

NRES 285
INDIA: CONSERVATION, CLIMATE, AND CULTURE
SPRING 2024

Travel Dates: May 13, 2024 – May 28, 2024

Pre-departure course meetings: Second eight weeks; **W 7:00 – 7:50 pm**; March 20, 27, April 3, 10, 17, 24 (if needed).

Pre-departure & Course Instructors: Dr. Suneeti Jog (jog@illinois.edu), (518) 878-3589 and Dr. Jason Bried (bried@illinois.edu), (518) 698-1257.

Credit: 2 hours

Location: Central Kerala circuit (Alleppey, Thekkady, Munnar)

Kerala Coordinator: Mr. Jojo T. D. (jojo@atree.org), +91-477-2251818, WhatsApp # 98460 09339

Credits: 2 credits for NRES 285 Field experience

Course Description:

This course will introduce students to sustainable practices in wetland and forest conservation in the Western Ghats, a biodiversity hotspot in India. Students will get hands-on experience with monitoring and conservation efforts at an internationally recognized wetland complex. Students will also visit nationally important forests and get firsthand experience with forest conservation practices in a tropical, developing nation. Agro-forestry, invasive species management, sustainable livelihood and ethical harvesting, organic waste management, climate change mitigation, and socio-economic impact to local resource-based communities will be emphasized in a two-week hands-on immersive experience spanning three different ecosystem complexes in southwestern India.

Student Learning Objectives:

Upon completion of this course students will:

1. Discuss the concept of sustainability in a biological, historical, and cultural context
2. Explore wetland conservation practices in the tropics with respect to ecosystem specific threats
3. Learn about forest conservation practices in a heavily natural resource dependent society
4. Relate conservation practices to societal pressures of overpopulation, invasive species, and climate change in southern India
5. Understand and appreciate societal and environmental challenges of a developing nation and gain insight into how culture and natural resources are intertwined
6. Acquire hands-on training with local village community members, researchers and outreach staff from partner institutions, and farmers and fishermen

Learning Outcome Assessment Methods:

1. Completion of pre-departure assignments (**20** points)
2. Participation in weekly discussions involving assigned readings during the on-campus portion of the course (**10** points).
3. Participation and engagement in guest lectures from visiting speaker during the on-campus and local lectures during in-field portions of the course (12X10 points each = **120** points).
4. Participation in in-field activities such as creation of fish sanctuary, and interactions with local community members (**100** points).

5. Presentation (**200** points – **due June 15** by 5pm CST) of summative review (recorded PowerPoint presentation) on conservation (and cultural) issues at the end of the in-field portion of the course **OR** individual reflective essay or Zine (**200** points – due **June 15** by 5pm CST).
4. Ability to work collaboratively in pairs or groups and work through cross-cultural and communication barriers (**20** points). Students' ability to work cohesively in groups will be assessed here.
5. Field journal OR photo documentation (**30** points)

Total points = 500

Grading Scale: Evaluation of your academic performance will be based on several factors. Grades will be determined upon TOTAL points accumulated during the semester.

A 90 - 100% (90-93.0 A-, 93.1-97 A, 97.1-100 A+)
 B 80 - 89.9% (80-83.0 B-, 83.1-87 B, 87.1-89.9 B+)
 C 70 - 79.9% (70-73.0 C-, 73.1-77 C, 77.1-79.9 C+)
 D 60 - 69.9% (60-63.0 D-, 63.1-67 D, 67.1-69.9 D+)
 F =< 59.9 %

Readings:

Students will be assigned weekly readings from peer-reviewed journals, popular science articles, excerpts from books, and websites, and these will be posted on the course Canvas page.

Pre-Departure Assignments (all need to be done by May 13)

1. Answer pre- and post- viewing questions on the documentary "Gods in Shackles"

<https://vimeo.com/200941065?share=copy>

2. Scientific reports

Visit to Vembanad, Kerala, a wetland included under National Wetland Conservation and Management Programme of the Ministry of the Environment and Forests. 2008. Planning Commission. Government of India.

3. Peer-reviewed articles

Arasumani M. et al. 2019. Invasion compounds an ecosystem-wide loss to afforestation in the tropical grasslands of the Shola Sky Islands. *Biological Conservation* 230, 141-150.

