

*“Protecting the public health and natural resources of the
White River watershed through advocacy, education, and research”*

WHITE RIVER
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PREVIEW OF 2018 CRITICAL SEASON DISSOLVED OXYGEN 303(D) IMPAIRMENT LISTINGS FOR SELECT STREAMS IN THE WHITE RIVER WATERSHED

EXECUTIVE SUMMARY

In just a couple of weeks, Arkansas Department of Environmental Quality (ADEQ) will issue a public notice for the draft 2018 303(d) list for public comment and review. Under sections 303(d) and 305(b) of the Clean Water Act, states are required to evaluate the status of the waters within their state every two years and create a list of impaired waterbodies and a report of the overall water quality conditions within the state.

To get a headstart, White River Waterkeeper (WRW) has begun assessing water quality data so we can alert the public, and ADEQ, of any discrepancies. Continuous dissolved oxygen data from USGS stream gages were assessed for attainment within the critical season¹ for five sites within the White River watershed.

Of the five sites assessed, three are determined to be impaired based on dissolved oxygen concentrations dropping below the allowable standard in more than 10% of the samples. Despite public comments in 2016 noting that Big Creek at Carver should be listed as impaired for dissolved oxygen, it was not. Data from the 2018 cycle indicate Big Creek (tributary to the Buffalo River) will be included in the upcoming 303(d) list. Water quality on the South Fork of the Little Red River below Gulf Mountain Wildlife Management Area (WMA) is poor, compared to upstream of the WMA. WRW has not attempted to identify any sources of impairment at this time.

¹ Critical season is defined by water temperatures exceeding 22°C. Primary season dissolved oxygen, when water temperatures are at or below 22°C, have not yet been evaluated.



