

Political Ecology of Forests: People and Natural Resources

Spring Semester, 2023

Course Description

The course explores the relationships between human communities and the forest ecosystems that they depend on, and requires an integration of both the natural sciences and social sciences. The course takes as its case study the ethnoecological relationship of the upland Karen (Bak'en yaw) ethnic group in the forested mountains of Mae Hong Song province, Northern Thailand. A key focus of this course is how the Karen manage their forests, including long cycle rotational farming systems, how forest management and forest resources are integrated with their cultural practices, and how state and non-local actors impact the ability of the Karen to continue their traditional way of life. The majority of the course takes place in mountain villages and forests of the Karen, living with host families, backpacking into remote villages, and studying the forests, culture and ecology in Mae Hong Son.

By the end of the course, students will have an in-depth understanding of the major issues in political ecology and how forests and human communities interact. Students will understand the specific case study of the Karen in Northern Thailand, the cultural and ecological basis for their upland rotational farming systems, and how Karen culture is integrated into upland forest ecology. Students will also learn about the efforts of the Karen to maintain their traditional way of life in the face of pressure to change and abandon their traditions. A key part of the course is understanding how marginalized communities are able to maintain their identity in the face of state pressure to change and assimilate, especially with conflict between local and non-local concepts of sustainable forest management.

Course Objectives

The objectives for this course are to:

- Understand the key concepts and issues in forest political ecology
- Articulate and understand the cultural adaptations to upland forest ecosystems in Karen culture
- Describe the ecological processes involved in long fallow rotational farming systems
- Understand forest classification and management systems
- Identify major forest species (tree and non-tree) as well as their cultural significance, if any
- Be proficient in the tools of ecological and ethnographic field research
- Demonstrate proficiency in field research, remote travel, and the tools of field research

Methodology

The course will integrate course lectures and readings with group discussions and seminars. Experiential field studies will be an important component of the course, both formal and informal. Guest lecturers will be a part of the course to share their experiences and perspective with students. Keeping up with readings, materials presented in class, and assignments is critical for success during this course.

Grading and Assessment

Course Component Details	Total
Participation	
In class participation: This means being an active participant in classes, contributing meaningfully to the discussions, questions, and ongoing learning.	5
Projects: Throughout the class participating in a meaningful way in projects and assignments in-class.	5
Field Studies: Participating in field studies outside of the classroom, both through asking questions in the field, engaging in activities, and being an active and engaged learner during field studies.	5
Total Participation	15
Writing	
Seminar and Observation Notes: An important component of learning to observe and analyze the issues during this course is taking notes in class as well as keeping an on-going journal of observations outside the classroom. This means writing daily in your journal, even if only for brief or significant observations.	10
Field Research Notebook: A more structured way of taking notes and learning outside the classroom, FRNs will be assigned to specific field studies and experiential learning opportunities.	15
Essays: For this course essays are longer reflections and analysis. There are two (2) essays during the course, generally one every two weeks. Essays should be 4-5 pages long in your journal, and cover the following points: <ul style="list-style-type: none"> • How this issue or topic links to the overall topic of the course. • Why you are interested in this specific issue or topic. • An analysis of a specific issue observed or learned about during the two weeks — describe this and why it is important. • Reference to a reading either from the course reader or outside sources. • Other questions that this issue raises for you to explore further. 	20
Total writing	45
Independent Research Project/Focused Inquiry	
Each student will choose an issue related to the course to study independently. This should be a combination of research, observations, and analysis of a topic that the student is interested in. The emphasis is primarily on field observations broadly defined, drawing on both class-related field studies as well as independent observations in Thailand on your own time. This is not a book report or literature review, but a field study.	
Proposal: The IRP proposal will be a written outline and a short presentation to the class explaining a statement of intent, how data will be gathered, the feasibility of studying this during the course, and any potential challenges you may anticipate running into.	10
Progress update: This part of the IRP is a short update during the course (both an outline and a presentation) on what the student has discovered about their topic so far, what further questions this raises, any challenges they have faced and how they have overcome them, as well as further information they will be looking for during the second half of the field study.	10
Final Presentation: On the last day of the course each student will give a five to ten (5-10) minute presentation on their topic, focusing on the initial question, methods, challenges, and the outcome of their focused inquiry. This should be presented with supporting slides. This will be followed by questions and comments from fellow students and instructors.	20
Rubric for final presentation	
1. Clarity and organization — is the issue clearly explained, linked to the topic and readings of the course, and well organized?	
2. Experiential learning/field studies/observations — does the presentation link to specific examples of observations?	
3. Interviews — does the presentation reflect discussions, interviews, and talks with local people and community members?	
4. Depth — is the issue analyzed and explained well and thoroughly?	
Total Independent Research Project	40

