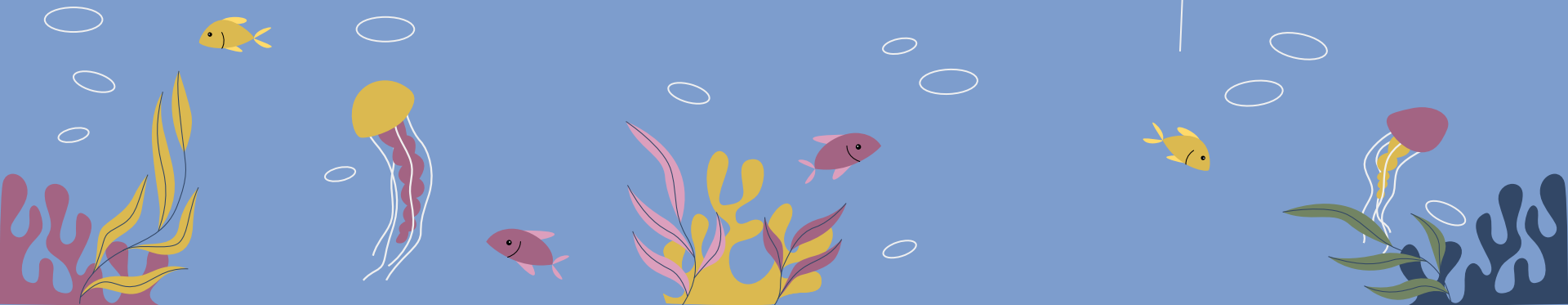
Predicting Harmful Algal Blooms:

