



Final
Delisting Decision
for
Yellow Leaf Creek

Waterbody ID AL03150107-0801-100

Chilton County

Siltation

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

Figure 1.1 Map of Yellow Leaf Creek Watershed in the Coosa River Basin

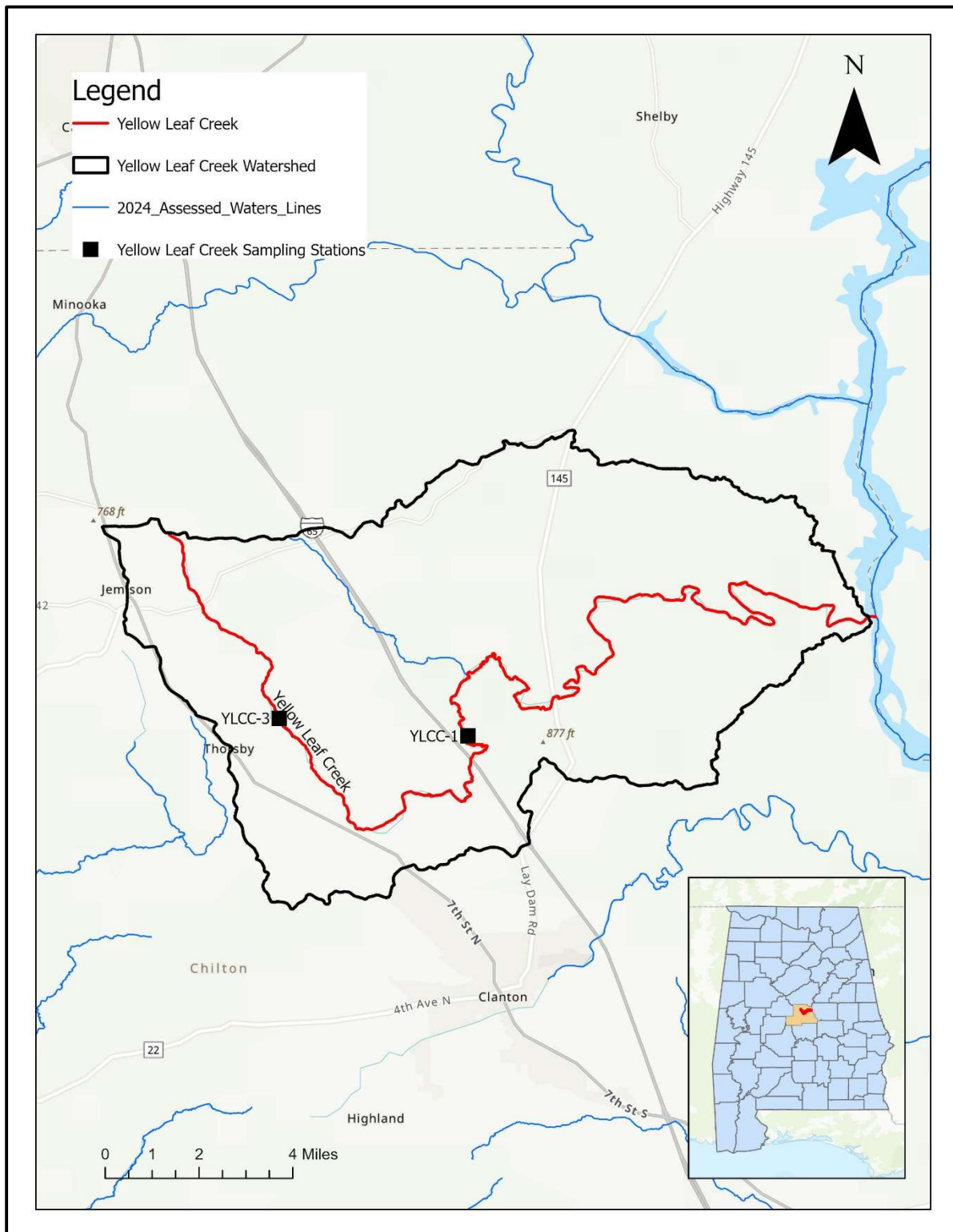


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1.0 Executive Summary

Yellow Leaf Creek, a part of the Coosa River basin, is located in Chilton County north of Clanton, Alabama. Yellow Leaf Creek begins northeast of the town of Jemison and flows southeast then east for 31.27 miles to its confluence with the Coosa River (Mitchell Lake). Yellow Leaf Creek has a use classification of Fish & Wildlife (F&W). The drainage area of the Yellow Leaf Creek watershed is 79.6 square miles.

