

Anthropology 331

Historical Ecology

Spring 2020

PROFESSOR:

Dr. Clark Erickson
435 University Museum
cerickso@sas.upenn.edu
215-898-2282

DESCRIPTION: Historical Ecology. Undergraduate Seminar Course; 1 Unit.

The relationship between the human beings and the environment is a complex, dynamic, and contentious. Historical ecology addresses this relationship over the long term through the physical signatures and patterns of past human activity that are embedded in landscape. In some preindustrial cases, humans caused environmental degradation and societal collapse. In other situations, people transformed, created, and managed resources for sustainable lifeways over centuries and increased biodiversity. This seminar will examine the Myth of the Ecologically Noble Savage, the Myth of the Pristine Environment, domestication of landscape, biocultural diversity, the alliance between native peoples and Green Politics, and the contribution of past societies to appropriate technology, sustainable development, and biodiversity through the historical, ethnographic, and archaeological record.

OFFICE HOURS:

Mondays 3:00 – 5:00pm or by appointment (email). My office is Penn Museum 435 (Academic Wing). I will be available during office hours, after class, or by appointment if you have any questions regarding the course material, the Department's Major in Anthropology, or Archaeology as a career. You can also reach me by email (cerickso@sas.upenn.edu).

ANTHROPOLOGY 331 HOMEPAGE: A Canvas website for this course can be found on the Penn Website as ANTH 331 *Historical Ecology*. This homepage will include on-line versions of the course description, syllabus, and handouts; updates on reading assignments and lectures; recent news items about historical ecology, native peoples, and the environment; announcements about on-campus seminars and lectures related to the seminar topics; and links to relevant web sites. I recommend saving the address as a "bookmark" and regularly checking the site for new and updated information.

MAPS & IMAGERY:

Google Earth Pro© (3D digital world maps at high resolution). Download and install the free version of software program on your computer to use for finding and viewing Andean

archaeological sites from space and on the ground. You can download the free software and find information about the program at <http://earth.google.com/>

Bing Maps© (Digital world maps at high resolution). You can view this imagery online at <https://www.bing.com/maps> (click Aerial box on the upper right corner for color satellite imagery).

CLASS MEETINGS: Tuesday and Thursdays 3:00-4:20pm, Penn Museum 330 (Academic Wing). On certain days, we will meet in the Collections Study Room of the University of Pennsylvania Museum of Archaeology and Anthropology to view and study Amazonian artifacts.

REQUIRED ON-LINE READINGS:

Anthropology 331 Historical Ecology Canvas Website: a collection of required readings will be available as PDF format digital files. You will need Adobe Reader© software to view the files. I recommend updating to the most recent version of Adobe Reader©. See the Penn Computing for the free software.

COURSE CONTENT:

This course focuses on the relationship between past and present humans and the environment, with a focus native peoples and their activities. The course has no prerequisites. I will begin most classes with an orientation lecture and/or case study introducing the topic. At the beginning or end of the lecture, considerable time will be devoted to student discussion of the lecture and reading materials. Student participation in discussions is required and student must be prepared by having read required readings and taken notes. I may assign rotating individuals or groups of students to lead the discussions.

PowerPoint slides will be used to illustrate concepts and case studies presented in lecture and several films will also be shown as supplementary material. I generally do not stop the lecture to spell terminology, although you will be provided with handouts including lists of important terminology. Questions and comments are encouraged and may be asked before, during, or after lectures. I will also make use of artifacts from the extensive South American collections of the University of Pennsylvania Museum of Archaeology and Anthropology (Penn Museum). On some days, we may meet at the Penn Museum collection rooms instead of in our regular classroom.

REQUIRED READINGS:

A reading syllabus is provided below and on the Canvas website. This syllabus may be periodically updated throughout the semester (using the Announcement Page on Canvas for the class). You must read the required readings before the class meeting and be prepared to discuss the required readings for each class. In addition to detailed class notes, you must take detailed

notes while doing the readings. These notes will be valuable for in-class discussions and preparing your papers. I may require detailed notes to be turned in before class if I find that students unprepared for discussion.

