U.S. Environmental Protection Agency (EPA) Notes Concerning the State of Arkansas' Water Quality Standards (WQS) -

Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas

Note: EPA utilizes the last federally approved version of the Arkansas WQS submitted for triennial revision (October 26, 2007) in reference to the approved/disapproved modifications below.

The following were adopted by the Arkansas Pollution Control and Ecology Commission (APC&EC) on September 28, 2007
Effective under State Law on October 10, 2007
Effective under Federal Law on January 24, 2008

With the exceptions described below, EPA has approved the following provisions within *Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas* (either as new or revised provisions adopted by the APC&EC on September 28, 2007, or in previous versions of this document).

Chapter 1: Authority, General Principles, and Coverage has been approved with the following exception: EPA has determined that it is not obligated to take action under Clean Water Act (CWA) § 303(c) on the new definitions for "All Flows," "Base Flows," and "*Escherichia coli*."

Chapter 2: Antidegradation Policy has been approved with the following exception: EPA has determined that it is not obligated to take action under CWA § 303(c) on the agency name revision from "Arkansas Soil and Water Conservation Commission" to "Arkansas Natural Resources Commission."

Chapter 3: Waterbody Uses has been approved with the exceptions identified below.

- Regulation 2.304(A) - EPA has disapproved the following sentences:

> For the purposes of this subsection, the Director may determine that a proposed physical alteration of the habitat is not significant if it is demonstrated that:
>
> (1) the proposed physical alteration of habitat (a) will not impair water quality; (b) will not impair the natural flow regime; and (c) will not impair the habitat of fish, shellfish or other forms of aquatic life; and
> (2) there is no feasible alternative to the proposed project.
>
> A request under this subsection for a determination that a proposed physical alteration of habitat is not significant shall be submitted to the Director in accordance with the procedures set forth in Appendix D.

Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved version of Regulation 2.304 (see April 23, 2004, version of Regulation No. 2) remains in effect for CWA purposes.

- Regulation 2.306 – EPA has determined that it is not obligated to take action under CWA § 303(c) on the following *revisions* to Regulation 2.306 denoted by underlined text:

> Reg. 2.306 Procedures for Removal of Any Designated Use Except Fishable/Swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway, and Modification of Water Quality Criteria not Related to These Uses
>
> This procedure is applicable in those cases where the Commission chooses to establish less stringent water quality criteria without affecting a fishable/swimmable use or the designated use of Extraordinary Resource Water or Ecologically Sensitive Waterbody or Natural and Scenic Waterway, or when the Commission chooses to remove a use which is not an existing use other than fishable/swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway.
>
> The Commission may allow a modification of the water quality criteria or the removal of a use which is not a fishable/swimmable use or designated use of Extraordinary Resource Water or Ecologically Sensitive Waterbody or Natural and Scenic Waterway to accommodate important economic or social development in a local area, if existing uses are maintained and protected fully and the requirements for public participation in the Continuing Planning Process are met. As a minimum, the following information shall be submitted to the Director before initiation of the public participation process:

- Regulation 2.310 – EPA has determined that it is not obligated to take action under CWA § 303(c) on Regulation 2.310.

- Regulation 2.311 – EPA has determined that it is not obligated to take action under CWA § 303(c) on Regulation 2.311.

Chapter 4: General Standards has been approved in its entirety.

Chapter 5: Specific Standards has been approved with the exceptions identified below.

- Regulation 2.503 – EPA has disapproved the words “All Flows” where used throughout Regulation 2.503. Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved column heading title of “Storm-Flow” in Regulation 2.503 and the word “storm-flow” within the text of Regulation 2.503 remain in effect for CWA purposes (see April 23, 2004, version of Regulation No. 2).

- Regulation 2.509 – EPA has not yet taken action on the final sentence in the first paragraph of Regulation 2.509 which states, “However, when excess nutrients result in an impairment, based upon Department assessment methodology, by any established, numeric water quality standard, the waterbody will be determined to be impaired by nutrients.”

- Regulation 2.511(A) –

  - EPA has determined that it is not obligated to take action under CWA §303(c) on the inclusion of the subheading title “(A) Site-Specific Mineral Quality Criteria” in Regulation 2.511.

  - EPA has disapproved the phrase “the monthly average” in the following sentence within Regulation 2.511: “The following limits apply to the streams indicated, and represent the monthly average concentrations of chloride (Cl^-), sulfate ($SO_4^=$) and total dissolved solids (TDS). Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA

purposes until approved by EPA. Therefore, the previously approved version of this sentence (see April 23, 2004, version of Regulation No. 2) remains in effect for CWA purposes and is stated as follows: "The following limits apply to the streams indicated, and represent concentrations of chloride (Cl^-), sulfate ($SO_4^=$) and total dissolved solids (TDS) not to be exceeded in more than one (1) in ten (10) samples collected over a period of not less than 30 days or more than 360 days."

- EPA has disapproved the site-specific chloride, sulfate, and TDS criteria for "Bayou Bartholomew" in the Ouachita River Basin. Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved chloride, sulfate, and TDS criteria of 30 mg/L, 30 mg/L, and 220 mg/L, respectively, for Bayou Bartholomew (see April 23, 2004, version of Regulation No. 2) remain in effect for CWA purposes.

- EPA has determined that it is not obligated to take action under CWA §303(c) on the inclusion of the asterisks that follow the site-specific chloride and TDS criteria for "Walker Branch" in the Ouachita River Basin within Regulation 2.511(A).

- EPA has determined that it is not obligated to take action under CWA §303(c) on the words "Hurricane Cr from" associated with "Ben Ball Bridge to Hwy 270" and "Hwy 270 to Saline River" in the Ouachita River Basin within Regulation 2.511(A).

- Regulation 2.511(B) –

  - EPA has determined that it is not obligated to take action under CWA §303(c) on the inclusion of the subheading title "(B) Ecoregion Reference Stream Minerals Values" in Regulation 2.511.

  - EPA has disapproved the following table in Regulation 2.511(B):

CALCULATED ECOREGION REFERENCE STREAM VALUES (mg/l)

Ecoregion	Chlorides	Sulfates	TDS
Ozark Highlands	17.3	22.7	250
Boston Mountains	17.3	15	95.3
Arkansas River Valley	15	17.3	112.3
Ouachita Mountains	15	20	142
Gulf Coastal Plains	18.7	41.3	138
Delta	48	37.3	411.3

Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved version of this table as shown below (also see April 23, 2004, version of Regulation No. 2) remains in effect for CWA purposes.

ECOREGION REFERENCE STREAM DATA (mg/l)

	Cl^-	SO4=	TDS
Ozark Highlands	13	17	240
Boston Mountains	13	9	85
Arkansas River Valley	10	13	103
Ouachita Mountains	6	15	128
Gulf Coastal Plains	14	31	123
Delta	36	28	390

Chapter 6: Effective Date has been entirely approved.

Appendix A: Designated Uses, Specific Standards and Maps of Waters of the State by Ecoregions has been approved with the exceptions identified below.

- Within the "Specific Standards" part of Appendix A for each of the six Arkansas ecoregions, the phrase "base/all" follows the row heading titled "Turbidity (NTU)." EPA has disapproved the word "all" in all six of these instances where it is used in Appendix A. Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved word "storm" (see April 23, 2004, version of Regulation No. 2) remains in effect (instead of "all") for CWA purposes.

- Gulf Coastal Ecoregion - Specific Standards –

  - EPA has determined that it is not obligated to take action under CWA §303(c) on the name "Chemtura" that is identified in the following bullet within the Gulf Coastal Ecoregion – Specific Standards part of Appendix A: "Bayou de Loutre from Chemtura outfall to Loutre Creek – maximum water temperature 96°F (GC-2, #29)."

  - Within the Gulf Coastal Ecoregion – Specific Standards part of Appendix A, the following is provided: "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)." EPA has disapproved the phrase "(limitation of 5 degrees above natural temperature does not apply)." Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, this limitation continues to apply to the unnamed tributary of Lake June for CWA purposes.

Appendix B: Environmental Improvement Project has been entirely approved.

Appendix C: Scientific Names of Fishes has been approved with the exceptions identified below.

- EPA has determined that it is not obligated to take action under CWA §303(c) on the common name for *Esox americanus* (Redfin Pickerel) in Appendix C.

- EPA has determined that it is not obligated to take action under CWA §303(c) on the inclusion of the Current River darter and the Strawberry River darter in Appendix C.

Appendix D: Procedures for Obtaining Director's Determination on the Proposed Physical Alteration of an Extraordinary Resource Waters, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway has been disapproved in its entirety.

EPA has determined that it is not obligated to take action under CWA § 303(c) on Appendix E: Criteria to be Considered in Determining Whether the Designated Use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterbody Should be Maintained.

EPA has determined that it is not obligated to take action under CWA § 303(c) on Appendix F: Factors Considered in Adding the Designated Use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a Waterbody or Waterbody Segment.

The following were adopted by the Arkansas Pollution Control and Ecology Commission (APC&EC) on October 26, 2007
Effective under State Law on November 25, 2007
Effective under Federal Law on May 23, 2008

With the exceptions described below, EPA has approved the following provisions within *Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas* (either as new or revised provisions adopted by the APC&EC on October 26, 2007, or in previous versions of this document).

Chapter 5: Specific Standards has been approved with the exceptions identified below.

Regulation 2.511

EPA approves site-specific chloride and sulfate criteria of 95 mg/L and 45 mg/L, respectively, only for the portions of Bayou Two Prairie that do not have the ERW designated use (i.e., from the mouth of Bayou Two Prairie to Bayou Two Prairie to the southern boundary of Smoke Hole Natural Area, and from Bayou Two Prairie to the northern boundary of Smoke Hole Natural Area to Bayou Two Prairie at its confluence with Rickey Branch). In other words, EPA's approval of the site-specific chloride and sulfate criteria of 95 mg/L and 45 mg/L, respectively, does not apply to the portion of Bayou Two Prairie adjacent to Smoke Hole Natural Area which is designated as an ERW.

EPA also approves site-specific chloride and sulfate criteria of 95 mg/L and 45 mg/L, respectively, for the following streams (also identified in Section I above): Bayou Meto (mouth to Bayou Two Prairie), Long Pond Slough, Castor Bayou, Cross Bayou, Little Bayou Meto, Bakers Bayou, Wabbaseka Bayou, Indian Bayou, Flat Bayou, Shumaker Branch, Skinner Branch, White Oak Branch, Caney Creek, Salt Bayou, Snow Bayou, Fish Trap Slough, Rickey Branch, Blue Point Ditch, Big Ditch, Main Ditch, Plum Bayou, Crooked Creek Ditch, Indian Bayou Ditch, Caney Creek Ditch, Salt Bayou Ditch, Bradley Slough, Tupelo Bayou, Dennis Slough, Buffalo Slough, Flynn Slough, Boggy Slough, Bear Bayou, Bubbling Slough, Five Forks Bayou, Government Cypress Slough, Brushy Slough, Tipton Ditch, Hurricane Slough, Newton Bayou, West Bayou, Brownsville Branch, Eagle Branch.

Note that for Bayou Meto and Bayou Two Prairie, the revisions to Regulation No. 2 which were submitted to EPA describe these segments as "Bayou Meto (mouth to Bayou Two Prairie)" and "Bayou Two Prairie (mouth to Rickey Branch)." However, APC&EC Minute Order No. 07-41 identifies the Pulaski/Lonoke County Line as the upstream extent of the Bayou Meto reach to which the site-specific chloride and sulfate criteria apply, rather than Bayou Two Prairie. Similarly, APC&EC Minute Order No. 07-41 identifies the Pulaski/Lonoke County Line as the upstream extent of the Bayou Two Prairie reach to which the site-specific chloride and sulfate criteria apply, rather than Rickey Branch. Therefore, the site-specific chloride and sulfate criteria of 95 mg/L and 45 mg/L, respectively, as submitted to EPA in Regulation No. 2, apply to a shorter segment length for these two streams than provided for in the segment descriptions identified in Minute Order No. 07-41. Although the segment descriptions submitted to EPA in Regulation No. 2 are different from the descriptions identified in Minute Order No. 07-41,

because these two segment descriptions and their associated site-specific chloride and sulfate criteria occur within the boundaries described in the minute order, EPA has determined that this difference does not affect the approval action described above.

EPA disapproves site-specific chloride and sulfate criteria of 95 mg/L and 45 mg/L, respectively, for the portion of Bayou Two Prairie which is designated as an ERW (i.e., Bayou Two Prairie adjacent to Smoke Hole Natural Area). Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved ecoregion-based criteria of 48 mg/L and 37.3 mg/L for chloride and sulfate, respectively, apply to the portion of Bayou Two Prairie adjacent to Smoke Hole Natural Area.

Appendix A: Designated Uses, Specific Standards and Maps of Waters of the State by Ecoregions has been approved with the exceptions identified below.

Delta Ecoregion - Specific Standards –

EPA has approved the site-specific chloride and sulfate criteria for the following waterbody segments identified within the Delta Ecoregion – Specific Standards part of Appendix A.

- Rocky Branch Creek - chlorides 64 mg/l (D-3, #4)
- Bayou Meto from Rocky Branch Creek to Bayou Two Prairie – chlorides 64 mg/ l (D-3, #4)
- Bayou Meto from mouth to Bayou Two Prairie- chlorides 95 mg/l; sulfates 45 mg/l (D-3, #4)
- Ditch No. 27 – sulfates 480 mg/l; TDS 1,200 mg/l; maximum water temperature 95°F (D-2, #5)
- Ditch No. 6 from Ditch No. 27 confluence to its mouth – sulfates 210 mg/l; TDS 630 mg/l
- (D-2, #6)
- Tyronza River from Ditch No. 6 confluence to its mouth – sulfates 60 mg/l – see Reg. 2.511
- (D-2, #7)
- Long Pond Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Castor Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Cross Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Bayou Two Prairie (mouth to Rickey Branch) – chlorides 95 mg/l; sulfates 45 mg/l
- Little Bayou Meto – chlorides 95 mg/l; sulfates 45 mg/l
- Bakers Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Wabbaseka Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Indian Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Flat Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Shumaker Branch – chlorides 95 mg/l; sulfates 45 mg/l
- Skinner Branch – chlorides 95 mg/l; sulfates 45 mg/l
- White Oak Branch – chlorides 95 mg/l; sulfates 45 mg/l
- Caney Creek – chlorides 95 mg/l; sulfates 45 mg/l
- Salt Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Snow Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Fish Trap Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Ricky Branch – chlorides 95 mg/l; sulfates 45 mg/l

- Blue Point Ditch- – chlorides 95 mg/l; sulfates 45 mg/l
- Big Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Main Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Plum Bayou– chlorides 95 mg/l; sulfates 45 mg/l
- Crooked Creek Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Indian Bayou Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Caney Creek Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Salt Bayou Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Bradley Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Tupelo Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Dennis Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Buffalo Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Flynn Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Boggy Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Bear Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Bubbling Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Five Forks Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Government Cypress Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Brushy Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Tipton Ditch – chlorides 95 mg/l; sulfates 45 mg/l
- Hurricane Slough – chlorides 95 mg/l; sulfates 45 mg/l
- Newton Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- West Bayou – chlorides 95 mg/l; sulfates 45 mg/l
- Brownsville Branch– chlorides 95 mg/l; sulfates 45 mg/l
- Eagle Branch– chlorides 95 mg/l; sulfates 45 mg/l

The following were adopted by the Arkansas Pollution Control and Ecology Commission (APC&EC) on October 26, 2007
Effective under Federal Law on April 14, 2009

With the exceptions described below, EPA has approved the following provisions within *Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas* (either as new or revised provisions adopted by the APC&EC on October 26, 2007, or in previous versions of this document).

Appendix A: Designated Uses, Specific Standards and Maps of Waters of the State by Ecoregions has been approved with the exceptions identified below.

Gulf Coastal Plain Ecoregion

EPA has **approved** the site-specific removal of the Domestic Water Supply use for the following waterbody segments identified within the Gulf Coastal Plain – Designated Uses part of Appendix A.

- Unnamed tributary from Great Lakes Chemical Company Outfall 002 to Bayou de Loutre*
- Unnamed tributary from Great Lakes Chemical Company Outfall 004 to Bayou de Loutre*

- Bayou de Loutre from mouth of UT004 to mouth of Loutre Creek
- Unnamed tributary from Great Lakes Chemical Company Outfall 003 (UT003) downstream to unnamed tributary to Little Cornie Bayou*
- Unnamed tributary of Little Cornie Bayou to confluence with Little Cornie Bayou*
- Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek*
- Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek*
- Flat Creek from the mouth of unnamed tributary to Flat Creek to the mouth of Haynes Creek*
- Haynes Creek from mouth of Flat Creek to confluence with Smackover Creek*
- Loutre Creek from Highway 15 South to the confluence of Bayou de Loutre
- Bayou de Loutre from Loutre Creek to the discharge for the City of El Dorado South facility
- Bayou de Loutre from the discharge for the City of El Dorado South downstream to the mouth of Gum Creek

* Effective under Federal Law on November 9, 2007

EPA has **disapproved** the site-specific chloride, sulfate, and TDS criteria for the following waterbody segments identified within the Gulf Coastal Plain Ecoregion – Specific Standards part of Appendix A. They are not effective for Clean Water Act purposes.

- Unnamed tributary from Great Lakes Chemical Company Outfall 002 to Bayou de Loutre- chloride 65, sulfate 35 mg/L, TDS 141 mg/L (GC-2, #31)
- Unnamed tributary from Great Lakes Chemical Company Outfall 004 to Bayou de Loutre- chloride 239 mg/L., TDS 324 mg/L (GC-2, #32)
- Bayou de Loutre from mouth of UT004 to mouth of Loutre Creek, chloride 278 mg/L (GC-2, #33)
- Unnamed tributary from Great Lakes Chemical Company Outfall 003 (UT003) downstream to unnamed tributary to Little Cornie Bayou – chloride 538 mg/L, sulfate 35 mg/L, and TDS 519 mg/L (GC-2, #34)
- Unnamed tributary of Little Cornie Bayou to confluence with Little Cornie Bayou – chloride 305 mg/L and TDS 325 mg/L (GC-2, #35)
- Little Cornie Bayou from mouth UTA to state line- chloride 215mg/L,sulfate 25mg/L and TDS 500mg/L. (GC-2, #36)
- Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek, Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37)
- Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38)
- Flat Creek from mouth of UTA to confluence with Haynes Creek, Chloride 165 mg/L, Sulfate 67 mg/L, TDS 560 mg/L (GC-2, #39)
- Haynes Creek from mouth of Flat Creek to confluence with Smackover Creek, Chloride 360 mg/L, Sulfate 55 mg/L, TDS 855 mg/L (GC-2, #40)
- Loutre Creek from Hwy 15 South to the confluence of Bayou de Loutre, Chloride, 256mg/l; Sulfate 997mg/l, TDS, 1756* (GC-3. #41)
- Bayou de Loutre from Loutre Creek to the discharge for the City of El Dorado South facility, Chloride, 264mg/l; Sulfate 635mg/l, TDS, 1236* (GC-3. #42)

- Bayou de Loutre from the discharge from the City of El Dorado-South downstream to the mouth of Gum Creek, Chloride, 250mg/l; Sulfate 431mg/l, TDS, 966 (GC-3. #43)
- Bayou de Loutre from the mouth of Gum Creek downstream to the mouth of Boggy Creek, Chloride, 250mg/l; Sulfate 345mg/l, TDS, 780 (GC-3. #44)
- Bayou de Loutre from the mouth of Boggy Creek downstream to the mouth of Hibank Creek, Chloride, 250mg/l; Sulfate 296mg/l, TDS, 750 (GC-3. #45)
- Bayou de Loutre from the mouth of Hibank Creek downstream to the mouth of Mill Creek, Chloride, 250mg/l; Sulfate 263mg/l, TDS, 750 (GC-3. #46)
- Bayou de Loutre from the mouth of Mill Creek downstream to the mouth of Buckaloo Branch, Chloride, 250mg/l; Sulfate 237mg/l, TDS, 750 (GC-3. #47)
- Bayou de Loutre from the mouth of Buckaloo Branch downstream to the mouth of Bear Creek, Chloride, 250mg/l; Sulfate 216mg/l, TDS, 750 (GC-3. #48)
- Bayou de Loutre from the mouth of Bear Creek to the final segment of Bayou de Loutre, Chloride, 250mg/l; Sulfate 198mg/l, TDS, 750(GC-3. #49)
- Bayou de Loutre (Final Segment) to the Arkansas / Louisiana State Line, Chloride, 250mg/l;, Sulfate 171 mg/l, TDS, 750(GC-3. #50)

The following were adopted by the Arkansas Pollution Control and Ecology Commission (APC&EC) on September 24, 2010 by way of a third party rulemaking
Effective under Federal Law on January 5, 2011

EPA has approved the following provisions within *Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas* (either as new or revised provisions adopted by the APC&EC on September 24, 2010, or in previous versions of this document).

EPA has **approved** the site-specific chloride, sulfate, and TDS criteria for the following waterbody segments identified within the Delta Ecoregion – Specific Standards part of Appendix A and Regulation 2.511 Mineral Quality

- Unnamed tributary to Big Creek – chlorides 71 mg/l, sulfates 60 mg/l, TDS 453 mg/l (D-1, #38)
- Big Creek from mouth of unnamed trib to Whistle Ditch – chloride 58 mg/l sulfates 49 mg/l (D-1, #39)
- Bayou DeView from Whistle Ditch to AR Hwy 14 – chloride 48 mg/l, sulfates 38 mg/l, TDS 411.3 mg/l (D-1, #40)
- Bayou DeView from AR Hwy 14 to its mouth – chloride 48 mg/l, sulfates 37.3 mg/l, TDS 411.3 (D-1, #41)

The following criteria were adopted by the Arkansas Pollution Control and Ecology Commission (APC&EC) on December 3, 2010 by way of a third party rulemaking
EPA disapproved them on August 31, 2011, and they are not effective for Clean Water Act purposes

EPA has disapproved the following provisions within *Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas* (either as new or revised

provisions adopted by the APC&EC on December 3, 2010, or in previous versions of this document).

- Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek, Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37)
- Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38)

The following were adopted by the Arkansas Pollution Control and Ecology Commission (APC&EC) on August 26, 2011 by way of a third party rulemaking
Effective under Federal Law on January 9, 2012

EPA has approved the following provisions within *Regulation No. 2: Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas* (either as new or revised provisions adopted by the APC&EC on August 26 2011, or in previous versions of this document)

EPA has **approved** the site-specific chloride, sulfate, and TDS criteria for the following waterbody segments identified within the Ouachita Mountains Ecoregion – Specific Standards part of Appendix A and Regulation 2.511 Mineral Quality

- Wilson Creek from a point approximately 0.85 mile upstream of Outfall 001 – chlorides 56 mg/l; sulfates 250 mg/l; TDS – 500 mg/l (OM-2, #6)
- Wilson Creek downstream of Outfall 001 to its mouth – chlorides 56 mg/l; sulfates 250 mg/l; TDS – 500 mg/l (OM-2, #7)

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 2

REGULATION ESTABLISHING WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF ARKANSAS

Adopted by the Arkansas Pollution Control and Ecology Commission on (October 26, 2007)

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SECRETARY OF STATE
STATE OF ARKANSAS
BY

Arkansas Pollution Control and Ecology Commission
Regulation No. 2, As Amended

Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas

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ARKANSAS
POLLUTION CONTROL
AND ECOLOGY COMMISSION

Regulation No. 2, As Amended

Regulation Establishing
Water Quality Standard for Surface Waters
of the State of Arkansas

CHAPTER 1: AUTHORITY, GENERAL PRINCIPLES, AND COVERAGE

Reg. 2.101 Authority

Pursuant to the provisions of SubChapter 2 of the Arkansas Water and Air Pollution Control Act (Act 472 of the Acts of Arkansas for 1949, as amended; Ark. Code Ann. 8-4-101 et seq, and in compliance with the requirements of the Federal Water Pollution Control Act, as amended, the Arkansas Pollution Control and Ecology Commission, (hereinafter referred to as "Commission") hereby promulgates this Regulation No. 2, as amended, establishing water quality standards for all surface waters, interstate and intrastate, of the State of Arkansas.

Reg. 2.102 Purpose

The water quality standards herein set forth are based upon present, future and potential uses of the surface waters of the State and criteria developed from statistical evaluations of past water quality conditions and a comprehensive study of least-disturbed, ecoregion reference streams. The standards are designed to enhance the quality, value and beneficial uses of the water resources of the State of Arkansas, to aid in the prevention, control and abatement of water pollution, to provide for the protection and propagation of fish and wildlife and to provide for recreation in and on the water. In establishing these standards, the Commission has taken into consideration the use and value of the streams for public water supplies, commercial, industrial and agricultural uses, aesthetics, recreational purposes, propagation of fish and wildlife, other beneficial uses, and views expressed at public hearings. The State of Arkansas has an exceptionally large volume of high quality water. With few exceptions the streams and lakes of Arkansas contain waters of a quality suitable for all legitimate uses without the necessity of unreasonable water treatment. Where man-made pollution exists, substantial progress has been made in abatement. It is the purpose of these regulations to preserve and protect the quality of this water so that it shall be reasonably available for all beneficial uses and thus promote the social welfare and economic well-being of the people of the State. It is further the purpose of these regulations to designate the uses for which the various waters of the State shall be maintained and protected; to prescribe the water quality standards required to sustain the designated uses; and to prescribe regulations necessary for implementing, achieving and maintaining the prescribed water quality.

Reg. 2.103 Commission Review

The water quality standards herein established will be reviewed by the Commission at least once each three-year period beginning as of October 18, 1972. Revisions may be made to take into account changing technology of waste production, treatment and removal, advances in knowledge of water quality requirements, and other relevant factors.

Reg. 2.104 Policy for Compliance

It shall be the policy of the Department to provide, on a case-by-case basis, a reasonable time for an existing facility to comply with new or revised water quality based effluent limits. Consequently, compliance schedules may be included in NPDES permits at the time of renewal to require compliance with new water quality standards at the earliest practicable time; but not to exceed three years from effective date of permit.

Reg. 2.105 Environmental Improvement Projects

The Commission may, after consideration of the information provided pursuant to Appendix B, grant modifications to the General and Specific Standards (Chapters 4 and 5, herein) or establish a subcategory(ies) of use(s) (Reg. 2.307, herein) for completion of long-term Environmental Improvement Projects (EIP), as provided by Act 401 of 1997, codified at A.C.A. § 8-5-901 et seq.

Reg. 2.106 Definitions

304(a) Guidance: Refers to Section 304(a) of the Clean Water Act which requires the Environmental Protection Agency to publish and periodically update ambient water quality criteria which will be protective of human health and the environment.

Abatement: The reduction in degree or intensity of pollution.

Act: Clean Water Act, as amended (33 U.S.C. 1251, et. seq.)

Acute toxicity: A statistically significant difference (at the 95 percent confidence level) in mortality or immobilization between test organisms and a control measured during a specified period of time which is normally less than 96 hours.

Algae: Simple plants without roots, stems or leaves which contain chlorophyll and are capable of photosynthesis.

All Flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events.

Aquatic biota: All those life forms which inhabit the aquatic environment.

Base Flows: That portion of the stream discharge that is derived from natural storage (i.e., outflow from groundwater or swamps), or sources other than recent rainfall that creates surface runoff. Also called sustaining, normal, dry weather, ordinary, or groundwater flow.

Chronic Toxicity: A statistically significant difference (at the 95 percent confidence level) in mortality or immobilization, reduced reproduction or limited growth between test organisms and a control measured during a substantial segment of the life span of the test organism.

Commission: The Arkansas Pollution Control and Ecology Commission.

Continuing Planning Process (CPP): A document which describes the principal processes of the State's water quality management programs. The CPP is not a regulation.

Critical flows: The flow volume used as background dilution flows in calculating concentrations of pollutants from permitted discharges. These flows may be adjusted for mixing zones. The following critical flows are applicable:

For a seasonal fishery - 1 cfs minus the design flow of any point source discharge (may not be less than zero).

For human health criteria - harmonic mean flow or long term average flow.

For minerals criteria - harmonic mean flow or 4 cfs, except in those waters listed in Reg. 2.511. Those waters in Reg. 2.511 which are noted with an asterisk will have a critical flow of 4 cfs. (Also see minerals implementation procedure in CPP)

For all others - the critical flow will be Q7-10.

Critical season: That period of the year when water temperatures exceed 22°C. This is normally the hot, dry season and after the majority of the fish spawning activities have ceased. This season occurs during a different time frame in different parts of the state, but normally exists from about mid-May to mid-September.

Cumulative: Increasing by successive additions.

Department: The Arkansas Department of Environmental Quality (ADEQ).

Degradation: The act or process of causing any decrease in quality.

Design Flow: A facility discharge flow of process wastewater that is authorized in a NPDES permit

Designated Uses: Those uses specified in the water quality standards for each waterbody or stream segment whether or not they are being attained.

Discharge: A discrete point source of waste or wastewater entering into waters of the State.

Dissolved oxygen (DO): A measure of the concentration of oxygen in solution in a liquid.

Ecoregion: A large area of landscape with relatively homogenous physical, chemical and biological characteristics.

Escherichia coli: a rod shaped gram negative bacillus (0.5 – 3-5 microns) abundant in the large intestines of mammals.

Endemic: Native to and confined to a specific region.

Existing Uses: Those uses listed in Section 303 (c)(2) of the Act (i.e., public water supplies, propagation of fish and wildlife, recreational uses, agricultural and industrial water supplies and navigation) which were actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.

Fecal coliform bacteria: Gram-negative nonspore-forming rods that ferment lactose in 24 ± 2 hours at 44.5 ± 0.2°C with the production of gas in a multiple-tube procedure or produce acidity with blue colonies in a membrane filter procedure. For the purpose of this regulation, the genus *Klebsiella* is not included in this definition.

Fishable/swimmable: Refers to one of the national goals of the Clean Water Act as stated in Section 101(a)(2), "...provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water."

Fishery: The designated use of a waterbody determined by the fish community and other associated aquatic life.

Hardness: A measure of the sum of multivalent metallic cations expressed as calcium carbonate ($CaCO_3$).

Harmonic Mean Flow: The reciprocal of the mean of the reciprocals of daily flow measurements.

Headwater: The source of a stream.

Heavy metals: A general name given to the ions of metallic elements heavier than iron, such as cadmium, lead, mercury, copper, zinc and chromium.

Human Health Criteria: Levels of toxicants in ambient water which will not manifest adverse health effects in humans.

Hypolimnion: That portion of a thermally stratified lake or reservoir below the zone in which the rate of temperature change is greatest. An area of minimal circulation and mixing.

Impairment: Exceedences of the water quality standards by a frequency and/or magnitude which results in any designated use of a waterbody to fail to be met as a result of physical, chemical or biological conditions.

Indicator species: Species of fish which may not be dominant within a species group and may not be limited to one area of the state, but which, because of their presence, are readily associated

with a specific ecoregion. All indicator species need not be present to establish a normal or representative fishery.

Indigenous: Produced, growing or living naturally in a particular region or environment.

Interstate: Of, connecting, or existing between two or more states.

Intrastate: Existing or occurring within a state.

Ionizing radiation: Gamma rays and x-rays; alpha and beta particles, high speed electrons, neutrons, protons and other nuclear particles; but not sound or radio waves, or visible, infrared or ultraviolet light.

Key species: Fishes which are normally the dominant species (except for some ubiquitous species) within the important groups such as fish families or trophic feeding levels. All specified key species need not be present to establish a normal or representative fishery.

