

Appendix A

Use Support Ratings for All Monitored Waterbodies in Yadkin River Subbasin HUC-03040103

IR Category	Integrated Reporting Categories for individual Assessment Unit/Use Support Category/Parameter Assessments. A single AU can have multiple assessments depending on data available and classified uses.
1	Supporting the assessed use no criteria exceeded (NCE) for a parameter of interest (POI) in a Use Support Category (USC).
1t	Supporting the assessed use no criteria exceeded (NCE) for a parameter of interest (POI) in a Use Support Category and there is an approved TMDL for the POI.
2	Supporting or not Impaired for all monitored uses
3a	Instream/monitoring data are inconclusive (DI)
3c	No Data available for assessment
3t	No Data available for assessment –AU is in a watershed with an approved TMDL
4a	Impaired for the assessed USC/POI; There is a standards violation (SV) and an approved TMDL for the POI.
4b	Impaired for the assessed USC/POI; Other program expected to address POI
4c	Impaired for the assessed USC/POI loss of use (LOU) and POI is a non pollutant
4cr	Impaired for LOU Recreation use and there is no data for TMDL (swimming advisories posted)
4ct	Impaired for the assessed USC/POI and the AU is in a watershed that is part of TMDL study area for the POI.
4s	Impaired Biological integrity with an identified Aquatic Life Standards Violation listed in Category 5
5	Impaired for the assessed USC/POI in need of TMDL for POI
5s	Impaired Biological integrity and stressor study does not indicate aquatic life standard violations.

Yadkin-Peedee River Basin

Yadkin River 8-Digit Subbasin 03040103

Assessment Unit Number	Name	Potential Stressors	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
Description	Potential Sources								
Classification	DWQ Subbasin	Miles/Acres							
12-119-(1)	Abbotts Creek	Habitat Degradation	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity FishCom	2006	2008	5
From source to a point 0.5 mile upstream of Davidson County SR 1810			Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2006		1
WS-III	03-07-07	18.8 FW Miles							
12-119-(6)a	Abbotts Creek		Aquatic Life	Impaired	Standard Violation	Turbidity	2006	2008	5
From upstream side of culvert at U.S. Hwys. 29 & 70 to SR1243			Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2006	2004	4s
C	03-07-07	6.4 FW Miles	Recreation	Not Rated	Potential Standards Violation	Fecal Coliform (recreation)	2006		3a
12-119-(6)b	Abbotts Creek		Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2006	2004	5
From SR1243 to I85			Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
C	03-07-07	1.6 FW Miles							
12-119-(4.5)	Abbotts Creek (including Lexington-Thomasville Water Supply Reservoir at normal reservoir elevation, Tom-A-Lex Lake)		Aquatic Life	Not Rated	Data Inconclusive	Chlorophyll a	2006		3a
From a point 0.5 mile upstream of Davidson County SR 1810 to the upstream side of culvert at U.S. Hwys. 29 & 70									
WS-III;CA	03-07-07	2.3 FW Miles							
12-118.5a	Abbotts Creek Arm of High Rock Lake		Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
From source at I-85 to NC 47			Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-V,B	03-07-07	3.7 FW Miles							
12-118.5b	Abbotts Creek Arm of High Rock Lake		Aquatic Life	Impaired	Standard Violation	Turbidity	2006	2004	5
From NC 47 to Davidson County SR 2294			Aquatic Life	Impaired	Standard Violation	High pH	2006	2008	5
WS-V,B	03-07-07	5.9 FW Miles	Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
13-2-3-3-(0.7)	Back Creek (Back Creek Lake)	Chlorophyll a	Aquatic Life	Not Rated	Data Inconclusive	Chlorophyll a	2006		3a
From a point 1.0 mile downstream of Randolph County SR 1504 to dam at Back Creek Lake (City of Asheboro water supply intake)			Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Water Supply	2006		1
WS-II;HQW,CA	03-07-09	0.6 FW Miles							

Yadkin-Peedee River Basin

Yadkin River 8-Digit Subbasin 03040103

Assessment Unit Number	Name	Potential Stressors	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
Description		Potential Sources							
Classification	DWO Subbasin	Miles/Acres							
12-126-(4)	Lick Creek		Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
From a point 1.0 mile upstream of Davidson County SR 2501 to Tuckertown Lake, Yadkin River			Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity FishCom	2006		1
WS-IV;CA	03-07-08	0.7 FW Miles	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2006	2008	5
			Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
12-110-3	Little Creek	Habitat Degradation	Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2006		1
From source to Grants Creek									
C	03-07-04	6.5 FW Miles							
13-2-1	Little Uwharrie River (Wheatmore Pond)		Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity FishCom	2006		1
From source to Uwharrie River			Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2006		1
WS-III	03-07-09	11.9 FW Miles							
13-2-20-(0.7)	McLeans Creek		Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2005		1
From a point 0.8 mile upstream of Montgomery County SR 1154 to Uwharrie River									
WS-IV	03-07-09	4.0 FW Miles							
13-2-20-1-1	Moccasin Creek		Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2005		1
From source to West Branch									
WS-IV	03-07-09	2.1 FW Miles							
12-119-7-4-1	North Hamby Creek	Toxic Impacts	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2003	1998	5
From source to Hamby Creek									
C	03-07-07	5.8 FW Miles							
13-(1)	PEE DEE RIVER (including Lake Tillery below normal operating levels)		Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
From mouth of Uwharrie River to Norwood Dam			Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-IV,B;CA	03-07-08	4,845.5 FW Acres	Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Water Supply	2006		1
13-2-18-1	Poison Fork		Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2005		1
From source to Barnes Creek									
C;ORW	03-07-09	4.5 FW Miles							

Yadkin-Peedee River Basin

Yadkin River 8-Digit Subbasin 03040103

Assessment Unit Number	Name	Potential Stressors	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
Description		Potential Sources							
Classification	DWQ Subbasin	Miles/Acres							
12-119-7a	Rich Fork	Fecal Coliform Bacteria	Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards	2006		1
From source to Payne Creek		Failing Septic Systems				Aquatic Life			
C	03-07-07	8.5 FW Miles	Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity	2006		1
		General Agriculture/Pasture				Benthos			
		MS4 NPDES							
		Natural Conditions	Recreation	Impaired	Standard Violation	Fecal Coliform (recreation)	2006	1998	4a
		WWTP NPDES							
		Habitat Degradation							
		General Agriculture/Pasture							
		Impervious Surface							
12-119-7b	Rich Fork	Fecal Coliform Bacteria	Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards	2006		1
From Payne Creek to Abbotts Creek		Failing Septic Systems				Aquatic Life			
C	03-07-07	12.1 FW Miles	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity	2006	1998	5
		General Agriculture/Pasture				FishCom			
		MS4 NPDES							
		WWTP NPDES	Recreation	Not Rated	Potential Standards Violation	Fecal Coliform (recreation)	2006	1998	4a
		Habitat Degradation							
		Low Dissolved Oxygen							
12-117-2	Second Creek	Habitat Degradation	Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity	2004		1
From source to Second Creek Arm of of High Rock Lake, Yadkin River		Industrial Site				FishCom			
C	03-07-04	13.5 FW Miles	Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity	2006		1
						Benthos			
12-117-(3)	Second Creek Arm of High Rock Lake	Chlorophyll a	Aquatic Life	Not Rated	Data Inconclusive	High Water Temperature	2006	2008	3a
From a point 1.7 miles downstream of Rowan County SR 1004 to High Rock Lake		Stormwater Runoff							
WS-IV,B	03-07-04	894.9 FW Acres	Aquatic Life	Impaired	Standard Violation	High pH	2006	2008	5
		High pH	Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
		Stormwater Runoff							
		Temperature							
		Impoundment							
		Natural Conditions							
12-113	Swearing Creek	Habitat Degradation	Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards	2006		1
From source to High Rock Lake, Yadkin River						Aquatic Life			
C	03-07-07	14.4 FW Miles	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity	2004	2004	5
						FishCom			
			Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity	2006		1
						Benthos			
			Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1

Yadkin-Peedee River Basin

8-Digit Subbasin 03040103

Assessment Unit Number	Name	Potential Stressors	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
Description	Classification	DWQ Subbasin	Miles/Acres	Potential Sources					
13-2-(4.5)	Uwharrie River								
From Randolph County SR 1174 to a point 1.3 miles upstream of mouth of Barnes Creek									
B	03-07-09	18.8	FW Miles						
				Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards Aquatic Life	2006	1
				Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2006	1
				Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006	1
13-2-20-1	West Branch								
From source to McLeans Creek									
WS-IV	03-07-09	3.8	FW Miles						
				Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity Benthos	2005	1
12-(114)	YADKIN RIVER (including lower portion of High Rock Lake)	Chlorophyll a							
From a line across High Rock lake from the downstream side of mouth of Crane Creek to the downstream side of mouth of Swearing Creek to a point 0.6 mile upstream of dam of High Rock Lake, except for the Abbotts Creek Arm of High Rock Lake upstream of Davi		Stormwater Runoff							
		High pH							
		Stormwater Runoff							
		Temperature							
		Impoundment							
WS-IV,B	03-07-04	4,870.1	FW Acres						
				Aquatic Life	Not Rated	Data Inconclusive	High Water Temperature	2006	3a
				Aquatic Life	Impaired	Standard Violation	High pH	2006	2008 5
				Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008 5
				Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006	1
12-(124.5)a	YADKIN RIVER (including lower portion of High Rock Lake)	Chlorophyll a							
From a point 0.6 mile upstream of dam of High Rock Lake to High Rock Dam		Stormwater Runoff							
		High pH							
		Stormwater Runoff							
WS-IV,B;CA	03-07-04	10.8	FW Acres						
				Aquatic Life	Impaired	Standard Violation	High pH	2006	2008 5
				Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008 5
				Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006	1
12-(124.5)c	YADKIN RIVER (including Tuckertown Lake, Badin Lake)								
From the mouth of Cabin Creek to Badin Lake									
WS-IV,B;CA	03-07-04	7,937.8	FW Acres						
				Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards Aquatic Life	2006	1
				Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006	1
				Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Water Supply	2006	1
12-(124.5)d	YADKIN RIVER (including Tuckertown Lake, Badin Lake)								
Badin Lake									
WS-IV,B;CA	03-07-04	6,847.0	FW Acres						
				Aquatic Life	Not Rated	Data Inconclusive	Water Quality Standards Aquatic Life	2006	3a
12-(108.5)b	YADKIN RIVER (including upper portion of High Rock Lake below normal operating level)	Chlorophyll a							
From mouth of Grants Creek to a line across High Rock Lake from the downstream side of mouth of Crane Creek to the downstream side of mouth of Swearing Creek		Stormwater Runoff							
		High pH							
		Stormwater Runoff							
		Turbidity							
		Stormwater Runoff							
WS-V	03-07-04	5,568.8	FW Acres						
				Aquatic Life	Impaired	Standard Violation	High pH	2006	2008 5
				Aquatic Life	Impaired	Standard Violation	Turbidity	2006	2004 5
				Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2004 5
				Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006	1
				Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Water Supply	2006	1

Yadkin-Peedee River Basin

Yadkin River 8-Digit Subbasin 03040103

Assessment Unit Number	Name		Potential Stressors	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
Description	Classification	DWQ Subbasin	Miles/Acres	Potential Sources						
12-(124.5)b	YADKIN RIVER (including upper portion of Tuckertown Lake)		Low Dissolved Oxygen Impoundment	Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
From High Rock Dam to mouth of Cabin Creek				Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-IV,B;CA	03-07-04	3.5	FW Miles	Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Water Supply	2006		1

Appendix B

**Ambient Monitoring Stations
Summary Sheets**

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: GRANTS CRK AT SR 1915 NR SALISBURY

Station #: Q4540000

Hydrologic Unit Code: 3040103

Latitude: 35.70718

Longitude: -80.43608

Stream class: C

Agency: NCAMBNT

NC stream index: 12-110

Time period: 10/05/2005 to 12/06/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	15	0	<4	1	6.7		3.8	4.9	6.5	9.2	10.4	11.7	11.7
	15	0	<5	1	6.7		3.8	4.9	6.5	9.2	10.4	11.7	11.7
pH (SU)	15	0	<6	0	0		6.1	6.1	6.2	6.5	7	7.6	7.6
	15	0	>9	0	0		6.1	6.1	6.2	6.5	7	7.6	7.6
Spec. conductance (umhos/cm at 25°C)	15	0	N/A				49	77	129	137	166	183	187
Water Temperature (°C)	15	0	>32	0	0		6.7	6.9	8.2	12.2	21.9	23.8	24.7
Other													
TSS (mg/L)	5	0	N/A				2.8	2.8	2.9	6	41.5	68	68
Turbidity (NTU)	15	0	>50	3	20	94.4	4.9	5.1	7.6	11	20	218.4	306
Nutrients (mg/L)													
NH3 as N	15	7	N/A				0.02	0.02	0.02	0.02	0.05	0.08	0.12
NO2 + NO3 as N	15	0	N/A				0.06	0.06	0.14	0.26	0.44	0.57	0.72
TKN as N	15	1	N/A				0.2	0.2	0.26	0.33	0.42	0.87	1.4
Total Phosphorus	15	0	N/A				0.03	0.03	0.04	0.05	0.08	0.31	0.51
Metals (ug/L)													
Aluminum, total (Al)	5	0	N/A				210	210	225	440	6745	13000	13000
Arsenic, total (As)	5	5	>10	0	0		5	5	5	5	5	5	5
Cadmium, total (Cd)	5	5	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	5	5	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	5	2	>7	2	40		2	2	2	2	23	24	24
Iron, total (Fe)	5	0	>1000	3	60		150	150	395	1100	9150	17000	17000
Lead, total (Pb)	5	4	>25	0	0		10	10	10	10	14	19	19
Mercury, total (Hg)	5	5	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	5	4	>88	0	0		10	10	10	10	12	14	14
Zinc, total (Zn)	5	3	>50	2	40		10	10	10	10	786	1500	1500
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
15	331	6	40	98.2									

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: GRANTS CRK AT SR 1915 NR SALISBURY

Station #: Q4540000

Hydrologic Unit Code: 3040103

Latitude: 35.70718

Longitude: -80.43608

Stream class: C

Agency: YPDRBA

NC stream index: 12-110

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	85	0	<4	0	0		5.2	5.5	6.1	7.2	8.8	10	11.6
	85	0	<5	0	0		5.2	5.5	6.1	7.2	8.8	10	11.6
pH (SU)	85	0	<6	0	0		6.7	6.7	6.8	7	7.4	8	8.2
	85	0	>9	0	0		6.7	6.7	6.8	7	7.4	8	8.2
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				88	107	116	140	168	222	271
Water Temperature (°C)	85	0	>32	0	0		5.6	7.1	12.1	20.2	23.4	26.7	29.1
Other													
Turbidity (NTU)	60	0	>50	3	5		2.2	5.2	7.1	11	19.8	33.8	120
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
60	106	5	8										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: GRANTS CRK BELOW SALISBURY AND SPENCER WWTP
Station #: Q4600000 **Hydrologic Unit Code:** 3040103
Latitude: 35.71085 **Longitude:** -80.42597 **Stream class:** C
Agency: NCAMBNT **NC stream index:** 12-110

Time period: 01/23/2002 to 08/04/2005

Field	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	43	0	<4	0	0		4.5	5.5	6.6	7.4	10.1	12.3	13.6
	43	0	<5	1	2.3		4.5	5.5	6.6	7.4	10.1	12.3	13.6
pH (SU)	43	0	<6	0	0		6.1	6.4	6.7	6.9	7.1	7.4	7.7
	43	0	>9	0	0		6.1	6.4	6.7	6.9	7.1	7.4	7.7
Spec. conductance (umhos/cm at 25°C)	43	0	N/A				71	95	128	142	157	203	289
Water Temperature (°C)	43	0	>32	0	0		1.2	6.5	8.9	13.9	21.7	23.7	26.7
Other													
TSS (mg/L)	14	0	N/A				3	3.5	4	9.5	44.2	535	820
Turbidity (NTU)	42	0	>50	4	9.5		6.2	7.2	8.5	13	22	67.5	380
Nutrients (mg/L)													
NH3 as N	42	4	N/A				0.02	0.02	0.02	0.04	0.07	0.11	0.19
NO2 + NO3 as N	42	0	N/A				0.05	0.22	0.34	0.4	0.56	2.49	6.1
TKN as N	42	2	N/A				0.2	0.22	0.26	0.35	0.46	0.57	0.84
Total Phosphorus	42	0	N/A				0.03	0.04	0.05	0.07	0.14	0.51	1.2
Metals (ug/L)													
Aluminum, total (Al)	15	0	N/A				140	158	240	320	880	20180	38000
Arsenic, total (As)	15	15	>10	0	0		5	5	5	10	10	10	10
Cadmium, total (Cd)	15	15	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	15	15	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	15	3	>7	5	33.3	99.8	2	2	2	3	12	31	32
Iron, total (Fe)	15	0	>1000	9	60	100	820	832	920	1100	1800	17700	30000
Lead, total (Pb)	15	14	>25	1	6.7		10	10	10	10	10	21	38
Mercury, total (Hg)	15	15	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	15	15	>88	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	15	10	>50	1	6.7		10	10	10	10	22	59	110
Fecal coliform (#/100mL)													
# results:	Geomean		# > 400: % > 400: %Conf:										
41	266		9 22 70.4										

Key:
 # result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: GRANTS CRK BELOW SALISBURY AND SPENCER WWTP
Station #: Q4600000 **Hydrologic Unit Code:** 3040103
Latitude: 35.71085 **Longitude:** -80.42597 **Stream class:** C
Agency: YPDRBA **NC stream index:** 12-110

