Rule 2:
Coffee Creek

2023 Triennial Review

ARKANSAS
ENERGY & ENVIRONMENT

What is Rule 2?

- The Federal Clean Water Act (1972) requires each state to establish Water Quality Standards (WQS)
- WQS include designated uses and the criteria to protect those uses for Arkansas surface waters
- WQS define the goals for waterbodies by designating uses for waterbodies
- Standards are reviewed every 3 years

What are Water Quality Standards?

Three Sections

- **Designated Uses – Rule 2.302**
- **Criteria – Chapters 4 and 5**
- **Antidegradation Policy – Chapter 2**

Designated Uses

Primary Contact Recreation

Aquatic Life

Domestic Water Supply

Industrial Water Supply

Secondary Contact Recreation

Water Quality Criteria

Based on their designated uses, water quality criteria are established for each waterbody.

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

Water Quality Criteria

WQS include numerical and narrative criteria that protect Arkansas's waters.

Numeric

- **Bacteria – 410 colony forming units**
- **Temperature – 32 C (89.6 F)**
- **Dissolved Oxygen – 5 mg/L**

Narrative

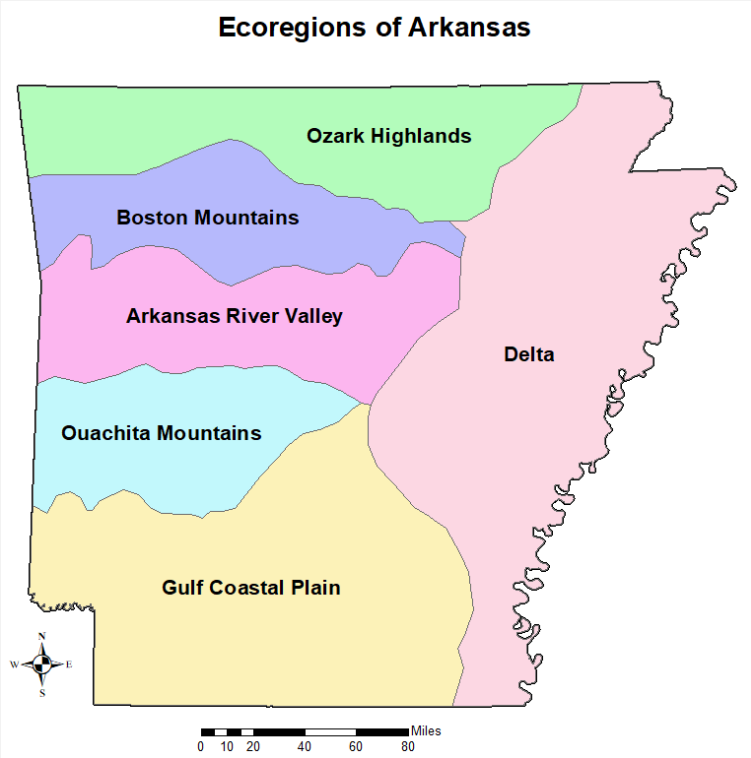
- **Color – True color shall not be increased in any waters to the extent that it will interfere with present or projected future uses of these waters.**

Water Quality Criteria Development

Ecoregion Based Criteria

- **In Arkansas, water quality criteria were developed using data from least-disturbed streams within each of the six ecoregions.**

- **These data were developed during an intensive, statewide study of the physical, chemical, and biological characteristics of least-disturbed streams (1983-1986).**



Water Quality Criteria Development

Ecoregions	Temp (°C)	D.O. (mg/L) Critical-Primary	pH
Ozark Highlands	29	5.0-6.0	6.0-9.0
Boston Mountains	31	6.0	6.0-9.0
Arkansas River Valley	31	3.0-5.0	6.0-9.0
Ouachita Mountains	30	6.0	6.0-9.0
Gulf Coastal Plain *Typical* *Springwater-influenced*	 30 30	 3.0-5.0 5.0	 6.0-9.0 6.0-9.0
Mississippi Alluvial Plain *Least Altered* *Channel Altered*	 30 32	 3.0-5.0 3.0-5.0	 6.0-9.0 6.0-9.0

