

ENVIRONMENTAL ARCHAEOLOGY

ANG 6120C Sec 3275/ANT 4147C Sec 3277

Dr. Kitty F. Emery

office hours: by appointment

114 Dickinson Hall, FLMNH, 273-1919

kemery@flmnh.ufl.edu

www.flmnh.ufl.edu/envarch and www.environmental-archaeology.com

Spring 2009

T 4-6 10:40-1:40

TUR B357

COURSE DESCRIPTION

Environmental archaeology is the study of past human interactions with the natural world—a world that encompasses plants, animals, landscapes, climate, and more. We will examine the methods used to reconstruct this complex ancient relationship through lectures, case-studies, hands-on labs, and class discussions. Course is open to graduate and undergraduate students – requirements differ slightly.

COURSE REQUIREMENTS

(note that grade allocations differ for graduate students (G) and undergraduates (U))

READINGS:

*Dincauze, D. 2000. *Environmental Archaeology: Principles and Practice*. Cambridge University Press.

Lab materials and additional required readings will be made available as necessary through the semester. Most will be available as pdfs downloadable from the FLMNH ftp site

(<ftp://flmnh.ufl.edu/Projects/EnvironmentalArchaeology/ClassReadingsEnvArch>). These must be read prior to class!!

GRADUATE LECTURE PRESENTATIONS (G20%): Environmental archaeology is a broad, interdisciplinary topic with various subfields. Each graduate student will be responsible for presenting 2 lectures on different fields of study within the science. (Undergraduates are exempt from this requirement). Lectures will be approximately 30 minutes. Lecture notes must be e-mailed to me by 10 am the day before the class.

CASE STUDY PRESENTATIONS (U20%): Each undergraduate student will be responsible for choosing and presenting a case study from the recent literature. (Graduates are exempt from this requirement but will be asked to guide undergraduate choices). Case study notes must be e-mailed to me by 10 am the day before the class.

DEBATES (G20%; U30%): Environmental Archaeology provides us with a wide range of intriguing complexities and controversies on an ever changing set of themes. For each of the topics covered, you will debate a central controversy using evidence and arguments gleaned from the literature. The debates will take significant advance preparation.

FINAL PAPERS AND PRESENTATIONS (G40%; U30%): Each student will prepare a paper presenting evidence for and against human impact on the ancient world – choose any geographic area (e.g. Africa, Central America, Great Britain, SE USA, etc.) or any data type (e.g. zooarchaeological remains, microbotanical remains, soils and sediments, aDNA, etc.). Undergraduate papers should be 10 – 15 pages with a minimum 2 single-spaced pages of bibliography. Graduate papers should be at least 25 pages with an extensive bibliography. Web citations are permitted but should not represent more than 10% of your references, must be properly cited, and should be used with great caution (no wikipedia).

You will also be responsible for presenting the compiled evidence for your research paper to the class (this will represent a small proportion of your total grade for this work). These presentations will be 15-20 minutes long and should be accompanied by a list of evidence, arguments, and citations. The data from all research projects will be evaluated following the presentations.

PARTICIPATION (G20%; U20%): This is a highly interactive class that incorporates hands-on experience, class discussions, lectures and tours. Your attendance and enthusiastic participation is essential. You are expected to attend every class, to do all assigned readings before each class, and to participate in all activities. In addition, graduate students are expected and advised to offer some hours of laboratory assistance at the FLMNH Environmental Archaeology laboratory on a project that will be of assistance to their future research.

