

The following revisions are proposed for the 2023 triennial review of Rule 2, Rule Establishing Water Quality Standards for Surface Water of the State of Arkansas.

I. Bacteria

- a. Removal of fecal coliform

<u>Contact Recreation Seasons</u>	<u>Criteria (col/100mL)</u>	
<u>Primary Contact¹</u>	<u>Fecal Coliform</u>	
	<u>IS³</u>	<u>GM⁴</u>
ERW, ESW, NSW, Reservoirs, Lakes	400	200
All Other Waters	400	200
<u>Secondary Contact⁵</u>		
ERW, ESW, NSW, Reservoirs, Lakes	2000	1000
All Other Waters	2000	1000

- b. Extension of primary contact season

Current: May 1 to September 30

Proposed: April 1 to October 31

- c. Removal of assessment language and revision of geometric mean duration.

REMOVE: For assessment of Individual Sample Criteria– at least eight (8) data points

REMOVE: For calculation and assessment of Geometric Mean – calculated on a minimum of five (5) samples spaced evenly and within a thirty (30)-day period.

EDIT: For calculation of Geometric Mean – all samples taken within a primary contact recreation season.

II. Site specific pH for five assessment units

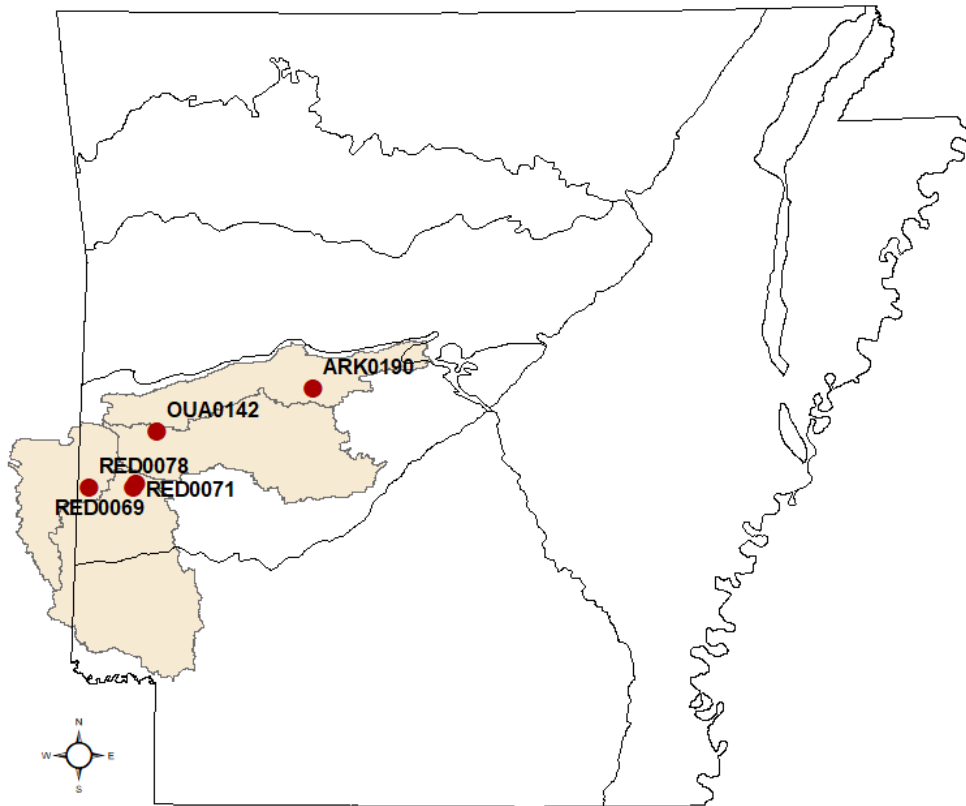
This proposal is for the revision of current pH criteria to site specific pH criteria for five waterbody assessment units (AUs) located in West Central and Southwest Arkansas. The rationale behind the proposed criteria revision is based on existing and available water quality data from the Arkansas Department of Energy and Environment, Division of

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Environmental Quality (DEQ) Water Quality Monitoring Station (WQS) as well as biological data available for these AUs.

Site Names	Assessment Units	Monitoring Stations	Monitored period	Current Criterion	Propose Criterion
Dry Fork Creek	AR_11110206_914	ARK0190	2/29/16-8/27/18	6.0-9.0 su	5.5- 8.5 su
Irons Fork Creek	AR_08040101_838	OUA0142	2/29/16-8/28/18		
Barren Creek	AR_11140108_907	RED0078	2/22/16-8/28/18		
Short Creek	AR_11140109_719	RED0071	2/23/16-7/10/18		
Caney Creek	AR_11140109_921	RED0069	3/15/16-7/10/18		



