

Updated Nov 1  
FALL 2016  
Geography/ENV ST 538

**Humid tropics: Ecology, Conservation and Development**

Professor Lisa Naughton  
355 Science Hall, email: naughton@geography.wisc.edu  
Office hours: Thursdays, 11am -1pm or by appointment  
Class meeting time: 9:30-10:45, Tue & Thur, Room 110 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 has 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 a short 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 some of the recommended readings.

Grading for undergraduate students will be based on:

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|---|------------|
| Three tests, each worth 30 points.<br>First test is multiple choice, short answer & matching, Tests two and three are short essay format and for these you may bring notes. Non-cumulative.<br>No final exam.   | 90 points  |
| Three writing assignments.<br>1. Movie review, pass/fail 2-3 pp (10 pts)<br>2. Env. concerns of smallholder farmers, 3-4 pp (20 pts)<br>3. Policy brief on PES or REDD in tropical forests, 5-6 pp (70 pts)   | 100 points |
| Class participation<br>a. Co-leading discussion of one class (15 pts)<br>b. 'Eating the tropics' food diary (10 pts)<br>c. Small group Uganda work (10 pts)<br>d. Quality of participation in class discussions <i>Did you enhance the learning experience of your classmates?</i> (10 pts)<br>e. Attendance <i>Where you present to enhance the learning experience of your classmates?</i> (2 absences are ok) (5 pts)<br>f. Oral presentation of Policy Brief (10 pts) | 60 points  |

Total possible = 250 points

Graduate students will be graded as above except:

- they will write a ~2 paragraph answer to an extra essay question on the second and third tests. worth 10 pts each and based on one of the recommended readings. Thus for grad students, tests two and 3 are each worth 40 pts and the final grade is based on a total of 270 points.

Grad student grading policy cont.

- for the third writing assignment, M.Sc. students may choose to write a policy brief on a topic related to their thesis or their professional internship. PhD students can choose to write a longer paper (~8 pages) related to their dissertation (e.g. a literature review, methods section, etc.). This must be a new writing project, not a revision of something written previously.

## Class Schedule and Readings.

*Note: readings should be completed before the listed lecture date. REQ = Required reading.*

*REC: = Recommended for undergraduates, required for grads. Readings are available at Learn@UW.*

### Section I. Physical Geography Overview – Key Patterns Shaping Resources & Sustainability in the Tropics

Sep 8 Introduction of course and students. Perceptions of the humid tropical environment

Handout: Movie review assignment DUE 9/22.

Sep 13 Geography of the humid tropics. Climatic conditions and forest formations. Implications for species richness and above-ground carbon stocks.

Handout: Climate worksheet (review in class 9/22).

REQ: Forsyth, A. and K. Miyata (1984). "In the Realm of the Tropics", Tropical Nature. NY, Scribner, pp. 7-15.

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

Sep 15 Tropical forests, disturbance and biodiversity.

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REQ: Laurence, W. 2007. "Have we overstated the tropical biodiversity crisis?" Trends in Ecol & Evol. 22:65-69.

REC: Barlow, J. et al. 2007. Quantifying the biodiversity value of tropical primary, Secondary and plantation forests. PNAS, 104, 18555-18560.

Sep 20 Tropical soils. Guest lecture: Prof. Erika Marin-Spiotta

REQ: Vandermeer, J. & I. Perfecto. 2005. Farming on Tropical Forest soils. Chap 3 *Breakfast of Biodiversity*. IFDP, Oakland, CA.

REQ: Chazdon, R. L. 2008. Beyond deforestation: restoring forests and ecosystem services on degraded lands. Science 320:1458-1460. [*originally assigned for 9/15*]

Sep 22 Tropical wildlife and the quest for sustainable hunting.

REQ: Diamond, J. 1999. "Zebras, unhappy marriages and the Anna Karenina Principle", pp. 157-175 in Guns, Germs, and Steel. WW Norton & Company: NY.

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

REC: Parry, L., et al. 2009, Hunting for Sustainability in Tropical Secondary Forests. *Cons Bio*, 23: 1270–80.

Sep 27 Tropical wildlife – are we 'demonizing' the bushmeat trade?

Discussion leaders: S. Firoze, V. Malleshappa, M. Matteson

REQ: Brown, D. 2003. Bushmeat & poverty alleviation: implications for development policy  
Small group discussion.  
Review Climate worksheet in class.

Sep 29 TEST ONE

Section 2. Direct conservation strategies and place-based interventions

**Discussion leaders: S. Dyke, I. Polo Chavez**

Oct 4 The role of parks and reserves

REQ: Peres, C. 2005. Why we need megareserves in Amazonia. *Cons Biology*. 19:728-733.

