Natural Resource Conservation and Policy

-OR-

How can we live sustainably on our planet?

**The Stone Age came to an end,*
but not because we ran out of stones.

— Sheikh Yamani, former OPEC oil minister

**Conservation, viewed in its entirety, is the slow and laborious unfolding of a new relationship between people and land. —Aldo Leopold, Wisconsin Wildlife Chronology (1940)*

**The king who cannot take good care of the mountain, forest, lake and meadow, will not be able to rule the nation. —Guan Zhong (645 BC)*

**A nation deprived of its liberty may win it, a nation divided may unite, but a nation whose natural resources are destroyed must inevitably pay the penalty of poverty, degradation, and decay. —Gifford Pinchot, founder, U.S. Forest Service*

**Despite our artistic pretensions,*
sophistication and accomplishments—
we still owe our existence
to a six-inch layer of topsoil and the fact that it rains. —Chinese Proverb

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Course Description:

Natural resource conservation combines science (primarily biology) and policy (decision making).

The course examines the conservation of natural resources, including its history and ecological, economic and social foundations. First we discuss the basic principles of resource management including sustained yield, ecology, conflict resolution, and the effects of world population growth. With this foundation, we take a more detailed look at the management of specific resources, including soils, agriculture, rangelands, forestry, wildlife, and fisheries, then fossil fuels and renewable energy.

The course attempts to take the LONG view. Many of our resource problems have been caused because people put short-term interests over their own best interests over the long run. In addition to that, the history of natural resource management is a key part of the last 10,000 years of human history. As poet Gary Snyder put it, resource management began when we "stopped chasing our food and started growing it." All of civilization is based on natural resource management. NRM has greatly increased the carrying capacity of the Earth for humans, but often at the expense of other species. Throughout its history, NRM has put people first and short-term over long-term goals. We need to change that. We need to take a long view toward the future and think of many generations down the road. What will we leave for them?

In addition to taking the long view, the course takes a GLOBAL view. Since the days of the spice trade, natural resource management has had global implications. Now there are so many humans on the planet that we are having global impacts. Again, human ingenuity will hopefully come to the rescue to reduce these.

The Goal of Resource Conservation:

Good natural resource conservation (or NRM) MUST be sustainable. **Sustainable NRM meets the needs of the present without compromising the ability of future generations to meet their own resource needs.**

Resource conservation is about survival of both our planet and ourselves. Over the long-term, human welfare and environmental quality are inseparable. The environment can live without us, but we can't live without it!

Resource conservation is about working *with* nature to provide what we need while minimizing our impact on the environment. This is a remarkably challenging problem and solving it what NRM is all about.

Themes

- Natural resource conservation is about supplying what humans need while trying to minimize the impacts of this on the environment.
- Natural resource conservation has greatly increased the carrying capacity of the Earth for humans.
- Much of natural resource management has involved domesticating the plants, trees, mammals, birds and fish that humans favor.
- We have faced serious environmental impacts in the past and in most cases (though not all) human ingenuity saved the day.
- We now face environmental challenges on a global scale

Course Objectives:

Upon completion of this course, the student should:

- Recognize that *everything is connected*. Resources are not separate entities, but communities of living, interacting organisms and their abiotic environments.
- Recognize that the history of resource management is one of turning an increasing amount of the world's biomass into humans and the things humans want and need. This is having major impacts on other species.
- It is also a history of increasing domestication. We started with grass seeds and small livestock, then other plants, trees, and finally fish. Will there be anything wild left?
- Recognize our total dependence on natural resources and our own *personal* impacts on them.
- Recognize the complexity of our resource problems; that there are often no simple answers and there is no free lunch—*all* decisions have consequences.
- Recognize the importance of our philosophy in determining both the types of environmental problems we are likely to confront and the types of solutions we are willing to consider.
- Consider both human needs and the needs of ecosystems.
- Be able to tolerate, and even appreciate, diverse viewpoints.
- Recognize that few disciplines are more controversial than resource management—and few are more important.

Know Three Principles of Sustainable Resource Management:

1. Reduce dependence on non-renewable, non-recyclable materials, as these will run out.
2. Harvest renewable resources no faster than they can be renewed, or they will also run out. Also reduce the impacts of resource use, such as species extinctions.
3. Produce wastes no faster than nature can absorb or break them down, or we will poison our environment—and ultimately, ourselves.

Required Text:

For those of you on a tight budget, copies of the text will be on reserve in the Bioscience Library and an eBook is available online. You will also find the first 4 chapters of Chiras on Blackboard in case it takes time to get your copy of the text.

