

BEAVER WATERSHED ALLIANCE

MISSION: *To proactively protect, enhance, and sustain water quality in Beaver Lake and the integrity of its watershed.*

- Watershed Approach
- Voluntary Participation
- BMP Implementation
- Scientific Investigation
- Adaptive Management



Goals of the Beaver Watershed Alliance

- Maintain a long-term, high-quality drinking water supply to meet current needs and continuing growth of the region
- Restore water quality of impaired streams
- Work on voluntary and educational programs and projects
- Foster communication among diverse stakeholders

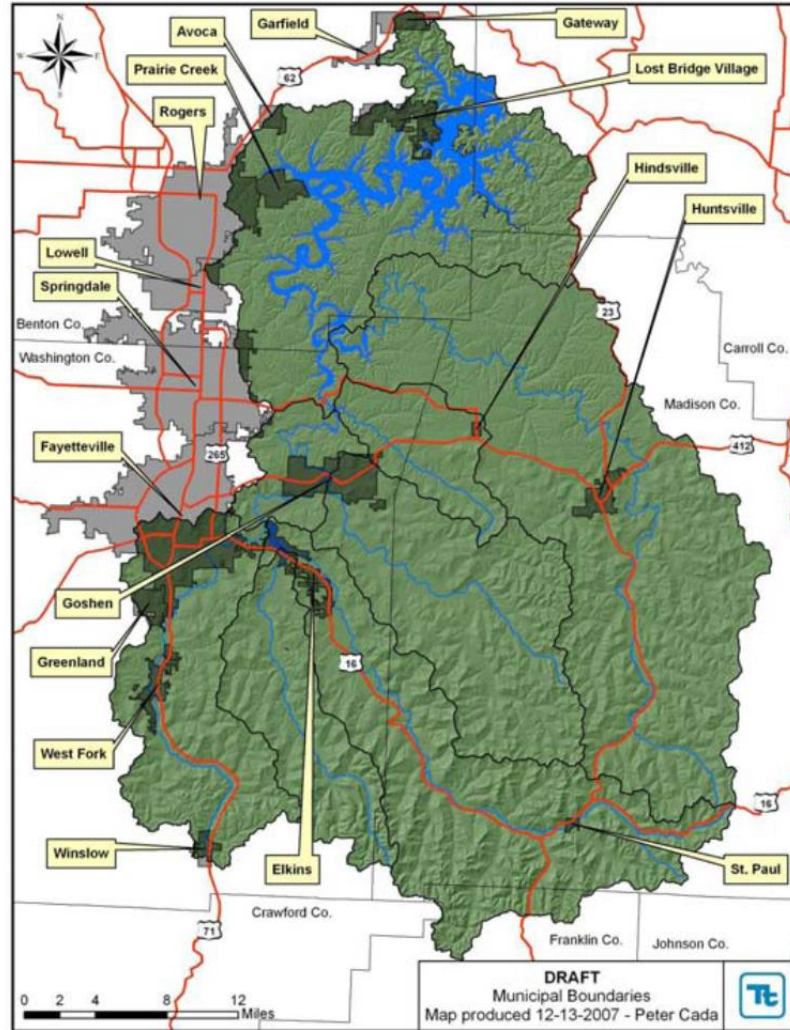


Importance of Beaver Lake

- Drinking water for 500,000
- 172 million kilowatt hours of electricity annually
- Recreation and tourism use, generating ~\$43 million annually
- Cornerstone of community growth and economic development



Beaver Lake Watershed



Top Concerns for Beaver Watershed

- Streambank erosion in upstream tributaries
- Stormwater runoff and excess nutrients from urban and pasture areas
- Sediment control BMPs for construction and unpaved roads
- Increases in impervious areas associated with urban development
- Forest decline
- Increased population



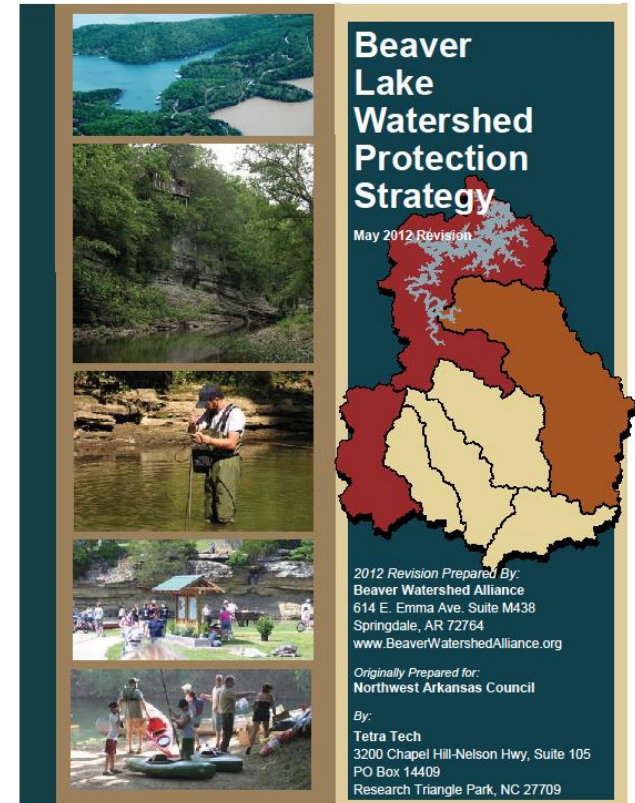
Other Concerns for Beaver Lake Watershed

