



THE SCHOOL
FOR FIELD STUDIES

Primate Behavioral Ecology in East Africa

SFS 3151

Office hours:
08:00-12:00; 14:00-17:00
and by appointment

The School for Field Studies (SFS)
Center for Water and Wildlife Studies (CWWS)
Kilimanjaro Bush Camp, Kimana, Kenya

This syllabus may develop or change over time based on local conditions, learning opportunities, and faculty expertise.
Course content may vary from semester to semester.



Course Overview

This course focuses on primate behavioral ecology in southern Kenya focusing on Amboseli Tsavo Ecosystem (ATE). In Africa, there is about 94 species of primates, with Kenya having 19 species. These include some of the world's most endangered and rare species such as the Tana River red colobus, Tana River mangabey, Percival's black and white colobus, and de Brazza's monkeys. Globally and across the continent, most primate populations are declining due to habitat loss, and poaching for bush meat and other products. In most regions of Kenya, habitat loss, habitat fragmentation and human primate conflicts are the major challenge to primate conservation. These effects have been amplified by a continuously increasing human population particularly in the rural areas where there most natural areas for wildlife occur. The increased human population is associated with activities such as agriculture, charcoal burning and conversion of land for human settlement which have led to loss and degradation of primate habitats. The loss of habitat has resulted to fragmentation and reduced populations of primates as critical habitats becoming scarce. Today the scenario is that of isolated populations of primates, with more habitat specific species getting confined mostly to within protected areas. However due to their broad habitat and long ranging movement of a number of primates, areas outside protected areas are still very critical to primate conservation.

In most situations, where there is close contact with humans, conflicts have become a dominant feature. The conflicts are mainly in form of crop raiding and livestock predation. In areas where primates have become habituated, they are constant menace as they raid human establishments in search of artificial foods as they raid for food.

Primates are one of the most exciting species to study due to their similarities to humans in terms of intelligence and social-ecological behavior. Their behavior is great interest to anthropologists and behavioral ecology scholars. The four week long course is tailored to give students abundance opportunity to explore the ecology, human primate dimensions and the threats to primate conservation in differing landscapes.

The course will be delivered in the ATE in southern Kenya. The region is one of the most popular tourism destinations in Kenya. Most nature lovers visit Amboseli, Chyulu Hills and Tsavo National Parks, and a host of community management sanctuaries in the area. Amboseli is popular for its large and tranquil elephant population and the magnificent views of Mt. Kilimanjro. The Tsavos, enjoined with Chyulu National Park are a massive rugged wilderness park offering striking natural scenery and views of elephants, rhinos, leopards and lions. Chyulu hills is in particular an important primate area in Kenya, black and white colobus monkeys have been sighted in the higher levels of some of the Chyulu Hills Peaks.

These areas have a unique primate species that are found in the divergent human and ecological environment. The major primates common in ATE include; yellow baboons, olive baboons, vervet monkeys, Skyke's monkeys, black and white colobus monkeys, lesser and greater bush babies. While baboon ecology and baboon-human dimensions have been well studied in the Amboseli ecosystem through the Amboseli baboon research project, little research has been undertake on the other species. The area is therefore a haven for seasoned and aspiring primatologists.

Primate Studies in Amboseli Tsavo Ecosystem

This course is designed to offer students skills and knowledge in primate studies. The array of primate species offers an exceptional opportunity for students to explore primate natural history, ecology and conservation.

In order to achieve this, lectures, field exercises and discussions are specific, purposely intended to instill a given skill set on primates. The learning model is case study approach whose key attribute is site and issue focused learning. The protected areas are the main refuge for most of the primates, although they regularly use the adjacent private land. Such a setting is crucial to understanding the influences of humans on primate behavior, and the prevailing human-primate conflicts.

In particular, student learning will be aimed at answering the following questions in relation to olive baboons, vervet monkeys, Syke's monkeys, black and white colobus monkeys, lesser and greater bush babies in ATE.