Long Term Average Flow: An average annual stream flow based on a period of record which reflects the typical annual variability.

Milligrams per liter (mg/l): The concentration at which one milligram is contained in a volume of one liter; one milligram per liter is equivalent to one part per million (ppm) at unit density.

Mixing zone: An area where an effluent discharge undergoes mixing with the receiving waterbody. For toxic discharges a zone of initial dilution, (ZID) may be allowed within the mixing zone.

Mouth: The point of confluence where a stream enters a larger body of water.

Natural background: Ambient conditions or concentrations of a parameter due to non-anthropogenic sources; natural background does not typically interfere with support of designated uses nor the level of aquatic life expected to occur naturally at the site.

Naturally occurring excursions: Temporary deviation from natural background due to natural events such as severe storm events, drought, temperature extremes, etc.

Nonpoint source: A contributing factor to water pollution that is not confined to an end-of-the-pipe discharge, i.e., stormwater runoff, agricultural or silvicultural runoff, irrigation return flows, etc.

NTU (Nephelometric Turbidity Unit): A measure of turbidity based upon a comparison of the intensity of light scattered by a sample of water under defined conditions with the intensity of light scattered by a standard reference suspension; NTU are considered comparable to the previously reported JTU (Jackson Turbidity Units). May also be reported as FTU (Formazin Turbidity Units) in equivalent units.

Nuisance species: Those organisms capable of interfering with the beneficial use of water.

Nutrient: Any substance assimilated by an organism which promotes growth and replacement of cellular constituents. The usual nutrient components of water pollution are nitrogen, phosphorus and carbon.

Objectionable algal densities: Numbers of total algae which would interfere with a beneficial use.

Persistent: Degraded only slowly by the environment.

pH: The negative logarithm of the effective hydrogen-ion concentration in gram equivalents per liter.

Picocurie: One trillionth (10^{-13}) of a curie which is a unit of quantity of any radioactive nuclide in which 3.7×10^{10} disintegrations occur per second.

Point source: A discharge from a discrete point.

Q7-10: A flow volume equal to or less than the lowest mean discharge during 7 consecutive days of a year which, on the average, occurs once every 10 years.

Primary season: That period of the year when water temperatures are 22°C or below. This includes the major part of the year from fall through spring, including the spawning season of most fishes. It normally occurs from about mid-September to mid-May.

Primary Season Critical flow: A flow volume equal to the lowest mean discharge during 7 consecutive days during the period when stream flows increase substantially and water temperatures are cooler and, on the average, occurs once in every 10 years. In streams with watersheds less than 10 mi^2 this flow is one (1) CFS minus the design flow of any point source discharge.

Regulated-flow stream: Those streams restricted by structures which have the ability to control stream flow.

Seasonal fishery: The designated fishery use that occurs in some waterbodies only during the period when stream flows increase substantially and water temperatures are cooler. This is normally during the months of December through May.

Surface water: That water contained on the exterior or upper portion of the earth's surface as opposed to groundwater.

Synergism: Cooperative action of discrete agents such that the total effect is greater than the sum of the effects taken independently.

Total dissolved solids (TDS): The total soluble organic and inorganic material contained in water; includes those materials, both liquid and solid, in solution and otherwise, which pass through a standard glass fiber filter disk and are not volatilized during drying at 180°C.

Trout fishery: Water which is suitable for the growth and survival of trout, usually characterized as high quality water having a maximum summer temperature of 68°F or less.

Use attainability analysis: A structured scientific assessment of the factors affecting the attainment of the fishable/swimmable use which may include physical, chemical, biological and economic factors.

Waterbodies, waterways, waters: In this document, refers to surface waters of the state as described in Act 472.

Water Effects Ratio (WER): A specific pollutant's acute or chronic value measured from a specific site ambient water, divided by the respective acute or chronic toxicity of the same pollutant in laboratory water.

Zone of Initial Dilution (ZID): An area within the mixing zone where a toxic effluent discharge initiates mixing in the receiving waterbody. This is an area where acute water quality criteria may be exceeded, but acute toxicity may not occur.

CHAPTER 2: ANTIDEGRADATION POLICY

Reg. 2.201 Existing Uses

Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

Reg. 2.202 High Quality Waters

Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that (1) there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and (2) that the provisions of the Arkansas Water Quality Management Plan be implemented with regard to nonpoint sources.

Reg. 2.203 Outstanding Resource Waters

Where high quality waters constitute an outstanding state or national resource, such as those waters designated as extraordinary resource waters, ecologically sensitive or natural and scenic waterways, those uses and water quality for which the outstanding waterbody was designated shall be protected by (1) water quality controls, (2) maintenance of natural flow regime, (3) protection of instream habitat, and (4) encouragement of land management practices protective of the watershed. It is not the intent of the ERW designated use definition to imply that ERW status dictates regulatory authority over private land within the watershed, other than what exists under local, state, or federal law. The Arkansas Natural Resources Commission has responsibility for the regulation of the withdrawal of water from streams and reservoirs, and such withdrawals are not within the jurisdiction of this regulation.

Reg. 2.204 Thermal Discharges

In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Act.

CHAPTER 3: WATERBODY USES

Reg. 2.301 Introduction

Substantially all the waters of the State have been designated for specific uses as shown in Appendix A. In those instances where waters are classified for multiple uses and different criteria are specified for each use, the criteria to protect the most sensitive use shall be applicable.

Reg. 2.302 Designated Uses

The designated uses are defined as follows:

(A) Extraordinary Resource Waters - This beneficial use is a combination of the chemical, physical and biological characteristics of a waterbody and its watershed which is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential and intangible social values.

(B) 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.

(C) Natural and Scenic Waterways - This beneficial use identifies segments which have been legislatively adopted into a state or federal system.

(D) Primary Contact Recreation - This beneficial use designates waters where full body contact is involved. Any streams with watersheds of greater than 10 mi^2 are designated for full body contact. All streams with watersheds less than 10 mi^2 may be designated for primary contact recreation after site verification.

(E) Secondary Contact Recreation - This beneficial use designates waters where secondary activities like boating, fishing or wading are involved.

(F) Fisheries - This beneficial use provides for the protection and propagation of fish, shellfish and other forms of aquatic life. It is further subdivided into the following subcategories:

(1) <u>Trout</u> - water which is suitable for the growth and survival of trout (Family: Salmonidae).

(2) <u>Lakes and Reservoirs</u> - water which is suitable for the protection and propagation of fish and other forms of aquatic

life adapted to impounded waters. Generally characterized by a dominance of sunfishes such as bluegill or similar species, black basses and crappie. May include substantial populations of catfishes such as channel, blue and flathead catfish and commercial fishes including carp, buffalo and suckers. Forage fishes are normally shad or various species of minnows. Unique populations of walleye, striped bass and/or trout may also exist.

(3) Streams - water which is suitable for the protection and propagation of fish and other forms of aquatic life adapted to flowing water systems whether or not the flow is perennial.

(a) Ozark Highlands Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by a preponderance of sensitive species and normally dominated by a diverse minnow community followed by sunfishes and darters. The community may be generally characterized by the following fishes:

Key Species	**Indicator Species**
Duskystripe, Bleeding or Cardinal shiner	Banded sculpin
Northern hogsucker	Ozark madtom
Slender madtom	Southern redbelly dace
"Rock" basses	Whitetail shiner
Rainbow and/or Orangethroat darters	Ozark minnow
Smallmouth bass	

(b) Boston Mountains Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by a major proportion of sensitive species; a diverse, often darter-dominated community exists but with nearly equal proportions of minnows and sunfishes. The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Bigeye shiner	Shadow bass
Black redhorse	Wedgespot shiner
Slender madtom	Longnose darter
Longear sunfish	Fantail darter
Greenside darter	
Smallmouth bass	

(c) Arkansas River Valley Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by a substantial proportion of sensitive species; a sunfish- and minnow-dominated community exists but with substantial proportions of darters and catfishes (particularly madtoms). The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Bluntnose minnow	Orangespotted sunfish
Golden redhorse	Blackside darter
Yellow bullhead	Madtoms
Longear sunfish	
Redfin darter	
Spotted bass	

(d) Ouachita Mountains Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. The fish community is characterized by a major proportion of sensitive species; a minnow-sunfish-dominated community exists, followed by darters. The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Bigeye shiner	Shadow bass
Northern hogsucker	Gravel chub
Freckled madtom	Northern studfish
Longear sunfish	Striped shiner
Orangebelly darter	
Smallmouth bass	

(e) Typical Gulf Coastal Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by a limited proportion of sensitive species; sunfishes are distinctly dominant followed by darters and minnows. The community may be generally characterized by the following fishes:

Key Species	**Indicator Species**
Redfin shiner	Pirate perch
Spotted sucker	Flier
Yellow bullhead	Spotted sunfish
Warmouth	Dusky darter
Slough darter	Creek chubsucker
Redfin pickerel	Banded pygmy sunfish

(f) Springwater-influenced Gulf Coastal Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by a substantial proportion of sensitive species; sunfishes normally dominate the community and are followed by darters and minnows. The community may be generally characterized by the following fishes:

Key Species	**Indicator Species**
Redfin shiner	Pirate perch
Blacktail redhorse	Golden redhorse
Freckled madtom	Spotted bass
Longear sunfish	Scaly sand darter
Creole darter	Striped shiner
Redfin pickerel	Banded pygmy sunfish

(g) Least-altered Delta Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by an insignificant proportion of sensitive species; sunfishes are distinctly dominant followed by minnows. The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Ribbon shiner	Pugnose minnow
Smallmouth buffalo	Mosquitofish
Yellow bullhead	Pirate perch
Bluegill	Tadpole madtom
Bluntnose darter	Banded pygmy sunfish
Largemouth bass	

(h) Channel-altered Delta Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic life. Fish communities are characterized by an absence of sensitive species; sunfishes and minnows dominate the population followed by catfishes. The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Blacktail shiner	Mosquitofish
Drum	Gizzard shad
Carp	Emerald shiner
Channel catfish	
Green sunfish	
Spotted gar	

(G) Domestic Water Supply - This beneficial use designates water which will be protected for use in public and private water supplies. Conditioning or treatment may be necessary prior to use.

(H) Industrial Water Supply - This beneficial use designates water which will be protected for use as process or cooling water. Quality criteria may vary with the specific type of process involved and the water supply may require prior treatment or conditioning.

(I) Agricultural Water Supply - This beneficial use designates waters which will be protected for irrigation of crops and/or consumption by livestock.

(J) Other Uses - This category of beneficial use is generally used to designate uses not dependent upon water quality, such as hydroelectric power generation and navigation.

Reg. 2.303 Use Attainability Analysis

(A) A use attainability analysis must be conducted to justify the following conditions:

(1) Removing a fishable/swimmable designated use, which is not an existing use, from a waterbody; or

(2) To identify a subcategory of a fishable/swimmable use which requires less stringent criteria.

(B) In order to remove a designated fishable/swimmable use which is not an existing use, or identify subcategories of a fishable/swimmable use which require less stringent criteria, it must be demonstrated that the designated use is not attainable because:

(1) naturally occurring pollutant concentrations prevent the attainment of the use; or

(2) natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

(3) human caused conditions or sources of pollution prevent attainment of the use and cannot be remedied or would cause more environmental damage to correct than leave in place; or

(4) dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) physical conditions related to the natural features of a water body, such as lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) controls more stringent than those required by Section 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

The scope of a use attainability analysis shall be in direct proportion to the project involved and the resource value of the receiving stream. Methods for conducting a use attainability analysis

may be found in the November 1983 EPA publication entitled *Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use Attainability Analyses*. Other scientific methods, including the use of existing technical data, may be used for justifying the removal of a designated use; provided the methods are agreed upon prior to the study. Such other methods may include the use of information previously gathered through technical studies and/or use attainability analysis. Use attainability analysis procedures may be found in the State of Arkansas Continuing Planning Process document (CPP). Any waterbody on which a use attainability analysis is approved shall be so listed in Appendix A with appropriate criteria.

Reg. 2.304 Physical Alteration of Habitat

(A) Significant physical alterations of the habitat within extraordinary resource waters, ecologically sensitive waterbodies or natural and scenic waterways are not allowed. For the purposes of this subsection, the Director may determine that a proposed physical alteration of the habitat is not significant if it is demonstrated that:

(1) the proposed physical alteration of habitat (a) will not impair water quality; (b) will not impair the natural flow regime; and (c) will not impair the habitat of fish, shellfish or other forms of aquatic life; and.
(2) there is no feasible alternative to the proposed project.

A request under this subsection for a determination that a proposed physical alteration of habitat is not significant shall be submitted to the Director in accordance with the procedures set forth in Appendix D.

(B) In other waters, where significant physical alterations of the habitat are proposed, the Department must be assured that no significant degradation of any existing use or water quality necessary to protect that use will occur. In order to make such determinations, the Department may require an evaluation of all practicable alternatives to the project including: an environmental assessment of the impacts of each alternative, an engineering and economic analysis, and a socio-economic evaluation of the project in the local area.

Reg. 2.305 Short Term Activity Authorization

The Director may authorize, with whatever conditions deemed necessary and without public notice, short term activities which might cause a violation of the Arkansas Water Quality Standards. This authorization is subject to the provisions that such activity is essential to the protection or promotion of the public interest and that no permanent or long-term impairment of beneficial uses is likely to result from such activity. Nothing herein shall be intended to supersede existing state and federal permitting processes or requirements.

Activities eligible for authorization include, but are not limited to:

(A) wastewater treatment facility maintenance;

(B) fish eradication projects;

(C) mosquito abatement projects;

(D) algae and weed control projects;

(E) dredge and fill projects;

(F) construction activities; or

(G) activities which result in overall enhancement or maintenance of beneficial uses.

The Director shall specify the degree of variance from the standards, the time limit of activity and restoration procedures where applicable.

Such authorization shall not be granted for activities which result in the adverse impact on any federally threatened or endangered species or on critical habitat of such species.

Reg. 2.306 Procedures for Removal of Any Designated Use Except Fishable/Swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway, and Modification of Water Quality Criteria not Related to These Uses

This procedure is applicable in those cases where the Commission chooses to establish less stringent water quality criteria without affecting a fishable/swimmable use or the designated use of Extraordinary Resource Water or Ecologically Sensitive Waterbody or Natural and Scenic Waterway, or when the Commission chooses to remove a use which is not an existing use other than fishable/swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway.

The Commission may allow a modification of the water quality criteria or the removal of a use which is not a fishable/swimmable use or designated use of Extraordinary Resource Water or Ecologically Sensitive Waterbody or Natural and Scenic Waterway to accommodate important economic or social development in a local area, if existing uses are maintained and protected fully and the requirements for public participation in the Continuing Planning Process are met. As a minimum, the following information shall be submitted to the Director before initiation of the public participation process:

(A) Technological or economic limits of treatability.

(B) Economic analysis of the impact on the local area.

(C) Documentation that the use being removed is not an existing use and that all other designated uses will be protected.

Modifications made pursuant to this section may be required to be rejustified for continued support. As community water needs change, or technological advancement, including long-term environmental improvement projects, make treatment options more practicable, the Commission may reevaluate the need for the reestablishment of the more stringent water quality criteria or the removed use.

Any waterbody on which such alterations are approved will be so listed in Appendix A with the applicable changes noted.

Reg. 2.307 Use Subcategories

The Commission may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses; for instance, to differentiate between cold and warm water fisheries or agricultural and domestic water supply.

Reg. 2.308 Site Specific Criteria

In establishing criteria:

(A) Establish numerical criteria values based on:

(1) 304(a) Guidance; or

(2) 304(a) Guidance modified to reflect site conditions [WER] or

(3) other scientifically defensible methods;

(B) Establish narrative criteria or criteria based upon biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria.

Reg. 2.309 Temporary Variance

A temporary variance to the water quality standards may be allowed for an existing permitted discharge facility. The variance will be for specified constituents and shall be no longer than a three year period. A variance must be approved by the Arkansas Pollution Control and Ecology Commission and the U.S. Environmental Protection Agency. A variance will be considered when it is determined that a standard, including designated use, can ultimately be attained or when preliminary evidence indicates that a site specific amendment of the standards may be appropriate. A variance may be granted only to the applicant and will not apply to other discharges into the specified waterbody.

Reg. 2.310 Procedure for the Removal of the Designated Use of Extraordinary Resource Water, or Ecologically Sensitive Waterbody, or Natural and Scenic Waterway for the Purpose of Constructing a Reservoir on a Free Flowing Waterbody to Provide A Domestic Water Supply.

(A) An extraordinary resource water, ecologically sensitive waterbody, or natural and scenic waterway designated use may be removed from a free flowing waterbody for the purpose of constructing a reservoir to provide a domestic water supply, if it can be demonstrated that:

(1) the sole purpose for the funding and construction of the reservoir is to provide a domestic water supply; and

(2) there is no feasible alternative to constructing a reservoir in order to meet the domestic water needs of the citizens of the State of Arkansas.

The limitation in Subsection A(1) of this section does not prohibit incidental uses of the reservoir that are consistent with the use of domestic water supply.

(B) A petition to initiate rulemaking to remove an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway designated use from a free flowing waterbody in order to construct a reservoir to provide a domestic water supply may be submitted to the Commission by a regional water distribution district, public facilities board, public water authority, or other public entity engaged in providing water to the public. Such petition, at a minimum, shall include:

(1) A map depicting the location of the proposed project and the area to be impounded;
(2) A description of the proposed project, including detailed design plans;
(3) A certification that the proposed structure to impound the free flowing stream shall be funded and constructed solely for the purpose of providing a domestic water supply;
(4) An evaluation of all alternatives to the proposed project, including:
    (i) an environmental assessment of the impacts of each alternative on the instream and downstream water quality, the instream habitat, and the habitat and plant and animal life in the area upstream, downstream, and to be inundated by the proposed project;
    (ii) the costs associated with, and an economic analysis for, each alternative;
    (iii) an engineering analysis for each alternative; and
    (iv) a socio-economic evaluation of the project to the local area and to the State as a whole; and
(5) Information and supporting documentation which address the criteria set forth in Appendix E;
(6) A recommendation to the Commission from the Director on whether or not the designated use should be maintained based upon a review of the information and supporting documentation required to be considered in Appendix E. The Director shall provide the petitioner with the Director's recommendation within 180 days of the Department's receipt of the petitioner's Appendix E submittal. If the Director does not deliver a recommendation to the petitioner within the 180 day time period, the petitioner may file its petition under this section without including a recommendation from the Director. The Director may submit a recommendation to the Commission at any time not less than 30 days prior to the Commission's final decision on the petition.
(7) A description of any proposed mechanisms for protecting the domestic water supply, including but not limited to prohibitions to be placed on commercial and residential development along the proposed shoreline of the impoundment, the controls to be placed on public access to the water supply, and the legal authority for establishing and maintaining these domestic water supply protections; and
(8) Any other submittals required by Regulation No. 8 for a petition to initiate rulemaking.

(C) The Commission, as part of its rulemaking decision, shall determine whether or not a feasible alternative to constructing a reservoir is available to meet the domestic water needs of the citizens of the State of Arkansas. The Commission shall set forth the reasons for its

determination in writing. The designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway shall not be removed by the Commission if a feasible alternative to constructing a reservoir is available to meet the domestic water needs of the citizens of the State of Arkansas.

(D) The Commission, as part of its rulemaking, shall determine whether or not the sole purpose for the funding and construction of the reservoir is to provide a domestic water supply. The Commission shall set forth the reasons for its determination in writing. The designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway shall not be removed by the Commission if the purpose for the funding and construction of the reservoir is other than to provide a domestic water supply. In no circumstance, shall the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway be removed by the Commission from a free flowing waterbody in order to construct a reservoir for recreational, flood control, or economic purposes other than providing a domestic water supply.

(E) The Commission, as part of its rulemaking decision, shall determine whether or not the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway of a given waterbody should be maintained. The Commission shall set forth the reasons for its determination in writing, after considering the Director's recommendation referenced in Subsection (B)(6) of this section and reviewing the information and supporting documentation which address the criteria set forth in Appendix E.

Reg. 2.311 Procedure for the Addition of the Designated Use of Extraordinary Resource Water, or Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a Waterbody or Segment of a Waterbody.

(A) Any waters of the State may be nominated for designation as an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway by submitting a petition to initiate rulemaking to the Arkansas Pollution Control and Ecology Commission. Such petition shall include, at a minimum, the following:

(1) Name of petitioner;
(2) Petitioner's mailing address and telephone number;
(3) Name and location description of the waterbody or segment proposed for designation;
(4) A map depicting the waterbody or segment proposed for designation;
(5) Petitioner's interest in the proposed action;
(6) Statement of potential benefits and impacts of the proposed action, including economic benefits and impacts;
(7) Evidence of requests for resolution(s) by appropriate local government(s) regarding the nomination of the waterbody as an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway;
(8) Supporting documentation for the designation, including information which addresses the factors listed in Appendix F, I (A) through (P);
(9) Recommended language change necessary to affect this proposed change to any Commission regulation; and

(10) Any other submittals required by Regulation No. 8 for a petition to initiate rulemaking.

(B) The Commission, as part of its rulemaking, shall set forth in writing the reasons for its final decision.

CHAPTER 4: GENERAL STANDARDS

Reg. 2.401 Applicability

The general standards outlined below are applicable to all surface waters of the State at all times. They apply specifically with regard to substances attributed to discharges, nonpoint sources or instream activities as opposed to natural phenomena. Waters may, on occasion, have natural background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply.

Reg. 2.402 Nuisance Species

All waters shall be free from substances attributed to man-caused point or nonpoint source discharges in concentrations that produce undesirable aquatic life or result in the dominance of nuisance species.

Reg. 2.403 Methods

The methods of sample collection, preservation, measurements and analyses shall be in accordance with the EPA's *Guidelines Establishing Test Procedures for the Analysis of Pollutants* (40 CFR, Part 136) or other proven methods acceptable to the Department.

Reg. 2.404 Mixing Zones

Mixing zones are allowed for all parameters not specifically excluded in Reg. 2.404 and the effects of wastes on the receiving stream shall be determined after the wastes have been thoroughly mixed with the mixing zone volume. Outfall structures should be designed to minimize the extent of mixing zones to ensure rapid and complete mixing.

For aquatic life toxic substances in larger streams,(those with Q7-10 flows equal to or greater than 100 cfs), the zone of mixing shall not exceed 1/4 of the cross-sectional area and/or critical flow volume of the stream. The remaining 3/4 of the stream shall be maintained as a zone of passage for swimming and drifting organisms, and shall remain of such quality that stream ecosystems are not significantly affected. In the smaller streams, (Q7-10 flows less than 100 cfs), because of varying local physical and chemical conditions and biological phenomena, a site-specific determination shall be made on the percentage of river width necessary to allow passage of critical free-swimming and drifting organisms so that negligible or no effects are produced on their populations. As a guideline, no more than 2/3 of the cross-sectional area and/or critical flow volume of smaller streams should be devoted to mixing zones thus leaving at least 1/3 of the cross-sectional area free as a zone of passage.

Mixing zones are not allowed for the parameters of bacteria or oil and grease, or where the background flow is less than the critical flow or where the background concentration of a waste parameter exceeds the specific criteria for that waste parameter.

In lakes and reservoirs the size of mixing zones shall be defined by the Department on an individual basis, and the area shall be kept at a minimum.

Mixing zones shall not prevent the free passage of fish or significantly affect aquatic ecosystems.

A mixing zone shall not include any domestic water supply intake.

Reg. 2.405 Biological Integrity

For all waters with specific fisheries use designated in Appendix A, aquatic biota should not be impacted. Aquatic biota should be representative of streams that have the ability to support the designated fishery, taking into consideration the seasonal and natural variability of the aquatic biota community under naturally varying habitat and hydrological conditions; the technical and economic feasibility of the options available to address the relevant conditions; and other factors. An aquatic biota assessment should compare biota communities that are similar in variety and abundance, based upon either an in-stream study including an upstream and downstream comparison, a comparison to a reference water body within the same ecoregion, or a comparison to community characteristics from a composite of reference waters. The reference stream should have similar habitat and hydrologic conditions. Such a comparison should consider the seasonal and natural variability of the aquatic biota community. It is the responsibility of the Department to collect and evaluate the data for an aquatic biota assessment and such data will not be used to develop or impose permit limits.

Reg. 2.406 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.

Reg. 2.407 Taste and Odor

Taste and odor producing substances shall be limited in receiving waters to concentrations that will not interfere with the production of potable water by reasonable water treatment processes, or impart unpalatable flavor to food, fish or result in offensive odors arising from the waters or otherwise interfere with the reasonable use of the water.

Reg. 2.408 Solids, Floating Material and Deposits

Receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Reg. 2.409 Toxic Substances

Discharges shall not be allowed into any waterbody which, after consideration of the zone of initial dilution, the mixing zone and critical flow conditions, will cause toxicity to human, animal, plant or aquatic life or interfere with normal propagation, growth, and survival of aquatic biota.

Reg. 2.410 Oil and Grease

Oil, grease or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota.

CHAPTER 5: SPECIFIC STANDARDS

Reg. 2.501 Applicability

The following specific standards shall apply to all surface waters of the state at all times except during periods when flows are less than the applicable critical flow. Streams with regulated flow will be addressed on a case-by-case basis to maintain designated instream uses. These standards apply outside the applicable mixing zone. Waters may, on occasion have natural background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply to the naturally occurring excursions.

Reg. 2.502 Temperature

Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature, outside the mixing zone, by more than 5°F (2.8°C) based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) in streams, lakes or reservoirs. Maximum allowable temperatures from man-induced causes in the following waters are:

Waterbodies	**Limit °C (°F)**
Streams	
Ozark Highlands	29 (84.2)
Boston Mountains	31 (87.8)
Arkansas River Valley	31 (87.8)
Ouachita Mountains	30 (86.0)
Springwater-influenced Gulf Coastal	30 (86.0)
Typical Gulf Coastal	30 (86.0)
Least-Altered Delta	30 (86.0)
Channel-Altered Delta	32 (89.6)
White River (Dam #1 to mouth)	32 (89.6)
St.Francis River	32 (89.6)
Mississippi River	32 (89.6)
Arkansas River	32 (89.6)
Ouachita River (L. Missouri R.to state line)	32 (89.6)
Red River	32 (89.6)
Lakes and Reservoirs	32 (89.6)
Trout waters	20 (68.0)

Temperature requirements shall not apply to off-stream privately-owned reservoirs constructed primarily for industrial cooling purposes and financed in whole or in part by the entity or successor entity using the lake for cooling purposes.

Reg. 2.503 Turbidity

There shall be no distinctly visible increase in turbidity of receiving waters attributable to municipal, industrial, agricultural, other waste discharges or instream activities. Specifically, in no case shall any such waste discharge or instream activity cause turbidity values to exceed the base flows values listed below. Additionally, the non-point source runoff shall not result in the exceedance of the in stream all flows values in more than 20% of the ADEQ ambient monitoring network samples taken in not less than 24 monthly samples.

Waterbodies	Base Flows Values (NTU)	All Flows Values (NTU)
Streams		
Ozark Highlands	10	17
Boston Mountains	10	19
Arkansas River Valley	21	40
Ouachita Mountains	10	18
Springwater-influenced Gulf Coastal	21	32
Typical Gulf Coastal	21	32
Least-Altered Delta	45	84
Channel-Altered Delta	75	250
Arkansas River	50	52
Mississippi River	50	75
Red River	50	150
St. Francis River	75	100
Trout	10	15
Lakes and Reservoirs	25	45

Reg. 2.504 pH

As a result of waste discharges, the pH of water in streams or lakes must not fluctuate in excess of 1.0 unit over a period of 24 hours and pH values shall not be below 6.0 or above 9.0.

Reg. 2.505 Dissolved Oxygen

In streams with watersheds of less than 10 mi^2, it is assumed that insufficient water exists to support a fishery during the critical season. During this time, a D.O. standard of 2 mg/l will apply to prevent nuisance conditions. However, field verification is required in areas suspected of having significant groundwater flows or enduring pools which may support unique aquatic biota. In such waters the critical season standard for the next size category of stream shall apply.

All streams with watersheds of less than 10 mi^2 are expected to support a fishery during the primary season when stream flows, including discharges, equal or exceed 1 cubic foot per second (CFS); however, when site verification indicates that a fishery exists at flows below 1 CFS, such fishery will be protected by the primary standard.

Also, in these streams with watersheds of less than 10 mi^2, where waste discharges are 1 CFS or more, they are assumed to provide sufficient water to support a perennial fishery and, therefore, must meet the dissolved oxygen standards of the next size category of streams.

For purposes of determining effluent discharge limits, the following conditions shall apply:

(A) The primary season dissolved oxygen standard is to be met at a water temperature of 22°C (71.5°F) and at the minimum stream flow for that season. At water temperatures of 10°C (50°F), the dissolved oxygen standard is 6.5 mg/l.

(B) During March, April and May, when background stream flows are 15 CFS or higher, the D.O. standard is 6.5 mg/l in all areas except the Delta Ecoregion, where the primary season D.O. standard will remain at 5 mg/l.

(C) The critical season dissolved oxygen standard is to be met at maximum allowable water temperatures and at Q7-10 flows. However, when water temperatures exceed 22°C (71.6°F), a 1 mg/l diurnal depression will be allowed below the applicable critical standard for no more than 8 hours during any 24-hour period.

The following dissolved oxygen standards must be met:

Waterbodies	**Limit (mg/l)**	
Streams	Primary	Critical
Ozark Highlands		
<10 mi^2 watershed	6	2
10 to 100 mi^2	6	5
>100 mi^2 watershed	6	6
Boston Mountains		
<10 mi^2 watershed	6	2
>10 mi^2 watershed	6	6
Arkansas River Valley		
<10 mi^2 watershed	5	2
10 mi^2 to 150 mi^2	5	3
151 mi^2 to 400 mi^2	5	4
>400 mi^2 watershed	5	5
Ouachita Mountains		
<10 mi^2 watershed	6	2
>10 mi^2 watershed	6	6
Typical Gulf Coastal		

Waterbodies	Limit (mg/l)	
<10 mi^2 watershed	5	2
10 mi^2 to 500 mi^2	5	3
>500 mi^2 watershed	5	5
Springwater-influenced Gulf Coastal		
All size watersheds	6	5
Delta (least-altered and channel altered)		
<10 mi^2 watershed	5	2
10 mi^2 to 100 mi^2	5	3
>100 mi^2 watershed	5	5
Trout Waters		
All size watersheds	6	6

Lakes and Reservoirs

Specific dissolved oxygen standards for lakes and reservoirs shall be 5 mg/l. Effluent limits for oxygen-demanding discharges into impounded waters are promulgated in Regulation #6 of the Arkansas Pollution Control and Ecology Commission. However, the Commission may, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, establish alternative limits for dissolved oxygen in lakes and reservoirs where studies and other relevant information can demonstrate that predominant ecosystem conditions may be more accurately reflected by such alternate limits; provided that these limits shall be compatible with all designated beneficial uses of named lakes and reservoirs.

Reg. 2.506 Radioactivity

The Rules and Regulations for the Control of Sources of Ionizing Radiation of the Division of Radiological Health, Arkansas Department of Health, limits the maximum permissible levels of radiation that may be present in effluents to surface waters in uncontrollable areas. These limits shall apply for the purposes of these standards, except that in no case shall the levels of dissolved radium-226 and strontium-90 exceed 3 and 10 picocuries/liter, respectively, in the receiving water after mixing, nor shall the gross beta concentration exceed 1000 picocuries/liter.

