

# Sustainable Resource Management

## Alliant International University

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This course reviews the scientific foundations and economic principles of sustainable resource management. Emphasis is placed on sustainable systems, applied ecology and practical resource management. Topics covered include: resource management policy, land use, tenure, forestry, agriculture, agroforestry, fisheries, and range management.

The goal is to help students develop a better understanding of economics, true costs, and resource policy, the approach needed to manage resources and resolve conflicts, new business applications and opportunities, and their responsibility for the future. Class activities will include lecture and discussion, role playing, and simulations of meetings involving complex resource management problems. These will include: forest management in California, agroforestry in Kenya, cattle grazing in western China, and the Grand Banks fisheries.

### Texts

Christian Kuchli. 1997. **Forests of Hope**. New Society Publishers.  
Alan Weisman. 1998. **Gaviotas**. Chelsea Green.

Handouts, test materials, notes for exercises, sample test questions, changes in schedule and suggested reading will be placed on the web.

### Course requirements and grading.

- |   |     |
|---|-----|
| 1. Research profile (word search and hits), notes and outline for paper   | 10% |
| 2. One 2000 word research paper - fully referenced with citations and word count  | 30% |
| 3. Midterm – in class multiple choice and essay (from lectures, discussions and books)  | 20% |
| 4. Presentation of a short talk on research paper   | 10% |
| 5. Class participation – discussions and simulations are critical and require reading assignments (attendance is expected, more than 2 unexcused absences will result in penalties) | 10% |
| 6. Final exam—take home essays and problems   | 20% |

*The expectation is 6-8 hours of work per week outside of class.*

### Schedule:

- |   |                                |
|---|--------------------------------|
| 1. Introduction – assessment of understanding, sustainable resource management, a framework. Research, presentations, writing well. Critical thinking. Systems, polycultures, multiple products and complexity. | CK pp11-31, DW 3-47.           |
| 2. Economics of sustainable resource management   | CK31-51, DW 48-90.             |
| 3. Sustainable forestry   | CK52-73, CK 226-232.           |
| 4. Sustainable agriculture  | DW 93-157.                     |
| 5. Agroforestry   | CK118-135, DW 136-181.         |
| 6. Rangelands and pastoralism   | CK88-117.                      |
| 7. Fisheries  | web readings.                  |
| 8. Sustainable buildings  | web readings.                  |
| 9. Special considerations of developing countries   | CK88-101, 158-173, DW 182-227. |

## Course assessment

Understanding - essays, presentation, essay questions and short answer exam questions.

Critical thinking - class participation, research papers, exams.

Communication - analysis and presentation of a paper to class (seminar style), research papers.

## Assignments

### #1: RESEARCH & NOTES (*Condensed from 2 pages-db*)

This is training for effective library and internet research. Conducting research effectively and managing information well is essential to succeed in most careers. Research helps you find out how, why, what, where, and when.

Step 1: Choose a research topic.

Step 2: Develop a short list of key words for the search.

Step 3: Start with the excellent resources of the AIU library.

THERE WILL ALSO BE A SERIES OF BOOKS ON RESERVE TO HELP WITH PAPERS – USE THEM

Step 4. Melvyl. You must include the results for a search for books with your research title words in Melvyl:

<http://www.melvyl.ucop.edu/> Provide a list of books you find in Melvyl with shelf numbers and full citation detail.

Step 5. The California Digital Library – Searchlight. List results of your search for your key words in Searchlight.

Step 6. Web Crawl. Use at least 2 search engines. List your search results. You must have at least two different search engines in your search profile.

For a sample search look at <http://academic.alliant.edu/bainbridge/resources/researchsample.htm>

Step 7. Sample Notes. Many students are not familiar with good note taking. This requires practice and I will give you feedback on your note taking. You must turn in a sample from your research notes--which should be computer printed, providing full reference data and shelf numbers or URLs as well as your notes. Turn in your notes from at least two of your key sources: one from the library or a scientific journal and one from the web.

Include all relevant citation information. Notes should be in your words not copied from text or book directly.

Step 8. Two internet site reviews – make sure they are sustainable resources management sites! These are to be short – preferably 1/2 page each. Use the internet review suggestions on the web site for guidance.

### #2. Research Paper, 2000 words (+ or - 50 words)

PAPER typed 1.5 or double spaced in 12 point Times or similar font, 1.25 inch margin on the left and 1 inch margins on all other sides. Except in cases where original investigations are done, your paper will be a report on investigations by others so you must be sure to give credit where it is due with proper citations and references.