Time period: 01/15/2002 to 06/24/2003

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	25	0	<4	0	0		5	5.2	5.3	7	8.6	9.3	9.5
	25	0	<5	0	0		5	5.2	5.3	7	8.6	9.3	9.5
pH (SU)	25	0	<6	0	0		6.9	7	7.7	8	8	8.1	8.1
	25	0	>9	0	0		6.9	7	7.7	8	8	8.1	8.1
Spec. conductance (umhos/cm at 25°C)	24	0	N/A				85	89	94	130	205	236	245
Water Temperature (°C)	25	0	>32	0	0		5.7	6.1	9.8	19.6	25.8	27.5	29.4
Other													
Chlorophyll a (ug/L)	7	3	>40	0	0		1	1	1	5	8	15	15
Turbidity (NTU)	18	0	>50	3	16.7	90.2	5.9	8.5	14.8	17.5	36	66.5	80
Nutrients (mg/L)													
NH3 as N	18	5	N/A				0.01	0.01	0.01	0.04	0.08	0.35	0.49
NO2 + NO3 as N	18	1	N/A				0.01	0.01	0.19	0.51	0.65	0.83	0.87
TKN as N	18	1	N/A				0.1	0.11	0.36	0.54	0.84	3.27	3.36
Total Phosphorus	18	1	N/A				0.01	0.06	0.11	0.16	0.22	0.34	0.71

Fecal coliform (#/100mL)

# results:	Geomean	# > 400:	% > 400:	%Conf:
18	113	2	11	

Key:

result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: YADKIN RIV AT NC 150 NR SPENCER

Station #: Q4660000

Hydrologic Unit Code: 3040103

Latitude: 35.72303 **Longitude:** -80.39050

Stream class: WS-V

Agency: NCAMBNT

NC stream index: 12-(108.5)

Time period: 01/23/2002 to 12/06/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	59	0	<4	0	0		4.3	5.5	6.6	8.3	10.3	11.5	13.8
	59	0	<5	2	3.4		4.3	5.5	6.6	8.3	10.3	11.5	13.8
pH (SU)	59	0	<6	4	6.8		5.3	6	6.2	6.7	7.3	7.4	7.7
	59	0	>9	0	0		5.3	6	6.2	6.7	7.3	7.4	7.7
Spec. conductance (umhos/cm at 25°C)	59	0	N/A				54	70	82	89	117	131	267
Water Temperature (°C)	59	0	>32	0	0		1.2	6.6	8.9	16.3	24.1	26.5	29.8
Other													
TSS (mg/L)	19	0	N/A				5	5.2	15	24	30	41	60
Turbidity (NTU)	58	0	>50	15	25.9	100	5.2	7.6	12.5	23	56.2	95.5	240
Metals (ug/L)													
Aluminum, total (Al)	20	0	N/A				260	355	462	675	1725	3890	6200
Arsenic, total (As)	20	19	>10	0	0		5	5	5	10	10	10	10
Cadmium, total (Cd)	20	20	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	20	20	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	20	4	>7	1	5		2	2	2	3	4	6	9
Iron, total (Fe)	20	0	>1000	10	50	100	660	703	908	1050	1900	3310	7600
Lead, total (Pb)	20	19	>25	0	0		10	10	10	10	10	10	12
Manganese, total (Mn)	20	0	>200	1	5		39	45	49	65	88	119	260
Mercury, total (Hg)	20	20	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	20	20	>25	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	20	12	>50	1	5		10	10	10	10	15	27	53
Fecal coliform (#/100mL)													
# results:	Geomean			# > 400:	% > 400:	%Conf:							
56	171			15	27	92.1							

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: YADKIN RIV AT NC 150 NR SPENCER

Station #: Q4660000

Latitude: 35.72303

Agency: YPDRBA

Longitude: -80.39050

Hydrologic Unit Code: 3040103

Stream class: WS-V

NC stream index: 12-(108.5)

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	85	0	<4	0	0		4.6	5.2	5.6	6.9	8.8	10.1	11.4
	85	0	<5	3	3.5		4.6	5.2	5.6	6.9	8.8	10.1	11.4
pH (SU)	85	0	<6	0	0		6.7	6.8	6.9	7	7.4	8.1	8.4
	85	0	>9	0	0		6.7	6.8	6.9	7	7.4	8.1	8.4
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				71	83	96	120	150	189	295
Water Temperature (°C)	85	0	>32	0	0		5.5	7.1	13	20.6	23.9	26.3	29.2
Other													
Chlorophyll a (ug/L)	25	1	>40	1	4		1	2	3	6	14	25	51
Turbidity (NTU)	60	0	>50	8	13.3	85.8	6.2	13.1	18	25.5	40	66.8	110
Nutrients (mg/L)													
NH3 as N	59	7	N/A				0.01	0.01	0.03	0.06	0.09	0.13	0.17
NO2 + NO3 as N	60	0	>10	0	0		0.01	0.21	0.47	0.69	0.82	1.14	1.68
TKN as N	59	3	N/A				0.1	0.2	0.31	0.46	0.75	1	1.27
Total Phosphorus	60	1	N/A				0.01	0.1	0.12	0.15	0.18	0.32	0.66
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:		% > 400:		%Conf:							
60	89	3	5										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: SWEARING CRK AT SR 1272 JERSEY CHURCH RD NR LINWOOD

Station #: Q5135000

Hydrologic Unit Code: 3040103

Latitude: 35.72911

Longitude: -80.30566

Stream class: C

Agency: YPDRBA

NC stream index: 12-113

Time period: 01/15/2002 to 12/12/2006

Field	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
D.O. (mg/L)	85	0	<4	0	0		4.4	5.2	5.5	6.6	9	9.9	11.8
	85	0	<5	6	7.1		4.4	5.2	5.5	6.6	9	9.9	11.8
pH (SU)	85	0	<6	0	0		6.5	6.7	6.8	7	7.4	8	8.3
	85	0	>9	0	0		6.5	6.7	6.8	7	7.4	8	8.3
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				58	90	102	124	172	234	318
Water Temperature (°C)	85	0	>32	0	0		5.1	6.5	12.2	20.1	23.2	25.2	27.7
Other													
Turbidity (NTU)	60	0	>50	3	5		4.4	5.8	9.2	15.5	22	34.8	300
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
59	198	10	17										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: TOWN CRK AT SR 1915 ANDREWS ST AT SPENCER

Station #: Q5210000

Hydrologic Unit Code: 3040103

Latitude: 35.67981

Longitude: -80.41552

Stream class: C

Agency: YPDRBA

NC stream index: 12-115-3

Time period: 09/21/2004 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	39	0	<4	0	0		5.4	5.7	6.3	6.8	9.4	10.4	11.2
	39	0	<5	0	0		5.4	5.7	6.3	6.8	9.4	10.4	11.2
pH (SU)	39	0	<6	0	0		6.6	6.8	6.8	6.9	7	7.3	7.6
	39	0	>9	0	0		6.6	6.8	6.8	6.9	7	7.3	7.6
Spec. conductance (umhos/cm at 25°C)	39	0	N/A				97	126	150	185	217	256	306
Water Temperature (°C)	39	0	>32	0	0		7.2	8.3	13.7	19.2	23.6	25.4	28.2
Other													
Turbidity (NTU)	28	0	>50	1	3.6		9.2	9.8	12	17.5	30.2	36	70
Nutrients (mg/L)													
NH3 as N	28	1	N/A				0.01	0.02	0.03	0.06	0.09	0.14	0.19
NO2 + NO3 as N	28	0	N/A				0.17	0.25	0.35	0.52	0.59	0.72	1.19
TKN as N	28	2	N/A				0.2	0.2	0.26	0.44	0.59	0.9	1.01
Total Phosphorus	28	0	N/A				0.06	0.08	0.1	0.12	0.14	0.21	0.7
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:		% > 400:		%Conf:							
28	51	0	0										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: TOWN CRK AT I 85 NR SPENCER

Station #: Q5240000

Hydrologic Unit Code: 3040103

Latitude: 35.68635

Longitude: -80.40520

Stream class: C

Agency: YPDRBA

NC stream index: 12-115-3

Time period: 01/15/2002 to 08/25/2004

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	40	0	<4	0	0		4.6	5.2	5.6	7.4	8.8	10.4	11.3
	40	0	<5	2	5		4.6	5.2	5.6	7.4	8.8	10.4	11.3
pH (SU)	40	0	<6	0	0		6.8	6.9	7.1	7.4	8	8.1	8.2
	40	0	>9	0	0		6.8	6.9	7.1	7.4	8	8.1	8.2
Spec. conductance (umhos/cm at 25°C)	39	0	N/A				73	90	104	113	135	189	277
Water Temperature (°C)	40	0	>32	0	0		5.8	6.3	9.4	20.1	22.8	26.1	27
Other													
Turbidity (NTU)	29	0	>50	2	6.9		5.4	7.5	13.5	19	31	45	120
Nutrients (mg/L)													
NH3 as N	29	6	N/A				0.01	0.01	0.02	0.07	0.09	0.15	0.35
NO2 + NO3 as N	29	0	N/A				0.01	0.24	0.4	0.53	0.64	0.72	0.88
TKN as N	29	1	N/A				0.05	0.16	0.26	0.41	0.62	0.74	1.26
Total Phosphorus	29	2	N/A				0.01	0.05	0.08	0.11	0.12	0.19	0.27
Fecal coliform (#/100mL)													
# results:	Geomean		# > 400:		% > 400:		%Conf:						
29	174		3		10								

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: TOWN CRK AT SR 2168 NR DUKE

Station #: Q5360000

Hydrologic Unit Code: 3040103

Latitude: 35.66353 **Longitude:** -80.35418

Stream class: C

Agency: NCAMBNT

NC stream index: 12-115-(2)

Time period: 01/23/2002 to 12/06/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	59	0	<4	2	3.4		3.4	4.9	7.2	8.7	10.1	11.2	12.6
	59	0	<5	6	10.2	62.3	3.4	4.9	7.2	8.7	10.1	11.2	12.6
pH (SU)	59	0	<6	1	1.7		5.7	6.3	6.8	7.2	7.9	8.9	9.2
	59	0	>9	2	3.4		5.7	6.3	6.8	7.2	7.9	8.9	9.2
Spec. conductance (umhos/cm at 25°C)	59	0	N/A				56	79	101	116	132	186	229
Water Temperature (°C)	59	0	>32	1	1.7		2.5	7.2	10.7	19.4	26.1	29.6	33
Other													
Chlorophyll a (ug/L)	51	1	>40	16	31.4	100	1	5	22	28	44	54	250
TSS (mg/L)	19	0	N/A				4	6.8	11	15	25	82	290
Turbidity (NTU)	58	0	>25	16	27.6	100	4.9	7.5	11.8	18	29.2	75.2	310
Nutrients (mg/L)													
NH3 as N	42	30	N/A				0.02	0.02	0.02	0.02	0.02	0.06	0.09
NO2 + NO3 as N	42	22	N/A				0.02	0.02	0.02	0.02	0.16	0.27	0.4
TKN as N	42	0	N/A				0.38	0.51	0.56	0.7	0.78	1	1.1
Total Phosphorus	42	0	N/A				0.05	0.06	0.07	0.1	0.11	0.15	0.24
Metals (ug/L)													
Aluminum, total (Al)	20	0	N/A				180	222	308	590	1175	1590	24000
Arsenic, total (As)	20	20	>10	0	0		5	5	5	10	10	10	10
Cadmium, total (Cd)	20	20	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	20	20	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	20	2	>7	2	10	67.7	2	2	2	3	4	10	20
Iron, total (Fe)	20	0	>1000	9	45	100	300	370	508	940	1700	3680	18000
Lead, total (Pb)	20	19	>25	0	0		10	10	10	10	10	10	20
Mercury, total (Hg)	20	20	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	20	20	>88	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	20	13	>50	1	5		10	10	10	10	14	24	68
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
56	29	6	11										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: RICH FORK CRK AT SR 1755 NR HIGH POINT
Station #: Q5750000 **Hydrologic Unit Code:** 3040103
Latitude: 35.94891 **Longitude:** -80.10170 **Stream class:** C
Agency: YPDRBA **NC stream index:** 12-119-7

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	99	0	<4	0	0		4	5.3	6.2	7.3	8.9	9.9	11.8
	99	0	<5	3	3		4	5.3	6.2	7.3	8.9	9.9	11.8
pH (SU)	85	0	<6	0	0		6.6	6.8	6.9	7.1	7.5	8	8.3
	85	0	>9	0	0		6.6	6.8	6.9	7.1	7.5	8	8.3
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				72	106	129	158	189	222	368
Water Temperature (°C)	99	0	>32	0	0		2.8	5.8	12.7	18.7	21.9	23.2	25.1
Other													
Turbidity (NTU)	60	0	>50	3	5		2.1	4.1	7	10.5	17	35.8	230
Nutrients (mg/L)													
NH3 as N	60	10	N/A				0.01	0.01	0.02	0.05	0.08	0.16	0.88
NO2 + NO3 as N	60	3	N/A				0.01	0.03	0.08	0.19	0.25	0.31	0.38
TKN as N	60	6	N/A				0.1	0.2	0.21	0.34	0.51	0.69	1.86
Total Phosphorus	60	1	N/A				0.01	0.05	0.06	0.08	0.12	0.25	1.28
Fecal coliform (#/100mL)													
# results:	Geomean		# > 400:	% > 400:	%Conf:								
60	120		5	8									

Key:
 # result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: RICH FORK AT SR 1800 NR THOMASVILLE

Station #: Q5780000

Hydrologic Unit Code: 3040103

Latitude: 35.92668

Longitude: -80.12464

Stream class: C

Agency: NCAMBNT

NC stream index: 12-119-7

Time period: 01/08/2002 to 12/19/2006

Field	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	59	0	<4	0	0		4.7	5.2	5.9	8	9.8	11.5	13.5
	59	0	<5	3	5.1		4.7	5.2	5.9	8	9.8	11.5	13.5
pH (SU)	59	0	<6	0	0		6.5	6.7	7	7.2	7.3	7.5	7.7
	59	0	>9	0	0		6.5	6.7	7	7.2	7.3	7.5	7.7
Spec. conductance (umhos/cm at 25°C)	59	0	N/A				68	179	217	263	325	466	586
Water Temperature (°C)	59	0	>32	0	0		4	7.1	11.3	17.5	22.8	25.1	27.5
Other													
TSS (mg/L)	20	1	N/A				2.5	3.2	7.4	18	28.5	86.3	89
Turbidity (NTU)	59	0	>50	4	6.8		2.3	5	7.7	13	29	45	250
Nutrients (mg/L)													
NH3 as N	59	10	N/A				0.02	0.02	0.03	0.06	0.12	0.28	1.1
NO2 + NO3 as N	59	0	N/A				0.33	0.6	1.1	2.4	5.2	8.6	11
TKN as N	59	0	N/A				0.52	0.62	0.82	1.1	1.4	1.8	4.9
Total Phosphorus	59	0	N/A				0.1	0.11	0.18	0.26	0.52	0.75	2.6
Metals (ug/L)													
Aluminum, total (Al)	20	0	N/A				100	197	315	755	1175	5030	13000
Arsenic, total (As)	20	20	>10	0	0		5	5	5	8	10	10	10
Cadmium, total (Cd)	20	20	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	20	20	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	20	0	>7	2	10	67.7	2	2	3	4	4	11	21
Iron, total (Fe)	19	0	>1000	10	52.6	100	340	340	740	1200	1300	6000	15000
Lead, total (Pb)	20	19	>25	0	0		10	10	10	10	10	10	15
Mercury, total (Hg)	20	20	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	20	20	>88	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	20	2	>50	1	5		10	10	13	17	28	41	72
Fecal coliform (#/100mL)													
# results:	Geomean		# > 400: % > 400: %Conf:										
58	391		25	43	100								

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: RICH FORK CRK AT SR 1792 NR HIGH POINT
Station #: Q5785000 **Hydrologic Unit Code:** 3040103
Latitude: 35.89843 **Longitude:** -80.14540 **Stream class:** C
Agency: YPDRBA **NC stream index:** 12-119-7

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	99	0	<4	7	7.1		3.2	4.2	5.1	5.7	7.8	9.1	11.3
	99	0	<5	20	20.2	99.9	3.2	4.2	5.1	5.7	7.8	9.1	11.3
pH (SU)	85	0	<6	0	0		6.4	6.5	6.7	7	7.5	7.9	8.4
	85	0	>9	0	0		6.4	6.5	6.7	7	7.5	7.9	8.4
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				84	140	170	222	300	383	491
Water Temperature (°C)	99	0	>32	0	0		2.7	6	13.3	19.2	22.2	24.1	25.7
Other													
Turbidity (NTU)	60	0	>50	2	3.3		4.3	5.8	8.5	14.5	21.5	30	400
Nutrients (mg/L)													
NH3 as N	60	5	N/A				0.01	0.01	0.04	0.08	0.17	0.36	1.56
NO2 + NO3 as N	60	0	N/A				0.19	0.7	1.72	2.84	4.49	5.82	8.93
TKN as N	60	1	N/A				0.1	0.48	0.63	0.81	1.19	1.69	3.86
Total Phosphorus	60	1	N/A				0.01	0.12	0.15	0.23	0.33	0.45	1.22
Fecal coliform (#/100mL)													
# results:	Geomean			# > 400:	% > 400:	%Conf:							
60	156			5	8								

Key:
 # result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: RICH FORK CRK AT SR 2123 NR HIGH POINT
Station #: Q5790000 **Hydrologic Unit Code:** 3040103
Latitude: 35.85433 **Longitude:** -80.18215 **Stream class:** C
Agency: YPDRBA **NC stream index:** 12-119-7

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	99	0	<4	0	0		4.7	5.6	6.1	6.9	8.8	10.3	11.4
	99	0	<5	1	1		4.7	5.6	6.1	6.9	8.8	10.3	11.4
pH (SU)	85	0	<6	0	0		6.7	6.8	6.9	7	7.4	7.9	8.3
	85	0	>9	0	0		6.7	6.8	6.9	7	7.4	7.9	8.3
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				88	116	142	168	216	310	402
Water Temperature (°C)	99	0	>32	0	0		2.1	5.4	13.5	19.1	22.4	23.9	25.5
Other													
Turbidity (NTU)	60	0	>50	2	3.3		2.7	5.7	8	12.5	16.8	34	300
Nutrients (mg/L)													
NH3 as N	60	5	N/A				0.01	0.01	0.03	0.07	0.12	0.22	0.58
NO2 + NO3 as N	60	0	N/A				0.33	0.49	0.95	1.38	1.84	2.38	6.24
TKN as N	60	1	N/A				0.2	0.32	0.46	0.67	0.85	1.08	1.9
Total Phosphorus	60	2	N/A				0.01	0.08	0.11	0.14	0.18	0.24	1.51
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:		% > 400:		%Conf:							
60	103	5	8										

