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## Natural Resource Conservation and Policy

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

— Ernesta Ballard, Commissioner,  
Alaska Dept. of Environmental Conservation

*\*Tell me the landscape from which you come,  
and I will tell you who you are.*

— Jose Ortega y Gasset

*\*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:

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 agriculture, forest, wildlife, fisheries, and recreation management, then fossil fuels and renewable energy.

### The Goal of Resource Conservation:

*"To learn to live on a piece of land without spoiling it."*

—Aldo Leopold

Resource conservation is about survival—survival of both our planet and us. Over the long-term, human welfare and environmental integrity are inseparable. Resource conservation is about working *with* nature to provide what we need while trying to minimize our impact on the environment. We cannot “lock up” *all* of Earth’s natural resources. People are consumers—when we stop using the Earth’s bounty, we die. We must try to limit our population and to stop consuming far more than we need. But even if we succeed at doing so, the remaining humans will still need food, water and shelter. We will still need to obtain everything we require from the Earth. And as Leopold said, we must learn to do so without spoiling the very source of our livelihood.

### Required Texts:

- *Natural Resource Conservation*, by Chiras, et al. We will not discuss every topic covered by the book, but these topics are also important. The book provides vital background and supplementary information that the lectures alone cannot provide.

- *A Sand County Almanac* by Aldo Leopold. We will read and discuss this book in detail in discussion groups. Please get the *Oxford 1987 Edition* ordered for this class in the textbook section of the bookstore. Other editions have different essays. Additional short readings will be passed out in class and/or available on Blackboard, the online resource for this class at <http://classes.uaf.edu/>.

### Course Objectives:

Upon completion of this course, the student should:

- Recognize our total dependence on natural resources and our own *personal* impacts on them. All of us “live off the land,” though for most of us, this link is so remote that we are no longer aware of it. *All* of us are consumptive users of the environment.
- 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.
- Recognize that *everything is connected*. Resources are not separate entities, but communities of living, interacting organisms and their abiotic environments.
- Be able to challenge both optimistic and pessimistic perceptions about the state of our environment.
- Be able to explain what sustained yield is and why it is important in resource management.
- 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.

- Understand that policies are the rules that govern the behavior of an individual, group, organization or government. Policies include conventions, laws, regulations, enforcement, contracts, partnerships, and collaboration.

### **Grading Policy:**

Zeros play havoc with the total number of points received in the semester. Each year, 20% 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 out of the total possible points in the course, as shown below.

Grade on Entry Knowledge Quiz	75
Short Paper on Your “Ecological Footprint.”	50
15 Online Chapter Quizzes (10 pts each)	150
Attend Leopold Discussion 1	20
Attend Leopold Discussion 2	20
Attend Leopold Discussion 3	20
Attend Commons Game Session 1	20
Attend Commons Game Session 2	20
Leopold Essay 1	100
Leopold Essay 2	100
Leopold Essay 3	100
Test 1	200
Test 2	200
Final Exam	300
Instructor’s judgment of your attendance, participation and improvement during the semester. In short, would I recommend you for a job in this field?	125
<b>Total Points</b>	<b>1500</b>

***Anyone who has less than 51% of the points possible by November 2nd will be withdrawn from the course. You will be sent an email if this is the case.***

If your final % of total points is:		Your LETTER grade will be:
between	and	
92.5	100	A
90.0	92.4	A-
87.5	89.9	B+
82.5	87.4	B
80.0	82.4	B-
77.5	79.9	C+
72.5	77.4	C
70.0	72.4	C-
67.5	69.9	D+
62.5	67.4	D
60.0	62.4	D-
0.0	<59.9	F

**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 gaffs or 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 most or all of the *minimum* requirements with only a few notable errors. The student grasps the essential information; work is complete and presented on time.

**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.

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### **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.

### **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).

### **Guest Speakers are Volunteers—Please be considerate!**

Most speakers are nervous about speaking to a group this large. They spend considerable time putting together a talk they hope you will like. Please show them—and your fellow students—the respect they deserve. Good audience behavior enhances the reputation of the University and our ability to attract speakers who are at the cutting edge of their fields.

