

The Ohio State University
Anthropology H597.03

Issues of the Contemporary World: The Prehistory of Environment and Climate

Instructor

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Class Hours

MW 9:30-11:18 AM
5024 Smith Laboratory
174 West 18th Avenue

Anthropology H597.03 meets the guidelines for the Capstone: Issues of the Contemporary World GEC category.

This course examines the relationships between human behavior and environmental and climate changes in the present and in the past. The course will focus on the El Niño/Southern Oscillation (ENSO) phenomenon and the environmental calamities that have been blamed on it in recent years, as well as the calls for a global response to these crises. Recent studies have shown how the climate changes associate with the ENSO phenomenon in different parts of the world are interconnected, and how cooperation between nations is needed to alleviate the impact of these severe weather events. In addition, we consider how ancient El Niño events may have had an impact on the cultural development of prehistoric societies all over the world. Anthropology H597.03 is interdisciplinary in design, and uses resources and information from the disciplines of Anthropology, Geography, and Meteorology. In addition to the general classroom discussions of interdisciplinary topics, groups of students (with different majors and backgrounds) will complete an in-depth case study of the effects of an ENSO event on an ancient civilization, and will present an oral and written summary of their results. The students will learn from each other as they complete this assignment, and draw on their own research experiences and prior course work.

Learning Objectives: In this course students will learn how to:

1. understand the relationships between human behavior and environmental and climate changes in the present and in the past across the globe and to appreciate the political, economic, and cultural differences among the past societies and present nations of the world and how these differences may have affected their responses to environmental and climate changes.
2. appreciate how devastating “natural catastrophes” like the El Niño/Southern Oscillation (ENSO) phenomenon can be and to be aware of the global effects of these environmental calamities.
3. understand why a global response to these crises is needed and how cooperation between nations is needed to alleviate the impact of these severe weather events.
4. understand how ancient El Niño/Southern Oscillation events may have had an impact on the cultural development of prehistoric societies in different parts of the world.
5. draw on resources and information from different disciplines like Anthropology, Geography, and Meteorology to study climate changes and the human responses to those changes.

6. prepare detailed oral and written reports on an ancient ENSO event and the human reactions in the different regions of the world where the event has been documented.
7. work with other students from different major programs on group projects and to draw on their own diverse backgrounds and experiences to complete the research.

Required Texts: 1. *Floods, Famines, and Emperors: El Niño and the fate of Civilizations*, by Brian Fagan, (1999) Basic Books.

2. Anthropology H597.03 Reader from Greyden Press (Xeroxed articles)

Recommended: 1. *El Niño in History: Storming through the Ages*, by César N. Caviedes (2000) University Press of Florida.

2. *Paleoclimatology* 2nd ed., by Raymond S. Bradley (1999), Harcourt.

*** A series of Reserved Readings will be available in Room 212 Lord Hall.

*** Information on El Niño and related phenomena can be obtained from web sites.

Course Goals: By the time the giant El Niño of 1997-98 was over, 2,100 people had died and at least 33 billion dollars worth of property had been destroyed or damaged. Were Ancient El Niño events this devastating? Did they cause calamities that brought down ancient civilizations? In this course, we study the relationship between human behavior and environmental and climate changes in the past. The course will focus on the El Niño/Southern Oscillation (ENSO) phenomenon and the environmental calamities that have been blamed on it. Paleoenvironmental records from coastal Peru contain evidence for El Niño events spanning the last 5,000 years. Recent studies have shown how ENSO events transform the weather around the world. We will look at the evidence for ancient ENSO events and examine how past weather changes may have affected ancient societies in North and South America, Europe, North Africa, and Australasia. We will outline the methods that are used to reconstruct the past environment and climate and review the basic principles of human ecology and cultural adaptation to different environments, as we debate whether ENSO phenomena are examples of long-term weather cycles or if the recent severe El Niño and La Niña events have been triggered by human actions.

Class Format: Students will meet for two periods on Mondays and Wednesdays. When we meet in class we will discuss the topics covered in the reading assignments, and introduce additional material from other sources. Students **MUST** complete the reading assignments by the date listed on the syllabus and attend class for lectures and discussion. Groups of students will examine ancient ENSO events and human reactions in different regions of the world and present oral and written summaries of their results. There will be a midterm exam and a final exam on material covered in the course. Students are encouraged to draw on what they have learned in other classes (or in their own research experiences) during the discussion periods.

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| <u>Grading:</u> | <i>The final grade will be based on:</i> | |
| | Midterm exam: | 100 points |
| | Final exam: | 100 points |
| | Class Projects: | 150 points |
| | Class Attendance and Participation: | <u>30 points</u> |
| | <u>TOTAL:</u> | 380 points |