Key:
 # result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: HAMBY CRK AT SR 2775 OLD EMANUEL CHURCH RD NR THOMASVILLE
Station #: Q5860000 **Hydrologic Unit Code:** 3040103
Latitude: 35.85009 **Longitude:** -80.10637 **Stream class:** C
Agency: YPDRBA **NC stream index:** 12-119-7-4

Time period: 09/21/2004 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	39	0	<4	0	0		6.4	6.5	6.9	7.3	9.8	11.2	12.2
	39	0	<5	0	0		6.4	6.5	6.9	7.3	9.8	11.2	12.2
pH (SU)	39	0	<6	0	0		6.7	6.8	6.9	7	7.1	7.2	7.5
	39	0	>9	0	0		6.7	6.8	6.9	7	7.1	7.2	7.5
Spec. conductance (umhos/cm at 25°C)	39	0	N/A				87	91	102	115	127	155	173
Water Temperature (°C)	39	0	>32	0	0		4.8	6.6	11.5	16.7	21.9	23.8	24
Other													
Turbidity (NTU)	28	0	>50	1	3.6		3.3	5.2	6.7	12	20.8	37.2	72
Nutrients (mg/L)													
NH3 as N	28	2	N/A				0.01	0.02	0.03	0.06	0.08	0.12	0.16
NO2 + NO3 as N	28	0	N/A				0.34	0.62	0.86	1.42	2.17	3.08	3.56
TKN as N	28	5	N/A				0.2	0.2	0.29	0.56	0.75	0.91	0.95
Total Phosphorus	28	0	N/A				0.04	0.06	0.09	0.14	0.49	1.14	1.79
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:		% > 400:		%Conf:							
28	40	0	0										

Key:
 # result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: HAMBY CRK AT SR 2790 NR HOLLY GROVE

Station #: Q5906000

Hydrologic Unit Code: 3040103

Latitude: 35.83240

Longitude: -80.17472

Stream class: C

Agency: NCAMBNT

NC stream index: 12-119-7-4

Time period: 01/08/2002 to 12/18/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	59	0	<4	0	0		4.7	6.1	7.1	8.6	11	13.8	14.8
	59	0	<5	1	1.7		4.7	6.1	7.1	8.6	11	13.8	14.8
pH (SU)	59	0	<6	0	0		6.2	6.8	7	7.2	7.4	7.6	8.3
	59	0	>9	0	0		6.2	6.8	7	7.2	7.4	7.6	8.3
Spec. conductance (umhos/cm at 25°C)	59	0	N/A				80	180	233	323	401	622	923
Water Temperature (°C)	59	0	>32	0	0		3	6	11.2	16.9	22.3	24.6	26.8
Other													
TSS (mg/L)	20	3	N/A				2.5	2.5	2.6	5	13.5	37.6	90
Turbidity (NTU)	59	1	>50	3	5.1		1	2.4	3.3	5.8	11	22	310
Nutrients (mg/L)													
NH3 as N	59	30	N/A				0.02	0.02	0.02	0.02	0.05	0.6	3.8
NO2 + NO3 as N	59	0	N/A				0.79	1.8	2.8	6.1	9.9	16	21
TKN as N	59	3	N/A				0.16	0.39	0.52	0.7	1	1.8	4.2
Total Phosphorus	59	0	N/A				0.16	0.2	0.5	0.71	1.2	1.9	2.8
Metals (ug/L)													
Aluminum, total (Al)	20	0	N/A				57	62	104	305	572	2164	10000
Arsenic, total (As)	20	20	>10	0	0		5	5	5	8	10	10	10
Cadmium, total (Cd)	20	20	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	20	19	>50	1	5		25	25	25	25	25	25	54
Copper, total (Cu)	20	0	>7	11	55	100	2	2	4	8	13	24	56
Iron, total (Fe)	20	0	>1000	3	15	86.7	150	242	268	510	870	2270	13000
Lead, total (Pb)	20	19	>25	1	5		10	10	10	10	10	10	34
Mercury, total (Hg)	20	20	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	20	12	>88	0	0		10	10	10	10	15	23	35
Zinc, total (Zn)	20	2	>50	1	5		10	10	12	18	28	43	150
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:		% > 400:		%Conf:							
58	199	14	24	83.1									

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: ABBOTTS CRK AT SR 1243 AT LEXINGTON

Station #: Q5930000

Hydrologic Unit Code: 3040103

Latitude: 35.80629

Longitude: -80.23488

Stream class: C

Agency: NCAMBNT

NC stream index: 12-119-(6)

Time period: 01/16/2002 to 12/18/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	77	0	<4	0	0		4.7	5.4	6	7.6	10.4	11.6	13
	77	0	<5	1	1.3		4.7	5.4	6	7.6	10.4	11.6	13
pH (SU)	76	0	<6	0	0		6.3	6.8	7	7.2	7.3	7.6	7.9
	76	0	>9	0	0		6.3	6.8	7	7.2	7.3	7.6	7.9
Spec. conductance (umhos/cm at 25°C)	77	0	N/A				54	117	152	182	217	335	583
Water Temperature (°C)	77	0	>32	0	0		3	6.8	10.6	17.1	24.1	26.2	27.9
Other													
TSS (mg/L)	48	1	N/A				4	4.2	6	17	26	43	220
Turbidity (NTU)	76	0	>50	9	11.8	77.4	3.5	7.4	10.2	18.5	27.8	68	210
Nutrients (mg/L)													
NH3 as N	60	16	N/A				0.02	0.02	0.02	0.04	0.07	0.14	0.22
NO2 + NO3 as N	60	0	N/A				0.21	0.54	0.86	1.3	1.67	2.67	5.1
TKN as N	60	0	N/A				0.35	0.44	0.51	0.64	0.73	0.9	1.3
Total Phosphorus	60	0	N/A				0.09	0.12	0.14	0.17	0.24	0.35	0.55
Metals (ug/L)													
Aluminum, total (Al)	20	0	N/A				200	230	500	870	1350	5010	7000
Arsenic, total (As)	20	20	>10	0	0		5	5	5	8	10	10	10
Cadmium, total (Cd)	20	20	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	20	20	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	20	2	>7	3	15	86.7	2	2	3	4	7	9	24
Iron, total (Fe)	20	0	>1000	13	65	100	650	695	822	1250	1650	3780	8400
Lead, total (Pb)	20	19	>25	0	0		10	10	10	10	10	10	25
Mercury, total (Hg)	20	20	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	20	19	>88	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	20	9	>50	1	5		10	10	10	12	16	28	100
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
57	196	14	25	84.8									

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: ABBOTTS CRK AT I 85 NR LEXINGTON

Station #: Q5940000

Latitude: 35.78730

Agency: YPDRBA

Longitude: -80.23565

Hydrologic Unit Code: 3040103

Stream class: C

NC stream index: 12-119-6

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	Results not meeting EL			Percentiles							
			EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	99	0	<4	0	0		5.2	5.6	6	7.3	8.9	10.5	11.7
	99	0	<5	0	0		5.2	5.6	6	7.3	8.9	10.5	11.7
pH (SU)	85	0	<6	0	0		6.7	6.8	6.9	7.1	7.4	8	8.2
	85	0	>9	0	0		6.7	6.8	6.9	7.1	7.4	8	8.2
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				56	95	106	136	187	220	320
Water Temperature (°C)	99	0	>32	0	0		4.7	6.5	13.8	20.1	23.1	24.6	28.3
Other													
TSS (mg/L)	21	0	N/A				5.8	6.7	8.2	10	15.5	26.2	61
Turbidity (NTU)	60	0	>50	3	5		4.5	8.1	10.2	16	23	37.4	220
Nutrients (mg/L)													
NH3 as N	60	6	N/A				0.01	0.01	0.04	0.08	0.13	0.24	7.21
NO2 + NO3 as N	60	0	N/A				0.17	0.5	0.74	1.16	1.86	3.87	8.05
TKN as N	60	3	N/A				0.16	0.28	0.45	0.69	0.9	1.07	2.27
Total Phosphorus	60	1	N/A				0.01	0.09	0.11	0.16	0.24	0.7	2.27
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:		% > 400:		%Conf:							
60	79	5	8										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: ABBOTTS CRK AT NC 47 NR COTTON GROVE

Station #: Q5970000

Hydrologic Unit Code: 3040103

Latitude: 35.74795

Longitude: -80.24140

Stream class: WS-V&B

Agency: NCAMBNT

NC stream index: 12-118.5

Time period: 01/08/2002 to 12/18/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	59	0	<4	0	0		4.3	5.7	6.9	8.4	10.2	11.7	13.4
	59	0	<5	3	5.1		4.3	5.7	6.9	8.4	10.2	11.7	13.4
pH (SU)	59	0	<6	0	0		6.2	6.6	6.9	7.2	7.4	7.9	8.9
	59	0	>9	0	0		6.2	6.6	6.9	7.2	7.4	7.9	8.9
Spec. conductance (umhos/cm at 25°C)	58	0	N/A				80	125	148	180	216	341	581
Water Temperature (°C)	59	0	>32	1	1.7		2	6.8	11.3	18.1	25.3	29.8	33
Other													
Chlorophyll a (ug/L)	54	1	>40	6	11.1	70.7	1	2	3	7	20	42	140
TSS (mg/L)	20	0	N/A				3	5	12.2	21.5	26	36.4	40
Turbidity (NTU)	58	0	>50	5	8.6		5.4	9.5	15	22.5	34	47.5	150
Nutrients (mg/L)													
NH3 as N	42	15	N/A				0.02	0.02	0.02	0.02	0.06	0.11	0.23
NO2 + NO3 as N	42	4	>10	0	0		0.02	0.06	0.61	1.05	1.3	1.9	4
TKN as N	42	0	N/A				0.45	0.47	0.62	0.75	1.1	1.2	1.9
Total Phosphorus	42	0	N/A				0.1	0.13	0.14	0.2	0.24	0.28	0.32
Metals (ug/L)													
Aluminum, total (Al)	20	0	N/A				200	283	800	1150	1750	2940	3100
Arsenic, total (As)	20	20	>10	0	0		5	5	5	8	10	10	10
Cadmium, total (Cd)	20	20	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	20	20	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	20	1	>7	2	10	67.7	2	3	3	4	5	7	8
Iron, total (Fe)	20	0	>1000	17	85	100	710	780	1200	1400	1775	2380	2600
Lead, total (Pb)	20	20	>25	0	0		10	10	10	10	10	10	10
Manganese, total (Mn)	19	0	>200	6	31.6	99.8	16	69	110	170	240	320	360
Mercury, total (Hg)	20	20	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	20	19	>25	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	20	7	>50	1	5		10	10	10	14	21	37	51
Fecal coliform (#/100mL)													
# results:	56												
Geomean	114												
# > 400:		8											
% > 400:		14											
%Conf:													

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: ABBOTTS CRK AT NC 47 NR COTTON GROVE
Station #: Q5970000 **Hydrologic Unit Code:** 3040103
Latitude: 35.74795 **Longitude:** -80.24140 **Stream class:** WS-V&B
Agency: YPDRBA **NC stream index:** 12-118.5

Time period: 01/15/2002 to 12/12/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	99	0	<4	1	1		3.8	5.3	5.5	6.8	8.7	9.7	11.7
	99	0	<5	2	2		3.8	5.3	5.5	6.8	8.7	9.7	11.7
pH (SU)	85	0	<6	0	0		6.6	6.7	6.9	7	7.3	7.9	8.2
	85	0	>9	0	0		6.6	6.7	6.9	7	7.3	7.9	8.2
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				97	114	130	177	217	248	317
Water Temperature (°C)	99	0	>32	0	0		4.4	6.6	13.8	20.2	23.9	25.7	28.8
Other													
Chlorophyll a (ug/L)	21	3	>40	2	9.5		1	1	1	5	13	60	76
Turbidity (NTU)	60	0	>50	3	5		4.9	8.9	12.2	20.5	30.8	39	270
Nutrients (mg/L)													
NH3 as N	60	8	N/A				0.01	0.01	0.03	0.07	0.11	0.17	0.36
NO2 + NO3 as N	60	1	>10	0	0		0.01	0.4	0.66	1	1.84	4.06	6.5
TKN as N	60	0	N/A				0.25	0.4	0.5	0.7	1	1.48	1.95
Total Phosphorus	60	1	N/A				0.01	0.1	0.14	0.18	0.24	0.88	2
Metals (ug/L)													
Aluminum, total (Al)	29	0	N/A				142	215	326	502	1012	1527	10133
Arsenic, total (As)	29	29	>10	0	0		5	5	5	5	5	5	5
Cadmium, total (Cd)	29	29	>2	0	0		1	1	1	1	1	1	1
Chromium, total (Cr)	29	26	>50	0	0		5	5	5	5	5	6	22
Copper, total (Cu)	29	7	>7	2	6.9		2	2	2	3	5	6	21
Iron, total (Fe)	29	0	>1000	20	69	100	568	750	959	1129	1722	2069	16100
Lead, total (Pb)	29	28	>25	0	0		5	5	5	5	5	5	16
Manganese, total (Mn)	29	0	>200	12	41.4	100	62	103	128	182	259	322	616
Mercury, total (Hg)	29	29	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	29	27	>25	0	0		10	10	10	10	10	10	14
Zinc, total (Zn)	29	19	>50	0	0		10	10	10	10	11	22	41
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
60	114	9	15										

Key:
 # result: number of observations
 # ND: number of observations reported to be below detection level (non-detect)
 EL: Evaluation Level; applicable numeric or narrative water quality standard or action level
 Results not meeting EL: number and percentages of observations not meeting evaluation level
 %Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)
 Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: YADKIN RIV AT SR 1002 AT HIGH ROCK

Station #: Q6120000

Hydrologic Unit Code: 3040103

Latitude: 35.59680

Longitude: -80.23128

Stream class: WS-IV&B CA

Agency: NCAMBNT

NC stream index: 12-(124.5)

Time period: 01/08/2002 to 11/07/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	58	0	<4	4	6.9		2.9	4.2	5.2	7.6	10.7	12	13.4
	58	0	<5	11	19	98.9	2.9	4.2	5.2	7.6	10.7	12	13.4
pH (SU)	58	0	<6	2	3.4		5.7	6.5	6.7	7.1	7.5	7.8	8.1
	58	0	>9	0	0		5.7	6.5	6.7	7.1	7.5	7.8	8.1
Spec. conductance (umhos/cm at 25°C)	58	0	N/A				58	76	87	98	110	149	312
Water Temperature (°C)	58	0	>32	0	0		4	6.8	11.2	19	24.6	27.7	29.1
Other													
TSS (mg/L)	19	0	N/A				6.5	7	8	10	15	34	79
Turbidity (NTU)	57	0	>50	4	7		4.7	6.1	9.4	14	20	40	180
Nutrients (mg/L)													
NH3 as N	41	5	N/A				0.02	0.02	0.04	0.1	0.15	0.21	0.28
NO2 + NO3 as N	41	0	>10	0	0		0.08	0.26	0.36	0.49	0.68	0.82	0.89
TKN as N	41	0	N/A				0.28	0.33	0.42	0.55	0.63	0.7	0.79
Total Phosphorus	41	0	N/A				0.04	0.05	0.06	0.07	0.09	0.11	0.15
Metals (ug/L)													
Aluminum, total (Al)	19	0	N/A				120	180	360	430	1200	2900	6500
Arsenic, total (As)	19	19	>10	0	0		5	5	5	10	10	10	10
Cadmium, total (Cd)	19	19	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	19	19	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	19	10	>7	0	0		2	2	2	2	4	6	6
Iron, total (Fe)	19	0	>1000	6	31.6	99.8	240	290	500	710	1200	3100	5600
Lead, total (Pb)	19	19	>25	0	0		10	10	10	10	10	10	10
Manganese, total (Mn)	18	0	>200	0	0		43	50	63	96	132	153	180
Mercury, total (Hg)	19	19	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	19	19	>25	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	19	14	>50	0	0		10	10	10	10	12	25	28
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
54	36	2	4										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf : States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: YADKIN RIV AT SR 1002 AT HIGH ROCK

Station #: Q6120000

Hydrologic Unit Code: 3040103

Latitude: 35.59680

Longitude: -80.23128

Stream class: WS-IV&B CA

Agency: YPDRBA

NC stream index: 12-(124.5)

Time period: 09/23/2004 to 12/14/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	39	0	<4	0	0		5.5	5.9	6.4	6.8	9.6	10.3	10.8
	39	0	<5	0	0		5.5	5.9	6.4	6.8	9.6	10.3	10.8
pH (SU)	39	0	<6	0	0		6.8	6.8	7	7	7.1	7.2	7.3
	39	0	>9	0	0		6.8	6.8	7	7	7.1	7.2	7.3
Spec. conductance (umhos/cm at 25°C)	39	0	N/A				90	98	112	121	138	160	186
Water Temperature (°C)	39	0	>32	0	0		6	7.3	12.1	19.1	23.4	25.1	25.7
Other													
Chlorophyll a (ug/L)	11	0	>40	0	0		2	2	3	5	16	21	22
TSS (mg/L)	28	0	N/A				2.7	4.1	5.4	8	10.8	13.3	63
Turbidity (NTU)	28	0	>50	1	3.6		3.5	4.1	6.1	9.7	13	23.5	70
Nutrients (mg/L)													
NH3 as N	28	0	N/A				0.02	0.02	0.04	0.06	0.09	0.12	0.19
NO2 + NO3 as N	28	0	>10	0	0		0.02	0.17	0.22	0.42	0.63	0.76	0.81
TKN as N	28	0	N/A				0.31	0.34	0.41	0.52	0.76	1.02	4.96
Total Phosphorus	28	0	N/A				0.03	0.05	0.07	0.09	0.12	0.21	1.5
Metals (ug/L)													
Aluminum, total (Al)	15	0	N/A				79	128	240	265	560	970	1293
Arsenic, total (As)	15	15	>10	0	0		5	5	5	5	5	5	5
Cadmium, total (Cd)	15	15	>2	0	0		1	1	1	1	1	1	1
Chromium, total (Cr)	15	15	>50	0	0		5	5	5	5	5	7	10
Copper, total (Cu)	15	4	>7	0	0		2	2	2	2	3	4	4
Iron, total (Fe)	15	0	>1000	4	26.7	98.7	188	275	425	642	1051	1470	1569
Lead, total (Pb)	15	15	>25	0	0		5	5	5	5	5	5	5
Manganese, total (Mn)	15	0	>200	0	0		36	38	42	56	74	124	192
Mercury, total (Hg)	15	15	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	15	15	>25	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	15	10	>50	0	0		10	10	10	10	11	22	23
Fecal coliform (#/100mL)													
# results:	28												
Geomean	52												
# > 400:		0											
% > 400:			0										
%Conf:													

