Himalayan Biodiversity:
Natural History and Animal Behavior

Spring 2020, ANTH 1801/BIOSCI 0825



Mr. Suniti Bhushan Datta
Hanifl Center

Day “B” – 11:30am – 12:45pm

COURSE DESCRIPTION

Ranging in altitude from several hundred meters above sea level to over seven thousand, from subtropical forests to high altitude meadows and deserts, and from areas with little or no rainfall to regions that are among the wettest in the world, the Himalayas define a region of enormous geological variation and biodiversity. The goal of this course is to gain an understanding of this diversity, with a focus on ecology. Within the framework of standard classificatory schemes – mammals, birds, reptiles, and insects – we will focus on specific organisms within specific genre for more detailed behavioral analysis.

TEXTS

Do not purchase books, unless you want to. All reading assignments – including short selections from some of the books below -- will be available at the Hanifl Center and/or posted on the facebook group designated for this course.

On reserve at the Hanifl Center

David Zurick, Julsun Pacheco, Basanta Raj Shrestha, Birendra Bajracharya, 2006. *Illustrated Atlas of the Himalaya.* Lexington: University of Kentucky Press.

Vivek Menon, 2009. *Mammals of India.* Princeton: Princeton University Press.

S. S. Negi, 1992 *Himalayan Wildlife, Habitat and Conservation*. New Delhi: Indus Publishing.

Jim Corbett, 1994. *Jungle Lore.* Oxford: New Delhi

Salim Ali, 1996. *The Book of Indian Birds*. Bombay: Bombay Natural History Society.

Suniti Bhushan Datta and Nikhil Devasar. 2012. *Birding in the Doon Valley*. Landour: Winterline Publishing

COURSE REQUIREMENTS AND FORMAT

The class will meet at the Hanifl Center campus classroom and at designated times and places during field study excursions. Each class session will involve a short lecture by the instructor and/or guest lecturers with specialized knowledge on specific topics.

Field Study Expeditions are scheduled throughout the term, some taking as much as a week, others between two and four days or less. Expeditions will be coordinated to fit into the curriculum as a whole. Please see the master schedule of field activities for a perspective on the relationship between time spent at the Hanifl Campus, travel time, and time in field locations.

Class meetings at the Hanifl Center are scheduled around field study expeditions. There will be 13 formal meetings on days designated "B" on the master schedule. In conjunction with this

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there are 8 additional guest lectures given by local experts on various topics. These are designated "C" on the master schedule.

ASSIGNMENTS

Quiz: There will be three short quizzes during the term, each worth **5 points [15 points total]**

Papers:

Option 1: Identify a set of animals/organisms that constitute part of an ecological niche based on the fact that they interact and/or exchange information with one another. For this set of animals, first identify a specific problem of interaction and communication that interests you (bird vocalization, plumage, migration patterns, feeding habits, predation, grooming, parasitism, etc.) and write a 300 word statement highlighting this problem as a question (15 points [**due on Jan 24**]. Collect information on your set of animals/organisms based on a study of published material and field observation, keeping careful notes (due on **Feb. 17** [15 points] and **March 10** [15 points]). Write a 12-page analysis of your set of animals/organisms by answering the question you formulated. Due on **April 10**, [20 points]

Option 2: Identify two or three species within a genus. Start by writing a short 300-word question about the relationship between these species (**due on Jan 24** [10 points]. Collect information on the animals you have chosen based on a study of published material and field observation, keeping careful notes (due on **Feb 17** [15 points] and **March 10** [15 points]). Write a 12-page analysis of your set of animals/organisms by answering the question you formulated. Due on **April 10**. [20 points]

Option 3: Identify a problem of biodiversity in a particular ecological context and write a 300-word question that interests you about this problem (**due on Jan 24th** [10 points]). Collect information on the flora/fauna you have chosen based on a study of published material and field observation, keeping careful notes (due on **Feb 17** [15 points] and **March 10** [15 points]). Write a 12-page analysis of the problem you have identified by answering the question you formulated. Due on **April 10th**. [20 points]

Some Examples of Possible Questions:

1. Why and how have leopards adapted to human settlement patterns much more readily than tigers?
2. Why have species of moth "migrated" from east to west over the past century?
3. Beetles of many different varieties were once very common in the Mussoorie area. What types of beetles were these, and why have they become rare?
4. Explain the presence of stray dogs in Mussoorie in relation to dog domestication in Human history. Why are there so many dogs? What behavioral patterns do they exhibit in relation to a range of other animals, including humans?

