Nutrient Reduction: Northwest Arkansas

NATURAL RESOURCES DIVISION

Tate Wentz
Water Quality Section Manager

38th Mississippi River/Gulf Hypoxia Task Force Meeting
Fayetteville, AR
December 6, 2023

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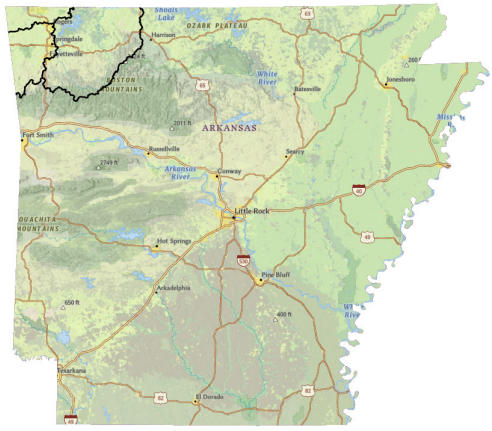
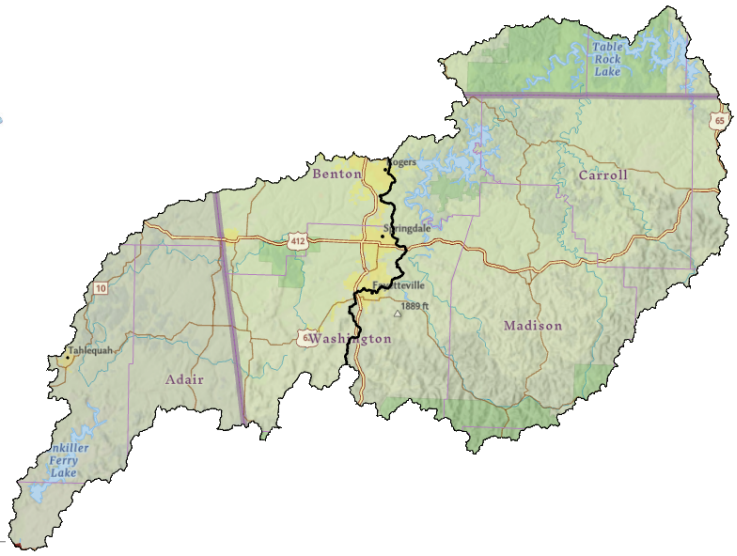
Nutrient Reduction and Northwest Arkansas





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Nutrient Reduction and Northwest Arkansas

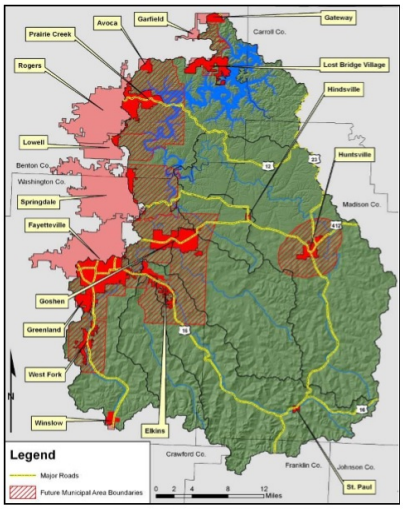
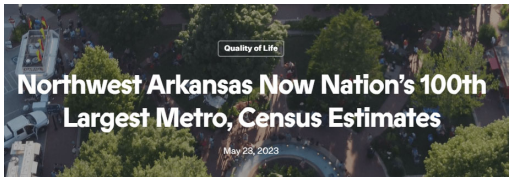


Figure 2-3. Comparison of Existing and Planned Future Municipal Boundaries



Preparing for
1 million people by 2045

Projected growth makes sediment loading reduction essential to maintain source water quality

Beaver Lake provides source water for one in five Arkansans

Nutrient Reduction: Illinois River

1970: Oklahoma designates the Illinois River a scenic waterway (among others) as part of the 1970 Oklahoma Scenic Rivers Act.

