

Water Wise

A Newsletter Promoting Fall River Watershed Improvement Strategies
A Publication of the Kansas Alliance for Wetlands & Streams (KAWS) www.kaws.org

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Saving Money & Time

Hello friends of the Fall River. Most of you are well aware that I am the Greenwood County Extension Agricultural Agent – a position I have held for 29 years. In that position, I wear many hats. For 2007, one of my hats will be that of Fall River Watershed Improvement Coordinator. My “job” will be to provide education and information relating to maintaining water quality, economic productivity and a healthy natural resource system, to those living in the Fall River watershed. .

As landowners in the watershed, you are a steward of the natural resources in the watershed. Streams, riparian areas, and productive farm or grazing land have always been important to livestock producers. Livestock producers place a high priority in protecting these resources and are challenged with finding a balance between sustaining the environment and maintaining profitability. The purpose of this quarterly newsletter, and other activities, is to provide you with some thoughts about managing your land, with attention to water quality,

livestock production and general resource management. I am also available for individual consultation, and would be glad to simply provide some thought or be someone to bounce ideas off of. There are also government assistance programs of many kinds which may apply to some of the ideas you have, and I will be glad to help get you in touch with the right entity for your particular project. Wishing you the best in 2007, I hope you find this newsletter thought provoking.

Upcoming Events

Feb 21 - afternoon

Tour of Jim Reeves stocker/feeder operation east of Augusta. Please **call** if you'd like to go. It will be weather dependent as I want a nice day to do this. We will look at good examples of brush control, salt placement, pond, grazing and riparian area management.

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Trees Along Streambanks

(summarized from KS Canopy – KS Forest Service Newsletter)

The Fall River watershed is overwhelmingly comprised of grasslands, and in those grasslands, we devote considerable money and time preventing or removing trees. As a general rule, those efforts will need to be intensified in future years if the grassland is to continue as grass. But along the major streams of the watershed - Fall River, Spring and Otter Creeks, timber dominates the streamside vegetation. That is where trees are needed, the immediate riparian zone. But we're guilty of overlooking the streamside timber. It's just there, we don't really manage it. Our streamside timber resource is one we could greatly improve with some simple management measures.

Water quality and streambank stabilization are two of the priorities identified in the Fall River Watershed Restoration and Protection Strategy report. As water flows across the ground, it picks up sediment and other pollutants. As water flows through timberland, its slowed by trunks, leaves and understory vegetation. As the water slows, the sediment, with its nutrients of phosphorus and nitrates, drops out, remaining on the forest floor. The slower water also allows increased infiltration, recharging the ground water which aids the flow of springs, maintaining a desirable stream flow. The roots of trees and understory shrubs not only penetrate deep into the streambank vertically, but they also hold the soil by lateral roots that can spread 2 or 3 times the height of the tree. These roots provide year-round stability for the soil on the streambank, holding it in place when it rains and when flooding occurs.

The canopy of the riparian forest also shades the stream, keeping the water temperature cooler and able to hold more dissolved oxygen, another priority identified by the Fall River WRAPS document. Increased dissolved oxygen provides a more hospitable environment for many aquatic species.

Your riparian forest is also a possible source of income, even though it can require essentially a generation to realize the profit from a timber resource. The best trees in Kansas grow along streams. During this past year, a single Kansas City log yard exported over 30,000 walnut logs to China (Hong Kong) and other foreign countries. The overall foreign demand for black walnut may be stronger than it's ever been. Even a modest amount of management can enhance the future value of that timber resource. Check with me about the possibility of government assistance for timber stand improvement, and a visit with a Kansas Forest Service forester.

End of Year Checklist

(from KSU Environmental Quality Website)

As we wind up 2006, and begin 2007, we should take a few minutes and evaluate our natural resource stewardship. We are now well into the winter cattle feeding period, an important time in terms of management. We make most of our water quality mistakes during the winter feeding months. Here is a checklist of questions you should ask yourself as we continue the cattle feeding months ahead.

- I. Has the height and density of desirable grasses in your pasture been maintained or improved during the past year? 2006 was a "short-

- grass” year, but the density should have been maintained, and consider how you will “recover” the grass in 2007.
- II. Do you remove the manure, waste feed and hay from feeding sites within two weeks after moving feeding sites or at least six times annually? Cleaning feeding sites prevents bacteria build-up, as well as horn flies.
 - III. Do all livestock at your facility have access to drinking water from some form of water tank? Providing water in a tank has proven to reduce cattle time in streams and ponds by 50 to 80 percent. Having water at all this year is a plus, but have you made plans to avoid “scrambling” for water during the next dry spell?
 - IV. Are supplemental feeding areas located at least 100 feet from creeks, streams, rivers, lakes, ponds or natural waterways and water wells? This distance will keep manure contamination from reaching main waterways.
 - V. Are supplemental feeding sites moved at least weekly to a new location? This prevents concentration of manure.
 - VI. Is the primary protection from wind or snowstorms by windbreaks or natural timber areas at least 100 feet from creeks, streams, rivers, lakes, ponds or natural waterways.
 - VII. Are the grazing areas along creeks, streams, rivers, lakes, ponds or natural waterways managed to

prevent trampling and overgrazing by cattle?

- VIII. Are mortalities disposed using a legal and approved method (composting, burial, incineration, contract pick-up services)?
- IX. Is a grazing management plan being followed?

Think about these things as you get your cattle situated for the rest of the winter, and determining where you will be feeding those cattle. These are little things that can add up to big differences in terms of water quality and streambank stability.

Reading Your Landscape: Are Your Pastures Healthy?

