

The Zoo Project: Nonhuman primate observation

Purpose: To become familiar with two nonhuman primate species live and first-hand; to personally see some of the physical characteristics and behaviors discussed in class and the readings; to exercise evolutionary thinking about your own observations of real primates.

What you do:

Prepare in advance

Print at least two copies of the Primate Observation form, single-sided, so you can write on the back if necessary. You may want to print one or two extra, just in case, and to take pre-visit notes on.

Pick and read a little about *four* species of nonhuman primates that are at the zoo you intend to visit. Lists of primates at the San Francisco and Oakland Zoos are attached. While the assignment covers only two species, read up on four, because some of them probably will be asleep, hiding, or just not doing anything interesting. The zoo web sites (attached, and on the class web page) and information from the lectures, text, and "Primate Gallery" link on the class web page may help you pick interesting species. Use the index in the textbook to find sections that discuss these species, or relatives of the same genus or family. Read up on the four species in the textbook and, if you like, the zoo web sites, other books, or elsewhere. Take notes that you will use to fill out the parts of the Primate Observation form that call for information about the primates in the wild, like:

- their formal and common names, and their taxonomic categories (infraorder, superfamily, etc.)
- the environment they live in in the wild
- their typical group composition in the wild

Also take notes that will help you with your observations, in particular:

- features that distinguish males from females (this may not be easy, so prepare in advance!)
- any features or behaviors that the species is notable for or that would be interesting to observe, including physical characteristics, forms of locomotion, sexual dimorphism, social behavior, and so on.

Go to the zoo

KEEP YOUR ADMISSION TICKET. You will have to turn it in. No ticket, no credit, no exceptions.

Go early enough to have plenty of time to observe the primates. They are often most active in the morning. If the weather is poor, you may want to call the zoo first (phone numbers are listed below). Both zoos sometimes close if it rains, and the primates may hide if it is too cold and wet. You may go with friends or classmates if you like, but each must make his/her own observations. Bring:

- two or more copies of the Primate Observation form, printed single-sided so you can write on the back
- a pen or pencil, and a clipboard or something else to write on
- optional: binoculars if you have or can borrow a pair; they are great for watching facial expressions, use of hands, and so on
- optional: a camera. Some people have enjoyed taking photos or videos.
- optional: the textbook or some other reference so you can review about the species you select

From the four primates you read about, pick two that are visible and reasonably active. Observe members of each species for at least 45 minutes. Longer would be better. You have fair amount of writing to do as well as observing, so allow time for both. The longer you watch, the more likely you are to see something particularly interesting. Fill in the Primate Observation form. Continue onto the back or onto additional

pages if necessary. Although you will turn these notes in, the form is meant to be a tool to direct your attention as you observe the primates, not a polished final product. You may want to write casual notes on the back of the form or elsewhere, as well. Try to verify (or contradict) the claims about behavior, sexual dimorphism, and other features that you read about. Zoo staff are often happy to talk about the animals, answer questions (is that one a juvenile or an adult female? etc.), and point out interesting things you might not have noticed.

Suggest some evolutionary explanations

After your visit, write one to two pages about each species. Specifically, for each species, pick a physical feature that you observed and discuss why natural selection might have favored it for that species in its native physical and social environment. That is, how might this feature have contributed to reproductive success or inclusive fitness? Then pick a behavior that you observed, and discuss why natural selection might have favored it for that species in its native physical and social environment. In other words, discuss how the selected feature might have affected the primate's ecological adaptation, food gathering, social strategies, mating strategies, etc. in ways that improved its reproductive success or inclusive fitness. In some cases, you might have to consider the differences between males and females. Be creative, but try to be realistic and logical, too. You may find suggested explanations for some physical or behavioral features in the course material or online, but you don't need to search for an authoritative answer. I understand that you may not know an accepted, "correct" explanation for the particular feature of the particular primate you are describing. Instead, your task here is just to suggest a hypothesis that should make sense and not obviously conflict with anything a student in this class should know. This is where you go beyond just watching, and really try to understand and explain what you see. You may get useful suggestions from Zoo staff, signs, or research that you do before or after your visit. Feel free to discuss multiple features if you have something to say about more than one physical and one behavioral trait. Your discussion for each species should be one to two double-spaced, computer printed pages.

What you turn in:

- Two completed Primate Observation forms, one for each species
- Two discussions of evolutionary explanations, one for each species, 1-2 pages each, on paper *and* by email. No file, no credit, no exceptions.
- YOUR ZOO ADMISSION TICKET. No ticket, no credit, no exceptions.

How you turn it in:

Turn in the packet of items above, stapled together, in class on Thursday, December 11 (or earlier, if you wish). In addition, you must **ALSO** submit your two discussions of evolutionary explanations as a computer file attached to an email message to me. Again: no computer file, no credit, no exceptions. The computer file must be the same as the paper version you submit, and it is due by email by midnight of the due date. I understand that computer problems happen, and will be lenient with minor delays, but I must have the file before I give you credit for the assignment. Name the file in this format:

201-08f-Primates-LastnameFirstname

Replace "LastnameFirstname" with your name, last name first, capitalizing the first letter of each name. Your word processor may add a short filename extension like ".doc" or ".wks".

I will send an email reply within 48 hours (there are a lot of you!), saying that I got your file. If you do not get a reply, assume that there has been a problem and try again.

Due date: Last day of class, Thursday, December 11.

San Francisco Zoo information:

\$15.00 admission. Open 10:00-5:00 every day. (415) 753-7080

Web page: <http://www.sfzoo.org> (or click on the SF Zoo link on the class web page)

Directions: See the zoo web site. Parking is \$8.00 in the zoo lot, but there is free parking along Sloat Blvd.

Primates at the SF Zoo include:

gorillas (a fairly naturalistic small group)
chimpanzees (a bit old, and not a very naturally-behaving group)
siamangs (often fairly active, often very loud!)
mandrills (a fairly naturalistic small group, interesting but often not visible)
lion-tailed macaques
francois langurs (sometimes active)
patas monkeys (a fairly naturalistic small group, sometimes active)
howler monkeys (sometimes active)

Plus one of the nation's leading prosimian centers including active, easily visible lemurs:

ring-tailed lemurs
black and white ruffed lemurs
red ruffed lemurs
white-fronted lemurs

Oakland Zoo Information:

\$10.50 admission and \$6.00 parking. Open 10:00-4:00 every day. (510) 632-9525

Web page: <http://www.oaklandzoo.org> (or click on the link on the class web page)

Directions: Coming south on highway 80, take 580 towards Hayward. Exit at Golf Links Road, turn left on Golf Links Road. The zoo is on your right.

Primates at the Oakland Zoo include:

hamadryas baboons (usually active, a fairly naturally-behaving small group)
chimpanzees (usually active, a female-heavy but somewhat naturally-behaving group)
white-handed gibbons (often active)
siamangs (often active)
vervet monkeys ("green monkeys") (often active medium-sized group)
squirrel monkeys (medium-sized group)
cotton-topped tamarin (extremely endangered)
ring-tailed lemurs (medium-sized group)