Legend

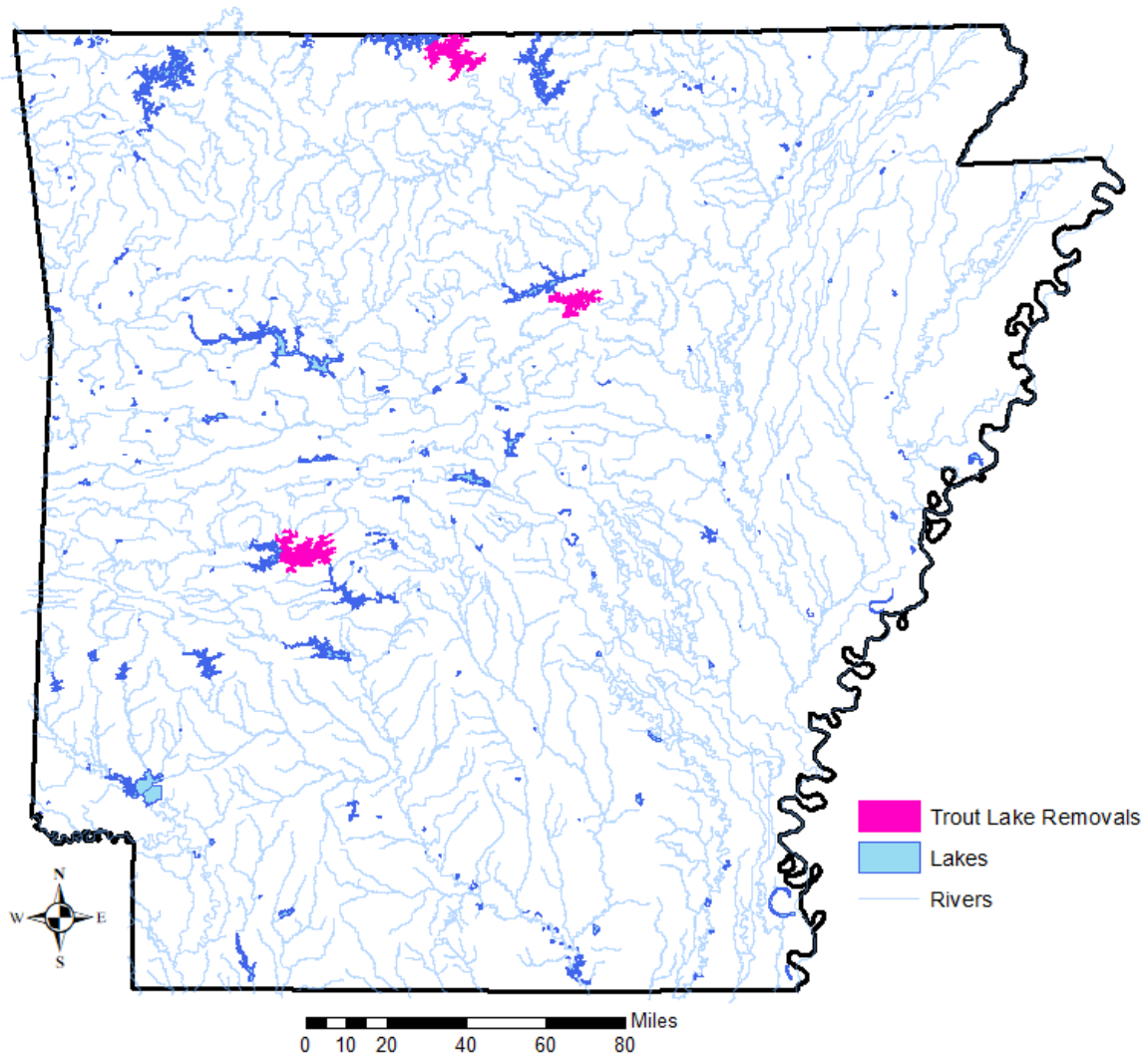
- pH Focus Area Monitoring Stations
- Ecoregions
- pH Focus Area HUC8

III. Trout Use Removal from three lakes

- a. AGFC no longer stocks trout in Bull Shoals Reservoir, Greers Ferry Reservoir, and Lake Ouachita. AGFC also does not manage these lakes for trout. (personal communication Christy Graham, 2018 and 2021)

Lake	<u>Current Standards</u>		<u>Updated Standards</u>	
	Temperature °C	DO mg/L	Temperature °C	DO mg/L
Bull Shoals Reservoir	20 (68 °F)	6	32 (89.6 °F)	5
Greers Ferry Reservoir	20 (68 °F)	6	32 (89.6 °F)	5
Lake Ouachita	20 (68 °F)	6	32 (89.6 °F)	5

