



Final
**Delisting Decision
for
Anderson Creek**

Assessment Unit ID # AL06030004-0404-102

Lauderdale County

Siltation

Alabama Department of Environmental Management
Water Quality Branch
Water Division
March 2026

Figure 1-1 Map of the Anderson Creek Watershed

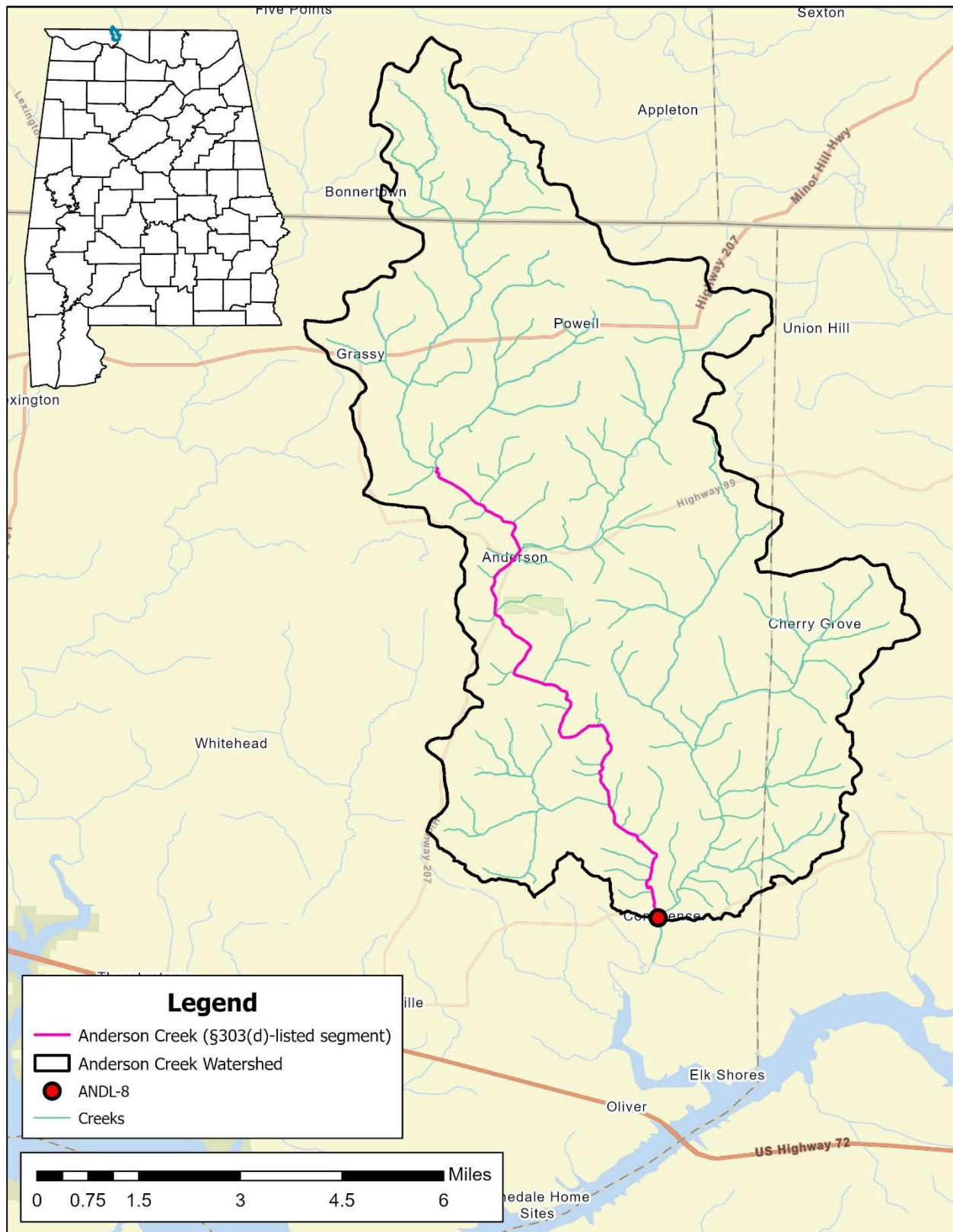


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1.0 Executive Summary

Anderson Creek, a part of the Tennessee River basin, is located in Lauderdale County. Anderson Creek begins northwest of Anderson, Alabama and flows southeast to its confluence with the Elk River (Wheeler Lake). The total length of Anderson Creek is 14 miles, and the total drainage area of the Anderson Creek watershed is 59.3 square miles. Anderson Creek is currently included on Alabama's 2024 §303(d) list as impaired for siltation from its source to Snake Road. The §303(d)-listed length of Anderson Creek is 9.31 miles, and the drainage area of the watershed for the listed segment is 48.6 square miles. Anderson Creek has a use classification of Fish and Wildlife (F&W).

Anderson Creek (AL06030004-0404-102) was first included on the 1998 §303(d) list as impaired for siltation from its source to Snake Road. The source of impairment was listed as unknown. The Alabama Department of Environmental Management (ADEM) updated the potential source of impairment from unknown to pasture grazing and non-irrigated crop production on the 2000 §303(d) list. Anderson Creek has subsequently been listed for siltation on the 2002-2024 §303(d) lists of impaired waterbodies.

In 2024, additional data was collected for Anderson Creek to assess its ability to meet applicable water quality standards. The data indicates that Anderson Creek now fully supports its use classification with respect to siltation.

This report addresses the results of the delisting analysis for Anderson Creek. Based on the assessment of all available data, ADEM has determined that a water quality impairment due to siltation does not currently exist. Therefore, ADEM will not develop a Total Maximum Daily Load (TMDL) due to "more recent or 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 the Environmental Protection Agency (EPA) 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. 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 instream 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).

