Analysis Tutorial Prospectus
Kendall Greer

1) Title

Plotly Time and Correlation Visual Analysis of Water Chemistry in the Galapagos Islands

2) Research Question(s)

How do different water chemistry parameters correlate? Do these parameters have temporal (diel) cycles? Are the patterns we see consistent across islands, or isolated?

3) Objective(s)

Discover and effectively communicate methods to visualize the water chemistry patterns seen in bodies of water on the Galapagos Islands. Create a code that builds and stores visualizations for the data using R studio code and Plotly.

4) Approach

I will use Plotly, a package in R that creates interactive visualizations, to analyze my data. I will attempt to create an R code that uses the Plotly package to successfully plot the data I want to analyze onto a series of scatterplots, where I can easily visualize and interact with any visible temporal or correlative patterns.

5) Selected References

Andersen MR, Kragh T, Sand-Jensen K. 2017. Extreme diel dissolved oxygen and carbon cycles in shallow vegetated lakes. Proc Biol Sci. 284(1862):20171427. https://royalsocietypublishing.org/doi/10.1098/rspb.2017.1427

GeeksforGeeks. 2024. Getting Started with Plotly in R. GeeksforGeeks. From www.geeksforgeeks.org/getting-started-with-plotly-in-r/

R Core Team. 2024. R: A Language and Environment for Statistical Computing. from https://www.r-project.org/

Reddy, K.R. 1981. Diel variations of certain physico-chemical parameters of water in selected aquatic systems. *Hydrobiologia* 85, 201–207. https://doi.org/10.1007/BF00017610