- What is their natural history?
- What determines primate landscape distribution?
- What are the primate caused zoonotic diseases of public health significance?
- What are the drivers of primate activity budgets?
- What is the nature and extent of primate - human conflicts?
- What are the threats facing primate conservation?
- What are the primate conservation strategies in ATE and Kenya

Learning will be through a multi-disciplinary learning process, that involves student self-enquiry through literature review, field observations, discussions with local community members and experts in wildlife management, and field based ecological and social research.



Left: Male baboon. Right: Mother and baby.
for studying and managing primates. This will be achieved by addressing the following objectives:

Learning Objectives

The overall objective of the course is to equip students with adequate knowledge on primate ecology and conservation issues and strategies in Kenya, with case studies from ATE. The course is tailored to provide students with knowledge and skills necessary

- To understand the natural history of yellow baboons, olive baboons, vervet monkeys, blue monkeys, black and white colobus monkeys, lesser and greater bush babies.
- To determine the environmental factors influencing primate distribution in ATE?
- To determine activity budgets of olive baboons in ATE.
- To determine nature and extent of conflicts between humans and primates in ATE.
- To understand human-baboon disease interface in ATE.
- To understand the conservation threats and the current strategies for managing primates in Kenya.

Assessment

<i>Assessment Item</i>	<i>Due Date</i>	<i>Value (%)</i>
Analysis of olive baboon activity pattern		25
Social survey of primate human conflict and local people perceptions of primates		25
Habitat management planning for blue monkey in Kimana area		20
Exam		30
TOTAL		100

Grading Scheme

A	95.00 – 100.00%	B+	86.00 – 89.99%	C+	76.00 – 79.99%	D	60.00 - 69.00%
A-	90.00 – 94.99%	B	83.00 – 85.99%	C	73.00 – 75.99%	F	59.99 - 0.00%
		B-	80.00 – 82.99%	C-	70.00 – 72.99%		

Description of Assignments

Studying primate behavioral ecology (25%):

In this assignment students will spend 4 hours doing behavioral observations on olive baboons so as to learn the major techniques for studying primate behavior. The field observations will focus on activity time budgets based on scan sampling. The data collected will be used to do an individual paper on the activity pattern of olive baboons in Amboseli National Park. The paper will follow a scientific format as a way to teach students the norms of scientific writing.

Social survey of primate human conflict and local people perceptions of primates (25%):

Students will conduct household interviews to investigate the kind and severity of human baboon conflicts and people attitudes towards primates in ATE. Students will analyse the data collected and write an individual scientific paper either on dimension human primate conflicts or community attitudes towards primates.

Habitat management planning for blue monkey in Kimana area (20%):

This assignment will be done in groups where students will team up and evaluate the influence of human activities on a critical riparian habitat (Kimana river) for blue monkeys. The field activity will involve a transect walk across Kimana river. Using the information gathered, students will then draft a blue monkey habitat conservation plan for Kimana area. The plan will be the graded item.



Above: Male monkey resting in tree. Right: Mother and baby.

General Reminders

Readings: Assigned readings and hand outs (exercises/assignments) will be available prior to the scheduled activities. Course readings must be read and clarification on issues sought where necessary since ideas and concepts contained in them will be expected to be used and cited appropriately in assigned course essays and research papers.

Plagiarism: using the ideas or material of others without giving due credit – is cheating and will not be tolerated. A grade of zero will be assigned for anyone caught cheating or aiding another person to cheat either actively or passively (e.g. allowing someone to look at your exam).

Deadlines: Deadlines for written field exercises and other assignments are posted to promote equity among students and to allow faculty ample time to review and return assignments in good time. As such, deadlines are firm and extensions will only be considered under the most extreme circumstances. Late assignments will incur a 10% penalty for each hour that they are late.

Participation: Since we offer a program that is likely more intensive than you might be used to at your home institution, missing even one lecture can have a proportionally greater effect on your final grade simply because there is little room to make up for lost time. Participation in all components of the program is mandatory because your actions can significantly affect the experience you and your classmates have while at CWMS. Therefore, it is important that you are prompt for all course activities.

