

Anthropology 4E03
Archaeology of Climate Change and Culture

Office: Chester New Hall Rm. 508
Office hours: Thursday 1:30-2:30, or by appointment
Classes: Friday 11:30-2:20, Room TSH B126

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An examination of the implications of major past climate change events on the archaeological histories of cultures worldwide. We will look at the ways in which climate-based interpretations are developed and disputed within archaeology. We will also address the evidential basis for establishing the timing, nature, and extent of climate change events and for interpreting culture histories as their direct result.

Classes: During the first week of classes, and any subsequent university-wide move to online teaching, classes will be scheduled synchronous seminars, discussions, and debates. The platform will be Zoom, with links for access located on Avenue to Learn. Any changes to the course delivery format will be announced on Avenue to Learn.

Grading:

Article overviews (6 @ 5% each)	- 30%
In-class discussions and presentations	- 10%
Debate papers (3@ 10% each)	- 30%
Final paper	- 30%

Article overviews: will require each student to find and briefly describe the focus and content of six published articles on climate change and its effects on archaeologically known cultures. These will include two for each of the major case studies examined throughout the course. One of the articles will address the timing, cause, or evidence for the climate change event in a specific region or regions of the world. The other will argue for or against the implications of that event for the history of a specific archaeological culture or cultures. A template for the overviews will be provided. Each must include a full citation, link, and a brief argument for why the article would be suitable as a class reading and the basis for debate and discussion. The overviews must be posted on Avenue to Learn prior to the class in which readings for the case study are determined. Deadlines for posting articles will be provided. The articles each of you select for the overviews must not have been selected by another student.

Readings, in-class discussions, debates, and presentations: points will be awarded for: 1) submission of written comments on assigned readings, 2) your presence and participation in discussions for the selection of articles for reading and discussion, 3) your presence and participation in in-class debates, and 4) presentation of a preliminary report on your final paper project.

Debate papers: each of three short papers will be a position statement supported by a critical review of claims regarding the cultural historical implications of each of the three global climate change events examined in the course. The focus will be on the evaluation and comparison of claims for and against the role of climate in culture change, but each paper must take a clear and well-supported position on whether the event in question had a significant and lasting effect on the course of archaeological histories. A more detailed outline of this assignment will be provided.

Final paper: will be a comprehensive analysis of the implications of any example of regional or global climate change for archaeological histories and long-term culture change. The paper will include an overview of the climate event or sequence of climate changes and the archaeological case studies, an assessment of the basis of claims and counter arguments for climate-based influence on culture history, and an analysis of the effects on the cultures in question. The paper should also address the broader implications of a focus on climate to understand and explain past culture histories and should consider whether this focus on climate and its effects in the past has any potential for informing responses to

current and future climate change events. A more detailed outline of this assignment will be provided.

Penalties will apply for all late and missed assignments unless an MSAF is filed.

SCHEDULED TOPICS AND ASSIGNED READINGS

Jan. 14 - Elements and Examples.

Jan. 21 - Effects.

READING: Bar-Yosef et al. 2017, Thompson and Kolata 2017, Weiss 2017.

Jan. 28 - Timing.

READING: Arnold et al. 2021a,b, Kintigh and Ingram 2018, Marsh et al 2021, Yaeger and Hodell 2008.

Feb. 4 - Scale.

READING: Defleur et al. 2019, Hoggarth et al. 2017, Wilkerson 2008.

Feb. 11 - Reductionism: Debate on case studies.

READING: Hulme 2011.

Feb. 18 - The Younger-Dryas: Event and consequences.

READING: To be determined in class Feb. 11.

Feb. 25 - Mid-term recess.

March 4 - The Younger Dryas: Debate.

March 11 - The 4.2 kya event: Event and consequences.

READING: To be determined in class March 4.

March 18 - The 4.2 kya event: Debate.

March 25 - Medieval Climate Anomaly/Little Ice Age: Events and consequences.

READING: To be determined in class March 18.

April 1 - Medieval Climate Anomaly/Little Ice Age: Debate.

April 8 - Research Reports.

READINGS

Arnold, T. Elliott, Aubrey L. Hillman, Mark B. Abbott, Josef P. Werne, Steven J. McGrath, and Elizabeth N. Arkush

2021a Drought and the Collapse of the Tiwanaku Civilization: New Evidence from Lake Orurillo, Peru. *Quaternary Science Reviews* 251:106693. <https://www-sciencedirect-com.libaccess.lib.mcmaster.ca/science/article/pii/S0277379120306557>

Arnold, T. Elliott, Aubrey L. Hillman, Mark B. Abbott, Josef P. Werne, Steven J. McGrath, and Elizabeth N. Arkush

2021b Reply to Comments by Marsh et al. on “Drought and the collapse of the Tiwanaku Civilization: New evidence from Lake Orurillo, Peru”. *Quaternary Science Reviews* 269:107032. <https://www-sciencedirect-com.libaccess.lib.mcmaster.ca/science/article/pii/S0277379121002390>

