



Oregon Envirothon Resources

Soils & Land Use Study Concepts:

1. Recognize soil as an important and dynamic resource.
2. Know soil vocabulary and terminology including names of soil constituents: sand, silt, clay, organic matter, air and water.
3. Be able to describe topographic features including names of landforms and estimating percent slope.
4. Describe basic soil properties and soil formation factors.
5. Understand the origin of soil parent materials.
6. Identify and list soil characteristics (e.g., texture, structure, etc.) and their relation properties.
7. Be able to describe a soil profile including depth, horizons, color, texture and structure.
8. Understand soil drainage classes and know how wetlands are defined. Recognize the characteristics of wetland (hydric) soils.
9. Be able to estimate soil properties and limitations including mottling, infiltration, permeability, water holding capacity, nutrient holding capacity, effective rooting depth, susceptibility to subsidence, and susceptibility to mass movement (land slide) by observing a soil pit or soil profile.
10. Understand the nature of soil in water: its movement, storage and uptake by plants and its role in the hydrologic cycle.
11. Understand the nature of plant nutrients and how they are stored and cycled through the soil. Understand how the nitrogen, phosphorous, potassium and carbon cycles relate to soils.
12. Understand how soils affect water quality. Understand the filtering and buffering capacity of the soil, including its interaction with seepage, animal waste, pesticides, heavy metals and fertilizers.
13. Understand the effects of land use on soils.
14. Rate the suitability of a soil for various uses by man including building site development and roads, sanitary facilities (landfills and septic tank filter fields), animal waste management, water management, water quality and nutrient management, agriculture, silviculture, and wildlife habitat.
15. Identify types and causes of soil erosion and discuss practices to protect the soil from erosion.
16. Understand the impact of wildfires on soils.
17. Recognize human impacts to soils including erosion (sheet and rill, ephemeral gullies, classic gullies, road scouring and mass movement), poor tilth, compaction, salinization, excess animal waste, excess fertilizers and excess pesticides.
18. Know how to use a soil survey report including use of the map index, reading aerial photographs, finding soil boundaries and symbols on a detailed soil map, reading soil map unit descriptions, and tables.
19. Discuss how soil is a factor in, or impacted by, non-point source pollution, recommend Best Management Practices applied to soils to prevent pollution and erosion, maintain soil condition, and sustain the use of soils and the resource base.
20. Know and understand the National Environmental Policy Act of 1969, which defines the role of environmental impact or assessment statements and threatened and endangered species reports (E.I.S., E.A., and T.E.S.) as they relate to national soils policies.