



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS TX 75202-2733

MAR 10 2016

Mr. James Wise  
Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317

Re: Draft 2016 Impaired Waterbodies List

Dear Mr. Wise:

Thank you for the opportunity to comment on the draft 2016 Arkansas Clean Water Act Section 303(d) list of impaired waters. The Environmental Protection Agency commends the Arkansas Department of Environmental Quality for the significant effort expended in assessing the State's waters and appreciates the emphasis Arkansas places on maintaining and enhancing the State's abundant natural resources.

Based on our initial review, the Region 6 office of the Environmental Protection Agency is providing the attached comments on Arkansas's draft 2016 303(d) list. If you have any questions or need any clarification, please contact Laura Hunt of my staff by phone at (214) 665-9729 or via email at [Hunt.Laura@epa.gov](mailto:Hunt.Laura@epa.gov).

Sincerely,

A handwritten signature in black ink that reads "Stacey B. Dwyer".

Stacey B. Dwyer, P.E.  
Associate Director  
NPDES Permits & TMDL Branch

**EPA COMMENTS ON ARKANSAS'S DRAFT 2016 §303(d) LIST-Public Comment**

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**A. Segments delisted from Arkansas's draft 2016 303(d) list with no rationale**

Arkansas's draft 2016 303(d) list did not include segments that were previously listed and no new evidence was provided supporting delisting (table 1). The Arkansas Department of Environmental Quality (ADEQ) removed listings as found on their website (see [link](#)) as part of the 2016 public comment period, however, the removed listings did not include a rationale or justification and as such do not meet the requirements for public participation.

Per CFR 130.7(b)(6), *"each State shall provide documentation to the Regional Administrator to support the State's determination to list or not to list its waters as required by §§ 130.7(b)(1) and 130.7(b)(2)."* Based on these regulations, Arkansas's rationale for delisting waters is insufficient. The rationales for delisting segments are important and are further described in EPA's 2006 guidance document which states: *"States should provide detailed rationales for removing segment/pollutant combinations from their previous 303(d) lists in the record of decision for the list."* The public needs detailed information to determine what factors were used to remove waters.

**Table 1. Segments previously listed on the draft 2014 303(d) list where no new data supports delisting**

Stream Name	Parameter	HUC	RR	#Exceedances	N	Comment
Beech Creek	Dissolved Oxygen	11140203	025			Previously listed by Arkansas and no new data was found to support delisting
Bodcau Creek	pH	11140205	006			Previously listed by Arkansas and no new data was found to support delisting
Kings River	Total dissolved solids	11010001	042	10	57	Impaired and needs to be listed
Prairie Creek	Dissolved Oxygen	08040101	048	8	13	Impaired and needs to be listed
Red River	Total dissolved solids	11140201	003	17	57	Impaired and needs to be listed
Red River	Total dissolved solids	11140201	007	23	55	Impaired and needs to be listed

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Stream Name	Parameter	HUC	RR	#Exceedances	N	Comment
Red River	Total dissolved solids	11140201	011	17	57	Impaired and needs to be listed
Smackover Creek	Dissolved Oxygen	08040201	006	11	20	Impaired and needs to be listed
Sulphur River	Temperature	11140302	006	9	56	Impaired and needs to be listed

**B. Segments exceeding Arkansas’s site specific minerals criteria but are not on Arkansas’s draft 2016 303(d) list**

For assessment of site-specific mineral criteria, the state’s assessment methodology for the draft 2016 303(d) list states that:

*“Monitoring segments with site specific standards will be listed as non-support when greater than 25 percent of the total samples within the period of record exceed the applicable criteria, listed in APC&EC Reg. 2.511(A).”*

Previous versions of the state’s assessment methods have applied a 10 percent exceedance frequency for determining nonsupport of the site specific minerals criteria (see [link](#)).

To facilitate a clearer understanding for the public, ADEQ needs to provide supporting documentation describing how the exceedance rate change (10% to 25%) is an appropriate and scientifically defensible frequency. EPA review of all available data found 33 segments (table 2) that exceeded site specific minerals greater than 10% but were not on Arkansas’s draft 2016 303(d) list.

