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
41	approved I MDL 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.

Assessment Unit Nu Description	mber	Name	Potential Stressors	Use Support	Use Support	Reason for	Parameter of	Collection	Listing	IR
Classification	DWQ Subbasin	Miles/Acres	Potential Sources	Category	Rating	Rating	Interest	Year	Year	Category
12-119-(1)	Abbotts Creel	k (D) il (C) (Habitat Degradation Stormwater Runoff	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity FishCom	2006	2008	5
SR 1810	bint 0.5 mile upstream	m of Davidson County		Aquatic Life	Supporting	g No Criteria Exceeded	Ecological/biological Integrity	/ 2006		1
WS-III	03-07-07	18.8 FW Miles					Benthos			
12-119-(6)a	Abbotts Creel	k		Aquatic Life	Impaired	Standard Violation	Turbidity	2006	2008	5
From upstream side SR1243	e of culvert at U.S. H	wys. 29 & 70 to		Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2006	2004	4s
С	03-07-07	6.4 FW Miles		Recreation	Not Rated	Potential Standards Violation	tandards Fecal Coliform (recreation)			3a
12-119-(6)b	Abbotts Creel	k		Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2006	2004	5
C	03-07-07	1.6 FW Miles		Recreation	Supporting	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
12-119-(4.5) Abbotts Creek (including Lexington-Thomasville Water Supply Reservoir at normal reservoir elevation, Tom-A-Lex			Aquatic Life	Not Rated	Data Inconclusive	Chlorophyll a	2006		<u>3a</u>	
From a point 0.5 m	Lake)	dson County SP 1810								
to the upstream side	e of culvert at U.S. H	Iwys. 29 & 70								
WS-III;CA	03-07-07	2.3 FW Miles								
12-118.5a	Abbotts Creel	k Arm of High Rock		Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
France				Recreation	Supporting	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-V,B	03-07-07	3.7 FW Miles								
12-118.5b	Abbotts Creel	k Arm of High Rock		Aquatic Life	Impaired	Standard Violation	Turbidity	2006	2004	5
	Lake			Aquatic Life	Impaired	Standard Violation	High pH	2006	2008	5
From NC 47 to Day	vidson County SR 22	294		Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
WS-V,B	03-07-07	5.9 FW Miles			-					
13-2-3-3-(0.7)	Back Creek (I	Back Creek Lake)	Chlorophyll a	Aquatic Life	Not Rated	Data Inconclusive	Chlorophyll a	2006		3a
From a point 1.0 m 1504 to dam at Bac supply intake)	ile downstream of Rack Creek Lake (City)	andolph County SR of Asheboro water	Nutrient Impacts	Water Supply	y Supporting	g No Criteria Exceeded	Water Quality Standards Water Supply	er 2006		1
WS-II;HQW,CA	03-07-09	0.6 FW Miles								

Assessment Unit N Description	lumber	Name	Potential Stressors	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
	DWQ Subbasin	Miles/Acres	Totential Sources	A	<u> </u>			2006	1 cui	
13-2-18-(2.5)	Barnes Creek	terrer Country CD		Aquatic Life	Supportin	g No Criteria Exceeded	FishCom	y 2006		1
1303 to Uwharrie	e River	tgomery County SK		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
WS-IV;ORW	03-07-09	0.8 FW Miles					Bentnos			
13-2-5	Betty McGees	s Creek		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
From source to U	wharrie River			A quatia Lifa	Summantin	a No Critorio Evocodod	Faalagigal/higlogigal Integrit			1
С	03-07-09	9.4 FW Miles		Aquatic Life	Supportin	g No Chiena Exceeded	Benthos	y 2003		1
13-2-1-1	Brier Creek			Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
From source to Li	ittle Uwharrie River						Dentitos			
WS-III	03-07-09	5.8 FW Miles								
12-119-5-(1)	Brushy Fork		Habitat Degradation Stormwater Runoff	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
WS III	03-07-07	0.5 FW Miles								
	05 07 07	9.5 T W WINCS								
12-127-(2)	Cabin Creek	a downstream of	Habitat Degradation Impoundment	Aquatic Life	Not Rated	Data Inconclusive	Ecological/biological Integrit FishCom	y 2006		3a
Davidson County	SR 2536	downstream of	Natural Conditions							
WS-IV	03-07-08	5.8 FW Miles								
13-2-3	Caraway Cre	ek		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
From source to U	03-07-09	26.4 FW Miles		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
13-2-24	Dutchmans C	reek		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
From source to U	wharrie River						Benthos			
WS-IV	03-07-09	4.9 FW Miles								
12-110a	Grants Creek		Habitat Degradation	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2004		1
From source to SI	K 1910 03-07-04	19.7 FW Miles	Turbidity Construction MS4 NPDES WWTP NPDES							

