

Center for Engaged Learning Abroad

**Primate Ecology and Conservation:
An Introduction to Field Research**

Course Number: ANTH2995
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Credit: 3 hours

COURSE DESCRIPTION:

This 10 day course is designed for undergraduate or veterinary students with an interest in primates from a biology or conservation perspective.

This 10 day course is designed for undergraduate or veterinary students with an interest in primates from biology or conservation perspective. The Community Baboon Sanctuary (CBS) has set the standard for community based conservation (Bruner 1993, Horwich 2011). Over 200 landowners have pledged to protect that habitat of the local howler monkey population. The black howler monkey (*Alouatta pigra*) is classified as endangered by the IUCN (WWF 1997). This includes the populations in Yucatan, southern Mexico, Guatemala and Belize (Horwich 1989). Several groups of monkeys were continuously studied from 1985-1999, and censuses at CBS showed steady population growth (Howich et al. 2001).

This course is an introduction to primate ecology and conservation, field work and data collection, focusing on behavioral data collection as well as population counts and a health assessment. Health assessments will be conducted using parasitology as a measure. In addition, the course will engage in community education with the villages within the Community Baboon Sanctuary. Course topics explore the behavior, ecology and conservation of nonhuman primates (New World monkeys and howler monkeys, (*Alouatta pigra*) in particular), with emphasis on natural history and adaptation to the environment. Specific topics include methods for the study of primate behavior, history of primate behavior research, socio-ecology, foraging, predation, affiliation, aggression, mating, parenting, development, communication, and conservation. Because most primate species are listed as threatened or endangered, the course will also examine the threats to primate survival and strategies for their conservation.

Students will be trained in various methods of collecting behavioral, physical and ecological data, and will practice those methods during fieldwork. Students will learn methods for estimating primate populations through survey procedures, including line transects. Methods of collecting behavioral data will include the following: scan sampling, focal animal sampling, and ad lib sampling. Physical data will be collected in the form of fecal samples which will be tested for parasite loads. Students will also learn various methods for collecting ecological data, including vegetation plots and phenology measures.

COURSE LEARNING OBJECTIVES:

At the end of this course students should be able to:

- Demonstrate knowledge of the defining characteristics, taxonomy and evolutionary history of the Order Primates
- Discuss the diversity of New World Primates in detail
- Understand and explain the socio-ecology, foraging, predation, affiliation, aggression, mating, parenting, development, communication, and conservation of New World monkeys in general and Black Howler monkeys in particular
- Understand the threats to primate survival and discuss conservation approaches used with monkeys.
- Properly utilize a variety of field data collection methods, including sampling and recording methods for behavioral data and fecal samples, population assessment methods, and habitat description methods
- Conduct fieldwork safely in tropical habitat
- Accurately describe the primates and ecology of Central America.

COURSE LOGISTICS

This course will be conducted largely in the field – outdoors, in the jungle with hiking, canoeing, and extended periods outside. Days will be long, starting early in order to properly count groups of monkeys. Evenings will be spent in coursework or discussions. Students will stay with host families in the local communities. Accommodations are basic, meals prepared by host family, CBS is in an isolated location, tiny village (one store), and no internet access. There will be limited opportunities to travel outside of the Community Baboon Sanctuary areas during the course.

COURSE READINGS

All course readings will be available in an electronic format on the CELA e-campus. Please see the reading assignments in the course schedule and make sure to have completed the required reading before the course dates in order to be able to participate in discussions, field work and lab practices.

COURSE ASSESSMENT

- Daily Fieldwork Performance and Conduct 30%
- Journal Article Critique and Class Discussions 25%
- Field Journal 25%
- Presentation 25%

Daily Fieldwork Performance and Conduct: Students are expected to participate fully and actively in every aspect of the course, including participation in the community. The grade for participation and conduct will be based on the ability to work effectively with classmates, instructors, guides, and community members in addition to their willingness to participate and the level of participation.