- Do NOT put books away or zip backpacks until class is over (i.e. NOT ONE MINUTE BEFORE 11:30).
- Please use the bathroom *before* or *after* class, not during it. Leaving and returning disrupts the class and disturbs other students.
- Anyone talking during a presentation will be asked to leave.
- Anyone sleeping during a presentation will be asked to leave.
- Any student who is asked to leave three times will be withdrawn from the course.
- If you arrive LATE, please sit in the back.
- If you **MUST** leave early, please sit in the back and depart quietly.
- Feet belong on the floor, not up in a speaker's face.

### **The Difference Between Research Universities and High School or Community Colleges**

Students should also know the difference between research universities and colleges. At high schools and community colleges, faculty are not expected to do research and

virtually none of their institution's income is derived from research. Teaching is their focus.

But at a university, the *majority* of the capital and operating costs come from research grants. The primary purpose of research universities is to conduct research. Teaching is a side benefit. This arrangement has worked for centuries to push the envelope of knowledge while at the same time training the next generation of researchers. These are also considered to be higher caliber institutions for learning; a degree from a research university is generally more prestigious than one from a non-research oriented college.

As a result of this research focus, most faculty in the sciences have 80-90% research appointments and just 10-20% teaching appointments. Even if the professor wants to spend more time teaching, s/he is not being paid to do so and must still complete the research that is required. If you sometimes feel that professors do not spend enough time with students, please be aware that many of us would like to spend more time teaching, but teaching alone cannot begin to support the costs of a university like this.

Research pays the lion's share of the bills, constructs almost all of the facilities on campus, adds to the value of your diploma and certainly adds to the ability of a university to attract professors who are at the cutting edge of their fields. Although it has its downside in pulling faculty away from the classroom, it has great benefits also. If it did not, you and I would probably be at a community college right now.

### **Brief Biography**

I grew up in western Nebraska and eastern Wyoming. I hold a BA in cellular biology from Bryn Mawr College in Philadelphia. I also hold a Masters in Regional Planning from the University of Michigan. My PhD—also from Michigan—is in Natural Resources, specializing in Environmental Mediation.

I came to Alaska in 1975. Since then, I have worked as an employee and/or a consultant for the US Forest Service, the Fish and Wildlife Service, the National Marine Fisheries Service, the National Park Service, the Alaska Dept. of Natural Resources and the Alaska Dept of Fish and Game, Chugach Natives Inc., Louis Berger Consulting, and the US Agency for International Development.

My planning and mediation experience includes development of a management plan for 13 million acres of state land in Alaska's Tanana River Watershed and the successful resolution of the intense debates over wolf management in Alaska's Fortymile River area.

In addition to this course, I teach courses in Resource Planning, Environmental Mediation, Resource Management in Developing Countries, and Literature of Science and the Environment. My research looks at ways to give citizens a voice in environmental decisions and planning processes.

## Email

If you send an email to me or to the TA, please put **“NRM 101” and your name at the start of the subject line**. Most faculty get 100-200 messages/day, many of which are spam. If you want us to read your email, **ALWAYS include a subject and your name**. Otherwise, it could be considered spam and be deleted.

Only those with active UAF accounts are allowed to use our “online classroom” called Blackboard. Your UAF email account should be generated automatically a day after you register. If you prefer to use a different email account, please forward your UAF account to it, since we cannot send mail to such external accounts from within Blackboard. To forward your email, go to <https://fsxyz.email.uaf.edu:20000> where “fsxyz” is your UAF user id. Enter your password, then click on “mail” and you’ll see the button to hit to forward your mail.

## Blackboard

We use the online course center called “Blackboard” (abbreviated 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. Go to <http://classes.uaf.edu/> and log in using your UAF userid (the fsabc part of your UAF email address) and a password that you create. First time users of BB should use their social security number without any dashes as their password. Once logged in, you can change your password by going to “TOOLS” and then to “PERSONAL INFORMATION” where you can click on “CHANGE PASSWORD.”

