Environmental Impact on Ovenbird Song Frequency

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INTRODUCTION
The ovenbird (Seiurus aurocapillus) is small songbird in the warbler family that is found in Connecticut in mature, closed-canopy deciduous forests. The connection between the frequency of ovenbird calls and environmental stimuli provides valuable information about the suitability of the ovenbirds’ habitat. Changes in bird activity can highlight the effects of habitat fragmentation and other environmental disturbances on the natural world.¹

Hypotheses:

H1. The higher number of ovenbirds in an area, the higher the frequency of their songs
H2. The larger the forest fragment size, the higher the frequency of ovenbird songs
H3. The higher wind intensity, the lower the frequency of ovenbird songs
H4. The higher the number of caterpillars, the higher the frequency of ovenbird songs

The objectives of this study were to:

• study the connection between the frequency of ovenbird song and the environment;
• develop a story map to educate the public on the importance of bird song and their applications to conservation.

METHODS

Data Analysis

• Examined song recordings from autonomous recording units taken during three consecutive breeding seasons (2017-2019) in 28 Connecticut forest fragments.
• Listened to a subset of recordings and recorded every ovenbird song on a spreadsheet.
• Used the R programming language to compare the frequency of ovenbird songs with environmental factors using linear models and an ANOVA.

RESULTS

Statistically Significant Data

• The higher the number of ovenbirds, the higher the frequency of ovenbird songs.
• The larger the forest fragment, the higher the frequency of ovenbird songs.
• The higher the number of caterpillars, the higher the frequency of ovenbird songs.

Statistically Insignificant Data

• Wind intensity does not affect ovenbird song frequency.

CONCLUSION

• This project showed relationships between some environmental variables and the frequency of ovenbird songs. From here, future research could investigate if these relationships change over time and explore causal links, such as:
  • Why does the forest fragment size affect ovenbird song frequency?
  • This baseline of ovenbird interactions with the environment can be used to study:
    • A wider range of variables;
    • Connections between environmental variables.
• Methods for this project are transferable to other projects:
  • Recording devices can be used to gather data in areas that humans cannot easily reach, such as very dense forests with dangerous terrain.
  • A research and story map combination makes it more accessible to the public.
  • Complex information conveyed with simple language and interactive maps is engaging and allows a wide audience to understand the project.

REFERENCES

2 Young, Susan (photographer), (2019, October 21). Ovenbird. Retrieved from: https://www.flickr.com/photos/95798305@N08/48993110991/in/photolist-13zj5x-4Dm32c-4ZCfGC/1DzbvzN

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