

## Section B - Chapter 2

### Tar-Pamlico River Subbasin 03-03-02

Tar River, Sandy Creek, Stoney Creek and Swift Creek

#### 2.1 Subbasin Overview

##### *Subbasin 03-03-02 at a Glance*

###### **Land and Water Area**

Total area:	663 mi <sup>2</sup>
Land area:	654 mi <sup>2</sup>
Water area:	9 mi <sup>2</sup>

###### **Population Statistics**

2000 Est. Pop.:	91,606 people
Pop. Density:	101 persons/mi <sup>2</sup>

###### **Land Cover (percent)**

Forest/Wetland:	64
Surface Water:	1
Urban:	3
Cultivated Crop:	27
Pasture/ Managed Herbaceous:	4.6

###### **Counties**

Edgecombe, Franklin, Nash,  
Vance, Warren and Wilson

###### **Municipalities**

Centerville, Nashville, Henderson,  
Rocky Mount, Spring Hope,  
Tarboro and Whitakers

Population growth is occurring around Rocky Mount, which is the largest urbanized area in the subbasin. The fastest growing area is Franklin County near the boundary with subbasin 03-03-01. Much of the subbasin, which includes the Swift Creek watershed, is rural and little development is occurring.

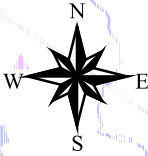
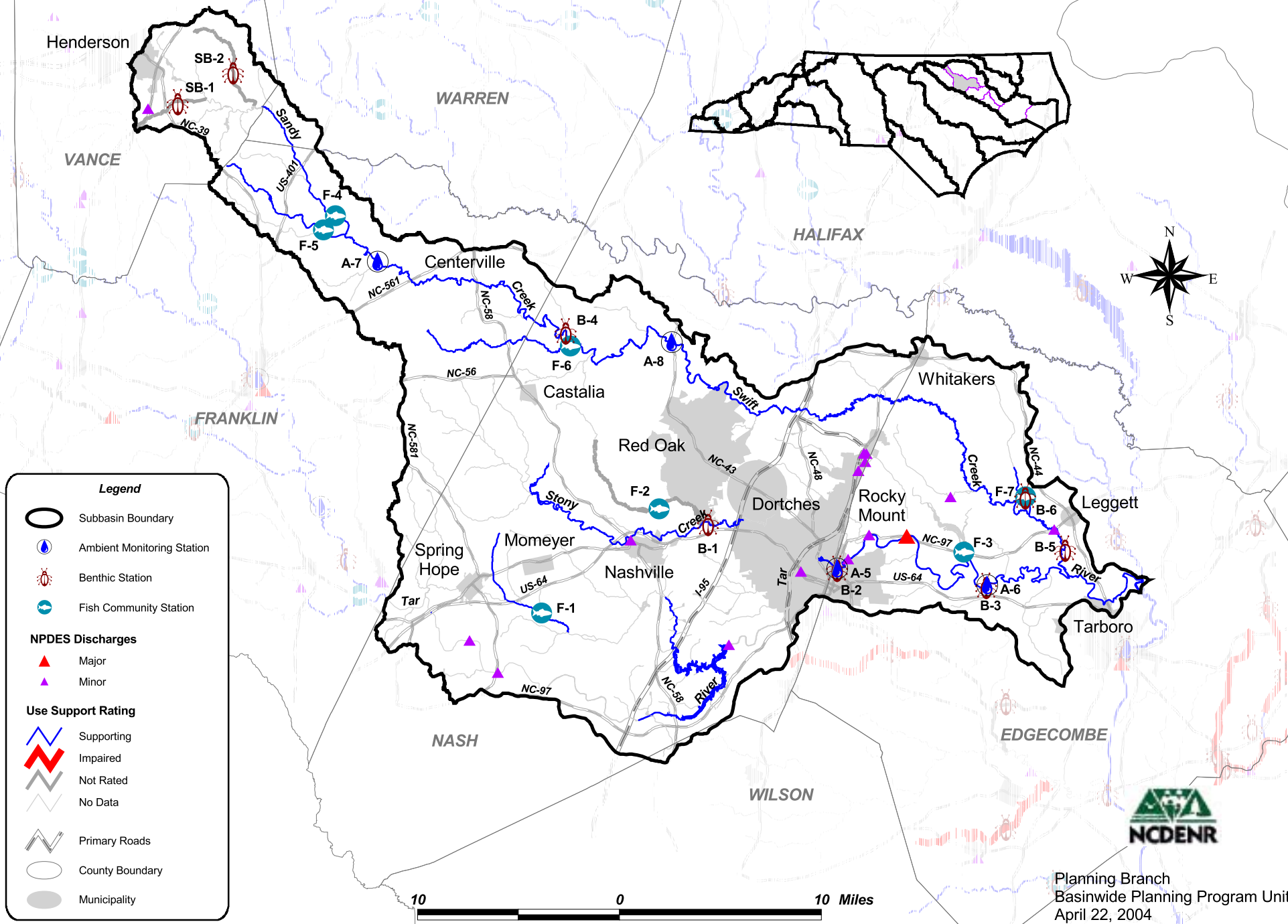
There are 12 individual NPDES wastewater discharge permits in this subbasin with a permitted flow of 23 MGD (Figure B-2). The largest is the Tar River Regional WWTP (21 MGD). There are also 15 general NPDES wastewater permits, two individual NPDES stormwater permits, and 58 general NPDES stormwater permits in the subbasin. Refer to Appendix I for identification and more information on individual NPDES permit holders.