Assessment Unit N Description Classification	lumber DWQ Subbasin	Name Miles/Acres	Potential Stressors Potential Sources	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
12-110b	Grants Creek		Fecal Coliform Bacteria	Aquatic Life	Impaired	Standard Violation	Turbidity	2006	1998	4a
From SR 1910 to C	o Yadkin River 03-07-04	1.2 FW Miles	Habitat Degradation	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2004		1
			Turbidity	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
			General Agriculture/Pasture MS4 NPDES WWTP NPDES	Recreation	Impaired	Standard Violation	Fecal Coliform (recreation)	2006	1998	4a
12-119-7-4 From source to R	Hamby Creek		Fecal Coliform Bacteria Failing Septic Systems	Aquatic Life	Not Rated	Potential Standards Violation	Copper-Historic Listing	1998	1998	3a
С	03-07-07	11.1 FW Miles	MS4 NPDES	Aquatic Life	Not Rated	Data Inconclusive	Nutrients-Historic Listing	1998	1998	3a
			WWIP NPDES Habitat Degradation	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
			Impervious Surface Impoundment	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006	1998	5
			Nutrient Impacts WWTP NPDES	Recreation	Not Rated	Potential Standards Violation	Fecal Coliform (recreation)	2006		3a
			Stormwater Runoff							
12-119-7-3	Hunts Fork			Aquatic Life	Impaired	Biological Criteria	Ecological/biological Integrit	y 2006	1998	5
From source to R	ich Fork					Exceeded	Benthos			
С	03-07-07	7.1 FW Miles								
12-119-7-4-2 From source to H	Jimmys Creek			Aquatic Life	Not Rated	Data Inconclusive	Ecological/biological Integrit Benthos	y 2003		3a
С	03-07-07	6.8 FW Miles								
12-119-8-(3)	Leonard Cree	K hatta Craali		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2001		1
	03-07-07	2.6 EW Miles								
<u> </u>	05 07 07	2.0 1 w wines								
12-126-(3) From East Brand	Lick Creek to a point	1.0 mile unstream of	Low Dissolved Oxygen WWTP NPDES	Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
Davidson County	7 SR 2501		Nutrient Impacts WWTP NPDES	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit FishCom	y 2006		1
W2-IV	03-07-08	/.1 FW Miles		Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006	2008	5
				Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1

Assessment Unit N Description	umber	Name	Potential Stressors	Use Support	Use Support	Reason for	Parameter of	Collection	Listing	IR
Classification	DWQ Subbasin	Miles/Acres	Potential Sources	Category	Rating	Rating	Interest	Year	Year	Category
12-126-(4)	Lick Creek	door County SP 2501		Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
to Tuckertown La	ke, Yadkin River	ason County SK 2501		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
WS-IV;CA	03-07-08	0.7 FW Miles					FishCom			
				Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrit	y 2006	2008	5
				Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
12-110-3	Little Creek		Habitat Degradation General Agriculture/Pasture	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
From source to G	03-07-04	6.5 EW Miles	-							
<u> </u>	03-07-04	0.5 FW Miles								
13-2-1	Little Uwharı Pond)	ie River (Wheatmore		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit FishCom	y 2006		1
From source to U	wharrie River			Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2006		1
WS-III	03-07-09	11.9 FW Miles					Benthos			
13-2-20-(0.7)	McLeans Cre	ek		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2005		1
From a point 0.8 1 1154 to Uwharrie	mile upstream of Mon River	tgomery County SR					Dentitos			
WS-IV	03-07-09	4.0 FW Miles								
13-2-20-1-1	Moccasin Cre	ek		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit	y 2005		1
From source to W	est Branch						Bentnos			
WS-IV	03-07-09	2.1 FW Miles								
12-119-7-4-1	North Hamby	r Creek	Toxic Impacts	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrit Benthos	y 2003	1998	5
From source to Ha	amby Creek									
С	03-07-07	5.8 FW Miles								
13-(1)	PEE DEE RI Tillery below	VER (including Lake normal operating		Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
	levels)	1 0		Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
From mouth of U	wharrie River to Norw	vood Dam		Water Suppl	y Supportin	g No Criteria Exceeded	Water Quality Standards Wat	er 2006		1
WS-IV,B;CA	03-07-08	4,845.5 FW Acres					Supply			
13-2-18-1	Poison Fork			Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2005		1
From source to Ba	arnes Creek									
C;ORW	03-07-09	4.5 FW Miles								

Assessment Unit N Description	DWO Sukhasin	Name	Potential Stressors Potential Sources	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
12-119-7a	Rich Fork	Willes/Acres	Fecal Coliform Bacteria	Aquatic Life	e Supportin	g No Criteria Exceeded	Water Quality Standards	2006		1
From source to Pa	ayne Creek		Failing Septic Systems		TTTTTTT		Aquatic Life			
С	03-07-07	8.5 FW Miles	General Agriculture/Pasture MS4 NPDES	Aquatic Life	e Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
			Natural Conditions WWTP NPDES	Recreation	Impaired	Standard Violation	Fecal Coliform (recreation)	2006	1998	4a
			Habitat Degradation General Agriculture/Pasture Impervious Surface							
12-119-7b From Payne Cree	Rich Fork		Fecal Coliform Bacteria Failing Septic Systems	Aquatic Life	e Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
C	03-07-07	12.1 FW Miles	General Agriculture/Pasture MS4 NPDES	Aquatic Life	e Impaired	Biological Criteria Exceeded	Ecological/biological Integrit FishCom	y 2006	1998	5
			WWTP NPDES Habitat Degradation	Recreation	Not Rated	Potential Standards Violation	Fecal Coliform (recreation)	2006	1998	4a
			Low Dissolved Oxygen							
12-117-2	Second Creek	C f High Rock Lake	Habitat Degradation Industrial Site	Aquatic Life	e Supportin	g No Criteria Exceeded	Ecological/biological Integrit FishCom	y 2004		1
Yadkin River	03-07-04	13.5 FW Miles		Aquatic Life	e Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
12-117-(3)	Second Creek	Arm of High Rock	Chlorophyll a	Aquatic Life	e Not Rated	Data Inconclusive	High Water Temperature	2006	2008	
	Lake	C C	Stormwater Runoff	Aquatic Life	e Impaired	Standard Violation	High pH	2006	2008	5
From a point 1.7 to High Rock Lak	miles downstream of l	Rowan County SR 1004	High pH Stormwater Runoff	Aquatic Life	e Impaired	Standard Violation	Chlorophyll a	2006	2008	5
WS-IV,B	03-07-04	894.9 FW Acres	Temperature Impoundment Natural Conditions							
12-113	Swearing Cre	eek	Habitat Degradation	Aquatic Life	e Supportin	g No Criteria Exceeded	Water Quality Standards	2006		1
From source to H	ligh Rock Lake, Yadki	in River	Low Dissolved Oxygen	A +' T 'C	. T 1	Distant C is i			2004	
С	03-07-07	14.4 FW Miles	2011 Dissorred Oxygen	Aquatic Life	e Impaired	Exceeded	Ecological/biological integrit	y 2004	2004	5
				Aquatic Life	e Supportin	g No Criteria Exceeded	Ecological/biological Integrit Benthos	y 2006		1
				Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1