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: LICK CRK AT SR 1002 NR HEALING SPRINGS

Station #: Q6140000

Hydrologic Unit Code: 3040103

Latitude: 35.61638

Longitude: -80.17543

Stream class: WS-IV

Agency: YPDRBA

NC stream index: 12-126-(3)

Time period: 01/09/2003 to 12/14/2006

Field	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
D.O. (mg/L)	68	0	<4	0	0		4.3	5.5	6.2	7.1	9.8	10.4	11.1
	68	0	<5	1	1.5		4.3	5.5	6.2	7.1	9.8	10.4	11.1
	68	0	<6	0	0		6.6	6.8	6.9	7	7.2	7.3	7.9
	68	0	>9	0	0		6.6	6.8	6.9	7	7.2	7.3	7.9
Spec. conductance (umhos/cm at 25°C)	68	0	N/A				116	131	144	163	180	214	360
Water Temperature (°C)	68	0	>32	0	0		4.1	7.1	12.1	19.9	24.1	25.2	27
Other													
Turbidity (NTU)	48	0	>50	1	2.1		3.1	4.8	7.2	10	16.5	38	160
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
48	105	4	8										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: UT TO LICK CRK AT SR 2505 NR DENTON

Station #: Q6180000

Hydrologic Unit Code: 3040103

Latitude: 35.61596

Longitude: -80.14043

Stream class: WS-IV

Agency: YPDRBA

NC stream index: 12-126-(3)

Time period: 01/17/2002 to 12/11/2002

Field	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	17	0	<4	0	0		5.2	5.2	5.2	5.7	7.1	10.2	10.2
	17	0	<5	0	0		5.2	5.2	5.2	5.7	7.1	10.2	10.2
pH (SU)	17	0	<6	0	0		7.7	7.9	7.9	8.1	8.1	8.1	8.1
	17	0	>9	0	0		7.7	7.9	7.9	8.1	8.1	8.1	8.1
Spec. conductance (umhos/cm at 25°C)	16	0	N/A				162	176	214	263	332	375	384
Water Temperature (°C)	17	0	>32	0	0		4.8	5.1	9.4	21.3	25	26	26.2
Other													
Turbidity (NTU)	12	0	>50	0	0		2.7	3.7	6.1	7.8	8.8	25.5	30
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
12	31	0	0										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries

NCDENR, Division of Water Quality

Basinwide Assessment Report

Location: YADKIN RIV AT NC 8 AND NC 49 NR RICHFIELD

Station #: Q6360000

Hydrologic Unit Code: 3040103

Latitude: 35.50602

Longitude: -80.18413

Stream class: WS-IV&B CA

Agency: YPDRBA

NC stream index: 12-(124.5)

Time period: 01/17/2002 to 08/24/2004

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	46	0	<4	0	0		5	5.2	5.4	6.7	9.2	10.2	11.2
	46	0	<5	0	0		5	5.2	5.4	6.7	9.2	10.2	11.2
pH (SU)	46	0	<6	0	0		6.8	7	7.1	7.4	8	8.2	8.4
	46	0	>9	0	0		6.8	7	7.1	7.4	8	8.2	8.4
Spec. conductance (umhos/cm at 25°C)	45	0	N/A				76	89	102	109	122	148	168
Water Temperature (°C)	46	0	>32	0	0		4.3	6.6	12.1	22.4	25.3	28.2	29.2
Other													
Chlorophyll a (ug/L)	13	0	>40	0	0		1	2	8	18	20	31	33
TSS (mg/L)	32	0	N/A				3	4	6.1	7.7	11	15.8	46
Turbidity (NTU)	32	0	>50	1	3.1		2.7	4.8	7.3	8.4	12.8	21.4	95
Nutrients (mg/L)													
NH3 as N	32	10	N/A				0.01	0.01	0.01	0.04	0.08	0.16	0.23
NO2 + NO3 as N	32	1	>10	0	0		0.01	0.01	0.19	0.36	0.58	0.73	0.9
TKN as N	32	1	N/A				0.1	0.36	0.42	0.51	0.64	0.88	1.26
Total Phosphorus	32	1	N/A				0.01	0.04	0.05	0.06	0.09	0.14	1.24
Metals (ug/L)													
Aluminum, total (Al)	32	1	N/A				50	158	223	331	472	1369	3325
Arsenic, total (As)	32	31	>10	0	0		5	5	5	5	5	5	5
Cadmium, total (Cd)	32	31	>2	0	0		1	1	1	1	1	1	1
Chromium, total (Cr)	32	28	>50	0	0		5	5	5	5	5	6	6
Copper, total (Cu)	32	18	>7	1	3.1		2	2	2	2	3	5	13
Iron, total (Fe)	32	0	>1000	6	18.8	96.4	211	229	332	488	827	1362	2081
Lead, total (Pb)	32	31	>25	0	0		5	5	5	5	5	5	5
Manganese, total (Mn)	14	0	>200	0	0		29	36	55	64	88	122	145
Mercury, total (Hg)	32	32	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	32	31	>25	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	32	26	>50	0	0		10	10	10	10	10	12	37
Fecal coliform (#/100mL)													
# results:	32												
Geomean	36												
# > 400:	0												
% > 400:	0												
%Conf:													

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: UWHARRIE RIV AT NC 49 NR FARMER

Station #: Q6705000

Hydrologic Unit Code: 3040103

Latitude: 35.64212

Longitude: -79.96502

Stream class: C

Agency: YPDRBA

NC stream index: 13-2-1.5

Time period: 01/17/2002 to 12/14/2006

Field	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
D.O. (mg/L)	85	0	<4	0	0		5.3	5.5	6	6.9	9.6	10.6	10.9
	85	0	<5	0	0		5.3	5.5	6	6.9	9.6	10.6	10.9
pH (SU)	85	0	<6	0	0		6.7	6.9	7	7.1	7.4	8.1	8.2
	85	0	>9	0	0		6.7	6.9	7	7.1	7.4	8.1	8.2
Spec. conductance (umhos/cm at 25°C)	84	0	N/A				62	94	113	124	140	166	204
Water Temperature (°C)	85	0	>32	0	0		4.4	6.9	11.8	20.6	24.1	26	27.1
Other													
Turbidity (NTU)	60	0	>50	3	5		3.5	4.6	6.5	8.6	11.8	32	110
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
60	72	4	7										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Ambient Monitoring System Station Summaries
 NCDENR, Division of Water Quality
 Basinwide Assessment Report

Location: UWHARRIE RIV AT NC 109 NR UWHARRIE

Station #: Q6810000

Hydrologic Unit Code: 3040103

Latitude: 35.43121

Longitude: -80.01640

Stream class: WS-IV&B

Agency: NCAMBNT

NC stream index: 13-2-(17.5)

Time period: 01/08/2002 to 12/05/2006

	# result	# ND	EL	Results not meeting EL			Percentiles						
				#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
D.O. (mg/L)	47	0	<4	1	2.1		3.6	6.2	7.6	9.4	11.4	12.6	15.2
	47	0	<5	3	6.4		3.6	6.2	7.6	9.4	11.4	12.6	15.2
pH (SU)	48	0	<6	0	0		6.1	6.4	6.7	6.9	7.2	7.4	8
	48	0	>9	0	0		6.1	6.4	6.7	6.9	7.2	7.4	8
Spec. conductance (umhos/cm at 25°C)	48	0	N/A				65	80	86	93	101	108	120
Water Temperature (°C)	48	0	>32	0	0		1.6	5.7	8.5	16.8	23.2	26.4	29.5
Other													
TSS (mg/L)	16	2	N/A				2.5	2.5	2.5	3.5	5.4	20.6	50
Turbidity (NTU)	48	0	>50	2	4.2		1.6	2.1	3.2	7	14.8	27.7	80
Metals (ug/L)													
Aluminum, total (Al)	16	0	N/A				72	82	135	230	378	1670	3000
Arsenic, total (As)	16	16	>10	0	0		5	5	5	5	10	10	10
Cadmium, total (Cd)	16	16	>2	0	0		2	2	2	2	2	2	2
Chromium, total (Cr)	16	16	>50	0	0		25	25	25	25	25	25	25
Copper, total (Cu)	16	9	>7	1	6.2		2	2	2	2	3	6	8
Iron, total (Fe)	16	0	>1000	3	18.8	93.2	250	271	422	570	780	1870	3200
Lead, total (Pb)	16	16	>25	0	0		10	10	10	10	10	10	10
Manganese, total (Mn)	16	0	>200	0	0		12	16	21	24	33	95	110
Mercury, total (Hg)	16	16	>0.012	0	0		0.2	0.2	0.2	0.2	0.2	0.2	0.2
Nickel, total (Ni)	16	16	>25	0	0		10	10	10	10	10	10	10
Zinc, total (Zn)	16	16	>50	0	0		10	10	10	10	10	10	10
Fecal coliform (#/100mL)													
# results:	Geomean	# > 400:	% > 400:	%Conf:									
45	49	2	4										

Key:

result: number of observations

ND: number of observations reported to be below detection level (non-detect)

EL: Evaluation Level; applicable numeric or narrative water quality standard or action level

Results not meeting EL: number and percentages of observations not meeting evaluation level

%Conf: States the percent statistical confidence that the actual percentage of exceedances is at least 10% (20% for Fecal Coliform)

Stations with less than 10 results for a given parameter were not evaluated for statistical confidence

Appendix C

**Biological Data Sample Sites
Summary**

YADKIN RIVER HUC 03040103 - YADKIN RIVER

Description

HUC 03040103 is roughly bounded on the north by High Point, Thomasville, Lexington and South Salisbury. The drainage contains the Yadkin chain lakes High Rock, Tuckertown Reservoir, Badin and the major tributaries of Abbotts Creek and the Uwharrie River (Figure 4). Much of the eastern portion of the HUC drains the relatively undeveloped area forming the Uwharrie National Forest. This HUC contains Yadkin River subbasins 4 (in part), 7, 8 (in part) and 9. The streams in this HUC are mostly located in the Carolina Slate Belt portion of the piedmont ecoregion. These streams usually have a rocky substrate, but may have very low flow during drought conditions.

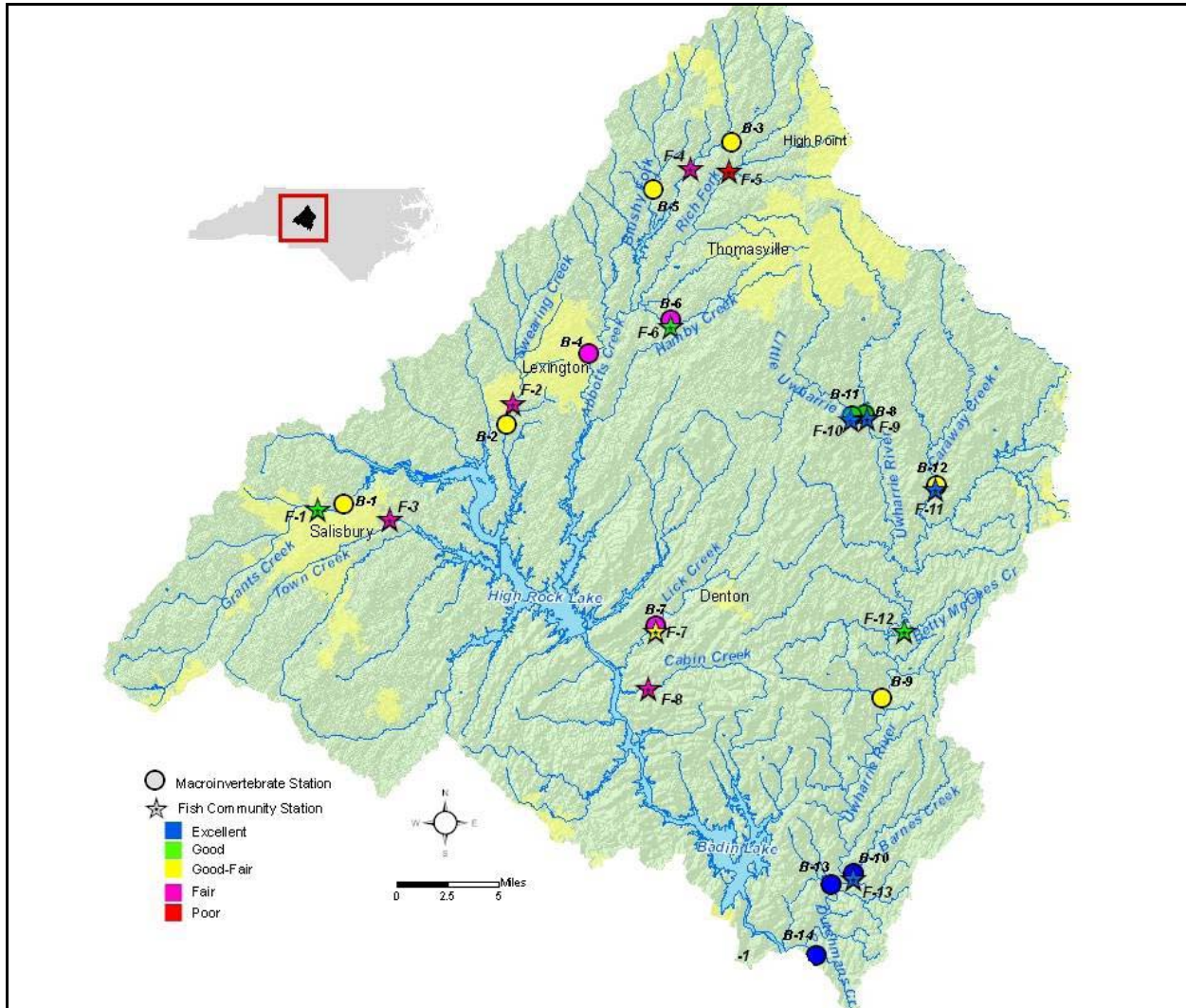


Figure 4. Sampling sites in HUC 03040103 in the Yadkin River basin. Monitoring sites are listed in Table ---.

The lower portion of Yadkin subbasin 4, bisected north/south approximately by NC 150, contains High Rock Lake and the lower portions of Swearinging Creek and Abbotts Creek, southwest of Lexington. Agricultural land use affects most streams outside of the urban areas. This area has easily eroded soils. Consequently, streams in areas of urban or agricultural land use are affected by sediment inputs, and have large amounts of coarse sand.

The Abbotts Creek watershed (subbasin 07), starts just south of Kernersville and flows south through Lexington and empties into High Rock Lake. Smaller streams in the watershed are Rich and Hunts Forks and Swearing and Hamby Creeks, which drain High Point, Thomasville, and the west side of Lexington. This watershed is located primarily in Davidson County and is bisected by the industrial and commercial US 64 and I-85 corridors. The largest municipalities in the subbasin are the cities of Lexington, Thomasville, and Highpoint. The largest discharger is the City of High Point's WWTP with a permitted flow of 6.2 MGD into Rich Fork. Other large municipal WWTP dischargers are Thomasville (4 MGD to Hamby Creek) and Lexington (5.5 MGD to Abbotts Creek). Land use is primarily forest and pasture though this watershed contain a high percentage of urban area.

The upper portion of Yadkin subbasin 8 in this HUC contains Tuckertown Reservoir and Badin Lake. Much of the land in this area is used for agriculture and undeveloped gamelands.

Subbasin 9 encompasses the entire Uwharrie River watershed. The upper watershed, primarily in Randolph County, includes portions of the municipalities of High Point, Thomasville, Archdale, Randleman, and Asheboro. The lower portion of the watershed in southern Randolph and northwestern Montgomery counties is within the Uwharrie National Forest. Most of the subbasin is forested. The Uwharrie River is within the piedmont Carolina Slate Belt ecoregion, but some tributaries draining the Uwharrie Mountains have montane characteristics. Certain geological subdivisions of the Carolina Slate Belt appear to have ecological significance. The sandiest streams were observed in the northern portion of the subbasin, where the underlying rocks are metamudstone and metaargillite. More rocky streams were observed in the southern portion of the subbasin where the underlying rocks are metavolcanic.

Overview of Water Quality

Fourteen sites were sampled for benthic macroinvertebrates in this HUC in 2006 (Table 3). Among these, four sites (Grants Creek, Swearing Creek, Little Uwharrie River, and Uwharrie River at SR 1406) showed improved bioclassifications compared with 2001 sampling, seven sites retained the same bioclassification as 2001, and two sites (Lick Creek and Uwharrie River at SR 1143) showed degraded bioclassifications compared to 2001. Dutchmans Creek, not rated in 2001 was rated Excellent in 2006. None of the sites improved or degraded more than one level of bioclassification.

Eleven sites were sampled to evaluate fish populations. No site showed an improved bioclassification, three sites retained their 2001 classification, and three sites (Cabin Creek, Rich Fork, Abbotts Creek) showed degraded classification compared to 2001. Five additional fish sites were sampled for the first time in 2006.

Table 3. Waterbodies monitored in HUC 03040103 in the Yadkin River basin for basinwide assessment, 2001 and 2006.

