

# Middle Fork of the Saline River

## The Importance

- ❖ Designated an Extraordinary Resource Waterbody and Ecologically Sensitive Waterway by ADEQ
- ❖ On the state registry of natural and scenic rivers
- ❖ Designated Ouachita Zone Quality Stream for Smallmouth Bass by AGFC
- ❖ Provides critical habitat for wildlife and harbors a suite of globally ranked species and state designated species of greatest conservation need
- ❖ Named a priority watershed by the Environmental Protection Agency (EPA) and the Arkansas Natural Resource Commission (ANRC) with suspended sediment identified as a major problem in the watershed

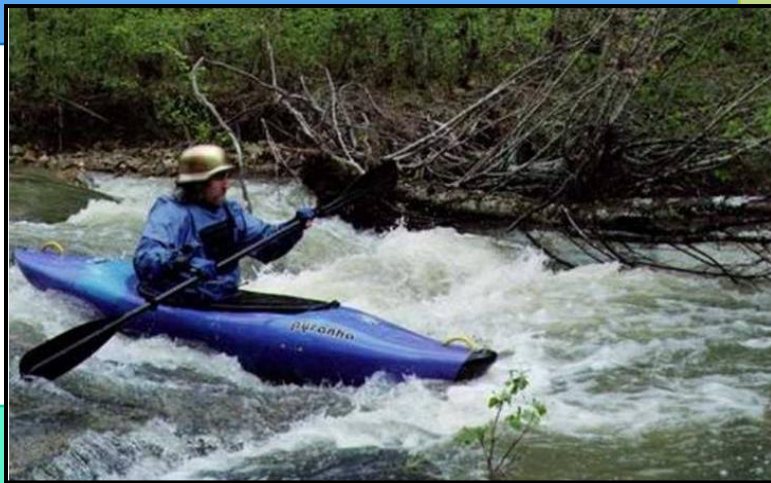


Received funding to complete on-the-ground stream and riparian restoration activities to directly improve habitat for:

- ❖ 14 aquatic species of greatest conservation need
  - 11 mussel species
  - 3 fish species



- ❖ A host of game species
  - Smallmouth bass
  - Largemouth bass
  - Spotted bass



## The Project

Surveying on the Middle Fork resulted in a prioritized reach being chosen for stream and riparian restoration.

### The Issues:

- ❖ High bank erosion rates on both banks
- ❖ Excessive deposition as both longitudinal and transverse bars
- ❖ Annual shifts of bed location
- ❖ Habitat loss
- ❖ **A total sediment loss in one year  $\approx$  1772 tons  $\approx$  71 dump truck loads**

### The Sources:

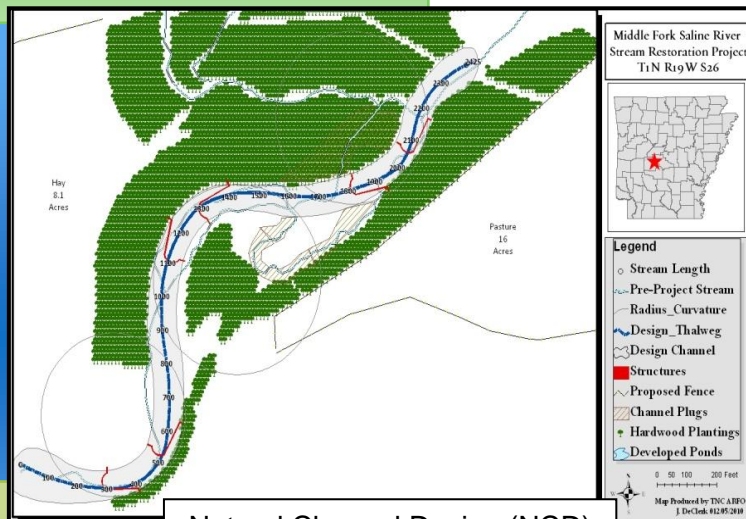
- ❖ Removal of streamside vegetation
- ❖ Development
- ❖ Historical gravel mining
- ❖ Gravel roads
- ❖ Sediment loading from point and non-point pollution
- ❖ Unsuitable stream crossings



# Restoration Project

## The Goals

- ❖ Reduce the amount of sediment in the channel and improve habitat for many key sensitive species for miles downstream of the disturbed site
- ❖ Demonstrate Natural Channel Design as a successful restoration technique to the private landowners, land trusts, and other watershed stakeholders
- ❖ Restructure a braided channel into a single functioning channel system
- ❖ Improve approximately 1 mile of in-stream and riparian habitat
- ❖ Restore 32 acres of riparian and floodplain area
- ❖ Exclude 200 head of cattle from the stream and create alternative water sources



Natural Channel Design (NCD)

## Project Partners

- ❖ U.S. Fish & Wildlife Service
- ❖ Arkansas Game & Fish Commission
- ❖ University of Central Arkansas
- ❖ Arkansas Department of Environmental Quality
- ❖ USDA/Garland County Conservation District
- ❖ Arkansas Highway and Transportation Department
- ❖ Private Landowners
- ❖ Arkansas Forestry Commission
- ❖ Alliance for an Improved Middle Fork
- ❖ Mountain Valley Spring Water Co.
- ❖ Army Corp of Engineers
- ❖ Riggs Cat Rental
- ❖ Roy & Christine Sturgis Charitable & Educational Trust



Repairing riparian area with erosion matting and tree cuttings

## The Results



Creating alternative water sources



A formerly braided area restructured into a single functioning channel using NCD