- Septic Systems
- Emerging Contaminants
- Invasive Plant Removal
- Illegal Dumping
- Stream Gravel Management
- New Impairments and TMDL Development



Primary Factor to Development of the Beaver Lake Watershed Protection Strategy

- Visionary leaders realized that the lake was the key to a high quality of life and continued community growth and economic development



Five Components of Protection Strategy

- Establish Beaver Lake Watershed Council (e.g Beaver Watershed Alliance)
- Voluntary Implementation of Core BMPs
- Developer and Contractor Lake Protection Certification Program
- Education and Stewardship Program
- Monitoring and Adaptive Management



Component 4.2.2: Core BMPs

- Land Conservation
- Improved Construction Site Management
- Riparian Buffer and Stream Restoration & Preservation
- Pasture BMPs
- Unpaved Road BMPs
- Stormwater BMPs



Water Quality Improvement Projects

- Community environmental improvement projects
- Outreach and education campaigns
- BMP Demonstration Projects
 - Riparian management demonstration
 - Stream restoration
 - Rain gardens
 - Pasture management
- BMP Adoption Projects
- Landowner Outreach
- Scientific studies
- Monitoring
- Policy

Component 4.2.4: Education and Stewardship

- West Fork Watershed Opportunity Assessment
- War Eagle Riparian Demo
- Forest Landowner Opportunity Assessment
- Rain Gardens
- Photography Contest
- Source Water Awareness
- River Cleanups
- Watershed Workshops
- Watershed Guardian Awards



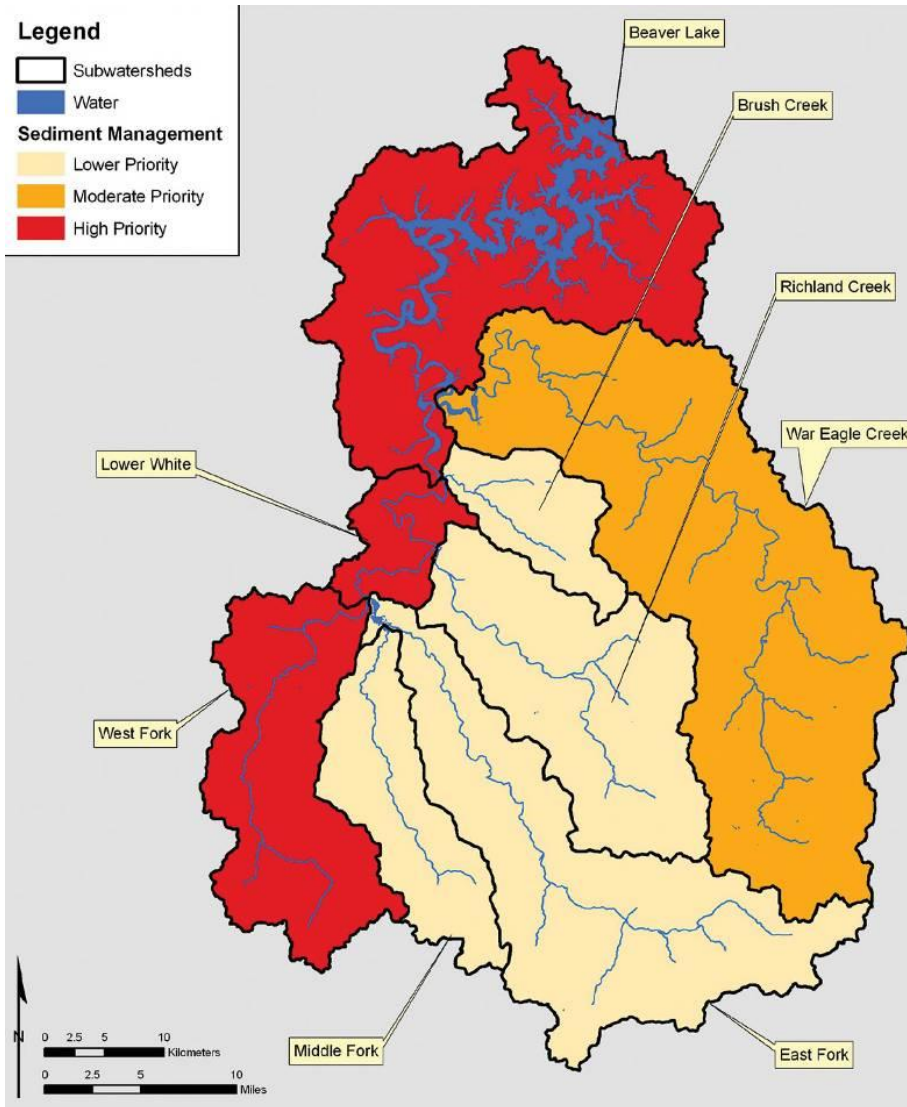
Landowner Outreach

- Focus on streamside and forest landowners
- Provide educational information relating to water quality
- Conduct conservation site-visits for interested landowners
- Encourage the use of voluntary Best Management Practices (BMPs)
- Connect interested parties to resources for BMP implementation
- Connect key conservation priority areas with willing landowners to maximize improvements in water quality
- Identify opportunities for voluntary water quality improvement

