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Assignment Guidelines Option 1

For this assignment option, select a site to conduct field observations and fill out an ethogram, which is explained on the next page of this document.

Step one. Select a site to visit

Is there a hike you enjoy near your neighborhood? A favorite spot on the beach? A nearby park? Do some research on the site before you go to make sure you are prepared. Consider:

1. Exact location
 - a. a google maps dropped pin for example to help you remember the location
2. Weather
 - a. temperature, wind
3. Time of day
 - a. consider when the sun sets and make sure you aren't stuck in the dark
4. What is the correct attire to wear for the terrain
 - a. Consider wearing neutral clothing colors to blend in with the habitat
5. What are the hazards
 - a. Consider bringing a camp chair or blanket with you so you can comfortably sit for a long period of time
6. What resources are available close by
 - a. be sure to bring water, snacks, warm clothes and sun protection! Binoculars if you have them will help too

Tell someone (or several people) where you are going and when you should be back. Do this even if you go with a roommate, friend or bubble member.

Step two. When you arrive.

Take note of the surroundings at the interface of human interaction (road, city, houses, and any infrastructure near your open space)

Find a location to comfortably sit for 45 minutes to 75 minutes without disruptions.

Sit down, set yourself up, and stop making any noise for 15 minutes. Try to move as little as possible (you may even want to consider your breathing if it is loud!)

Once 15 minutes have passed, begin making observations on a blank sheet of paper (maintain silence and stillness as much as possible; you may have to start over if you draw too much attention to yourself).

In addition to large and small mammals, consider birds, reptiles, insects and even plants.

Ask:

- 1- What are they doing? What is the pattern of movement? Direction? Linear? Zig-zag? Up-down? Erratic? Smooth? Clear or unclear goal destination? How are they moving?
- 2- Is there a clear motive for the behavior? Are you sure? Is there another possible explanation? 3- Is there a clear reason for the manner in which they are achieving the behavior? What are some

hypotheses that may explain how and why (proximate and ultimate) they are doing this behavior this way?

4- How might you test these hypotheses?

5- Did you observe any interactions between species? Animal- animal interactions seem exciting but don't forget animal-plant or plant-plant interactions; they are there and can be very interesting.

Conducting an Ethogram

A fundamental part of studying animal behavior is recording how animals spend their time. We might ask why one spotted hyena matriarch eats the majority of what her pack kills and frequently bites her pack-mates, whereas another matriarch tends to be less aggressive and let her pack eat more. Studying why animals do what they do requires quantifying their behavior. One way to do this is by constructing an ethogram, a list/map of the behaviors animals are likely to exhibit in a sampling period. This allows researchers to record how often animals perform behaviors or how long they exhibit different behavioral states. Another option for this extra credit activity is to conduct an ethogram. There are two fundamental ways: focal animal sampling and scan sampling.

Focal sampling involves recording everything one focal animal does over a time interval of interest. For instance, you might observe spotted hyenas, at a distance, and record what the pack matriarch does while the pack eats a gazelle. You could record how long the matriarch spends feeding or how often she nips at her pack mates, until they finish feeding. State behaviors, like time spent feeding, are quantified by the time spent in that behavioral state, whereas event measurements, like nips, are counted. This distinction is made for the sake of convenience. Any kind of behavior can be measured both ways, e.g. counting nips or measuring time spent fighting. However, if the matriarch nips at her pack mates as isolated incidents, e.g. no more than once a minute, nips would be easier to measure as events. Measuring time in behavioral states and counting events gives high resolution yet narrow data on target individuals.

Scan sampling gives more broad data by tracking what multiple animals do at set time intervals. For instance, you could record what every hyena pack member is doing around their gazelle carcass every sixty seconds for an hour (or until there is no more gazelle). You would still record behaviors in your ethogram, but this time, you just record what behavior the animals are performing at the time point. Four hyenas might be eating, another four waiting, and two fighting over a tibia. These time points are like snapshots of whatever the animals are doing at that moment. You therefore need to make these recordings quickly. Scan sampling loses the state/ event distinction and decreases resolution, but it gets data on way more animals in return.

For this assignment activity, you can try these techniques on one or a group of animals. Explain how you define each behavior that you witness in Table 1. What mannerisms do you observe that indicate that the animal is "resting" or "grooming" or "feeding"? If you do focal sampling (table 2), pick one animal and record everything it does for 5 minutes (this includes both state and event behaviors). Repeat this process for at least 3 individuals. For scan sampling (table 3), observe a group of animals (ex. a flock of birds). Every minute for 15 minutes record what each animal (up to 15 individuals) is doing. Because these time stamps represent snapshots, you must record these behaviors as quickly and consistently as possible. You will not need to distinguish between state and event behaviors when scan sampling.



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