Bar-Yosef, Ofer, Miriam Bar-Matthews, and Avner Ayalon

2017 12,000-11,700 BP: The Collapse of Foraging and Origins of Cultivation in Western Asia. In *Megadrought and Collapse: From Early Agriculture to Angkor*, edited by Harvey Weiss, pp. 33-67. Oxford: Oxford University Press. <https://oxford-universitypressscholarship->

[com.libaccess.lib.mcmaster.ca/view/10.1093/oso/9780199329199.001.0001/oso-9780199329199-chapter-2](https://www.sciencedirect.com/libaccess/lib/mcmaster.ca/view/10.1093/oso/9780199329199.001.0001/oso-9780199329199-chapter-2)

Defleur Alban R., and Emmanuel Desclaux

2019 Impact of the Last Interglacial Climate Change on Ecosystems and Neanderthals behavior at Baume Moula-Guercy, Ardèche, France. *Journal of Archaeological Science* 104:114–124.

[https://www.sciencedirect-com.libaccess.lib.mcmaster.ca/science/article/pii/S0305440318304680](https://www.sciencedirect.com/libaccess/lib/mcmaster.ca/science/article/pii/S0305440318304680)

Hoggarth, Julie A., Matthew Restall, James W. Wood, and Douglas J. Kennett

2017 Drought and Its Demographic Effects in the Maya Lowlands. *Current Anthropology* 58:82-113.

<https://www-journals-uchicago-edu.libaccess.lib.mcmaster.ca/doi/full/10.1086/690046>

Hulme, Mike

2011 Reducing the Future to Climate: A Story of Climate Determinism and Reductionism. *Osiris* 26:245-266.

<https://www-journals-uchicago-edu.libaccess.lib.mcmaster.ca/doi/full/10.1086/661274>

Kintigh, Keith W. and Scott E. Ingram

2018 Was the Drought Really Responsible? Assessing Statistical Relationships between Climate Extremes and Cultural Transitions. *Journal of Archaeological Science* 89:25-31.

<https://www-sciencedirect-com.libaccess.lib.mcmaster.ca/science/article/pii/S0305440317301309>

Marsh, Erik J., Daniel Contreras, Maria C. Bruno, Alexei Vranich, and Andrew P. Roddick

2021 Comment on Arnold et al. “Drought and the Collapse of the Tiwanaku Civilization: New Evidence from Lake Orurillo, Peru”. *Quaternary Science Reviews* 269:107004.

<https://www-sciencedirect-com.libaccess.lib.mcmaster.ca/science/article/pii/S0277379121002110>

Thompson, Lonnie G., and Alan L. Kolata

2017 Twelfth Century AD: Climate, Environment, and the Tiwanaku State. In *Megadrought and Collapse: From Early Agriculture to Angkor*, edited by Harvey Weiss, pp. 231-246. Oxford: Oxford University Press.

<https://oxford-universitypressscholarship-com.libaccess.lib.mcmaster.ca/view/10.1093/oso/9780199329199.001.0001/oso-9780199329199-chapter-8>

Weiss, Harvey

2017 4.2 ka BP Megadrought and the Akkadian Collapse. In *Megadrought and Collapse: From Early Agriculture to Angkor*, edited by Harvey Weiss, pp. 93-159. Oxford: Oxford University Press.

<https://oxford-universitypressscholarship-com.libaccess.lib.mcmaster.ca/view/10.1093/oso/9780199329199.001.0001/oso-9780199329199-chapter-4>

Wilkerson, S. Jeffrey K.

2008 *And the Waters Took Them: Catastrophic Flooding and Civilization on the Mexican Gulf Coast*. In *El Niño, Catastrophism, and Culture Change in Ancient America*, edited by Daniel H. Sandweiss and Jeffrey Quilter, pp. 243-271. Washington, D.C.: Dumbarton Oaks. **POSTED**

Yaeger, Jason and David A. Hodell

2008 The Collapse of Maya Civilization: Assessing the Impact of Culture, Climate, and Environment.

In *El Niño, Catastrophism, and Culture Change in Ancient America*, edited by Daniel H.

Sandweiss and Jeffrey Quilter, pp. 187-242. Washington, D.C.: Dumbarton Oaks.
<http://eprints.esc.cam.ac.uk/2468/>

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. It is your responsibility to understand what constitutes academic dishonesty.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <https://secretariat.mcmaster.ca/university-policies-procedures- guidelines/>

The following illustrates only three forms of academic dishonesty:

plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.

improper collaboration in group work.

copying or using unauthorized aids in tests and examinations.

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster’s use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, whether in person or online.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University’s Academic Accommodation of Students with Disabilities policy.

REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”.

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, including lectures by University instructors

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.