In 2010, Yellow Leaf Creek (AL03150107-0801-100) was added to the State of Alabama's §303(d) list as impaired for siltation (habitat alteration). The original listing was based on data collected in 2005 by the Alabama Department of Environmental Management (ADEM). The listing was updated from siltation (habitat alteration) to siltation in 2018. Yellow Leaf Creek is currently included on the 2024 §303(d) list as impaired for siltation.

Additional data for Yellow Leaf Creek was acquired in 2022 to assess its ability to meet applicable water quality standards. The data indicates that Yellow Leaf Creek now fully supports its use classification with respect to siltation.

The following report addresses the results of the delisting analysis of Yellow Leaf Creek for siltation. Based on an assessment of all available data, ADEM has determined that a water quality impairment due to siltation does not 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 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).

Yellow Leaf Creek was added to Alabama's §303(d) list in 2010 for siltation (habitat alteration). The original listing for siltation (habitat alteration) was reportedly based on a poor macroinvertebrate assessment score at ADEM station YLCC-1 in 2005. The siltation

(habitat alteration) listing was changed to siltation in 2018. The current §303(d) list states that Yellow Leaf Creek is impaired due to siltation for its entire length of 31.27 miles.

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.

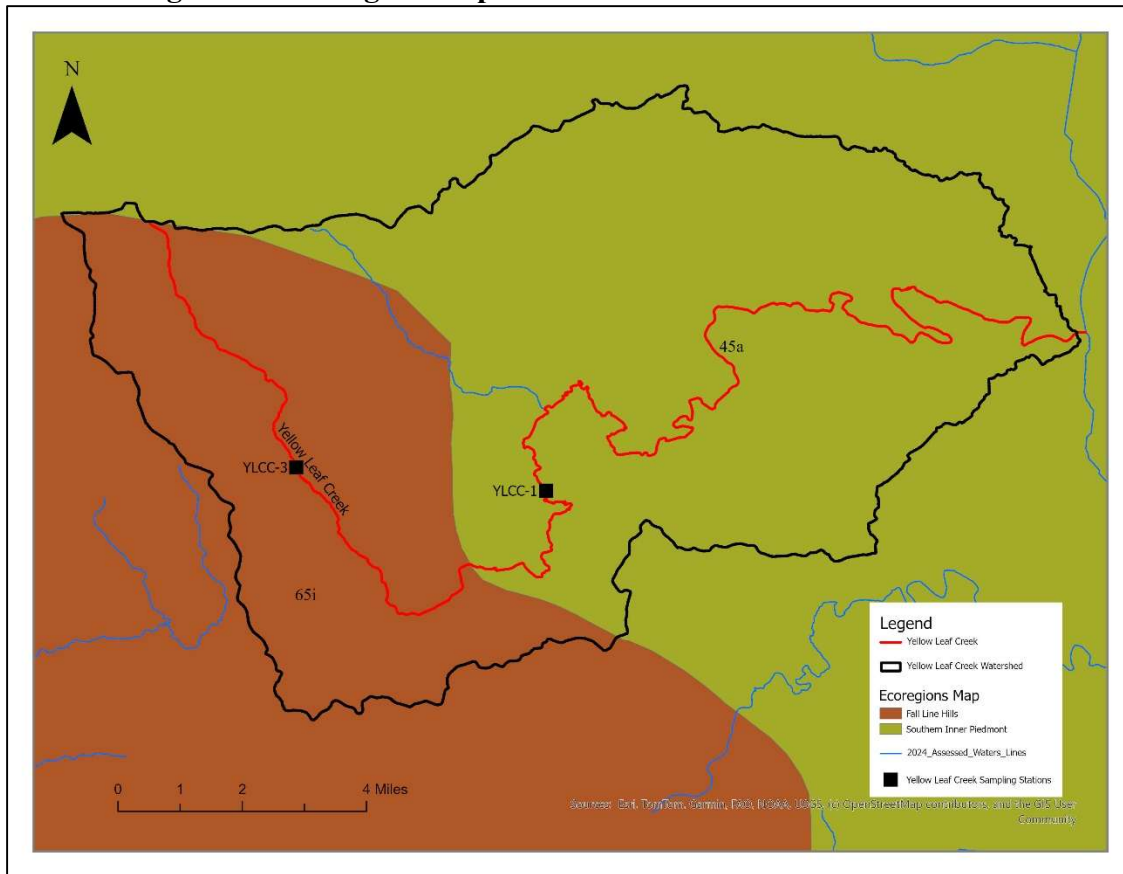
For the siltation impairment status, relative biological health and habitat suitability will be evaluated along with an assessment of the instream total suspended solids (TSS) and turbidity data.

