NR #6900
Forest Ecology and Management
Spring 2019

Instructor: Mariya Shcheglovitova
email: marsh7@umbc.edu

Credits 3

Course Description

Welcome to Forest Ecology and Management! Forests are dynamic landscapes produced by complex and interacting social and ecological processes. The purpose of this course is to get you familiar with these processes through an introduction to theories in forest ecology and an overview of case studies in forest management. The first half of the course will be devoted to establishing an understanding of forest ecosystems and their biophysical dynamics. In the second half of the course, we will explore diverse strategies of forest management.

This course takes forest management to mean any human intervention in the growth or use of forests and their products. As we survey the different ways groups – from federal agencies to people who harvest forest products for crafts, consumption, and local economies – manage forests, we will be particularly attentive to struggles between diverse management practices and the outcomes of these struggles. By studying them as socio-ecological systems, we will come to understand forests as spaces that have rich environmental dynamics, bio-socio-histories, and political contestations.

This course will challenge you to think critically about the concept of nature as you engage with the theories, practices, and values that make up our understandings of forests. As a final project, you will apply research methods from the physical and social sciences to complete a ‘forest ethnography.’ As you complete this project, you will visit a forest patch over the course of the semester to document its biophysical characteristics and draw on archives, popular media, and in-person interviews to describe the cultural and historical significance of the forest you choose to study.

Course Objectives

This course is designed for students who are looking to gain or enhance their understanding of forests and their management. The topics covered in this course represent evolving understandings of forests
as coupled human-natural systems. Engaging with these theories of forests and forestry will broaden your perspectives on forest conservation, recreation, and the management of forest resources.

Overall, my three main objectives are for you to:

1. gain an over-view of current theories in forest ecology.
2. develop an ability to think critically about nature, wilderness, and land management practices.
3. be able to apply theories covered in class to describe the biophysical characteristics of a forest, the history of its management practices, and the social and cultural significance of the forest to land users.

Course Resources

Text Book

There is no required textbook for this course. Readings will be posted on Canvas. Many of the readings for the first half of the course will come from Forest Ecosystems by David A. Perry, Ram Oren, and Stephen C. Hart, you may choose to purchase this book but it is not required.

Canvas

Canvas is the Learning Management System that we will use for our course. You can log into Canvas at https://canvas.usu.edu/. Enter your username, which is your A#, and your password is your global password (the same one you use for Banner or Aggiemail). For a list of tutorials relating to Canvas, go to your canvas page, select support and “Canvas orientation for students”.

We will be using Canvas’ Quiz, Assignment, and Announcement tools. The Discussion tool can be used among students to discuss lectures and readings, but should not be used to exchange results pertaining to quizzes or exams.

Course Activities

Each Week

Lectures: will be posted on Canvas (one lecture per week) and will be 20-40 minutes long depending on the topic.

Discussions: Depending on the size of the class we will either hold discussions on a message board or as a weekly video chat. Everyone will “lead” two class discussions during the semester. Leaders will be responsible for reading the material in particular detail that week, and preparing and presenting very brief synopses of the key issues the readings raise. Leaders should lay out some big questions, identify points of common interest, disagreement etc. If discussions take place on a message board, leaders are expected to give enough time for the rest of the class to respond by Friday when posting the reading synopsis and discussion questions. This means that you would need to post to the discussion board by Wednesday at the latest. We will sign up for discussions on the first week of class. Take a look at the class schedule to identify the topics that most interest you.

In this course we will cover environmental issues which intersect with issues of gender, race, class, nationality, and politics. When engaging in discussions, please strive to interact with one another about
challenging issues with honesty, sensitivity, and respect. We will all try to: 1. approach controversy with civility, 2. own our intentions and our impact, and 3. respect and not attack one another. These guidelines do not necessarily cover the requirements of all students enrolled in the course and you should always feel welcome to communicate what would make any physical and virtual space where we meet a safe and brave space.

**Readings:** will be posted each week to deepen your understanding of topics presented in the lecture. The lectures, discussions, and quizzes will draw heavily from these readings and you are expected to complete them all. You are encouraged to take notes on the readings, these will help you when you lead discussions and with quiz questions drawn from the readings. For discussions you should be prepared with your own critical appraisals of the readings, be able to discuss points of agreement and disagreement among the readings, and be ready to explore connections to other readings and materials from your own work.

Reading critically does not mean just criticizing readings (although you can certainly do that). It also means trying to understand what the authors are trying to accomplish, what they are contributing to ongoing understandings, and evaluating the merits and problems with the theoretical, methodological, empirical, and rhetorical tools the authors use.

*Throughout the Semester: Every 2 to 3 weeks*

**Assessments:** Instead of full length exams there will be 5 quizzes throughout the semester. These quizzes will have two to three short answer questions based largely on readings from the previous weeks’ modules. Quizzes will be posted on Monday and must be completed by Friday that same week.

