Conceptual content: An environmentally sustainable society is one that meets the current needs of its people for food, clean water, clean air, shelter and other basic resources without compromising the ability for future generations to meet their needs. Problems arising from the human need for energy and the environmental degradation that follows has created problems generating from a local to global scale. The nature and success in resolving these problems starts with a proper understanding of Ecology and how humans fit into nature. It is then that we can delve into inquiry and learn how to ask proper questions. From these questions we can test and answer the scientific cause and effect of the problems, as well as return to the socio-economic and political context of the original question and more importantly perhaps the spirit nature of life.

We begin the class with (You) asking “How big is your ecological footprint?” and then making a 10 week commitment to change something in your lifestyle and quantifying its affect. We will investigate, observe, test, write, graph, draw, debate, dialog, calculate and with determined focus, Learn!

This course will include team projects and fieldwork outside of class. We will ride share, camp and venture into Nature this term.

Reading Requirements:
A Sand County Almanac by Aldo Leopold
A Natural History of the Sense by Diane Ackerman

Additional articles will be posted in the online calendar for the class as assigned
Recommended:
Access to a computer will be very important. If you do not have an ODIN account with PSU please set up an account. Use campus labs if you do not have home internet access.

Visit [http://d2l.pdx.edu](http://d2l.pdx.edu) to find our course website.

However, no electronic devices are allowed in class. Leave your cell phone off, computers in your backpack.

Since we meet only once each week it is vital NOT to miss any classes. A project will be given during class each Friday that is due at the beginning of class the following Friday. The assignment will incorporate essay, experiment, scientific method, and research. Each assignment is worth 50pts. x 9 weeks = 450 pts. A final project will be worth 100pts for a term total of 550pts. All guidelines will be available on D2L. Check in everyday.

Assignments not listed here will be given in greater detail in class and on D2L.

Films & Media Lectures:
There will be various films used to support the themes as noted in the weekly calendar. Most of these films are not available for rent, therefore you must be present for viewing. These films are critical and cannot be missed.

Fieldtrips: I have organized your class so that we have 4 hours of time to complete fieldwork and experiments. We will need to carpool to the Columbia River Gorge, to the Oregon Coast, to the San Juan Islands and within the city of Portland. The weekend camping trip TBD will require camping gear such as tents, sleeping bags, and cooking equipment. These things can be rented if you do not own them. Begin a list now of what you will need so we can better help you.
Essays and Research:

Proper reference citing:

Reasons for proper reference:
Why sources should be cited
• To show that your edit isn't original research.
• To ensure that the content of articles is credible and can be checked by any reader or editor.
• To help users find additional reliable information on the topic.
• To improve the overall credibility and authoritative character of Wikipedia.
• To reduce the likelihood of editorial disputes, or to resolve any that arise.
• To credit a source for providing useful information and to avoid claims of plagiarism.

Peer review articles are: (click on this link for a full disclosure of what a peer reviewed journal is, AND a link to click on Ulrich’s directory to double check yourself) http://www.lib.utexas.edu/lsl/help/modules/peer.html

Be on time and turn assignments in promptly. The consequence to NOT participating, missing assignments, being late, adds UP. You earn points for participation, projects are graded by accumulation not deduction. Everyone begins with 550 points and each project gets deducted from your general debt. Sorta like life, you earn your worthiness to pay your existence here. We however are valued for our participation and learning E=MC2. Green Coins are earned on noted projects and extra credit options given. Worth 5pts each and can be used, traded or kept.
"In light of knowledge attained, the happy achievement seems almost a matter of course, and any intelligent student can grasp it without too much trouble. But the years of anxious searching in the dark, with their intense longing, their alterations of confidence and exhaustion and the final emergence into the light -- only those who have experienced it can understand it.".....Albert Einstein

*Binder w/ 10 weekly tabs. Make a section for Week and subject matter so that you can reference it beyond this class. You will add articles and other materials into this binder over the 10 weeks of our class.

