

# International Sustainable Development Studies Institute

สถาบันการศึกษาการพัฒนาที่ยั่งยืนนานาชาติ

## Political Ecology of Forests: People and Natural Resources

Anthropology / Ecology

Short Name: Political Ecology of Forests

Credits: 4

Contact Hours: 64.5

- Lecture Hours: 45
- Directed Field Studies: 19.5 (39 at 2:1 ratio)

### Course Description

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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 Son province, Northern Thailand. A key focus of this course is how the Karen manage their forests, including long cycle traditional 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

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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

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The course will integrate 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 perspectives with students. Keeping up with readings, materials presented in class, and assignments is critical for success during this course.

## Grading and Assessment

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### Engagement

This means participation in and out of the classroom, being an active member of the course, and being fully present and engaged in the field. This includes participation in discussions during seminars and in the village, etc. This also means being an active and supportive member of the course, including as a designated leader and active follower/self leadership. 10

### 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 daily journal of observations outside the classroom. Please put the date at the top of each page. 5

**Field Research Notebook:** A more structured way of taking notes and learning outside the classroom assigned to specific field studies. 15

**Essays:** There are two (2) essays during the course. Essays should be 4-5 pages long in your journal, and cover the following points: 20

- How this issue or topic links to the overall topic of the course. (1)
- Why you are interested in this specific issue or topic. (1)
- A description and analysis of the specific issue and why it is important. (5)
- Reference to interviews or observations during the course. (2)
- Other questions that this issue raises for you to explore further. (1)

### Independent Field Research Project (IFRP)

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** drawing on field studies as well as independent observations. This is not a book report or literature review, but field research. **Students must receive instructor approval for their chosen topic/issue.**

**Proposal:** The IFRP proposal is a written outline and a short presentation to the class explaining the question, how it is related to the course topic, how data will be gathered, and any potential challenges you may anticipate running into. 1 page typed as well as an in-class presentation. 10

**Progress update:** An update during the course on what the student has discovered about their topic so far, what further questions this raises, any challenges and how they have been overcome, as well as further information they will be looking for during the second half of the field study. 1 page written in your notebook as well as an in-class presentation. 5

**Final Presentation:** On the last day of the course each student will give a five minute presentation on their research. Focus on clarity, field observations, interviews/discussions with community members, and analytical depth. 5-10 slides in PDF format. 15

#### Organization for final presentation

1. What did you study/research focus? How is this related to the course topic? (2)
2. How did you study this, including observations and interviews? (5)
3. What did you learn? Findings and analysis. (10)
4. Further questions this raises for you. (2)
5. Final slide of references / interviews. (1)

### Final Exam

The final exam will be a comprehensive review of course topics with an emphasis on what was learned during the field portion of the course. There will be 10 short answer questions. Students may use their notes but not their readers or the internet during the exam. 20

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TOTAL 100

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## Schedule Overview

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### Please Note:

- Because this is a community-based program, the schedule may change due to availability of guest speakers, community access, or other unforeseen circumstances
- Hiking times are dependent on conditions and group abilities
- During hike breaks, students will give Species ID presentations
- Scheduled FRNs will be listed in the detailed schedule below. Other FRNs must be completed in the student's own time, as explained in more detail
- See description of Village Meetings at end of Field Schedule
- On certain days or partial days, students may be assigned to be Student Designated Leaders. This will be assigned at the beginning of the field session.

## Seminar Week Schedule

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### Monday - October 28

#### **Overview of forest management issues: The commons and ethnic minorities**

- Introduction to political ecology
- The commons and land rights
- Natural resources and management
- Forest ecology in Thailand

#### Required reading

- 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: [www.chiangraitimes.com](http://www.chiangraitimes.com)

### Tuesday - October 29

#### **Natural resource management and key actors in resource management**

- Dark and light green conservation
- Thai laws and regulations
- Ethnic groups in Thailand
- Alternative forest management

#### Required reading

- 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
- Vandergeest, 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 - October 30**

#### **Strategies and challenges for forest resource protection and conservation**

- Types of upland agriculture
- Community based management
- Local and global forest management
- Biodiversity management, carbon credit and climate change

#### Required reading

- Abson, D.J. et. al., 2014. Ecosystem services as a boundary object for sustainability. *Ecological Economics*, 103, pp.29-37.
- Hecken 2022 The "White Saviour" Deal for Nature. [www.resilience.org](http://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.

