

**Sustainability in the Land of the Maya:  
The interplay of culture, politics, economy and the environment**

ES604-A - Spring 2010 - 3 credits

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**Class dates:** Pre-trip: Wednesdays, February 3 and February 24, 5-8pm  
Field Study Trip to Yucatán Peninsula – Monday, March 15 through Saturday, March 27  
Post-trip: Wednesday, April 14, 5-8 pm  
Attending the February 5<sup>th</sup> ES Colloquium (see below) encouraged but not required

### **Overview**

The realization that people are using natural resources at a rate that compromises the ability of future generations to meet their own needs has brought the concept of sustainability to an ubiquitous presence in the discourse of political leaders, environmentalists, scholars, and the general public. It has also stimulated a careful analysis of its role as a determinant of success and failure of past and present societies. The goal of this Field Study Trip (FST) to the Yucatán peninsula is to examine the influence of some social, political, cultural, economic, and environmental factors in the rise and fall of the ancient Maya and to use this same analytical framework to evaluate current models of conservation and development in the peninsula.

The Maya, one of the most magnificent civilizations known, built astounding cities, developed trade networks with regions as far as central Mexico and northern Honduras, and made significant advances in many fields, including astronomy and mathematics. Their complex, highly structured society lived at densities perhaps three times larger than today's population in the region. This singular civilization, however, declined precipitously by about 900 A.D. Why and how did this happen? What were the reasons for such an abrupt demise? Many Maya scholars presume that this collapse was due to environmental damage and long-term drought; others argue that it resulted from chronic war and the lack of vision of the ruling class to lead city-states. Although the issue is currently unresolved, we will summarize a series of environmental and social factors that can be applied to an analysis of the present situation.

Today, the Mexican states of Quintana Roo, Campeche, and Yucatán are going through an epoch of economic and demographic growth, primarily supported by booming tourism and commerce. Its people have recently enjoyed low unemployment rates, a gross domestic product higher than the national average, and medium to high values of the UNDP's Human Development Index. In the conservation community's view, however, this is happening at the expense of the peninsula's natural capital. This FST addresses two core questions: How does the current model of development in the Yucatán peninsula take into account, or fail to, lessons from the ancient Maya? What are the prospects for sustainability?

### **Learning Objectives**

Upon completing this course, students will be able to:

- List, describe, and evaluate the factors that influenced the rise and fall of the ancient Maya
- Describe the interplay between environmental damage, climate change, and economic activities at different scales in the past and present
- Describe environmental features of the Yucatán peninsula, from its geology and general soil types to the hydrology and ecology of specific vegetation types, including tropical dry forest, tropical semi-deciduous forest, mangrove, and coastal scrub
- Identify the primary challenges to biodiversity conservation

- Classify site-specific conservation tools and strategies (e.g., Biosphere Reserves, collaborative community planning processes, legal mechanisms for land protection, community forestry projects) and the promise and pitfalls of each
- Critically assess the environmental, social, and economic impacts of various forms of tourism
- Question assumptions about “conservation” and “development” commonly held in the U.S.
- Adapt and apply the scope of this FST as appropriate in their own practice as leaders in the environmental field

## **Readings**

There is no required text for this course. Required readings will be available electronically on Sakai. Much of your reading and study for this course will be self-directed. You will be reading literature on your chosen “essential topics” (see below), drawing from various primary, secondary, and scholarly sources for your research. In addition, prior to and during the trip you should be reading whatever you can get your hands on about the Maya (ancient and contemporary) and the Yucatán Peninsula. Reading widely will enhance your experience and appreciation for the trip and the issues we’ll be discussing during it. We will establish a small lending library (location TBD) following the first class and will bring this library with us on the trip.

## **Course Communication**

We will post course materials on Sakai. During our first class, we will discuss and decide as a group how we want to use specific Sakai tools to support the course. Instructors will use the Sakai Mailtool to communicate important information about the course content and logistics. Please stay alert to emails you receive with the subject line “20 10SP ESP-604-A Sustainability-Land of Maya:” so that you don’t miss any critical or timely information. You can also visit the Email Archive on Sakai for a record of this information.

