NORTH CAROLINA'S

1998 303(d) LIST

Department of Environment and Natural Resources
Division of Water Quality

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What is the 303(d) list?

Section 303(d) of the Clean Water Act (CWA) requires states to develop a list of waters not meeting water quality standards or which have impaired uses. Waters may be excluded from the list if existing control strategies for point and nonpoint source pollution will achieve the standards or uses. Listed waterbodies must be prioritized, and a management strategy or total maximum daily load (TMDL) must subsequently be developed for all listed waters. The 303(d) process is presented in Figure 1.

303(d) List Development

Generally, there are four steps to preparing North Carolina's 303(d) list. They are (1) gathering information about the quality of North Carolina's waters, (2) screening those waters to determine if any are impaired and should be listed, (3) determining if a total maximum daily load (TMDL) has been developed, and (4) prioritizing impaired waters for TMDL development. This document also indicates whether the Division of Water Quality (DWQ) intends to develop a TMDL as part of a Management Strategy (MS) to restore the waterbody to its intended use. The following subsections describe each of these steps in more detail.

Sources of Information

For North Carolina, the primary sources of information are the basinwide management plans and accompanying assessment documents, which are prepared on a five-year cycle, and the 305(b) report, which is prepared biennially. Basinwide management plans include information concerning permitting, monitoring, modeling, and nonpoint source assessment by basin for each of the 17 major river basins within the state. These plans are updated every five years according to the schedule shown in Table 1. Basinwide management allows the state to examine each river basin in detail and to determine the interaction between upstream and downstream point and nonpoint pollution sources. As such, more effective management strategies can be developed across the state. To focus on all available data in each river basin, the 303(d) list is only updated for those basins that were scheduled for basinwide management plan reports within the last two years. For the 1998 303(d) list, more recent data were reviewed for the Broad, Chowan, Hiwassee, Little Tennessee, Neuse, Pasquotank, Roanoke, Savannah, Watauga, White Oak, and Yadkin river basins. Changes from the 1996 report may have been made to other basins based on public comments.

The 305(b) report is used as a basis for developing the 303(d) list. Section 305(b) of the CWA requires states to report biennially to the U.S. Environmental Protection Agency (EPA) on the quality of waters in their state. In general, the report describes the quality of the state's surface waters, groundwaters, and wetlands, and existing programs to protect water quality. Information on use support, likely causes (e.g., sediment, nutrients, etc.) and sources (point sources, agriculture, etc.) of impairment are also presented in the report. As with the 303(d) list, the 305(b) report is only updated for those basins that were scheduled for basinwide management plan reports within the last two years.

FIGURE 1. THE 303(d) PROCESS

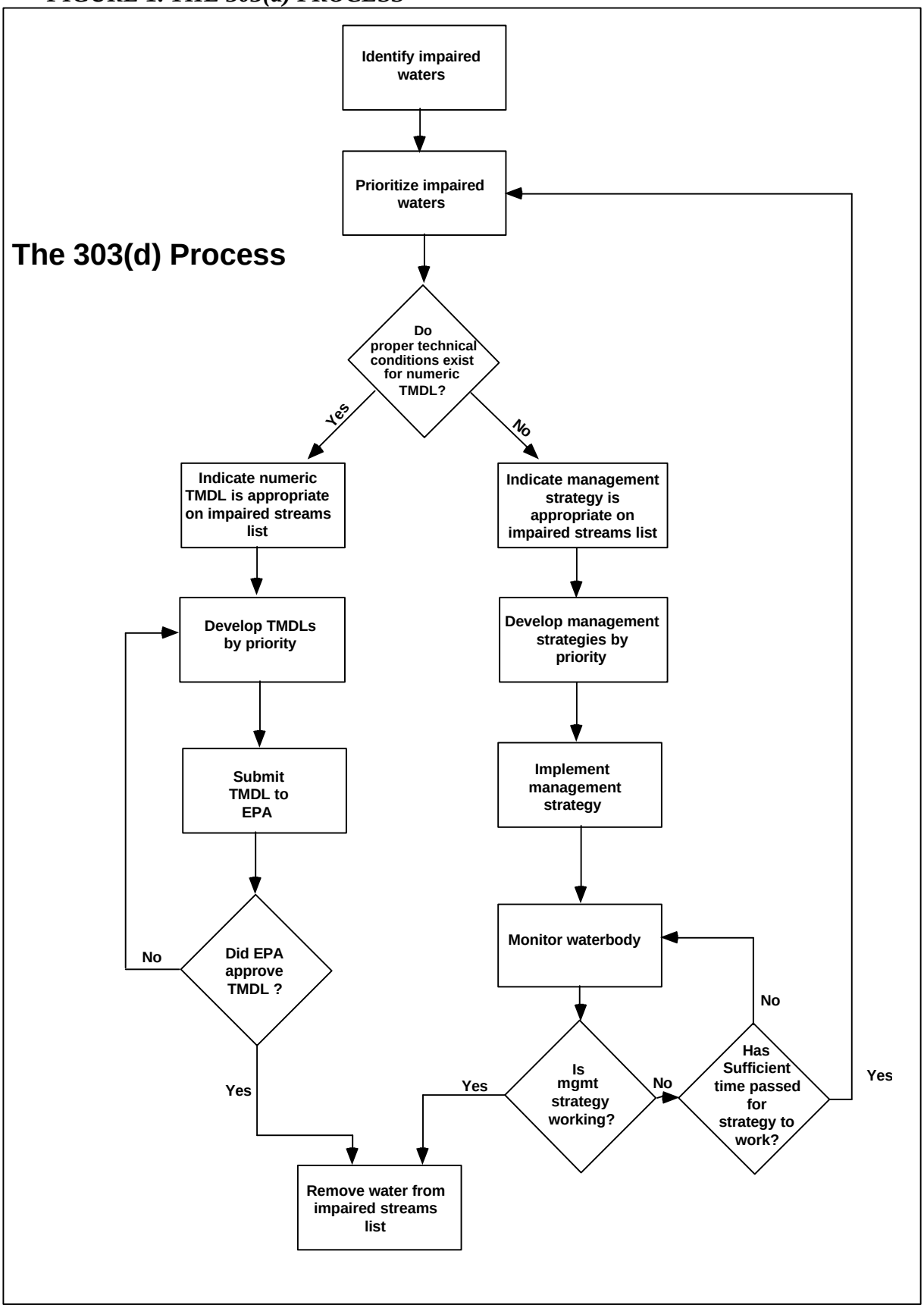


TABLE 1. BASINWIDE MANAGEMENT PLAN SCHEDULE FOR NORTH CAROLINA'S 17 MAJOR RIVERS (1996 to 2001)

	Scheduled Year					
Basin	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Broad			X			
Catawba				X		
Cape Fear					X	
Chowan		X				
French Broad					X	
Hiwassee		X				
Little Tennessee		X				
Lumber				X		
Neuse			X			
New					X	
Pasquotank		X				
Roanoke	X					X
Savannah		X				
Tar-Pamlico				X		
Watauga		X				
White Oak		X				
Yadkin-Pee Dee			X			

Scheduled year indicates when final basinwide management plan approval by the Water Quality Committee and the Environmental Management Commission is anticipated.

Many types of information were used to make use support assessments and to determine causes and sources of use support impairment. Chemical, physical, and biological data collected by DWQ were the primary sources of information used to make use support assessments. North Carolina has an extensive ambient and biological monitoring network throughout the state. Benthic macroinvertebrate data, which indicate taxa richness and species diversity, are an important data source. North Carolina also collects fish tissue and fish community structure data, and phytoplankton bloom data that are used in the assessments. Shellfish closure data, fish kill data, reports, predictive modeling results, toxicity data, and self-monitoring data are considered when making final use support determinations.

Data from all readily available sources outside of DWQ are considered when evaluating use support. Many other agencies, universities, industries, point sources, and environmental groups collect data on North Carolina's surface waters. Published reports and data from ongoing studies that the DWQ has knowledge of are actively solicited during the assessment phase of the basin planning cycle. Data that are not collected and analyzed following procedures outlined by the Environmental Protection Agency (EPA) are used to quality assure other monitoring that may occur in the same water and identify areas to monitor in the future. The Division therefore uses all data.

Use support ratings and the 303(d) list for the basin of interest has been included in each basin plan completed since October 1996 (use support included in all basin plans). During the basin planning cycle, several meetings occur in each basin in which the public is encouraged to share data and information about the basins. Early in each basin planning cycle, workshops are held throughout the basin to obtain public input on the water quality issues within the basin, the priorities within the basin, and to seek additional information that the DWQ was not aware of. In addition, public meetings are held to obtain comments on the draft basin plans, and a public comment period of at least 30 days is held to obtain final feedback on the plan. The public can provide additional data to the Division at any time during this process.

For the 1998 303(d) list, the process occurred for the following basins: Broad, Chowan, Hiwassee, Little Tennessee, Neuse, Pasquotank, Roanoke, Savannah, and Watauga River Basins. (Note: the Neuse Basin Plan has not yet been through the public review process, and the list could change if new data are brought forward for review). Updated data from sources within DWQ and outside the agency were reviewed for these basins only; updated data was not solicited or reviewed for the remaining basins within the state. The exception to this was the review of updated fish consumption advisory areas for all basins since some significant changes have occurred since the 1996 list was compiled. A list of data sources for the updated basins is included in Appendix I.

Listing Criteria

Waterbodies whose use support ratings were not supporting (NS), partially supporting (PS), and support threatened (ST) based on monitored information in the 305(b) report were considered as initial candidates for the 303(d) list. Although support threatened waters currently meet their intended uses, these waters were reviewed to determine if there were sufficient data to determine if they would become impaired in the next two years. The list was then compared to the 1996 303(d) list to determine if additional waters should be added that were included on that 303(d) list that are still considered as impaired based on evaluated information.

Fish consumption advisory information was then reviewed to determine if other waters should be added to the list. Fish consumption advisories are no longer considered when determining use support since the entire state was posted in June 1997 for the consumption of bowfin from mercury contamination. It should be noted that bowfin do not occur statewide; they are found primarily within the coastal plain. The entire Lumber River Basin has also been posted for mercury. While fish consumption advisories do indicate impairment, DWQ did not want to mask other causes and sources of impairment by having the entire state or an entire basin listed as impaired due to advisories. However, DWQ believes that advisories on specific waters are cause to include the water on the 303(d) list. Therefore, advisories other than statewide bowfin mercury contamination and the basinwide Lumber advisory were considered when developing the state's 303(d) list. Since fish consumption advisories are not considered when determining use support, waters listed due to advisories may have ratings of S (supporting) or ST (supporting, but threatened).

Guidance from EPA on developing 1998 303(d) lists indicates that impaired waterbodies without an identifiable problem parameter should not be included on the 303(d) list. However, DWQ feels that waterbodies listed in the 305(b) report as impaired for biological reasons where problem parameters have not been identified, should remain on the 303(d) list. The Clean Water Act states that chemical, physical, and biological characteristics of waterbodies shall be restored. The absence of a problem parameter does not mean that the waterbody should not receive attention. Instead, DWQ should at a minimum resample those areas or initiate studies to determine why the waterbody is impaired. Thus, biologically impaired waterbodies without identifiable problem parameters are on the 1998 303(d) list.

De-Listing Criteria

Waters included on the 1996 303(d) list were reviewed to determine if they may be removed from the list of impaired waterbodies. If updated use support analyses indicated that the water was meeting its uses, the waterbody was dropped from the list. Other waters were dropped from the list if an approved TMDL is on file for the water and parameter listed.

Management strategies have been developed for a number of impaired waters. These waters remain on the list unless updated use support information indicated the water met its uses. In some cases, DWQ is confident that the management strategy will restore water quality, but it may take time to restore the water. For these waters, DWQ does not propose to do further modeling on the water, but the water will continue to be monitored to determine when it meets its uses. This approach is addressed further in the prioritization section of the document.

Assigning Priority

North Carolina is required to prioritize its 303(d) list in order to direct resources to those waterbodies in greatest need of management. The Clean Water Act states that the degree of impairment (use support rating) and the uses to be made of the water (stream classification) are to be considered when developing the prioritization. In addition, DWQ reviews the degree of public interest and the probability of success when developing its prioritization schemes. Waters harboring endangered species are also given additional priority. A method to assign ratings to freshwaters that have recent data indicating impairment has been devised based on these criteria. A summary of the prioritization scheme is included in Appendix II.

Estuarine areas were also prioritized. In general, waters with nutrient enrichment and dissolved oxygen issues were given a higher priority than waters impaired due to fecal coliform. Nutrient enrichment can impact several uses including aquatic life, fishing, and swimming. Fecal coliform usually impacts only the shellfish use. The public also appears to have a greater interest in the nutrient issues within North Carolina's coastal waters. Fish kills related to nutrient enrichment and the associated low dissolved oxygen concentrations draw much public attention. Pfiesteria may also be controlled through nutrient management. Finally estuarine responses to fecal coliform loads are difficult to capture using deterministic water quality models, and the results tend to be more suspect than results for processes that

are better understood such as those for nutrients. Thus, the probability of developing a defensible numeric loading target may be lower for fecal coliform.

The prioritization process for both freshwater and saltwater results in ratings of high, medium, and low. Generally, waters rated with the highest priority are classified for water supply, rated not supporting, and harbor an endangered species. Waters receiving a High priority are important natural resources for the state of North Carolina and generally serve significant human and ecological uses. High priority waters will likely be addressed first within their basin cycles.

EPA recently issued guidance that suggested states should develop TMDLs and management strategies on all of their impaired waters within the next eight to thirteen years. To meet this federal guidance, the DWQ is striving to address all waters on the 1998 303(d) list that have a priority of high, medium, or low within the next 10 years. Numeric TMDLs, if proper technical conditions exist, and management strategies will be developed for these waters. The DWQ is currently reviewing its resource needs in order to meet this aggressive schedule.

Other priorities have also been assigned to waters. A **Monitor** priority indicates that the waterbody is listed based on (1) data older than 5 years, (2) biological monitoring and no problem pollutant has been identified, or (3) biological monitoring that occurred in waters where we now have evidence that the biological criteria should not have been applied. These waters will be resampled before a restorative approach may be developed because more information is required about the cause of impairment. Further information on the monitoring approaches that have a Monitor priority is provided in the next section.

The final priority listed on the 303(d) list is **N/A** for not applicable. This priority was assigned to waters that DWQ believes will meet their uses based on the current management strategies. DWQ will not develop a new TMDL or management strategy for these waters unless data continue to indicate impairment and sufficient time has passed for the waterbody to respond to the management action. An example of this priority is a water impaired by a point source, and the pollutant causing the impairment has been completely removed from the point source.

Approaches to Restore Water Quality

EPA informed North Carolina at a TMDL workshop in January, that TMDLs must now be total, maximum, daily, and loads in order to be approved. Such a narrow definition of a TMDL severely limits states' abilities to develop numeric TMDLs. Given this narrow definition of a TMDL, North Carolina believes that TMDLs cannot be developed for waters impaired by sediment, turbidity, fecal coliform, and pH. DWQ believes that TMDLs are only one tool that can be used to prioritize and direct resources for the restoration of impaired waters. There are other tools that can be used. In the management strategy approach included on the 303(d) list, the state can work to identify the causes and sources of impairment and implement strategies to reduce those sources so that water quality can ultimately be restored. As part of the management strategy approach, North Carolina may be able to develop numeric targets such as percentage reductions or other metrics that do not

meet EPA's current definition of an approvable TMDL. However, DWQ would like to have adequate data and a defensible modeling approach to minimize challenges of the numeric goals which can exhaust our limited resources. DWQ is reviewing its options to address these impaired waters, and staff are currently working together to develop a process to encourage local watershed management plans. This process could include a combination of voluntary and mandatory control strategies. We anticipate that we will receive stakeholder input on the process in mid to late 1998 after it is presented to and approved by the Department's administration. DWQ has confidence that this approach will be successful in restoring impaired waters. Management strategies developed with strong stakeholder input have been shown throughout the nation to be effective in restoring water quality.

For both the numeric TMDL approach and management strategies that include alternative numeric targets, DWQ needs to ensure that defensible targets are developed. In order to have technically defensible numeric targets, the proper technical conditions are needed. EPA's guidance published in the December 28, 1978 Federal Register defined proper technical conditions as having the analytical methods, modeling techniques, and database necessary to develop a technically defensible TMDL.

North Carolina and EPA are currently reviewing methods to develop numeric targets for fecal coliform and sediment. As better models and data become available, North Carolina will review its approach column to include more TMDLs if EPA revises its current definition of a TMDL. In the interim, DWQ will develop other numeric goals when data are available to support them.

The 303(d) list contains information on whether the Division plans to pursue a numeric **TMDL** as currently defined by EPA or whether it will pursue a management strategy (**MS**). Some waters must have more data collected on them to determine the causes and sources of pollution before a management strategy or TMDL can be devised. These include the waters that are biologically impaired waters where no problem parameter has been identified, listed based on data older than five years, and the swamp waters, that may not be impaired, that are listed based on freshwater biological criteria.

It will be difficult to develop TMDLs or management strategies on waters where we have no problem pollutant identified even if the data were collected recently. DWQ proposes to collect more biological and chemical data to determine the causes and sources of the impairment for waters included on the list based on recent biological data. The approach for these waters is problem parameter identification or **PPI**. Monitor appears in the Priority column, corresponding to PPI in the approach column. DWQ will develop TMDLs or management strategies for these waters within two basin planning cycles from when data indicating causes and sources of impairment are available. We will collect this information on as many waterbodies as resources allow during the next basin planning cycle. DWQ is beginning to collect this information in the Cape Fear Basin this summer. We should have more information on our ability to identify the causes and sources of biological impairment these waters later this year.

Waters that are listed based on data older than 5 years may in fact be meeting their uses. Since many changes can occur within a watershed in a five-year period, conclusive information about a waterbody's use support cannot be made with older data. North Carolina will resample as many of these waterbodies that have only historical data as staffing and time permit for subsequent updates of the basin plans and 303(d) list. Waters listed based on older information are indicated by a **RES** in the Approach column of the lists to denote that they will be resampled.

Staff biologists have determined that the biocriteria used in the past should not have been applied to some of North Carolina's waters. The sampling methods and criteria that had been developed for freshwater and flowing streams rely heavily on the number of intolerant species. Swamp waters do not support these same populations because they have naturally low dissolved oxygen concentrations and pH. Present evaluation metrics nearly always result in bioclassifications that are too low considering the characteristics of these swamps. Even sites that have little or no human impacts have received low ratings. In other cases a sample was collected in a stream one year, but when DWQ returned in a different year, there was no flow. Our current biocriteria should not have been applied to these waters. DWQ is currently developing new benthic and fish criteria for these swamp and intermittently flowing waters. Staff biologists planned on sampling reference sites in 1997, but Hurricane Fran impacted many coastal sites, including the reference sites. Sampling of these reference sites will resume in 1998. Revised biocriteria will be applied to the swamp waters when they are available; swamp waters are listed with a priority **SWMP.**

A TMDL or management strategy will not be developed for waters listed based on old data or an inappropriate use of biological criteria until we have updated sampling information that indicates the water is impaired. This process will ensure that DWQ has sufficient current information to determine if the impairment exists and to help identify the source of the impairment. This will enable DWQ to focus its limited resources on watersheds that are in greatest need of management.