**Table 2. Segments exceeding site specific minerals criteria and not on Arkansas’s draft 2016 303(d) list**

Stream Name	HUC	RR	Parameter	Criteria	#Exceedances	N	%Exceedance
Saline River	08040204	002	Sulfate	10	46	56	82.14
Saline River	08040204	002	Sulfate	10	43	55	78.18
Red River	11140201	007	Total dissolved solids	500	23	55	41.81
Tyronza River	08020203	909	Sulfate	30	5	13	38.46

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Stream Name	HUC	RR	Parameter	Criteria	#Exceedances	N	%Exceedance
Saline River	08040204	002	Total dissolved solids	90	21	55	38.18
Bayou DeView	08020302	009	Chloride	20	19	56	33.92
Cache River	08020302	020	Sulfate	30	4	12	33.33
Tyronza River	08020203	909	Sulfate	30	4	13	30.76
Saline River	08040204	002	Total dissolved solids	90	17	56	30.35
Red River	11140201	011	Total dissolved solids	500	17	57	29.82
Red River	11140201	003	Total dissolved solids	500	17	57	29.82
Cache River	08020302	028	Sulfate	30	3	11	27.27
Saint Francis River	08020203	014	Chloride	10	15	57	26.31
Bayou DeView	08020302	004	Total dissolved solids	270	3	12	25
Bayou DeView	08020302	004	Chloride	20	3	12	25
North Fork Saline River	08040203	011	Total dissolved solids	90	13	57	22.80
Bayou DeView	08020302	009	Total dissolved solids	270	12	56	21.42
Cache River	08020302	018	Sulfate	30	3	14	21.42
Cache River	08020302	018	Total dissolved solids	270	3	14	21.42
Red River	11140106	005	Total dissolved solids	850	12	57	21.05
Sulphur River	11140302	006	Sulfate	100	12	57	21.05
Mine Creek	11140109	934	Chloride	90	11	58	18.96
Mine Creek	11140109	933	Chloride	90	11	58	18.96

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Stream Name	HUC	RR	Parameter	Criteria	#Exceedances	N	%Exceedance
Kings River	11010001	042	Total dissolved solids	150	10	57	17.54
Sulphur River	11140302	006	Total dissolved solids	500	10	57	17.54
White River	11010003	902	Total dissolved solids	160	10	57	17.54
L'Anguille River	08020205	001	Sulfate	30	10	58	17.24
Red River	11140106	005	Chloride	250	9	56	16.07
Red River	11140106	005	Sulfate	200	8	56	14.28
North Fork Saline River	08040203	011	Sulfate	10	8	57	14.03
Mine Creek	11140109	933	Sulfate	65	8	58	13.79
Mine Creek	11140109	934	Sulfate	65	8	58	13.7
White River	11010001	023	Chloride	20	7	55	12.7

**C. Segments exceeding Arkansas’s ammonia criteria but are not on Arkansas’s draft 2016 303(d) list**

Arkansas’s draft 2016 303(d) list omitted 5 waterbodies (see table 3) where more than one exceedance of the ammonia criteria was found in a 3 year period. For toxics criteria, the EPA CWA section 304(a) guidance recommends an average frequency for criteria excursions not to exceed one in three years (see [link](#)). Arkansas’s water quality standards for toxics states that “*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.*”. Based on EPA’s guidance and Arkansas’s WQS, there is sufficient data to conclude that the applicable water quality standards are not being attained and the 5 water bodies in table 3 need to be added to Arkansas’s 2016 303(d) list as impaired for ammonia.