GRADING:

Grading is based on three writing assignments (three 10 page papers) and class participation in readings discussions. I will discuss the writing assignment, guidelines for preparing your paper, and deadlines in detail later in the semester. I highly recommend that you exchange drafts of your papers with fellow students for editorial comments before submitting draft and final versions. Students will have the opportunity to rewrite their papers for consideration of a higher grade if drafts are received by the due dates (to be announced). Students will be responsible for material presented in the lecture, readings, slide presentations, seminar discussions, artifact presentations, tours of the Penn Museum collections, and films. The draft and final version paper due dates will be announced).

Writing Assignments: I will discuss each writing assignment in detail later in the semester.

Assignment 1: see Handout: date to be announced (30% of final grade)

Assignment 2: see Handout: date to be announced (30% of final grade)

Assignment 3: Object Study; see Handout: date to be announced (30% of final grade)

Participation in the seminar discussions (10% of final grade)

Grading Scale:

A: 95-100

B: 88-94

C: 81-87

D: 74-80

F: ≤ 73

ATTENDANCE:

Students are expected to show up for all class meetings (except religious holidays and officially excused absences). Missing a class or two could negatively affect your grade. Please get the notes from other students if you have to miss a class meeting. The professor will not provide copies of lecture notes or *PowerPoint* slide presentations to students.

Laptops may be used to take notes and refer to readings under discussion during class. You can use laptops to take notes in class, but the use of laptops, tablets, or phones for other purposes including email, text messaging, Facebook, Twitter, web surfing, and other non-scholarly social

media activities is prohibited. Turn off all cell phones before class starts.

ACADEMIC INTEGRITY:

Students should be familiar with and respect the Academic Code of Integrity of the University of Pennsylvania. Any cheating or plagiarism in this course will be dealt with severely. Please see the Penn websites below for definitions of what constitutes plagiarism and cheating and how to avoid them:

Academic Code of Integrity:

<http://www.vpul.upenn.edu/osl/acadint.html>

Plagiarism - What it is and how to avoid it:

<http://gethelp.library.upenn.edu/guides/engineering/ee/plagiarize.html>

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Professor Clark L. Erickson

SUMMARY SYLLABUS
(Tentative and subject to change)

- January 16: Introduction
- January 21: The Cofán: an Amazonian Native People, Sovereignty, Management, and Development.
- January 23: Defining Biodiversity & Ecosystem Services
- January 28: Linguistic, Cultural, and Biological Diversity
- January 30: Environmental Determinism, Cultural Ecology, Environmental Anthropology, and Evolutionary Ecology
- February 4: Succession, Disturbance, and the New Ecology
- February 6: The Myth of the Pristine Landscape; Degradation vs. Enhancement of the Environment: How is it measured? At what scale? Against what benchmark?
- February 11: Professor doing fieldwork off campus; no class
- February 13: Professor doing fieldwork off campus; no class
- February 18: Historical Ecology and Landscapes
- February 20: Domestication of Landscape
- February 25: What Do Native People Think and Know about the Environment? What can we Learn?
- February 27: The Myth of the Noble Savage: Native Americans and Conservation
- March 3: The Impact of Hunting by Indigenous Peoples

- March 5 Extinction of Megafauna of the Ice Age in North America
- March 10: SPRING BREAK
- March 12: SPRING BREAK
- March 17: Environmental Impact of Humans on Pacific Islands
- March 19: Cooking the Earth: People, Fire and Management
- March 24: The Domestication of Plants and Animals I
- March 26: The Domestication of Plants and Animals II
- March 31: Native Agroforestry in the Tropics I
- April 2: Native Agroforestry in the Tropics II
- April 7: Pre-Columbian Transformation of the Amazon
- April 9: Amazonian Dark Earth
- April 14: The Andes: A Built Environment
- April 16: The Signature of Settled Life and Farming on the African Landscape
- April 21: Cities in the Tropical Forest: The Maya
- April 23: Society for American Archaeology Meetings (**class cancelled**) Student independent work on object study
- April 28: The Jungle as Pharmaceutical Cornucopia: Shamanism, Ethnobotany, Bioprospecting, and Intellectual Property Rights

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READING SYLLABUS

(Tentative and subject to change)

January 16: Introduction

January 21: The Cofán: an Amazonian Native People, Sovereignty, Management, and Development.