Reg. 2.507 Bacteria

The Arkansas Department of Health has the responsibility of approving or disapproving surface waters for public water supply and of approving or disapproving the suitability of specifically delineated outdoor bathing places for body contact recreation, and it has issued rules and regulations pertaining to such uses.

For the purposes of this regulation, all streams with watersheds less than 10 mi^2 shall not be designated for primary contact unless and until site verification indicates that such use is attainable. No mixing zones are allowed for discharges of bacteria.

(A) Primary Contact Waters - Between May 1 and September 30, the maximum allowable fecal coliform criteria, calculated as a geometric mean, shall be 200 col/100 ml and the single-sample maximum shall be 400 col/100 ml. Alternatively, in these waters, the maximum allowable *Escherichia coli* criteria, calculated as a geometric mean, shall be 126 col/100 ml and the single-sample maximum shall be 298 col/100 ml in lakes, reservoirs, Extraordinary Resource Waters ("ERW"), Ecologically Sensitive Waterbodies ("ESW"), and Natural and Scenic Waterways ("NSW") or 410 col/100 ml in all other rivers and streams. During the remainder of the calendar year, these criteria may be exceeded, but at no time shall these counts exceed the level necessary to support secondary contact recreation (below).

(B) Secondary Contact Waters – The maximum allowable fecal coliform criteria, calculated as a geometric mean, shall be 1000 col/100 ml and the single-sample maximum shall be 2000 col/100 ml. Alternatively, the maximum allowable *E. coli* criteria, calculated as a geometric mean, shall be 630 col/100 ml and the single-sample maximum shall be 1490 col/100 ml for lakes, reservoirs, ERWs, ESWs, and NSWs or 2050 col/100 ml for all other rivers and streams.

(C) For assessment of ambient waters as impaired by bacteria, the above listed applicable values for *E. coli* shall not be exceeded in more than 25% of samples in no less than eight (8) samples taken during the primary contact season or during the secondary contact season.

Reg. 2.508 Toxic Substances

Toxic substances shall not be present in receiving waters, after mixing, in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota. Acute toxicity standards may not be exceeded outside the zone of initial dilution. Within the ZID acute toxicity standards may be exceeded but acute toxicity may not occur. Chronic toxicity and chronic numeric toxicity standards shall not be exceeded at, or beyond, the edge of the mixing zone. Permitting of all toxic substances shall be in accordance with the toxic implementation strategy found in the Continuing Planning Process. For non permit issues and as a guideline for evaluating toxic substances not listed in the following tables, the Department may consider No Observed Effect Concentrations (NOECs) or other literature values as appropriate. For the substances listed below, the following standards shall apply:

ALL WATERBODIES - AQUATIC LIFE CRITERIA

Substance	Acute Values (µg/l) (Never to Exceed)	Chronic Values (µg/l) (24-hr Average)
PCBs		0.0140
Aldrin	3.0	
Dieldrin	2.5	0.0019
DDT (& metabolites)	1.1	0.0010
Endrin*	0.18	0.0023
Toxaphene	0.73	0.0002
Chlordane	2.4	0.0043
Endosulfan*	0.22	0.056
Heptachlor	0.52	0.0038
Hexachlorocyclohexane*	2.0	0.080
Pentachlorophenol	$e^{[1.005(pH)-4.869]}$	$e^{[1.005(pH)-5.134]}$
Chlorpyrifos	0.083	0.041

* Total of all isomers

DISSOLVED METALS *

	Acute Criteria (CMC) - µg/L(ppb)		Chronic Criteria (CCC) - ug/L(ppb)	
Substance	**Formula**	**X Conversion**	**Formula**	**X Conversion**
Cadmium	$e^{[1.128(lnhardness)]-3.828}$	(a)	$e^{[0.7852(lnhardness)]-3.490}$	(c)
Chromium(III)	$e^{[0.819(lnhardness)]+3.688}$	0.316	$e^{[0.8190(lnhardness)]+1.561}$	0.860
Chromium (VI)	16	0.982	11	0.962
Copper	$e^{[0..9422(lnhardness)]-1.464}$	0.960	$e^{[0.8545(lnhardness)]-1.465}$	0.960
Lead	$e^{[1.273(lnhardness)]-1.460}$	(b)	$e^{[1.273(lnhardness)]-4.705}$	(b)
Mercury**	2.4	0.85	0.012**	NONE
Nickel	$e^{[0.8460(lnhardness)]+3.3612}$	0.998	$e^{[0.8460(lnhardness)]+1.1645}$	0.997
Selenium**	20	NONE	5	NONE
Silver	$e^{[1.72(lnhardness)]-6.52}$	0.85	----------	NONE

	Acute Criteria (CMC) - µg/L(ppb)		Chronic Criteria (CCC) - ug/L(ppb)	
Substance	**Formula**	**X Conversion**	**Formula**	**X Conversion**
Zinc	$e^{[0.8473(\ln hardness)]+0.8604}$	0.978	$e^{[0.8473(\ln hardness)]+0.7614}$	0.986
Cyanide**	22.36	NONE	5.2	NONE

* These values may be adjusted by a site specific Water Effects Ratio(WER) as defined in 40 CFR Part 31.36 (c).

(a) Calculated as: 1.136672 - [(ln hardness)(0.041838)]

(b) Calculated as: 1.46203 - [(ln hardness)(0.145712)]

(c) Calculated as: 1.101672 - [(ln hardness)(0.041838)]

* * Expressed as total recoverable. Mercury based on bioaccumulation of residues in aquatic organisms, rather than toxicity.

ALL WATERBODIES - HUMAN HEALTH CRITERIA

Substance	Criteria (ng/l)*
Dioxin (2,3,7,8 TCDD)	0.001
Chlordane	5.0
PCBs (polychlorinated biphenyls)	0.4
alpha Hexachlorocyclohexane	37.3
Beryllium	4000**
Dieldrin	1.2
Toxaphene	6.3

* Criteria based on a lifetime risk factor of 10^{-5}.

** 4000 ng/l is also represented as 4.0 ug/l, which is the Maximum contaminant level (MCL) under the EPA Safe Drinking Water Act [42 U.S.C. s/s 300f et seq. (1974)]

The permittee shall have the option to develop site-specific numerical standards for toxic substances using EPA approved bioassay methodology and guidance. Such guidance may include but may not be limited to *Water Quality Standards Handbook*; *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (August, 1994); *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms* (EPA 600/4-90/027F. 5th ed. December 2002); *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/600/4-91/002. 4th ed. October 2002) or most recent update thereof.

Only ambient water quality data for dissolved metals generated or approved by ADEQ after March 1, 1993 will be considered in the documentation of background concentrations for the purpose of developing permit limitations.

Reg. 2.509 Nutrients

Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody. Impairment of a waterbody from excess nutrients are dependent on the natural waterbody characteristics such as stream flow, residence time, stream slope, substrate type, canopy, riparian vegetation, primary use of waterbody, season of the year and ecoregion water chemistry. Because nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others. However, when excess nutrients result in an impairment, based upon Department assessment methodology, by any established, numeric water quality standard, the waterbody will be determined to be impaired by nutrients.

All point source discharges into the watershed of waters officially listed on Arkansas' impaired waterbody list (303d) with phosphorus as the major cause shall have monthly average discharge permit limits no greater than those listed below. Additionally, waters in nutrient surplus watersheds as determined by Act 1061 of 2003 Regular Session of the Arkansas 84th General Assembly and subsequently designated nutrient surplus watersheds may be included under this Reg. if point source discharges are shown to provide a significant phosphorus contribution to waters within the listed nutrient surplus watersheds.

Facility Design Flow – mgd	Total Phosphorus discharge limit – mg/L
= or > 15	Case by case
3 to <15	1.0
1 to <3	2.0
0.5 to <1.0	5.0
<0.5	Case by Case

For discharges from point sources which are greater than 15 mgd, reduction of phosphorus below 1 mg/L may be required based on the magnitude of the phosphorus load (mass) and the type of downstream waterbodies (e.g., reservoirs, Extraordinary Resource Waters). Additionally, any discharge limits listed above may be further reduced if it is determined that these values are causing impairments to special waters such as domestic water supplies, lakes or reservoirs or Extraordinary Resource Waters.

Reg. 2.510 Oil and Grease

Oil, grease or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface, or coat the

banks and/or bottoms of the watercourses or adversely affect any of the associated biota. As a guideline, oil and grease shall not exceed 10 mg/l average or 15 mg/l maximum when discharging to surface waters. No mixing zones are allowed for discharges of oil and grease.

Reg. 2.511 Mineral Quality

(A) Site Specific Mineral Quality Criteria

Mineral quality shall not be altered by municipal, industrial, other waste discharges or instream activities so as to interfere with designated uses. The following limits apply to the streams indicated, and represent the monthly average concentrations of chloride (Cl^-), sulfate ($SO_4^=$) and total dissolved solids (TDS).

Stream	Concentration-mg/L		
	Cl^-	$SO_4^=$	TDS
Arkansas River Basin			
Arkansas River (Mouth to L&D #7)	250	100	500
Bayou Meto (Rocky Branch to Bayou Two Prairie)	64*	ER	ER
Bayou Meto (mouth to Bayou Two Prairie)	95**	45**	ER
Bayou Two Prairie (mouth to Rickey Branch)	95**	45**	ER
Rocky Branch Creek	64*	ER	ER
Arkansas River (L&D #7 to L&D #10)	250	100	500
Cadron Creek	20	20	100
Arkansas River (L&D #10 to Oklahoma line, including Dardanelle Reservoir)	250	120	500
James Fork	20	100	275
Illinois River	20	20	300
Poteau River from Business Hwy 71to Stateline	120	60	500
Unnamed trib at Waldron	150	70	660
White River Basin			
White River (Mouth to Dam #3)	20	60	430
Big Creek	20	30	270
Unnamed trib from Frit Ind.	ER	48*	ER
Cache River	20	30	270
Lost Creek Ditch	20	30	270
Bayou DeView	20	30	270
Little Red River (including Greers Ferry Reservoir)	20	30	100
Black River	20	30	270
Strawberry River	20	30	270
Spring River	20	30	290
Eleven Point River	20	30	270
Stennitt Creek	ER	ER	456*
South Fork Spring River	20	30	270
Myatt Creek	20	30	270
Current River	20	30	270
White River (Dam #3 to Missouri line, including Bull	20	20	180

Stream	Concentration-mg/L		
	Cl^-	$SO_4^=$	TDS
Shoals Reservoir)			
Buffalo River	20	20	200
Crooked Creek	20	20	200
White River (Missouri line to headwaters, including	20	20	160
Beaver Reservoir)			
Kings River	20	20	150
West Fork White River	20	20	150
St. Francis River Basin			
St. Francis River (Mouth to 36° N. Lat.)	10	30	330
L'Anguille River	20	30	235
Tyronza River (headwaters to Ditch No. 6 confluence)	20	30	350
Ditch No. 27	ER	480	1200
Ditch No. 6 (mouth to Ditch No. 27 confluence)	ER	210	630
Tyronza River (mouth to Ditch No. 6 confluence)	20	60	350
Little River	20	30	365
Pemiscot Bayou	20	30	380
St. Francis River (36° N. Lat. to 36° 30' N. Lat.)	10	20	180
Ouachita River Basin			
Bayou Bartholomew	50	20	500
Chemin-A-Haut Creek	50	20	500
Overflow Creek	20	30	170
Bayou Macon	30	40	330
Boeuf River	90	30	460
Big Cornie Creek	230	30	500
Little Cornie Creek	200	10	400
Three Creeks	250	10	500
Little Cornie Bayou	200	20	500
Unnamed trib from GLCC 003	538*	35*	519*
Unnamed trib to Little Cornie Bayou	305*	ER	325*
Little Cornie Bayou from unnamed trib to State Line	215*	25*	500*
Walker Branch	180*	ER	970*
Gum Creek	104*	ER	311*
Bayou de L'Outre above Gum Creek	250	90	500
Bayou de L'Outre below Gum Creek	250	90	750
Ouachita River (Louisiana line to Camden)	160	40	350
Saline River	20	40	120
Saline River east bifurcation at Holly Creek	ER	250	500
Hurricane Cr above Hurricane Lake Dam	20	250	500
Hurricane Cr from Hurricane Lk. Dam to Ben Ball Brdg	125	730	1210
Hurricane Cr from Ben Ball Bridge to Hwy.270	125	700	1200
Hurricane CR from Hwy 270 to Saline River	100	500	1000
Alcoa unnamed tribs to Hurricane Cr.	125	700	1100

Stream	Concentration-mg/L		
	Cl^-	$SO_4^=$	TDS
Dry Lost Creek and tribs	ER	560	880
Lost Creek to Little Lost Creek	ER	510	820
Lost Creek below Little Lost Creek	ER	300	550
Holly Creek	30	860	1600
Moro Creek	30	20	260
Smackover Creek	250	30	500
Haynes Creek from mouth of Flat Creek to Smackover creek	360*	55*	855*
Flat Creek from mouth of UTA to Haynes Creek	165*	67*	560*
Unnamed trib A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek	16*	80*	315*
Confluence with unnamed trib A to Flat Creek	23*	125*	475*
Bayou de L'Outre Creek above Loutre Creek	180	ER	970
Unnamed trib UT004 from GLCC	014*	ER	311*
Unnamed trib UT002 from GLCC	278*	90*	500*
Loutre Creek- from Hwy 15 South to the confluence of Bayou de Loutre	256*	997*	1756*
Bayou de Loutre – from Loutre Creek to the discharge for the City of El Dorado - South facility	264*	635*	1236*
Bayou de Loutre – from the discharge for the City of El Dorado-South downstream to the mouth of Gum Creek	250*	431*	966*
Bayou de Loutre – from the mouth of Gum Creek downstream to the mouth of Boggy Creek	250*	345*	780*
Boggy Creek - from the discharge for Clean Harbors El Dorado LLC to the confluence of Bayou de Loutre	631*	63*	1360*
Bayou de Loutre- from the mouth of Boggy Creek downstream to the mouth of Hibank Creek	250*	296*	750*
Bayou de Loutre – from the mouth of Hibank Creek downstream to the mouth of Mill Creek	250*	263*	750*
Bayou de Loutre – from the mouth of Mill Creek downstream to the mouth of Buckaloo Branch	250*	237*	750*
Bayou de Loutre- from the mouth of Buckaloo Branch downstream to the mouth of Bear Creek	250*	216*	750*
Bayou de Loutre – from the mouth of Bear Creek downstream to the final segment of Bayou de Loutre	250*	198*	750*
Bayou de Loutre (Final segment) – from the mouth of Bear Creek to the Arkansas/Louisiana State Line	250*	171*	750*
Ouachita River (Camden to Carpenter Dam)	50	40	150
Town Creek below Acme tributary	ER	200	700
Unnamed trib from Acme	ER	330	830
Little Missouri River	10	90	180
Muddy Fork Little Missouri	ER	250	500
Bluff Creek and unnamed trib.	ER	651*	1033*

Stream	Concentration-mg/L		
	Cl^-	$SO_4^=$	TDS
Garland Creek	250	250	500
South Fork Caddo	ER	60	128
Back Valley Creek	ER	250	500
Ouachita River (Carpenter Dam to Headwaters, including Lake Ouachita tributaries)	10	10	100
Red River Basin			
Bayou Dorcheat	100	16*	250
Albemarle unnamed trib (AUT) to Horsehead Creek	137*	ER	383*
Horsehead Creek from AUT to mouth	85*	ER	260*
Cypress Creek	250	70	500
Crooked Creek	250	10	500
Dismukes Creek	26	ER	157
Big Creek from Dismukes to Bayou Dorcheat	20	ER	200
Bois d'Arc Creek from Caney Creek to Red River	113*	283*	420*
Caney Creek	113*	283*	420*
Bodcau Creek	250	70	500
Poston Bayou	120	40	500
Kelley Bayou	90	40	500
Red River from Oklahoma to confluence with Little River	250	200	850
Red River from Little River to Louisiana	250	200	500
Sulphur River	120	100	500
Days Creek	250	250	500
McKinney Bayou	180	60	480
Little River	20	20	100
Saline River	20	10	90
Mine Creek from Hwy 27 to Millwood Lake	90	65	700
Cossatot River	10	15	70
Upper Rolling Fork	20	20	100
Rolling Fork from unnamed trib A to DeQueen Lake	130	70	670
Unnamed tribs A and A1 at Grannis	135	70	700
Mountain Fork	20	20	110
Mississippi River (Louisiana line to Arkansas River)	60	150	425
Mississippi River (Arkansas River to Missouri line)	60	175	450

ER - ecoregion standard
* - based on critical background flow of 4 cfs
** - These limits shall apply to all tributaries of Bayou Meto and Bayou Two Prairie listed in Appendix A
Any modification of these values must be made in accordance with Reg. 2.306.

(B) Ecoregion Reference Stream Minerals Values

The following values determined from Arkansas' least-disturbed ecoregion reference streams are considered to be the maximum

naturally occurring levels. For waterbodies not listed above, any discharge which results in instream concentrations more than 1/3 higher than these values for Cl and $SO_4^{=}$ or more than 15 mg/l, whichever is greater, is considered to be a significant modification of the water quality. Similarly, such modification exists if the following TDS values are exceeded after being increased by the sum of the increases to Cl and SO_4. Such modifications may be made only in accordance with Reg. 2.306.

CALCULATED ECOREGION REFERENCE STREAM VALUES (mg/l)

Ecoregion	Chlorides	Sulfates	TDS
Ozark Highlands	17.3	22.7	250
Boston Mountains	17.3	15	95.3
Arkansas River Valley	15	17.3	112.3
Ouachita Mountains	15	20	142
Gulf Coastal Plains	18.7	41.3	138
Delta	48	37.3	411.3

(C) Domestic Water Supply Criteria

In no case shall discharges cause concentrations in any waterbody to exceed 250, 250 and 500 mg/l of chlorides, sulfates and total dissolved solids, respectively, or cause concentrations to exceed the applicable limits in the streams to which they are a tributary, except in accordance with Reg. 2.306.

Reg. 2.512 Ammonia

Total ammonia nitrogen (N) shall not exceed those values and frequency of occurrence established in the following tables:

(A) The one-hour average concentration of total ammonia nitrogen shall not exceed, more than once every three years on the average, the acute criterion as shown in the following table:

pH-Dependent Values of the CMC (Acute Criterion)- mg/L

pH	Salmonids* Present	Salmonids Absent
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

* Family of fishes which includes trout

(B) The thirty-day average concentration of total ammonia nitrogen shall not exceed those values shown as the chronic criterion in the following tables:

Temperature and pH-Dependent Values of the CCC (Chronic Criterion) for Fish Early Life Stages Present – mg/L

	Temperature, °C									
pH	**0**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Temperature and pH-Dependent Values of the CCC (Chronic Criterion) for Fish Early Life Stages Absent – mg/L

	Temperature, °C									
pH	**0-7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15***	**16***
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

* At 15 C and above, the criterion for fish ELS absent is the same as the criterion for fish ELS present.

(C) The highest four-day average within a 30-day period should not exceed 2.5 times the chronic values shown above.

(D) For permitted discharges, the daily maximum or 7-day average permit limit shall be calculated using the four-day average value described above as an instream value, after mixing and based on a season when fish early life stages are present and a season when fish early life stages are absent. Temperature values used will be 14° C when fish early life stages are absent and the ecoregion temperature standard for the season when fish early life stages are present. The pH values will be the ecoregion mean value from least-disturbed stream data.

CHAPTER 6: EFFECTIVE DATE

This regulation is effective ten (10) days after filing with the Secretary of State, The State Library, and the Bureau of Legislative Research.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

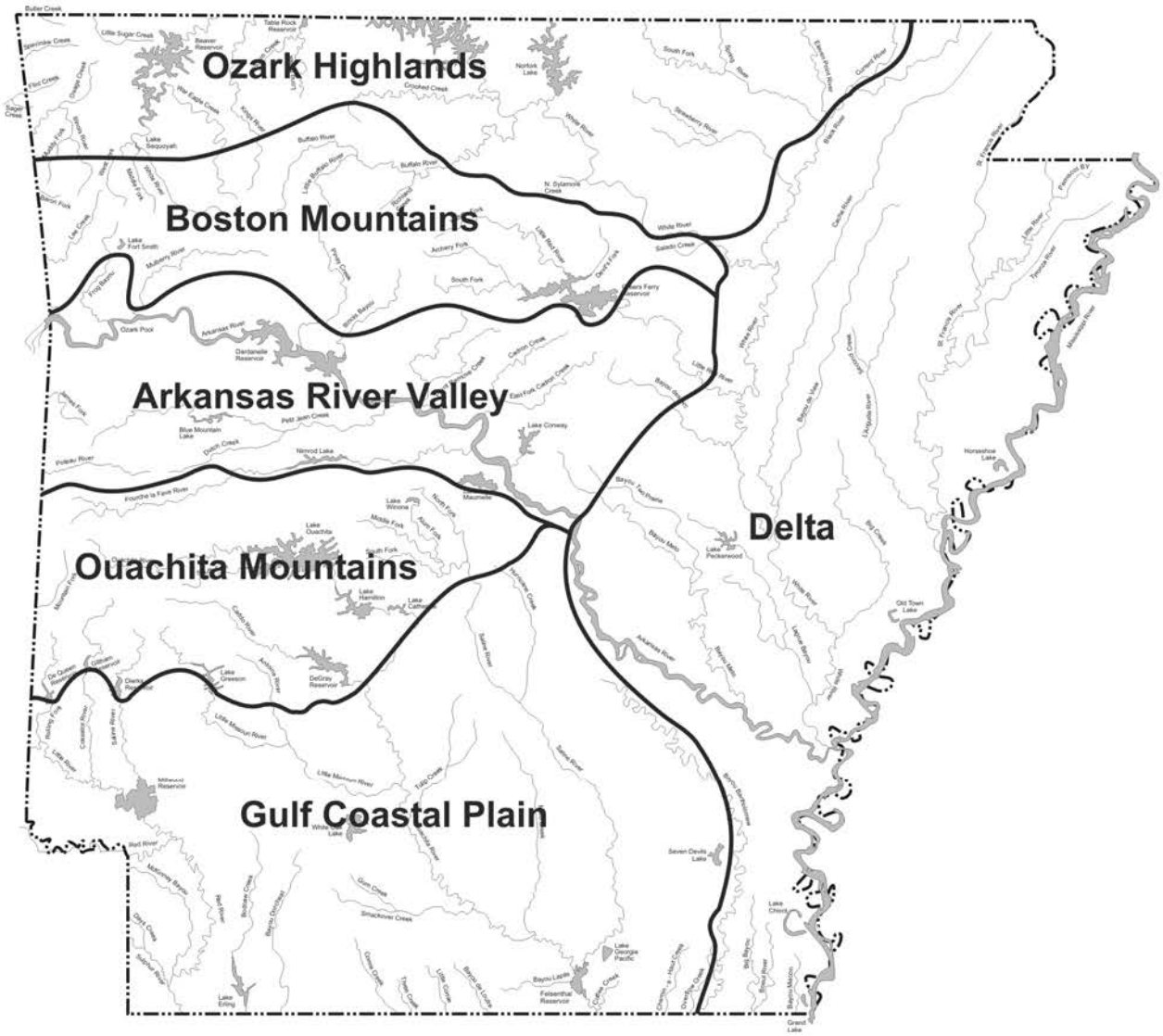
REGULATION NO. 2

APPENDIX A

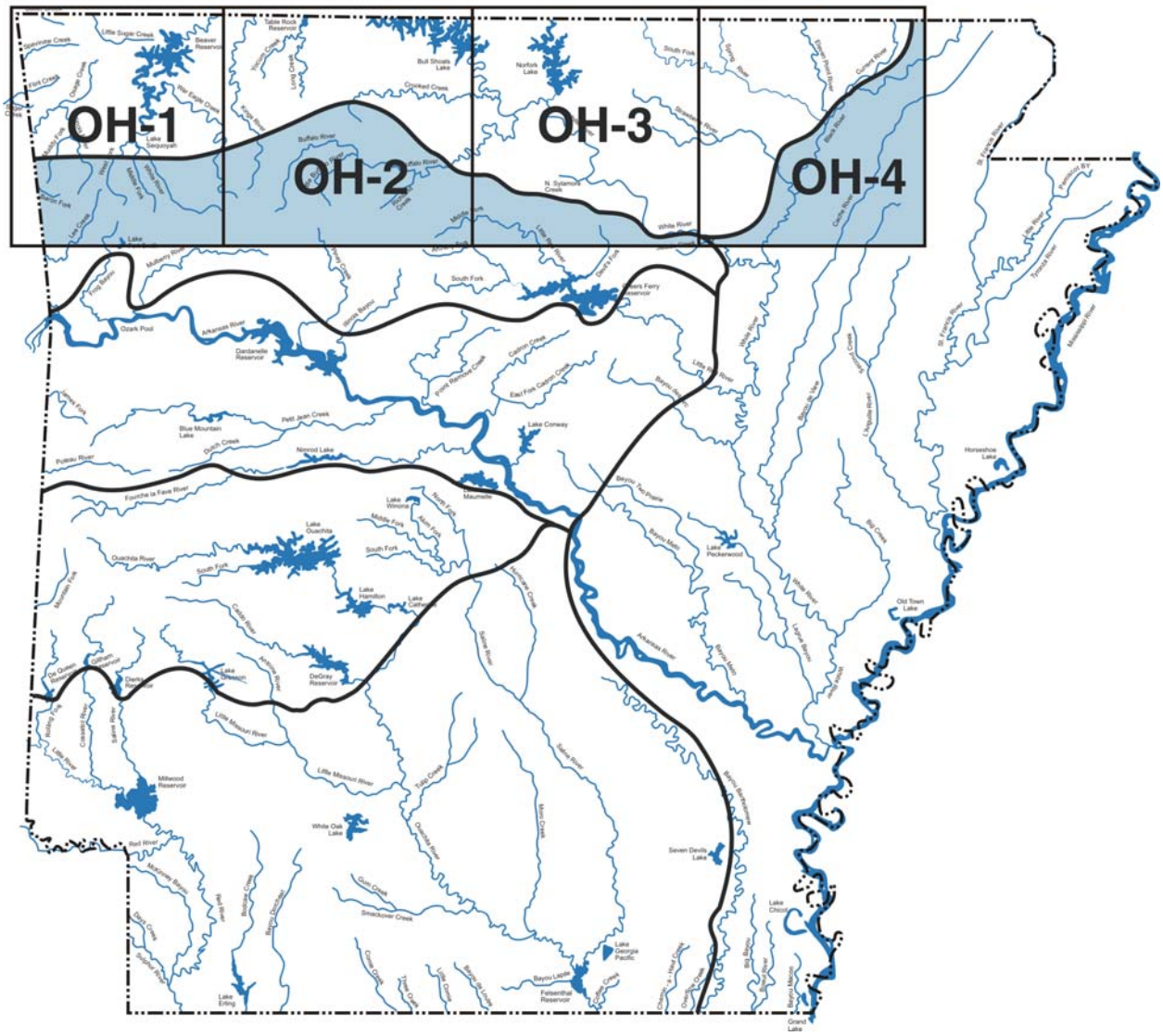
Designated Uses, Specific Standards and Maps of Waters of the State by Ecoregions

(September 28, 2007)

APPENDIX A: MAP OF ECOREGIONS OF ARKANSAS



Index to Plates of the Ozark Highlands



DESIGNATED USES: OZARK HIGHLANDS ECOREGION
(Plates OH-1, OH-2, OH-3, OH-4)

Extraordinary Resource Waters
Current River (OH-4)
Eleven Point River (OH-4)
Strawberry River (OH-3, OH-4)
Spring River, including its tributaries: Field Creek, Big Creek, English Creek, Gut Creek and Myatt Creek (OH-4)
South Fork Spring River (OH-3, OH-4)
North Sylamore Creek (OH-3)
Buffalo River (OH-2, OH-3)
Kings River (OH-2)
Bull Shoals Reservoir (OH-2, OH-3)

Natural and Scenic Waterways
Strawberry River from headwaters to Sharp-Izard County Line (OH-3, OH-4)
Kings River - that segment in Madison County (OH-2)
Buffalo River (OH-2, OH-3)
North Sylamore Creek (OH-3)*

Ecologically Sensitive Waterbodies
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 Strawberry River darter (OH-3, OH-4)
Spring River - snuffbox and pink mucket mussels; Ozark hellbender (OH-4)
Eleven Point River - location of Ozark hellbender (OH-4)
Current River - location of flat floater and pink mucket mussels (OH-4)
Illinois River - Neosho mucket (OH-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi^2 and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

Fisheries

Trout

Bull Shoals Reservoir - lower portion (OH-2)
White River from Bull Shoals Dam to Dam #3 (OH-3)
North Fork White River (OH-3)
Spring River from Mammoth Springs to South Fork Spring River (OH-4)
Upper White River from Beaver Dam to State Line (OH-1)

Lakes and Reservoirs - all

Streams

Seasonal Ozark Highlands fishery - all streams with watersheds of less than 10 mi^2 except as otherwise provided in Reg. 2.505
Perennial Ozark Highlands fishery - all streams with watersheds of 10 mi^2 and larger and those waters where discharges equal or exceed 1 CFS

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* As designated in the National Wild and Scenic Rivers System

Use Variations Supported by UAA or Other Investigations
Railroad Hollow Creek - no fishable/swimmable uses (OH-1, #1)
Columbia Hollow Creek - seasonal fishery March-June (OH-1, #2)
Curia Creek - below first waterfall, perennial fishery (OH-4, #3)
Moccasin Creek - below Highway 177, perennial fishery (OH-3, #4)
Stennitt Creek- from Brushy Creek to Spring River, no domestic water supply use (OH-4)

SPECIFIC STANDARDS: OZARK HIGHLANDS ECOREGION
(Plates OH-1, OH-2, OH-3, OH-4)

	Streams		Lakes and Reservoirs
Temperature °C (°F)*	29 (84.2)		32 (89.6)
Trout waters	20 (68)		
Turbidity (NTU) (base/all)	10/17		25/45
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen**	Pri.	Crit	see Reg. 2.505
<10 mi^2 watershed	6	2	
10 to 100 mi^2	6	5	
>100 mi^2 watershed	6	6	
Trout waters	6	6	

All other standards (same as statewide)

Variations Supported by UAA
Railroad Hollow Creek: from headwaters to Spavinaw Creek - year-round dissolved oxygen - 2 mg/l (OH-1, #1)
Curia Creek - below first waterfall, critical season D.O. 6 mg/l (OH-4, #3)
Moccasin Creek - below Highway 177, critical season D.O. 5mg/l (OH-3, #4)
SWEPCO Reservoir - maximum temperature 54°C (limitation of 2.8°C above natural temperature does not apply) (OH-1, #5)
Stennitt Creek - from Brushy Creek to Spring River, TDS = 456 mg/l (OH-4, #6)

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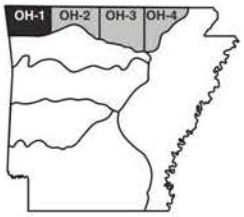
* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 CFS and greater, the primary season D.O. standard will be 6.5 mg/l. When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period.