The fieldwork part of the course involves participation in data collecting techniques, methods, and procedures including:

- Primate Population Census
- Primate Behavioral Sampling Methods
- Primate Feeding Ecology
- Habitat Description and Mapping
- Plant Phenology and Productivity

Journal Article Critique and Class Discussions: Each student will be responsible for leading one group discussion of an assigned reading. Assignments of discussion topics will be assigned prior to the beginning of the course. The discussion leader should briefly summarize the paper in their own words, place the reading in the context of the course and other readings and lead a discussion with questions that critique the reading. Students not leading the discussion will be graded on their participation in the discussion.

Field Journal: Students will be responsible for collecting, recording and submitting behavioral, physical and ecological data from their field work. They will utilize their field journals to record their data collection, their experiences working in the field and respond to assigned readings. Field journals will be submitted to the instructor at the end of each week.

Final presentation: Students are required to give a 15-minute presentation on a topic of their choice that is relevant to the course. Where possible, students are encouraged to use data collected during the field course for their presentations.

NEED TO INSERT COURSE SCHEDULE

Some Links Relevant to Primate Conservation

International Primatological Society

<http://www.internationalprimatologicalsociety.org/>

Homepage for the Jane Goodall Institute

<http://www.w.csu.ctstateu.edu/cyberchimp/homepage.html>

Environmental and Conservation Research

<http://pipkin.lut.ac.uk/~ben/enres/envres.html>

American Society of Primatologists Conservation Page

<http://www.asp.org/asp/conservation>

Neotropical Primate Conservation

<http://www.neoprimate.org/index.php/en/>

Community Conservation: Catalysts for Global Change

<http://www.communityconservation.org/who.htm>

Community Baboon Sanctuary

<http://www.howlermonkeys.org/>

JOURNAL ARTICLES:

Population Counts and Demographics:

- Buckland, ST, Plumptre, AJ, Thomas, L, and EA Rexstad. 2010. Design and analysis of line transect surveys for primates. *International Journal of Primatology* 31(5):833-847.
- Plumptre, AJ, and D Cox. 2006. Counting primates for conservation: primate surveys in Uganda. *Primates* 47:65-73.
- Marshall, AR, Lovett, JC, and PCL White. 2008. Selection of line-transect methods for estimating the density of group-living animals: lessons from the primates. *American Journal of Primatology* 70:452-462.
- Estrada, A, Lueke, L, Van Belle, S, Barrueta, E, and MR Meda. 2004. Survey of black howler (*Alouatta pigra*) and spider (*Ateles geoffroyi*) monkeys in the Mayan sites of Calakmul and Yaxchilán, Mexico and Tikal, Guatemala. *Primates* 45(1):33-9.
- Horwich, RH, Brockett, RC, James, RA, and CB Jones. 2001a. Population Growth in the Belizean Black Howling Monkey (*Alouatta pigra*). *Neotropical Primates* 9(1): 1-7.
- Horwich, RH, Brockett, RC, James, RA, and CB Jones. 2001b. Population Structure and Group Productivity of the Belizean Black Howling Monkey (*Alouatta pigra*): Implications for Female Sociology. *Primate Report* 61:47-65.
- Ostro, LET, Silver, SC, Koontz, FW, Young, TP, and RH Horwich. 1999. Ranging Behavior of Translocated and Established Groups of Black Howler Monkeys (*Alouatta pigra*) in Belize, Central America. *Biological Conservation* 87: 181-190. 64
- Ostro, LET, Silver, SC, Koontz, FW, Horwich, RH, and RC Brockett. 2001. Shifts in social structure of black howler (*Alouatta pigra*) groups associated with natural and experimental variation in population density. *International Journal of Primatology* 22 (5): 733-748.

Parasitology:

- Kowalzik, BK, Pavelka, MSM, Kutz, SJ, and A Behie. 2010. Parasites, primates, and ant-plants: clues to the life cycle of *Controrchis* spp. in black howler monkeys (*Alouatta pigra*) in southern Belize. *Journal of Wildlife Diseases* 46 (4): 1330-1334.
- Behie, AM, and MSM Pavelka. 2014. The interacting roles of nutrition, stress and parasitism in determining population density of howler monkeys living in a hurricane disturbed forest fragment. In *Primates in Fragments: Complexity and Resilience*, eds. LK Marsh and CA Chapman. Springer Press. pp. 447-456.
- Vitazkova, SK, and SE Wade. 2006. Parasites of free- ranging black howler monkeys (*Alouatta pigra*) from Belize and Mexico." *American Journal of Primatology* 68 (11): 1089-1097.