Seminar Week Topics and Schedule

Monday - April 17

Overview of Forest Management Issues: The commons and ethnic minorities

- Introduction to political ecology
- The commons and land rights
- Natural resources and forest ecology in Thailand
- Ethnic groups in Thailand

Delang, C.O. 2005. The Political Ecology of Deforestation in Thailand, *Geography* 90(3): 225-237.

Bixler, et.al., 2015. The political ecology of participatory conservation, *Journal of Political Ecology*, Vol 22, pp. 164-182.

Berkes, F. and Folke, C., 1994. Linking Social and Ecological Systems for Resilience and Sustainability, The Beijer International Institute of Ecological Economics The Royal Swedish Academy of Sciences, Stockholm, Sweden

Chusak Wittayapak. 2008. History and geography of identifications related to resource conflicts and ethnic violence in Northern Thailand. *Asia Pacific Viewpoint* (49)1: 111-127.

Optional reading

Bryant R.L. 1998. Power, knowledge and political ecology in the third world: a review. *Progress in Physical Geography* 22,1 pp. 79-94

Delang, C.O., 2002. Deforestation in northern Thailand: the result of Hmong farming practices or Thai development strategies?. *Society & Natural Resources*, 15(6), pp.483-501.

Paritta Wangkiat. "Thailand's Forest Authorities Make Northern Karen Hill-Tribesmen the Scapegoats of Deforestation". *Chiang Rai Times*. 3 May, 2014. Accessed at: <http://www.chiangraitimes.com/thailands-forest-authorities-make-northern-karen-hill-tribesmen-thescapegoats-ofdeforestation.html>

Tuesday - April 18

Natural resource management and key actors in resource management

- Dark and light green conservation
- Thai laws and regulations
- Alternative forest management

Isager, Lotte and Ivarsson, Soren. 2002. "Contesting Landscapes in Thailand. Tree Ordination as Counterterritorialization". *Critical Asian Studies* 34:3. Routledge. p. 402-409.

Leblond JP. Thai Forest Debates and the Unequal Appropriation of Spatial Knowledge Tools. *Conservat Soc* 2014;12:425-36

Vandergaest, P., & Peluso, N. L. (1995). Territorialization and state power in Thailand. *Theory and society*, 24(3), 385-426.

Hayward, D., 2017. Community Land Titling in Thailand, The legal evolution and piloting of titling policy, Mekong Research Land Forum

Corry, 2020 Who Protects Protected Areas and Why? WRM in English 14 May 2020

Optional reading

Jason Lubanski. 2012. "Brief Review of Thailand Land Issues, Laws, Regulations, and Policies", Page 13-20 Excerpted from "Land is Life: A Policy Advocacy Case Study of the Northern Thailand Land Reform Movement". Capstone Collection.

Ostrom, Elinor. 1999 "Design Principles and Threats to Sustainable Organizations that Manage Commons". Workshop in Political Theory and Policy Analysis 1-16. Indiana University Center for the Study of Institutions, Population, and Environmental Change.

Wednesday - April 19

Strategies and challenges for forest resource protection and conservation

- Types of upland agriculture
- Community based management
- Local and global forest management

Abson, D.J. et. al., 2014. Ecosystem services as a boundary object for sustainability. *Ecological Economics*, 103, pp.29-37.

