Sierra Institute
Natural History Field Studies
Spring Quarter

Contemporary Environmental Issues

X129.12
Course Overview
This course is taught in concurrence with two other field-based courses, Natural History of California and California Vegetation. The program is made up of a series of extended field trips to different natural regions of California. During each field trip, the academic activities will be designed to immerse the student in the ecosystem they are visiting, while also studying the contemporary environmental issues in each of those areas. On each trip, we will focus on the contemporary environmental issues unique to each specific bioregion and how those issues relate to the larger context of the state of California. Students will prepare and present short talks to introduce key topics at each field site.

Learning Objectives
1) To evaluate and understand the contemporary environmental issues associated with the bioregions of California we visit.
2) For students to gain an understanding and appreciation for the complexity of environmental issues in California.
3) To evaluate and understand the application of scientific information in addressing environmental issues.
4) To understand the Endangered Species Act and other important environmental laws and policies that affect California’s bioregions and species.
5) To understand land management issues on federal, state, and private lands.
6) To evaluate and understand legislation, regulations, agencies, and court cases affecting natural resource management.

Course Outline
This course focuses on the contemporary environmental issues associated with the bioregions of California we visit during this field quarter. Topics covered will include natural resource management, endangered species, invasive flora and fauna, water use, fire, ecosystem management, state and federal laws and policies, and more.

Schedule

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<th>Location/Topic</th>
<th>Assignments</th>
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<td><strong>Granite Mountains (Mojave Desert) - 10 hours</strong></td>
<td><strong>Field Journal:</strong> Students will keep a field journal beginning on the desert trip and continuing through the entire course. Field notes will be taken every day and will be evaluated at the end of each trip and returned. Field notes will start with natural history observations, but will include all broader topics we are learning, including contemporary environmental issues. <strong>Special-status Species or Community Profile:</strong> Students will select a special-status species or community (rare and/or otherwise imperiled) and present an oral presentation, along with a written report or pamphlet, reporting</td>
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**Carrizo Plain (San Joaquin Valley) - 5 hours**
- Environmental issues in the San Joaquin Valley
  - Case study: Habitat loss in the San Joaquin Valley
  - Threatened/Endangered species case studies: San Joaquin kit fox and vernal pool crustaceans

**Big Sur and Carmel Valley (Central Coast) - 9 hours**
- Conservation biology and biodiversity
- Management issues: fire, grazing, and invasive species
- Case study: Military land use (Fort Hunter Liggett)
- Endangered species case study: California condor

**Mendocino (North Coast) - 6 hours**
- Forestry practices and old growth forests
- Introduction to the National Forest Management Act and State Forest Practices Act
- Environmental issues: invasive species, fisheries and logging
- Endangered species case study: Northern spotted owl

**Klamath Range, Lava Beds National Monument (Northern CA: Cascades, Great Basin) - 10 hours**
- Biodiversity, rarity and endemism
- Water rights and watershed protection
- Land management: USFS vs. NPS
- Case study: Dam removal on the Klamath River
- Case study: White-nose syndrome

**Owens Valley and Yosemite National Park (Great Basin and E & W Sierra Nevada Mountains) - 10 hours**
- Water resources
- Management issues: water use, grazing, mining, and recreation
- Case study: Hetch Hetchy
- Case study: Owens Lake
- Case study: Sierra Nevada rivers
- Case study: Native amphibians

**Field Journal**: Continued

**Required Readings**

**TOTAL HOURS: 50**
Fleischner, T.L. 2005. *Natural History and the Deep Roots of Resource Management*

**Assessment**
- Participation in discussion 10%
- Quality of written assignments 60%
- Oral reports 30%