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.

Yellow Leaf Creek is located in ecoregions 45a (Southern Inner Piedmont) and 65i (Fall Line Hills). Since the drainage areas for the ADEM sampling stations (YLCC-1 and YLCC-3) are primarily in ecoregion 65i, Alabama’s 2020 Ecoregional Reference Guidelines for ecoregion 65i (Level IV) were used in this analysis and are shown in Appendix 7.3. 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. A map of the ecoregions within the Yellow Leaf Creek watershed is shown below in Figure 3.1.

Figure 3.1 Ecoregion Map of the Yellow Leaf Creek Watershed



3.3 Land Use Assessment

Land use for the Yellow Leaf Creek watershed was determined using ArcMap with land use datasets derived from the 2021 National Land Cover Dataset (NLCD). Figure 3.2 and Table 3.1 display the land use areas for the Yellow Leaf Creek watershed. Figure 3.3 is a graph depicting the primary land uses in the Yellow Leaf Creek watershed.

The majority of the Yellow Leaf Creek watershed is forested/natural, which accounts for 67.08% of the total watershed area. Agricultural land use accounts for approximately 23.25%, while open water and developed land occupies the remaining 9.7% of land use.

Figure 3.2 Land Use Map of the Yellow Leaf Creek Watershed

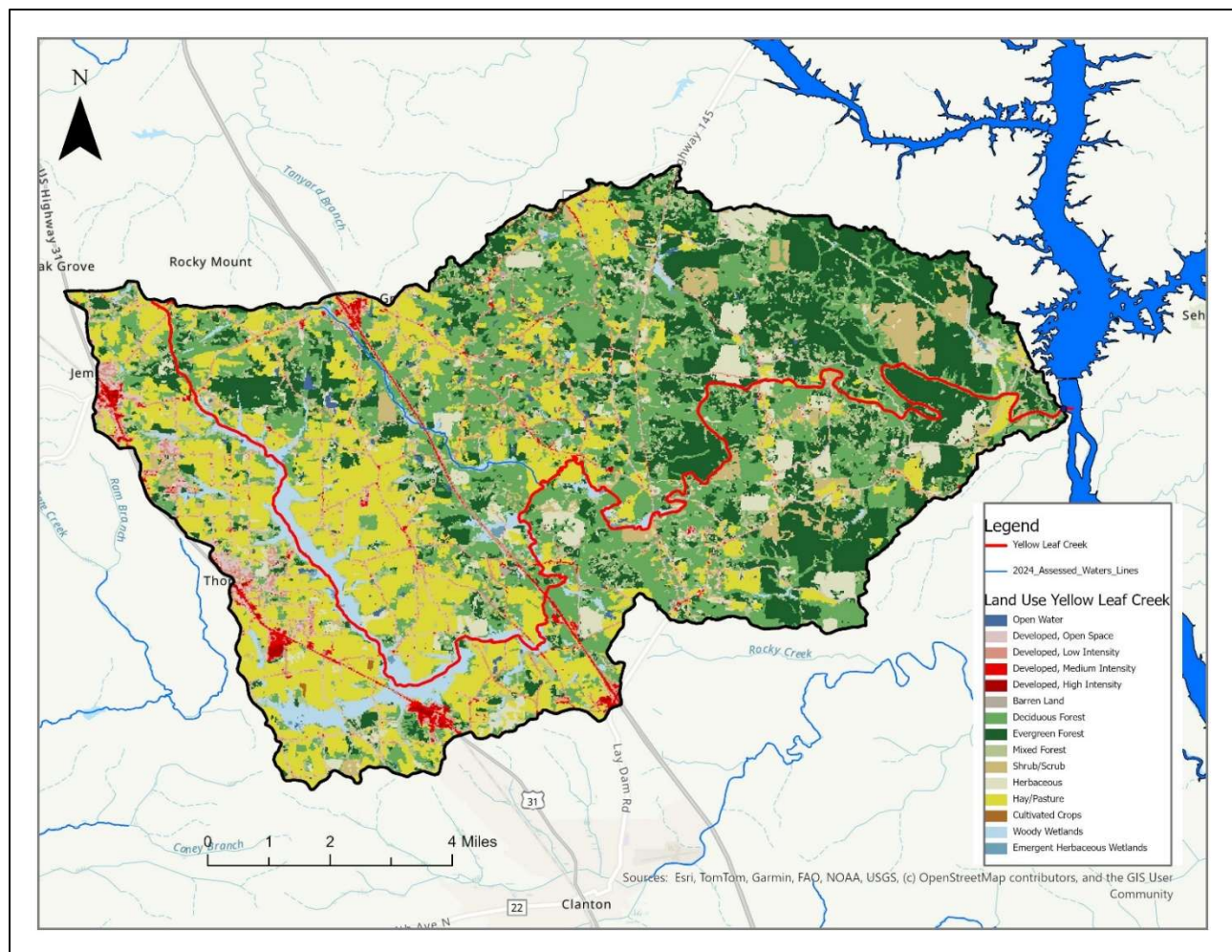
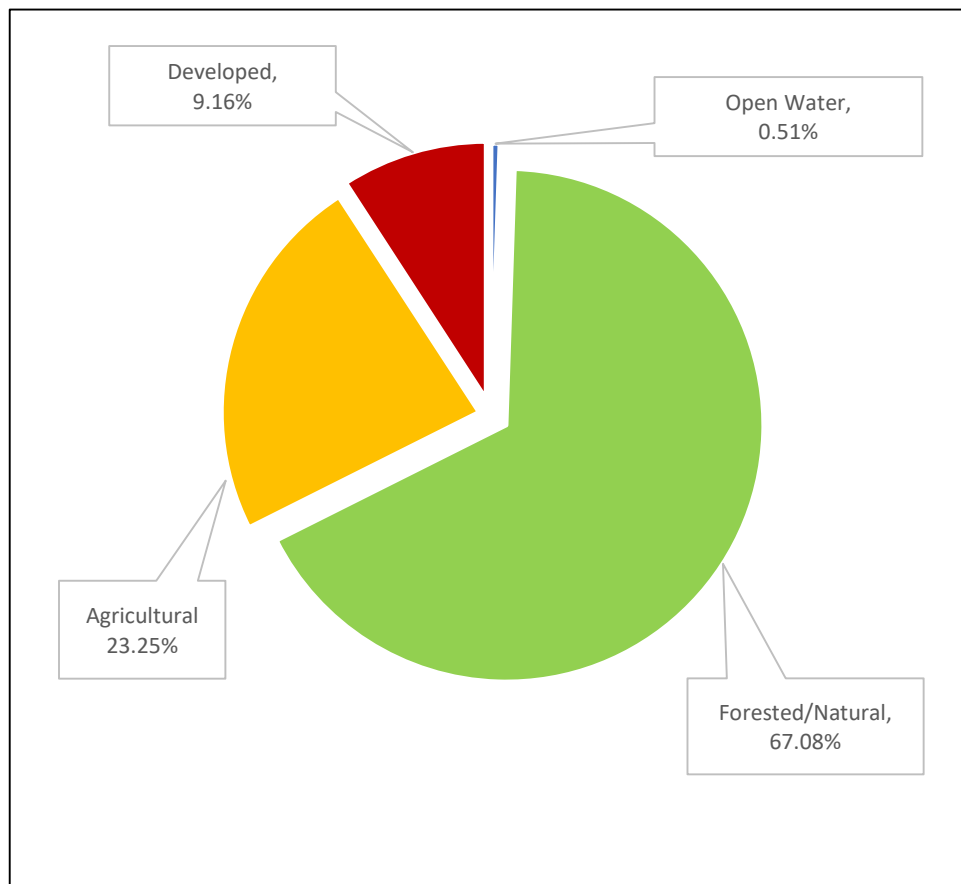


Table 3.1 Land Use Areas for the Yellow Leaf Creek Watershed

Cumulative Land Use	Mi ²	Acres	Percent
Open Water	0.41	259.81	0.51%
Forested/Natural	53.40	34173.24	67.08%
Agriculture	18.51	11844.48	23.25%
Developed (cumulative)	7.29	4666.47	9.16%
Total	79.60	50944.00	100.00%