The penalties for plagiarism are spelled out in the student handbook--zero for the assignment plus other penalties if serious. PAPERS WITHOUT PAGE NUMBERS WILL NOT BE ACCEPTED.

The individual paper topic must include sustainable resource management issues, economics and environmental issues. If you can't think of a topic I will help you. You should use at least **five scholarly papers or books** for your paper, you may use up to five internet sources in addition to the "permanent" references. There are books on reserve to help you get started. Use professional journals, government documents, and scholarly books as primary source materials. When you use an investigator's data, state his/her ideas, paraphrase his/her conclusions, or quote him/her directly, cite the reference as follows at the end of the sentence the first time their work is used in a paragraph (Altieri, 1995). This is the CBE or CSE name year reference format, not APA or MLA. Follow the instruction sheet. **No footnotes**, use direct quotations rarely, and only when they are essential to your argument. In most instances you should paraphrase the information from your sources, giving credit to authors by citing their paper or book. Contact the writing lab for help. **At the back of the paper attach** a detailed computer search

listing the search terms you used, the hits, and the browser and data bases you searched. You will also be required to turn in a sample of your research notes--which should be computer printed, providing full reference data and shelf numbers.

### **SUGGESTED TOPICS**

Sustainable management of a critical resource in your country or globally. What economic factors have led to problems? What environmental and social costs are involved? What has been suggested as a solution? Or a critical resource management issue for developing countries or global survival. Check with me for assistance on topics and resources.

**GRADING for PAPERS** . *I allow the papers to be corrected and resubmitted for regrading.*

1) Innovation and thoughtfulness	10
2) Analysis/understanding	20
3) Structure and order, focus	10
4) Grammar	10
5) Style-is it engaging, readable	20
6) Citations correctly used	10
7) Quality of citations and searches	20
Total score possible	<b>100 points</b>
<i>Deductions for spelling errors</i>	<i>-5 points for each word</i>
<i>Deductions for wrong words</i>	<i>-5 points for each word</i>
<i>Deductions for incorrect margins</i>	<i>-5 each</i>
<i>Inappropriate topic (doesn't answer question asked)</i>	<i>up to -30</i>
<i>Plagiarism (inappropriate copying of web page or other paper - no points for paper, no rewrite).</i>	

**PROVIDE A WORD COUNT – TRY TO MAKE THE TOTAL PAPER COME OUT AT EXACTLY 2000 WORDS NOT COUNTING REFERENCES. (penalties will be assessed if you are off by more than 50 words).**

### **#3. Presentation**

Presenting ideas is critical in business and community life. Your short talk can cover your research paper or an aspect of course role playing/simulations. Choose something of interest for your classmates. Expect to talk for about 5-8 minutes. Turn in your OH transparencies or display. Start using PowerPoint if you have not used it before. Your time as presenter is valuable - make sure it counts. More details will be provided in class.

### **Exams**

The midterm will be fill in the blanks, definitions, essays and problems.

The final will be a take home with essays and problems.

### **Course goals for understanding**

*Demonstration of a global outlook*

*Appreciation for economic drivers, inequity, asymmetry of power, externalities*

*Understanding of the interconnectedness and interdependence of individuals and cultures.*

*Skill in critical thinking to assess the quality of information and its importance.*

*Competency in interpersonal communication with oral, written, quantitative and computer skills*

*Understanding of the interdisciplinary nature of knowledge*

## **Course objectives**

*Integrate each student's unique experiences and background into this class.*

*Understand the importance of culture on other cultures, the environment and on historical development patterns.*

*Relate environmental constraints to development patterns and sustainability*

*Develop increased respect and understanding of "others" and especially the skill and intelligence needed for subsistence and survival in difficult and changing environments.*

*Apply critical analysis skills to interpreting regional history and current challenges.*

*Interpret and present important history, newspaper, and web information for other classmates.*

*Understand the inter-relatedness of all things and the importance of systems thinking to solve complex problems.*

*Learn to work well with teams and with a partner in analyzing and presenting discussions and displays of important concepts and papers.*

*Provide a meaningful project at the end of the class to help the campus understand its environmental history and prepare for the future.*

*Sample simulation exercise*

### **Wicked Problems – an exercise of complexity and compromise**

*The play's the thing*

The Okamogin Forest is a large forest in eastern Washington. Logging, mining, and grazing have taken place over the years and a large forest fire occurred five years ago. Only one relatively intact watershed remains with old growth forest. This watershed is also the spawning ground of the last significant salmon run in the area and host to several rare and endangered species. The forest fire led to a new planning effort to balance and protect the needs and wants of the forest users and the biological integrity of the forest.

