

Agroecosystems Analysis
Sustainable Agriculture 509, Agronomy 509, Sociology 509, Anthropology 509
Fall Semester 2009, Field Component: July 31 - August 14
Rm. 1151 Jischke Honors Building

Instructors:

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Catalog description: Experiential, interdisciplinary examination of Midwestern agricultural/ food systems emphasizing field visits, with some classroom activities. Focus on understanding multiple elements, perspectives (agronomic, economic, ecologic, social, etc), and scales of operation. This course is co-listed as AGRON 509, SOC 509 and ANTHRO 509.

Course objectives:

- to provide a grounding in the complexity, subsystems, components, and historical and cultural roots of the mainstream agricultural and food system
- to provide a common set of experiences to facilitate analysis and appreciation of the complexity, diversity and importance of agroecosystems
- to build appreciation of the complex variety of pathways and trade-offs involved in food's journey from field to fork to human and ecosystem health
- to introduce a spectrum of thought—from readings, speakers, site hosts—on the history, successes, challenges, and future of agriculture in the Midwest, the United States and beyond
- to develop competence and confidence in methods of assessing and evaluating dominant and alternative agroecosystems
- to facilitate student development by:
 - increasing learners' willingness to investigate personal beliefs, worldviews and preconceptions
 - increasing learners' appreciation of the beliefs, worldviews and preconceptions of others
 - sharing responsibility for managing and facilitating the course
- to put the idea of "community" to practical use within the class, academically and socially.

Learning objectives (as a result of taking the course, students will have):

- participated in a variety of field, classroom and group experiences that increase understanding of the components and the complexity of agroecosystems
- engaged in field research for the purpose of investigating central questions facing agriculture, especially the agriculture of the Midwest
- increased competence and confidence in reading and analyzing agricultural landscapes, especially the landscapes of the Midwest
- identified forces constraining and facilitating systemic change in agriculture, especially the agriculture of the Midwest

Required Readings:

We expect to see evidence of reading and thinking about the readings in class discussions and journals.

Mainstream Agriculture and Food Systems—Issues and Concerns

- Babbitt, Bruce. 2005. "What's the matter with Iowa?" (pp. 97–114). *Cities in the Wilderness: a New Vision of Land Use in America*. Washington, DC: Island Press.
- DeWitt, Jerry. 2008. A firsthand look at the Iowa floods. Leopold Center Newsletter: <http://www.leopold.iastate.edu/pubs/nwl/2008/2008-2-leoletter/director.html>
- DeVore, Brian. 2002. "Why Do They Do It?" (pp. 107-118) in Jackson, Dana L. and Laura L. Jackson (eds). *The Farm as Natural Habitat*. Washington DC: Island Press.
- Flora, Cornelia Butler. 1998. Water: The Urban-Rural Connection. July.
- Olmstead, Julia. 2006. "What About the Land? A look at the impacts of biofuels production in the US and the world". *Grist*. December 5. <http://www.grist.org/article/index/olmstead/PALL>
- Olmstead, Julia. 2006. "The Balancing Act: How experts measure the energy balance of alternative fuels". *Grist*. December 5.
- Pollan, Michael. 2007 "You Are What You Grow". *The New York Times Magazine*. April 22.
- Pollan, Michael. 2002. "An Animal's Place". *The New York Times Magazine*. November 10: (pp.58-65).
- Shapin, Steven. 2006. Paradise Sold. *The New Yorker*. May 15. (pp. 84-88).

The Farm Bill and Commodity Payments

- Ikerd, John E. "It's Time to Dismantle Failed Farm Programs." [http://web.missouri.edu/~ikerdj/papers/SFT-Farm%20Policy%20\(1-07\).htm](http://web.missouri.edu/~ikerdj/papers/SFT-Farm%20Policy%20(1-07).htm)
- Jackson, Wes and Wendell Berry. 2009. A 50-year Farm Bill New York Times Opinion. Jan 4. : http://www.nytimes.com/2009/01/05/opinion/05berry.html?_r=1&scp=1&sq=wes%20jackson&st=cse
- Marlow, Scott. 2005. The Non-Wonk Guide to Understanding Federal Commodity Payments. Pittsboro, North Carolina: Rural Advancement Foundation International.