Figure 3.3 Land Use Graph of the Yellow Leaf Creek Watershed



4.0 Data Availability and Analysis - Basis for Delisting

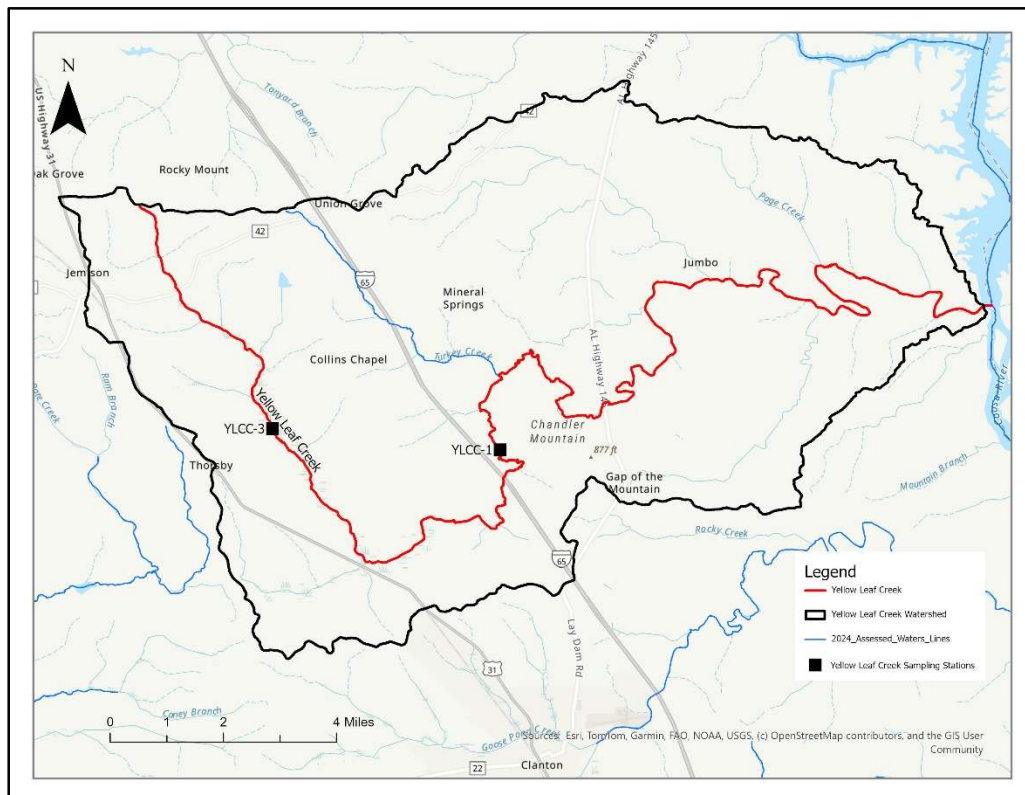
The data used for this analysis is from 2022. It should be noted that Yellow Leaf Creek has been sampled prior to 2022, but this data is older than six years of age. Only data that is six years in age or less will be used in this analysis, which is consistent with *Alabama's Water Quality Assessment and Listing Methodology* (ADEM, 2024).

Yellow Leaf Creek was sampled at two stations in 2022, YLCC-1 and YLCC-3. Table 4.1 below provides location descriptions of the sampling stations, which are also shown on the maps in Figure 3.1 and Figure 4.1. Habitat and macroinvertebrate assessments were performed at YLCC-1; physical and chemical data were collected at both stations, YLCC-1 and YLCC-3.

Table 4.1 Yellow Leaf Creek Station Locations

Station	Latitude	Longitude	Description
YLCC-1	32.919560	-86.641740	Yellow Leaf Creek at Co Rd 43 approximately 1.5 miles upstream of confluence with Turkey Creek
YLCC-3	32.924982	-86.699886	Yellow Leaf Creek at Co Rd 50

Figure 4.1 Map of Sampling Locations in the Yellow Leaf Creek Watershed



4.1 Macroinvertebrate Assessment and Habitat Assessment

A macroinvertebrate assessment and a habitat assessment were conducted by ADEM's Field Operations Division at station YLCC-1 on September 27, 2022. The macroinvertebrate community was assessed as fair (Figure 4.2). The habitat was also rated as fair (Figure 4.3). The 2022 macroinvertebrate and habitat results provide evidence that there is no impairment in Yellow Leaf Creek due to siltation.

