Glossary for Soil

1. **Absorb** – when water gets trapped in the spaces between soil particles; clay absorbs water and does not allow water to move completely through it; this can cause flooding, drowning of plants and root rot.

2. **Bedrock** – The solid rock that weathers into soil. The parent material of soil.

3. **Clay** – The smallest-sized soil particles; feels sticky when wet; also refers to a soil texture that consists of at least 40% clay particles. Clay soil does not drain water well; causes flooding in yards and could cause plants to drown.

CLORPT – The five factors that influence what type of soil forms: climate, organisms, relief (landscape), parent material, and time.

Compost – The remains of plants and animals after they have decomposed. Can be used to fertilize soil and to improve its structure and ability to hold water.

Compounds – The combination of two or more elements. For example, hydrogen and oxygen combine to make water. (Water is a compound - H_2O) Plants need these compounds to survive.

4. **Decompose (Decomposition)** – To break down a compound into simpler compounds. Often accomplished with the help of micro-organisms such as bacteria.

5. **Earthworms** – a very important soil organism that mixes the soil, creates air spaces as it moves though soil and adds organic matter to soil as it excretes waste.

6. **Mature Soil / Developed soil** – A soil that has had a long time to form, such as most tropical soils. A mature soil. A soil that has horizon A, B, and C (topsoil, subsoil and weathered rock.)

7. **Decomposers** – organisms such as bacteria and fungi that break down organic matter and turn it into topsoil and humus.

8. **Deficiency** – Lacking in something important. A deficiency of nutrients in a plant, for example, can stunt its growth. Some soils are deficient in nutrients and are called Exhausted Soils.

9. **Dormant** – A state in which a plant or animal is not growing. Some seeds remain dormant in the soil until they are exposed to the "right" conditions for germination such as proper temperature and water.

Ecologist – A scientist who studies interactions between organisms and their environment.

10. **Erode (Erosion)** – To wear away, or remove, rock or soil particles by water, ice, and/or gravity.

11. **Fertility** – The ability of a soil to supply essential nutrients to plants. Soils that have the nutrients that plants need are called Fertile Soils.

12. **Fertilizer** – A substance added to soil that contains plant nutrients such as nitrogen, phosphorus, and potassium.

(13) **Fungus** – A kingdom of organisms distinct from animals and plants. Most fungi get their energy from decomposing plants and animals. Fungi (mushrooms) are called decomposers because they break organic matter down (cause it to decompose) and turn the organic matter into topsoil or humus.

Granular – A soil structure. Soil particles are arranged into shapes that resemble granola. Has lots of pores; water moves through it easily.

Groundwater – Water that collects underground in the pore spaces of soil and rock. An important source of drinking water. Well water comes from ground water.

(14) **Horizon** – A layer of soil with properties that differ from the layers above or below it. Each horizon or layer is usually a different color due to its different properties and components.

(15) **Horizon A (Topsoil)** –The horizon that forms at the land's surface hence the name topsoil. If the soil is mature and well developed, the topsoil will be a crumbly dark brown soil that is a mixture of humus, clay and other minerals. Topsoil is the darkest layer of the soil profile because it has the most organic matter in it. Topsoil includes the weathered minerals from the parent material with some humus mixed in.

(16) **Horizon B (Subsoil)** – The layer found under the topsoil that is mostly made of clay and contains the minerals that leached down from the horizons above it. This layer contains the smallest soil particles (clay). Subsoil is the last layer to form when soil develops. See page 120. This layer is rusty orange in NC due to the high iron content that has oxidized (rusted). Subsoil is only present in very mature soils.

(17) **Humus** – Organic matter such as highly decomposed leaves. Humus is also referred to as topsoil.

(18) **Immature Soil** – young soil that is only made of bedrock and some weathered bedrock (only has one horizon); it has not had enough time to weather and break down into soil. Look at Figure 8 on page 120 in your red book.

(19) **Inorganic Matter** – matter that is not alive and never was; the nonliving part of the soil such as sand, silt, clay, minerals, water, air etc.

(20) **Leaching** – The process of water seeping down from one soil layer to another; the removal of minerals and nutrients from a soil or a horizon as water passes through it. As water moves through the topsoil it leaches minerals from it and carries those minerals to the subsoil layer; this in how the subsoil layer forms.