In 1998, Anderson Creek was added to Alabama's §303(d) list as impaired for siltation. The potential source of impairment was originally listed as unknown but has since been updated to

pasture grazing and non-irrigated crop production. Anderson Creek has subsequently been listed for siltation on the 2000-2024 §303(d) lists of impaired waterbodies.

3.0 Watershed Assessment

3.1 Water Quality Target Identification

The State of Alabama currently has no numeric criteria for siltation; therefore, narrative criteria must be used to assess the siltation impairment. While numeric criteria normally have a quantifiable endpoint for a given parameter, narrative criteria are qualitative statements that establish a set of desired conditions for all State waters. These narrative criteria are commonly referred to as “free from” criteria that enable states a regulatory avenue to address pollutants or problems that may be causing or contributing to a use impairment that otherwise cannot be evaluated against any numeric criteria. Typical pollutants that fall under this category are nutrients and siltation. Historically, in the absence of established numeric criteria, ADEM and/or EPA would use available data and information coupled with best professional judgement to determine overall use support for a given waterbody. Narrative criteria continue to serve as a regulatory basis for determining use support and making listing/delisting decisions of waters in regard to Alabama’s §303(d) list. ADEM’s narrative criteria (ADEM Admin. Code r. 335-6-10-.06) are as follows:

335-6-10-.06 Minimum Conditions Applicable to All State Waters. *The following minimum conditions are applicable to all State waters, at all places and at all times, regardless of their uses:*

(a) State waters shall be free from substances attributable to sewage, industrial wastes or other wastes that settle to form bottom deposits which are unsightly, putrescent or interfere directly or indirectly with any classified water use.

(b) State waters shall be free from floating debris, oil, scum, and other floating materials attributable to sewage, industrial wastes or other wastes in amounts sufficient to be unsightly or which interfere directly or indirectly with any classified water use.

(c) State waters shall be free from substances attributable to sewage, industrial wastes or other wastes in concentrations or combinations, which are toxic or harmful to human, animal or aquatic life to the extent commensurate with the designated usage of such waters.