If guidance is issued in the future which indicates that mandatory controls are to be placed on point or nonpoint sources on the basis that it is included on a state's 303(d) list, these controls should not be applied to waters listed based on older information or biological criteria that are not applicable to the water. Mandatory controls applied to these waters simply on the basis of being included on the 303(d) list could result in high costs to the regulated community with little or no environmental benefit.

Targeted Waterbodies for TMDL Initiation by April 2000

North Carolina's focus for the next ten years is to develop strategies to restore impaired waters with a high, medium or low priority to their intended uses. Therefore, DWQ will spend significant resources deciding the best approaches and strategies for restoring waterbodies. Some waterbodies are impaired due to problem parameters that are not necessarily conducive to a TMDL. In these cases, DWQ believes that resources are better utilized by developing a management strategy instead of attempting to develop a technically defensible TMDL. DWQ's current focus for TMDL development continues to be on nutrient

management strategies for the Neuse and Tar-Pamlico estuaries. An update of efforts in these two basins, as well as other TMDL targets, are provided below:

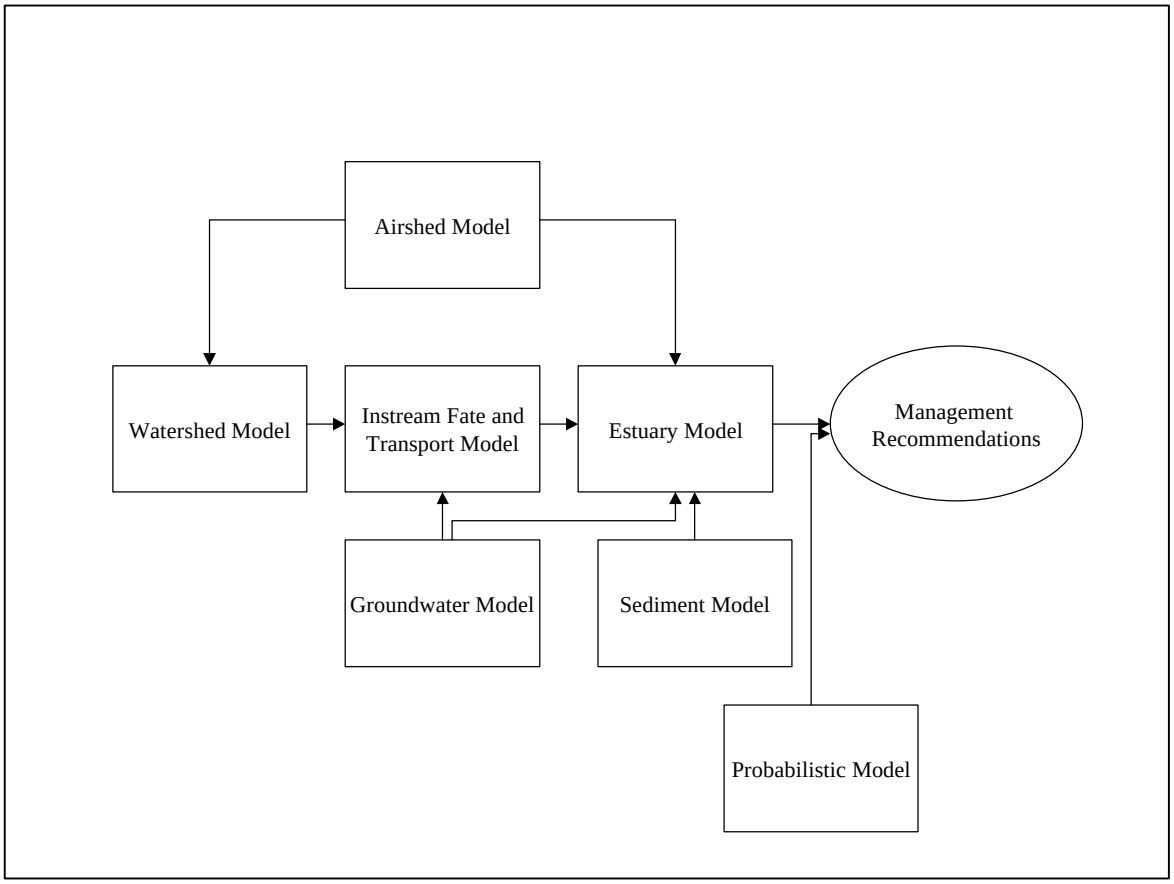
- Neuse River Estuary. Summer phytoplankton blooms and fish kills continue to occur in the Neuse River Estuary. In response to these environmental crises, the nutrient sensitive waters (NSW) strategy has been revised for the basin. The Neuse River Basin NSW Management Strategy, which is in the rule-making phase, addresses a reduction of nitrogen in the Neuse River through a series of voluntary and mandatory controls. The nutrient sources specifically outlined in the strategy include point sources, urban stormwater management, agriculture, riparian area protection, and nutrient management. A draft TMDL for total nitrogen of 6.1 million lbs/year at New Bern has been developed as part of the NSW strategy. North Carolina and EPA are currently negotiating the TMDL submittal.

  In order to implement an effective strategy for managing the Neuse River Basin, DWQ needs to understand the sources and fate of nutrients in the system. Thus, coordination for an integrated multimedia modeling effort to evaluate nutrient sources and fate in the Neuse River Basin has begun. The proposed modeling effort includes an airshed, watershed, groundwater, fate and transport model, sediment, probabilistic, and estuary model, as shown in Figure 2. The multimedia models will track the accumulation of nutrient loads from point sources, runoff, groundwater discharge, and atmospheric deposition, from the headwaters of the Neuse River through the estuary.

  This integrated multimedia modeling approach has several related components in various stages of completion. For example, a screening-level, steady-state, nitrogen fate and transport model was developed by a Research Triangle Institute (RTI) and modified by DWQ to route nutrients from the mouth of subbasins to the estuary. Nitrogen loads determined from this model will be coupled to an estuarine model. DWQ and USGS developed a nutrient estuarine model to simulate dissolved oxygen, nutrients, and algae dynamics. The estuarine model is currently undergoing calibration and refinement as part of the MODeling and MONitoring (MODMON) project. MODMON, which is funded for June 1997 to May 1998, is a comprehensive project that includes the collection and application of data and modeling that will be used to understand nutrient cycling in the estuary. As part of MODMON, the real-time data is used to refine the nutrient water quality model and study fish habitat response. This phase of the estuarine model will be completed by December 1998. Investigations have begun regarding the watershed model, and applications of SWAT and HSPF are being considered.

  DWQ is currently pursuing funding for the integrated multimedia modeling effort to provide further enhancements of the estuarine model and develop the other modeling components (e.g., the airshed model). DWQ anticipates that approximately five to seven years from the time of funding will be needed to collect the necessary data and develop the different models. A final report will then be prepared with management recommendations.

FIGURE 2. PROPOSED NEUSE RIVER BASIN MULTIMEDIA MODELING APPROACH



- Tar-Pamlico Estuary. Phase II of the NSW Implementation strategy for the Tar-Pamlico River Basin is now underway. The strategy to reduce nutrients from NPS is in the second year, with annual status reports on nutrient reductions being provided every May. DWQ has implemented two projects to provide input to decisions about nutrient reduction: 1) increase monitoring in the estuary and 2) develop a nutrient fate and transport model. Additional monitors are currently in place and collecting data. However, it may be several years to develop conclusions about the basin using data alone. DWQ has developed a nitrogen fate and transport model for the Tar-Pamlico River Basin to aid the development of the nutrient reduction strategy. Early runs of the model have described hydrologic units with the greatest potential for nutrient loading. The model will be refined, as data becomes available.

- Jordan Lake, Cape Fear River Basin. DWQ has applied a Nutrient Sensitive Water (NSW) strategy to the Jordan Reservoir Watershed since 1983. Through limited modeling analysis (models on tributaries of Jordan Lake) and monitoring, it is evident that eutrophication problems are common in areas with long retention times. We are currently reviewing available information to determine viable scientific approaches to evaluate nutrient issues in the lake.

- Lower Cape Fear River Basin BOD TMDL. A BOD TMDL for the lower Cape Fear River below Lock and Dam #1 of 80,000 lbs/day BOD_u was drafted in late 1996. The TMDL team proposed using a phased approach to reduce BOD loading to the lower Cape Fear and highlighted several options that primarily reduce point source discharges to the river. The TMDL must go through the public review process and should be completed by 2000.

- Goose Creek, Yadkin-Pee Dee River Basin. Nonpoint source pollution and the cumulative effect of a number of small discharges impair Goose Creek. The expansion of the Charlotte area has led to an increase in the number of small dischargers to several streams in the area, including Goose Creek. Elevated fecal coliform bacteria levels and sedimentation are problem parameters for this stream. To better assess the cumulative impact of discharges and to evaluate the assimilative capacity of Goose Creek, a field-calibrated QUAL2E model will be developed by 2000. Further work on Goose Creek will be done prior to the next basin plan in conjunction with the nonpoint source team's efforts.

- Mercury impaired waters in the Lumber River Basin. Numeric TMDLs will be developed by 2000 for streams and publicly owned lakes with fish advisories and sampling data that indicate fish tissue concentrations are above the FDA limit of 1 ppm.

Additional Guidance on Using the 303(d) List

The column headings in the 303(d) list refer to the following:

Class - The information in this column indicates the classification assigned to the particular waterbody. Stream classifications are based on the existing and anticipated best usage of the stream as determined through studies and information obtained at public hearings. The stream classifications are described in 15 A NCAC 2B .0300, and a copy of the pertinent pages of these regulations is attached in Appendix III.

Wtrbdy - The number in this column refers to the DWQ subbasin in which the waterbody is located. The NRCS 14 digit hydrologic units nest within the DWQ subbasins. On the lakes tables, this column is entitled subbasin.

Problem Parameter - These are the causes of impairment as identified in the 305(b) report. Where no cause is listed, the rating was based on biological data, and available chemical data showed no impairment. These biological data may include benthic and fish habitat and community structure. When a problem parameter is identified, the parameter listed exceeded the state's water quality standards for that substance or was identified by scientific personnel during field studies (e.g., sediment). This parameter is a potential cause of the impairment, but there may be other, unidentified causes contributing to the impairment as well. Problem parameters included in the 303(d) list are outlined below:

Chla – chlorophyll-a

Cl – chlorine
Cu – copper
DO – dissolved oxygen
Fecal – fecal coliform bacteria
Hg – mercury
NH3 – ammonia
Nutr – nutrients
Pb – lead
pH – pH
Sed – habitat impairment due to sediment
Tox – toxicity
Turb – turbidity
Aq. Weeds – aquatic weeds
Organic chemicals listed by name

Rating - This column lists the overall use support rating. These values may be NS (not supporting), PS (partially supporting), and NE (not evaluated). A rating of not evaluated is typically assigned to waters that were sampled using biocriteria that may not apply or there is no data available on the water. These waters appeared on earlier lists, and they continue to be listed, but no TMDL or management strategy will be developed until we have updated information that the water continues to be impaired. For waters listed solely on the basis of fish consumption advisories, the rating may also be supporting (S) or supporting but threatened (ST). The 305(b) report describes these use support ratings further. On the lake tables, the overall use support rating is found in the column entitled "Overall use". Ratings for specific uses are found in the columns entitled "Fish Consump", "Aq. Life and Secondary Impact", "Swimming", and "Drinking Water".

Major Sources (P,NP) - This column indicates whether point (P) or nonpoint (NP) sources are the probable major sources of impairment.

Subcategory - This column breaks the probable point and nonpoint sources down further. A list describing what each number means is provided in Appendix IV.

Approach – This column indicates the approach DWQ will take to restore the waterbody. If more than one approach is listed, one is a TMDL. TMDLs are typically developed for DO, nutrients, ammonia, and metals. Management strategies are typically done for pH, sediment, turbidity, and fecal coliform. Further information on each approach is provided below.

TMDL – A numeric TMDL as currently defined by EPA will be developed (e.g. is total, maximum, daily, load).

MS – Management Strategy – These waterbodies are on the list based on data collected within the five years prior to when the use support assessment was completed. A problem pollutant has been identified, but North Carolina cannot develop a numeric TMDL as EPA currently defines it. A management strategy may contain the following elements: further characterization of the causes and sources of

impairment, numeric water quality goals other than TMDLs, and best management practices to restore the water.

RES – This waterbody was identified as being impaired based on water quality data that were greater than 5 years old at the time the use support assessment was performed. This waterbody will be resampled prior to TMDL or management strategy development to ensure the impairment continues to exist. This will enable the Division to focus its limited resources on watersheds that are in greatest need of management.

PPI – Problem Parameters Identification - Available chemical data do not show any parameters in violation of the standard, but biological impairment have been noted within the five years prior to use support assessment. DWQ will resample these waters for chemical and biological data to attempt to determine the potential problem pollutants. TMDLs or management strategies will be developed within 2 basin cycles of problem parameter identification.

SWMP – This waterbody is swampy, and it was assessed using biological monitoring methods that apply to freshwater areas. The water may not actually be impaired. The waterbody will be re-evaluated when swamp criteria are available.

Priority – Priorities of high, medium and low were assigned for waters identified as being impaired based on data that were not greater than 5 years of age at the time the use support assessment was done and for which a problem pollutant has been identified. All waters assigned a priority of high, medium, or low will be addressed within the next two basin cycles. The basis of these priorities is further explained in Appendix II. Priorities of monitor and N/A have also been assigned. Further explanation on each of these is provided below:

High – Waters rated High are important resources for the state of North Carolina in terms of their human and ecological uses. Typically they are classified as water supplies, harbor federally endangered species, and are rated as not supporting. These waters will be addressed first within their basin cycles.

Medium – Waters rated Medium may be classified for water supply or primary recreational use, may have state endangered or other threatened species, and may be rated as partially or not supporting.

Low – Waters rated Low generally are classified for aquatic life support and secondary recreation (i.e., Class C waters), and harbor no endangered or threatened species.

Monitor – The waterbody is included on the 303(d) list based on: (1) data that are greater than 5 years of age when use support assessment done (denoted by RES in approach column) or (2) biological data collected within 5 years of use support assessment but no problem pollutant has been identified (available chemical data show full use support – denoted by PPI in approach column), and (3) freshwater

biological criteria applied to swamp waters. In general, waters given this priority based on recent biological data will be sampled prior to waters listed based on older information and are therefore higher priority than waters listed based on older information or swamp waters. All waters with this priority will be resampled as resources allow. Waters with this priority will not have management strategy or TMDL developed for it before updated sampling or analyses of the biological criteria are done which indicates that the water continues to be impaired and a problem pollutant has been identified. Once updated sampling is done and problem pollutants have been identified, these waters will be addressed by either a management strategy or TMDL within two basin planning cycles (10 years). This approach will enable DWQ to focus its limited resources on watersheds that are in greatest need of management.

N/A – DWQ believes that its current management strategy will address the water quality impairment, but it may take a number of years before standards are met. In this case, DWQ plans to continue monitoring the water to determine if improvements are occurring, but no new management strategy or TMDL will be developed unless sufficient time has passed for improvement to occur, and data indicate the water is still impaired.

The estuary lists also contain references to Division of Environmental Health (DEH) areas. These areas are mapped in Appendix V.

The lakes column entitled "Troph Status" refers to the trophic status of the lake, a relative description of the biological productivity of the lake. The lake may be hypereutrophic, eutrophic, mesotrophic, or oligotrophic. Oligotrophic lakes are nutrient poor and biologically unproductive, mesotrophic lakes have intermediate nutrient availability and biological productivity, eutrophic lakes are nutrient rich and highly productive, and hypereutrophic lakes are extremely eutrophic.

303(d) List Narrative Basinwide Updates

The following sections highlight basin-specific information or programs that have been implemented to restore impaired waters. Additionally, a table describing waters removed from the 1996 303(d) list has been included for those basins that were updated since the previous list.

Broad River Basin

- The following waters are currently supporting their uses based on the latest techniques: Fall Creek, Green River, Little Hungry River, Pulliam Creek, Camp Creek, Cove Creek, Rixhaven Creek, Little Cove Creek, Hungry River, and North Pacolet River.
- The UT to Whiteoak Creek was not found in the 1997 use support information, but available data on Whiteoak Creek indicate the water meets its uses. The tributary was, therefore, dropped from the 303(d) list.

- Lick Branch was listed as two segments in previous 303(d) lists. These segments have been combined into one longer segment on the 1998 listing.
- Brushy Creek was formerly listed as one segment, but for this list was split into two segments. The most upstream segment has data that indicate improvement and was removed from the list. The downstream segment is still rated partially supporting and remains on the list. However, the downstream portion of Brushy Creek will be resampled since this rating is based on data more than 5 years old.
- Walnut Creek, Catheys Creek, and Beaverdam Creek were not included on the 1996 303(d) list. They have been added to the 1998 list based on updated use support information.

Cape Fear River Basin

- Several waters were added to the list that were not on the 1996 303(d) list. These waters are subject to the federal stormwater rules in Greensboro, Durham, and Cumberland County. The waters were added to the list since these rules apply to new development only, and existing problems may not be addressed. The waters added include: Horsepen Creek, an unnamed tributary in Greensboro, North Buffalo Creek, South Buffalo Creek, New Hope Creek, Cross Creek, and Little Cross Creek.

- Herrings Marsh Run and Goshen Swamp were added to the list that were not on the 1996 303(d) list. These waters had nonpoint source programs in place to address the impairment. These waters will remain on the list until updated monitoring indicates that uses have been restored.

- Pittsboro Lake was added to the list due to aquatic weeds.

Catawba River Basin

- Several waters were added to the list that were not on the 1996 303(d) list. These waters are subject to the federal stormwater rules in Charlotte. These waters were added to the list since these rules apply to new development only, and existing problems may not be addressed. These waters include Sugar Creek, Irwin Creek, Stewart Branch, Little Sugar Creek, and McAlpine Creek.

- Long Creek and Dallas Branch were added to the list, and they were not on the 1996 303(d) list. These waters have nonpoint source programs in place to address the impairment. These waters will remain on the list until updated monitoring indicates uses have been restored.

