TENNESSEE CLEAN WATER NETWORK

10 YEAR ANNIVERSARY

2010 DRAFT 303(d) List Analysis for Shelby County

The 303(d) list is prepared every two years by the Tennessee Department of Environment and Conservation and every similar office in each state in the nation. The report is required by the EPA and it lists all of Tennessee's waters that are too polluted or full of sediment for public uses. Each stream has designated uses for humans like fishing, swimming, boating and others for biodiversity and trout populations. Designated uses are assigned to waters, and the water is listed as impaired if it is unsafe or impossible to use the water as intended. Designated uses are generally a reflection of historical or "existing" uses. The people of the state own the water in trust and have a right to clean water and streams and lakes. This is codified in Tennessee law.

Some streams are considered to be "Outstanding Water Resources of the State" and TDEC can't permit pollution discharges into those waters. Other streams get different levels of protection, and the resulting inputs from permitted or non-point sources degrade the water quality. When the water quality is too poor for people to use it as intended, it is placed on the 303(d) list for greater protection. On the list, the waters that are assessed are listed in a category that says how clean they are based on the designated use criteria.

Table 1. 303(d) List Attainment Categories

Category 1	Waterbody or waterbody segment meets all designated uses.
Category 2	Waterbody or waterbody segment meets some designated uses, but data are not available in order to determine whether all uses are being met.
Category 3	Insufficient data exists to determine whether any uses are being met.
Category 4A	One or more uses are not being met. However, TMDLs have been completed and approved for all listed pollutants.
Category 4B	One or more uses are not being met. However, a TMDL is not needed because compliance with water quality standards will be achieved in the short-term by a more traditional approach, such as permitting or enforcement.
Category 4C	One or more uses are not being met. However, the impairment is not being caused by a pollutant.
Category 5	One or more uses are not being met. A TMDL is needed for the listed pollutants.

Impairment

Approximately 801.3 miles impaired and polluted waters in Shelby County and/or flowing into or from adjacent counties

At least 55 streams or sections of streams in Shelby County are on the proposed 2010 303(d) list. Most of the designations are Category 5, which means too polluted or disturbed for at least one public use as intended. 6.5 miles of Nonconnah Creek initially listed for E. coli on previous lists were removed due to improvement in the E. coli levels.

Some pollution can make people sick and kill animals and plants. The Tennessee Department of Environment and Conservation posts advisories for bacteria and fish that can't be eaten due to the pollution in the water. These are listed in the 303(d) list as well as on the web site.

Fish Tissue Advisories in Shelby County

The Loosahatchie River, McKellar Lake, Mississippi River, Nonconnah River, and Wolf River are all listed on the Fish Tissue Advisory with the comment "Do Not Eat Fish" due to Chlordane, Mercury, and other organics.

Shelby County

As the chart below indicates, the greatest pollution in Shelby County is caused by Municipal Storm Sewer System (MS4) area pollution and channelization. There may be multiple sources of pollution in the stream. In these combined cause groups, the data given does not allow separation to identify which use is the predominant cause of the pollution and which have a smaller contribution. The TN Department of Environment and Conservation (TDEC) attributes sediment as the state's number one source of pollution to our rivers, streams, and lakes. Sediment carried in water increases flooding, impacts water supplies and navigation, degrades aquatic habitat and transports chemicals. Channelization, hydromodification, pasture grazing and grading for development all promote transport of sediment into streams.

Table 2. Contributing Causes of Pollution by River Miles Affected

	Listed as only cause	Listed as partial cause
Collection System Failure	0	25.8
Channelization	10	411.52
MS4	145.54	342.37
Dredging	0	64.9

Definitions:

MS4
Tennessee's Municipal Storm Sewer System (MS4) Phase II Permit is given by the state, to small municipalities, to control pollution going into our waters. In particular, it is designed to control pollution that flows into our streams from development, such as sediment or mud.

Channelization
The subset "channelization" is the actual alteration of the stream substrate.

Examples of listings for Shelby County

- McKellar Lake is listed for Mercury, PCBs, Chlordane, Dioxins, Nitrate, Loss of Biological Integrity, Low Dissolved Oxygen, and Escherichia coli due to collection system failures, discharges from the MS4 area, dredging, atmospheric deposition and contaminated sediment. Fish in this stream can not be consumed.
- 8.2 miles of the Loosahatchie River are listed for physical substrate habitat alterations, loss of biological integrity, and Escherichia coli due to land development, channelization and pasture grazing.