



Conservation and Sustainability Practices in Ecuador

ENVI-3000 (3 Credits / 45 hours)

SIT Study Abroad Program:
Ecuador: Comparative Ecology and Conservation

PLEASE NOTE: This syllabus is representative a recent semester. Because courses develop and change over time to take advantage of unique learning opportunities, actual course content varies from semester to semester.

Course Description

The Conservation and Sustainability Practices in Ecuador seminar focuses on the analysis of major environmental issues that currently threaten Ecuadorian ecosystems. The course examines contemporary conservation strategies that have been implemented to protect the natural resource base and their viability. National and local government policies aimed toward sustainable resource use and their effects are studied. The course seeks to enable students to build an individual framework that facilitates their conceptualization of contemporary environmental and social issues as they relate to conservation and, as a result, impact local resources and landscapes.

Learning Outcomes

By the end of the course, students will be able to:

- Define the primary environmental issues, threats to conservation, and challenges to sustainability in Ecuador, and their rationale
- Demonstrate an interdisciplinary understanding of conservation and resource management in Ecuador
- Discuss the social and economic factors that affect Ecuadorian conservation efforts and resource management
- Debate and postulate alternatives for conservation, based on the analysis of current resource management strategies and policies
- Assess the linkages between global and local conservation issues, problems, and solutions

Language of Instruction

The academic content of this course is taught in both Spanish and English. All orientation and logistical issues are provided in English.

Course Schedule

***Please be aware that topics and excursions may vary to take advantage of any emerging events, to accommodate changes in our lecturers' availability, and to respect any changes that would affect student safety. Students will be notified if this occurs.**

Module 1: Ecuador's General and Paramo Conservation & Sustainability Issues

This module analyses the most important threats to conservation and sustainability in Ecuador and Paramo, including deforestation for agriculture and pastureland, logging and mining.

Sessions:

- Development and nature in Ecuador, a contemporary analysis. Study of the most important ecological threats in Ecuador, a general review of processes, impacts, reactions, and potential solutions
- Deforestation in Ecuador and Carbon Sequestration: Pastures and Agriculture and their relationship with road construction; Agricultural and industrial land tenure as a mobile for deforestation in Ecuador and other environmental impacts; Mining in the high Andes; impacts on the local population and on the environment
- Sustainability Issues in Ecuador: Energy use in Ecuador; Current statistics; Alternative energy projects and perspectives; Urban environmental impacts in Ecuador; The case of Quito in terms of mobility and air pollution; Waste management; Green areas; Recycling
- Land-use and Global Warming in Ecuador; The particular case of the high Andes and paramo ecosystems; vegetation adaptation issues; Water and soil productivity
- Food sovereignty, crop production and food distribution; Specific analysis of local markets; Issues of local grown owners in competing with international companies networks, production costs and final prices to consumers
- Community Tourism as a motor for conservation activities and environmental education in Ecuador; analysis of best practices; Community Land Tenure as an opportunity for eco-tourism and conservation; pros and cons of a relatively new concept for local communities
- The Chimborazo Casa Condor Community Program: The Camelid Project (Alpacas and Lamas); Reintroduction of Vicuñas in Chimborazo Reserve; Chimborazo Land Tenure and its community rules and management (provided in several sub-sessions during the Paramo Chimborazo excursion)
- The Yunguilla Community Project: Organic Farming, Food Production, Forestry, Ecotourism, Land and Work Distribution within the Community; Governance best practices issues in community projects; Participatory Activities in the Yunguilla Community: Organic Farming, Forestry and Food Production (provided in several sub-sessions during the Yunguilla excursion)

Instructors: Daisy Collaguazo and Germán Collaguazo, and other Yunguilla Community Leaders; Olmedo and Manuel Cayambe, and other Chimborazo Community Leaders; Xavier Silva Ph.D, Javier Robayo, Diana Serrano

Readings:

