

A “Little” Project Making a Big Impact Improving Water Quality

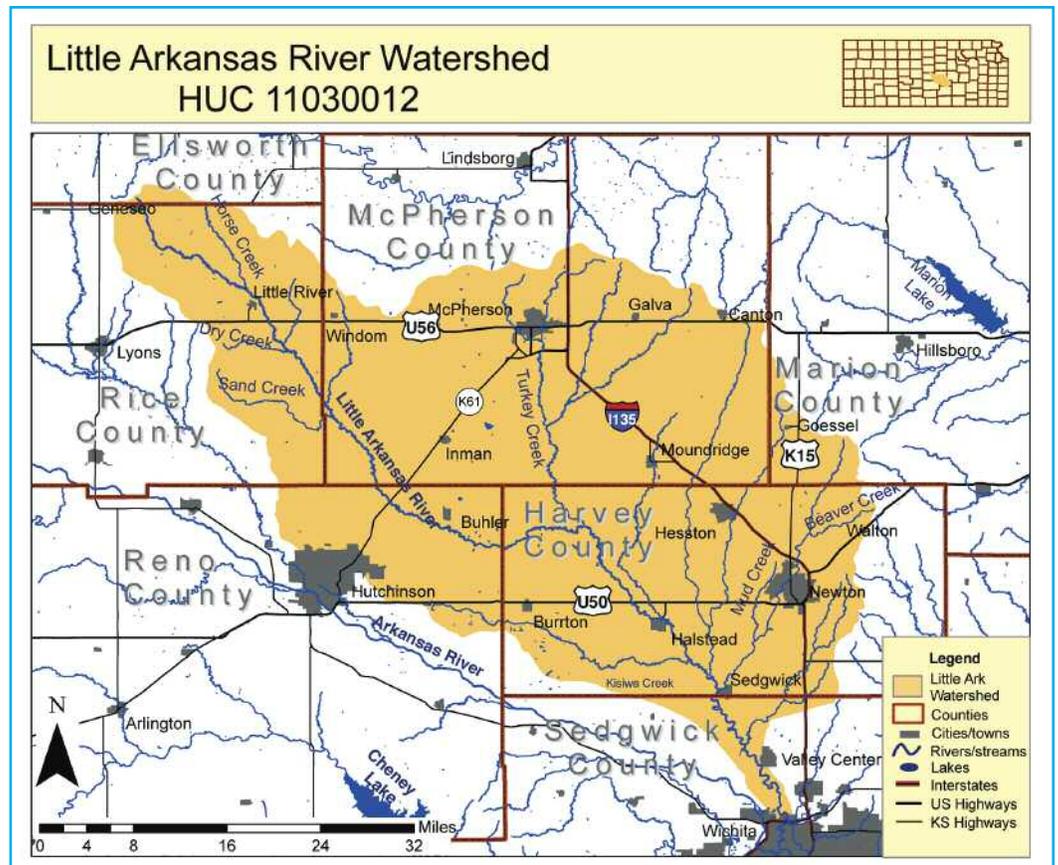
Landowners and stakeholders in the Little Arkansas River Watershed should be rather pleased with themselves. Together they have successfully reduced atrazine loading into their creeks and river by 54 percent since 2006. With 97 percent of the watershed being dedicated to agricultural production, this is quite an accomplishment.

The Little Arkansas River Watershed is located in central Kansas; it includes portions of Ellsworth, Rice, Reno, McPherson, Marion, Harvey, and Sedgwick counties. This watershed feeds 205 public water suppliers, as well as the artificial groundwater recharge project for the City of Wichita. Local watershed stakeholders have been steering and implementing the Little Arkansas River Watershed Restoration and Protection Strategy

(WRAPS) Project since 2004. In response to state watershed assessments and classifications, the WRAPS group has been focused on decreasing atrazine, sediment, and fecal coliform bacteria loading throughout the watershed. Several different state and federal grants have allowed the watershed stakeholder group to focus on each specific pollutant separately and effectively.

Atrazine levels have been documented throughout the watershed in excessive amounts, especially during seasonal spikes, or high rainfall events, typically in the spring/early summer. These seasonal spikes cause enormous concern for area public water suppliers. The Little Ark WRAPS has made the reduction of atrazine loading in the watershed a top priority. Atrazine “loading” occurs when displaced

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No-till and minimum-till fields nearly dominate the targeted sub-watersheds of the Little Arkansas River thanks to a five-year push to reduce atrazine loss.

chemical moves from the soil to an adjacent water body, usually during a high rainfall event. Given the high percentage of acres dedicated to corn and grain sorghum production, atrazine is an herbicide commonly utilized by local farmers. The Little Arkansas WRAPS stakeholder team, comprised of landowners, agency personnel, and watershed citizens, understands and appreciates the critical role that agriculture plays in the area. They continuously work hand-in-hand with local farmers to implement atrazine-reducing programs that not only minimize the potential for atrazine loading, they also allow the producer to remain profitable in crop production.