Chowan River Basin

- Two of the segments of the Chowan River were combined between the 1996 use support rating and the 1998 rating. No further work will be done on the waters for dioxin since the dioxin has been removed from a pulp and paper mill in Virginia. An NSW strategy

that includes nitrogen and phosphorus targets has also been established for the basin. Once these TMDLs are submitted and approved, the waters can be removed for nutrients, dissolved oxygen and pH.

- Cypress Creek was included on the 1996 303(d) list, but it was removed from the 1998 list since the use support rating indicates the water meets its uses.

- Big Woods was included on the 1996 303(d) list, but this water cannot be found in the use support ratings. Big Woods may be a local name for the stream. It is a tributary to Buckhorn Creek that meets its uses, and the water was not included on the 303(d) list.

- Ahoskie Creek was not included on the 1996 303(d) list. New use support information indicates that the water is impaired.

French Broad River Basin

- No changes were made to the 1998 303(d) list for the French Broad River Basin.

Hiwassee River Basin

- Three waters that were included on the 1996 303(d) list are currently rated as meeting their uses, and they were removed from the 1998 303(d) list. These waters are Davis Creek, Garrett Creek, and North Shoal Creek.

- Two waters were added to the 1998 303(d) list that were not included on the 1996 303(d) list based on new data which indicate impairment. These waters are Brasstown Creek and Valley River.

Little Tennessee River Basin

- All waters included on the 1996 303(d) list have current use support ratings of supporting or supporting but threatened, and they were not included on the 1998 303(d) list. These waters are: Little Tennessee River, Shope Fork, Ball Creek, Big Choga Creek, Savannah Creek, Scott Creek, Mountain Creek, Squally Creek, Deep Creek, Barker Creek, and Bear Creek.

- There were several streams not on the 1996 303(d) list that were added based on updated use support information. These waters are: Cullasaja River, Mill Creek, and Whiteoak Creek.

- Whiteoak Creek was on the list, but a trout farm believed to be the source of impairment has implemented best management practices. DWQ will continue to monitor the water.

- Mill Creek was included on the list even though the Town of Highlands has developed local water quality protection ordinances. These new ordinances address new

development and is has not been determined if existing development may contribute to the impairment.

Lumber River Basin

- No waters included on the 1996 303(d) list were dropped from the 1998 303(d) list.

- Several waters were added to the 1998 303(d) list that were not included on the 1996 303(d) list based on new fish consumption advisory information. These waters include: Drowning Creek, Lumber River, Big Swamp, Big Creek, White Marsh, Big Creek, and Pages Lake. Porter Swamp, Pit Links Lake, Watson Lake, and Ashpole Swamp have also had mercury added to their problem pollutant column. (Pit Links Lake and Watson Lake are privately owned lakes that were sampled to support the Lumber basinwide fish consumption advisory. DWQ has no further physical, biological, or chemical information on either lake.)

- Back Swamp and Burnt Swamp were not included on the 1996 303(d) list. Biological data indicate these waters are impaired, but they are swamps, and the freshwater criteria probably should not have been applied. These waters have been included on the list, and the use support rating will be recalculated when swamp criteria have been developed.

- Pages Lake and Tabor City Lake are currently drained while repairs are made to the dam. The current approach assigned to both lakes is N/A since they are drained.

Neuse River Basin

- Neuse River from the water intake at Wake Finishing to US 1 location is now within another segment that is rated as supporting.
- The following waters are currently supporting their uses based on the latest use support information: Sanford Creek, Smith Creek, Middle Creek, Turner Swamp, Black Creek subbasin 030404), Stone Creek, Hannah Creek, Moccasin Creek, Turkey Creek, Toisnot Swamp, Brooks Swamp, and Wheat Swamp Creek.
- Brice Creek was studied but was not assigned a use-support rating since the biologists did not feel that the criteria should apply to it based on the depth of the water and the estuarine influence. Since no new information is available, the water will remain on the list until the DWQ determines a method to study it or information indicates that it is not impaired.
- The Trent River listings from the 1996 303(d) list have been combined into one longer segment on the 1998 list.
- The following waters were not included on the 1996 303(d) list and they have been added to the 1998 list based on updated use support information: North Fork Little River, Toms Creek, Perry Creek, segments of Crabtree Creek, Black Creek (subbasin 030402), Hare Snipe Creek, Mine Creek, Walnut Creek, Mill Creek, Stony Creek, Bear Creek,

Contentnea Creek, Beaverdam Creek, Nahunta Swamp, segments of Little Contentnea Creek, Clayroot Swamp, Lake Raleigh, Reedy Creek Lake, and Lake Wackena.

- Waters were removed from previous 303(d) lists since the federal stormwater programs that have been implemented in Durham and Raleigh apply to them. Since this program is designed to address new development, they may not be sufficient to restore impaired waters. The following waters are included on the 1998 list: Ellerbe Creek, Lick Creek, Pigeon House Branch, Marsh Creek, Swift Creek, and Little Creek.
- Acreages of fecal coliform impaired waters have changed based on current closure information on waters classified for shellfishing.
- All lakes listed for this basin are impaired, at least partially, due to aquatic weeds. However, the Division of Water resources has implemented strategies to improve Reedy Creek Lake. Lake Raleigh is currently drained because of damage to the dam from Hurricane Fran; the current approach assigned to Lake Raleigh is N/A.

New River Basin

- Peak Creek was not included on the 1996 303(d) list since a 319 project was implemented in the basin that could address some of the problems. This water has been added to the 1998 list. DWQ will continue to monitor the water to determine if improvements in water quality occur or if additional strategies are needed.

Pasquotank River Basin

- Updated biological information indicates that Perquimans River and Bethel Creek are supporting their uses. Thus, they were removed from the list.

- Burnt Mill Creek, Kendrick Creek, and the Main Canal were not included on the 1996 303(d) list. They have been included on the 1998 list based on updated use support information that indicates impairment.

- Phelps Lake was not included on the 1996 303(d) list. It has been included on the 1998 list based on a fish consumption advisory for mercury.

- There were several acres of impaired waters in DEH areas I3, I5, I7, I8, and I10 for fecal coliform and DO. The latest use support indicates that these areas meet their uses. DEH area I6 was added to the 1998 list based on updated use support information that indicates that the DO standard is violated. Other changes in fecal coliform impaired acres are due to changes in the acres of closed shellfish waters.

Roanoke River Basin

- The Roanoke River and Welch Creek were included on the 1996 303(d) list for dioxin. An approved TMDL exists for dioxin, and the waters were not included on the 1998

303(d) list. Current data do not show problems with other parameters listed for these waters. (TMDL also exists for DO on the Roanoke mainstem).

- The Dan and Hyco Rivers have updated biological monitoring indicating that uses are being met. These rivers have been removed from the 303(d) list.

- Several waters not included on the 1996 303(d) list were added to the 1998 list based on new use support assessments. These waters are Marlowe Creek, Anderson Swamp Creek, Quankey creek, Conconnara Swamp, Cashie River, and Roanoke Rapids Lake.

- Belews Lake and Hyco Lake were left off the 1996 303(d) list since point source controls have been implemented that should restore the waters. DWQ has added these waters back on the list since there is still a selenium fish advisory in effect. We will continue to monitor these waters to determine when they meet their uses and can be dropped from the list.

Savannah River Basin

- Logan Creek was included on the 1996 303(d) list, but it was dropped from the 1998 list based on updated use support information which indicates the water is meeting its uses.

- Norton Mill Creek was not included on the 1996 303(d) list. It has been added to the 1998 list based on updated use support information.

Tar-Pamlico River Basin

- Estuarine waters included on the 1996 303(d) list for chlorophyll a and dissolved oxygen were removed from the 1998 303(d) list since a TMDL has been approved for total nitrogen and total phosphorus in the basin. Waters removed include portions of the Pamlico and Pungo Rivers.

- Several waters were not included on the 1996 303(d) list that appear to have been omitted through error. These waters were added back to the 1998 303(d) list. They are: several segments of the Tar River mainstem, North Fork Tar River, Fishing Creek, Whiteoak Swamp, and a section of Tranters Creek.

- Chicod Creek was dropped from the 1996 303(d) list because of a 319 project ongoing in the watershed. This water has been added to the 1998 list; DWQ will continue to monitor the water to determine if standards are being met or if additional management is needed.

Watauga River Basin

- One water, Laurel Fork, was included on the 1996 303(d) list. Updated use support information indicates that the water is meeting its uses, and it has been dropped from the 1998 list.

White Oak River Basin

- The Newport River was originally listed as impaired due to violations of DO and pH standards. However, the Newport River is a swampy, slow moving river that would naturally be expected to have low DO and pH values. North Carolina's regulations allow for water quality below the standards if it is due to natural conditions (15A NCAC 2B .0205). This river should never have been placed on the 303(d) list and was removed for 1998.

- Southwest Creek was not included on the 1996 303(d) list. It was added to the 1998 list based on updated use support information.

- Fifteen acres of estuarine waters located near Sneads Ferry and the Newport River were removed from the 303(d) list for copper since current use support information does not show impairment from copper. Other acres were modified in the estuarine areas based on shellfish closure data and the area impacted by nutrients.

Yadkin-Pee Dee River Basin

- Several waters were included on the 1996 303(d) list that have been removed from the 1998 303(d) list since updated use support information indicates that the water is meeting its uses. These waters include: South UT, Ararat River, Toms Creek, Danbury Creek, Carter Creek, Barkers Creek, Little Creek, Abbotts Creek, Back Creek, Long Creek, one segment of Long Branch, one segment of Richardson Creek, and two segments of Marks Creek.

- The listing for Rich Fork Creek has been combined into one long segment.

- Several waters were not included on the 1996 303(d) list that have been included on the 1998 list based on updated use support information. These waters are: Reynolds Creek, Salem Creek, Fourth Creek, Grants Creek, Brushy Fork, Lick Creek, Pee Dee River, Little Mountain Creek, Rocky River, Coddle Creek, Goose Creek, Crooked Creek, North Fork Crooked Creek, South Fork Crooked Creek, Lanes Creek, Brown Creek, Cartledge Creek, Hitchcock Creek, North Fork Jones Creek, and South Fork Jones Creek.

- Long Lake, Hamlet City Lake, and Rockingham City Lake have been added to the list based on updated use support information. Long Lake was rated as impaired because it has been drained; however, there is a plan in place to restore the lake. Hamlet City Lake is rated as partially supporting its uses, but a local plan has been developed to restore the lake. Hamlet City Lake is also currently drained under an Army Corps of Engineers project to repair the dam. . Since Long Lake and Hamlet City Lake have been drained, a priority of N/A has been assigned to them.

- Ledbetter Lake was added tot he 303(d) list based on a fish consumption advisory for mercury. Ledbetter Lake is privately owned and DWQ has no further physical, biological, or chemical information on the lake.

North Carolina's 303(d) List

The following pages contain North Carolina's 303(d) list.

1998 303(d) LIST FOR THE BROAD RIVER BASIN											
Name of Stream	**Description**	**Class**	**Index #**	**Miles**	**Wtrbdy**	**Problem Parameter(s)**	**Overall Rating**	**Major Sources (P,NP)**	**Subcategory**	**Approach**	**Priority**
Walnut Creek	From source to Green River	C	9-29-44	8.3	30802	Sed	PS	NP	10	MS	Low
Catheys Creek	From dam at old Duke Power Co.'s Raw	C	9-41-13-(6)	3.8	30802	Sed	PS	NP,P	03,10	MS	Low
Hollands Creek	From Duke Power Co. Aux Raw	C	9-41-13-7-(3)	2.5	30802		NS	P	03	RES	Monitor
Buffalo Creek	Dam at Kings Mtn Res to US 74	C	9-53-(5)a	1.6	30801		PS	NP	10,30,60	RES	Monitor
Brushy Creek	From SR 1323 Cleveland Co to First Broa	C	9-50-29b	8.4	30804		PS	NP	11	RES	Monitor
Beaverdam Creek	From source to First Broad River	C	9-50-32	10.9	30804		PS	NP,P	10,30	PPI	Monitor
Lick Branch	From source to Buffalo Cr	C	9-53-11	3.2	30805	Sed	PS	NP,P	10,01	MS	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE CAPE FEAR RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
HAW RIVER	Source to SR2109, Guilford Co.	C NSW	16-(1)a	30601	7.2	Fecal	PS	NP,P	10,08	MS	Low
HAW RIVER	From NC 87 to NC 49	C NSW	16-(1)d	30602	13.9	Fecal,Turb,Cd	PS	NP,P	10,40,06	TMDL,MS	Medium
Candy Creek	From source to Haw River	C NSW	16-5	30601	3.6		PS	NP	10	PPI	Monitor
Troublesome Creek	From Rockingham county SR 2423 to da	WS-III NSW C	16-6-(0.7)	30601	5.8	Sed	PS	NP	10	MS	Medium
Little Troublesome Creek	From source to Reidsville WWTP	C NSW	16-7a	30601	2.9		PS	NP		PPI	Monitor
Little Troublesome Creek	Reidsville WWTP to Haw River	C NSW	16-7b	30601	6.5	Fecal,Turb	NS	P	03,08	MS	Medium
Reedy Fork (including Lake	From .4 mile downstream of Moores Cr to	WS-III NSW C	16-11-(3.5)	30602	12.3	Sed	PS	P	06,	MS	Medium
Brush Creek	From source to 0.5 mile downstream of G	WS-III NSW	16-11-4-(1)	30602	5.4		PS	NP	10	RES	Monitor
Brush Creek (Lake Higgins	From 0.5 mile downstream of Guilford Co	WS-III NSW C	16-11-4-(2)	30602	0.6		PS	NP	10	RES	Monitor
Horsepen Creek	From source to US Hwy 220	WS-III NSW	16-11-5-(0.5)	30602	6.9		PS	NP	55,84	PPI	Monitor
Unnamed Tributary at	From dam at Guilford College bathing lak	WS-III NSW C	16-11-5-1-(2)	30602	2.9		NS			PPI	Monitor
North Buffalo Creek	From source to above WWTP	C NSW	16-11-14-1a	30602	8.5	Fecal,NH3	NS	NP, P	43,01,08, 03	MS, TMDL	Medium
South Buffalo Creek	From source to NC 70	C NSW	16-11-14-2a	30602	18.6	Sed	PS	NP	43,	MS	Low
South Buffalo Creek	From NC 70 to Buffalo Creek	C NSW	16-11-14-2b	30602	4.3	NH3,Cd	NS			TMDL	Medium
Town Branch	From source to Haw River	C NSW	16-17	30602	4.0	Fecal,Turb	PS			MS	Low
Robeson Creek	From .7 mile downstream of Chatham Co	WS-IV NSW	16-38-(3)a	30604	0.9		NS	NP	10,40	PPI	Monitor
Robeson Creek	From above to.3 mile upstream of mouth	WS-IV NSW	16-38-(3)b	30604	4.7	pH,Fecal,Chla	PS	NP	10,40	TMDL,MS	Medium
New Hope Creek	From I-40 to .8 mile downstream of Durha	WS-IV NSW	16-41-1-(11.5)	30605	20.7	Fecal	NS	NP	43	MS	Medium
Third Fork Creek	From source to 2 miles upstream of NC H	C NSW	16-41-1-12-(1)	30605	4.5		NS	NP	32,40	PPI	Monitor
Third Fork Creek	From 2 miles upstream of NC Hwy 54 to N	WS-IV NSW	16-41-1-12-(2)	30605	4.5	Turb	NS	NP	32,40	TMDL	Medium
New Hope Creek	From .8 mile downstream of Durham SR	WS-IV NSW	16-41-1-(14)	30605	4.8		PS	NP	43	PPI	Monitor
Bolin Creek (Hogan	From US Hwy 501 Business to Little Cree	WS-IV NSW	16-41-1-15-1-	30605	1.0		PS			PPI	Monitor
Northeast Creek	From source to NC hwy 55	C NSW	16-41-1-17-(0	30605	4.6		PS	NP	30,40	PPI	Monitor
Northeast Creek	From Hwy 55 to SR 1102 Durham	WS-IV NSW	16-41-1-17-(7	30605	2.2		PS	NP	30,40	PPI	Monitor
Northeast Creek	From 1102 to 1100 Durham	WS-IV NSW	16-41-1-17-(7	30605	1.8	Fecal,Turb,Cu,Sed	PS	NP, P	43, 03	TMDL,MS	Medium
Northeast Creek	From SR 1100 Durham to .5 mile downstr	WS-IV NSW	16-41-1-17-(7	30605	4.4	Sed	PS	NP	43	MS	Medium
Morgan Creek (including	From Orange SR 1919 to Chatham Co SR	WS-IV NSW	16-41-2-(5.5)	30606	8.0	Sed	PS	NP,P	43, 02	MS	Medium
Meeting of the Waters	From source to Morgan Creek	WS-IV NSW	16-41-2-7	30606	1.6		NS	NP	40	PPI	Monitor
Morgan Creek (including	From Chatham Co SR 1109 to New Hope	WS-IV NSW C	16-41-2-(9.5)	30606	0.6	Fecal	PS			MS	Medium
White Oak Creek	From 0.3 mile upstream of NC Hwy 751 t	WS-IV NSW C	16-41-6-(3.5)	30605	0.5	Sed	PS	NP,P	65,32,08	MS	Medium
East Fork Deep River	From source to .4 mile downstream of Gu	WS-IV	17-2-(.3)	30608	6.5	Fecal,Turb	PS	NP,P	10,08	TMDL,MS	Low
DEEP RIVER	From dam at High Point Lake to Guilford	WS-IV	17-(3.3)	30608	1.1		PS	NP	40	PPI	Monitor
DEEP RIVER	From Guilford Co SR 1334 to dam at Oa	WS-IV CA	17-(3.7)	30608	1.3		PS	NP	40	PPI	Monitor
DEEP RIVER	From dam at Oakdale Cotton Mills, Inc (J	C	17-(4)a	30608	2.0		PS	NP	40	PPI	Monitor
DEEP RIVER	From SR 1113 to SR-1921 near Randlem	C	17-(4)b	30608	6.8	Fecal,Turb, Lindane	PS	NP	10,30,40	MS,TMDL	Low
DEEP RIVER	From NC 220 to SR-2122, Randolph Co.	C	17-(4)d	30608	2.3	Fecal,Turb,Cu,Hg	PS	NP	18,20	TMDL,MS	Low
Richland Creek	Source to Deep River/SR-1145, Guilford	C	17-7	30608	9.1	Fecal,Turb,Cu, Lindane	PS	NP,P	62,02	TMDL,MS	Low
Muddy Creek	Source to Deep River/SR-1736, Randolph	C	17-9	30608	10.9	Fecal	ST	NP	30	MS	Low
Unnamed Tributary at	From Cone Mills Club Lake Dam to Polec	WS-III	17-11-2-(2)	30609	1.4		NS			PPI	Monitor