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Table 3. Segments with more than one exceedance of the ammonia criteria and not on Arkansas's draft 2016 303(d) list

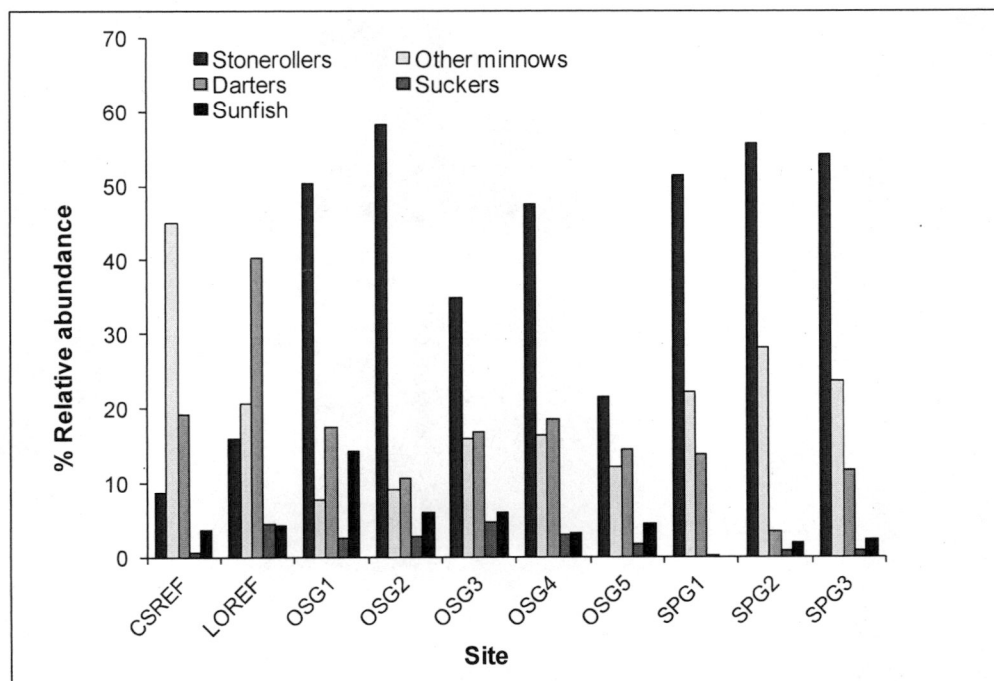
Waterbody Name	HUC	RR	Parameter	Criteria	#Exceedances	Comments
Gilham Lake	11140109	018	Ammonia	chronic	3	Exceedances are from station near the dam
Lake DeQueen	11140109	027	Ammonia	chronic	4	Exceedances are from station near the dam
Lake Austelle	08020203	008	Ammonia	chronic/ acute	12 chronic/ 3 acute	Exceedances are from station near the dam
Dierks Lake	11140109		Ammonia	chronic	3	Exceedances are from station near the dam
Whig Creek	11110203	931	Ammonia	chronic	16	Exceedances are from station downstream from a WWTP

**D. Osage Creek and Spring Creek**

During the 2002 303(d) cycle, EPA added Spring Creek and Osage Creek (table 4) to the State of Arkansas §303(d) lists of impaired waters because of elevated phosphorus concentrations. In 2009, the Cities of Rogers and Springdale conducted a study on Osage Creek and Spring Creek which concluded that there was no violation of Arkansas's narrative nutrient criterion in these waters. During the 2010 303(d) cycle, EPA reviewed the study results and found that indicators of nutrient enrichment are still prevalent in Osage Creek and Spring Creek and that the fish assemblages in the creeks were not representative of designated uses described in the standards for an Ozark Highland Ecoregion fishery. For example, the study noted that fish collections were dominated by species typically encountered in nutrient enriched streams including Largescale Stoneroller and Central Stoneroller (figure 1), rather than the key species, such as diverse minnows, sunfishes, and darters, that define the Designated Use (Reg. 2.302(F)(3)(a)) applicable to Ozark Highland streams. Also, the study reported total phosphorus (TP) concentrations in Spring Creek and Osage Creek were at concentrations that scientific studies associate with shifts in aquatic assemblages. Given that the study documents elevated TP and biotic responses expected with excess TP, such as shifts in fish assemblages, Osage Creek and Spring Creek are not attaining the Designated Use [*Aquatic Life/Fisheries*] portions of Arkansas's water quality standards (Reg. 2.302(F)(3)(a)) and associated Biological Integrity narrative water quality criteria (Reg. 2.405). Until new data indicate that the segments are no longer impaired, Osage Creek and Spring Creek need to be listed on Arkansas's 2016 303(d) list.