Meitzner Yoder, et. al., "Swidden Fallow Length: Reasons for adjusting the swidden cycle at Huay Pu-Ling, northwest Thailand." 1-16
Hecken 2022 The "White Saviour" Deal for Nature. www.resilience.org.
Prasert Trakarnsuphakorn. 1997. "The Wisdom of the Karen in Natural Resource Conservation." Pp. 204-218 in McCaskill, D., and K. Kampe (eds), Development or Domestication?: Indigenous Peoples of Southeast Asia. Chiang Mai: Silkworm.
Wangpakapattanawong, P., et al. 2010. Fallow to Forest: Applying indigenous and scientific knowledge of swidden cultivation to tropical forest restoration. *Forest Ecology and Management* 260: 1399-1406.

Optional reading

Pinkaew Laungaramsri. 2000. Chapter 6 "Rai, Rai Lu'an Loy, Rai Mun Wian and the Politics of "Shifting Cultivation" Redefining Nature: Karen Ecological Knowledge and the Challenge to the Modern Conservation Paradigm, 238-254. PhD dissertation, Anthropology, University of Washington, USA

Thursday - April 20

Filed trip: Forest restoration and management: from theoretical to practical

- Case Study: Forest Landscape Restoration at Ban Mae Sa Mai, Chiang Mai, Thailand
- Visit: Forest Restoration Research Unit (FORRU) – Learning about "Framework Species Method for Forest Restoration"

Elliott S. (et al.) (2012). Chapter: Integrating Scientific Research with Community Needs to Restore a Forest Landscape in Northern Thailand - A Case Study of Ban Mae Sa Mai, A Goal-Oriented Approach to Forest Landscape Restoration, Volume 16.

Kanowski, J. and Catterall, C.P., 2010. Carbon stocks in above-ground biomass of monoculture plantations, mixed species plantations and environmental restoration plantings in north-east Australia. *Ecological Management & Restoration*, 11(2), pp.119-126.

Optional reading

Forest Restoration Research Unit. 2006. How to Plant a Forest: Principles and Practice of Restoring Tropical Forests. 33-38, 29-30 Biology Department, Science Faculty, Chiang Mai University, Thailand.

Ciccarese, L., Mattsson, A. and Pettenella, D., 2012. Ecosystem services from forest restoration: thinking ahead. *New Forests*, 43(5-6), pp.543-560.

Friday - April 21

[ISDSI Films: Indigenous Weaving and Natural Dyes](#)
[Carbon content calculation](#)

Proposal Presentation: IRP

IRP PROPOSAL DUE

Pothong, T. et. al. (2022). New allometric equations for quantifying tree biomass and carbon sequestration in seasonally dry secondary forest in northern Thailand. *New Forests*, 53(1), 17-36.
<https://ngthai.com/animals/30155/new-newts-in-nan/>
<https://www.trueplookpanya.com/blog/content/71784/>

Field Schedule

Day 1: Monday 24/4: Students travel via Van to Mae Hong Son

Students travel to MHS and stay at Rom Thai Guesthouse in Mae Hong Son. Group dinner and exploration of Mae Hong Son town.

Day 2: Tuesday 25/4: Meeting at the Royal Forestry Department of Mae Hong Son Province

The RFD is a key government stakeholder in forest resources but their role has shifted significantly over the last few decades. The RFD staff will present on the forest areas of Mae Hong Son, the rules and laws governing them, and their current projects.

Meeting with Khun Sakchai, Former manager of Project for Recovery of Life and Culture (PRLC)

PRLC was an NGO that works closely with many of our host communities. Among other things, PRLC helped bring Community Based Tourism (CBT) trainings to several villages, provided support for the Community Forest Bill, coordinated efforts for the Community Land Title application, and advocated for national recognition of Subdistrict-level rules for natural resource use. PRLC closed down in 2020 but still have networking group.