Through Satellite Imagery

Matthew Duncan



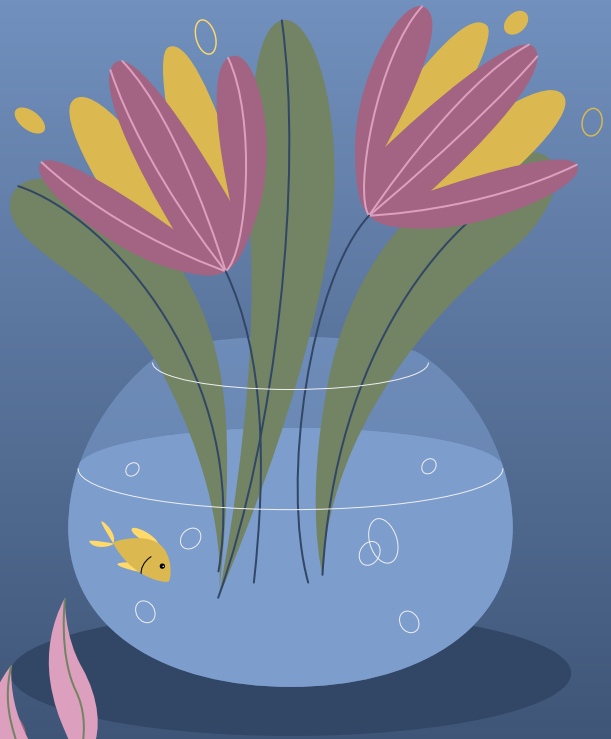
Outline

01 Background

02 Data

03 Model

04 Conclusions



Background

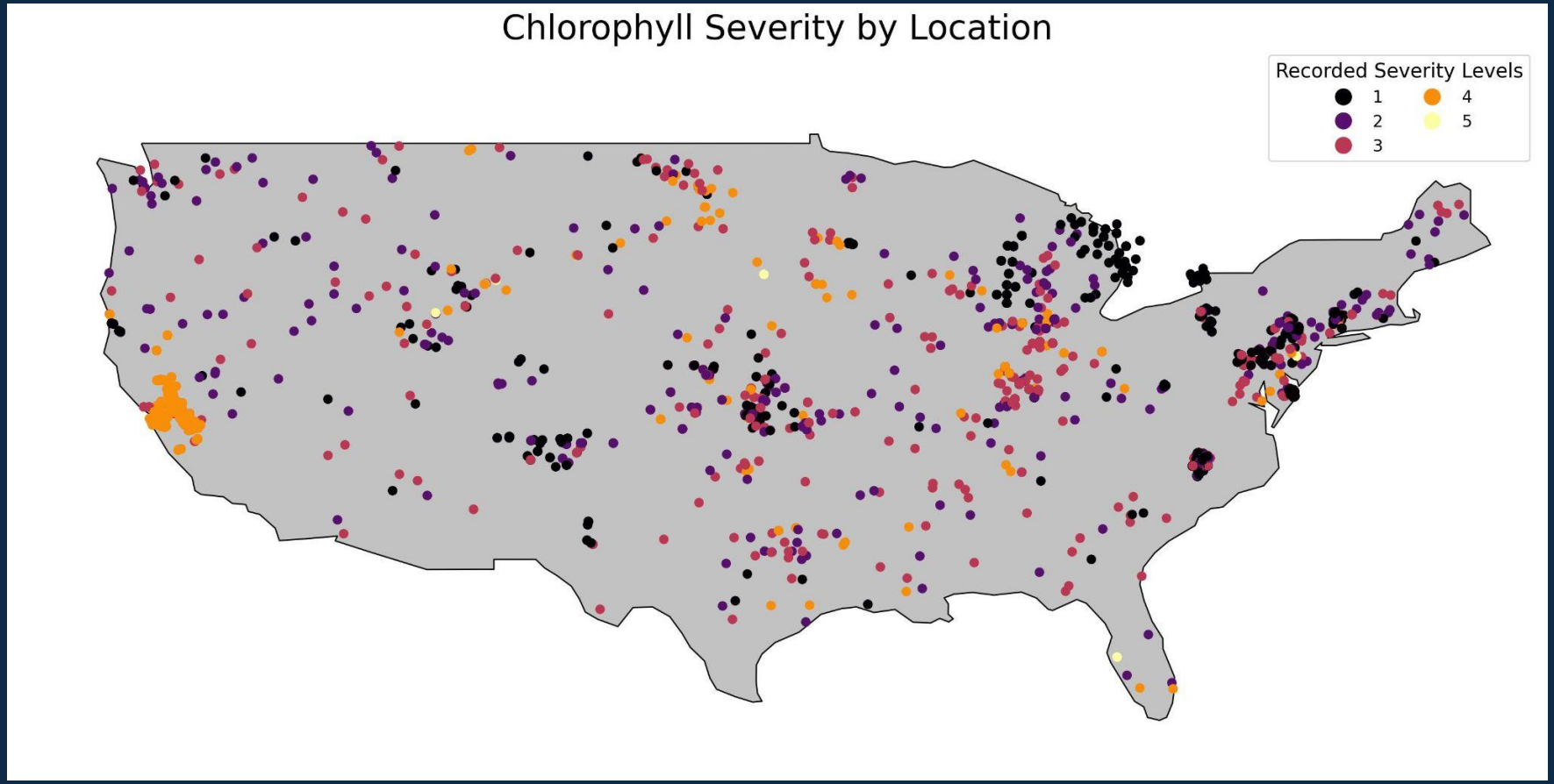
- Departments