1998 303(d) LIST FOR THE CAPE FEAR RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
Haskett Creek	From source to SR 2149 & ab WWTP	C	17-12a	30609	5.5		PS			PPI	Monitor
Haskett Creek	From SR 2149 to Deep R.	C	17-12b	30609	2.3	Fecal,Cu	PS	NP	40	TMDL,MS	Low
Flat Creek	From source to Deep River	C	17-24	30609	9.5		PS	NP	18,20	PPI	Monitor
Cotton Creek	From Source to SR-1372, Montgomery C	WS-III	17-26-5-3-(1)a	30610	0.3		PS	NP,P	03,	PPI	Monitor
Cotton Creek	from 1372 to Cabin Cr	WS-III	17-26-5-3-(1)b	30610	6.5		PS	NP	10,40,	PPI	Monitor
Falls Creek	From source to Deep River	C	17-27	30610	11.6	Sed	PS	NP	10	MS	Low
McLendons Creek	From SR 1210 Moore Co to .4 mile downs	C	17-30b	30610	20.1		PS			PPI	Monitor
Richland Creek	From Moore County SR 1264 to McLendo	C	17-30-5-(2)	30610	12.8		PS			PPI	Monitor
McLendons Creek	From .4 mile downstream of SR 1628 Mc	WS-IV	17-30-(6)	30610	2.9		PS			PPI	Monitor
Big Governors Creek	From Moore Co SR 1651 to Deep R	WS-IV	17-32-(.7)	30610	9.5		NS			PPI	Monitor
Indian Creek	From source to Deep River	WS-IV	17-35	30611	8.2	Sed	NS	NP	10	MS	Medium
Little Pocket Creek	From source to Pocket Creek	C	17-37-4	30611	12.4		PS	NP	11,12	PPI	Monitor
Cedar Creek	From source to Deep River	C	17-39	30611	7.9	Sed	PS	NP	50	MS	Low
Georges Creek	From source to Deep River	C	17-41	30611	8.7		PS			PPI	Monitor
Little Buffalo Creek	From source to Deep River	WS-IV	17-42	30611	9.8	Sed	NS	NP	50,40	MS	Medium
Rocky River	From dam at lower water supply to US 64	C	17-43-(8)a	30612	4.2		PS			PPI	Monitor
Loves Creek	From source to abover WWTP nr SR 220	C	17-43-10a	30612	5.5		PS	NP	10	PPI	Monitor
Loves Creek	From above WWTP nr SR 2203 to Rocky	C	17-43-10b	30612	0.9		NS	NP,P	03,10	PPI	Monitor
Bear Creek	From source to SR 2189 Chatham	C	17-43-16a	30612	14.9	Sed	PS			MS	Low
Gulf Creek	From source to .2 mile upstream of mouth	WS-IV	18-5-(1)	30607	5.1	Sed	NS	NP	50	MS	Medium
Neill Creek (Neals Creek)	From .7 mile upstream of Wake-Harnett (	WS-IV	18-16-(.7)	30607	2.4	Sed	PS			MS	Medium
Neill Creek (Neals Creek)	From source to .7 mile upstream of Wake	C	18-16-(.3)	30607	1.7	Sed	PS			MS	Low
Kenneth Creek	From source to .6 mile downstream of 40	C	18-16-1-(1)	30607	2.0		NS	NP	10,30	PPI	Monitor
Kenneth Creek	From .6 mile downstream of 401 to SR 27	WS-IV	18-16-1-(2)a	30607	1.0		NS	NP,P	10,30,02	PPI	Monitor
Kenneth Creek	From SR 2772, Be F-V Wake Co to Neils	WS-IV	18-16-1-(2)b	30607	5.5		PS	NP	10,30	PPI	Monitor
Anderson Creek	From source to Little River	C	18-23-32	30614	5.5	Sed	PS	NP	10	MS	Low
Cross Creek (Big Cross	From source to .5 mile upstream of water	WS-IV	18-27-(1)	30615	9.0	Sed	PS			MS	Medium
Cross Creek (Big Cross	From water supply intake at Murchison to	C	18-27-(3)	30615	3.6	Pb	PS	NP	40	TMDL	Low
Little Cross Creek	From source to .5 mile upstream of backv	WS-IV	18-27-4-(1)	30615	7.0		NS			PPI	Monitor
Pedler Branch	From source to Rockfish Creek	C	18-31-16	30615	2.6		NS	NP	40,10	PPI	Monitor
UT#1 to Bones Creek	From source to Bones Creek	C	18-31-24-2a	30615	0.0		NS			PPI	Monitor
Harrisons Creek (Little	From source to Cape Fear River	C	18-42	30616	20.5	pH, Sed	PS	NP	90	SWMP	Monitor
Turnbull Creek	From source to Cape Fear River	C	18-46	30616	27.2	pH, Sed	PS	NP	10	SWMP	Monitor
CAPE FEAR RIVER	From .6 mile upstream of Livingston Cr to	C Sw	18-(63)a	30617	2.1		PS	P	01,08	PPI	Monitor
Livingston Creek (Broad-	From source to NC 74 Columbus	C Sw	18-64a	30617	14.5		PS			SWMP	Monitor
Livingston Creek (Broad-	From NC 74 Columbus, to Cape Fear Riv	C Sw	18-64b	30617	7.7	NH3	NS			SWMP	Monitor
South River	Source to NC 13	C Sw	18-68-12a	30618	7.2		PS			PPI	Monitor
Black River	From East of Dunn to I-95	C Sw	18-68-12-1a	30618	20.0	Sed	PS	NP	10	MS	Low
Northeast Cape Fear River	Source to SR-1937 (Wayne Co) near Mt.	C Sw	18-74-(1)a	30621	3.3	DO,Fecal,NH3,Cl	NS			TMDL,MS	Low

1998 303(d) LIST FOR THE CAPE FEAR RIVER BASIN											
Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
Northeast Cape Fear River	From SR-1937 Wayne near Mt. Olive, to I	C Sw	18-74-(1)b	30621	2.6	Sed	PS	NP	82,	MS	Low
Barlow Branch	Source to NE Cape Fear R/Bell St, Duplin	C Sw	18-74-2	30621	1.1		NS	NP,P	40,01	PPI	Monitor
Goshen Swamp	Source to NE Cape Fear R	C Sw	18-74-19	30622	32.6	Sed	PS	NP	10,16	MS	Low
Panther Creek	From NC-50, Duplin Co. to Goshen Swar	C Sw	18-74-19-3b	30622	3.0		NS	P	08,	PPI	Monitor
Herrings Marsh Run	From source TO 1508	C Sw	18-74-19-16	30622	1.8		PS			PPI	Monitor
Grove Creek	From source to Northeast Cape Fear Rive	C Sw	18-74-21	30622	7.7		PS	NP	10,42	RES	Monitor
Persimon Branch	From source to WWTP	C Sw	18-74-25-1a	30622	1.5		PS			PPI	Monitor
Persimon Branch	From WWTP to Muddy Creek	C Sw	18-74-25-1b	30622	0.8		NS			PPI	Monitor
Rock Fish Creek (New	From SR 1165 to Northeast Cape Fear R	C Sw	18-74-29c	30622	7.2	Fecal,Cu,Sed	PS	NP,P	11,18,03	TMDL,MS	Low
Burgaw Creek	Source to N.E. Cape Fear	C Sw	18-74-39b	30623	10.7	Sed	NS	NP	41,42,62	RES	Monitor
Cypress Creek	From source to Long Creek	C Sw	18-74-55-2	30623	8.0		PS	NP	65	SWMP	Monitor
Burnt Mill Creek	From source to Smith Creek	C Sw	18-74-63-2	30617	4.8	Sed	NS	NP,P	31,32,65, 08	SWMP	Monitor

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE CAPE FEAR RIVER BASIN - LAKES													
LAKE NAME	COUNTY NAME	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
PITTSBORO LAKE	CHATHAM	30604	38	C-NSW	NS	S	NS	n/a	n/a	HYPEREUTROPH	AQ WEEDS	TMDL	Medium
GREENFIELD LAKE	NEW HANOVER	30617	115	C-SW	NS	S	NS	n/a	n/a	HYPEREUTROPH	NUTR, AQ WEEDS,	TMDL	Medium
BAY TREE LAKE (BLAC	BLADEN	30618	1400	C-SW	S	PS	S	n/a	n/a	DYSTROPHIC	FISH ADV.-HG	TMDL	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

ESTUARINE AREAS IN THE CAPE FEAR RIVER BASIN THAT ARE ON THE 1998 303(d) LIST

Area Name *	DEH AREA	Use Support (acres) Partial Support	Use Support (acres) Non-Support	Major Causes (acres) Fecal	DO	Chla	Metals	Major Sources (acres) Point	Nonpoint	Source Descriptions	Approach	Priority
Southport	B1	630	0	630				290	340	WWTP, ag, septic tanks, urban runc	MS	Low
Buzzard Bay	B2	5	0	5					5	marina	MS	Low
The Basin	B3	1	0	1					1	marina	MS	Low
Cape Fear	B4	7,500	0	2,500	5,000			1,939	5,561	WWTP, ag, urban runoff, industry	MS,TMDL	Low
Myrtle Sound	B5	624	0	624					624	urban runoff, septic tanks, marinas	MS	Low
Masonboro Sound	B6	382	0	382				80	302	WWTP, urban runoff, septic tanks, r	MS	Low
Wrightsville Beach	B7	562	0	562					562	urban runoff, septic tanks, marinas	MS	Low
Topsail Sound	B8	410	0	410					410	ag, urban runoff, septic tanks, marir	MS	Low
Stump Sound	B9	320	0	310	10			99	221	WWTP, ag, urban runoff, septic tan	MS,TMDL	Low
Total Acres		10,434	0	5,424	5,010			2,408	8,026			
Percent		26.62	0	51.984	48.016			23.08	76.92			

* See DEH Area Map for Locations

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, Chl-a, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for fecal.

1998 303(d) LIST FOR THE CATAWBA RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbody	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
Catawba River	From 1234 to I40	C	11-(8)c	30830	1.3	Hg	NS			TMDL	Low
Corpening Creek	SR-1819/ McDowell	C	11-32-1-4a	30830	4.2		PS	NP	40	PPI	Monitor
Corpening Creek	SR-1794/McDowell	C	11-32-1-4b	30830	0.5		NS	NP	10	PPI	Monitor
High Shoals Creek	From source to South Muddy Creek	C	11-32-2-6	30830	2.6	Hg	NS			TMDL	Low
Harper Creek	From source to Wilson Creek	C Tr ORW	11-38-34-14	30831	9.0	Sed	PS	NP	13	RES	Monitor
North Harper Creek	From source to Harper Creek/FSR 58	C Tr ORW	11-38-34-14-2	30831	6.1	Hg	PS			TMDL	Medium
Lower Creek	From Caldwell Co SR 1143 to 0.7 mile do	WS-IV	11-39-(6.5)	30831	6.6	Fecal, Sed	PS	NP,P	32,10,03	MS	Low
Muddy Fork	Fromab Schneidr Mills to Lower Little Riv	C	11-69-4b	30832	1.6	Sed	PS	NP,P	10,08	MS	Low
McDowell Creek	From US Hwy 21 to SR 2136 Mecklenbur	WS-IV	11-115-(1.5)a	30833	5.0	Sed	PS			MS	Low
Henry Fork	From SR 1008 to South Fork	C ORW	11-129-1-(12.5	30835	8.0	Fecal,Turb	NS	NP	18,20	MS	Medium
Clark Creek	From 1149 to 0.6 mile downstream of SR	C	11-129-5-(0.3)	30835	3.6		PS	NP	10,18,61,62,90	PPI	Monitor
Clark Creek	From 0.6 mile downstream of SR 2014 Ca	WS-IV	11-129-5-(4.5)	30835	1.0		PS	NP	10,18,61,62,90	PPI	Monitor
Clark Creek	From SR-1274 to South Fork Catawba R	WS-IV	11-129-5-(4.5)	30835	5.5	Cu,Turb,Fecal	PS	NP, P	10,18,61,62,90	TMDL,MS	Medium
Long Creek	From NC 275 to South Fork Catawba Riv	C	11-129-16-(4)	30836	7.7		PS	NP,P	18,03	PPI	Monitor
Dallas Branch	From ab Dallas WWTP to Long Creek	C	11-129-16-7b	30836	0.8		PS	NP	40,18	PPI	Monitor
Catawba Creek	Source to SR-2446, Gaston	C	11-130a	30837	6.1	Sed	PS	NP	61,62	MS	Low
Catawba Creek	From SR 2446 to SR-2439, Gaston	C	11-130b	30837	2.9		NS	NP,P	61,62, 06,03	PPI	Monitor
Crowders Creek	SR 1118 to SR 1125	C	11-135b	30837	1.7		PS	NP	40	PPI	Monitor
Crowders Creek	Sr 1125 to SR1131	C	11-135c	30837	4.5		PS	NP	40	PPI	Monitor
Crowders Creek	SR 1108 to NC 321	C	11-135e	30837	1.4		PS	NP	40	PPI	Monitor
Crowders Creek	NC 321- SR 2424	C	11-135f	30837	1.4		PS	P	08, 08, 03, 08	PPI	Monitor
McGill Creek	From source to Crowders Creek	C	11-135-2	30837	2.4		NS			PPI	Monitor
Abernethy Creek	From source to Lithium Co. discharge	C	11-135-4a	30837	2.2		PS	NP	40	PPI	Monitor
Abernethy Creek	From Lithium Co. discharge to Crowders	C	11-135-4b	30837	2.2		NS	P	3	PPI	Monitor
UT to Crowders Creek	From source to Crowders Creek	C	11-135-8.5	30837	0.4		PS			PPI	Monitor
Sugar Creek	From source to below WWTP, SR 1156,	C	11-137a	30834	0.2	Sed	NS	NP	43	MS	Low
Sugar Creek	From SR 1156 Mecklenburg, to HWY 51	C	11-137b	30834	11.9	Fecal, Sed	PS	NP, P	43,08	MS	Low
Irwin Creek	From source to Sugar Creek	C	11-137-1	30834	0.0		PS			PPI	Monitor
Irwin Creek	NC-1156, WWTP/ Mecklenburg	C	11-137-1b	30834	4.5	Fecal,Turb	NS	NP	40,30	MS	Low
Stewart Creek	From source to Irwin Creek	C	11-137-1-2	30834	0.6		PS	NP	40,30	PPI	Monitor
McCullough Branch	From source to Sugar Creek	C	11-137-7	30834	2.6		NS	P	8	PPI	Monitor
Little Sugar Creek	At US 521 at Pineville, N.C.	C	11-137-8b	30834	4.6	Fecal,NH3,Sed	NS	NP	43	TMDL,MS	Low
McAlpine Creek	From source to SR 3356, (Sardis Rd?)	C	11-137-9a	30834	8.3	Fecal,Turb,Sed	NS	NP	32,43	MS	Low
McAlpine Creek	From SR 3356 to NC 51	C	11-137-9b	30834	6.3	Sed	PS	NP	32,43	MS	Low
McAlpine Creek	From NC Hwy 521 to NC/SC stateline	C	11-137-9d	30834	1.1	Fecal,NH3,Sed	PS	NP	32,43	TMDL,MS	Low
Sixmile Creek	From source to North Carolina-South	C	11-138-3	30838	9.2	Sed	PS	NP, P	10, 32,08	RES	Monitor

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE CHOWAN RIVER BASIN											
Name of Stream	**Description**	**Class**	**Index #**	**Wtrbdy**	**Miles**	**Problem Parameter(s)**	**Overall Rating**	**Major Sources (P,NP)**	**Subcategory**	**Approach**	**Priority**
CHOWAN RIVER	From NC/VA state line to Near Riddicksvi	B NSW	25a	30101	1.8	DO, Fish Adv.-dioxins	ST	NP	10,16	TMDL (a)	Medium
CHOWAN RIVER	From near Riddicksville to near Winton, U	B NSW	25b	30101	10.1	Fish Adv.-dioxins	ST	NP	90	(a)	N/A
CHOWAN RIVER	From near Winton, US Hwy 13 to Channe	B NSW	25c	30101	14.5	Fish Adv.-dioxins	ST	NP	90	(a)	N/A
CHOWAN RIVER	From channel marker #16 near Gatesville	B NSW	25d	30103	4.5	Fish Adv.-dioxins	ST	NP	90	(a)	N/A
CHOWAN RIVER	From below Holiday Island near Harrellsvi	B NSW	25e	30103	5.5	pH, Nutr, Fish Adv.-dioxin	PS	NP,P	01,02	TMDL (a)	Medium
CHOWAN RIVER	From Collerain to US Hwy 17 at Edenhou	B NSW	25f	30104	14.5	Nutr, Fish Adv.-dioxins	PS	NP		TMDL (a)	Medium
Potecasi Creek	From source to Meherrin River	C NSW	25-4-8	30102	45.6	DO,pH, Fish Adv.-dioxins	PS	NP	10	TMDL (a)	Low
Painter Swamp	From source to Potecasi Creek	C NSW	25-4-8-5	30102	3.7		NE	NP	10	RES	Monitor
Cutawhiskie Swamp	From source to Potecasi Creek	C NSW	25-4-8-8	30102	17.8		PS	NP	10,71	PPI	Monitor
Bells Branch	From source to Potecasi Creek	C NSW	25-4-8-10	30102	4.8		NE	NP	10	RES	Monitor
Wiccacon River (Hoggard	From source to Chowan River	C NSW	25-14	30101	20.8		PS	NP	90	PPI	Monitor
Ahoskie Creek (Ahoskie	From source to Wiccacon River	C NSW	25-14-1	30101	27.8		PS	NP	10,71	PPI	Monitor