Map # ¹	Waterbody	County	Location	2001	2006
B-1	Grants Cr	Rowan	SR 1912	Fair	Good-Fair
B-2	Swearing Cr	Davidson	NC 47	Fair	Good-Fair
B-3	Abbotts Cr	Davidson	SR 1755	Good-Fair	Good-Fair
B-4	Abbotts Cr	Davidson	SR 1243	Fair	Fair
B-5	Brushy Fk	Davidson	SR 1810	Good-Fair	Good-Fair
B-6	Hamby Cr	Davidson	SR 2017	Fair	Fair
B-7	Lick Cr	Davidson	NC 8	Good-Fair	Fair
B-8	Uwharrie R	Randolph	SR 1406	Good-Fair	Good
B-9	Uwharrie R	Randolph	SR 1143	Good	Good-Fair
B-10	Uwharrie R	Montgomery	NC 109	Excellent	Excellent
B-11	L Uwharrie R	Randolph	SR 1405	Good-Fair	Good
B-12	Caraway Cr	Randolph	SR 1331	Good-Fair	Good-Fair
B-13	Barnes Cr	Montgomery	SR 1303	Excellent	Excellent
B-14	Dutchmans Cr	Montgomery	SR 1150	Not Rated	Excellent
F-1	Grants Cr	Rowan	SR 2200 (SR 1910)	Good-Fair	Good (2004) ²
F-2	Swearing Cr	Davidson	SR 1104	---	Fair (2004) ²
F-3	Town Cr	Rowan	SR 2118	---	Fair
F-4	Abbotts Cr	Davidson	SR 1800	Good-Fair	Fair
F-5	Rich Fk	Davidson	NC 109	Fair	Poor
F-6	Hamby Cr	Davidson	SR 2017	---	Good
F-7	Lick Cr	Davidson	NC 8	Good-Fair	Good-Fair
F-8	Cabin Cr	Davidson	SR 2536	Good	Fair
F-9	Uwharrie R	Randolph	SR 1406	Excellent (1999)	Excellent
F-10	L Uwharrie R	Randolph	SR 1405	---	Excellent
F-11	Caraway Cr	Randolph	SR 1331	---	Excellent
F-12	Betty McGees Cr	Randolph	SR 1107	Good	Good
F-13	Barnes Cr	Montgomery	SR 1303	Excellent	Excellent

¹B = benthic macroinvertebrate monitoring sites; F = fish community monitoring sites.

²special study site that has become a basinwide site.

River and Stream Assessment

Leonards Creek (Davidson County), previously sampled as a basinwide site in subbasin 07 was not sampled in 2006 due to low flow conditions. Similarly, Rich Fork at Davidson County SR 2005 was not sampled for benthos during 2006 due to excessive depth caused by operations of sand-dipping operations. It is likely that the latter site will therefore be discontinued.

Specific site summaries of the 14 benthic macroinvertebrate and 13 fish community samples may be found at this link: [03040103](#).

SPECIAL STUDIES

UT Second Creek

This stream (near Dutch Creek Rd) in Rowan County was sampled in January 2002 for possible removal from the 303(d) list. This creek was the former site of the Town of Rockwell's WWTP. The WWTP ceased discharging into UT second creek in 1996. Both upstream and downstream segments were rated Not Impaired. (BAU memo B-020328)

Town Creek

A TMDL study was done on Town Creek in June 2004 to characterize the possible stressors impacting the stream. Urban impacts from upstream were characterized as a major cause of degraded water quality. (BAU memo B-040916) The stream was sampled again in September 2006 for possible removal from the impaired streams list. Located below an inactive WWTP outfall in Spencer, NC, it was determined that the stream remains impacted. (BAU memo B-070129a)

Second Creek

Second Creek in Rowan County was sampled in September 2006 to document and characterize the water quality before animal operations are expanded in its watershed. The stream was found to be relatively unimpacted at SR 2370. (BAU memo B-070129a)

Little Creek

Little Creek in Rowan County was sampled in September 2006 for possible removal from the impaired streams list. It was discovered that the stream was erroneously put on the 303(d) list. It has never been sampled for fish and benthic sampling in 1990 resulted in a Not Impaired rating. The stream was assigned a Good-Fair bioclassification as a result of the 2006 benthic collections.

Fish Community Urbanization Study

Grants Creek at SR 1506 and at SR 1910, and Second Creek at SR 2338 in Rowan County, as well as Swearing Creek at SR 1104 (Davidson County), were sampled by DWQ in 2004 as part of a North Carolina State University fish community urbanization study (unpublished data).

Swearing Creek, NC 47, Davidson County

This site was resampled in 2002 to determine whether the stream should be placed on North Carolina's 303(d) list. This site received a Fair rating, which verified the Fair rating it received in 2001. (BAU Memo B-021001)

Hamby Creek TMDL Stressor Study

A TMDL stressor study was conducted at seven sites in the Hamby Creek watershed in Davidson County in May 2003. Results of this study suggest that the cause of impairment in Hamby Creek appears to be chemical and/or physical pollutants in the form of toxic chemicals from urban runoff and nutrient inputs. (BAU Memo B-031016)

Planning Section Requests

Three additional benthic sites were requested by the Planning Section for sampling in 2006. Hunts Fork at SR 1787 and Rich Fork at SR 1755 are on North Carolina's 303d impaired streams list. Samples from these streams were needed to see if impairment is still warranted. In 2006 Hunts Fork received a Fair rating. Rich Fork rated Good-Fair. Hamby Creek at SR 2025 received a Poor bioclassification. (BAU Memorandum B-061114)

Abbotts Creek, SR 1735, Davidson County

At the request of Winston-Salem Regional Office, Abbotts Creek was sampled near the Davidson/Wilkes County line to provide baseline data prior to construction of a Dell computer plant. This site was borderline Good-Fair/Good. (BAU Memo B-061114)

Yadkin Subbasin 07 TMDL Stressor Study

A TMDL stressor study was conducted at eight sites in Subbasin 07 (Davidson County) in May and September 2006. Overall, five of the sites received Good-Fair ratings, two received Fair ratings (Abbotts Creek at SR 1243, Hamby Creek at SR 2017) and one received a Poor rating (Hamby Creek at SR 2025). (BAU Memo B-060108)

Lick Creek TMDL

Two benthic sites were sampled in 2003 because Lick Creek was considered impaired from its source to a point one mile upstream of Davidson County SR 2501, not far above the confluence with the Yadkin River. Both sites received a Good-Fair rating. (BAU Memo B-040212)

Uwharrie River

A site on the Uwharrie River at NC 109 was sampled in March 2005 by both DWQ and Duke Energy biologists as a quality assurance measure comparing methods of both groups.

Uwharrie River EEP Study

Per a request received by the Biological Assessment Unit (BAU) from Ecosystems Enhancement Program (EEP) staff, seven benthos sites were sampled in May 2006. The reference site, Barnes Creek

received a bioclassification of Excellent ; five study sites earned bioclassifications of Good (Uwharrie River at SR 1406 and SR 1564, Little Uwharrie River at SR 1405, Brier Creek at SR 1402, and Caraway Creek at SR 1524 and one site, Caraway Creek at Randolph SR 1331, earned a bioclassification of Good-Fair.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Grants Cr	SR 1910	07/08/04	Good

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Rowan	4	03040103	354134	802813	12-110	Southern Outer Piedmont

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	56.9	--	9	0.3	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	50	25	0	25 (golf course)

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	23.3
Dissolved Oxygen (mg/L)	6.4
Specific Conductance (µS/cm)	133
pH (s.u.)	6.6

Water Clarity	Slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	15
Bottom Substrate (15)	4
Pool Variety (10)	9
Riffle Habitat (16)	7
Left Bank Stability (7)	3
Right Bank Stability (7)	3
Light Penetration (10)	7
Left Riparian Score (5)	2
Right Riparian Score (5)	5
Total Habitat Score (100)	60

Site Photograph



Substrate	Sand, cobble
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
07/08/04	2004-114	19	48	Good
05/02/01	2001-35	12	42	Good-Fair

Most Abundant Species	Bluegill and Bluehead Chub	Exotic Species	Common Carp, Red Shiner, Green Sunfish, and Spotted Bass
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Species Change Since Last Cycle

Gains -- Common Carp, Red Shiner, Eastern Silvery Minnow, Golden Shiner, Creek Chubsucker, Spotted Sucker, Flat Bullhead, White Catfish, Pumpkinseed, Bluegill, sunfish hybrid, Black Crappie, Spotted Bass, and Largemouth Bass. **Losses** -- Redlip Shiner, Rosyside Dace, Creek Chub, Brown Bullhead, Eastern Mosquitofish, and Warmouth.

Data Analysis

Watershed -- drains central and northeastern Rowan County, including the towns of Spencer, Salisbury, China Grove, and Landis; site is ~3.5 miles upstream from the backwaters of the Yadkin River and High Rock Lake and 1.3 miles downstream of 2001 site at SR 2200, difference in drainage area is 1.8 square miles. **Habitat** -- sandy runs, snag pools, one riffle; golf course along southern shoreline. **2004** -- diverse, but the proximity to reservoir and river influenced the fish community; intolerant species were absent; slightly greater than expected percentage of omnivores+herbivores; 8 of 19 species represented by only 1 or 2 fish per species; loss of the Redlip Shiner - second most abundant species in 2001. **2001 and 2004** -- 25 species are known from the site, but only 6 collected in both years (Bluehead Chub, Redbreast Sunfish, Green Sunfish, Tessellated Darter, and Fantail Darter); dominant species both years was the Bluehead Chub; sampled in 2004 as part of a NCSU Urban Fish Study.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
GRANTS CR	SR 1910	08/09/06	Good-Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
ROWAN	4	03040103	12-110	354151	802649

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Southern Outer Piedmont	C	61.8	8	0.3

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	25	25	0	50 (fallow)

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None: The Salisbury WWTP was erroneously reported to be upstream in 2003 report	---	---

Water Quality Parameters

Temperature (°C)	24.9
Dissolved Oxygen (mg/L)	5.9
Specific Conductance (µS/cm)	159
pH (s.u.)	6.9
Water Clarity	slightly turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	3
Instream Habitat (20)	14
Bottom Substrate (15)	8
Pool Variety (10)	4
Riffle Habitat (16)	5
Left Bank Stability (7)	4
Right Bank Stability (7)	4
Light Penetration (10)	9
Left Riparian Score (5)	4
Right Riparian Score (5)	0
Total Habitat Score (100)	54

Substrate	mostly sand with some cobble (rip-rap)
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
08/09/06	10047	87	18	6.4	6.0	Good-Fair
08/07/01	8463	72	13	6.6	6.3	Fair
08/06/96	7126	74	20	6.4	5.5	Good-Fair
07/13/89	4981	67	20	6.2	5.5	Good-Fair

Taxonomic Analysis

EPT taxa in 2006 increased modestly to 18 from the 13 collected in 2001. This increase was comprised of one mayfly and 4 caddisfly taxa. Two caddisflies not previously collected at this site, the intolerant *Neophylax oligius* and *Chimarra*, occurred though were rare in abundance. The abundant mayfly, *Procladius*, was also collected for the first time in 2006. The decrease of the Biotic index to 6.4 indicates a return to the marginally better water quality seen prior to 2001.

Data Analysis

Located approximately 2.5 miles from the confluence with the Yadkin River, this site predominately receives urban runoff from Salisbury and Spencer. Grants Creek also suffers from poor habitat with a mostly homogeneous substrate (sand), poor riffles and lack of pools. Additionally, the riparian areas are minimal with moderate erosion. Results from the 2006 benthic survey indicate a return to the Good-Fair conditions seen prior to 2001. Grants Creek was rated a Fair in 2001, a low flow year, suggesting that a higher than normal concentration of pollutants was affecting the benthic community for that year.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Swearing Cr	SR 1104	07/08/04	Fair

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Davidson	7	03040103	354612	801803	12-113	Southern Outer Piedmont

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	31.8	--	12	0.4	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	40	0	35	25 (suburban residential)

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

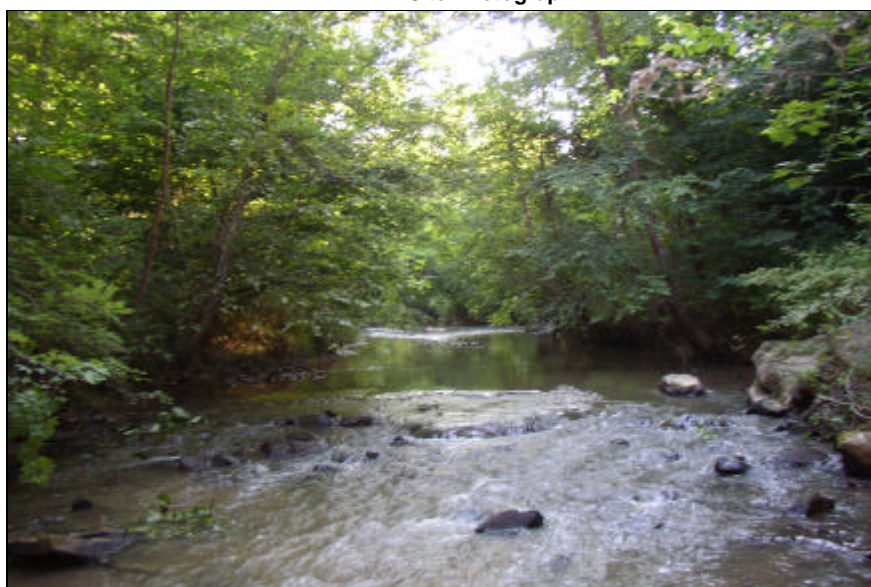
Temperature (°C)	25.4
Dissolved Oxygen (mg/L)	6.3
Specific Conductance (µS/cm)	110
pH (s.u.)	6.7

Water Clarity	Slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	17
Bottom Substrate (15)	5
Pool Variety (10)	10
Riffle Habitat (16)	7
Left Bank Stability (7)	3
Right Bank Stability (7)	3
Light Penetration (10)	7
Left Riparian Score (5)	4
Right Riparian Score (5)	5
Total Habitat Score (100)	66

Site Photograph



Substrate	Sand, cobble
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
07/08/04	2004-113	12	40	Fair

Most Abundant Species	Fantail Darter, Redbreast Sunfish, Eastern Silvery Minnow	Exotic Species	Red Shiner and Green Sunfish
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Species Change Since Last Cycle	N/A; new site in 2004.
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Data Analysis

Watershed -- drains the western portion of the City of Lexington; tributary to High Rock Lake. **Habitat** -- sandy runs, snag pools, and bedrock riffles; bank instability. **2004** -- total number of fish, total species diversity, and diversity of darters lower than expected; intolerant species and species of suckers were absent; percentage of tolerant fish (Satinfin Shiner, Red Shiner, Golden Shiner, Flat Bullhead, Redbreast Sunfish, and Green Sunfish) moderately high; sampled as part of a NCSU Urban Fish Study.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
SWEARING CR	NC 47	09/11/06	Good-Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
DAVIDSON	7	03040103	12-113	354520	801820

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Southern Outer Piedmont	C	34.8	6	0.2

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	50	25	25	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	21.4
Dissolved Oxygen (mg/L)	7.7
Specific Conductance (µS/cm)	131
pH (s.u.)	6.4
Water Clarity	clear

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	11
Bottom Substrate (15)	3
Pool Variety (10)	6
Riffle Habitat (16)	3
Left Bank Stability (7)	2
Right Bank Stability (7)	2
Light Penetration (10)	9
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	51

Substrate	Sand, Detritus, Silt
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
09/11/06	9996	57	17	6.4	5.5	Good-Fair
07/03/02	8858	63	12	6.6	5.7	Fair
07/25/01	8493	--	13	--	5.8	Fair
08/07/96	7156	--	16	--	5.2	Good-Fair

Taxonomic Analysis

Abundant taxa included *Baetis intercalaris*, *Stenonema modestum*, *Cheumatopsyche*, *Ancyronyx variegatus*, *Macronychus glabratus*, *Argia*, *Boyeria vinosa*, *Calopteryx*, *Macromia*, *Progomphus obscurus*, and *Corbicula fluminea*. Taxa collected in 2006 that had not been previously collected at this site included *Baetis pluto*, *Baetisca*, *Pteronarycs*, *Chimarra*, *Nectopsyche exquisita*, and *Oecetis persimilis*.

Data Analysis

This tributary to the Yadkin River has been sampled four times since 1996. It received a Good-Fair rating in 1996, decreased to Fair in 2001 and 2002, and was back to Good-Fair in 2006. The 2001 and 2002 samples were borderline Fair/Good-Fair with each needing one more taxon to receive a Good-Fair rating. Based on the benthic data no major changes in water quality have been observed.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Town Cr	off SR 2118	05/11/06	Fair

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Rowan	4	03040103	354110	802424	12-115-3	Southern Outer Piedmont

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	16.5	---	8	0.4	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	50	---	---	50 (Salisbury Spencer WWTP)

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
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Water Quality Parameters

Temperature (°C)	17.0
Dissolved Oxygen (mg/L)	7.7
Specific Conductance (µS/cm)	262
pH (s.u.)	6.8

Water Clarity	Slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	4
Instream Habitat (20)	14
Bottom Substrate (15)	8
Pool Variety (10)	9
Riffle Habitat (16)	5
Left Bank Stability (7)	5
Right Bank Stability (7)	5
Light Penetration (10)	10
Left Riparian Score (5)	5
Right Riparian Score (5)	3
Total Habitat Score (100)	68

Site Photograph



Substrate	cobble, gravel, boulder
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/11/06	2006-42	14	38	Fair

Most Abundant Species	Green Sunfish	Exotic Species	Green Sunfish, Redear Sunfish, Red Shiner
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Species Change Since Last Cycle	N/A, new site in 2006
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Data Analysis

Watershed -- drains East Spencer and south Salisbury in central Rowan County; a tributary to High Rock Lake. **Habitats** -- side snags, boulders, runs, short riffles; good riparian on left; WWTP on right, but it no longer discharges to Town Creek. **2006** -- new fish community monitoring site; the trophic structure of this fish community was skewed towards a high percentage of Insectivores (93%), many of which were tolerant species (73% of total, Green Sunfish = 36% of sample); six sunfish species collected, all having large individuals; no intolerant species collected; high conductivity due to urban runoff.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
ABBOTTS CR	SR 1755	09/13/06	Good-Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
DAVIDSON	7	03040103	12-119-(1)	355730	800643

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Southern Outer Piedmont	WS-III	22.3	8	0.2

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	75	0	25	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	18.5
Dissolved Oxygen (mg/L)	8.1
Specific Conductance (µS/cm)	133
pH (s.u.)	7.5
Water Clarity	slightly turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	12
Bottom Substrate (15)	6
Pool Variety (10)	4
Riffle Habitat (16)	12
Left Bank Stability (7)	5
Right Bank Stability (7)	5
Light Penetration (10)	10
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	69

Substrate	Gravel, Sand, Silt, Rubble, Boulder
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
09/13/06	10000	65	17	5.8	5.1	Good-Fair
09/28/01	8640	--	15	--	5.4	Good-Fair
08/08/96	7158	--	16	--	5.2	Good-Fair

Taxonomic Analysis

Abundant taxa included *Acentrella*, *Hexagenia*, *Stenonema modestum*, *Tricorythodes*, *Cheumatopsyche*, *Leucotrichia pictipes*, and *Nectopsyche exquisita*.