<table>
<thead>
<tr>
<th>Exercises</th>
<th>Points Possible</th>
<th>Points Possible</th>
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<tbody>
<tr>
<td>EcoFootprint</td>
<td>* (green coin)</td>
<td>Weekend Fieldtrip TBD (Fieldwork)</td>
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<tr>
<td>10 week Pledge</td>
<td>* (green coin)</td>
<td>Easter Island Presentation</td>
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<td>Mission Theatre Feb 18 (green coin)</td>
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<td>Salmon Forest Flow Diagram</td>
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<td>Ecological Design (Applied)</td>
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<td>Columbia River-Water</td>
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<td>EcoHunt (fieldwork)</td>
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<td>Columbia River-Plants (Fieldwork)</td>
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<td>Earth Science</td>
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<td>Ring of Fire</td>
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<td>Biomimicry</td>
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<tr>
<td>Oregon Coast (Fieldwork)</td>
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<td>Final Project (team)</td>
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</table>

Portland State University  
FRINQ UNST 286D Friday 9-1  
Dr. Candace Gossen: gossen@pdx.edu  
GA: Lukas Maurer imaurer@pdx.edu

CRN 45729
Cramer Hall 225
| Week One - January 10 | Water & Forests (Biomes) | The Salmon Forest Film
  - Great Bear Rainforest
  - Keystone Species (Salmon)
  - Biomes, Ecosystems
  - Flow Diagrams
  - Git’Gat People
  - Ni5 & Hydrologic Cycle | Hoop of the People
  - EcoFootprint
  [http://www.earthday.org/footprint-calculator](http://www.earthday.org/footprint-calculator)
  - Redefine the Dream
  - E=MC2
  [http://www.1728.org/einstein.htm](http://www.1728.org/einstein.htm) | Wells checklist:
  - Monterey Seafood Watch Pocket Guide
  - The World's Biomes
  - The David Suzuki Foundation
  [http://www.davidsuzuki.org](http://www.davidsuzuki.org)
  - See D2L for Flow Chart examples | Bound:
  - Introduction (<1 page)
  - Flow Diagram
  - Research Salmon (Columbia River)
  - Observational data (10 people - 10 questions)
  - Report Findings
  - Create educational tool (1 page max) |
<table>
<thead>
<tr>
<th>Week</th>
<th>Elemental Nature</th>
<th>Theme</th>
<th>Exercises</th>
<th>Reading &amp; More</th>
<th>Project</th>
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<tbody>
<tr>
<td>Week Two - January 17</td>
<td>Wood (Ecosystems)</td>
<td>Ecology &amp; Connections</td>
<td>Cadillac Desert (Film)</td>
<td>Boundary:</td>
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<td>• Endemic Species</td>
<td>Water Quality (Experiment)</td>
<td>• Introduction (&lt;1 page)</td>
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<td>• Isolated Ecosystems</td>
<td>Scientific Method Plants</td>
<td>• Columbia River Natural History</td>
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<td>• Range of Tolerance</td>
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<td>• Summary of Water Quality Test &amp; Range of Tolerance for Salmon</td>
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<td>• Dams</td>
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<td>• Research Endemic Plant Species (photo &amp; ID for field trip) 1 page for each</td>
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<td>• Celilo Falls</td>
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<td>plant. Minimum 6 plants (non-Internet source)</td>
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<td>Week</td>
<td>Elemental Nature</td>
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<td>Week Three - January 24</td>
<td>Wood (Micro)</td>
<td>Field trip to Oneonta Gorge</td>
<td>In the Field</td>
<td>See links D2L.</td>
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<td>• Isolated Micro ecosystems</td>
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<td>Dam Removal</td>
<td>• Photo Essay</td>
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<td><a href="http://news.nationalgeographic.com/2013/07/14/65-dams-removed-to-restore-rivers-in-2012/">http://news.nationalgeographic.com/2013/07/14/65-dams-removed-to-restore-rivers-in-2012/</a></td>
<td>• Field Notes</td>
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<td>• Geology of Columbia River Gorge</td>
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<td>Cadillac Desert by Marc Reisner</td>
<td>• Essay 2,000 words</td>