The meeting is being held in Bentin, a small town near the junction of two rivers below the forest. Beautiful mountains are seen in the distance behind forests that are looking more than a little battered and misused. Salmon still run up the river in the fall, but the numbers are a small fraction of the historic run – when fish were so thick it was said you could cross the river on their backs without getting your feet wet.

The tourism industry, fishing, hunting, viewing, hiking (on the rise), logging industry (in decline) and cattle industry all want to utilize the forest resources. The newspaper reporters can attempt to ask questions at any time, but if rejected must wait impatiently for another chance.

*10 minutes or so - Moderator*

Today the Forest Service is presenting its two preferred options in a public meeting. These were developed by the scientists and planners at the USFS with input from community groups and stakeholders. This will present the two preferred options and receive public response from interest groups and get a preliminary sense of which direction to proceed. Is one of these plans going to be accepted or not?

*20-30 minutes - Interest Groups*

Your task is to represent your interests as strongly as if it was your own future at stake. Each interest group will get to make a short 2-3 minute statement of their views after the plan is presented. First state your name, your reason for being here, and your message. Being human this does not have to be rational, logical or to the point--although it would be nice if it is. The forest planner will then answer questions for a few minutes.

*15 minutes – milling about*

We will then take a 15 minute recess where you can talk with other special interest groups to see if you can find common ground for cooperation on the plan alternatives. At this time the newspaper reporters will circulate through the group and ask for opinions and try to stir up controversy.

*15 minutes*

You will then vote using sticky pads, with 3 votes with numbers (3 is your most preferred alternative), 2 less preferred, 1 least preferred). You can vote for either plan option I or II or a “start over option”

Wrap-up and discussion

**The dramatis personae** (*assigned by prof based on earlier student assignments*)

Lumber mill owner – wants no restrictions on cutting. Hasn't invested in mill modernization so needs big trees to be profitable. Born and raised in town, 3<sup>rd</sup> generation of mill ownership and operation.

Loggers – want no restrictions. Get the cut out! But most are fishermen and hunters. Born and raised in town.

Federal Wildlife official determined to protect salmon and R&E species at all costs. No cutting possible.

Eco-group Tree huggers – want more forest set aside for wilderness, more fish, no logging. Came from the city for this meeting.

Fishing tour guide – wants more fish. Desire to protect salmon watershed but born and raised locally – used to be a logger.

Hotel owner – wants more tourists of all kinds. Moved from Seattle 10 years ago.

Hotel worker – local married to logger, but needs job in hotel to make ends meet.

State fish and game dept warden – wants to protect endangered species, increase fishing and hunting opportunities, friends with many locals.

Mushroom collector wants to manage the forest for better mushroom harvests, some cutting might help and better roads would be useful.

Log truck driver – wants work, but fishes and hunts and could drive a tour bus. Conflicted.

Cafe owner – wants more tourists of any kind. Moved from LA twenty years ago, married into a local family with some loggers.

Mayor is a third generation cattleman turned apple grower. Wants to protect community and friends

Reporter from the Bentin Herald, wants controversy and “fights” if possible. Wants to make it to the city news desk in Seattle.

Bar tender – wants more tourists but sells a lot of beer and whisky to loggers.

Fishermen – have driven up from Seattle to press for more fish protection.

Logging equipment company. Almost broke, few sales. Divorced recently as debt increased. Locally born and raised.

State water quality agency staffer – goal to protect water at all costs.

The ranchers – want more access to the forest for grazing and less regulations. Locally born and raised. Cutting would improve feed for cattle.

Environmental group (mainline) – eager to protect forest but compromise oriented to keep funds flowing from corporate donors.

Bird watcher – driven by need to count more bird species, new roads would improve access, but too much damage would hurt old growth species.

Ski area developer – wants cutting to open forest for ski runs. Making no progress on his own.

Home builder -- local wants more people to come to town, which demands great environmental values. But needs wood and came from logging family.

Chamber of Commerce president – protect property rights (logging) and stimulate tourism. Friends in both camps.

The deputy mayor -- wife of the hotel owner, locally born – went away to the city and came back. Wants to protect community and friends.

Local citizens – want a better economy, peaceful community and a strong future. Locally born and raised mixed with wealthier urban refugees.

*Refer to full scale maps for added details.*

*These were very effective. Sometimes had to intervene when the discussions got too heated. It helped students understand the complexity and emotional loading of resource decisions.*