EEB 698 - Fall 2019

Ordination Methods, or Analysis of species composition data,

focusing on: non-Metric Multidimensional Scaling and model-based analyses

Instructor: Dr. Philip Dixon

Class: Weds, 1:10 – 2:00 (lecture). Optional computer lab/help: 2:00 – 2:40.

Both 3121 Snedecor

Reaching me:

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office hours (shared with Stat 534): Th 2-3pm, 2121 Snedecor

Class web site: <https://pdixon.stat.iastate.edu/eeb698>

Topics to be covered:

Types and characteristics of species composition data

Traditional ordination:

Measuring similarity/dissimilarity in species composition

Graphical representation of similarity/dissimilarity

how nMDS works

Interpreting nMDS results

Response of species composition to environment or treatment (PERMANOVA)

Model-based analyses:

Response of species composition to environment or treatment (mvabund)

Linking traditional and model-based approaches

Clustering

Based on similarity

Based on a model

Choice of ordination or clustering

The acronym stew: other approaches

Computing:

We will use R and R libraries, primarily vegan and mvabund

Code provided for all analyses

Will be discussed in the optional computing period after lecture

Other programs, e.g., PC-ORD, CANOCO, and PRIMER, do traditional ordination. Use these if you prefer. Model-based analyses are available only in R.

My expectations:

You will attend regularly,

do any assigned readings prior to seminar,

participate in the discussions, and

present a 15 min talk at the end of the semester.

The 15 minute presentation will be:

An analysis of your data using class ideas, or

A short lecture on a related topic we haven’t discussed.

Syllabus statements: Syllabus statements on academic dishonesty, disability accomodation, dead week, harassment and discrimination, religious accomodation, and contact information for academic issues are in [Syllabus statements](https://pdixon.stat.iastate.edu/Syllabus%20statements.docx)

Additional details for EEB 698:

Dead week: Your presentations will be scheduled during dead week and potentially during the regularly scheduled final exam period.