Our Mission:
To provide water quality education and funding for cost effective clean water projects that improve the North Fork Ninnescah Watershed which feeds Cheney Lake.

H2infO

CHENEY LAKE WATERSHED, INC. FALL 2008

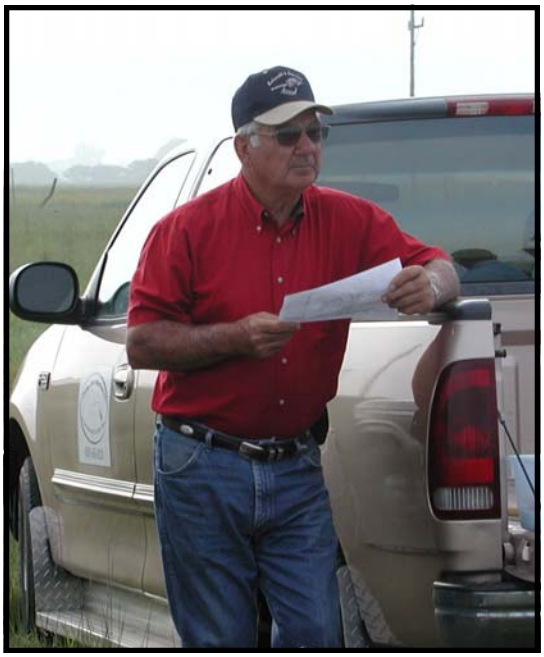
Grazing CRP Grass for Water Quality

By Howard Miller

Roland Elpers prefers to graze his expired Conservation Reserve Program (CRP) contract acres rather than break them out to be farmed once again. Roland's first experience with grazing expired CRP grass began about 10 years ago when he participated in a program offered by the City of Wichita to fence expired CRP acres. Through the Cheney Lake Watershed the City of Wichita will pay 50% of the county average cost for up to 2 miles of boundary fence. By keeping the expired CRP contract acres in grass rather than converting it to cropland the chances of soil leaving the field and being deposited as sediment in Cheney Lake is greatly reduced.

While Roland grew up on a farm, he spent a number of years operating mattress factories in Colorado, Iowa and Kansas. Several years ago he downsized and today Roland owns and operates a factory in Haven where they manufacture mattresses sold under the Restonic name. Roland enjoys having more time to operate the farm with his sons, Mark & Pat. Together they farm 4,000 acres in northern Kingman and southern Reno Counties. Most of their land lies to the south and west of Cheney Lake where they grow wheat, alfalfa, milo & millet. The only livestock the Elpers own are Roland's 2 Texas Longhorns. The rest of the livestock on the farm are custom grazed on grass in the summer and wheat pasture during the winter months.

When Roland purchased the parcel of grass to the east of Cheney Lake, it had a new CRP contract. After it expired Roland chose to fence it and graze the grass. Roland says the grass on that parcel never has done really well because of the poor soils and he has to be careful not to overgraze it. He feels like he pushed it too hard several years ago so he is not grazing it this year to let it rejuvenate.



Roland Elpers

In August of this year, Cheney Lake Watershed sponsored a field day to see another expired CRP contract Roland converted to grazing in 2007. He used state cost-share programs through the Reno County Conservation District to set up a livestock watering system, consisting of a well with a solar powered pump and rubber tire tanks. The tire tanks that Roland installed are made from used construction equipment tires. The rubber tanks are nearly indestructible. Roland says that CRP grass grazes as well as native grass after the first year or two as it becomes less clumpy and more even. He feels the grazing plan, required with the fencing cost share, may seem restrictive early in the year but it works out about right by the end of the season. Roland says that on the marginal soils around the lake, grass is probably the best crop to grow. This area is a high priority area for Cheney Lake Watershed's goal of reducing sediment deposited in the lake. There are additional incentive programs in place that will pay producers $200 per acre to seed areas of fields to grass under long term retirement programs. If we can lower the amount of soil leaving fields and entering Cheney Lake this is a win-win for both the City of Wichita and area producers. By leaving expired CRP grass in place Roland certainly has done his part to help extend the life of Cheney Reservoir.

H2infO is published by the Citizen's Management Committee (CMC) of the Cheney Lake Watershed, Inc. and the Reno County Conservation District with funding provided by a U.S. Environmental Protection Agency Section 319 non-point source pollution grant through the Kansas Department of Health and Environment.

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Wetlands Give Stability to the Watershed

By Lisa French

"The protection or restoration of wetlands is an effective tool for water quality improvement, flood protection, wildlife habitat, and groundwater recharge. "

"Wetland" is a word that triggers images of a swampy, boggy area filled with mosquitoes. Or dark thoughts of red tape restricting farming practices. And even if "wetland" is not quite that negative, it can still bring to mind an area that is not productive - something that would be more useful if it were drained or filled in with soil.

Contrary to these common images, wetlands are indispensible to our watershed. The protection or restoration of wetlands is an effective tool for water quality improvement, flood protection, wildlife habitat, and groundwater recharge. All of these functions can mean dollars and cents to area landowners as wetlands provide stability and protection.

- **Water Quality**

Wetlands are sometimes described as giant sponges that trap pollutants before they can transport into the stream system. Sediment settles out in the calmer waters of the wetland. Nutrients are captured and used by wetland plants. Pesticide transport is slowed and the chemicals are broken down. Water temperature, an aspect of water quality that is important for wildlife habitat, is moderated by wetland vegetation.

- **Flood Control**

Wetlands also act as "speed bumps" in a stream system, minimizing flood damage by slowing and storing flood waters. Steambanks are protected from storm surges that can collapse banks as the velocity of the water and the peak flows are reduced.

