



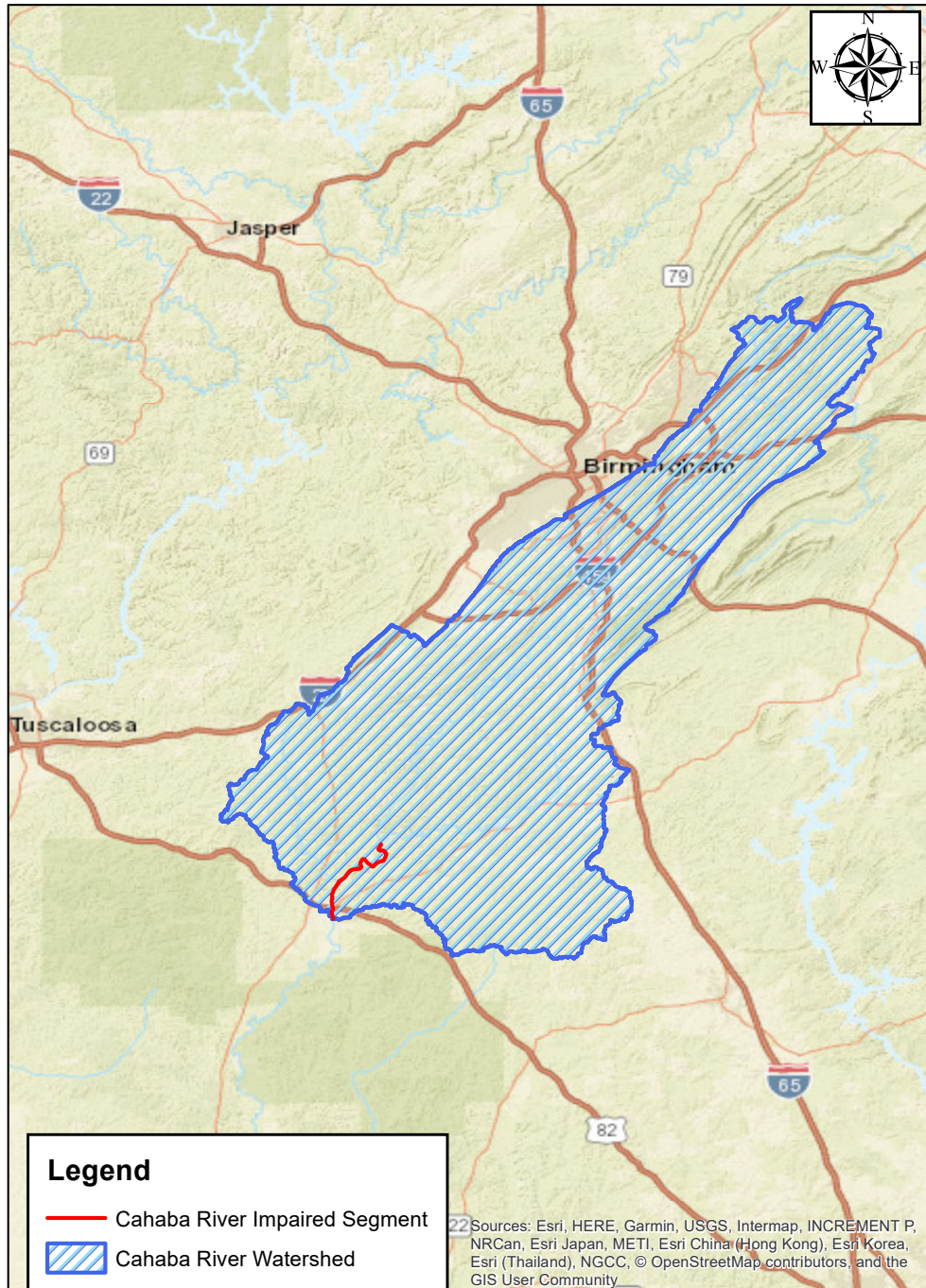
**Final Delisting Decision
for
Cahaba River**

Assessment Unit ID# AL03150202-0503-102

Pathogens (*E. coli*)

Alabama Department of Environmental Management
Water Quality Branch
Water Division
March 2022

