ETHNOBOTANY COURSE SYLLABUS, FALL 2014
BOTANY/ANTHROPOLOGY/AMERICAN INDIAN STUDIES 474

3 credits
Lectures MWF 11:00 – 11:50 am in B-302 Birge Hall
Prerequisite: an introductory course in botany or biology (e.g., Botany 130, Biology 151), or permission of the instructor.

Instructor:
Dr. Eve Emshwiller
Office: 321 Birge Hall/Botany Dept.
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Office hours Mondays 12:00 to 12:45 or by appointment.

Teaching Assistant:
Alex McAlvay
Office: 319 Birge Hall/Botany Dept.
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Office hours Mondays 3:00pm to 4:00pm or by appointment.

Ethnobotany is the study of the interactions between human cultures and plants. As such it is an extremely broad field that crosses disciplinary boundaries. It includes economic botany, the study of the human uses of plants in all aspects of culture. However, ethnobotany also includes aspects that do not involve the practical uses of plants, such as linguistic/cognitive studies of how plants are perceived, named, and classified in various cultures, or studies of the history of human impacts on the environment. The course is intended as a broad survey of the kinds of plant-human interactions that are studied by ethnobotanists, and is aimed at upper-level undergraduates and early graduate students.

Topics to be covered include:

- Ethnoecology / Traditional resource management
- Agriculture: origins, traditional, industrialized, sustainable
- Crop domestication, evolution, and conservation of genetic diversity
- Interactions of humans and plants in the past: archaeobotany, paleoethnobotany, ethnohistory
- Indigenous knowledge
- Quantitative ethnobotany and survey field methods
- Plants in symbolism, ritual, and religion
- Plants in material culture / fibers, plant structure related to uses
- Plants in nutrition and dietary patterns / Fermented foods
- Phytochemistry / Human uses of plant secondary metabolites / Foods as medicines
- Global movement of plants and human cultures
- Non-timber forest products / plants and markets
- Plants and Indigenous cultures of Wisconsin and of North America

REQUIRED TEXTS:

Nabhan, Gary Paul (1989) Enduring Seeds: Native American Agriculture and Wild Plant Conservation. University of Arizona Press, Tucson, AZ. 225 pages

Minnis Paul E. and Wayne J. Elisens (Editors) (2000) Biodiversity and Native America. University of Oklahoma Press, Norman, OK. 310 pages

RECOMMENDED TEXT:

Minnis, Paul E. (Editor) Ethnobotany: A Reader (2000) University of Oklahoma Press, Norman, OK. 327 pages

There will also be additional reading assignments that will be distributed in class and available through the class web site on Learn@UW.

Attendance: I expect everyone enrolled in the class to attend all lectures and to participate in discussions. If you have to miss a class for any reason, you must contact me **in advance**. Attendance may be considered in your final grade.

Academic honesty and reference citation format: I would prefer not to have to discuss plagiarism, but rather to emphasize our common (I hope) values of honesty, integrity, and ethics. However, sometimes some people do not know the accepted forms to acknowledge the sources of ideas, words, and quotes. I am sure you are aware that direct quotes should always be indicated by quotation marks or indentation, and the source provided. **Even if you paraphrase, however, you must still indicate the source.** Please see this resource provided by the Writing center: http://writing.wisc.edu/Handbook/QuotingSources.html. In this class we will follow the citation format of the American Journal of Botany, which will be provided as a photocopy, and can also be found under "Literature Cited" on this page: http://www.amjbot.org/site/misc/ifora.xhtml#65Lcited with additional examples here: http://www.botany.org/ajb/ajb_Lit_Cited_Instructions.pdf .

