

# Arkansas Department of Environmental Quality

A photograph of a modern, multi-story office building with a prominent glass facade. The building is surrounded by landscaping, including several young trees and a grassy area in the foreground. A parking lot with several cars is visible in front of the building. The sky is overcast.

Selena Medrano  
Water Quality Management Planning

# ADEQ Divisions

Management Services

Legal

Fiscal

Computer

Public Outreach and Education

Hazardous Waste

Solid Waste

Technical Services

Mining

Air

*Water*



# Clean Water Act

- The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution; amended in 1972, it became known as the Clean Water Act.
- The 1972 amendments had a major impact on state water programs:
  - Required states to establish water quality standards
  - Required states to perform a *water quality assessment* of the quality of surface waters in the state every two (2) years
  - Made it unlawful to discharge any pollutant from a point source into navigable waters without a permit

# ADEQ Water Division

The Water Division has four (4) branches whose aim is to protect and enhance the water quality of the State of Arkansas:

- Water Quality Planning
- Permits
- Inspection
- Enforcement

# Water Quality Planning Branch

- Water Quality Standards (Regulation 2)
- Biennial Water Quality Assessment
  - Create 303(d) list based on assessments
    - TMDLs for listed waterbodies
- Groundwater Protection Program
- Technical Review of NPDES Program
- Water Quality and Biological Monitoring
- STAA and 401 Certification Program
- Toxicity Program

Water Quality & Biological Data



Water Quality Standards & Criteria



Assessment



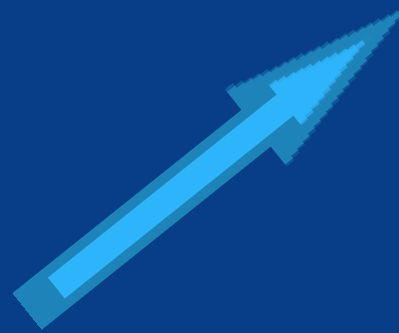
Permit Limitations



Impairment



TMDL



# Water Quality Planning Branch

## Water Quality Monitoring Network

### Ambient Surface Water Network

- Approximately 150 stations
- Sampled monthly – some for 25-30 years
  - Chemical parameters & flow
- Monitor objectives:
  - Big river systems
  - Below point source discharges
  - Potentially problematic nonpoint source areas
  - Least-disturbed reference streams
  - Long-term consistent monitoring