Alternative Visions of Agriculture, Food Systems and the Economy

- Costanza, Robert. 2009. Toward a Sustainable Economy. *Real World Economics Review*. March 26. <http://www.commondreams.org/view/2009/03/26-10>
- Diamond, Jared. 1987. The Worst Mistake in the History of the Human Race. *Discover* (May): 64-66.
- Ikerd, John E., "Reclaiming the sacred in food and farming" <http://web.missouri.edu/~ikerdj/papers/Sacred.html>
- Jackson, Dana. 2002. The Farm as Natural Habitat. Pp 13-26 in Jackson, Dana L. and Laura L. Jackson (eds). *The Farm as Natural Habitat*. Washington DC: Island Press.
- Leopold, Aldo. 1999. "The Farmer as Conservationist" in J. Baird Callicott and Eric T. Freyfogle. *For the Health of the Land*. Washington DC: Island Press.
- Liebman, Matt et al. 2008. Agronomic and Economic Performance Characteristics of Conventional and Low-External-Input Cropping Systems in the Central Corn Belt. *Agronomy Journal* 100 (3): 600-610.
- Tagtow, Angie. (2008). "A Vision for 'Good Food' for Iowa: Linking Community-Based Food Systems to Healthy Iowans and Healthy Communities". Kellogg Foundation Food and Society Fellows Publications. <http://www.foodandsocietyfellows.org/publications.cfm?refID=102826>

Developing a Handle on Sustainability

- Meadows, Donella, 1998. Indicators and Information Systems for Sustainable Development. The Sustainability Institute. Hartland 4 Corners, VT.
- Meadows, Donella. [Leverage Points. Places to Intervene in a System](#). Sustainability Institute, Hartland Four Corners VT.
- Reed, Mark S., Evan D.G. Fraser & Andrew J Dougill. 2006. An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecological Economics* 59: 406-418.

Observation and Communication

- Cayer, Mario. 2005. The Five Dimensions of Bohm's Dialogue. Pp. 161-189 in B. Banathy and Jenlink (eds.), *Dialogue as a Means of Collective Communication*. New York: Kluwer Academic/Plenum.
- Leopold, Aldo. Illinois Bus Ride. Pp. 117-119 in *Sand County Almanac*.

Preparations for travel:

Iowa in August is typically hot and humid. Wear comfortable clothes and sturdy walking shoes. (Though cool, sandals are not the best choice for walking farm fields.) Bring a water bottle (we won't carry disposable cups), sunscreen and a hat that will provide sun protection. Bring long pants and closed-toe shoes, as they are required for certain visits. Though we will be wearing plastic boots for most farm visits, please bring shoes/boots you have **not** worn on other farms to address biosanitary concerns.

Please inform us of any health issues we should be aware of (asthma, insect allergies, etc.), and if you have special dietary restrictions or needs, so that we can do our best to choose appropriate foods and stops. Review the food responsibility chart we give you during orientation and prepare to pack food as needed for meals on the road. Each van will have a shared cooler with ice.

We will be spending a fair amount of time in close quarters, especially when traveling in the vans. To make the situation as comfortable as possible for everyone, we ask that folks minimize the amount of personal belongings they carry as best they can and take special care with personal cleanliness and hygiene.

Photos are a vivid way to record and share your experiences, and we encourage you to bring a camera. *Make sure, however, that you ask permission to take pictures when we are on visits.* **Note:** The GPSA often uses photographs from SusAg 509 on its website, in printed promotional material and for presentation of the program to the public. The photos that are used are selected to highlight the students and the activities of the program. If you have objections to your image being used for these purposes, please inform the program's coordinator, Charles Sauer (csauer@iastate.edu) in writing.

On Saturday we will make assignments for several tasks: (1) introductions between the class and site visit hosts or guest presenters; (2) writing thank you letters and (3) two-person green-team responsibilities. The teaching team will model introductions on the first day of class and do the honors during our first farm visit.

- (1) *Introductions:* At the beginning of each visit or prior to a guest presentation, one student will introduce the people we are visiting (or the guest speaker) to the class. Doing this will require reviewing the schedule for the day, seeking clarifications from the teaching team, and talking briefly with hosts (or guest presenters) upon arrival to get their names, and the names of family members or other supporting individuals present. The student will then introduce the hosts or presenters to the class and provide a short overview of what the class is all about. Students and instructors will then introduce themselves, typically in round robin fashion as we will usually be gathered in a circle.
- (2) *Thank you letters:* Every student will write at least one thank you letter to a guest speaker or site host. Thanks-you letters are always enhanced with a mention of something specific that was memorable or personal about that visit. Therefore, it's useful to think about keep some of these specifics in mind.
- (3) *Green team:* The second task is to pick up trash/recyclables, dispose of disposables, etc. in meeting rooms, whether on campus or in the field, at picnic sites, or in the vans. If booties are worn for a visit, green team members should make sure that they are gathered and disposed of properly. The assigned students should inspect both vans in the evening, gathering litter and sweeping out debris, and checking the status of the cooler in terms of orderliness, cleanliness, and ice (and reorganizing, cleaning, and adding ice as needed). Of course, everyone should be responsible for the litter and trash they create (perhaps itself a learning experience in sustainability) but beyond that, a daily tidying goes a long way to making us all comfortable traveling together for two weeks.