Henderson, Nashville, Rocky Mount, Tarboro, as well as Edgecombe, Franklin and Nash counties, will be required to develop stormwater programs under Phase II (page 75). Henderson, Nashville, Rocky Mount, Tarboro, and Edgecombe, Nash and Franklin counties will also have to submit model stormwater ordinances as required by the Tar-Pamlico NSW strategy (page 61) stormwater rules. Significant issues related to compliance with NPDES permit conditions are discussed below. There are also 32 registered animal operations in this subbasin.

There were eight benthic macroinvertebrate community samples and seven fish community samples (Figure B-2 and Table B-3) collected in 2002 as part of basinwide monitoring. Two sites improved; one site remained the same, and three sites had lower bioclassifications. Seven sites were monitored for the first time, and there were two special study samples collected in the subbasin during the assessment period. Data were collected from nine ambient monitoring stations and one lake was monitored as well.

Refer to *2003 Tar-Pamlico River Basinwide Assessment Report* at <http://www.esb.enr.state.nc.us/bar.html> and Section A, Chapter 3 for more information on monitoring.

Figure B-2 Tar-Pamlico River Subbasin 03-03-02



**Legend**

- Subbasin Boundary
- Ambient Monitoring Station
- Benthic Station
- Fish Community Station

**NPDES Discharges**

- Major
- Minor

**Use Support Rating**

- Supporting
- Impaired
- Not Rated
- No Data

- Primary Roads
- County Boundary
- Municipality



Planning Branch  
 Basinwide Planning Program Unit  
 April 22, 2004

Table B-3 DWQ Assessment and Use Support Ratings Summary for Monitored Waters in Subbasin 03-03-02