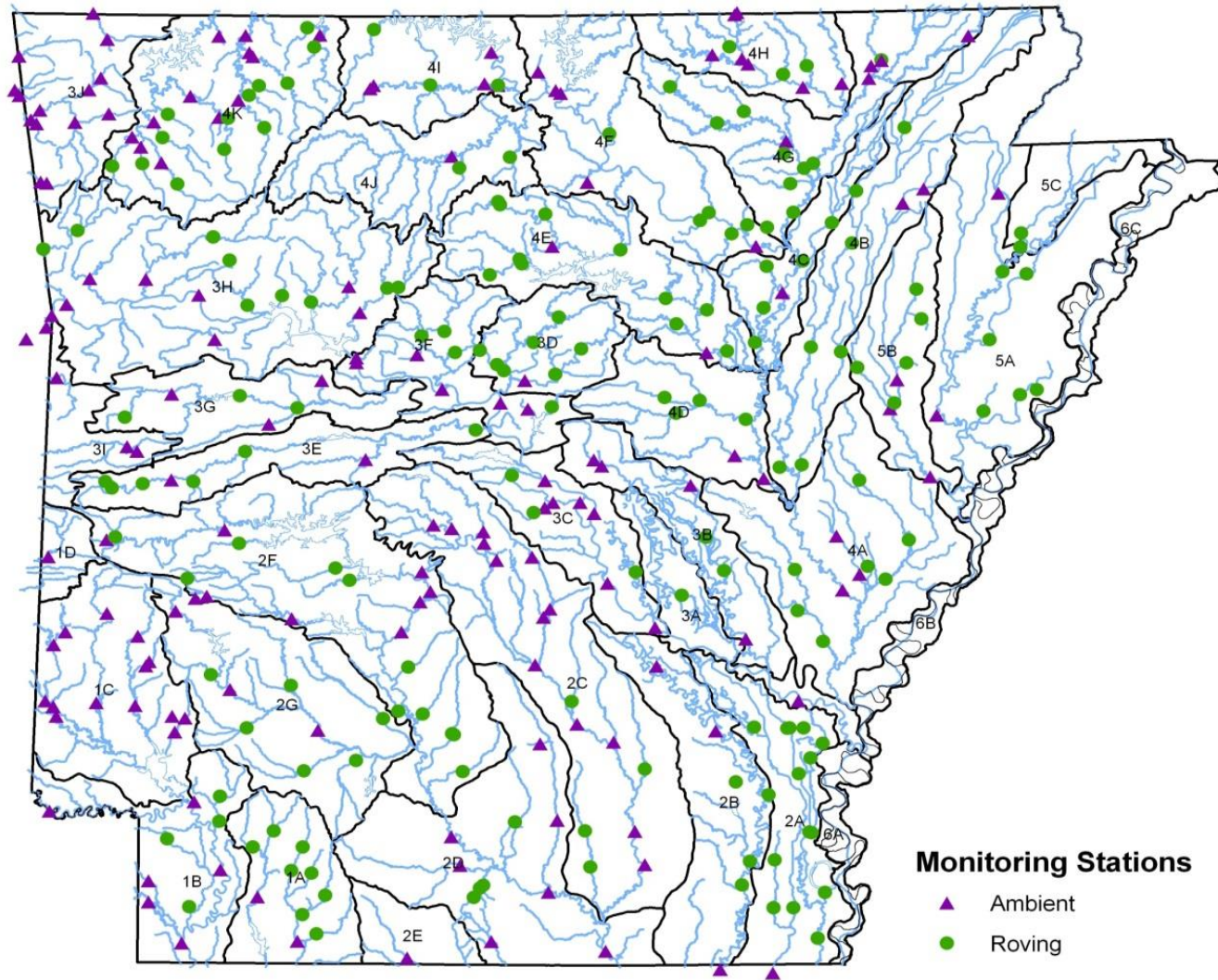
# Water Quality Planning Branch

## Water Quality Monitoring Network

### Roving Surface Water Network

- Approximately 200 stations
  - ¼ stations sampled for two year period
- Waters with limited to no water quality data
- Sampled every two (2) months:
  - Chemical parameters
  - Flow
  - Bacteria
  - Specialized compounds





# Water Quality Planning Branch

## Watershed Monitoring Network

### Macroinvertebrate Community

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Watershed Based

10-20 sites

Statewide

100+ samples/year



### Fish Community

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Watershed Based

10-20 sites

Statewide

30+ samples/year





# What are Designated Uses?



Primary Contact Recreation



Industrial Water Supply



Domestic  
Water Supply



Fisheries



Secondary Contact Recreation

# Water Quality Standards

Water Quality Standards include criteria designed to prevent impairment of the designated uses

These criteria serve as the regulatory basis for water quality-based treatment controls under Section 303(e) of the Clean Water Act



# Water Quality Standards

Criteria can be narrative or numeric for constituents, such as:

- Dissolved Oxygen
- Bacteria
- Temperature
- Nutrients
- Toxic Substances
- Turbidity





# Water Quality Standards

## Ecoregion Based

- In Arkansas, water quality standards were developed using data from least-disturbed streams within each of the State's six (6) ecoregions
- These data were developed during an intensive, statewide study of the physical, chemical, and biological characteristics of least-disturbed streams (1983-1986)