COURSE SCHEDULE

- Weeks 1-2 (Jan 6-13) Introducing Environmental Archaeology
Required Readings: Dincauze: Chapters 1-2, p. 1-35
Recommended Reading: Dincauze: Chapters 3-4 p. 36-79 (do read these chapters at some point)
Case Studies: Butzer, 1982, English Heritage 2002, Evans 2003, Evans and O'Connor 1999, Hardesty and Fowler 2001, O'Connor 2001, Reitz, Newsom, Scudder 1996, Wilkinson and Stevens 2003
- Weeks 3-4 (Jan 20-27) Zooarchaeology
Required Readings: Dincauze: Chapters 15-17, p. 411-488
Recommended Readings: Reitz and Wing 2007
Jan 20 Lecture (Emery), Case study (Emery)
Jan 27 Lab [Lab Reading: TBA] / DEBATE
- Week 5-6 (Feb 3-10) Archaeobotany
Required Readings: Dincauze: Chapters 13-14, p. 329-402; Wilkinson and Stevens Sec 3, p. 175-180
Recommended Readings: Pearsall 2000, Others TBA
Feb 3 Lecture Archaeobotany (G STUDENT 1)
Case studies Macrobotany/Microbotany (U STUDENTS 1-2)
Feb 10 Lab: [Lab Reading: TBA] / DEBATE
- Weeks 7-8 (Feb 17-24) Geoarchaeology
Required Readings: Dincauze: chapters 7-9, p. 137-187 and p. 193-226; chapter 11, p. 255-290
Recommended Readings: Rapp and Hill 1998, Herz and Garrison 1998, Waters 1996.
Feb 17 Lecture: Soils and Landscapes (G STUDENT 2); Lecture: Climate and Global Reconstructions (G STUDENT 3) / Case studies Soils/Landscape/Sea Levels (U STUDENTS 3-5)
Feb 24 Lab [Lab Reading: TBA] / DEBATE
- Week 9: (Mar 3): HANDS-ON ACTIVITY
- March 7-14th = March Break
- Week 10: (Mar 17) Biomolecules [Guest lecture: Erin Thornton]
Required and Recommended Readings: TBA
- Week 11 (Mar 24) Human Behavior, Actualistic Research, Symbolism, and Documents
Required Readings: Wilkinson and Stevens: sec 4, p. 210-238
Recommended Readings: Human Ecology - Evans/O'Connor: chapter 14, p. 181-195; Kaplan and Hill 1992. Documents - Evans 2003:148-171; Marcus 1992.
Lecture: (G STUDENT 4) / Case studies Behavior/Symbolism (U STUDENTS 6-7) / Lab/Debate TBA
- Week 12 (Mar 31) HANDS ON ACTIVITY
- Week 13 (Apr 7) Reprise – Defining Environmental Archaeology – and a discussion of ethics and goals
Required Readings: Dincauze: chap 18, p. 497-522; Wilkinson: section 5-6, p. 242-307; Barker in Albarella 2003
- Week 14 (Apr 14) PRESENTATIONS (ALL STUDENTS)
- Week 15 (Apr 21) NO CLASS – Papers due.

ENVIRONMENTAL ARCHAEOLOGY

GRADUATE LECTURE GUIDELINES

You will each lecture on one aspect of the course material. Your lecture should be approximately 20-30 minutes long. Your lecture notes will be handed in to me by 10 am the day before the class. I would suggest you hand the notes in as an e-mail attached text file because we can then post them to the website for other students to access. Power-point is preferred. Handouts with definitions and outlines are often useful as well. Read all the recommended text readings, but do not rely only on these to complete your lecture. Instead, use the additional recommended readings and any others you find (if others, please list these in a citation list at the end of your lecture for others to access if they're interested).

In your lecture, please include information on the following:

1. major sources of information (what are we studying e.g. bones, pollen, soils, texts) – note that I have specified some sources for each lecture. Feel free to expand the list after discussing it with me.
2. pertinent information on site formation and/or post-depositional situations (specific preservational information or specific effects of transportation, etc.) and relevance to the appropriate use of the methods or data sources
3. primary methods associated with analysis (recovery and sampling methods, identification methods, quantification methods) – and the scales at which they are relevant.
4. examples of their use in reconstructing ancient environments and society – in each case with attention to scale and/or context of the question. Note, these are brief examples since other students will present case-studies!

The lectures should include the following information (to avoid overlaps):

- **Macrobotany** (seeds, fruits/nuts, woods, roots/tubers, other macro-plant parts, impressions etc. – emphasis on the first three remains – be sure to discuss preservation)
- **Microbotany** (pollen, phytoliths, fungal spores, starch grains, other plant cellular and organic chemical traces – emphasis on the first two remains – be sure to discuss difficulties in identification and quantification)
- **Soils and Sediments** (as site context [therefore soil formation and classification, sedimentary sources, transportation, deposition, transformations], and anthrosols – discuss field and lab methods including particle and constituency analyses, and chemical and physical residue studies. Do not discuss climate.)
- **Landscapes** (tectonics, regional and local landform modification processes (emphasis on anthropogenic landforms), and landscape and settlement choices – discuss the methods of geomorphology research, mapping, remote sensing including chemical prospecting. Do not discuss climate.)
- **Climate and Global Reconstructions** (global and regional climatic reconstructions – discuss ice cores, paleolimnology, isotopic ratio analysis, etc. – note that this presentation will draw on all methods discussed in earlier segments – do not reiterate previous discussions unless necessary)
- **Human ecology modeling** (actualistic studies and behavioral analogy); **Documentary evidence** (historic texts, oral history, artwork, symbolism)

