Ecological Background for Resilience and Adaptation
Biology 692 (aka RAP Ecology Module)

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Class Time: Tuesday and Thursday, 8:00 – 9:30 am, 28 February – 5 April 2012

Location: 208 Irving I Building

Office Hours: After class or by appointment

Course Description: Ecological Background for Resilience and Adaptation provides the ecological background that is necessary for understanding the role of ecology in complex systems involving interactions among biological, economic, and social processes. This course is designed for incoming students of the Resilience and Adaptation (RAP) Program that have not received training in ecology.

Prerequisites: Graduate student enrollment or permission of instructor.

Grading Policy: 1 credit, Pass/Fail, determined from class participation, student led paper discussions, and completion of an ecologically based management planning project.

Online Course Material Access: UAF Blackboard system will have required articles posted

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. State that you will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.”

Course Final Assessment: Students will be required to develop an ecologically based management plan for an issue or land area of their choice using a template provided by the instructor. The student must incorporate topics discussed in class, and may choose to develop their plan on a topic related to their own research area. DUE DATE: Thursday, April 5, 2012 (final day of class)
Course Outline

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<th>Class Number</th>
<th>Date</th>
<th>Topic</th>
<th>Instructor</th>
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<td>1</td>
<td>February 28</td>
<td>Ecological Context for Resilience and Biodiversity Issues</td>
<td>Katie Spellman</td>
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<tr>
<td>2</td>
<td>March 1</td>
<td>Carbon into systems—the incredible photosynthesis story</td>
<td>Becky Hewitt</td>
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<td>3</td>
<td>March 6</td>
<td>Carbon out of systems—permafrost peril</td>
<td>Ben Abbott</td>
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<td>4</td>
<td>March 8</td>
<td>Element Cycles (N &amp; P)—What’s man got to do with it?</td>
<td>Michaela Swanson</td>
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<td>SPRING BREAK</td>
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<td>5</td>
<td>March 20</td>
<td>Trophic systems—energy flow, cascades, and beyond</td>
<td>Mel Durrett</td>
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<td>6</td>
<td>March 22</td>
<td>Ecologically based land management planning</td>
<td>Michaela Swanson</td>
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<td>7</td>
<td>March 27</td>
<td>Wetlands and Ecosystem Services—why muck is good</td>
<td>Mel Durrett</td>
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<td>8</td>
<td>March 29</td>
<td>Stream ecology— the wet, the wild (and not so wild?)</td>
<td>Ben Abbott</td>
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<td>9</td>
<td>April 3</td>
<td>Temporal Dynamics of Ecosystems—changing fire and succession in the north</td>
<td>Becky Hewitt</td>
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<td>10</td>
<td>April 5</td>
<td>FIELD TRIP- Ecological field experience at Bonanza Creek Long Term Ecological Research Area (road condition pending)</td>
<td>Katie Spellman</td>
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Course Textbook


Assignments

**Tues. Feb. 28**

Required Reading:

Recommended Reading: Chapter 12 (Community Effects on Ecosystem Processes) in *Principles of Terrestrial Ecosystem Ecology*
Thurs. Mar. 1
Required Reading:

Recommended Reading: Chapter 5 (Carbon Input to Terrestrial Ecosystems) in *Principles of Terrestrial Ecosystem Ecology*

Tues. Mar. 6
Required Reading:

Recommended Reading: Chapter 7 (Terrestrial Decomposition) in *Principles of Terrestrial Ecosystem Ecology*

Thurs. Mar. 8
Required Reading:

Recommended Reading: Chapter 9 (Terrestrial Nutrient Cycling) and “The Global Nitrogen Cycle” (pages 343-348) of Chapter 15 in *Principles of Terrestrial Ecosystem Ecology*

Tues. Mar. 20
Required Reading:

Recommended Reading: Chapter 11 (Trophic Dynamics) in *Principles of Terrestrial Ecosystem Ecology*

Thurs. Mar. 22
Required Reading:

Recommended Reading: Chapter 16 (Managing and Sustaining Ecosystems) in *Principles of Terrestrial Ecosystem Ecology*

Tues. Mar. 27
Required Reading:

Recommended Reading: Chapter 16 section “Valuation of Ecosystem Goods and Services” pg. 366-368 in *Principles of Terrestrial Ecosystem Ecology*
Thurs. Mar. 29
Required Reading:

Tues. April 3
Required Reading:

Recommended Reading: Chapter 13 (Temporal Dynamics) in *Principles of Terrestrial Ecosystem Ecology*

Thurs. April 5
Completed Management Plan Due