

on the bayou

BAYOU BARTHOLOMEW WATER QUALITY PROJECT

in this issue

• Page 2 •

Group Joins Forces
Flooding Rice & Soybeans
Tillage Helps Farmers

• Page 3 •

Conservation Programs
Web Offers
Conservation Tips

• Page 4 •

Cotton Farmer
Sold on No-Till

• Page 5 •

Well Testing in
Desha County

• Page 6 •

Poly Pipe Recycling

Water Quality is *Top* Priority

Bayou Bartholomew is the nation's longest bayou. It drains around 997,000 acres in parts of Jefferson, Lincoln, Drew and Ashley counties in southeastern Arkansas before entering Louisiana. In 1994, the Department of Pollution Control and Ecology (ADPCE) assessment report estimated that 184 of 359 stream miles



were adversely affected by sediment from nonpoint sources including cropland drainage, streambank erosion and silviculture. The watershed also has

by Mike Daniels

been designated as one of the top 10 priority watersheds by ADPCE. Land use within the watershed is around 73 percent forestland, 20 percent cropland and 7 percent grassland.

In 1998, President Clinton released the Clean Water Action Plan,

a strategy addressing nonpoint source pollution under the Clean Water Act. Part of this plan requires state and federal

agencies that deal with water quality to work together to develop a list of priority watersheds that are threatened and warrant increased measures of protection and attention. This list is known as the Unified Watershed Assessment. Out of 58 watersheds in Arkansas, Bayou Bartholomew ranked fifth in priority.

The Cooperative Extension Service, University of Arkansas, has received a grant from the Arkansas Soil and

Water Commission to develop and deliver a water quality educational program to landowners in the Bayou Bartholomew watershed. The program goal is to educate agricultural land managers about the potential impacts of agricultural practices on water quality and best management practices (BMP) that minimize these

impacts. The program will include conservation farm tours, a water quality BMP newsletter (this is the first issue), public presentations and fact sheets. The project is funded for two years from July 1, 1998.

Bill Kinkaid, an assistant specialist at the new UAPB Extension Center, will coordinate the project between the participating county offices. Bill can be reached at (870) 543-8530. ■

Arkansas Is Our Campus

Visit our web site at:
<http://www.uaex.edu>

Group Joins Forces to Protect Natural Resources

— Bill Kinkaid

The Bayou Bartholomew Alliance was formed in October, 1995, as a nonprofit organization to address water quality concerns associated with the bayou. Its membership includes concerned citizens, landowners and others who share the common goal of protecting this



natural resource. The Alliance was founded on the vision and concern of Dr. Curtis Merrell who is serving as the organization's first president. Dr. Bill Layher serves as the project coordinator.

Land uses within the watershed, such as urban development, timber harvest and agriculture, can cause streambank

and soil erosion which can pose potential threats to water quality and wildlife habitat.

This nonprofit organization has brought together many different interests including farming, environmental, recreational, industrial and others to improve water quality, improve the beauty of the Bayou, enhance wildlife and fish habitat and related recreation, educate the public about the historical and ecological

significance of this resource and to improve overall benefits to landowners adjacent to the Bayou.

(**Editor's note:** The Cooperative Extension Service is currently working with the BBA as part of this project.) ■

Conservation Tillage Helps Farmers

Tillage systems that leave 30 percent or more crop residue, after planting, are called conservation tillage systems. Conservation tillage systems (no-till, strip-till, ridge-till and mulch-till) offer the following economical and farmer friendly benefits:

➤ **Reduced labor requirements**
Conservation tillage systems are geared toward fewer trips through the field.

➤ **Time savings**
On a 1,000 acre farm, the time savings can be as great as 450 hours, or more than seven 60-hour workweeks.

➤ **Reduced machinery wear**
No-till saves an estimated \$5 per acre on such costs.

➤ **Fuel savings**
No-till can save an average 3.5 gallons an acre compared to conventional tillage systems.

➤ **Higher soil moisture and improved water infiltration**
Leaving crop residues on the soil surface allows more water to soak into the soil and reduces evaporation in the top few inches of the soil.

➤ **Reduced soil erosion**
Crop residues on the soil surface reduce soil erosion and will enhance long-term soil productivity.