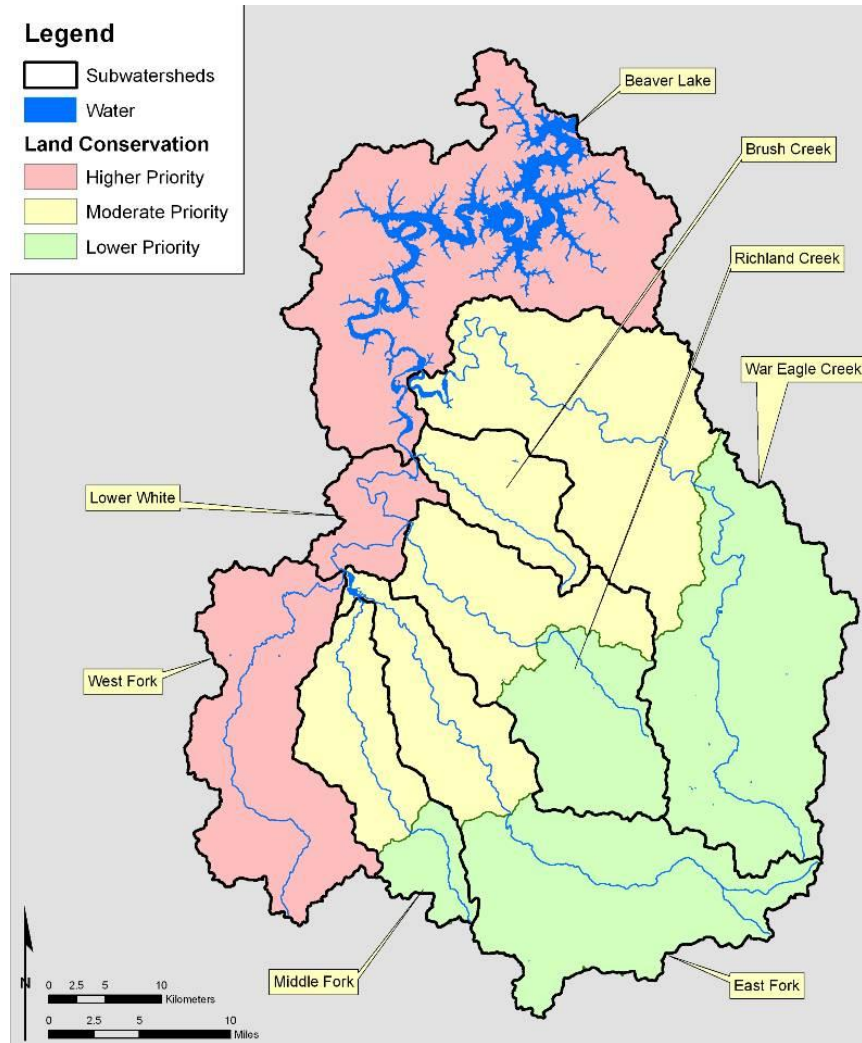


Sediment Reduction Priority Map

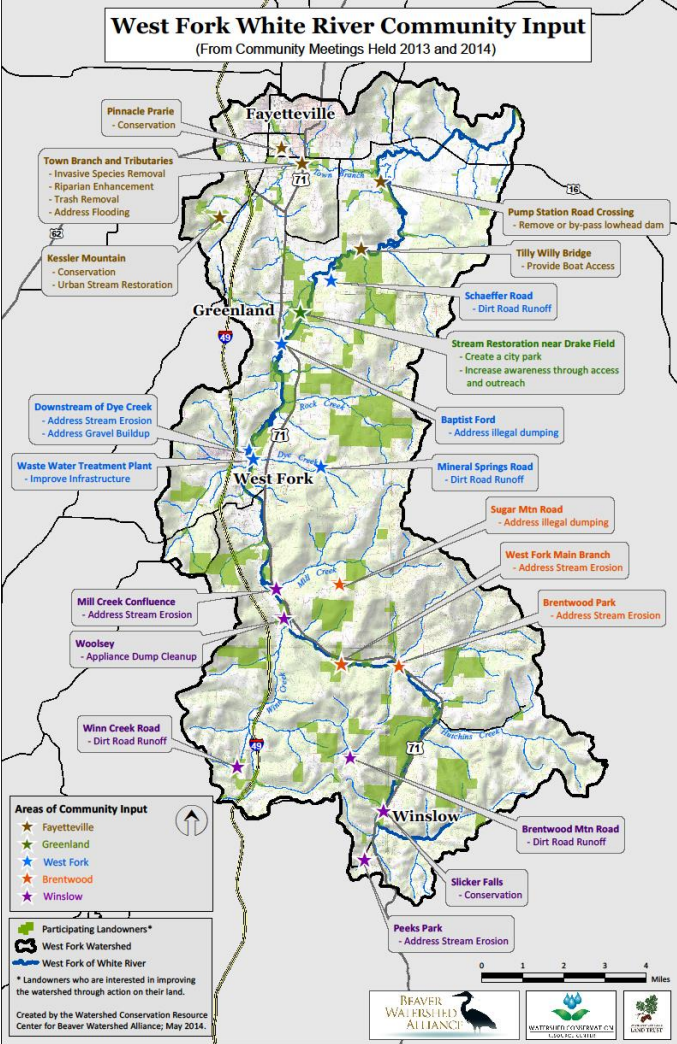
Current Beaver Lake Watershed Protection Strategy has limited detail