## **Evaluation**

### Participation

- To be successful, this course will require the active engagement of all participants. Students are expected to work as a group, supporting and encouraging each other in all aspects of the trip. The course is designed as a learning community in which each participant becomes expert in particular topics and shares that knowledge with others. Participation involves completing all required readings prior to class and contributing to (but not dominating!) group discussions. In addition, your helpfulness and flexibility during the trip itself is crucial. As we meet with local people, assistance translating from students fluent in Spanish will also be helpful.
- Daily journal entries — We highly encourage you to keep a journal during the trip, following whatever format you feel most comfortable with. Daily journal entries are a valuable way to document experiences, reflect on activities, and synthesize new information. We will not collect and read your journals, because we prefer that you write for yourself and not with us in mind as an audience. However, we do anticipate that writing in a journal will enhance the quality of your participation and other assignments.

### Documentation and Content

- “One-pagers”

To become more familiar with the places we’ll visit and content we’ll discuss, each student will develop two “one-pagers” to contribute to a collective, in-depth glossary. Each student will prepare a “one-pager” about a site that we will visit (e.g., Uxmal) and another about a particular concept or

term of relevance (e.g., ejido). These brief documents will provide useful background that will help everyone become more knowledgeable prior to the trip. We will provide an example “one-pager” in the first class, and students will select their site and concept/term from a suggested list then. Both “one-pagers” will be due February 24.

- Essential topic(s) research - presentation and essay

During the first class meeting on February 3, you will choose an essential topic area to research with one or two other students prior to leaving for the trip. You and your teammates will become the experts on this topic and be responsible for sharing what you learn with the rest of the group. We’ve included a list of topic areas below, but if you have other ideas, please bring them to the first class.

Presentation - During the study trip each of your teams will present your research topic to the class while we’re in the field. You and your partner(s) should drive home the salient points of your research, but feel free to be creative in your presentation style (we won’t have computers and projectors!). This is an opportunity for you to teach your peers everything you’ve learned about your chosen topic, to add breadth and depth to the course content. Presentations should not exceed 40 minutes, so plan well. While in the field, we will notify you at least one day beforehand about when your presentation will occur.

Topical Essay - In addition to your presentation, each team will contribute an essay to an edited volume, “Sustainability in the Land of the Maya.” This will be a collective report documenting our learning through the course, which we will then share with colleagues in Mexico and at ANE. Essays should reflect your reading of relevant literature, class discussions, and experiences on the trip. They will be due at our final class on April 14; however, you might want to begin a preliminary draft prior to the trip and share it with the group to review in concert with your presentation. Essays should be 6-10 double-spaced pages (excluding references), 12-point font, with 1-inch margins throughout and cite scholarly sources following the citation style provided in class.

- Natural community rapid assessments

During the trip, we will conduct rapid assessments of four vegetation types: mangrove, tropical deciduous (or dry) forest, tropical semi-deciduous forest, and coastal scrub. Each of these descriptions will also contain a non-exhaustive list of common and/or conspicuous elements of the flora and fauna of each habitat type. In each of these natural communities, we will also determine soil types and describe the geomorphology. Students will be responsible for selecting rapid field survey techniques that can help us classify each natural community, soil type, and geomorphology; be considerate of limited time and tools available; and organize the logistical aspects of field data collection, analysis, and synthesis.

## Course Schedule

February 3<sup>rd</sup> 5-8 pm

Introductions

Overview & Analysis Framework

Select Essential Topics & “One-Pagers”

Trip logistics

- Read the following (see Sakai Resources-Readings-Feb 3):
  - Diamond, Jared. 2005. “A Tale of Two Farms.” Pages 1-24 in *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking Press.