TRIENNIAL REVIEW PROCESS

Task	Estimated Timeline
Stakeholder Workgroup	March – May 2022
Governor's Office	Fall 2022
Petition the APC&E Commission	Winter 2022
Public Notice	Winter 2022 – Spring 2023
Public Hearing	Winter 2022 – Spring 2023
45-day Comment Period	Winter 2022 – Spring 2023
Responsive Summary	Spring – Summer 2023
Adoption by APC&E Commission	Summer 2023
Legislative Review	Fall 2023
Submit to EPA	Fall 2023


• Upper Coffee Creek – 18-square-mile watershed
Coffee Creek Below Mossy Lake – 34-square-mile watershed
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coffee Creek History

- In 1980, PC&E determined uses associated with a Class B stream:
  - had not previously been attained in Coffee Creek
  - had not been attained in the interim
  - could not be attained in the future by any technology currently available

Coffee Creek History

- 1984 – Coffee Creek-Mossy Lake UAA
- April 26, 1988 – Letter from EPA to PC&E approving UAA for Coffee Creek and Mossy Lake
- March 14, 2002 – Congressman John Cooksey requested that the EPA assess the impact of the Georgia-Pacific discharge on the Ouachita River

Coffee Creek History

- December 2007 – Parson's UAA and Water Quality Assessment of Coffee Creek, Mossy Lake and the Ouachita River

- March 6, 2009 – EPA letter to ADEQ regarding concerns related to lack of use designations for Coffee Creek and Mossy Lake

Coffee Creek History

- December 19, 2013 – Tulane University's Request for Objection to ADEQ's inadequate 2013 Triennial Review – specifically regarding ADEQ's failure to provide designated uses for Coffee Creek or Mossy Lake
- November 2013 – Report "Data Collection and Factual Analysis Use Attainability Analysis of Coffee Creek and Mossy Lake" is submitted by Georgia- Pacific to ADEQ