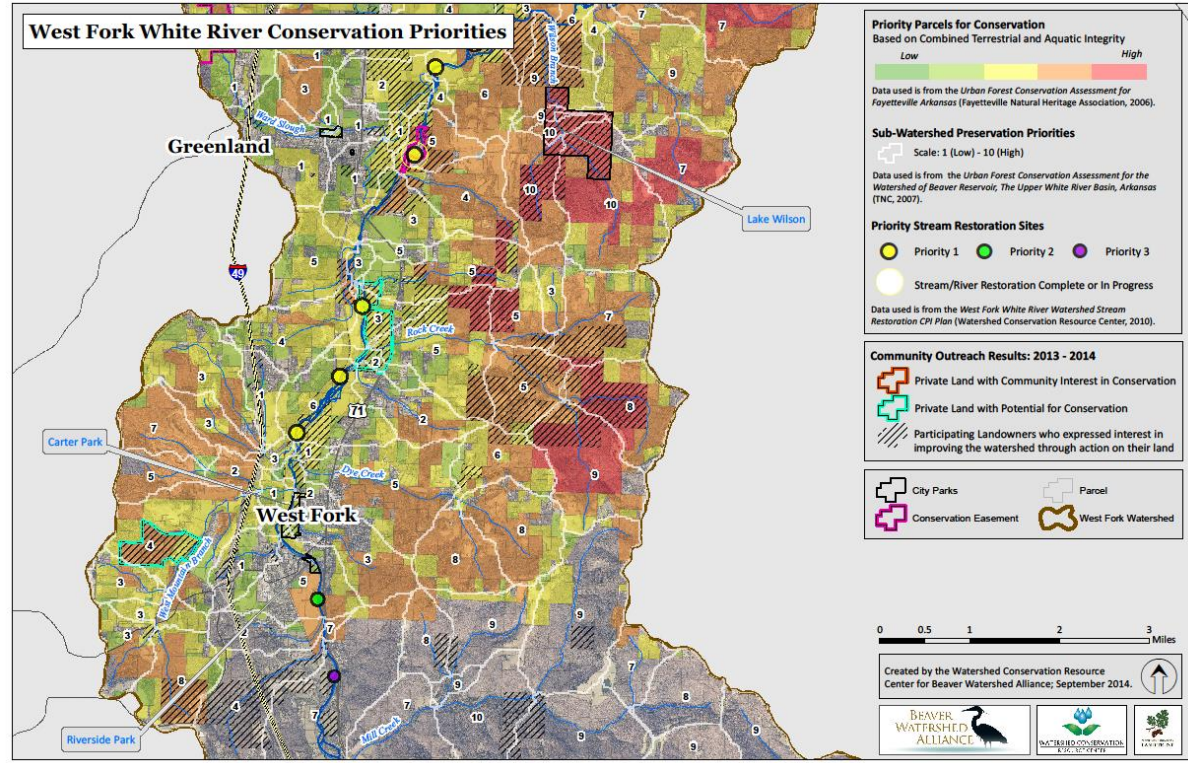
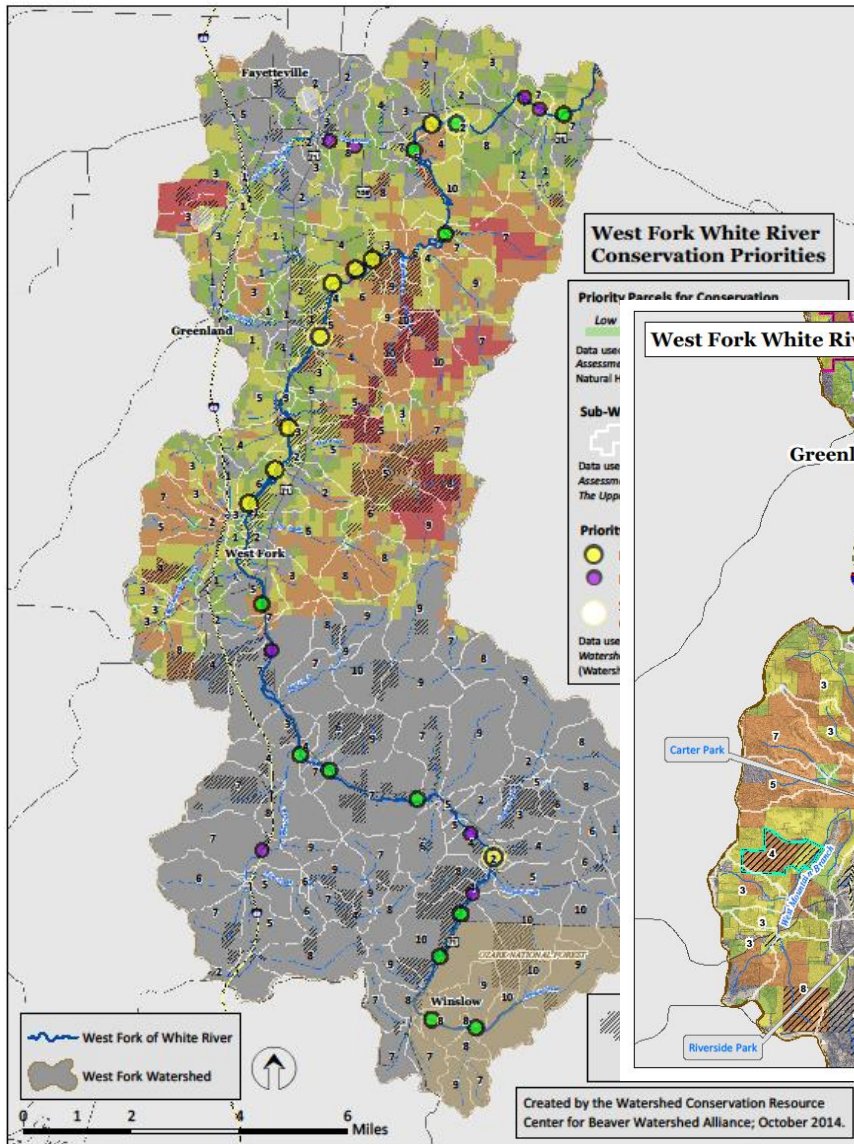
Land Conservation Priority Map