(a) The Chowan River remains on the list due to fish consumption advisories even though fish tissue data indicate declining levels of dioxins in fish. Controls have been placed on point sources upstream of the sampling locations and concentrations in fish are expected to continue to decline. DWQ will not develop a TMDL or additional management strategies, however, dioxin levels in fish will continue to be monitored.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE FRENCH BROAD RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
PIGEON RIVER	From Canton Water Intake to Clyde/At Cl	C	5-(7)a	40305	7	Fish Adv.-dioxin, Fecal	PS,NS	P	01,02,10	MS (a)	Low
PIGEON RIVER	From Clyde/At Clyde, SR-1642, Haywood	C	5-(7)b	40305	7.9	Fish Adv.-dioxin	PS	P	01,03	(a)	N/A
PIGEON RIVER	From Crabtree CK to SR-1338 near Hepc	C	5-(7)c	40305	7	Fish Adv.-dioxin, Fecal	NS	P	01,10	MS (a)	Low
PIGEON RIVER	From SR-1338 near Hepco to Hurricane C	C	5-(7)d	40305	8.7	Fish Adv.-dioxin	PS	P	01,	(a)	N/A
PIGEON RIVER	FromHurricane Cr, Haywood to Counterfe	C	5-(7)e	40305	5.4	Fish Adv.-dioxin	PS	P	01,	(a)	N/A
PIGEON RIVER	Counterfeit Br to NC/Tenn State line	C	5-(7)f	40305	2.6	Fish Adv.-dioxin	PS	P	01,	(a)	N/A
Richland Creek	Source to Bus 23 above Dayco, Haywood	B	5-16-(1)a	40305	8		PS			PPI	Monitor
Hyatt Creek	Source to SR 1159, Haywood Co, #1 & #2	C	5-16-6a	40305	0.9	Sed	NS	NP	11	RES	Monitor
Hyatt Creek	From SR-1159, Haywood Co, to Richland	C	5-16-6b	40305	2.6	Sed	NS	NP	11	RES	Monitor
Richland Creek	From Lake Junaluska Dam to Pigeon	C	5-16-(16)	40305	2.4	Sed	PS	NP	10,40	MS	Low
Hemphill Creek	From source to Jonathans Creek	C Tr	5-26-16	40305	4.9	Sed	PS	NP	21,91	RES	Monitor
Hurricane Creek	From source to Pigeon River	C Tr	5-44	40305	6	Sed	PS	NP	91	RES	Monitor
West Fork French Broad	From above Trout Farms t below trout far	C TR	6-2-(0.5)b	40301	0.5		PS			PPI	Monitor
FRENCH BROAD RIVER	Nicholson Creek to Mill Pond Creek	C	6-(27)	40301	26.9	Fecal	PS	NP	43,10,03	MS	Low
Wash Creek	From source to North Fork Mills River	WS-II Tr	6-54-2-6	40303	4.2	Sed	PS	NP	40	RES	Monitor
Mud Creek	From source to Byers Cr	C	6-55-(1)	40302	15.2	Fecal,Turb	NS	P	08, 01	MS	Low
Bat Fork	From source to Johnson Drainage Ditch	C	6-55-8-1	40302	4.8		NS	NP,P	65,32,06,01,08	PPI	Monitor
Clear Creek	From Lewis Creek to Mud Creek	C	6-55-11-(5)	40302	6.3		NS	NP	32,11	PPI	Monitor
Mud Creek	From Byers Cr to French Broad River	C	6-55-(14)	40302	3.2		NS	P	08,	PPI	Monitor
FRENCH BROAD RIVER	From SR1348 to SR 1634 Alexander/Alex	C	6-(67.5)b	40302	9.6	Fecal,Turb	PS			MS	Low
Hominy Creek	From NC 151 @ Candler, to NC 112 ab E	C	6-76c	40302	3.1	Sed	PS	NP	43,32,11	MS	Low
Hominy Creek	From NC 112 ab Enka to French Broad B	C	6-76d	40302	8.7	Sed, Fecal	NS	NP, P	43,32,11, 01	MS	Low
Swannanoa River	From SR 2416 to Hwy 81	C	6-78d	40302	10.6		PS	NP	30,40	PPI	Monitor
Swannanoa River	From Hwy 81 to Hwy 25	C	6-78e	40302	0.2		PS	NP	30,40	PPI	Monitor
Beetree Creek (Bee-	From source to Asheville Water Supply	WS-I	6-78-15-(1)	40302	4.3	pH	PS			MS	Low
Newfound Creek SR 1297	From SR 1296 to SR-1297 Buncombe, C	C	6-84b	40302	1.3	Sed	PS	NP	11,12,16,18,10	MS	Low
Newfound Creek	From SR 1297 to SR 1378 Buncombe	C	6-84c	40302	2.3	Sed,Fecal	PS	NP	11,14,16,18	MS	Low
Newfound Creek	SR-1378 to French Broad R	C	6-84d	40302	6.6	Sed,Fecal	NS	NP	11,14,16,18	MS	Low
Flat Creek	From source to Hwy 70 Buncombe	C	6-88a	40302	12.3	Sed	PS	NP	11,16,18,08	MS	Low
Turkey Creek	From source to Sandymush Creek	C	6-92-13	40302	9.6	Sed	PS	NP	16,11,12,18	RES	Monitor
South Turkey Creek	From source to Turkey Creek	C	6-92-13-2	40302	9	Sed	PS	NP	16,11,12,18	RES	Monitor
Corner Rock Creek	From source to Dillingham Creek	WS-II Tr	6-96-1-3	40304	2.9	Sed	PS	NP	91	RES	Monitor
Puncheon Fork	From source to Big Laurel Creek	C Tr	6-112-5	40304	5.4	Sed	PS	NP	11	RES	Monitor
Roaring Fork	From source to Meadow Fork	C Tr	6-118-19-6	40304	4.9	Sed	PS	NP	90	RES	Monitor
Right Fork Cane Creek	From source to Cane Creek	C Tr	7-2-59-1	40306	1.1	Sed	PS	NP	91	RES	Monitor
Little Creek	From source to Cane River	C Tr	7-3-33	40307	3.9	Sed	PS	NP	91	RES	Monitor

(a) The Pigeon River remains on the list due to fish consumption advisories even though fish tissue data indicate declining levels of dioxins in fish. Controls have been placed on point sources upstream of the sampling locations and concentrations in fish are expected to continue to decline. DWQ will not develop a TMDL or further management strategies, however, dioxin levels in fish will continue to be monitored.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, organic chemicals, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE FRENCH BROAD RIVER BASIN - LAKES													
LAKE NAME	COUNTY NAME	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
WATERVILLE LAKE	HAYWOOD	40305	340	C	ST	NS	ST	n/a	n/a	EUTROPHIC	FISH ADV.-DIOXINS	MS	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

1998 303(d) LIST FOR THE HIWASSEE RIVER BASIN											
							Overall	Major Sources			
Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Rating	(P,NP)	Subcategory	Approach	Priority
Brasstown Creek	From North Carolina-Georgia State	WS-IV	1-42	40501	8.5	Sed	PS	NP	10,91	MS	Low
Valley River	From off US 19, nr Rhodo, to ab landfill, c	C Tr	1-52b	40502	19.6		PS	NP	90	PPI	Monitor
Webb Creek	From source to Valley River	C Tr	1-52-32	40502	1.6	Sed	NE	NP	91	RES	Monitor
Brown Creek	From source to Valley River	C	1-52-34	40502	2.8	Sed	NE	NP	91,10,30	RES	Monitor

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE LITTLE TENNESSEE RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
Cullasaja River (Including	Source to Macon Co SR 1545	WS-III Tr	2-21-(0.5)	40401	4.8	Sed	NS	NP	90	MS	High
Mill Creek	From source to Mirror Lake, Cullasaja	WS-III C Tr	2-21-3	40401	1.4	Sed	PS	NP		MS	Medium
Whiteoak Creek	From SR 1397 to SR 1423	C Tr	2-57-45b	40403	1.0	Nutr	PS	P	08	(a)	N/A

(a) The trout farm believed to be the cause of impairment has implemented BMPs. Whiteoak Creek will continue to be monitored to measure the success of the BMPs.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE LUMBER RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
Drowning Creek	From source to Naked Creek	WS-II Sw	14-2-(1)	30750	20.5	Fish Adv.-Hg (a)	S			TMDL	Low
Drowning Creek	From Naked Creek to Horse Creek	WS-II Sw	14-2-(6.5)	30750	5.4	Fish Adv.-Hg (a)	S			TMDL	Low
Drowning Creek	From Horse Cr to point .4 mi upstream of U	WS-II Sw	14-2-(9)	30750	0.6	Fish Adv.-Hg (a)	S			TMDL	Low
Drowning Creek	From a point .4 mi upstream of US Hwy 1 t	C Sw	14-2-(10.5)	30750	6.9	Fish Adv.-Hg (a)	S			TMDL	Low
Quewhiffle Creek	From Source to SR-1214, Hoke Co./SR-12	C	14-2-14a	30750	2.8		PS			PPI	Monitor
LUMBER RIVER	From NC Hwy 71 to SR 1303	C Sw	14-(4.5)b	30751	2.5	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	SR-1303 to SR-1153, Robeson Co./SR-11	C Sw	14-(4.5)c	30751	2.4	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	SR-1153 to Seaboard Coast Line RR Bridg	C Sw	14-(4.5)d	30751	5.9	Fish Adv.-Hg (a)	S			TMDL	Low
Gum Swamp	From source to Lumber River	C	14-5	30751	13.0		PS			PPI	Monitor
LUMBER RIVER	From Seaboard Coast Line RR bridge to .	WS-IV Sw	14-(7)a	30751	20.0	Fish Adv.-Hg (a)	S			TMDL	Low
Back Swamp	From Roberson Co SR 1157 to Lumber R	WS-IV Sw	14-8-(2.5)	30751	7.7		PS	NP	71	SWMP	Monitor
Burnt Swamp	From NC Hwy 72 to point above RR, Robe	WS-IV Sw	14-10-8-4-(0	30752	1.0		PS			SWMP	Monitor
Burnt Swamp	From point above RR to Richland Swamp	WS-IV Sw	14-10-8-4-(0	30752	3.3		PS			SWMP	Monitor
LUMBER RIVER	From .5 mi upstream of Powell Br to Raw V	WS-IV Sw	14-(10.3)		0.7	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	From Raw Water Supply Intake for City	B Sw	14-(11)	30751	0.5	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	HWY 301 to SR2289 /SR-2289, Robeson (	C Sw	14-(13)a	30751	2.7	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	From SR 2289 to Lumber R above Alpha C	C Sw	14-(13)b		0.7	Fish Adv.-Hg (a)	ST			TMDL	Low
LUMBER RIVER	Lumber R. above Alpha Cell. at 2202 to a	C Sw	14-(13)c	30751	0.6	Fish Adv.-Hg (a)	ST			TMDL	Low
LUMBER RIVER	Above WWTP to below WWTP at SR-162	C Sw	14-(13)d	30751	1.3	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	SR 1620 to NC 74, Robeson Co	C Sw	14-(13)e	30751	16.6	Fish Adv.-Hg (a)	S			TMDL	Low
LUMBER RIVER	From NC 74 to NC 904	C Sw	14-(13)f	30751	18.4	Fish Adv.-Hg (a)	S			TMDL	Low
Big Swamp	From source to NC 211	C Sw	14-22a	30753	15.4	Fish Adv.-Hg (a)	ST			TMDL	Low
Big Swamp	From NC 211 to Lumber River	C Sw	14-22b	30753	9.5	Fish Adv.-Hg (a)	ST			TMDL	Low
Porter Swamp	From source to Lumber River	C Sw	14-27	30751	16.4	Fish Adv.-Hg (a), Sed	NS	NP	11	TMDL, MS	Low
LUMBER RIVER	From N.C. Hwy. 904 to North Carolina-	B Sw	14-(28)	30751	3.8	Fish Adv.-Hg (a)	S			TMDL	Low
Ashpole Swamp	From source to Hog Swamp	C Sw	14-30a	30754	18.8	Fish Adv.-Hg (a)	PS	NP	10	SWMP	Monitor
Ashpole Swamp	From Hog Swamp to North Carolina-	C Sw	14-30b	30754	6.9	Fish Adv.-Hg (a), DO	NS	NP	10	SWMP	Monitor
Hog Swamp	From source to Ashpole Swamp	C Sw	14-30-7	30754	17.3		PS			SWMP	Monitor
Little Shoe Heel Creek	From source to Shoe Heel Creek	C Sw	14-34-3	30755	7.6		PS			PPI	Monitor
WACCAMAW RIVER	From source at dam at Lake Waccamaw to	C Sw	15-(1)a	30756	0.2	Fish Adv.-Hg	PS			TMDL	Low
WACCAMAW RIVER	From 0.1 mile below dam to off SR 1930	C Sw	15-(1)b	30756	6.8	Fish Adv.-Hg	PS			TMDL	Low
WACCAMAW RIVER	From site off SR 1930 to SR 1928	C Sw	15-(1)c	30757	3.5	Fish Adv.-Hg	PS			TMDL	Low
WACCAMAW RIVER	From SR 1928 to NC 130	C Sw	15-(1)d	30757	8.9	Fish Adv.-Hg	PS			TMDL	Low
WACCAMAW RIVER	From NC 130 to NC 904	C Sw	15-(1)e	30757	18.1	Fish Adv.-Hg	PS			TMDL	Low
Big Creek	From source to Lake Waccamaw	C Sw	15-2-6	30756	5.0	Fish Adv.-Hg	PS			TMDL	Low
White Marsh	From source to Welch Creek	C Sw	15-4c	30758	5.2	Fish Adv.-Hg (a)	S			TMDL	Low
White Marsh	Welch Creek to Richardson Swamp	C Sw	15-4a	30758	5.7	Fish Adv.-Hg (a)	ST			TMDL	Low
White Marsh	From Richardson Swamp to Waccamaw R	C Sw	15-4b	30758	12.6	Fish Adv.-Hg (a)	S			TMDL	Low
Brown Marsh	From source to Red Hill Swamp	C Sw	15-4-1-1	30758	4.8		PS	NP	11	SWMP	Monitor
Toms Fork	From North Carolina-South Carolina borde	C Sw	15-17-1-10	30757	6.2		PS			SWMP	Monitor
Monie Swamp	From source to Grissett Swamp	C Sw	15-17-1-12	30757	7.8		PS	NP	11,16	SWMP	Monitor

1998 303(d) LIST FOR THE LUMBER RIVER BASIN											
Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
WACCAMAW RIVER	From N.C. Hwy. 904 to North Carolina-Sou	B Sw	15-(18)	30757	8.4	Fish Adv.-Hg	PS			TMDL	Low

(a) Water body was added to the 303(d) list due to fish consumption advisories issued after the last basin plan and associated use support rating. Thus, the rating appears as "S" or "ST". Other data have not been reviewed for these waters since the last basin plan.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.
MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.
RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.
PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.
SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE LUMBER RIVER BASIN - LAKES													
LAKE NAME	COUNTY OR INDEX NUMBER	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
LAKE TABOR	15-17-1-(1)	30757	70	B-SW	NS	PS	FTH	n/a	n/a		(a)	MS	N/A
PAGES LAKE	14-2-11-(5)	30750	40	B	NS	PS	FTH	FULL	n/a	EUTROPHIC	FISH ADV.-Hg (a)	TMDL	Low
PIT LINKS LAKE	MOORE	30750	UNKNOWN		NE	NE	NE	NE	NE	NE	FISH ADV.-Hg	TMDL	Low
WATSON LAKE	14-2-11-2	30750	UNKNOWN	B	NE	NE	NE	NE	NE	NE	FISH ADV.-Hg	TMDL	Low

(a) Lake is currently drained.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

ESTUARINE AREAS IN THE LUMBER RIVER BASIN THAT ARE ON THE 1998 303(d) LIST

Area Name *	DEH AREA	Use Support (acres) Partial Support	Use Support (acres) Non-Support	Major Causes (acres) Fecal	DO	Chla	Metals	Major Sources (acres) Point	Nonpoint	Source Descriptions	Approach	Priority
Calabash	A1	1,201	0	1,201					1,201	ag, urban runoff, septic tanks, marinas	MS	Low
Shallotte River	A2	230	0	230					230	ag, urban runoff, septic tanks, marinas	MS	Low
Lockwoods Folly River	A3	721	0	721					721	urban runoff, septic tanks, marinas	MS	Low
Total Acres		2,152	0	2,152					2,152			
Percent		44.83	0.00	44.83				0.00	44.83			

* See DEH Area Map for Locations

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, Chl-a, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for fecal.

