

Geography/ENV ST 538
Humid tropics: Ecology, Conservation and Development

Professor Lisa Naughton
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Office hours: Thursdays, 11am -1 pm or by appointment
Class meeting time: 2:20-4:50, Thursdays, Room 175 Science Hall

Course description: The humid tropics encompass roughly 10% of the earth's surface and are home to 40% of the world's human population. This region is characterized by extraordinary cultural and biological diversity, and a general dependence on agriculture and natural resources to sustain local and national economies. Within the development process, the humid tropics are undergoing rapid social and environmental change, including extensive deforestation, loss of biodiversity and release of carbon. We begin with an overview of the physical environment of the humid tropics, then we study the complex forces driving deforestation in different realms (Africa, Latin America, SE Asia) and learn about consequences for local citizens. How is urbanization and globalization shifting the pressure on tropical forests? Finally, we evaluate the ecological and social viability of dominant strategies for conserving tropical forests, including protected areas, community-based forest management, and payments for ecosystem services.

Course readings: Readings are drawn primarily from physical geography, political ecology and conservation biology. Undergraduates are expected to read all required readings, graduate students will also be tested on recommended readings.

Grading for undergraduate students will be based on:

First exam (multiple choice, short answer, matching) =	50 points
Second exam (Short essays) =	50 points
Four writing assignments	145 points
1. Pass/fail movie review, 2-3 pp (10 pts)	
2. Position paper on Ecologically Noble Savage, 3-4 pp (50 pts)	
3. 'Eating the tropics' food diary, 1 p. (10 pts)	
4. Case study on PES in tropical forests*, 5-7 pp.(75 pts)	

Class participation	45 points
a. Leading or co-leading discussion of one class (15 pts)	
b. Participating in class discussion throughout semester (15 pts)	
c. Oral presentation of PES Case Study (10 pts)	
d. Providing feedback on classmates' oral presentations (5 pts)	

Total possible = 290 points

The importance of writing in this course: The writing assignments in this course are designed to help students master the course material and improve their writing skills. All *undergraduate* students are required to work with the Writing Fellows during the preparation of two assignments: 1) a 3-4 page position paper, and 2) a 5-7 page case study on PES. Two weeks before the final due date for each assignment, students will submit polished drafts to writing fellows Patricia Paskov or Miriam Kelberg who will offer suggestions for revising and improving the paper before it is graded by Prof. Naughton. Additional writing assignments include: a 2-3 page movie review (pass/fail), a one-day food diary, and a short essay exam during the last scheduled day of class.

Note on writing fellows

Writing Fellows are:

- Undergraduate students who will read your writing and make constructive suggestions for revision
- Trained in how to critically evaluate and respond helpfully
- Supervised closely by your professor

Writing Fellows Do Not:

- Grade your papers
- Teach you course-specific content

How it works:

The Writing Fellows will work with you on two assignments: your Wolf Hunt Position Paper and your case study on human-wildlife conflict. In each case, you will submit a polished draft* of your paper to me on the assigned due date. I will pass it on to your Writing Fellow, who will carefully read your paper, make comments on your draft, and then meet with you individually to discuss your writing and offer suggestions for revision. You will then revise your paper and submit *both* the original draft and your revised version on the final due date.

*What is a polished draft?

A polished draft represents your best effort at the assignment. It is typewritten (double-spaced) and has a complete bibliography. It is not an outline, a rough draft, or a first draft. Proofread carefully to remove any grammar or spelling errors. This will allow your Writing Fellow to focus on larger issues like organization, presentation and clarity of style.

Graduate students will be graded on a total 300 points. Grads will write a 1-2 paragraph answer to an extra essay question on each exam that is based on one of the recommended readings (10 points each). They will not be graded on oral presentation and feedback. In place of the PES case study, graduate students will also have the option to a) write a polished draft news article (1000 words) for submission to Mongabay.com, a popular environmental science and tropical conservation news site, or b) write a 7-10 p. paper on a topic related to your professional interests. Instead of working with writing fellows, graduate students will exchange drafts of their news article 2 weeks before the due date and write up comments for one another (copy to me). They will also meet separately (date TBD) to share their independent project instead of attending class on 12/4. In sum, Graduate student grades will be based on:

First exam (multiple choice, short answer, matching + 1 short essay) =	60 points
Second exam (Short essays) =	60 points
Four writing assignments	150 points
1. Pass/fail movie review, 2-3 pp (10 pts)	
2. Position paper on Ecologically Noble Savage (50 pts)	
3. 'Eating the tropics' food diary, 1 p. (10 pts)	
4. News report on topic related to professional interests for Mongabay OR 7-10 page paper on thesis topic. (75 pts)	
Class participation	30 points
a. Presenting case studies and leading discussion (15 pts)	
b. Participating in class discussion (15 pts)	
Total possible = 300 points	

Note: all readings should be completed before the listed lecture date.

Section I. Introduction Physical Geography – Key Patterns Shaping Resources & Sustainability

Sep 4 Introduction of course and students. Perceptions of the humid tropical environment

Handout: Movie review assignment DUE 9/18.

Sep 11 Geography of the humid tropics. Climatic conditions and forest formations. Implications for species richness and above-ground carbon stocks. Handout: Climate worksheet (review this in class 9/18).

Required readings:

Forsyth, A. and K. Miyata (1984). "In the Realm of the Tropics", Tropical Nature. New York, Charles Scribner's Sons, chap 1 (pp. 7-15).

Whitmore, T. C. (1998). "What are tropical forests?" An Introduction to Tropical Rain Forests. Oxford, Clarendon Press: pp. 10-29.

Recommended:

Gibbs, Holly K., et al. "Monitoring and estimating tropical forest carbon stocks: making REDD a reality." Environmental Research Letters 2.4 (2007): 045023.

Sep. 18 Tropical forests, disturbance and biodiversity. Why are there so many species in tropical rainforests? How sensitive are species to disturbance? DUE in class: Movie review.

Required readings:

Willis, K. et al. 2004. "How "Virgin" Is Virgin Rainforest?" Science 304, Iss. 5669; pg. 402, 2 pgs

Wright, S.J. & H. C. Muller-Landau. 2006. "The Future of Tropical Forest Species" Biotropica 38(3):287-301.

Laurence, W. F. 2007. "Have we overstated the tropical biodiversity crisis?" Trends in Ecology & Evol. 22(2): 65-69.

Recommended:

Gibson, Luke, et al. "Primary forests are irreplaceable for sustaining tropical biodiversity." Nature 478.7369 (2011): 378-381.

Chazdon, R. L. 2008. Beyond deforestation: restoring forests and ecosystem services on degraded lands. Science **320**:1458-1460.

Sep. 25 Tropical agriculture, Tropical soils and 'garden hunting'. GUEST: Emily Atkinson, PhD candidate, Dept of Geography. Handout: Assignment #2. Ecologically Noble Savage. Draft due Monday, Oct 6. Final due Oct 23.

Required readings:

Linares, O. F. 1976. Garden hunting in the American tropics. Human Ecology 4(4): 331-349

Redford, K. 1992. "The empty forest" Bioscience 42(6):412-422.

Parry, L., et al. (2009), Hunting for Sustainability in Tropical Secondary Forests. Conservation Biology, 23: 1270–1280.

Recommended:

Robinson, J. & E. Bennett. 2004. "Conserving your wildlife and eating it too" Anim Cons 7:397–408.

Oct 2 Indigenous management of neotropical forests.

Required readings:

Redford, K. H. 1990. "The ecologically noble savage." Orion Nature Quarterly 9: 24-29.

Kayapó People's Manifesto June 2013. Downloaded 1/11/14 from <http://raoni.com/news.php>

Nepstad D, et al. 2006. Inhibition of Amazon Deforestation and Fire by Parks and Indigenous Lands. Conservation Biology 20: 65-73

McSweeney K. 2005. Indigenous population growth in the lowland Neotropics. Cons Biology 19: 1375-84.

Recommended:

Schwartzman, S. and B. Zimmerman. (2005), Conservation Alliances with Indigenous Peoples of the Amazon. Conservation Biology, 19: 721–727.

Optional (not included on exam, even for grad students):

Pelican, M. 2009. "Complexities of Indigeneity and Autochthony. An African Example". American Ethnologist. PAGES 52-56 ONLY.