Figure 1: Cahaba River Watershed



<i>Table of Contents</i>	<i>Page</i>
1. Executive Summary	1
2. Basis for §303(d) Listing	2
3. Technical Basis for Delisting Decision	2
3.1. Water Quality Target Identification	2
3.2. Data Availability and Analysis	3
4. Conclusion	5
5. Public Participation	6
6. Appendices	
A. References	7
B. Station CABB-1 Listing <i>E.coli</i> Data (2009-2014)	8
C. Station CABB-1 Photos	10

List of Tables

Table 1. Cahaba River Sampling Station	3
Table 2. Station CABB-1 <i>E.coli</i> Data (2015-2020)	4
Table 3. Data Summary	5

List of Figures

Figure 1. Cahaba River Watershed	ii
Figure 2. Cahaba River Sampling Location	5

1.0 Executive Summary

The segment of the Cahaba River from Alabama Highway 82 to lower Little Cahaba River is located in Bibb County and is part of the Cahaba River basin. It has a length of 10.58 miles and a use classification of Outstanding Alabama Water/Swimming and Other Whole Body Water-Contact Sports (OAW/S).

This segment of the Cahaba River was first placed on the State of Alabama's §303(d) list for pathogens (*E. coli*) in 2016 based on data collected by the Alabama Department of Environmental Management (ADEM) from 2009 to 2014. The source of the pathogens impairment was listed as municipal, pasture grazing, and urban runoff/storm sewers.

Over the last six years, additional data has been acquired for the Cahaba River to assess its ability to meet applicable water quality standards. The data indicates that this waterbody now fully support its use classification with respect to pathogens (*E. coli*).

This report addresses the results of the delisting analysis for the Cahaba River. Based on the assessment of the available data, ADEM has determined that a water quality impairment due to pathogens (*E. coli*) does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent of accurate data," which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).

2.0 Basis for §303(d) Listing

Section 303(d) of the Clean Water Act (CWA), as amended by the Water Quality Act of 1987 and EPA's Water Quality Planning and Management Regulations [Title 40 of the Code of Federal Regulations (CFR), Part 130], requires states to identify waterbodies which are not meeting water quality standards applicable to their designated use classifications. The identified waters are prioritized based on severity of pollution with respect to designated use classifications. Total maximum daily loads (TMDLs) for all pollutants causing violation of applicable water quality standards are established for each identified water. Such loads are established at levels necessary to implement the applicable water quality standards with seasonal variations and margins of safety. The TMDL process establishes the allowable loading of pollutants, or other quantifiable parameters for a waterbody, based on the relationship between pollution sources and in-stream water quality conditions, so that states can establish water-quality based controls to reduce pollution from both point and non-point sources and restore and maintain the quality of their water resources (USEPA, 1991).

The segment of the Cahaba River from Alabama Highway 82 to lower Little Cahaba River was first placed on the State of Alabama's §303(d) list for pathogens (*E.coli*) in 2016 based on data collected by ADEM from 2009 to 2014. The source of the pathogens impairment was listed as municipal, pasture grazing, and urban runoff/storm sewers. The impairment was subsequently included on the 2018 and 2020 §303(d) lists. The 2009–2014 listing data is shown in Appendix B.

3.0 Technical Basis for Delisting Decision

3.1 Water Quality Target Identification

Criteria for acceptable bacteria levels for the Outstanding Alabama Water use classification are described in ADEM Admin. Code R. 335-6-10-.09(1)(c)7 as follows:

7. Bacteria: in non-coastal waters, bacteria of the E.coli group shall not exceed a geometric mean of 126 colonies/100 ml nor exceed a maximum of 235 colonies/100 ml in any sample. In coastal waters, bacteria of the enterococci group shall not exceed a geometric mean of 35 colonies/100 mL nor exceed a maximum of 104 colonies/100 mL in any sample. The geometric mean shall be calculated from no less than five samples collected at a given station over a 30 day period at intervals not less than 24 hours.