## Editing and Spelling Matters..

One point will be deducted for each spelling error on each written assignment except tests. If you have trouble spelling, ask the Writing Center or a friend to proofread your papers. The Writing Center on 8<sup>th</sup> Floor Gruening has trained staff who will proofread your paper for FREE. Save points by taking your paper there before turning it in. If your first paper loses many points for grammar and spelling, your section instructor will require that you take your last two papers to the Writing Center.

The following are taken from papers submitted in this class. It simply takes longer to comprehend such sentences. When the entire paper is like this, it can take **10 times as long** for me to discern what the writer was trying to say, let alone grade the paper. Take pity on your readers! Spell check and READ your papers (AND your email messages) before turning them in.

- “In terms of a dame, I say no, under he presidents we promote adversity of life.” (This is an exact copy!)
- “Darwin saled around the world on a boat called “The Bagel.”
- “To put out a plot, you masure 10 meters and drive in a steak.”

Jobs in natural resources, wildlife and fisheries are highly competitive. The first contact most applicants make with potential employers is through their cover letters and resumes. Would an employer spend 30 minutes reading a poorly written letter, when she could read a well-written one in just three minutes? An ability to write so that others can easily understand it is essential to finding a job in this field.

# ASSIGNMENTS

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*NOTE: ALWAYS keep a copy of written assignments (in all classes) in case one gets lost.*

## 1. Entry Knowledge Quiz

We are required to give a “survey of knowledge” at the start of this course. It will be given on the 2<sup>nd</sup> day of class. You are NOT expected to know all the answers, but you will be rewarded for doing your best on it.

## 2. Your Ecological Footprint and the PAT Impact Equation.

Directions for this assignment are included in this syllabus. See the schedule on the last page for the due date.

## 3. Chapter Quizzes – 10 pts each.

Quizzes for each assigned chapter of the text are on <http://www.prenhall.com/chiras/>. These are open book quizzes that you do online. Quizzes for each week’s readings are due the following Monday at 1 pm. **Email your results to the TA, Matthew Helt at [ftmeh@uaf.edu](mailto:ftmeh@uaf.edu)** Do let me know if you feel that the website has the wrong answer and thus graded you incorrectly. Last year we found two questions that were clearly wrong, but I wrote them and hopefully those have been fixed.

## 4. A Sand County Almanac (SCA) discussions and essays

### 5a) SCA Discussion Sessions

On three Fridays we will have discussion sections on *A Sand County Almanac*. These sessions provide an opportunity for student participation and discussion of this influential work and they are spaced two weeks apart so that we have time to grade the papers before you write your next one. You will have the same room and the same group leader for all three sessions. In the next few weeks, we will assign each student to a group and a room.

I will ask everyone to let me know if they prefer a room on Main Campus or West Ridge. Two discussion groups will meet on Main Campus and two on West Ridge.

Attendance is taken at each discussion session. **You must be present within the first 10 minutes of class and remain the rest of the period to be counted.** If you do not know where the room is, please try to find it in advance so you do not miss the first session. If you do miss one, it will not be possible to “make-up” the points for attendance. However, you can still complete the reflection paper, subject to the late paper policy described below (i.e. no extra time is given if you miss the discussion session, UNLESS you were seriously ill). Note that it often takes a while before campus scheduling assigns us rooms.

#### 5b) Three Essays based on SCA

The grading criteria and directions for each of the essays are included in this syllabus, pages 10 and 11.

**NOTE: All papers in this class can be turned in on recycled paper or on double-sided paper. As more people learn to read worldwide, paper is consuming immense quantities of wood! China alone has quadrupled its consumption of paper in the past decade.**

#### **LATE PAPERS:**

Each written assignment is turned in AT THE END OF CLASS on the DATE DUE. It is far easier to keep track of papers if they are all collected in class at the same time. To encourage everyone to turn them in on time and to reward those who do, the following points will be deducted from late papers.

Points Deducted for Late Papers:	
Papers submitted outside my office (349 O'Neill) after 1 p.m. but before 5 pm on the day it is due.	-20 points
Papers submitted after 5 pm on FRIDAY, but before class the following Monday.	-30 points
Papers after this without a note from a doctor or other responsible party.	-ALL points

## Tests & Final Exam

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There will be two tests and one comprehensive final exam. Each of these will include about 30 true/false questions, several multiple choice and a few short answer questions. Dates for tests and the exam are given on the attached course schedule.