Evaluation:	**Percent of grade:**
3 exams during semester @ 10% each	30%
Cumulative final exam (take home)	10%
Five short assignments @ 4% ea.	20%
Term paper (including all stages and peer reviews)	28%
12 mini summaries (50 words!) of chapters of Nabhan 1989 book	12%
Total	100%

***Graduate students**: In compliance with new policies from the Graduate School, graduate students must be assessed separately from undergraduates. Graduate students will be required to do a brief presentation to the class, and also lead small group discussions of reading assignments, including contributing questions for the discussion.*

Grades will be allocated according to the following percentages:
90% and above _____A
86-89.99%_____AB
80-85.99%_____B
76-79.99%_____BC
70-75.99%_____C
60-69.99%_____D
Below 60%_____F

Ethnobotany provisional class schedule

Please note that this schedule is provisional and may change during the semester.

Week	Lecture	Day	Date	Topic or activity	Due dates
1	1	W	03-Sep	Introductions and logistics	
	2	F	05-Sep	Introduction botany, survey methods	
2	3	M	08-Sep	Pile sort with fruits & vegetables	
	4	W	10-Sep	Paired comparisons with fruits, ranking?	50 Words Prologue
	5	F	12-Sep	Continue survey methods, Anthropac results (?)	
3	6	M	15-Sep	Non-domesticates as food	Critique #1 due
	7	W	17-Sep	Ethnoecology / Traditional Resource management	50 Words Ch 1
	8	F	19-Sep	Traditional Resource management	
4	9	M	22-Sep	Agriculture: traditional, industrialized, sustainable	Critique #2 due
	10	W	24-Sep	Agriculture: traditional, industrialized, sustainable	50 Words Ch 2
	11	F	26-Sep	Crop domestication and evolution	
5	12	M	29-Sep	Crop domestication and evolution	Gepts list due (extra credit)
	13	W	01-Oct	Alex McAlvay on Traditional Resource Management (TRM)	50 Words Ch 6
	14	F	03-Oct	Crop domestication examples	
6	15	M	06-Oct	**Exam 1**	**Exam 1**
	16	W	08-Oct	Agrobiodiversity Conservation	50 Words Ch 8
	17	F	10-Oct	Agrobiodiversity / Plants in material culture, fibers	
7	18	M	13-Oct	Archaeobotany-paleoethnobotany	
	19	W	15-Oct	Archaeobotany-paleoethnobotany	50 Words Ch 5
	20	F	17-Oct	Sunflower debate	Sunflower debate
8	21	M	20-Oct	Phytochemistry / Dr. David Kiefer	
	22	W	22-Oct	Phytochemistry, 2° metabolites and human uses	50 Words Ch 3
	23	F	24-Oct	Phytochemistry, 2° metabolites and human uses	
9	24	M	27-Oct	Medicinal plant module - Dr. Kiefer	Medicinal plant module
	25	W	29-Oct	Plants in nutrition, dietary patterns	50 Words Ch 4
	26	F	31-Oct	Ethics, Intellectual property rights, biopiracy	
10	27	M	03-Nov	Share "Foods as Medicines"	Foods as Medicines due
	28	W	05-Nov	Ethics, Intellectual property rights, biopiracy	50 Words Ch 10 (extra credit)
	29	F	07-Nov	**Exam 2**	**Exam 2**
11	30	M	10-Nov	Fermentation	
	31	W	12-Nov	Fermentation	50 Words Ch 9
	32	F	14-Nov	Ethnobotany of Indigenous peoples of Wisconsin	
12	33	M	17-Nov	Ethnobotany of Indigenous peoples of Wisconsin	
	34	W	19-Nov	Manoomin harvest and the Anishinabe (Ojibwe) Nation	50 words Ch 7
	35	F	21-Nov	Non-Timber Forest Products / Plants and markets	
13	36	M	24-Nov	Mezcal video	
	37	W	26-Nov	Plants in symbolism, ritual, religion (Video)	50 Words Ch 11
	X	F	28-Nov	THANKSGIVING BREAK	
14	38	M	01-Dec	Global movement of plants and human cultures	
	39	W	03-Dec	Global movement of plants and human cultures	Term paper due
	40	F	05-Dec	Linguistics / ethnobiological classification	
15	41	M	08-Dec	Indigenous Knowledge / Local Knowledge / TEK	
	42	W	10-Dec	Indigenous Knowledge / Local Knowledge / TEK	50 Words Ch 12
	43	F	12-Dec	**Exam 3**	**Exam 3**
Final		W	17-Dec	**Final Exam 12:25pm, Take home exam due**	**Take Home Final Due**