<https://doi.org/10.1016/j.biocon.2018.12.019>

Gubbi S. and D. MacMillan. 2008. Can non-timber forest products solve livelihood problems? A case study from Periyar Tiger Reserve, India. *Oryx* 42(2), 222–228.

<https://doi.org/10.1017/S0030605308071111>

Kamath R. and S. Ramanathan. 2017. Women tea plantation workers' strike in Munnar, Kerala: lessons for trade unions in contemporary India. *Critical Asian Studies* 49(2), 244-246.

<http://dx.doi.org/10.1080/14672715.2017.1298292>

Rai et al. 2021. Beyond fortress conservation: The long-term integration of natural and social science research for an inclusive conservation practice in India. *Biological Conservation* 254(2021) 108888. <https://doi.org/10.1016/j.biocon.2020.108888>

Shankar et al. 2005. Linking biodiversity conservation and livelihoods in India. *PLoS Biology* 3(11). 1878-1880. <https://doi.org/10.1371/journal.pbio.0030394>

Other articles will be posted on Canvas for recommended reading.

Summative Review Presentation

Each student pair will record a summative review presentation (12 to 15 minutes, PowerPoint Slides) on their topic of choice. Each student should spend at least 6 but no more than 8 minutes on a portion of the talk. This should follow the general format for a review paper (Research question or topic, Introduction, Supporting studies, Synthesis, Discussion/Conclusions). Think of the presentation as a conference talk.

The “W’s” (who, what, when, where, why) are an effective way to organize the elements of your summative.

- In the introductory section, describe what you are studying, why it is important, and why you picked the topic.
- In the data and methods section, list when, where, who, and how the data were collected, and how many cases were involved.
- In the results section, present what you found.
- Tell a story that is interesting to the audience; avoid unnecessary jargon and simplify the topic.
- Conclude by returning to the original question/idea and talk about future directions and programs or policies related to the issue.
- Presentations should be made in PowerPoint and use a minimum of 18-point format for text (preferably 24 point or more). Minimize words, use bullet points, and photos or videos in your presentation slides.
- Speak clearly and explain each slide. Instructions for recording will be made available via Canvas.

Field Journal and Photo Documentation

Maintain a journal or notebook with activities from the day; note unique experiences and practices that are unique to conservation methods in South Asia; note culturally unique practices that are beneficial or harmful to the environment. Take photos and make notes about those photos in your notebook at the end of each day. Note that you will need to use these photos for your summative review presentation.

Reflective Essay or Zine

Each student will write a reflective essay (5 pages, Times New Roman 12-point font, 1.5 line spacing) OR a Zine (10-12 8.5” X 5.5” pages) after returning. Zines are self-published texts (reflections in the form of a little booklet), reproduced by a photocopier. More information is available <https://libguides.salemstate.edu/zines/teaching>. Instead of just summarizing your activities and research projects, focus on reflecting more broadly about how the study abroad experience changed

your perspective on things. That is, how was your worldview changed in terms of conservation biology, wildlife management, human-wildlife conflict, management of invasive species, socio-economic pressures on plantation workers, sustainability of rural communities, hunting, ecotourism, Indian culture, and anything else you think is important. Also spend some time discussing how the experience contributed to your career development. A Zine rubric will be provided on Canvas. This Zine will be shared with the class and archived at the library. Student will get 100 points if all the components of the rubric are followed.

Student Responsibilities:

On campus:

1. Students should come to class on time and attendance is expected for the on-campus and in-field portions of the course (missed class due to illness will be excused).
2. Students will be expected to interact maturely and responsibly with their course instructors, fellow classmates, and guest speakers.
3. Regular completion of assigned readings and participation in discussions is required for the on-campus portion of this course.

In-field:

1. Students should come prepared with a notebook to take notes in the field. Photo and video documentation for the purpose of learning and presentations is highly encouraged, except at Government facilities in India, where it is prohibited. Students will be informed if photography is prohibited.
2. Students should wear close-toed shoes (where needed), long pants, and outdoor appropriate clothing.
3. Students must comply with safety precautions and course policies concerning travel abroad and during the in-field portion of the course.
4. Students are prohibited from engaging in activities that endanger themselves or others while traveling abroad, including drug use, underage drinking (legal drinking age is 23 in Kerala, India), and excessive consumption of alcohol.
5. Students should avoid walking around alone at night and women must be accompanied by instructors or male classmates whenever possible. Local customs of dress and conduct should be adhered to per guidelines (in other words, please be respectful and mindful of local culture).
6. Motion sickness is highly likely due to travel through mountainous terrain; students who are predisposed to motion sickness are advised to manage their condition as per health guidelines.