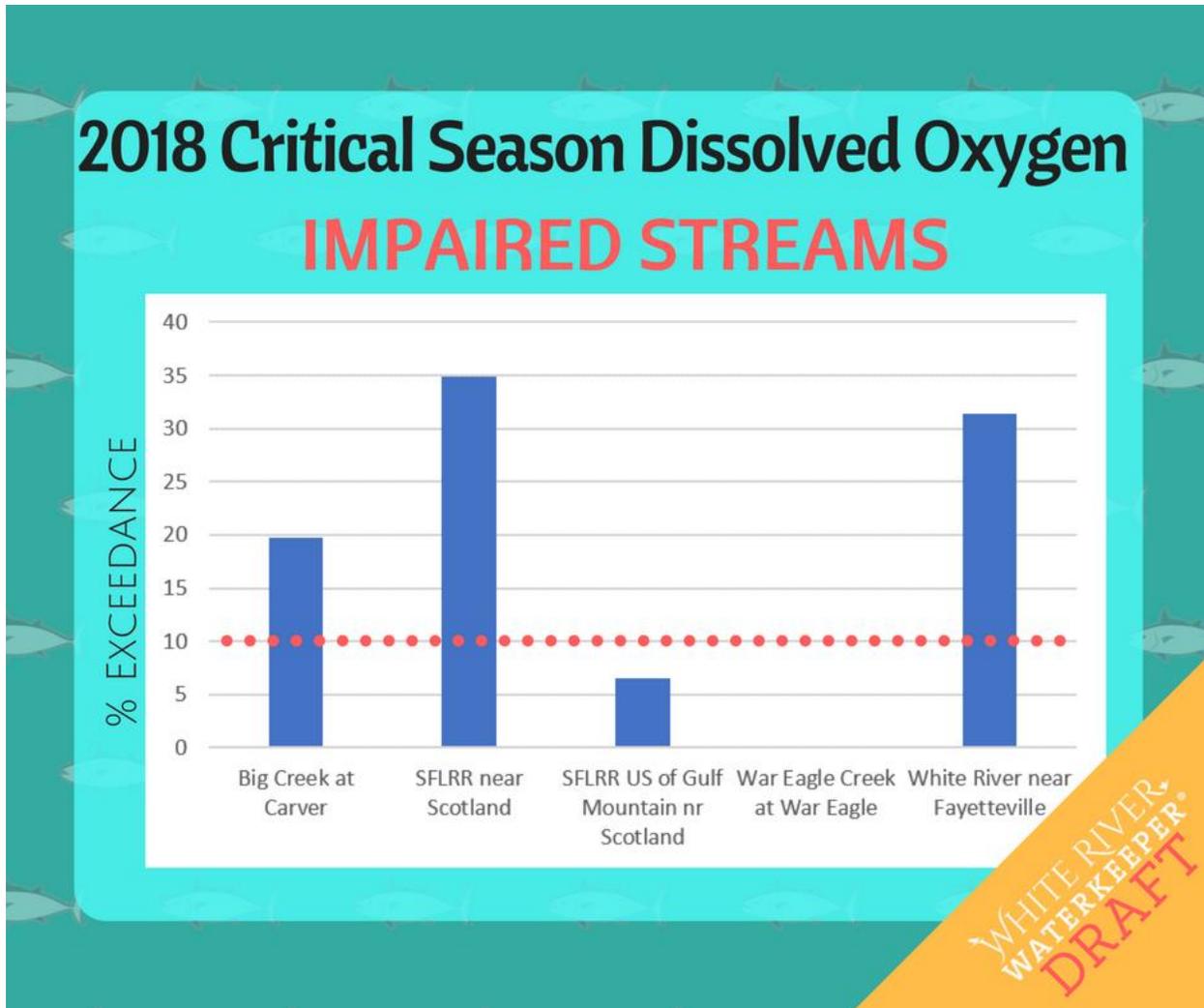


Figure 1. Percent exceedance rate of critical season dissolved oxygen standards for select streams within the White River watershed. The red dotted line indicates the allowable limit that dissolved oxygen can drop below the standard, above which limit streams are considered impaired and will be included on the 2018 303(d) list of impaired waterbodies. For location information, see Table 1.

Table 1. Site information for 2018 critical season dissolved oxygen assessments of select USGS stream gage sites within the White River watershed. Dissolved oxygen criteria correspond to ecoregion and watershed size in accordance with Regulation No. 2. Exceedance rates are calculated from the number of dissolved oxygen measurements/total number of dissolved oxygen measurements X 100. Only measurements with paired temperature data >22°C are included in calculations. Sites with asterisks (*) denote impairments that *should* be listed on the 2018 303(d) list.

USGS ID	Site Name	Lat	Long	DO Criteria (mg/L)	# Critical DO	# DO Below Standard	% Exceedance
7055814	Big Creek at Carver*	35.94662	-93.06778	6	23946	4735	19.8
7075270	SFLRR near Scotland*	35.56989	-92.62182	6	31137	10872	34.9
7075250	SFLRR US of Gulf Mountain near Scotland	35.54705	-92.70767	6	32587	2113	6.5
7049050	War Eagle Creek at War Eagle	36.26744	-93.94313	5	10816	2	0.02
7048600	White River near Fayetteville*	36.07320	-94.08050	6	22528	7071	31.4

FREQUENTLY ASKED QUESTIONS

Q. How are data assessed?

A. Dissolved oxygen and temperature data are from [USGS gage stations](#). For the 2018 reporting cycle, only data from **1 April 2012 to 31 March 2017** are assessed (See p. 11 of [Draft 2018 Assessment Methodology](#)). ADEQ assesses dissolved oxygen for each site based on two seasons, primary and critical. These assessments are only for the critical season. Dissolved oxygen samples collected when water temperatures exceed 22°C are considered “critical season” samples. Dissolved oxygen readings were culled from paired temperature data >22.0°C and assessed based on the allowable 10% exceedance rate.

Q. How are dissolved oxygen standards determined?

A. Regulation No. 2: Arkansas Water Quality Standards define thresholds for chemical, physical, and biological parameters that are indicators of water quality health. Depending on the specific criteria, these can apply to all waters in the state, or based on waterbody characteristics (e.g., watershed size, ecoregion, lake vs. river, Outstanding Resource Water vs. all other waters, season, etc.). Appropriate criteria are determined based on Reg. 2.505 and Reg. 2 Appendix A.

Q. When you say a stream is impaired for critical season dissolved oxygen, what does that really mean?

A. Dissolved oxygen standards are meant to protect aquatic life designated uses. When there is not enough available oxygen to fish, mussels, and insects, it means sensitive life stages and sensitive species *are* or *will be* negatively impacted.

Q. Will ADEQ's Draft 2018 303(d) List of Impaired Waterbodies include the same impairments that are noted by White River Waterkeeper?

A. Your guess is as good as ours. WRW's determinations were based on the Draft 2018 Assessment Methodology. ADEQ has not issued their Final 2018 Assessment Methodology. Additionally, ADEQ can choose to ignore their Assessment Methodology if they justify why a different determination is appropriate.

Q. Is Big Creek at Carver downstream of C&H Hog Farm?

A. Yes.

Q. How does the 2018 assessment for Big Creek differ from 2016?

A. You're really lobbing the tough questions our way, aren't you? Technically, dissolved oxygen dropped below the critical season standard 24% of the time during the 2016 period of record. However, ADEQ's justification for not listing it as impaired in 2016 was based on data not "being distributed over at least three seasons and two years" and because ADEQ did not have an assessment methodology to address continuous recordings at that time (See p. 4 of [Response to Comments](#)).

Q. Public comments were submitted to ADEQ during the 2016 303(d) cycle about dissolved oxygen impairment on Big Creek, and ADEQ chose not to list it. How can we make sure it actually gets listed as impaired this cycle?

A. Become a member of White River Waterkeeper. Seriously, though. We are prepared to challenge the 303(d) list if it comes to that, but we can't do it without your help. There is a short window for legal intervention. Without your support, we can't engage in legal advocacy work. Visit <https://www.whiteriverwaterkeeper.org/member> to join today.