READING ASSIGNMENTS FOR ETHNOBOTANY (Version 2, 22 September 2014)

REQUIRED READINGS	OPTIONAL READINGS
Introduction, definitions and historical view of ethnobotany: 3 Sept 2014	
MINNIS, P. E. AND W. J. ELISENS. 2000. Introduction. Pages 3-25 in P. E. Minnis and W. J. Elisens, eds., *Biodiversity and Native America.* University of Oklahoma Press, Norman.	HARSHBERGER, J. W. 1896. The Purposes of Ethno-Botany. *Botanical Gazette*. 21(3): 146-154.
FORD, RICHARD I. 1978. Ethnobotany: Historical diversity and synthesis. pp. 33-49 in Ford, R. I. (ed.) *The Nature and Status of Ethnobotany*. Anthropological Papers, Museum of Anthropology, University of Michigan, No 67. Ann Arbor, MI, USA.	PEARSALL, DEBORAH M. 2004. Chapter 1 Ethnobotany: The study of Human-Plant Interrelationships (pp 1-11) *Plants and People in Ancient Ecuador: The Ethnobotany of the Jama River Valley*. Wadsworth/Thomson Learning. Belmont, CA, USA.
MCCLATCHEY, W., A. PAUL, T. FLASTER & V. MCCLATCHEY. 1999. An Evaluation of Educational Trends in Economic Botany. Centre for International Ethnomedicinal Education and Research: *Ethnobotany Educational Publication Series* 1:1-21. ***(Focus on definitions, from right side of page 4 through left side of page 5.)***	MCCLATCHEY, WILL. 2007. Two Ethnobotanists. *Journal of Ethnobotany Research and Applications*.
Collecting botanical specimens: 5 Sept 2014	
NGUYEN, MY LIEN T. 2005 Cultivated Plant Collections from marketplaces. Ethnobotanical Research and Applications. 3:w5-16. ***(What information can be gotten from vouchers but not photos?)***	BYE, ROBERT A., JR. 1986. Voucher specimens in ethnobiological studies and publications. *J. of Ethnobiology* 6:1–8.
Quantitative ethnobotany methods: 8 to 12 Sept 2014	
The Anthropac 4 Methods Guide by Stephen P. Borgatti is posted on Moodle among the readings under the heading for "Quantitative methods," and is labeled "**ANTHROPAC methods 7**" on that list. The assigned readings are: Chapter 1: pages 1-3 Introduction and Freelisting Section 2.2: pages 7-9 Single Pilesorts Section 2.5: page 13 only Triads Section 4.2: just up to the figure and the couple of paragraphs below it (not section 4.2.1) Multidimensional Scaling Chapter 5: pages 40-44 Consensus Analysis ***(Be able to distinguish which of these methods is used to answer which kinds of questions. Anthropac guide 6 and Anthropac manual 9 are optional and are included here in case someone wants to use the program for a project.)***	PURI , RAJINDRA K. AND CHRISTIAN R. VOGl (2005) A Methods Manual for Ethnobiological Research and Cultural Domain Analysis With analysis using ANTHROPAC (unpublished manuscript shared with permission of the authors) PURI, RAJINDRA K. AND CHRISTIAN R. VOGl 2007 Ethnobiology Cultural Domain Analysis Presentation (shared with permission of the authors). QUINLAN, MARSHA 2005. Considerations for collecting freelists in the field: Examples from ethnobotany. *Field Methods* 17:219–234.
Eating non-cultigens: 15 Sept 2014	
MULLER, J. & A. M. ALMEDOM. 2008. What is a "Famine Food?" Distinguishing Between Traditional Vegetables and Special Foods for Times of Hunger/Scarcity. *Human Ecology* 36:599–607	MERCADER, J. ET AL. 2009. Mozambican Grass Seed Consumption During the Middle Stone Age. *Science* 326, 1680-1683.

