

Homework_3

2026-02-24

Set-up

Here is my GitHub Repository: [link]https://github.com/samantha-gibson05/ENVS-193DS_homework-03

Problems

Problem 1. Slough soil salinity

You are working at a restoration site where you are managing planting of California pickleweed (*Salicornia virginica*) along a brackish slough (i.e. there is a mixture of fresh water and salt water). Be specific in your response to demonstrate your understanding of the variables in this question.

An appropriate parametric test is **Pearson's correlation coefficient (r)**, which assesses the strength and direction of a linear relationship between two continuous variables (soil salinity (mS/cm) and California pickleweed biomass (g)) assuming approximately normal distributions and independent observations. A non-parametric alternative is **Spearman's rank correlation (ρ)**, which evaluates the strength of a monotonic relationship using ranked values of salinity and biomass and does not require normality. Pearson's r tests linear association on raw data, whereas Spearman's ρ tests monotonic association based on ranks and is more flexible to non-normality and outliers.