Plate OH-1 (Ozark Highlands)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

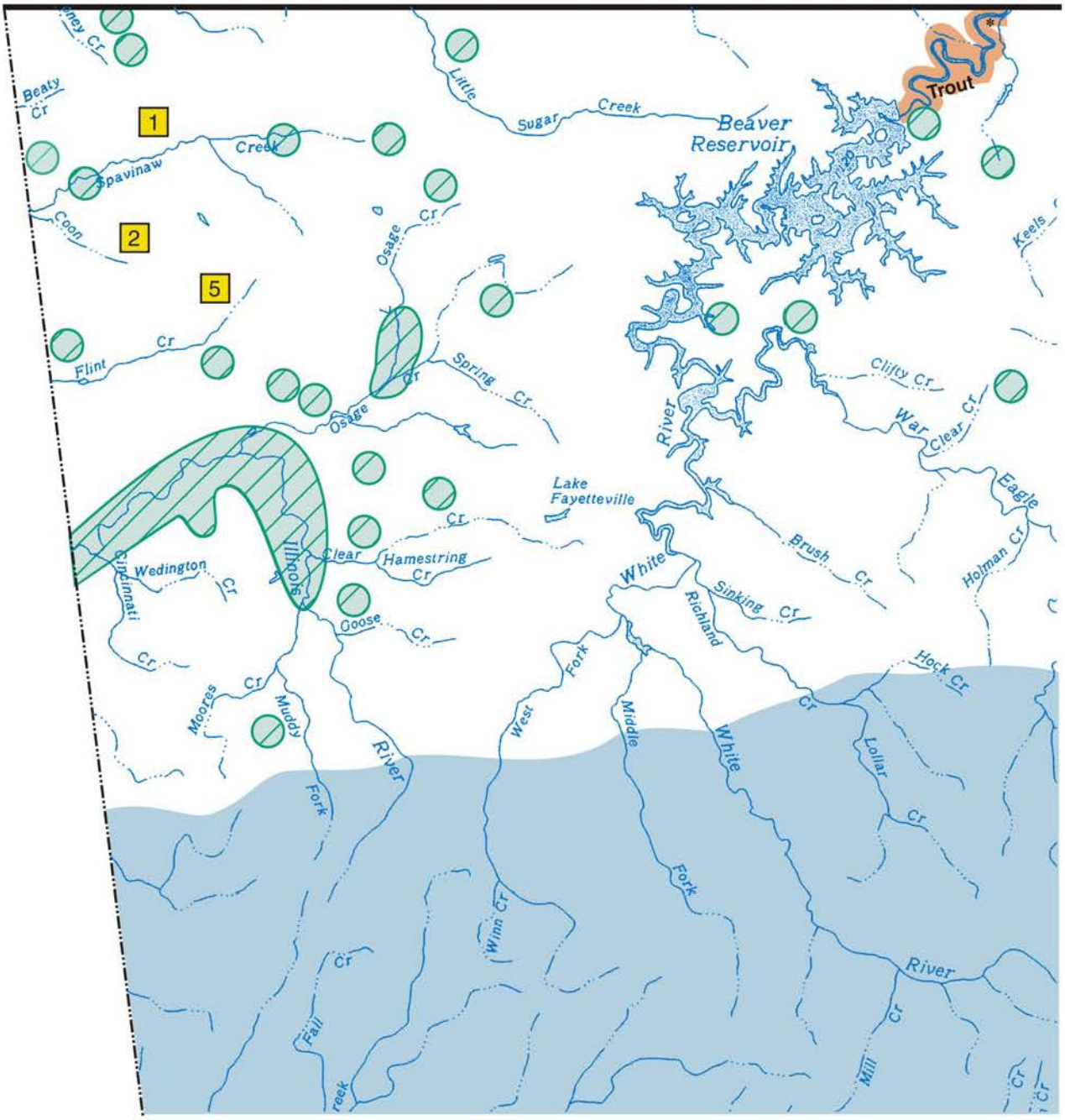
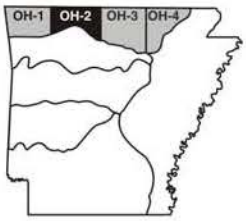
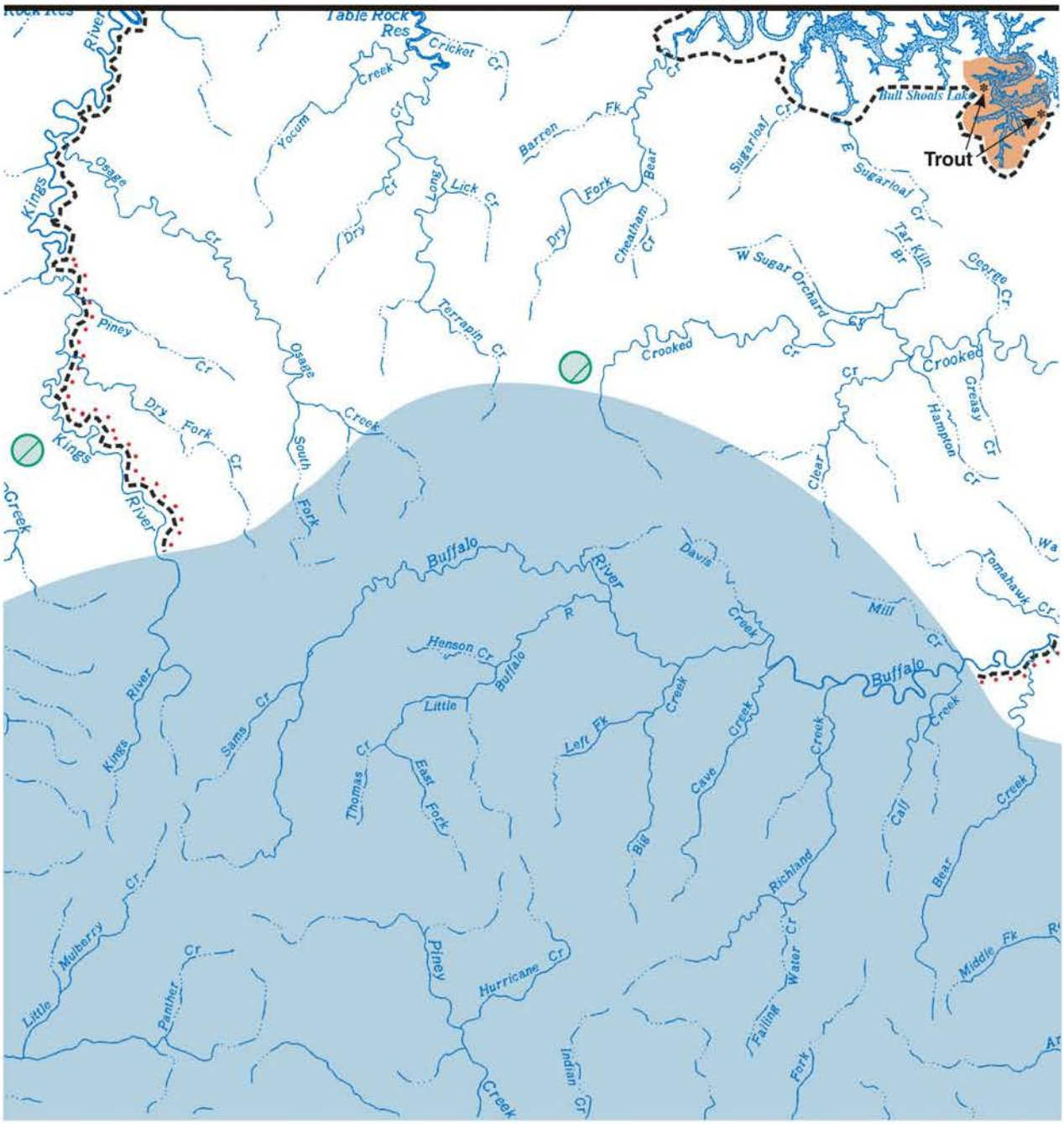


Plate OH-2 (Ozark Highlands)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA



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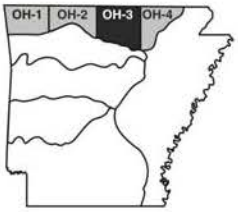


LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

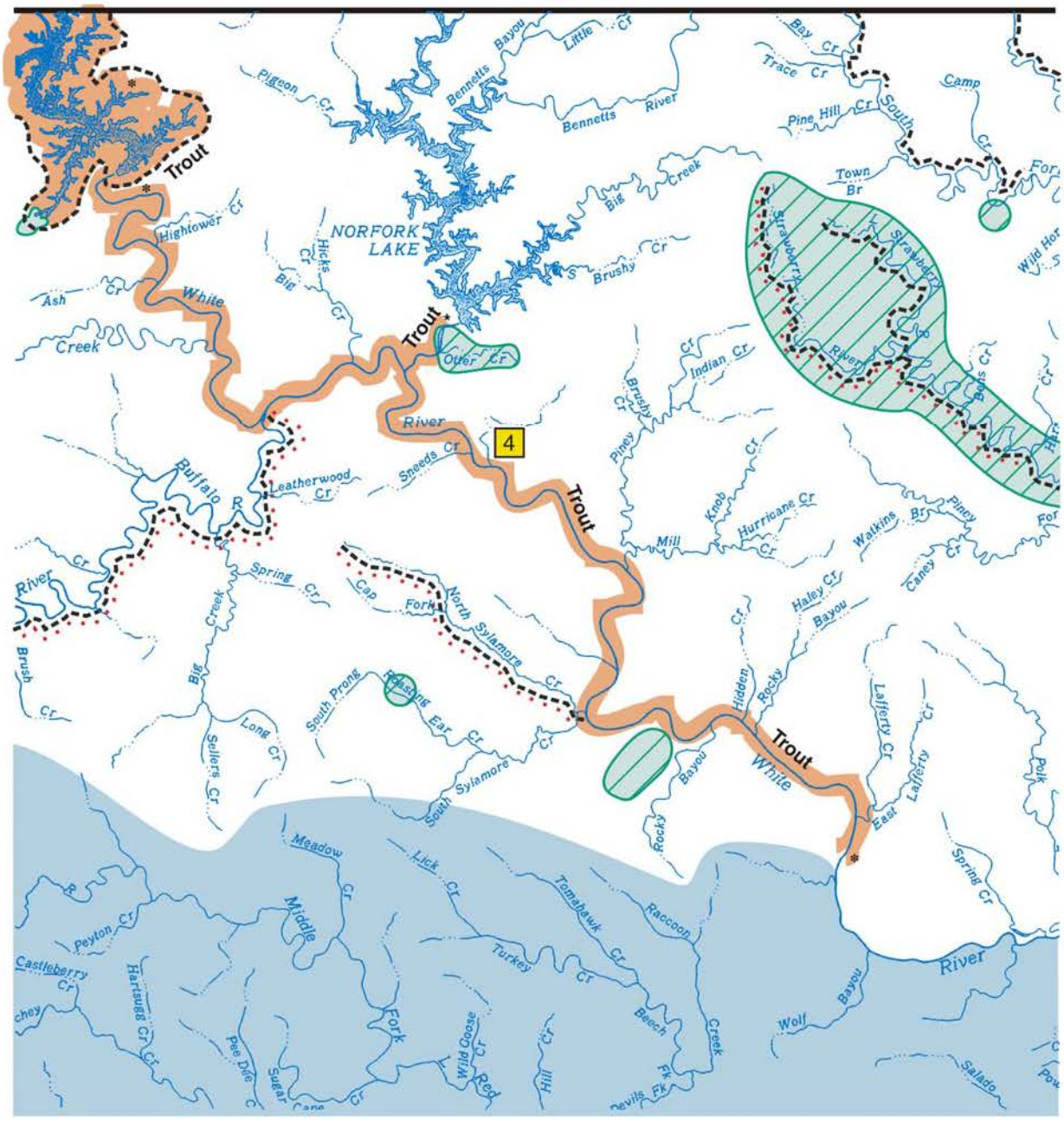
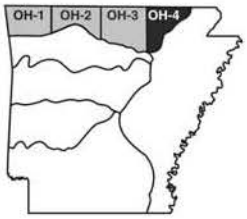
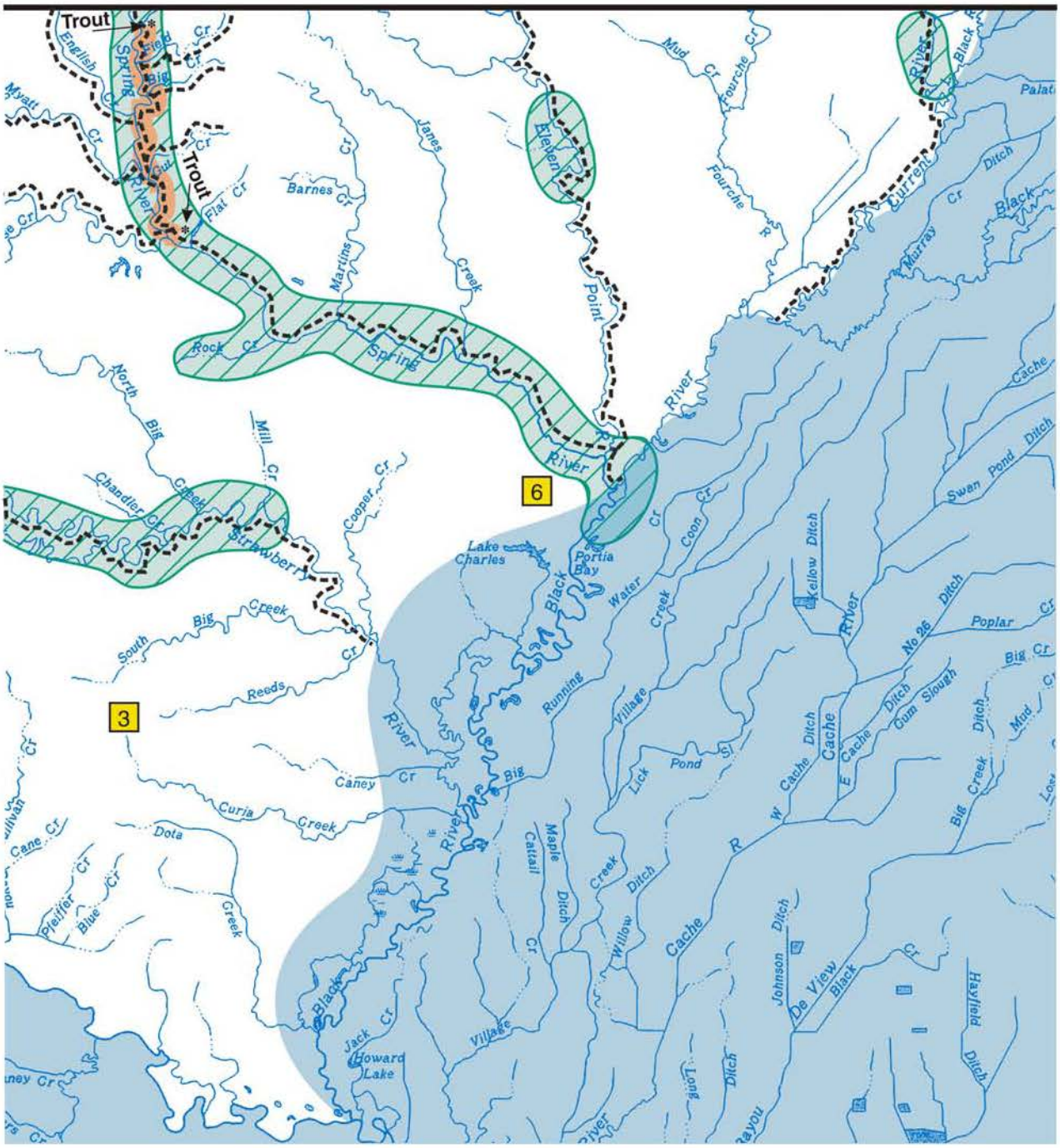


Plate OH-4 (Ozark Highlands)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA



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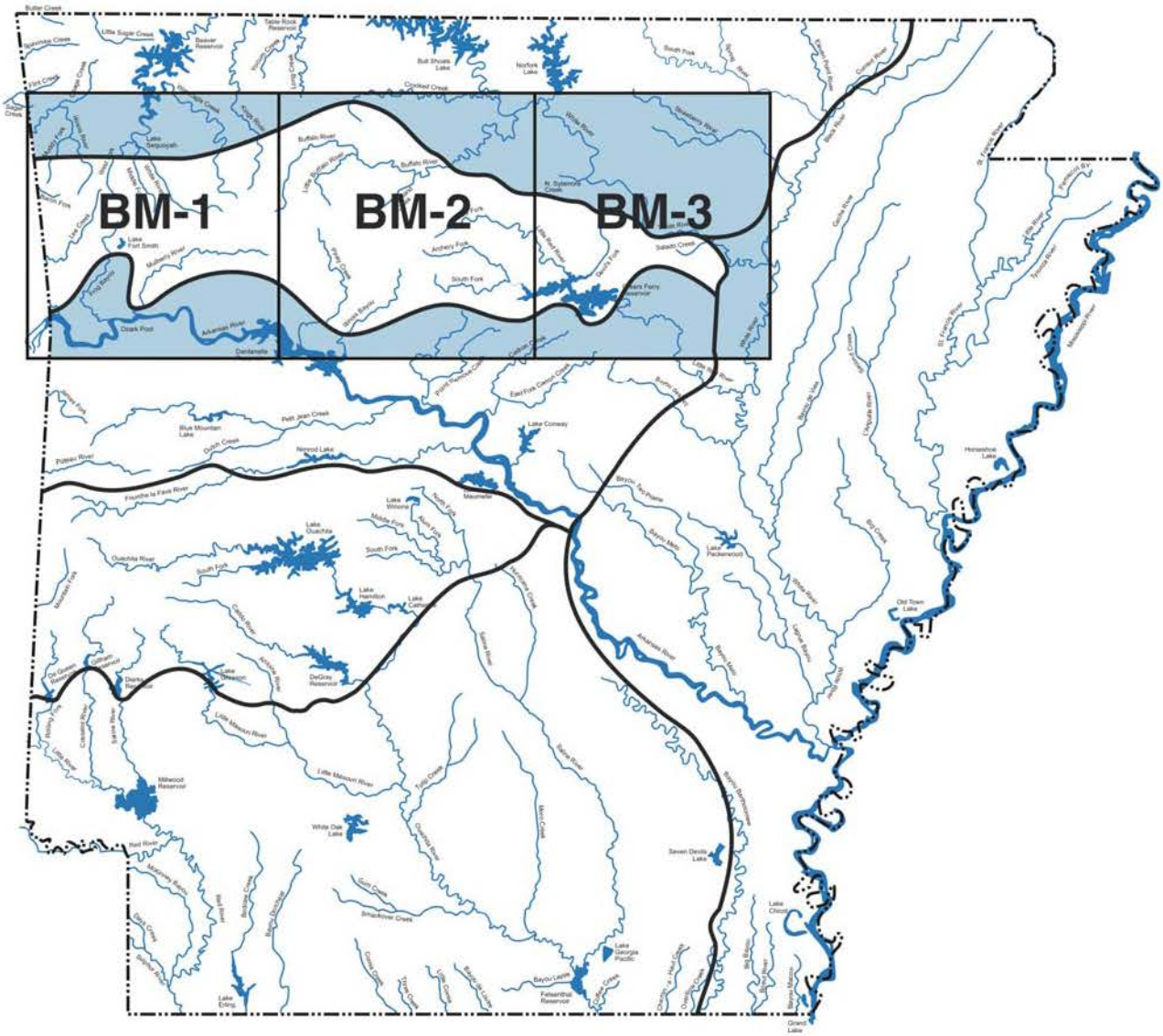

DESIGNATED USES: BOSTON MOUNTAINS ECOREGION

(Plates BM-1, BM-2, BM-3)

Extraordinary Resource Waters

Devils Fork of Little Red River including Beech Creek, Tomahawk Creek, Turkey Creek, Lick Creek and Racoon Creek (BM-3)
Middle Fork of Little Red River above Greers Ferry Reservoir (BM-2, BM-3)
Archey Creek from headwaters to confluence with South Fork Little Red River (BM-2)
Illinois Bayou including North, Middle and East Forks (BM-2)
Piney Creek (BM-2)
Hurricane Creek (BM-2)
Mulberry River (BM-1, BM-2)
Lee Creek from state line upstream to headwaters (BM-1)
Salado Creek (BM-3)
Kings River (BM-1)
Richland Creek and Falling Water Creek (BM-2)
Buffalo River (BM-1, BM-2)

Natural and Scenic Waterways

Mulberry River (BM-1, BM-2)
Buffalo River (BM-1, BM-2)
Kings River (BM-1)
Big Piney Creek (BM-2)*
Hurricane Creek (BM-2)*
Richland Creek (BM-2)*

Ecologically Sensitive Waterbodies

Devils, Middle and South Forks of Little Red River and Archey Creek above Greers Ferry Reservoir - location of endemic yellowcheek darter and endangered speckled pocketbook mussel (except Devils Fork) (BM-2, BM-3)
Foshee Cave - location of aquatic cave snail (BM-3)
Upper White River - location of longnose darter (BM-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi^2 and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

Fisheries

Trout

Greers Ferry Reservoir below Narrows (BM-3)
Little Red River below Greers Ferry Dam (BM-3)

Lakes and Reservoirs – all

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* As designated in the National Wild and Scenic Rivers System

Streams

Seasonal Boston Mountain fishery - all waters with watersheds of less than 10 mi^2 except as otherwise provided in Reg.2.505

Perennial Boston Mountain fishery - all waters with 10 mi^2 watershed or larger and those waters where discharges equal or exceed 1 CFS

Use Variations Supported by UAA

None

SPECIFIC STANDARDS: BOSTON MOUNTAINS ECOREGION

(Plates BM-1, BM-2, BM-3)

	Streams		Lakes and Reservoirs
Temperature °C (°F)*	31 (87.8)		32 (89.6)
Trout waters	20 (68)		
Turbidity (NTU) (base/all)	10/19		25/45
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/l) **	Pri.	Crit	see Reg. 2.505
<10 mi^2 watershed	6	2	
10 mi^2 and greater	6	6	
Trout waters	6	6	
All other standards	(same as statewide)		

Variations Supported by UAA

None

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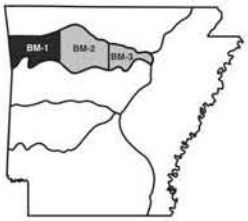
* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 CFS and greater, the primary season D.O. standard will be 6.5 mg/l. When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period.

Plate BM-1 (Boston Mountains)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

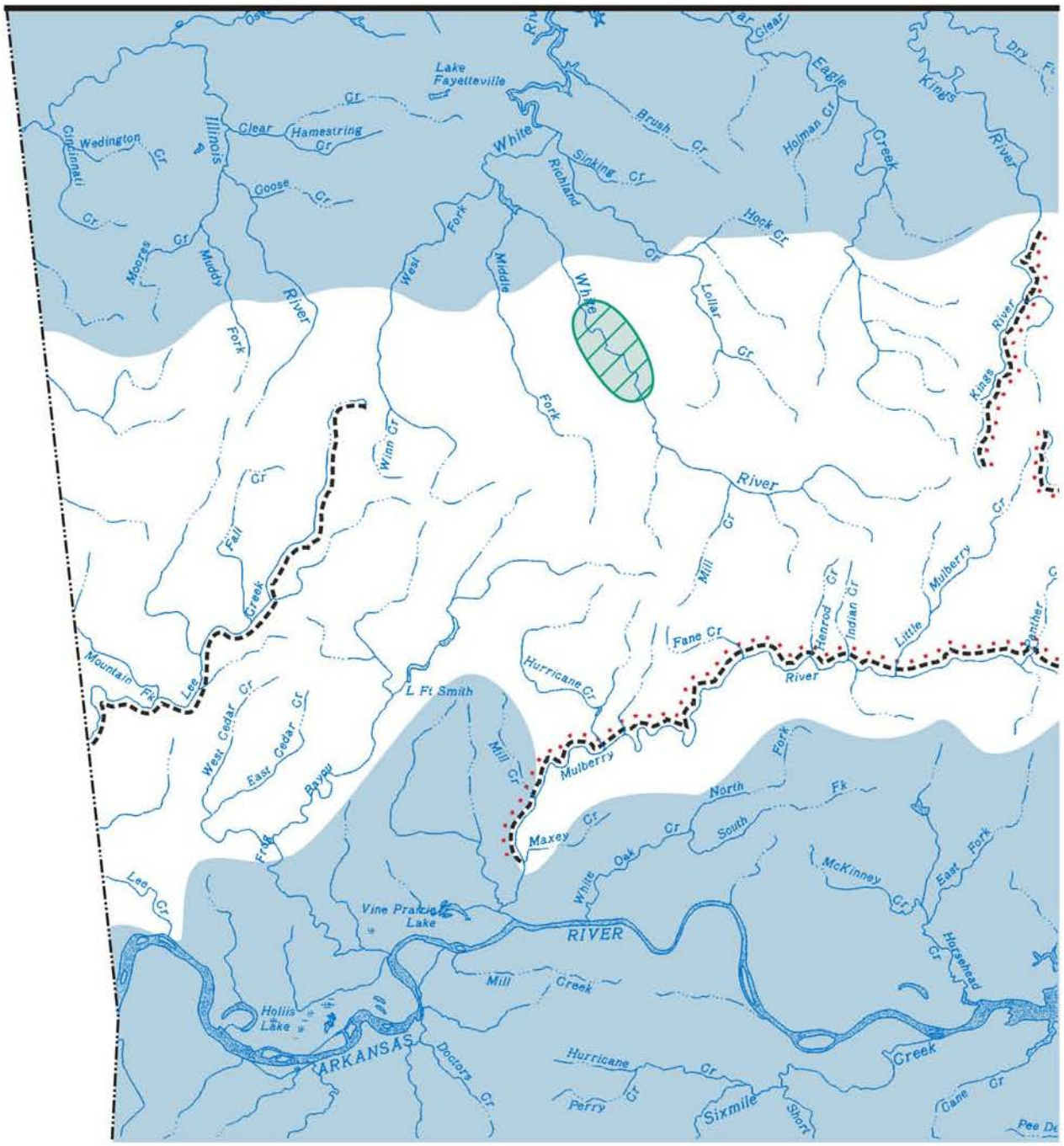
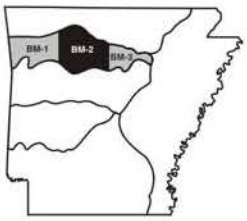


Plate BM-2 (Boston Mountains)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

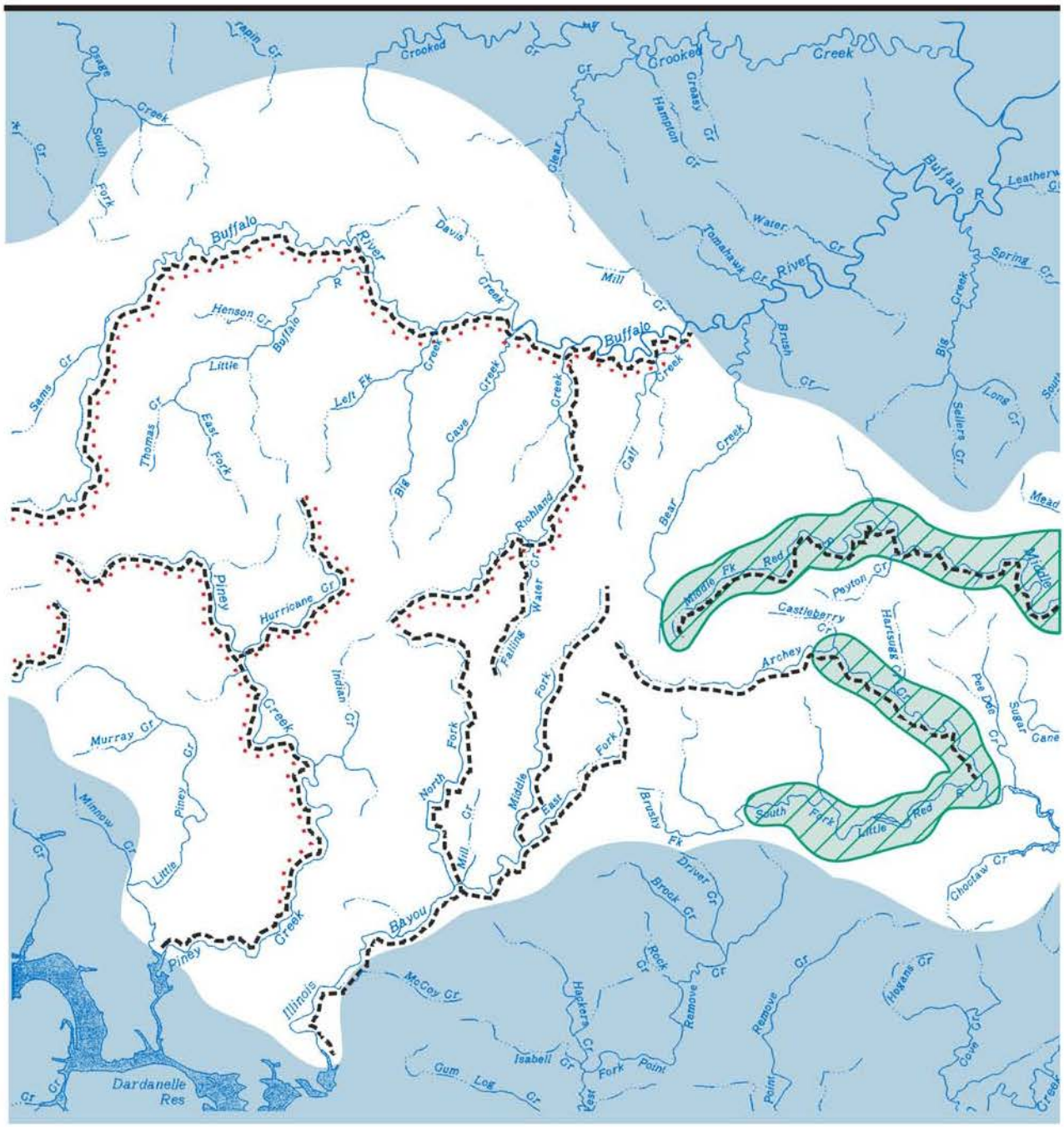
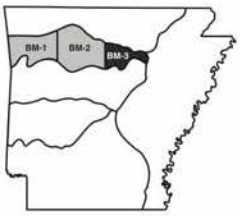
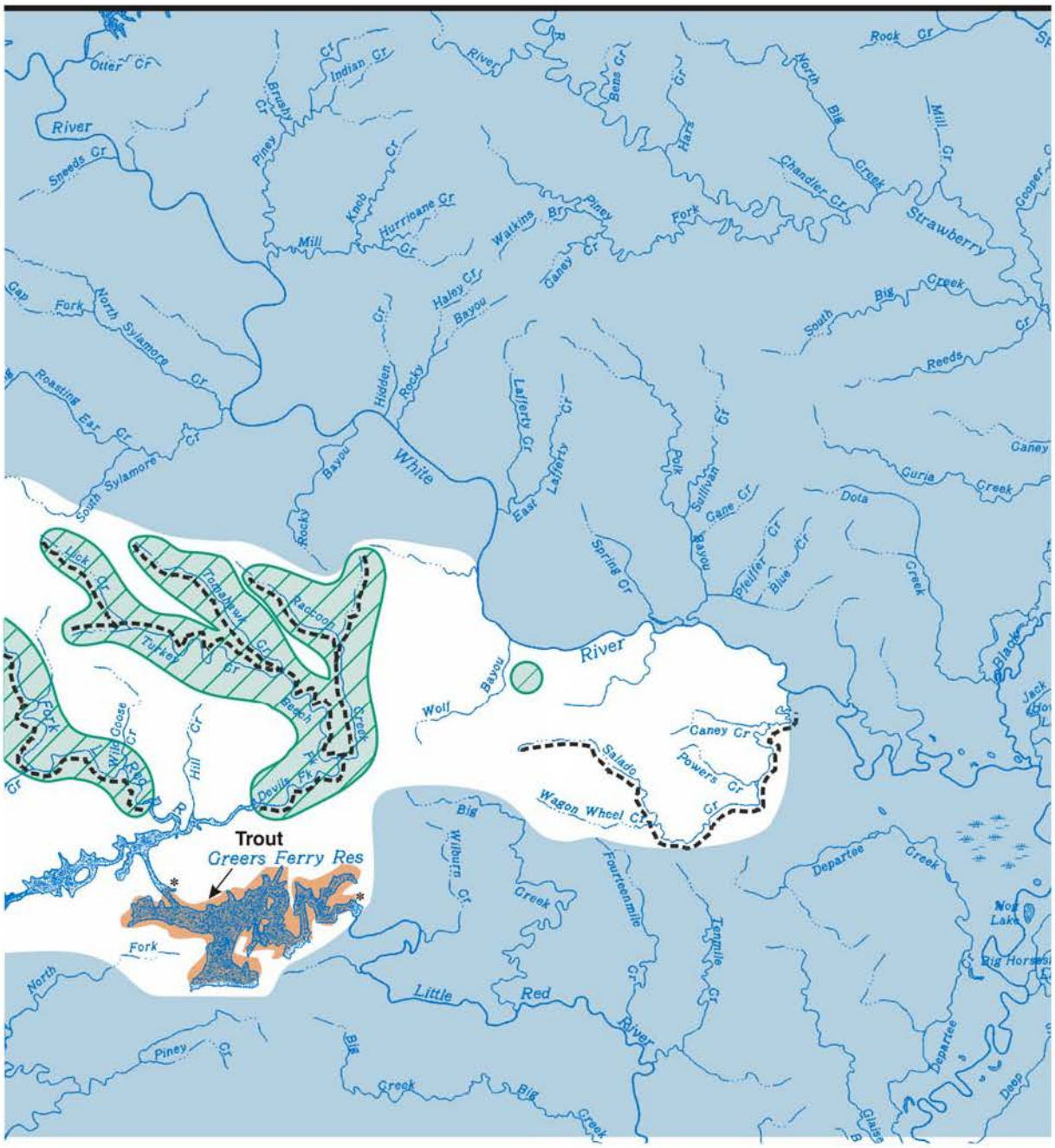