REQUIRED READINGS	**OPTIONAL READINGS**
LUCILENE LIMA DOS SANTOS, ANDRÉ LUIZ BORBA DO NASCIMENTO, FÁBIO JOSÉ VIEIRA, VALDELINE ATANÁZIO DA SILVA, ROBERT VOEKS, AND ULYSSES PAULINO ALBUQUERQUE (2014) The Cultural Value of Invasive Species: A Case Study from Semi–Arid Northeastern Brazil. *Economic Botany*. Online first. ***(Read the Introduction and the second section of the Methods, in which they discuss the definitions they are using for "invasive").***	TURNER, NANCY T. AND ALISON DAVIS. 1993. 'When everything was scarce': the role of plants as famine foods in northwestern North America. *Journal of Ethnobiology* 13: 171-201.
	STEPP, J. R. & D. MOERMAN. 2001. The importance of weeds in ethnopharmacology. *Journal of Ethnopharmacology*. 75: 19–23.
Ethnoecology and traditional resource management (TRM): 17 to 19 Sept 2014	
PEACOCK, S. L. AND N. J. TURNER. 2000. Chapter 5: "Just Like a garden": Traditional Resource Management and Biodiversity Conservation on the Interior Plateau of British Columbia. Pages 133-179 in P. E. Minnis and W. J. Elisens, eds., *Biodiversity and Native America*. University of Oklahoma Press, Norman.	ALCORN, J., 2000. Factors influencing Botanical Resource perception Among the Huastec: Suggestions for future Ethnobotanical Inquiry. Chapter 1, pp. 17-28 in *Ethnobotany: A reader*, ed. Paul E. Minnis. Norman: Oklahoma. [originally published in *Journal of Ethnobiology* 1(2):221-230 (1981)]
KEELEY, J. E. 2002. Native American impacts on fire regimes of the California coastal ranges. *Journal of Biogeography* 29: 303-320.	FOWLER, CATHERINE S. 2000. Ethnoecology: An Introduction. pp. 13-16 in P.E. Minnis (ed.) *Ethnobotany: A Reader*. U. of Oklahoma Press.
WILLIAMS, GERALD W. 2003. REFERENCES ON THE AMERICAN INDIAN USE OF FIRE IN ECOSYSTEMS. Washington, D.C. : U.S. Forest Service. (Previously posted on USDA Forest Service web site). ***(Read introductory section on first 3.5 pages, before the bibliography begins. Provided as a handout in class.)***	KHAN, RAZIB 2010. The pristine Amazon – a zone of contention. Blog post in "*Gene Expression*" on *Discover* blogs. http://blogs.discovermagazine.com/gnxp/2010/09/the-pristine-amazon-a-zone-of-contention/
MANN, CHARLES C. 2008. Ancient Earthmovers Of the Amazon. *Science*, 321(5893):1148-1152 ***(Scan for general ideas & images.)***	BIRD, R. BLIEGE, DOUGLAS W. BIRD, BRIAN F. CODDING, CHRISTOPHER H. PARKER, AND JAMES H. JONES. 2008. "The "fire stick farming" hypothesis: Australian Aboriginal foraging strategies, biodiversity, and anthropogenic fire mosaics." *Proceedings of the National Academy of Sciences of the USA* 105(39): 14796-14801.
CASAS, ALEJANDRO, ADRIANA OTERO-ARNAIZ, EDGAR PÉREZ-NEGRÓN, AND ALFONSO VALIENTE-BANUET. 2007. In situ management and domestication of plants in Mesoamerica. *Annals of Botany*, *100*(5), 1101-1115. ***(Read introduction on first ~2.5 pages.)***	DENEVAN, WILLIAM M. 1992. The Pristine Myth: The Landscape of the Americas in 1492. *Annals of the Association of American Geographers*. 82(3):369-385. **(A classic. It was only moved to "optional" because you will read other papers that summarize it. I recommend that you look at this and/or his follow-up paper below.)**
(Read handout of pages about fire as a traditional management tool from the book: COTTON, CATHERINE M. 1996. Ethnobotany: principles and applications. John Wiley & Sons,	DENEVAN, WILLIAM M. 2011. "The 'Pristine Myth' Revisited." The *Geographical Review*. 101(4) 576-591.
	JOHNSON-GOTTESFELD, LESLIE M. 1994. Aboriginal burning for vegetation management in northwest British Columbia. *Human Ecology*. 22(2): 171-188.

