

Chapter 13

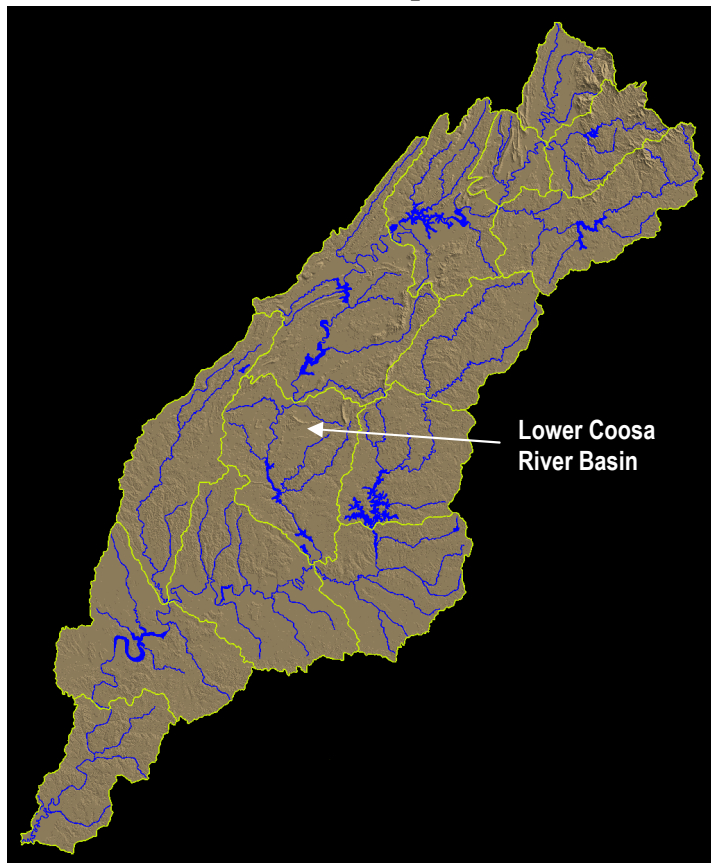
Watershed Management Framework

The everyday lifestyle of the residents of the Lower Coosa River Basin impacts the water resources of the basin. Some activities consume a portion of the available water quantity. This portion is relatively small because much of the water is returned through discharges after treatment. Because there are upstream users, the residents of the Lower Coosa River Basin are using recycled water. Likewise, downstream water users also receive recycled water after it is used in the Lower Coosa River Basin.

Virtually every action in the Lower Coosa River Basin influences the water quality of the basin and downstream areas. When individuals assume responsibility for protecting water quality, their collective actions preserve the beneficial uses of water and minimize the economic investment required to preserve their quality of life. Likewise, when local water quality is preserved, the ability to use secondary treatment prior to discharge avoids the need to install and operate more expensive, tertiary treatment facilities, the cost of which is passed on to the consumer.

Figure 148:

The Lower Coosa River Basin Within The Alabama-Coosa-Tallapoosa River Network



Source: Montana State University Environmental Statistics Group. Graphical Locator. www.esa.montana.edu

This chapter discusses the overall framework for developing a basinwide management strategy for the Lower Coosa River Basin. First, the Lower Coosa River and the surrounding basin area play several roles within the broader picture of the Alabama-Coosa-Tallapoosa River network. These roles are reviewed from four perspectives. Understanding these roles and perspectives is necessary to provide a holistic approach to watershed management. Second is the framework for the Lower Coosa River Basin management measures – the outline for organizing the actions and tasks necessary to maintain water quality. And last, watershed issues and concerns are identified and categorized by the area affected.

Watershed Management Views

There are several perspectives from which management of the Lower Coosa River Basin can be viewed. First, the Lower Coosa River Basin is a part of the Coosa River, which in turn is a part of the greater Mobile River Basin. As a part of the Mobile River Basin, the Lower Coosa River Basin is obligated to act as a good “upstream neighbor, protecting and preserving the downstream systems impacting the Mobile Bay and estuary system, as well as maintaining a healthy river system that supports the economic diversity identified in the Mobile Basin Recovery Plan. Second, the Lower Coosa River Basin is downstream from other segments of the Coosa River and upstream from the Alabama River. Collectively, the entire river system has competing uses for the water in the Coosa River. Each part of the system must be a good steward of the water resources to ensure that all beneficial uses of water are fulfilled, the linkages being shown in Figure 144.