Proposed Trout Use Removals

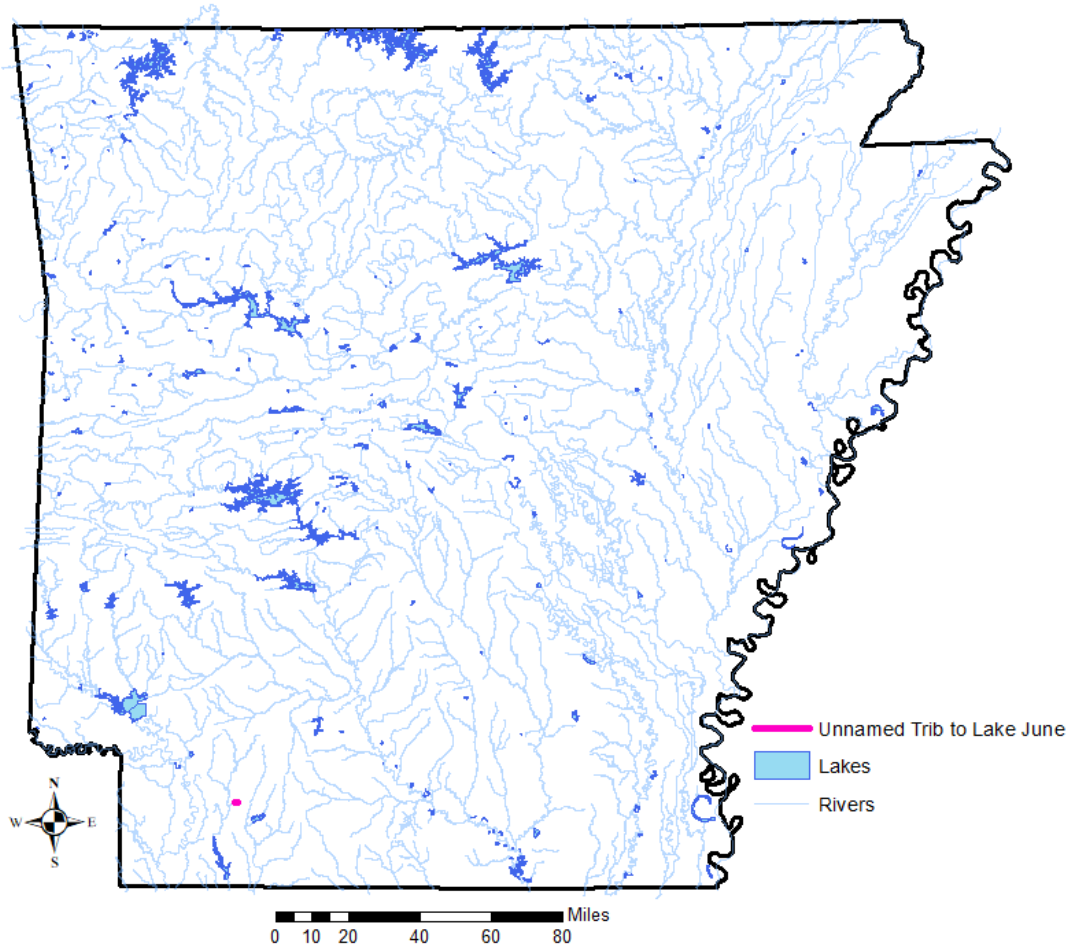


IV. Unnamed Tributary to Lake June site specific temperature removal

- a. Remove site specific temperature criteria “Unnamed tributary of Lake June below Entergy Couch Plant to confluence with Lake June – maximum water temperature 95 degrees F (limitation of 5 degrees above natural temperature does not apply) (GC-1, #30).”

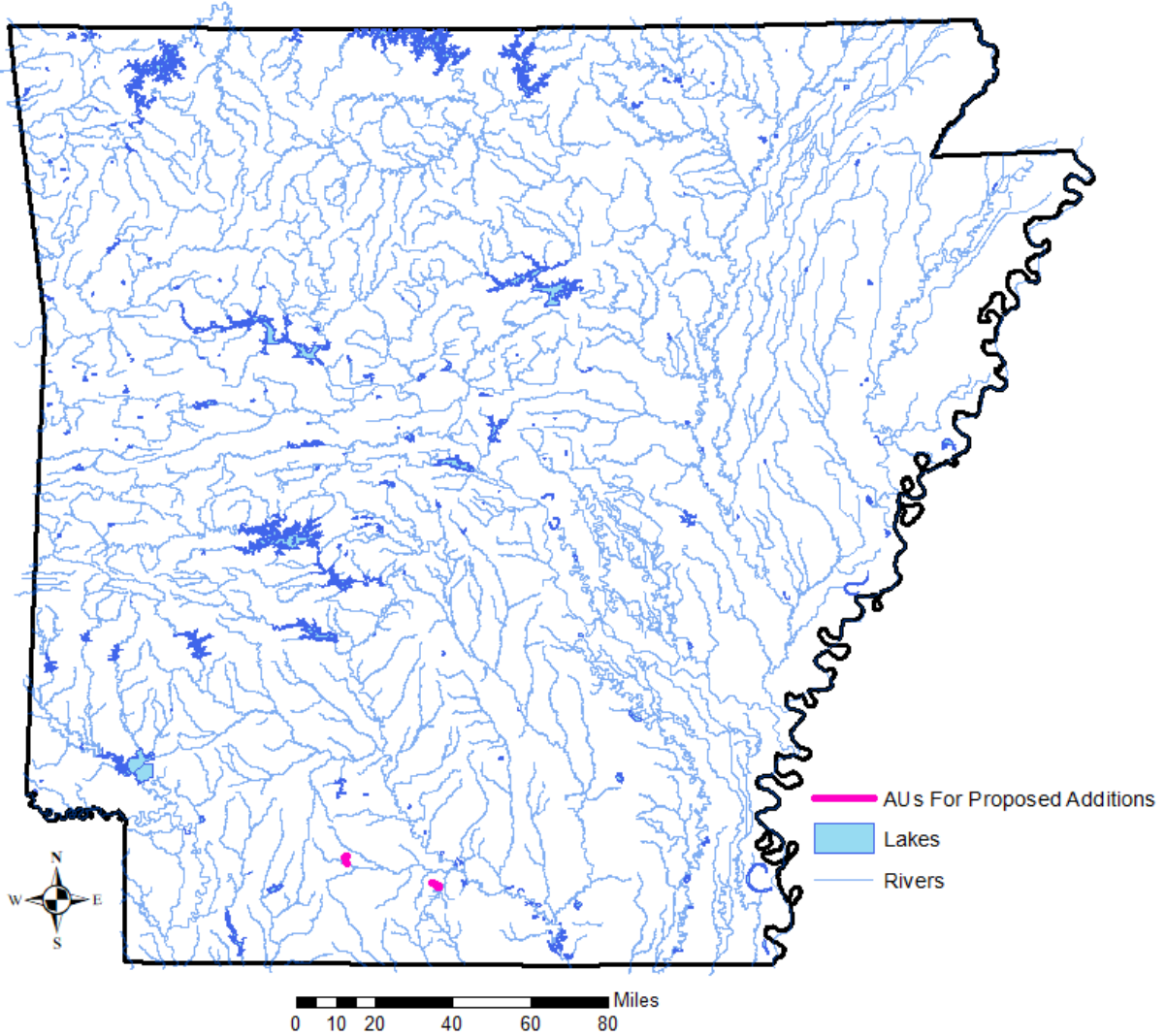
Stream	Current Standards	Updated Standards
Unnamed Trib. to Lake June	35 °C (95°F)	30 °C (68°F)