(21) **Loam** – A Soil type that has about equal proportions of sand, silt and clay; Good texture for farming and gardening; considered the best type of soil because it contains about equal amounts of varying particle sizes; absorbs just the right amount of water (for plants) and drains the right amount (so plants don't drown).

(22) **Microbes** – Microscopic organisms, such as bacteria and fungi. Microbes represent the most abundant soil organisms.

Microbiologist – A scientist who studies microscopic organisms, or microbes.

23 **Minerals** – The inorganic particles in soils that weather from rocks.

24 **Nitrogen (N)** – Macronutrient essential to living things like plant growth and building proteins. Often added to agricultural and garden soils.

25 **Nutrients** – Elements or compounds that nourish organisms. Essential for growth and reproduction.

26 **Organic matter** – Material derived from the decay of plants and animals. Always contains compounds of carbon and hydrogen. Very dark in color. Found in the Humus or topsoil layer; the part of the soil that is alive or used to be alive; could contain decaying leaves, insects, pine needles, bark, twigs, bacteria, fungus etc.

Organisms – Living things such as worms, bacteria, fungi, plants, or animals.

27 **Parent material** – The material from which a soil formed. Can be bedrock or materials carried and deposited by wind, water, glaciers, and/or gravity.

Peat – Partially decayed organic matter that accumulates in environments that stay wet. Found in wetlands and bogs. Certain plants only grow in peat moss or bogs.

Ped – The structural unit formed when soil particles (sand, silt, and clay) bind together.

Pedologist – A scientist who studies soils.

28 **Percolate** – when water is able to move down through the soil without getting trapped in the soil pore spaces. Gravel percolates water well because most water runs through it. If the soil percolates water effectively, it prevents flooding.

Permafrost – A soil horizon, or layer, that remains frozen year round

Phosphorus (P) – Macronutrient essential to all living things like flowers, fruits, seeds in plants, and the nervous system in animals. Often added to agricultural and garden soils.

Photosynthesis – The process by which plants, some bacteria, and some algae use sunlight to convert carbon dioxide and water into food and oxygen.

29 **Pores** – The space between soil particles, which can be filled with water or air. A porous soil has lots of pores. Gravel and rock fragments are porous; they allow water to run through them.

Potassium (K) – Macronutrient essential to all living things like water uptake and pest resistance in plants; muscles and blood circulation in animals. Often added to agricultural and garden soils.

30 **Productive** – A term used to describe a soil that has the capacity to grow an abundance of crops.

31 **Relief** – The shape of the land surface created by features such as hills and valleys.

Runoff – Water from precipitation or irrigation that does not soak into the soil but flows off the land and reaches streams and rivers.

32 **Sand** – The largest-sized soil particles (other than gravel or rock fragments). Sand feels gritty. Also refers to a soil texture that consists of at least 85% sand particles.

33 **Sediment** – Any particle of soil or rock that has been deposited by water, wind, glaciers, or gravity. Sediment forms from chemical and physical weathering; sediment can be organic and inorganic.

34 **Silt** – Soil particles in between sand and clay in size. Silt feels like flour (smooth and velvety). Also refers to a soil texture that consists of at least 80% silt particles.

Sludge – Semi-solid material left behind after sewage has been processed in a treatment plant. May be used as a fertilizer in some instances.

Sod – Grass and the soil beneath it, held together by roots. Can be cut into blocks and used as a building material.

35 **Soil** – A mixture of minerals, organic matter, water, and air, which forms on the land surface. Can support the growth of plants.

36 **Soil profile** – A section of the soil that has been cut vertically to expose all its horizons, or layers.

37 **Soil texture** – The relative proportions of sand, silt, and clay particles.

Tissue – A group of cells in an organism that work together, such as muscles in an animal or the outer surface of leaves in a plant.

38 **Transform** – To change from one thing into another or from one state into another, like a liquid into a gas. Rocks transform with time and so do soils.

39 **Transitional Soil** – this is a soil that is in its "middle stage" of development. It has bedrock, weathered bedrock and some topsoil in it. The subsoil has not yet developed in this soil. See Figure 8 on page 120.

Uptake – The ability of a plant to absorb water and nutrients.

40 **Weather (Weathering)** – To break down rocks and minerals at or near Earth's surface into smaller particles and soil. This can happen chemically and physically.

Wetland – An area of land where the soil is saturated with water, such as a marsh, swamp, or bog.