Figure 4.2 Macroinvertebrate Assessment – September 27, 2022

Table 4. Results of the Macroinvertebrate survey conducted on Yellow Leaf Creek at YLCC-1, 09/27/2022.		
Macroinvertebrate Assessment	Results	Scores
Taxonomic richness and diversity metrics		
Taxa Count	52	52
# rare and highly sensitive taxa	1	1
# sensitive taxa	13	13
# sensitive EPT taxa	4	4
Percent taxon metrics		
% rare and highly sensitive taxa	2	2
% sensitive taxa	25	25
% sensitive EPT taxa	8	8
% highly tolerant taxa	15	15
Percent individual metrics		
% rare and highly sensitive individuals	0	0
% sensitive individuals	22	22
% sensitive EPT individuals	19	19
% tolerant individuals	5	5
WMB-I Survey Score		4.0
WMB-I Survey Rating		Fair (3.85-4.149)
Index Description		
The benthic macroinvertebrate community was sampled using ADEM's Intensive Multi-habitat Bioassessment methodology (WMB-I). Measures of taxonomic richness, community composition and pollution tolerance were used to assess the overall health of the macroinvertebrate community in comparison to conditions expected in north Alabama streams and rivers. Each site is placed in one of six levels ranging from 1, or natural, to 6, or highly altered.		

Figure 4.3 Habitat Assessment– September 27, 2022

Table 3. Results of the habitat assessment survey conducted on Yellow Leaf Creek at YLCC-1, September 27, 2022. Macroinvertebrates were also collected.

Habitat Survey	% Max Score	Rating
Instream Habitat Quality	53	Marginal/Sub-optimal (50-54.999)
Sediment Deposition	53	Marginal/Sub-optimal (50-54.999)
Frequency of Riffles	68	Sub-optimal (55-74.999)
Bank Vegetative Stability	56	Sub-optimal (55-74.999)
Riparian Zone Measurements	45	Marginal (30-49.999)
Habitat Assessment Score	142	
% Maximum Score	54	Fair (41-63.999)

Index Description

Habitat quality and availability was evaluated using ADEM's Habitat Survey for Low Gradient Streams. Measures of instream habitat availability and quality, sediment deposition, reach sinuosity, bank stability, and riparian zone quality are used to assess the overall availability and quality of habitat in comparison with reference reaches in the same ecoregion. Each metric is scored and rated as percent of maximum score. The overall habitat score and rating is the average of all metric scores. The length of reach being evaluated for habitat conditions depends on the type of biological survey being conducted: wadeable macroinvertebrate survey=100m; nonwadeable macroinvertebrate survey=500m; wadeable fish IBI=300m.

4.2 TSS and Turbidity Data Analysis

TSS and turbidity data collected at stations YLCC-1 and YLCC-3 during 2022 were compared to Alabama's 2020 Ecoregional Reference Guidelines for Level IV ecoregion 65i. The median of the TSS samples at each station was compared to the ecoregional reference guideline of 30.0 mg/L. Eight TSS samples were collected at YLCC-1 and seven TSS samples were collected at YLCC-3 during the 2022 sampling season. (There was no flow at station YLCC-3 when the Department visited the site in October 2022; therefore, no samples were collected.) The TSS data for each station is shown below in Tables 4.2 and 4.3. The ecoregional reference data can be seen in Appendix 7.3.

Table 4.2 TSS Data at Station YLCC-1

Station YLCC-1				
Sample Date	TSS (mg/l)	TSS (mg/l), DET_COND*	Median TSS (mg/l)	Ecoreference Value (mg/l)
3/15/2022	10		10.5	30.0
4/12/2022	9			
5/10/2022	9	JH		
6/14/2022	11			
7/19/2022	13	JQ6		
8/16/2022	11			
9/13/2022	8			
10/5/2022	12			

*JH: The identification of the analyte is acceptable; the reported value is an estimate. The analytical holding times for analysis are exceeded. JQ6: The identification of the analyte is acceptable; the reported value is an estimate. Spurious contamination or reagent contamination is evident at a level that affects accuracy.