REQUIRED READINGS	OPTIONAL READINGS
Origins of agriculture: 22 Sept 2014	
BALTER, M. 2007. Seeking agriculture's ancient roots. *Science* 316: 1830-1835.	ANDERSON, E. 1952 [re-issued 1971]. Dump heaps and the origin of agriculture. Chapter IX in *Plants, Man and Life*. Berkeley: University of California Press. ***(What did he really mean by "dump heaps"? Some of the language is ethnocentric and disrespectful of other cultures, but typical of the time. A classic nonetheless.)***
	JONES, M. AND T. BROWN. 2000. Agricultural origins: the evidence of modern and ancient DNA. *Holocene* 10: 769-776
Traditional and industrialized agriculture: 22-24 Sept 2014	
WASHINGTON STATE UNIVERSITY COOPERATIVE EXTENSION. (n/d) Comparing Yields with the Land Equivalent Ratio (LER). Agriculture and Natural Resources Fact Sheet #532	TURNER, N. 1999. Keeping it living. Proceedings of a meeting held October 1-4, 1999 Kenora, Ontario, Canada.
MT. PLEASANT, J. 2006. The Science behind the Three Sisters Mound System - An Agronomic assessment of an indigenous Agricultural System in the Northeast Chapter 38, pp. 529-537. In: *Histories of Maize*, Staller, J., R. Tykot, B. Benz (Eds.) Academic Press Rand Ed.	FORD, R. 2000. Agriculture, An Introduction pp. 243-246. In: *Ethnobotany: A reader*, ed. Paul E. Minnis. Norman: Oklahoma.
Crop domestication: 26 Sept to 3 Oct 2014	
ZEDER, M.A., E. EMSHWILLER, D. G. BRADLEY, B. D. SMITH 2006. Documenting domestication: the intersection of genetics and archaeology. *Trends in Genetics* 22(3): 139-155. ***(Read the first page and all seven boxes.)***	NABHAN, G.P., ET AL. 2000. Chapter 12. Devil's Claw Domestication: Evidence from Southwestern Indian Fields. Pp 247-282 in: *Ethnobotany: A reader*, ed. Paul E. Minnis. Norman: Oklahoma. [originally published in *Journal of Ethnobiology* 1(1):135-164. (1981)]
HARLAN, J.R. 1992. Pages 63-67 from What is a crop? Chapter in *Crops and Man*.	JAENICKE-DESPRÉS, V. E. S., ET AL. 2003. Early allelic selection in maize as revealed by ancient DNA. *Science* 302: 1206-1208.
http://www.plantsciences.ucdavis.edu/GEPTS/pb143/lec16/pb143l16.htm http://www.plantsciences.ucdavis.edu/GEPTS/pb143/lec08/pb143l08.htm ***(See above links to Paul Gepts's course (also on Moodle). Reading the web pages is required, but written assignment is extra credit.)***	**See link in Moodle to more information on genetic bottlenecks. Also, entire *Documenting Domestication* book is available to you in Moodle.**
Conservation of crop genetic diversity: 8-10 Oct 2014	
TUXILL, JOHN 2000. The biodiversity that people made. *World Watch magazine* 13:25-35.	DEBOUCK, D.G. AND D. LIBREROS-FERLA. 1995. Neotropical montane forests: a fragile home of genetic resources of wild relatives of new world crops. Pp. 561-577 in Churchill, S. P., Balslev, H., Forero, E., Luteyn, J. L. (eds.) *Biodiversity and conservation of Neotropical montane forests*. Proceedings of a symposium, New York Botanical Garden, New York.
(See also handouts and links posted on Moodle as well.)	PERALES, H. R., B. F. BENZ, AND S. B. BRUSH. 2005. Maize diversity and ethnolinguistic diversity in Chiapas, Mexico. *PNAS* 102(3): 949-954.