Arrive at Hua Nam Mae Sa Kuet

Hua Nam Mae Sa Kuet is a village much closer in proximity to the city of Mae Hong Son than the other villages where we stay. Many of the villagers, including Khon Muang and Thai-Yai ethnic group, are day laborers in the city, and some maintain residency both in Mae Sa Kuet and in their home village. The villagers have mostly abandoned tending to rai, instead finding different careers. This village provides students a chance to observe how proximity to urban areas affects the livelihoods of upland people. Students should use this village to analyze why the trend of moving closer to the city is occurring at the rate it is. What incentives do villagers have to live close to Mae Hong Son? How does this affect their culture, religion, and relationship to the forest?

Village Meeting

Evening meeting and discussion with community members. This is the first of many community meetings, one in each village - they are scheduled as time for students and villagers to interact, ask questions about major course themes, and hear about village background and history. Students should be prepared with thoughtful and appropriate questions and comments. Students can ask their IRP questions during meeting.

Day 3: Wednesday 26/4: Hike Hua Nam Mae Sa Kuet to Pakalo

Student teaches ecology lessons along the way.

The majority of Ban Pakalo's residents currently earn their livelihood as unskilled laborers in town. This village provides students another chance to observe how proximity to urban areas affects the livelihoods of upland people. Students should use this village to analyze why the trend of moving closer to the city is occurring at the rate it is. What incentives do villagers have to live close to Mae Hong Son? How does this affect their culture, religion, and relationship to the forest?

FRNs: Stream health assessment 1

Village Meeting

Evening meeting and discussion with community members. This is the second of many community meetings, one in each village - they are scheduled as time for students and villagers to interact, ask questions about major course themes, and hear about village background and history. Students should be prepared with thoughtful and appropriate questions and comments. Students can ask their IRP questions during meeting.

Day 4: Thursday 27/4: Hike Pakalo to Hua Nam Mae Hong Son

Early morning start, many river crossings and steep terrain; a technical hike. Student leaders will teach ecology lessons along the way.

Hua Nam Mae Hong Son village is marked by loosely scattered houses situated in the watershed of the Mae Hong Son River. Although the village has patches of upland rice fields as well as wet rice paddies, they have largely conserved the watershed forest that surrounds the community.

Day 5: Friday 28/4 Family Day

Spend the majority of the day with your family, concentrating on experiential learning. This is your chance to learn firsthand about different ways of life, and it is up to you to take advantage of it.

Village Meeting

Evening meeting and discussion with community members. This is the third of many community meetings, one in each village - they are scheduled as time for students and villagers to interact, ask questions about major course themes, and hear about village background and history. Students should be prepared with thoughtful and appropriate questions and comments. Students can ask their IRP questions during meeting.

Day 6: Saturday 29/4: Hike Hua Nam Mae Hong Son to Nam Hoo

Another early start, and another long and strenuous hiking day. Students teach ecology lessons along the way.

Nam Hoo is a small village that consists of approximately 8 households and has a population of less than 50. Nam Hoo is a Christian village and some of their traditional beliefs and ceremonies have been changed, adapted, or dropped.

Day 7: Sunday 30/4 Family Day / Optional: Hike up to Namhoo waterfall

Spend the day with your family, concentrating on learning about daily life, cultural practices, and the diversity of activities of largely subsistence farmers.

Village Meeting

Evening meeting and discussion with community members. This is the fourth of many community meetings, one in each village - they are scheduled as time for students and villagers to interact, ask questions about major course themes, and hear about village background and history. Students should be prepared with thoughtful and appropriate questions and comments. Students can ask their IRP questions during meeting.

Day 8: Monday 01/5**Rotational Farming learning day**

Student will learn about rotational farming practice and get to do FRN's activities such as community study, forest profile, forest transect and more

Stream health assessment 2**FRNs: Rotational Agriculture Discussion**

Meet with local instructors after Field Activity today to discuss clearing, burning, planting, and harvesting of the rai crops throughout the year and after the first year. Also, discuss how the village manages land among families and determines when to return to fallow fields.

Day 9: Tuesday 02/5: Hike Nam Hoo to Huai Hee

The morning begins a long ridge ascent and finish with a long downhill. Students teach ecology lessons along the way.

Huai Hee was the first Karen village to successfully set up Community-Based Tourism (CBT) to promote their relationship with the surrounding ecosystem to outsiders and to supplement their income.