Academic Integrity

The University of Illinois at Urbana-Champaign *Student Code* should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>. Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: <http://studentcode.illinois.edu/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Students with Disabilities

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor as soon as possible. To ensure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class should contact Disability Resources and Educational Services (DRES) and see the instructor as soon as possible. If you need accommodations for any sort of disability, please speak to me after class, or make an appointment to see me, or see me during my office hours. DRES provides students with academic accommodations, access, and support services. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to disability@uiuc.edu. <http://www.disability.illinois.edu/>.

Family Educational Rights and Privacy Act (FERPA)

Any student who has suppressed their directory information pursuant to *Family Educational Rights and Privacy Act* (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See <http://registrar.illinois.edu/ferpa> for more information on FERPA.

Emergency Response Recommendations

Emergency response recommendations can be found at the following website:

<http://police.illinois.edu/emergency/>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class.
<http://police.illinois.edu/emergency/floorplans/>.

Sexual Misconduct Policy and Reporting

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: wecare.illinois.edu/resources/students/#confidential.

Other information about resources and reporting is available here: wecare.illinois.edu.

Course Format:

During the on-campus portion of the course, we will:

1. Introduce students of NRES and SIB to the concepts of sustainability and conservation.
2. Use Lake Vembanad, a tropical RAMSAR wetland complex and longest lake in India (with both brackish and freshwater zones) as a primary case study to explore the pressures of overharvesting, overpopulation, and pollution in an ecologically and economically important ecosystem.
3. Explore the unique practice of rice cultivation below sea level, coir production, and clam harvesting using Lake Vembanad as a case study.

4. Use Periyar Tiger Reserve (PTR) and surrounding virgin forests and societies as i) a case study to explore the effects of poaching, fires, human encroachment and livelihood on tiger and elephant habitat and ii) a biodiversity hotspot for endemic flora and fauna.
5. Use Munnar tea and cardamom plantations to study the Indian high range mountain landscape project in the Western Ghats; explore the complex social history of caste systems in India and how this legacy continues to influence present day natural and socio-economic outcomes.
6. Lead UIUC students to develop review projects within the context of sustainability and conservation to explore a natural or social challenge during the in-field portion of the course.

During the in-field portion of the course, students will:

1. Visit sites at Lake Vembanad, Munnar, and PTR that are representative of different biological, cultural, social, or historical components of the region.
2. Interact with various researchers, instructors, village leaders, community members, fishermen and women, paddy field farmers, clam processing workers, forest watchers, anti-poaching watchers and tribal members while learning about the biology, history, and culture of the three field sites.
3. Gather materials in the form of interviews, field notes, and photos for summative review presentations on ecosystem threats, conservation practices, sustainability, and socio-economic pressures in a developing nation. Students will record these presentations and upload them on Canvas for the class at the end.
4. Fully integrate the knowledge, interests, and perspectives of students from different backgrounds along with local faculty and team leaders to enhance the learning experiences of all students.

Schedule:

On-campus (6 weeks, 1 hour each)

Week 1 (March 20th): Introduction to conservation of biological and social systems with emphasis on South Asia.

Week 2 (March 27th): Ecology and conservation in backwaters and virgin forests of India, globalization, human population growth, and ecosystem threats, development of final project with partner.

Week 3 (April 3rd): History and culture of diaspora of southern India with emphasis on Kerala (Zoom guest lecture by Dr. Vibha Shetiya, Department of Linguistics, University of Pittsburgh).

Week 4 (April 10th): Orientation from Study Abroad office.

Week 5 (April 17th): Orientation from Study Abroad office.

Week 6 (April 24rd): Travel orientation, cultural norms, code of conduct (if needed).