Although ADEM does not currently have numeric criteria for siltation, there is an existing criterion for turbidity. According to ADEM Admin. Code 335-6-10-.09(5)(e)9, the following criterion is applicable for a waterbody classified as Fish and Wildlife:

9. *Turbidity: there shall be no turbidity other than of natural origin that will cause substantial visible contrast with the natural appearance of the waters or interfere with any beneficial uses which they serve. Furthermore, in no case shall the turbidity exceed 50 Nephelometric units above background. Background will be interpreted as the natural condition of the receiving water without the influence of man-made or man-induced causes. Turbidity caused by natural runoff will be included in establishing background levels.*

For the siltation impairment status, relative biological health and habitat suitability was evaluated along with an assessment of the instream total suspended solids (TSS) and turbidity data.

3.2 Assessment of Ecoregional Reference Data

ADEM has established ecoregional reference guidelines for several parameters and pollutants. Reference streams, also referred to as “reference reaches” or “ecoregional reference sites,” are defined as relatively homogeneous areas of similar climate, landform, soil, natural vegetation, hydrology, and other ecologically relevant variables (USEPA, 2000b) which have remained comparatively undisturbed or minimally impacted by human activity over an extended period of time in relation to other waters of the State. While not necessarily pristine or completely undisturbed by humans, reference streams do represent desirable chemical, physical and biological conditions for a given ecoregion that can be used for evaluation purposes. The reference streams selected for a particular analysis depend primarily on the available number of reference streams and associated data within a particular ecoregion. Therefore, the total number of reference sites selected and the aerial scale (i.e., Ecoregion Level III, Level IV) used to represent a reference condition will often vary on a case-by-case basis.

Anderson Creek is located in ecoregion 71f (Western Highland Rim). ADEM elected to use the 90th percentile of the data distributions from the selected reference sites to establish goals for siltation, specifically TSS and turbidity, on an ecoregional basis. The 90th percentile of the data distribution is considered an appropriate target since it falls within an acceptable range of “least-impacted” conditions (i.e., upper quartile). Median values are used to represent existing TSS conditions within the impaired waterbody, and turbidity values are assessed on an individual sample basis. Alabama’s 2020 Ecoregional Reference Guidelines for ecoregion 71f (Level IV) were used in this analysis and are shown in Appendix 7-3, Table 7-2.

3.3 Land Use Assessment

Land use for the Anderson Creek (§303(d)-listed segment) watershed was determined using ArcGIS Pro with land use datasets derived from the 2021 National Land Cover Dataset (NLCD). Figure 3-1 and Table 3-1 display the land use areas for the Anderson Creek watershed. Figure 3-2 is a chart depicting the primary land uses in the Anderson Creek watershed.

The majority of the Anderson Creek watershed is agricultural land (60.27%). Other land uses include forested/natural (32.78%) and developed land (6.86%).

