



# Science and Management for Forest Sustainability

## ESM 296-3F [section 300]

Fall 2018

Mondays, 3:30-4:45; Bren Hall 1510

Instructor: Bruce Kendall

Email: [kendall@bren.ucsb.edu](mailto:kendall@bren.ucsb.edu)

Office: BH 4514

Phone: (805) 893-7539

Office Hours: Thursdays, 1-2PM

### Course objectives

- Recognize the social and biophysical dimensions of forest sustainability
- Understand how differing types of forests face differing sustainability challenges
- Connect forest sustainability issues with principles you have learned or will learn elsewhere in the MESM curriculum
- Write MESM Group Project proposals related to forests and forest sustainability
- Join a community of students, practitioners and scholars interested in forest sustainability

### Course format

Most class sessions will be led by Bruce or a guest instructor. Generally, there will be a reading for you to do beforehand, and some sort of more or less formal presentation by the instructor. This will be followed by or interspersed with discussion around the topics raised by the reading and presentation. Finally, we will have one or two 5-minute case study presentations, each led by two students.

The major product of the course will be a set of forest-related Group Project proposals. Each proposal will be prepared by 2-4 students (depending on how many are developed).

### Grading

- Participation in class discussions (60%)
- Presentation of case study (10%)
- Preparation of Group Project proposal (30%)

### Class participation

Full credit requires:

- Attending all class sessions (unless excused by instructor)
- Reading assigned readings prior to class (demonstrated by comments during class discussion)
- Regular participation during class (asking and answering questions, contributing insights to discussions, etc.)

## Case study presentation

In a group of 2, each student will present a case study during one of the class sessions. This requires: reading background material; creating and delivering a 5-minute presentation in class; preparing discussion questions; leading a 5-minute discussion following the presentation.

The grade will be based on:

- The clarity of the presentation
- Keeping the presentation within time
- Effective use of visual aids (if appropriate)
- Ability to draw out the links to forest sustainability in the presentation and discussion

## Group Project proposal

The group project proposal will be graded based on the final written version; there will be opportunities for feedback on preliminary versions throughout the quarter (see below).

A high-scoring proposal will have the following characteristics:

- The Objectives and Significance sections are clearly stated, and make a compelling case for the project's need
- The Background section indicates a clear understanding of the project context
- The Approaches section describes a sound methodology that seems likely to address the project questions
- The proposal follows the Bren School Guidelines for Group Project Proposals (<http://bren.ucsb.edu/research/documents/2019-2020ProposalGuidelines.pdf>) and contains all elements prescribed therein (except 5b (budget) and 5c (client letter of support))

## Group Project proposal development

**Week 1:** During introductions, we will describe forest-related organizations (agencies, NGOs, companies) that we have worked or otherwise interacted with that might be clients. We will also briefly mention any ideas we might have for GPs (stemming from existing GPs, prior work with potential clients, or our own good ideas). 2<sup>nd</sup> year students and faculty will describe the qualities of an effective GP.

**Week 2:** Prior to class, students will write forum posts describing (a) potential clients that they have contacts with and (b) Group Project ideas. During class, those with ideas will pitch them with a brief description.

**Week 3:** Before class, each student will select two or more GP ideas they would be interested in working on. During class, we will select 4-8 ideas and groups to move forward. Each group should have at least one first-year and at least one second-year student.

**Weeks 4-9:** Groups work on developing their proposals, consulting with clients and faculty as appropriate (we will have opportunities in class to check in to discuss progress and challenges). Prior to week 6, if a group decides that their idea is not working out, the students may disband and join other groups.

**Week 10:** Well before class (TBD; perhaps the preceding Tuesday), each group will submit a draft written proposal. Also before class, each student will read one or two (TBD) proposals and

write comments and feedback. During class, each group will present their proposal and the class will ask clarifying questions and provide further feedback. On Friday of this week, submit revised GP proposals to the instructor.

**Winter break and January:** Continue refining your proposal. Discussions with the client about formal commitments of support should begin before you depart for the holidays.

## Schedule

### Week 1

Course introduction

- Introduce one another
- Review course goals and structure
- Discussion: What is sustainability? What benefits do forests provide? What are the threats to forest sustainability?

### Week 2

Large intact forests (Bruce Kendall)

Case study: effects of oil sands development on wildlife in the boreal forest

### Week 3

Managing California forests in a changing climate (Frank Davis)

Case study: climate change effects on oak seedling recruitment in California

### Week 4

Policies for reducing deforestation (Robert Heilmayr)

Case study: eco-certification of oil palm plantations

### Week 5

Urban ecology and remote sensing of ecosystem services (Joe McFadden)

No case study

### Week 6

Forest ecohydrology (Naomi Tague)

Case study: effects of stand stand thinning on water resources

### Week 7

No class (Veterans' Day holiday)

### Week 8

Co-evolution of forest science and management (Joan Dudley)

Case study: TBA

### Week 9

Wildfire science and policy (Sarah Anderson and Max Moritz)

Case study: TBA

### Week 10

Present GP proposals; written proposals due at end of week.