Proposed Site Specific Temperature Removal



- V. Adding fishable/swimmable uses for two small watershed assessment units and removing associated site specific dissolved oxygen criteria.

Proposed Additions of Fishable/Swimmable Uses



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a. Current Rule 2 Language: Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC-2, #2)

UAA Date: October 1986

Was fish or macroinvertebrate data collected during the study? No, "... omitted because of the obvious absence of fishlife in this stream as a result of very limited water volumes and fish habitat."

Watershed size: 1.88 square miles determined using USGS StreamStats.

NPDES status: No active NPDES permits.

Proposed Rule 2 revisions:

- Remove current Rule 2 language "Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC-2, #4)".
- Remove site specific criteria "Year-round DO 2 mg/L".
- Add seasonal aquatic life and secondary contact recreation.

b. Current Rule 2 Language: Unnamed tributary to Flat Creek - no fishable/swimmable uses (GC-2, #4)

UAA Date: October 1986

Was fish or macroinvertebrate data collected during the study? No, "... it was apparent that insufficient water quantity and habitat existed to support this use."

Watershed size: 1.32 square miles determined using USGS StreamStats.

NPDES status: One active NPDES individual permit.

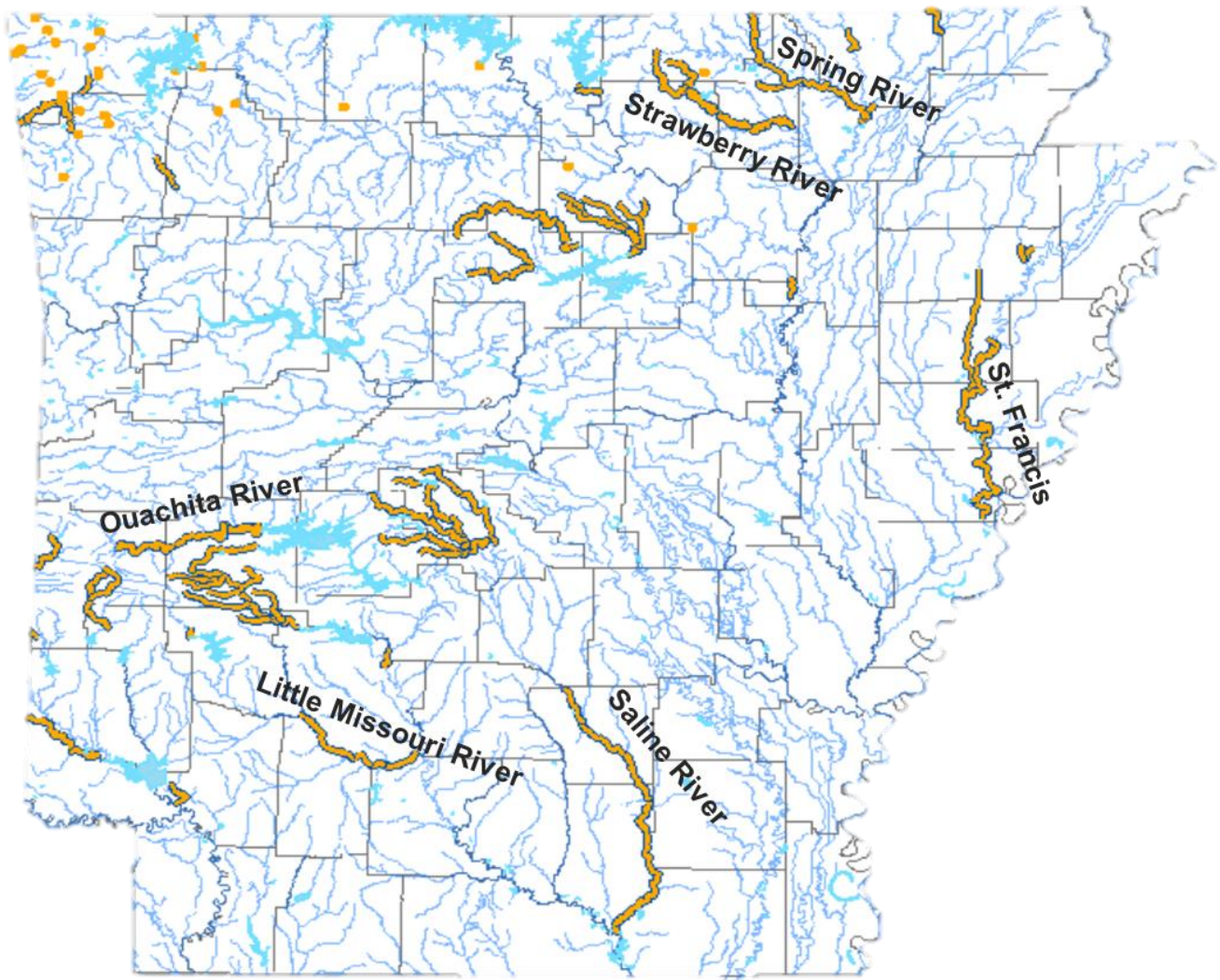
Proposed Rule 2 revisions:

- Remove current Rule 2 language "Unnamed tributary to Flat Creek - no fishable/swimmable uses (GC-2, #2)".
- Remove site specific criteria "Year-round DO 2 mg/L".
- Add seasonal aquatic life and secondary contact recreation.

VI. Additional species listing on current Ecological Sensitive Waterbodies (ESW)

Ecologically Sensitive Waterbody - This beneficial use identifies segments known to provide habitat within the existing range of threatened, endangered or endemic species of aquatic or semi-aquatic life forms. (For specific listings, refer to Appendices A and D)

DEQ proposes an updated list of species documented in currently designated ESW's. This update consists of species in one of the following: Federal Status (Listed Endangered, Listed Threatened), State Rank (S1 – Critically imperiled, S2- Imperiled, S3 – Vulnerable), or endemic.



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Proposed species additions are in **red text**.

Ozark Highlands

Ecologically Sensitive Waterbodies

- Cave Springs Cave, Logan Cave and numerous springs and spring-fed tributaries which support southern cavefish, Ozark cavefish, Arkansas darter, least darter, Oklahoma salamander, cave snails, cave crawfish, and unique invertebrates (OH-1, OH-2, OH-3)
- Strawberry River - location of **Rabbitsfoot, Spectaclecase, Snuffbox, Western Fanshell, Ouachita Kidneyshell, Purple Lilliput, Scaleshell, Fat Pocketbook, Pink Heelsplitter, Pondhorn, Elktoe, Ozark Pigtoe, Hickorynut, Round Pigtoe, Lilliput, Rainbow, and Bleedingtooth mussels; Least Brook Lamprey, Mooneye, Ozark Shiner, Western Sand Darter, Slenderhead Darter, Gilt Darter, and Strawberry Darter** (OH-3, OH-4)
- Little Strawberry River – location of the **Curtis Pearlymussel, Rabbitsfoot, Spectaclecase, Snuffbox, Pink Mucket, Pink Heelsplitter, Pondhorn, Elktoe, Ozark Pigtoe, Hickorynut, Round Pigtoe, and Lilliput mussels; Ozark Shiner and Strawberry Darter** (OH-3)
- Spring River – location of **Curtis Pearlymussel, Rabbitsfoot, Spectaclecase, Scaleshell, Ohio Pigtoe, Ouachita Kidneyshell, Salamander, Purple Lilliput, Ellipse, Bleedingtooth, Rainbow, Pink Heelsplitter, Pondhorn, Fawnsfoot, Elktoe, Ozark Pigtoe, Hickorynut, Round Pigtoe, Lilliput, Snuffbox, and Pink Mucket mussels; Ozark hellbender; Least Brook Lamprey, Mooneye, Blue Sucker, Silver Redhorse, Pealip Redhorse, Western Sand Darter, Current Darter, Gilt Darter, Saddleback Darter, Slenderhead Darter, and Stargazing Darter** (OH-4)
- Rock Creek – location of **Curtis Pearlymussel, Rabbitsfoot, Spectaclecase, Pink Heelsplitter, Pondhorn, Elktoe, Ozark Pigtoe, Hickorynut, Round Pigtoe, Lilliput, Snuffbox, and Pink Mucket mussels; Ozark hellbender** (OH-4)
- Eleven Point River - location of **Ozark hellbender; American Eel, Current Darter, Gilt Darter, and Stargazing Darter; Rabbitsfoot, Curtis Pearlymussel, Spectaclecase, Pink Mucket, Ouachita Kidneyshell, Bleedingtooth mussel, Pink Heelsplitter, Pondhorn, Elktoe, Ozark Pigtoe, Hickorynut, Round Pigtoe, and Lilliput mussels** (OH-4)
- Current River - location of **Rabbitsfoot, Curtis Pearlymussel, Snuffbox, Spectaclecase, Ouachita Kidneyshell, Western Fanshell, Pink Heelsplitter, Pondhorn, Elktoe, Ozark Pigtoe, Hickorynut, Round Pigtoe, Lilliput, Flat Floater, and Pink Mucket mussels** (OH-4)
- Illinois River - location of **Neosho Mucket, Rabbitsfoot, Purple Lilliput, Ouachita Kidneyshell, Ellipse, Rainbow, Pink Heelsplitter, Pondhorn, Elktoe, Ozark Pigtoe, Round Pigtoe, and Lilliput mussels; Redspot Chub, Highfin Carpsucker, Pealip Redhorse, Sunburst Darter, and Highland Darter** (OH-1)