1988: US EPA approves Fayetteville NPDES permit - Oklahoma sues.

1992: U.S. Supreme Court rules Arkansas must meet downstream state WQS

2003: Arkansas and Oklahoma agree to work together to reduce pollution in the Illinois River watershed

2003: Arkansas Legislature passes four laws addressing poultry litter and nutrients

2005: OK files suit against 14 poultry companies

2009: Federal trial begins in Judge Gregory Frizzell's courtroom.

2010: Arkansas P Index updated for implementation Title 22

2010: Final arguments in chicken poultry case. After more than eight years, no decision has been rendered.

2013: Oklahoma and Arkansas announce joint three-year study as a continuance of the 2003 agreement as a "Second Statement of Joint Principles and Actions."

2016: The Joint Principals agreement yields the Oklahoma-Arkansas Scenic Rivers Joint Phosphorus Study

2023: Judge Frizzell rules on poultry case

Nutrient Reduction: Beaver Reservoir

BEAVER LAKE SITE-SPECIFIC WATER QUALITY CRITERIA DEVELOPMENT: RECOMMENDED CRITERIA

In 2013, APC&EC adopted the following language into part (B) Site Specific Nutrient Standards of Regulation 2.509, Nutrients:

(B) Site Specific Nutrient Standards

Lake	Chlorophyll a (ug/L)**	Secchi Transparency (m)***
Beaver Lake*	8	1.1

*These standards are for measurement at the Hickory Creek site over the old thalweg, below the confluence of War Eagle Creek and the White River in Beaver Lake.
**Growing season geometric mean (May - October)
***Annual Average

FEBRUARY 8, 2008

Nutrient Reduction: Legislative Action

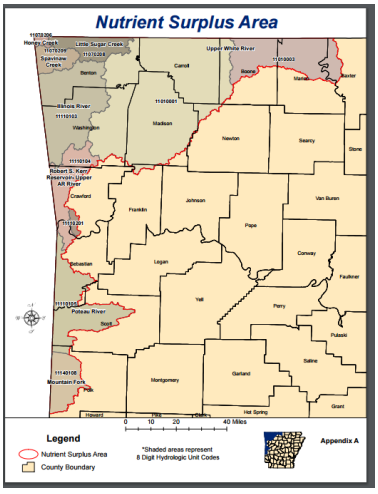
In 2003 the Arkansas 84th General Assembly passed 3 laws affecting the way Arkansas manages and applies nutrients

ACT 1059: Soil Nutrient Management Planner and Applicator Certification Act.

ACT 1060: Registry of Poultry Feeding Operations.
Title 19: Registry of PFOs

ACT 1061: Requires Proper Application of Nutrients and Utilization of Poultry Litter in Nutrient Surplus Areas.
Title 20: Nutrient Management Planner Certification Program
Title 21: Nutrient Management Applicator Certification Program
Title 22: Soil Nutrient and Poultry Litter Application and Management Program

ACT 2294: Requires a Nutrient Management Plan for all dry litter applications.



Nutrient Reduction: Implementation

Arkansas Phosphorus Index

- Arkansas Phosphorus Index
  - 2010 – Pasture and Hayland
  - 2019 – Row Crop (Pending)
- Factors Considered(Pasture)
  - Soil Test Phosphorus
  - Soluble P application
  - Soil Erosion
  - Soil Runoff Class
  - Flooding Frequency
  - Application Method
  - Application Timing
- Credit for BMP's Implemented

Best Management Practice	CPS#	Credit
Diversion	362	5%
Terrace	600	10%
Pond	378	20%
Fenced pond		30%
Filter strip	393	20%
Fenced filter strip		30%
Grassed waterway	412	10%
Fencing	382	30%
Riparian forest buffer	391	20%
Fenced riparian forest buffer		35%
Riparian herbaceous cover	390	20%
Fenced riparian herbaceous cover		30%
Field borders	386	10%