REQUIRED READINGS	OPTIONAL READINGS
	BRUSH, STEPHEN B. 2000. Ethnoecology, Biodiversity, and Modernization in Andean Potato Agriculture. Chapter 13 pp 283-306 in *Ethnobotany: A reader*, ed. Paul E. Minnis. Norman: Oklahoma. [originally published in *Journal of Ethnobiology* 12(2):161-185 (1992)]
Archaeobotany / Paleoethnobotany: 13-15 October 2014 ***(Note that the sunflower debate is also included in this topic.)***	
FORD, R. I. 2000. Human Disturbance and Biodiversity: A Case Study from Northern New Mexico. Pages 207-222 in P. E. Minnis and W. J. Elisens, eds., *Biodiversity and Native America.* University of Oklahoma Press, Norman.	HAMMETT, J. E. 2000. Chapter 9. Ethnohistory of Aboriginal Landscapes in the Southeastern United States. Pages 248-299 in P. E. Minnis and W. J. Elisens, eds., *Biodiversity and Native America.* University of Oklahoma Press, Norman.
FRITZ, G.J. 2000. Levels of Native Biodiversity in Eastern North America. Pages 223-247 in P. E. Minnis and W. J. Elisens, eds., *Biodiversity and Native America.* Univ. of Oklahoma Press, Norman.	SMITH, B. D. 1997. Initial domestication of *Cucurbita pepo* in the Americas 10,000 years ago. *Science* 276: 932-934.
Two handouts on "Radiocarbon dating" and "Bone Chemistry and Prehistoric Subsistence" from: PRICE AND FEINMAN. 2004. *Images of the Past.* 4th edition. McGraw Hill.	RIEHL & AL. 2014. Drought stress variability in ancient Near Eastern agricultural systems evidenced by $\delta^{13}C$ in barley grain. *Proceedings of the National Academy of Sciences of the United States of America* (Early edition online).
SMITH, B. D. 1989. Origins of Agriculture in Eastern North America. *Science* 246 (4937): 1566-1571. ***Read just the final section, called The Shift to Maize-Centered Agriculture, on page 1570.***	HAYASHIDA, F. M. 2005. Archaeology, ecological history, and conservation. *Annual Review of Anthropology* 34: 43-65
ARCHER, S. 2004. *Phytoliths.* Colonial Williamsburg Research Division website. ***(Available on Moodle as PDF or as URL to web.)***	KVAVADZE, E., et al. 2009. "30,000-Year-Old Wild Flax Fibers." *Science* 325(5946): 1359.
BALTER, M. 2007. Starch reveals crop identities. *Science* 316: 1834-1834. ***(This was a "box" with the previously assigned paper: Balter, M. 2007. Seeking agriculture's ancient roots.)***	
Phytochemistry / secondary metabolites and human uses / medicinal plants / foods as medicines: 20 to 27 Oct 2014	
LEWIS W.H. 2000. Ethnopharmacology and the search for new therapeutics. Pp 74–96. in P. E. Minnis and W. J. Elisens, eds., *Biodiversity and Native America.* University of Oklahoma Press, Norman.	GOMEZ-BELOZ, ALFREDO AND NOEL CHAVEZ 2001. The *Botánica* as a Culturally Appropriate Health Care Option for Latinos. *The Journal of Alternative and Complementary Medicine.* 7(5): 537-546.
SHERMAN, PAUL W. AND SAMUEL M. FLAXMAN 2001. "Protecting ourselves from food." *American Scientist* 89(2): 142-151. **[Focus on the antimicrobial hypothesis concerning the use of spices, and the alternative hypotheses, not the part on morning sickness]**	TIMBROOK, JAN 2000. Virtuous Herbs: Plants in Chumash Medicine. Chapter 8, pp 172-183 in P.E. Minnis (ed.) *Ethnobotany: A Reader.* U. of Oklahoma Press.
NICHOLSEN 1999. AZ-tech Medicine. *Natural History magazine.*	Best, Ben. Phytochemicals as Nutraceuticals http://www.benbest.com/nutrceut/phytochemicals.html **Several other papers are available as optional readings.**