1998 303(d) LIST FOR THE NEUSE RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
North Fork Little River	From source to SR 1519, Orange Co	WS-II NSW	27-2-21-3a	30401	6.5		PS	NP	10	PPI	Monitor
Flat River (including the	From dam at Lake Michie to 1.6 miles dov	WS-IV NSW	27-3-(8)	30401	2.8	DO	PS	NP	10, 74	TMDL	Medium
Knap of Reeds Creek	From .8 mile upstream of mouth to Falls L	WS-IV NSW CA	27-4-(8)	30401	0.8		PS	NP	40,90	RES	Monitor
Knap of Reeds Creek	From dam at Butner Lake to .8 mile upstr	WS-IV NSW	27-4-(6)	30401	6		PS	NP	40,90	PPI	Monitor
Ellerbe Creek	Source to US Hwys 15 & 501 Business	C NSW	27-5-(0.3)	30401	5.8		NS	NP	40	RES	Monitor
Ellerbe Creek	US Hwys 15 & 501 Business to .2 mile u	WS-IV NSW	27-5-(0.7)	30401	5.9		NS	NP	40	PPI	Monitor
Ellerbe Creek	From .2 mile upstream of Durham Co SF	WS-IV NSW CA	27-5-(2)	30401	0.5		NS	NP,P	40,08	RES	Monitor
Little Lick Creek	From Source to .4 mile downstream of Du	WS-IV NSW	27-9-(0.5)	30401	6.5	DO	NS	NP	30,40	TMDL	Medium
Little Lick Creek	From .4 mile downstream of Durham Co S	WS-IV NSW CA	27-9-(2)	30401	0.5		NS	NP	30,40	RES	Monitor
Lick Creek	From source to .2 mile upstream of NC H	WS-IV NSW	27-11-(0.5)	30401	9.9	Sed	PS	NP	30,40	MS	Medium
New Light Creek	From source to .3 mile downstream of Bu	WS-IV NSW	27-13-(0.1)	30401	8		PS	NP	10	PPI	Monitor
New Light Creek	From .3 mile downstream of Buckhorn Cr	WS-IV NSW CA	27-13-(2)	30401	0.6		PS	NP	10	RES	Monitor
South Flat River	Source to SR 1009	WS-III NSW	27-3-3a	30401	3		PS	NP	10,18	RES	Monitor
Williams Creek	Source to Swift Creek	WS-III NSW	27-43-2	30402	4.8		PS	NP	30,40	RES	Monitor
Toms Creek (Mill Creek)	From source to Neuse River	C NSW	27-24	30402	4		PS	P,NP	08, 40,32	PPI	Monitor
Perry Creek (Greshams	From source to dam at Greshams Lake	B NSW	27-25-(1)	30402	3.6		PS	P,NP	40,08	RES	Monitor
Perry Creek	From dam at Greshams Lake to Neuse R	C NSW	27-25-(2)	30402	2.3		PS	P,NP	40,08	PPI	Monitor
Crabtree Creek	From source to backwaters of Crabtree L	C NSW	27-33-(1)	30402	5.8		NS	NP	32,43	PPI	Monitor
Crabtree Creek	From backwaters of Crabtree Lake to Ca	B NSW	27-33-(3.5)a	30402	0.2	Sed	NS	NP	32,43	MS	Medium
Crabtree Creek	From Cary WWTP to Richlands Cr, Wake	B NSW	27-33-(3.5)b	30402	5	DO,Turb	PS	NP	32,43	TMDL,MS	Medium
Black Creek	From source to Crabtree Creek	C NSW	27-33-5	30402	3.6		PS	NP	40	PPI	Monitor
Crabtree Creek	From mouth of Richlands Creek to US 1	C NSW	27-33-(10)a	30402	8.6		PS	NP	40	PPI	Monitor
Hare Snipe Creek (Lake	From source to dam at Lake Lynn	B NSW	27-33-12-(1)	30402	2.9		PS	NP	40	RES	Monitor
Hare Snipe Creek	From dam at Lake Lynn to Crabtree Cree	C NSW	27-33-12-(2)	30402	2.5		PS	NP	40	PPI	Monitor
Mine Creek	From source to Shelly Lake	C NSW	27-33-14a	30402	3.3		PS	NP	40,32	PPI	Monitor
Mine Creek	From Shelly Lake to Crabtree Creek	C NSW	27-33-14b	30402	1.5		NS	NP	40,32	PPI	Monitor
Pigeon House Branch	From source to Crabtree Creek	C NSW	27-33-18	30402	2.9	Fecal,DO,Cu	NS	NP	41, 43,45	MS, TMDL	Medium
Marsh Creek	Source to Crabtree Ck/ Nr US-1, Wake C	C NSW	27-33-20	30402	6.4	Sed	PS	NP	40	MS	Low
Walnut Creek	From dam at Lake Johnson to backwaters	C NSW	27-34-(1.7)	30402	1.3		PS	NP	40	PPI	Monitor
Walnut Creek	From backwaters of Lake Raleigh to dam	B NSW	27-34-(3.5)	30402	0.7		PS	NP	40	RES	Monitor
Walnut Creek	From dam at Lake Raleigh to SR 2544 (S	C NSW	27-34-(4)a	30402	7.2	Sed	NS	NP	40	MS	Low
Walnut Creek	From SR 2544 (Sunnybrook Rd) to Neuse	C NSW	27-34-(4)b	30402	3.4	Sed	PS	NP	40	MS	Low
Swift Creek	From source to Holly Springs Rd, Wake	WS-III NSW	27-43-(1)a	30402	2.2	Sed	NS	NP	10,32,43	MS	High
Swift Creek	From Holly Springs Rd to .6 mile upstrea	WS-III NSW	27-43-(1)b	30402	7	Sed	PS	NP	40	MS	Medium
Little Creek	From source to Swift Creek	C NSW	27-43-12	30402	12	Sed	PS	NP	10,40	MS	Medium
Buffalo Creek	From dam at Robertsons Pond to 200 fee	B NSW	27-57-16-(2)	30406	5.6	Sed	NS	NP	10	MS	Medium
Buffalo Creek (Wendell	From 200 feet upstream from West Hayw	C NSW	27-57-16-(3)	30406	20.9	Sed	PS	NP	10,30	MS	Medium
Mill Creek	From source to Little River	C NSW	27-57-18	30406	1.2		PS	NP	10	PPI	Monitor
Stony Creek	From source to Neuse River	C NSW	27-62	30405	10.2		NS	NP	40	PPI	Monitor
Bear Creek	From source to Neuse River	C Sw NSW	27-72	30405	15.8	Sed	PS	NP	10	MS	Low
Southwest Creek (Kellys	From source to Neuse River	C Sw NSW	27-80	30405	21.8		PS	NP	18,10	SWMP	Monitor
Contentnea Cr (Buckhorn F	From source to .6 mile upstream of Marsh	WS-V NSW	27-86-(1)	30407	9.1	Sed, DO	PS	NP	10	MS, TMDL	Medium
Little Creek (West Side)	From source to Moccasin Creek	C NSW	27-86-2-4	30407	4.5		NS	NP	10	PPI	Monitor
Beaverdam Creek	From source to Turkey Creek	C NSW	27-86-3-8	30407	5.7	Sed	PS	NP,P	10,02	MS	Medium

1998 303(d) LIST FOR THE NEUSE RIVER BASIN											
Name of Stream	**Description**	**Class**	**Index #**	**Wtrbdy**	**Miles**	**Problem Parameter(s)**	**Overall Rating**	**Major Sources (P,NP)**	**Subcategory**	**Approach**	**Priority**
Contentnea Cr (Buckhorn F	From .6 mile upstream of Marsh Swp to .6	WS-IV NSW	27-86-(4.5)	30407	7.2	Sed	PS	NP	10	RES	Monitor
Contentnea Cr (Buckhorn F	From .6 mile downstream of Shepard Br	WS-IV NSW CA	27-86-(5.8)	30407	4	Sed	PS	NP	10	RES	Monitor
Contentnea Creek	From dam at Wilson Water Supply to NC	C Sw NSW	27-86-(7)a	30407	18.2	Sed	PS	NP, P	11,14,16,18,03	MS	Low
Turner Swamp	From source to Black Creek/near Eureka,	C Sw NSW	27-86-9.5	30407	4.6		NE			RES	Monitor
Nahunta Swamp	From source to Contentnea Creek	C Sw NSW	27-86-14	30407	27.1		PS	NP,P	2,10	PPI	Monitor
Little Contentnea Creek	From source to Contentnea Cr	C Sw NSW	27-86-26	30407	27	DO*	PS	NP	16,18,12,13,17	TMDL	Low
Core Creek	From source to Neuse River	C Sw NSW	27-90	30408	18.5	Sed	PS	NP	11,71,16,18	MS	Low
Swift Creek	Source to Palmetto Swamp	C Sw NSW	27-97-(0.5)a	30409	25.9		NS	NP	71,10	SWMP	Monitor
Swift Creek	Palmetto Swamp to Bear Br	C Sw NSW	27-97-(0.5)b	30409	10.9	Sed	PS	NP	71,11	SWMP	Monitor
Clayroot Swamp	From source to Swift Creek	C Sw NSW	27-97-5	30409	12.6		NS	NP	10, 71	SWMP	Monitor
Creeping Swamp	Source to Clayroot Swamp/Hwy 43 near V	C Sw NSW	27-97-5-3	30409	6.6	DO, pH, Chl a	NS	NP	11,71	TMDL (a)	Medium
Trent River	From source to mouth of Deep Gully, Jon	C Sw NSW	27-101-(1)	30411	71.8	DO	PS	NP	10,16,18	TMDL	Low
Beaverdam Swamp	From source to Trent River	C Sw NSW	27-101-3	30411	4.7		PS	NP	10	SWMP	Monitor
Little Chinquapin Branch	From source to Trent River	C Sw NSW	27-101-11	30411	4.4		PS	NP	11,18,22	SWMP	Monitor
Beaver Creek	From source to Trent River	C Sw NSW	27-101-15	30411	8		PS	NP	11,18,22	SWMP	Monitor
Brice Creek	Source to Craven County SR 1004/ Crave	C Sw NSW	27-101-40-(1)	30410	21.4		NE	NP	11	SWMP	Monitor

(a) Creeping Swamp is considered swamp waters and will be further monitored to characterize DO and pH. However, Chl-a impairment is not likely due to the conditions of swamp waters, therefore a TMDL will be developed to address Chl-a.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE NEUSE RIVER BASIN - LAKES													
LAKE NAME	COUNTY NAME	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
BIG LAKE	WAKE	30402	62	B-NSW	PS	S	PS	S	n/a	EUTROPHIC	AQ WEEDS	MS	Low
LAKE RALEIGH	WAKE	30402	90	B-NSW	NS	S	PS	S	n/a	EUTROPHIC	(a)	MS	N/A
REEDY CREEK LAKE	WAKE	30402	20	B-NSW	PS	S	PS	PS	n/a	EUTROPHIC	AQ WEEDS	MS	Medium
LAKE WACKENA	WAYNE	30405	165	C-NSW	PS	S	PS	n/a	n/a	EUTROPHIC	AQ WEEDS	MS	Low

(a) Lake Raleigh is currently drained because the dam was damanged during Hurricane Fran. Previously, Lake Raleigh was listed as PS for siltation and aquatic weeds.

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Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

ESTUARINE AREAS IN THE NEUSE RIVER BASIN THAT ARE ON THE 1998 303(d) LIST

Area Name	DEH AREA	Use Support (acres) Partial Support	Non-Support	Major Causes (acres) Fecal	DO	Chla	Metals	Major Sources Point	Nonpoint	Source Descriptions	Approach	Priority
Neuse River	F1	900	0	900					NP	WWTP, urban runoff, marinas, ag runoff	MS	Low
Merrimon	F2	1,475	0	1,475					NP	ag, forestry	MS	Low
West Bay	F3	12	0	12					NP	wildlife	MS	Low
Cedar Island	F4	13	0	13					NP	ferry, marina	MS	Low
Oriental	F5	851	0	851				P	NP*	WWTP, septic, ag, urban,marina	MS	Low
Bay River	F6	337	0	337				P	NP*	WWTP, septic,wildlife, marina,urban,anim. ops.	MS	Low
Neuse River	F8	9,450	0			9,450		P	NP	wwtp, ag, urban runoff, swamp	TMDL	Medium
Neuse River	F9	19,500	0			19,500		P	NP	wwtp, ag, urban runoff, swamp	TMDL	Medium
Total Acres		32,538	0	3,588	0	28,950	0					
Percent		15.74	0.00	1.74		14.006						

NP* signifies that the majority of the impairment is due to nonpoint sources.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, Chl-a, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for fecal.

1998 303(d) LIST FOR THE NEW RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
Middle Fork South Fork Ne	From source to Brown Branch	WS-IV +	10-1-2-(1)	50701	4.7	Sed	PS	NP,P	08,02,10,40,30	MS	Medium
South Fork New River	From Hunting Lane to NC 221/421, Wata	C +	10-1-(3.5)b	50701	2.5	NH3,Hg	PS	NP,P	03,10,30	TMDL	Low
Naked Creek	From WWTP to S. Fork New River, Ashe	C +	10-1-32b	50701	2.0		PS	P	,02	PPI	Monitor
Peak Creek	From Ore Knob to below Ore Knob Branc	B Tr +	10-1-35-(2)b	50701	0.6	Sed	NS	NP	58	MS	Medium
Peak Creek	From below Ore Knob Branch(SR 1599) t	B Tr +	10-1-35-(2)c	50701	1.9	Sed	PS	NP	58	MS	Medium
Peak Creek	From Little Peak to New River, Ashe Co.	B Tr +	10-1-35-(2)d	50701	0.4	Sed	PS	NP	58	MS	Medium
Little Peak Creek	From source to Peak Creek	B Tr +	10-1-35-4	50701	2.5		NS	NP	58	PPI	Monitor
Little Buffalo Creek	From source to US Bus 221/ off SR 2253	C Tr +	10-2-20-1a	50702	1.7		NS	NP,P	40,03	PPI	Monitor
Laurel Branch (Laurel Cre	From source to 0.3 mile downstream	C Tr	10-9-10-2a	50703	0.3		NS	NP	32	PPI	Monitor
Laurel Branch (Laurel Cre	From 0.3 miles downstream to NC 21	C Tr	10-9-10-2b	50703	0.4		PS	NP	32	RES	Monitor
Laurel Branch (Laurel Cre	From NC 21 to Brush Creek	C Tr	10-9-10-2c	50703	3.3		PS	NP,P	08,32	PPI	Monitor

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE PASQUOTANK RIVER BASIN											
Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Subcategory	Approach	Priority
Little River	From source to mouth of Halls Cr/Woodvi	C Sw	30-5-(1)	30152	11.8	DO	PS	NP	11,18,32,65	TMDL	Low
Burnt Mill Creek	From source to Yeopim River	C Sw	30-8-1	30152	3.5		NS	NP	18,11,16	PPI	Monitor
Kendrick Creek (Mackeys	From source to U.S. Hwy. 64 at Roper	C Sw	30-9-(1)	30153	13.2	DO, pH	PS	NP,P	11,18,02	TMDL,MS	Low
Main Canal	From source to Kendrick Creek	C Sw	30-9-4	30153	5.0		PS	NP	16,18,11	PPI	Monitor
Scuppernong River	From source to mouth of Riders Creek	C Sw	30-14-4-(1)	30153	15.2	DO,pH	PS	NP,P	11,13,18,02	TMDL,MS	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE PASQUOTANK RIVER BASIN - LAKES													
LAKE NAME	COUNTY NAME	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
PHELPS LAKE	WASHINGTON	30153	16600	C SW	S	PS	S	n/a	n/a	OLIGOTROPHIC	FISH ADV.-HG	TMDL	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

ESTUARINE WATERS IN THE PASQUOTANK RIVER BASIN THAT ARE ON THE 1998 303(d) LIST

Area Name	DEH AREA	Use Support(acres) Partial Support	Use Support(acres) Non-Support	Major Causes (acres) Fecal	DO	Chl-a	Metals	Major Sources (acres) Point	Nonpoint	Source Description	Approac	Priority
Roanoke Sound	H1	1,950	0	1,950				500	1,450	WWTP, urban runoff, septic tanks,	MS	Low
Croatan Sound	H2	891	0	891					891	urban runoff, septic tanks, marinas	MS	Low
Stumpy Sound	H3	265	0	265					265	septic tanks	MS	Low
Hatteras	H4	625	0	625					625	urban runoff, septic tanks, marinas	MS	Low
Outer Banks	H5	331	0	331					331	urban runoff, septic tanks, marinas	MS	Low
Eastern Albemarle	I2	800	0	800					800	septic tanks, urban runoff	MS	Low
Little River	I6	1,125	0		1,125				1,125	ag,swamp	MS	Low
Totals		5,987	0	4,862	1,125			500	5,487			
Percentages		2.94	0	81.21	18.79			8.35	91.65			

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, Chl-a, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for fecal.

1998 303(d) LIST FOR THE ROANOKE RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Subcategory	Approach	Priority
Marlowe Creek	From source to Storys Creek/Woodsdale	C	22-58-12-6	30205	2.7	Cu, Sed	PS	P,NP	03,08	TMDL,MS	Low
Nutbush Creek (Including	From source to Crooked Cr	C	23-8-(1)	30206	2.0		PS	NP,P	40, 03	PPI	Monitor
Anderson Swamp Creek (I	From source to .6 mile upstream of Vance	WS-III&B	23-8-6-(1)	30206	4.0		PS	NP	55,61,63	PPI	Monitor
Smith Creek	From source to NC/VA Line	C	23-10	30207	11.6	Sed	PS	NP	10	MS	Low
Quankey Creek	From source to Roanoke River	C	23-30	30208	19.4		PS	NP,P	21,73,86,02,08	PPI	Monitor
Conconnara Swamp	Source to Roanoke River	C	23-33	30208	17.8		PS	NP		RES	Monitor
Cashie River	From source to SR 1257, Berti	C Sw	24-2-(1)a	30210	24.3		PS	NP		PPI	Monitor

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE ROANOKE RIVER BASIN - LAKES

LAKE NAME	COUNTY NAME	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
BELEWS LAKE	ROCKINGHAM	30201	4030	WSIV,B,C	S	PS	S	S	n/a	OLIGOTROPHIC	FISH ADV-SELENIU	(a)	Low
HYCO LAKE	PERSON	30205	3750	B	S	PS	S	n/a	S	OLIGOTROPHIC	FISH ADV-SELENIU	(a)	Low
ROANOKE RAPIDS LAK	NORTHAMPTON	30208	4893	WSIV, B	PS	S	S	PS	PS	MESOTROPHIC	AQ WEEDS	MS	Low

(a) Belews Lake and Hyco Lake remain on the list due to fish consumption advisories even though fish tissue data indicate declining levels of selenium in fish. Controls have been implemented on sources and concentrations in fish are expected to continue to decline. DWQ will not develop a TMDL or additional management strategies, however, selenium levels in fish will continue to be monitored.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

1998 303(d) LIST FOR THE SAVANNAH RIVER BASIN											
Name of Stream	**Description**	**Class**	**Index #**	**Wtrbdy**	**Miles**	**Problem Parameter(s)**	**Overall Rating**	**Major Sources (P,NP)**	**Subcategory**	**Approach**	**Priority**
Norton Mill Creek	From source to Chattooga River	C Tr+	3-3	31301	4.5	Sed	PS			MS	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE TAR-PAMLICO RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
TAR RIVER	From SR 1138 to a point 0.6 mile upstrea	WS-IV NSW	28-(1)b	30301	4.6		PS	NP	010	PPI	Monitor
North Fork Tar River	From source to Tar River	WS-IV NSW	28-5	30301	7.6		PS	P	08	PPI	Monitor
Fishing Creek	From source to SR1649	C	28-11a	30301	2	Sed	PS	NP,P	10,08	MS	Medium
Fishing Creek	From SR1649 to #1 outfall	C	28-11b	30301	0.4	Sed	NS	NP	010	MS	Medium
Fishing Creek	From #1 outfall to SR 1608	C	28-11c	30301	0.9	Sed	NS	NP,P	10,03	MS	Medium
TAR RIVER	From Hwy 401 to SR 1001 Franklin Cour	WS-V NSW	28-(24.7)b	30301	11.5	Fecal	NS	P	03	MS	High
TAR RIVER	From 3.2 mi downstream of NC Hwy 581	WS-IV NSW	28-(34.5)	30302	6.5		PS			PPI	Monitor
Stony Creek	From source to Tar River	C	28-68	30302	23.2	Sed	PS	NP	90	MS	Medium
TAR RIVER	From 0.9 mi downstream of Buck Sw to S	WS-IV NSW	28-(74)a	30302	5.3		PS			PPI	Monitor
Whiteoak Swamp	From 1.8 mi upstream of SR 1428 Edgec	WS-IV NSW	28-78-7-(2)	30302	2.7	Sed	PS	NP	10	MS	Medium
Fishing Creek	From source to ab Warrenton WWtp, Wa	C NSW	28-79-(1)a	30304	14.2		PS	NP	10, 12	PPI	Monitor
Town Creek	From source to SR 1202 ab Pinetops, Ed	C	28-83a	30303	18	Sed	PS	NP	10	MS	Medium
Cokey Swamp	From source to Town Creek	C	28-83-3	30303	13.8		PS	NP	18,21,63,84	PPI	Monitor
Little Cokey Swamp	From Source to Branch Cr	C	28-83-3-1a	30303	0.8		NS	NP	84,10,40	PPI	Monitor
Little Cokey Swamp	From Branch Cr. to (above & below) CSX	C	28-83-3-1b	30303	0.5		NS	NP	84,10,40	PPI	Monitor
Little Cokey Swamp	From SR 1158 to Cokey Sw	C	28-83-3-1c	30303	4.2		PS	NP	84,10,40	PPI	Monitor
Briery Branch	From source to Bynums Mill Run	C	28-83-4-1-1	30303	0.6		NS	P	02	SWMP	Monitor
UT Otter Creek	From source to Otter Creek	C	28-86a	30303	0		NS			SWMP	Monitor
Conetoe Creek	Source to SR 1404 Pitt Co	C	28-87-(0.5)	30303	15.3	Sed,pH	PS	NP,P	11,71,02	MS	Medium
TAR RIVER	From 1.2 miles downstream of mouth of B	B	28-(99.5)	30305	9.2	pH,Fecal	PS	NP	11,21,31,32,41,	MS	Low
Grindle Creek	From source to Tar River	C	28-100	30305	27.3	Sed	PS	NP	11,71	MS	Low
Chicod Creek	From source to Tar River	C	28-101	30305	13	DO,NH3,Sed	PS	NP	10	TMDL,MS	Low
Tranters Creek	From 0.8 mi upstream of Cherry Run to W	WS-IV Sw CA	28-103-(16.5)	30307	0.9	Fecal,Chloride,Sed	PS	NP	10	SWMP	Monitor
Tranters Creek	From Washington Auxiliary Raw Water St	C Sw	28-103-(18)	30307	0.8	Sed	PS	NP	10	SWMP	Monitor
Chocowinity Creek and	From source to N.C. Hwy. 33	C Sw	29-6-2-1-(1)	30307	9.6		PS	NP	41	SWMP	Monitor
Jack Creek	From source to a point three-fourths	C	29-12-4-(1)	30307	1.1		NS			SWMP	Monitor
Whitehurst Creek	From source to SR 1937	C Sw	29-28-7-(1)a	30307	0.4		NS			SWMP	Monitor
Whitehurst Creek	From SR 1937 to NC Hwy 306	C Sw	29-28-7-(1)b	30307	2		NS			SWMP	Monitor