Day 10: Wednesday 03/5: IRP Progress Presentation

To be completed in the morning in a common area with all students together- should not take longer than 1.5 hours

Optional activity: Study about coffee with Pati Saju after IRP progress presentation (Beans to Cups)**Village Meeting**

Evening meeting and discussion with community members. This is the fifth of many community meetings, one in each village - they are scheduled as time for students and villagers to interact, ask questions about major course themes, and hear about village background and history. Students should be prepared with thoughtful and appropriate questions and comments. Students can ask their IRP questions during meeting.

Day 11: Thursday 04/5: Hike Doi Pui

Standing 1,722 meters above sea level, Doi Pui is the highest point in the Mae Hong Son area and has been targeted by the national park for promoting mass tourism. Villagers of Huai Hee have developed small-scale, locally guided hikes and wild orchid preservation projects. Their goal is to re-establish their local control and rights to protect their environment from being exploited by park officials.

Forest Transect, Forest profile, Community study and biodiversity study (part 2)

In Huai Hee's rotational fields, students learn from the Karen about their forest resource management and rotational farming systems. You will collect data from a conserved forest that was previously used as a rai 20-40 years ago.

Culture Exchange

A fun evening cultural exchange of songs and skits with the villagers of Huai Hee.

Day 12: Friday 05/5: Hike from Huai Hee to Huai Tong Kaw

A hike ascending up into the mountains and then descending into a river valley before ascending again to Huai Tong Kaw village- a relatively tough day. Students teach ecology lessons along the way.

Huai Tong Kaw village is passionately involved in the grassroots struggle for public and legal recognition of ethnic upland peoples' rights to manage their local forest resources. Thus, it is important that students prepare themselves with specific questions about village history, the Community Forestry Bills and the various roles that the local government plays in the villagers' lives.

Day 13: Saturday 06/5: Culture Day

Singing the "Tah", basket weaving, blacksmithing and herbal medicine.

Students learn many of the practical and cultural skills that comprise everyday life in a Karen village. Students will learn ritual songs (the Tah), herbal remedies, basket weaving, and blacksmithing.

Village Meeting

Evening meeting and discussion with community members. This is the sixth of many community meetings, one in each village - they are scheduled as time for students and villagers to interact, ask questions about major course themes, and hear about village background and history. Students should be prepared with thoughtful and appropriate questions and comments. Students can ask their IRP questions during meeting.

Day 14: Sunday 07/5: Weaving Day

Students spend all day learning about the process of weaving traditional cloth (collecting the cotton, spinning, natural dyes, setting the loom, and weaving).

Day 15: Monday 08/5: Family day

Spend the majority of the day with your family, concentrating on experiential learning. This is your chance to learn firsthand about different ways of life, and it is up to you to take advantage of it.

Culture Exchange

A fun evening meeting with Huai Tong Kaw villagers. This will not be a formal meeting, but rather a cultural exchange with songs and skits. Start preparing now for different skits, games and songs your group can share with villagers!

Day 16: Tuesday 09/5:**Meeting with Huay Pu Ling TAO Chief Pi Chaiya**

Traveling 30 minutes from Huaitongkaw village to Subdistrict Administrative Office, students stop to meet with the current "Nayok Obotaw" (Huaypuling Tambon Administrative Organization Chief) and various other staff at the Huay Pu Ling sub-district office. The current Chief, Khun Chaiya.

Students should ask questions about both the Community Land Titling process (Ban Nong Khao Klang is the only community that has applied from Huay Pu Ling Sub-district to date) and the "Local Regulations for L and NR Management (Kaw Punyat)" model that Huay Pu Ling Sub-district is current drafting. The subdistrict also on their process of making Huay Pu ling becomes a special cultural area and has their own management where they can preserve local traditional knowledge and manage forest by themselves.

Day 17: Wednesday 10/5: Return via Van to Chiang Mai

Check out of the guesthouse and depart Mae Hong Son. Students will travel back to Chiang Mai via van. About 45 minute out of Mae Hong Son town, we will stop to do our last FRNs activities, market survey at Luk Kao Lum market in Pangmapa district, Mae Hong Son province.