Waterbody	Assessment Unit Number	DWQ Classification	Length/Area	Category	Data Type with Map Number and Data Results			Use Support Rating	
					Biological	Ambient	Other	2004	1998
Sapony Creek	28-55-(1)	C NSW	7.7 mi	AL	F-1 NR--02			S	NR
TAR RIVER (Reservoir)	28-(63)	WS-IV NSW CA	98.8 ac.	AL			L-1 nce	S	ST
TAR RIVER	28-(66.5)	WS-IV NSW CA	0.7 mi.	FC	FT-1 ce			I	N/A
Stony Creek	28-68a	C NSW	19.4 mi	AL	B-1 GF--02			S	PS
Pigbasket Creek	28-68-3-(2)	C NSW	11.2 mi	AL	F-2 NR--02			NR	NR
TAR RIVER	28-(69)	C NSW	11.3 mi	AL	B-2 GF--02	A-5 nce		S	ST
TAR RIVER	28-(69)	C NSW	11.3 mi.	REC		A-5 nce		S	N/A
TAR RIVER	28-(74)a	WS-IV NSW	21.0 mi	AL	B-3 GF--02	A-6 nce		S	FS
TAR RIVER	28-(74)a	WS-IV NSW	21.0 mi.	REC		A-6 nce		S	N/A
Beech Branch	28-75-(4)	WS-IV NSW	1.0 mi	AL	F-3 NR--02			NR	FS
Swift Creek	28-78-(0.5)	C NSW	37.7 ac	AL		A-8 nce A-9 nce		S	FS
Swift Creek	28-78-(0.5)	C NSW	37.7 mi.	REC		A-8 nce A-9 nce		S	N/A
Martin Creek	28-78-1-3	C NSW	4.2 mi.	AL	SB-1 NR--02			NR	NR
Weaver Creek	28-78-1-7	C NSW	6.5 mi.	AL	SB-2 NR--02			NR	ST
Sandy Creek	28-78-1-(8)b	B NSW	11.3 mi.	AL		A-7 nce		S	PS
Sandy Creek	28-78-1-(8)b	B NSW	11.3 mi.	REC		A-7 nce		S	N/A
Sandy Creek	28-78-1-(8)a	B NSW	3.8 mi.	AL	F-4 GF--02			S	PS
Flatrock Creek	28-78-1-12	B NSW	9.1 mi.	AL	F-5 G--02			S	NR
Sandy Creek	28-78-1-(14)	C NSW	20.3 mi.	AL	B-4 GF--02			S	FS
Red Bud Creek	28-78-1-17	C NSW	10.6 mi.	AL	F-6 G--02			S	FS
Swift Creek	28-78-(6.5)	WS-IV NSW	10.0 mi.	AL	B-5 G--02			S	FS
Whiteoak Swamp	28-78-7-(2)	WS-IV NSW	2.8 mi.	AL	B-6 MS--02 F-7 NR--02			S	FS

**Assessment Unit Number** - Portion of DWQ Classified Index where monitoring is applied to assign a use support rating.

<b>Use Categories:</b> AL - Aquatic Life REC - Recreation FC - Fish Consumption	<b>Monitoring data type:</b> F - Fish Community Survey B - Benthic Community Survey SF - Special Fish Community Study SB - Special Benthic Community Study A - Ambient Monitoring Site L - Lakes Assessment FT - Fish Tissue Site	<b>Bioclassifications:</b> E - Excellent    N - Natural G - Good        MS - Moderate Stress GF - Good-Fair    SS - Severe Stress F - Fair P - Poor	<b>Use Support Ratings 2004:</b> S - Supporting, I - Impaired, NR - Not Rated  <b>Use Support Ratings 1998:</b> FS - fully supporting, ST - supporting but threatened, PS - partially supporting, NS - not supporting, NR - not rated, N/A - not applicable
		<b>Ambient Data</b> nce - no criteria exceeded ce - criteria exceeded	

Use support ratings for all waters in subbasin 03-03-02 are summarized in Part 2.2 below. Recommendations, current status and future recommendations for waters that were Impaired in 1999 are discussed in Part 2.3 below. Current status and future recommendations for newly Impaired waters are discussed in Part 2.4 below. Waters with noted water quality impacts are discussed in Part 2.5 below. Water quality issues related to the entire subbasin are discussed in Part 2.6. Refer to Appendix III for a complete list of monitored waters and more information on Supporting monitored waters.

## **2.2 Use Support Assessment Summary**

Use support ratings were assigned for waters in subbasin 03-03-02 in the aquatic life, recreation, fish consumption and water supply categories. All waters are Impaired on an evaluated basis in the fish consumption category because of statewide fish consumption advice for mercury that is applied in this category to basins east and south of I-85 (page 90). Also, 0.7 miles of the Tar River are Impaired in the fish consumption category based on fish tissue monitoring data. In the water supply category, all waters are Supporting on an evaluated basis based on reports from DEH regional water treatment plant consultants.