Table 4.3 TSS Data at Station YLCC-3

Station YLCC-3				
Sample Date	TSS (mg/l)	TSS (mg/l), DET_COND*	Median TSS (mg/l)	Ecoreference Value (mg/l)
3/15/2022	4		6.0	30.0
4/12/2022	11			
5/10/2022	9	JH		
6/14/2022	6			
7/19/2022	6			
8/16/2022	3			
9/13/2022	4			

*JH: The identification of the analyte is acceptable; the reported value is an estimate. The analytical holding times for analysis are exceeded.

Individual turbidity samples were compared to the applicable numeric criterion (50 NTU plus ecoregional reference value). Twelve turbidity samples were collected at YLCC-1 during the 2022 sampling season. At station YLCC-3, seven turbidity samples were collected. This data can be seen below in Tables 4.4 and 4.5. A summary of the data collected at both stations is located in Appendix 7.1.

Table 4.4 Turbidity Data at Station YLCC-1

Station YLCC-1				
Sample Date	Turbidity (NTU)	Ecoreference Value (NTU)	Maximum Turbidity (NTU) at Station	Maximum Criterion (50 NTU + Background)
3/15/2022	11.0	25.92	14.3	75.92
4/12/2022	12.4			
5/10/2022	13.9			
5/18/2022	13.0			
6/14/2022	13.9			
7/19/2022	14.3			
7/28/2022	11.7			
8/16/2022	14.3			
9/13/2022	12.2			
9/27/2022	12.2			
10/4/2022	9.9			
10/5/2022	9.7			

Table 4.5 Turbidity Data at Station YLCC-3

Station YLCC-3				
Sample Date	Turbidity (NTU)	Ecoreference Value (NTU)	Maximum Turbidity (NTU) at Station	Maximum Criterion (50 NTU + Background)
3/15/2022	9.0	25.92	13.9	75.92
4/12/2022	11.8			
5/10/2022	12.0			
6/14/2022	10.6			
7/19/2022	13.9			
8/16/2022	9.9			
9/13/2022	10.0			

As shown in the tables above, the median values for the collected TSS samples at YLCC-1 and YLCC-3, respectively, were 10.5 mg/l and 6.0 mg/l, which are both less than the applicable ecoregional reference value of 30 mg/l. The maximum turbidity values of 14.3 and 13.9 NTU at stations YLCC-1 and YLCC-3, respectively, were also significantly less than the applicable criterion of 75.92 NTU (50 NTU + weighted ecoregional guideline value). While the reference guidelines for ecoregion 65i were utilized in the data analysis since the drainage area at the ADEM stations is primarily in ecoregion 65i, it is also noted that the median TSS values are also less than the reference value for ecoregion 45a, which encompasses the remaining Yellow Leaf Creek drainage area. In addition, the maximum turbidity values are less than the criterion calculated utilizing the ecoregion 45a reference value. The ecoregional reference values for ecoregions 65i and 45a can be seen in Appendix 7.3.

5.0 Conclusion

From examination of all available data, ADEM has determined that a water quality impairment due to siltation does not currently exist within Yellow Leaf Creek. Therefore, ADEM will not develop a TMDL 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).

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 Quality Program, Chapter 335-6-10, Water Quality Criteria, and Chapter 335-6-11 Use Classifications for Interstate and Intrastate Waters.

Alabama Department of Environmental Management's Monitoring Program. 2005, 2022.

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

Alabama Department of Environmental Management. Standard Operating Procedures #4910, Revision 7.2 - Laboratory Data Qualification. January 2022.

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

7.2 Data Summary

Table 7.1 2022 Yellow Leaf Creek Data Summary

Station ID	Sample Date	Measured Flow (cfs)	TSS (mg/l)	TSS (mg/l), DET_COND*	Turbidity (NTU)
YLLC-1	3/15/2022	29.9	10		11.0
	4/12/2022	38.03	9		12.4
	5/10/2022	10.66	9	JH	13.9
	5/18/2022	7.45			13.0
	6/14/2022	9.66	11		13.9
	7/19/2022	12.95	13	JQ6	14.3
	7/28/2022	5.17			11.7
	8/16/2022	3.28	11		14.3
	9/13/2022	4.16	8		12.2
	9/27/2022	2.16			12.2
	10/4/2022	1.95			9.9
	10/5/2022	1.67	12		9.7
YLLC-3**	3/15/2022	11.2	4		9.0
	4/12/2022	16.61	11		11.8
	5/10/2022	3.02	9	JH	12.0
	6/14/2022		6		10.6
	7/19/2022	5.29	6		13.9
	8/16/2022		3		9.9
	9/13/2022		4		10.0

*JH: The identification of the analyte is acceptable; the reported value is an estimate. The analytical holding times for analysis are exceeded. JQ6: The identification of the analyte is acceptable; the reported value is an estimate. Spurious contamination or reagent contamination is evident at a level that affects accuracy.