Assessment Unit Nur Description	nber	Name	Potential Stressors	Use Support Category	Use Support	Reason for Rating	Parameter of Interest	Collection	Listing	IR Category
Classification	DWQ Subbasin	Miles/Acres	Potential Sources	Category	Kating	Rating	interest	Year	Year	Category
12-115-3 From source to Cra	Town Creek		Habitat Degradation Impervious Surface	Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
C	03-07-04	15.4 FW Miles	Nutrient Impacts MS4 NPDES	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity FishCom	2006	1998	5
			WWTP NPDES Toxic Impacts	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/biological Integrity Benthos	2006	1998	5
			Stormwater Runoff	Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
13-2-3-3-2-2-(2)	Unnamed Trib Creek (Lake B	outary to Cedar Fork Sunch)	Chlorophyll a	Aquatic Life	Not Rated	Data Inconclusive	Chlorophyll a	2006		3a
From a point 1.1 m (City of Asheboro v	iles upstream of mouvater supply intake)	th to Cedar Fork Creek								
WS-II;HQW,CA	03-07-09	0.6 FW Miles								
13-2-(0.5)	Uwharrie Rive	er	Habitat Degradation	Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrity FishCom	2006		1
River WS-III	03-07-09	18.3 FW Miles		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrity Benthos	2006		1
13-2-(1.3)	Uwharrie Rive	er		Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
Randolph County S	R 1314 (including La	ake Reese)		Water Suppl	y Supportin	g No Criteria Exceeded	Water Quality Standards Water	er 2006		1
WS-III;CA	03-07-09	7.4 FW Miles					Supply			
13-2-(1.5)	Uwharrie Rive	er		Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
From Randolph Co 1174 WS-III:CA	03-07-09	9.8 FW Miles		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrity Benthos	2006		1
w5-m,CA	03-07-07	5.6 T W WINCS		Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
				Water Supply	y Supportin	g No Criteria Exceeded	Water Quality Standards Water Supply	er 2006		1
13-2-(17.5)	Uwharrie Rive	er		Aquatic Life	Supportin	g No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
to mouth of Dutchn	nans Creek	0.2 EW Miles		Aquatic Life	Supportin	g No Criteria Exceeded	Ecological/biological Integrity Benthos	2006		1
w5-iv,в	05-07-09	9.5 FW Milles		Recreation	Supportin	g No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
				Water Supply	y Supportin	g No Criteria Exceeded	Water Quality Standards Wate Supply	er 2006		1

8-Digit Subbasin 03040103

Assessment Unit N Description Classification	Jumber DWO Subbasin	Name Miles/Acres	Potential Stressors Potential Sources	Use Support Category	Use Support ¹ Rating ¹	Reason for Rating	Parameter of Interest	Collection Year	Listing Year	IR Category
13-2-(4.5)	Uwharrie Riv	er		Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards	2006		1
From Randolph (of mouth of Barn	County SR 1174 to a p les Creek	oint 1.3 miles upstream		Aquatic Life	Supporting	No Criteria Exceeded	Aquatic Life Ecological/biological Integrity	2006		1
В	03-07-09	18.8 FW Miles		Recreation	Supporting	No Criteria Exceeded	Benthos Fecal Coliform (recreation)	2006		1
13-2-20-1	West Branch			Aquatic Life	Supporting	No Criteria Exceeded	Ecological/biological Integrity	2005		1
From source to M	IcLeans Creek						Benthos			
WS-IV	03-07-09	3.8 FW Miles								
12-(114)	YADKIN RIV	ER (including lower	Chlorophyll a	Aquatic Life	Not Rated	Data Inconclusive	High Water Temperature	2006		3a
	portion of Hig	gh Rock Lake)	Stormwater Runon	Aquatic Life	Impaired	Standard Violation	High pH	2006	2008	5
From a line acros mouth of Crane (ss High Rock lake from Creek to the downstrea	n the downstream side of mouth of	Stormwater Runoff	Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
Swearing Creek t Rock Lake, excep Lake upstream of	to a point 0.6 mile upst pt for the Abbotts Cree f Davi	ream of dam of High k Arm of High Rock	Temperature Impoundment	Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-IV,B	03-07-04	4,870.1 FW Acres								
12-(124.5)a	YADKIN RIV	ER (including lower	Chlorophyll a	Aquatic Life	Impaired	Standard Violation	High pH	2006	2008	5
	portion of High Rock Lake)		Stormwater Runoff	Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2008	5
From a point 0.6 High Rock Dam	mile upstream of dam	of High Rock Lake to	Stormwater Runoff	Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-IV,B;CA	03-07-04	10.8 FW Acres								
12-(124.5)c	YADKIN RIV Tuckertown I	/ER (including Lake, Badin Lake)		Aquatic Life	Supporting	No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1
From the mouth of	of Cabin Creek to Bad	in Lake		Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-IV,B;CA	03-07-04	7,937.8 FW Acres		Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Wate Supply	er 2006		1
12-(124.5)d	YADKIN RIV Tuckertown I	/ER (including Lake, Badin Lake)		Aquatic Life	Not Rated	Data Inconclusive	Water Quality Standards Aquatic Life	2006		3a
Badin Lake										
WS-IV,B;CA	03-07-04	6,847.0 FW Acres								
12-(108.5)b	YADKIN RIV	/ER (including upper	Chlorophyll a	Aquatic Life	Impaired	Standard Violation	High pH	2006	2008	5
	portion of Hig	gh Rock Lake below	Stormwater Runoff	Aquatic Life	Impaired	Standard Violation	Turbidity	2006	2004	5
From mouth of G	irants Creek to a line a	cross High Rock Lake	Stormwater Runoff	Aquatic Life	Impaired	Standard Violation	Chlorophyll a	2006	2004	5
from the downstr	ream side of mouth of (Crane Creek to the	Turbidity	Recreation	Supporting	No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
downstream side WS-V	of mouth of Swearing 03-07-04	Creek 5,568.8 FW Acres	Stormwater Runoff	Water Supply	Supporting	No Criteria Exceeded	Water Quality Standards Water Supply	er 2006		1