There were 187.9 stream miles (37 percent) and 717.6 freshwater acres (99 percent) monitored during this assessment period in the aquatic life category. There were no Impaired waters in this use category. Refer to Table B-4 for a summary of use support ratings for waters in subbasin 03-03-02.

Table B-4 Summary of Use Support Ratings by Category in Subbasin 03-03-02

Use Support Rating	Aquatic Life	Fish Consumption	Recreation	Water Supply
<b>Monitored Waters</b>				
Supporting	165.0 mi 717.6 ac	0	81.2	0
Impaired	0	0.7	0	0
Not Rated	22.9	0	0	0
<b>Total</b>	<b>187.9 mi 717.6 ac</b>	<b>0.7</b>	<b>81.2 mi</b>	<b>0</b>
<b>Unmonitored Waters</b>				
Supporting	0	0	0	129.3 mi 722.0 ac
Impaired	0	510.5 722.0	0	0
Not Rated	0	0	0	0
No Data	323.3 mi 4.4 ac	0	430.0 mi 722 ac	0
<b>Total</b>	<b>323.3 mi 4.4 ac</b>	<b>510.5 722.0</b>	<b>422.4 98.9</b>	<b>129.3 mi 722.0 ac</b>
<b>Totals</b>				
<b>All Waters</b>	<b>511.2 mi 722 ac</b>	<b>511.2 mi 722 ac</b>	<b>511.2 mi 722 ac</b>	<b>129.3 mi 722.0 ac</b>

## 2.3 Status and Recommendations of Previously Impaired Waters

Waters in the following section are identified by assessment unit number (AU#). This number is used to track defined segments in the water quality assessment database, 303(d) Impaired waters list, and the various tables in this basin plan. The assessment unit number is a subset of the DWQ index number (classification identification number). A letter attached to the end of the AU# indicates that the assessment is smaller than the DWQ index segment. No letter indicates that the assessment unit and the DWQ index segment are the same.

### 2.3.1 Sandy Creek [AU# 28-78-1-(8)a, b and 28-78-1-(14)]

#### 1999 Recommendations

It was recommended that Sandy Creek be resampled to determine if the water quality impacts noted in 1997 were related to the 1996 Hurricane Fran.

#### Current Status

Sandy Creek (35.4 miles) from NC 401 to Swift Creek is currently Supporting in the aquatic life category because of Good-Fair bioclassifications at sites B-4 and F-4 in 2002. No criteria were

exceeded at site A-7. Based on bacteriological monitoring (site A-7), Sandy Creek [AU# 28-78-1-(8)b only] is Supporting in the recreation category.

In the 1999 plan, Sandy Creek was Impaired from NC 401 to NC 561 (15.1 miles). Possible causes of the impairment were thought to be related to the hurricane and possibly to logging and a milldam just upstream of site B-4. Intolerant species were collected in 2002, indicating reduced impact to the stream. The biological community may also have been adversely impacted by the four-year drought, although nonpoint source runoff impacts may have been minimized during this time.

The High Roost Poultry Farm has been an inactive operation since 1998. The farm lagoon has had overflows during some rain events and there have been civil penalty assessments against the farm.

#### 2004 Recommendations

DWQ will continue to monitor water quality in Sandy Creek to determine if the cause of the depressed biological community is from extreme meteorological events or land use activities. Land-disturbing activities should implement BMPs to minimize or prevent future impacts to water quality in the Sandy Creek watershed. The Sandy Creek watershed is also part of a proposed ORW management strategy to protect water quality in downstream portions of Swift Creek. The Raleigh Regional Office staff will continue to monitor the High Roost farm. Additionally, DWQ will continue to work with the Office of the Attorney General in pursuit of obtaining corrective actions to cease the overflows and will also work with farm owners and other agencies to find a permanent solution.

