USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Envirothon Soils Training

Teacher Training

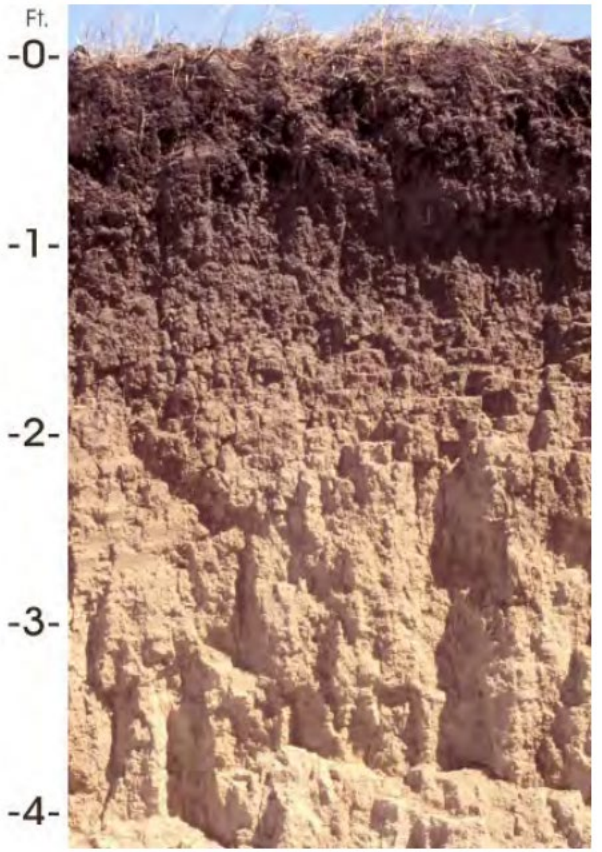
FARM PRODUCTION AND CONSERVATION
FSA | NRCS | RMA | Business Center

5 Key Points

- 1: Soil Formation and Description
- 2: Soil Biology, IPM and Nutrient Management
- 3: Soil Fertility
- 4: Soil Conservation and Soil Health
- 5: Web Soil Survey, Wetlands and Careers

Key Point 1 Study Guides

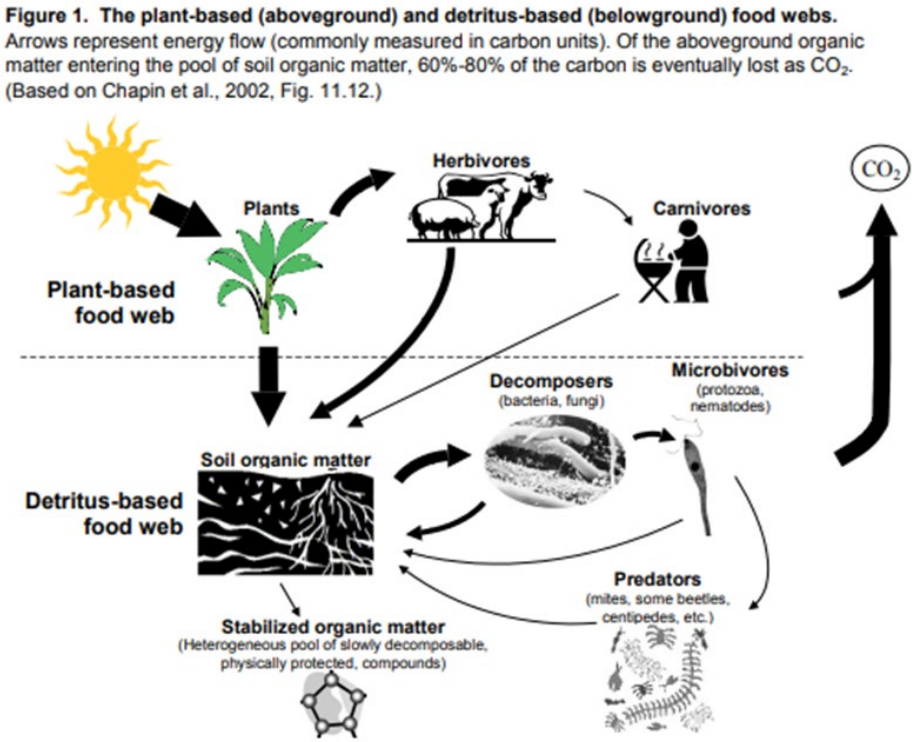
- **Why Soil is Important/How Much Soil is there?**
  - 4-page document with short summaries on why soil science is important, soil facts and trivia
- **From the Surface Down**
  - 34-page document that gives an overview of soil horizons, soil formation, soil properties, and soil survey
- **Soil Examination and Description of Soil**
  - 21-page document that goes over in field soil description information like site location, landform identification, horizon designation, soil color, soil texture, soil structure and soil consistence
- **Soil Landscapes of Nebraska/State Soil**
  - 8-page document with general landscape map, parent material map and general soil map of Nebraska. Parent Material and Landform Glossary and State Soil of Nebraska