# Arkansas's Ecoregions

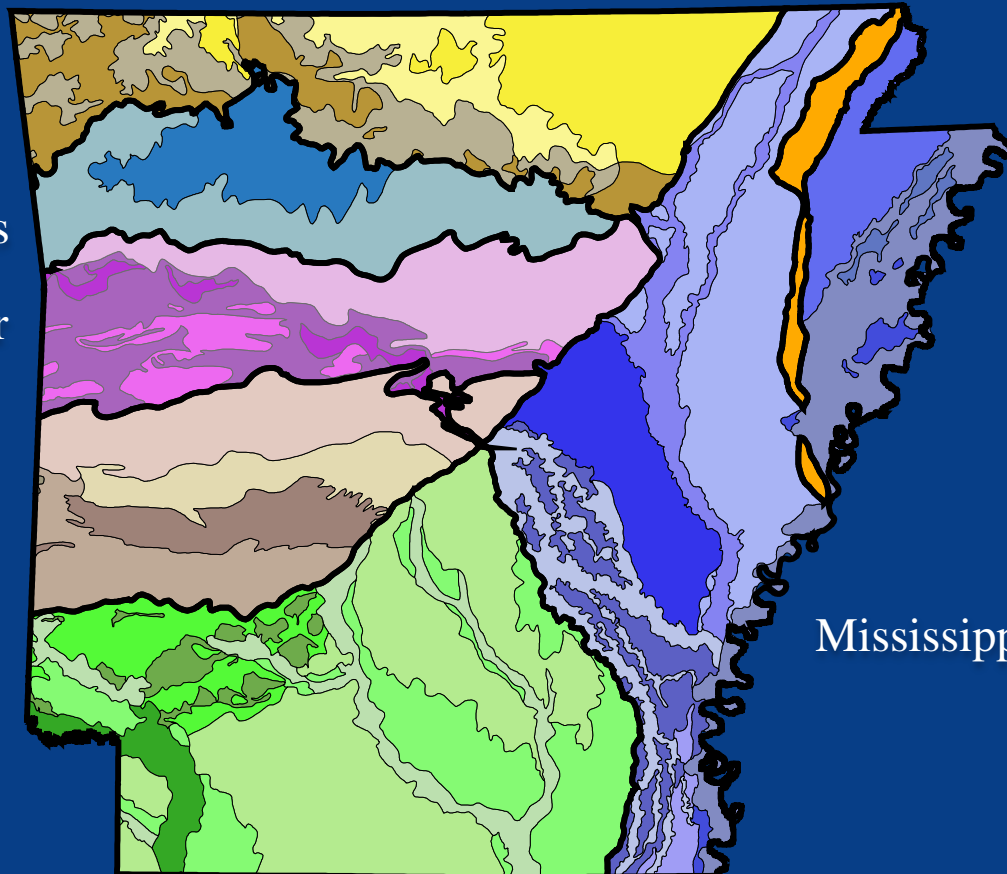
Ozark Highlands

Boston Mountains

Arkansas River  
Valley

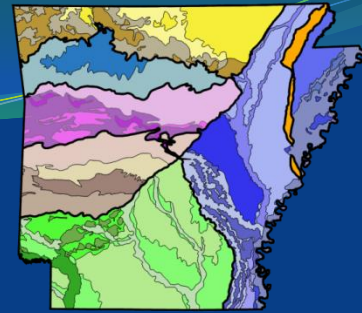
Ouachita  
Mountains

Gulf Coastal  
Plains



Mississippi Alluvial Plains

# Water Quality Standards Ecoregion Based



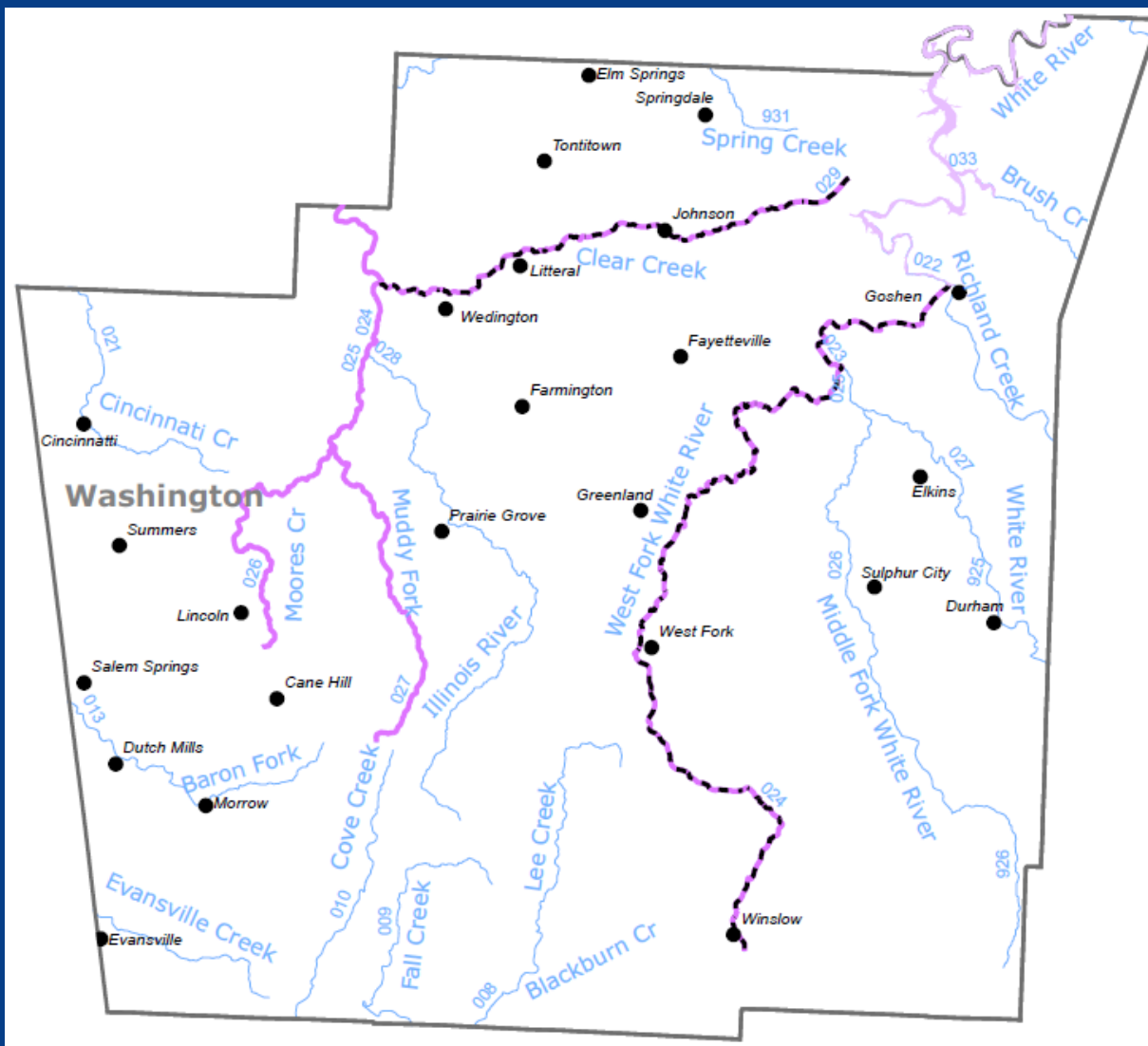
Ecoregions	Temp (°C)	Turbidity		Sulfates	TDS
		Base	All		
Ozark Highlands	29	10	17	22.7	250
Boston Mountains	31	10	19	15	95.3
Arkansas River Valley	31	21	40	17.3	112.3
Ouachita Mountains	30	10	18	20	142
Gulf Coastal Plain					
Typical	30	21	32	41.3	138
Springwater-influenced	30	21	32	41.3	138
Mississippi Alluvial Plain					
Least Altered	30	45	84	37.3	411.3
Channel Altered	32	75	250	37.3	411.3

# Clean Water Act

## § 303(d) List of Impaired Waters

- Section 303(d) of the Clean Water Act requires states to perform a *water quality assessment* of the quality of surface waters in the state, including all rivers and lakes, every two (2) years
- Waters that are impaired and not meeting their designated uses must be placed on the 303(d) list