To improve detail and local relevance of the watershed management plan, community input is being captured throughout a series of community watershed input meetings and landowner outreach programs.



Improved detail gained for BLWPS through landowner outreach

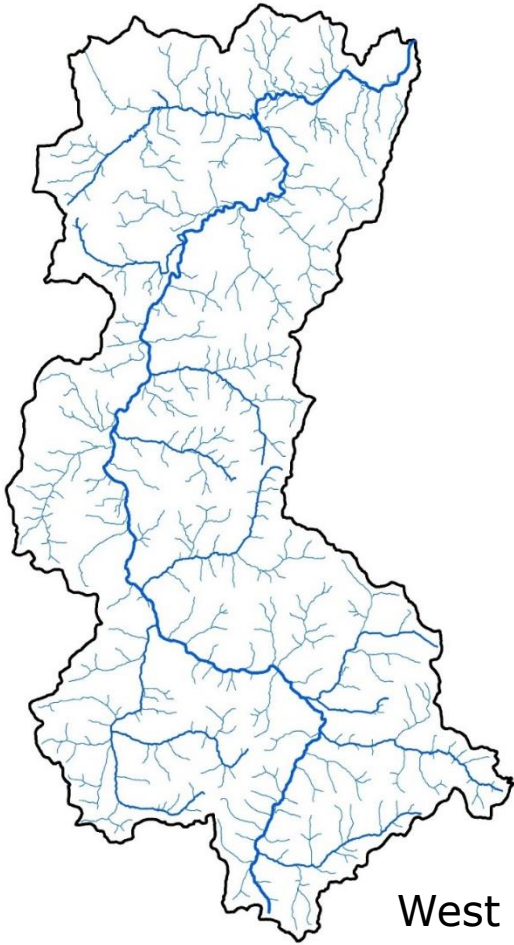


West Fork Watershed Pond Placement Optimization

- Assess several scenarios regarding pond placement and design to increase water, sediment, and nutrient retention



West Fork Watershed Pond Placement Optimization

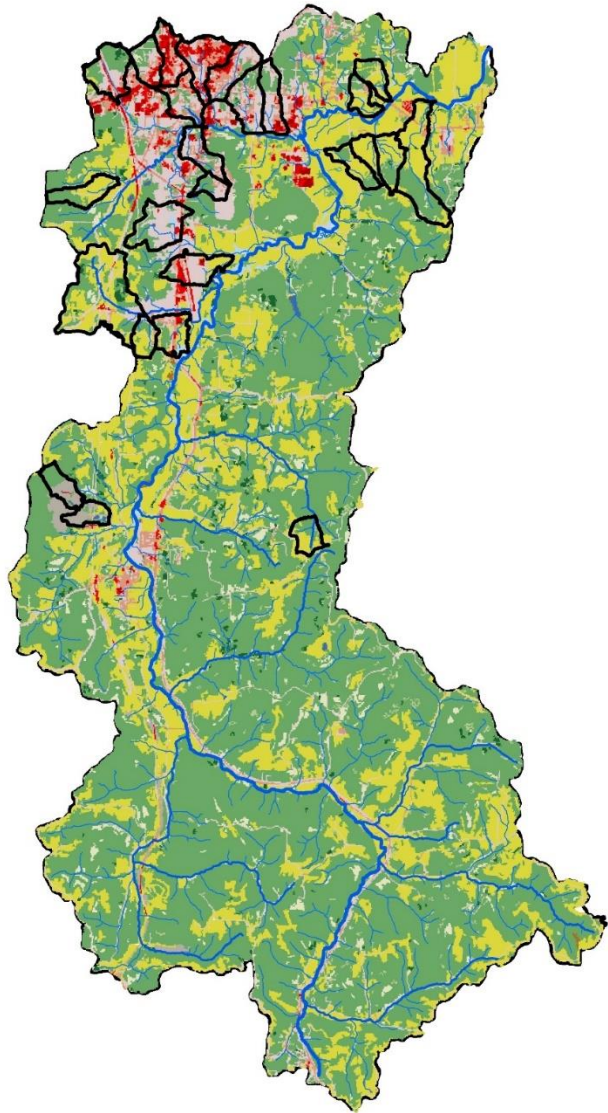


West Fork
White River
Watershed

Watershed
delineated into
1-5 km²
subbasins
(278 total)



