Now You See Me, Now You Don't!
Bobcat Activity Patterns

Name: _____

PART 1: ACTIVITY PATTERNS

1. What do scientists mean when they say they study an animal's **activity pattern**?

2. To understand activity patterns, we have to understand what makes animals active at some times of day but not others. What are some reasons an animal might be more active at one time of day than another?

3. Why is it important to understand activity patterns of animals? Name at least two reasons we might want to know this for a species.

PART 2: BOBCAT ACTIVITY PATTERNS

Today you will be investigating bobcat activity patterns using data from eMammal camera trapping projects in Maryland, Virginia, and the Carolinas. Your goal is to answer the question:

QUESTION: What factors influence bobcat activity patterns?

1. What information do you want to know about bobcats to help you make an educated guess about when they are most active? Write those topics below.

There are many factors that could affect when bobcats are most active, but we are going to focus on two **alternative hypotheses** for our question:

HYPOTHESIS 1: **<u>Stealth</u> - A bobcat's ability to sneak up on prey determines when they are active.**

HYPOTHESIS 2: **<u>Prey Availability</u> - Bobcats are most active when their prey are most active.**

2. If Hypothesis 1 is true, what time of day would you expect bobcats to be most active? Shade in the times you would expect them to be active on the table on Page 3, in the row labeled "Prediction 1."

3. If Hypothesis 2 is true, what time of day would you expect bobcats to be most active? To figure this out, you'll need information on when bobcat prey is active. Follow your teacher's instructions to obtain this information from eMammal, then shade in the cells in the "Prediction 2" row with when you would expect bobcats to be most active.

4. You now have two predictions in your table on Page 3. How will you know which hypothesis is better supported by bobcat activity data obtained from eMammal?

5. Using the same methods you used to obtain prey activity data, use eMammal to find out bobcat activity patterns for Maryland, Virginia, and the Carolinas. Plot this activity in the final row of the table on Page 3. (Use an activity level cutoff of 0.04 for determining peak bobcat activity.)

	1 a.m.	3 a.m.	5 a.m.	7 a.m.	9 a.m.	11 a.m.	1 p.m.	3 p.m.	5 p.m.	7 p.m.	9 p.m.	11 p.m.
Prediction 1 (Stealth)												
Prediction 2 (Prey Availability)												

Actual Bobcat Activity												

6. How many shaded cells does Actual Bobcat Activity have in common with Prediction 1? _____

7. How many shaded cells does Actual Bobcat Activity have in common with Prediction 2? _____

8. Which of your alternative hypotheses is better supported by the actual bobcat data?

9. Why might the better supported hypothesis make sense, given that a bobcat needs to successfully hunt to survive?

10. We were able to look at the relationship between time of day, prey availability, and bobcat activity patterns with eMammal data today, but these results don't tell us for sure that prey are causing bobcats to be active when they are. How would you design a study to determine if prey availability is what is really causing bobcat activity patterns?