Data Analysis

This site is located north of NC 109 and is the most upstream benthic sampling site on Abbotts Creek. It has been sampled three times since 1996 and has always rated Good-Fair. EPT taxa richness and EPT Biotic Index scores were nearly identical for all three samples which suggests no major changes in water quality.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Abbotts Cr	SR 1800	05/10/06	Fair

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Davidson	7	03040103	355619	800853	12-119-(4.5)	Southern Outer Piedmont

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
WS-III; CA	37.1	--	8	0.3	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	75	0	25	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	15.0
Dissolved Oxygen (mg/L)	8.9
Specific Conductance (µS/cm)	138
pH (s.u.)	6.2

Water Clarity	Turbid
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Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	12
Bottom Substrate (15)	3
Pool Variety (10)	8
Riffle Habitat (16)	3
Left Bank Stability (7)	2
Right Bank Stability (7)	2
Light Penetration (10)	9
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	54

Substrate	Sand
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/10/06	2006-37	14	40	Fair
05/01/01	2001-32	15	46	Good-Fair
04/24/96	96-34	15	44	Good-Fair

Most Abundant Species	Bluehead Chub (2006)	Exotic Species	Green Sunfish
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Species Change Since Last Cycle **Losses** -- Gizzard Shad, Rosyside Dace, White Sucker, Notchlip Redhorse, and Pumpkinseed. **Gains** -- Creek Chub, Flat Bullhead, and Green Sunfish (first time collected at the site).

Data Analysis

Watershed -- drains the extreme southeastern corner of Forsyth and the northeastern corner of Davidson counties, including the southern portion of the City of Kernersville; semi-rural/suburban; upstream of Lake Tom-a-Lex. **Habitat** -- coarse woody debris; large deadfalls; snags; eroded vertical banks. **2006** -- decline in the number of species of suckers and increase in the percentage of tolerant fish (primarily Satinfin Shiner and Redbreast Sunfish). **1996 - 2006** -- total habitat scores have averaged ~ 50; specific conductance has gradually increased from 104 to 121 to 138 µS/cm since 1996; an abundant, but not diverse community; total number of species known from site = 19; no intolerant species are known from the site; the percentage of tolerant fish has increased from 10 to 17 to 37% since 1996; trophically no change, very stable metrics; Bluehead Chub has consistently been the dominant species (~40%); NCIBI ratings range between 40 and 46, NCIBI ratings from high Fair to high Good-Fair. 2006 data were summarized in BAU Memorandum 20061120.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
ABBOTTS CR	SR 1243	09/12/06	Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
DAVIDSON	7	03040103	12-119-(6)	354824	801407

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Southern Outer Piedmont	C	175.0	12	0.3

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	70	0	30	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	21.2
Dissolved Oxygen (mg/L)	5.3
Specific Conductance (µS/cm)	153
pH (s.u.)	6.6
Water Clarity	turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	4
Instream Habitat (20)	13
Bottom Substrate (15)	8
Pool Variety (10)	6
Riffle Habitat (16)	14
Left Bank Stability (7)	6
Right Bank Stability (7)	6
Light Penetration (10)	7
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	74

Substrate	Rubble, Gravel, Boulder, Sand, Silt, Bedrock
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
09/12/06	9997	63	11	6.7	6.2	Fair
07/25/01	8494	61	15	6.8	6.2	Fair
08/09/96	7161	62	17	6.5	6.2	Fair
11/13/85	1612	49	12	7.4	6.2	Fair

Taxonomic Analysis

Several taxa typically found in urban streams (i.e., *Cheumatopsyche*, *Hydropsyche betteni*, *Argia*, *Ablabesmyia mallochi*, *Conchapelopia* group, *Polypedilum illinoense* group, and *Rheocricotopus robacki*) were found in abundance.

Data Analysis

This site is located within Lexington city limits and is the most downstream sampling location for benthos on Abbots Creek. It has consistently received a Fair rating since 1985. Abbots Creek receives urban runoff from the city of Lexington. In addition, the city of Lexington WWTP is permitted to discharge 5.5 MGD to Abbots Creek Arm of High Rock Lake, which is located approximately 2.5 miles downstream.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Rich Fk	NC 109	05/10/06	Poor

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Davidson	7	03040103	355615	800652	12-119-7	Southern Outer Piedmont

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	25.6	--	6	0.3	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100	0	0	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
City of High Point's Westside WWTP; Instream Waste Concentration = 93%	NC0024228	6.2

Water Quality Parameters

Temperature (°C)	16.4
Dissolved Oxygen (mg/L)	8.4
Specific Conductance (µS/cm)	372
pH (s.u.)	6.2

Water Clarity	Clear
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Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	12
Bottom Substrate (15)	3
Pool Variety (10)	9
Riffle Habitat (16)	2
Left Bank Stability (7)	2
Right Bank Stability (7)	2
Light Penetration (10)	7
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	52

Substrate	Soft, sinking sand
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/10/06	2006-38	16	34	Poor
05/01/01	2001-33	13	40	Fair
04/25/96	96-35	10	34	Poor

Most Abundant Species	Redbreast Sunfish and Bluegill	Exotic Species	Swallowtail Shiner, Green Sunfish, and Redear Sunfish
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Species Change Since Last Cycle	Losses -- Gizzard Shad, Rosyside Dace, and Spottail Shiner. Gains -- Creek Chub, White Catfish, Eastern Mosquitofish, Warmouth, and Tessellated Darter (first time ever at site).
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Data Analysis

Watershed -- drains the west-southwest areas of the City of High Point and northeast corner of Davidson County. Habitat -- runs, snags, coarse, woody debris; sand dipping operation downstream and WWTP upstream. WWTP with frequent violations in 2003 and 2004 for biochemical oxygen demand and fecal coliform bacteria, proceeded to enforcement; occasional other violations for pH, total phosphorus, and total ammonia; no reported violations in 2006 (BIMS query 12/14/2006). **2006** -- decline in the number of fish, increase in total diversity; no intolerant species; high percentage of tolerant fish; 92% of all fish were insectivores. **1996 - 2006** -- specific conductance consistently greater than 325 µS/cm; total habitat scores range from 39 to 66; total species at site = 21; has steadily increased to 16; no intolerant species known from site; percentage of tolerant fish consistently high; Redbreast Sunfish typically one of the dominant species; percentage of species with multiple ages increased from 30 to 46 to 50% since 1996. 2006 data were summarized in BAU Memorandum 20061120.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
BRUSHY FK	SR 1810	09/12/06	Good-Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
DAVIDSON	7	03040103	12-119-5-(1)	355528	801049

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Southern Outer Piedmont	WS-III	20.8	7	0.3

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	25	50	25	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	19.5
Dissolved Oxygen (mg/L)	7.1
Specific Conductance (µS/cm)	116
pH (s.u.)	6.4
Water Clarity	clear

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	11
Bottom Substrate (15)	3
Pool Variety (10)	9
Riffle Habitat (16)	3
Left Bank Stability (7)	3
Right Bank Stability (7)	6
Light Penetration (10)	9
Left Riparian Score (5)	1
Right Riparian Score (5)	5
Total Habitat Score (100)	55

Substrate	Sand, Silt
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
09/12/06	9999	61	15	5.9	5.0	Good-Fair
07/30/01	8498	53	20	5.4	4.4	Good
08/08/96	7159	--	13	--	4.7	Fair

Taxonomic Analysis

Abundant taxa included *Hexagenia*, *Isonychia*, *Stenonema modestum*, *Tricorythodes*, *Paragnetina fumosa*, *Cheumatopsyche*, *Triaenodes ignitus*, *Macronychus glabratus*, *Macromia*, *Calopteryx*, *Conchapelopia* group, *Polypedilum convictum*, and *Corbicula fluminea*.

Data Analysis

Brushy Fork, located north of Lexington, is a tributary to Tom-a-Lex Lake (the water supply for the cities of Lexington and Thomasville). In 1996, the site received a Fair rating and in 2001, it increased to Good. The rating dropped to Good-Fair in 2003 and 2006. According to Historic Palmer Drought Indices (<http://www.ncdc.noaa.gov/oa/climate/research/drought/palmer-maps/>), 1996 was a normal year for rainfall whereas, in 2001, the area was in a moderate drought. The increased rating in 2001 may be due to the low flow limiting impacts from nonpoint sources. In addition, a slight increase in available habitat and an increase in abundance of intolerant taxa were also noted in 2001. Although the 1996 sample was an EPT sample, when a correction factor is applied to compare with a Full Scale sample, the 1996 sample is comparable to the 2006 sample in terms of EPT taxa richness, indicating no real change in water quality even though the bioclass changed. Both samples were borderline Fair/Good-Fair.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
HAMBY CR	SR 2017	09/12/06	Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
DAVIDSON	7	03040103	12-119-7-4	354953	800948

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Southern Outer Piedmont	C	21.0	10	0.2

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	50	50	0	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
Thomasville WWTP	NC0024112	4.0

Water Quality Parameters

Temperature (°C)	20
Dissolved Oxygen (mg/L)	7.1
Specific Conductance (µS/cm)	379
pH (s.u.)	6.8
Water Clarity	slightly turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	15
Bottom Substrate (15)	8
Pool Variety (10)	9
Riffle Habitat (16)	14
Left Bank Stability (7)	3
Right Bank Stability (7)	6
Light Penetration (10)	10
Left Riparian Score (5)	2
Right Riparian Score (5)	5
Total Habitat Score (100)	77

Substrate	Rubble, Sand, Boulder, Gravel
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
09/12/06	9998	51	11	6.9	6.4	Fair
05/12/03	9128	60	9	7.2	6.3	Fair
07/30/01	8499	58	12	6.5	6.1	Fair

Taxonomic Analysis

Although dissolved oxygen was not low at the time of sampling, *Argia* and *Calopteryx* were very abundant. Species indicative of nutrient enrichment, toxicity, and urbanization were also abundant (i.e., *Cheumatopsyche*, *Hydropsyche betteni*, *Conchapelopia* group, *Polypedilum scalaenum*, and *Natarsia*).

Data Analysis

This site is located approximately four and one half miles downstream of Thomasville WWTP and has been sampled three times since 2001. All three samples received Fair bioclassifications and the benthic community has remained relatively unchanged: EPT taxa richness has been 12, 9, and 11 and the EPT Biotic Index ranged from 6.1 to 6.4.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Hamby Cr	SR 2017	05/10/06	Good

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Davidson	7	03040103	354954	800947	12-119-7-4	Southern Outer Piedmont

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	20.4	--	10	0.3	No

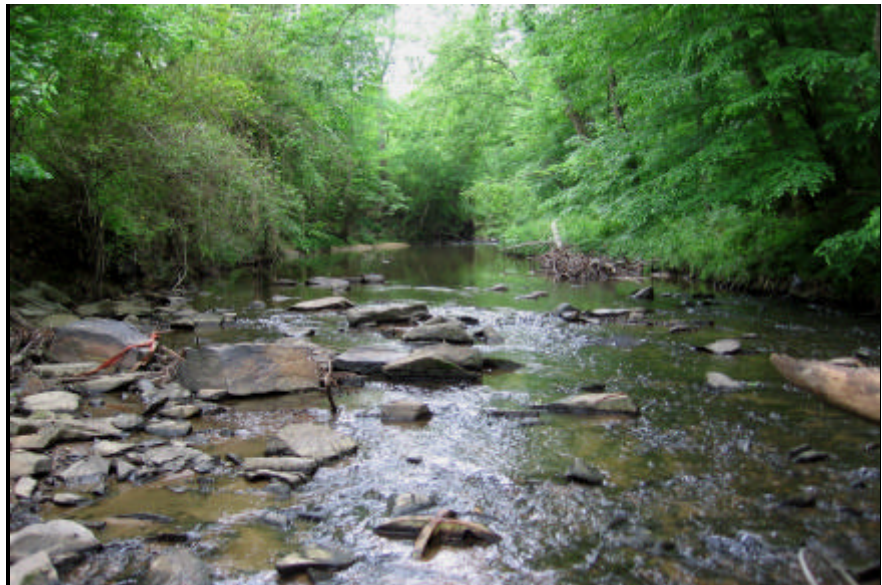
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	75	0	0	25 -- residential

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
City of Thomasville's Hamby Creek WWTP; Instream Waste Concentration = 94%	NC0024112	6

Water Quality Parameters

Temperature (°C)	15.6
Dissolved Oxygen (mg/L)	6.4
Specific Conductance (µS/cm)	305
pH (s.u.)	6.8

Site Photograph



Water Clarity	Very slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	8
Pool Variety (10)	9
Riffle Habitat (16)	7
Left Bank Stability (7)	6
Right Bank Stability (7)	7
Light Penetration (10)	9
Left Riparian Score (5)	3
Right Riparian Score (5)	5
Total Habitat Score (100)	75

Substrate	Cobble, boulder
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/10/06	2006-39	15	48	Good

Most Abundant Species	Redbreast Sunfish and Bluehead Chub	Exotic Species	Green Sunfish and Redear Sunfish
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Species Change Since Last Cycle	N/A; new site in 2006.
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Data Analysis

Watershed -- drains northeast Davidson County, including the I-85 corridor and the City of Thomasville; headwaters in Thomasville; borders the Carolina Slate Belt. **WWTP** -- many violations during the period June 2001 to June 2006 for biochemical oxygen demand, fecal coliform bacteria, total residual chlorine, metals (nickel, cadmium, and chromium), cyanide, pH, nutrients, and total suspended solids; proceeded to enforcement for many of the repeated violations (BIMS query 12/14/2006). **Habitat** --a Carolina Slate Belt type stream; bedrock, sand, and silts in the pools; shallow riffles; good riparian on right. **2006** -- large biomass of White Sucker, Creek Chubsucker, Brassy Jumprock, Flat Bullhead, Bluegill, Redbreast Sunfish, and Largemouth Bass; no Redlip Shiner or intolerant species; discharge from WWTP augments stream flow and nutrients stimulate fish production; data were summarized in BAU Memorandum 20061120.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
LICK CR	NC 8	08/11/06	Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
DAVIDSON	8	03040103	12-126-(3)	353647	801026

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	WS-IV	28.7	8	0.2

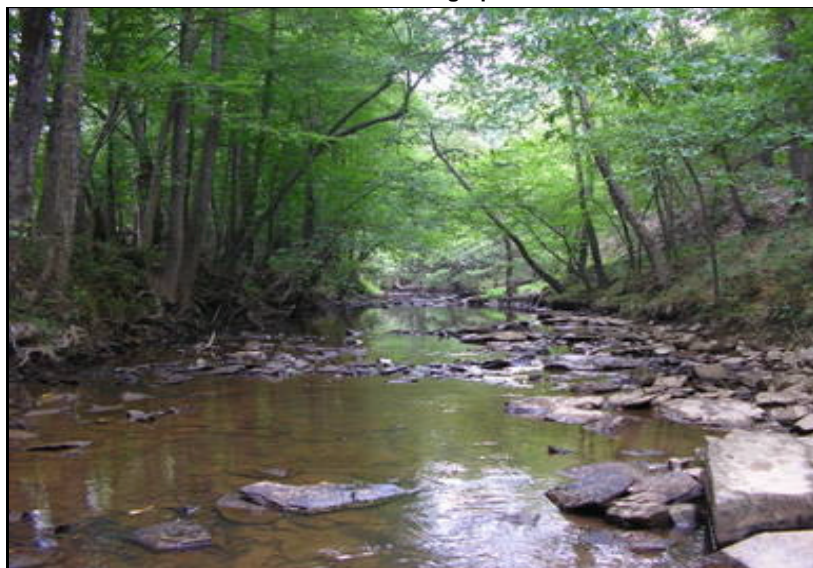
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	30	0	0	70 (50 fallow, 20 disturbed)

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
none	---	---

Water Quality Parameters

Temperature (°C)	24.9
Dissolved Oxygen (mg/L)	4.2
Specific Conductance (µS/cm)	179
pH (s.u.)	6.5
Water Clarity	turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	12
Bottom Substrate (15)	15
Pool Variety (10)	6
Riffle Habitat (16)	10
Left Bank Stability (7)	4
Right Bank Stability (7)	4
Light Penetration (10)	8
Left Riparian Score (5)	1
Right Riparian Score (5)	5
Total Habitat Score (100)	70

Substrate	Boulder, cobble and gravel
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
08/11/06	10053	81	13	6.7	6.6	Fair
09/03/03	9287	79	17	6.5	5.7	Good-Fair
08/07/01	8504	---	11	---	6.5	Fair
08/06/96	7128	---	12	---	5.6	Fair

Taxonomic Analysis

A loss of four EPT and an increase in the biotic index occurred since a special study was conducted on Lick Creek in 2003. No intolerant species were abundant while the cosmopolitan tolerant mayflies *Maccaffertium modestum* and *Stenacron interpunctatum* as well as the hydroptychid caddisflies *Cheumatopsyche* and *Hydropsyche betteni* were abundant. The silt loving mayfly, *Caenis*, was abundant as well. An indicator of slate belt streams and their low flow conditions, *Stenonema femoratum* was collected though it was only common. Chironomids indicative of organic enrichment (*Dicrotendipes neomodestus*) and of low dissolved oxygen (*P. illinoense* gr) were abundant while the low DO indicator *Physa* (a snail) made its first appearance in this stream.