### **2.3.2 Stoney Creek [AU# 28-68a]**

#### 1999 Recommendations

Because of low flow in 1997, Stoney Creek was not resampled in 1997, although it remained on the 303(d) list of Impaired waters. No recommendations were made to address water quality issues in the 1999 plan.

#### Current Status

Stoney Creek (Boddies Mill Pond 19.4 miles) from the source to Lassiters Creek is currently Supporting because of a Good-Fair bioclassification at site B-1. No data were collected on the lower segment from Lassiters Creek to the Tar River (segment runs through urban areas in southwest Rocky Mount). Although most of the watershed is in forest and agricultural land use, there is development occurring both upstream and downstream of site B-1. The cause of the depressed bioclassification is likely habitat degradation, as there was little riparian area and moderate to severe bank erosion noted at site B-1. Also, drought conditions limited available habitat in Stoney Creek during monitoring (page 82).

#### 2004 Recommendations

DWQ will continue monitoring Stoney Creek to determine if the cause of the depressed biological community is from extreme meteorological events or land use activities. Water quality should be considered during land-disturbing activities, and BMPs should be implemented to minimize or prevent future impacts to water quality in the Stoney Creek watershed.

### Current Water Quality Initiatives

Because of previous impairment and current water quality degradation, this is one of 27 local watersheds in the Tar-Pamlico River basin that has been identified by EEP as an area with the greatest need and opportunity for stream and wetland restoration efforts.

## **2.4 Status and Recommendations of Newly Impaired Waters**

Waters in the following section are identified by assessment unit number (AU#). This number is used to track defined segments in the water quality assessment database, 303(d) Impaired waters list, and the various tables in this basin plan. The assessment unit number is a subset of the DWQ index number (classification identification number). A letter attached to the end of the AU# indicates that the assessment is smaller than the DWQ index segment. No letter indicates that the assessment unit and the DWQ index segment are the same.

### **2.4.1 Tar River [AU# 28-(66.5)]**

#### Current Status

The Tar River (0.7 miles) is currently Impaired in the fish consumption category from Maple Creek to Old Rocky Mount water intake because fish tissue collected in this segment exceeded the state criterion of 0.4 µg of methylmercury per gram of fish tissue. Five of 13 large mouth bass collected in this segment also exceeded this criterion. There is also statewide consumption advice for mercury in fish tissue that is applied to waters east and south of I-85.

#### 2002 Recommendations

Contamination of fish tissue with mercury is a regional issue. Refer to page 90 for more information on plans to address mercury.

## **2.5 Status and Recommendations for Waters with Noted Impacts**

The surface waters discussed in this section are not Impaired. However, notable water quality problems and concerns have been documented for these waters based on this assessment. While these waters are not Impaired, attention and resources should be focused on these waters to prevent additional degradation or facilitate water quality improvement.

Waters in the following section are identified by assessment unit number (AU#). This number is used to track defined segments in the water quality assessment database, 303(d) Impaired waters list, and the various tables in this basin plan. The assessment unit number is a subset of the DWQ index number (classification identification number). A letter attached to the end of the AU# indicates that the assessment is smaller than the DWQ index segment. No letter indicates that the assessment unit and the DWQ index segment are the same.

### **2.5.1 White Oak Swamp [AU# 28-78-7-(2)]**

#### Current Status and 2004 Recommendations

White Oak Swamp (2.8 miles) is currently Supporting because of a moderate stress bioclassification at site B-6 in 2002. The stream was channelized in the past, but habitat is good and the stream appears to be recovering.

DWQ will continue to monitor White Oak Swamp to assess further recovery. Water quality should be considered during land-disturbing activities, and BMPs should be implemented to minimize or prevent future impacts to water quality in the White Oak Swamp watershed.

