

Soil health is a topic that has generated a lot of discussion over the past several years. Most of the time it refers to cover crops, alternative crops, and tillage practices that are designed to provide water storage capacity, increase organic matter in soil, and reduce wind and water erosion. Environmental benefits are only one side of the coin, however, the flip side is the economic and sustainability benefits that soil health practices provide to landowners.

The water stored in the soil profile has numerous benefits. Not only does it reduce peak flows in streams and subsequent streambank erosion but it helps to provide needed water to crops during the dry summer months. How about increases in organic matter? That feeds the biology of the soil and increases the availability of nutrients for plants throughout the year. Increased soil health also keeps valuable topsoil in place on the field and out of lakes, streams and ditches. A win-win prospect if ever there was one.

When most folks think about soil health practices they think of the row crop applications but the Clearwater Soil and Water Conservation District (SWCD) is helping their landowners apply these principals on pasture and hay land as well. These principles increase soil and plant productivity, decrease runoff, and increase infiltration in an economically and environmentally sustainable manner.

To that end, the SWCD received a 2015 Clean Water Fund Grant to target pasture and hay land adjacent to public waters and sensitive lakes in Clearwater County. The grant provided technical assistance and a no-till drill for pasture and hay land renovation in order to introduce warm season grasses, legumes, and even native vegetation into the forage mix without reworking the field or pasture. Rather than tilling the soil which destroys the structures that plant roots and microbes have developed and exposes the soil which increases the chance of erosion, the no-till drill allows the introduction of plant species that will be available for forage late in the season when the cool-season grasses that make up most pasture grasses have gone dormant. Robust plant growth throughout the season ensures adequate forage along with decreased runoff and increased evapotranspiration from actively growing plants.



*No-till drill at work*

The SWCD also provides another opportunity for landowners to increase soil health by providing access to a soil aerator that can help areas compacted by machinery or livestock. Golf courses and lawn maintenance companies routinely aerate compacted soils to increase infiltration and provide oxygen to maintain biological activity. Those same principles apply in an agricultural setting. Aerating the soil without traditional tilling is another way to maintain vegetative cover, optimize soil health increase infiltration, and reduce runoff.

Nathan Nordlund, SWCD Manager says, “Word is spreading about the availability of this equipment. We have landowners that are using the equipment multiple times. They must have liked the results.”



*Soil aerator on a field*