Boston Mountains

Ecologically Sensitive Waterbodies

- Middle, South, and Devils Forks of Little Red River including Beech Creek, Tomahawk Creek, Turkey Creek, Lick Creek, Raccoon Creek, Little Raccoon Creek, and Archey Creek above Greers Ferry Reservoir - location of **Autumn Darter, yellowcheek darter; Pink Mucket, Rabbitsfoot, Snuffbox, Bleedingtooth mussel, Purple Lilliput, Pyramid Pigtoe, Ouachita Kidneyshell, Sandbank Pocketbook, Southern Hickorynut, Hickorynut, Rainbow, Pondhorn, Elktoe, Ozark Pigtoe, Round Pigtoe, Hickorynut, Lilliput, and Speckled Pocketbook mussel** (except Devils Fork) (BM-2, BM-3)
- Foshee Cave - location of aquatic cave snail (BM-3)
- Upper White River - location of **Autumn Darter, Highland Darter, and longnose darter; Pink Heelsplitter, Elktoe, Pondhorn, Ozark Pigtoe, Round Pigtoe, Hickorynut, and Lilliput mussels** (BM-1)

Ouachita Mountains

Ecologically Sensitive Waterbodies

- Ouachita River above Lake Ouachita - location of Caddo madtom, **Ouachita darter, peppered shiner, Kiamichi Shiner, Beaded Darter, Saddleback Darter, Stargazing Darter; Rabbitsfoot, Elktoe, Pondhorn, Hickorynut, Lilliput, and Arkansas Fatmucket mussel** (OM-1)
- South Fork Ouachita River - location of **Rabbitsfoot, Pondhorn, Lilliput, Hickorynut, Arkansas Fatmucket mussel; Caddo madtom, Redspot Chub, Peppered Shiner, Beaded Darter, and Paleback Darter** (OM-1)

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- Caddo River and all tributaries above DeGray Reservoir - location of paleback darter, Caddo madtom, **Beaded Darter (excluding tributaries); Rabbitsfoot, Scaleshell, Slippershell, Western Fanshell, Southern Pocketbook, Elktoe, Pondhorn, Lilliput, Hickorynut, and Arkansas Fatmucket Mussel (OM-1, OM-2)**
- Mountain Fork River - location of leopard darter and **Ouachita Shiner; “Arkoma” Fatmucket, Pondhorn, Hickorynut, Round Pigtoe, and Lilliput mussels (OM-1)**
- Cossatot River above Gillham Reservoir - location of leopard darter, **Ouachita Shiner and Brown Bullhead; Ouachita Rock Pocketbook, Spectaclecase, Pink Mucket, Rabbitsfoot, Louisiana Pigtoe, “Arkoma” Fatmucket, Pondhorn, Hickorynut, Round Pigtoe, and Lilliput mussels (OM-1)**
- Saline River including Alum, Middle, North and South Forks, and Ten Mile Creek - location of Ouachita madtom, **Kiamichi Shiner (North and Alum Fork only), Brown Bullhead (Middle Fork only); Pink Mucket, Scaleshell, Rabbitsfoot, Winged Mapleleaf, Lilliput, Gulf Mapleleaf, Southern Mapleleaf, Hickorynut, Elktoe, Pondhorn, Fawnsfoot, and Arkansas Fatmucket Mussel (except South fork and Ten Mile Creek) (OM-2)**
- Little Missouri River above Lake Greeson - location of Caddo madtom; **Rabbitsfoot, Pondhorn, Hickorynut, Lilliput, and Elktoe mussels (OM-1)**
- Mayberry Creek (tributary to Hallman's Creek) - location of paleback darter; **Pondhorn, Elktoe, Hickorynut, and Lilliput mussels (OM-2)**
- Robinson Creek - location of leopard darter; **Spectaclecase, Ouachita Rock Pocketbook, Louisiana Pigtoe, “Arkoma” Fatmucket, Pondhorn, Hickorynut, and Lilliput mussels (OM-1)**

Gulf Coastal

Ecologically Sensitive Waterbodies

- Little River above Millwood Reservoir - location of **Rocky Shiner, Bluehead Shiner, Western Starhead Topminnow; Rabbitsfoot, Spectaclecase, Pondhorn, Louisiana Pigtoe, Fawnsfoot, Hickorynut, Southern Mapleleaf, Gulf Mapleleaf, Lilliput, Ouachita rock pocketbook, and pink mucket mussels (GC-1)**
- Grassy Lake and Yellow Creek below Millwood Reservoir - unique ecosystem and biota **including Alligator Gar and Blackspot Shiner; Ouachita Rock Pocketbook, Pondhorn, Lilliput, Louisiana Pigtoe, Hickorynut, and Round Pigtoe mussels (GC-1)**
- Lower Little Missouri River - location of peppered shiner, **American Eel, Alabama Shad, Crystal Darter, Ouachita darter, Saddleback Darter, and Stargazing Darter; Rabbitsfoot, Winged Mapleleaf, Pink Mucket, Pondhorn, Lilliput, and Elktoe mussels (GC-2)**
- Lower Saline River - location of peppered shiner, crystal darter, goldstripe darter, **Western Sand Darter, Saddleback Darter, and Stargazing Darter; Rabbitsfoot, Winged Mapleleaf, Pink Mucket, Pondhorn, Lilliput, Gulf Mapleleaf, Southern Mapleleaf, Hickorynut, Elktoe, and Fawnsfoot mussels (GC-3)**
- Ouachita River near Arkadelphia - location of **Scaleshell, Rabbitsfoot, Arkansas Fatmucket, Winged Mapleleaf, Pondhorn, Lilliput, Hickorynut, Elktoe, Flat Floater, Ouachita Rock Pocketbook, and Pink Mucket mussels; American Eel, Alabama Shad, Crystal Darter, Saddleback Darter, and Stargazing Darter (GC-4)**