Figure 3-1 Land Use Map for the Anderson Creek Watershed

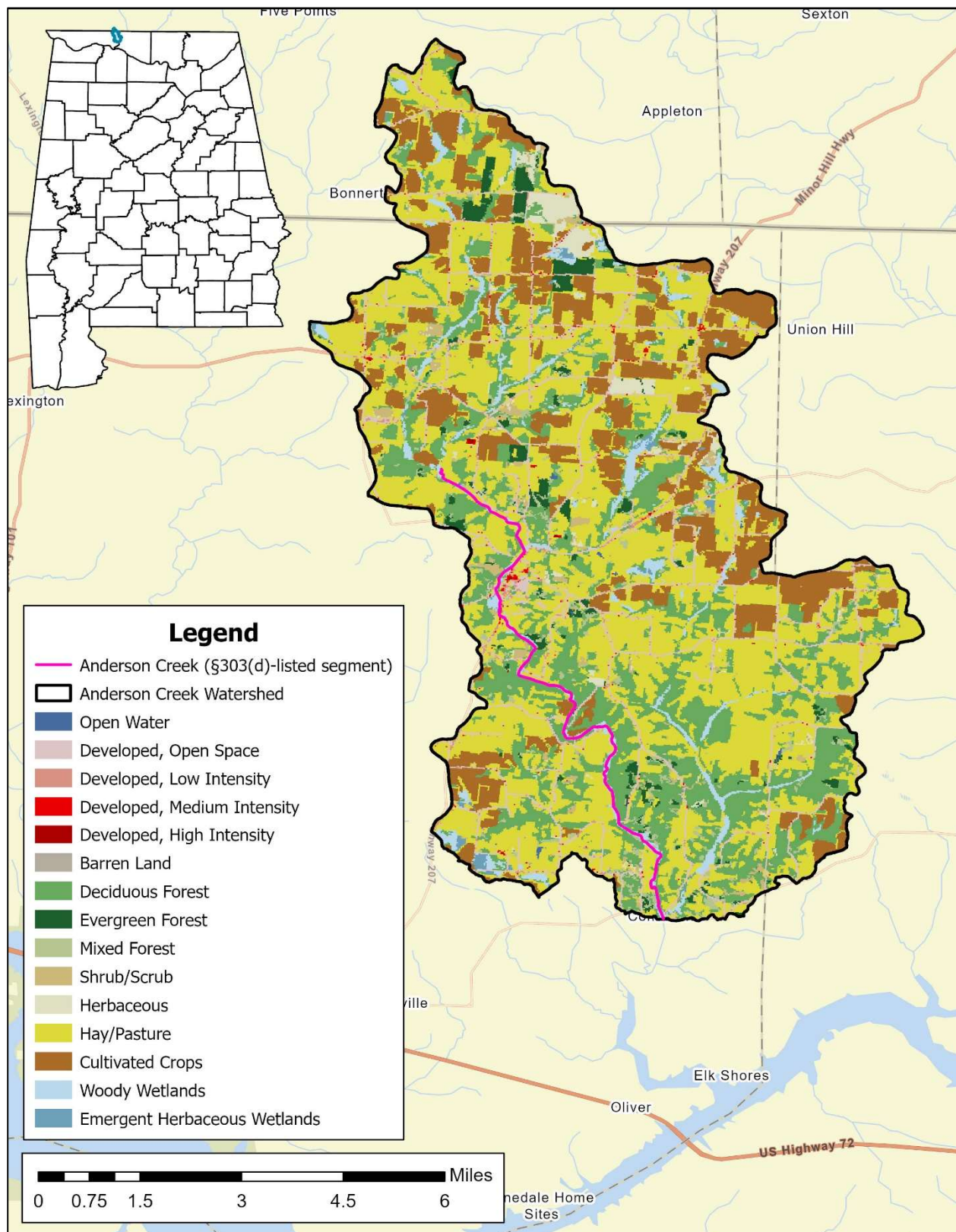
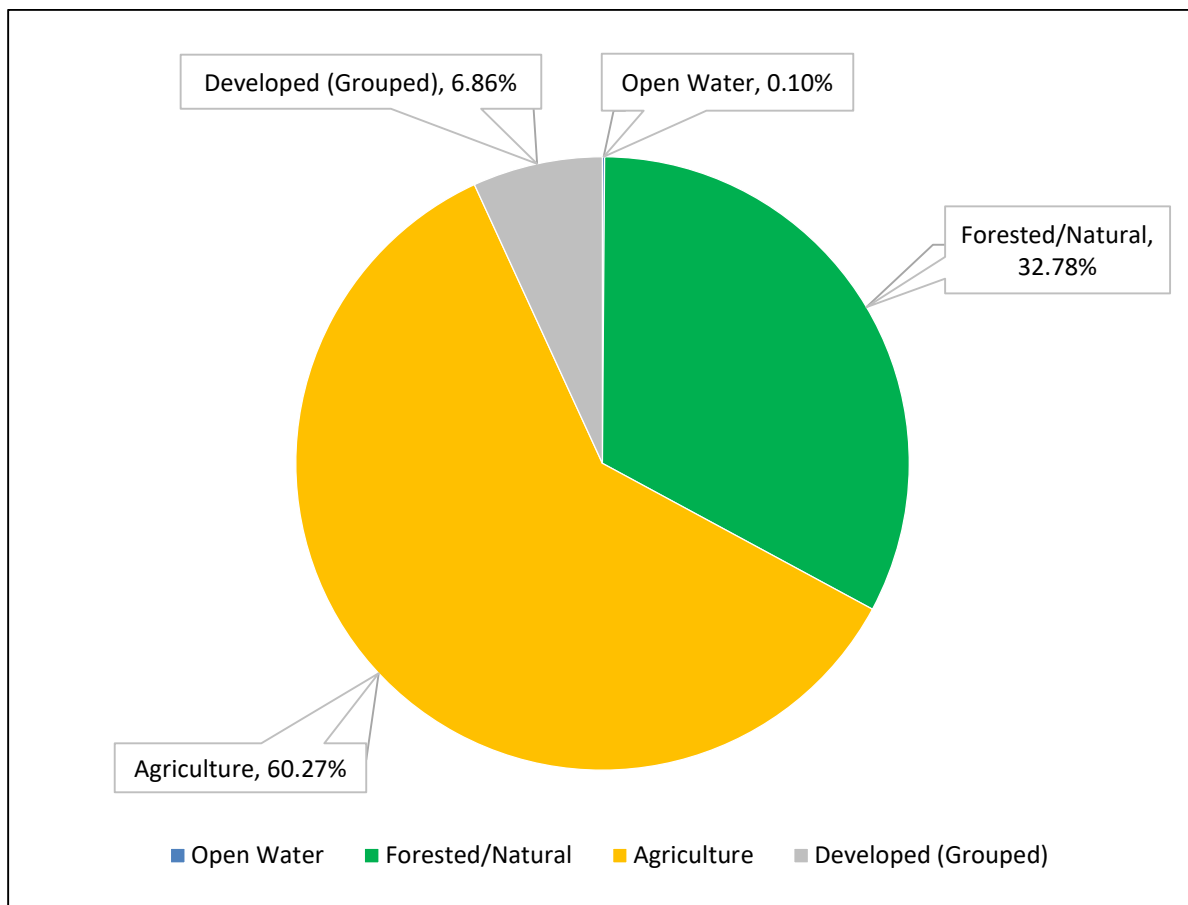