Based on the views of the Lower Coosa River Basin being set within the Mobile Basin and the Coosa River System there is a need for management that extends beyond the Lower Coosa River Basin. This need must be met by federal and state policy and regulation.

Third, within the Lower Coosa River Basin, there are 20 subwatersheds corresponding to the 11-digit hydrologic unit code. Some of these watersheds are small and have low-order streams flowing directly into the Coosa River. For example, the Walthall Branch watershed has a long dimension that is coincident with the bank of the Coosa River. There is both sheet flow and small streams that flow directly into the river as opposed to flowing into Walthall Branch. Larger watersheds, such as the Walnut Creek watershed, have some areas that drain directly to the Coosa River. The dominant portion of the watershed is drained by a stream network flowing to Walnut Creek, a primary tributary discharging into the Coosa River.

A few of the watersheds form larger areas because one watershed discharges into another watershed. For example, the Buxahatchee Creek watershed drains into Waxahatchee Creek. And, the Socapatoy Creek and Upper Hatchet Creek watersheds drain into the Middle Hatchet Creek watershed which in turn drains into Lower Hatchet Creek before discharging into the Coosa River.

As a result of the drainage configurations of the 20 subwatersheds, there are areas that primarily influence the Coosa River; there are watersheds with primary tributaries supported by a local stream network; and finally, there are watersheds that are interconnected as a system that must be viewed as a unit rather than as only being a watershed. Further, within

the watersheds of the Lower Coosa River Basin, there is a need for both lake management and watershed management. Lake management concepts must address issues that are similar to watershed management and broader issues that are unique to the setting of the three lakes within the river system.

The fourth perspective is a blend of the regional setting perspectives of the Lower Coosa River Basin and the watershed perspective. This view recognizes that there are actions for which individual property owners, local organizations and agencies, city and county governments, and state agencies should assume responsibility.

Watershed Management Plan Development

Approaching water quality from within the watershed framework promotes the connection between water quality and the affect of activities on the surrounding land on water quality. Through planning and implementation of a plan developed within the watershed framework, it is possible to address the greatest number of causes of water quality problems rather than trying to just correct the resulting water quality in-stream through regulation and limitation of use of the water. This approach addresses both land-based and water-based issues.

During the public education and awareness portions of the planning process, local citizens were asked to respond to surveys regarding the identification of issues within the Lower Coosa River Basin and to provide comments regarding proposed management tools and alternatives. The purpose of these surveys and public comment opportunities was to integrate local observations with documented study results enabling the formulation of a management strategy that addressed both local and basinwide concerns with as little duplication of effort as possible.

The response rate to the first survey regarding water quality issues that were distributed in a series of 22 meetings with the local governments and home owner and boat owner associations was just under 10 percent, with 43 surveys returned. A summary of the first phase survey responses is provided in Figure 149. Responses to the survey indicate that approximately one-third of those in attendance at the meetings knew about the development of the Lower Coosa River Basin Management Plan and understood what nonpoint source pollution is. Responses show that residents thought that most common types of nonpoint source pollution present in the Lower Coosa River Basin are urban runoff, agricultural runoff, failing onsite septic systems, illegal dumping and sedimentation. Residents stated that the most harmful types of nonpoint source pollution are urban runoff and failing septic systems, followed distantly by illegal dumping, sedimentation and silviculture runoff. Locally identified water quality issues in the survey included pollutants, urban growth, high nutrient loads, point source discharges, and stream flow (quantity of water). Local issues are discussed in more detail later in this chapter.

Figure 149:

Lower Coosa River Basin Management Plan Stakeholder Survey Results
 Approx. 439 Surveys Distributed; 40 Surveys Returned; 9.1% Response Rate