# Draft 2014 Impaired Waterbodies





# Clean Water Act

## § 303(d) List of Impaired Waters

For listed waters, ADEQ must develop water quality improvement strategies to reduce the specific pollutant(s) that are restricting the designated use(s) in order to restore and protect the use(s)

- TMDLs
- Watershed Restoration Plans
- NPDES permit limits
- Additional monitoring

# Clean Water Act

## National Pollutant Discharge Elimination System

- As authorized by the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the U.S.
- Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters



# Permits Branch

Permit limitations are based on Arkansas' ecoregion-based water quality criteria

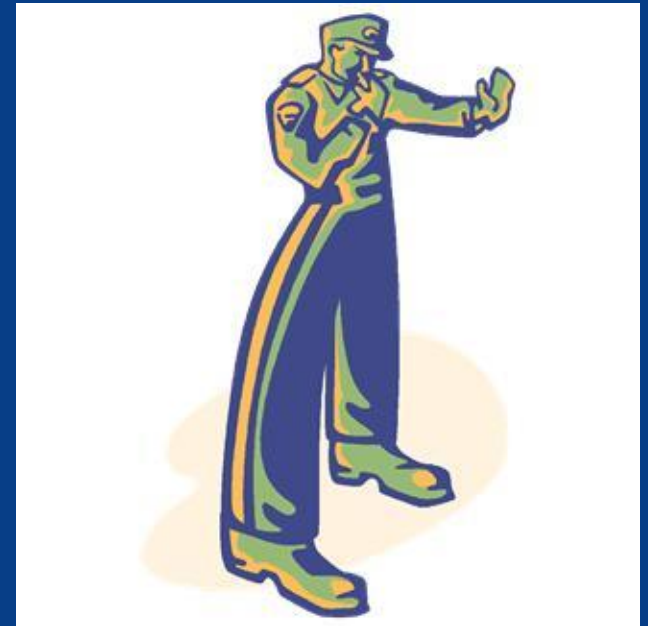
- Individual NPDES Discharge Permits
- Stormwater General Permits
- General NPDES Permits
- No-Discharge Permits
- Wastewater Treatment Construction
- Pretreatment Programs

# Inspection Branch

- Permit Compliance Inspections for NPDES facilities
  - Municipal wastewater treatment plants
  - Industrial discharges for process wastewater
- Permit Compliance Inspections for subsurface or no-discharge facilities
- Storm Water Inspections
- Investigate citizen's complaints against municipalities, industries, other citizens, or agricultural facilities
- Respond to spills of materials from industries, transportation and municipalities
- Investigate fish kills related to environmental causes
- Collect routine water samples for the ambient surface water network

# Enforcement

- Monitor and enforce Storm Water, General, and NPDES permits for facilities
- Reviewed on case by case basis
- Willingness to discuss violations and review actions to resolve issues





Water Quality & Biological Data



Water Quality Standards & Criteria



Assessment



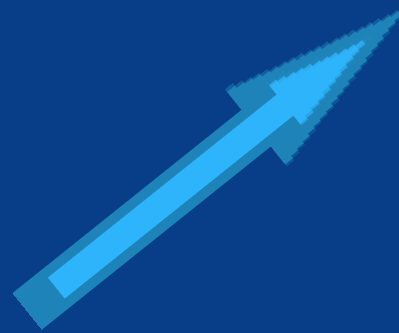
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# Stay informed

ADEQ Homepage: [www.adeq.state.ar.us](http://www.adeq.state.ar.us)

You will find:

- Contact Information
- Public Hearing Notices Concerning Permits
- Arkansas' 303(d) List
- TMDLs
- Regulation 2
- Links to other resources





Questions?



# ADEQ Water Division

## What We Do



*Nothing grows faster than a  
fish between the time the fish  
takes the bait...*

*and the time he gets away*

*-Tom Lehmann*

# ADEQ

ARKANSAS  
Department of Environmental Quality