Plate BM-3 (Boston Mountains)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA



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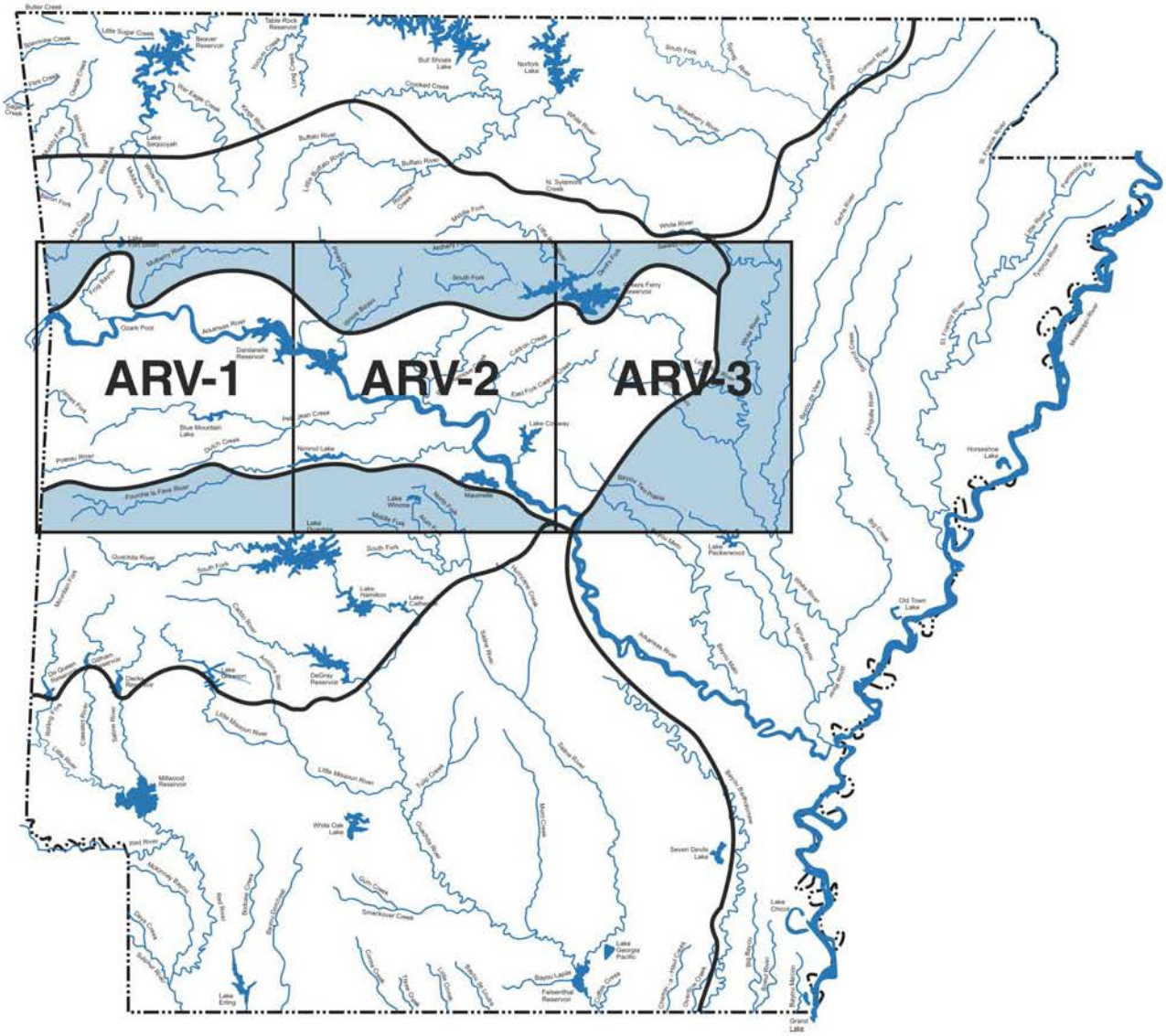

DESIGNATED USES: ARKANSAS RIVER VALLEY ECOREGION

(Plates ARV-1, ARV-2, ARV-3)

Extraordinary Resource Waters
Cadron Creek including North Fork and East Fork (ARV-2, ARV-3)
Mulberry River (ARV-1)
Big Creek adjacent to natural areas (ARV-3)

Natural and Scenic Waterway
Mulberry River (ARV-1)

Ecologically Sensitive Waterbodies

Primary Contact Recreation - all streams with watersheds of greater than 10 mi^2 and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

Fisheries

Trout

Little Red River below Greers Ferry Dam to Searcy (ARV-3)

Lakes and Reservoirs - all

Streams

Seasonal Arkansas River Valley fishery - all streams with watersheds of less than 10 mi^2 except as otherwise provided in Reg. 2.505

Perennial Arkansas River Valley fishery - all streams with watersheds of 10 mi^2 or larger and those waters where discharges equal or exceed 1 CFS

Use Variations Supported by UAA
Poteau River from Business Highway 71 to Stateline - no domestic water supply use(ARV-1,#2)
Unnamed tributary to Poteau River at Waldron - no domestic water supply use(ARV-1,#3)

SPECIFIC STANDARDS: ARKANSAS RIVER VALLEY ECOREGION

(Plates ARV-1, ARV-2, ARV-3)

	Streams		Lakes and Reservoirs
Temperature °C (°F)*	31 (87.8)		32 (89.6)
Trout waters	20 (68)		
Arkansas River	32 (89.6)		
Turbidity(NTU) (base/all)	21/40		25/45
Arkansas River)(base/all)	50/52		
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/l)**	Pri.	Crit.	see Reg. 2.505
<10 mi^2 watershed	5	2	
10 to 150 mi^2	5	3	
151 mi^2 to 400 mi^2	5	4	
>400 mi^2 watershed	5	5	
Trout waters	6	6	
All other standards	(same as statewide)		

Variations Supported by UAA

Dardanelle Reservoir - maximum temperature 35°C (95°F) (limitation of 2.8°C above natural temperature does not apply) (ARV-2, #1)

Poteau River from Business Highway 71 to Stateline - chlorides - 120 mg/l; sulfates - 60 mg/l; TDS - 500 mg/l (ARV-1, #2)

Unnamed tributary to Poteau River at Waldron - chlorides 150 mg/l; sulfates - 70 mg/l; TDS - 660 mg/l (ARV-1, #3)

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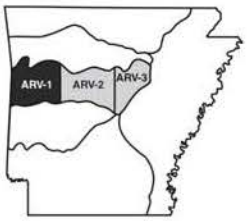
* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 CFS and greater, the primary season D.O. standard will be 6.5 mg/l. When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period.

Plate ARV-1 (Arkansas River Valley)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

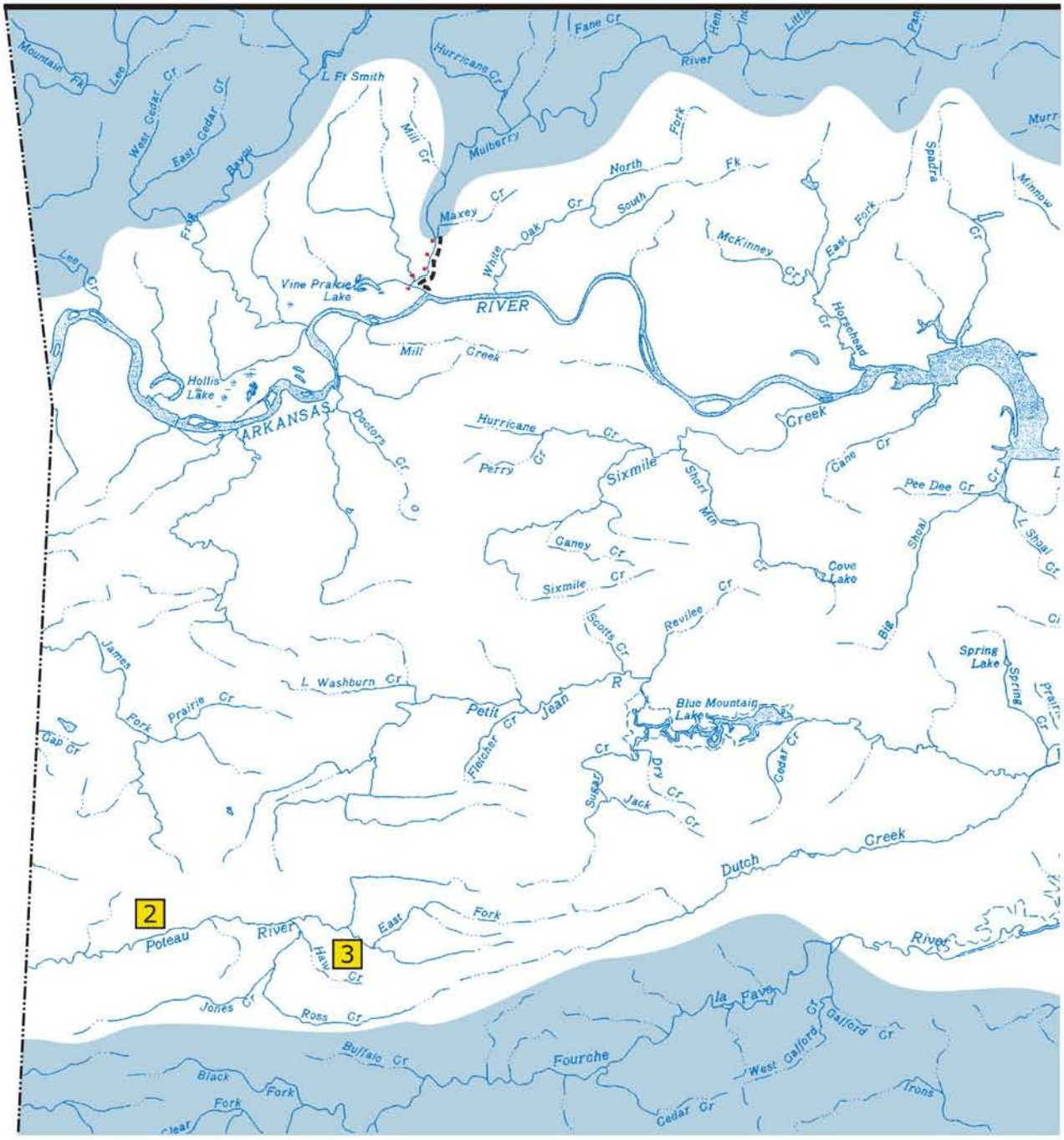
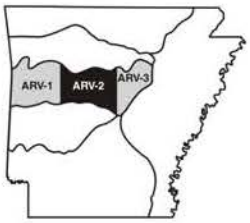


Plate ARV-2 (Arkansas River Valley)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

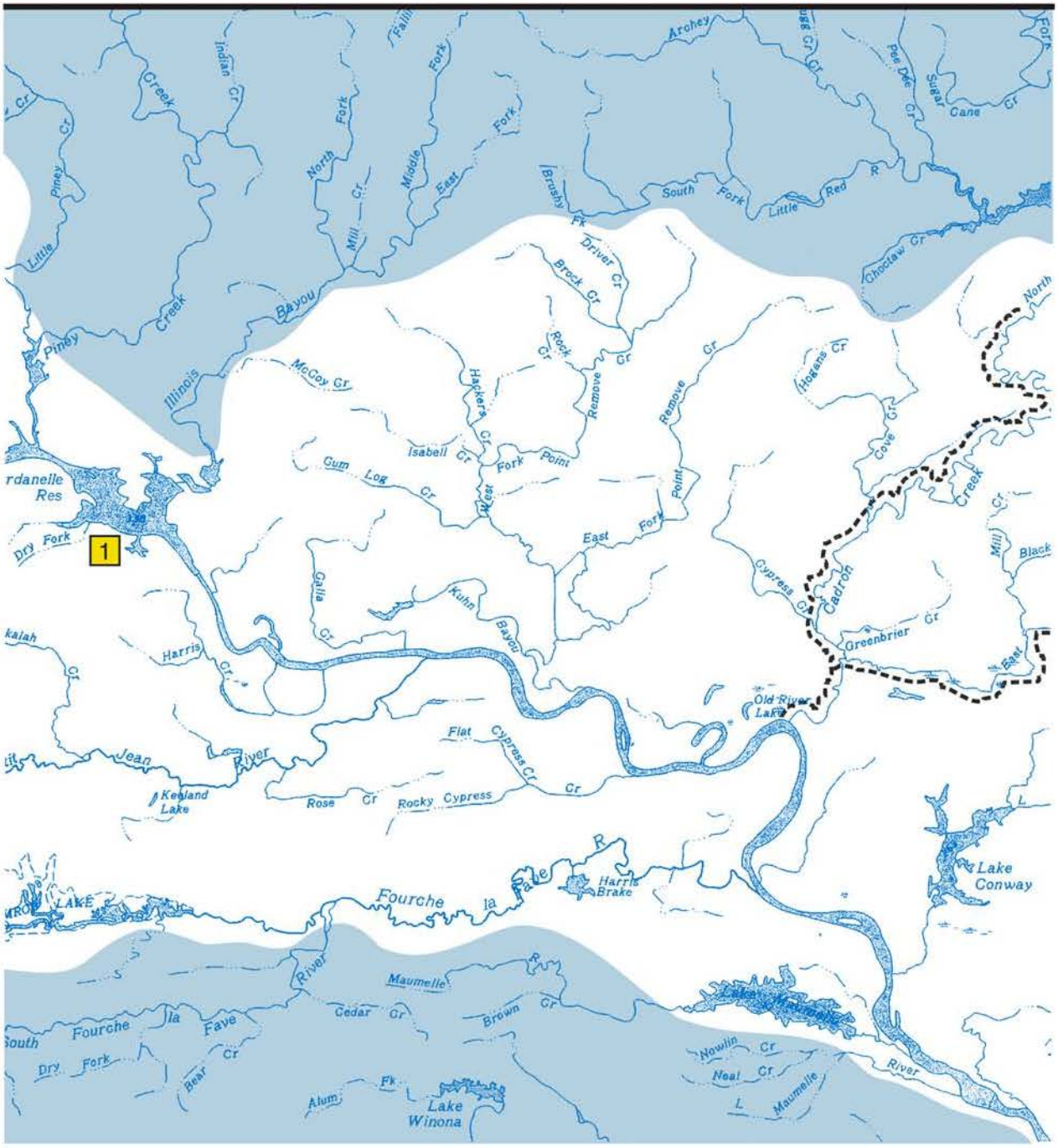
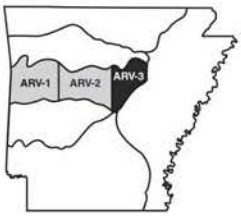
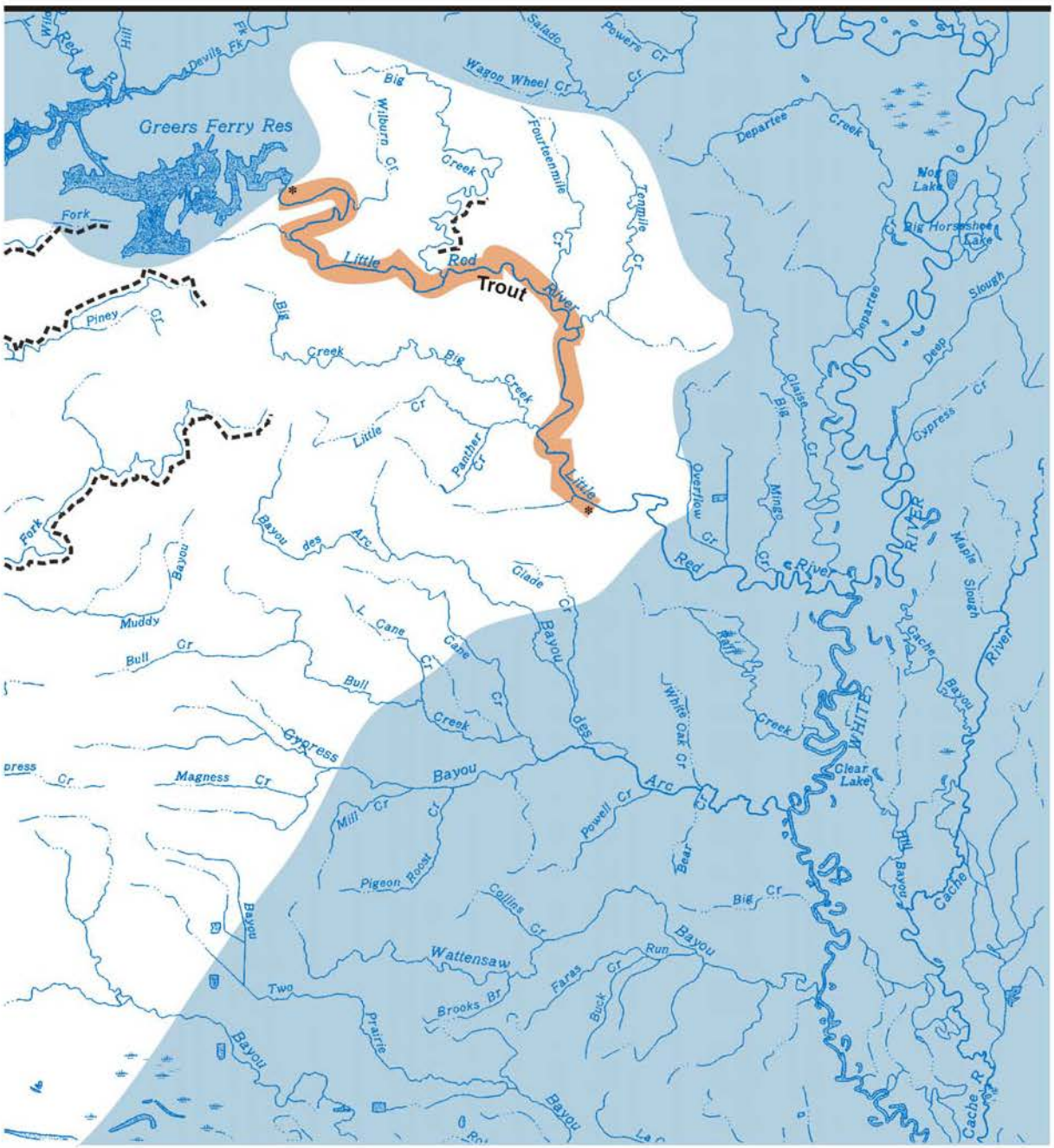


Plate ARV-3 (Arkansas River Valley)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA



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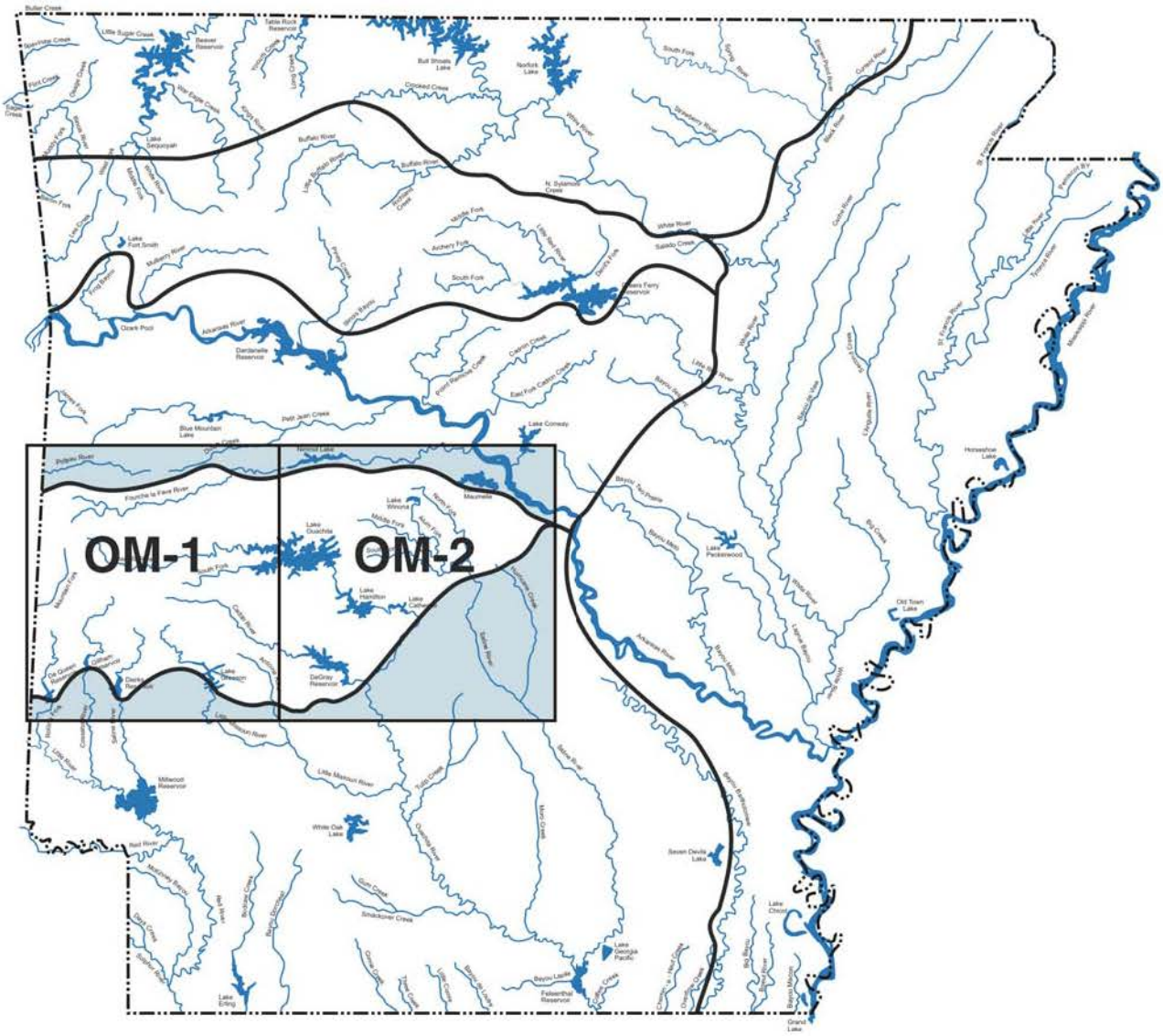

DESIGNATED USES: OUACHITA MOUNTAIN ECOREGION

(Plates OM-1, OM-2)

Extraordinary Resource Waters

Lake Ouachita (OM-1, OM-2)
DeGray Reservoir (OM-2)
Saline River - entire segment including North, Alum, Middle and South Forks (OM-2)
Caddo River - above DeGray Reservoir (OM-1, OM-2)
South Fork Caddo River (OM-1)
Cossatot River - above Gillham Reservoir (OM-1)
Caney Creek (OM-1)
Little Missouri River - above Lake Greeson (OM-1)
Mountain Fork River (OM-1)
Big Fork Creek - adjacent to natural area (OM-1)

Natural and Scenic Waterway

Cossatot River above Gillham Reservoir (OM-1)
Little Missouri River above Lake Greeson (OM-1)
Brushy Creek (OM-1)*

Ecologically Sensitive Waterbodies

Ouachita River above Lake Ouachita - location of Caddo madtom, longnose darter, peppered shiner and threatened Arkansas Fatmucket Mussel (OM-1)
South Fork Ouachita River - location of Arkansas fat mucket mussel and Caddo madtom (OM-1)
Caddo River and all tributaries above DeGray Reservoir - location of endemic paleback darter, Caddo madtom and threatened Arkansas Fatmucket Mussel (OM-1, OM-2)
Mountain Fork River - location of threatened leopard darter (OM-1)
Cossatot River above Gillham Reservoir - location of threatened leopard darter (OM-1)
Saline River including Alum, Middle, North and South Forks, and Ten Mile Creek - location of endemic Ouachita madtom and threatened Arkansas Fatmucket Mussel (except South fork and Ten Mile Creek)(OM-2)
Little Missouri River above Lake Greeson - location of Caddo madtom
Mayberry Creek (tributary to Hallman's Creek) - location of paleback darter (OM-2)
Robinson Creek - location of threatened leopard darter (OM-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi^2 and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

Fisheries

Trout

Lake Ouachita (lower portion) (OM-2)
Ouachita River from Blakely Mt. Dam to Hwy. 270 bridge (OM-2)

Lakes and Reservoirs – all

---

* As designated in the National Wild and Scenic Rivers System

Fisheries

Streams

Seasonal Ouachita Mountain Ecoregion fishery - all streams with watersheds of less than 10 mi^2 except as otherwise provided in Reg. 2.505

Perennial Ouachita Mountain Ecoregion fishery - all streams with watershed of 10 mi^2 or larger and those waters where discharges equal or exceed 1 CFS

Use Variations Supported by UAA

Rolling Fork from unnamed tributary A at Grannis to DeQueen Reservoir - no domestic water supply use (OM-1, #2)

Unnamed tributaries A and A1 at Grannis - no domestic water supply use (OM-1, #3)

SPECIFIC STANDARDS: OUACHITA MOUNTAIN ECOREGION

(Plates OM-1, OM-2)

	Streams		Lakes and Reservoirs
Temperature °C (°F)*	30 (86)		32 (89.6)
Trout waters	20 (68)		
Turbidity (NTU) (base/all)	10/18		25/45
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/l) **	Pri.	Crit	see Reg. 2.505
<10 mi^2 watershed	6	2	
10 mi^2 and greater	6	6	
Trout waters	6	6	
All other standards	(same as statewide)		

Variations Supported by UAA

Prairie Creek: from headwaters to confluence with Briar Creek, critical season dissolved oxygen - 4 mg/l (OM-1, #1)

Rolling Fork from unnamed tributary A to DeQueen Reservoir - chlorides 130 mg/l; sulfates - 70 mg/l; TDS - 670 mg/l (OM-1, #2)

Unnamed tributaries A and A1 at Grannis - chlorides - 135 mg/l; sulfates - 70 mg/l; TDS - 700 mg/l (OM-1, #3)

South Fork Caddo River - sulfates 60 mg/1 (OM-1, #4)

Back Valley Creek - sulfates 250 mg/l; total dissolved solids 500 mg/l (OM-1,#5)

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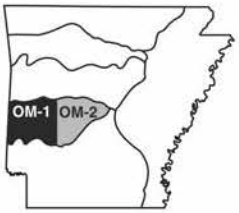
* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 CFS and greater, the primary season D.O. standard will be 6.5 mg/l. When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period.

