



**Davis College of Agriculture, Natural Resources and Design**

19 October 2011

To whom it may concern:

Thank you for agreeing to help out with the golden eagle photo trapping project.

The goal of this project is to estimate the size of the population of golden eagles wintering in the Appalachians. To accomplish this goal we will take multiple photographs of individual golden eagles and then use a specially designed software package to identify individuals. Once individuals are identified, we can then treat photographs as “captures” in a mark-recapture experiment and use these data to estimate abundance.

To ensure that all data for this project are collected in a standardized manner, we are establishing a set of protocols so that everyone is collecting data the same way. Hopefully these instructions will be both really simple and easy to understand, making this a fun and exciting project.

1. *Testing your trail cam.* First thing you should do once you’ve received your trail cam is to test it somewhere. Make sure the darn thing is working. Put it in your back yard or somewhere else where you are moderately sure you can get a few pictures and where it won’t get stolen and come back in a few days.

2. *Site selection.* Once you know your trail cam is working, you need to find a site that is suitable for attracting and photographing golden eagles (see attached photos, this is a rather large clearing). Key characteristics we have noticed are as follows:

a. Accessibility. This is a winter site and you will need to get there every 2-5 days. Know your area and the typical winter; a really crummy road with a steep grade that ices up or snows in heavily is probably a bad idea, unless required. You also will need to get roadkill deer there, so a walk-in site is not so good either. Make sure the site is one you can drive to on a regular basis and in a safe manner.

b. Small clearings. Golden eagles in the central Appalachians seem to prefer small clearings – smaller than you’d expect, in fact. Even 30-60 feet diameter is small enough for these birds. 500 feet is probably too large a clearing. They prefer to perch in large trees near a carcass and watch it for a while, so it is good if there are a few big trees around.

c. Elevation. Golden eagles come in easily to mountain top areas, they seem less willing to come into low lying areas. Pick an isolated, unvisited and forested hilltop for your photo trapping site.

**Division of Forestry and Natural Resources**

Phone: 304-293-2941  
Fax: 304-293-2441  
www.caf.wvu.edu

322 Percival Hall  
P.O. Box 6125  
Morgantown, WV 26506-6125

Equal Opportunity/Affirmative Action Institution

d. Timing. Best is to get 2-4 weeks of coverage between 01 January and 15 February. This will make inter-site comparison feasible. Please let us know if there are questions about timing of sampling at your site.

e. Mapping. Once you've located your site, please be sure to take a GPS there and get GPS coordinates. Best is to report in UTM, probably in WGS 1984 coordinates (whichever coordinate system you use, be sure to let us know!).

3. *Camera setup*. Once you've chosen your site, there are a couple of key elements to setting up the camera (see attached photos for some examples of how things can look).

a. The bait. Deer carcasses work really well for eagles. If you are getting lots of eagles and ravens, you may need many carcasses; the exact number you need will be determined by how quickly they disappear.

Wire the carcasses to a buried rebar stake or two if possible, otherwise coyotes and eagles will drag it out of the field of view of the camera. Site the carcass about 10-30 feet from the edge of the trees, but definitely not in the center of the clearing.

It is usually a good idea to cut open the carcass, along the legs and abdomen, to provide easier access for ravens and other birds. Many times ravens alert eagles to the presence of a carcass, so it is good to have a raven going back and forth to a carcass.

b. The camera - location. The camera should be attached to a small tree or a 3' wooden stake about 6 feet from the deer carcass, with the camera lens about 18-24" from the ground (or above the snow). We have had good luck putting the camera on a wooden stake and putting the stake in the middle of a cinderblock or two to stabilize it and the camera. If possible, orient the camera to the NORTH – this ensures that the sun is to the side or behind the camera; south-facing cameras often produce washed out pictures.

Make sure that however it is attached, it is sturdy enough that if a bird lands on the camera (or the stake), it will not fall over or change the field of view.

c. The camera – settings. The camera should be set to take a picture every **1 minute**. **It is very important that all camera settings are the same at all sites**. This interval seems to provide multiple pictures of single individuals without taking so many that it fills up memory cards quickly.

d. Batteries. Different cameras use batteries at different rates. Most cameras will function better using an external battery source than running from internal batteries. If possible, try to run your system from a vehicle or marine battery, as the camera will endure for longer.

e. Signs. In some spots putting a sign on the camera will make it less likely that it will get stolen, in other places a sign will make it more likely to get stolen. We recognize that this is a real threat no matter what we do and we will leave it up to the judgment of each site manager to decide whether or not and how to sign their site.

4. *Downloading pictures*. Visit your site every 2-5 days. After the first few visits you will have a pretty good idea how long batteries last and how long it takes your memory card to fill up. When you visit, be sure to do the following:

- a. Check the battery level and change batteries if needed.
- b. Swap out the memory card, download pictures on site if possible.
- c. Check the condition and software settings of the camera.
- d. Check the positioning of the camera.
- e. Make sure you got enough bait to feed eagles! A small deer can disappear in a

day.

5. *Back at home.* First, Copy all pictures to a folder on your computer hard drive.

Second, review the pictures to make sure that the camera, flash, timer, etc., are all functioning properly and to understand the types of wildlife you are photographing.

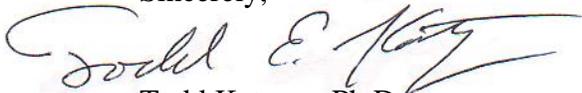
Third, do not delete any images, whether or not they have eagles! Give the folder a name that has the site name and the date of the data download. To avoid confusion, always write the name of the month in letter, not numbers. So a site name could be "Cheat Mountain\_24 January 2011" or "Nathaniel Mountain\_13 March 2011."

**DO NOT DELETE ANY PICTURES TAKEN! This is really important.**

6. *Hard drive.* Copy the folders to a hard drive and at the end of the season, send the hard drive back to Todd Katzner (in PA) or Kieran O'Malley (in WV).

Please let us know if you have questions.

Sincerely,



Todd Katzner, Ph.D.

West Virginia University

[todd.katzner@mail.wvu.edu](mailto:todd.katzner@mail.wvu.edu)

412-983-2986

Kieran O'Malley & Rich Bailey

West Virginia Division of Natural Resources

Kieran.M.O'Malley@wv.gov & Richard.S.Bailey@wv.gov

304-822-3551 & 304-637-0245