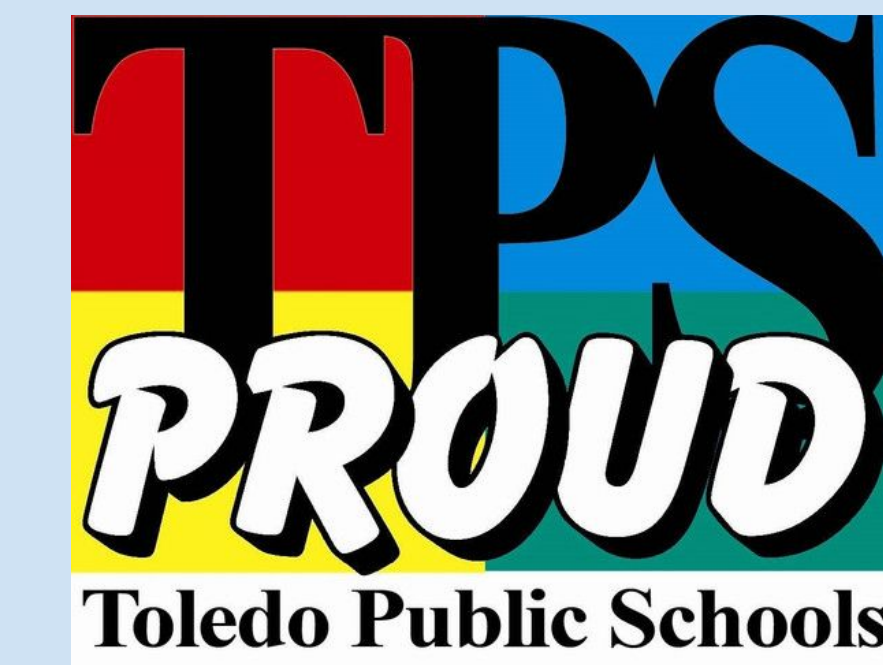# Cloud Cover and Birds

Olivia Gilbert, Em Webster, Olivia Hovey
Natural Science Technology Center

Introduction

Our research project is about how the cloud cover affects birds: we wanted to know if cloud cover impacted how many we'd see. Many factors influence the activity and visibility of birds, with a big one being weather. For this project, we decided to focus on cloud cover specifically. In theory, a higher cloud cover would lessen visibility for birds and making it colder. *The Influence of Social and Physical Factors on Bird Migration* states, "Cooke (1903) found, that most birds fly high on clear nights and low on cloudy and foggy nights," insinuating that birds behaviour is impacted by it. *Watermark.silverchair.com* says, "...it is seen that the decrease in cloud cover occurs about a month before birds should leave the winter range for the week." and *link.springer.com* says,"therefore, it is not surprising that visually perceived cues have long been recognized as an important source of directional information for migrants," noting that visibility, clouds in our case, affect the birds.

Hypothesis

We hypothesized that the higher the cloud cover, the less birds we will see at Toledo Botanical Gardens.

Objective

Our objective was to observe the relationship between cloud cover and the number of birds observed at Toledo Botanical Gardens.

Methods

- Collect the necessary supplies (binoculars, data sheet, writing utensil, and a phone with the Merlin Bird ID app)
- Go to our designated point at Toledo Botanical Gardens.
- We set out timers at 15 minutes (sometimes 30 or 20) and let the app pick up the bird noises.
- While the time was going, we would use our binoculars to look for birds we heard or just birds around in Toledo Botanical Gardens.
- Some birds were just in big flocks and that's why some of the counts are so high
- We used th NASA cloud data app to track the cloud cover.

With the increase of cloud cover at Toledo Botanical Gardens, there's an observable increase in the number of birds visible.