UNDERGRADUATE CASE STUDY GUIDELINES

You will each be responsible for choosing and reviewing one case study for a brief (15 minute) presentation to the class. You will be guided in your choice of case study by the graduate student lecturing for the class, but feel free to search the literature for something that interests you. You should present a summary, an evaluation of the study's strengths and weaknesses, and a discussion of its place in the general themes we have discussed in the course. Your case study notes will be handed in to me by 10 am of the day before your presentation. You will be graded on the extent to which your article choice represents a useful contribution to the course discussion, the quality of your evaluation of the case study, and the quality of your interpretation of the case study in the broader context of environmental archaeology. Emphasis is on evaluation and interpretation!

LIST OF COURSE READINGS (will be expanded as more readings are added)

- Barker, G. 2001. Agendas for environmental archaeology. In *Environmental Archaeology: Meaning and Purpose*, edited by U. Albarella, pp. 305-314. Kluwer Academic Publishers, London.
- Butzer, K. 1982. Context in Archaeology; Environmental Systems. Chapters 1 and 2 in *Archaeology as Human Ecology*. Pp. 3-32.
- Dincauze, D. 2000. *Environmental Archaeology: Principles and Practice*. Cambridge University Press, Cambridge.
- English Heritage. 2002. *Environmental Archaeology*. In Center for Archaeology Guidelines. Pp. 6-17. English Heritage.
- Evans, J.G. 2003. *Environmental Archaeology and the Social Order*. Pp. 1-19. Routledge Press, London.
- Evans, J.G. and T. O'Connor. 1999. *Environmental Archaeology: Principles and Methods*. Pp. 1-16. Sutton Publishing, Gloucestershire.
- Hardesty, D.L. and D.D. Fowler. 2001. Archaeology and Environmental Changes. In *New Directions in Anthropology and Environment*, edited by C. Crumley, E. van Deventer and J.J. Fletcher. Pp. 72-89. Altamira Press, Walnut Creek.
- Herz, N. and E.G. Garrison. 1998. *Geological Methods for Archaeology*. Oxford University Press, Oxford
- Kaplan, H. and K. Hill. 1992. The Evolutionary Ecology of Food Acquisition. In Smith, E.A. and B. Winterhalder. *Evolutionary Ecology and Human Behavior*. Pp. 167-201. Aldine Press, New York.
- Marcus, J. 1992. Truth, Propaganda, and Noble Speech. In *Mesoamerican Writing Systems*. Princeton University Press, New Jersey.
- O'Connor, T. 2001. Economic Prehistory or Environmental Archaeology? On Gaining a Sense of Identity. In *Environmental Archaeology: Meaning and Purpose*, edited by U. Albarella. Pp. 17-27. Kluwer Academic Publishers, The Netherlands.
- Pearsall, D.M. 2000. *Paleoethnobotany: A Handbook of Procedures*. 2nd Edition. Academic Press, New York.
- Rapp, G. Jr., and C.L. Hill. 1998. *Geoarchaeology*. Yale University Press, New Haven
- Reitz, E.J., L.A. Newsom, and S.J. Scudder. 1996. Issues in Environmental Archaeology. In *Case Studies in Environmental Archaeology*, edited by E.J. Reitz, L.A. Newsom, and S.J. Scudder. Pp. 3-16. Plenum Press, NY.
- Reitz, E.J. and Wing, E.S. 2007. *Zooarchaeology*. Cambridge University Press, New York.
- Waters, M.R. 1996. *Principles of Geoarchaeology*. University of Arizona Press, Tucson.
- Wilkinson, K. and C. Stevens. 2003. *Environmental Archaeology: Approaches, Techniques, and Application*. Pp. 12-43. Tempus, Gloucestershire.