Data Analysis

Lick creek drains a portion of southeastern Davidson county including the municipality of Denton. Aside from the urban impacts of Denton, the most probable reason for the Fair bioclass is the influence of the Denton WWTP and low flow. The plant, a minor discharger, is located about 2.5 miles upstream of NC 8 and is the most likely source of organic enrichment in the stream. The specific conductance in 2006 was higher than in 2003 (100) though much lower than in the drought year of 2001 (382). High amounts of silt and flocculent sediments were observed covering the hard substrate and the bottom of the pools. Low dissolved oxygen was probable in restricting the macroinvertebrate fauna and may have resulted from high organic enrichment and low flows inherent in slate belt streams.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Lick Cr	NC 8	05/10/06	Good-Fair

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Davidson	8	03040103	353647	801024	12-126-3	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
WS-IV	28	--	10	0.4	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	80	0	0	20 -- dirt bike track on left

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
Town of Denton's WWTP; Instream Waste Concentration = 100%	NC0026689	0.8

Water Quality Parameters

Temperature (°C)	15.8
Dissolved Oxygen (mg/L)	8.7
Specific Conductance (µS/cm)	123
pH (s.u.)	6.5

Water Clarity	Very slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	18
Bottom Substrate (15)	10
Pool Variety (10)	9
Riffle Habitat (16)	4
Left Bank Stability (7)	6
Right Bank Stability (7)	7
Light Penetration (10)	10
Left Riparian Score (5)	4
Right Riparian Score (5)	5
Total Habitat Score (100)	78

Site Photograph



Substrate	Cobble, boulder, bedrock
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/10/06	2006-40	14	44	Good-Fair
04/19/01	2001-27	16	44	Good-Fair
04/23/96	96-31	14	44	Good-Fair

Most Abundant Species	Redbreast Sunfish	Exotic Species	Green Sunfish
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Species Change Since Last Cycle	Losses -- Golden Shiner, Eastern Mosquitofish, Pumpkinseed, and Fantail Darter. Gains -- Highfin Shiner and Largemouth Bass.
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Data Analysis

Watershed -- drains the Town of Denton and the southeastern corner of Davidson County; site is ~ 3 mi. below the WWTP outfall. WWTP provides constant flows during droughts; WWTP with rare violations for biochemical oxygen demand, fecal coliform bacteria, and nickel from June 2001 to June 2006 (BIMS query 12/14/2006). Habitat -- a typical Carolina Slate Belt type stream; pools; runs; short and shallow riffles (a function of low flow); good riparian on right with bluff. **2006** -- slight decrease in the total species diversity and darter diversity; slight improvements in the percentages of omnivores and piscivores; continued high percentage of tolerant fish, primarily Redbreast Sunfish. **1996 - 2006** -- total habitat scores average ~ 75; specific conductance averages ~ 75 µS/cm; gradual improvements in the trophic metrics; dominant species are Redbreast Sunfish and Bluehead Chub; 20 species known from site, but no intolerants; NCIBI score and rating consistent at 44 and Good-Fair, respectively.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Cabin Cr	SR 2536	05/11/06	Fair

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Davidson	8	03040103	353406	801046	12-127-(2)	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
WS-IV	18.7	--	8	0.3	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	65	0	35	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	16.0
Dissolved Oxygen (mg/L)	8.0
Specific Conductance (µS/cm)	102
pH (s.u.)	6.3

Water Clarity	Clear, tannin stained
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Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	10
Pool Variety (10)	9
Riffle Habitat (16)	4
Left Bank Stability (7)	3
Right Bank Stability (7)	3
Light Penetration (10)	10
Left Riparian Score (5)	5
Right Riparian Score (5)	4
Total Habitat Score (100)	69

Substrate	Cobble, boulder, gravel
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/11/06	2006-41	16	38	Fair
05/01/01	2001-34	15	48	Good
04/24/96	96-32	12	52	Good

Most Abundant Species	Bluegill	Exotic Species	Black Bullhead, Green Sunfish, Redear Sunfish, and Yellow Perch
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Species Change Since Last Cycle	Losses -- Spotted Sucker, Margined Madtom, and Largemouth Bass. Gains -- Notchlip Redhorse, Black Bullhead, Chain Pickerel, and Pumpkinseed.
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Data Analysis

Watershed -- small drainage area in the southeastern corner of Davidson County, south of the Town of Denton; ~ 0.8 mi. above Tuckertown Reservoir. **Habitat** -- a typical Carolina Slate Belt type stream; short, but rare riffles (a function of low flow); pools; good riparian on left (bordered by NCWRC Gamelands). **2006** -- decrease in the number of fish; skewed trophic metrics (91% of all fish were insectivores); increase in the percentage of disease (popeye in Bluegill). **1996 - 2006** -- consistently elevated specific conductance, > 100 µS/cm; total habitat scores ~ 70; number of fish has declined from 252 to 142 to 116 since 1996; total species at site = 22, including 7 species of sunfish, but only 1 species of minnow, never any Redlip Shiner or intolerant species; Bluegill usually the dominant species; Fantail Darter not collected since 1996; proximity to reservoir influences species assemblage and is also a barrier to recolonization after prolonged droughts.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
UWHARRIE R	SR 1406	05/16/06	GOOD

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
RANDOLPH	9	3040103	13-2-(0.5)	354556	795933

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	WS-III	40.7	10	0.2

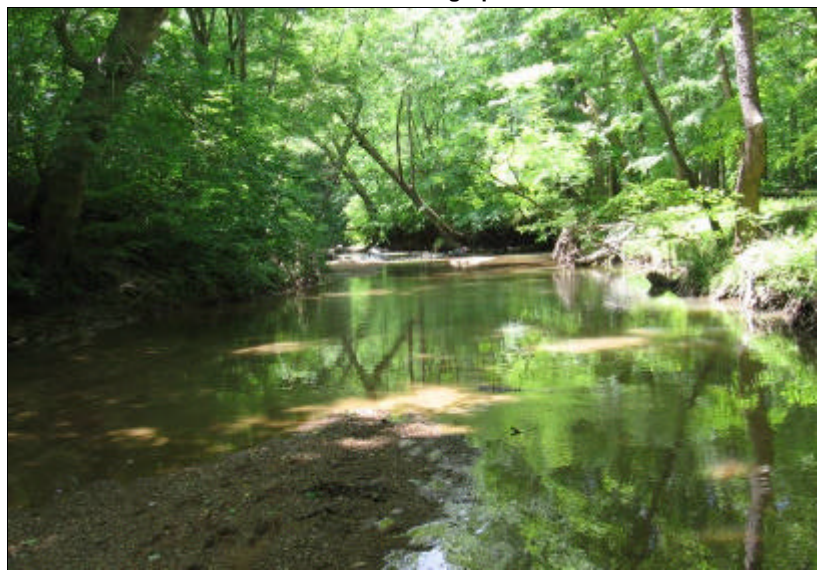
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100			

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	15.6
Dissolved Oxygen (mg/L)	10.5
Specific Conductance (µS/cm)	142
pH (s.u.)	6.8
Water Clarity	Slightly Turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	8
Bottom Substrate (15)	3
Pool Variety (10)	4
Riffle Habitat (16)	3
Left Bank Stability (7)	6
Right Bank Stability (7)	6
Light Penetration (10)	10
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	55

Substrate	Gravel with some sand and rubble
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
05/16/06	9902	72	24	5.8	4.5	Good
08/09/01	8556	NA	18	NA	5.3	Good-Fair

Taxonomic Analysis

Increases in mayfly, stonefly and caddisfly taxa, along with the presence of sensitive taxa like *Paraleptophlebia*, *Dolophilodes* and *Chimarra* helped improve the 2001 bioclassification of Good-Fair to the current Good rating. Mayfly richness led this improvement, with a net gain of 4 taxa.

Data Analysis

The upper Uwharrie River drains the southern portions of High Point and Archdale then passes through a mostly agricultural/rural section above this site. The upper portion of the drainage falls outside of the Carolina Slate Belt and has more sediment entering the system that in this lower section. Some of this transition is apparent at this site with the substrate consisting of relatively large proportion of fine gravel and coarse sand. Some bank erosion is evident though the riparian area remains mostly intact. Benthic macroinvertebrate results suggest a slight improvement in water quality conditions since prior sampling in 2001.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Uwharrie R	SR 1406	05/02/06	Excellent

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Randolph	9	03040103	354556	795933	13-2-(0.5)	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
WS-III	41.3	--	10	0.4	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100	0	0	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	14.4
Dissolved Oxygen (mg/L)	9.7
Specific Conductance (µS/cm)	131
pH (s.u.)	7.2
Water Clarity	Slightly turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	8
Pool Variety (10)	9
Riffle Habitat (16)	3
Left Bank Stability (7)	4
Right Bank Stability (7)	4
Light Penetration (10)	9
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	68

Substrate	Sand, bedrock, slate, boulder
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/02/06	2006-30	22	58	Excellent
10/26/99	99-71	15	52	Good
06/15/99	99-49	20	56	Excellent
04/14/99	99-13	18	58	Excellent
04/24/96	96-33	24	54	Excellent

Most Abundant Species	Bluegill	Exotic Species	Swallowtail Shiner, Green Sunfish, and Redear Sunfish
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Species Change Since Last Cycle	Losses -- Rosyside Dace, Whitefin Shiner, Warmouth, and Piedmont Darter. Gains -- Creek Chub, White Sucker; Pumpkinseed (all collected for the first time at the site), and Redear Sunfish.
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Data Analysis

Watershed -- drains northwestern Randolph County, including the Town of Archdale, the southwest portion of the City of High Point, and the I-85 and US 29/70 corridors; upstream from Lake Reese; borders the Southern Outer Piedmont. **Habitat** -- shallow sandy runs, boulder runs/chutes; side pools and snags; bluffs on left; forested riparian zones. **2006** -- 1 of 3 sites with 4 species of suckers; only 2 species of darters (Tessellated Darter and Fantail Darter), Piedmont Darter is rare at the site. **1996 - 2006** -- an abundant and species-rich site, 28 species known from the site; dominant species include Bluehead Chub, Swallowtail Shiner, Brassy Jumprock, Bluegill, and Redbreast Sunfish; data were summarized in BAU Memorandum 20061121; the fish community qualifies as High Quality Waters, if so petitioned; although the river did not qualify as Outstanding Resource Waters as detailed in BAU Memorandum 20021028.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
UWHARRIE R	SR 1143	09/27/06	Good-Fair

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
RANDOLPH	9	03040103	13-2-(1.5)	353348	795832

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	C	291.5	14	0.6

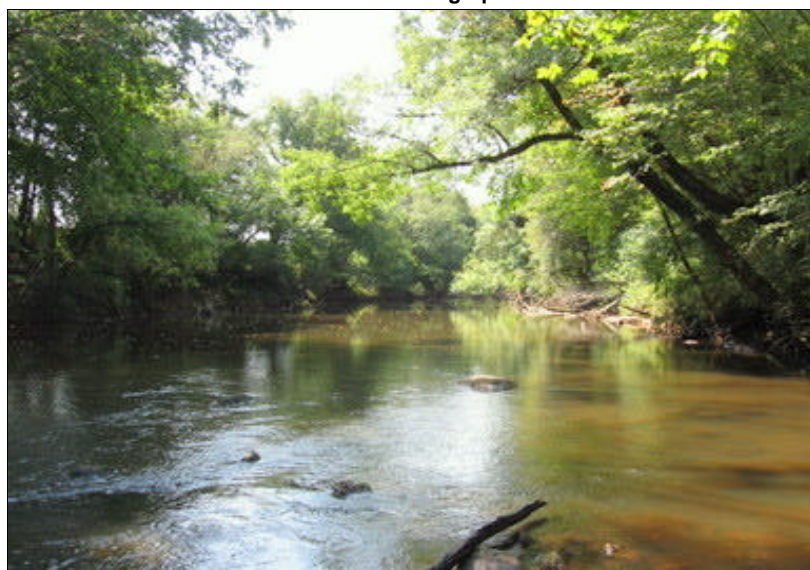
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	50	0	50	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
none	---	---

Water Quality Parameters

Temperature (°C)	20.4
Dissolved Oxygen (mg/L)	8.1
Specific Conductance (µS/cm)	104
pH (s.u.)	6.3
Water Clarity	slightly turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	14
Pool Variety (10)	6
Riffle Habitat (16)	7
Left Bank Stability (7)	6
Right Bank Stability (7)	4
Light Penetration (10)	7
Left Riparian Score (5)	3
Right Riparian Score (5)	1
Total Habitat Score (100)	69

Substrate	Boulder with cobble and gravel
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
09/27/06	10055	92	19	5.9	4.2	Good-Fair
08/09/01	8553	84	27	5.7	4.9	Good
08/08/96	7136	72	19	5.2	4.7	Good

Taxonomic Analysis

A significant drop in EPT taxa richness occurred from 2001 to 2006 and consisted of 4 less mayflies, one less stonefly, and 3 less caddisflies. Also EPT abundance was significantly less in 2006 (EPT N = 73) than in either subsequent sampling years (118 in 1996 and 111 in 2001). Sensitive species such as the stonefly *Neoperla* and the caddisfly *Ceraclea ancylus* were abundant while only two tolerant EPT taxa were abundant, the caddisfly *Cheumatopsyche* and the mayfly *Maccaffertium modestum*. A high diversity of beetles and snails (including the intolerant *Elimia*) existed within the stream. A higher number of oligochaete and chironomid taxa than in previous years served to increase the biotic index slightly and included organic enrichment indicators *Polypedilum illinoense* gr and *P. flavum* (abundant in 2006 though they were also abundant or common in 1996 and 2001). The first state record of the dragonfly *Dythemis* occurred at this site in 2006. Other notable taxa included the caddisflies *Ceraclea neffi* (15th state record) and *Trienodes perna*.

Data Analysis

The Uwharrie River at SR 1143 drains adjacent agricultural lands and has no major NPDES dischargers. Initial sampling of this site was postponed 45 days due to high turbidity. This may have served to allow the emergence of more than a few EPT taxa thus, in effect, reducing the bioclassification from Good to Good-Fair. Support for this assertion may be seen in the low EPT biotic index (lower than in 1996 and 2001). However, water degradation may also be occurring as evidenced by the year to year increase in the biotic index. Overall, no major water quality problems were observed at this site.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
UWHARRIE R	NC 109	08/11/06	Excellent

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
MONTGOMERY	9	03040103	13-2-(17.5)	352551	800105

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	WS-IV, B	361	31	0.3

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	80	0	20	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
none	---	---

Water Quality Parameters

Temperature (°C)	26.3
Dissolved Oxygen (mg/L)	5.3
Specific Conductance (µS/cm)	101
pH (s.u.)	6.6
Water Clarity	slightly turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	18
Bottom Substrate (15)	15
Pool Variety (10)	6
Riffle Habitat (16)	12
Left Bank Stability (7)	6
Right Bank Stability (7)	6
Light Penetration (10)	6
Left Riparian Score (5)	5
Right Riparian Score (5)	4
Total Habitat Score (100)	83

Substrate	boulder, cobble and gravel
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
08/11/06	10051	118	35	5.2	3.8	Excellent
08/08/01	8551	89	33	5.0	3.9	Excellent
08/08/96	7135	80	27	5.3	4.1	Good
07/23/90	5389	81	30	5.2	4.2	Good
07/15/88	4612	101	30	5.3	3.9	Good

Taxonomic Analysis

EPT taxa richness has increased slightly over the last few sampling cycles ensuring an Excellent bioclassification rating. The biotic index, however, did increase slightly reflecting the higher number of chironomid and oligochaete taxa (27 and 16 in 2006, respectively and 17 and 1 in 2001). However, overall there were many intolerant taxa that were abundant such as the mayfly *Leucrocota*, the stonefly *Neoperla*, and the caddisflies *Ceraclea ancylus*, *Paranyctiophylax celta*, *Lepidostoma* and *Polycentropus*. Many infrequently collected taxa were also collected at this site such as the caddisflies *Ceraclea maculata* (rare), *Hydropsyche mississippiensis* (abundant), *Helicopsyche borealis* (common), *Triaenodes injustus* (common), *Oecetis sp A* (rare) and *Mystacides* (rare).

Data Analysis

The Uwharrie river at NC 109 is surrounded mostly by forest with some agricultural land use. Of note was the extreme abundance of periphyton, filamentous algae and podostemum and the associated mollusc fauna on the substrate indicating probable nutrient enrichment from upstream. Overall, the Uwharrie River demonstrates stable conditions and excellent water quality.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
L UWHARRIE R	SR 1405	05/16/06	GOOD

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
RANDOLPH	9	3040103	13-2-1	354552	800015

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	WS-III	48.4	12	0.2

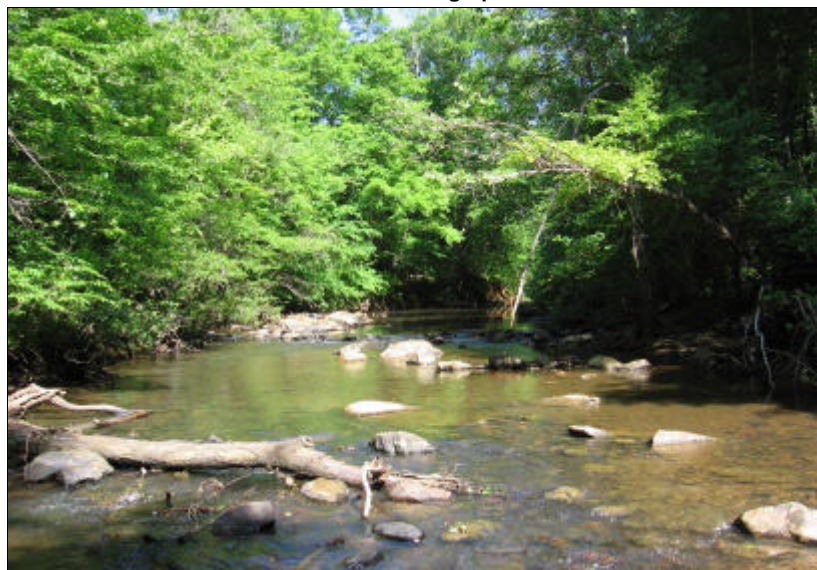
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100			

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	14.7
Dissolved Oxygen (mg/L)	9
Specific Conductance (µS/cm)	133
pH (s.u.)	6.4
Water Clarity	Clear

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	4
Instream Habitat (20)	16
Bottom Substrate (15)	15
Pool Variety (10)	6
Riffle Habitat (16)	16
Left Bank Stability (7)	6
Right Bank Stability (7)	6
Light Penetration (10)	7
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	86

Substrate	Mix of gravel, rubble, boulder
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
05/16/06	9904	75	18	5.6	4.4	Good
08/09/01	8555	NA	18	NA	4.7	Good-Fair
08/08/96	7141	NA	14	NA	4.3	Good-Fair

Taxonomic Analysis

EPT taxa richness in 2006 was identical to that of 2001 though EPT biotic index reflected a shift toward less tolerant species; improving the site's bioclassification from Good-Fair to Good. Mayfly abundance notably decreased between the sampling events with several taxa decreasing from abundant to common even though number of mayfly taxa increased from 8 to 11. caddisfly taxa decreased from 7 in 2001 to 3 in 2006.