Assessment Unit Number Name		Name		Use	Use					
Description			Potential Stressors	Support	Support	Reason for	Parameter of	Collection	Listing	IR
Classification	DWQ Subbasin	Miles/Acres	Potential Sources Category		Rating	Rating	Interest	Year	Year	Category
12-(124.5)b	YADKIN RIV portion of Tu	/ER (including uppe cktertown Lake)	Aquatic Life	Supportin	ng No Criteria Exceeded	Water Quality Standards Aquatic Life	2006		1	
From High Rock I	Dam to mouth of Cab	in Creek		Recreation	Supportin	ng No Criteria Exceeded	Fecal Coliform (recreation)	2006		1
WS-IV,B;CA	03-07-04	3.5 FW Miles		Water Suppl	y Supportin	ng No Criteria Exceeded	Water Quality Standards Water Supply	er 2006		1

Appendix B

Ambient Monitoring Stations Summary Sheets

Location:	GRANTS CRK	AT SR 1915 NR SALISBUF	RY	
Station #:	Q4540000		Hydrologic Unit Code:	3040103
Latitude:	35.70718	Longitude: -80.43608	Stream class:	С
Agency:	NCAMBNT		NC stream index:	12-110

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

	#	# # Results not meeting EL Percentiles											
	result	ND	EL	#	%	%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 (AI)	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 (#/100	mL)	4 < 4	00. 0/ -	400.0/	Canf								
# results: Geomean		# > 4	UU: %>4	400: %	Conf:								
15 331		6	40	- 98	5.2								

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

Location:	GRANTS CRK	AT SR 1915 NR SALISBUF	RY	
Station #:	Q4540000		Hydrologic Unit Code:	3040103
Latitude:	35.70718	Longitude: -80.43608	Stream class:	С
Agency:	YPDRBA		NC stream index:	12-110

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

	#	#		Results	s no	t meeting	EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (#/100)mL)												
# results: Geomean	, I	# > 40	0: %>	> 400: %C	onf:								
60 106		5	8	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

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

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

	#	#	# Results not meeting El				a EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (AI)	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	2 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 (#/100 # results: Geomean	mL)	# > 4	00: %	> 400: %	Conf:								

41 266 9 22

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)

70.4

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

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

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

	#	# Results ne			s no	t meeting	J EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (#/100 # results: Geomean	mL)	# > 40	0: %	> 400: %	Conf:								

# results:	Geomean	, # > 400:	% > 400: %Cor
18	113	2	11

Key: # result: number of observations

ND: 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

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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	s no	t meeting	g EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (AI)	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 (#/100 # results: Geomean	mL)	# > 4	00: %>	400: %	Conf:								

Key: # result: number of observations

56

171

15

27

92.1

ND: 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

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:	YPDRBA		NC stream index:	12-(108.5)

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

	#	# Results not				t meeting	J EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (#/100 # results: Geomean	mL)	# > 40	0: %	> 400: %	Conf:								

3 89

Key: # result: number of observations

60

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

5

Location:	SWEARING CR	K AT SR 1272 JERSEY C	CHURCH RD NR LINWOOD	
Station #:	Q5135000		Hydrologic Unit Code:	3040103
Latitude:	35.72911	Longitude: -80.30566	Stream class:	С
Agency:	YPDRBA		NC stream index:	12-113

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

	#	# #		Results not meeting EL Percentiles									
	result	ND	EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Мах
Field													
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 (#/100	mL)												
# results: Geomean	,	# > 400): %	> 400: %0	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

Location:	TOWN CRK A	T SR 1915 ANDREWS ST A	T SPENCER	
Station #:	Q5210000		Hydrologic Unit Code:	3040103
Latitude:	35.67981	Longitude: -80.41552	Stream class:	С
Agency:	YPDRBA		NC stream index:	12-115-3

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

	#	#		Results not meeting			EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (#/100 # results: Geomean	mL)	# > 40	0: %	> 400: %	Conf:								

# results:	Geomean	# > 400:	% > 400: %C
28	51	0	0

Key: # result: number of observations

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

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

Location:	TOWN CRK A	AT I 85 NR SPENCER		
Station #:	Q5240000		Hydrologic Unit Code:	3040103
Latitude:	35.68635	Longitude: -80.40520	Stream class:	С
Agency:	YPDRBA		NC stream index:	12-115-3

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

	#	#	Results not		t meeting	EL		Pe	rcenti	les			
	result	ND	EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Мах
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 (#/100 # results: Geomean	mL)	# > 40	0: %	> 400: %(Conf:								

# results:	Geomean	# > 40	0: % > 4	00: %Co
29	174	3	10	

Key: # result: number of observations

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

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

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Location:	TOWN CRK AT	SR 2168 NR DUKE		
Station #:	Q5360000		Hydrologic Unit Code:	3040103
Latitude:	35.66353	Longitude: -80.35418	Stream class:	С
Agency:	NCAMBNT		NC stream index:	12-115-(2)

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

	#	# # Results not meetii				t meeting	g EL		Pe	rcenti	les		
	result	ND	EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Мах
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 (AI)	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 (#/100 # results: Geomean	mL)	# > 4(00: %>	400: %	Conf:								

results: Geomean

29

56

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

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

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

	#	#		Result	t meeting	EL		Pe	rcenti	les			
	result	ND	EL	#	%	%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 (#/100	mL)												