REQUIRED READINGS	OPTIONAL READINGS
Nutrition and dietary patterns: 29 October 2014	
KHAN, SARAH K. 2012. Chapter 85: The Glycemic Index/Load. pp. 789-794e in *Integrative medicine*, 2nd ed. [edited by] David Rakel. Philadelphia, PA: Saunders Elsevier.	FOSTER-POWELL, K., SUSANNA HA HOLT, AND JANETTE C BRAND-MILLER. 2002 Glycemic Index Glycemic Load. *American Journal of Clinical Nutrition* 76:5–56.
JOHNS, TIMOTHY 2003 Plant Biodiversity And Malnutrition: Simple Solutions To Complex Problems *African journal of food, agriculture, nutrition and development AJFAND.* Available on Moodle as a scanned document, or html at: http://www.bioline.org.br/request?nd03003 ***[Focus on parts on Global Change, Diet And Health And Nutritional Blindness: A Case Of Single-Nutrient Preoccupation]***	
Assigned websites for TOCA • Tohono O'odham Community Action: ***[Pay attention to the factors that led to the destruction of the historical Tohono O'odham food system, the effects on people's health, and what the community is doing now to revitalize their traditions and improve their health.]*** Historical Tohono O'odham Food System http://www.tocaonline.org/traditional-food-system.html Destruction of the Tohono O'odham Food System http://www.tocaonline.org/loss-of-traditional-foods.html Health effects of loss of traditional food system http://www.tocaonline.org/health-impacts.html Traditional food as medicine http://www.tocaonline.org/health-impacts.html Native Food Sovereignty http://www.tocaonline.org/native-food-sovereignty.html New generation of O'odham Farmers http://www.tocaonline.org/new-generation-of-o-odham-farmers.html School Gardens http://www.tocaonline.org/school-gardens.html Empowerment model http://www.tocaonline.org/how-we-do-it.html	