A study was commissioned by UA based on science and stakeholder input to find the best placement of ponds to reduce flooding, peak flows, sediment and nutrients from entering the West Fork

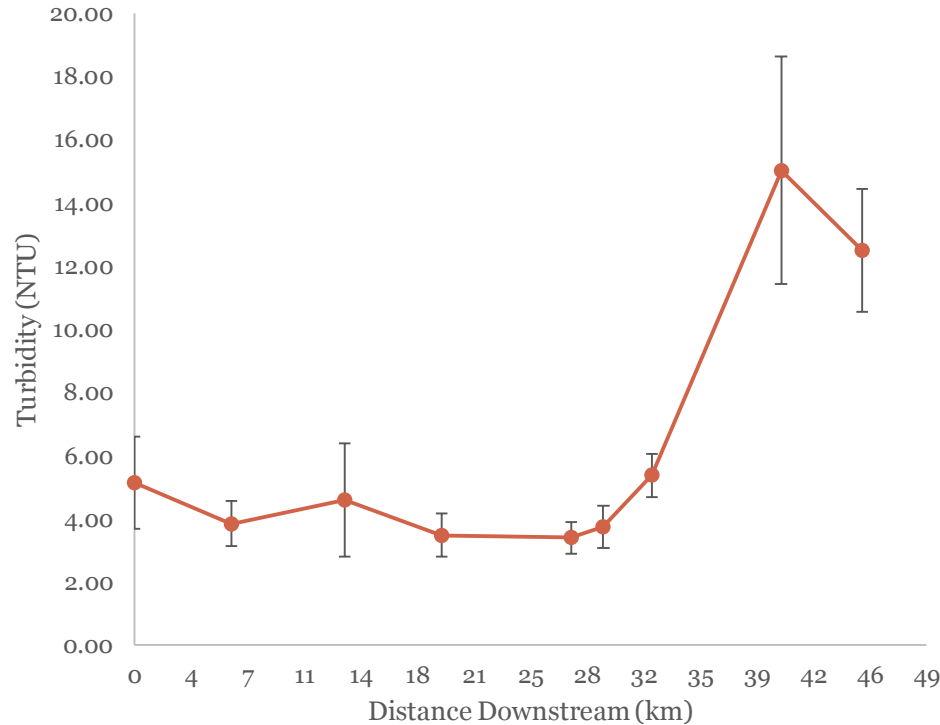


- 25 priority subbasins had Curve Number ≥ 80
- Potentially represent the greatest need for ponds

Average Pond Size Needed
Assuming Different Average
Depths:

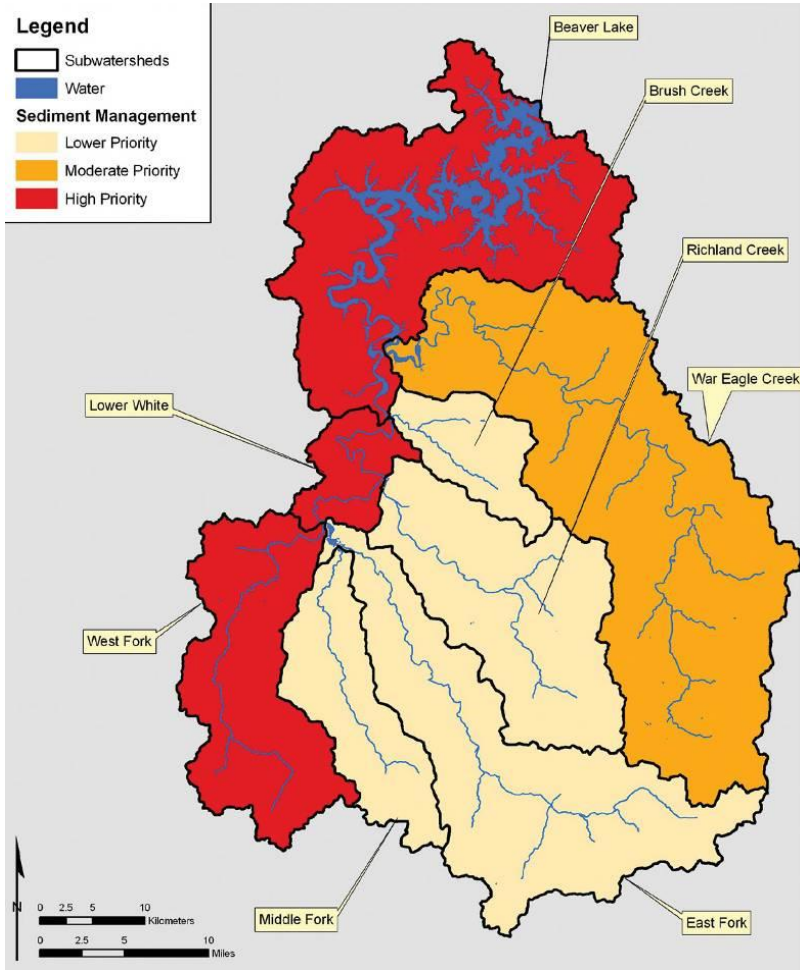
<u>Pond Depth (m)</u>	<u>Pond Area (acre)</u>
1	3.03
1.5	2.02
2	1.51
2.5	1.21
3	1.01