#### Questions on Test Scores

An opportunity for students to discuss questions regarding a test score will be provided, subject to the following guidelines. Please do **not** discuss the score 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 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 checked it. Do NOT wait until the end of the semester to bring such problems to my attention.

#### 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 3-4 exams in one day, provide proof and if possible, we will allow you to take the final exam at a different time.

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### 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.

**Other reasons.** Legitimate problems do happen, but sleeping through the test, getting caught in a blizzard that mysteriously occurred only at your house, being detained by aliens, etc. do NOT constitute reasons to take the test another day! ***However, if you are delayed for any reason, remember that arriving late to a test is preferable to missing it altogether.***

**Illness.** Anyone absent due to severe illness must write me an email as soon as possible (preferably before the quiz) and make it up as soon as possible.

**Other.** Any other excuse must be signed by the Dean of Students—preferably *before* the test, but at the latest during or before the next class period following the test.

**NO OTHER EXCUSE WILL BE ACCEPTED.**

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# Your Ecological Footprint & The PAT Equation

NRM 101 Assignment DUE:

See schedule (last page) for date due.

50 pts

## ASSIGNMENT

### A. Your Ecological Footprint

First, calculate your ecological footprint at <http://www.myfootprint.org>

You will need to click on North America, then the U.S., then choose your preferred language, and answer a few questions.

Copy or print the web page that shows: a) your total footprint (in acres); b) how much of the average American's footprint this represents; c) what % of land you would like set aside for other species; and d) how many earths it would take to support the current human population at your standard of **living (6 pts)**.  
*You will NOT be graded on how low or high you are; simply report what you come up with.*

Copy your results (or print them from the website), then number and briefly answer the following in 1-2 sentences each.

- 1) Explain why you may have scored higher or lower than the average American. (7 pts)
- 2) If a person wanted to reduce their footprint, what should they do; i.e. what are the biggest contributors to a large footprint? (7 pts)
- 3) Do you think this estimate is accurate? Why or why not? (7 pts)

### B. The PAT Equation

Paul Ehrlich (who wrote the influential book *The Population Bomb*) came up with the "PAT Equation":  $I = (PA)/T$  where human impact (I) on the environment is directly proportional to the human population (P) and its level of affluence (A) (i.e. its consumption of resources per person) and inversely proportional to the technology available to reduce the impact (such as technology that efficiency in the number of miles per gallon or that allows us to harvest the sun or wind or that cleans exhaust fumes more effectively).

- 1 a) Holding the other variables constant, what happens to I when P increases? (3 pts)  
b) What happens to I when A increases? (3 pts)  
c) What happens to I when T increases? (3 pts)
- 2) Using the PAT equation, explain which country has more impact on the environment: poor countries or rich countries? (7 pts)
- 3) Based on this equation, if a country wants to reduce its environmental impact, what are its choices? (7 pts)

Staple your results from the website to your answers to the above questions. **Your answers can be single spaced, but they must be typed, spell-checked (1 point off for each misspelled word) and stapled**

**\*\* NO STAPLE, NO CREDIT ! \*\***

## *Background Info (questions from this will be on the first test)*

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### **What's your 'Ecological Footprint?'**

Karen Youso, Star Tribune April 22, 2003

Everybody loves the Earth. And why not? It supplies us with food, a place to live, places to go and ways to get there.

All this human activity puts a demand on the planet. That's not a problem as long as the demand doesn't exceed nature's ability to supply.

The question on this 33rd anniversary of the first Earth Day is: Are we taking more from nature than nature can give? Or, more specifically, are we drawing more than our fair share of the Earth's resources?

One way to address the question is by calculating an "ecological footprint." The bigger your footprint, the more of Earth's resources are needed to support you as you live, eat and move about. Add your footprint to everybody else's and you get the total human demand on nature.

Nature, in this case, is figured as the acres of Earth's land and water that produce food, absorb so-called "greenhouse" gases from fossil fuels and provide space for roads and homes. In other words, the part of Earth that supplies us.

Take the number of productive acres and divide it by the number of people on Earth, and you get nature's available capital, according to Mathis Wackernagel of Redefining Progress, a think tank in Oakland, Calif.