**Final Project**

The final project will challenge you to describe the ecological, historical, and social characteristics of a forest. This can be a national forest that you visit often for hiking, an urban forest patch that you volunteer in or steward, the urban tree canopy of your home town (often referred to as the urban forest), or any other space that can be loosely described as a forest. There is a lot of flexibility in choosing your forest, the only requirement is that you choose a location that is easy for you to access over the course of the semester and one that you are able to find multiple historical, popular media, or primary sources to interview to help you inform the analysis for your project. The methodology you will use for this final project is called “forest ethnography” and was introduced by Ogden et al. (2018). Ogden and her co-authors proposed forest ethnography as a research methodology for studying urban forests, but the techniques they suggest are portable to rural forests and wilderness areas as well.

For your forest ethnography, you will be asked to describe the bio-physical characteristics of the forest you are studying. To do this you will use a technique called “field reconnaissance,” where you write down your observations as you walk through the forest. Everyone will notice different things as they observe the environment and you might want to do this a few times, potentially in different seasons. You can make notes about tree species, forest structure, wildlife use, soil and geological features, water bodies, and other topics we will cover in part one of the class. This survey is not expected to cover the entire extent of the forest, just a small portion (a mile long transect should be enough). You will accompany your bio-physical observations with historical sources, popular media accounts, policy documents, interviews, and personal reflections. You do not have to use all of these qualitative data sources but you are expected to have enough sources to demonstrate an understanding of the forest’s history, an overview of land management practices carried out in the forest, and a discussion of the
forest’s social and cultural significance. Forests can encompass a variety of experiences and have many meanings for different people; your discussion of social and cultural characteristics will be subjective and guided by your sources. You should choose only one or two sources for this part of the project, these sources could be your own personal reflections on the forest, interviews with forest users or land managers, or fiction, folklore, or art that has been made in or about the forest you choose for your project.

This project requires a one page “project proposal”, due February 10th. This proposal is a brief discussion of the project site and the data collection methods. I will provide written feedback on the proposals and be available for individual meetings during the semester to discuss project progress. To assist you as you work on your project, you will also turn in outlines for the project sections. These outlines can be as bare-bones or detailed as you choose. My main goal is to give you an opportunity to receive feedback from me prior to turning in your final essay.

Project Timeline

- February 14: Project proposal due
- February 21: Receive feedback on project proposal
- February 24 – Apr 3: Mariya available to meet to discuss data collection and analysis
- Mar 20: Outline for context, methods, and ecology sections due
- Apr 10: Outline for history, management, and significance due
- April 24: Project Due

Project Components

The final format for the project is an essay (min 5,000 words). The format of the essay is up to you but it should include the following sections, the questions are meant to serve as prompts for your thinking and writing:

1. **Context**: Why did you choose the forest you are writing about?
2. **Methods**: What methods did you use to research the forest?
3. **Ecology**: What are your bio-physical observations of the forest and how do they relate to theories of diversity and stand structure, nutrient cycling, forest succession, disturbance and adaptation, and/or competition, facilitation, and mutualism? You do not have to discuss all of these theories but you should choose those that are most relevant to your observations.
4. **History**: What is the history of the forest? You are not expected to present a comprehensive history but do your best to piece together some idea of who (if anyone) lived on the site previously, the types of uses the land might have had (was it farm land etc.), and the historic management practices (was it burned, were burns suppressed). When addressing this question you should make inferences about how past land use and management practices have impacted the forest characteristics you observe today.
5. **Management**: What are the present day uses and management practices of the forest? Is there recreation, timber harvesting, conservation initiatives, mining, or other practices that are being
supported by the forest? Who is allowed to use forest resources and who manages forest resource use? Do you notice signs of these management practices when you are in the forest?

6. **Significance**: What is the social and cultural significance of the forest to managers and land users? You also count as a land user, thus this section can take the form of a personal reflection. If you choose to conduct interviews for this section, your writing should weave together quotes and themes that are brought up in the interview.

7. **Reflection/Conclusions**: This final section should synthesize your findings and include a personal reflection on your experiences completing this project. Have your views on forests changed? Were you able to observe a feedback between the forests social and ecological dimensions? What are the ways you see the biophysical characteristics of forests being impacted by and impacting historical contexts, management practices, and its social and cultural significance?

**Course Policy**

*Feedback and Communication*

I will use the Announcements page in Canvas to communicate changes to the course and other important information. I also encourage the use of the Chat device available in Canvas to interact with your fellow students and create the classroom atmosphere that often lacks online. I will not monitor the Chat section – the use of this service is entirely optional.

I will answer all questions you may have regarding course materials by e-mail (marsh7@umbc.edu) and will do my best to answer within 24 hours on weekdays. You will receive specific feedback on your Assignments in the form of text comments appended to your electronic submissions.

*Late Assignments*

Late assignments will be penalized 25% of the total grade per day late. Because of this, assignments more than 4 days late will not be accepted and will be assigned a grade of 0. This policy is designed to maintain fairness to students who turn in their assignments on time.

If you experience a legitimate emergency that prevents you from completing required coursework on time, please let me know ASAP. Make sure you state the nature of the emergency when making such inquiries.