# results:	Geomean	<i>#</i> > 400:	% > 400: %Conf:
60	120	5	8

Key: # result: number of observations

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

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

Location:	RICH FORK AT	SR 1800 NR THOMASVIL	LE	
Station #:	Q5780000		Hydrologic Unit Code:	3040103
Latitude:	35.92668	Longitude: -80.12464	Stream class:	С
Agency:	NCAMBNT		NC stream index:	12-119-7

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

	#	#	F	Results not			j EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (AI)	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 (#/100)mL)	# > AI	n0· %>	400·%	Conf								
58 201	•	25	ν. /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

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

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

	#	#		Result	s no	t meeting	I EL	Percentiles					
	result	ND	EL	#	%	%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 (#/100	mL)												

# 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)

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

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

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

	#	#		Result	s no	t meeting	EL	Percentiles					
	result	ND	EL	#	%	%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 (#/100 # results: Geomean	mL)	# > 40	0: %	> 400: %	Conf:								

# results:	Geomean	# > 400:	% > 400: %Co
60	103	5	8

Key: # result: number of observations

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

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

Location:	HAMBY CRK A	SR 2775 OLD EMANUEL و	CHURCH RD NR THOM	ASVILLE
Station #:	Q5860000		Hydrologic Unit Code:	3040103
Latitude:	35.85009	Longitude: -80.10637	Stream class:	С
Agency:	YPDRBA		NC stream index:	12-119-7-4

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

	#	#		Result	s no	t meeting	EL	Percentiles					
	result	ND	EL	#	%	%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 (#/100	mL)												

# results:	Geomean	<i>,</i> # > 400:	% > 400: %Conf:
28	40	0	0

Key: # result: number of observations

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

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

Location:	HAMBY CRK AT	SR 2790 NR HOLLY GRO	DVE	
Station #:	Q5906000		Hydrologic Unit Code:	3040103
Latitude:	35.83240	Longitude: -80.17472	Stream class:	С
Agency:	NCAMBNT		NC stream index:	12-119-7-4

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

	#	#	R	lesult	s no	t meeting	J EL	Percentiles						
	result	ND	EL	#	%	%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 (AI)	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 (#/100	mL)													
# results: Geomean	-	# > 4	00: % >	400: %	Conf:									
58 199		14	24	83	3.1									

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

Location:	ABBOTTS CRK	AT SR 1243 AT LEXINGT	ON	
Station #:	Q5930000		Hydrologic Unit Code:	3040103
Latitude:	35.80629	Longitude: -80.23488	Stream class:	С
Agency:	NCAMBNT		NC stream index:	12-119-(6)

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

	#	#	Results not meeting EL			Percentiles							
	result	ND	EL	#	%	%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 (AI)	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 (#/100	mL)				_								
# results: Geomean		# > 40	00: %>	400: %	Conf:								
57 196		14	2	584	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

Location: ABBOTTS CRK AT I 85 NR LEXINGTON

Station #:	Q5940000		Hydrologic Unit Code:	3040103
Latitude:	35.78730	Longitude: -80.23565	Stream class:	С
Agency:	YPDRBA		NC stream index:	12-119-6

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

	#	#	Results not meeting			EL		Pe	rcenti	les			
	result	ND	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 (#/100	mL)												

#	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

Location:	ABBOTTS CRI	K 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

	# #		I	Result	ts no	t meeting	g EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (AI)	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 (#/100	mL)												

results: Geomean 56 114

> 400: % > 400: %Conf: 14

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

NCDENR, Division of Water Quality Ambient Monitoring System Report Yadkin-Pee Dee River Basin – June 2007

AMS-145

Location:	ABBOTTS C	CRK AT NC 47 NR COTTON G	ROVE	
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

	# #		R	esult	ts no	t meeting	g EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (#/100 # results: Geomean	mL)	# > 4()0: %>4	400: %	Conf:								

results: Geomean

114

60

15

Key: # result: number of observations

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

9

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

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

	#	#	F	Result	ts no	t meeting	g EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (AI)	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 (#/100 # results: Geomean	mL)	# > 4(00: %>	400: %	Conf:								

results: Geomean

36

54

4

Key: # result: number of observations

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

2

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

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

	#	# #			s no	t meeting	g EL		Pe	rcenti	les		
	result	ND	EL	#	%	%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 (AI)	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 (#/100	mL)												

Geomean # results:

52

28

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

> 400: % > 400: %Conf:

0

NCDENR, Division of Water Quality Ambient Monitoring System Report Yadkin-Pee Dee River Basin – June 2007

AMS-148

LICK CRK AT	ICK CRK AT SR 1002 NR HEALING SPRINGS												
Q6140000		Hydrologic Unit Code:	3040103										
35.61638	Longitude: -80.17543	Stream class:	WS-IV										
YPDRBA		NC stream index:	12-126-(3)										
	LICK CRK AT Q6140000 35.61638 YPDRBA	LICK CRK AT SR 1002 NR HEALING SPR Q6140000 35.61638 Longitude: -80.17543 YPDRBA	LICK CRK AT SR 1002 NR HEALING SPRINGS Q6140000 Hydrologic Unit Code: 35.61638 Longitude: -80.17543 Stream class: YPDRBA NC stream index:										

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

	#	ŧ #		# Results not meeting EL Percenti								les		
	result	ND	EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Мах	
Field														
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	
pH (SU)	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 (#/100	mL)													
# results: Geomean		# > 40	0: %	> 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

Location:	UT TO LICK CR	K AT SR 2505 NR DENTC	DN	
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

	#	#		Results	s no	t meeting	EL						
	result	ND	EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Мах
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 (#/100	mL)												
# results: Geomean	,	# > 400): %	> 400: %C	onf:								
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

Location:	YADKIN RIV A	T NC 8 AND NC 49 NR RIC	HFIELD	
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

	#	#	I	Result	s no	t meeting	g EL	Percentiles					
	result	ND	EL	#	%	%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 (AI)	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 (#/100	mL)												

results: Geomean 32 36

> 400: % > 400: %Conf: 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

Location:	UWHARRIE RIN	/ AT NC 49 NR FARMER			
Station #:	Q6705000		Hydrologic Unit Code:	3040103	
Latitude:	35.64212	Longitude: -79.96502	Stream class:	С	
Agency:	YPDRBA		NC stream index:	13-2-1.5	

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

	#	#	Results not meeting EL							Percentiles			
	result	ND	EL	#	%	%Conf	Min	10th	25th	50th	75th	90th	Max
Field													
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 (#/100	mL)												
# results: Geomean		# > 400): %	> 400: %C	onf:								
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 UWHARR	IE	
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

	#	#	1	Results not meeting EL			Percentiles						
	result	ND	EL	#	%	%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 (AI)	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 (#/100 # results: Geomean	mL)	# > 4	00: %>	• 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 Swearing 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.

