

ANTH/ENST 3133 Environmental Archaeology

Fall 2017, Lecture/Lab 2/2

Instructors	Dr. Scott Hamilton shamilto@lakeheadu.ca	Office: BB-2001-B Lab: BB0007	Tel: 343-8742
	Dr. M. Boyd mboyd1@lakeheadu.ca	Office: BB-2001-F	Tel: 343-8279
Lecture:	BB2002 Friday 12:30 to 2:30 pm		
Lab:	AT 3--- Monday 11:30 to 2:30 pm		
Evaluation:	Zooarchaeology	3 lab Quizzes (3x10%), 1 midterm test (20%)	
	Paleoecology	Lab assignments (20%), paleoecology project (30%)	

This class introduces osteological and paleo-ecological studies in archaeology. The first module focuses on zooarchaeology (Dr. Hamilton), while the second module addresses aspects of paleoecology and archaeobotany (Dr. Boyd). The class consists of 2 hours of lectures and 3 hours of lab.

No text book is assigned for the Zooarchaeology module, but a lab manual and Lecture materials are available through myCourseLink.

The suggested text for the paleoecology/archaeobotany component is:

Reitz, E.J. and Shackley, M. 2012. *Environmental Archaeology*. New York: Springer.

Tentative Course Schedule:

Week 1 (Sept 5-8, 2017)

Lecture:	history of Zooarchaeology Biological, Folk and Zooarchaeological Taxonomies Describing Bone surfaces and orientation Bone and tooth anatomy
Lab:	Bone microstructure Axial versus appendicular skeleton Locomotion and lifestyle Dentition, and dental formulae

Week 2 (Sept 11-15, 2017)

Lecture	Taphonomy in Zooarchaeology Inferring past environments Inferring domestication
Lab	Comparative mammalian osteology

Week 3 (Sept 18- Sept 22, 2017)

Lecture	Describing individual bones Variation within species Interpreting past environments Inferring seasonality
----------------	--

Lab Sexing and Aging Techniques
lab Quiz 1 (10%)
Fish and Bird Osteology

Week 4 (Oct 2-6, 2017)

Lecture Assessing relative abundance of individual Taxa
MNI, NISP, Utility indices

Lab **lab Quiz 2 (10%)**
Identification of fragmentary bones

Week 5 (Oct 9-13, 2017)

Lecture Element representation, bone processing and butchering
Evaluating Human predator, processing behaviour

Lab **Lab Quiz 3 (10%)**
Identification of fragmentary bones

Week 6 (Oct 16-20, 2017)

Lecture Case study: Fur Trade 'over-hunting' (Peace River)
Case study: Integrating NISP, MNI, and historic records (Brandon House)

Lab **Midterm Quiz (20%)**

Week 7 (Oct 24-25) Paleoecology begins

Lecture Introduction

Lab Scavenger hunt

Week 8 (Oct 31-Nov 1)

Lecture Bryophytes and vascular plants

Lab Plant macrofossil identification (10%)

Week 9 (Nov 7-8)

Lecture Plant microfossils: pollen, phytoliths and starch

Lab Plant microfossil identification (10%)

Week 10 (Nov 14-15)

Lecture Arthropods and other invertebrates

Lab Macrofossil sample processing & project description

Week 11 (Nov 21-22)

Lecture Molluscs and echinoderms

Lab Paleoecology project

Week 12 (Nov 28-29)

Lecture Viruses, bacteria, fungi, and stable Isotopes

Lab Paleoecology project

Paleoecology project due: **December 2** (Monday)

References (zooarchaeology)