*Syllabus Changes*

This syllabus is subject to change. I will notify the class regarding all changes via the Announcement page on Canvas.

*University Policy*

Honor Pledge: Students will be held accountable to the Honor Pledge which they have agreed to: “I pledge, on my honor, to conduct myself with the foremost level of academic integrity.”
Academic Dishonesty: The Instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University’s Student Code: Acts of academic dishonesty include but are not limited to: 1) Cheating, 2) Falsification, 3) Plagiarism. Full text of the Student Code is available at: http://www.usu.edu/studentservices/studentcode/

Accommodations for disabilities: Students with physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. All accommodations are coordinated through the Disabilities Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.

Grading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
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<td>A-</td>
<td>90 – 92</td>
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<td>B+</td>
<td>87 – 89</td>
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<td>B</td>
<td>83 – 86</td>
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<tr>
<td>B-</td>
<td>80 – 82</td>
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<td>C+</td>
<td>77 – 79</td>
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<td>C</td>
<td>73 – 76</td>
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<tr>
<td>C-</td>
<td>70 – 72</td>
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<td>D+</td>
<td>67 – 96</td>
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<td>D</td>
<td>60 – 66</td>
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<td>F</td>
<td>≤ 59</td>
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- Quizzes: 35% (7% each)
- Final Assignment: 40%
- Participation: 25%
  - Discussion Leadership: 15%
  - Discussion Participation: 10%

Course Schedule (tentative)

<table>
<thead>
<tr>
<th>Module #</th>
<th>Week</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignments</th>
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</thead>
<tbody>
<tr>
<td>Part 1: Forest Ecosystems</td>
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<tr>
<td>Module 1</td>
<td>Jan 6 - 10</td>
<td>Forests as Part of the Global Ecosystem</td>
<td>Perry et al. (ch. 1); Perry et al. (ch. 3)</td>
<td>Sign up for 2 discussions</td>
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<tr>
<td>Module 2</td>
<td>Jan 13 - 17</td>
<td>Diversity and Stand Structure</td>
<td>Perry et al. (ch. 9), Perry et al. (ch. 10)</td>
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<td>Module 3</td>
<td>Jan 20 - 24</td>
<td>Primary Productivity; Herbivory and Plant Defenses</td>
<td>Perry et al. (ch. 15); Perry et al. (ch. 19)</td>
<td>Quiz 1 due by Jan 24</td>
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<tr>
<td>Module 4</td>
<td>Jan 27 - 31</td>
<td>Nutrient Cycling; Soils</td>
<td>Perry et al. (ch. 17); Perry et al. (ch. 18)</td>
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<tr>
<td>Module 5</td>
<td>Feb 3 - 7</td>
<td>Tree Mortality and Decomposition</td>
<td>Boddy and Watkinson (1995), Franklin, Shugart, and Harmon (1985)</td>
<td>Quiz 2 due by Feb 7</td>
</tr>
<tr>
<td>Module 6</td>
<td>Feb 10 - 14</td>
<td>Forest Succession, Disturbance, and Adaptation</td>
<td>Perry et al. (ch. 7); Perry et al. (ch. 8); Ogden et al. (2018)</td>
<td>Project Proposal due by Feb 14</td>
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<td>Module 7</td>
<td>Feb 17 - 21</td>
<td>Competition, Facilitation, and Mutualism</td>
<td>Teste et al. (2009), Perry et al. (ch. 11)</td>
<td>Quiz 3 due by Feb 21</td>
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<td><strong>Part 2: Forest Management</strong></td>
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<td>Module 8</td>
<td>Feb 24 - 28</td>
<td>History of the USFS: From Scientific to Ecological Forestry</td>
<td>Demeritt (2001), Hill (1999)</td>
<td>Sign up for individual meeting to discuss final project (optional)</td>
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<td>Spring Break</td>
<td>Mar 2 – 6</td>
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<td>Module 10</td>
<td>Mar 16 - 20</td>
<td>Forest Conservation: The Spotted Owl Crisis</td>
<td>Prudham (2012)</td>
<td>Outline for context, methods, and ecology sections due by Mar 20</td>
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<tr>
<td>Module 12</td>
<td>Mar 30 – Apr 3</td>
<td>Community Forestry</td>
<td>Agrawal (1999); Singh (2001)</td>
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<td>Module 13</td>
<td>Apr 6 - 10</td>
<td>Forest Economies: Matsutake Mushrooms</td>
<td>Tsing (2015)</td>
<td>Outline for history, management, and significance due by Apr 10</td>
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<tr>
<td>Module 14</td>
<td>Apr 13 - 17</td>
<td>Forest Values: Ecosystem Services; Tree Planting and Environmental Policy</td>
<td>Cohen (2004), Suding et al. (2015), Singh (2015), Perkins (2015) – need to choose 2</td>
<td>Quiz 5 due by Apr 17</td>
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<tr>
<td>Finals Week</td>
<td>Apr 20 - 24</td>
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<td>Final Project Due by Apr 24</td>
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PDFs of readings will be available on Canvas.


