

Improvement Program



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Chapter 12

Priority Watersheds

Each of the watersheds of the Lower Coosa River Basin has been organized into one of three categories (high, moderate or low priority) based on their score results upon application of an 18-factor rating system. Those watersheds categorized as a high priority watersheds have the greatest number of features that could have a negative impact on water quality within the watershed, such as a significant amount of urban land uses, and/or the highest number of features to be safeguarded, such as endangered species. Conversely, those watersheds categorized as a low priority watersheds have the fewest features with potential for negative impacts on water quality or the fewest features to be safeguarded. Even in the low priority watersheds, factors do exist which may impact water quality in a negative manner if not managed correctly. Therefore, the low priority watersheds are in just as much need of watershed management measures as the high priority watersheds, though the urgency may not be as great.

The organizational technique used provides a basis for determining which issues have the potential to impact the entire basin, as well as identifying issues which may be impacting some, but not all, of the watersheds – regional issues. The priority rating system utilized 18 factors drawn from the existing physical, structural, economic and cultural features of the watershed, as well as from the identification of characteristics that need to be safeguarded, i.e., sensitive features.

In addition to the existing conditions that have been previously outlined and defined in this plan, rating factors from two other studies were used as well: the (SWCD) Watershed Assessments conducted in 1999 and the Alabama Department of Environmental Management *Surface Water Quality Screening Assessment of the Coosa River Basin – 2000 (Screening Assessment)*. The rating system included in this plan does not always match the individual watershed ranking of the other studies. The SWCD Watershed Assessments were conducted on a county by county basis, with some watersheds in the county lying in different river basins. The individual SWCD Watershed Assessments designated Priority 1 and Priority 2 watersheds for each county, regardless of which river basin the watershed was located within. This provides a good tool for the counties, but does not provide an adequate perspective for the entire Lower Coosa River Basin. The *Screening Assessment* identified watersheds as high, moderate and low potential based on their potential for nonpoint source pollution. While the *Screening Assessment* provides an excellent resource for identification

of the factors contributing to nonpoint source pollution, it does not consider other factors, such as endangered species or the capacity of the residents of the watershed to resolve local water quality issues. The ranking system provided in this plan provides a holistic perspective of the individual watersheds within the setting of the Lower Coosa River Basin, including the economic and cultural assets and limitations, and accounts for the presence of sensitive features that need to be safeguarded in the watershed management process. In this way, the Lower Coosa River Basin 2005 Priority Watersheds ranking system is more inclusive than previous studies, while recognizing their contributions in the rating factors.

For each rating factor, a watershed received a score between one and five, with one having the least potential for a negative impact on water quality or lowest presence of sensitive features and five having the highest potential for a negative impact on water quality or a more significant presence of sensitive features. The scores were then added for the final rating score, ranking the watersheds as high, moderate or low priority. High priority watersheds received a rating score of 60 or higher; moderate priority watersheds a rating score between 50 and 59; and, low priority watersheds a rating score of 49 or lower.

The ranking resulted in six low priority watersheds, three moderate priority watersheds and eleven high priority watersheds. Figure 142 shows that the location of the high priority watersheds is strongly aligned across the northern, western and southern parts of the basin, while the low and moderate priority watersheds are found in the east central portion of the basin. This pattern reflects the urbanization patterns west of the Coosa River and the presence of the Talladega National Forest and lower population densities east of the Coosa River. The factors used in the watershed rating are provided in Figure 143 and a summary chart is provided in Figure 144.

Figure 142:

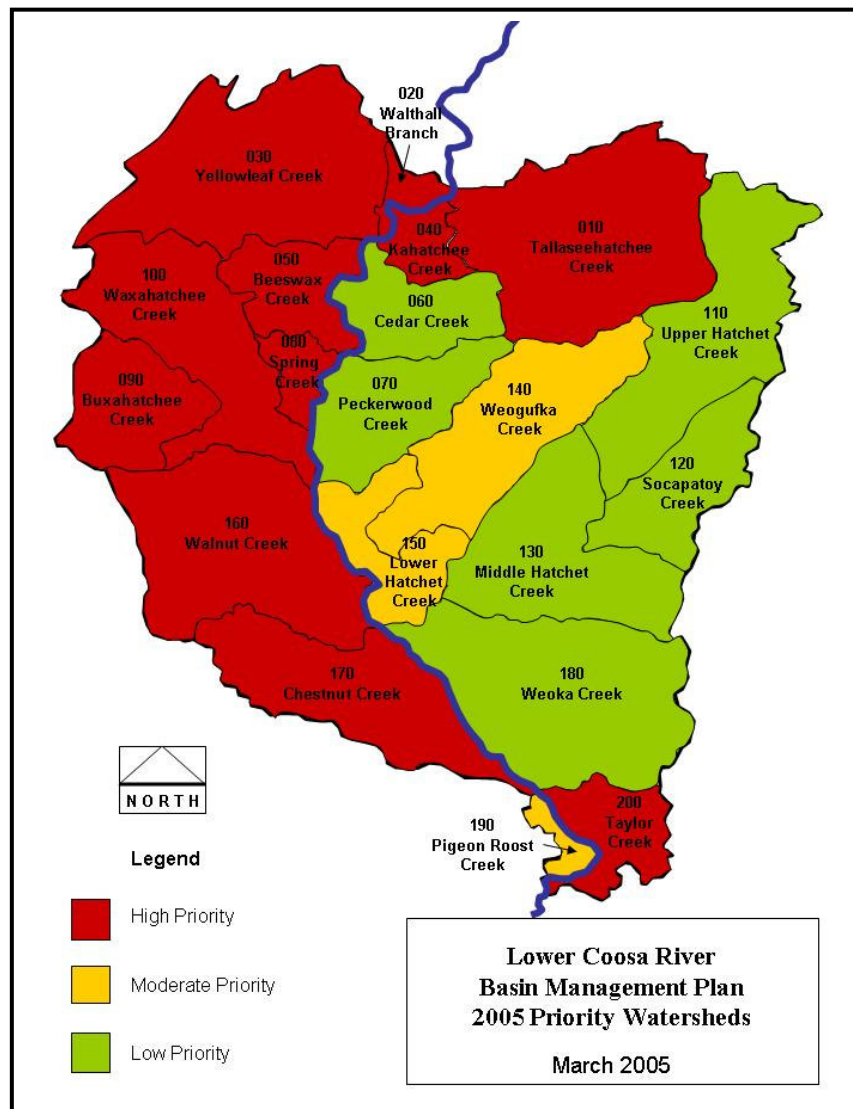


Figure 143:

Rating Factors of the Watershed Ranking System <i>(Worksheets for those factors that are ratios are located in Appendix D.)</i>	
Rating Factor	Description
Impaired Water Bodies	The presence of a water body that was included in the State of Alabama 2004 Draft Section 303(d) List of Impaired Water Bodies resulted in a score of 5 for the watershed. If an impaired water body was not present, then a score of 1 was given to the watershed.
ADEM Assessment Rating for NPS	Those watersheds that have a high or moderate potential for nonpoint source pollution, as noted in the ADEM <i>Surface Water Quality Screening Assessment of the Coosa River Basin – 2000</i> were assigned a score of 3 for moderate potential or 5 for high potential. If the watershed was not designated in the study as having a high or moderate potential for nonpoint source pollution, it received a score of 1.
NRCS Priority Watershed	Those watersheds designated as Priority 1 watersheds in the NRCS 1999 Watershed Assessments received a score of 5, while those watersheds that were Priority 2 watersheds received a score of 3. If the watershed was not designated as a Priority 1 or Priority 2 watershed, it received a score of 1.
Alabama Water Watch Citizen Water Quality Monitoring and Results	The presence or lack of presence of local citizen water quality monitoring activities was accounted for through the database available on the Alabama Water Watch website. Through citizen monitoring it is possible to establish water quality trend lines and to identify potential water quality problems early. Those watersheds with no monitoring activities received a score of 5. If on-going citizen monitoring is present in the watershed, then monitoring results from the AWW website were used to determine the rating score as follows: Results did not meet parameter standards in more than three events = 5 Results did not meet parameter standards in less than three events = 3 Results met all parameter standards in all monitoring events = 1
Use Classification	The water use classification, as designated by ADEM, was taken into account to ensure that those watersheds that contain water bodies where more stringent water quality standards apply will continue to meet their applicable standards. Scoring factors are as follows: Outstanding Alabama Water, Public Water Supply or Swimming = 5 Shellfish Harvesting = 4 Fish and Wildlife = 3 Limited Warm Water Fishery = 2 Agricultural and Industrial Water Supply = 1
Land Use Character	The predominant land use of the watershed was noted with urban land uses, which have the most negative effect on water quality, receiving a score of 5; agricultural land uses receiving a score of 3, and forest land uses receiving a score of 1.
Potential for Silviculture	While undisturbed forest land uses have the least impact on water quality, silviculture activities in these forested areas do have significant potential for nonpoint source pollution if best management practices are not implemented. The potential for silvicultural activities was based on the percentage of evergreen forest of the total forested land in the watershed. Scoring factors are as follows: 32.01 or More Percent Evergreen = 5 24.01 to 32.00 Percent Evergreen = 4 16.01 to 24.00 Percent Evergreen = 3 8.01 to 16.00 Percent Evergreen = 2 0 to 8 Percent Evergreen = 1