REQUIRED READINGS	OPTIONAL READINGS
Ethical issues /Patenting, Intellectual property rights, biopiracy: 31 October to 5 November 2014	
D. D. SOEJARTO, C. GYLLENHAAL, H. H. S. FONG, L. T. XUAN, N. T. HIEP, N. V. HUNG, T. Q. BICH, B. SOUTHAVONG, K. SYDARA, AND J. M. PEZZUTO 2004 The UIC ICBG (University of Illinois at Chicago International Cooperative Biodiversity Group) Memorandum of Agreement: A Model of Benefit-Sharing Arrangement in Natural Products Drug Discovery and Development. *J. Nat. Prod.*, 67 (2), 294 -299. ***[Focus on arrangements for intellectual property rights, treatment of informed consent, and plans for benefit-sharing.]***	ELVIN-LEWIS, MEMORY 2006.Evolving Concepts Related to Achieving Benefit Sharing for Custodians of Traditional Knowledge. *Ethnobotany Research and Applications*. 4(1):75-96.
BANNISTER, K. 2007. The ethics of engagement: An ethnobiologist's perspective. Academic Matters.	WYNBERG, RACHEL (2004) Rhetoric, Realism and Benefit-Sharing: Use of Traditional Knowledge of *Hoodia* Species in the Development of an Appetite Suppressant. *The Journal of World Intellectual Property*. 7 (6) 851-876.
Fermentation: 10 and 12 Nov 2014	
ARMELAGOS, GEORGE J. 2000. Take two beers and call me in 1,600 years – Ancient Nubians and Egyptians had a way with antibiotics. *Natural History Magazine*.	Beer: Origins and Ancient History: http://www.answers.com/topic/beer-origins-and-ancient-history
KATZ, S. E. 2012. *The Art of Fermentation: An In-Depth Exploration of Essential Concepts and Processes from Around the World*. Chelsea Green Publishing, White River Junction, VT. ***(Read pages provided in Moodle.)***	
Indigenous cultures of Wisconsin and North America: 14 to 19 November 2014	
SMITH, BRUCE D. 2006. "Eastern North America as an independent center of plant domestication." *Proceedings of the National Academy of Sciences of the United States of America* 103: 12223-12228.	Manoomin, the Food that Grows on Water. http://theways.org/story/manoomin
MANN, C.C. 2002. "1491." *Atlantic Monthly* 289: 41-53.	Smith, Bruce D. 1989. Origins of Agriculture in Eastern North America. *Science*, New Series, 246(4937):1566-1571.
GLIFWC (Great Lakes Indian Fish and Wildlife Commission). (n/d) Wild Rice: Ecology, Harvest, Management. (Brochure)	***(Several other websites are listed on Moodle for optional reading).***
Feb 8, 1887: Cleveland signs devastating Dawes Act into law http://www.history.com/this-day-in-history/cleveland-signs-devastating-dawes-act-into-law	
NTFP / Plants and Markets: 21 Nov 2014	
BALICK, M. AND P. COX 1995. *Plants, People and Culture: The Science of Ethnobotany*. Scientific American Library, HPHLP: New York. ***(Read Section on "Plants as an Impetus for European Exploration," pp. 132-141.)***	GODOY, ET AL. 2005. The effect of market economies on the well-being of Indigenous peoples and on their use of renewable natural resources. *Ann. Rev. Anthropology*. 34: 121-138.
TICKTIN, T. 2004. Ecological implications of harvesting non-timber forest products. *Journal of Applied Ecology* 41: 11-21	PETERS, D. M. ET AL 1989. Valuation of an Amazonian Rainforest. *Nature* 339: 655-656.

REQUIRED READINGS	OPTIONAL READINGS
Plants in Symbolism and Religion: 26 Nov 2014	
RASHFORD, JOHN (1984) Plants, Spirits, and the Meaning of "John" in Jamaica. *Jamaica Journal* 17 (2):62-72.	VOEKS, ROBERT A. 2000. "Candomblé ethnobotany: African medicinal plant classification in Brazil," in *Ethnobotany: A Reader*. Edited by P. E. Minnis, pp. 148-171. University of Oklahoma Press, Norman, OK.. [originally published in *Journal of Ethnobiology* 15(2):257-280 (1995)]
Global movement of plants and human cultures: 1 - 3 Dec 2014	
CARNEY, JUDITH A. 1998. The role of African rice and slaves in the history of rice cultivation in the Americas. *Human Ecology*. 26 (4): 525-545.	NGUYEN, MY LIEN T. 2006. Insertions and Deletions: Evolution in the assemblage of Vietnamese food plants. *Ethnobotany Research and Applications* 4(1):175-202.
NGUYEN, MY LIEN T. 2003. Comparison of food plant knowledge between Vietnamese living in Vietnam and Hawai'i. *Economic Botany* 57(4):472-480.	CARNEY, J. 1996. Landscapes of Technology Transfer: Rice Cultivation and African Continuities, *Technology and Culture*, 37(1): 5-35.
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