Chapin, Mac 2004 A Challenge to Conservationists. *World Watch* November/December 2004 pp. 17-31.

World Watch 2005 From Readers (responses to “A Challenge to Conservationists” by Mac Chapin). *World Watch* January/February 2005 pp. 5-20 & March/April pp. 7-12. **[skim only]**

Cepek, Michael L. 2011 Foucault in the Forest: Questioning Environmentality in Amazonia. *American Ethnologist* 38(3):501-515.

OPTIONAL

Cepek, Michael L. 2008 Essential Commitments: Identity and the Politics of Cofán Conservation. *Journal of Latin American and Caribbean Anthropology* 13(1):1-27.

Francine Strickwerda and Laurel Spellman Smith 2014 *Oil and Water*. Corporation for Public Broadcasting, Washington DC [78-minute documentary]
<http://www.oilandwaterdocumentary.com/>

January 23: Defining Biodiversity & Ecosystem Services

Raven, Peter 1994 Defining Biodiversity. *Nature Conservancy* 44(1):11-15.

Janzen, Daniel H 1997 Wildland Biodiversity Management in the Tropics. In *Biodiversity II: Understanding and Protecting our Biological Resources*, Edited by Marjorie Reaka-Kudla, Don Wilson, and Edward O. Wilson, pp. 411-431. Joseph Henry Press, Washington D.C.

Kricher, John 2017 Chapter 9: Why are there so many Species? In *The New Neotropical*

Companion. pp. 134-154. Princeton University Press, Princeton.

OPTIONAL:

Dirzo, Rodolfo and Peter H. Raven 2003 Global State of Biodiversity and Loss. *Annual Review of Environment and Resources* 28:137-167.

Millennium Ecosystem Assessment 2005 *Ecosystems and Human Well-being: Biodiversity Synthesis*. World Resources Institute, Washington, DC.

Sutton, Mark and E. N. Anderson 2010 Chapter 2: Fundamentals of Ecology. *Introduction to Cultural Ecology* 2nd Edition. Altamira, Walnut Creek. pp. 35-57. [good intro to basic concepts of ecology]

January 28: Linguistic, Cultural, & Biological Diversity

Mann, Charles C. 1991 Extinction: Are Ecologists Crying Wolf? *Science* 253:736-738. Too old?

Maffi, Luisa 2005 Linguistic, Cultural, and Biological Diversity. *Annual Review of Anthropology* 29:599–617.

OPTIONAL

Gorenfloa, L. J., Suzanne Romaine, Russell A. Mittermeier, and Kristen Walker-Painemillad 2012 Co-occurrence of linguistic and biological diversity in biodiversity hotspots and high biodiversity wilderness areas. *PNAS* 109(21): 8032-8037. Too much?

Mora, Camilo 2011 How Many Species Are There on Earth and in the Ocean? *PLoS Biology* 9(8):| e1001127.

January 30: Environmental Determinism, Cultural Ecology, Environmental Anthropology, & Evolutionary Ecology

Brondízio, Eduardo, Ryan T. Adams, Stefano Fiorini 2016 History and Scope of Environmental Anthropology. In *Routledge Handbook of Environmental Anthropology*. Edited by Helen Kopnina, Eleanor Shoreman-Ouimet, Routledge.

Sutton, Mark and E. N. Anderson 2010 Chapter 1: Introduction. pp. 1-33. *Introduction to Cultural Ecology* 2nd Edition. Altamira, Walnut Creek. [SKIM READ only pp. 35-57]

Sutton, Mark and E. N. Anderson 2010 Chapter 4: Cultural Ecology pp. 91-132. *Introduction to Cultural Ecology* 2nd Edition. Altamira, Walnut Creek. [READ pp. 91-132]

OPTIONAL

Oliver-Smith, Anthony 2016 Adaptation, Vulnerability, and Resilience. In *Routledge Handbook of Environmental Anthropology*. Edited by Helen Kopnina, Eleanor Shoreman-Ouimet, Routledge.