➤ **Increased organic matter**
Crop residues build up organic matter which is important to long-term fertility.

➤ **Decreased soil compaction**
Reduced weight and horsepower requirements with no-till can help minimize compaction.

Adapted from CTIC website (www.ctic.purdue.edu/)

Flooding Rice and Soybeans Works

— Bill Kinkaid

Farmers can benefit from flooding rice and soybean fields over the winter in the following ways:

- by reducing the loss of precious topsoil
- by reducing the green flush of native weeds and grasses before planting in the spring
- by reducing soil compaction and increasing soil moisture
- by providing winter income by leasing fields to waterfowl hunters

Flooding rice and bean fields over the winter also has the environmental benefit of improving water quality



Photo by A.C. Haralson. Provided by Arkansas Department of Parks and Tourism.

by reducing potential soil erosion and pesticide runoff.

Over winter flooding of rice and bean fields provides excellent waterfowl habitat. Some agronomists estimate that 150

pounds of rice grain per acre or 50 pounds of soybeans per acre can be left in the field after harvest even with a good header and operator. These numbers could actually be higher in certain situations. ■

Cotton Farmer *Sold* on No-Till

— Rich Maples

Don't ask Bill Teeter to go back to conventional tillage. The Desha County cotton farmer won't do it.

Teeter, known to his neighbors as No-Till Bill, will tell anyone who will listen about the benefits of no-till production. For one thing, he says, "It takes less time. And time is money.

"You need less equipment. I have a disk that's about 15 years old and it's like new. We just don't use it much."

Teeter says most farmers plow at least five times, some as many as eight. "My definition of no-till is you don't plow. With no-till you don't disk two or three times in the fall. You don't chisel plow or use a Triple-K. You don't bed up, knock it down or rehip a time or two."

In short, you save trips across the field, which translates into less equipment and fuel, fewer repairs, less labor and, very importantly, better use of labor.

And there are the conservation benefits. Teeter says he's not exactly sure how much no-till has reduced soil loss on his farm, but he knows it has. He illustrates his point by shaking up jars of water



collected from ditches adjoining a no-till field and a conventional field. Water from the no-till field quickly clears up, while the water from the other field remains muddy.

Teeter is allowing University of Arkansas scientists, led by soil fertility researcher Scott McConnell,

to monitor the runoff from his fields for soil as well as pesticides.

So does Teeter have any advice for farmers considering no-till?

"Get into it gradually," he says. "My first year, I had 48 acres in no-till. The next year it was 125 acres, then 300. This past year, I no-tilled all 775 acres of my cotton. I'll add 125 more acres in 1999."

"I don't recommend anybody going in and no-tilling everything they have the first time," says Teeter.

How does no-till work on the Teeter farm? He says he starts by leaving 6-8 inch stalks in the field at harvest. "By spring, the

stalks rot enough that they just snap over when you plant. If you cut the stalks too short, you risk puncturing the rubber gauge wheels on the front of the planter. If you leave them too tall, the stalks can interfere with your planter."

"Early, in February, I apply 2,4-D. Then about three weeks before planting, I use a burn-down herbicide. Then

it's ready to plant. I'll spray again, maybe two or more times, and that's it."

He says a few weeds are going to escape, whether the herbicide is applied with a ground rig or an airplane. "The best thing you can have on a no-till farm is a four-wheeler with a spray boom and hand wand. You can spot treat."

All of Teeter's cotton is furrow irrigated. He says the ground doesn't have to be reworked as long as it drains well. It may be five years before a field has to be repaired, and when Teeter does rework a field, in most cases he only has to hip it twice and roll it.

"The hipper is just about the only tool we use," says Teeter. We

rework about 200 to 300 acres a year. On some fields where heavy fall rain has melted down the soil, we may rework it after three years instead of five."

Teeter says his no-till cotton has averaged about 2.25 bales per acre. In 1997, he averaged 2.88 bales. "We had one field that made 3.6 bales per acre. It was in no-till about seven years and was reworked once."

Teeter says he'll average more than 2 bales per acre in 1998. "We have one field that picked 1,309 pounds.

"How much did no-till contribute to that? I don't know. But I know I'm doing better than I did before I began using no-till."

Teeter says his father told him, "'Do things that will make this land more productive for the next generation.' Daddy wanted the farm to be better when he was gone than when he got it."