- Purpose

Cyanobacteria Effects

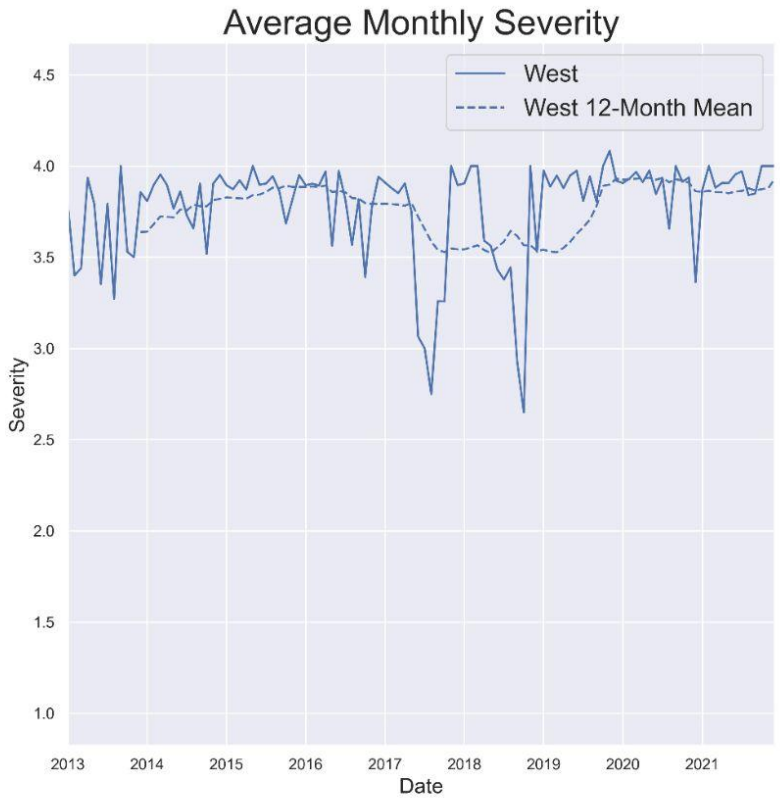
- Ecosystems
- Health
- Agriculture

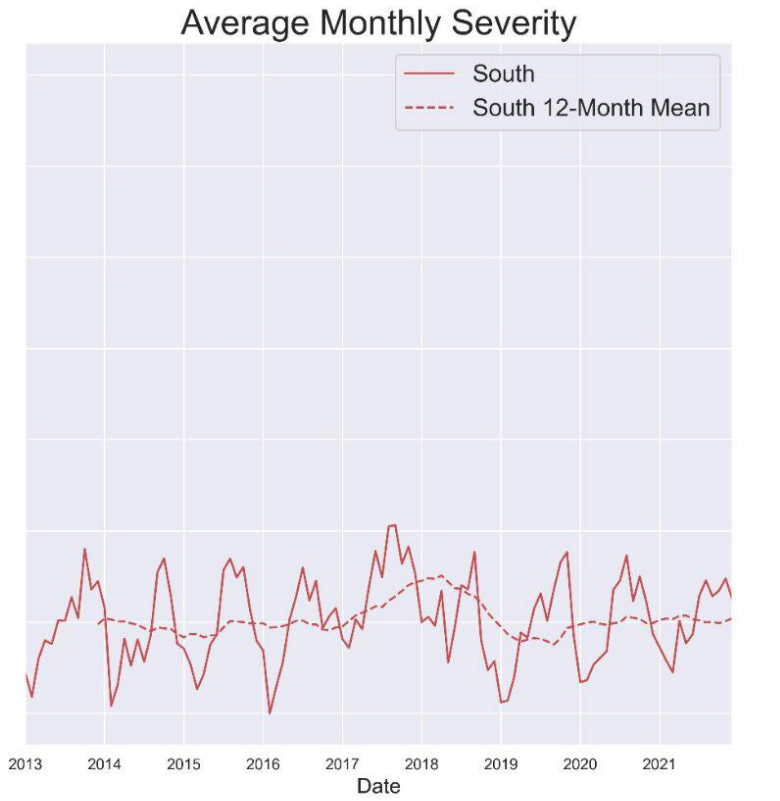
The Data

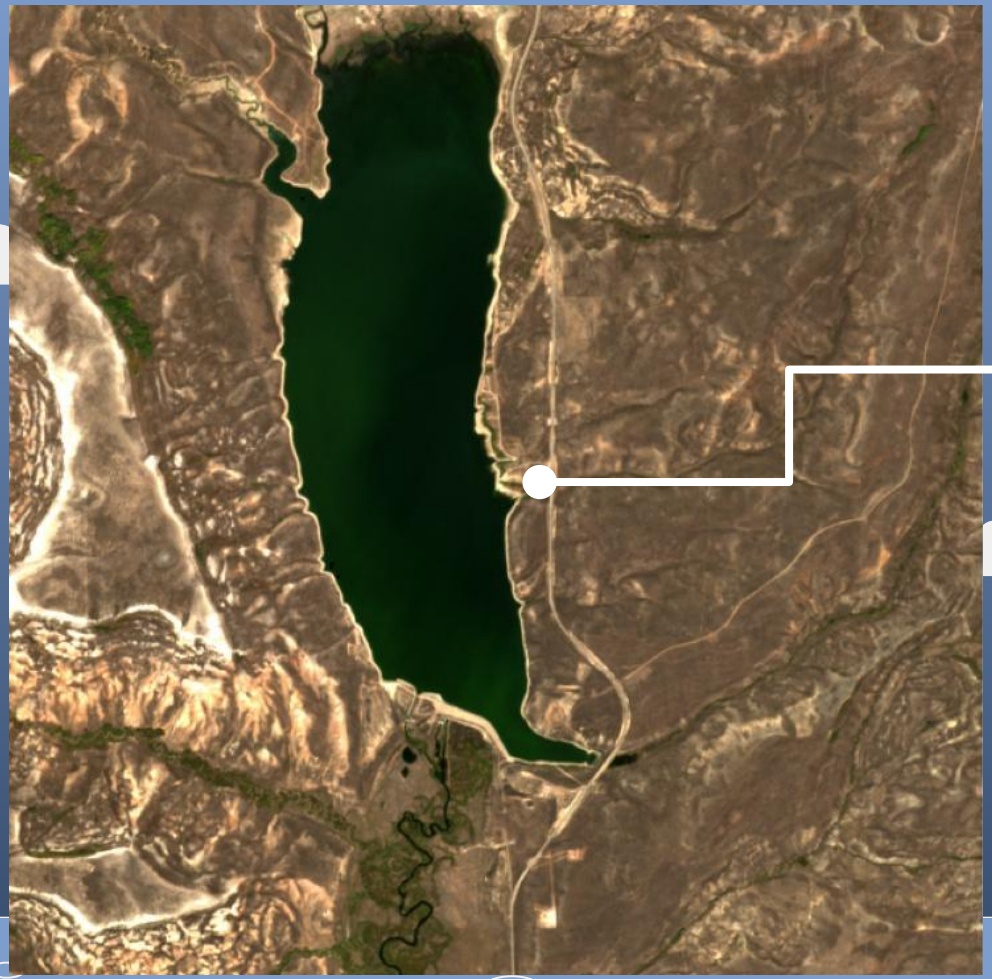
- EPA
- NASA