### **Thursday - October 31**

#### **Field trip: Forest restoration and management- from theory to practice**

- 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"
- Tree identification at Huay Kaew Arboretum

#### Required reading

- 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 - November 1**

- [ISDSI Films: Indigenous Weaving and Natural Dyes](#)
- Carbon content calculation
- **Students present Independent Field Research Project proposals**

#### **IFRP PROPOSAL DUE** (presentation and written page)

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.

#### **Other possible sessions for Seminar Week: Expedition Intro, Karen Language, Field Policies**

### Field Schedule

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FRNs to be completed outside of scheduled activities: Flora and Fauna Survey (Species IDs), pg 1.  
Altitude and Forest Types, pg. 61.

## **Day 1 - Monday, November 4: Chiang Mai to Mae Hong Son**

### *Travel to Mueang Mae Hong Son*

Travel to Mae Hong Son by van. We will stop in Pai for lunch, and at a market in afternoon.

### FRN: Market Survey, pg. 62

Markets in upland rural areas sell forest products as well as cultivated crops.

## **Day 2 - Tuesday, November 5: Mae Hong Son**

### *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. Staff will present on the managed forests of Mae Hong Son, policies in place, and current projects.

### *Meeting with Khun Geng current CBT staff*

Community-Based Tourism (CBT) provides trainings to several villages, supporting the Community Forest Bill, coordinating efforts for the Community Land Title application, and advocating for national recognition of Subdistrict-level rules for natural resource use.

### *Travel to Hua Nam Mae Sa Kuet Village*

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 groups, 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 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 1\**

## **Day 3 - Wednesday, November 6: Hike to Pakalo**

### *Hiking from Hua Nam Mae Sa Kuet to Pakalo*

Students will teach Species ID lessons on the way.

Pakalo: 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. How do demographics changes affect their culture, religion, and relationship to the forest?

### *Village Meeting 2\**

### FRN: Hike #1, pg 64

## **Day 4 - Thursday, November 7: Hike to Hua Nam Mae Hong Son**

### *Hike from Pakalo to Hua Nam Mae Hong Son*

Early morning start, with many river crossings and steep terrain; a technical hike. Students will teach Species ID lessons along the way.

Hua Nam Mae Hong Son: This 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.

### FRN: Hike #2, pg 65

## **Day 5 - Friday, November 8: Village Day in Hua Nam Mae Hong Son**

### *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.

FRN: Stream Health Assessment #1

*Village Meeting 3\**

**Day 6 - Saturday, November 9: Hike to Nam Hoo**

*Hike from Hua Nam Mae Hong Son to Nam Hoo*

Another early start, and another long and strenuous hiking day.

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

FRN: Hike #3, pg 66

**Day 7 - Sunday, November 10: Village Day in Nam Hoo**

*Family Time*

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

FRN: Stream Health Assessment #2 + short waterfall hike

**ESSAY #1 DUE BY 5 PM**

**Day 8 - Monday November 11: Rotational Farming**

*Rotational Farming Practicum*

Students will learn about rotational farming practices and complete many FRN activities

FRN: Ecological Field Surveys, pg 22: Biodiversity Survey, Community Study, Forest Transect, Forest Profile

FRN: Rotational Farming, pg. 56

Meet with local instructors to discuss clearing, burning, planting, and harvesting of the rai crops throughout the year. Discuss land management practices.

*Village Meeting 4\**

**Day 9 - Tuesday, November 12: Hike to Huay Hee**

*Hike from Nam Hoo to Huay Hee*

The morning begins with a long ridge ascent and finishes with a long downhill. Students teach Species ID lessons along the way.

Huay Hee: 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.