Diet and Vegetation:

- Marsh, LK, and BA Loiselle. 2003. Recruitment of black howler fruit trees in fragmented forests of Northern Belize. *International Journal of Primatology* 24 (1): 65-86.
- Silver, SC, Ostro, LET, Yeager, CP, and RH Horwich. 1998. Feeding ecology of the black howler monkey (*Alouatta pigra*) in Northern Belize. *American Journal of Primatology* 45: 263–279.
- Ganzhorn, JU. 2003. Habitat description and phenology. In *Field and Laboratory Methods in Primatology: A Practical Guide*, eds. JM Setchell and DJ Curtis. Cambridge University Press. pp. 40-56.

Conservation:

- Ostro, LET, Silver, SC, Koontz, FW, and TP Young. 2000. Habitat selection by translocated black howler monkeys in Belize. *Animal Conservation* 3: 175-181.
- Wyman, MS, Stein, TV, Southworth, J, and RH Horwich. 2011. Does population increase equate to conservation success? Forest fragmentation and conservation of the black howler monkey. *Conservation and Society* 9:216-28.
- Alexander, SE. 2000. Resident attitudes towards conservation and black howler monkeys in Belize: the Community Baboon Sanctuary. *Environmental Conservation* 27 (4): 341-350.

Ethics:

- Treves, A and K Brandon. 2005. Tourist impacts on the behavior of black howling monkeys (*Alouatta pigra*) at Lamanai, Belize. *Commensalism and conflict: The human-primate interface*: 147-167.
- Fedigan, LM. 2010. Ethical issues faced by field primatologists: asking the relevant questions. *American Journal of Primatology* 72: 754–771.
- Grossberg, R, Treves, A, and L Naughton-Treves. 2003. The incidental ecotourist: measuring visitor impacts on endangered howler monkeys at a Belizean archaeological site." *Environmental Conservation* 30 (1): 40-51.

BOOKS:

- Horwich, RH and J Lyon. 1993. A Belizean Rain Forest: The Community Baboon Sanctuary. Orang-utan Press.
- Kowalewski, MM, Garber, PA, Cortes-Ortiz, L, Urbani, B, and D Youlato. 2015. Howler Monkeys: Behavior, Ecology, and Conservation. Springer Press.
- Strier, KB. Primate Behavioral Ecology, 4th edition. 2000. Allyn and Bacon Publishing.
- Campbell CA, Fuentes A, MacKinnon KC, Panger M, and SK Bearder. 2006. Primates in Perspective. New York: Oxford University Press.
- Martin P and Bateson P. 2007. Measuring Behavior: An Introductory Guide, 3rd Edition. Cambridge: Cambridge University Press.

Optional Books:

- Terborgh, J, van Schaik, C, Davenport, L, and M Rao. 2002. Making Parks Work: Strategies for Preserving Tropical Nature. Washington: Island Press.
- Fleagle, JG. 1999. Primate Adaptation and Evolution. Academic Press.
- Fleagle, JG, Janson, CJ, and KE Reed. 1999. Primate Communities. Cambridge University Press.
- Kricher JC. 1989. A Neotropical Companion. Princeton, NJ: Princeton University Press.
- Smuts BB, Cheney DL, Seyfarth RM, Wrangham R, and Struhsaker TT. 1987.

- Primate Societies. Chicago: University of Chicago Press.
- Sussman RW. 2003. Primate Ecology and Social Structure, Vol.2: New World Monkeys (revised 1st edition). Boston, MA: Pearson Custom Publishing.
 - Terborgh J. 1983. Five New World Primates: A Study in Comparative Ecology. Princeton, NJ: Princeton University Press.
 - Fowler J, Cohen L, and Jarvis P. 1998. Practical Statistics for Field Biology, 2nd Edition. Chichester: Wiley & Sons.