

THE SCHOOL FOR FIELD STUDIES

DIRECTED RESEARCH CAMBODIA

Center for Environmental Justice and Mekong Ecologies · Siem Reap.
A complete record of student research projects from the three most recent semesters.



FALL 2025

3 projects · 6 student authors

SPRING 2025

5 projects · 7 student authors

FALL 2024

5 projects · 12 student authors

13

RESEARCH PROJECTS

25

STUDENT AUTHORS

3

FACULTY ADVISORS

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SEMESTERS

FALL 2024 – FALL 2025

ABOUT THIS GUIDE

Directed Research is the capstone of every SFS semester: students work in small teams with resident faculty on questions set by the needs of the host community and its ecosystems. This guide collects the Directed Research projects completed at the Center for Environmental Justice and Mekong Ecologies in Siem Reap, Cambodia, over the three most recent semesters.

Projects are listed newest first. Each entry gives the project title, its faculty advisor or advisors, and the student authors with their home institutions. Where a project’s final report carries a formal author abstract, that abstract is reproduced here. Otherwise the entry closes with a research summary drawn from the Center’s semester final report.

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FACULTY ADVISORS

Directed Research at the Center for Environmental Justice and Mekong Ecologies was advised by 3 faculty and researchers across these semesters.

ADVISOR	PROJECTS	SEMESTERS
Dr. Megan English	6	Fall 2024, Spring 2025, Fall 2025
Dr. Tim Frewer	4	Fall 2024, Spring 2025, Fall 2025
Dr. Jean-Christophe Diepart	3	Fall 2024, Spring 2025, Fall 2025

Center for Environmental Justice and Mekong Ecologies · Siem Reap, Cambodia

01 Watersnake Bycatch and Trade, Kampong Khleang

Faculty advisor: Dr. Megan English

Geffen Waterman¹, Emma Bilgreen²

¹ University of Massachusetts, ² University of Michigan

RESEARCH SUMMARY

This project continues the Center's long-running assessment of watersnake bycatch and trade on the Tonle Sap, working in the commune of Kampong Khleang. Catch and market data were gathered alongside interviews with the fishers and traders who handle the snakes, extending a record that now spans several years and allows fluctuation in the endemic Tonle Sap watersnake to be tracked. The advisor intends to run the project annually where possible: returning to the same commune risks interviewee fatigue, but it is what makes the year-to-year comparison meaningful in distinguishing natural fluctuation from human-caused decline.

02 Participatory Land Use Research with Indigenous Researchers

Faculty advisor: Dr. Tim Frewer

Yasmin Barnes¹, Elsa Tessandori²

¹ Trinity College, ² Reed College

RESEARCH SUMMARY

This project worked directly with Indigenous researchers from across Cambodia on participatory land use research — a design in which the communities whose land is at issue help set the questions and gather the data rather than serving as subjects. The advisor describes it as a first step toward a much closer working relationship with those networks. The groups that took part are keen to continue and have already drawn up plans for future research.

03 Food for Thought: The Household-Level Decision-Making for the Adoption of the Participatory Guarantee System. A Case Study at ECOFARM and FUDAC in Siem Reap, Cambodia

Faculty advisor: Dr. Jean-Christophe Diepart

Elizabeth Garrett¹, Rachel Scher²

¹ College of the Holy Cross, ² Macalester College

RESEARCH SUMMARY

This case study at ECOFARM and FUDAC in Siem Reap examined how households decide whether to adopt the Participatory Guarantee System, a farmer-led alternative to third-party organic certification. It was the Center's first use of a serious game as a research method, which proved an efficient and appropriate way to engage local communities — smooth, visual, and enjoyable — and drew good feedback from both the communities and the partner cooperatives and support NGOs. The advisor sees substantial scope for further research on agroecology and safe food certification, with the partnerships with ECOFARM/FUDAC and GRET/CIRD now well established.

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01 Snake It 'Til You Make It: Behavioral Strategies of Tonle Sap Watersnakes (*E. longicauda*) in Changing Environments

Faculty advisor: Dr. Megan English

Grace Carpenter¹, Riley Baker²

¹ Colby-Sawyer College, ² Bates College

RESEARCH SUMMARY

This lab-based project examined the behavioural strategies of Tonle Sap watersnakes (*Enhydra longicauda*) under changing environmental conditions, complementing the Center's field assessments of the same endemic species. It forms another step in preparing a graduate research project planned for 2026 with collaborators from several organisations and the University of Nottingham. The advisor expects to return to the lake for the following semester's fieldwork on watersnakes.

02 Romp or Restless: A Behavioral Comparison between Otter Pairs and Families in Captivity

Faculty advisor: Dr. Megan English

Mia Levine¹, Meztli Meriscal Del Toro²

¹ Brandeis University, ² Whitman College

RESEARCH SUMMARY

This project compared the behaviour of captive otters kept as pairs against those kept in family groups, testing whether social grouping affects activity and welfare. Behavioural comparisons of this kind inform how rescue and conservation centres house the animals in their care. The advisor notes the project was a one-off and is unlikely to be repeated.

