USDA
United States Department of Agriculture

NATURAL RESOURCES CONSERVATION SERVICE

10A

SOIL TECH NOTES

Earthworms

PROBLEM: "You know, I've heard a lot about earthworms in the soil and how good they are. I don't think I have many. Is that bad?"

LOW EARTHWORM POPULATION PROBLEM CAUSED BY:

- Excessive tillage of the surface layer.
- Sometimes by **over applying** certain farm chemicals or even nitrogen.
- Surface layer is very compact.
- Surface layer or even upper subsoil is too wet or saturated for extended times.
- Soil pH is too acid.

WHAT DAMAGE IS CAUSED LOW POPULATIONS:

- Earthworms are extremely good at shredding organic residue on the surface and throughout the upper part of the soil. If not there, decomposition of residue greatly decreased.
- They create channels down through the soil which allow roots, microbes, and water to move deeper and increase the rooting volume of plants. In proper environment, earthworms can produce over 800,000 small channels per acre that will move water.
- These channels can act as root pathways that many of the cover crops will use to go deeper into the soil.
- Earthworms have often been considered a good soil health "marker" in the soil. If not present could indicate other soil health issues exist.

POSSIBLE SOLUTIONS TO INCREASE NUMBERS:

- Decrease tillage. Tillage will physically destroy their habitat.
- Be mindful of correct chemical and fertilizer rates. Earthworms don't like acid soils.
- Proper mix of cover crops provide a good habitat for earthworms. They also increase the air and water movement, which can minimize wet, saturated soils.
- Earthworms can move and improve up to 100 tons of soil per acre each year if left undisturbed and allowed to function in a healthy soil.
- Crop rotation of non-monoculture nature will also increase population. Diversity is always better environment.