- NOAA

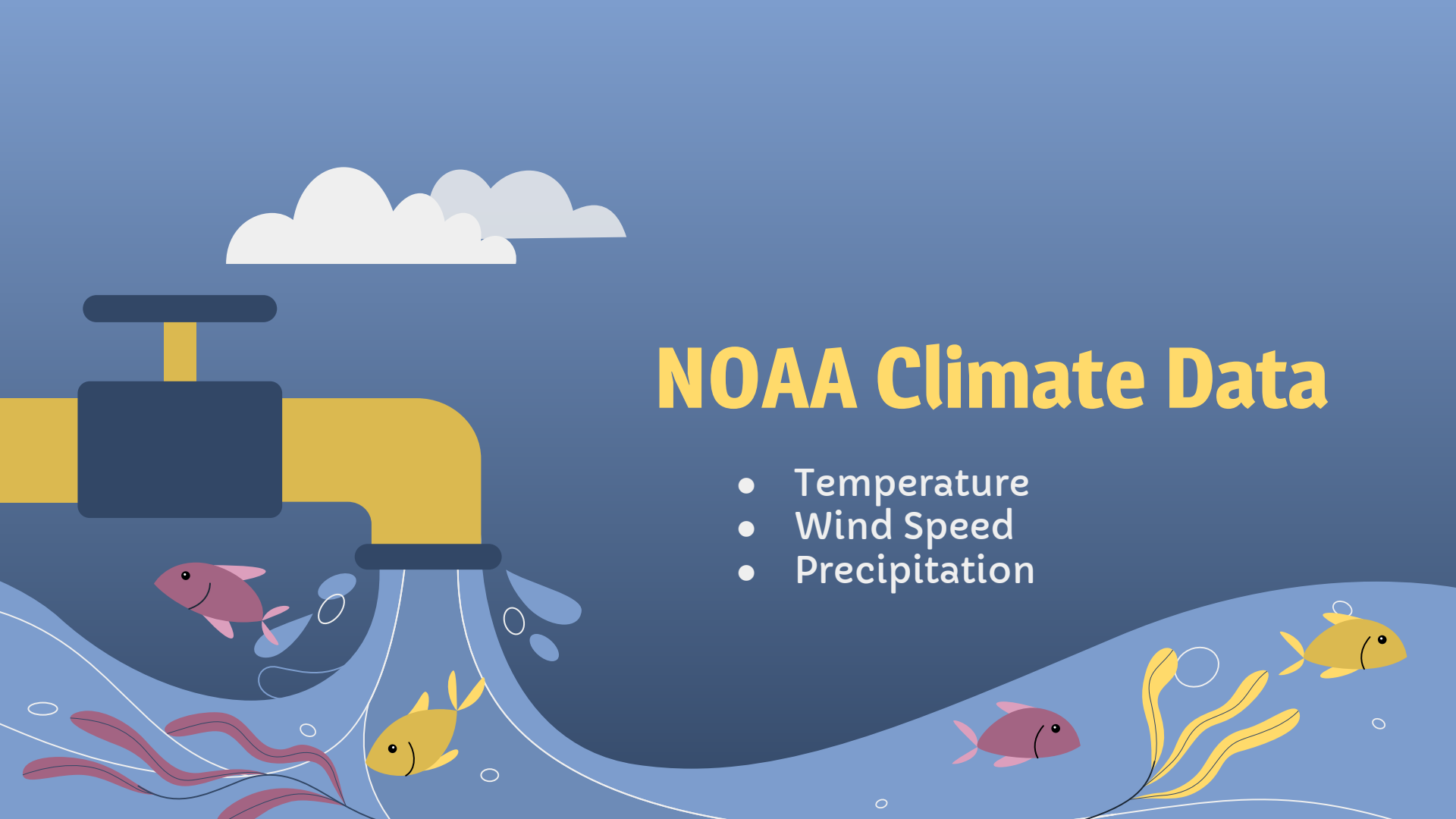

Chlorophyll Severity by Location
Recorded Severity Levels
1
2
3
4
5

EPA


Average Monthly Severity
West
West 12-Month Mean
Severity
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