Cloud Cover and Total Birds at TBG
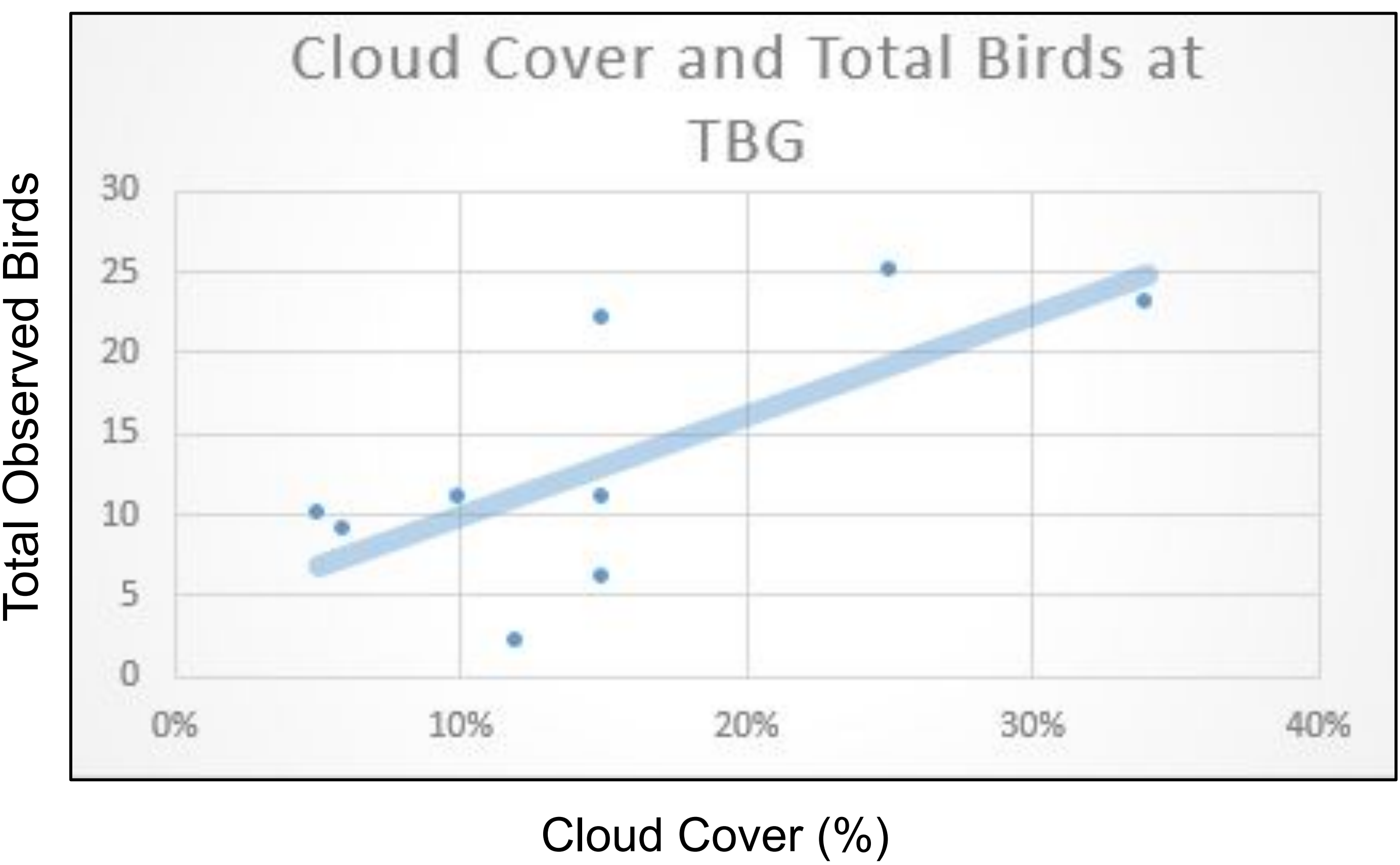
Date	Cloud Cover	Total Birds	Total Species	Location	Duration	Merlin ID
9/13/2022	15%	6	1	P.10	20	5
9/16/2022	10%	11	3	P. 01	15	9
9/23/2022	12%	2	1	P. 07	15	9
9/29/2022	6%	9	3	P. 6	15	5
10/21/2022	5%	10	2	P. 09	10	10
10/24/2022	25%	25	2	P. 06	15	22
10/25/2022	15%	22	6	P. 10	15	15
11/4/2022	34%	23	3	P. 10	15	21
11/10/2022	15%	11	3	P. 10	30	7

Abstract

In our project, we aimed to study the relationship between cloud cover and the number of birds we see at Toledo Botanical Gardens. On our table we noted many factors to compare their influence to that of cloud cover. We found a trendline, going against our hypothesis, but it could have been a false one.

Results

Our results show a clear trendline between cloud cover and the daily number of birds seen; the more cloud cover, the more birds observed at TBG. Clouds are one of many influences on bird flight patterns, affecting visibility, temperature and moisture.

Conclusion

Our data does not support our hypothesis; it's possible that the size of our data set may have created a false trendline. There are also many factors that could have influenced the number of observed birds. Some factors include late autumn migration, the duration of our observation times, and being at different points. For example, we saw a lot of flocks, but that can be explained by migration season.

References

Miskimen, M. (1951). The Influence of Social and Physical Conditions on Autumn Bird Migration. Ohio State University, 12–14.
Agostini, N., Gustin, M., & Panuccio, M. (2016, September 3). Wind Patterns affect Migration Flyways and Flock Size of a Soaring Bird over Sea. journals.sagepub.com.

Acknowledgments