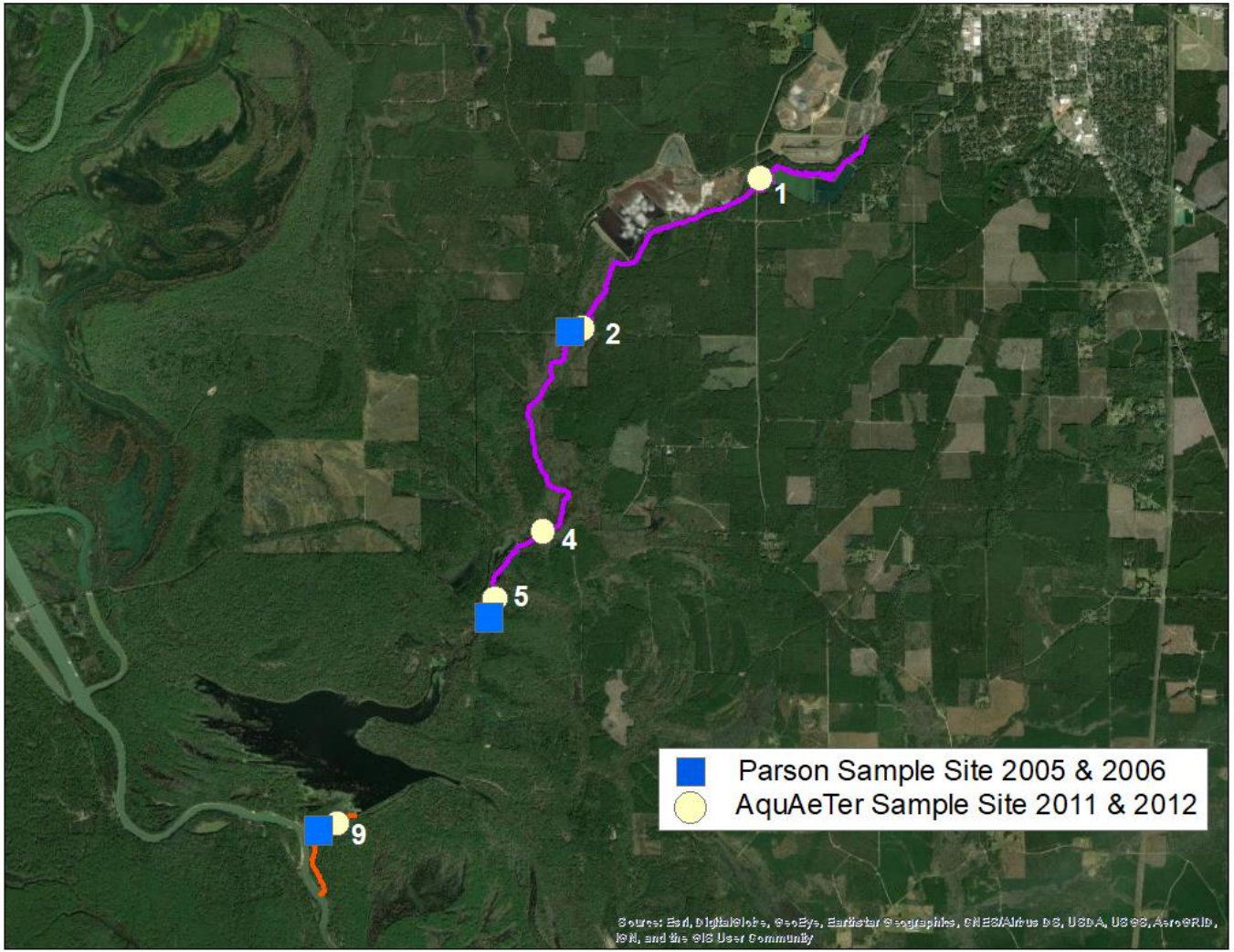
Current Standards

No fishable/swimmable or domestic water supply uses

- **Agricultural Water Supply**
- **Industrial Water Supply**

Exempt from Rule 2.406 and Chapter 5

- **2.406 – Color**
- **Chapter 5 – Specific Standards**


1
2
4
5
9
Parson Sample Site 2005 & 2006
AquAeTer Sample Site 2011 & 2012
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Aquatic Life Summary – Fish

Study	Month	Year	Site Descriptor	# of organisms	# of species
Parson	June	2005	upstream	301	15
Parson	February	2006	upstream	2	1
Parson	June	2006	upstream	23	5
Parson	August	2005	railroad trestle	1	1
Parson	February	2006	railroad trestle	8	3
Parson	June	2006	railroad trestle	4	2
Parson	June	2005	below Mossy Lake	35	6
Parson	February	2006	below Mossy Lake	33	8
Parson	June	2006	below Mossy Lake	21	3

Aquatic Life Summary – Fish

Study	Month	Year	Site Descriptor	# of organisms	# of species
AquAeTer	September	2011	1	26	3
AquAeTer	August	2012	1	42	8
AquAeTer	September	2011	2 (upstream)	dry	dry
AquAeTer	August	2012	2 (upstream)	dry	dry
AquAeTer	September	2011	4	dry	dry
AquAeTer	August	2012	4	dry	dry
AquAeTer	September	2011	5 (railroad trestle)	not sampled	not sampled
AquAeTer	August	2012	5 (railroad trestle)	not sampled	not sampled
AquAeTer	September	2011	9 (below Mossy Lake)	4	3
AquAeTer	August	2012	9 (below Mossy Lake)	8	5

Aquatic Life Summary – Macroinvertebrates

Study	Month	Year	Site Descriptor	# of organisms	# of taxa
Parson	June	2005	upstream	200	13
Parson	February	2006	upstream	179	8
Parson	June	2006	upstream	10	6
Parson	August	2005	railroad trestle	139	6
Parson	February	2006	railroad trestle		6
Parson	June	2006	railroad trestle	223	
Parson	June	2005	below Mossy Lake	200	
Parson	February	2006	below Mossy Lake		43
Parson	June	2006	below Mossy Lake	147	3

Aquatic Life Summary – Macroinvertebrates

Study	Month	Year	Site Descriptor	# of organisms	# of taxa
AquAeTer	December	2011	1	194	7
AquAeTer	May	2012	1	200	19
AquAeTer	December	2011	2 (upstream)	187	13
AquAeTer	May	2012	2 (upstream)	126	13
AquAeTer	December	2011	4	198	7
AquAeTer	May	2012	4	282	10
AquAeTer	December	2011	5 (railroad trestle)	182	21
AquAeTer	May	2012	5 (railroad trestle)	51	9
AquAeTer	December	2011	9 (below Mossy Lake)	flooded	flooded
AquAeTer	May	2012	9 (below Mossy Lake)	559	16