Best Management Practices

Starting with a complex surface water-monitoring program, seven sub-watersheds have been delineated and targeted within the Little Ark River watershed to focus atrazine-reduction efforts since 2006. Intense educational programs have focused on watershed farmers and crop consultants. Twenty-one educational sessions, hundreds of field visits and one-on-one meetings have trained more than 640 farmers and consultants on atrazine best management practices. These landowners, in control of

approximately 43 percent of the land in the targeted watersheds, understand the importance of reducing atrazine in the runoff. Participation in the WRAPS program ensures that the farmer is in control of which management practices will be the best fit for his or her farming operation. Given a choice of nine different atrazine-reducing best

management practices (BMPs), farmers may select one or more implementation activity to incorporate on their specific fields to minimize atrazine runoff.

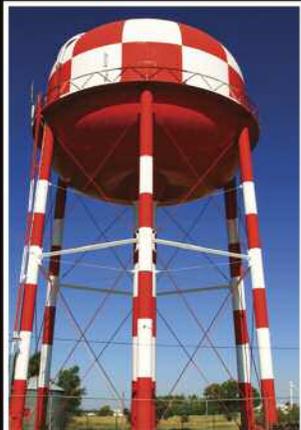
These BMPs include:

- Incorporate atrazine into the first two inches of soil prior to planting;
- Apply atrazine prior to April 15;

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- Apply atrazine as part of a postemergence premix;
- Reduce soil-applied atrazine rates to 1.6 lb ai/acre or less;
- Use split applications of atrazine;
- Band apply atrazine at planting;
- Use no atrazine;
- Establish buffer strips;
- Incorporate atrazine with 1/2" sprinkler irrigation.

Each BMP option has a calculated factor of atrazine reduction. Best management practices voluntarily selected by targeted farmers not only give a baseline amount of atrazine not leaving the fields, they also offer the farmer an incentive payment of up to \$8.00/acre for participating. Ultimately, the more atrazine-reducing BMPs that are installed, the less atrazine there is entering the surface water in the watershed. The years 2006-2010 have seen an average of 15,283 acres per year enrolled into atrazine-reducing best management practices. That figures out to be 44 percent of the acres annually planted to grain sorghum and nearly 46 percent of acres annually planted to corn in the respective watersheds.

The Little Arkansas River WRAPS group has been incredibly successful in its efforts.

The Little Arkansas River WRAPS group has been incredibly successful in its efforts. An intensive water monitoring program has not only monitored the runoff from the target watersheds, they have also monitored neighboring watersheds where little to no atrazine reduction efforts have taken place. The results from five years of data are staggering. Atrazine concentrations in targeted watersheds were reduced by 54 percent, in comparison to neighboring watersheds where no best management practices were installed. This significant reduction has allowed the Little Arkansas WRAPS to accomplish their goal of reducing atrazine below three parts per billion throughout the Little Arkansas River watershed.



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Sediment-reduction efforts include the installation of grassed waterways and terraces. The drought of 2011 made grass establishment a struggle in Harvey County.

What is WRAPS?

Watershed Restoration and Protection Strategy (WRAPS) is a planning and management framework that engages stakeholders within a particular watershed in a process to:

- ◆ Identify watershed restoration and protection needs and opportunities
- ◆ Establish goals for the watershed community;
- ◆ Create a cost-effective action plan to achieve goals;
- ◆ Implement the watershed plan.

WRAPS represents a shift from “top-down” government intervention in watershed issues, to a more citizen-stakeholder approach, in which funds, guidance and technical assistance are provided for stakeholders to reach consensus on issues of relevance in their watershed, and then design and execute a plan to address those issues.

Similarly, the WRAPS group has obtained a grant allowing them to focus on sediment reduction efforts in the Black Kettle watershed. This 19,983-acre sub-watershed of the Little Arkansas River averages 1.88 tons of sediment lost per acre throughout the watershed per year. Factoring in stream location, soil type, slope, and land use of the designated area, computer modeling directs the WRAPS group efforts to the most vulnerable and highly erodible fields. Like the atrazine program, sediment-reducing BMPs are voluntarily

selected by landowners and installed for the purpose of minimizing the negative impact of sediments and nutrients entering surface waters. Participation incentive payments are made to producers for everything from installing a sediment pond or buffer strip to converting to no-till or minimum-till. The successful installation of BMPs has seen a reduction in the total suspended solids from 2866 tons in 2007, to 598 tons in 2010.

Incentive payments made to producers from both programs include

one to five-year commitments from the participant to maintain the agreed practice(s) installed. Little Arkansas River WRAPS Coordinator, Ron Graber, concludes that the success of these projects is not only from the work and dedication of the WRAPS group and staff, but is successful because of landowner participation. Vital partners to the project include KSU Research and Extension, KDHE, the county Conservation Districts, the City of Wichita, NRCS, and the Division of Conservation. These agencies and partners provide the support and funding desperately needed to ensure the continued restoration of the Little Arkansas River watershed.

Katie Miller joined the KRWA staff in October 2009. She previously worked for Flint Hills Resource Conservation and Development as a Watershed Restoration and Protection Strategy Project Coordinator since



2003. She organized and coordinated the Twin Lakes Water Festival in 2005 – 2009.