Holdrege Soil Profile
Surface layer: dark grayish brown silt loam
Subsoil - upper: dark grayish brown silty clay loam
Subsoil - middle: light brownish gray silty clay loam
Subsoil - lower: light gray silt loam

Key Point 2 Study Guides

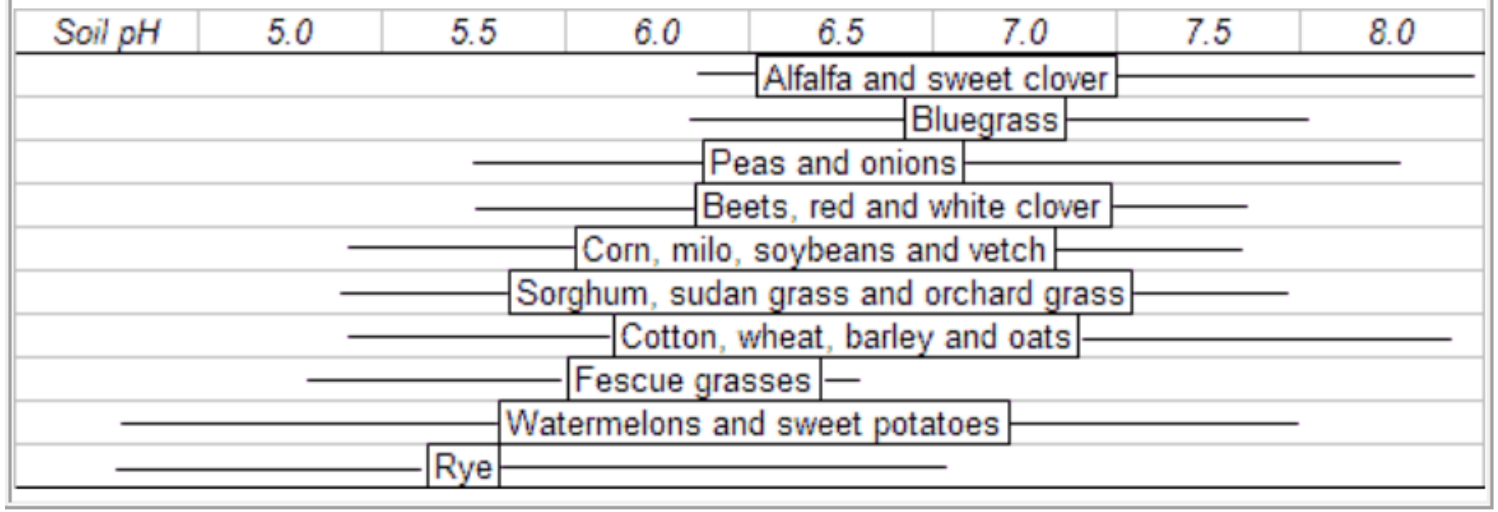
- **Soil Biology and Land Management**
  - 20-page document going over what soil biology is, why it is important, types of soil organisms, what impacts soil biology and management techniques
- **Integrated Pest Management**
  - 3-page document summarizing what IMP is and how it works
- **Nutrient Cycles**
  - 2-page documents with diagrams of the carbon, nitrogen and Phosphorus Cycle and text descriptions of each cycle



Key Point 3 Study Guide

- **Soil Fertility**
  - 22-page document with summaries on plant nutrition, fertilizer, soil testing and sampling, soil nutrients and pH, Nitrogen, Phosphorus and Potassium cycles and forms (more expanded information on how these nutrients act in the soil compared to Key Point 2)

Table 4.1. Preferred soil pH range of various crops.



Key Point 4 Study Guides

- **Soil Erosion**
  - 6-page document with overviews of the types and classes of Wind and Water erosion and a short explanation of the Universal Soil Loss Equation
- **Soil Conservation Practices**
  - 8-page document with short overviews of 10 soil conservation practices
- **Soil Health**
  - 8-page document with key points of soil health, benefits of soil health and soil health practices

Birdseye view of an agricultural landscape with grass filter strips and other types of conservation buffers. Photo courtesy USDA NRCS.

