Spatial association patterns of foundation shrubs in the East Mojave

Intro

Foundation plants and shrubs.

Spatial association patterns.

Spatial statistics. What do patterns tell you?

Study site

Sunset Cove, Granite Mountains. Dates.

Methods.

All woody shrubs and cactus were mapped in 3 80m by 20m rectangular transects. Measuring tapes and ropes were used to create 10 m by 10 m quadrats. Mapped to nearest 5 cm. The veg were measured to the center of the plant, as it was not possible to ascertain where every shrub roots. The x, y, and z measurements of each plant was also recorded. A few species of shrub had not completed leafed out, and so the woody parts of the shrub without leave were measured as a proxy for its approximate size. The goal is to determine association patterns based on shrub size, and only using the small, new growth would underestimate the size. In the cases where multiple stems came out of the ground and growth only on one, only the stems with growth were measured, otherwise can’t be certain same plant.

Ephedra showed ring growth, so the center of the clump was mapped as I could not tell them apart. Larrea showed similar growth patterns, and the centre was mapped, the entire clump measured and the number of stems estimated. Plants were identified to best of my ability, and morphospecies numbers were assigned to each individual. When flowering, I will use the maps and walk through the site and determine the identity of each individual.

Analysis

Mapping.

Point pattern analysis using spatstat in R.

Join count using spdep in R.