Plate OM-1 (Ouachita Mountains)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

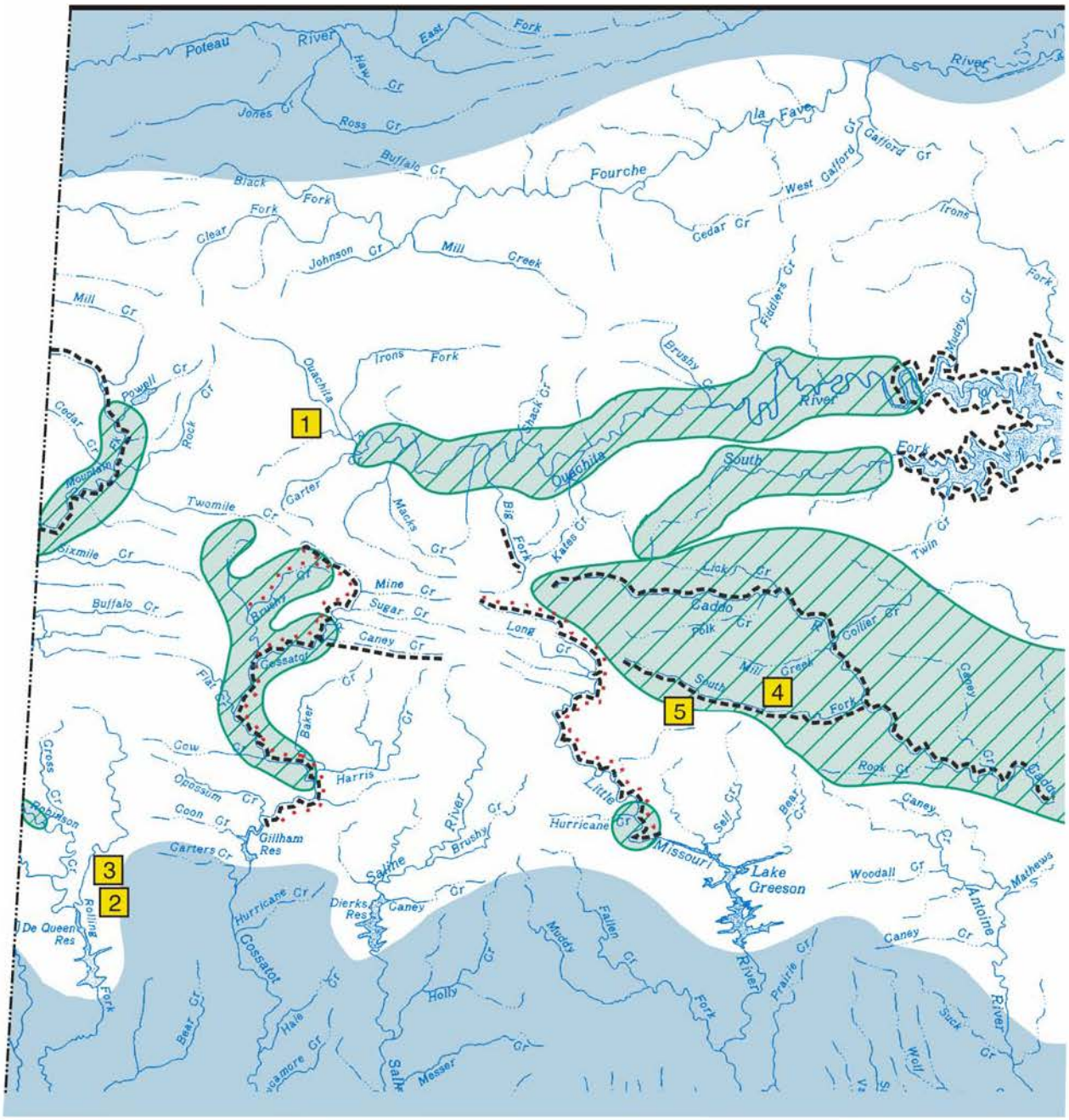
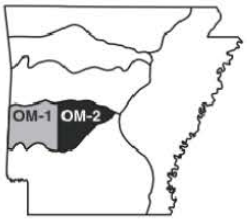
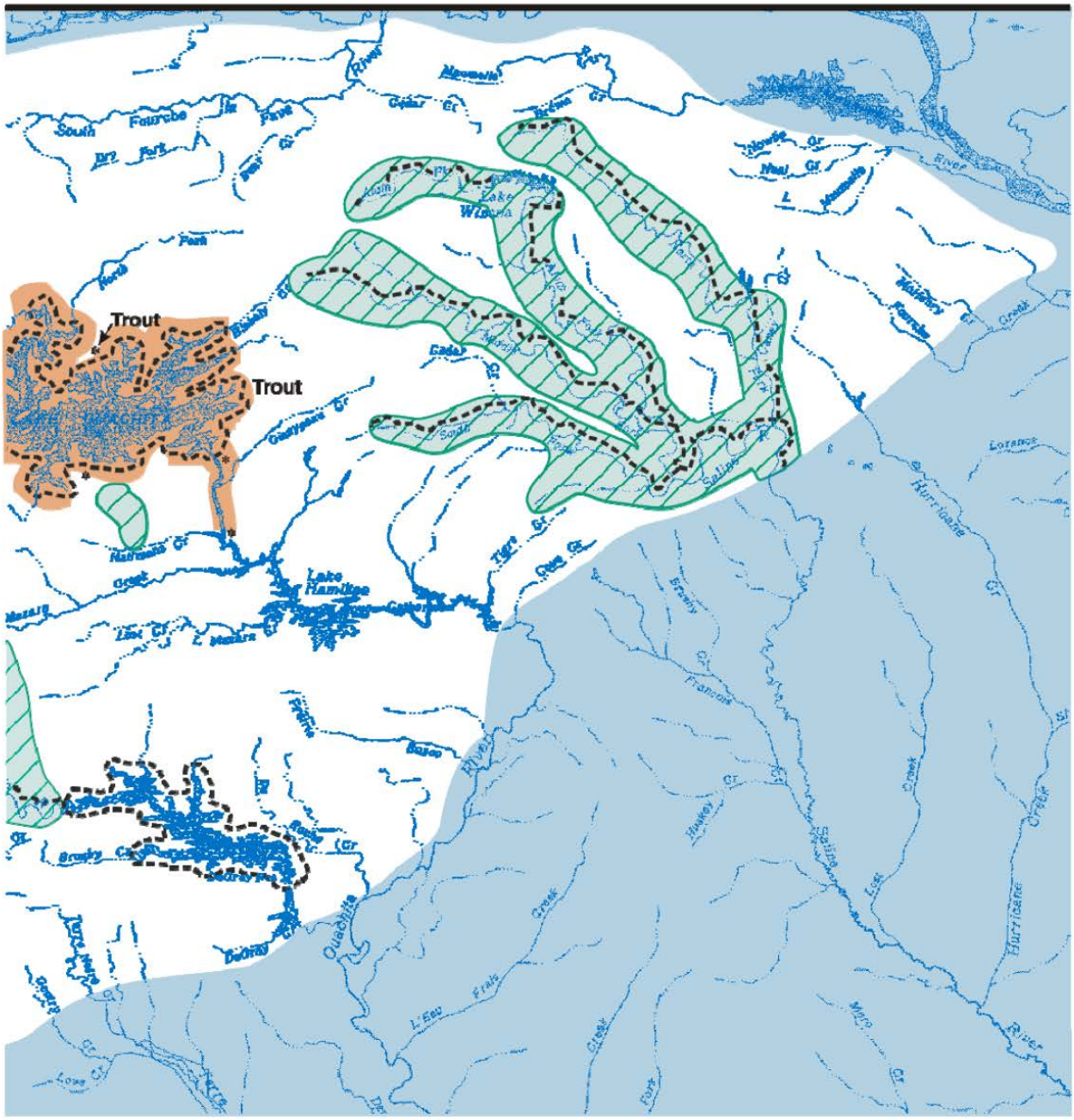


Plate OM-2 (Ouachita Mountains)



LEGEND

- Ecologically Sensitive Waterbodies
- Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA



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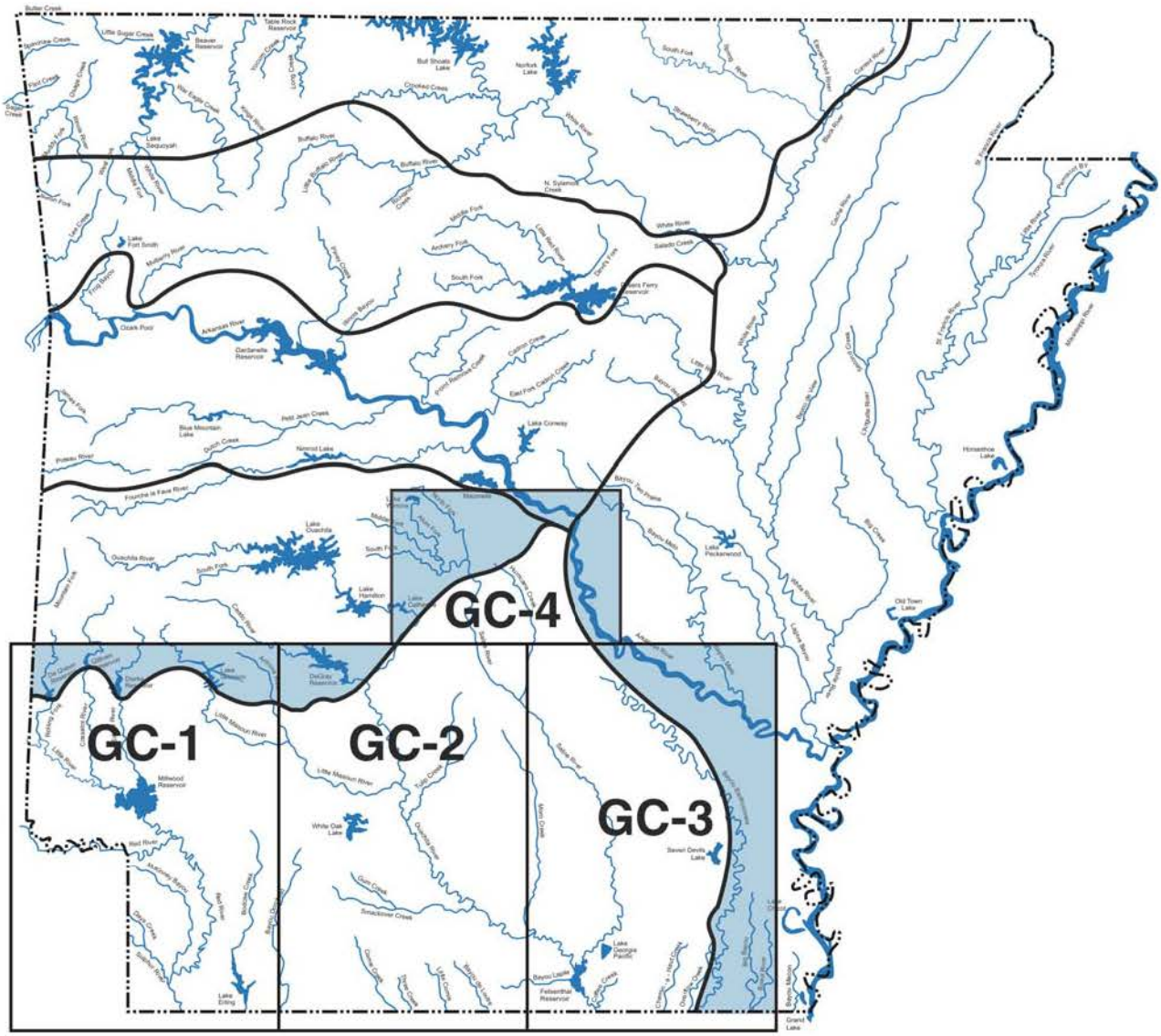


DESIGNATED USES: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

Extraordinary Resource Waters
Saline River (GC-3, GC-4)
Moro Creek - adjacent to natural area (GC-3)

Natural and Scenic Waterways
Saline River from the Grant-Saline County line to mouth (GC-3)

Ecologically Sensitive Waterbodies
Little River above Millwood Reservoir - location of Ouachita rock pocketbook and pink mucket mussels (GC-1)
Grassy Lake and Yellow Creek below Millwood Reservoir - unique ecosystem and biota (GC-1) Lower Little Missouri River - location of peppered shiner and longnose darter (GC-2)
Lower Saline River - location of peppered shiner, crystal darter and goldstripe darter (GC-3)
Ouachita River near Arkadelphia - location of flat floater, Ouachita rock pocketbook and pink mucket mussels (GC-2)

Streams with Substantial Springwater Influence
L'Eau Frais (GC-4)
Cypress Creek (GC-4)
East and West Fork Tulip Creeks (GC-4)
Others to be determined

Primary Contact Recreation - all streams with watersheds greater than 10 mi^2 and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

Fisheries

Trout

Little Missouri River from Narrows Dam to confluence with Muddy Fork (GC-1)

Lakes and Reservoirs - all

Streams

Seasonal Gulf Coastal fishery - all streams with watersheds of less than 10 mi^2 except as otherwise provided in Reg. 2.505
Perennial Gulf Coastal fishery - all streams with watersheds of 10 mi^2 or larger and those waters where discharges equal or exceed 1 CFS

Use Variations Supported by UAA
Loutre Creek - perennial fishery, except seasonal from railroad bridge to mouth (GC-2, #1)
Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC-2, #2)
Unnamed tributary to Flat Creek - no fishable/swimmable uses (GC-2, #4)
Dodson Creek - perennial fishery (GC-4, #5)
Jug Creek - perennial fishery (GC-2, #6)
Lick Creek - seasonal fishery; no primary contact (GC-1, #7)
Coffee Creek and Mossy Lake - no fishable/swimmable or domestic water supply uses (GC-3, #8)
Red River from Oklahoma to confluence with Little River - No domestic water supply use (GC-1, #9)
Bluff Creek and unnamed tributary - no domestic water supply use(GC-1,#10)
Mine Creek from Highway 27 to Millwood Lake - no domestic water supply use (GC-1, #11)
Caney Creek - no domestic or industrial water supply use(GC-1,#12)

Use Variations Supported by UAA

Bois d'Arc Creek from Caney Creek to Red River - no domestic or industrial water supply use(GC-1,#13)
Town Creek below Acme tributary - no domestic water supply(GC-4,#14)
Unnamed trib. from Acme - no domestic water supply(GC-4,#14)
Gum Creek - no domestic water supply use(GC-2,#15)
Bayou de Loutre from Gum Creek to State line - no domestic water supply use(GC-2,#16)
Walker Branch - no domestic water supply use(GC-2,#17)
Little Cornie Bayou from Walker Branch to State line - no domestic water supply use(GC-2,#18)
Alcoa unnamed trib to Hurricane Cr.and Hurricane Cr. - no domestic water supply use(GC-4,#19)
Holly Creek - no domestic water supply use(GC-4,#20)
Dry Lost Creek and Tribs. - no domestic water supply use(GC-4.#21)
Lost Creek - no domestic water supply use(GC-4,#22)
Albemarle unnamed trib (AUT) to Horsehead Creek - no domestic water supply use(GC-2,#27)
Horsehead Creek from AUT to mouth - no domestic water supply use(GC-2,#27)
Dismukes Creek and Big Creek to Bayou Dorcheat – no domestic water supply
Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre - no domestic water supply use

SPECIFIC STANDARDS: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

	Typical Streams		**Spring Water Streams**	**Lakes and Reservoirs**
Temperature °C (°F)*	30 (86)		30 (86)	32 (89.6)
Ouachita River (state line to Little Missouri River)	32 (89.6)			
Red River	32 (89.6)			
Turbidity (NTU) (base/all)	21/32		21/32	25/45
Red River (base/all)	50/150			
Minerals	see Reg. 2.511			see Reg. 2.511
Dissolved Oxygen (mg/l) **	Pri.	Crit.		see Reg. 2.505
<10 mi^2 watershed	5	2		
10 mi^2 - 500 mi^2	5	3		
>500 mi^2 watershed	5	5		
All sizes	6	5		
All other standards	(same as statewide)			

* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 CFS and greater, the primary season D.O. standard will be 6.5 mg/l. When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period

Variations Supported by UAA

Loutre Creek - from headwaters to railroad bridge, critical season D.O. standard - 3 mg/l; primary season - 5 mg/l; from railroad bridge to mouth, critical season D.O. - 2 mg/l (GC-2, #1)

Unnamed tributary to Smackover Creek - headwaters to Smackover Creek, year round D.O. criteria - 2 mg/l (GC-2, #2)

Unnamed tributary to Flat Creek - from headwaters to Flat Creek, year round D.O. criteria - 2 mg/l (GC-2, #4)

Dodson Creek - from headwaters to confluence with Saline River, critical season D.O. standard - 3 mg/l (GC-4, #5)

Jug Creek - from headwaters to confluence with Moro Creek, critical season D.O. standard - 3 mg/l (GC-2, #6)

Lick Creek - from headwaters to Millwood Reservoir, critical season D.O. standard - 2 mg/l (GC-1, #7)

Coffee Creek and Mossy Lake - exempt from Reg. 2.406 and Chapter Five (GC-3, #8)

Red River from Oklahoma to confluence with Little River - total dissolved solids - 850 mg/l (GC-1, #9)

Bluff Creek and unnamed trib. - sulfates 651 mg/l; total dissolved solids 1033 mg/l(GC-1,#10)

Muddy Fork Little Missouri River - sulfates 250 mg/l; total dissolved solids 500 mg/l(GC-1,#24)

Little Missouri River - sulfates 90 mg/l; total dissolved solids 180 mg/l(GC-1,#25)

Mine Creek from Highway 27 to Millwood Lake - chlorides - 90 mg/l; sulfates - 65 mg/l; TDS - 700 mg/l (GC-1, #11)

Caney Creek - chlorides 113 mg/l; sulfates 283 mg/l; total dissolved solids 420 mg/l(GC-1,#12)

Bois d'Arc Creek from Caney Creek to Red River - chlorides 113 mg/l; sulfates 283 mg/l; dissolved solids 420 mg/l(GC-1,#13)

Town Creek below Acme tributary - sulfates 200 mg/l; TDS 700 mg/l(GC-4,#14)

Unnamed trib. from Acme - sulfates 330 mg/l; TDS 830 mg/l(GC-4,#14)

Gum Creek - chlorides 104 mg/L; TDS 311 mg/L(GC-2,#15)

Bayou de Loutre from Gum Creek to State line - Chlorides 250 mg/l; TDS solids 750 mg/l(GC-2,#16)

Walker Branch - chlorides 180 mg/l; total dissolved solids 970 mg/l(GC-2,#17)

Ouachita River - from Ouachita River mile(ORM) 223 to the Arkansas-Louisiana border(ORM 221.1),site specific seasonal D.O.criteria: 3 mg/L June and July; 4.5 mg/L August; 5 mg/L September through May. These seasonal criteria may be unattainable during or following naturally occurring high flows,(i.e., river stage above 65 feet measured at the lower gauge at the Felsenthal Lock and Dam, Station No.89-o, and also for the two weeks following the recession of flood waters below 65 feet), which occurs from May through August. Naturally occurring conditions which fail to meet criteria should not be interpreted as violations of these criteria (GC-3, #26)

Alcoa unnamed trib. to Hurricane Cr. And Hurricane Cr. - see Reg. 2.511(CG-4. #19)

Holly Creek - See Reg. 2.511(CG-4, #20)

Saline River bifurcation - see Reg. 2.511(GC-4, #23)

Dry Lost Creek and tributaries - see Reg. 2.511(GC-4, #21)

Lost Creek - see Reg. 2.511(GC-4, #22)

Albemarle unnamed trib (AUT) to Horsehead Creek - chlorides 137 mg/l; TDS 383 mg/l (GC-2,#27)

Horsehead Creek from AUT to mouth - chlorides 85 mg/l; TDS 260 mg/l(GC-2,#27)

Bayou Dorcheat - sulfates 16 mg/l (GC-2,#27)

Dismukes Creek – chlorides 26 mg/L; TDS 157 mg/L (GC-2, #28)

Big Creek from Dismukes to Bayou Dorcheat – chlorides 20 mg/L; TDS 200 mg/L (GC-2, #28)

Bayou de Loutre from Chemtura outfall to Loutre Creek – maximum water temperature 96°F (GC-2, #29)

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).

Unnamed tributary from Great Lakes Chemical Company Outfall 002 to Bayou de Loutre-chloride 65, sulfate 35 mg/L, TDS 141 mg/L (GC-2, #31)

Unnamed tributary from Great Lakes Chemical Company Outfall 004 to Bayou de Loutre-chloride 239 mg/L., TDS 324 mg/L (GC-2, #32)

Bayou de Loutre from mouth of UT004 to mouth of Loutre Creek, chloride 278 mg/L (GC-2, #33)

Unnamed tributary from Great Lakes Chemical Company Outfall 003 (UT003) downstream to unnamed tributary to Little Cornie Bayou – chloride 538 mg/L, sulfate 35 mg/L, and TDS 519 mg/L (GC-2, #34)

Unnamed tributary of Little Cornie Bayou to confluence with Little Cornie Bayou – chloride 305 mg/L and TDS

325 mg/L (GC-2, #35)

Little Cornie Bayou from mouth UTA to state line- chloride 215mg/L,sulfate 25mg/L and TDS 500mg/L. (GC-2, #36)

Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37)

Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38)

Flat Creek from mouth of UTA to confluence with Haynes Creek, Chloride 165 mg/L, Sulfate 67 mg/L, TDS 560 mg/L (GC-2, #39)

Haynes Creek from mouth of Flat Creek to confluence with Smackover Creek, Chloride 360 mg/L, Sulfate 55 mg/L, TDS 855 mg/L (GC-2, #40)

Loutre Creek from Hwy 15 South to the confluence of Bayou de Loutre Chloride, 256mg/l; Sulfate 997mg/l, TDS, 1756* (GC-3. #41)

Bayou de Loutre from Loutre Creek to the discharge for the City of El Dorado South facility Chloride, 264mg/l; Sulfate 635mg/l, TDS, 1236* (GC-3. #42)

Bayou de Loutre from the discharge from the City of El Dorado-South downstream to the mouth of Gum Creek. Chloride, 250mg/l; Sulfate 431mg/l, TDS, 966 (GC-3. #43)

Bayou de Loutre from the mouth of Gum Creek downstream to the mouth of Boggy Creek Chloride, 250mg/l; Sulfate 345mg/l, TDS, 780 (GC-3. #44)

Bayou de Loutre from the mouth of Boggy Creek downstream to the mouth of Hibank Creek Chloride, 250mg/l; Sulfate 296mg/l, TDS, 750 (GC-3. #45)

Bayou de Loutre from the mouth of Hibank Creek downstream to the mouth of Mill Creek Chloride, 250mg/l; Sulfate 263mg/l, TDS, 750 (GC-3. #46)

Bayou de Loutre from the mouth of Mill Creek downstream to the mouth of Buckaloo Branch Chloride, 250mg/l; Sulfate 237mg/l, TDS, 750 (GC-3. #47)

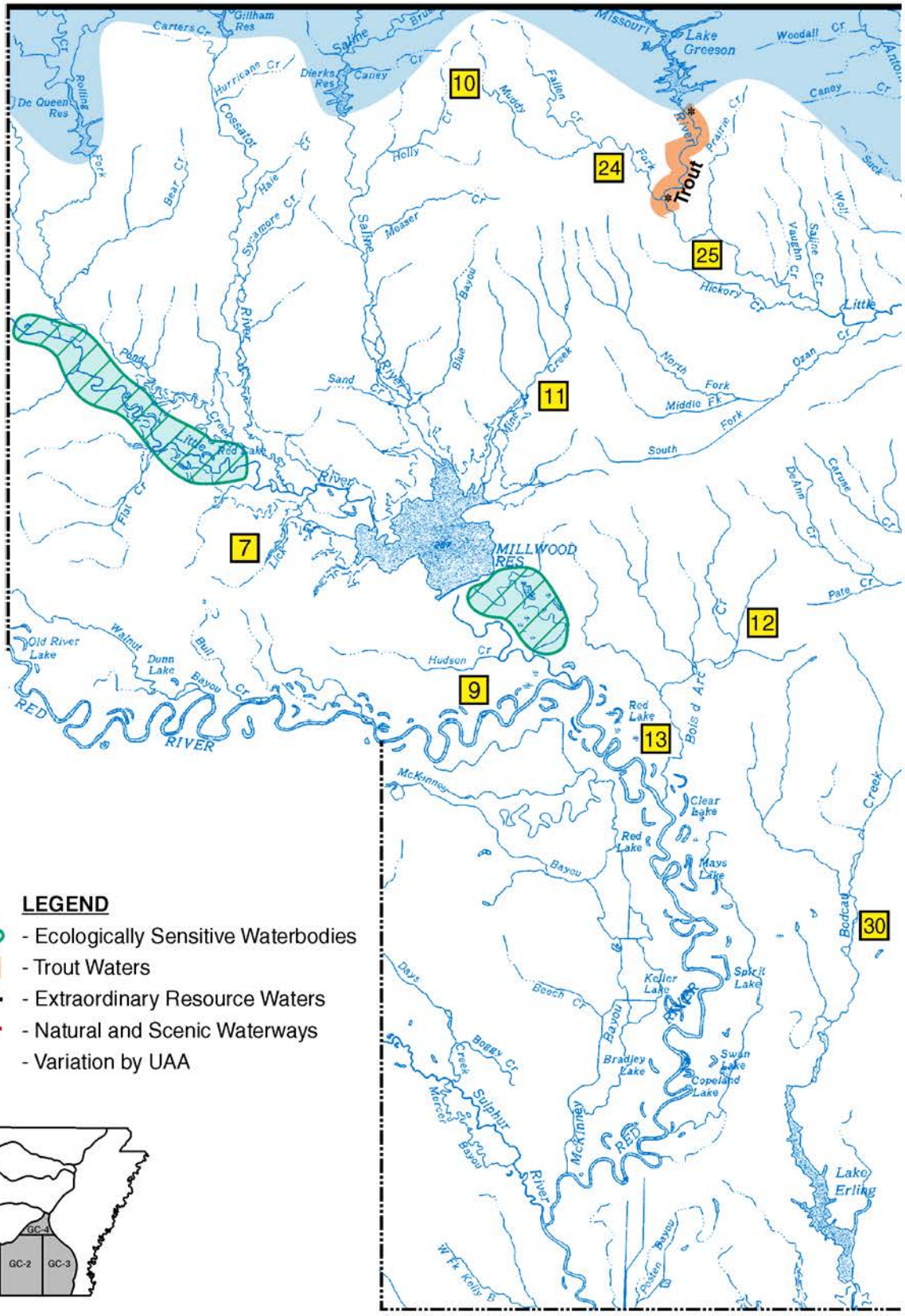
Bayou de Loutre from the mouth of Buckaloo Branch downstream to the mouth of Bear Creek Chloride, 250mg/l; Sulfate 216mg/l, TDS, 750 (GC-3. #48)

Bayou de Loutre from the mouth of Bear Creek to the final segment of Bayou de Loutre. Chloride, 250mg/l; Sulfate 198mg/l, TDS, 750(GC-3. #49)

Bayou de Loutre (Final Segment) to the Arkansas / Louisiana State Line. Chloride, 250mg/l; Sulfate 171 mg/l, TDS, 750(GC-3. #50)

Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre. Chloride, 631mg/l; Sulfate, 63 mg/l, TDS, 1360; Selenium, 15.6 u/l

Plate GC-1 (Gulf Coastal Plain)



LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA

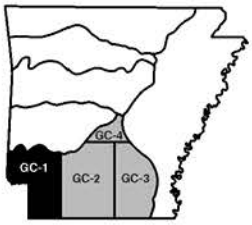


Plate GC-2 (Gulf Coastal Plain)

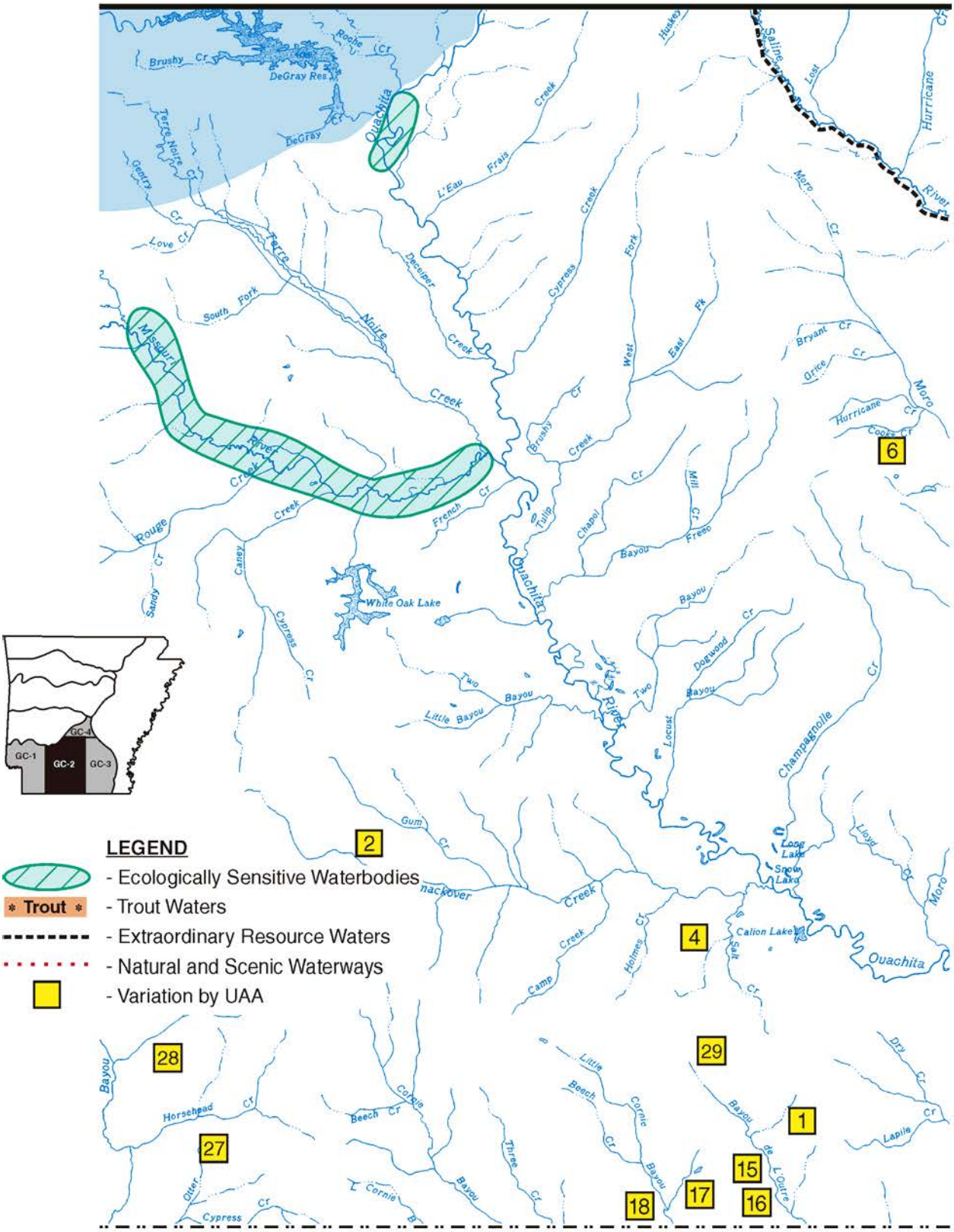


Plate GC-3 (Gulf Coastal Plain)

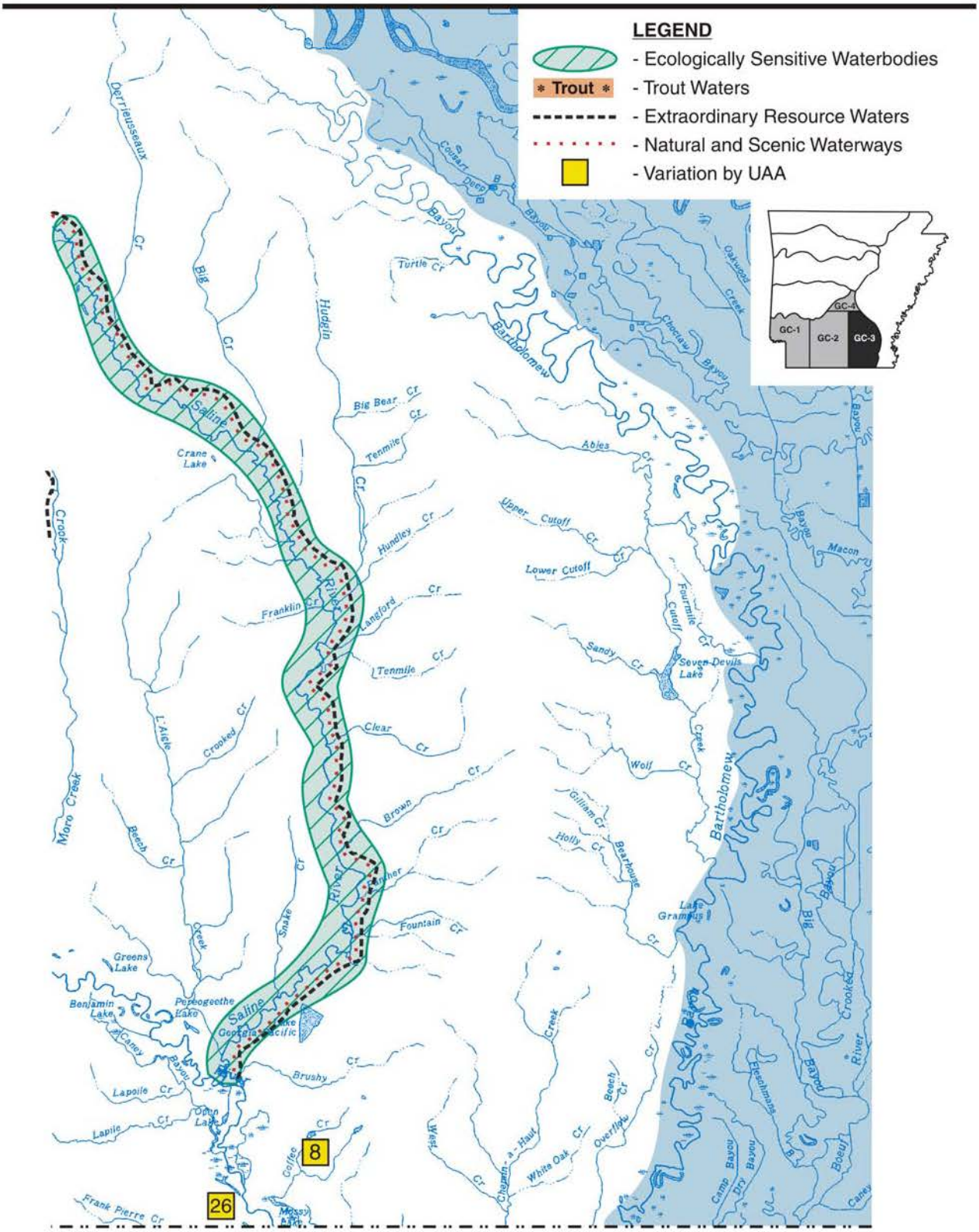
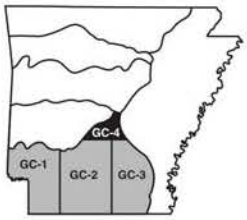


