

Course- WL- 707 Terrestrial Wildlife
Management
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Management

8th Lecture

SOIL AND WILDLIFE

SOIL AND WILDLIFE:

Soil is full of life. It is often said that a handful of soil has more living organisms than there are people on planet Earth. Soils are the stomach of the earth, consuming, digesting, and cycling nutrients and organisms.

On first observation, however, soil may appear as a rather inert material on which we walk, build roads, construct buildings, and grow plants. On closer observation, we observe that soil is teeming with living organisms. Living organisms present in soil include archaea, bacteria, actinomycetes, fungi, algae, protozoa, and a wide variety of larger soil fauna, including springtails, mites, nematodes, earthworms, ants, insects that spend all or part of their life underground, and larger organisms such as burrowing rodents. All of these are important in making up the environment we call soil and in bringing about numerous transformations that are vitally important to life.

Characteristics:

Soil animals contribute directly to nutrient cycling in soil when they release mineralized nutrients in their excreta. However, most of their contributions are indirect by:

- grazing on the microbial biomass, which can increase the rate at which they decompose organic matter

- fragmenting organic matter and increasing the surface area for microorganisms to decompose,
- controlling the grazing pressure of nematodes on microorganisms,
- mixing soil and organic matter and
- introducing microorganisms onto fresh organic matter

SOIL ANIMALS

• Soil animals are consumers and decomposers because they feed on organic matter and decomposition occurs in the digestive tract. Some animals feed on roots, and others feed on each other. There are several types of worms. Earthworms are the easiest to identify. They eat plant material and organic matter, and excrete worm castings in the soil as food for other organisms. They also leave channels that they burrow in, which increases infiltration.

• Earthworms can weigh between 100-1,000 pounds per acre! There are also microscopic worms called nematodes, or roundworms. These worms live in the water around soil particles. There are several different types of nematodes, some of them eat dead materials, others eat living roots, and some eat other living organisms. Some nematodes are bad, and can cause severe root damage or deformation.

Animals, such as rabbits and moles, dig holes and help mix up the soil. Their tunnels let air reach plant roots, let water drain through soil, and provide spaces where plant roots can grow. Small animals stir up the soil and make holes where air and water can enter the soil.

Soil as a Natural Resource

Another important natural resource is soil. It is the thin layer of a grainy substance which covers the surface of the earth. The important constituents of soil include:

- Organic matter
- Humus
- Silica
- Clay
- Sand