**Exploring the population dynamics of wintering bald eagles through long-term data**

Overview:

The exercise was divided into four parts. First, the students were required to read the introductory material before the first class. As part of the course, students had reading assignment with questions to answer before each class, so compliance with the assignment was relatively high. Students were also required to complete a modified version of the “Student Research Proposal” provided by Beckstead et al. 2011.

The second part of the assignment took place in a 50-minute class section of Ecology. Students found partners and the pair decided which research proposal (or a combination of the two) they would pursue. They were required to get me to approve of their questions, hypotheses, and analysis plans before they started. They then began to make graphs and analyze data.

The third part of the assignment took place in a second 50-minutes class section of Ecology. Some students completed their analyses on the previous day, so they worked on writing the report. Most were still making graphs and figuring out how to analyze the data. By the end of class, everyone (in 7 groups) had completed a graph and statistical analysis. The statistics were done using Vassarstats.net.

The last part of the assignment was that students were required to complete their report for homework, and turn it in to me in the next class. The average grade for the assignment was approximately an 8.5/10

Problems:

The primary problem I had with this assignment is that students didn’t know enough about bald eagles, even after reading the introductory material, to ask questions that were likely to result in significant patterns in the data. Most students predicted that bald eagle abundance would be determined by salmon abundance, and were somewhat frustrated when they found no relationship. They also struggled to determine why they found the results that they did.

An additional problem I had was that students in Ecology have dramatically different backgrounds using Excel and employing and interpreting statistics. Also, I let students choose their own group members, so in most cases the stronger students were not able to help the weaker students.

Benefits:

This activity provided a chance to reinforce methods of analysis I had introduced previously in Ecology, including using Excel, choosing statistical tests, and interpreting p-values.