**There was no flow during the Department's visit to station YLCC-3 in October 2022; therefore, no samples were collected.

7.3 Ecoregional Reference Guidelines

Table 7.2 2020 Ecoregional Guidelines for Ecoregions 45a and 65i

		Level 4	Level 4
Parameters	Basis of comparison	45a	65i
Physical			
Temperature (°C)	90th Percentile	26.00	25.40
Turbidity (NTU)	90th Percentile	13.58	25.92
Total Dissolved Solids (mg/L)	90th Percentile	67.00	66.00
Total Suspended Solids (mg/L)	90th Percentile	13.00	30.00
Specific Conductance (µmhos/cm@25c)	Median	38.75	27.75
Hardness (mg/L)	Median	10.80	8.00
Total Alkalinity (mg/L)	90th Percentile	22.82	14.10
Chemical			
Dissolved Oxygen (mg/L)	10th Percentile	7.30	7.00
pH (SU)	10th Percentile	6.40	5.80
pH (SU)	90th Percentile	7.60	7.40
Ammonia Nitrogen (mg/L)	90th Percentile	0.0110	0.0512
Nitrate + Nitrite Nitrogen (mg/L)	90th Percentile	0.1610	0.3206
Total Kjeldahl Nitrogen (mg/L)	90th Percentile	0.3870	0.6109
Total Nitrogen (mg/L)	90th Percentile	0.4758	0.7330
Dissolved Reactive Phosphorous (mg/L)	90th Percentile	0.0170	0.0190
Total Phosphorous (mg/L)	90th Percentile	0.0598	0.0560
CBOD-5 (mg/L)	90th Percentile	2.00	2.00
Total Chlorides (mg/L)	90th Percentile	4.50	4.80
Total Metals			
Total Aluminium (mg/L)	90th Percentile	0.3691	0.7232
Total Iron (mg/L)	90th Percentile	1.1820	3.8960
Total Manganese (mg/L)	90th Percentile	0.0745	0.3908
Dissolved Metals			
Dissolved Aluminium - Al (mg/L)	90th Percentile	0.1060	0.10
Dissolved Antimony - Sb (µg/L)	90th Percentile	1.00	5.00
Dissolved Arsenic - As (µg/L)	90th Percentile	0.4370	1.3370
Dissolved Cadmium - Cd (µg/L)	90th Percentile	0.4275	0.1555
Dissolved Chromium - Cr (µg/L)	90th Percentile	6.50	25.00
Dissolved Copper - Cu (µg/L)	90th Percentile	2.50	25.00
Dissolved Iron - Fe (mg/L)	90th Percentile	0.6180	0.6405
Dissolved Lead - Pb (µg/L)	90th Percentile	1.00	5.00
Dissolved Manganese - Mn (mg/L)	90th Percentile	0.0499	0.4382
Dissolved Mercury - Hg (µg/L)	90th Percentile	-	0.30
Dissolved Nickel - Ni (µg/L)	90th Percentile	21.00	25.00
Dissolved Selenium - Se (µg/L)	90th Percentile	5.00	25.00
Dissolved Silver - Ag (µg/L)	90th Percentile	1.50	1.50
Dissolved Thallium - Tl (µg/L)	90th Percentile	0.50	0.68
Dissolved Zinc - Zn (µg/L)	90th Percentile	15.00	34.50
Biological			
Chlorophyll a (mg/m ³)	90th Percentile	2.670	4.036
E Coli (mpn/dl)	10th Percentile	29.30	90.90

7.4 *Yellow Leaf Creek Photos*

Photo 7.1 Yellow Leaf Creek at YLCC-1 on September 27, 2022, upstream view.



Photo 7.2 Yellow Leaf Creek at YLCC-1 on September 27, 2022, downstream view.



Photo 7.3 Yellow Leaf Creek at YLCC-3 on September 13, 2022, upstream view.



Photo 7.4 Yellow Leaf Creek at YLCC-3 on September 13, 2022, downstream view.