- Diamond, Jared. 2005. “The Maya Collapses.” Chapter 5 in *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking Press. (Also note further readings are included at end.)
  - Pringle, Heather. 2009. “A New Look at the Maya’s End.” *Science* 324, 24 April, 454-6.
  - Rasmussen, Derek. n.d. “Cease to Do Evil - *Then* Learn to Do Good ... (A Pedagogy for the Oppressor).” Unpublished manuscript. (While this reading is not specific to the Maya or the Yucatán Peninsula, it’s a provocative piece that we have included to remind ourselves that we aim not only to learn about another place and its cultures but also to reflect on our own.)
- Bring 3-5 questions that you would like us to investigate through the duration of this course (feel free to post to online discussion ahead of time)
  - Bring your passport or a clear photocopy of it

#### February 5th 11:30 am-12:30 pm - ES Colloquium

*Conservation, Land and the Politics of Knowledge in Quintana Roo, Mexico*

Dr. Jose Martinez-Reyes - Anthropologist at the University of Massachusetts-Boston

This talk will be highly relevant to the course. We encourage everyone who is available to attend. The colloquium is usually held in the community room or dance studio; look for signs posted in ES that week.

#### February 24th 5-8 pm

The Present-day Situation on the Yucatán Peninsula

- Readings TBA
- One-pagers due
- Provide an oral progress update on essential topics research

#### March 15-March 27 - Field Study Trip!

We have included a *tentative* itinerary at the end of the syllabus. We are confirming logistical arrangements now and will provide an updated itinerary when available.

#### April 14

Debrief & Reflect

Future Projects?

Course Wrap-Up

- Essential topic essay due

#### **Essential Topic Areas**

On February 3, we will provide a schematic for thinking about these topic areas and discuss further expectations for the essential topics research, presentations, and essays. In the meantime, consider which of the following areas are of interest to you. Students will investigate topic areas in teams of two or three.

#### Geology, hydrology and soils

Content might include: geological history, water table, topography, formations, karst, cenotes, coastal dynamics, soil types, soils distribution

### Climate

Content might include: paleoclimate and reconstructions, geographic and temporal precipitation patterns, drought, temperature patterns, hurricane regimes, future climate projections

### Agriculture & forestry

Content might include: subsistence agriculture including pet koot (traditional Mayan rotational system) and milpa (traditional Mexican corn-garden system), monocultures (henequen, agave azul), cattle ranching, apiculture, timber, non-timber forest products, water management, markets, food systems, nutrition

### Political organization and law

Content might include: Mayan city-states, chronology of Mayan dynasties, ancient Mayan social structure, Colonial period, present day government, political parties, land tenure systems

### Vegetation and Flora

Content might include: vegetation types (mangroves, tropical deciduous or dry forest, tropical semi-deciduous forest, and coastal scrub), specific flora (palms, black mangrove, red mangrove, white mangrove, ceiba, ramón, fig, epiphytes)

### Animals

Content might include: conservation status, habitat requirements, and ecology of specific amphibians, reptiles (sea turtles, iguanas), birds (ocelated turkey), mammals (red brocket deer, monkeys, jaguar, ocelots), insects (butterflies, leaf cutting ants)

### Trade and Commerce

Content might include: Ancient Mayan trade, globalization, impacts of contemporary tourism (beach, eco, adventure, spa, anthropological, cultural/arts, etc.), petroleum

### Conservation

Content might include: protected areas management, community-based initiatives (e.g., community forestry), ecological monitoring, ecoregional planning, conservation site planning, conservation easements, payment for ecosystem services

## **Special Considerations**

### Passport

Travel to and from Mexico requires a valid passport.

### Language

Familiarity with Spanish or Yucatec Maya is helpful but not required. If you have some knowledge of Spanish, we strongly encourage you brush up on your language skills. Doing so will allow you opportunity to discuss with local people and digest local reading material. However, the course will be conducted in English and translation will be provided.

### Dietary restrictions

Our experience traveling in the region suggests that vegetarians will frequently be able to meet their dietary needs; however, vegans might have difficulty doing so. Both vegetarians and vegans must be aware that in some locations non-meat and non-animal food options could be limited and prepare accordingly by packing supplemental food or being flexible with food choices during the trip.

### Physical stamina

Because the majority of trip activities will be outdoors, you should be prepared for heat (typical March temperatures reach highs in the 90soF), extremely bright sun, and mosquitoes.

Emergency contact

We will gather emergency contact information for each of you prior to departure. In addition, we will have a cell phone with us, although coverage might not be available throughout the entire peninsula. Should someone in the U.S. need to reach you in an emergency situation while you are on the trip, they can text or call Ernesto's cell phone at 011-51 (228) 105-9195. They should leave a detailed message to be relayed to you. Please use this number only in the case of an emergency.

