Landscape Ecology

Kent State Department of Geography

Course Number

GEOG 41195 (x-listed with GEOG 51195 & 71195)

All sections are 3 credits

Instructor

Dr. Timothy Assal (he/him)

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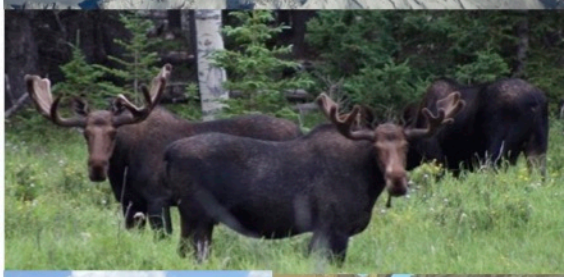
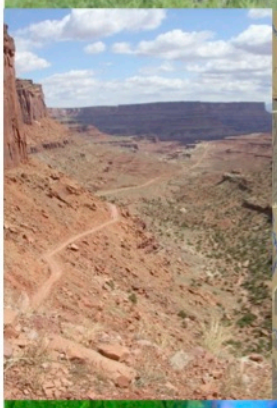
Location

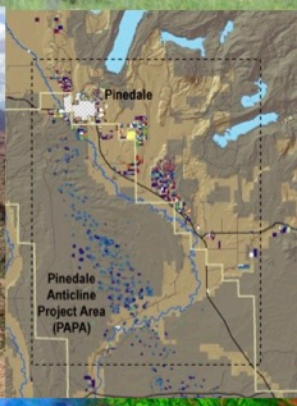
Spring 2022

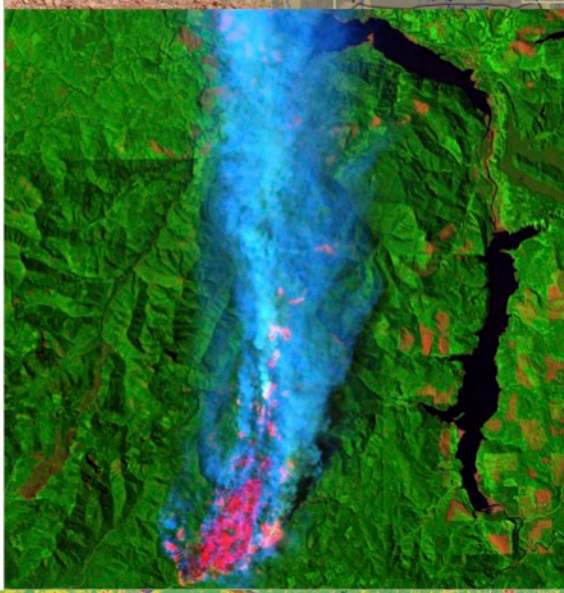
TR 3:45-5 pm

McGilvrey Hall 310









Course Description

Landscape ecology is the study of the interaction between spatial pattern and ecological processes. The emphasis on spatial patterning – its development and importance for ecological processes – often focuses on broad spatial and temporal scales. This course aims to provide a comprehensive introduction to the field by coupling theoretical concepts (lecture, readings, discussion) with applications through modeling projects (exercises in quantitative approaches) to provide hands-on practical experience with landscape analysis tools and ideas. ***This field of study combines the spatial approach of the geographer with the functional approach of the ecologist.*** The course should be useful to students in geography and ecology as well as those with interests in natural resource, landscape architecture, land use planning, etc.

Prerequisites:

Graduate standing (instructor permission for undergraduate students)

It is recommended students meet at least one of the following criteria:

- An introductory biology and/or ecology course
- Extensive coursework in physical geography/natural resources
- Experience with geographic techniques (GIS, remote sensing)
- Familiarity with statistics, modeling, R

Planned topics: (subject to adjustment)

1. What is landscape ecology and why is it a field of study?
   - *What makes a landscape?*
   - *The critical concept of scale*
2. Fundamentals of Landscape Pattern
   - *What creates landscape pattern?*
   - *How can we quantify landscape pattern?*
   - *Scale detection using spatial statistics*
3. Landscape Change and Disturbance
   - *Introduction to models, neutral landscapes, fractal theory*
   - *Landscape disturbance dynamics*
4. Conservation and Applied Landscape Ecology
   - *Ecosystems processes on landscapes*
   - *Organisms and landscape pattern (connectivity, species distribution models)*
   - *The social-ecological landscape: ecosystem services & land use planning*

New course - Spring 2022!