Awareness					
Were you aware of the on-going process to develop a watershed management plan for the Lower Coosa River Basin prior to receiving this survey?				Yes	No
				21	18
Where did you learn of the effort to develop the Lower Coosa River Basin Management Plan?		City Council Meeting		10	
		County Commission Meeting		4	
		Civic Organization Meeting		1	
		Association/Club Meeting		13	
		Other: ADEM, Mail, AWWA, Word of Mouth		4	
Prior to learning about the Lower Coosa River Basin Management Plan, were you aware of any water quality problems of issues associated with the Lower Coosa River?				Yes	No
				28	10
List / Explain:					
Runoff Problems (1); Pollutants (3); Mercury Levels in Fish (2); Upstream Contamination (1); Logging (1); Littering (3); Sewage (5); Alabama Power (1); Paper Mill (2); PCBs (8); 303(d) List (1); HOBO (2); Flooding (1); Turbidity (1); Media (3); HOBO Groups (3), Low Dissolved Oxygen (1), High Nutrient Load (2); Flow (2); Shelby County Growth (2)					
Watersheds of Interest:					
Talleshatchee Creek	5	Spring Creek	11	Lower Hatchet Creek	8
Walthall Branch	2	Buxahatchee Creek	16	Walnut Creek	4
Yellowleaf Creek	22	Waxahatchee Creek	18	Chestnut Creek	2
Kahatchee Creek	4	Upper Hatchet Creek	9	Weoka Creek	4
Beeswax Creek	16	Socatatoy Creek	3	Pigeon Roost Creek	0
Cedar Creek	9	Middle Hatchet Creek	8	Taylor Creek	0
Peckerwood Creek	9	Weogufka Creek	8	Paint Creek	1
Dry Branch Creek	12	Sawmill Creek	1		
Nonpoint Source Pollution					
Do you know what nonpoint source pollution is and how it affects water quality?				Yes	No
				27	12
What do you feel are the most common types of nonpoint source pollution present in the Lower Coosa River Basin?					
Urban Runoff	22	Sedimentation	14		
Agricultural Runoff from Crops	18	Failing Onsite Septic Systems	18		
Agri Runoff from Livestock, Poultry	12	Water-Related Rec. Activities	8		
Silviculture Runoff	6	Illegal Dumping	16		
Other: Litter (2); Fertilizer on Yards (1); Point Sources (2)					
Which of the types of nonpoint source pollution, as listed above, are the most harmful to water quality in the Lower Coosa River Basin?					
Septic Systems (8); Urban Runoff (10); All (1); Silviculture (3); Sedimentation (3); Illegal Dumping (3); Litter (1); Crop Runoff (2)					

Figure 149, Continued:

Implementation and Participation			
Do you, your business, organization, or club have any past, current and/or future watershed projects or activities in the Lower Coosa River Basin?		Yes 17	No 17
Project Name, Location and Description:			
Hidden Valley Association active in Paint Creek area Lake Jordon HOB0 Clean Up Lake Mitchell HOB0 Clean Ups (4) Lay Lake HOB0 Clean Up (7) Shelby County Commission Environmental Program Lay Lake HOB0 and Lake Mitchell Water Quality Monitoring (7) Clean Ups Christmas Tree Fish Habitat Enhancement Increased Aeration in Hydro Plants Lake Jordan HOB0 Objectives for Lower Coosa River Basin Strategic Planning NEMO Program Involvement in Relicensing IAGs (1)			
Would you be interested and willing to participate in implementation activities as they are outlined in the Lower Coosa River Basin Management Plan, upon its completion?			
Area(s) of interest?			
Serving on a Committee	12	Stream Clean Ups	12
Installation of BMPs	7	Establishing Buffer Zones	6
Water Quality Monitoring	13	Education and Outreach	10
Nonpoint Source Training	6	Start a Watershed Group	1
Urban Forestry Programs	3	Not Interested	5

In response to citizen comments received in the first phase of the education and awareness part of the planning process and the inventory and research that had been conducted, preliminary protection measures were developed and organized into seven categories of watershed management activities, or tasks. These categories are education and outreach; water quality monitoring; plan development, coordination and compliance; sedimentation; urban management practices; pollution prevention and nuisance violations; and, stream remediation and protection.

During the meetings, residents were provided with examples of protection measures under each category and were then asked to vote on which category they felt was most important (i.e., would have the most impact) and which category they felt was the least important or would have the least impact. The resident voting results, shown in Figure 150, clearly show that, from the voting results, education and outreach and water quality management measures were thought to have the most impact on improving and maintaining water quality in the Lower Coosa River Basin.

Figure 150:

Watershed Management Categories for Protection Measures		
Category	Most Important	Least Important
Education and Outreach	16	5
Water Quality Monitoring	13	3
Plan Development, Coordination and Compliance	7	2
Sedimentation	7	13
Urban Management Practices	5	16
Pollution Prevention and Nuisance Violations	1	7
Stream Remediation and Protection	0	0

Source: Citizen responses during Phase II Public Education and Awareness Meetings held as a part of the Lower Coosa River Basin Management Planning Process. A series of five meetings held in Shelby, Talladega, Chilton, Coosa and Elmore Counties in May and June, 2004.