FRNs last activity: Market Survey

Markets in upland rural areas sell forest products as well as cultivated crops. For the market survey, identify what is being sold, its origin, and if it is cultivated or gathered from the forest.

Day 18: Thursday 11/5

AM: Closing ceremony at Maejo university. Pm: Preparation for IRP Final presentation. All students should send their presentation file in pdf format before 9am, Friday to **Pi Poad's Email: sompoad@isdsi.org**

Day 19: Friday 12/5

Independent Research Final Presentation, 10-11am, 11-12am wrap up with Ajaan kimmim

Final Presentations in Class

- IRP PRESENTATION IN CLASS: Please note — students are responsible for collecting all presentations before class and loading them into a SINGLE computer for presentations.
- FIELD RESEARCH NOTEBOOK DUE
- ESSAY #2 DUE
- ISDSI JOURNAL DUE
- ALL THREE DUE BEFORE 5PM ON FRIDAY

Field Research

Field research is an important component of this course, and mastery of the field research methods will help make the course a success. Each student will record detailed field observations and studies in their Field Research Notebook as a critical part of the learning on this course. Some of the key methodologies and techniques are described below. Specific days and assignments for the field research will be assigned.

The questions and format in the Field Research Notebook will be more extensive and detailed.

Forest Flora and Fauna Survey

The goal of this activity is to develop familiarity with several forest species, both flora (plants and trees) as well as fauna (animals, including birds). **Identify and gather data on 6 plant species (at least 3 of these should be trees) and 2 animal species — 8 total.** These should be thoroughly described, bringing together information from multiple, cited sources. Include Common Name, Scientific Name, and Thai (or Karen) Name.

Forest Survey Summary List

Species Summary List			
Species #	Species Name	Species Type	Environment
1		<input type="checkbox"/> Plant <input type="checkbox"/> Tree <input type="checkbox"/> Animal	
2		<input type="checkbox"/> Plant <input type="checkbox"/> Tree <input type="checkbox"/> Animal	

Species 1 Information and Description (example)

Common Name / Scientific Name / Thai Name

Type of organism: plant tree animal

- Sketch
- Behavior/Habitat
- Location(s) observed
- Ecological Role
- Cultural significance — if any (food/use/economic value/other)

Forest Ecological Field Surveys

During this course you will be using ecological field survey methods in several different and distinct ecosystems:

- Natural forest
- Upland fields under cultivation
- Fallow swidden fields

In the SITE DESCRIPTION note which ecosystem you are studying.

Biodiversity survey: The purpose of the biodiversity survey is to learn about all of the diversity of life (flora and fauna) in a specific area. The goal is to understand the **number of different** species in the designated area. The goal is to identify as many different species as possible in the area.

Community study: The purpose of a community study is to look in-depth at a **specific area** and note the species diversity as well as **map the species** within a bounded area. The goal is to identify and count the number of **different species** as well as the **numbers of individuals** of that species in the area.

Transect survey: A transect is a survey along a line in a designated area. The purpose of the transect is to understand **diversity**, **abundance**, and **distribution** along the transect line. The goal is to map out along the line, noting scale/distance in total, as well as where individuals cross or are immediately adjacent to the transect.

Forest profile: The forest profile is a **vertical transect** looking specifically how different organisms (plants, trees, birds, insects, etc.) and diversity varies by height in the forest — from the forest floor to the top of the canopy. The goal is to map out along the vertical, noting scale/distance in total, as well as where individuals occur along this vertical line.

Some of the ecological field surveys will be conducted in multiple locations to allow for comparison and a deeper understanding of the ecological processes at work.

Biodiversity Survey # 1 (example)

Date:		Time of day:	
Coordinates:		Altitude:	
Site description:		Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain	
Species	Number	Habitat	Notes

Community Study # 1

Date:		Time of day:	
Coordinates:		Altitude:	
Site description:		Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain	

- Map and identify distribution of organisms within the area studied.
- Note the scale on your map (1 large square = 1 meter or 2 = 1 meter, etc.)
- Orient towards North at the top, and record the scale between the heavy grid lines.