With the help of no-till, Bill Teeter has done what his father asked.

He's also been willing to share what he's learned with other farmers and people such as Steve Kelley, Desha county agent for the Cooperative Extension Service, University of Arkansas. Kelley's advice to anybody thinking about no-till crop production is to talk to an experienced farmer such as Teeter.

"The extension service can help, too, especially on the economic end," says Kelley. "We can sit down and discuss some of the costs that can be reduced by no-tilling."

If you have more questions, contact your county extension agent. ■

Well Testing Continues in Desha County

— J. W. Lehman

In 1997, the Desha County Conservation Committee applied for a grant from the Arkansas Soil and Water Commission to do a water quality study of irrigation wells in Desha County. The grant was approved and received in

12-week period to do the well testing. The Desha County Conservation District provided funds for salaries, some equipment and supplies; Extension provided office space and some logistical support; Dr. Wilson supplied the

used to get a precise location of each well tested. Wells were tested for pH, bicarbonates, EC and chlorides.

Nearly 2000 wells and relifts are registered in Desha County. During 1998, 911 wells and 83 relifts were tested.

Wells with bicarbonate readings above 300 ppm, and chloride readings above 100 ppm are considered problem wells. Desha County had 48 percent of the wells test high in bicarbonates and 34 percent high in chlorides.

Each farmer is supplied the information from his wells. Each agency has plans to help growers in developing plans to use the quality of water available to him or develop alternate sources of water as needed.

The program will continue in 1999 with plans of testing the remaining wells in the county. ■



early 1998. The Desha County Extension Office was asked to cooperate and they suggested that Dr. Charles Wilson of the Southeast Research and Extension Center also be asked to help since he had been doing some well testing in the area. The purpose of the program is to test all irrigation wells in the county for bicarbonate and chloride problems. The intent was to find out how many had problems, how severe the problems were and delineate the areas where the problem wells were located.

A program coordinator and three technicians were hired for a

chemicals, testing equipment and technical advice on well testing.

Information from the well-registration program in the NRCS office was used to establish a data base for the testing program. A handheld GPS monitor was

The breakdown is as follows:

Wells and relifts with bicarbonates above 300 ppm:

301 – 400	=	367
401 – 500	=	87
501 – 600	=	18
601 – 700	=	2
701 – 800	=	2
801 – 900	=	<u>1</u>
Total	=	477

Wells and relifts with chlorides above 100 ppm:

101 – 200	=	211
201 – 300	=	72
301 – 400	=	36
401 – 500	=	8
501 – 600	=	6
601 – 700	=	<u>1</u>
Total	=	334

Poly Pipe Recycling Continues

— Bill Kinkaid

Staff from the Cooperative Extension Service, Delta Plastics, Arkansas Farm Bureau, Arkansas Department of Pollution Control and Ecology (APC&E), along with state legislators, agricultural producers and other agencies, met recently at the APC&E offices in Little Rock to discuss poly pipe recycling and the need for additional funding.

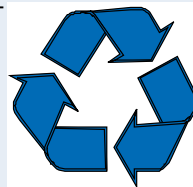
All agreed that poly pipe recycling is a sound environmental service that should be

continued across the state. Delta Plastics in Stuttgart now is the only company offering these services.

The need for added collection sites was mentioned by agricultural producers in several counties. In one case three counties share one collection site, which is an inconvenience for producers.

Additional funding for future services was an issue brought up by Delta Plastics. With the

price of virgin poly resin so low now, the market for recycled poly pipe is not in as great a demand. Also, the strength of the poly pipe made from recycled poly pipe is not as great as the pipe made with virgin material.



One of the only other markets for the recycled pipe is in California, where their state regulations require trash bags to be made of at least 20 percent recycled plastic. Delta says it costs them

at least \$12,000 per month to keep their collection truck and operator on the road. At this cost, they say it's not profitable to continue this service with the current price of virgin poly resin.

As a result, Delta is looking for new revenue to offset their cost. This added revenue might be through a user fee, a charge for services in the counties that they provide the service for or a fee somewhat similar to the battery exchange fee. Whatever the case, this is a service that should remain. If you have ideas, please contact one of the agencies listed. ■