Figure 143, Continued:

Rating Factor	Description
Sediment Load Ratio	<p>The NRCS 1999 Watershed Assessments provide the total sediment generated in each watershed by source. This factor applies a ratio of the amount of total sediment generated by the total acreage of the watershed. Ratios range between 0.96 tons per acre and 27.50 tons per acre. Scoring factors are as follows:</p> <p style="text-align: center;">10.01 or More Tons Per Acre = 5 6.01 to 10.00 Tons Per Acre = 4 4.01 to 6.00 Tons Per Acre = 3 2.01 to 4.00 Tons Per Acre = 2 0 to 2.00 Tons Per Acre = 1</p>
Animal Density	<p>Although there are no CAFOs present in the Basin, some watersheds have a higher quantity of cattle, swine and poultry than others. The NRCS 1999 Watershed Assessments provide the total number of animals by type present in each watershed. Scores are based on a ratio of the number of animals to the size of the watershed (in acres). The animal density ratio ranged between 0 and 111.64 acres per animal.</p> <p style="text-align: center;">0 to 15 Acres Per Animal = 5 16 to 30 Acres Per Animal = 4 31 to 45 Acres Per Animal = 3 46 to 60 Acres Per Animal = 2 60 Acres of More Per Animal = 1</p>
Soil Suitability for Development	<p>Without proper management measures, development in areas with poor soil composition increases the potential for erosion and sedimentation. Watersheds with soils that are not conducive to structural development received a score of 5, while those watersheds with soils that are conducive to development received a score of 1. Watersheds with a combination of soils received a score of 2, 3 or 4 depending on the majority of the soil type.</p>
Growth Rate of County	<p>Population information available from the U.S. Bureau of the Census was used to identify those counties with the highest population increases from 1990 to 2000. The population increase was important to account for the increased urbanization of the land to accommodate the population growth. Population increases in the Basin ranged from 7.6 percent to 44.2 percent. Watersheds received scores based on the county within which the majority of the watershed is located.</p> <p style="text-align: center;">Population increase from 41 to 50 percent = 5 Population increase from 31 to 40 percent = 4 Population increase from 21 to 30 percent = 3 Population increase from 11 to 20 percent = 2 Population increase from 0 to 10 percent = 1</p>
Increase in Traffic Volume	<p>Increased vehicular traffic presents more potential for nonpoint source pollution from roadways. Even watersheds that do not show an increase in population can be negatively affected by a traffic increase from vehicles en route to another destination. Changes in traffic volume ranged from a decrease of 37.01 percent to an increase of 63.34 percent. For those watersheds with more than roadway present, the highest increase was used as the basis for the score.</p> <p style="text-align: center;">Traffic volume increase of 45 percent or more = 5 Traffic volume increase from 30.00 to 44.99 percent = 4 Traffic volume increase from 15.00 to 29.99 percent = 3 Traffic volume increase from 0 to 14.99 percent = 2 A decrease in traffic volume = 1</p>

Figure 143, Continued:

<p>Number of Permitted Dischargers</p>	<p>NPDES permitted discharger information from ADEM was used to identify the number of point source discharges per watershed. The number of point source discharges can affect the amount of nonpoint source pollution that a water body can assimilate. The number of permitted dischargers in a watershed ranged from 0 to 42.</p> <p>31 or more dischargers = 5 21 to 30 permitted dischargers = 4 11 to 20 permitted dischargers = 3 1 to 10 permitted dischargers = 2 No permitted dischargers = 1</p>
<p>Presence of Hydroelectric Dam</p>	<p>The presence of a hydroelectric dam presents issues that can have a negative impact on water quality, some of which may include thermal stress, pooling, flow interruption, dissolved oxygen issues and bank erosion. Watersheds located upstream and downstream of a hydroelectric dam received a score of 5. Watersheds without a hydroelectric dam present received a score of 1.</p>
<p>Housing Density</p>	<p>Housing density was calculated by dividing the number of houses present in the watershed (using 2000 Census data) by the acreage, or area, of the watershed. This ratio was used as opposed to the number of housing units to indicate a higher potential for nonpoint source pollution due to the concentration of population. Housing density ranged from 8.69 acres per unit to 140.23 acre per unit.</p> <p>0 to 30 Acres Per Unit = 5 31 to 60 Acres Per Unit = 4 61 to 90 Acres Per Unit = 3 91 to 120 Acres Per Unit = 2 121 o 150 Acres Per Unit = 1</p>
<p>Septic System Density</p>	<p>The SWCD 1999 Watershed Assessments provide the total number of septic systems located in each watershed. The density of septic systems was used rather than the number of systems in the watershed. This ratio indicates the potential for nonpoint source pollution due to the concentration of septic systems, particularly in smaller watersheds.</p> <p>0 to 30 Acres Per Unit = 5 31 to 60 Acres Per Unit = 4 61 to 90 Acres Per Unit = 3 91 to 120 Acres Per Unit = 2 121 o 150 Acres Per Unit = 1</p>
<p>Number of Endangered Species</p>	<p>The number of endangered species indicates a higher need for management measures to ensure that these species are offered continued survival without habitat disturbance.</p> <p>41 and 50 endangered species = 5 31 to 40 endangered species = 4 21 to 30 endangered species = 3 11 to 20 endangered species = 2 0 to 10 endangered species = 1</p>
<p>2000 Unemployment Rate</p>	<p>The unemployment rate of the watershed, based on 2000 Census, is an indicator of the economic capacity of residents to implement watershed management measures.</p> <p>Unemployment rates between 8.01 and 10.00 percent = 5 Unemployment rates between 6.01 and 8.00 percent = 4 Unemployment rates between 4.01 and 6.00 = 3 Unemployment rates between 2.01 and 4.00 percent = 2 Unemployment rates between 0 and 2.00 percent = 1</p>

Figure 144:

Lower Coosa River Basin Management Plan 2005 Priority Watershed Rating										
Rating Factor	010	020	030	040	050	060	070	080	090	100
	Talassahatchee Creek	Walthall Branch	Yellowleaf Creek	Kahatchee Creek	Beeswax Creek	Cedar Creek	Peckerwood Creek	Spring Creek	Buxahatchee Creek	Waxahatchee Creek
Impaired Water Bodies	1	5	1	5	5	5	5	5	5	5
ADEM Assessment Rating for NPS	5	5	1	5	5	5	1	1	1	1
SWCD Priority Watershed	3	1	1	1	3	1	3	1	1	1
Alabama Water Watch Citizen Water Quality Monitoring and Results	5	5	5	5	5	3	5	5	5	5
Use Classification	5	3	5	3	1	1	1	1	3	3
Land Use Character	5	3	4	5	5	3	1	5	1	1
Potential for Silviculture	3	5	4	4	4	4	4	5	5	4
Sediment Load Ratio	2	5	3	5	5	3	1	5	4	4
Animal Density	4	5	3	4	4	3	1	4	3	3
Soil Suitability for Development	2	1	4	5	3	2	4	3	4	5
Growth Rate of County	2	5	5	2	5	2	2	5	3	5
Increase in Traffic Volume	4	3	5	1	3	1	1	3	5	4
Number of Permitted Dischargers	5	1	4	2	2	2	1	2	2	4
Presence of Hydroelectric Dam	1	1	1	1	1	1	5	1	1	5
Housing Density	5	5	5	5	5	5	2	5	5	4
Septic System Density	1	5	5	1	5	1	4	5	5	5
Number of Endangered Species	4	4	4	4	4	4	4	4	4	5
2000 Unemployment Rate	5	3	2	5	3	3	4	5	3	3
Total	62	65	62	63	68	49	49	65	60	67

Figure 144, Continued:

Lower Coosa River Basin Management Plan 2005 Priority Watersheds										
Rating Factor	110	120	130	140	150	160	170	180	190	200
	Upper Hatchet Creek	Socapatoy Creek	Middle Hatchet Creek	Weogufka Creek	Lower Hatchet Creek	Walnut Creek	Chestnut Creek	Weoka Creek	Pigeon Roost Creek	Taylor Creek
Impaired Water Bodies	1	1	1	1	5	5	1	1	1	1
ADEM Assessment Rating for NPS	1	1	1	1	1	1	1	1	1	5
NRCS Priority Watershed	1	1	1	5	1	5	3	1	1	1
Alabama Water Watch Citizen Water Quality Monitoring and Results	5	5	5	3	3	5	5	1	5	5
Use Classification	5	3	5	5	5	3	3	5	5	5
Land Use Character	1	1	1	2	1	3	4	1	5	5
Potential for Silviculture	2	3	3	3	5	3	3	3	1	4
Sediment Load Ratio	1	1	1	1	1	2	2	1	2	5
Animal Density	1	1	1	3	1	5	2	1	1	1
Soil Suitability for Development	4	3	3	5	5	3	4	3	2	2
Growth Rate of County	1	2	2	2	2	3	3	4	4	4
Increase in Traffic Volume	3	3	2	3	1	3	5	2	5	2
Number of Permitted Dischargers	2	2	2	2	1	4	2	2	2	2
Presence of Hydroelectric Dam	1	1	1	1	5	5	5	5	5	5
Housing Density	3	3	2	4	1	5	5	4	5	5
Septic System Density	5	5	5	5	4	5	5	5	1	1
Number of Endangered Species	4	4	4	4	4	4	5	4	5	5
2000 Unemployment Rate	5	4	3	3	5	3	3	2	5	3
Total	46	44	43	53	51	67	61	46	56	61

