

Trees: directions, multi-purpose, protection

As I wander down the Kansas highways I will notice a large tree and start wondering. How old is the tree? If that tree could talk what stories could it tell? Kansas in the mid 1800s had an estimated 4.5 million acres of forestland or about 8% of the land area. By 1937 that area had been reduced to 1.2 million acres or 2%. Kansas today has 4% total land area or 2.2 million acres of forestland. What role do trees and forestland play in Kansas? They have an important role in watershed protection.

Giving directions

Go south down the gravel road until you come to the hedge row, take a left and at the first oak you come to, head back north past the

second shelterbelt, the house is on the right with the apple tree in the front yard. Okay, maybe the directions are not accurate to take you to Custer's Elm, but I'm sure these apply somewhere in Kansas.



Jim Jackson
Source *Water Tech*

Multi-purpose

The tree held the beloved tire swing by the back door. The branch that hung over the creek was used as a diving board on a hot summer day. The big tree in the yard was used for the tree house and hiding spot. In my childhood, there may have been a branch or two used by my parents before I could make it to the hiding spot (and frankly, I

appreciate the discipline they gave). There were hedge apples that could be used for target practice. The trees provided fire sticks used to cook hotdogs and marshmallows on the hayrack

Protection

Riparian buffers can be established for different reasons. The wettest and lowest ends of a field are always subject to flooding. Farming these areas can

Kansas today has 4% total land area or 2.2 million acres of forestland. What role do trees and forestland play in Kansas? They have an important role in watershed protection.

ride. We spent Saturdays cutting up fallen trees for firewood. I know I forgot a few uses; perhaps you have others such as producing nice walnut or ash cabinetry or other furniture.

be difficult. Some people may want to improve the wildlife habitat for hunting or pleasure. Some may want to enhance the appearance of their land. Some may want to improve the water



After Watershed Forester Ryan Neises welcomed people to the recent tree planting tour in Linn County, the agenda included discussing the benefits of protecting young trees by using tree shelters, which protect young trees from deer. Neises has been working on improving the water quality in the Marais des Cygnes River Basin.

quality of the creek or stream. Some may want trees for a source of income.

The benefits desired from a riparian area dictate the types of vegetation that should be established. There are three types of vegetation that can be used in a riparian area: grass, shrubs, and trees. The benefits include: streambank stability, filter sediment, nutrient retention, pesticide buffering, livestock protection, and flood damage protection. The table at the right illustrates the benefits.

Benefits of riparian forest buffers

- Trees located along creeks and rivers reduce flood damage by slowing water velocity and keeping unwanted debris out of fields. By slowing the flow, trees help store flood water and recharge ground water supplies.
- Tree buffers improve water quality by reducing nitrogen entry into a stream by 80% to 90%, phosphate by 50%, and sediment by 85% to 90%. Pesticide entry is also reduced by 90%.
- Tree roots stabilize stream banks and reduce soil erosion.
- Trees like black walnut, bur oak, green ash, and hackberry are an excellent economic investment.
- Trees are excellent wildlife habitat, providing food, cover and travel corridors.
- Trees provide shade for streams and rivers. This lowers water temperature, which improves habitat for fish and other aquatic wildlife. Lower water temperature increases the presence of oxygen while reducing evaporation and release of unwanted chemicals from sediment.
- Overhanging roots provide good fish habitat while fallen leaves and small branches create organic matter that is the basic food source for fish and other aquatic life.
- Trees enhance aesthetics and provide recreational opportunities

like fishing, hunting, bird watching and wildlife photography.

- Tree buffers function as transformers when bacteria and fungi located in buffers convert chemical runoff from adjacent fields into forms usable by plants.

The following list of benefits is taken from the State of Kansas publication, "Trees for Clean Water," from the Governor's Water Quality Initiative.

| | Vegetation Type | | |
|-------------------------|-----------------|----------|----------|
| Benefit | Grass | Shrubs | Trees |
| Streambank stability | Low | High | High |
| Filter sediment | High | Low | Low |
| Nutrient retention | Medium | Medium | High |
| Pesticide buffering | Medium | Med/High | Med/High |
| Livestock protection | Low | Medium | High |
| Flood damage protection | Low | Medium | High |

They also transform toxic chemicals to non-toxic forms.

- Tree buffers function as sinks when chemicals are absorbed and stored by trees.