Forest Transect

Forests are very diverse. One good way to capture this diversity is to complete a transect — a study of diversity along a specific line. For this activity you will use a 20 meter transect line to do your survey. Working in groups of 3-4 students:

- Place your transect line to capture maximum diversity
- Record all plants directly along the transect line
- Record any other organisms (insects, etc.) that you observe in and around your transect

Date:		Time of day:	
Coordinates:		Altitude:	
Site description:		Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain	

- Sketch of placement of transect line in context
- List of plants along transect line
- List of other organisms in/around transect line
- Annotated map of transect line + height + tree name

Forest Profile #1

Date:	Time of day:
Coordinates:	Altitude:
Site description:	Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain

Draw and annotate a profile map of the forest profile from forest floor to canopy top

Traditional Weaving

Weaving and traditional clothing is an important part of Karen culture. The purpose of this activity is to learn more about weaving, how it fits into Karen culture, why it is important, and what role it plays in linking the culture and the local ecology.

- Draw a sketch and annotate each step of the process of weaving.
- For natural dyes, what are the origins of the colors used in weaving? How does this relationship to the forest shape and reinforce Karen culture?
- Who weaves? Why? How is this important in this culture?

Rotational Farming

Upland rotational farming is a distinctive agriculture practice of the Karen. In the space below draw a diagram of the upland rotational farming system, annotating the times between fallow periods, as well as what is planted, and how the forest regenerates.

Upland Field Survey

The goal of this study is to understand the micro-ecology of upland fields. In the space below list the plants and food crops grown in the upland fields, and their relationship (if any) between them.

Stream health assessment

For this study we will be looking at the overall health of the stream in question. This will take into account the clarity of the stream flow, the number and diversity of insects in and around the stream, fish / crustaceans / amphibians, and flow.

Stream Assessment #1 (example)

Date:	Time of day:
Coordinates:	Altitude:
Site description:	Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain

- Turbidity / silt (rate from 0 / clear to 10 / opaque):
- Flow (rate from 0 / still to 10 / fast):
- Aquatic insects — identify the species and numbers
- Fish / crustaceans / amphibians — identify the species and numbers
- Assessment: How healthy is this stream? Why?

Market survey

Markets in upland rural areas sell forest products as well as cultivated crops. For the market survey, identify what is being sold, its origin, and if it is cultivated or gathered from the forest.

Item	Usage	Origin	Notes

Course Policies

Attendance Policy

Students are expected to be on time and attend all classes. If you are ill or otherwise need to miss a class, please inform your instructor or teaching assistant.

Academic Integrity

Academic integrity is essential to a positive teaching and learning environment. All students enrolled in ISDSI courses are expected to complete coursework responsibilities with fairness and honesty. Failure to do so by seeking unfair advantage over others or misrepresenting someone else's work as your own can result in disciplinary action.

Scholastic Dishonesty

Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering forging, or misusing an academic record; or fabricating or falsifying data, research procedures, or data analysis. Within this course, a student responsible for scholastic dishonesty can be assigned a penalty up to and including an "F" or "N" for the course. If you have any questions regarding the expectations for a specific assignment or exam, ask.

Grading Standards

Letter grade	Score or percentage	Description
A	93–100	Achievement that is outstanding relative to the level necessary to meet course requirements.
A-	90–92	Achievement that is significantly above the level necessary to meet course requirements.
B+	87–89	Achievement that is significantly above the level necessary to meet course requirements.
B	83–86	Achievement that is significantly above the level necessary to meet course requirements.
B-	80–82	Achievement that meets the course requirements in every respect.
C+	77–79	Achievement that meets the course requirements in every respect.
C	73–76	Achievement that meets the course requirements in every respect.
C-	70-72	Achievement that is worthy of credit even though it fails to meet fully the course requirements.
D+	67-69	Achievement that is worthy of credit even though it fails to meet fully the course requirements.
D	60-66	Achievement that is worthy of credit even though it fails to meet fully the course requirements.
F	0-59	Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an Incomplete.