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

ESTUARINE WATERS IN THE TAR-PAMLICO RIVER BASIN THAT ARE ON THE 1998 303(d) LIST

Area Name *	DEH AREA	Use Support (acres) Partial Support	Use Support (acres) Non-Support	Major Causes (acres) Fecal	DO	Chla	Metals	Major Sources (acres) Point	Nonpoint	Source Descriptions	Approach	Priority
Goose Creek	G1	300	0	300					300	ag,urban runoff, marinas	MS	Low
Pamlico River	G2	500	0	500					500	ag, urban runoff, septic tanks	MS	Low
Swanquarter	G3	667	0	667				40	627	WWTP, ag, septic tanks, marinas	MS	Low
Wysocking Bay	G4	430	0	430				20	410	WWTP, ag, septic tanks	MS	Low
Long Shoal	G5	1566	0	1566					1566	ag, septic tanks, marinas	MS	Low
Ocracoke	G6	95	0	95					95	urban runoff, septic tanks, marinas	MS	Low
Pungo River	G8	3180	0	3180				272	3028	WWTP, ag,urban runoff, marinas	MS	Low
South Creek	G12	3300	0	3300					3300	WWTP, ag,urban runoff, marinas	MS	Medium
Total Acres		10,038	0	10,038				332	9,826			
Percent		5.28	0.00	100.00				3.31	97.89			

* See DEH Area Map for Locations

Definitions for approach:
TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, Chl-a, and all metals.
MS - A management strategy will be developed for this water body/pollutant. Usual approach for fecal.

1998 303(d) LIST FOR THE WHITE OAK RIVER BASIN											
Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Subcategory	Approach	Priority
Little Northeast Creek	Source to NC Hwy 24 Creek/Near Ja	C	19-16-2	30502	8.3	DO, Chl a	PS	NP,P	43	TMDL (a)	Low
Southwest Creek	From Mill Run to New River	C	19-17-(6.5)	30502	2.6	Chl a	PS	NP	86	RES (a)	Monitor

(a) Considered swamp waters and will be further monitored to characterize DO and pH. However, Chl-a impairment is not likely due to the conditions of swamp waters, therefore a TMDL will be developed to address Chl-a.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

ESTUARINE WATERS IN THE WHITE OAK RIVER BASIN THAT ARE ON THE 1998 303(d) LIST

Area Name	DEH Area	Use Support (acres) Partial Support	Non-Support	Major Causes (acres) Fecal	DO	Chla	Metals	Major Sources Point	Nonpoint	Source Description	Approach	Priority
Chadwick Bay	C1	223	0	223					NP	urban runoff, septic tanks, marinas	MS	Medium
Sneads Ferry	C2	189	0	189				P	NP	WWTP, septic tanks, marinas,urbar	MS	Low
Stones Bay	C3	3,756	0	751		3,005		P	NP	WWTP, urban runoff, marinas	MS	Medium
Hurst Beach	C4	160	0	160				P	NP	WWTP, urban runoff,forestry	MS	Medium
Bear Creek	D1	70	0	70					NP	ag, marinas,wildlife,forestry	MS	Low
Queen Creek	D2	745	0	745				P	NP	WWTP, ag, urban runoff, septic tan	MS	Low
White Oak River	D3	1,417	0	1,417				P	NP	WWTP, ag, urban runoff, septic tan	MS	Medium
Deer Creek	D4	222	0	222					NP	urban runoff, marinas, septic tanks,	MS	Medium
Broad Creek	E1	133	0	133					NP	urban runoff, septic tanks, marinas	MS	Low
Bogue Sound	E2	94	0	94					NP	urban runoff, septic tanks, marinas	MS	Low
Morehead City	E3	1,284	0	1,284					NP	urban runoff, septic tank, marina, s	MS	Low
Newport River	E4	1,863	0	1,863				P	NP	WWTP, ag, forestry, urban runoff, s	MS	Medium
Taylor Creek	E5	450	0	450				P	NP	WWTP, urban runoff, septic tanks	MS	Low
North River	E6	647	0	647				P	NP	WWTP, ag, forestry, urban runoff, r	MS	Medium
Back Sound	E7	32	0	32					NP	septic tanks, marinas	MS	Low
Core Sound	E8	200	0	200					NP	ag, forestry, marinas	MS	Low
Nelson Bay	E9	456	0	456				P	NP	WWTP, ag, septic tanks	MS	Low
Total Acres		11,941	0	8,936		3,005						
Percent		9.80	0	74.83		25.17						

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, Chl-a, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for fecal.

1998 303(d) LIST FOR THE YADKIN RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
UT Mulberry Creek	Ab WWTP to Mulberry Ck	C	12-42-10b	30701	0.5		NS			RES	Monitor
Little Beaver Creek	From NC 268 to Fisher River	C	12-63-13b	30702	1.4		NS	NP	84- tire fire run	PPI	Monitor
Endicott Creek	Dam at Raven Knob Lk to Fisher R	WS-II Tr	12-63-5-(3)	30702	0.5		PS	NP	10	RES	Monitor
Ararat River	From Mount Airy WWTP to SR 2026, at A	C	12-72-(4.5)b	30703	10.3	Sed	PS	NP,P	10,40,03	MS	Low
Faulkner Creek	From source to Ararat River	C	12-72-6	30703	6	Sed	NE	NP	40,10	RES	Monitor
Lovills Creek (Lovell	From Mount Airy Water Supply Dam to Ar	C	12-72-8-(3)	30703	4.2		PS	NP	40	PPI	Monitor
Heatherly Creek	From source to WWTP	C	12-72-14-5a	30703	1.7		PS	NP	10	PPI	Monitor
Heatherly Creek	WWTP to Toms Creek	C	12-72-14-5b	30703	1.7		NS	NP,P	40,03	PPI	Monitor
Reynolds Creek	From Sequoia WWTP, Forsyth to Muddy	C	12-94-9b	30704	1.7		PS	NP	10,40	PPI	Monitor
Salem Creek (Middle Fork	From Winston-Salem Water Supply Dam	C	12-94-12-(4)	30704	11.7	Fecal,Turb,Sed	PS	NP	10,40,43,03	MS	Low
Cedar Creek, including	From source to Davie County SR 1410	B	12-102-13-(1)	30705	8.5		PS	NP	90 unknown	PPI	Monitor
Cedar Creek	From Davie County SR 1410 to above Qu	C	12-102-13-(2)	30705	3.2		PS	NP	90 unknown	PPI	Monitor
Fourth Creek	From SR 2308 Iredell Co 1.5 mile upstrea	C	12-108-20-(1)	30706	9.5	Sed, Fecal, Turb	PS	NP	10	MS	Low
Fourth Creek	From 1.5 mile upstream of Rowan County	WS-IV	12-108-20-(3.5	30706	7.7	Sed	PS	NP	10	MS	Low
UT Grants Creek	From source to Grants Creek	C	12-110UT1	30704	0		NS			RES	Monitor
Grants Creek	From source to Yadkin River	C	12-110	30704	17.9	Fecal, Turb,Sed	PS	P,NP	02,40,30,10	MS	Low
Town Creek	From SR 1526 to Crane Cr	C	12-115-3b	30704	8.1	Sed	NS	NP,P	30,40,10	MS	Low
UT Second Creek	Ab WWTP to Second Creek	C	12-117UT2	30704	0		NS			RES	Monitor
Brushy Fork	From Buck Br to Tom-A-Lex Lake, Abbott	WS-III CA	12-119-5-(7)	30707	0.5	Sed	PS	NP	10	RES	Monitor
Brushy Fork	From source to Buck Br	WS-III	12-119-5-(1)	30707	9.3	Sed	PS	NP	10	MS	Medium
Rich Fork	From source to Abbotts Cr	C	12-119-7	30707	20.7	Fecal	PS	NP,P	10,40,30,20,03	MS	Low
Hunts Fork	SR-1792, Davidson County	C	12-119-7-3	30707	7.5		PS		40,30	PPI	Monitor
Hamby Creek	From source to Hunts Cr	C	12-119-7-4	30707	12.5	Fecal, Sed	NS	NP,P	40,10,03	MS	Low
North Hamby Creek	From source to Hamby Cr	C	12-119-7-4-1	30707	6.1		NS	NP	40	PPI	Monitor
Jimmys Creek	From source to Hamby Creek	C	12-119-7-4-2	30707	6.8		PS	NP	90	PPI	Monitor
UT Lick Creek	NC 2505, Davidson Cty	C	-	30708	-		PS	NP	40	RES	Monitor
UT Lick Creek	NC 47, Davidson Cty	C	-	30708	-		NS	NP	40	RES	Monitor
Lick Creek	From source to East Br Lick Cr, Yadkin R	C	12-126-(0.5)	30708	7.2		PS	NP	10	RES	Monitor
Lick Creek	From East Br Lick Cr 1 mile upstream of I	WS-IV	12-126-(3)	30708	7.4		PS	P,NP	02,40,10	PPI	Monitor
PEE DEE RIVER (incl Blew	From Norwood Dam to mouth of Turkey	WS-V&B CA	13-(15.5)	30710	15.2	DO	PS	NP	10 CAOs & Cro	MS	Medium
PEE DEE RIVER	From Turkey Top Creek to .8 mile downst	WS-IV&B	13-(23.5)	30708	5.7	pH	PS	NP	10 CAOs & Cro	MS	Medium
Little Mountain Creek	From .5 mile upstream of Stanly Co SR 1	WS-IV	13-5-1-(2)	30708	5		PS	NP,P	10,upstream dis	PPI	Monitor
Little Mountain Creek	From source to .5 mile upstream of Stanly	C	13-5-1-(1)	30708	2		PS	NP,P	10,us cumm dis	RES	Monitor
Rocky River	From source to SR 2420, Mecklenburg	C	13-17a	30711	9.2	Fecal,Turb,Sed	NS	NP	10,40	MS	Low
Dye Creek (Branch)	From source to SR-1147, Iredell County	C	13-17-2a	30711	3.3	Sed	PS	NP	40,10	MS	Low
Dye Creek (Branch)	From SR-1147 Iredell County to Pee Dee	C	13-17-2b	30711	1.8	Sed	NS	NP,P	40,10,03	MS	Low
Clarke Creek	From source to Rocky River	C	13-17-4	30711	5.4		NE	NP	18	RES	Monitor
Coddle Creek	Source .2 mile upstream of NC Hwy 73 (	C	13-17-6-(5.5)	30711	13.7	Sed	PS	NP	40	MS	Low
UT Reedy Creek	Below landfill	C	-	30711	-		PS	NP	10	RES	Monitor

1998 303(d) LIST FOR THE YADKIN RIVER BASIN

Name of Stream	Description	Class	Index #	Wtrbdy	Miles	Problem Parameter(s)	Overall Rating	Major Sources (P,NP)	Major Sources Subcategory	Approach	Priority
McKee Creek	From source to Reedy Creek	C	13-17-8-4	30711	6.5	Sed,Fecal	NE	NP	10, 40,32,08	RES	Monitor
Clear Creek	From source to McKee Creek	C	13-17-8-4-1	30711	1.6	Sed,Fecal	NE	NP	10, 40,32	RES	Monitor
Goose Creek	From source to Rocky River	C	13-17-18	30712	17	Fecal,Sed	NS	NP,P	40,30, cumulati	MS	High
Crooked Creek	From source to Rocky River	C	13-17-20	30712	13.1		PS	NP,P	40, cum discha	PPI	Monitor
North Fork Crooked Creel	From source to SR 1514, Union Crooked	C	13-17-20-1a	30712	7.5		PS	P,NP	40, cum discha	PPI	Monitor
North Fork Crooked Creel	From SR 1004 Union Co to Crooked Cree	C	13-17-20-1c	30712	1.7		PS	P,NP	40, cum discha	PPI	Monitor
South Fork Crooked Cree	From source to SR 1515 Union Co	C	13-17-20-2a	30712	5		NS	NP	10,30,40	PPI	Monitor
South Fork Crooked Cree	From SR 1515 Union Co Crooked Creek	C	13-17-20-2b	30712	8.7		PS	NP,P	10,30,40,cum.	PPI	Monitor
Little Long Creek	From source to Long Creek	C	13-17-31-4	30713	6.7		NE	NP	42,43	RES	Monitor
Long Branch(Lower Long	From source to above Carolina Solite old	C	13-17-31-7a	30713	0.8		PS	NP	10,40	PPI	Monitor
Richardson Creek	From Monroe Water Supply dam to SR 1(	C	13-17-36-(5)a	30714	6.9	Sed	NS	NP,P	10-CAOs,03	MS	Low
Richardson Creek	From SR 1006 to SR 1649	C	13-17-36-(5)b	30714	5.6	Sed	PS	NP,P	10-CAOs,03	MS	Low
Lanes Creek	From SR 1929 Union Co to Marshville W	WS-V	13-17-40-(1)b	30714	9.9	Sed	NS	NP	10-CAOs	MS	Medium
Lanes Creek	From Marshville Water Supply Dam (.1 m	C	13-17-40-(12)	30714	26.9		PS	NP	10 CAOs	PPI	Monitor
Wicker Branch	Source to Lanes Creek	WS-V	13-17-40-6	30714	5.3		PS	NP	10	RES	Monitor
Waxhaw Branch	Source to Lanes Creek	WS-V	13-17-40-6	30714	5.7		PS	NP	10	RES	Monitor
Brown Creek	From NC 74 to Pee Dee	C	13-20b	30710	22	Sed,DO,pH	PS	NP	10	MS, TMDL	Medium
Cartledge Creek	From source to Pee Dee River	C	13-35	30716	10.5		PS	NP	10	PPI	Monitor
Hitchcock Creek (Midway	From below Fox Yarns, Richmond Co to F	C	13-39-(10)b	30716	6.1	Fecal,pH,Sed	NS	NP	10,30,40	MS	Low
Hitchcock Creek (Midway	From dam at Roberdel Lake (rockingham	C	13-39-(10)a	30716	3.9		PS	NP	10,30,40	RES	Monitor
North Fork Jones Creek	From Wadesboro Water Supply Intake to	C	13-42-1-(0.5)	30717	8.4	Sed	PS	NP	10	MS	Low
South Fork Jones Creek	From Anson SR 1821 to Jones Creek	C	13-42-2b	30717	0.8	Sed	PS	NP	10	MS	Low
Marks Creek (Everetts Lak	From NC 177 Richmond Co to NC-SC Li	C	13-45-(2)b	30716	13.3	Sed	PS	NP	40	MS	Low

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant. Usual approach for nutrients, DO, and all metals.

MS - A management strategy will be developed for this water body/pollutant. Usual approach for sediment, fecal, pH, and turbidity.

RES -Resample. Water body remains on the 303(d) list even though data are more than five years old. Waters will be resampled to obtain updated use support information.

PPI - Problem Parameter Identification. Biologically impaired waters will be resampled for biological and chemical data to attempt to determine potential problem parameters.

SWMP - Swamp Waters. Swamp waters previously evaluated using freshwater criteria will continue to be monitored and will be re-evaluated when swamp criteria are available.

1998 303(d) LIST FOR THE YADKIN RIVER BASIN - LAKES													
LAKE NAME	COUNTY NAME	SUBBASIN	SIZE (acres)	CLASS	OVERALL USE	FISH CONSUMP.	AQ. LIFE & SECONDARY CONTACT	SWIMMING	DRINKING WATER	TROPH STATUS	PROBLEM PARAMETERS	APPROACH	PRIORITY
LONG LAKE(Albermarle	STANLY	30713	74	C	NS	S	NS	n/a	S	HYPEREUTROPH	(a)	MS	N/A
HAMLET CITY LAKE	RICHMOND	30716	100	C	PS	S	PS	n/a	n/a	EUTROPHIC	(a)	MS	N/A
LEDBETTER LAKE	RICHMOND	30716	UNKNOWN	WS-III	NE	NE	NE	NE	NE	NE	FISH ADV-HG	TMDL	Medium
ROCKINGHAM CITY LA	RICHMOND	30716	27	WS-III CA	PS	S	PS	n/a	PS	DYSTROPHIC		MS	Medium

(a) Lake is currently drained.

Definitions for approach:

TMDL - Proper technical conditions exist to develop a TMDL for this water body/pollutant.

MS - A management strategy will be developed for this water body/pollutant.