February 4: Succession, Disturbance, & the New Ecology

Kricher, John 2017 Chapter 7: If a Tree Falls...Rain Forest Disturbance. In *The New Neotropical Companion*. Princeton University Press, Princeton. [READ pp. 95-106]

Botkin, Daniel 1990 Chapter 1. In *Discordant Harmonies: A New Ecology for the Twenty-First Century*. Oxford University Press, Oxford, pp. 3-13.

Zimmerer, Karl and Kenneth Young 1998 Introduction: The Geographical Nature of Landscape Change. In *Nature's Geography: New Lessons for Conservation in Developing Countries*. Edited by K. Zimmerer and K. Young, University of Wisconsin Press, Madison, pp. 3-34. . **[Read 3-22 only]**

Blumler, Mark A. 1998 Biogeography of Land-Use Impacts in the Near East. In *Nature's Geography: New Lessons for Conservation in Developing Countries*. Edited by K. Zimmerer and K. Young, University of Wisconsin Press, Madison, **pp. 220-223 only** [Clements, Succession Theory]

OPTIONAL

Connell, Joseph 1978 Diversity in Tropical Rain Forests and Coral Reefs. *Science* 199(4335):1302-1310.

February 6: The Myth of the Pristine Landscape; Degradation vs. Enhancement of the Environment: How is it Measured? At what scale? Against what benchmark?

Mann, Charles 2002 1491: Before it became the New World, the Western Hemisphere was vastly more populous and sophisticated than has been thought. *Atlantic Monthly* March, pp. 41-53.

Denevan, William M. 1992 The Pristine Myth: The landscape of the Americas in 1492. *Annals of the Association of American Geographers* 82:369-385.

Balee 2013 Landscape Transformations (overview) & Chapter 2: An Estimate of Anthropogenesis. In *Cultural Forests of The Amazon: A Historical Ecology of People and Their Landscapes*. University of Alabama Press, Tuscaloosa.
[originally published as: Balée, William 1989 The Culture of Amazonian forests. In *Natural Resource Management by Indigenous and Folk Societies in Amazonia*. Edited by Darrell Posey

and William Balée. *Advances in Economic Botany* 7. The New York Botanical Garden, New York, pp. 1-21.]

OPTIONAL

Stahl, Peter W. 1996 Holocene Biodiversity: An Archaeological Perspective from the Americas. *Annual Review of Anthropology* 25:105-126.

Denevan, William M. 2011 The “pristine myth” revisited. *The Geographical Review* 101(4): 576–91.

Politis, Gustavo 1996 Moving to Produce: Nukak Mobility and Settlement Patterns in Amazonia. *World Archaeology* 27(3): 492-511. (additional reading about the case study presented in class)

Politis, Gustavo 2001 Foragers of the Amazon: The Last Survivors or the First to Succeed? In: *Unknown Amazon, Culture in Nature in Ancient Brazil*, C. McEwan, C. Barreto and E. Neves, eds. London: British Museum Press, pp. 26-49. (additional reading about the case study presented in class)

February 11: Professor doing fieldwork off campus; no class

February 13: Professor doing fieldwork off campus; no class

February 18: Historical Ecology & Landscapes

Crumley, C.L. 1994 Historical ecology: a multidimensional ecological orientation. In *Historical ecology: cultural knowledge and changing landscapes*, edited by Carole Crumley, pp. 1–16. School of American Research Press, Santa Fe.

Knapp, Bernard, and Wendy Ashmore 1999 Archaeological Landscapes: Constructed, Conceptualized, Ideational. In *Archaeologies of Landscape: Contemporary Perspectives*, edited by Wendy Ashmore and Bernard Knapp, pp. 1-30. Blackwell, Oxford.