Plate GC-4 (Gulf Coastal Plain)



LEGEND

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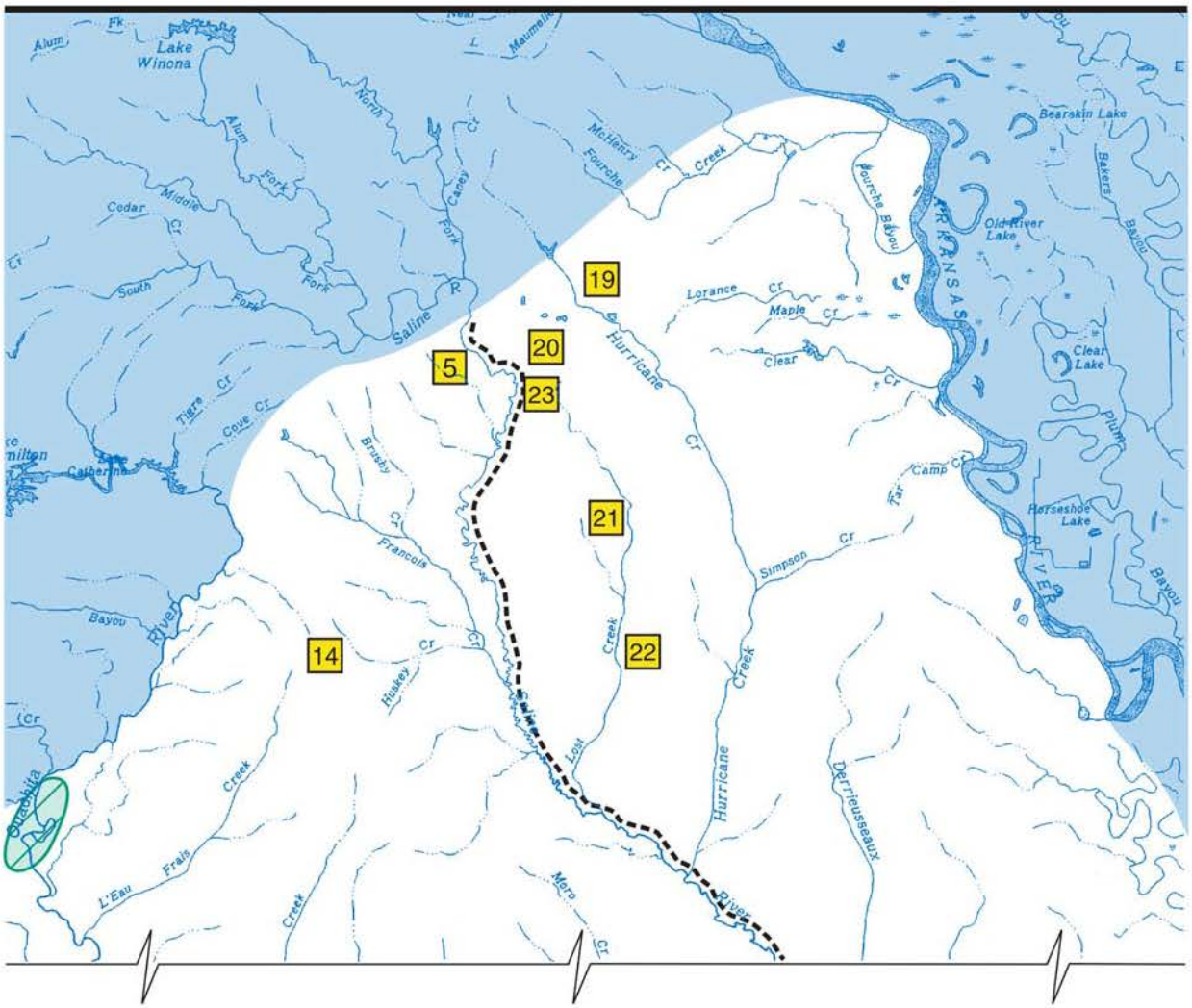
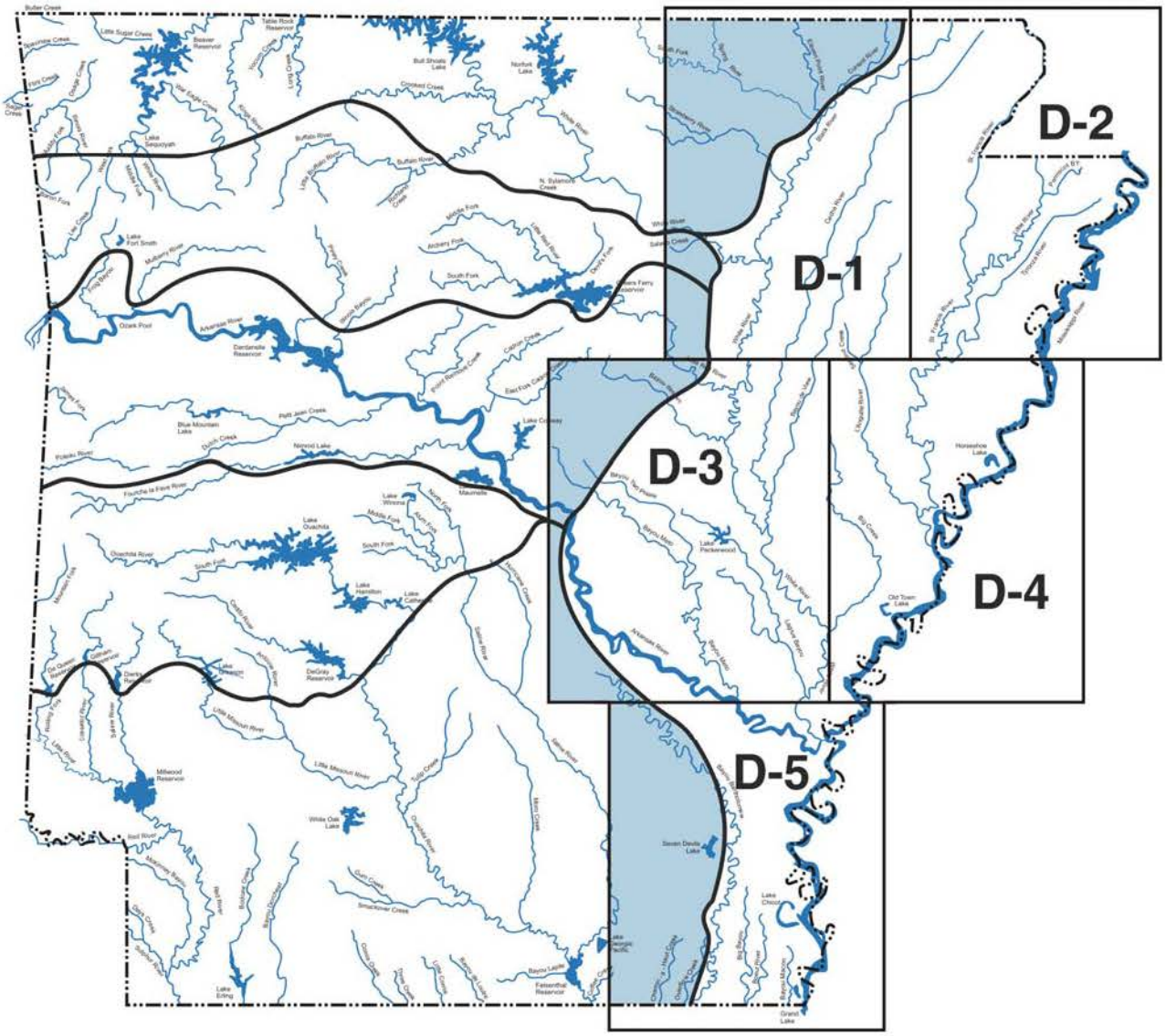


Index to Plates of the Delta



DESIGNATED USES: DELTA ECOREGION

(Plates D-1, D-2, D-3, D-4, D-5)

Extraordinary Resource Waters
Second Creek (D-4)
Cache River above Cache Bayou - adjacent to natural areas (D-3)
Arkansas River below Dam #2 (D-5)
Strawberry River (D-1)
Two Prairie Bayou adjacent to natural areas (D-3)

Natural and Scenic Waterways
None

Ecologically Sensitive Waterbodies
Lower St. Francis River and lower 10 miles of Straight Slough - location of fat pocketbook mussel (D-2, D-4)
Right Hand Chute at confluence with St. Francis River - location of fat pocketbook mussel (D-2)
Departee Creek - location of flat floater mussel (D-1)
Black River at mouth of Spring River - location of pink mucket mussel (D-1)

Channel-altered Delta Ecoregion Streams - These include the majority of the streams in this ecoregion and are characterized by substantial alteration of the morphology of their main-stream channel as well as their tributary streams. Such alteration of the tributaries of these streams significantly affects the water quality and hydrology of the streams and their watersheds. Most of the upper segments of these waters have been dredged and straightened into ditches. Additionally most of the tributaries of these streams have been straightened, ditched and, in some cases, rerouted to quickly move water off the agriculture fields and into the major streams. In the lower segments of these waters, channel realignment is less expansive but most of these channels have been "snagged" to remove any in-stream obstructions (brush, logs, and other debris) and the stream channel and banks have been dredged to uniform depths and cleared of any obstructions. These include Cache River, Bayou DeView, Village Creek, Blackfish Bayou and others to be determined by the Department on a case by case basis.

Primary Contact Recreation - all streams with watersheds of greater than 10 mi^2 and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

Fisheries

Trout - none

Lakes and Reservoirs - all

Streams

Seasonal Delta fishery - all streams with watersheds of less than 10 mi^2 except as otherwise provided in Reg. 2.505

Perennial Delta fishery - all streams with watersheds 10 mi^2 or larger and those waters where discharges equal or exceed 1 CFS

Use Variation Supported by UAA
Unnamed ditch to Little Lagrue Bayou - perennial Delta fishery (D-3, #1)
Little Lake Bayou - seasonal Delta fishery; no primary contact (D-5, #2)
Coon Creek and unnamed tributary from Frit Ind. - no domestic water supply use (D-1, #3)
Rocky Branch Creek and Bayou Meto from Rocky Branch Creek to Bayou Two Prairie - no domestic water supply use (D-3 #4)
Ditch No. 27 – no domestic water supply use (D-2, #5)
Ditch No. 6 – no domestic water supply use (D-2, #6)

SPECIFIC STANDARDS: DELTA ECOREGION

(Plates D-1, D-2, D-3, D-4, D-5)

	Least-Altered Streams		Channel-Altered Streams		Lakes and Reservoirs
Temperature ^{o}C (^{o}F)*	30 (86)		32 (89.6)		32 (89.6)
White River	32 (89.6)				
St. Francis River	32 (89.6)				
Mississippi River	32 (89.6)				
Arkansas River	32 (89.6)				
Turbidity(NTU) (base/all)	45/84		75/250		25/45
Arkansas River (base/all)	50/52				
Mississippi River (base/all)	50/75				
St. Francis River (base/all)	75/100				
Minerals	see Reg. 2.511		see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/l)**	Pri	Crit	Pri	Crit.	see Reg. 2.505
<10 mi^2 watershed	5	2	5	2	
10 mi^2 to 100 mi^2	5	3	5	3	
>100 mi^2 watershed	5	5	5	5	
All other standards	(same as statewide)				

Variations Supported by UAA

Unnamed ditch to Little Lagrue Bayou - from headwaters to confluence with Little Lagrue Bayou, critical season D.O. standard - 3 mg/l (D-3, #1)
Little Lake Bayou - critical season D.O. standard - 2 mg/l (D-5, #2)
Unnamed tributary from Frit Ind, to Coon Creek - sulfates 48 mg/l (D-1, #3)
Rocky Branch Creek- chlorides 64 mg/l (D-3, #4)
Bayou Meto from Rocky Branch Creek to Bayou Two Prairie – chlorides 64 mg/ l (D-3, #4)
Bayou Meto from mouth to Bayou Two Prairie- chlorides 95 mg/l; sulfates 45 mg/l (D-3, #4)
Ditch No. 27 – sulfates 480 mg/l; TDS 1,200 mg/l; maximum water temperature 95°F (D-2, #5)
Ditch No. 6 from Ditch No. 27 confluence to its mouth – sulfates 210 mg/l; TDS 630 mg/l (D-2, #6)
Tyronza River from Ditch No. 6 confluence to its mouth – sulfates 60 mg/l – see Reg. 2.511 (D-2, #7)
Long Pond Slough – chlorides 95 mg/l; sulfates 45 mg/l
Castor Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Cross Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Bayou Two Prairie (mouth to Rickey Branch) – chlorides 95 mg/l; sulfates 45 mg/l
Little Bayou Meto – chlorides 95 mg/l; sulfates 45 mg/l
Bakers Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Wabbaseka Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Indian Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Flat Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Shumaker Branch – chlorides 95 mg/l; sulfates 45 mg/l
Skinner Branch – chlorides 95 mg/l; sulfates 45 mg/l
White Oak Branch – chlorides 95 mg/l; sulfates 45 mg/l
Caney Creek – chlorides 95 mg/l; sulfates 45 mg/l
Salt Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Snow Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Fish Trap Slough – chlorides 95 mg/l; sulfates 45 mg/l
Ricky Branch – chlorides 95 mg/l; sulfates 45 mg/l

Blue Point Ditch- – chlorides 95 mg/l; sulfates 45 mg/l
Big Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Main Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Plum Bayou– chlorides 95 mg/l; sulfates 45 mg/l
Crooked Creek Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Indian Bayou Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Caney Creek Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Salt Bayou Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Bradley Slough – chlorides 95 mg/l; sulfates 45 mg/l
Tupelo Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Dennis Slough – chlorides 95 mg/l; sulfates 45 mg/l
Buffalo Slough – chlorides 95 mg/l; sulfates 45 mg/l
Flynn Slough – chlorides 95 mg/l; sulfates 45 mg/l
Boggy Slough – chlorides 95 mg/l; sulfates 45 mg/l
Bear Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Bubbling Slough – chlorides 95 mg/l; sulfates 45 mg/l
Five Forks Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Government Cypress Slough – chlorides 95 mg/l; sulfates 45 mg/l
Brushy Slough – chlorides 95 mg/l; sulfates 45 mg/l
Tipton Ditch – chlorides 95 mg/l; sulfates 45 mg/l
Hurricane Slough – chlorides 95 mg/l; sulfates 45 mg/l
Newton Bayou – chlorides 95 mg/l; sulfates 45 mg/l
West Bayou – chlorides 95 mg/l; sulfates 45 mg/l
Brownsville Branch– chlorides 95 mg/l; sulfates 45 mg/l
Eagle Branch– chlorides 95 mg/l; sulfates 45 mg/l

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* Increase over natural temperatures may not be more than 2.8°C (5°F).

** When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period.

Plate D-1 (Delta)

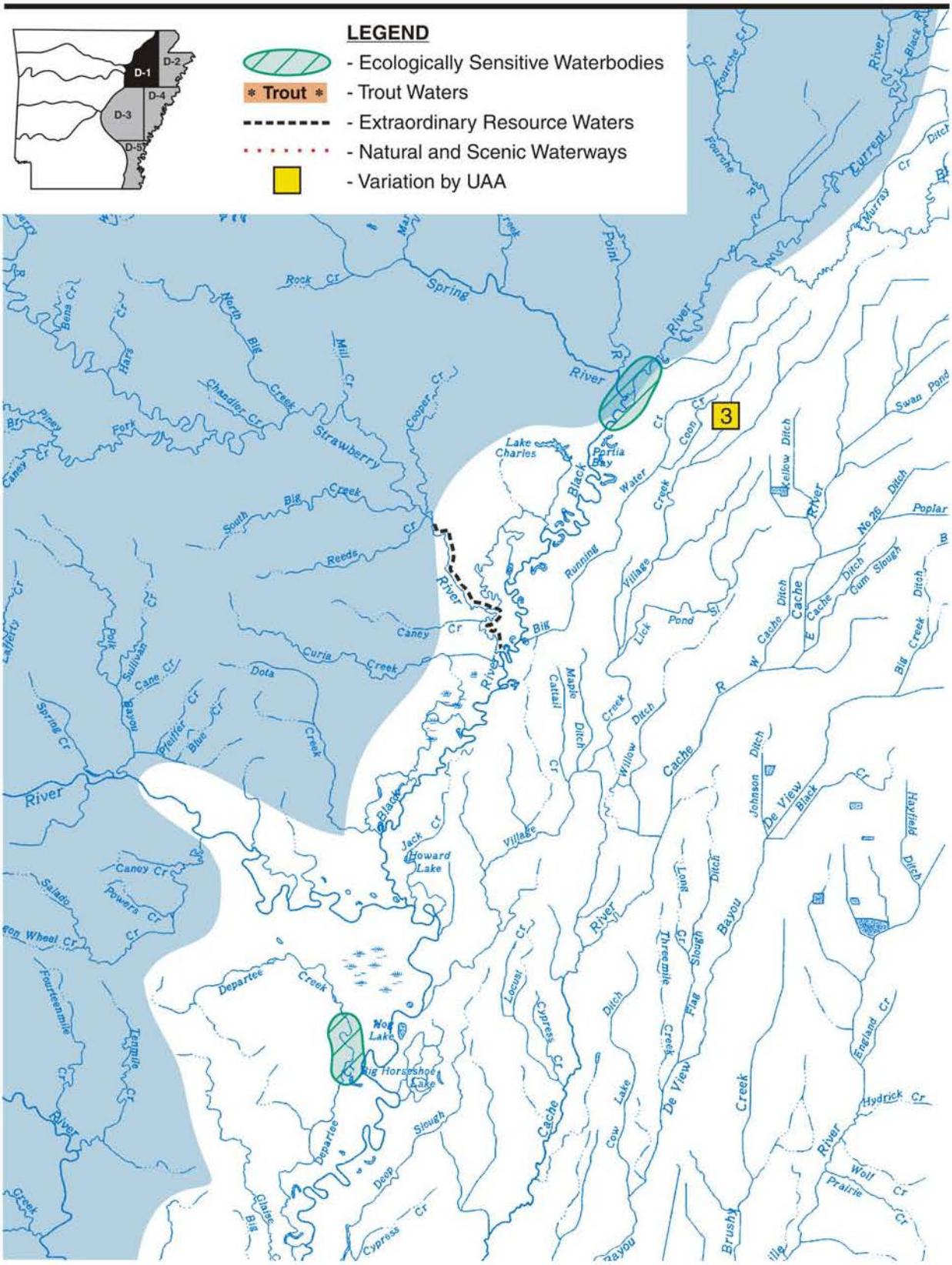
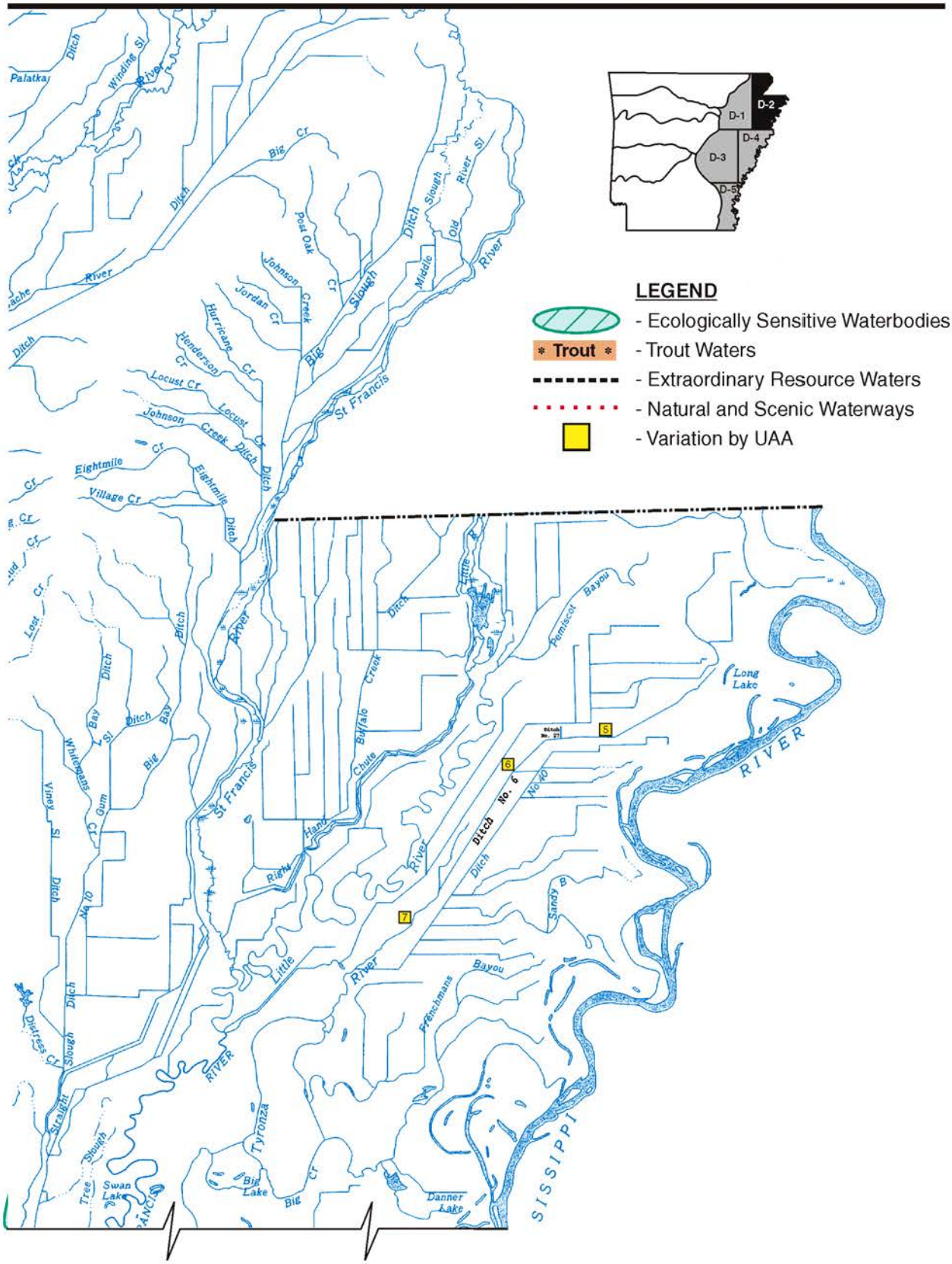


Plate D-2 (Delta)



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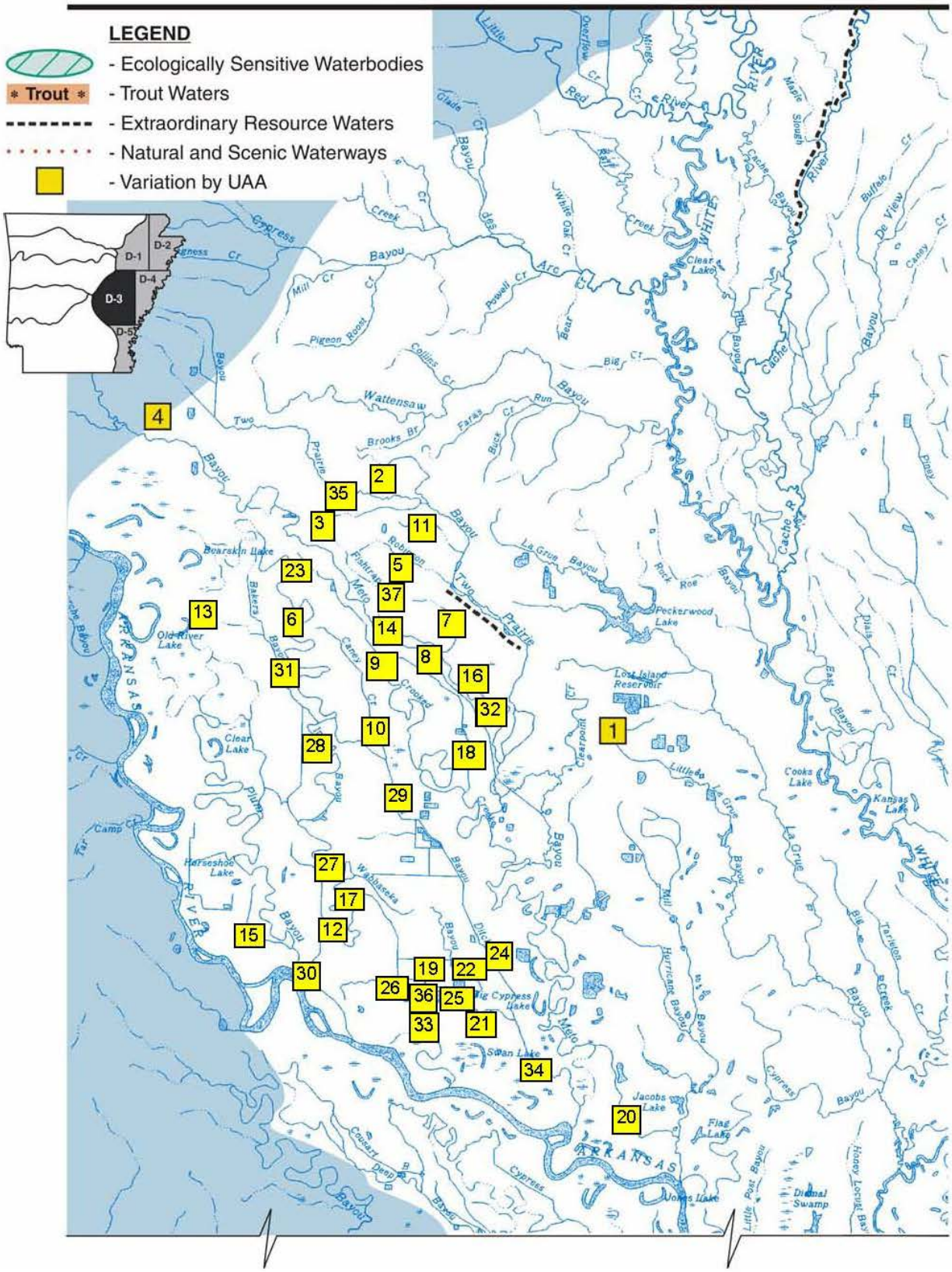

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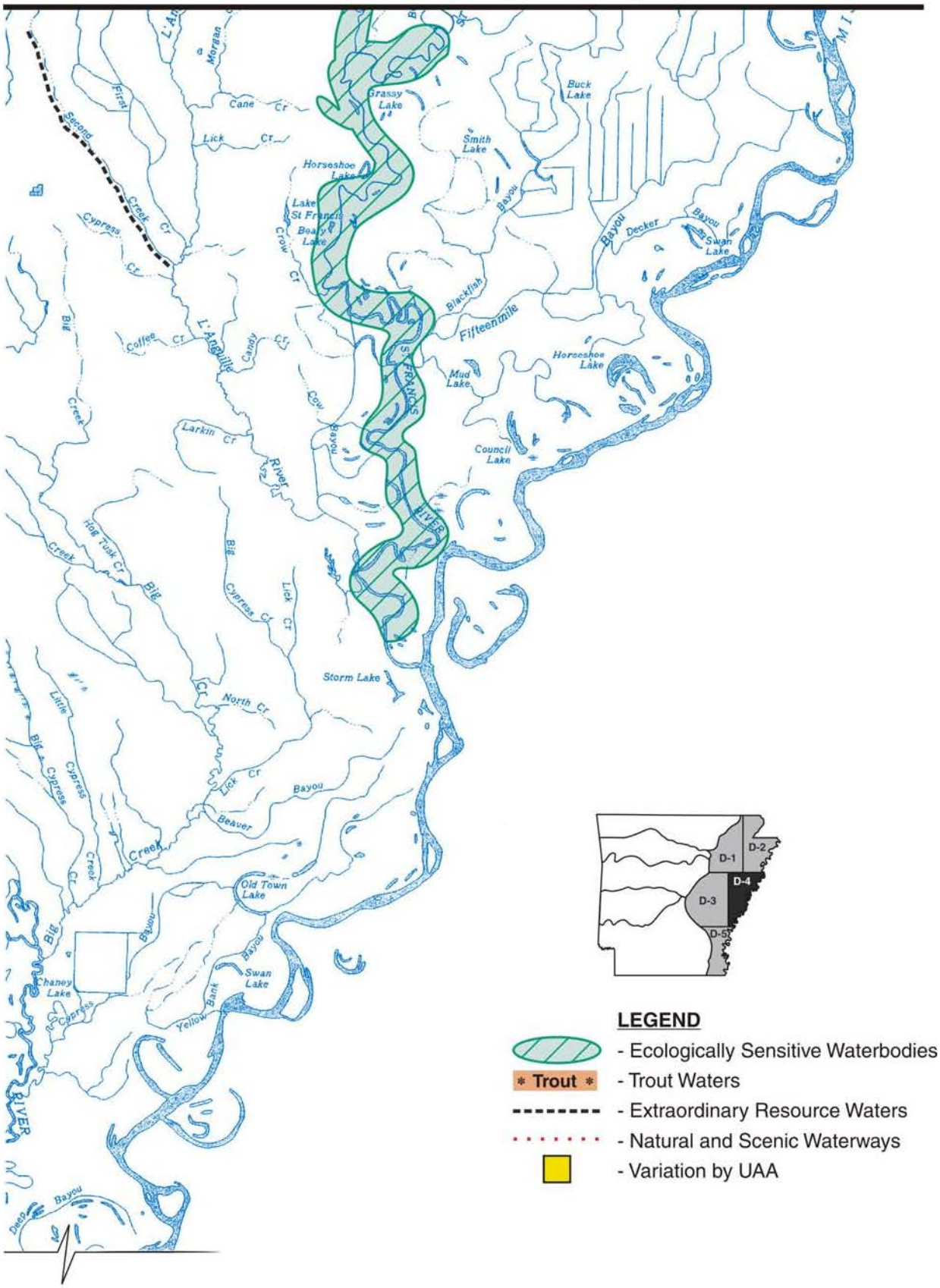