### **2.5.2 Beech Branch [AU# 28-75-(4)]**

#### Current Status and 2004 Recommendations

The current use support rating of Beech Branch is Not Rated because site F-3 could not be rated as criteria for assigning bioclassifications to fish community samples have not been developed for coastal plain streams (page 73). Past channelization was noted at site F-3 and the area had been recently logged. The fish community was diverse; however, and more fish were collected here than at other coastal plain sites.

DWQ will continue to monitor Beech Branch to assess changes in the fish community that might be related to land-disturbing activities. Water quality should be considered during land-disturbing activities, and BMPs should be implemented to minimize or prevent future impacts to water quality in the Beech Branch watershed. DWQ will continue to develop criteria to assign bioclassifications for coastal plain fish communities.

### **2.5.3 Tar River Reservoir [AU# 28-(63) and 28-(36)]**

#### Current Status and 2004 Recommendations

The Tar River Reservoir is Supporting in the aquatic life category based on monitoring during the summer of 2002. Because of the drought, water levels dropped four feet during the summer, and nutrients and chlorophyll *a* increased during the summer. Increased turbidity levels were likely (from 1997 levels) related to the lower lake levels. DWQ will continue to monitor the lake.

Because of the potential water quality problems noted above and because the Tar River Reservoir is a public water supply, it has been identified by EEP as one of 27 local watersheds in the basin with the greatest need and opportunity for stream and wetland restoration efforts. This watershed will be given higher priority than nontargeted watersheds for implementation of EEP restoration projects.

### **2.5.4 Tar River [AU# 28-(69) and 28-(74)a]**

#### Current Status and 2004 Recommendations

The current use support rating of the Tar River from Rocky Mount Mills to the subbasin boundary is Supporting because of Good-Fair bioclassifications at sites B-2 and B-3 in 2002. Both of these bioclassifications are lower than in 1997. Trash was noted as well as eroding



streambanks at site B-2. The lower bioclassification at site B-3 is attributed to drought. No stoneflies were present at site B-2, indicating some water quality problems in this segment. No criteria were exceeded at sites A-5 and A-6, although total suspended solids and total phosphorus were elevated at both sites.

DWQ will continue to monitor the Tar River to determine if the lower bioclassifications were because of drought or other water quality problems related to land disturbances or discharges.

### **2.5.5 Pig Basket Creek [AU# 28-68-3-(1) and (2)]**

#### Current Status and 2004 Recommendations

The lower portion of Pig Basket Creek is currently Not Rated because a bioclassification could not be assigned at site F-2 in 2002. Low dissolved oxygen levels were noted at F-2 as well. There is currently no data available to assign use support ratings to the upper portion of Pig Basket Creek.

Production Enterprises poultry farm has had overflows of the treatment lagoon near the source of Pig Basket Creek. The facility is presently abandoned by its owners and has had no poultry since 2001. The Raleigh Regional Office staff will continue to monitor the Production Farm. Additionally, DWQ will continue to work with the Office of the Attorney General in pursuit of obtaining corrective actions to cease the overflows and will also work with farm owners and other agencies to find a permanent solution.

### **2.5.6 Red Bud Creek [AU# 28-78-1-17]**

#### Current Status and 2004 Recommendations

Red Bud Creek (10.6 miles) from the source to Sandy Creek is currently Supporting in the aquatic life category because of Good bioclassification at site F-6 in 2002. The Yang Poultry Farm has had overflows of the treatment lagoon near an unnamed tributary to Red Bud Creek. The facility was assessed a civil penalty for a discharge in 2000. This farm was depopulated of birds in October of 2003 and is presently abandoned.

The Raleigh Regional Office staff will continue to monitor the Yang Farm. Additionally, DWQ will continue to work with the Office of the Attorney General in pursuit of obtaining corrective actions to cease the overflows and will also work with farm owners and other agencies to find a permanent solution.

## **2.6 Additional Water Quality Issues within Subbasin 03-03-05**

### **2.6.1 Swift Creek and Sandy Creek**

Portions of these two creeks have been reclassified to ORW because of excellent water quality. Refer to page 41 for more information on this reclassification.