Delta

Ecologically Sensitive Waterbodies

- Lower St. Francis River and lower 10 miles of Straight Slough - location of **Spectaclecase, Pondhorn, Lilliput, Pink Heelsplitter, Fawnsfoot, Elktoe, Gulf Mapleleaf, Southern Mapleleaf, Round Pigtoe, Hickorynut, Fat Pocketbook mussel; Paddlefish, Shoal Chub, Blue Sucker, and Crystal Darter (D-2, D-4)**
- Right Hand Chute at confluence with St. Francis River - location of **Spectaclecase, Pondhorn, Lilliput, Hickorynut, Round Pigtoe, Pink Heelsplitter, Fawnsfoot, Tapered Pondhorn, Fat Pocketbook mussels (D-2)**
- Departe Creek - location of **Fat Pocketbook, Spectaclecase, Rabbitsfoot, Pink Mucket, Pondhorn, Lilliput, Hickorynut, Round Pigtoe, Pink Heelsplitter, and Flat Floater mussels (D-1)**
- Black River at mouth of Spring River - location of **Curtis Pearlymussel, Rabbitsfoot, Spectaclecase, Snuffbox, Pondhorn, Lilliput, Hickorynut, Round Pigtoe, Pink Mucket mussels; Lake Sturgeon and Sabine Shiner (D-1)**

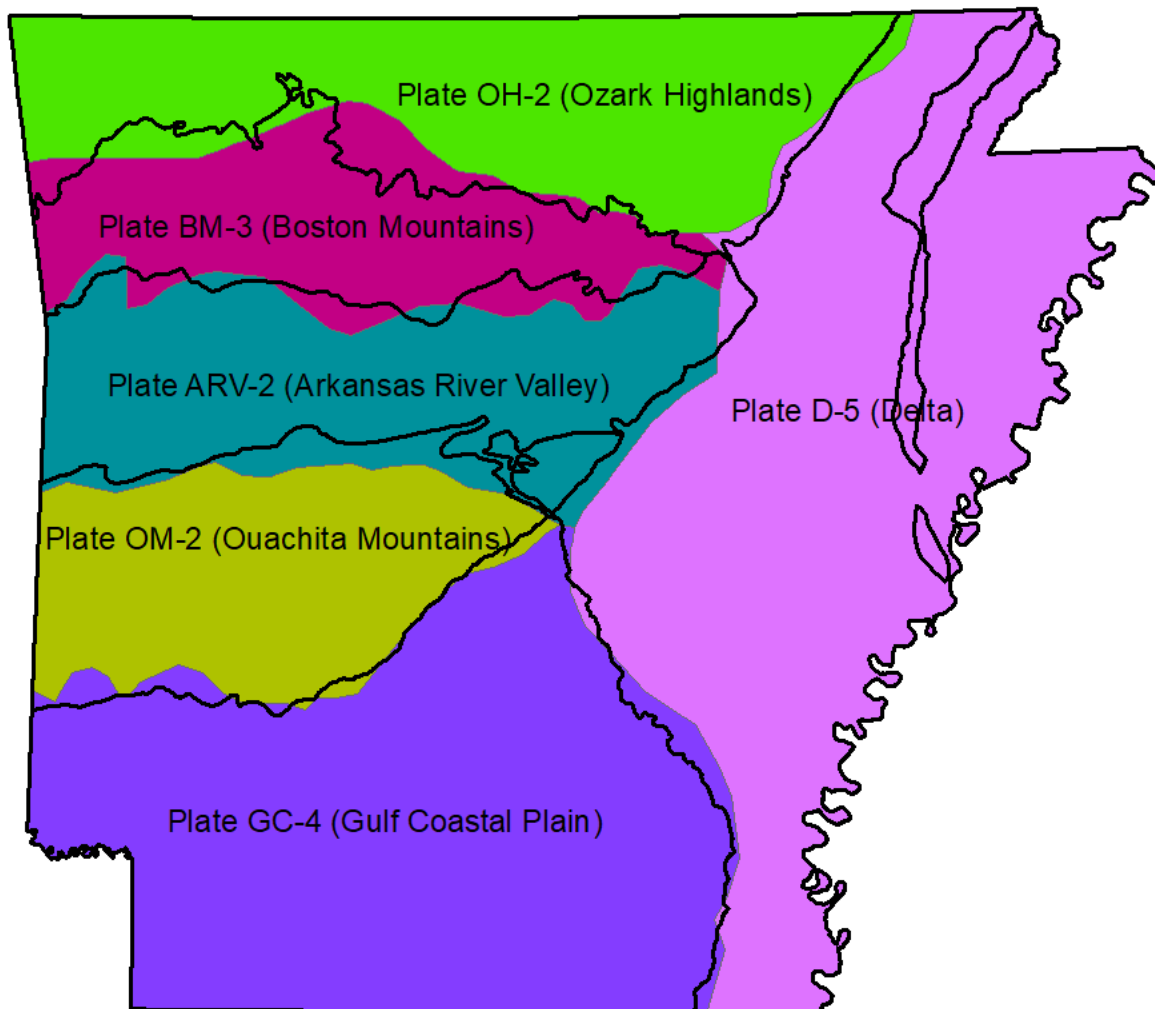
VII. Ecoregion boundary updates

Current Arkansas Ecoregions were delineated in the mid 1980s using land surface forms, natural vegetation, soil types and land use.