**Every person on the planet would get 4.5 acres before overdrawing on nature's bank**, Wackernagel says. But some say that people should have access to the amount that exists in their country, which doesn't always fit the average. For example, productive land in the United States allows about 14 acres per resident. Yet the average American footprint approaches 24 acres per person.

We aren't alone in taking more than Earth can replenish. The average German uses 12 acres, Australians 19 acres per person. As the human footprint increases, resources for future generations and wildlife diminish.

"You may not need elephants to live, but some people don't want to live in a world without elephants," Wackernagel said.

It's a choice, he said. What kind of world do we want to live in?

The challenge is to find quality of life within nature's means.

According to Redefining Progress, the Ecological Footprint for the average American is 23.5 acres. Here's an example of how it's divided and ways to reduce it:

#### **FOOD: 5.5 acres**

The average American eating meat at least once a week requires 5.5 acres to allow for food production and

energy used to transport, process, package and store it. About three-quarters of the typical American's diet is prepackaged, processed food that comes from farther than 200 miles away.

**To reduce:** Eat less meat, or eat range-fed or wild meats. Plants generally require less land, energy and other resources. Otherwise, buy more locally produced meats, preferably from small-scale, organic or so-called sustainable farmers.

Much of the energy in the food system is spent on transportation, processing, packaging and storage. Grow food yourself, shop at farmers markets or buy directly from farmers.

#### **SHELTER: 5.1 acres**

This measures the energy and resources for constructing, heating, cooling and maintaining a dwelling. This number is for a 1,000 to 1,500-square-foot, free-standing house with energy conservation and two occupants.

**To reduce:** A smaller-sized home with more occupants means the resources used go farther. Adding to the family, however, isn't an effective strategy to minimize your impact. Don't oversize your home. Also, living in a condo, townhouse or apartment tends to decrease your footprint.

#### **MOBILITY: 4.3 acres**

This is how walking, biking, trains, planes and automobiles affect the planet. It reflects the space and resources used for building byways, and manufacturing and operating vehicles.

The average American drives about 14,000 miles a year, or 270 miles a week, in a vehicle that delivers 15 to 25 miles per gallon and occasionally has passengers.

Americans spend an average of 4.7 hours per person on commercial airlines every year. This is roughly equivalent to a round-trip flight between Washington, D.C., and Chicago.

An average American using public transportation travels 25 to 75 miles a week. For many Minnesotans, the weekly average would be zero.

**To reduce:** Use public transportation, shorten your daily commute, drive fuel-efficient vehicles, car-pool and, whenever possible, walk or bike.

#### **GOODS AND SERVICES: 8.6 acres**

Goods include appliances, clothing, electronic items, sports equipment, toys, computers, household furnishings and cleaning products.

Services include water, sewage, garbage, telecommunications, education, health care, entertainment, recreation and tourism, military and other government services.

**To reduce:** Because our lifestyles increasingly depend on goods and services, this part of the footprint can be significant. To reduce, lower your score on food, housing and mobility. Another approach: repair, don't replace. Think energy efficiency when you buy and recycle whenever possible.

**Total footprint: 23.5 acres.**

#### **Humanity's Footprint**

Today, humanity's Ecological Footprint is already over 30 percent larger than what the world can offer. This means we are overusing