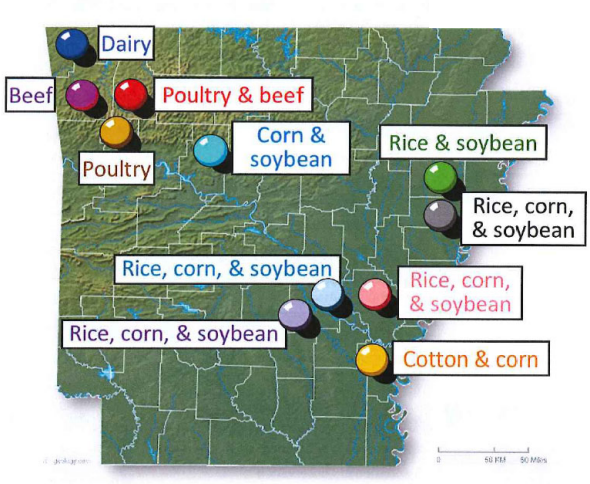
P Index Value	Site Interpretations and Recommendations
LOW	Caution against long-term buildup of P in the soil.
MEDIUM	Evaluate the Index and determine any field areas that could cause long-term concerns. Consider adding BMPs.
HIGH	Evaluate the Index and determine elevation cause. Add appropriate BMPs and/or reduce P application. The immediate planning target is an API value in the Medium class or lower. If this cannot be achieved with realistic BMPs and/or reduced P rates in the short-term, then a conservation plan needs to be developed with a long-term goal of an API value in the Medium class or lower.
VERY HIGH	No P application. Add BMPs to decrease this value below the Very High class in the short-term and develop a conservation plan that would reduce the API value to a lower risk category, with a long-term goal of an API in the Medium class or lower.

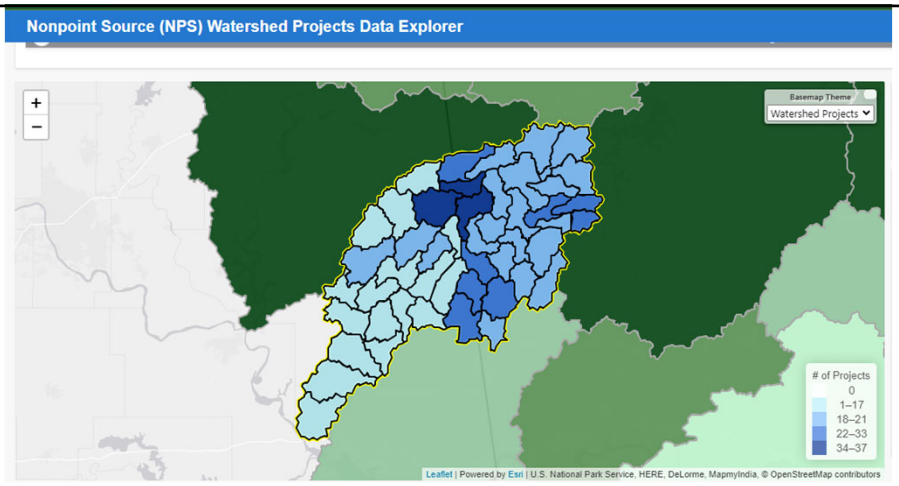
Nutrient Reduction: Implementation

Arkansas Discovery Farms

U of A – Division of Agriculture

- Conduct on-farm research and monitoring which assesses the need for and effectiveness of best management practices.
- Provide on-farm verification and documentation of conservation practices which ensure sound environmental land stewardship.
- Develop and deliver educational programs from data collected on-farm that will assist producers in achieving both production and environmental goals, thus increasing the overall sustainability of Arkansas' farming enterprises.