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WEEKLY SHEDULE
(See Master Itinerary for specific dates)

Class 1. Three-dimensional Ecology.

An overview of the spatial distribution, altitudinal and latitudinal gradients, and topographical features of different habitats in the Himalaya, and their effects on the distribution of flora and fauna.

Class 2. Bugs and Butterflies.

With the diversity of habitats and harsh conditions of the high mountains, insects and spiders have some unique morphological and behavioral adaptation for survival. This lecture explores these fascinating and relatively little-studied taxa.

Class 3. Birds in the Himalaya.

The Himalaya is home to about 80% of all the avian species found in India, the Himalayas are a superb ecosystem to study, or watch, birds. This lecture explores some of the factors that determine the distribution and behavioral adaptations of birds across the span of the Himalaya.

Class 4. Over the Mountains: Trans-Himalayan Bird Migration.

Every year, a large population of birds migrates great distances from northern and central Asia to the plains of India, and beyond, often flying over the highest peaks in the world. How do they do it? What determines where they go? Learn about this fascinating phenomenon in this lecture!

Class 5. Monkeys in the Mountains.

Living in the hills, one very soon gets acquainted with monkeys of various species. In this lecture, we explore the different species found here, their relationship with the forest and with humans.

Class 6 . Living Cold: Reptiles and Amphibians.

One wouldn't normally expect reptiles and amphibians to not just survive, but even thrive, in the harsh environment of the Himalayas. We explore their adaptations to this environment, and talk about some of these amazing creatures, in this lecture.

Class 7. Stealthy Cats and Diminishing Dogs: Carnivores and their conservation.

Home to several large carnivores (and several small ones) that form the apex predators in these mountains, these animals are crucially important for the ecosystem. In this lecture, we will

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discuss the ecology of these predators, their relationship with the Himalayan ecosystem and the threats they face from humans.

Class 8. Keepers of the Jungle: Asian Elephants and their conservation.

The outer fringes of the Himalaya forms some of the best Asian elephant habitat in the world, and these mega-herbivores are crucial for the health of these forests and grasslands. In this lecture, we learn about the natural history of these amazing animals and the challenges of conserving them amidst a growing human population.

Class 9. Co-existing with Wildlife: Human-Wildlife conflict in the Himalayas.

The Himalaya abuts onto the Gangetic plains, which has the densest human population in the world. This human-dominated mosaic of forest, urban centres and agricultural lands is fast becoming a hotbed of conflict between animals and people. In this lecture, we will explore some of these issues and discuss possible mitigation measures.

Class 10. Wildlife Trade and its threats to Himalayan wildlife.

The illegal trade in wildlife products is estimated to be the fourth highest in terms of monetary value, behind arms, drugs and human-trafficking. The Himalaya with its rugged terrain and host of valued species, poses a unique challenge to law enforcement. In this lecture we discuss the issues around the enforcement of antipoaching laws, right from the grassroots to the wildlife markets in South and South-east Asia.

Class 11. Hugging the Trees: Environmental Activism in the Himalayas

Did you know that the original 'tree-huggers' were from the Himalayas?! The people of these mountains have deep connections with their environment and have frequently taken to social and political activism to defend it from those wanting to exploit it, be it the timber contractors or big hydro-electric projects.

Class 12. Conservation History of the Himalayas: The past, present and future.

In this lecture, we look at the history of conservation in the Himalayas, from the times of Emperor Ashoka (2000 years ago), through the colonial British times, to current policies and practices, and, with the challenges of climate change and the Anthropocene Era, look to the future of Himalayan ecosystems.

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