APPENDIX I. DATA SOURCES USED TO ASSESS NORTH CAROLINAS SURFACE WATERS

Federal Agencies

U.G. Geological Survey
National Parks and Wildlife Refuges
Department of Agriculture – Natural Resources Conservation Service
Tennessee Valley Authority
Environmental Protection Agency
U.S. Fish and Wildlife
U.S. Army Corps of Engineers
U.S. Marine Corps
U.S. Forest Service
National Oceanic and Atmospheric Administration

North Carolina State Agencies

Division of Marine Fisheries
Wildlife Resources Commission
Museum of Natural Sciences
Albemarle Pamlico Estuarine Study
Division of Epidemiology
Division of Water Resources
State Parks Rangers
Division of Environmental Health

Other State Agencies

Virginia Water Control Board
Georgia Department of Natural Resources
South Carolina Department of Health and Environmental Control

Local Governments

County Health Departments
County Planning Agencies
Local Parks and Recreation
Water Treatment Plant Operators

Universities

UNC Charlotte
Duke University
NC State University
UNC Chapel Hill
UNC Institute of Marine Sciences
East Carolina University
UNC Wilmington
Western Carolina University

Private

Consultants
Duke Power
Carolina Power and Light
NPDES dischargers

Other

Citizens
Lake caretakers and wardens

APPENDIX II. PRIORITY RANKING FOR FRESHWATERS

Each of the waters on the 303(d) list were ranked in order to prioritize DWQ's resources. The ranking is based on the classification, use support rating, presence of endangered species, degree of public interest, and the probability of success. This ranking can be represented by

Rank = S (classification, use support rating, endangered species, public interest, probability of success)

Where the following numeric rankings were applied to the various categories:

Classification:

Water supply waters (WS-1, II, III, IV)	=	2
B	=	1
C	=	0
Supplemental classificions	=	+1

Tr (Trout fishing waters)
NSW (Nutrient sensitive waters)
HQW (High quality waters)
ORW (Outstanding resource waters)

Use Support Rating:

NS	=	1
PS	=	0

Endangered Species present:

Federally endangered	=	2
Other endangered or threatened	=	1
None present	=	0

Public interest expressed on particular water body:

Yes	=	1
No	=	0

Probability of success (subjective criteria depending upon problem parameters, type of sources of problem parameters, availability of technical tools to calculate numeric loads, NPS/319 priorities, etc.):

Yes	=	1
No	=	0

The sum of the individual category ranking is used to determine the priority for the impaired water body. If the overall rank is between 6 and 8, the water is prioritized as high. If the overall rank is between 3 and 5, the water body is prioritized medium, and overall ranks of below 3 are prioritized as low. Each category has equal weight in the determination of the overall ranking. For example, for Little Buffalo Creek in the Cape Fear River Basin, the overall ranking and priority of medium were determined as follows:

Category	Value	Comments	Rank
Classification	WS-IV	No supp classifications	2
Use support rating	NS	None	1
Public interest	No	None	0
Endangered species	Yes, federal	Cape Fear Shiner in subbasin 11	2
Prob of success	Sediment impaired, no standard, NPS sources	None	0
Total			**5**

APPENDIX III. STREAM CLASSIFICATION RULES (NORTH CAROLINA ADMINISTRATIVE CODE, T15A:02B .0300)

SECTION .0300 - ASSIGNMENT OF STREAM CLASSIFICATIONS

.0301 CLASSIFICATIONS: GENERAL

(a) Schedule of Classifications. The classifications assigned to the waters of the State of North Carolina are set forth in the schedules of classifications and water quality standards assigned to the waters of the river basins of North Carolina, 15A NCAC 2B .0302 to .0317. These classifications are based upon the existing or contemplated best usage of the various streams and segments of streams in the basin, as determined through studies and evaluations and the holding of public hearings for consideration of the classifications proposed.

(b) Stream Names. The names of the streams listed in the schedules of assigned classifications were taken as far as possible from United States Geological Survey topographic maps. Where topographic maps were unavailable, U.S. Corps of Engineers maps, U.S. Department of Agriculture soil maps, and North Carolina highway maps were used for the selection of stream names.

(c) Classifications. The classifications assigned to the waters of North Carolina are denoted by the letters WS-I, WS-II, WS-III, WS-IV, WS-V, B, C, SA, SB, and SC in the column headed "class." A brief explanation of the "best usage" for which the waters in each class must be protected is given as follows:

Fresh Waters

Class WS-I: waters protected as water supplies which are in natural and undeveloped watersheds; in public ownership; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of this Subchapter; local programs to control nonpoint source and stormwater discharge of pollution are required; suitable for all Class C uses;

Class WS-II: waters protected as water supplies which are generally in predominantly undeveloped watersheds; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of this Subchapter; local programs to control nonpoint source and stormwater discharge of pollution are required; suitable for all Class C uses;

Class WS-III: waters protected as water supplies which are generally in low to moderately developed watersheds; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of this Subchapter; local programs to control nonpoint source and stormwater discharge of pollution are required; suitable for all Class C uses;

Class WS-IV: waters protected as water supplies which are generally in moderately to highly developed watersheds; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of this Subchapter; local programs to control nonpoint source and stormwater discharge of pollution are required; suitable for all Class C uses;

Class WS-V: waters protected as water supplies which are generally upstream and draining to Class WS-IV waters or waters previously used for drinking water supply purposes or waters used by industry to supply their employees, but not municipalities or counties, with a raw drinking water supply source, although this type of use is not restricted to a WS-V classification; no categorical restrictions on watershed development or treated wastewater discharges are required, however, the Commission or its designee may apply appropriate management requirements as deemed necessary for the protection of downstream receiving waters (15A NCAC 2B .0203); suitable for all Class C uses;

Class B: primary recreation and any other usage specified by the "C" classification;

Class C: aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture.

Tidal Salt Waters

Class SA: shellfishing for market purposes and any other usage specified by the "SB" and "SC" classification;

Class SB: primary recreation and any other usage specified by the "SC" classification;

Class SC: aquatic life propagation and survival, fishing, wildlife, and secondary recreation.

Supplemental Classifications

Trout Waters: Suitable for natural trout propagation and maintenance of stocked trout;

Swamp Waters: Waters which have low velocities and other natural characteristics which are different from adjacent streams;

NSW: Nutrient Sensitive Waters which require limitations on nutrient inputs;

HQW: High Quality Waters which are waters that are rated as excellent based on biological and physical/chemical characteristics through division monitoring or special studies, native and special native trout waters (waters and their tributaries) designated by the Wildlife Resources Commission, primary nursery areas (PNA) designated by the Marine Fisheries Commission and other functional nursery areas designated by the Wildlife Resources Commission, critical habitat areas designated by the Wildlife Resources Commission or the Department of Agriculture, all water supply watersheds which are either classified as WS-I or WS-II or those for which a formal petition for reclassification as WS-I or WS-II has been received from the appropriate local government and accepted by the Division of Environmental Management and all Class SA waters.

ORW: Outstanding Resource Waters which are unique and special waters of exceptional state or national recreational or ecological significance which require special protection to maintain existing uses.

FWS: Future Water Supply Waters which are waters intended for future drinking water supply purposes.

(d) Water Quality Standards. The water quality standards applicable to each classification assigned are those established in 15A NCAC 2B .0200, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, as adopted by the North Carolina Environmental Management Commission.

(e) Index Number.

(1) Reading the Index Number. The index number appearing in the column so designated is an identification number assigned to each stream or segment of a stream, indicating the specific tributary progression between the main stem stream and the tributary stream.

(2) Cross-Referencing the Index Number. The inclusion of the index number in the schedule is to provide a cross reference between the classification schedules and an alphabetic list of streams.

(f) Classification Date. The classification date indicates the date on which enforcement of the provisions of Section 143-215.1 of the General Statutes of North Carolina became effective with reference to the classification assigned to the various streams in North Carolina.

(g) Reference. Copies of the schedules of classifications adopted and assigned to the waters of the various river basins may be obtained at no charge by writing to:

Director

Division of Environmental Management

Department of Environment, Health, and Natural Resources

Post Office Box 29535

Raleigh, North Carolina 27626-0535

(h) Places where the schedules may be inspected:

Division of State Library

Archives -- State Library Building

109 E. Jones Street

Raleigh, North Carolina.

(i) Unnamed Streams.

(1) Any stream which is not named in the schedule of stream classifications carries the same classification as that assigned to the stream segment to which it is tributary except:

(A) unnamed streams specifically described in the schedule of classifications; or

(B) unnamed freshwaters tributary to tidal saltwaters will be classified "C"; or

(C) after November 1, 1986, any newly created areas of tidal saltwater which are connected to Class SA waters by approved dredging projects will be classified "SC" unless case-by-case reclassification proceedings are conducted.

(2) The following river basins have different policies for unnamed streams entering other states or for specific areas of the basin:

Hiwassee River Basin (Rule .0302); Little Tennessee River Basin and Savannah River Drainage Area (Rule .0303); French Broad River Basin (Rule .0304); Watauga River Basin (Rule .0305); Broad River Basin (Rule .0306); New River Basin (Rule .0307); Catawba River Basin (Rule .0308); Yadkin-Pee Dee River Basin (Rule .0309); Lumber River Basin (Rule .0310); Roanoke River Basin (Rule .0313); Tar-Pamlico River Basin (Rule .0316); Pasquotank River Basin (Rule .0317).

History Note: Authority G.S. 143-214.1; 143-215.1; 143-215.3(a)(1);

Eff. February 1, 1976;

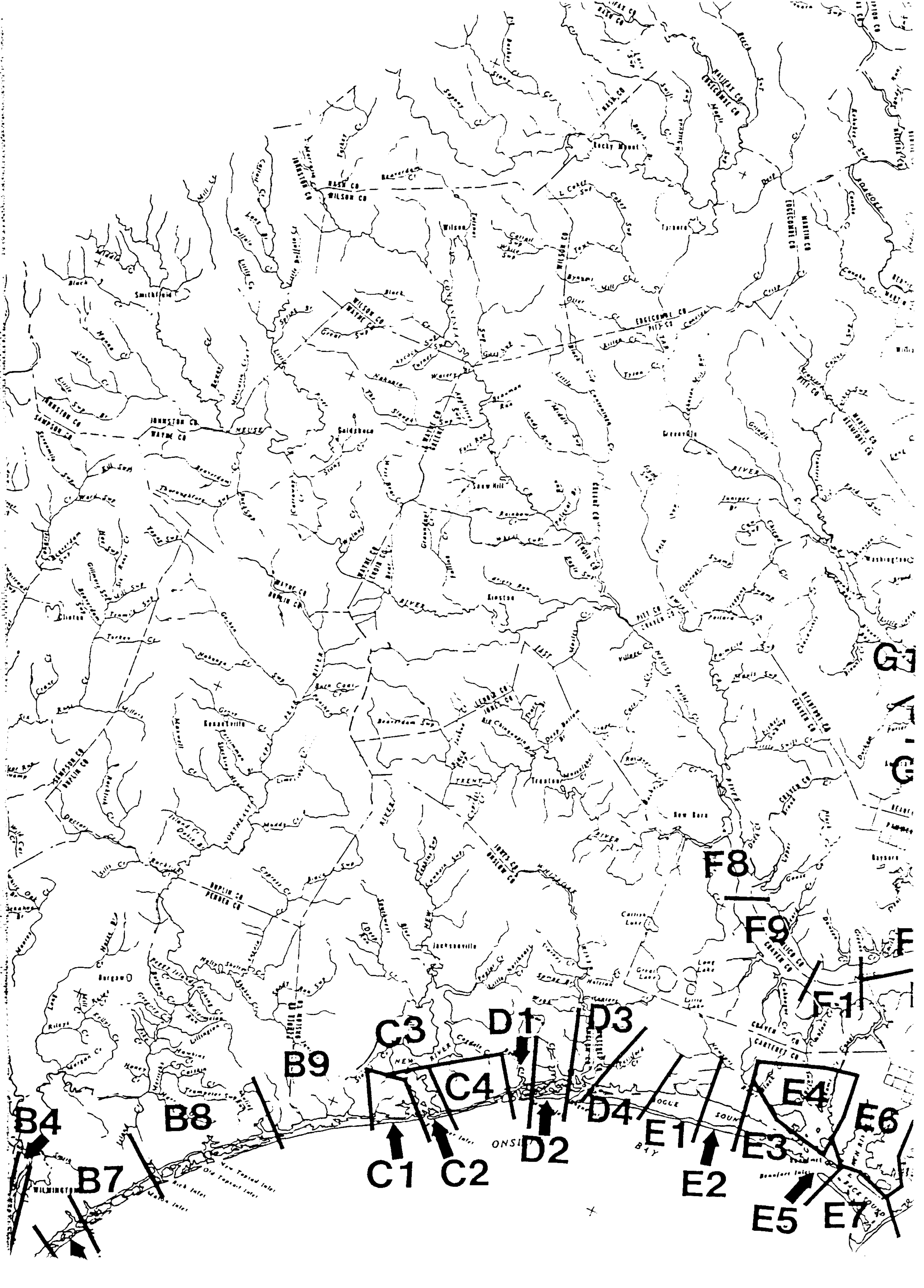
Amended Eff. August 1, 1995; August 3, 1992; August 1, 1990; October 1, 1989.

APPENDIX IV. TABLE OF SOURCE SUBCATEGORIES

Category	*Subcategory*	*Description*
0		Point Sources
	01	Industrial
	02	Municipal
	03	Municipal pretreatment (indirect dischargers)
	04	Combined sewer overflows (end-of-pipe control)
	05	Storm sewers (end-of-pipe control)
	06	Schools
	08	Minor non-municipal
1		Nonpoint sources
10		Agriculture
	11	Non-irrigated crop production
	12	Irrigated crop production
	13	Specialty crop production (e.g., truck farming and orchard)
	14	Pasture land
	15	Range lots
	16	Feedlots – all types
	17	Aquaculture
	18	Animal holding/management areas
20		Silviculture
	21	Harvesting, reforestation, residue management
	22	Forest management
	23	Road construction/maintenance
30		Construction
	31	Highway/road/bridge
	32	Land development
40		Urban Runoff
	41	Storm sewers (source control)
	42	Combined sewers (source control)
	43	Surface runoff
	44	Finger canals
	45	Industrial

Category	*Subcategory*	*Description*
50		Resource Extraction/Exploration/Development
	51	Surface mining
	52	Subsurface mining
	53	Placer mining
	54	Dredge mining
	55	Petroleum activities
	56	Mill tailings
	57	Mine tailings
	58	Abandoned mines
60		Land Disposal (Runoff/Leachate from permitted areas)
	61	Sludge
	62	Wastewater
	63	Landfills
	64	Industrial land treatment
	65	On-site wastewater systems (septic tanks, etc.)
	66	Hazardous waste
70		Hydrologic/Habitat Modification
	71	Channelization
	72	Dredging, sand dipping
	73	Dam construction
	74	Flow regulation
	75	Bridge construction
	76	Removal of riparian vegetation
	77	Streambank modification/destabilization
	78	Collapsed dam
80		Other
	81	Atmospheric deposition
	82	Waste storage/storage tank leaks
	83	Highway maintenance and runoff
	84	Spills
	85	In-place contaminants
	86	Natural
	87	Marinas, harbors
	88	Airport
	89	Military activities (off-road)
90		Source Unknown
	91	General erosion (road erosion)

APPENDIX V. MAP OF NC COASTAL AREAS



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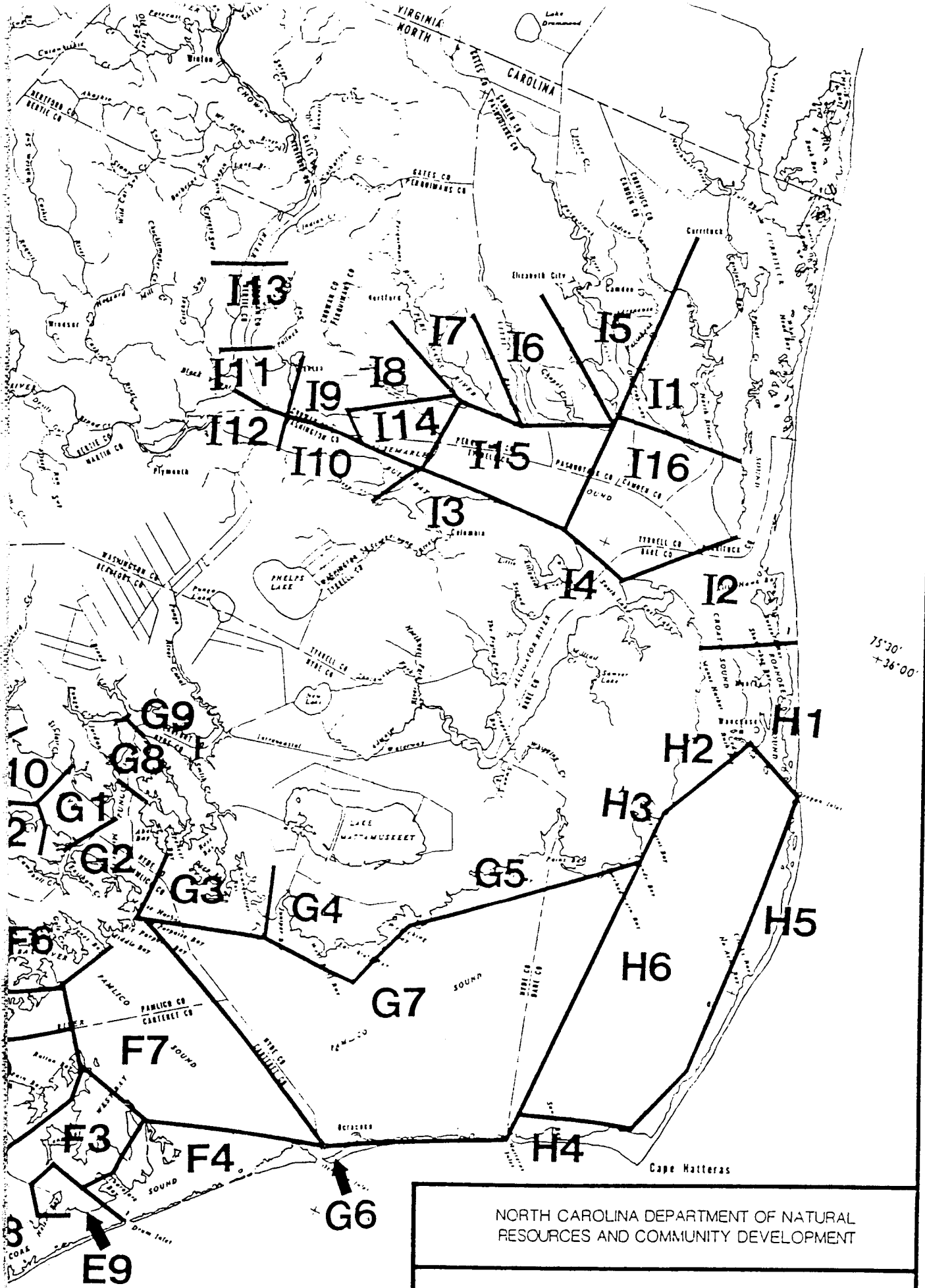

NORTH CAROLINA DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

COASTAL REGION OF NORTH CAROLINA

DHS AREAS AND DEM WATER