Key Point 5 Study Guides

- **Getting Started with Web Soil Survey**
  - 3-page guide accessing and using Web Soil Survey (WSS)
- **Interpretive Groups Wetlands**
  - 12-page document with overviews of Soil Interpretive Groups including; Land Capability Classification, Prime Farmland Classification, Highly Erodible Lands, Hydric Soils, Ecological Sites. Overview of Soil Drainage Classifications, Hydric Soil Indicators and the importance and Function of Wetlands.
- **Careers in Conservation – Soil Scientist/Conservationist**
  - 14-page document going over careers in Soil Science the USDA-Natural Resources Conservation Service including Soil Conservationist, Soil Conservation Tech, Rangeland Management Specialist, Biologist, Engineer, Engineering Tech

Web Soil Survey

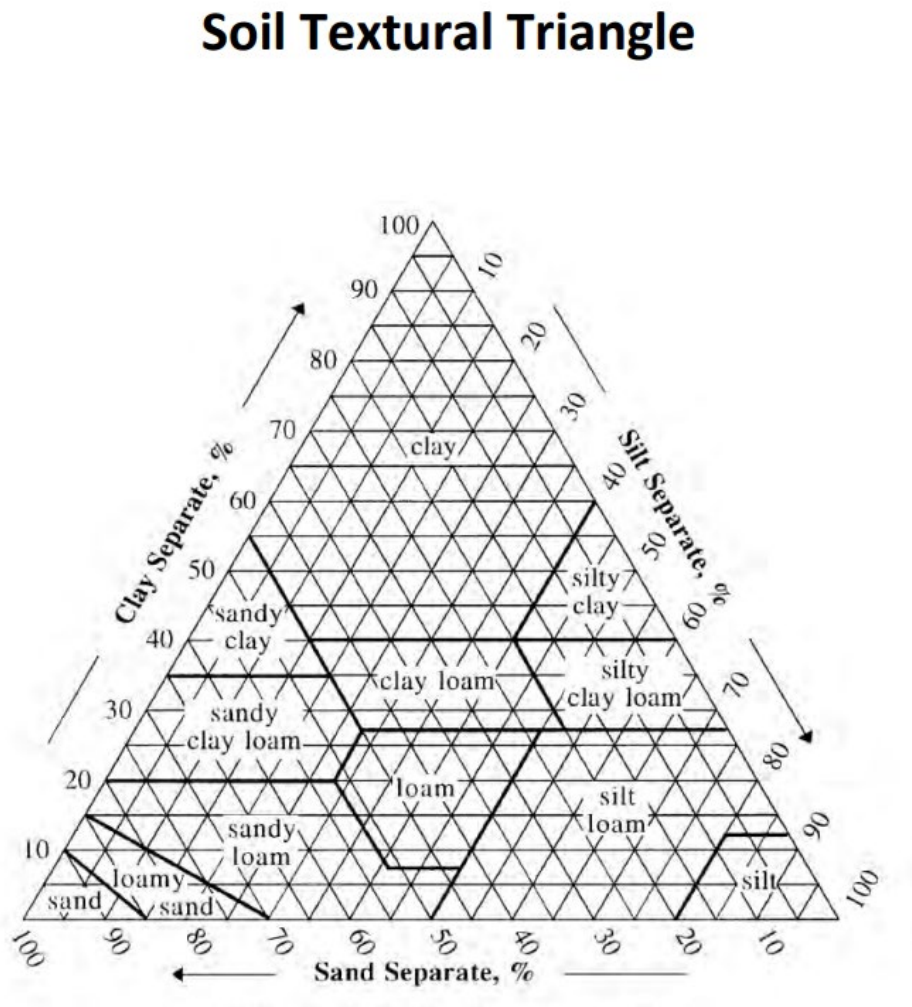
- https://websoilsurvey.nrcs.usda.gov/app/

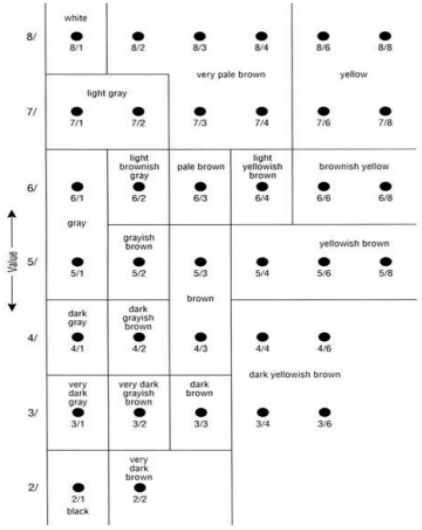
Other Online Soil Resources

- https://casoilresource.lawr.ucdavis.edu/gmap/
- https://casoilresource.lawr.ucdavis.edu/soilweb-apps

Hands on Training

- **Soil Color**
  - Hue, Value, Chroma
  - Using a Munsell Color Book
- **Soil Texture**
  - Soil texture triangle
  - Texturing by feel





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