03 A Comparison of Community Forest Effectiveness in Siem Reap, Cambodia

Faculty advisor: Dr. Jean-Christophe Diepart

Lilah Parker¹

¹ Tufts University

RESEARCH SUMMARY

Community forests devolve management of forest land to the villages around it, but their effectiveness varies widely. This individual project compared community forests in Siem Reap to establish what separates those that work from those that do not. The advisor describes it as a great project and intends to develop the report into a proper publication.

04 Forests Without Funders: Donor Withdrawal, Environmentality, and Agrarian Change in Cambodia's Community Forests

Faculty advisor: Dr. Tim Frewer

Gabrielle Moreau¹

¹ University of North Carolina/Chapel Hill

RESEARCH SUMMARY

Cambodia's community forests were established with donor money, and this project examined what happens when that money is withdrawn — tracing donor withdrawal, environmentality, and agrarian change through the communities left to manage forests without external support. The advisor notes the same methodology could be applied to community forests elsewhere in the country, Prey Lang among them.

05 Filming the Lives of Survivalist Farmers in Siem Reap

Faculty advisor: Dr. Tim Frewer

Monique Say¹

¹ Clark University

RESEARCH SUMMARY

This project documented the lives of survivalist farmers around Siem Reap on film, using video rather than a written report as its primary output. The advisor describes it as highly successful: enough footage was captured for a twenty-minute short. Editing continues toward a final version that can be shared and potentially entered into film festivals, and further films in the series are planned on subjects including the environmental activists of Prey Lang and Bunong farming livelihoods.

01 Observing a Mixed-Species Raptor Enclosure to Determine Welfare and the Existence of a Social Hierarchy

Faculty advisor: Dr. Megan English

Bethany Steinman¹, Alex Deguid²

¹ Wheaton College, ² University of Richmond

ABSTRACT

Mixed-species groups of animals are commonly found in both the wild and captivity. In the wild, these groups provide additional protection and increased foraging efficiency. Mixed-species groups in captivity can be beneficial as they establish an environment similar to what would naturally be found in the wild. There has been little research done on raptor mixed-species groups in either the wild or in captivity. We studied one captive mixed-species group of raptors located at the Angkor Centre for Conservation of Biodiversity in Phnom Kulen National Park, Cambodia. Using continuous sampling, we determined an activity budget for five raptors of three different species in the enclosure: one Grey-headed fish eagle, two Crested serpent eagles, and two Brahminy kites. This was done to determine the existence of a social hierarchy as well as the state of the birds' welfare. We found all of the birds spent the majority of their time stationary, either perching or standing. Several negative interspecific interactions were also identified, all originating from the Grey-headed fish eagle. A social hierarchy was determined, with the Grey-headed fish eagle being a dominating presence over other species in the enclosure. Both Crested serpent eagles also appeared to have compromised welfare, suggested by atypical behaviors indicating stress. We recommend future studies be conducted on the species in this enclosure to ensure the safety of the raptors and to further understand the behaviors exhibited by birds of prey in a mixed-species exhibit.

02 Understanding behaviours of captive male Silver Indochinese langurs

Faculty advisor: Dr. Megan English

Anya Mueller¹

¹ University of Richmond

ABSTRACT

This study is concerned with the behaviors of four male Indochinese silver langurs who reside at the Angkor Center for Conservation of Biodiversity (ACCB), Kbal Spean, Cambodia. Silver langurs, along with other primates in Cambodia and Southeast Asia, face population threats from deforestation and the illegal wildlife trade. As a result, conserving langur populations and removing individuals from the illegal pet trade is critical. Behavior studies can increase the welfare of langur populations in captive environments at conservation centers like ACCB. This study is unique because it focuses on an all-male population, which is an uncommon demographic in other scientific literature about captive silver langurs. The activity budget data was collected over eight days using two-minute interval sampling and included behaviors like resting, feeding, locomotion, and grooming. In addition, other continuous sampling event behaviors were recorded, which included all instances of aggression. The data collected from this study showed a high proportion of resting behaviors to aggressive behaviors. This can help form a baseline for the typical behavior patterns of male captive silver langurs. The results of this study inform ACCB about the tendencies of each male langur, which can increase the effectiveness of future actions.