Criteria for acceptable bacteria levels for the Swimming and Other Whole Body Water-Contact Sports use classification are described in ADEM Admin. Code R. 335-6-10-.09(3)(c)6(i), (ii), and (iii) as follows:

6. *Bacteria:*

(i) *Waters in the immediate vicinity of discharges of sewage or other wastes likely to contain bacteria harmful to humans, regardless of the degree of treatment afforded these wastes, are not acceptable for swimming or other whole body water-contact sports.*

(ii) *In all other areas, the bacterial quality of water is acceptable when a sanitary survey by the controlling health authorities reveals no source of dangerous pollution and when the geometric mean *E. coli* organism density does not exceed 126 colonies/100 ml nor exceed a maximum of 235 colonies/100 ml in any sample in non-coastal waters. In coastal waters, bacteria of the enterococci group shall not exceed a geometric mean of 35 colonies/100 ml nor exceed a maximum of 104 colonies/100 ml in any sample. The geometric mean shall be calculated from no less than five samples collected at a given station over a 30-day period at intervals not less than 24 hours. When the geometric mean bacterial organism density exceeds these levels, the bacterial water quality shall be considered acceptable only if a second detailed sanitary survey and evaluation discloses no significant public health risk in the use of the waters.*

(iii) *The policy of nondegradation of high quality waters shall be stringently applied to bacterial quality of recreational waters.*

3.2 Data Availability and Analysis

Over the last six years, ADEM performed additional sampling on the Cahaba River to further assess the water quality of the impaired stream. For the purposes of this delisting decision, data from 2015 to 2020 will be used to assess the water quality of the Cahaba River. This is consistent with the 2020 edition of *Alabama's Water Quality Assessment and Listing Methodology*. A description of the location of station CABB-1 can be found in Table 1, and a map showing the location can be found in Figure 2.

A total of thirty-three *E. coli* samples were collected at station CABB-1 from 2015 to 2020. Table 19 in the 2020 edition of *Alabama's Water Quality Assessment and Listing Methodology* gives the allowable number of exceedances of the pathogens criteria for a waterbody to be delisted. For a sample size of 22-37, one exceedance is allowable. Of the 33 samples taken at station CABB-1, there was only one exceedance of the single sample maximum criterion. There were no exceedances of the geometric mean criterion.

Table 1. Cahaba River Sampling Station

Station ID	Description	Latitude	Longitude
CABB-1	Cahaba River at AL Hwy 219	32.946314	-87.140258

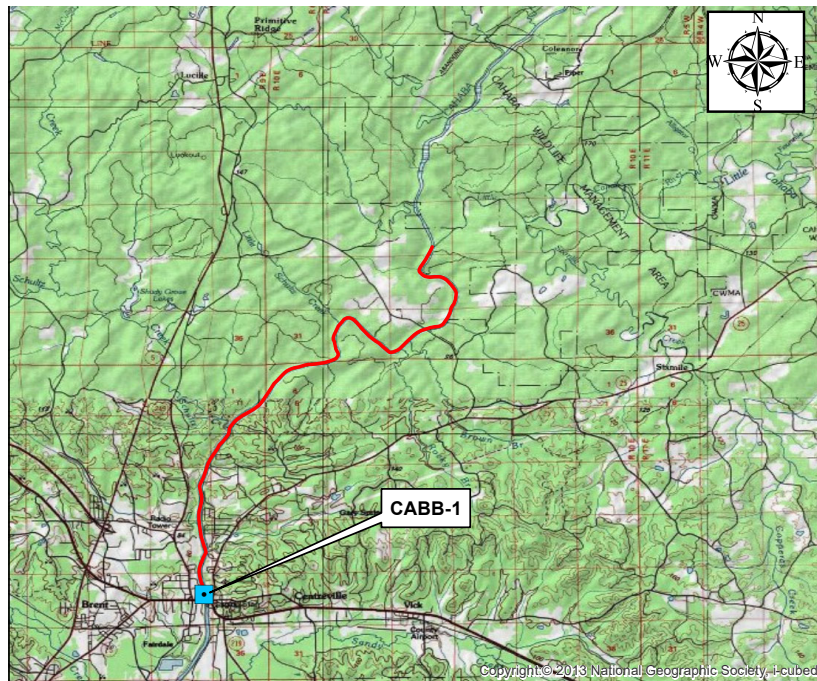
Table 2. Cahaba River Station CABB-1 *E. Coli* Data (2015-2020)