FRN: Hike #4, pg 67

**Day 10 - Wednesday, November 13: Mid-Course**

- Mid-Course Discussion with Ajaan
- **Students present IFRP Progress**
- Local coffee processing in afternoon with Pati Saju
- Karen sewing activity
- Village meeting 5\*

FRN: Upland Field Survey, pg. 57

**Day 11 - Thursday, November 14: Doi Pui**

*Hike Doi Pui*

At 1,722 meters above sea level, Doi Pui is the highest point in Mae Hong Son and has been targeted by the national park for promoting mass tourism. Villagers of Huay 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.

FRN: Ecological Field Surveys: Biodiversity Survey, Community Study, Forest Transect, Forest Profile

In Huay 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.

FRN: Hike #5, pg 68

*Knowledge Sharing & Culture Exchange Night*

Students will present to the village what they have learned from their experience there (to be explained in more detail later). This will be followed by a fun cultural exchange of songs and skits with the villagers of Huay Hee. Start preparing in advance for different skits, games, and songs your group can share with villagers!

**Day 12 - Friday, November 15: Hike to Huey Tong Kaw**

*Hike from Huay Hee to Huay Tong Kaw*

A hike ascending up into the mountains and then descending into a river valley before ascending again to Huay Tong Kaw village- a relatively tough day.

Huay Tong Kaw: This 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.

FRN: Hike #6, Pg 69

**Day 13 - Saturday, November 16: Culture Learning Day**

*Ba Ken Yaw's Culture Learning Day*

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

*Village Meeting 6\**

**Day 14 - Sunday, November 17: Weaving Day**

*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).

*Knowledge Sharing & Culture Exchange Night*

Students will present to the village what they have learned from their experience there (to be explained in more detail later). Followed by a fun evening with Huay Tong Kaw villagers. This will not be a formal meeting, but rather a cultural exchange with songs and skits.

FRN: Traditional Weaving, Pg 54

**Day 15 - Monday, November 18: Back to Mae Hong Son**

*Meeting with Huay Pu Ling TAO Chief (Khun Chaiya)*

Travel to the Huay Pu Ling Subdistrict Administrative Office to meet with the current "Nayok Obotaw" (Huaypuling Tambon Administrative Organization Chief) and various other staff. 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 drafting. The subdistrict is also in the process of making Huay Pu Ling a special cultural area and has their own management where they can preserve local traditional knowledge and manage the forest by themselves.

*Travel back to Mueang Mae Hong Son and have lunch*

**Day 16 - Tuesday, November 19: Back to Chiang Mai**

*Travel Back to Chiang Mai*

**Day 17 - Wednesday, November 20:** Off [IFRP preparation]

**Day 18 - Thursday, November 21: Last Day!**

**• FINAL EXAM & IFRP FINAL PRESENTATIONS**

- Course wrap-up with Ajaan
- Re-entry to US session
- Gear return
- Farewell Dinner

*Off - Prepare for IFRP final presentations, finalize FRNs, and get all borrowed gear ready for return*

**DUE BY 8:30 AM: Essay #2, Field Observation Notebook, Field Research Notebook**

*(If you would like any academic materials returned to you, please arrange with FIs)*

*\*Village meetings:* There will be several village meetings throughout this field session. We aim to have one per 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, using as much Thai or local language as possible. Students can ask their IFRP questions during the meeting as appropriate. These generally take place in the evening (around 7 pm) as this is when most community members are available.

## Field Research

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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 8 plant species (at least 4 of these should be trees) and 2 animal species – 10 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 use ecological field survey methods in several different and distinct ecosystems:

- Home garden
- 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

## Hiking Days Observations

For this study we will observe and interact with different types of forests through hiking. For each hike, catalogue the point of departure and arrival, the distance hiked, and the time taken. Along the way, observe plants (including trees), animals (including insects), soil, weather conditions, etc.

Include the name of each hike below, for example, "Place A to Place B"

- Type of forest, including trees, plants, soil, etc.
- Observations ( animals, birds, insects, tracks, etc.)
- Trail conditions (muddy, steep, dry, river crossing, etc.)

## Course Policies

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### 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.