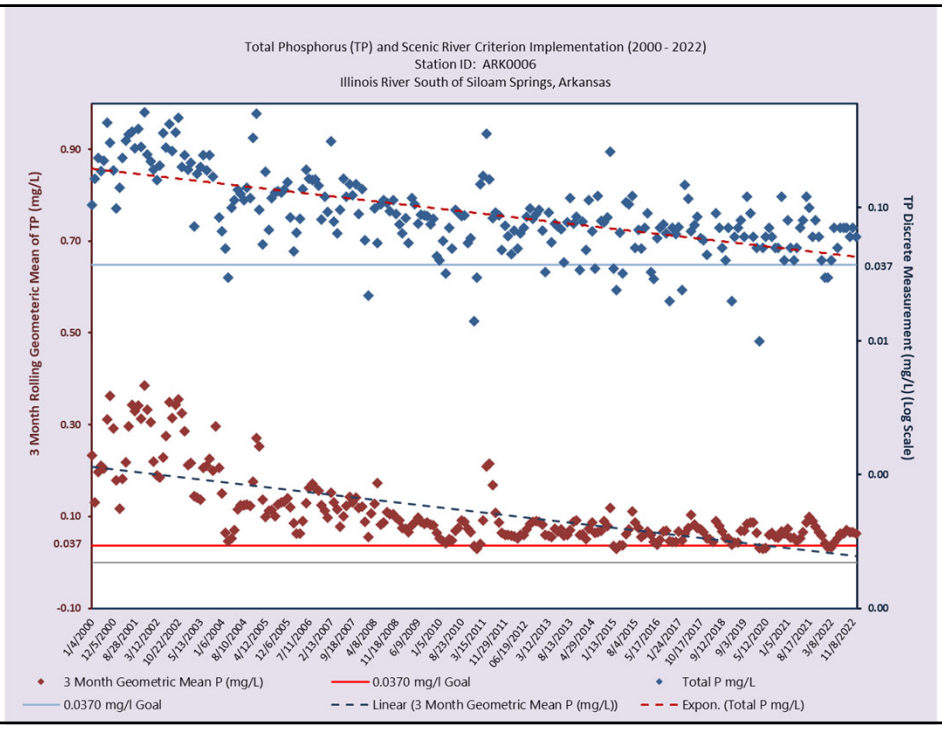
HUC12 EPA Investments (319 Funding)

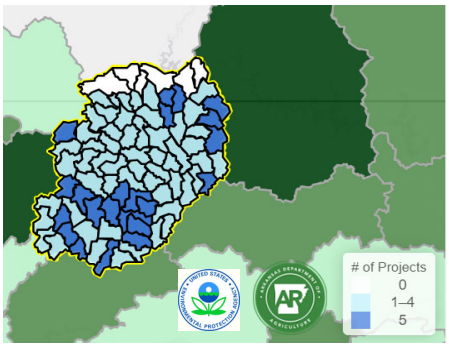
$6,827,440 from 319 (45 projects)

$8,248,232 from local sponsors

$15,075,672 in total investments

Source: EPA's NPS tracking tool and Arkansas Natural Resources Division, 2022 (https://ordspub.epa.gov/ords/grts/f?p=109:940:16762042680673::::P940_WIDGET:N#a_Collapsible2_INSTRUCTIONSHEADER_heading)





HUC12 EPA Investments (319 Funding)

$4,638,805 from 319 (17 projects)

$3,603,684 from local sponsors

$7,876,362 in total investments

Source: EPA's NPS tracking tool and Arkansas Natural Resources Division, 2022 (https://ordspub.epa.gov/ords/grts/f?p=109:940:16762042680673::::P940_WIDGET:N#a_Collapsible2_INSTRUCTIONSHEADER_heading)

Source Water Protection Funding – Beaver Water District

$2,846,900 SWP Funding (2011-2022)

$9,755,435 Leveraged for additional SWP programming and project implementation in the Beaver Lake watershed area