Water quality monitoring along the West Fork

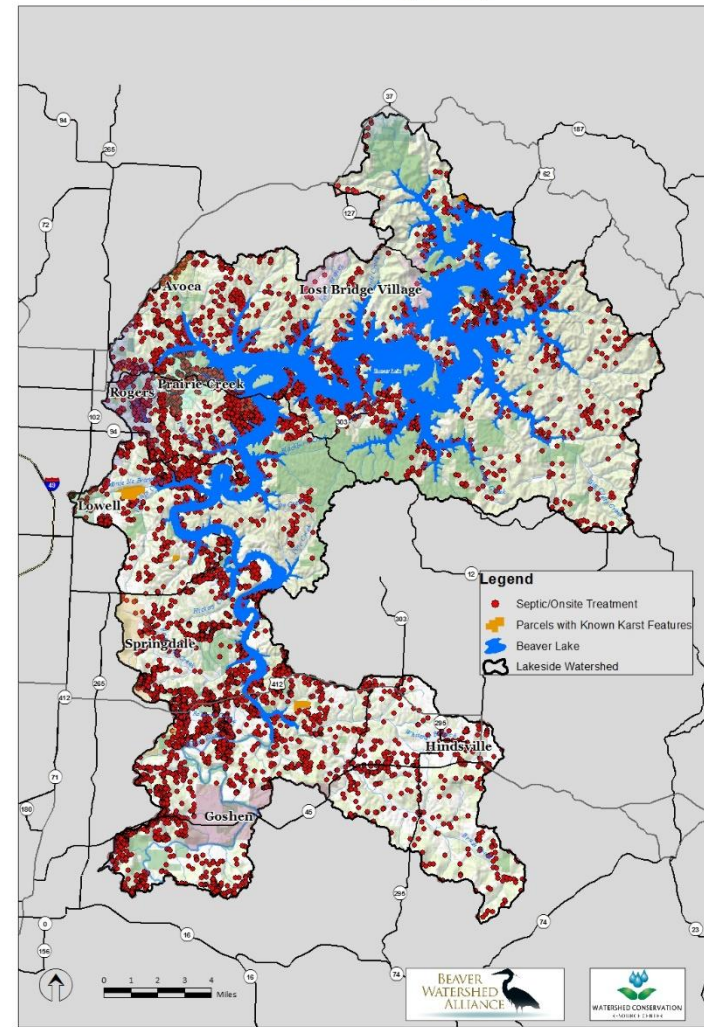


In attempt to delist part of the West Fork, to better measure project results, and to better prioritize resources water quality monitoring was established from the headwaters to tail waters of the watershed

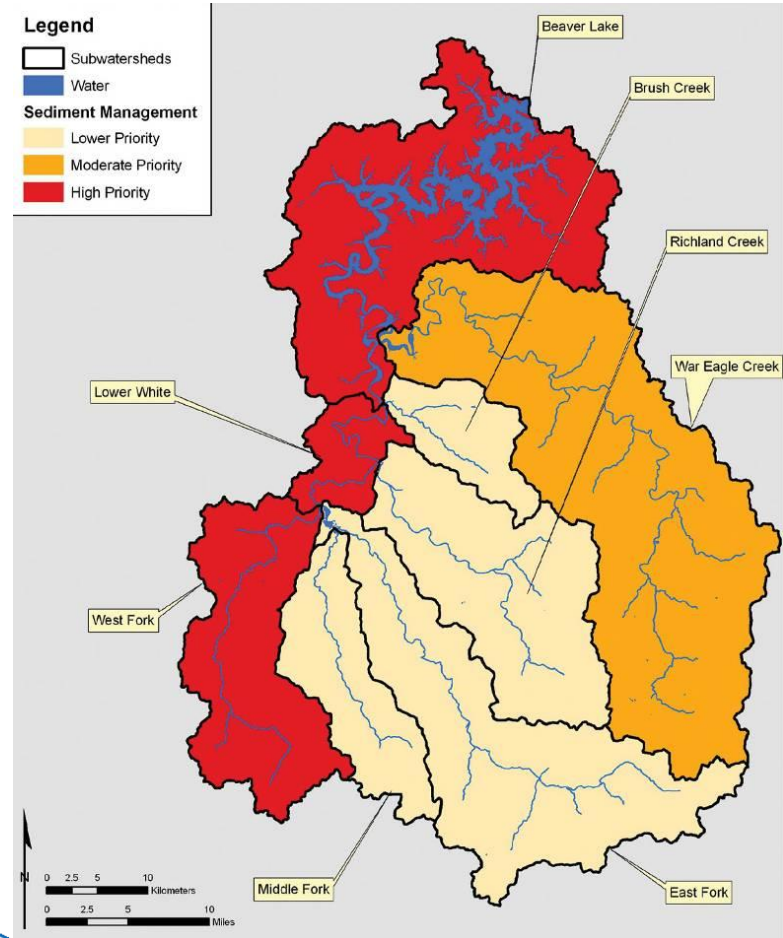
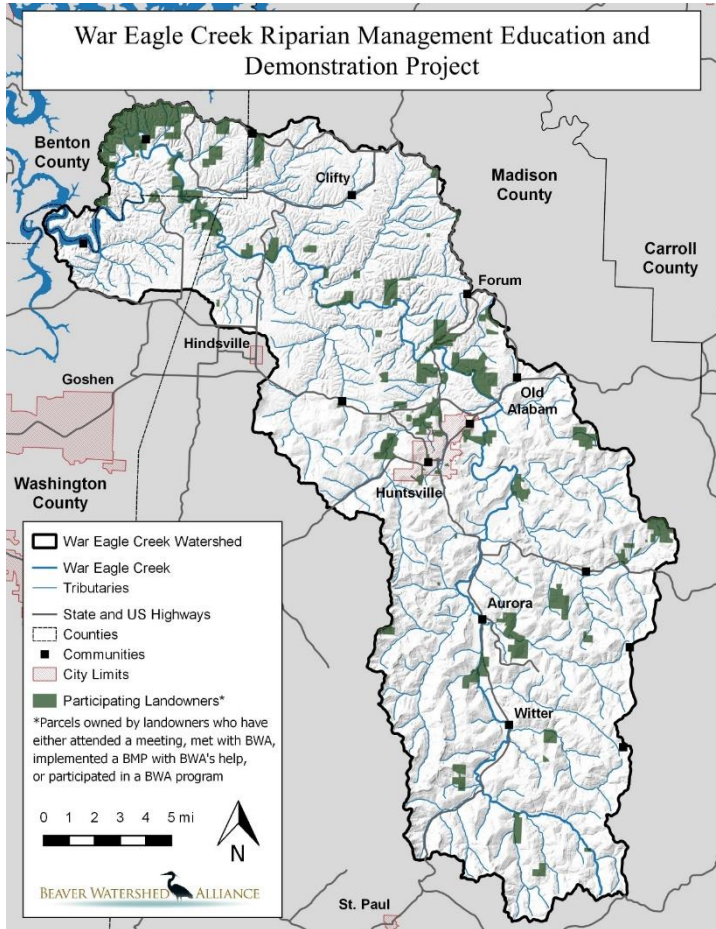
Lakeside Watershed Area