(Borrowed from Texas Ag Extension Service – Authored by White, Rector & Hays)

Water is often a limiting factor on rangelands. Every dry year reminds us that forage production is not guaranteed, and that managers must be prepared for the inevitable forage shortfall. Climatic risk must be managed to prevent the degradation of resources, prevent non-point source pollution, and reduce financial risks.

We may not be able to control the amount or timing of rainfall, but the productivity of rangeland is closely tied to the amount of moisture *captured* in the soil when it rains and the presence of desirable plant species to use that moisture. It is your current and past management practices that determine how much rainfall penetrates the soil, the kinds of plants on your land, and the amount

of runoff, sediment, and non-point source pollutants that leave your property.

Factors that affect where rainfall goes are the type and density of vegetative cover; the intensity of a storm; the amount of moisture in the soil before the storm; the capacity of the soil to hold water; and the slope of the land. These factors affect how much moisture evaporates, infiltrates or runs off the land, and the velocity of runoff water.

While you can't change most of these factors, your management does determine the condition of the soil and the type of vegetation growing in it. That can make the difference between capturing rainfall for the production of desirable plants, or seeing your land erode and your forage disappear. If you correctly "read" the condition of your rangeland, you can make timely management decisions to protect your resources.

Knowing what to look for is key to reading your landscape. The first indicator of range or pasture health is vegetative cover – both the amount and the species composition. Good vegetative cover, with little bare ground, slows the movement of water across the land and lessens the impact of raindrops on the soil surface. The greater the raindrop impact and the faster the water moves, the more soil will be dislodged and carried away. The slower the movement of surface water, the more time there is for it to soak into the soil. By monitoring the amount of bare ground on your land and the evidence of erosion, you can determine how your management is affecting the soil surface.

A certain amount of vegetative cover should be left on the soil surface at all times. This is called the threshold residue. It varies with plant species, soil type and climate, and it

determines the amount of rainfall captured and the potential for future grass production. An annual rainfall of 20 inches can produce twice as much forage on an area with adequate threshold residue, as compared to an area with little residue, and bare ground becoming quite evident.

The kinds (species) and classes (grasses, forbs, etc.) of plants determine the amount of rainfall that will be intercepted by foliage and evaporate back to the atmosphere, or that will reach the soil surface – to either infiltrate or run off. The ability to identify the plants on your land is very important. Plants reflect the environment produced by your management and the natural climatic and soil factors of your property.

The second indicator of rangeland health is the soil surface. Large areas of bare ground, pedestaled plants, litter dams, rills and gullies are signs that rainfall is running off the land rather than infiltrating the soil. Another danger sign is stream bank erosion, which often occurs when riparian vegetation is inadequate to stabilize the bank against flowing water. Riparian vegetation is important for maintaining natural stream channels. Closely checking stream bank stability and riparian zone vegetation can help you recognize a problem with the land upstream. Riparian vegetation is another priority of the Fall River Watershed Protection Strategy.

The *bottom line* is to know what is happening on your land. Check for signs of increasing bare ground, reduced litter, lower forage production, changing plant species, and stream bank erosion. These signs tell you that rainfall is not being effectively captured and that sediment losses are reducing the soil's productivity and water holding capacity. If these signs are present,

you can change your management before the next storm further degrades your property. Learning to read your land will pay off in greater productivity now and sustainable productivity in the future.

Farm Pond Maintenance

2006 pointed out just how important a good pond is. A pond is an important resource providing in addition to livestock water – recreation, flood control, pollution control, and wildlife habitat. A pond does represent a sizeable investment. Proper maintenance can provide long-term use. If the pond is used for livestock water, it is best to fence it with a pipe through the dam and a tank below the dam. An additional advantage of this practice in the winter is not having to chop ice and there's no danger of losing livestock that fall through the ice. Granted, there does have to be water in the pond for this system to work, and dry ponds are very common right now – with many being cleaned out so they will hold more water when it does rain again.

Cleaning ponds is another expense, and fencing the pond, with a tank below the dam, will extend the life of the pond considerably. As cattle move in and out of a pond to drink, they tend to push or stomp in the edge of the pond, gradually filling it. They also tend to take the vegetation off the shore line, allowing more erosion which causes the pond to silt in. Depth is important to a pond, as the deeper water remains cooler, reducing evaporation losses.

There are other livestock management practices that can prolong the life of your pond.

→ place salt, minerals, or fly control away from the pond.

→ don't allow livestock to develop trails in the emergency spillway

→ if the pond is used exclusively for livestock, eliminate existing trees to avoid loafing areas. Additionally, trees near the pond pull moisture from the pond, causing water losses above normal evaporation.

Wind and Water

This is the time of year when we especially appreciate the benefits of a windbreak. Cattle also benefit from some form of windbreak shelter, whether it be a planted, designed windbreak, or a natural wooded area, or even a steep slope. Protection from wind can significantly improve animal performance and feed efficiency. Healthy cattle perform best when the temperature is between 23 and 77 degrees Fahrenheit. A wet hair coat will compound the negative affects of wind. However, if we consistently feed near these shelters, there can be an excessive build-up of mud, manure and wasted feed.

Mud can actually be a greater detriment to production and feed efficiency than winds. Water quality concerns arise if these areas are located near streams, ponds, wells or natural waterways. Often times our naturally wooded areas are alongside streams. Feeding in areas used for shelter should be minimized – especially when located near water resources.

If an area does get “overused” during the winter, take the time in late winter to clean the area by removing or scattering manure and waste feed. Not only is it a source of fecal coliform, nitrate, phosphorus and other contaminants, but it is also a breeding ground for stable flies.

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