analyze the relationship between bat species richness and noise levels, we conducted a literature review using available databases, journals, and studies concerning the topic of both bat populations in New York City, as well as noise pollution and noise complaint levels in the boroughs of Manhattan and the Bronx. In the review, we looked at noise pollution levels, and matched it with bat population levels in the same location and at the same time. Then, we looked at different locations and different times in order to discover a correlation between the two. For example, we could compare noise levels and bat populations in the same borough, whereas one portion of the data was taken from 2015 and the other was taken from 2020, which would have two very different noise levels due to COVID-19 and quarantine. We would then notate these on graphs so that we can see how the bat levels correspond with noise pollution. We ended up doing this particular research because we were unable to properly discover bat populated areas. We reached out to wildlife conservatories and bat conservation sites to see how everything correlates.



Results

For our question of whether or not noise pollution correlated with lower bat population, we discovered that as of recently, the bat populations have been increasing with the noise population. This is counterintuitive to what would serve bats. This may be explained by the fact that bats are naturally attracted to light and sound, which could serve as an ecological trap that attracts bats but does not allow them to thrive.



Conclusion

This study suggests that even though bats are attracted to bright, noisy areas in New York City, these places may act as ecological traps that do not support long-term survival or population growth. Bats may be drawn to artificial light because it provides short-term feeding opportunities, but the added noise and disturbance can seriously harm their health and behavior. Recognizing light and noise pollution as possible ecological traps is important for improving wildlife conservation in growing cities. With the right changes, urban areas can support the presence of bats and their long-term success as well. Future research should look at how well bats survive over time, how often they reproduce, and their stress levels in areas with high light and noise to better understand whether these environments truly harm their overall health. Luckily for the bat population, the Gotham Bat Conservancy, with whom we entered personal contact with over the course of the experiment, is currently in the midst of its Gotham City Project that seeks to gain a full grasp of this knowledge. Reducing noise in important bat habitats could also help support healthier bat populations.



References

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