Balée, William and Clark Erickson 2006 Time, Complexity, and Historical Ecology. In *Time and Complexity in Historical Ecology: Studies from the Neotropics*. edited by William Balée and Clark Erickson, pp. 1-17. Columbia University Press, New York, [read pp. 1-6 (skim 7-18)].

Balée, William 2006 The Research Program of Historical Ecology. *Annual Review of Anthropology* 35: 75-98

February 20: Domestication of Landscape

Erickson, Clark 2006 The Domesticated Landscapes of the Bolivian Amazon. In *Time and Complexity in Historical Ecology: Studies in the Neotropical Lowlands*, edited by William Balée

and Clark Erickson, pp. 235-278. Columbia University Press, New York. [read pp. 235-247 & 262-267 and relevant endnotes; skim the read for future lecture]

Clement, Charles 2014 Landscape Domestication and Archaeology. In *Encyclopedia of Global Archaeology*, edited by C. Smith, pp. 4388-4394. Springer, New York.

February 25: What Do Native People Think and Know about the Environment? What can we Learn?

Posey, Darrell A. 1992 Interpreting and Applying the “Reality” of Indigenous Concepts: What is Necessary to Learn from Natives? In *Conservation of Neotropical Forests: Working from Traditional Resource Use*. edited by Kent Redford and Christine Padoch, Columbia University Press, New York, pp. 20-34.

Anderson, E. N. 2016 Ethnobiology and the New Environmental Anthropology. In *Routledge Handbook of Environmental Anthropology*. edited by Helen Kopnina, Eleanor Shoreman-Ouimet, Routledge.

Reichel-Dolmatoff, Gerardo 1976 Cosmology as Ecological Analysis: A View from the Rain Forest *Man* II:307-318.

OPTIONAL:

Salmón, Enrique 2000 Kincentric Ecology: Indigenous Perceptions of the Human-Nature Relationship. *Ecological Applications* 10(5):1327-1332

Nadasdy, Paul 2005 Transcending the Debate over the Ecologically Noble Indian: Indigenous Peoples and Environmentalism. *Ethnohistory* 52(2):291-331. excellent article but long and dense; focus on some parts?

February 27: The Myth of the Ecologically Noble Savage: Native Americans and Conservation

Redford, Kent H. 1991 The Ecologically Noble Savage. *Cultural Survival Quarterly* 15(1):46-48.

Stearman, Allyn MacLean 2000 A Pound of Flesh: Social Change and Modernization as Factors in Hunting Sustainability among Neotropical Indigenous Societies. In *Hunting for Sustainability in Tropical Forests*. Edited by John Robinson and Elizabeth Bennett, Columbia University Press, New York, pp. 233-250.

Hames, Raymond 2007 The Ecologically Noble Savage Debate. *Annual Review of Anthropology* 36:177-190.

OPTIONAL

Hayashida, Frances 2005 Archaeology, Ecological History, and Conservation. *Annual Review of Anthropology* 34: 43–65.

March 3: The Impact of Hunting by Indigenous People

Alvard, Michael S. 1994 Conservation by Native Peoples: Prey Choice in a Depleted Habitat. *Human Nature* 5(2):127-154.

Smith, Eric and Mark Wishnie 2000 Conservation and Subsistence in Small-Scale Societies. *Annual Review of Anthropology* 29:493–524.

Shepard Jr., Glenn H., Taal Levi, Eduardo Goes Neves, Carlos A. Peres, and Douglas W. Yu 2013 Hunting in Ancient and Modern Amazonia: Rethinking Sustainability. *American Anthropologist* 114(4):652–667.

OPTIONAL

Alvard, Michael 1995 Intraspecific Prey Choice by Amazonian Hunters. *Current Anthropology* 36(5):789-818.

Especially the Comments and Reply at end by Michael Alvard, Janis B. Alcorn, Richard E. Bodmer, Raymond Hames, Kim Hill, Jean Hudson, R. Lee Lyman, Rajindra K. Puri, Eric A. Smith, & Allyn Maclean Stearman.

