

12. Team Diversity Projects

Z620: Quantitative Biodiversity, Indiana University

OVERVIEW

Quantitative Biodiversity (QB) introduces concepts and methods focused on the analysis of biodiversity data. We would like to provide you with the opportunity to implement this knowledge using your own data or another publicly available dataset. To this end, QB has a **Team Diversity Project**. You will be assigned a partner during the first week of class. Your group will be responsible for the following:

IDENTIFY A DATASET

You should talk with your partner after the first class. Perhaps one of you have a dataset that is appropriate for analysis. If not, you will need to identify a publicly available dataset. There are a few places you might look for biodiversity data sets, including ESA data papers (<http://www.esapubs.org/archive/search.php>), the LTER data portal (<https://portal.lternet.edu/nis/home.jsp>), the Dryad digital repository (<http://datadryad.org/>), and the NEON data portal (<https://data.neonscience.org/>).

There are a few things that you will want to look for in a useful dataset for the QB Group Diversity Projects:

- 1) Need a site-by-species matrix (see end of Week 1 handout), which contains presence-absence or species abundance data for multiple sites or locations.
- 2) In week 3 we will discuss beta-diversity and how to use environmental data to explain patterns of community composition. Therefore, it would be useful if your site-by-species matrix was accompanied by a site-by-environment matrix.
- 3) We will eventually be integrating phylogenetic information into QB. These datasets may be harder to come by, but they're out there if your group is interested.
- 4) If there is an experimental manipulation or underlying question, this will make your project more inspiring and interesting to talk about.

INTEGRATION INTO COURSE ASSIGNMENTS

You will become familiar with your dataset because we will be asking you questions about it from week to week as part of course assignments.

ANALYSES

Outside of course, you and your partner will can use techniques from QB, but also others to analyze your data to address questions relevant to biodiversity research. You will need visualize the data and test hypotheses when appropriate. You will create an RMarkdown document that contains your data, code, and figures. This will be submitted by **12:00 (noon) on Wednesday, March 5, 2025**

PRESENTATIONS

You and your partner will give a joint, 10-15 minute presentation to QB on the last day of class (i.e., March 3) using powerpoint or google slides. The slides for your presentation should be pushed to GitHub by **12:00 (noon) on Thursday, March 6, 2025**