

## **Missouri Cooperative Conservation Efforts in the Mississippi River Basin Sub-Watersheds of the North Fork Salt River**

### **Description of the watershed**

The North Fork Salt River Basin is an 8-digit hydrologic unit in portions of Schuyler, Adair, Knox, Macon, Shelby, and Monroe counties in northeastern Missouri. The drainage area is 626 square miles (400,640 acres) and flows into Mark Twain Lake before draining into the upper Mississippi River. The North Fork Salt River is the source of supply for the Clarence Cannon Wholesale Water Commission, purveyor of potable water to 20 rural water districts and communities in northeastern Missouri. It serves approximately 35,000 people.

Recent focus has been on two sub-watersheds, Tenmile Creek and Middle 1 North Fork Salt River 2 Watershed, containing 67,666 acres that have received recent attention from local stakeholders, the Missouri Department of Natural Resources and the Natural Resources Conservation Service. These sub-watersheds are 35 percent cropland, 43 percent pastureland, 17 percent forest land, 4 percent CRP, 1.5 percent wetlands, and 1 percent urban land. There are 132 miles of perennial streams. The upper parts of these watersheds are predominately Putnam and Mexico soils which are clay pan soils with a high run-off potential. Nearly all acres are in crop production. Major crops are corn, soybeans and wheat. Lower in the watershed, the land use is pasture and woodland. Stream valleys are shallow and narrow.

### **Resource Problems**

The primary nonpoint source pollutant is sediment from eroding cropland caused by sheet and rill, ephemeral, and gully erosion due to poor land management and intensive cropping and tillage practices. Streambank erosion also contributes sediment at various locations in the stream network. A secondary resource concern is the excessive run-off of fertilizers, herbicides and insecticides applied to cropland and pastureland. Additional concerns include gully and streambank erosion from over-grazed pastureland, and excessive turbidity from livestock access to smaller streams.

### **Partners/Participants**

The “North Fork Project” is a Section 319-funded information and education initiative administered by the Clarence Cannon Wholesale Water Commission that provides a meeting ground for watershed partners. Three work groups address agriculture/natural resources management, communities/watersheds, and water/wastewater issues. The list of partners is extensive, but includes cities, towns, and county commissions, health departments, soil and water conservation districts, the Missouri Association of Soil and Water Conservation Districts, Missouri Corn Growers Association, Corps of Engineers, Missouri Department of Natural Resources, Missouri Department of Conservation, University of Missouri-Columbia, Iowa State University, USDA-NRCS, USDA-RD and the University of Missouri Extension. The customer base is currently at least 42,000 people potentially served.

### **Actions Taken**

The information and education activities of the North Fork Project set the standard and serve as a model for watershed management. Efforts to involve the community with newsletters, meetings, workshops, and conferences have made everyone aware of the resource problems and the means to solving those problems. Two products from this involvement include a watershed restoration action strategy for the North Fork Salt River Basin and the Shelbina Watershed Management Plan to protect their public drinking water supply.

Grant funds from Section 319 of the Clean Water Act and an Agricultural Nonpoint Source Special Area Land Treatment (AgNPS SALT) project together brought approximately \$1.2 million from the Missouri Department of Natural Resources and U.S. EPA to address specific milestones. The SALT grant,

## North Fork Salt River – A Success Story

administered by the Shelby County SWCD, addresses the two 14-digit HUCs in the lower portion of the basin. State cost sharing is provided on a number of mechanical and incentive practices including terraces, filter strips, field borders, erosion control structures, nutrient and pest management. The Department of Natural Resources can provide a summary of state cost share items installed by HUC.

From a federal perspective, the following table reflects:

### **USDA Farm Bill activities in the North Fork Salt River watershed include (as of 2004)**

<i>Program</i>	<i>Acres Enrolled</i>	<i>Contracts/Easements</i>
WRP	1,062 acres	5 easements
CRP	36,999 acres	1526 contracts
CREP	99 acres	4 contracts
WHIP	500 acres	3 contracts
EQIP	3,052 acres	

Notes: - Producers in this watershed use EQIP funds primarily for nutrient and pest management.

NRCS has approximately 107 current and past EQIP contracts in the larger basin that address concerns related to grazing, waste management, erosion, nutrient, and pest management.

Water sampling has been conducted over the past five years by the Environmental Resources Coalition within numerous sub-watersheds using 20 automated sampling devices to determine the impacts of cropland best management practices on water quality. This special project involves USDA-ARS, the University of Missouri-Columbia and a private consulting firm, MEC Water Resources, Inc. To learn more about the Environmental Resources Coalition's Watershed Research, Assessment and Stewardship Project, visit their project website at: <http://www.mocorn.org/waterquality.htm> In addition, a 19 minute DVD is available that highlights this proactive effort to protect water quality for everyone.

### **Status**

The 319 grant is drawing to a close while the SALT project will continue for five additional years. Also, the North Fork Salt River is a Conservation Security Program watershed. Because of the extensive public awareness and appreciation for water quality combined with a history of applying conservation practices, we are anticipating strong interest in CSP, and we anticipate a high percentage of the applicants will be eligible.

### **Results**

The impact on public awareness about water quality is difficult to measure. However, no "notices of violation" (NOVs) for exceeding the atrazine maximum contaminant level have been issued to the public drinking water supplies in the basin since the North Fork Project began in 1998. Prior to the project, the Public Drinking Water Program monitored atrazine levels monthly, and atrazine concentrations were excessive following high runoff events.

### **Additional Needs**

Other indicators of success, beyond the field level monitoring work carried out by the Environmental Resources Coalition, have not been initiated due to a lack of funding and the expertise to plan and carry out these evaluations. Technical assistance is needed in evaluating impacts on the land from these locally initiated watershed management planning efforts.

### **Watershed Map**

See attached electronic file.

## North Fork Salt River Basin