Watershed Protection

The Marais des Cygnes Watershed Riparian Forestry Initiative has been working to improve the water quality of the Marais des Cygnes River Basin

WATER WISE ENTERPRISES, LLC

YOUR SOURCE for the AQUA-MAG line of WATER TREATMENT products LMI & STENNER chemical feed pumps

office 316.792.6994
fax 316.773.1492

Toll FREE 866.883.1427
dpatton@waterwiseenterprises.com

Diane Patton



Trees: directions . . .

for the past two years. This joint initiative between the Lake Region RC&D, Kansas Forest Service and Hillsdale Water Quality Project is possible through an EPA 319 Clean Water Act Non Point Source Grant administered

by the Kansas Department of Health and Environment.

Watershed Forester Ryan Neises has been conducting workshops, tree planting demonstrations, individual on-site planning, project plan preparation,

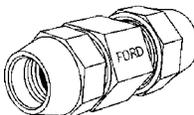
cost estimates, plan implementation and numerous other activities to help improve the water quality within the basin.

The goals of the Marais des Cygnes Initiative are to restore, protect and manage the woodlands adjacent to streams and rivers by planting trees for the purpose of improving water quality and other benefits like commercial timber products, recreation and wildlife. Trees are an important resource for water quality. Riparian forest buffers provide soil stabilization and filtration of sediments and pollutants and also provide economic returns.

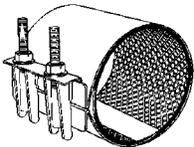
Ryan will be a presenter at an upcoming KRWA training in August on "Water Protection and Water Rights" in Fort Scott. Ryan will demonstrate how water quality can be improved during an on-site tree buffer planning session at Fort Scott Community College's Source Water Protection project. The project consists of wetlands, waterfalls, and ponds to

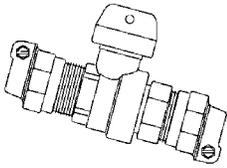
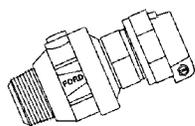


This willow cutting will begin to take root, helping stabilize the banks of the river. The cuttings are planted every two to four feet along the bank.

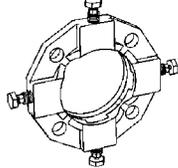
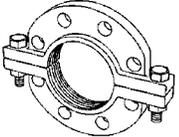


WATER WORKS BRASS AND PIPELINE PRODUCTS





THE FORD METER BOX COMPANY, INC.
P.O. Box 443, Wabash, Indiana 46992-0443
260-563-3171 • FAX: 800-826-3487
<http://www.fordmeterbox.com>



improve water quality from runoff from a confined animal facility, athletic fields, parking lots and residential areas. Pat Flynn, Fort Scott Community College, will discuss this project and the benefits of source water protection.

Additional information on this training session can be located at www.krwa.net training calendar.

The Kansas Forest Service can provide assistance if you would like to plan a riparian forest buffer. They help identify the

vegetation type and benefits that will help protect the creeks, streams, and rivers. The Kansas Forest Service has six district offices throughout the State of Kansas; each has a District Forester who will be able to help with this planning. The District Forester's Offices can be located using the Kansas Forest Service website at www.kansasforest.org.

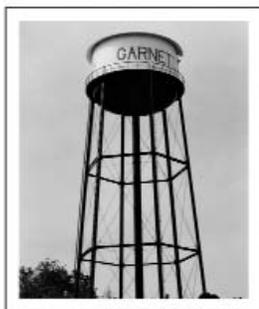
For more reading, check out the following Marais des Cygnes Watershed Riparian Forestry Initiative Web sites: www.lakeregionrcd.org and www.hwqp.org.

Kansas Rural Water Association provides assistance to cities and RWDs with source water protection planning. Give us a call at 785/336-3760 or e-mail me at jim@krwa.net. I'd be pleased to attend a board or council meeting to discuss options available to you.



Streambank erosion can be seen here along the Marais des Cygnes River. This erosion causes sedimentation that is a major concern in Kansas watersheds.

SUSTAINABILITY



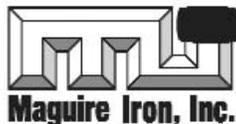
tank maintenance



tank repair



new tanks



We've been in the business since 1915 and have built and serviced everything from ground storage reservoirs to all styles of elevated tanks.

P.O. Box 1446 Sioux Falls, S.D. 57101 Ph: 605.334.9749 www.maguireiron.com