Table 3-1 Land Use Areas for the Anderson Creek Watershed

Cumulative Land Use	Square Miles (mi ²)	Acres	Percent
Open Water	0.05	31.36	0.10%
Forested/Natural	15.93	10,195.66	32.78%
Agriculture	29.29	18,746.99	60.27%
Developed (Grouped)	3.33	2,132.55	6.86%
Total	48.60	31,106.56	100.00%

Figure 3-2 Primary Land Uses in the Anderson Creek Watershed



4.0 Data Availability and Analysis – Basis for Delisting

The data used for this analysis is from 2024. It should be noted that Anderson Creek has been sampled prior to 2024, but this data is older than six years of age. Only data that is six years in age or less was used in this analysis, which is consistent with *Alabama’s Water Quality Assessment and Listing Methodology* (ADEM, 2024).

The §303(d)-listed segment of Anderson Creek was sampled at one station, ANDL-8, in 2024. Figure 1-1 and Table 4-1 display the location and description, respectively, of the ADEM sampling station. Habitat and macroinvertebrate assessments along with physical and chemical data were collected at station ANDL-8.

Table 4-1 Anderson Creek Sampling Station Description

Station ID	Station Location	Latitude	Longitude
ANDL-8	Anderson Creek at Snake Road Bridge	34.8515	-87.2361

4.1 Habitat and Macroinvertebrate Assessments

Habitat and macroinvertebrate assessments were conducted by ADEM’s Field Operations Division at station ANDL-8 on June 5, 2024. The habitat was rated as “good” (Figure 4-1), and the macroinvertebrate community was rated as “fair” (Figure 4-2). These results provide evidence that there is no impairment in Anderson Creek due to siltation.