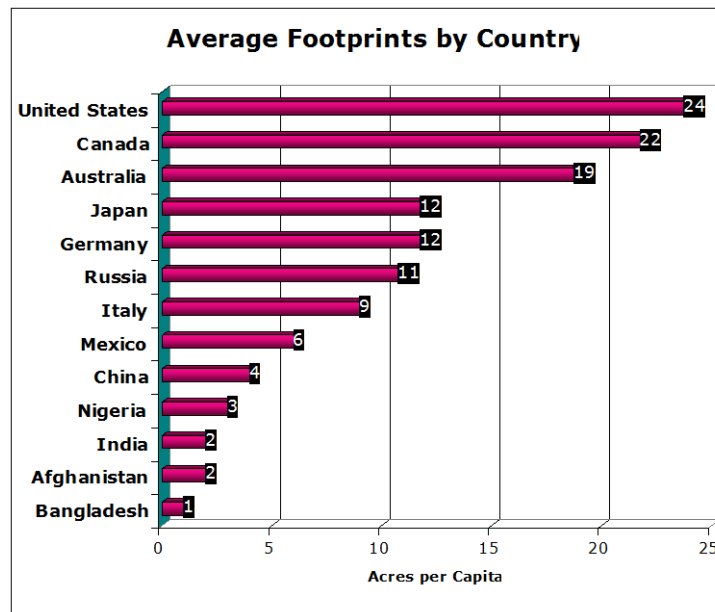
the planet and liquidating its ecological assets. Examples of our overuse include deforestation, collapsing fisheries, and the build-up of heat-trapping carbon in the atmosphere. At the same time, a significant percentage of the world's people do not have enough resources to meet basic survival needs.

To overcome this sustainability challenge, we need to do a better job of budgeting our planet's limited resources. Nature provides an average of 2.1 hectares (5.3 acres) of biologically productive space for every person in the world. By 2050 that available space will be reduced to 1.4 hectares (3.5 acres) per person if predictions of global population are accurate. Also,

some of this area must be set aside for the estimated 10 million other species on the planet.

On average, people use 2.8 hectares (6.9 acres), but there is a wide range. In some countries, the average is as low as 0.5 hectares (1.2 acres), while others use as much as 13 hectares (32 acres) per person. Even within any given country, individuals' footprints vary widely.

By more carefully tracking human impacts on the Earth's resources, we can learn what needs to be done in order to protect our natural assets. We can all be part of the solution. Together, we can reshape the global economy in a way that will allow all people to meet their essential needs without destroying the limited capacity of our planet.



### If the world were a village of 100 people...

These statistics give us a wider perspective on the state of the world and the pressure on natural resources worldwide. For most humans, things like parks and recreation are unthinkable luxuries. Clean water is even beyond their reach. If we could shrink the earth's population to a village of precisely 100 people, with all the existing ratios remaining the same, it would look something like the following. This is from the book, *If the World Were a Village*, by David Smith (2002).

#### There would be:

61 Asians  
17 Europeans  
14 from the Western Hemisphere, both north and south  
8 Africans

52 would be female  
48 would be male

70 would be non-white  
30 would be white

70 would be non-Christian  
30 would be Christian

89 would be heterosexual  
11 would be homosexual

6 people would possess 59% of the entire world's wealth and all 6 would be from the United States.

80 would live in substandard housing  
70 would be unable to read  
50 would suffer from malnutrition

One would be near death; one would be near birth. One (yes, only 1) would have a college education. *One* would own a computer

If you woke up this morning with more health than illness ...you are more blessed than the million who will not survive this week.

If you have *never* experienced the danger of battle, the loneliness of imprisonment, the agony of torture, or the pangs of starvation ...you are ahead of 500 million people in the world.

If you can attend a religious or spiritual gathering without fear of harassment, arrest, torture, or death...you are more blessed than three billion people in the world.

If you can read this, you are more blessed than over two billion people in the world who cannot read at all.

## NRM 101

### Discussion Sessions and Papers on A Sand County Almanac (SCA)

#### **A. Discussion Sessions**

At each discussion session, come prepared to read

- 1) a paragraph from your paper and
- 2) a passage from SCA (for this passage, you must choose a different essay than the one you chose for your reflection).

In the discussion session, we skip around the room until everyone has read a paragraph from their paper and explained why they chose that essay to write about.

Next, we focus on the text. Each student reads a passage from the book (from a different essay than the one they wrote about) and explains why they chose that passage, then we discuss the issues it raised.

***\*\* Bring your book to each discussion session so that you can read along. \*\****

*NOTE: attendance is required at the discussion sessions. Unless there is a problem with the assigned room (such as another class is in the room, which HAS happened), you must be present in the first 10 minutes of discussion to be counted as present. If there IS a problem with your assigned room, don't panic. You will not be penalized for someone else's mistake.*

#### **B. Three Reflections on the Readings**

Choose one of the essays from the week's reading assignment and write a **TWO-page** reflection on it.