- Balkwill, D., Cumbaa, S. L., 1992. A guide to the identification of postcranial bones of *Bos taurus* and *Bison bison*. *Syllogeus*, No. 71. Canadian Museum of Nature. 10:215-254.
- Behrensmeyer, Anna K., and Andrew P. Hill, eds. 1980 *Fossils in the Making: Vertebrate Taphonomy and Paleoecology*. University of Chicago Press, Chicago.
- Binford, Lewis R. ed. 1977 *For Theory Building in Archaeology: Essays on Faunal Remains, Aquatic Resources, Spatial Analysis, and Systemic Modeling*, Academic Press, New York.
- 1978 *Nunamiut Ethnoarchaeology*. Academic Press, New York.
- 1981 *Bones: Ancient Men and Modern Myths*. Academic Press, New York.
- 1984 Butchering, sharing and the archaeological record. *Journal of Anthropological Archaeology* 3:235-257.
- Butzer, Karl W. 1971 *Environment and Archeology: An Ecological Approach to Prehistory*. Aldine Publishing, Chicago.
- Cannon, D. Y. 1987. *Marine Fish Osteology: A Manual for Archaeologists*. Simon Fraser University Press.
- Chaplin, Raymond, E. 1971 *The Study of Animal Bones from Archaeological Sites*. Seminar Press, London and New York.
- Claassen, C. 1999. *Shells. Cambridge Manuals in Archaeology*. Cambridge University Press.
- Cohen, A. and D. Serjeantson. 1996. *A Manual for the Identification of Bird Bones from Archaeological Sites*, revised ed. Archetype Publications, Ltd.
- Davis, Simon J. 1987 *The Archaeology of Animals*, Yale University Press; New Haven.
- Frison, George 1974 *The Casper Site: a Hell Gap Bison Kill on the High Plains*. Academic Press, New York.
- Gifford-Gonzalez, Diane 1991b Bones are not enough: Analogues, knowledge, and interpretive strategies in zooarchaeology. *Journal of Anthropological Archaeology*
- Gilbert, B. Miles 1990. *Mammalian Osteology*. Missouri Archaeological Society.
- Gilbert, B. M., Martin, L. D., and H. G. Savage. 1996. *Avian Osteology*. Missouri Archaeological Society, Inc.
- Grayson, Donald K. 1984 *Quantitative Zooarchaeology : Topics in the Analysis of Archaeological Faunas* . Academic Press, Orlando.
- Hesse, Brian and Paula Wapnish 1985 *Animal Bone Archaeology: From Objectives to Analysis*, Manuals on Archaeology 5 Taraxacum, Washington.
- Hillson, Simon 1992. *Mammal, bones and teeth: An Introductory Guide to Methods of Identification*. Institute of Archaeology, University College, London.
- Hillson, S. 2005. *Teeth*, 2nd ed. *Cambridge Manuals in Archaeology*. Cambridge University Press.
- Klein, Richard G. and Karthryn Cruz-Urbe 1984 *The Analysis of Animal Bones from Archaeological Sites* Prehistoric Archeology and Ecology Series, University of Chicago Press, Chicago and London.
- Hockett, Bryan S. 1998 Sociopolitical meaning of faunal remains from Baker Village. *American Antiquity* 63 (2):289-302.
- Hudson, Jean, ed. 1993 *From Bones to Behavior : Ethnoarchaeological and Experimental Contributions to the Interpretation of Faunal Remains*. Center for Archaeological Investigations, Southern Illinois University at Carbondale, Occasional Paper No. 21.
- Klein, Richard G. 1978 Stone Age predation on large African bovids. *Journal of Archaeological Science* 5 :195-217.
- Klein, Richard G., and Kathryn Cruz-Urbe 1984 *The Analysis of Animal Bones from Archeological Sites*. University of Chicago Press Chicago.
- Lyman, R. Lee 1985 Bone frequencies, differential transport, in situ destruction, and the MGUI. *Journal of Archaeological Science* 12 :221-236.

- 1994 *Vertebrate Taphonomy*. Cambridge University Press, Cambridge.
- 2008 *Quantitative Paleozoology*. Cambridge Manuals in Archaeology, Cambridge University Press.
- Lyman, R. L. and K. P. Cannon (eds).
2004. *Zooarchaeology and Conservation Biology*. University of Utah Press.
- Maureen, Curtis W., and Lillian M. Spencer
1991 Impact of carnivore ravaging on zooarchaeological measure of element abundance. *American Antiquity* 56 :645-658.
- Metcalf, Duncan, and Kevin T. Jones
1988 A reconsideration of animal body-part utility indices. *American Antiquity* 53 (3):486-504.
- Morrison, D. and P. Whitridge.
1997. *Estimating the Age and Sex of Caribou from Mandibular Measurements*. *Journal of Archaeological Science* 24:1093-1106.
- O'Connell, James C., Kristen Hawkes and Nicholas Blurton Jones
1988 Hadza huntin, butchering and bone transport and their archaeological implications. *Journal of Anthropological Research* 44 (2):113-161.
- O'Connor, T.
2000. *The Archaeology of Animal Bones*. Texas A&M University Press.
- Olsen, Stanley J.
1960 *Postcranial skeletal characters of Bison and Bos*, Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University 35(4).
- 1964 *Mammal remains from archaeological sites, Part I, Southeastern and Southwestern United States*, Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University 56(1).
- 1968 *Fish, amphibian, and reptile remains from archaeological sites, Part I, Southeastern and Southwestern United States*, Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University 56(2).
- 1972 *Osteology for the archaeologist, 3, the American mastodon and woolly mammoth*, Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University 56(3).
- 1972 *Osteology for the archaeologist, 4, North American birds*, Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University 56(4).
- 1985 *Origins of the Domestic Dog*. Tucson: University of Arizona Press.
- Reitz, Elizabeth and Elizabeth Wing
2007 *Zooarchaeology* 2nd Edition. Cambridge University Press.
- Schmid, E.
1972. *Atlas of Animal Bones: For Prehistorians, Archaeologists and Quaternary Geologists*. Elsevier Publishing Company.
- Schmitt, David N., and Karen D. Lupo
1995 On mammalian taphonomy, taxonomic diversity, and measuring subsistence data in zooarchaeology. *American Antiquity* 60 (3):496-514.
- Serjeantson, D.
2009. *Birds*. Cambridge Manuals in Archaeology. Cambridge University Press.
- Speth, John D.
1983 *Bison Kills and Bone Counts : Decision Making by Ancient Hunters* . University of Chicago Press, Chicago.
- Speth, John D., and Katherine A. Spielmann
1983 Energy source, protein metabolism and hunter-gatherer subsistence strategies. *Journal of Anthropological Archaeology* 2 :1-31.
- Stiner, Mary C.
1990 The use of mortality patterns in archaeological studies of hominid predatory adaptations. *Journal of Anthropological Archaeology* 9 :305-351.
- Stiner, Mary C.
1991a Food procurement and transport by human and non-human predators. *Journal of Archaeological Science* 18 :455-482.
- Stiner, Mary C., ed.
1991b *Human Predators & Prey Mortality*. Westview Press, Boulder.
- Von den Driesch, Angela
1976 *Measurements for Animal Bones*. Peabody Museum, Harvard University.
- Wheeler, A. and A. K. G. Jones.
2009. *Fishes*. Cambridge Manuals in Archaeology. Cambridge University Press.