Figure 4-1 Habitat Assessment

Table 3. Results of the habitat assessment survey conducted on Anderson Creek at ANDL-8, June 5, 2024. Macroinvertebrates were also collected.		
Habitat Survey	% Max Score	Rating
Instream Habitat Quality	78	Sub-optimal/Optimal (75-79.999)
Sediment Deposition	80	Optimal (80-100)
Frequency of Riffles	85	Optimal (80-100)
Bank Vegetative Stability	78	Sub-optimal/Optimal (75-79.999)
Riparian Zone Measurements	88	Optimal (80-100)
Habitat Assessment Score	211	
% Maximum Score	81	Good (64-83.999)
Index Description		

Figure 4-2 Macroinvertebrate Assessment

Table 4. Results of the Macroinvertebrate survey conducted on Anderson Creek at ANDL-8, 06/05/2024.		
Macroinvertebrate Assessment	Results	Scores
Taxonomic richness and diversity metrics		
Taxa Count	66	66
# rare and highly sensitive taxa	0	0
# sensitive taxa	14	14
# sensitive EPT taxa	8	8
Percent taxon metrics		
% rare and highly sensitive taxa	0	0
% sensitive taxa	21	21
% sensitive EPT taxa	12	12
% highly tolerant taxa	15	15
Percent individual metrics		
% rare and highly sensitive individuals	0	0
% sensitive individuals	5	5
% sensitive EPT individuals	3	3
% tolerant individuals	12	12
WMB-I Survey Score		4.0
WMB-I Survey Rating		Fair (3.85-4.149)

4.2 TSS and Turbidity Data Analysis

TSS and turbidity data collected at station ANDL-8 during 2024 were compared to Alabama's 2020 Ecoregional Reference Guidelines for Level IV ecoregion 71f. The median of the TSS samples was compared to the reference guideline of 6.0 mg/L, and individual turbidity samples were compared to the applicable numeric criterion (50 NTU plus the reference guideline of 4.4 NTU). The applicable ecoregional reference data can be found in Appendix 7-3, Table 7-2.

Eight TSS and nine turbidity samples were collected at station ANDL-8 during the 2024 sampling season. This data can be viewed in Tables 4-2 and 4-3 and Appendix 7-2, Table 7-1.

Table 4-2 Summary of TSS Data

Station ANDL-8				
Sample Date	TSS (mg/L)	TSS (mg/L), DET_COND*	Median TSS (mg/L)	Ecoreference Value (mg/L)
3/20/2024	1	< MDL 1	3	6.0
4/10/2024	3			
5/15/2024	6	JH		
6/11/2024	1	< MDL 1		
7/8/2024	3			
8/13/2024	1	JI		
9/9/2024	3			
10/21/2024	5			

*JH denotes that the identification of the analyte is acceptable; the reported value is an estimate. The analytical holding times for analysis are exceeded. JI denotes that the identification of the analyte is acceptable; the reported value is an estimate. The reported value is between the MDL (method detection limit) and the RL (reporting level).

Table 4-3 Summary of Turbidity Data

Station ANDL-8				
Sample Date	Turbidity (NTU)	Maximum Turbidity (NTU)	Ecoreference (Background) Turbidity (NTU)	Turbidity Criterion (50 NTU + Background)
3/20/2024	2	10.3	4.4	54.4
4/10/2024	6.6			
5/15/2024	10.3			
6/11/2024	3.2			
7/8/2024	2.7			
8/2/2024	8.3			
8/13/2024	2			
9/9/2024	1.5			
10/21/2024	1.2			

The median value for the collected TSS samples was 3 mg/L, which is lower than the applicable reference value of 6.0 mg/L. Each measured turbidity value was significantly less than the applicable criterion of 54.4 NTU (50 NTU plus reference guideline of 4.4 NTU).

5.0 Conclusion

Based on an examination of the recently collected water quality data on Anderson Creek, ADEM has determined that a water quality impairment due to siltation does not currently exist. Therefore, ADEM will not develop a TMDL due to “more recent or accurate data,” which is just cause for delisting a waterbody according to 40 CFR 130.7(b)(6)(iv).