Course Content

Instructors: MO, Moses Okello, JK, John Kiringe, JKM, John Kioko,

Type- L: Classroom lecture, **FL:** Field lecture, **FEX:** Field Exercise, **D:** Class discussions, **Lab:** class exercise,

SP: Students Presentation

*Readings in **Bold** are required

	<i>Title and Description</i>	<i>Readings</i>	<i>Instructor</i>
(L, 1.0 hr)	Course introduction This is a lecture on the course outlook, field trips, schedule, assignment and grading. It will set the general expectations and students will have a chance to ask questions they may have regarding the academics and the course delivery.	Course syllabus	All/MO
(L, 2 hrs)	Conservation status and challenges facing primates in Africa This lecture will explore the diverse challenges facing conservation of primates in Africa by focusing on specific primates across the continent of Africa.	(Estrada et al., 2017)	JK/Guest
(L, 2 hrs)	Natural history of primate species in Kenya This lecture will briefly show case the natural history of different primate species found in Kenya, however with more emphasis on the primate species likely to be seen during this course.	(Estes R. D, 1991)	JK
(L, 2 hrs)	Techniques for studying primate behavior I This is a lecture on the techniques for studying primate behavior. The knowledge will be applied in a field exercise on baboon activity pattern to be undertaken in Amboseli National Park.	(Altmann J, 1974)	JKM
	<i>Title and Description</i>	<i>Readings</i>	<i>Instructor</i>
(FE, 5 hrs)	Techniques for studying primate behavior II In this field exercise, students will undertake observations of olive baboon behavior using a ethogram in Amboseli National Park. Scan samples of olive baboon activity will be undertaken to monitor trends in behavior. The data collected will be later analysed and used to write a scientific paper on primate behavior.		JKM

(FE, 3 hrs)	Olive baboon research in Amboseli Ecosystem This will be a quest lecture by researchers from the Amboseli Baboon Research Project. The lecture will focus on the ongoing research on olive baboon within Amboseli Ecosystem. Students will also get a chance to learn the daily and overall operations a long term research camp.	(Altmann J, and Muruthi P, 1988)	JKM/Guest
(L, 2 hrs)	Species management plans In order to save a species from various threats and to safeguard its future, habitat plans are necessary. This lecture will teach students the steps in management planning. The information will be basis of an evaluation of the status of blue monkey in ATE.	Fallding, Martin. (2008).	JKM
(FL, 4 hrs)	Can we save Sykes monkeys in ATE This will be a travelling lecture where students will visit areas where blue monkeys are found, are erratically found or have completely disappeared. The field observations will form background of an assignment in blue monkey planning process. The species has continued to disappear in many parts of ATE and is likely to go extinct locally in the next few years.	Otieno, Jeff. (2010).	JK
(L, 3 hrs)	Social survey techniques for primate studies. The most commonly used survey techniques for social enquiry will be taught. Students will gain skills to prepare an enquiry tool (e.g questionnaire) to be used in studying human primate conflict in ATE	(John et al., 2014)	MO
	<i>Title and Description</i>	<i>Readings</i>	<i>Instructor</i>
(L, 2 hrs)	Theoretical background to people and primate conflicts. In this lecture, the dimensions of human-primate conflicts will be explored as a way to give students adequate background to digest the results of human primate conflict survey. The tool will be used in a subsequent, field exercise.	(Hoffman T.S. & O'Riain M.J., 2012) (Hill, C.M., 1998)	MO

