

Exploring Natural Resources Management
NATR 108
Course Content Objectives & Competencies:

Conservation and Natural Resources Management

1. Describe the basis for Natural Resources Management, name the major types of resources and distinguish between renewable and non-renewable resources.
2. Define the three E's of Natural Resource Management and compare and contrast the various perspectives of exploitation, preservation and conservation management practices.
3. Recall three major historical events in Conservation, related population trends and demands and assess our Natural Resource reserves, supplies and exhaustibility.
4. Define and provide examples of a balanced natural ecosystem and the human impacts and conservation efforts of Natural Resource Management.
5. Explain why Natural Resource Management decisions are so controversial and define the considerations affecting decisions on the conservation and natural resource management policies.

Soil and Land Resources

6. Outline the formation of soil, describe the components of a mature soil profile and describe the characteristics of the eight land capability classes.
7. Describe the major types of soil erosion and identify the mechanical and vegetative methods of controlling soil erosion.
8. Describe the common soil conservation practices employed today and why soil conservation and erosion control is so important to everyone.
9. Analyze the physical properties and chemical components of a soil sample.
10. Identify the soil series and land classification types of your area. Describe land measurement and mapping methods.

11. Define solid waste, municipal solid waste and industrial waste and the common methods of disposal.
12. Describe natural attenuation and the growing concerns of our society. Discuss recycling efforts and other alternative methods of waste disposal.
13. Explain why land-use planning and commercial and non-commercial zoning is so important to our ecosystems and our community.
14. Discuss the Conservation Continuum.

Water and Air Conservation

15. Describe and identify the components of the hydrologic cycle. Define a wetland, watershed and important water resource sources in the area.
16. Describe the major sources of water pollution and the common water conservation and pollution control methods used today. Discuss wetland restoration and the preservation of natural aquifers.
17. Analyze the properties and chemical components of random water sample and describe water quality standards.
18. Describe the kinds of wastewater generated; describe wastewater treatment and recovery methods and how wastewater is treated before it is returned to the water cycle.
19. Define aquaculture and describe the biological requirements necessary for the production of aquatic plants and animals.
20. Define Air pollution, identify the components of air quality and discuss air pollution prevention methods.
21. Discuss the fossil fuels and global warming issue.
22. Analyze the properties of random air samples and describe the procedures for maintaining and improving air quality.

Forest and Range Resources

23. Identify the growing parts of a tree and the functions of each part.
24. Differentiate between native and non-native plants and trees, pure and mixed stands of forests, and the impact of non-native introduced species of trees on the forest ecosystem.
25. Discuss the common ways of measuring a forest and why good woodland management is important. Describe the various methods of harvesting a stand of trees and explain why a forest can grow healthier after harvesting.
26. Describe natural plant succession.
27. Locate and describe the major rangelands in our area and the continental U.S. Compare and contrast the differences and characteristics of a grassland and rangeland, identify the vegetation types common to both in our area and discuss the careful management and conservation methods used today.
28. Discuss the role and importance of a healthy grassland and range to the environment.
29. Identify the characteristics of a healthy forest, grassland and rangeland. Discuss how our public lands are abused.
30. Identify the major insect and disease problems and the role of fire as a management and forest regeneration method.

Fish and Wildlife Management

31. Describe how the fish, birds and wildlife species are considered natural resources. Identify the common fish, bird and wildlife species throughout our region.
32. Discuss the extinct, endangered and threatened classifications of wildlife and identify examples of those wildlife species that possess those distinctions and why.
33. Describe the characteristics of an essential habitat for wildlife species. Describe the characteristics of a fresh water habitat and estuarine ecosystem.
34. Describe the relationship between wildlife and the environment, discuss game and non-game management and conservation strategies and describe the common accepted methods of game management.

35. Describe the many types of outdoor recreation within our region. Identify land ownerships and the role of federal, state and local governance.

Energy and Mineral Resources

36. Identify and describe the sources of the common mineral resources within our region.
37. Describe the various methods of obtaining and processing mineral and metal resources. Discuss environmental impacts and modern reclamation practices employed in mineral resource management.
38. Discuss oil exploration techniques. Discuss the potential oil shale, tar sand, and other petroleum sources and reserves. Identify how natural gas is obtained and distributed.
39. Describe alternative fuel production and methods of refining. Identify the common crop and plant products used as alternative fuel production.
40. Discuss the use of alternative energy sources and describe the various alternative energy producers in our region and the U.S.
41. Describe how hydro electric, coal fired turbines, nuclear power plants, geothermal, methane, tidal and wind produce energy.

Careers in Natural Resource Management

42. Describe the major career areas and example occupational titles within Natural Resource Management.
43. Identify the general tasks and duties required within the various fields of Natural Resource Management.
44. Identify the education and specialized training needs of the successful natural resources employee.