6.0 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 newspapers in Montgomery, Huntsville, Birmingham, and Mobile, as well as submitted to persons who requested to be on ADEM’s postal and electronic mailing distributions. In addition, the public notice and subject DD were made available on ADEM’s Website: www.adem.alabama.gov. The public could also request paper or electronic copies of the DD 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. No written comments were received during the public notice period.

7.0 Appendix

7.1 References

ADEM Administrative Code, 2025. Water Division - Water Quality Program, Chapter 335-6-10, Water Quality Criteria.

ADEM Administrative Code, 2025. Water Division - Water Quality Program, Chapter 335-6-11, Use Classifications for Interstate and Intrastate Waters.

Alabama Department of Environmental Management's Monitoring Program. 2024.

Alabama Department of Environmental Management, *Alabama's Water Quality Assessment and Listing Methodology*, January 2024.

Alabama Department of Environmental Management, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022 & 2024 §303(d) Lists and Fact Sheets.

Alabama Department of Environmental Management (ADEM), Laboratory Data Qualification SOP #4910 Revision 7.2, 2022.

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.

7.2 Water Quality Data

Table 7-1 2024 TSS and Turbidity Data at Station ANDL-8

Station ID	Sample Date	Measured Flow (cfs)	TSS (mg/L)	TSS (mg/L), DET_COND*	Turbidity (NTU)
ANDL-8	3/20/2024	87.05	1	< MDL 1	2
ANDL-8	4/10/2024		3		6.6
ANDL-8	5/15/2024	133.68	6	JH	10.3
ANDL-8	6/11/2024	25.43	1	< MDL 1	3.2
ANDL-8	7/8/2024	14.46	3		2.7
ANDL-8	8/2/2024	10.66			8.3
ANDL-8	8/13/2024	10.66	1	JI	2
ANDL-8	9/9/2024	8.91	3		1.5
ANDL-8	10/21/2024		5		1.2

*JH denotes that the identification of the analyte is acceptable; the reported value is an estimate. The analytical holding times for analysis are exceeded. JI denotes that the identification of the analyte is acceptable; the reported value is an estimate. The reported value is between the MDL (method detection limit) and the RL (reporting level).