2013
2014
2015
2016
2017
2018
2019
2020
2021
Date

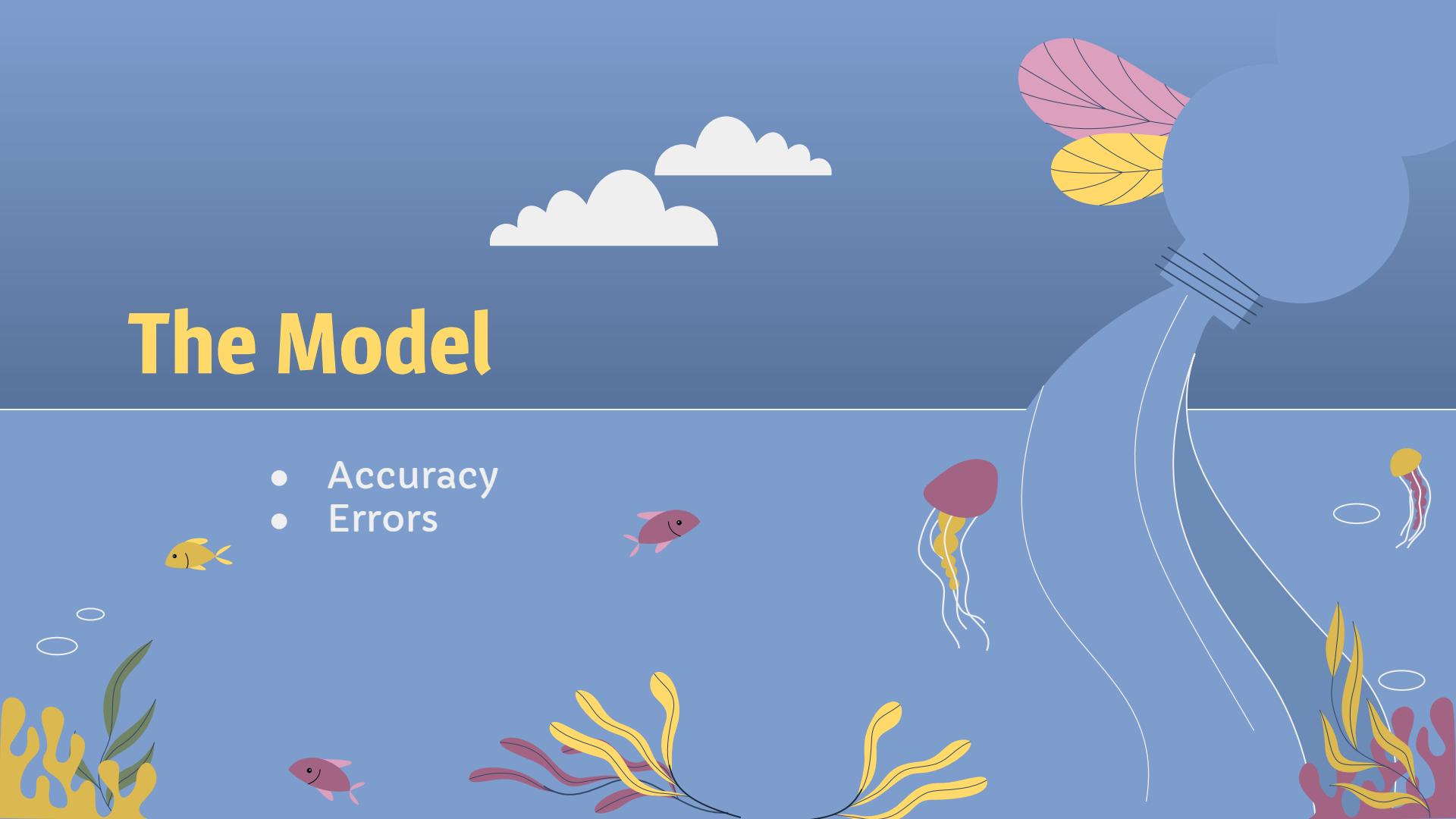

Average Monthly Severity
South
South 12-Month Mean
2013
2014
2015
2016
2017
2018
2019
2020
2021
Date


