ENVS 411 -- Monitoring Tools and Techniques
"*Environmental Monitoring and Mapping*"

Winter 2008 Wednesday 2-4:50pm; Friday 2-3:50pm
crn: 25450 206 Condon Hall
Nick Kohler, Instructor nicholas@uoregon.edu

An introduction to the theory, techniques, and practice of environmental and ecological monitoring, designed to ground students in the data collection, analysis, and presentation methods used to characterize conditions in a variety of environmental settings.

The class examines the many applications of environmental monitoring and gives students hands-on experience with the tools used for monitoring projects, using case studies and field trips. Local examples of monitoring projects and guest lectures allow students to interact with people involved with environmental monitoring. Course topics include: needs for monitoring; sampling techniques; spatial and temporal scales of observation; data sources and acquisition (field sampling, GPS, remote sensing/monitoring, geographic information systems (GIS)); data maintenance; data analysis and presentation; and restoration/monitoring applications.

Students gain hands on experience using a variety of software and equipment for project planning, data acquisition and management, analysis, and data presentation. The software resources - available in the Social Science Instructional Labs (SSIL) on campus - include GIS, remote sensing, statistical analysis and graphics programs. As a necessary accompaniment, students will use a variety of tools for data acquisition (air photography, field survey equipment, digital cameras, GPS units, and other data loggers) while completing course exercises and a class project.

Requirements:

Course exercises, quizzes, midterm, final, and class project (done as part of a small group or individually). Participation is an important part of the grading. The class project will involve a choice among several options: the design of a monitoring plan as part of a group; the individual study and evaluation of a local monitoring project; or the design of a survey/monitoring instrument for a specific monitoring need.

Textbook:

Monitoring Plant and Animal Populations. Elzinga et al., 2001. Blackwell Science.

Other readings available electronically