Proposed Standards – Upper Coffee Creek

Proposed uses

- **Aquatic Life**
- **Primary Contact Recreation (May 1 – September 30)**
- **Secondary Contact Recreation (year round)**
- **Domestic Water Supply**
- **Agricultural Water Supply**
- **Industrial Water Supply**

Proposed Standards – Upper Coffee Creek

Proposed criteria

- 2.406 – Color
- 2.502 – Temperature
- 2.503 – Turbidity
- 2.504 – pH
- 2.505 – Dissolved Oxygen
- 2.506 – Radioactivity
- 2.507 – Bacteria
- 2.508 – Toxic Substances
- 2.509 – Nutrients
- 2.510 – Oil and Grease
- 2.511 – Mineral Quality
- 2.512 – Ammonia

Proposed Standards – Upper Coffee Creek

Proposed criteria detailed

- **2.502 Temperature – 30 C (86 F)**
- **2.503 Turbidity – 21 NTU Base**
- **2.503 Turbidity – 32 NTU Storm**
- **2.504 pH 6 – 9 su**
- **2.505 Dissolved Oxygen – 5 mg/L primary season (temperature at or below 22 C: mid-September through mid-May)**
- **2.505 Dissolved Oxygen – 3 mg/L critical season (temperature above 22 C: mid-May through mid-September)**

Proposed Standards – Upper Coffee Creek

Proposed criteria detailed

- **2.507 Bacteria – 410 col/100 mL primary contact recreation (May 1 – September 30)**
- **2.507 Bacteria – 2050 col/100 mL secondary contact recreation (year round)**
- **2.511 Chloride – 250 mg/L**
- **2.511 Sulfate – 250 mg/L**
- **2.511 Total Dissolved Solids – 500 mg/L**

Proposed Standards – Coffee Creek Below Mossy Lake

Proposed uses

- **Aquatic Life**
- **Primary Contact Recreation (May 1 – September 30)**
- **Secondary Contact Recreation (year round)**
- **Domestic Water Supply**
- **Agricultural Water Supply**
- **Industrial Water Supply**

Proposed Standards – Coffee Creek Below Mossy Lake

Proposed criteria

- 2.406 – Color
- 2.502 – Temperature
- 2.503 – Turbidity
- 2.504 – pH
- 2.505 – Dissolved Oxygen
- 2.506 – Radioactivity
- 2.507 – Bacteria
- 2.508 – Toxic Substances
- 2.509 – Nutrients
- 2.510 – Oil and Grease
- 2.511 – Mineral Quality
- 2.512 – Ammonia

Proposed Standards – Coffee Creek Below Mossy Lake

Proposed criteria detailed

- **2.502 Temperature – 30 C (86 F)**
- **2.503 Turbidity – 21 NTU Base**
- **2.503 Turbidity – 32 NTU Storm**
- **2.504 pH 6 – 9 su**
- **2.505 Dissolved Oxygen – 5 mg/L primary season (temperature at or below 22 C: mid-September through mid-May)**
- **2.505 Dissolved Oxygen – 3 mg/L critical season (temperature above 22 C: mid-May through mid-September)**

Proposed Standards – Coffee Creek Below Mossy Lake

Proposed criteria detailed

- **2.507 Bacteria – 410 col/100 mL primary contact recreation (May 1 – September 30)**
- **2.507 Bacteria – 2050 col/100 mL secondary contact recreation (year round)**
- **2.511 Chloride – 250 mg/L**
- **2.511 Sulfate – 250 mg/L**
- **2.511 Total Dissolved Solids – 500 mg/L**

KEEP IN TOUCH

E&E-DEQ-OWQ

5301 Northshore Drive
North Little Rock, AR 72118

PHONE

501.682.0744

EMAIL

Rule_2_Comments@adeq.state.ar.us

WEBSITE

https://www.adeq.state.ar.us/water/planning/reg2/triennial/2023/

@AREnergyEnvironment

@ArkansasEE

ARKANSAS DEPARTMENT OF ENERGY AND ENVIRONMENT

ARKANSAS
ENERGY & ENVIRONMENT