NCDENR, Division of Water Quality Basinwide Assessment Report - Yadkin River Basin - April 2006 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.

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

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

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 MemoB-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

NCDENR, Division of Water Quality Basinwide Assessment Report - Yadkin River Basin - April 2006 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

Waterbo	dy			Location		Date				Bioclassification		
Grants	Cr		S	R 1910			07/08/04			Good		
County	Subba	sin	8 digit HUC	Latitude	Lon	aitude	Index Numb	er	Leve	I IV Ecoregi	on	
Rowan	4		03040103	354134	80)2813	12-110		Souther	Southern Outer Piedmon		
Stream Classifica	tion	Drair	nage Area (mi2) Elevatio	n (ft)	Strea	m Width (m)	Ave	verage Depth (m) Reference			
С			56.9				9		0.3	No		
		For	octod/Motland	Liek	an		Agriculturo		Otho	r (doscribo)		
Visible Landuse	(%)	FOR	50	2	25		Agriculture		25 (aolf course)		
	(70)		30	2	5		0		20 (gon course)		
Upstream NPDES Di	scharge	rs (>1	MGD or <1MG	D and within 1	mile)		NPDES	Numbe	er	Volume ((MGD)	
			None				-					
Wator Quality Param	otors						Si	te Phot	ograph			
	leters				MAX .	a states			lograph	1000	2.2	
Temperature (°C)			23.3		1100	Prostal			12950	C. Alexander	1 - T	
Dissolved Oxygen (m	g/L)		6.4	120			ALL NO		Sec. Sec. 5	122 3		
Specific Conductance	e (µS/cm)		133		a late	and the second	o desta in the		1 1 1 1			
pH (s.u.)			6.6		1. 4.2		William .	0	No. 200			
Water Clarity		c	lightly turbid	5.30	4	No.			C. Series			
		3				- A-			1. 7 M			
Habitat Assessment	Scores (max)									ALC: NO	
Channel Modification	(5)		5	-	the start			-	3000			
Instream Habitat (20)	()		15		Sec. 1	1.22	THE SE	1				
Bottom Substrate (15)		4				A CONTRACT OF A		-			
Pool Variety (10)	/		9		-	State of the local division of the local div			-	and the second second		
Riffle Habitat (16)			7		Conception of the	-	ALC: NOT	-150		A MARTIN		
Left Bank Stability (7)			3			-	-	-			125	
Right Bank Stability (7)	7)		3					-	-	Here a strategy		
Light Penetration (10)	,		7	100	-	-	-				-	
Left Rinarian Score (5	5)		2									
Pight Piparian Score	(5)		5									
Total Habitat Score	(3) (100)		60	Subs	strate	Sand, col	oble					
	(100)			····		· •				D : 1		
	•		5ampi		Sp		ai	NCIBI		Bioclassif	d	
07/08/04			2004-	35		19		40		Good-I	u Fair	
00/02/01		<u> </u>	2001	00		1				00001		
Most Abundant Spo	ecies		Bluegill and Blu	lehead Chub		Exotic	Species	Commo and Sp	on Carp, Red S otted Bass	hiner, Green	Sunfish,	
Species Change Sin	ce Last (Cycle	Gains - Sucker, Bass, a Eastern	- Common Carp Flat Bullhead, ^v nd Largemouth Mosquitofish, a	o, Red S White Ca Bass. L and Warr	hiner, Eas atfish, Pun .osses F mouth.	tern Silvery Minnc npkinseed, Blueg Redlip Shiner, Ros	ow, Golo ill, sunfi syside E	den Shiner, Cre sh hybrid, Blac Dace, Creek Ch	ek Chubsucł k Crappie, S ub, Brown B	ker, Spotted potted ullhead,	
Data Analysis												
Watershed drains of upstream from the ba area is 1.8 square mil	central an ckwaters es. Habi	d nort of the tat :	theastern Rowa Yadkin River a sandy runs, sna	in County, inclu and High Rock L ag pools, one rif	ding the ake and fle; golf	towns of S 11.3 miles course alo	Spencer, Salisbury downstream of 20 ng southern shore	/, China 001 site eline. 2	Grove, and La at SR 2200, di 004 diverse,	ndis; site is fference in d but the proxi	~3.5 miles rainage mity to	

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.

