



LeChevallier

The Piasa Creek Watershed Project:

Cleaning up the muddy Mississippi



Extensive erosion of Piasa Creek (left), a tributary of the Mississippi River, has been reduced by streambank stabilization (center). The project is part of a plan to reduce sediment erosion by 6,700 tons per year in the Piasa watershed over 10 years. Additional efforts to minimize erosion and restore the watershed include tree planting at Boy Scout Lake (right) to restore native vegetation.

The man they called Ed said the muddy Mississippi water was wholesomer to drink than the clear water of the Ohio; he said if you let a pint of this yaller Mississippi water settle, you would have about a half to three-quarters of an inch of mud in the bottom, according to the stage of the river, and then it warn't no better than Ohio water—what you wanted to do was to keep it stirred up—and when the river was low, keep mud on hand to put in and thicken the water up the way it ought to be.

The Child of Calamity said that was so; he said there was nutritiousness in the mud, and a man that drunk Mississippi water could grow corn in his stomach if he wanted to. He says:

“You look at the graveyards; that tells the tale. Trees won't grow worth chucks in a Cincinnati graveyard, but in a Sent Louis graveyard they grow upwards of eight hundred foot high. It's all on account of the water the people drunk before they laid up. A Cincinnati corpse don't richen a soil any.” (Twain, 1883)

A PROBLEM OF PERMITTING

The residents of Alton, Ill., were in a predicament when the Great Flood of 1993 submerged the old water treatment plant. Plans surfaced to build a new facility out of harm's way, on top of the river bluff. The old plant had a permit to recycle the mud and silt back to the river—but this permit was not transferable to the new facility. This required the building of another facility—at a cost of more than \$7 million—to remove and collect the silt. It also meant trucking more than a dozen loads of mud

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down the scenic Great River Road to a burgeoning landfill each day. Local residents, government officials, and environmental groups, perhaps encouraged by the spirit of Mark Twain, cried out for a better solution.

**A NOVEL SOLUTION:
REDUCE EROSION ELSEWHERE**

A coalition that included the local water utility (Illinois-American) and the Illinois Environmental Protection Agency, the Illinois Pollution Control Board, the Great Rivers Land Trust,

easements, and wetlands restoration. The efforts would not only reduce soil erosion but would also improve water quality through pollution prevention and land conservation and help control stormwater runoff through stream bank stabilization and fish and wildlife habitat restoration. The Great Rivers Land Trust also developed educational programs for school children and the community.

Since the project began in 2001, numerous other projects have been completed, including construction of

Agriculture standards 3,716 tons of soil have been controlled annually. To date, 1,117 acres (452 ha) of Piasa Watershed have benefited from the project. (SIRAM calculations are based on a series of equations based on the revised universal soil loss equations that can be viewed at www.ars.usda.gov/Research/Research.htm?modecode=64-08-05-30.)

COMMUNICATING WITH THE PUBLIC

Community involvement, education, and public awareness have been achieved through a series of brochures, newsletters, tours, and press releases. The website www.greatriverslandtrust.com/ provides opportunities to contribute to the project. In addition to the initial Illinois-American grant, the Great Rivers Land Trust has been awarded more than \$250,000 in supplemental funding from other sources. In 2002, the project was selected as a finalist for the 16th Illinois Governor's Pollution Prevention Award for companies and organizations that make efforts to reduce environmental effects and improve economic viability.

When it is completed in 2010, the Piasa Creek watershed project will make the Mississippi River a bit less muddier. Mark Twain wouldn't mind—he'd likely approve of the restoration that helped make this tributary of the mighty river a bit closer to the natural beauty he enjoyed during his lifetime.

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Piasa Creek Watershed improvements began in 2001 and have included numerous projects such as rock stabilization of a streambank that prevents erosion and creates pools and riffles for fish (left). Construction of stream barbs helps to reduce erosion and improve fish habitat (right).

and local interest groups formed to propose an innovative solution: Permit the new treatment plant to continue returning silt back to the Mississippi River, but redirect \$4 million of the \$7 million that would have been used for the dewatering facility to fund a program to reduce erosion in the nearby Piasa Creek tributary.

An environmental impact study showed that recycling the silt would not adversely affect the Mississippi River. Moreover, the 10-year plan would reduce sediment erosion by 6,700 tons per year in the Piasa watershed—twice the discharge of the new treatment plant. The funds, managed by the not-for-profit Great Rivers Land Trust, would also protect up to 10,000 acres (4,047 ha) of land through acquisition, conservation

- 113 sedimentation basins,
- 6 storm water detention basins,
- 3 field terraces,
- a 500-ft (153-m) buffer strip,
- 3 grass waterways,
- a grade-control structure, and
- 2 stream bank stabilization projects that include 3 stream barbs, 7 rock riffles, and 450 with stone tow protection. (For a complete description go to www.nrcs.usda.gov/technical/stream_restoration/newgra.html.)

The Warren Levis Lake restoration is the largest project to date. It involves excavating 15 acres (6 ha) of silted-in lakebed and the establishment of a 10 acre (4 ha) enhanced wetland above the restored portion of the lake.

Using the established Silt Input Reduction Analysis Method (SIRAM)² based on US Department of

REFERENCE

Twain, M., 1883. *Life on the Mississippi*. James R. Osgood and Co., Boston.