1) Natural Resource Conservation: Management for a Sustainable Future, 9th or 10th Edition by Daniel D. Chiras & John P. Reganold,. This book provides vital background and supplementary information that we don't have time to cover in lecture: You can order a new or used hardcopy at **http://www.UAFText2U.com**

Here is a link to a cheaper version of Chiras on Amazon, and a link for students to sign up for a free six months of Amazon Prime (free 3-5 business day shipping). It should be noted that if your subscription to Prime has not been cancelled by the end of the six month period, you will be charged the yearly rate of $39 - which is half that of the non-edu membership.
Book: http://amzn.com/0132251388 - $35.59. Amazon
Prime: http://www.amazon.com/gp/student/signup/info?ie=UTF8&refcust=5XKG22R4TR7TTEDSD5OOGSTS2Y&ref_type=generic

Learning Disabilities:

If you have a learning disability that may interfere with your ability to perform the work in this course, I am happy to make any necessary accommodations. However, it is the student's responsibility to obtain an Accommodation Letter from the Disabilities Office of the Health Center (ext.6158). This letter MUST be presented to Dr. Todd **within the first two weeks** of class. No accommodations will be made until this letter is given to the professor. Accommodations will NOT be made retroactively (i.e. if you have a spelling disability, you must present the letter ***before*** any points are deducted for spelling).

Attendance

Students are expected to attend all classes. If it is necessary to miss a class, contact the instructor beforehand to inform them of your plans and request guidance on how to make up missed classroom learning. **Research has shown that students who attend classes do much better and are FAR more likely to graduate.** The US has dropped from 1st to 12th in the number of students who start college and actually manage to finish, so professors are urged to take attendance, as this has been shown to increase graduation rates.

TAKE NOTES

Research also makes it clear that students who take notes do better in classes and again, are more likely to graduate. Note taking helps keep your mind from wandering; it helps you concentrate on the class.

CONDUCT IN CLASS

- **CELLPHONES ARE NOT ALLOWED.** Anyone caught with a cellphone will be asked to put it away immediately. They are an enormous distraction and will not be tolerated.
- **COMPUTERS ARE NOT ALLOWED unless we are working on a project where I ask you to bring them.** Computers are a distraction.
- Do NOT put books away or zip backpacks until class is over (i.e. NOT ONE MINUTE BEFORE 11:30).
-If other students are disturbing or distracting you, please let me know.

EMAIL: ALWAYS INCLUDE A SUBJECT & YOUR NAME

If you send an email to me or to the TA, please put **"NRM 101" as part of the subject line**. Most faculty get over 40 messages/day. If you want us to read your email, **ALWAYS include a subject**. Otherwise, it could to be considered spam and deleted.

If you have any questions about email or Blackboard, contact the Computing Help Desk at helpdesk@alaska.edu.

Blackboard

We use the online course center called "Blackboard" (I abbreviate it BB) for many things in this class. It allows us to post copyrighted material (since only those with a password can access it), most of the gradebook is kept online, and you can access lecture notes, announcements, handouts, etc. It will also be the place to take quizzes and submit some assignments. Go to http://classes.uaf.edu/ and log in using your UA username (eg. sktodd). Don't know it? Go to: https://uaonline.alaska.edu/banprod/owa/bwgk2gid.P_DisplayID_Request.

Flipped Classroom

Lecture slides will be posted on Blackboard. There is a lot of material that I am required to cover in this course, but I don't want every class period to be a lecture. In order to spend more time discussing issues and doing activities, we will often use the "FLIPPED CLASSROOM" model where students review the lecture before or after class. You will still be required to know

the vocabulary and concepts presented in the slides, so if you have any questions about the lecture slides, please let me know.

Academic Honesty:

The UAF Student Code of Conduct requires that collaboration among students will not be allowed on essays, tests, exams and online quizzes. Copying or paraphrasing another student's writing is a violation of the Student Code. Evidence of academic dishonesty (either copying anyone else's work or allowing someone to copy yours) will be presented to the Director of Judicial Services and may result in an F for the course and possible expulsion from the University.

Quizzes

There is at least one quiz due by 11:59 pm almost every Monday!!

NOTE: You cannot pass this course without doing the quizzes. In every field, the 100-level courses tend to be heavy on vocabulary. In this respect, the courses are like a new language and it's hard to discuss the complexities of a discipline without being fluent in the "language." The quizzes help develop your fluency in the vocabulary of NRM that you will need for upper division courses.

QUIZZES count for over 30% of the points in this course. There is a quiz on every lecture topic, such as agriculture, forestry, wildlife, fisheries, etc. Quizzes on one week's topics are due by 11:59 the *following* Monday. You do not need to wait till the last minute; the quizzes are available any time. Some weeks there can be 3 quizzes due Monday night, so I would encourage you to work on the quizzes as soon as possible after the lecture on the topic. You have two chances to get a perfect score on each quiz. There are also practice quizzes that do not count toward the grade; they are just there for review and practice.