Oct. 9 Exam 1 (first half)

Second half: Guest speaker: Prof Matthew Turner, Geography. Defining 'Development'

No readings this week.

Oct 16 Poverty and Forest Dependency.

Required readings:

Adams, W. M., R. Aveling, et al. 2004. Biodiversity Conservation and the Eradication of Poverty. Science. 306 (5699): 1146-1149.

Angelsen A, Wunder S. 2003. *Exploring the Forest—Poverty Link: Key Concepts, Issues and Research Implications*, CIFOR, Bogor, Indonesia [**only through section 4.3, page 34**]

Recommended:

McSweeney, K, and OT. Coomes. 2011. "Climate-related disaster opens a window of opportunity for rural poor in northeastern Honduras." PNAS 108.13: 5203-5208.

Oct 23 Does deforestation accelerate & then diminish with economic growth?

Due: Final version of Assignment #2. Ecologically Noble Savage position paper.

Required readings:

Rudel, Thomas K., et al. "Forest transitions: towards a global understanding of land use change." Global Environmental Change 15.1 (2005): 23-31.

DeFries, Ruth S., et al. "Deforestation driven by urban population growth and agricultural trade in the twenty-first century." Nature Geoscience 3.3 (2010): 178-181.

Recommended reading:

Geist, H.J. & EF Lambin. 2002. Proximate Causes and Underlying Driving Forces of Tropical Deforestation. Tropical forests are disappearing as the result of many pressures, both local and regional, acting in various combinations in different geographical locations. *BioScience* 52, 143-150

Oct 30 The quest for good forest governance.

Handout: Assignment #3. Eating the tropics. Due Nov 13.

Required readings:

Robbins, P. et al. 2009. Even Conservation Rules Are Made to Be Broken: Implications for Biodiversity. *Environmental Management* Vol. 37, No. 2, pp. 162–169.

Goodman, P.S. and P. Finn. 2007. Corruption stains timber trade. *Washington Post*. 4/1. A01.

Persha et al. 2011. Social and Ecological Synergy: Local Rulemaking, Forest Livelihoods, and Biodiversity Conservation. 25(6024): 1606-1608

Recommended

Robinson, B. E., Holland, M. B., & Naughton-Treves, L. (2013). Does secure land tenure save forests? A meta-analysis of the relationship between land tenure and tropical deforestation. *Global Environmental Change*.

Nov. 6 The rise and fall (and rise again?) of REDD. Handout: Assignment #4. Case study of tropical forest PES.

Required readings:

[Update of REDD in intl policy]

Beymer-Farris, B. A., and T.J. Bassett. "The REDD menace: Resurgent protectionism in Tanzania's mangrove forests." *Global Environmental Change* 22.2 (2012): 332-341.

Burgess, Neil D., et al. "REDD herrings or REDD menace: Response to Beymer-Farris and Bassett." *Global Environmental Change* 23.5 (2013): 1349-1354.

Recommended reading:

Bruce, J., et al. "Whom to pay." *Key Concepts and Terms regarding Tenure and Property Rights in Payment-based Forest Ecosystem Conservation*. Madison, WI: Land Tenure Center (2010).

Nov 13 Efforts to control deforestation due to commodity agriculture – case of oil palm and soy
GUEST: Prof. Holly Gibbs, Dept of Geography.

Required readings:

Gibbs, H.K., et al. The end of the Soy Moratorium will mean more deforestation (in review)

Recommended reading:

Nikoloyuk, J. et al. "The promise and limitations of partnered governance: The case of sustainable palm oil." *Corporate Governance* 10.1 (2010): 59-72.

Nov 20 Are parks working? Part 1

Efforts to connect parks (corridors and zoning) Part 2

DUE: One paragraph describing Tropical Forest PES case study with ≥3 annotated references.

Required readings:

Naughton-Treves, L, et al. "The role of protected areas in conserving biodiversity and sustaining local livelihoods." *Annu. Rev. Environ. Resour.* 30 (2005): 219-252.

Other reading: TBA – Infrastructure and Extractive industry in tropical parks.

Recommended: TBA

Nov. 27: Thanksgiving break. No class.

Dec 4 PES case study (in class presentations)

Dec 11 PES case study (in class presentations) and Exam II.

Dec 16 PES case study due
