Analysis Tutorial Prospectus

Kaylee McKay

1. Title

Map assessing location of human West Nile Cases in the United States in 2024

1. Research questions?

Where are West Nile cases most prevalent in the continental United States? How could this map help vector control efforts?

1. Objectives
2. Code a map of the Continental United States using R

ii. Integrate data taken from the CDC on the location of human West Nile cases in the continental United States to identify potential spatial patterns and regional hotspots

iii. Analyze the data to identify high-risk areas for West Nile Infection and identify ideal targets for vector control

1. Approach

This project will generate a spatial map to assess the distribution of human West Nile virus cases across the continental United States in 2024. Using R, I will compile and visualize georeferenced case data from the CDC to identify spatial patterns, regional hotspots, and potential correlations with environmental or demographic variables. The analysis will incorporate packages such as tidyverse, sf, ggplot2, tmap, and leaflet for mapping the West Nile cases. The final map will support public health interpretation and may serve as a foundation for hypothesis generation around WNV transmission dynamics and targeted intervention planning.

1. Selected References

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

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

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