Tests & Final Exam

There will be one Midterm and one comprehensive Final Exam. Each of these will include about several true/false and multiple choice questions, as well as several short answer and essay questions. Dates for tests and the exam are given on the attached course schedule.

Questions on Test Scores

If you feel there is a mistake in the grading of a test or assignment, it is important for you to point it out. Graders do make mistakes and it's also healthy to defend yourself and your ideas. However, please do **not** discuss the score right after class. I can be surrounded by a dozen students pleading for points and this isn't fair to any of us. Instead, do the following:

Write the number of the question on the back of the test and explain why you feel you deserve more points for it, then turn it in.

I will look these over carefully and correct any problems. When you get your corrected test back, if you still have concerns, please make an appointment to discuss it with me. However, **an appointment to discuss a particular test must be made within one week after I have returned it.** Do NOT wait until the end of the semester to bring such problems to my attention.

Late for a test? Remember that arriving late to a test is preferable to missing it altogether!!

No Early Final Exams

Early final exams are not allowed (an airline ticket is not an excuse for missing the final exam). However, if you have more than 2 exams in one day, provide proof and if possible, we will allow you to take the final exam at a different time.

Don't Miss a Test!

Missed Test Policy

This policy is an effort to be fair to those who did take the test on time and who have complained in the past that they, too, would have liked extra time to study (or sleep, etc…).

Sports Teams. If you are on a team that requires you to miss a test, you must have an excuse signed by your coach and make arrangements with me to take the test as soon as you return.

Illness. if you are seriously sick, you should stay home. You won't do well on the test and could infect others. However, please write me an email as soon as possible (preferably before the test) and make it up as soon as possible.

Grading Policy

Zeros are very bad for your final grade! Try hard not to get a single ZERO! Each year, 15% of the students in this course receive an F, and inevitably they have several zeros on the grade sheet. This is NOT a difficult course—unless you fail to do the work. **It is always better to turn in something rather than taking a zero**. Grades will be based on the percentage of points earned in the course.

Entry Quiz—up to 75 points Extra Credit	
Summary of 2 History Films	100
Online Quizzes, responses and reflections on the readings, lectures , & role playing exercises	1023
Active participation in 2 Commons Game Sessions	100
Reflection on Commons Game	50
Stormwater Management Plan	150
Extinction/Ecosystem Services Public Information Project	150
Active participation in 2 Rhino Debate Sessions	100
Reflection on Rhino Debate	50
Active participation and 2 Climate Change Negotiation	100
Reflection on Climate Change Game	50
Fisheries Readings Summary and Response	80
Overall Participation	50
Midterm	450
Final Exam	600
Total Points	**3,053**

WHAT DO THE LETTER GRADES MEAN?

A = Exceptional – The work is of "***professional***" quality, demonstrating originality, independence, and a thorough mastery of the subject matter. This not only means fulfilling the requirements, but doing it in a way that *goes beyond* the basic expectations of the assignment.

B = Very Good – Work does not have all the ***refinements*** that could give it real polish, but also didn't have any significant problems. Work is accomplished on time and presented neatly and thoroughly but does not have the depth and originality for an "A."

C = Acceptable – The work fulfills the ***minimum*** requirements with only a few notable errors. The student grasps the essential information; but work is not consistently thorough and does not demonstrate mastery. BTW, if this course is required for your major, you must get a C or better (even a C- is not adequate).

D = Unacceptable – The work demonstrates a lack of understanding of the fundamental nature of the assignment or material.

F = Complete lack of understanding of the fundamentals of the course.

Anyone who has less than 51% of the points possible after the first test will be withdrawn from the course. It is better to receive a W than an F.
You will be sent an email if this is the case.

Some ironic Natural Resource conundrums.
What effects, if any, do such attitudes have on public opinions on natural resource management?

1. Thoreau tried growing a bean patch, but he felt guilty destroying weeds and fighting woodchucks. He concluded that farming should be condemned as discrimination against innocents. Thereafter, he obtained his beans from his mother's garden.

2. A timber harvesting protest is held in lovely *log* home; dozens of flyers printed on *paper*, protesters hold *paper* placards on *wooden* stakes. Are they aware of the paradox?

3. New Alaskan: "You know, when I came to Alaska from Baltimore, I was totally opposed to cutting trees. But since I got here, I've realized something. I—well, I *like wood!* "

4. A woman at a public meeting tells the group that she is strongly opposed to mining of any kind and to gold mining in particular. While she talks, she runs her fingers along the long strands of a gold necklace around her neck.

5. Leslie: "My mother always bought chicken drumsticks in packages of four. As a result, my sister was 12 years old before she discovered that chickens don't have four legs."

6. A Native woman describes how she was sad when she caught a mother lynx with two kittens on her 50-mile trapline. The kits would surely die. Asked how she dealt with that, she said, "Well I know that someday it will be my turn. It's like they say, 'First the salmon feed me, then I feed the salmon.'"