



Illinois Envirothon | Soils

SOILS OBJECTIVES

Envirothon soils contestants should be able to:

- 1.** Understand concepts of soil development and soil landscape relationships.
 - a. Identify soil horizons
 - b. Understand the five soil forming factors
 - c. Understand the soil forming processes
 - d. Understand the differences between Prairie and Forest soils
 - e. Understand how glaciations affected soils across Illinois
- 2.** Understand major soil properties and how they affect the use and management of soils.
- 3.** Be able to interpret all aspects of county soil surveys - either on-line or printed.
- 4.** Recognize and understand the features of a soil profile.
- 5.** Utilize hands on techniques to evaluate and interpret soils
 - a. Soil constituents (eg: sand, silt, clay, etc)
 - b. Texture
 - c. Structure
 - d. Color
 - e. Slope
 - f. Nutrients
- 6.** Define and understand types of soil erosion and methods used for reducing erosion.
- 7.** Define and understand soil quality/health and ways they are evaluated. Be able to describe the management approaches to improving soil quality/health.
- 8.** Understand the soil food web and the different roles that various soil organisms play in the soil environment.
- 9.** Understand water movement through various soil types.
- 10.** Identify and list soil characteristics (eg: texture, structure, etc) and their relation to soil properties.



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SOILS RESOURCES

A. pdf files found on CD

Broderson, William D. From the Surface Down: An Introduction to Soil Surveys for Agronomic Use. U.S. Department of Agriculture. Lincoln, Nebraska, 1988.
<<http://www.urbanext.uiuc.edu/soil/Surface/surdown.pdf>>.

Minor, Paul. Soil Science, Student Guide. University of Missouri-Columbia, 1995.
<<http://soils.missouri.edu/data/studentguide.pdf>>.

Munkel, Gary. Understanding Soil Risks and Hazards. U.S. Department of Agriculture. Lincoln, Nebraska, 2004.

Oschwald, W. R. and R. L. Courson. Understanding Soils (VAS 4052a). Ed. David T. Nolan. Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

U.S. Department of Agriculture, Natural Resources Conservation Service. Soil Quality Information Sheets. <<http://soils.usda.gov/sqi/publications/publications.html>>.

B. online only

U.S. Department of Agriculture, Natural Resources Conservation Service. Published Soil Surveys and Manuscripts for Illinois. <http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=IL>

U.S. Department of Agriculture, Natural Resources Conservation Service, Illinois. Soil Regions of Illinois.
http://www.nrcs.usda.gov/wps/portal/nrcs/main/il/soils/#IL_Soil_Regions

C. material located in packet

Magdoff, Fred and Harold van Es. Building Soils for Better Crops. Maryland. Sustainable Agriculture Network, 2000. <<http://www.sare.org/publications/soils.htm>>.

Tugel, Arlene, Ann Lewandowski, Deb Happe-vonArb, eds. 2000. Soil Biology Primer. Rev. ed. Ankeny, Iowa: Soil and Water Conservation Society.

U.S. Department of Agriculture, Natural Resources Conservation Service. Conservation Choices.
<<http://www2.ctic.purdue.edu/Core4/CT/Choices/Choices.html>>.