Expectations for site visits

During your two weeks in the field, you will (1) interact directly with the people, activities and settings making up various agroecosystems; (2) reflect upon and test your observations and judgments; and (3) envision and propose improved or alternative models of agroecosystems, informed by the insights and learning derived from course activities.

To interpret sustainable agriculture, you must understand and be able to critique agriculture as a whole. To be credible, effective, and pose informed conclusions, this critique must be based on an understanding of the forces that have shaped modern agriculture. To that end, we will visit settings that illustrate how humans engage in providing food for people in contemporary industrial society, and we will provide opportunities to understand first-hand the realities and worldviews of people who participate in the various roles in contemporary agroecosystems.

At each stop, you should feel free to interact with our hosts and to probe for insights into the facts, reasons, beliefs, rationale and worldview underlying their various agricultural practices. However, at all times be respectful of their dignity and integrity and refrain from instantaneous and public judgments of their roles and beliefs. View the field visits as data-collection activities; we will provide more appropriate settings to examine and discuss the data collected, express opinions, deconstruct and understand the worldviews expressed, and formulate hypotheses based on aggregate data collected throughout the course.

Course Grading:

35%: Journal

25%: Participation

15% Food Investigation Project

25%: Final assignment (presentation at GPSA Colloquium, short paper)

A. Journaling (35% of grade)

Students will keep a personal record of observations, thoughts, expectations, reactions and discoveries throughout the span of the course, using a journal; this will be one of the measures used to assess and evaluate your performance in the class. You are free (and encouraged!) to develop their own journaling style and format; however, we expect the journals to be methodical, substantive, introspective and understandable to an outside reader. Use any form of inscription you want for journaling during the class itself, but to save the eyesight and dispositions of those reading and assessing the journals later on, they should attain their final form as a Word document and should be submitted electronically. Journals will be due October 30th, the final Friday in October.

Expectations:

- Strive to update and write in your journal at least once daily during the field portion of the class, and regularly after the end of the field portion of the class as you and your group work on the final assignment. Learning continues into the semester!
- Illustrate points by incorporating information from your field notes
- Incorporate observations/thoughts/ideas from the assigned readings
- Include the following specific reflections (we are expecting journal entries, not term papers!)
 - Prior to our first field visit on August 1st, write a journal entry on the following questions
 - What are you expecting to see and learn?
 - What is ‘sustainable agriculture’?
 - Important thoughts and feelings
 - At the end of the field portion of the class on August 14th, write a journal entry on the following questions
 - Is what you saw and learned what you expected? In what ways was it different?
 - What is ‘sustainable agriculture’?
 - Important thoughts and feelings

- After your group has finished the paper for the final assignment, write a final journal entry on the following questions
 - Have your ideas and conceptions changed across the span of this class? In what ways?
 - What is ‘sustainable agriculture’?
 - Important thoughts and feelings

Sample questions to help kick-start journaling

- What did you think this topic/idea/visit would be like?
- How did the actual experience compare to your expectations?
- What were important questions you thought needed to be asked? Did new questions arise during the visit/reflection/conversation or occur to you to pose subsequently? What were they?
- What has the day brought to your conceptions and preconceptions? What did you learn? What did you unlearn?
- What thoughts and feelings have risen to the surface?
- How might the day’s experiences and reflections aid or influence subsequent days?

Criteria for evaluating journals:

- *Substance*: making connections between visits and specific subject-matter points made in presentations and/or discussed and developed during reflection sessions; clear demonstration of how information collected during field visits affected insights and conclusions drawn
- *Thoroughness*: covering the subject matter discussed, developed and presented during field visits and in on-campus sessions; frequency of entries; entries that span the course from start to finish; inclusion of material from assigned readings
- *Introspection*: demonstrating how existing thoughts and preconceptions aided and/or affected your approach to visits and the subject matter discussed during reflections and in interactions with hosts and classmates
- *Insights*: noting the development of new thoughts and insights resulting directly from experiences or observations during the class. How did the visits, readings, reflections, conversations, or course experience as a whole contribute?