Data Analysis

The Little Uwharrie River drains a relatively undisturbed forested watershed. The rocky substrate of the site is slightly embedded with silt. The riffle sampled is somewhat uncharacteristic of the more sandy nature of other sections of the river. Results of this sampling event indicate that water quality has remained consistent or possibly improved during the previous ten years.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Little Uwharrie R	SR 1405	05/02/06	Excellent

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Randolph	9	03040103	354552	800010	13-2-1	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
WS-III	42.9	--	13	0.4	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	75	0	25	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	13.5
Dissolved Oxygen (mg/L)	9.9
Specific Conductance (µS/cm)	106
pH (s.u.)	6.5

Water Clarity	Slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	18
Bottom Substrate (15)	12
Pool Variety (10)	9
Riffle Habitat (16)	10
Left Bank Stability (7)	6
Right Bank Stability (7)	6
Light Penetration (10)	7
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	87

Site Photograph



Substrate	Gravel, cobble, boulder outcrops
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/02/06	2006-29	23	56	Excellent

Most Abundant Species	Redlip Shiner and Bluehead Chub	Exotic Species	Swallowtail Shiner and Green Sunfish.
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Species Change Since Last Cycle	N/A; new site in 2006.
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Data Analysis

Watershed -- drains northwestern Randolph County, a small portion of eastern Davidson County, including the area south of the City of Thomasville, and the US 64 corridor. **Habitat** -- pools; two good riffles; snags; large dead trees across channel; good riparian zones. **2006** -- high abundance and species diversity including 3 species of darters, 4 species of sunfish and bass, 3 species of suckers, and 2 intolerant species; data were summarized in BAU Memorandum 20061121.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
CARAWAY CR	SR 1331	05/15/06	GOOD-FAIR

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
RANDOLPH	9	3040103	13-2-3	354257	795546

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	C	42.9	12	0.1

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	80	10	10	

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	16.2
Dissolved Oxygen (mg/L)	8.1
Specific Conductance (µS/cm)	128
pH (s.u.)	6.5
Water Clarity	Slightly Turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	4
Instream Habitat (20)	8
Bottom Substrate (15)	8
Pool Variety (10)	4
Riffle Habitat (16)	7
Left Bank Stability (7)	5
Right Bank Stability (7)	5
Light Penetration (10)	10
Left Riparian Score (5)	4
Right Riparian Score (5)	4
Total Habitat Score (100)	59

Substrate	Gravel with some sand and rubble
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
05/15/06	9906	74	17	5.8	4.9	Good-Fair
08/09/01	8554	NA	18	NA	4.3	Good-Fair
08/08/96	7139	NA	17	NA	4.7	Good-Fair

Taxonomic Analysis

Taxa observed in 2006 sampling indicated a slight increase in mayfly taxa including the sensitive *Paraleptophlebia* though previously abundant or common taxa including *Isonychia* and *Leucrocota* were absent. Caddisfly taxa declined in abundance and stonefly taxa remained fairly stable. The sensitive stonefly genus *Neoperla* was collected in 2006. EPT biotic index increased slightly between 2002 and 2006 indicating a slightly more tolerant community.

Data Analysis

This site on Caraway Creek lies south of US 64 in an area of the creek with a fairly broad floodplain and is bounded in many cases by agricultural fields. Upstream, the creek drains a mostly forested watershed between Shepherd and Caraway Mountains after passing the town of Hillsville. As previously recorded, some stream bank erosion was evident. With limited substrate, canopy, and pools, the site's habitat rating of 59 ranked fairly low among other sites sampled in the subbasin. The benthic community observed appears fairly consistent for the previous ten years

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Caraway Cr	SR 1331	05/08/06	Excellent

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Randolph	9	03040103	354257	795549	13-2-3	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	43.9	--	12	0.4	No

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	75	0	25	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	15.4
Dissolved Oxygen (mg/L)	8.1
Specific Conductance (µS/cm)	117
pH (s.u.)	6.3

Water Clarity	Turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	10
Pool Variety (10)	9
Riffle Habitat (16)	12
Left Bank Stability (7)	4
Right Bank Stability (7)	4
Light Penetration (10)	9
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	79

Site Photograph



Substrate	Gravel, sand, cobble, bedrock boulders
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/08/06	2006-31	19	54	Excellent

Most Abundant Species	Redbreast Sunfish and Bluehead Chub	Exotic Species	Redear Sunfish
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Species Change Since Last Cycle	N/A; new site in 2006.
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Data Analysis

Watershed -- drains west-central Randolph County; the US 311 corridor traverses its headwaters northwest of the City of Asheboro, and the US 64 corridor dissects the lower one-third of the watershed west of Asheboro. **Habitat** -- two good riffles, runs; side snags and pools; good riparian zones. **2006** -- good species diversity including 3 species of darters, 4 species of sunfish and bass, 2 species of suckers, and 2 intolerant species; data were summarized in BAU Memorandum 20061121.

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Betty McGees Cr	SR 1107	05/08/06	Good

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Randolph	9	03040103	353638	795724	13-2-5	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C	8	--	5	0.3	Yes

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100	0	0	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	14.0
Dissolved Oxygen (mg/L)	9.0
Specific Conductance (µS/cm)	90
pH (s.u.)	6.3

Water Clarity	Very slightly turbid
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Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	10
Pool Variety (10)	10
Riffle Habitat (16)	7
Left Bank Stability (7)	3
Right Bank Stability (7)	3
Light Penetration (10)	9
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	73

Site Photograph



Substrate	Cobble, gravel, sand
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/08/06	2006-32	18	52	Good
04/16/01	2001-15	15	52	Good
04/18/96	96-24	14	54	Excellent

Most Abundant Species	Bluehead Chub	Exotic Species	Green Sunfish and Redear Sunfish
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Species Change Since Last Cycle	Losses -- Largemouth Bass. Gains -- Eastern Mosquitofish (first time collected at the site), Margined Madtom, Bluegill, and Redear Sunfish (first time collected at the site).
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Data Analysis

Watershed -- drains a small rural area in southwestern Randolph County including the northern portion of the Birkhead Wilderness Area in the USFS Uwharrie National Forest. **Habitat** -- a typical Carolina Slate Belt stream; short and shallow riffles; side snags; a few pools; poor quality (Chinese privet), but wide riparian zones; water withdrawal structure within reach may affect stream during low flow periods. **2006** -- increase in the number of species from 15 to 18; increase in the percentage of species with multiple age groups; data were summarized in BAU Memorandum 20061120. **1996 - 2006** -- specific conductance has averaged ~ 95 µS/cm; total species at site = 19; number of species has increased from 14 to 15 to 18 since 1996; Bluehead Chub and Redbreast sunfish dominant species; NCIBI scores and ratings range from a high Good to a low Excellent.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
BARNES CR	SR 1303	05/16/06	EXCELLENT

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
MONTGOMERY	9	3040103	13-2-18-(0.5)	352619	795956

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	WS-IV, ORW	23.3	12	0.5

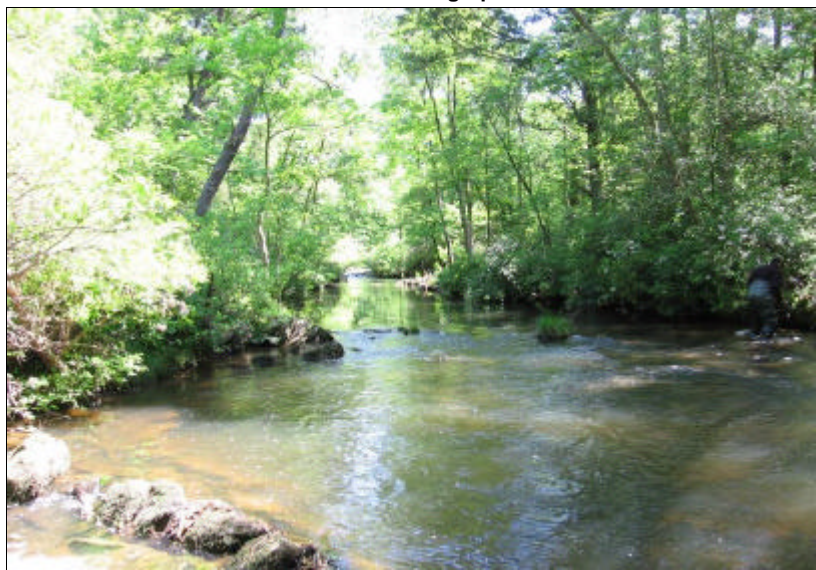
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100			

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None		

Water Quality Parameters

Temperature (°C)	15.3
Dissolved Oxygen (mg/L)	9.8
Specific Conductance (µS/cm)	55
pH (s.u.)	6.4
Water Clarity	Slightly Turbid

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	11
Pool Variety (10)	8
Riffle Habitat (16)	16
Left Bank Stability (7)	7
Right Bank Stability (7)	7
Light Penetration (10)	10
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	90

Substrate	Bedrock with boulder and rubble
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
05/15/06	9908	95	37	5	4.2	Excellent
09/28/01	8637	79	38	4.1	3	Excellent
08/09/01	8552	108	40	4.2	3.5	Excellent
08/07/86	7134	99	36	4.4	3.4	Excellent
08/01/85	3573	87	29	4.8	4	Excellent

Taxonomic Analysis

Total and EPT taxa abundance remained fairly consistent at this site in 2006 relative to previous years. An increase in overall biotic index and EPT biotic index may indicate a shift toward slightly more tolerant taxa in since 2001 sampling. A decline on trichopeteran taxa may reflect low flow encountered during sampling and minimized stream-edge root mats. Midge taxa increased from 15 in 2001 to 32 in 2006, the greatest number yet recorded at the site.

Data Analysis

Barnes Creek drains from the Uwharrie National Forest, a mostly undisturbed, and relatively mountainous terrain. The rocky, slate-belt substrate of the stream, mostly bedrock, provides quite good habitat for a variety of species; many of which are found more often in more western/northern North Carolina mountain regions. This site has an ORW designation and has maintained Excellent water quality (as measured by benthic community for two decades of sampling).

FISH COMMUNITY SAMPLE

Waterbody	Location	Date	Bioclassification
Barnes Cr	SR 1303	05/09/06	Excellent

County	Subbasin	8 digit HUC	Latitude	Longitude	Index Number	Level IV Ecoregion
Montgomery	9	03040103	352617	795956	13-2-18-(0.5)	Carolina Slate Belt

Stream Classification	Drainage Area (mi2)	Elevation (ft)	Stream Width (m)	Average Depth (m)	Reference Site
C,ORW	22.4	--	8	0.4	Yes

Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100	0	0	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
None	---	---

Water Quality Parameters

Temperature (°C)	14.2
Dissolved Oxygen (mg/L)	10.2
Specific Conductance (µS/cm)	51
pH (s.u.)	6.4

Water Clarity	Clear
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Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	19
Bottom Substrate (15)	15
Pool Variety (10)	9
Riffle Habitat (16)	16
Left Bank Stability (7)	7
Right Bank Stability (7)	7
Light Penetration (10)	8
Left Riparian Score (5)	5
Right Riparian Score (5)	5
Total Habitat Score (100)	96

Substrate	Cobble, boulder
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Sample Date	Sample ID	Species Total	NCIBI	Bioclassification
05/09/06	2006-35	17	58	Excellent
04/16/01	2001-16	16	54	Excellent
10/17/97	97-86	12	44	Good-Fair
04/22/96	96-25	10	48	Good

Most Abundant Species	Bluehead Chub and Redlip Shiner	Exotic Species	Smallmouth Bass
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Species Change Since Last Cycle	Losses -- Rosyside Dace and Creek Chub. Gains -- Flat Bullhead and Chain Pickerel.
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Data Analysis

Watershed -- drains rural northwestern Montgomery and southwestern Randolph counties; no municipalities in watershed. **Habitat** -- second greatest habitat score of any fish site in 2006; good riffles and pools; angular bedrock and boulders; *Podostemum*; water slightly stained. Lowest specific conductance of any fish community site in the Piedmont in 2006. 2006 -- lower than expected percentage of species with multiple age groups. **1996 - 2006** -- consistently high total habitat scores; specific conductance ~ 45 µS/cm; total species at site = 23, including 3 species of darters and 3 species of suckers; dominant species are Bluehead Chub, Redbreast Sunfish, and Redlip Shiner; 1996 sample collected near bridge, 1997 data collected after very high flows in 1996 followed by low flows in 1997; 1996 - 2006 data were summarized in BAU Memorandum 20061121.

Benthic Macroinvertebrate Sample

Waterbody	Location	Date	Bioclassification
DUTCHMANS CR	SR 1150	08/10/06	Excellent

County	Subbasin	8 digit HUC	Index Number	Latitude	Longitude
MONTGOMERY	9	03040103	13-2-24	352247	800149

Level IV Ecoregion	Stream Classification	Drainage Area (mi2)	Stream Width (m)	Stream Depth (m)
Carolina Slate Belt	WS-IV	3.5	3	0.1

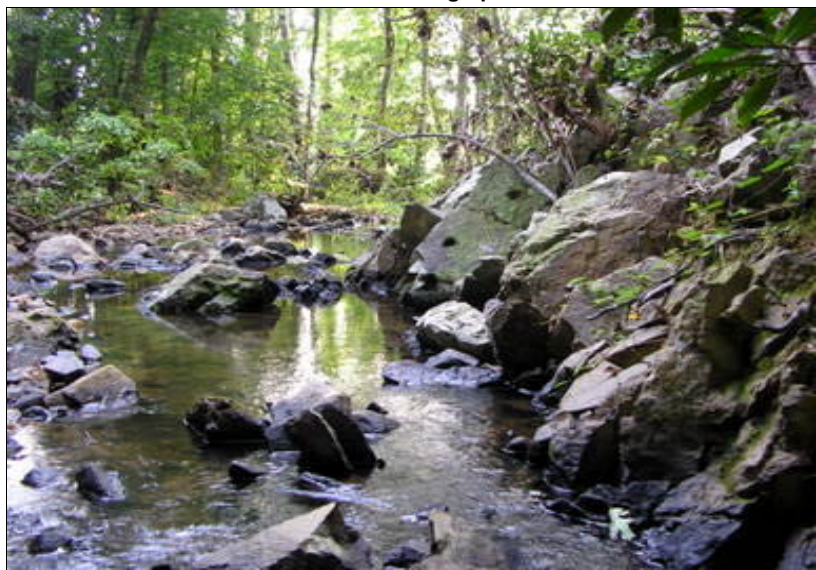
Visible Landuse (%)	Forested/Wetland	Urban	Agriculture	Other (describe)
	100	0	0	0

Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)	NPDES Number	Volume (MGD)
none	---	---

Water Quality Parameters

Temperature (°C)	26.6
Dissolved Oxygen (mg/L)	5.9
Specific Conductance (µS/cm)	62
pH (s.u.)	6.5
Water Clarity	clear

Site Photograph



Habitat Assessment Scores (max)

Channel Modification (5)	5
Instream Habitat (20)	16
Bottom Substrate (15)	15
Pool Variety (10)	9
Riffle Habitat (16)	16
Left Bank Stability (7)	6
Right Bank Stability (7)	6
Light Penetration (10)	10
Left Riparian Score (5)	5
Right Riparian Score (5)	4
Total Habitat Score (100)	92

Substrate	boulder, cobble with some gravel and bedrock
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Sample Date	Sample ID	ST	EPT	BI	EPT BI	Bioclassification
08/10/06	10050	---	30	---	3.6	Excellent
08/08/01	8550	---	26	---	3.0	Not Rated
08/07/96	7133	63	29	3.8	3.1	Excellent

Taxonomic Analysis

The 2006 sample garnered more EPT than any other sampling year. Abundant intolerant taxa dominated the fauna by two to one (to tolerant taxa) and included the mayflies *Leucrocuta* and *Paraleptophlebia*, the stonefly *Acroneuria abnormis*, and the caddisfly *Chimarra*. Other notable intolerant taxa include the mayfly *Dipheter hageni* and *Epeorus rubidus* as well as the caddisflies *Anisocentropus pyraloides*, *Rhyacophila*, and *Paranyctiophylax moestus*.

Data Analysis

A small streams reference site, Dutchmans Creek's watershed lies entirely in an undeveloped portion of the Uwharrie Mountains. This stream contains an intolerant faunal assemblage that is typical of streams with excellent water quality. Though not rated in 2001 because of low flows, the 2006 sampling occurred during flow typical of a small stream and thus was assigned an Excellent rating. Of note was an extremely high wrack line and a reworked upstream segment from extreme highflows that in all probability occurred during a spate of hurricanes in 2004.