In-field (2 weeks)

Day 1 (May 13th): Meet at Terminal 5, Chicago O'Hare Int. Airport. Fly from Chicago (ORD) to Dubai (DXB) by Emirates Airlines Flight# 0236 departing 8.45pm. Flight duration = 13 hrs. 25 mins

Day 2 (May 14th): On flight: Layover in Dubai (DXB) for 2hr 15min; Depart at 9.25pm Dubai to Kochi (COK). Flight duration = 4 hrs. 5 mins

Day 3 (May 15th): Arrive at Kochi at 3am, drive to Alleppey, Kerala (2 hours), situate students in Karmasadan Alleppey Diocese Church dorms, orientation. *Day 1 in Kerala; stay at Karmasadan*

Day 4 (May 16th): Introduction to Lake Vembanad and overview of non-profit sector conservation activities, houseboat cruise to understand the system and interaction with crew, visit to coir museum and coir factory. *Day 2 in Kerala; stay at Karmasadan*

Day 5 (May 17th): Discussion of role of state and civil society in the below sea level farming systems in Kuttanad, visit to paddy fields and interaction with farming community, visit to rainwater harvesting structure; visit to 9th – 14th century CE Buddha statue. *Day 3 in Kerala; stay at Karmasadan*

Day 6 (May 18th): Introduction to formal and informal institutional governance in Vembanad socio-ecological system, fish and clam resources of Vembanad, clam processing site visits and meeting clam cooperative society representatives, participation in construction of traditional fish sanctuaries with bamboo poles and vegetation with Lake Protection Forum, interactions with clam collectors and fisherfolk. *Day 4 in Kerala; stay at Karmasadan*

Day 7 (May 19th): Backwater tourism and its issues in Vembanad (lecture and discussion), visit to a model resort (Coconut Lagoon), responsible tourism operations in Vembanad, visit to an island fish-dependent community, invasive species of Vembanad and threats to the ecosystem, threat of invasive species discussion, paper making with invasive *Eichhornia* (water hyacinth). *Day 5 in Kerala; stay at Karmasadan*

Day 8 (May 20th): Drive from Alleppey to Thekkady (5 hours), visit to pineapple and rubber plantations enroute, orientation, temple tourism and role of temples in protection-based conservation and culture (with reference to Sabarimala temple), situate students in housing (Bamboo Grove), night hike for nocturnal species viewing. *Day 6 in Kerala; stay at Bamboo Grove*

Day 9 (May 21st): Boating at Periyar Tiger Reserve (PTR) to see elephants in the wild; discussion of PTR history and biodiversity; role of Eco Development Communities in forest governance, interaction with state government forest workers, tribal dance, honey collection, martial arts show. *Day 7 in Kerala; stay at Bamboo Grove*

Day 10 (May 22nd): Drive to Gavi Ecotourism Center; situate students in housing at Forest Department guest house, sustainable harvest of non-timber forest products, discussion of effect of non-timber forest products on communities and ecosystems and high range mountain landscape project visit to hydroelectric dam, campfire, orientation. *Day 8 in Kerala; stay at Bamboo Grove*

Day 11 (May 23rd): Drive to Munnar (3 hours); history of tea plantations and socio-economic conditions of workers, visit to tea plantation via Jeep ride, tea museum, and spice gardens. *Day 9 in Kerala; stay at Ayur County Resorts, Munnar*

Day 12 (May 24th): Visit to sandalwood forest and jaggery making units at Marayoor; trek from Kathallor to Vattavada (The Only Place); orientation. *Day 10 in Kerala; stay at The Only Place, Vattavada*

Day 13 (May 25th): Eco restoration programs at Munnar and interaction with forest officials; discussion of human-wildlife conflict issues; strawberry farm visit; discussions or questions on summative review presentation. *Day 11 in Kerala; stay at The Only Place, Vattavada*

Day 14 (May 26th): Drive to Kochi (5 hours); History of Kochi, Visit to Folklore Museum. *Day 12 in Kerala; stay in CSI Heritage Bungalow, Fort Kochi*

Day 15 (May 27th): Explore Kochi, Jewish Synagogue, spice and antique market, and evening drive to Kochi Airport. *Day 13 in Kerala*

Day 16 (May 28th): Depart from Kochi (COK) for Dubai (DXB) 4.30am Flight duration = 3 hrs. 50 mins
Layover in Dubai for 2hrs. 15 mins, depart from Dubai at 9.55am for Chicago (ORD). Flight duration = 14 hrs. 50 mins.

Day 17 (May 28th): Arrive at Chicago (ORD) at 3.45 pm