B. Participation: (25% of grade)

We expect three kinds of participation from every student: in discussion, in reflection and in the co-creation of the course. Scheduled time will be provided for reflection, which involves collective review, analysis, discussion and extraction of meaning from the day’s activities. These sessions are critical for synthesis and capture of novel insights and ideas.

Sample criteria for evaluating participation:

- *Quality*:
 - Was your participation constructive in terms of helping to overcome collective mental barriers, or providing an environment for the discussion of different perspectives?
 - Were your comments and ideas conducive to greater understanding and/or creative thinking?
 - Did you on occasion integrate reference to the assigned readings into reflection sessions and other class activities?
- *Uniqueness*:
 - Did your specific contributions provide group insights and benefits that would have been lacking in your absence?
 - Did your particular background perspectives benefit the group’s understanding?
- *Shared responsibility*:
 - Did you contribute to co-structuring the class?
 - Did you accept class responsibilities (i.e. for managing reflection, group activities, etc...)

C. Food Investigation Exercise (15% of grade)

This exercise will take place Sunday, August 9th, with a class picnic at Brookside Park, Maple Shelter. More details will come in a supplemental handout.

Sample criteria for evaluating food investigation

- Working together as a team: division of responsibilities and work; contribution to the final presentation and written overview
- Evidence of thought in determining the choice of foods and wrestling with the issues and concerns of sustainability and their implications for the foods we acquire and eat
- Inclusion of a clear explanation of your group's food choice(s) for the meal
- Creativity in the presentation
- Clarity of the written overview
- Submission of each member's peer evaluation

D. Final assignment: Wrestling with Sustainable Agriculture (25% of grade)

One of our goals for the class is to take the observations and information from the class visits, readings and discussions, and organize them into a conception of sustainable agriculture. Though admittedly messy and complex, it is a task we all need to undertake, in order to make sense of the assessments we make that a practice or a principle is 'more' or 'less' sustainable, and to explain to someone what it is that we study and do. So, your final assignment for the class is to pull together a conception of sustainable agriculture, using all the resources of the class as your basis.

To provide a starting point for this task, we offer you a common model of sustainable agriculture. It asserts that a sustainable agriculture must be "...ecologically sound, economically viable and socially responsible."¹ This conception is often described or drawn as the 'three-legged stool' or the 'three pillars' of sustainability, as one can easily imagine what happens to the strength and permanence of the stool (or a roof that rests on the pillars) when one of the supports is removed.

Your task for this final assignment is to take this model and defend and critique it (identify its usefulness, strengths and limitations) using the information you have acquired throughout this course. You will work in small groups to do this and the assignment will have two 'deliverables'.

- (1) a 20-minute presentation by your group to test out your conclusions to the GPSA Colloquium on September 30th and October 7th. The object is to exercise your ideas with a broader community that is deeply concerned with the topic. In addition, most of the students at Colloquium will have been in your shoes, wrestling with the same concerns and complexity you are facing. This will be an opportunity to receive valuable feedback to further develop and refine your ideas and to learn from one another, as you listen and respond to the other 509 groups. Illustrate your presentation using examples from class visits, discussions, readings and visuals such as photographs or graphics.
- (2) a short paper that will be the written version of your conception of sustainable agriculture. It will be due on Friday October 23rd, allowing you to distill and incorporate the feedback you received during the colloquia and any further thoughts or analysis you might have had as a result.

Sample criteria for evaluating presentation/paper

As a group:

- Building a solid case for your notion of sustainable agriculture
- Creativity and coherence in the conceptualization and communication of your ideas
- Engaging the audience in the discussion
- Responding to audience feedback

¹ John Ikerd. 1999. "Hallmarks of Sustainable Farming Systems." Presented at the Scientific Conference on Organic Agriculture – Building the Bridges, Saskatoon, Saskatchewan, Canada
<http://web.missouri.edu/~ikerdj/papers/Hallmarks.html>

- Using the resources of the class to good advantage; showing evidence of having learned from the readings and the collective information and experience of hosts, fellow students and teaching team.
- Using the resources of your group to good advantage; considering and utilizing team members' unique abilities, disciplinary perspectives, personal experiences and skills.

As individuals:

- Making a fair and worthwhile individual contribution to content, coordination, leadership in the presentation and paper
- Participating in and supporting group interaction and discussion with all the presentations, including your own
- Completing the peer assessment handout for the assignment

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