Also during the Phase II meetings, residents were asked to review a list of the proposed protection measures by category and mark the watersheds where they felt these protection measures would be applicable. The results of this survey, which are shown in Figure 148, indicated there are a considerable number of protection measures that would be applicable throughout the basin rather than in just one or two watersheds. This is particularly true in the education and outreach, water quality monitoring and sedimentation categories. Those watershed management measure categories that appear to have had the least amount of widespread appeal to residents are urban management practices, pollution prevention and nuisance violations, and stream remediation and protection.

The citizen responses from both phases of the education and awareness part of the planning process were instrumental in the identification of water quality issues and in the development of protection measures to address the issues. Citizen guidance coupled with the inventory and analysis in Parts I and II of the plan made it possible to coordinate the necessary implementation tools for improving water quality with the areas where they are specifically needed. This can be viewed as constructing a tailored strategy as opposed to a one size fits all strategy. It is clear from the material presented thus far in this plan that, although there are many common denominators among the watersheds in the Lower Coosa River Basin, what works in one area may not work in another. And, vice versa, the citizen guidance also made it possible to coordinate activities that are affecting more than one watershed for a more comprehensive approach.

Watershed Issues and Concerns

Watershed issues and concerns affecting the Lower Coosa River Basin are derived from the inventory and analysis of existing conditions presented in Parts I and II of this plan in conjunction with citizen observations and locally-identified issues. A brief explanation of each issue is provided in Chapter 14: Water Quality Improvement Program, along with management measures to address the issue. For more detailed information regarding the specific conditions, refer to the appropriate section of the plan. For example, information on endangered species can be found in Chapter 4: Ecoregions and Habitat, and information on Low Dissolved Oxygen can be found in Chapter 10: Water Quality Monitoring. The watershed issues and concerns have been categorized based on the geographical area that is impacted by the issue. Some issues affect the entire Lower Coosa River Basin, while others may affect, or be present in, one or two watersheds. The issue categories are basin-wide issue, regional issues, and local concerns.

Basin-wide Issues. These issues affect all watersheds in the Lower Coosa River Basin and should be addressed from a holistic, basin perspective rather than a watershed by watershed. Due to either the nature of these issues or their widespread geographic impact, these issues require the coordinated efforts of all residents and organizations in the basin for management efforts to be effective. Basin-wide issues identified include:

- Endangered Species
- Illegal Dumping
- FERC Relicensing of Hydroelectric Facilities
- Lack of Water Quality Trend Data
- Lack of Education and Awareness

Regional Issues. These issues are present in more than five watersheds but do not impact the entire basin. Identification of regional issues provides the opportunity to coordinate with a larger pool of residents and organizations in the implementation of management measures. Furthermore, some of the regional issues cross watershed boundaries and must be addressed at a level larger than the local watershed. Regional issues identified and the watersheds that are affected are as follows:

Issue	Watersheds Affected
▪ Compliance with the Recovery Plan for the Mobile River Basin Aquatic Ecosystem	Tallassehatchee Creek Watershed Yellowleaf Creek Watershed Buxahatchee Creek Watershed Upper Hatchet Creek Watershed Middle Hatchet Creek Watershed Weogufka Creek Watershed Lower Hatchet Creek Watershed Pigeon Roost Creek Watershed Taylor Creek Watershed

Issue	Watersheds Affected
<ul style="list-style-type: none"> ▪ Designation as a Critical Habitat 	Yellowleaf Creek Watershed Upper Hatchet Creek Watershed Middle Hatchet Creek Watershed Lower Hatchet Creek Watershed Pigeon Roost Creek Watershed Taylor Creek Watershed
<ul style="list-style-type: none"> ▪ Growth Rate, Population Increase and Urban Development 	Walthall Branch Watershed Yellowleaf Creek Watershed Beeswax Creek Watershed Spring Creek Watershed Buxahatchee Creek Watershed Waxahatchee Creek Watershed Walnut Creek Watershed Chestnut Creek Watershed Weoka Creek Watershed Pigeon Roost Creek Watershed Taylor Creek Watershed
<ul style="list-style-type: none"> ▪ Agricultural Runoff 	Tallasseeatchee Creek Watershed Walthall Branch Watershed Yellowleaf Creek Watershed Kahatchee Creek Watershed Beeswax Creek Watershed Cedar Creek Watershed Spring Creek Watershed Weogufka Creek Watershed Walnut Creek Watershed Chestnut Creek Watershed Pigeon Roost Creek Watershed Taylor Creek Watershed
<ul style="list-style-type: none"> ▪ Silviculture Runoff 	Tallasseeatchee Creek Watershed Kahatchee Creek Watershed Cedar Creek Watershed Peckerwood Creek Watershed Spring Creek Watershed Buxahatchee Creek Watershed Waxahatchee Creek Watershed Upper Hatchet Creek Watershed Socapatoy Creek Watershed Middle Hatchet Creek Watershed Weogufka Creek Watershed Lower Hatchet Creek Watershed Walnut Creek Watershed