Sample
Site

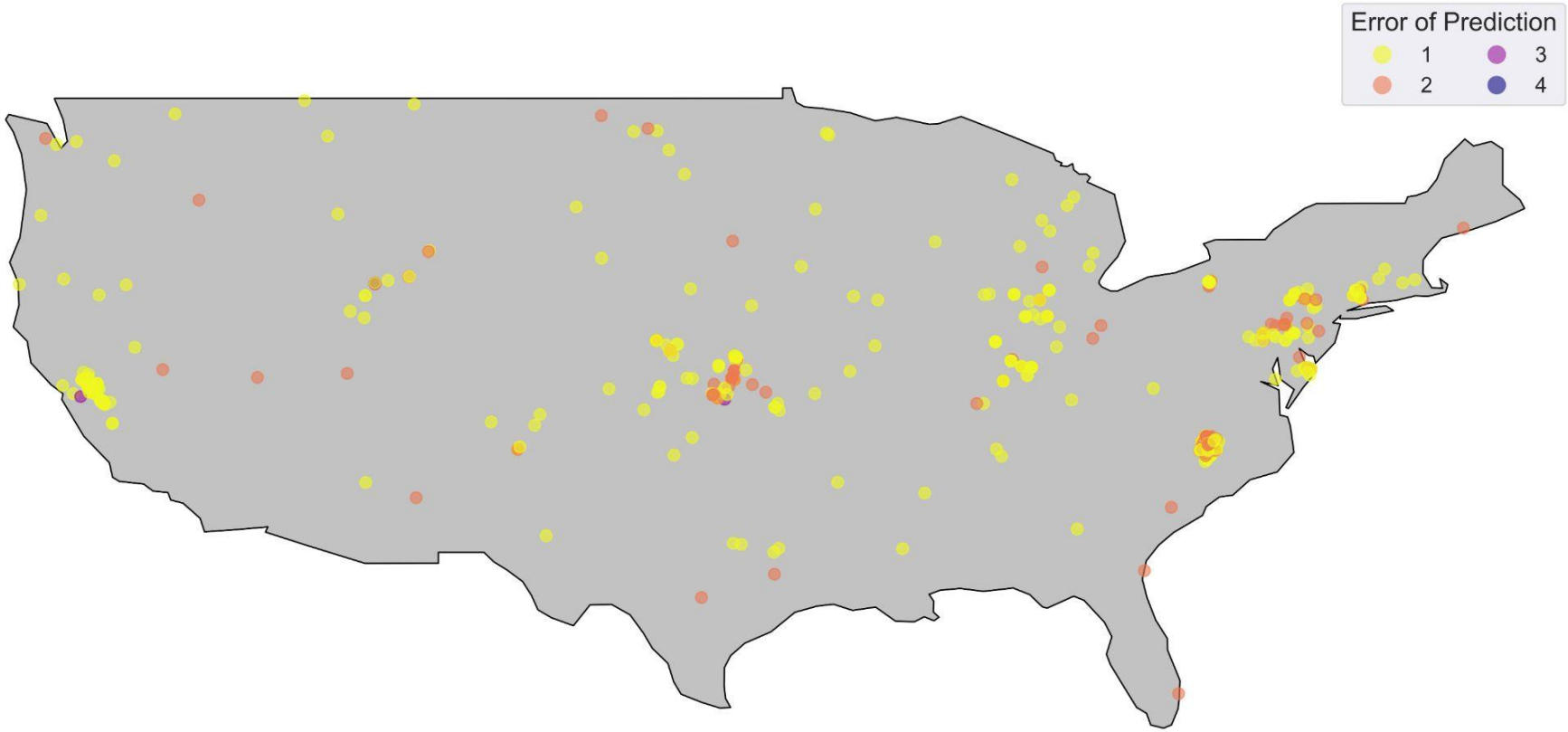

NOAA Climate Data
Temperature
Wind Speed
Precipitation

The Model

- Accuracy
- Errors



Model Prediction Errors



Conclusions

Future Considerations

- Additional Satellite Images
- All Climate Data
- Availability

Our Team

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