Station ID	Visit Date	Single Sample (col/ 100 mL)	<i>E. coli</i> Dc	Single Sample Criteria	Geometric Mean (col/ 100 ml)	Geometric Mean Criteria (col/ 100 ml)	Flow (cfs)
CABB-1	1/20/2015	3.1	-	235			900
CABB-1	2/5/2015	14.8	-	235			1025
CABB-1	5/13/2015	15.8	-	235			657
CABB-1	7/8/2015	53.7	-	235			667
CABB-1	9/10/2015	24.3	-	235			415
CABB-1	5/4/2016	95.9	-	235			1375
CABB-1	7/6/2016	17.5	-	235			266
CABB-1	9/8/2016	24.6	-	235			229
CABB-1	5/9/2017	18.7	-	235			592
CABB-1	7/11/2017	8.6	-	235			983
CABB-1	9/28/2017	22.8	-	235			312
CABB-1	5/8/2018	10.8	-	235			839
CABB-1	7/11/2018	25.6	-	235			497.5
CABB-1	9/6/2018	22.8	-	235			374.5
CABB-1	3/7/2019	166.4	-	235			3290
CABB-1	4/16/2019	686.7	-	235			4470
CABB-1	5/6/2019	18.7	-	235	30	126	1235
CABB-1	5/9/2019	21.6	-	235			825
CABB-1	5/13/2019	43.2	-	235			3460
CABB-1	5/20/2019	40.4	-	235			821
CABB-1	5/28/2019	34.5	-	235			497.5
CABB-1	6/12/2019	14.8	-	235			803
CABB-1	7/9/2019	8.6	-	235			393.5
CABB-1	8/8/2019	6.3	-	235			303
CABB-1	9/5/2019	39.3	-	235	29.3	126	258
CABB-1	9/12/2019	26.2	-	235			228
CABB-1	9/19/2019	19.7	-	235			214
CABB-1	9/23/2019	32.3	-	235			201
CABB-1	9/30/2019	33.1	-	235			206
CABB-1	10/17/2019	16	-	235			220
CABB-1	6/10/2020	93.3	-	235			1300
CABB-1	8/13/2020	35.9	-	235			343
CABB-1	10/8/2020	16.1	-	235			240

Table 3: Data Summary

Station	Total Geometric Mean Samples	Geometric Mean Criteria (col/100ml)	Geometric Mean Exceedances	Total Single Samples	Single Sample Criteria (col/100 ml)	Single Sample Exceedances	Allowable Single Sample Exceedances
CABB-1	2	≤126	0	33	≤235	1	1

Figure 2. Cahaba River Sampling Location



4.0 Conclusion

Based on an examination of the recently collected water quality data on the Cahaba River, ADEM has determined that a water quality impairment due to pathogens (*E.coli*) does not currently exist. Therefore, ADEM will not develop a total maximum daily load due to “more recent data,” which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).

5.0 Public Participation

As part of the public participation process, this Delisting Decision (DD) was placed on public notice and made available for review and comment. The public notice was prepared and published in the major daily newspapers in Montgomery, Huntsville, Birmingham, and Mobile, as well as submitted to persons who have requested to be on ADEM's postal and electronic mailing distributions. In addition, the public notice and subject document were made available on ADEM's Website: www.adem.alabama.gov. The public could also request paper or electronic copies by contacting Ms. Kimberly Minton at 334-271-7826 or kminton@adem.alabama.gov. The public was given an opportunity to review the DD and submit comments to the Department in writing. At the end of the public review period, any written comments received during the public notice period became part of the administrative record. ADEM considered all comments received by the public prior to final completion of this DD and subsequent submission to EPA Region 4 for final approval.

Appendix A References

ADEM Administrative Code, 2017. Water Division - Water Quality Program, Chapter 335-6-10, Water Quality Criteria.

ADEM Administrative Code, 2017. Water Division - Water Quality Program, Chapter 335-6-11, Use Classifications for Interstate and Intrastate Waters.

Alabama's Monitoring Program. 2009-2020. ADEM.

Alabama Department of Environmental Management (ADEM), Alabama's Water Quality Assessment and Listing Methodology, 2020.

Alabama's §303(d) Lists and Fact Sheets. 2016-2020. ADEM.

Alabama Department of Environmental Management (ADEM) Laboratory QA Manual, Chapter 10, Appendix A: ADEM Laboratory Qualifier Codes and Descriptions, October 12, 2016.

United States Environmental Protection Agency, 1991. Guidance for Water Quality-Based Decisions: The TMDL Process. Office of Water. EPA 440/4-91-001.

United States Environmental Protection Agency, 1986. Quality Criteria for Water. Office of Water. EPA 440/4-91-001.