- Spencer S. Stober, Alvernia University, PA (2010). Ecuador: Mother Nature Utopia. *The International Journal of Environmental, Cultural, Economic and Social Sustainability*, Vol. 6, Issue 2
- Weinstein, Michael P. R. Eugene Turner, & Carles Ibáñez (2012). The Global Sustainability Transition: it is more than changing light bulbs. *Sustainability: Science, Practice, & Policy Journal*, Vol. 9, Issue 1
- Berkes, Fikret; University of Manitoba, Canada (2004). Rethinking Community Based Conservation. *Conservation Biology Journal*, p 621-630, Vol. 18, Issue 3

- Buytaert, Wouter, Rolando Célleri, Bert De Bièvre, Felipe Cisneros, Guido Wyseure, Jozef Deckers, Robert Hofstede (2006). Human impact on the hydrology of the Andean páramos. *Earth-Science Reviews* 79: 53–72
- Farley, Kathleen A. (2007). Grasslands to Tree Plantations: Forest Transition in the Andes of Ecuador. *Annals of the Association of American Geographers*, 97(4)
- Suarez, Esteban, and Galo Medina (2001). Vegetation Structure and Soil Properties in Ecuadorian Paramo Grasslands with Different Histories of Burning and Grazing. *Arctic, Antarctic, and Alpine Research*, Vol. 33, No. 2

Module 2: Cloud Forest Conservation & Sustainability Issues

This module analyses most of the management, conservation and sustainability problems that Ecuadorian Cloud Forests currently face.

- Introduction to Cloud Forest Conservation & Sustainability Issues: Human Uses & Ecological Services; Main Threats and Potential Solutions; Crop production in the cloud forest: Coffee, Naranjilla, Sugar Cane, other; Cattle Ranching & Pastureland
- Cloud Forest Main Ecological Threats: Deforestation for pastureland, logging and mining (provided in several sub-sessions during the Cloud Forest excursion)
- Mining in the Cloud Forests of Ecuador: Main environmental issues; types of mines; the struggle against mining in cloud forest communities; Transnational Companies and the Ecuadorian State vs. human populations
- Mining case study of Intag region; Struggle against copper mining and current events; Local society organizations, success stories and issues, including community division and pressure from international companies
- Government vs. Private Conservation in the Cloud Forest: Analysis of current management issues and conservation policies in a mestizo born local society (provided in several sub-sessions during the Cloud Forest excursions)
- Tourism vs. Mining in the Cloud Forest; Analysis of short term vs. long term economic and ecological solutions
- The case of Santa Lucía Reserve compared to other local reserves and their management differences, success stories and failures
- The Andean Bear Conservation Program in North-Western Cloud Forests of Ecuador; main premises; best practices, failures and struggles

Instructors: Santa Lucía Local Community Members; Holger Beck; Xavier Silva Ph.D, Javier Robayo, Diana Serrano

Readings:

- Reyes J. P., y O. Valenzuela (2013). Gente, naturaleza y agua en la cuenca alta del Pastaza. *Folleto de difusión del Cantón Baños, Tungurahua, Ecuador*
- Ebeling, Johannes and Mai Yasue (2009). The effectiveness of market-based conservation in the tropics: Forest certification in Ecuador and Bolivia. *Journal of Environmental Management* 90: 1145–1153
- Useche Diana C (2005). Contribución de los sistemas silvopastoriles a la restauración ecológica de paisajes ganaderos. *Revista Recursos Naturales y Ambiente / no. 46:5-12*

Module 3: Amazon Rainforest Conservation & Sustainability Issues

This module provides an introduction to the complexities of the Ecuadorian Amazon conservation and sustainability problems, including social and environmental impacts from major threats, such as the petroleum industry and large-scale agriculture, including African Oil-Palm.