1. Begin your reflection by stating the **title** of the essay you chose and the **page number** it is on.
2. In the first paragraph of your reflection, briefly summarize what the essay is about.
3. The following points *must be included in your reflection*.
  - a. Discuss "the moral of the essay." In other words, what is Leopold's thesis—his primary argument—in the essay? What does he want the reader to take away; why did he write this essay? For example, in the first essay, does he want the reader to know that animals make tracks in the snow, or is he trying to communicate something more profound and universal?
  - b. List at least one *scientific* point that is included in your chosen essay. For example, on page 4 he talks about a meadow mouse. In two short paragraphs, the reader learns a good deal about mice. And on page 73, he talks about the many diseases that afflict his woods. Yet he calls the essay "A Mighty Fortress." Why call a forest with many maladies a mighty fortress? What is the scientific point he is trying to make? (See the SCA Study Guide on Blackboard for more ideas).
  - c. Explain why you chose this particular essay. This could be because you strongly agree with its point, or because of things you find surprising, enlightening, irritating, unbelievable, or downright wrong.

Definitely include quotations in your paper and/or refer to a specific passage, and when you do so, be sure to include the **page number from the book**.

**STAPLE** a copy of the grading criteria (on the next page)  
to the front of your paper.

**HINT:** You can improve your grade substantially  
by using the grading criteria as a checklist when you write the paper. ☺

REFLECTION # (check one)



YOUR FIRST &amp; LAST NAME:

YOUR GROUP LEADER'S NAME:

**Points for CONTENT**

Your Pts	PTS	4 ↓	Use the shaded column as a checklist to make sure you have included each item <i>before</i> you turn in the paper.
	5		The reflection indicates the title and page number of the essay to be discussed.
	10		The reflection summarizes in one short paragraph what the essay was about.
	10		The reflection explains why the student chose this particular essay to write about.
	20		The reflection discusses "the moral of the essay." In other words, what is Leopold's thesis—his primary argument—in this essay? What does he want the reader to take away; why did he write this essay?
	10		The reflection discusses at least one <i>scientific</i> point made in the essay (such as "Draba is a small plant most people would not notice but it plays an important role in reducing erosion.")
	5		Paper includes at least one quotation from the book, with quotation marks and the correct page number in parentheses at the end of the quotation.

**Points for Writing Quality**

	10		The points reflect thought and a careful reading of the book.
	10		Paper includes original and creative elements such as word choice, approach, unusual points or insights, etc.
	10		Paper is easy to read: effective sentence structure and word choice, not boring or verbose.
	10		<b>Overall Quality of the paper</b>
	100		<b>Subtotal for Content of Paper</b>

**LESS deductions for errors and omissions:**

	Points Deducted	Check 4	Problem
	-1 pt each		For each spelling error, improper use of homonyms, etc.
			For each grammatical or syntax error (subject and verb not in agreement, incomplete or run-on sentences).
			For each significant punctuation error.
	-2 pts each		For use of clearly incorrect words, such as "adversity" instead of "diversity" or "Voyage of the Bagel" instead of "Voyage of the Beagle," etc
	-3 pts per paper		Paper does not have 1.5 or double spacing.
	-5 pts per paper		Paper is not typed.
	-2 pts per paper		Paper does not have a 11 or 12 point font for the body of the text.
	-3 pts per paper		Pages do not have margins between 1.0 to 1.25 inches minimum/maximum on all sides.
	-10 pts per paper		Paper is LESS THAN ONE full page OR MORE THAN THREE pages in length. (Try to keep it no more than 2 pages long).
	-5 pts per paper		Paper does not have grading sheet stapled to the front. To avoid missing points, READ the grading sheet and check off each requirement before submitting your paper.
	-3 pts each		Grading sheet does not have (a) YOUR NAME and (b) your GROUP LEADER'S NAME in the box at the top.
	-10 pts /paper		Paper is not STAPLED (if more than one page). That means a STAPLE, not a diaper pin or a fold-and-spit. Be professional. Get a small, light \$2 stapler at the bookstore.
	<b>Subtotal for Errors and Omissions</b>		
	<b>Total Points (points for content less errors and omissions)</b>		