Waterbody				Locat	tion		Date				Bioclassification		
GRANT	S CR			SR 1	910	0	08/09/06			Good-Fair			
County	Subb	basin	8 dig	it HUC	UC Index Number Latitude						Longitude		
ROWAN	4	4	0304	40103	12-110	354151			802649				
Level	IV Ecore	egion		Stream	Classification	Drainage	e Area (mi2)	St	ream Widtl	h (m)	Stream Depth (m)		
Southern	Outer P	iedmont			С	e	61.8		8		0.3		
		Fo	orested/W	etland	Urban		Agriculture	-		Other (d	describe)		
Visible Landuse	e (%)		25		25	0			50	(fallow)			
Upstream NPDES	Dischar	aers (>1	MGD or <	1MGD and	within 1 mile)		NPD	DES Nu	umber		Volume (MGD)		
None: The Salisbur	y WWTF	was er	roneously	reported to I	be upstream in 200)3 report							
Water Quality Para	ameters							Site Ph	otograph				
Temperature (°C)				24.9	5 11 3	Contraction of the			all the way		and a second second		
Dissolved Oxvaen ((ma/L)			5.9	10 U 10 U 10	he to			The second	S. 2.	1 . Bard		
Specific Conductan	ice (µS/c	:m)		159	15 × 18	1. 380					Charles and the		
pH (s.u.)				6.9		A. A.	Nº C		The state				
					and the second		1919			-site	AND SEAS		
Water Clarity			slightly tui	rbid		a sector			and and the second	- Min	111 10		
Habitat Assessme	nt Score	es (max))		5 34	and a	alter an						
Channel Modificatio	on (5)			3		and the second				ALC: N			
Instream Habitat (2	0)			14									
Bottom Substrate (*	15)			8		Distant.			Sec. 1				
Pool Variety (10)				4	and the	-		-			Part of the local division of the local divi		
Riffle Habitat (16)				5		100		-		and the second			
Left Bank Stability ((7)			4	Sec. 1.	The state	and the			The sea			
Right Bank Stability	(7)			4	Same 1		and the second		1				
Light Penetration (1	0)			9	14	100 2			1	12	and the second		
Left Riparian Score	(5)			4	list "				and the second	205			
Right Riparian Scor	re (5)			0									
Total Habitat Score	e (100)			54	Substrate	mos	stly sand with	some c	obble (rip-r	ap)			

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, *Procloeon*, 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 approximatley 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 homogenoeous substrate (sand), poor riffles and lack of pools. Additionally, the riparian areas are minimal with moderate erosion. Results form 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	g Cr		S	R 1104		0	7/08/04		Fa	ir	
County	Subt	asin	8 digit HUC	Latitude	Lon	nitude	Index Numb	or	l evel IV (Ecoregion	
Davidson	Jup	7	03040103	354612	80	1803	12-113		Southern Ou	iter Piedmont	
Stream Classifica	tion	Drai	nage Area (mi2	2) Elevation	n (ft)	Stream	n Width (m)	Average	Depth (m)	Reference Site	
С			31.8				12	C).4	No	
		For	ested/Wetland	Urba	an		Aariculture		Other (de	escribe)	
Visible Landuse	(%)		40	0			35		25 (suburban	residential)	
Unstroom NDDES Di	cohora	ore (> 1		D and within 1	milo)		NDDES	Number	v	olumo (MCD)	
Opstream NPDES DI	scharg	ers (>1	None		nne)		NFDE3		V		
Water Quality Param	eters				12 d	C AND DO DO	Si	te Photograp	۶h		
Temperature (°C)			25.4		1			1.1	1 Contra		
Dissolved Oxygen (mg	g/L)		6.3	1.00		1	Carlo Carlo	3. 200	11 18		
Specific Conductance	(µS/cn	า)	110	7 23	2	Section 10	See State	See.		100	
pH (s.u.)			6.7	and the second	2 - Da	1	A CONTRACTOR	a ser			
					1	A	the states				
Water Clarity		5	Slightly turbid		- and	and rate			Sec. St.		
Habitat Assessment	Scores	(max)									
Channel Medification	(5)	, (max)	5				· · · · · ·	12011		A CONTRACTOR	
	(3)		17				计图书 建	a share the second			
Bottom Substrate (15)			5	1000	Co.					100 miles	
Pool Variety (10)			10	100 A					100 m		
Riffle Habitat (16)			7				a state of	no sind		and the second	
Left Bank Stability (7)			3	100-1		N. 11 S	and the second second	Side States	Internet in the	C3 Stored	
Right Bank Stability (7)	7)		3	1.0	1	L al	The Mar	1			
Light Penetration (10))		7		1	100		and the second			
Left Riparian Score (5)		4				the way	St Alter	0		
Right Riparian Score (/ (5)		5		100	200	1000-000	Contraction of the local distance of the loc			
Total Habitat Score (100)		66	Subs	trate	Sand, cobl	ole				
Quanta Data	,			- 10	0						
Sample Date	•		Sampi		Sp		1		BIG	Ecir	
07/06/04			2004-	113		12		40		Fall	
Most Abundant Spe	ecies		Fantail Darter, Eastern Silvery	Redbreast Sunfi / Minnow	sh,	Exotic	Species	Red Shiner a	nd Green Sun	fish	
Species Change Sine	ce Last	Cycle	N/A; ne	w site in 2004.							
Data Analysis											
Watershed drains to bank instability. 2004	he wes total	tern po numbe	rtion of the City r of fish, total s	of Lexington; trik pecies diversity,	outary to and dive	o High Rock ersity of dai	Lake. Habitat	- sandy runs, expected; into	snag pools, a lerant species	and bedrock riffles; and species of	

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.