Lakeside Watershed Septic/Onsite Treatment Locations
Beaver Lake (Draft)

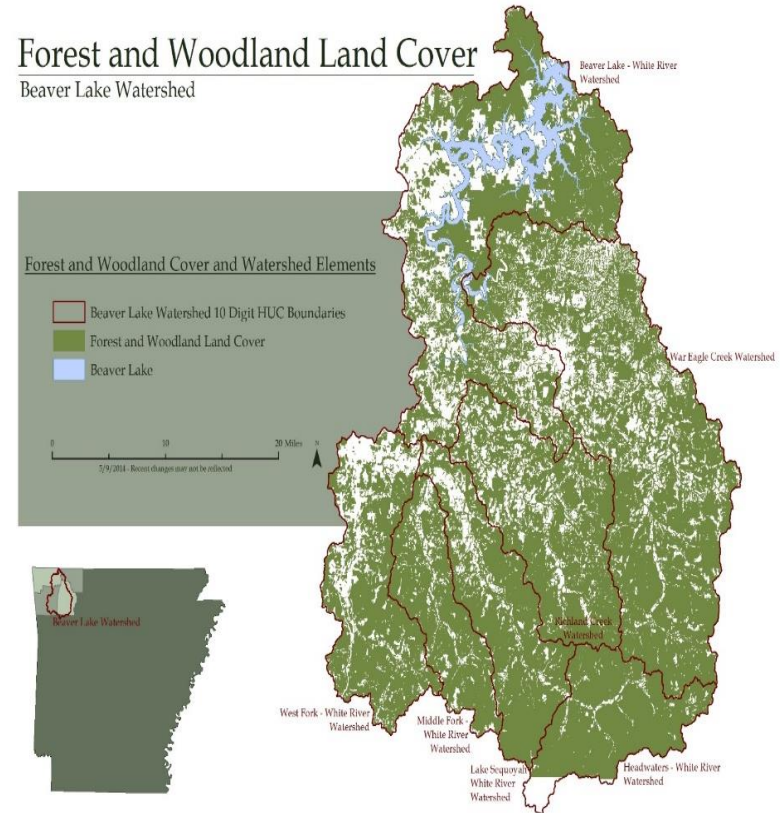


War Eagle Outreach - Education and Demo



Forested Watershed Landowner Assessment

- Assess conservation resource needs of forested landowners
- Incorporate programming into watershed protection strategy
- Secure/disseminate resources for maintained forest management



Component 5: Monitoring Program

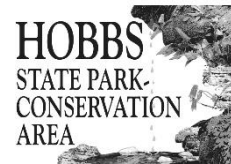
- Identify monitoring gaps
- Monitor
- Prioritize watershed areas
- Plan programs based on monitoring outcomes
- Adapt programming
- Measure social indicators
- Measure progress of program effectiveness



Beaver **Water** District

Be Considerate, Give Credit, and Encourage

- Great partners help make clean water
- Give your partners proper credit
- Be easy to work with and not difficult
- Encourage



Beaver Water District



Additional Information

To find out more about the Beaver Lake Watershed, Beaver Watershed Alliance, water quality, water quality issues, and programs to address water quality within the Beaver Lake Watershed please visit the BWA website - a clearinghouse for information relating to the Beaver Lake Watershed



www.beaverwatershedalliance.org