Week 8 recap

Lecture 1

Cancelled due to snow

Lecture 2

This week we talked about soil biology. About 1-8% of total soil organic matter is living by dry weight. Don’t forget that one of the 6 functions of soil is that it is a habitat for soil organisms. Soil organisms are important because they build soil structure, control decomposition and recycling of OM, protect crops from pests and diseases, control the fate of pollutant chemicals in soil, and are a large reservoir of biodiversity as 1/3 of all living organisms are soil organisms. Soil organisms can be classified by their size, where they live, their function, and their energy + carbon source.

Autotrophs get energy from light/ the sun

Heterotrophs get energy from food/ other organisms

Earthworms contribute significantly to soil health. They create iopores, bioturbation, nutrient condition, soil condition, and aid with soil aggregation. They eat OM and pass soil through their bodies each year, mixing horizons. They promote good soil structure and aeration.

Lecture 3

In a gram of soil you could expect over one billion soil organisms.

Mesofauna are small arthropods such as mites or small annelids such as pot worms. They are heterotrophs that feed on fungi, protozoa, nematodes, and smaller mites. They are important in regulating the populations of everything smaller than themselves. They shred organic material, stimulate microbial activity, enhance soil aggregation, burrow which increases infiltration, and control pests.

Microfauna are even smaller, most important member is the nematode. They can be predators, decomposers, or parasites. Nematodes feed on bacteria, fungi, and protozoa and help control bacterial numbers. They help maintain plant available N. Very small!

The protozoa is a very small microorganism that is unicellular and needs water to move and eat. There are three categories

Ciliates – move using hair like cilia

Flagellates- move using whip like flagellae

Amoebae – Move using foot like structures called pseudopodia.

Ameoba are the principal consumers of bacteria in soil that does the same things as nematodes pretty much. Ameoba are vast in number and are the food source for fungi, mematodes, and many others.