**Final Project**

**ECOL 5200**

**Pronghorn density estimation and explanation**

The primary goal is to estimate mean pronghorn abundance in units of INDIVIDUAL pronghorn per square kilometer and interpret the effects (if any) of road density and public land density on pronghorn abundance.

Instructions:

1. Download the data and non-working script from the distance sampling module page.
2. Edit the script so that the code will run correctly and estimate Davg – the average density of pronghorn per sq km across all replicates and so that you can interpret the effects of roads and public land on pronghorn density.

Questions:

1. What is the estimate of mean density for pronghorn and how does this number have any significance to you? (can you put the estimate in any personal or professional context that might make it more interesting than just a number)?
2. What is the intercept term for group size (in units of individuals per group) and at what levels of road density and prop public land does the expected group size equal the exponentiated intercept term alone?
3. What is the intercept term for group density (in units of groups per sq km) and at what levels of road density and proportion of public land does the expected group density equal the exponentiated intercept term alone?
4. How does group size and group density compare to your expectations (your prior). Why do you think your prior was close (or far) from the real values?