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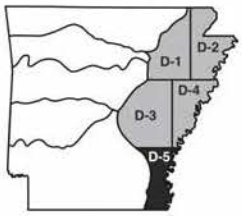
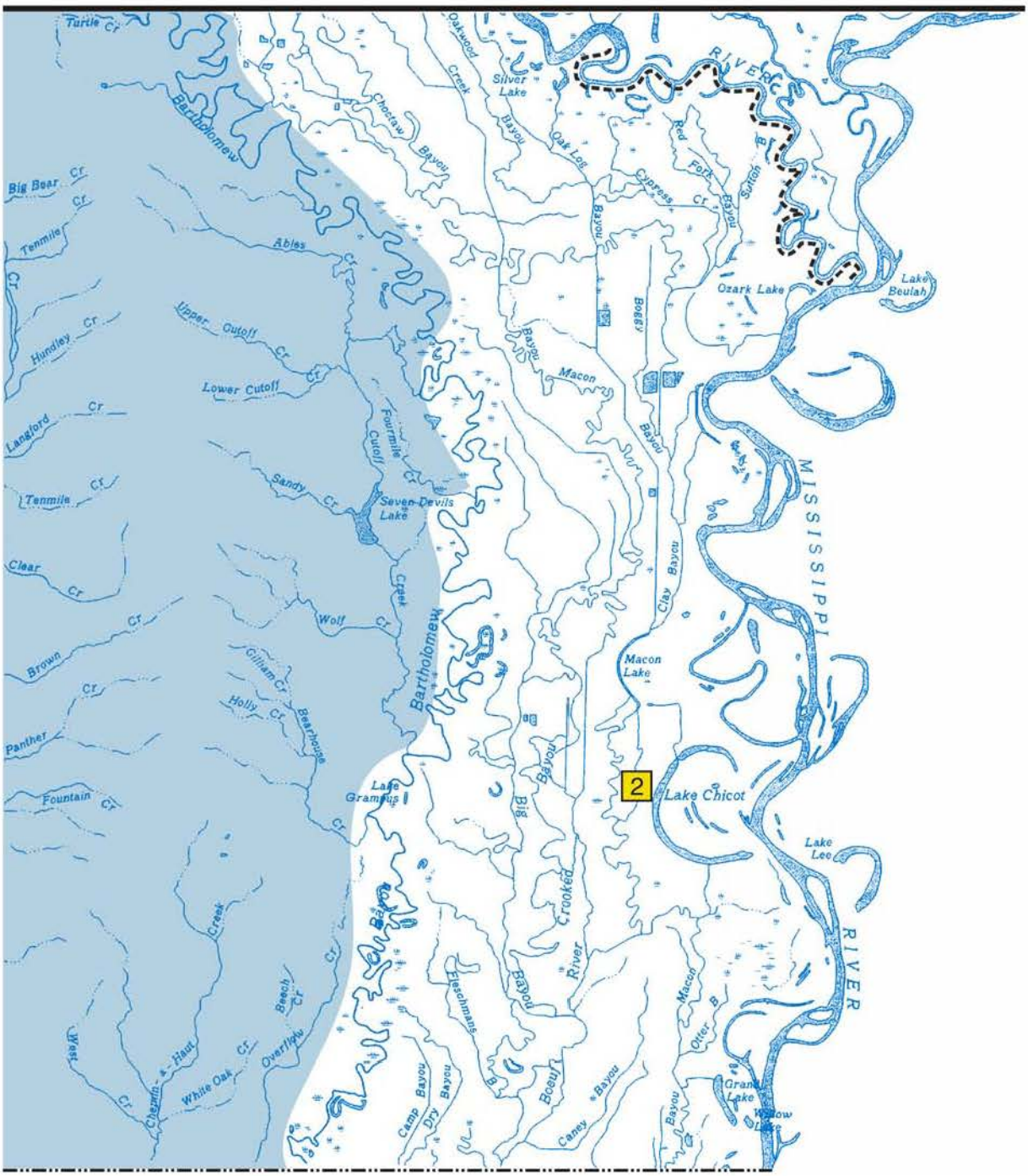


LEGEND

- Ecologically Sensitive Waterbodies
- * Trout * - Trout Waters
- Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA



REGULATION NO. 2

APPENDIX B

Environmental Improvement Project

(September 28, 2007)

APPENDIX B: ENVIRONMENTAL IMPROVEMENT PROJECT

Stricken language would be deleted from present law. Underlined language would be added to present law

State of Arkansas *As Engrossed: S2/21/97*

81st General Assembly **A Bill** ACT 401 OF 1997

Regular Session, 1997 HOUSE BILL 1563

By: Representatives Sheppard, Wallis, Lancaster, Johnson, and Horn

By: Senator Mahony

For An Act To Be Entitled

"AN ACT TO ENCOURAGE LONG-TERM ENVIRONMENTAL PROJECTS; AND FOR OTHER PURPOSES."

Subtitle

"AN ACT TO ENCOURAGE LONG-TERM ENVIRONMENTAL PROJECTS."

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

SECTION 1. Legislative Findings and Intent.

The General Assembly hereby finds that many areas of the state would benefit from long-term environmental remediation projects that significantly improve the effects caused by industrial or extractive activities. However, commitments by private enterprise to remedy such damages are discouraged by the prospect of civil liability based upon rigid application of state water quality standards to the enterprises activities. The purpose of this act is to preserve the states approach to establishing water quality standards, while also encouraging private enterprises to make significant improvements to closed or abandoned sites that are of such magnitude that more than three (3) years will be required to complete the project.

SECTION 2. Definitions and Applicability.

For the purposes of this act:

(1) "Long-term Improvement Project" or "Project" means any remediation or reclamation project at closed or abandoned:

(A) Mineral Extraction Sites;

(B) Solid Waste Management Units as defined pursuant to the Arkansas Hazardous Waste Management Act;

(C) Oil and Gas Extraction Sites;

(D) Brownfield Sites as defined in Act 125 of 1995 or as may be amended; and

(E) Hazardous Substance Sites listed on the National Priority List (42 U.S.C. Section 9605), or State Priority List (Arkansas Code 8-7-509(e), or as may be amended.

(2) "Water Quality Standard" means standards developed through administrative rulemaking by the Commission;

(3) "Commission" means the Arkansas Pollution Control and Ecology Commission; and

(4) "Department" means the Arkansas Department of Pollution Control and Ecology.

SECTION 3. Procedures for approval of environmental projects, contents of applications, and public notice.

(a) A petitioner seeking approval of a change in water quality standards to accommodate a long-term environmental improvement project shall file with the Department a Notice of Intent, which includes as a minimum:

(1) A description of the water body or stream segment affected by the project;

(2) The existing ambient water quality for the use of criteria at issue;

(3) The affected water quality standard;

(4) The modifications sought;

(5) The proposed remediation activities;

(6) A proposed Remediation Plan, which shall contain:

(A) A description of the existing conditions, including identification of the conditions limiting the attainment of the water quality standards;

(B) A description of the proposed water quality standard modification, both during and post project;

(C) A description of the proposed remediation plan; and

(D) The anticipated collateral effects, if any, of the Remediation Plan; and

(7) A schedule for implementing the Remediation Plan that ensures that the post project water quality standards are met as soon as reasonably practicable.

(b) The department shall cause notice of the proposed project and associated water quality standard changes described in subsection (a) to be published for public notice and comment in the same manner as provided for permit applications in Arkansas Code 8-4-203(b), and shall advise the public that the details of the proposed project are available for public review.

(c) After considering comments from the public, the department shall notify the petitioner as to whether the proposed project is approved or denied. The department may deny approval of a project if it reasonably concludes that the plan is not complete, the plan is not technically sound, the schedule is unrealistic, the plan will not have an overall beneficial effect for the environment, or other appropriate reasons. Any department determination on the approval or denial of a project is subject to the appeal procedures applicable to permitting decisions set out in Arkansas Code 8-4-205.

(d) Upon approval of the project for further development, the petitioner shall prepare documentation required for third-party rulemaking by Arkansas Code 8-4-202 and established in administrative procedures.

SECTION 4. Modification of Water Quality Standards.

(a) The commission may approve a modification where the water quality standard is not being maintained due to conditions which may, in part or in whole, be corrected through the implementation of long-term measures. The commission shall establish such subcategory of use and modify such general and specific standards as it deems appropriate to reflect such modification while ensuring that the fishable/swimmable use is maintained. In all water quality standard changes associated with long-term environmental projects, the remedial action plan described in subsection (a) of Section 3 of this act shall be incorporated by reference in the statement of basis and purpose of the rule and shall be considered an essential condition of the modified water quality standard.

(b) Once the commission approves a water quality standard modification, the department shall ensure that conditions and limitations designed to achieve compliance with the plan are established in applicable discharge permits, consent administrative orders, or such other enforcement measures deemed appropriate by the department. The department may allow modifications by the petitioner to the remediation plan and schedule as is deemed appropriate, provided that any such modifications to the original remedial action plan shall not render the project significantly less protective of the applicable use subcategory. Should the department find that the petitioner is not acting in good faith to complete the project in accordance with the approved plan, applicable and appropriate enforcement authority may be exercised subject to appeal to the commission.

(c) The department or the petitioner shall report annually to the commission on the progress of the project.

SECTION 5. Project Completion.

At the end of the project the post project water quality standards shall be in full force and effect.

SECTION 6.All provisions of this act of a general and permanent nature are amendatory to the Arkansas Code of 1987 Annotated and the Arkansas Code Revision Commission shall incorporate the same in the Code.

SECTION 7. If any provision of this act or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the act which can be given effect without the invalid provision or application, and to this end the provisions of this act are declared to be severable.

SECTION 8. All laws and parts of laws in conflict with this act are hereby repealed.

/s/Sheppard et al

APPROVED:3-07-97

1

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 2

APPENDIX C

Scientific Names of Fishes

(September 28, 2007)

APPENDIX C: SCIENTIFIC NAMES OF FISHES

Common Name	Species	Family
Banded sculpin	*Cottus carolinae*	Cottidae
Banded pygmy sunfish	*Elassoma zonatum*	Elassomatidae
Bigeye shiner	*Notropis boops*	Cyprinidae
Black redhorse	*Moxostoma duquesnei*	Catostomidae
Blackside darter	*Percina maculata*	Percidae
Blacktail redhorse	*Moxostoma poecilurum*	Catostomidae
Blacktail shiner	*Notropis venustus*	Cyprinidae
Bleeding shiner	*Luxilus zonatus*	Cyprinidae
Bluegill	*Lepomis macrochirus*	Centrarchidae
Bluntnose minnow	*Pimephales notatus*	Cyprinidae
Bluntnose darter	*Etheostoma chlorosomum*	Percidae
Cardinal shiner	*Luxilus cardinalus*	Cyprinidae
Carp	*Cyprinus carpio*	Cyprinidae
Channel catfish	*Ictalurus punctatus*	Ictaluridae
Creek chubsucker	*Erimyzon oblongus*	Catostomidae
Creole darter	*Etheostoma collettei*	Percidae
Current River darter	*Etheostoma uniporum*	Percidae
Drum	*Aplodinotus grunniens*	Sciaenidae
Dusky darter	*Percina sciera*	Pericidae
Duskystripe shiner	*Luxilus pilsbryi*	Cyprinidae
Emerald shiner	*Notropis atherinoides*	Cyprinidae
Fantail darter	*Etheostoma flabellare*	Percidae
Flier	*Centrarchus macropterus*	Centrarchidae
Freckled madtom	*Noturus nocturnus*	Ictaluridae
Gizzard shad	*Dorosoma cepedianum*	Clupeidae
Golden redhorse	*Moxostoma erythrurum*	Catostomidae
Redfin pickerel	*Esox americanus*	Esocidae
Gravel chub	*Hybopsis punctata*	Cyprinidae
Green sunfish	*Lepomis cyanellus*	Centrarchidae
Greenside darter	*Etheostoma blennioides*	Percidae
Largemouth bass	*Micropterus salmoides*	Centrarchidae
Longear sunfish	*Lepomis megalotis*	Centrarchidae
Longnose darter	*Percina nasuta*	Percidae
Madtoms	*Noturus sp.*	Ictaluridae
Mosquitofish	*Gambusia affinis*	Poeciliidae
Northern hogsucker	*Hypentelium nigricans*	Catostomidae
Northern studfish	*Fundulus catenatus*	Cyprinodontidae
Orangebelly darter	*Etheostoma radiosum*	Percidae
Orangespotted sunfish	*Lepomis humilis*	Centrarchidae
Orangethroat darter	*Etheostoma spectabile*	Percidae
Ozark madtom	*Noturus albater*	Ictaluridae

Common Name	Species	Family
Ozark minnow	*Notropis nubilus*	Cyprinidae
Pirate perch	*Aphredoderus sayanus*	Aphredoderidae
Pugnose minnow	*Notropis emiliae*	Cyprinidae
Rainbow darter	*Etheostoma caeruleum*	Percidae
Redfin darter	*Etheostoma whipplei*	Percidae
Redfin shiner	*Lythrurus umbratilis*	Cyprinidae
Ribbon shiner	*Lythrurus fumeus*	Cyprinidae
"Rock basses"	*Ambloplites sp.*	Centrarchidae
Scaly sand darter	*Ammocrypta vivax*	Percidae
Shadow bass	*Ambloplites ariommus*	Centrarchidae
Slender madtom	*Noturus exilis*	Ictaluridae
Slough darter	*Etheostoma gracile*	Percidae
Smallmouth bass	*Micropterus dolomieu*	Centrarchidae
Smallmouth buffalo	*Ictiobus bubalus*	Catostomidae
Southern redbelly dace	*Phoxinus erythrogaster*	Cyprinidae
Spotted bass	*Micropterus punctulatus*	Centrarchidae
Spotted sucker	*Minytrema melanops*	Catostomidae
Spotted sunfish	*Lepomis punctatus*	Centrarchidae
Spotted gar	*Lepisosteus oculatus*	Lepisosteidae
Strawberry River darter	*Etheostoma fragi*	Percidae
Striped shiner	*Notropis chrysocephalus*	Cyprinidae
Tadpole madtom	*Noturus gyrinus*	Ictaluridae
Warmouth	*Lepomis gulosus*	Centrarchidae
Wedgespot shiner	*Notropis greenei*	Cyprinidae
Whitetail shiner	*Notropis galacturus*	Cyprinidae
Yellow bullhead	*Ameiurus natalis*	Ictaluridae

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 2.

APPENDIX D

PROCEDURES FOR OBTAINING DIRECTOR'S DETERMNATION ON THE PROPOSED PHYSICAL ALTERATION OF AN EXTRAORDINARY RESOURCE WATERS, ECOLOGICALLY SENSITIVE WATERBODY, OR NATURAL AND SCENIC WATERWAY

(September 28, 2007)

APPENDIX D: PROCEDURES FOR OBTAINING DIRECTOR'S DETERMINATION ON THE PROPOSED PHYSICAL ALTERATION OF AN EXTRAORDINARY RESOURCE WATERS, ECOLOGICALLY SENSITIVE WATERBODY, OR NATURAL AND SCENIC WATERWAY

I. CONTENTS OF REQUEST FOR DETERMINATION

Any person may submit a written request to the Department seeking a determination on whether or not a proposed project will constitute a significant physical alteration of the habitat of an extraordinary resource water, ecologically sensitive waterbody, or natural and scenic waterbody. Such request shall include, at a minimum:

(A) A map depicting the location of the proposed project and the area to be altered by the project;
(B) A description of the project, including detailed design plans;
(C) An analysis of alternatives to the proposed project, including: an environmental assessment of the impacts of each alternative, the costs associated with each alternative, an engineering and economic analysis, and a socio-economic evaluation of the project to the local area; and
(D) A technical report containing supporting documentation to demonstrate that the proposed project:
(1) will not impair water quality;
(2) will not impair the natural flow regime; and
(3) will not impair the habitat of fish, shellfish, or other forms of aquatic life

II. DEPARTMENT REVIEW OF REQUEST

(A) Upon receipt of the request and supporting documentation identified above, the Department shall review the alternatives analysis referenced in Appendix D, I (C). The Department may consult with professionals, as necessary, in reviewing the report. The Department shall review the alternatives analysis in order to:
(1) ensure that the alternatives analysis is complete;
(2) evaluate whether the analysis adequately addresses the environmental, social, and economic costs and impacts of each alternative; and
(3) determine whether any feasible alternatives exist for the proposed project.

(B) Following review of the alternatives analysis, the Department will review the technical report referenced in Appendix D, I (D). The Department may consult with professionals, as necessary, in reviewing the report. The Department shall review the technical report to evaluate the impacts of the proposed project on water quality, instream flow, and aquatic habitat. The Department will develop guidelines for drafting the technical report and identifying issues to be addressed.

III. DIRECTOR'S DETERMINATION

(a) Upon completing its review of the written request and supporting information, the Director shall issue a draft determination. The Director's draft determination shall include a written statement setting out the reasons for the determination and provide a draft decision on the proposed project which shall either:

1) authorize, with conditions as necessary, the alteration of the habitat because the proposed project does not constitute a significant alteration of the habitat and no feasible alternatives exist to the proposed project; or
2) deny the request to alter the habitat because:
   (i) the proposed project constitutes a significant alteration of the habitat which is prohibited by Reg. 2.304(a); or
   (ii) feasible alternatives to the proposed project exist.

(b) Public notice, notice of a public comment period, and notice of any public hearing on the Director's draft determination shall be provided in the same manner as that provided for a draft permit decision in Regulation No. 8. Thereafter, the Director shall issue a final determination. The final determination shall be issued and notice provided in the same manner as that provided for the issuance and notice of a final permitting decision in Regulation No. 8. The Director's determination may be appealed to the Commission in the same manner as permit appeals are provided for in Regulation No. 8.

IV. REQUIREMENT FOR SHORT TERM ACTIVITY AUTHORIZATION

If the Director authorizes the alteration of the habitat of an extraordinary resource water, ecologically sensitive waterbody, or natural and scenic waterway, then the party requesting the Director's Determination shall submit to the Department a request for a short term activity authorization in accordance with the requirements of Reg. 2.305.

V. OTHER REQUIRED PERMITS NOT WAIVED

Nothing contained herein shall be construed to relieve the petitioner of the requirements to obtain any other permit for the proposed project required by state or federal law.

A RKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 2.

APPENDIX E

Criteria to be Considered in Determining Whether the Designated Use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway Should be Maintained

(September 28, 2007)

APPENDIX E: CRITERIA TO BE CONSIDERED IN DETERMINING WHETHER THE DESIGNATED USE OF EXTRAORDINARY RESOURCE WATER, ECOLOGICALLY SENSITIVE WATERBODY, OR NATURAL AND SCENIC WATERWAY SHOULD BE MAINTAINED

The determination of whether a designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway should be maintained in a given waterbody must be made on a case by case basis. At least 180 days prior to filing any petition authorized under Section 2.310 to initiate rulemaking with the Commission to remove the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway from a free flowing waterbody for the purpose of constructing a reservoir to provide a domestic water supply, the petitioner shall submit to the Department information and supporting documentation which address each of the following:

(A) Describe generally and specifically the state of the existing water quality;
(B) Identify the presence of key and indicator species of fish adapted to flowing water systems and state the extent to which these species are present in the waterbody;
(C) Describe the extent to which water quality and physical habitat, including wetlands, support other plant or animal life and identify the species;
(D) Identify the presence of, and state the extent to which, other wildlife uses are dependent upon the waterbody;
(E) State the extent to which water quality and physical habitat support threatened, endangered, or endemic aquatic or semi-aquatic species and identify those species;
(F) Specify the extent to which the waterbody supports a high diversity of aquatic species and identify the presence and frequency of the species;
(G) Describe and identify the extent to which physical or chemical characteristics of the waterbody provide an unusual or uncommon aquatic habitat;
(H) Describe the extent to which physical or chemical characteristics give the waterbody unusual or unique aesthetic attributes;
(I) Specify the extent of the use of the waterbody for recreation in or on the water, such as fishing, swimming, and boating (including but not limited to canoeing, kayaking, or rafting), or use of the waterbody for commercial activity, including tourism;
(J) Identify and describe the intangible social values associated with the free flowing characteristics of the waterbody;
(K) Identify the presence and location of gorges, rapids, waterfalls, or other significant geologic features;
(L) Identify the presence and location of scenic areas and sites potentially impacted by the reservoir;

(M) Identify the presence and location of rare and/or irreplaceable natural areas potentially impacted by the reservoir;
(N) Identify the presence and location of known archeological sites potentially impacted by the reservoir;
(O) Identify the presence and location of historic resources potentially impacted by the reservoir;
(P) Delineate the extent to which the waterbody is located within the boundaries of, flows through, or is adjacent to state or federal forest land, parks, natural areas, nature preserves, refuges, or wildlife management areas;
(Q) Describe the extent to which the waterbody is used for educational, scientific, or research purposes;
(R) Identify the waterbody's use or potential use as an ecoregion reference stream;
(S) Describe the land uses, and the geographical extent of each, occurring within the watershed;
(T) Identify the presence and location of all permitted point sources discharging to the waterbody;
(U) Identify the presence and location of existing alterations, diversions or man-made impoundments; and
(V) Provide the frequency of occasions when there is no natural flow in the waterbody, and the 7Q10 flow values for the waterbody.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 2.

APPENDIX F

Factors Considered In Adding the Designated Use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a Waterbody or Waterbody Segment

(September 28, 2007)

APPENDIX F: FACTORS CONSIDERED IN ADDING THE DESIGNATED USE OF EXTRAORDINARY RESOURCE WATER, ECOLOGICALLY SENSITIVE WATERBODY, OR NATURAL AND SCENIC WATERWAY TO A WATERBODY OR WATERBODY SEGMENT

The Commission shall consider the following supporting documentation in determining whether a waterbody should be designated as an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway:

(A) Location – The waterbody is within the boundaries of or flows through or is adjacent to state or federal forest land, parks, natural areas, nature preserves, refuges, or wildlife management areas, or the watershed may include remote, primitive, or relatively undeveloped areas;
(B) Existing water quality – pristine, naturally-occurring, or unique;
(C) Ecological value – The presence of water quality and physical habitat that supports threatened, endangered, or sensitive species, the presence of any threatened, endangered, or sensitive species, and/or water quality that supports an exceptional high diversity of aquatic species (fish or benthic macroinvertebrates) as categorized by an appropriate index of biological integrity (IBI) protocol;
(D) Presence of physical or chemical characteristics that provide an unusual or uncommon aquatic habitat;
(E) Special attributes of the waterbody that make it an outstanding resource, including but not limited to the presence of archeological sites, historical sites, or rare or valuable wildlife habitat;
(F) Aesthetic Value- the presence of scenic areas or sites or scenic beauty resulting from natural features of the basin such as flow, topography, geology, ecology, physiography (i.e., waterfalls, gorges, rapids, or other special features), or the presence of characteristics giving the waterbody unique or unusual attributes;
(G) Recreational Value- Use of the waterbody for:
  (1) Fishing, rafting, kayaking, camping, family outings, backpacking, bird watching, etc.,
  (2) Presence of hiking trails or scenic road or highway alongside, and
  (3) Attracting tourism;
(H) Use of the waterbody for educational, scientific, or research purposes;
(I) Presence of rare and/or irreplaceable natural areas; and
(J) Impacts the designation may have on current uses, upstream users, downstream users, and potential future uses of the waterbody or waterbody segment.

17. modify the dissolved mineral standards for Fish Trap Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
18. modify the dissolved mineral standards for Rickey Branch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
19. modify the dissolved mineral standards for Blue Point Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
20. modify the dissolved mineral standards for Big Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
21. modify the dissolved mineral standards for Main Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
22. modify the dissolved mineral standards for Plum Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
23. modify the dissolved mineral standards for Crooked Creek Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
24. modify the dissolved mineral standards for Indian Bayou Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
25. modify the dissolved mineral standards for Caney Creek Ditch follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
26. modify the dissolved mineral standards for Salt Bayou Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
27. modify the dissolved mineral standards for Bradley Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
28. modify the dissolved mineral standards for Tupelo Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
29. modify the dissolved mineral standards for Dennis Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
30. modify the dissolved mineral standards for Buffalo Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
31. modify the dissolved mineral standards for Flynn Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
32. modify the dissolved mineral standards for Boggy Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
33. modify the dissolved mineral standards for Bear Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
34. modify the dissolved mineral standards for Bubbling Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
35. modify the dissolved mineral standards for Five Forks Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
36. modify the dissolved mineral standards for Government Cypress Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;

Arkansas Pollution Control and Ecology Commission

Subject: Adoption of revisions to Regulation No. 2, Regulation Establishing Water Quality Standards for the Surface Waters of the State of Arkansas.

Docket No: 07-004-R

MINUTE ORDER NO. 07-41

Pursuant to public notice and hearing, and in consideration of the fact that no adverse public comments were received, the Arkansas Pollution Control and Ecology Commission hereby adopts the following changes to Regulation No. 2, Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas.

1. modify the dissolved mineral standards for Long Pond Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
2. modify the dissolved mineral standards for Castor Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
3. modify the dissolved mineral standards for Cross Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
4. modify the dissolved mineral standards for Bayou Meto from the point it crosses the Pulaski/Lonoke County line to the confluence with the Arkansas River as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 64 mg/l to 95 mg/l;
5. modify the dissolved mineral standards for Bayou Two Prairie from the point it crosses the Pulaski/Lonoke County line to the confluence with the Arkansas River as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
6. modify the dissolved mineral standards for Little Bayou Meto as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
7. modify the dissolved mineral standards for Bakers Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
8. modify the dissolved mineral standards for Wabbaseka Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
9. modify the dissolved mineral standards for Indian Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
10. modify the dissolved mineral standards for Flat Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
11. modify the dissolved mineral standards for Shumaker Branch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
12. modify the dissolved mineral standards for Skinner Branch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
13. modify the dissolved mineral standards for White Oak Branch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
14. modify the dissolved mineral standards for Caney Creek as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
15. modify the dissolved mineral standards for Salt Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
16. modify the dissolved mineral standards for Snow Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;

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For Office Use Only

Effective Date: **Classification Number:**

Name of Agency: Arkansas Department of Environmental Quality

Contact Person: Steven Drown **Telephone:** (501) 682-0655

Statutory Authority for Promulgating Rules: A. C. A. § 8-4-201(b)(1).

Title of Rule: Regulation No. 2, Regulation Establishing Water Quality Standards for the Surface Waters of the State of Arkansas; Docket No 07-004-R; Minute Order No. 07-41.

Rule Status	Effective Date Status	Effective Date
☐ New Rule/Regulation	☐ Emergency	
☒ Amended Rule/Regulation	☒ 10 Days after filing	November 25, 2007
☐ Repealed Rule/Regulation	☐ Other	
☐ Order	☐ Repealed	
☐ Emergency Rule/Regulation	Adopted by State Agency	

☐ Rule above is proposed and will be replaced by final version

☒ Financial and/or Fiscal Impact Statement Attached

Certification of Authorized Officer

I hereby certify that the attached rules were adopted in compliance with Act 434 of 1967 as amended.

Signature: Michael O'Malley Date: November 15, 2007

Title: Administrative Hearing Officer

1/14/99

ARKANSAS POLLUTION CONTROL & ECOLOGY COMMISSION
101 EAST CAPITOL
SUITE 205
LITTLE ROCK, ARKANSAS 72201
PHONE: (501) 682-7890
FAX: (501) 682-7891

RECEIVED

NOV 1 5 2007

BUREAU OF
LEGISLATIVE RESEARCH

November 15, 2007

Ms. Donna Davis
Administrative Rules and Regulations Committee
Room 433, State Capitol Building
Little Rock, Arkansas 72201

RE: Regulation No. 2, Regulation Establishing Water Quality Standards for the Surface Waters of the State of Arkansas; Docket No. 07-004-R - **FINAL FILING**.

Dear Ms. Davis:

I am enclosing the following for filing with your office:

1. Two (2) hard copies of the amendment to Regulation No. 2, Regulation Establishing Water Quality Standards for the Surface Waters of the State of Arkansas.
2. Two (2) copies of Commission Minute Order No. 07-41.
3. Two (2) copies of the Financial Impact Statement.

Please provide written confirmation of your receipt of these materials by file-marking the enclosed copy of this letter and returning it to me.

Thank you for your assistance in this matter.

Respectfully,

Michael O'Malley

Michael O'Malley
Administrative Hearing Officer

Enclosures

ARKANSAS REGISTER

Transmittal Sheet

Charlie Daniels
Secretary of State
State Capitol Room 026
Little Rock, Arkansas 72201-1094
(501) 682-3527

For Office Use Only: Effective Date _____ Code Number _____

Name of Agency: Arkansas Department of Environmental Quality

Department: Arkansas Pollution Control and Ecology Commisison

Contact: Steven Drown E-mail: drown@adeq.state.ar.us Phone: (501) 682-0655

Statutory Authority for Promulgating Rules: A. C. A. § 8-4-201(b)(1).

Rule Title: Regulation No. 2, Water Quality Standards for the State of Arkansas; Docket No. 07-004-R; Minute Order No. 07-41

Intended Effective Date

- [ ] Emergency
- [x] 10 Days After Filing
- [ ] Other _____

	Date
Legal Notice Published	05/10/07
Final Date for Public Comment	07/10/07
Reviewed by Legislative Council	08/21/07
Adopted by State Agency	10/26/07

- [x] Electronic Copy of Rule Provided on disk or CD (per Act 1478 of 2003)
- [ ] Electronic Copy of Rule e-mailed from: _____

Contact Person Email Address Date

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with Act 434 of 1967 As Amended.

By Michael O'Malley
Signature

(501) 682-7890 omalley@adeq.state.ar.us
Phone Number E-mail Address

Administrative Hearing Officer
Title

11/15/07
Date

FILED
AR REGISTER
2007 NOV 15 PM 5:00
SECRETARY OF STATE
STATE OF ARKANSAS

Rev. 04

37. modify the dissolved mineral standards for Brushy Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
38. modify the dissolved mineral standards for Tipton Ditch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
39. modify the dissolved mineral standards for Hurricane Slough as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
40. modify the dissolved mineral standards for Newton Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
41. modify the dissolved mineral standards for West Bayou as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
42. modify the dissolved mineral standards for Brownsville Branch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l;
43. modify the dissolved mineral standards for Eagle Branch as follows: sulfates from 37 mg/l to 45 mg/l and chlorides from 48 mg/l to 95 mg/l.

PROMULGATED THIS 26TH DAY OF OCTOBER, 2007 BY ORDER OF THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

By: William S Thompson
~~Thomas Schueck~~, Chair Vice Chair

ATTEST: Teresa Marks
Teresa Marks, Director

Approved:
Mike Beebe, Governor

COMMISSIONERS:

	L. Bengal		J. Shannon
	S. Henderson		L. Sickel
	D. Hendrix		J. Simpson
	C. McGrew		W. Thompson
	D. Samples		E. Valdez
	T. Schueck		B. White
			R. Young

William S Thompson SUBMITTED BY: William N. Reed PASSED: 10/26/07
Chair