Appendix B Station CABB-1 Listing *E. coli* Data (2009-2014)

Station ID	Visit Date	Single Sample (col/100 mL)	<i>E. coli</i> Dc	Single Sample Criteria	Geometric Mean (col/100 ml)	Geometric Mean Criteria (col/100 ml)	Flow (cfs)
CABB-1	9/10/2009	30.1	-	235			435
CABB-1	10/8/2009	686.7	-	235			4500
CABB-1	11/12/2009	2419.6	G	235			18700
CABB-1	12/10/2009	1299.7	-	235			6985
CABB-1	1/14/2010	3	-	235			1150
CABB-1	2/11/2010	109.5	-	235			3495
CABB-1	3/25/2010	29.5	-	235			1905
CABB-1	4/13/2010	51.2	-	235			1480
CABB-1	5/13/2010	27.8	-	235			777
CABB-1	6/17/2010	30.9	-	235			1040
CABB-1	7/29/2010	8.4	-	235			435
CABB-1	8/26/2010	17.5	-	235			348
CABB-1	9/30/2010	15.8	-	235			276
CABB-1	10/14/2010	85.7	-	235			393
CABB-1	11/18/2010	104.3	-	235			1150
CABB-1	12/16/2010	67.7	-	235			519
CABB-1	1/20/2011	24.1	-	235			626
CABB-1	2/10/2011	38.4	-	235			1360
CABB-1	3/17/2011	72.3	-	235			3840
CABB-1	4/14/2011	37.4	-	235			1370
CABB-1	6/9/2011	17.3	-	235			175
CABB-1	7/7/2011	12.2	-	235			657
CABB-1	8/4/2011	7.4	-	235			266.5
CABB-1	9/8/2011	303	-	235			1850
CABB-1	10/6/2011	14.8	-	235			248
CABB-1	11/3/2011	142.1	-	235			166
CABB-1	12/8/2011	976.9	-	235			4330
CABB-1	1/12/2012	2239.7	-	235			3860
CABB-1	2/16/2012	18.3	-	235			1390
CABB-1	3/15/2012	28.1	-	235			2010
CABB-1	4/3/2012	78.9	-	235			1710
CABB-1	5/31/2012	71.2	-	235			361
CABB-1	6/12/2012	21.6	-	235			373
CABB-1	7/18/2012	13.5	-	235			200

Station ID	Visit Date	Single Sample (col/100 mL)	<i>E. coli</i> Dc	Single Sample Criteria	Geometric Mean (col/100 ml)	Geometric Mean Criteria (col/100 ml)	Flow (cfs)
CABB-1	8/7/2012	34.1	-	235			456
CABB-1	9/4/2012	3465.8	-	235			3800
CABB-1	10/9/2012	17.1	-	235			376
CABB-1	11/7/2012	29.2	-	235			373
CABB-1	12/4/2012	12.2	H	235			273
CABB-1	1/9/2013	31.3	H	235			1400
CABB-1	2/5/2013	96	H	235			2020
CABB-1	3/5/2013	23.1	-	235			1980
CABB-1	4/9/2013	24.3	H	235			1490
CABB-1	5/6/2013	1732.9	H	235			4040
CABB-1	6/11/2013	52.9	H	235			2400
CABB-1	7/17/2013	12.6	H	235			716
CABB-1	8/7/2013	204.6	-	235			1330
CABB-1	9/9/2013	22.8	H	235			373
CABB-1	10/10/2013	40.4	-	235			288
CABB-1	11/13/2013	12.1	-	235			185
CABB-1	12/11/2013	1732.9	-	235			3240
CABB-1	1/16/2014	110	-	235			1980
CABB-1	2/25/2014	48.7	-	235			1690
CABB-1	3/6/2014	41	-	235			1420
CABB-1	4/3/2014	44.1	-	235			2130
CABB-1	5/8/2014	19.9	-	235			997
CABB-1	6/5/2014	24.5	-	235			1290
CABB-1	7/8/2014	11	-	235			383
CABB-1	8/6/2014	8.6	-	235			327.5
CABB-1	9/4/2014	13.5	-	235			277.5
CABB-1	10/7/2014	10.7	-	235			-
CABB-1	11/19/2014	1841.7	-	235			1730
CABB-1	12/4/2014	23.3	-	235			399

Appendix C Station CABB-1 Photos

Station CABB-1, looking upstream (5/4/2016)



Station CABB-1, looking downstream (5/4/2016)



Station CABB-1, looking upstream (9/23/2019)



Station CABB-1, looking downstream (9/23/2019)