Nadasdy, Paul 2005 Transcending the Debate over the Ecologically Noble Indian: Indigenous Peoples and Environmentalism. *Ethnohistory* 52(2):291-331.

Sutton, Mark and E. N. Anderson 2010 Chapter 3: Human Biological Ecology [Evolutionary Ecology] pp. 73-88. *Introduction to Cultural Ecology* 2nd Edition. Altamira, Walnut Creek. [READ pp. 73-88]

March 5 Extinction of Megafauna of the Ice Age in North America

Continue discussion of Alvard 1994 and Shepard et al. 2013

Meltzer, David J. 2015 Pleistocene Overkill and North American Mammalian Extinctions, *Annual Review of Anthropology* 44:33–53.

OPTIONAL

Stahl, Peter W. 2008. The contributions of zooarchaeology to historical ecology in the Neotropics. *Quaternary International* 180: 5–16. More relevant: discussions of HG impacts, overkill, extinction, of animals etc.

March 10: SPRING BREAK

March 12: SPRING BREAK

March 17: Environmental Impact of Humans on Pacific Islands.

Diamond, Jared 2005 Chapter 2: Twilight at Easter. In *Collapse: How Societies Choose to Fail or Succeed*. Viking, New York, pp. 79-119.

Hunt, Terry L. 2006 Rethinking the Fall of Easter Island. *American Scientist* 94:412-419.

Bahn, Paul 2011 Head to Head. *Nature* 476:150–151.

Stevenson, Christopher M., Cedric O. Puleston, Peter M. Vitousek, Oliver A. Chadwick, Sonia Haa, and Thegn N. Ladefoged
2015 Variation in Rapa Nui (Easter Island) land use indicates production and population peaks prior to European contact. *PNAS* 112(4):1025–1030.

March 19: Cooking the Earth: Fire Histories and People

Pyne, Stephen J. 1998 Forged in Fire: History, Land, and Anthropogenic Fire. In *Advances in Historical Ecology*. Edited by William Balée, Columbia University Press, New York, pp. 62-103.

Ruddiman, William 2013 The Anthropocene. *Annual Review of Earth and Planetary Sciences* 41:45–68.

Kimmerer, Robin and Frank Kanawha Lake 2001 The Role of Indigenous Burning in Land Management. *Journal of Forestry* November 36-41.

March 24: The Domestication of Plants and Animals I

Pollan, Michael 2001 I, Pollinator. *New York Times Magazine* (April 22, 2001), pp. 21-22.

Pollan, Michael 1989 Weeds Are Us. *New York Times Magazine*, November 5, 1989.

Sutton, Mark and E. N. Anderson 2014 Chapter 6: Origins of Food Production. pp. 1-15. *Introduction to Cultural Ecology* 3rd Edition. Altamira, Walnut Creek.

March 26: The Domestication of Plants and Animals II

Hastorf, Christine 1998 The Cultural Life of Early Domestic Plant Use. *Antiquity* 72:773-782.

Oliver, Jose 2008 The Archaeology of Agriculture in Ancient Amazonia. In *Handbook of South American Archaeology*. Edited by Helaine Silverman, and William Isbell, Springer, New York, pp. 185-216.

OPTIONAL

Iriarte, José 2007 New perspectives on plant domestication and the development of agriculture in the New World. In *Rethinking Agriculture: Archaeological and Ethnoarchaeological Perspectives*. Edited by Tim Denham, José Iriarte and Luc Vrydaghs, pp. 167-188. Left Coast Press, Walnut Creek, CA.

March 31: Native Agroforestry in the Tropics I

Peters, Charles 2000 Precolumbian Silviculture and Indigenous Management of Neotropical Forests. In *Imperfect Balance: Landscape Transformations in the Precolumbian Americas*. Edited by David Lentz, Columbia University Press, New York, pp. 203-223.