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<td><a href="http://www.ldeo.columbia.edu/~martins/hydro/case_studies/cadillac_desert.htm">http://www.ldeo.columbia.edu/~martins/hydro/case_studies/cadillac_desert.htm</a></td>
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<td>Week Four - January 31</td>
<td>Fire (global)</td>
<td>Food Garbage Archaeology &amp; Taxonomy</td>
<td>Lunch Project</td>
<td>Once &amp; Future Landfills (pdf)</td>
<td>Bound:</td>
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<td>Fukushima</td>
<td>(bring your lunch to class)</td>
<td><a href="http://solar783.com/solar783/landfills.pdf">http://solar783.com/solar783/landfills.pdf</a></td>
<td>• Introduction (&lt;1 page)</td>
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<td>Nuclear Waste (symbology for the Future)</td>
<td>Shimizu City (Film) Symbology</td>
<td>Ewaste <a href="http://ngm.nationalgeographic.com/geopedia/F-Waste">http://ngm.nationalgeographic.com/geopedia/F-Waste</a></td>
<td>• Summary of Lunch Project and relation to garbage in ocean</td>
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<td>Ring of Fire</td>
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<td>• Waste solutions 2,000 words</td>
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<td>Week</td>
<td>Elemental Nature</td>
<td>Theme</td>
<td>Exercises</td>
<td>Reading &amp; More</td>
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<td>Week Five - February 7</td>
<td>Oregon Coast Fire + Water</td>
<td>Tillamook Biodigester Coastal Ecosystem Grey Whale Migrations and Identifying</td>
<td>(Friday &amp; Saturday Fieldtrip)</td>
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<td>Bound:</td>
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<td>• Introduction (&lt;1 page)</td>
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<td>• Summary Biodigester</td>
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<td>• Grey Whale Migration in the Pacific Ocean (food, pathways, ....)</td>
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<td>• Essay how does garbage and radioactive waste affect the whales 2,000 words)</td>
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<td>Week Six - February 14</td>
<td>Earth + Air</td>
<td>Forests as Lungs of Planet</td>
<td>Mass Balance Equation (bring calculators)</td>
<td>global warming view 1: <a href="http://solar783.com/gw1.pdf">http://solar783.com/gw1.pdf</a></td>
<td>Bound:&lt;br&gt;• Introduction (&lt;1 page)&lt;br&gt;• Opposing views of Global Warming summary&lt;br&gt;• Earth Science Experiment summary&lt;br&gt;• Proposal for future (essay 2,000 words)</td>
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<td>Introduce Easter Island (Deforestation &amp; Drought)</td>
<td>Atmospheric Physics (sheets given in class)</td>
<td>global warming view 2: <a href="http://solar783.com/gw2.pdf">http://solar783.com/gw2.pdf</a></td>
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<td>Read the culture story before class <a href="http://islandheritage.org/wordpress/?page_id=144">http://islandheritage.org/wordpress/?page_id=144</a></td>
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<td>February 18 - Tuesday</td>
<td>Easter Island Presenta- tion at the Mission Theatre OMSI Science Pub 7-9pm</td>
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<td><a href="https://www.omsi.edu/sciencepubportland/021814">https://www.omsi.edu/sciencepubportlan d/021814</a></td>
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### Week Seven - February 21
- **Nature**
- **Biomimicry**
- **Ecological Design**
- **Ecological Design (film)**
- **Living Building Challenge**
- **Biomimicry website**
- **Bound:**
  - Introduction to Biomimicry
  - Design a nature solution to a current unsustainable problem (photos, sketches, writing, creative project of your design, credibly)

### Week Eight - February 28
- **Design**
- **Rules of Thumb**
- **Reading Sun Charts**
- **Solar (HW & PV)**
- **Rainwater Collection**
- **Calculators to class**
- **Malcolm Wells**
- **ReDiscovering America handouts**

### Week Nine - March 7
- **Sustainability**
- **EcoHunt (fieldtrip in Portland)**
- **EcoHunt (geocaching site)**
- **Land Use Solar vs Coal**
- **http://solar783.com/landusesolar.pdf**
- **Bound:**
  - Photo Summary of EcoHunt
  - Informational web page for sustainable places in Portland

### Week Ten - March 14
- **Portland State University**
- **FRINQ UNST 286D Friday 9-1**
- **Dr. Candace Gossen:** gossen@pdx.edu
- **GA: Lukas Maurer** imaurer@pdx.edu

**CRN 45729**
**Cramer Hall 225**

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<tr>
<th>where i live</th>
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<th>Regenerates +100</th>
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Total (add them all up)