High Priority Watersheds

The eleven watersheds receiving the high priority ranking in the Lower Coosa River Basin, in order of highest rating score, are: Beeswax Creek watershed (68); Walnut Creek watershed (67); Waxahatchee Creek watershed (67); Spring Creek watershed (65); Walthall Branch watershed (65); Kahatchee Creek watershed (63); Yellowleaf Creek watershed (62); Tallasseehatchee Creek watershed (62); Taylor Creek watershed (61); Chestnut Creek watershed (61); and Buxahatchee Creek watershed (60).

Only the Walnut Creek watershed was listed as a Priority 1 watershed in the SWCD watershed assessments, however, five of the watersheds were identified in the *Screening Assessment* as having a high potential for nonpoint source pollution. The five watersheds are Tallasseehatchee Creek watershed, Walthall Branch watershed, Kahatchee Creek watershed, Beeswax Creek watershed, and Taylor Creek watershed.

Figure 145:

High Priority Watershed Summary of Contributing Factors	
First:	Lack of On-going Water Quality Monitoring by Citizens Impaired Water Bodies Presence of a High Number of Endangered Species
Second:	Growth Rate Urbanization of Land
Third:	Potential for Nonpoint Source Pollution

Moderate Priority Watersheds

The three watersheds that have a moderate priority in the Lower Coosa River Basin, in order of the highest rating score, are: Pigeon Roost Creek watershed (56); Weogufka Creek watershed (53); and Lower Hatchet Creek watershed (51). The Weogufka Creek watershed was identified in the NRCS watershed assessment as a Priority 1 watershed. None of the moderate priority watersheds were identified in the ADEM *Screening Assessment* as having high potential for nonpoint source pollution. The major contributing factors in the moderate priority watersheds were use classification standards in all three watersheds; poor soil composition in the two of the watersheds, the presence of a hydroelectric dam in two of the watersheds, high unemployment rates in two of the watersheds and a high number of endangered species in all three watersheds.

Rating scores in the moderate priority watersheds were generally either high or low with very few scores of 2, 3 or 4, indicating that these watersheds still have very significant factors affecting them, but not as many as the high priority watersheds.

Figure 146:

Moderate Priority Watershed Major Contributing Factors	
First:	Use Classification Standards
Second:	Soil Suitability for Development Presence of a Hydroelectric Dam 2000 Unemployment Rate
Third:	Number of Endangered Species

Low Priority Watersheds

The six watersheds that were ranked as low priority watersheds in the Lower Coosa River Basin, in order of the highest rating score, are: Peckerwood Creek watershed (49); Cedar Creek watershed (49); Weoka Creek watershed (46); Upper Hatchet Creek watershed (46); Socapatoy Creek watershed (44); and Middle Hatchet Creek watershed (43). The Peckerwood Creek watershed, located in Coosa County, was rated as a Priority 2 watershed in the NRCS watershed assessment. And, the Cedar Creek watershed was designated in the ADEM *Screening Assessment* as having a high potential for nonpoint source runoff.

In comparison to the high priority and moderate priority watershed, the low priority watersheds received considerably more “mid-range” scores, indicating that there are a number of factors impacting or having the potential to impact these watersheds, but possibly not quite as significantly as in the high and moderate priority watersheds. The three most significant contributing factors among the six low priority watersheds are septic system density, the lack of on-going water quality monitoring by citizens, and the number of endangered species present in the watersheds.

Figure 147:

Low Priority Watershed Major Contributing Factors	
First:	Septic System Density Lack of On-going Citizen Water Quality Monitoring Number of Endangered Species
Second:	2000 Unemployment Rate Use Classification
Third:	Potential for Silviculture Soil Suitability for Development Housing Density