Sutton, Mark and E. N. Anderson 2010 Chapter 7: Horticulture [Slash and Burn Agriculture pp. 200-208. *Introduction to Cultural Ecology* 2nd Edition. Altamira, Walnut Creek. [READ pp. 73-88]

OPTIONAL

Carneiro, Robert L. 1988 Indians of the Amazon Forests. In *People of the Tropical Rain Forest*. Edited by Julie Sloan Denslow and Christine Padoch, University of California Press, Berkeley, pp. 73-86.

Denevan, W. M., and Padoch, C. 1987 Swidden-fallow agroforestry in the Peruvian Amazon. *Advances in Economic Botany* 5:1-107.

April 2: Native Agroforestry in the Tropics II

Levis, Carolina, Bernardo M. Flores, Priscila A. Moreira, Bruno G. Luize, Rubana P. Alves, Juliano Franco-Moraes, Juliana Lins, Evelien Konings, Marielos Peña-Claros, Frans Bongers, Flavia R. C. Costa, and Charles R. Clement 2018 How People Domesticated Amazonian Forests. *Frontiers in Ecology and Evolution* 5:171.

Shepard, Glen and Henri Ramirez 2011 “Made in Brazil”: Human Dispersal of the Brazil Nut (*Bertholletia excelsa*, Lecythidaceae) in Ancient Amazonia. *Economic Botany* 65(1):44-65.

April 7: Pre-Columbian Transformation of the Amazon

Erickson, Clark L. 2008 Amazonia: The Historical Ecology of a Domesticated Landscape. In *Handbook of South American Archaeology*. Edited by Helaine Silverman and William Isbell, Springer, New York, pp. 157-184.

McMichael C. H., D. R. Piperno, M. B. Bush, A. R. Zimmerman, M. F. Raczka, L. C. Lobato 2012 Sparse Pre- Columbian human habitation in western Amazonia. *Science* 336: 1429–1431. [skim]

Stahl, Peter 2015 Interpreting interfluvial landscape transformations in the pre-Columbian Amazon. *The Holocene* 25(10): 1598-1603. [skim]

OPTIONAL:

Denevan, William M. 2006 Pre-European Forest Cultivation in Amazonia. In *Time and Complexity in Historical Ecology: Studies in the Neotropical Lowlands*. Edited by William Balée and Clark Erickson, Columbia University Press, New York, pp. 153-163.

Erickson, Clark L. 2006 The Domesticated Landscapes of the Bolivian Amazon. In *Time and Complexity in Historical Ecology: Studies in the Neotropical Lowlands*. Edited by William Balée and Clark Erickson, Columbia University Press, New York, pp. 235-278 [sections on the landscapes of the Bolivian Amazon].

Erickson, Clark 2000 An Artificial Landscape-Scale Fishery in the Bolivian Amazon. *Nature* 408:190-193.

April 9: Amazonian Dark Earth

Mann, Charles 2002 The Real Dirt on Rainforest Fertility. *Science* 297:920-923.

Heckenberger, Michael 2009 Lost Cities of the Amazon. *Scientific American* 301(4):64-71.

OPTIONAL:

Certini, Giacomo and Riccardo Scalenghe 2011 Anthropogenic soils are the golden spikes for the Anthropocene. *The Holocene* 21(8):1269– 1274.

Mann, Charles 2000 The Good Earth: Did People Improve the Amazon Basin? *Science* 287(5454):788.

Erickson, Clark 2003 Historical Ecology and Future Explorations. In *Amazonian Dark Earths: Origin, Properties, Management*, Edited by Johannes Lehmann, Dirse C. Kern, Bruno Glaser, and William I. Woods editors Kluwer, Dordrecht, pp. 455-500.

April 14: The Andes: A Built Environment; Applied Archaeology

Erickson, Clark L. 2000 The Lake Titicaca Basin: A Pre-Columbian Built Landscape. In *Imperfect Balance: Landscape Transformations in the Precolumbian Americas*. Edited by David Lentz, Columbia University Press, New York, pp. 311-356.