Sessions:

- Introduction to Ecuadorian Amazon Conservation & Sustainability Issues: Human Uses and Ecological Services of the Amazon Rainforest
- The Petroleum Industry in Ecuadorian Amazon; Environmental and Social Impacts, general implications on the economy, society and environment; Petroleum – Road Construction – Colonization – Deforestation; An insidious closed circle in name of development (provided in several sub-sessions during the Amazon Excursion)
- Important Petroleum Cases in the Ecuadorian Amazon: Introduction and current issues of the Chevron-Texaco international legal case; The Yasuní-ITT Initiative; Historical analysis of a death-born project and implications in the international arena; Petroleum production and China; The impact of Chinese companies in the petroleum business in Ecuador; Economical and environmental impacts
- Visit to Petroleum Fields in Ecuadorian Amazon: Legal, environmental and social issues
- Ethnic Groups in Ecuadorian Amazon: Current Social Problems; Interaction with an Indigenous Community in Ecuadorian Amazon: Social Issues, Education, Local Agriculture, etc. Uncontacted Tribes; Current risks and perspectives of two self-defined uncontacted tribes in the Ecuadorian Amazon (provided in several sub-sessions during the Amazon Excursion)
- Deforestation in Ecuadorian Amazon: Logging and African Oil-Palm Plantations; The African Palm Oil phenomena in the Ecuadorian Amazon; Analysis of environmental and social impacts (provided in several sub-sessions during the Amazon Excursion)
- Hunting issues in the Ecuadorian Amazon; Is hunting sustainable for local communities? analysis and debate; Subsistence hunting vs. commercial hunting; Roads and increased access for hunting; local bush-meat markets
- Community-born Ecotourism Projects in the Ecuadorian Amazon; Visit and analysis of different community projects to develop and maintain ecotourism; stop of hunting for local communities in order to increase tourism, analysis and discussion

Instructors: Alexandra Almeida, Acción Ecológica Foundation; Hector Vargas, Community Leader and Activist; Diana Serrano, Javier Robayo, and Xavier Silva

Readings:

- Messina, Joseph P., Stephen J. Walshb, Carlos F. Menab, Paul L. Delamater (2006). Land tenure and deforestation patterns in the Ecuadorian Amazon: Conflicts in land conservation in frontier settings. *Applied Geography Journal* 26: 113–128
- Franzen, Margaret; University of California, Davis (2006). Evaluating the sustainability of hunting: a comparison of harvest profiles across three Huaorani communities. *Environmental Conservation* 33 (1): 36–45
- Readings obtained on your own for the Amazon Workshop and Presentation (Spanish)

Module 4: Galapagos Conservation & Sustainability Issues

The Galapagos Conservation & Sustainability Issues module analyses the major management problems that currently faces the Galapagos National Park & Marine Reserve, such as invasive species, over-tourism, over-fishing, and other issues.

Sessions:

- Introduction to Galapagos Conservation & Sustainability Issues: Orientation prior to the Galapagos Educational Excursion
- Galapagos National Park and Marine Reserve Management: In the field observations, discussions and activities (provided in several sub-sessions during the Galapagos Excursion)
- Impact of Introduced Species in Galapagos & Eradication Programs: Important Cases: Goats, Ants & other invertebrates, Philornis fly, Guava, Cinchona, etc. In the field observations, discussions and activities (provided in several sub-sessions during the Galapagos Excursion)
- Over-tourism in Galapagos; Social & Environmental Issues: In the field observations, discussions and activities (provided in several sub-sessions during the Galapagos Excursion)
- Over-fishing in Galapagos; Social & Environmental Issues: In the field observations, discussions and activities (provided in several sub-sessions during the Galapagos Excursion)
- Special Law for the Galapagos Islands; Immigration process within the same country; Pros and cons of the special law; Social issues
- Fresh-Water Production and Saving in the Galapagos; Analysis of one of a difficult economic and environmental issues in the Galapagos, especially focused for the increasing tourism industry
- Waste Management and Recycling in the Galapagos; Analysis of an increasing problem
- Energy Production and Alternative Energies in the Galapagos; An economic and environmental discussion