Issue	Watersheds Affected
<ul style="list-style-type: none"> ▪ Urban Runoff 	Tallasseeatchee Creek Watershed Walthall Branch Watershed Yellowleaf Creek Watershed Kahatchee Creek Watershed Beeswax Creek Watershed Spring Creek Watershed Buxahatchee Creek Watershed Waxahatchee Creek Watershed Walnut Creek Watershed Chestnut Creek Watershed Pigeon Roost Creek Watershed Taylor Creek Watershed
<ul style="list-style-type: none"> ▪ Sedimentation 	Walthall Branch Watershed Yellowleaf Creek Watershed Kahatchee Creek Watershed Beeswax Creek Watershed Cedar Creek Watershed Spring Creek Watershed Buxahatchee Creek Watershed Waxahatchee Creek Watershed Taylor Creek Watershed
<ul style="list-style-type: none"> ▪ Nutrients, Algal Growth, and Invasive Species 	Beeswax Creek Watershed Cedar Creek Watershed Peckerwood Creek Watershed Spring Creek Watershed Buxahatchee Creek Watershed Waxahatchee Creek Watershed Lower Hatchet Creek Watershed Walnut Creek Watershed Chestnut Creek Watershed Weoka Creek Watershed
<ul style="list-style-type: none"> ▪ Low Dissolved Oxygen / Organic Enrichment 	Walthall Branch Watershed Kahatchee Creek Watershed Beeswax Creek Watershed Cedar Creek Watershed Peckerwood Creek Watershed Spring Creek Watershed Waxahatchee Creek Watershed Lower Hatchet Creek Watershed Walnut Creek Watershed Chestnut Creek Watershed Weoka Creek Watershed

Issue	Watersheds Affected
<ul style="list-style-type: none"> ▪ Upstream Contamination 	Beeswax Creek Watershed Cedar Creek Watershed Peckerwood Creek Watershed Spring Creek Watershed
<ul style="list-style-type: none"> ▪ Temperature and Thermal Stress 	Peckerwood Creek Watershed Waxahatchee Creek Watershed Lower Hatchet Creek Watershed Walnut Creek Watershed Chestnut Creek Watershed Weoka Creek Watershed
<ul style="list-style-type: none"> ▪ Priority Organics (PCBs) 	Walthall Branch Watershed Kahatchee Creek Watershed Beeswax Creek Watershed Cedar Creek Watershed Peckerwood Creek Watershed Spring Creek Watershed
<ul style="list-style-type: none"> ▪ Mining Runoff 	Kahatchee Creek Watershed Cedar Creek Watershed Peckerwood Creek Watershed Buxahatchee Creek Watershed Waxahatchee Creek Watershed

Local Concerns. These issues are present in only one to five watersheds, and the watersheds do not have strong geographical connections. Most of the local issues were derived from citizen comments and observations, however, many of the issues identified by citizens were common among watersheds and became regional and basin wide issues. One citizen concern that is not included in this list, although it was identified by several citizens, is the mercury level in fish. While there was once a fish consumption advisory in the Lay Lake area due to mercury levels in fish, this consumption advisory in this area is no longer valid. Local issues that have been identified and the watersheds that are affected are as follows:

Issue	Watersheds Affected
<ul style="list-style-type: none"> ▪ Bacteria 	Socapatoy Creek Watershed Weoka Creek Watershed
<ul style="list-style-type: none"> ▪ Flooding 	Weoka Creek Watershed Taylor Creek Watershed
<ul style="list-style-type: none"> ▪ Turbidity 	Weoka Creek Watershed Taylor Creek Watershed

Issue	Watersheds Affected
▪ Point Source Discharges	Tallosehatchee Creek Watershed Walthall Branch Watershed Beeswax Creek Watershed Buxahatchee Creek Watershed Middle Hatchet Creek Watershed
▪ Low Flow	Beeswax Creek Watershed

