I modified this activity to use in two consecutive 75 minute lectures of an upper division, senior level Applied Ecology course. Students in this course have had courses in general ecology and statistics, where they were introduced to using R and R Studio. In addition, this was the final activity of four data intensive activities using R over the course of the semester. The first class is devoted to the “research proposal” where they write down their predictions and draw graphs. The second class is devoted to R coding for data visualization and analyes.

The purpose of this modification was to take the analyses that were done in Excel and have the students perform them using R. Students were not given any R code for this activity, as they were given R code throughout the semester that they can refer back to in order to create the graphs for this activity. In addition, students have learned about correlation and linear regression in their statistics course, so I helped them through the coding to determine these, but they had an understanding of the interpretation.

Our department has laptop computers with R Studio loaded on them that faculty can check out for classes. In the future I will look into using R Studio Cloud as you can set up a project where you can add all the required libraries and set up the coding. This will make it easier for students who have brought their own laptops but then need to ensure that all the packages and libraries are downloaded.

Implementation: I gave a short powerpoint describing bald eagle conservation in general – touching upon the endangered species list addition and removal. We had a brief discussion of DDT and the impacts to the bald eagle populations. I then handed out the activity and students worked in pairs, first on the “research proposal” document and then through the data visualization and analysis. I stress how important it is to draw graphs of hypothesized relationships before diving into the R coding.

At the end of the assignment I have listed what I would like them to turn in at the end.