What to bring

We will distribute a suggested packing list at the first class meeting.

**Flight Information**

We are flying on Continental Airlines. We will work out details of transportation to the airport in one of our pre-trip classes.

Mon, 15 MAR – CO 9 – DEPART BOSTON 7:30AM – ARRIVE NEWARK 8:45AM – 737-700

Mon, 15 MAR – CO 1745 – DEPART NEWARK 10:37AM – ARRIVE CANCUN 12:50PM – 737-800

Sat, 27 MAR – CO 265 – DEPART CANCUN 6:00AM – ARRIVE HOUSTON 9:19AM – 737-800

Sat, 27 MAR – CO 382 – DEPART HOUSTON 11:25AM – ARRIVE BOSTON 3:58PM – 737-800

**TENTATIVE Itinerary:**

The following gives a sense of the sites we will visit and topics we will cover. Exact dates and local contacts are likely to change as we work to finalize arrangements (and some details could differ after we arrive in Mexico, as we may need to adapt to changes on the ground). We will provide an updated itinerary as soon as possible.

	Mar	Activities	Tentative Topics	Lodging in:
Mon	15	Fly Boston to Cancún. Dinner and orientation.	Tourism	Cancún
Tue	16	Travel Cancún to Tulúm (~2.5 hours): Along the Riviera Maya, contrast a typical tourist experience w/ everyday life of Quintanarroenses Visit Dos Ojos cenote Visit Tulúm Archeological Site	Tourism & its impacts Karst geology Significance of Tulúm in Mayan history, post-Classic Maya, trade	CESIAK (within Sian Ka'an)
Wed	17	Explore Sian Ka'an Biosphere Reserve (including Boat Tour)	Mangroves Wetlands History of biosphere reserves Ecotourism	CESIAK
Thur	18	Further explore Sian Ka'an Visit Cobá Archeological Site	Tropical dry forest Significance of Cobá, classic Maya, culture Present day cooperatives	CESIAK
Fri	19	Travel Sian Ka'an to Zoh Laguna (~3 hours) with stop in Felipe Carillo Puerto: Seminars with Comisión Nacional de Áreas Naturales Protegidas (CONANP) (federal agency that manages biosphere reserves) and U'YO'OLCHE (local NGO)	Protected areas management Land tenure ("ejidos") Community-based conservation	Zoh Laguna

Sat	20	Calakmul Biosphere Reserve: Site visit to 20 de Noviembre (including woodworking cooperative and traditional Mayan meal) Seminar with CONANP	Present day Maya Mayan agriculture (“milpa”) Community enterprise development (e.g., community forestry) Ecological monitoring Tourism	Zoh Laguna
Sun	21	Calakmul Archeological Site: Hike to explore forest Visit Calakmul ruins  Travel to Campeche (~4 hours)	Tropical semi-deciduous forest Significance of Calakmul, ancient Mayan social organization, conflict	Campeche
Mon	22	Seminar with ECOSUR See historic Campeche (a World Heritage Site) Travel to Mérida (~2 hours) Tour henequén hacienda en route	Present day Mayaland socio-economic indicators Colonial history Land tenure from colonial times to early 20 <sup>th</sup> century and implications for conservation	Mérida
Tue	23	Visit Uxmal Possibly visit caverns of Loltún Explore Mérida	Classic Maya Karst geology	Mérida
Wed	24	Seminar with Pronatura, The Nature Conservancy Southern Mexico Program, and/or Centro de Investigación Científica de Yucatán Visit Chichen Itzá (“Maravilla del Mundo”)	Conservation planning Significance of Chichen Itzá, classic Maya	Ek Balam
Thur	25	Visit Ría Lagartos with boat tour to see flamingo colony Discussion with members of cooperative operating “cabañas eco-turísticas” in Ek Balam	Ecotourism Present day Maya	Ek Balam
Fri	26	Visit Ek Balam Archeological Site Travel to Cancún (~2 hours)	Coastal scrub Mangroves Flamingo ecology Present day cooperatives	Cancún
Sat	27	Fly from Cancún to Boston		