Higher quality spatial data and analysis tools have allowed the USEPA to increase the resolution of ecoregion boundary lines.

Characteristics considered now include geology, physiography, climate, soils, land use, wildlife, hydrology, vegetation and more.

New Arkansas Ecoregion lines have higher resolution to better reflect the true geographical boundaries of our 7 distinct ecoregions.



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Number of permitted facilities that would be considered within a different ecoregion than currently noted in Rule 2.

Rule 2 Ecoregion	Omernik Level 3 Ecoregion	Number of Permits Changing
Arkansas River Valley	Boston Mountains	3
Arkansas River Valley	Mississippi Alluvial Plain	16
Arkansas River Valley	Ouachita Mountains	21
Boston Mountains	Arkansas River Valley	4
Boston Mountains	Ozark Highlands	7
Delta	Gulf Coastal Plain	3
Delta	Ozark Highlands	6
Gulf Coastal Plain	Mississippi Alluvial Plain	2
Gulf Coastal Plain	Ouachita Mountains	1
Ouachita Mountains	Gulf Coastal Plain	9
Ozark Highlands	Boston Mountains	2
Ozark Highlands	Mississippi Alluvial Plain	4
	Total Permits Changing:	78

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DEQ ambient water quality monitoring stations that would be considered within a different ecoregion than currently noted in Rule 2.

Site Code	Ambient DEQ Monitoring Station Site Description	Rule 2 Ecoregion	Omernik Ecoregion
ARK0050	Bayou Meto on SR161 just S of Jacksonville	Arkansas River Valley	Mississippi Alluvial Plain
ARK0131	Fourche Creek just off I440 in East Little Rock	Arkansas River Valley	Mississippi Alluvial Plain
WHI0059	Little Red River on SR367/Lakeshore Dr. S of Searcy	Arkansas River Valley	Mississippi Alluvial Plain
ARK0060	Bayou Meto on West Main Street Bridge in Jacksonville	Arkansas River Valley	Ouachita Mountains
ARK0042	Mulberry River just off I40 (dirt trail) 11 miles E of Alma	Boston Mountains	Arkansas River Valley
ARK0043	Big Piney Creek on SR164 1.3 miles S of Bullfrog Valley	Boston Mountains	Arkansas River Valley
ARK0044	Illinois Bayou on SR7 1.2 miles NW of Dover	Boston Mountains	Arkansas River Valley
ARK0167	West Fork Point Remove Creek on CR8/Dayton Rd	Boston Mountains	Arkansas River Valley
ARK0168	Trimble Creek on SR389	Boston Mountains	Arkansas River Valley
ARK0169	West Fork Point Remove Creek on State Road 389	Boston Mountains	Arkansas River Valley
ARK0170	South Fork Little Red River on County Road 23	Boston Mountains	Arkansas River Valley
ARK0007A	Barren Fork on SR45 E in Dutch Mills	Boston Mountains	Ozark Highlands
WHI0049A	Buffalo River on Hwy 65 near St. Joe	Boston Mountains	Ozark Highlands
WHI0200	Crooked Creek on Hudson Road S of Harrison	Boston Mountains	Ozark Highlands
WHI0172	Lost Creek on Lacy Drive near Jonesboro	Delta	Mississippi Valley Loess Plains
WHI0196	Big Creek ditch on SR91/Dan Ave NW of Jonesboro	Delta	Mississippi Valley Loess Plains
UWBYB03	Bayou Bartholomew on SR54 at Garrett Bridge	Gulf Coastal Plain	Mississippi Alluvial Plain
ARK0147C	Fourche Creek off Gum Springs Rd at Benny Craig Park - Audubon 3	Ouachita Mountains	Gulf Coastal Plain
ARK0147F	Fourche Creek on Otter Creek Road near Stagecoach Rd - Audubon 6	Ouachita Mountains	Gulf Coastal Plain
ARK0147H	Fourche Creek off Blount Rd in Hindman Park	Ouachita Mountains	Gulf Coastal Plain
OUA0026	Saline River near Benton ,AR on SR229	Ouachita Mountains	Gulf Coastal Plain
WHI0051	West Fork White River on SR16 E of Fayetteville	Ozark Highlands	Boston Mountains
WHI0052	White River on SR45/W Boman Rd near Goshen	Ozark Highlands	Boston Mountains
WHI0100	W Fork White River on CR55/Dead Horse Mountain Rd	Ozark Highlands	Boston Mountains
WHI0103	Middle Fork White River on CR51/S Harris Dr SW of Elkins	Ozark Highlands	Boston Mountains
WHI0004	Current River on Hwy 62/67 near Pocahontas	Ozark Highlands	Mississippi Alluvial Plain
WHI0025	Black River on Hwy 67/SR90 at Pocahontas	Ozark Highlands	Mississippi Alluvial Plain
		Total Ambient Stations Affected:	27