Analysis Tutorial Prospectus
Steve Powers

1. Title
Shiny applications for rapid visualization of species occurrence databases

2. Research question(s)
Where do different species occur? How can we develop a tool for visualizing species distributions?

3. Objective(s)
i. Communicate methods relevant to building a simple ShinyApp that successfully downloads and rapidly visualizes occurrence data from public databases for a species selected by the user. Provide code that supports communication of these methods.

4. Approach
Shiny applications (shiny apps) are interactive tools for rapid visualization and exploratory analysis of diverse datasets that can support hypothesis formulation as well as communication of results to diverse audiences. I will build on the ChatGPT conversation in example #7 "Write a shiny app" from the Supplementary of Merow et al. (2023), which uses R (R Core Team 2024), and attempt to produce functional code and a working ShinyApp.

5. Selected References
Merow C, Serra-Diaz, JM, Enquist, BJ, & Wilson AM. 2023. AI chatbots can boost scientific coding. Nature Ecology & Evolution, 7(7), 960–962. https://doi.org/10.1038/s41559-023-02063-3

Owens H, Chamberlain S, Ram K, Hart T, rOpenSci. 2023. spocc: Interface to Species Occurrence Data Sources. Retrieved from https://cran.r-project.org/web/packages/spocc/index.html

Perkel, JM. 2023. Six tips for better coding with ChatGPT. Nature, 618(7964), 422–423. https://doi.org/10.1038/d41586-023-01833-0

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