Investments are Leveraged to reach Full Potential of Project Dollars

Watershed Success

Segment of West Fork – White River Delisted

16.5 river miles removed from the state's list of impaired waters for turbidity

- Streambank evaluation
- Streambank restoration efforts
- Technical publications on soils and water quality
- Water quality sampling efforts
- Land conservation efforts

Voluntary, Non-Regulatory Watershed Management Plan for the Illinois River Watershed

3rd Stakeholder Meeting
West Siloam Springs, OK
August 10, 2023

ARKANSAS DEPARTMENT OF AGRICULTURE

OKLAHOMA CONSERVATION COMMISSION

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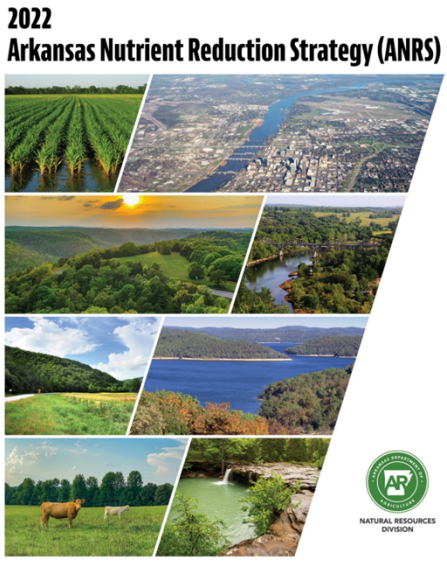
Illinois River: Guide for Arkansas's Strategy

- Clearly Defined Goal
- Extensive Study and Monitoring
- Point and Non-point both being addressed
- Nutrient Surplus Area
- State NPS Initiative
- Numerous 319 Projects
- NRCS Initiative
- Illinois River Watershed Partnership



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Advancing of the Arkansas Nutrient Reduction Strategy

ANRS Workgroup Results

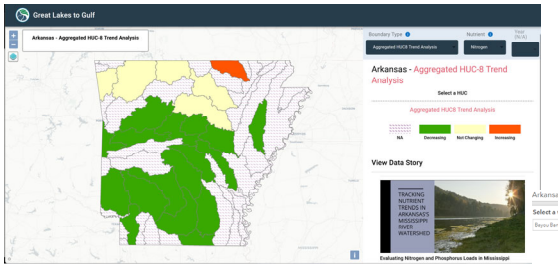
Innovation (Science & Research)

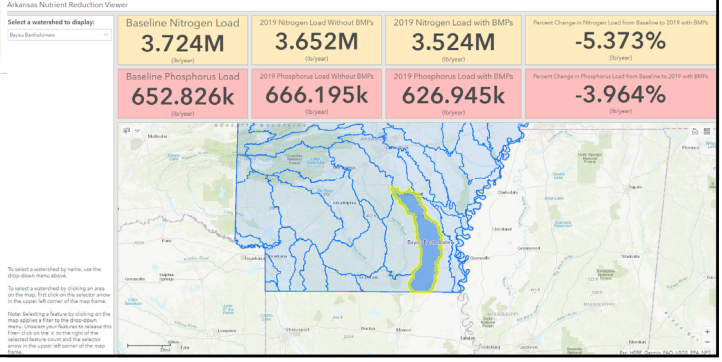
- Prioritizing Tier 2 Watersheds
- Determining Research and Development Needs
- Resources for Watershed Planning
- Reviewing Conservation Practice Efficiencies

Communication (Education & Outreach)

- Enhance communication, specifically to engage partners and stakeholders in watersheds.
- Review outreach and education strategies.
- Make recommendations for communication strategies.
- Other objectives and strategies as developed by the workgroup that enhance or advance the ANRS.

Advancing of the Arkansas Nutrient Reduction Strategy





Thank You

Tate Wentz
Water Quality Section Manager
Natural Resources Division-Arkansas Dept. of Agriculture
tate.wentz@agriculture.arkansas.gov
501.682.3914