Learning Outcomes/Expectations/Soils

Participants should be able to:

- identify the factors affecting soil formation and describe processes involved
- identify soil horizons in soil pit or photograph
- describe a soil profile in terms of soil colour, texture, and quantity of organic matter
- name the soil regions of Canada and identify them on a map

Participants should be able to:

- define soil texture
- identify soil types according to textural characteristics
- use a “soil triangle” to determine soil class
- define soil structure
- name the soil structure according to aggregate characteristics (i.e. granular, blocky, columnar, platy, massive)
- describe soil structure in terms of its three components: form, stability, and strength
- identify sources of organic matter in soil
- describe how different amounts of organic matter affect and are affected by soil structure and texture
- define soil water and soil air/aeration
- describe how soil water and air are interrelated, and how they are affected by other soil physical properties
- identify factors that influence soil temperature

Participants should be able to:

- define soil pH
- describe ways in which soil pH affects plant growth
- measure soil pH using colour reaction test equipment
- define cation exchange capacity
- describe the cation exchange process and relate it to soil fertility
- identify benefits of soil organic matter to soil chemistry
- identify the six essential nutrient elements in soil and describe how they affect soil fertility
Participants should be able to:

- identify types of soil organisms and their functions within a soil ecosystem
- describe the carbon cycle and the nitrogen cycle
- define soil erosion and identify the three types: soil, water and tillage
- describe the effects of each type of erosion on the landscape and capability for various kinds of plant growth
- identify erosion control methods (i.e. windbreaks, crop rotation, drainage, etc.)