

R package **ecostructure**

Functions (already included):

CreateGlobalAbundanceFields.R -

Create the dispersion field list of same length as number of sites (35 in our case) from the local data frame which we provide as input and a directory name which also we shall provide as input, that will host shapefiles for all the species in the data. The user has the flexibility to determine the size of the raster by specifying the latitudinal and the longitudinal ranges and also the raster resolution.

DispersionFieldToCounts.R

Convert this list of dispersion field matrices into an aggregated counts matrix with as many rows as number of sites and as many columns as there are grid cells in the raster chosen (depending on the ranges of latitude and longitude chosen)

CreateMapsFromDispersionFields.R

Create maps of global assemblage dispersion field pattern for each site from the dispersion field matrix list created by the first function. (Need to know how to obtain the global shapefile that plots the map of India in the background)

BlockStructure.R

Build a block-partitioned Structure plot representation of the grade of membership model, where the blocks are created a blocker metadata and the ordering Inside each block is by a quantitative ordering metadata.

nullmodel_GoM.R

Build a null model for the given observed data, and compare the GoM model fit between the original observed data and the null model data.

TopicMetaDiversity.R

A bi-Y plot representing the sites ordered by some ordering metadata along X axis, the topic proportions or grades of membership along one of the Y axes and the distance metric between two adjacent sites on the X axis plotted as segments according to a second Y axis.

TopicMetaMeta.R

A bi-Y plot representing the sites ordered by some ordering metadata along X axis, the topic proportions or grades of membership along one of the Y axes and the other metadata along the other Y axis.

Other functions to include:

1. One function that clumps the nodes from a tree object to highlight coalescence times
2. One function that creates binned data that can be fed to ordtpx
3. One function that generates sliding window counts data that can be fed to maptpx (this is an alternative to ordtpx)
4. One function that plots the cluster distributions on the map (similar to *CreateMapsFromDispersionFields* function above). Also would need the global shapefile for the background.
5. We will add maptpx and ordtpx as dependencies and say that we are using these functions to run the Grade of Membership models in the paper.