(FE, 5 hrs)	People and primate survey field survey on nature and extent of human-primate conflicts: Conflict with farmers? Using a questionnaire, students will conduct a social survey on the type and severity of human primate conflicts, and the existing mitigation measures and their efficacy. The survey will be among the farmers in Kimana area.	(Eaden, et al., 1998)	JK
(FE, 5 hrs)	People and primate survey field survey on nature and extent of human-primate conflicts: Conflict with pastoralists? Using a questionnaire, students will conduct a social survey on the type and severity of human primate conflicts, and the existing mitigation measures and their efficacy. This will focus on the Maasai people who are pastoralists in one of the group ranches.	(Eaden, et al., 1998)	
(FE, 5 hrs)	Field techniques and tools for studying primate movement behavior This will be a field exercise where faculty will demonstrate how different techniques such as radio telemetry, camera traps and GPS are applied in monitoring primate ranging behavior.	(Caravaggi, A, et al., 2017)	JKM
(L, 2 hrs)	Primate disease studies This will be a lecture by a wildlife veterinarian /researcher working on aspects related to wildlife diseases in Kenya. The lecture aims to focus on current primate disease research in Kenya. It will highlight the existing opportunities for veterinary work on primates in Kenya and the East African region.	(Wolfe, N.D. et al, 1998)	Guest/JKM
(FE, 5 hrs)	Influence of tourism on primate behavior: Beware of baboons. While the economic benefits of tourism are well known, their negative effects on wildlife is rarely known due to lack of quantifiable data. In this field exercise, students will observation human baboon interactions by quantifying the baboon time budgets and by looking at patterns of affiliation. Observation will be undertaken in picnic sites/lodges in Amboseli National Park, which has a huge population of olive baboon.	(Altmann J, & Muruthi P, 1988).	JK
	<i>Title and Description</i>	<i>Readings</i>	<i>Instructor</i>
(L, 2 hrs)	Wildlife utilization: Case of primates This lecture will highlight the different primate values/uses by local people across African and their implications for conservation of primates.	(Michael A. H., 2001)	JKM

(FE, 4 hrs)	Cultural values. The place of primates in African culture: Case of Maasai and other tribes. This will be a field exercise whereby students in groups will undertake a survey how different tribes in ATE utilise (d) primates.		JK
(FL,3 hrs)	Conservation leadership training: Getting involved: Primate research and opportunities This will be a student led discussion where students will field questions and lead a discussion on their experiences in research and conservation. The faculty will also get a chance to highlight some of the opportunities for primate research and how students can get involved.		ALL
56 hrs	Total Contact Hours		

Readings

*Readings in **Bold** are required

Altmann J. (1974). Observational study of behavior: sampling methods. *Behaviour* 49:227–266.

Altmann J & Muruthi P. (1988). Differences in daily life between semiprovisioned and wild-feeding baboons. *Am J Primatol* 15:213–221.

Bronikowski A.M. et al. (2002). The aging baboon: comparative demography in a non-human primate. *Proc Natl Acad Sci USA* 99:9591–9595.

Caravaggi, A, et al., (2017). A review of camera trapping for conservation behaviour research. *Remote Sensing in Ecology and Conservation*. (3): 1.

De Jong, Y. A. & T. M. Butynski. (2012). The primates of East Africa: country lists and conservation priorities. *Afr. Primates* 7: 135–155.

Eaden, et al., (1998). Questionnaires: the use and abuse of social survey methods in medical research. *Postgrad Med J.* (75): pp 397–400.

Estrada et al. (2017). Impending extinction crisis of the world's primates: Why primates matter. *Science Advances*.

Fallding, Martin. (2008). What makes a good natural resource management plan? *Ecological Management and Restoration* 1(3):185 – 194

Hill, C.M. (1998). Conflict of Interest Between People and Baboons: Crop Raiding in Uganda. *International Journal of Primatology*. (21): 2, 2000.

Hoffman T.S. & O'Riain M.J. (2012). Monkey management: using spatial ecology to understand the

extent and severity of human–baboon conflict in the Cape Peninsula, South Africa. *Ecology and Society* 17(3): 13.

John et al. (2014). Robust study design is as important on the social as it is on the ecological side of applied ecological research. *Journal of Applied Ecology*.

Michael A. H. (August, 2001). Self-Medicative Behavior in the African Great Apes. *BioScience*: 51 (8). Pp 651–661.

Otieno, Jeff. (2010). Vegetation Loss Threatens to Push Wildlife Species into Extinction. *Daily Nation*. Web. <https://www.nation.co.ke/news/Vegetation-loss-threatens-Kenya-wildlife-species/1056-1044286-9kqym/index.html>

Wolfe N.D., et al. (1998). Wild Primate Populations in Emerging Infectious Disease Research: The Missing Link? *Emerging Infectious Diseases*. (4):2. Pp 149-158.