- **Habitat**

Wildlife benefit from wetlands as the diversity of habitat in an area increases. There are numerous species that need shallow water, mud, or some type of condition midway between a flowing stream and dry land. Some of these species provide recreational opportunities for hunters. Others provide opportunities for us to observe and learn about interesting animals and plants.

- **Groundwater recharge**

Lastly, wetlands are often a point of groundwater recharge, allowing flood flows to slowly soak into the aquifer. Since groundwater also feeds our streams, this recharge helps to maintain minimum flows in watershed streams.

Watch for an upcoming field day in October to visit wetlands in western Reno County. These wetlands near the Ninnescah River were enhanced using cost share from the City of Wichita, Stumps Trust, and the Kansas Alliance for Wetlands and Streams. Presentations will include information on creating habitat to attract the wildlife you want, lease arrangements that protect and benefit landowners, and acquiring cost share dollars and technical help to complete your project. Call our office to make sure your name is on the list for an invitation (620-665-0231).

Alex Miller & Jasper Nisly (left) and Daniel Miller (right) enjoyed a field trip to the Ninnescah with the Partridge Community Assn and Cheney watershed staff in July.

Brazilian Champions Cover Crops for No-till Farming

By Lisa French

"Agriculture is site-specific but the principles are the same everywhere," according to Dr. Telmo Amado, visiting Professor of Agronomy at Kansas State University. Amado recently recounted the surprising creativity of farmers in Africa, South America, and the USA in addressing soil erosion through the adaptive use of no-till farming. From the oxen-powered, one-row planters of "no-till smallholders" in Africa to the development of perennial pastures planted in consortium with major grain crops in Brazil, Amado sees no-till farming as a technique that can be adapted by farmers to fit their particular needs and resources. Amado was one of the featured speakers at a No-till Workshop near Yoder sponsored by Kansas Farm Bureau, Cheney Lake Watershed, and No-till on the Plains.

Brazilian farmers have made substantial conversions to no-till farming as a response to economic pressures and tremendous erosion. Forty years of intensive tillage coupled with high rainfall in Brazil have resulted in disastrous levels of erosion that destroyed fields and filled the rivers with silt. Amado estimates that for every ton of grain produced in Brazil, ten tons of soil were lost to erosion prior to the adoption of no-till.

Today, Brazilian farmers and their counterparts around the world are adopting cover crops as a component of no-till farming systems with multiple benefits. Amado sites increases in soil organic matter, the capture and cycling of nutrients within the soil profile, and "biological tillage" to break up compaction with the use of cover crops.

Participants at the August no-till workshop were able to see examples of a variety of cover crops on the farm of Cameron and Jeanne Peirce. Working in partnership with Kauffman Seeds, Cameron had planted small test plots that included Austrian winter peas, cowpeas, buckwheat, hairy vetch, turnips, and other potential cover crops.

The workshop also featured a soil pit on a 14-year no-till field adjacent to a soil pit on a conventionally tilled field. NRCS soil scientist, Gary Parks, helped participants compare soil structure, root depths, water infiltration, and evidence of biological activity. Over 75 people attended the field day.

Gary Parks, NRCS Soil Scientist, discusses soil characteristics of conventionally tilled soils as compared with no-till soils.

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How Fast Can Your Soil Capture Rainwater?

-Lisa French and DeAnn Presley

"Infiltration" is the name of the game whether we are talking about capturing moisture for our crops or preventing run-off induced erosion. According to DeAnn Presley, Extension Soil Scientist with Kansas State University, there are several factors that determine how fast your soil can absorb rainfall.

- **The length of time from the start of the rain event**.

Infiltration is usually high at first, decreasing gradually, and eventually reaching a steady-state of slow infiltration as the soil profile fills with moisture. No-till soils have a higher infiltration rate at the start of the rain event but eventually their infiltration rate is the same as tilled soils. Run-off begins when the precipitation rate exceeds the infiltration rate.

- **The water content of the soil when rainfall starts**

Soils have a lower infiltration rate when they are wet than they have when they are dry. This is a corollary to Factor #1 because you reach the steady-state of infiltration sooner with wet soils. This is true whether the soils are wet due to rain or to irrigation. For this reason you may see more run-off and more erosion on irrigated soils when other factors are the same.

- **The hydraulic conductivity of the soil**

Soil texture (sand or clay) will affect infiltration as will soil structure. Soils with well-defined structure, stable aggregates, more pores, and higher organic matter content are better able to conduct water through the soil. The structural characteristics are somewhat dependent upon tillage. Tillage breaks down the soil structure and decreases infiltration rates throughout the soil profile. Raindrop impacts also break down aggregates during a rain event. Soils that are not tilled gain some benefit from slightly higher levels of organic matter, but their real benefit is the much greater stability of aggregates.

- **The condition of the soil surface**

Large soil pores (macropores) such as old root channels or other cracks that extend from the surface well into the soil profile allow for moisture infiltration. Residue lying on the surface slows running water giving it more time to infiltrate, and protects the soil surface from the impact of falling raindrops. Partly buried residue that creates new flow paths into the soil can also aid infiltration. Each of these features are characteristic of no-till soils.

- **The depth and layering of the soil profile**

Different types of soil structure, texture, and original parent material within the soil profile can affect the rate of infiltration. Tillage and heavy loads can also change the profile by creating a plowpan or a surface crust that will inhibit water movement. Surface crusts can be removed with freezing and thawing, but plowpans are not. Plowpans may persist in soils for many years and are very difficult to address once present.