Metadata for Moth Data Set

The data are taken from a research project on multi-scale patterns in species-environment relationships for rare moths in the coastal pine barrens community of the Camp Edwards Training Area of the Massachusetts Military Reservation on Cape Cod, Massachusetts, courtesy of Doctor Joanna Grand, former doctoral candidate at the University of Massachusetts. The details of this study are given in a separate pdf file.

The data for this project consist of several files to facilitate the variance decomposition. Each of these files are briefly described below. All data sets contain 25 observations (row vectors) and a different set of variables (columns):

Moths.cvs

Moth species data set with the following species variables:

ACAL	Barrens daggermoth	*Acronicta albarufa*
ANST	Spiny oakworm	*Anisota stigma*
APDE	Blueberry sallow	*Apharetra dentata*
BARE	Straight lined mallow moth	*Bagisara rectifascia*
CAHE	Gerhard's underwing moth	*Catocala herodias gerhardi*
CIME	Melsheimer's sack bearer	*Cicinnus melsheimeri*
EUMA	Coastal plain euchlaena	*Euchlaena madusaria*
ITAME	Pine barrens itame	*Itame sp. 1 nr. inextricata*
MEPI	Coastal swamp metarranthis	*Metarranthis pilosaria*
PSCA	Pink sallow moth	*Psectraglea carnosa*

Moths.land.cvs

Landscape-level environmental data with the following variables:

CONTAG5	Contagion of landscape within 1200 m
PLAND3S	Percentage of landscape within 600 m made up of scrub oak
PLAND4P	Percentage of landscape within 900 m made up of powerlines
PLAND5M	Percentage of landscape within 1200 m made up of mixed woods
PLAND5T	Percentage of landscape within 1200 m made up of pitch pine-scrub oak thicket
PD1S	Patch density of scrub oak patches within 150 m
PD2FP	Patch density of scrub oak frost pockets within 300 m
PD3T	Patch density of pitch pine-scrub oak thickets within 600 m
AREA5T	Mean patch size of pitch pine-scrub oak thickets within 1200 m

Moths.patch.cvs

Patch-level environmental data with the following variables:

AREA	Patch area
GYR	Patch radius of gyration (measure of patch extensiveness)
PARA	Perimeter-area ratio (measure of patch shape complexity)

FRAC	Patch fractal dimension (measure of patch shape complexity)
CORE	Patch core area (area of patch greater than specified edge depth)
ECON	Patch edge contrast (relative measure of the amount of contrast along the perimeter)

Moths.plot.cvs

Plot-level environmental data with the following variables:

CAN.M	% canopy
SO.M	% scrub oak
BL.HU	%blueberry/huckleberry
CH.OAK	%chinquapin oak
PPSAP	%pitch pine saplings
BL.OAKSAP	%black oak saplings
WH.OAKSAP	%white oak saplings
OTH.SHRUB	%other shrub
GRASSHERB	%grasses/herbaceous
BARE	%bare ground

Moths.full.cvs

Full environmental data contain all of the landscape, patch, and plot variables listed above combined into a single data set.

Moths.space.cvs

Space variables including the 8 terms of a second-order polynomial derived from the x-y coordinates of each site (x, y, xy, x^2, y^2, x^2y, y^2x, x^2y^2).