Are Watersnakes Hissstory? A Wet Season Assessment of Watersnake Bycatch and Trade in the Tonle Sap

Faculty advisor: Dr. Megan English

Céleste Deudon¹, Nandi Fisher², Belle Staley³

¹ Davidson College, ² University of Redlands, ³ Wellesley College

ABSTRACT

Not only does the Tonle Sap and its natural resources sustain surrounding human populations, but it is also home to a biodiverse selection of fauna and flora. However, due to unhampered development, overexploitation, and overharvesting of the Tonle Sap, many of these species populations have declined or disappeared entirely. For example, the destruction of surrounding forests which are seasonally flooded by the flood pulse of the Tonle Sap has been detrimental to species, like watersnakes, who rely on these “flooded forests” for food, resources, and breeding grounds. Our study examines how nine watersnake species’ populations, prevalence, and size have responded to such environmental disruptions, with a focus on the endemic Tonle Sap watersnake (*Enhydris longicauda*). Over 10 days, we assessed the species composition in the Tonle Sap and size (length and mass) of 349 (47.8 kg) watersnakes. These watersnakes were collected from local fishermen from four different villages, in the communes of Chong Kneas, Kompong Pluk, and Prek Toal, and traders from three markets. In total, nine species of watersnake were recorded. Along with catch assessments, 21 fishermen and 10 traders were interviewed to further evaluate how the volume and variety of watersnakes have changed over the years. Modes of capture, seasonality, locality, and subsequent uses of snakes were investigated. The most abundant species in both our catch assessment and interview responses was the Rainbow Watersnake, *Enhydris enhydris* (n = 213). This differs from studies in 2019 and 2023, which found the vulnerable Tonle Sap watersnake as the most abundant. Its prior predominance in markets may be due to the popularity of this species being sold for human consumption. The perceived decline of the *E. longicauda* population may be partially caused by overharvesting. However, our results also indicated a decline in the populations of inedible watersnakes such as *Cylindrophis ruffus* and *Acrochordus granulatus*. In our catch assessments, we did not observe these species. The absence of these snakes suggests factors besides overharvesting as the main contributor to decreasing watersnake populations. In order to determine the main factors contributing to the fluctuating populations of watersnakes in the Tonle Sap and whether conservation measures are required, we recommend more studies focusing on the spatial distribution of watersnake species across the Tonle Sap, their general breeding and dietary habits, and the long-term implications of unintentionally catching watersnakes.

Tardy Titles: Green Grabbed and Gone

Faculty advisor: Dr. Tim Frewer

Annika Twedt-Ball¹, Juliana Hisham², Nathan Bude³

¹ Clark University, ² Yale-NUS College, ³ University of Puget Sound

ABSTRACT

This paper examines how Cambodia’s land tenure reforms, specifically the Indigenous communal land titles (ICLTs), have failed due to commodity frontiers and state territorialization. Today, this has led to land and cultural dispossession, displacement, and transformed Bunong territory into a contested space. ICLTs, initially designed to recognize the need to secure Indigenous land rights, have become entangled in the Ministry of Environment’s state-making processes through protected areas. This research used a mixed-methods study of four Bunong villages — Pu Nyao, Pu Char, Pu Kes, and Knyaing — and demonstrates the reasons behind the stalled ICLT processes in Monduliri province, tracing them through the history of land reforms in Cambodia. By showing how multiple assemblages lay claims to Bunong territory, this study also calls for the accountability of actors that have enabled land dispossession through their support for green grabbing projects.

“Don’t Call it Phnom Prich Wildlife Sanctuary.” A Case Study of Land Cover Change and Swidden Agriculture Decline Due to Protected Area Zonation in Four Bunong Villages in Mondul Kiri Province

Faculty advisor: Dr. Jean-Christophe Diepart

Stella Mackler¹, Avery Myers², Neve Rauscher¹

¹ Davidson College, ² Oregon State University

ABSTRACT

Swidden agriculture is much more than a way of farming. It is a way of life, and one that has existed across Southeast Asia for thousands of years. In the Northeast highlands of Cambodia, however, this way of life is ceasing to exist. The goal of this study was to understand why. We examined the conditions that set the demise of swidden agriculture in motion, focusing mainly on protected area (PA) management and its influence on four Bunong villages in Memang Commune, Mondul Kiri Province in Northeast Cambodia. A mixed methods approach was employed, combining qualitative focus group discussions with community leaders, farm walks, quantitative household survey analysis, geographic information system (GIS) and legal analyses, as well as in-depth interviews with conservation actors. Swidden agriculture was examined through the assemblage framework, which revealed the specific forces that held it together and broke it apart. Ultimately, it became clear that swidden agriculture in its traditional form no longer exists in any of the villages due to the recent implementation of PA zonation, which has restricted access to fallow land. We identified a sequence of events, wherein lack of fallow land made swidden unfeasible. This resulted in high rates of poverty and food insecurity among villagers and forced villagers to turn to wage labor and cash crops to make an income. However, these strategies do not provide enough money to live off of, and a reliance on credit is necessary to make ends meet. Overall, the implementation of PA zones has caused dramatic land use and livelihood change. In the process, we found that the Bunong people were physically, politically, legally and economically marginalized, while their land has only become more important to the state. The results of this study can influence further research on the implications of conservation on local livelihoods, and the risks, politically and economically, imposed by PAs.

THE SCHOOL FOR FIELD STUDIES

Center for Environmental Justice and Mekong Ecologies, Siem Reap, Cambodia. Titles, faculty advisors, student authors, and home institutions compiled from the SFS Directed Research project lists for Fall 2024, Spring 2025, and Fall 2025.