



Geography 433/533: Fire and Natural Disturbances; Fall, 2015

Lecture: Mon & Wed & Fri 11:00-11:50 in 203 Condon

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Office Hours: T.B.D.

Required field trips Two, on weekends, dates to be determined.

Course Overview: Wildland fire is one of the most important natural disturbances of ecosystems. It is also a disturbance that presents a risk to human society that is difficult to balance among competing interests. This course will serve as an introduction to disturbance ecology with a focus on wildland fire. Fire will be examined at many levels: the **weather and fuel** conditions that result in a range of **fire behaviors**, the **effects** of fire on vegetation and ecosystems, and the **history of fire** including its connection to long-term **climate change**. We will study fire as an important process in all of the major biomes, not only the Pacific Northwest. Other natural disturbances to be addressed include wind, insect outbreaks, ice storms, and drought, all of which have synergistic effects with fire. The last portion of the class will address human use and suppression of fire, including specific management issues of fire in the Pacific Northwest. Field trips will involve visits to a variety of forest types and recent fires.

Objectives of the course:

- Understand the patterns and controls influencing natural disturbances over landscapes and through time.
- Understand the basics of fire behavior and effects on species and ecosystems, including adaptations of species to fire.
- Apply simulation models of fire on landscapes to understand how disturbance interacts with landscape elements and vegetation to produce landscape mosaics.
- Examine the historical variability of fire in order to place the current fire landscape in a longer-term context.
- Develop an in-depth knowledge in an area of fire science of your choice.

Assessment(see below for details):

- Research paper on a topic of your choice. 40% of your total grade.
 - 10% of the grade of the paper will be for a "proposal" of your research paper, due October 30.
 - The remainder 30% will be the paper itself, due during finals week.
- Field trip report: 5% of your total grade.
- One homework exercise: 15% of your total grade.
- Two exams: 20% and 20% of your total grade.

Course materials:

- Fire on Earth: An Introduction by Scott et al.
- Optional: Fire Ecology Ecology of the Pacific Northwest by Jim Agee. Island Press. (1993)
- Additional materials will be posted on ~~Blackboard~~ uoregon.edu.