Instructors: Lenin Villacis (Certified Galapagos Guide), Diana Serrano, Javier Robayo, Xavier Silva, Galapagos National Park Representatives and Local Community Leaders

Readings:

- Henderson, Scott (2005). Conservation Incentive Agreements in the Galápagos Marine Reserve: Feasibility Study for the Reduction of Fishing Pressure. *Conservación Internacional Ecuador Press*
- Watkins, G. and F. Cruz (2007). Galápagos en Riesgo: Un Análisis Socioeconómico de la Situación Actual en el Archipiélago. *Puerto Ayora, Provincia de Galápagos, Ecuador, Fundación Charles Darwin*
- Readings obtained on your own for the Galapagos Workshop and Presentation (Spanish)

Evaluation and Grading Criteria

Assignments:

Conservation/Sustainability Article Discussion: This work consists on a critical analysis of several articles in the fields of conservation and sustainability. Articles are provided electronically (see flash- drive). Students must read all articles and provide their personal arguments at 2 discussion meetings. Students are graded on their knowledge about the topics and their ability to participate at a discussion meeting/session.

Conservation/Sustainability Project (CSP): This is a team research to be developed until before ISP (see due-date on calendar). This assignment simulates a real life research experience with field studies that are usually implemented in Quito. Groups and topics are assigned during Orientation Week by Spanish Classes. The topics for this semester are: Energy; Transportation; Recycling; and Noise Pollution. The written report should be in Spanish following a science article structure (see Guidelines, Writing a Science Paper). For the Spanish Course the paper will be graded by the Spanish teachers (See due-dates for Spanish). For the Conservation & Sustainability Course the product consists on an edited documentary of about 15 minutes; it can be a film, a power point or any another audio-visual technology. After the oral presentation the participants have to lead a group discussion (15 minutes) with the audience (peers) about their topic. This assignment is graded by your ADs based on the presentation and the ability to lead a group discussion session.

Final Exam: The final examination contains questions from all lectures & field activities, plus selected required articles that will be indicated by your AD.

Participation: Evaluates student's participation during this course. Participation is based on:

- Preparation, attendance, and attitude in all lectures, discussions, activities, and excursions
- Active contribution in periodic group meetings
- Completion of written assignments
- Completion of assigned readings
- Culturally respectful behavior, flexibility, punctuality and enthusiasm

Assessment:

Conservation/Sustainability Article Analysis Oral Report	25%
Conservation/Sustainability Research Project	40% (10% oral; 30% written)
Final Exam	30%
Participation	5%

Grading Scale:

94-100%	A
90-93%	A-
87-89%	B+
84-86%	B
80-83%	B-
77-79%	C+
74-76%	C
70-73%	C-

67-69%	D+
64-66%	D
Below 64	F

Expectations and Policies

- **Readings** Both required and optional readings will be distributed to students during Orientation Week. Readings are organized by ecological systems: Ecuador General; Galapagos/Coast; Cloud Forest/ Paramo; and Amazon. These readings are designed to complement and expand upon the information provided on required readings and on the information covered by lectures, offering different points of view as well as more in-depth discussion of the topics. We recommend students to keep up with the optional readings throughout the semester. There are separate reading packets available on flash and paper. Readings should be properly cited in your assignments.
- **Assignments** Timely completion of all assignments is expected. Late hand-ins will be penalized. All assignments are evaluated according to organization, analytical quality, depth of understanding, argumentation, and presentation of evidence.

Please refer to the SIT Study Abroad Handbook for policies on academic integrity, ethics, warning and probation, diversity and disability, sexual harassment, and the academic appeals process.

Disability Services: Students with disabilities are encouraged to contact Disability Services at disabilityservices@sit.edu for information and support in facilitating an accessible educational experience. Additional information regarding SIT Disability Services, including a link to the online request form, can be found on the Disability Services website at <http://studyabroad.sit.edu/disabilityservices>.

Please Note: Course contents, lecturers, and readings may be modified as needed. Should any change of class topics or lecturers may be necessary, student will be promptly notified.