

WISCONSIN STATE FARMER

PAGE 10B

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Rotational grazing ranks at top for soil conservation

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Among cropping practices, managed grazing ranks at or near the top for controlling soil erosion, reducing fertilizer runoff, enhancing wildlife habitat, balancing manure and nutrient applications with crop use, cutting the use of pesticides, and keeping carbon in the soil rather than allowing it to escape into the atmosphere, the Natural Resource Conservation Service's grazing lands specialist for Wisconsin Brian Pillsbury reminded his audience at a workshop and field day for Grass Point Farms.

Speaking on Joe II and Deb Tomandl's 55-cow rotational grazing dairy farm, which is one of the nine original members of the new marketing organization that emphasizes the grass-based production of milk, the resulting benefits for the environment, and implied benefits for dairy food quality and human health, Pillsbury outlined research findings that identify the value of managed grazing on the landscape.

Referring to the prairie and grass-growing historical background of much of Wisconsin's landscape, Pillsbury said, "The land needs animals and fire to be healthy." He noted that Wisconsin once had about 4 million acres in forages (legumes and grasses) – a number that has dropped to 3 million of the state's approximately 15.4 million acres that are counted as being farmland.

This raises serious concerns because of the close correlation between land use, cropping practices, and the volume of soil erosion, Pillsbury pointed out. Although the number of grazing acres included in the nearly 3 million forage acres in Wisconsin is not known, he said there is no doubt that managed grazing is environmentally friendly and embodies the soil conservation ethic.

Despite the efforts made to reduce soil erosion, both before and during the 10 years that Pillsbury has been assigned to Wisconsin as the NRCS's grazing specialist under the provisions



BRIAN PILLSBURY

of the Grassland Conservation Initiative program, soil erosion still averages 3.2 tons per acre annually on Wisconsin's farmland, he reported. He noted that grazing land is not immune from soil erosion, especially when there is overgrazing or when animals are allowed too much access to gullies or the banks of bodies of water.

In most cases, however, the combination of ground cover and the permanent root masses on managed grazing land minimizes soil erosion, Pillsbury continued. He cited findings by Wisconsin's Discovery Farms project and from other sources that on relatively flat land, managed grazing limits soil erosion to an average of 0.4 ton per acre annually compared to 2.45 tons for rotations of corn grain and soybeans and 5.57 tons for corn silage and soybean rotations.

On hilly land, the numbers compiled for 2000 through 2004 jump, Pillsbury indicated. He noted that the measured erosion with managed grazing was only 0.16 ton per acre compared to 15 to 18 tons with other cropping sequences and up to 49.77 for a rotation of corn silage and soybeans.

Using the higher soil erosion rate of 0.4 tons, the conversion of 28,000 acres to pasture in Wisconsin during

the last five years theoretically prevented the erosion of 56,000 tons, or 2,500 truckloads, of topsoil, Pillsbury calculated. He also cited nitrate runoff from research in Ohio that indicated 3 to 4 parts per million from grazing land compared to the federal standard of 10 ppm that is acceptable for drinking water.

Additional environmental benefits from managed grazing accrue along stream banks and for aquatic habitat, Pillsbury stated. For stopping water flow and for filtering contaminants from that water, research shows that grazing land is as effective as placing a vegetative buffer along waterways, he noted.

Because managed grazing rarely requires the application of herbicides or pesticides, there is a 90 percent to 100 percent reduction in the use and cost of those products compared to growing corn and soybeans, Pillsbury pointed out. "And there is clean water for the cattle from streams."

A recently recognized and potential financial windfall for the owners of grazing land is its soil carbon holding ability, Pillsbury remarked. With an annual 1 percent increase of soil carbon content, 20 tons of carbon would be sequestered from the atmosphere over 20 years, he said.

What's important about that is the strongly suggested link between the emission of carbon dioxide to the concerns about global warming, Pillsbury indicated. As a result of public policies that allow the trading of carbon credits, utility companies want to buy offsetting credits – a potential source of income for owners of grassland, he explained.

The plant diversity and habitat cover on grazing land also provide excellent bird habitat and nesting sites, Pillsbury indicated. He concluded that the healing and forgiving traits are among the many rewards for soil conservation planning rooted in grasslands.