Table 4. Osage Creek and Spring Creek segments not on Arkansas’s draft 2016 303(d) list

Waterbody Name	HUC	RR
Osage Creek	11110103	030
Osage Creek	11110103	930
Spring Creek	11110103	931



**Figure 1. Relative abundance of selected fish taxa collected as part of the Rogers and Springdale study during the 2009 Critical Season**  
 CSREF=Chambers Creek Reference Site, LOREF=Little Osage Reference Site, OSG1-5= Osage Creek Sites, and SPG1-3=Spring Creek Sites.

**E. Ouachita River for Toxicity**

EPA evaluated water and sediment toxicity data from an EPA 2007 study publication entitled *Use Attainability Analysis and Water Quality Assessment of Ouachita River*.

- i. The Ouachita River was sampled at two stations: one located 100 yards upstream of the confluence with Coffee Creek and one located one-mile downstream of the confluence with Coffee Creek.

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- ii. The study included toxicity analysis of water and sediment samples during five sampling events. Sediment was only collected during two sampling events (1 and 4). Toxicity was observed in sediment and water samples collected at Ouachita River stations (table 5) using two standard laboratory test species, *C. dubia* and *P. promelas*.

**Table 5.** Summary of toxicity results for Ouachita River during five sampling events

Sampling Event	Ouachita River above	Ouachita River below
1*	S	WS
2	W	W
3	W	--
4*	S	S
5	--	--

W=toxicity detected in water sample to at least one test species (*C. dubia* or *P. promelas*), S=toxicity detected in sediment sample to at least one test species (*C. dubia* or *P. promelas*), \*=indicates a sediment sample was collected for analysis during sampling event

The State of Arkansas water quality standards (Reg 2.508) provide that “*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.*” Until new data indicates that the segment is no longer impaired, the Ouachita River from OUA0008B station (08040202-002) to the Louisiana state line needs to be listed on Arkansas’s 2016 303(d) list.

**F. Lake Ouachita Fish Advisory**

On August 11, 2014 the Arkansas Department of Health issued a fish consumption advisory for Lake Ouachita which included a ban of fish consumption to high risk groups (see [link](#)).

Specifically, the advisory states that:

*“High Risk Groups (women of childbearing age, pregnant women, breastfeeding women, and children under the age of seven years): Should not eat largemouth bass (13 inches or longer), white bass (13 inches or longer), or striped bass (25 inches or longer) from this lake. General Public (men, women, and children seven years and older): Lake Ouachita Fish Consumption Advisory Eat no more than 2 meals per month of largemouth bass (13 inches or longer), white bass (13 inches or longer), or striped bass (25 inches or longer) from this lake. Eating fish with mercury will not make people sick right away, but as you eat more and more, it can build up in the body and, over time, potentially cause adverse health effects. The Arkansas Department of Health issues fish consumption advisories when enough data indicates elevated levels of mercury have been reached”*



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Arkansas's draft 2016 303(d) list did not include Lake Ouachita based on the state's assessment methodology for fish consumption advisories which reads:

*“However, if a consumption restriction is recommended, e.g., no more than two meals per month or no consumption of fish over 15-inches, these waters will not be listed as non-support.”*

Long-standing EPA guidance states that waterbodies should be included on §303(d) lists where fish/shellfish bans and fish/shellfish consumption advisories (or restrictions) have been issued, unless the state demonstrates that the risk assessment parameters considered in developing an advisory are more protective than the applicable water quality standard (see [link](#)). EPA was not able to find where the state has demonstrated this for Lake Ouachita. Therefore, based on the applicable fish consumption advisories, there is sufficient data to conclude that the applicable water quality standards for toxic substances (Reg. 2.508) are not being attained and Lake Ouachita needs to be added to Arkansas's 2016 303(d) list.



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