COURSE OUTLINE

| <i>DATE</i> | <i>TOPIC AND READING ASSIGNMENTS</i> |
|-------------|---|
| January 6 | Introduction , form teams for group projects. |
| January 8 | Ecological Perspectives , <i>Read</i> Ch.1 in the Reader (Harris: Ecology and Ecosystems). Also read the following (on reserve in 212 Lord Hall): Preface and Introduction in <i>Human Ecology</i> , by Bernard Campbell, pp. vii – 17. |
| January 13 | Understanding and Reconstructing Past Climates I <i>Read</i> Chapters 1 and 2 in <i>Paleoclimatology</i> , by R. S. Bradley, pp. 1-46 (on reserve in 212 Lord Hall) |
| January 15 | Dating Methods, Geological and Biological Evidence of Climate Change , <i>Read</i> Chapters 7,8, and 9 in <i>Paleoclimatology</i> , by R. S. Bradley, pp. 285-396 (on reserve in 212 Lord Hall) |
| January 20 | Martin Luther King Day (observed) NO CLASS |
| January 22 | Changing Human Ecosystems , <i>Read</i> Preface and Chapter 10 in <i>Floods, Famines, and Emperors</i> , pp. xi-xviii, and 180-202; Chapter 2 in the Reader (J. Moody: The Cretan Environment); and pp. 200-207 in <i>El Niño in History</i> . First Exercise: Is there a correlation between the “Little Ice Age” and environmental changes on Crete? Summarize the evidence for such a connection, and discuss the effects of “Little Ice Age” climates on the Cretan landscape and the ancient Cretan people. (15 points) |
| January 27 | Understanding and Reconstructing Past Climates II , <i>Read</i> Chapters 3 and 4 in the Reader (W. J. Burroughs: Proxy Data, and The Global Climate) |
| January 29 | What is El Niño? <i>Read</i> Chapters 1, 2, 3, and 12 in <i>Floods, Famines, and Emperors</i> , pp. 3-54; 223-242, Chapters 1, 2, and 6 in <i>El Niño in History</i> , and: National Geographic Vol. 195, #3 (March, 1999): <i>El Niño/La Niña: Nature's Vicious Cycle</i> : pp. 72-95 (on reserve in 212 Lord Hall) |

| <i>DATE</i> | <i>TOPIC AND READING ASSIGNMENTS</i> |
|-------------|--|
| February 3 | Second Exercise: Prepare a brief, written definition of the El Niño/La Niña/Southern Oscillation (ENSO) phenomenon. You will also be asked to present an oral summary of your definition in class. Provide a list of the sources for the information that you used to prepare your summary and definition (books, articles, web sites, etc.). Use the citation format on the style sheet (20 points) |
| February 5 | What have you heard about El Niño? Third Exercise: Bring an article to class about the recent effects of the El Niño/La Niña/Southern Oscillation (ENSO) phenomenon that you found in a magazine or newspaper, or on the Web. Present an oral summary of the article and critique it for the class. Is it accurate? What were the sources used in the article? (15 points) |
| February 10 | MIDTERM EXAM in class |
| February 12 | El Niño and Ice-Cores, Read Chapters 5 and 6 in the Reader (Thompson <i>et al.</i> : Reconstructing interannual climate variability; and, Glacial records of global climate), and Thompson, L.G. (1996) Climatic changes for the 2000 years inferred from ice-core evidence in tropical ice cores. (on reserve 212 Lord Hall) |
| February 17 | El Niño, the North Atlantic Oscillation, and Global Warming, Read Chapters 4, 5, and 11 in <i>Floods, Famines, and Emperors</i> , pp. 3-54; 203-221. |
| February 19 | El Niño, History, and Prehistory, Read Chapters 7 and 8 in the Reader (D. B. Enfield: Historical and prehistorical overview of El Niño/Southern Oscillation; and W. H. Quinn: A study of Southern Oscillation-related climatic activity for A.D. 622-1900 incorporating Nile River flood data). |
| February 24 | El Niño and Archaeology, Read the following articles on reserve in 212 Lord Hall: Paulsen, Allison (1986) <i>Climate change and the rise of the state in prehistoric Peru</i> . Paper read at the 85 th Annual Meeting of the American Anthropological Association, Philadelphia; and Chapter 5, pp. 89-99 and 139-145, and Chapter 8, pp. 222-230 in <i>El Niño in History</i> . |
| February 26 | Oral Presentations of Group Projects I Moche, II Inka/Tiwanaku ALL READ Chapter 7 in <i>Floods, Famines, and Emperors</i> , pp. 119-138 |
| March 3 | Oral Presentations of Group Projects III Maya, ALL READ Chapter 8 in <i>Floods, Famines, and Emperors</i> , pp. 139-158 |

March 5 **Oral Presentations of Group Projects IV Chaco Canyon**
ALL READ Chapter 9 in *Floods, Famines, and Emperors*, pp. 159-177

DATE TOPIC AND READING ASSIGNMENTS

March 10 **Oral Presentations of Group Projects V Nile Valley, VI China**
ALL READ Chapter 6 in *Floods, Famines, and Emperors*, pp. 99-117

March 12 **Oral Presentations of Group Projects VI China**
SENIOR FINAL EXAM

March 19 **WEDNESDAY: FINAL EXAM: 9:30 AM in class**

*written summary of group project due in my office, 140 Lord Hall, by 4:00 PM

THIS MATERIAL IS AVAILABLE IN ALTERNATIVE FORMATS UPON REQUEST. STUDENTS WITH DISABILITIES ARE RESPONSIBLE FOR MAKING THEIR NEEDS KNOWN TO THE INSTRUCTOR, AND ARE RESPONSIBLE FOR SEEKING AVAILABLE ASSISTANCE FROM THE OFFICE OF DISABILITY SERVICES (ODS) AT 292-3307 AS SOON AS POSSIBLE, AND CERTAINLY PRIOR TO THE FIRST EXAMINATION.

Please Note: In case of unexpected instructor absences the information will be posted on the following departmental web site. This site should be consulted during inclement weather to check for possible class cancellations or delays. Do not call the department office, check the web site:

<http://anthropology.ohio-state.edu/home.html>

Academic Misconduct: All students should become familiar with the rules governing alleged academic misconduct. All students should be familiar with what constitutes academic misconduct, especially as it pertains to plagiarism and test taking. Ignorance of the rules governing academic misconduct or ignorance of what constitutes academic misconduct is not an acceptable defense. Alleged cases of academic misconduct are referred to the proper university committees.