OPTIONAL

Renard, D., J. Iriarte, J. J. Birk, S. Rostain, B. Glaser and D. McKey. 2012 Ecological engineers ahead of their time: The functioning of pre-Columbian Raised Rield Agriculture Sustainability and its potential Contributions to Today. *Ecological Engineering* 45: 30-44

Erickson, Clark L. 2003 Agricultural Landscapes as World Heritage: Raised Field Agriculture in Bolivia and Peru. In *Managing Change: Sustainable Approaches to the Conservation of the Built Environment*. Edited by Jeanne-Marie Teutonico and Frank Matero, Getty Conservation Institute in collaboration with US/ICOMOS, Oxford University Press, Oxford, pp. 181-204.

April 16: The Signature of Settled Life and Farming on the African Landscape

TEXTBOOK:

Redman: Chapter 5 (skim; you already read this for an earlier lecture/discussion) reread/skim pages 82-96 (Soils); page 101 (Erosion), pages 110-117;

Stocking, Michael 1996 Soil Erosion: Breaking New Ground. In *The Lie of the Land: Challenging Received Wisdom on the African Environment*, Edited by Melissa Leach and Robin Mearns, International African Institute, London, pp. 140-154.

Fairhead, James and Melissa Leach 1996 Thinking the Forest-Savanna Mosaic: Colonial Science and its Relics in West Africa. In *The Lie of the Land: Challenging Received Wisdom on the African Environment*. Edited by Melissa Leach and Robin Mearns, International African Institute, London, pp. 105-121

Show the documentary film

OPTIONAL:

Lansing, J. Stephen and James N. Kremer 1993 Emergent Properties of Balinese Water Temple Networks: Coadaptation on a Rugged Fitness Landscape. *American Anthropologist* 95(1):97-114.

April 21: Cities in the Tropical Forest: the Maya

Diamond, Jared 2008 The Maya Collapses. In *Reading Archaeology: An Introduction*. Edited by

Robert J. Muckle, Broadview Press, pp. 347-361.

Sabloff, Jeremy 2008 Chapter 2: Lessons from the Past? In *Archaeology Matters: Action Archaeology in the Modern World*. Left Coast Press, Walnut Creek, pp. 33-45.

Harrison, Peter 2001 Maya Agriculture at Tikal. In *Maya: Divine Kings of the Rain Forest*. Edited by Nicolai Grube. Könemann, Cologne/Oxford, Pp. 218-231. (plus Marta Grube on Maize and Food, 4 pages).

OPTIONAL:

Scarborough, Vernon L. 2003 Chapter 8: Archaeological Case Studies—New World. In *The Flow of Power: Ancient Water Systems and Landscapes*. School of American Research Press, Santa Fe, pp. 107-125.

April 23: **Society for American Archaeology Meetings (class cancelled)** Student independent work on Object study.

April 28: **The Jungle as Pharmaceutical Cornucopia; Shamanism, Ethnobotany, Biosprospecting, Intellectual Property Rights.**

Balick, Michael and Robert Mendelsohn 1992 Assessing the Economic Value of Traditional Medicines in the Tropical Rain Forests. *Conservation Biology* 6(1):128-130.

Balick, Michael, Rosita Arvigo, Leopoldo Romero 1994 The Development of an Ethnobotanical Forest in Belize: Its Role in the Preservation of Biological and Cultural Diversity. *Conservation Biology* 8(1): 316-317.

Greaves, Tom 1994 IPA: A Current Survey. In *Intellectual Property Rights for Indigenous Peoples, A Sourcebook*. Edited by Tom Greaves, Society for Applied Anthropology, Oklahoma, pp. 3-16.

Frazer, Jim 2004 Pharmaceutical El Dorado: Fact or Fancy? *South American Explorer* 75:16-22.

OPTIONAL:

King, S. R. 1994 Establishing Reciprocity: Biodiversity, Conservation, and New Models for Cooperation between Forest-Dwelling People and the Pharmaceutical Industry. In *Intellectual Property Rights for Indigenous Peoples, A Sourcebook*. Edited by Tom Greaves, Society for Applied Anthropology, Oklahoma, pp. 69-82.