REQ: Wittemyer, G, et al. 2008 "Accelerated human population growth at protected area edges." *Science* 321.5885: 123-126.

REC: **Naughton-Treves, L.**, Chapman, C. and J. Alix-Garcia. 2011. "Parks and Poverty: Lessons from a decade of forest loss and economic growth around Kibale National Park, Uganda". Proc of Natl Academy of Science. 108(34): 13919–13924.

Oct 6 Indigenous management of neotropical forests.

**Discussion leaders: B. Ederer and A. Ostermeier**

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

REQ: Nepstad D, et al. 2006. Inhibition of Amazon Deforestation and Fire by Parks and Indigenous Lands. *Cons Bio* 20: 65-73

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

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

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

Oct 11 Forest dependency by the rural poor

REQ: 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]

REC: 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.

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Oct. 13 The quest for sustainable logging.

REQ: streaming video. Natural Forest Management in Latin America. USAID

REQ: Putz, F.E., et al. 2012. "Sustaining conservation values in selectively logged tropical forests: the attained and the attainable." *Cons Letters* 5: 296-303.

Oct 18 Shifting cultivation and other forms of smallholder agriculture. Land Sparing and land sharing

**Discussion leaders: J. Sanchez**

READINGS:

REQ: Vandermeer and Perfecto, Chapt 1.

REQ: The Miracle in the Cerrado. *The Economist*.

REQ: Fischer et al. *Should Agricultural Policies Favor Land Sparing or Wildlife-Friendly Farming?*

REC: Phalan et al. *Reconciling Food Production and Biodiversity Conservation*

## Oct 25 and 27 Communities, wildlife and forests at Kibale National Park, Uganda

-Small group work, writing assignment on smallholder env. concerns, communicating with field guides in Uganda via WhatsApp.

READINGS: see per Kibale Assignment

Nov. 1 TEST TWO

### Section 3 International policy and macro economic forces shaping tropical forests and communities

Nov. 3 Defining 'poverty'. Is economic growth the best way to save biodiversity?. Guest: Prof Matt Turner, Geography.

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

REQ: The Economist.

Nov. 8 Does deforestation accelerate & then diminish with economic growth and urbanization?

*Discussion leader: A. De Oliveira Brandao*

REQ: Rudel, T.K., et al. 2005. "Forest transitions: towards a global understanding of land use change." *Global Environmental Change* 15: 23-31.

REQ: Geist, H.J. & EF Lambin. 2002. Proximate causes and underlying driving forces of tropical deforestation. *BioScience* 52, 143-150

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

Nov. 10 Emerging infectious diseases in biodiversity 'hotspots' Guest: Tony Goldberg, DVM, PhD.

*Discussion leaders: E. Jove-Edens*

REQ: Wolf et al. 2005. "Bushmeat hunting, deforestation and prediction of zoonotic disease outbreaks" vol 11(12):1822-26.

REQ; Goldberg, T. et al. "Exploring connections among human health, animal health and landscape dynamics in Western Uganda. Chap 31. From *New Directions in Conservation Medicine*. Eds. Aguirre, A. et al. Oxford Press.

REC: Paige, S. et al. Beyond bushmeat: Animal contact, Injury and Zoonotic Disease risk in Western Uganda". 2014. *EcoHealth*. 534-543.

Nov. 15 Neoliberal approaches to conservation. Paying for Ecosystem Services

*Discussion leader: A. Marvin*

REQ: Ricketts, Taylor H., et al. "Indigenous lands, protected areas, and slowing climate change." *PLoS Biol* 8.3 (2010): e1000331.

REQ: Wunder, Sven. "Revisiting the concept of payments for environmental services." *Ecological Economics* 117 (2015): 234-243.

OPTIONAL: Victor, D. 11/11/16. What a Trump Win Means For the Global Climate Fight. *Yale Environment* 360

Handout: Food diary. Eating the tropics? Due Nov 29

Nov 17 Efforts to control deforestation due to commodity agriculture – case of oil palm and soy GUEST: Prof. Holly Gibbs, Dept of Geography.

REQ: Gibbs, H. K., et al. "Brazil's soy moratorium." *Science* 347.6220 (2015): 377-378.

Nov 22 Group oral presentations on Kibale Case study.

Kibale Paper due.

Nov 24 Thanksgiving break. No class.

Nov. 29 The quest for good forest governance.

*Discussion leader: P. Premachandra and R. Brown-Wood*

REQ: 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.

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

REQ: Goodman. 2009.

Dec 1 Ecotourism

*Discussion leaders: A. Gleason and R. Schmidt*

READINGS: TBA.

Dec 6 TEST THREE

Dec 8 Tips on Policy briefs and Small group discussion.

Dec 13 Student presentations of policy briefs

Dec 15 Student presentations of policy briefs