

### Self-Study Problems #5: Primates – Food, territories and groups

1. An individual's "reproductive success" is:

*the number of fertile offspring that the individual has that survive to adulthood*

2. Foods vary in how many calories they provide per pound or per unit of volume. What kind of foods, in these terms, do smaller animals generally need, compared to larger animals?

*smaller animals need food with more calories per pound or unit of volume*

3. List two things that increase an animal's caloric needs that affect males and females approximately equally.

*activity and growing*

4. List two things that increase the caloric needs of females only.

*gestation and lactation (also carrying young)*

5. List the four general categories of primates based on their diets, and indicate what the major food source is for each

*insectivores – insects*

*gummivores – plant gum*

*folivores – leaves, etc.*

*frugivores – fruit*

6. At the zoo, you see a relatively large anthropoid primate with big, wide incisors. What do you suspect is a major food for this primate?

*fruit*

7. Which kind of primate is likely to have a larger home range in the wild, a folivore or a frugivore? Why?

*frugivore, because fruit tends to be dispersed in separated patches, while edible leaves are plentiful within a smaller area*

8. What is the difference between a home range and a territory?

*a territory is defended (exclusive; animals try to keep others of the same species out), while a home range is not*

9. What are the two main benefits that territoriality might have?

*resource defense (better access to resources like food) or mate defense (better access to mates)*

10. What evidence suggests that mating might be a factor in territoriality?

*males are usually more territorial than females; males' reproductive success depends on mating more than females'*

11. What are the two main categories of benefits of being with more other individuals?

*resource defense (better access to food by keeping foreign competitors of the same species away)  
protection from predation*

12. What are two costs of being with more other individuals?

*increased competition for food from group members, infectious disease*

13. Hamadryas baboons are diurnal, and are among the most terrestrial of primates.

a. What size of group, if any, would you expect them to generally live in?

*large*

b. If you observe a female hamadryas baboon in the wild, how many males do you expect to be nearby: none, one, several?

*several*

14. Why does natural selection affect traits and behaviors related to getting food more in females than in males?

*Females gestate, lactate, and for that reason, care for young by carrying them. This requires more energy, hence more food, so access to food has a direct, strong affect on their reproductive success. Males do not have these additional caloric needs, and may father many offspring even if they are not well nourished, so getting food is less tightly tied to males' reproductive success.*

15. Name and explain the two main kinds of competition for resources.

*contest competition: direct competition between individuals, in which one wins and the other loses  
scramble competition: competition in which individuals perform independently, as in searching for dispersed resources.*

16. Douc langurs are folivorous, but contrary to the predictions of the resource-defense theory of sociality, they live in groups usually of 4-15, with some groups up to 50 individuals.

a. What kind of competition would you expect to be common among these langurs?

*scramble competition*

b. Would you expect the females to have a clear dominance hierarchy?

*no*

c. Would you expect a group of 15 douc langurs to include no males, one male, a few males, approximately 50% males, or mostly males?

*a few males*