7.3 Ecoregional Reference Guidelines

Table 7-2 2020 Ecoregional Reference Guidelines for Ecoregion 71f

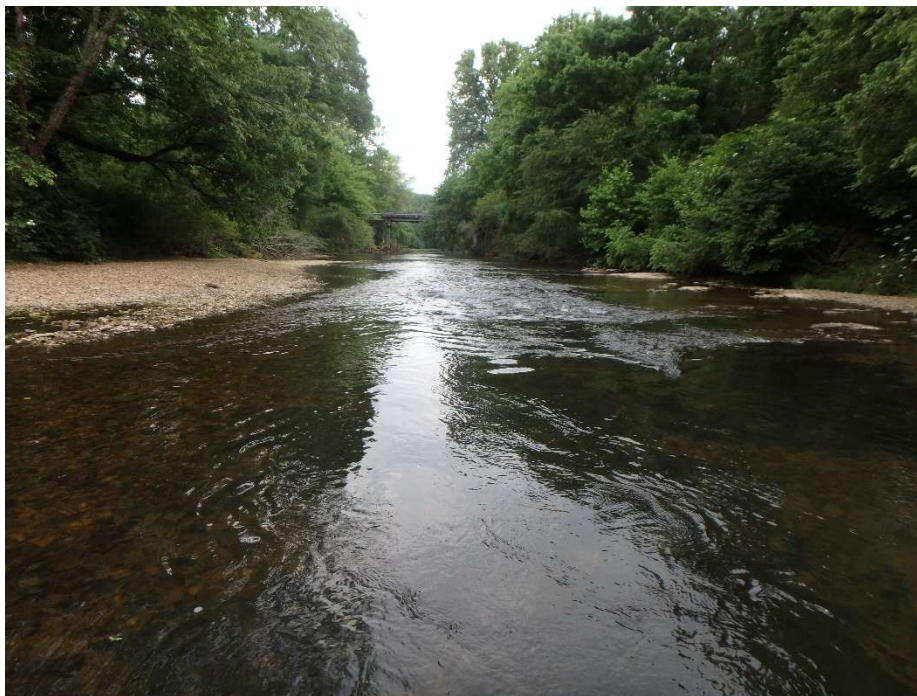
Parameters	Basis of comparison	Level 4 71f
Physical		
Temperature (°C)	90th Percentile	23.40
Turbidity (NTU)	90th Percentile	4.40
Total Dissolved Solids (mg/L)	90th Percentile	79.00
Total Suspended Solids (mg/L)	90th Percentile	6.00
Specific Conductance (µmhos/cm@25c)	Median	87.00
Hardness (mg/L)	Median	41.20
Total Alkalinity (mg/L)	90th Percentile	60.05
Chemical		
Dissolved Oxygen (mg/L)	10th Percentile	8.00
pH (SU)	10th Percentile	7.10
pH (SU)	90th Percentile	8.00
Ammonia Nitrogen (mg/L)	90th Percentile	0.0219
Nitrate + Nitrite Nitrogen (mg/L)	90th Percentile	0.5800
Total Kjeldahl Nitrogen (mg/L)	90th Percentile	0.4349
Total Nitrogen (mg/L)	90th Percentile	0.8490
Dissolved Reactive Phosphorous (mg/L)	90th Percentile	0.0495
Total Phosphorous (mg/L)	90th Percentile	0.0500
CBOD-5 (mg/L)	90th Percentile	1.00
Total Chlorides (mg/L)	90th Percentile	2.30
Total Metals		
Total Aluminum (mg/L)	90th Percentile	0.1679
Total Iron (mg/L)	90th Percentile	0.1809
Total Manganese (mg/L)	90th Percentile	0.0308
Dissolved Metals		
Dissolved Aluminum - Al (mg/L)	90th Percentile	0.0416
Dissolved Antimony - Sb (µg/L)	90th Percentile	5.00
Dissolved Arsenic - As (µg/L)	90th Percentile	0.4020
Dissolved Cadmium - Cd (µg/L)	90th Percentile	0.4195
Dissolved Chromium - Cr (µg/L)	90th Percentile	25.00
Dissolved Copper - Cu (µg/L)	90th Percentile	25.00
Dissolved Iron - Fe (mg/L)	90th Percentile	0.0703
Dissolved Lead - Pb (µg/L)	90th Percentile	5.00
Dissolved Manganese - Mn (mg/L)	90th Percentile	0.0250
Dissolved Mercury - Hg (µg/L)	90th Percentile	0.04
Dissolved Nickel - Ni (µg/L)	90th Percentile	25.00
Dissolved Selenium - Se (µg/L)	90th Percentile	1.3180
Dissolved Silver - Ag (µg/L)	90th Percentile	0.8920
Dissolved Thallium - Tl (µg/L)	90th Percentile	0.54
Dissolved Zinc - Zn (µg/L)	90th Percentile	30.00
Biological		
Chlorophyll a (mg/m ³)	90th Percentile	2.140
E Coli (mpn/dl)	10th Percentile	53.54

7.4 Anderson Creek Watershed Photos (June 5, 2024)

Figure 7-1 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Upstream



Figure 7-2 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Downstream



7.5 Anderson Creek Watershed Photos (June 11, 2024)

Figure 7-3 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Upstream



Figure 7-4 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Downstream



7.6 Anderson Creek Watershed Photos (July 8, 2024)

Figure 7-5 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Upstream



Figure 7-6 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Downstream



7.7 Anderson Creek Watershed Photos (August 2, 2024)

Figure 7-7 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Upstream



Figure 7-8 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Downstream



7.8 Anderson Creek Watershed Photos (August 13, 2024)

Figure 7-9 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Upstream



Figure 7-10 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Downstream



7.9 Anderson Creek Watershed Photos (October 21, 2024)

Figure 7-11 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Upstream



Figure 7-12 Anderson Creek at Snake Road Bridge (ANDL-8), Looking Downstream