Waterbo	ody		Location				Date			Bioclassification		
SWEARIN		R		NC	47	(9/11/06			Goo	od-Fair	
County	Subb	asin	8 dig	it HUC	Index Nur	nber	L	atitude	9		Longitude	
DAVIDSON	7	7	0304	40103	12-11	3	3	54520)		801820	
Level IV	V Ecore	egion		Stream	Classification	Drainage	e Area (mi2)	St	ream Widt	h (m)	Stream Depth (m)	
Southern C	Outer Pi	iedmont			С	;	34.8		6	0.2		
	_	Fo	rested/W	etland	Urban		Agriculture		Other (describe)			
Visible Landuse	(%)		50		25		25			0		
Upstream NPDES D	Dischar	gers (>1	MGD or <	1MGD and	within 1 mile)		NPI	DES Nu	umber		Volume (MGD)	
None												
Water Quality Parar	meters							Site Ph	otograph			
Temperature (°C) Dissolved Oxygen (n Specific Conductanc pH (s.u.)	ng/L) ce (µS/c	m)		21.4 7.7 131 6.4					V		A.M.	
Water Clarity			clear		10 k w	1		No.	4 60	-	- field	
Habitat Assessmen	t Score	es (max)					14		1		A AND A AND A	
Channel Modification	า (5)			5	A CONTRACTOR	TRAP 2		1		Diama and	the second	
Instream Habitat (20))			11		1214	Sec.	-		and the second		
Bottom Substrate (15	5)			3			-	1.0	and a second	1 Store		
Pool Variety (10)				6	Sec.			1	1	2.0		
Riffle Habitat (16)				3					and the	1000		
Left Bank Stability (7	7)			2	-		-	in car	and the	Lot.		
Right Bank Stability ((7)			2			ALC: NO		100	100	A DECEMBER OF	
Light Penetration (10))			9					14		Call and	
Left Riparian Score ((5)			5	1200		120	2	11.5		and the factor of the second s	
Right Riparian Score	e (5)			5								
Total Habitat Score	(100)			51	Substrat	e Sa	nd, Detritus	s, Silt				
Sample Date	;		Sample	ID	ST	EPT	В	1	EPT	BI	Bioclassification	

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 S	R 2118			05/1	1/06			Fair	
County Subba	isin 8	digit HUC	Latitude	Lor	ngitude	Ir	ndex Numb	er	Leve	el IV Eco	oregion
Rowan 4		03040103	354110	80)2424		12-115-3		Southe	rn Outer	Piedmont
Stream Classification	Draina	ge Area (mi2)	Elevation	(ft)	Strea	am Wio	dth (m)	Ave	erage Depth (r	n)	Reference Site
C		16.5				8			0.4		No
	Fores	ted/Wetland	Urba	an	_	Agr	iculture		Othe	er (desc	
VISIBle Landuse (%)		50							ou (Salisbu	ry spen	
Upstream NPDES Discharge	rs (>1M	GD or <1MGD a	and within 1 i	nile)			NPDES	Numbe	r	Volu	ime (MGD)
							-				
Water Quality Parameters							Site I	Photog	raph		
Temperature (°C)		17.0		.84			Sec.		Sec. 2		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Dissolved Oxygen (mg/L)		7.7				W.		No. 1		aber V	43.4 4 7
Specific Conductance (µS/cm)		262	Sec. 1			A.S. A.	Marine 1		A second	1	
pH (s.u.)		6.8			A SKIE	100			a starting		14-1-12
-			Standal and		1 93	1			1000		4.2
Water Clarity	Slię	ghtly turbid	and the second				1.841				
Habitat Assessment Scores ((max)		a sure of the			C Far		a state		8 . AS	
Channel Modification (5)	. ,	4	the second	A CAR	1.5	Carl Carl	Sector 1				
Instream Habitat (20)		14		20	all and						No. of the second
Bottom Substrate (15)		8		100		County of	-T- Jartan			1.	
Pool Variety (10)		9	2 10 1 C 1								and the second second
Riffle Habitat (16)		5						The second			1
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	Subst	rate			C	obble, g	ravel, boulder		
Samula Data		Comple II		c		401				Biaal	accification
5ample Date		2006-42) 		tai		38		BIOCI	Fair
03/11/00		2000-42			14			50			i ali
Most Abundant Species		Greer	n Sunfish		Ex Ex	otic S	pecies	Green	Sunfish, Rede	ear Sunf	ish, Red Shiner
Species Change Since Last C	Cycle					N/A,	new site in 2	2006			
Data Analysis	-										
Watershed drains East Sper	ncer and	south Salisbury	y in central Ro	wan C	ounty; a tr	ibutary	to High Ro	ck Lake	. Habitats s	side sna	gs, boulders,
runs, short riffles; good ripariar trophic structure of this fish cor total, Green Sunfish = 36% of s to urban runoff.	uns, short riffles; good riparian on left; WWTP on right, but it no longer discharges to Town Creek. 2006 new fish community monitoring site; the rophic structure of this fish community was skewed towards a high percentage of Insectivores (93%), many of which were tolerant species (73% of otal, Green Sunfish = 36% of sample); six sunfish species collected, all having large individuals; no intolerant species collected; high conductivity due or urban runoff.										

Waterb		Location				Date				Bioclassification			
ABBOT	TS CF	र		SR 1	755		09/	13/06			Goo	od-Fair	
County	Subl	basin	8 digit	нис	Index Nun	nber		La	titude			Longitude	
DAVIDSON	-	7	03040	103	12-119-	(1)		35	5730			800643	
Level	IV Ecore	egion		Stream	Classification	Drain	age Ar	ea (mi2)	Str	eam Widtl	n (m)	Stream Depth (m)	
Southern	Outer P	Piedmont		١	NS-III		22.3			8		0.2	
		Fo	prested/Wetl	/etland Urban			Agriculture				Other (d	describe)	
Visible Landuse	e (%)		75		0			25				0	
Upstream NPDES Dischargers (>1MGD or <1				/IGD and	within 1 mile)			NPD	ES Nu	ımber		Volume (MGD)	
None		90.0 (*											
Water Quality Para	ameters							s	ite Ph	otograph			
Temperature (°C)				18.5			6.91	1234	34		14	and the set	
Dissolved Oxygen (mg/L)			8.1		4.00	140		Sec.	12.36	200	daily 2123	
Specific Conductan	ice (µS/c	cm)		133	Sec. 1	3.4		8 P.M.	1.1	Ser 19	1	1. 2 2 200	
pH (s.u.)	ŭ	,		7.5	- C - 40					3 (A) -	-		
						1	and a			1.1.1.2	14	a second and	
Water Clarity			slightly turbi	d	Section 1				5	1	and a	A PLAN	
Habitat Assessme	nt Score	es (max))		1000	1	1	- the		and a	20		
Channel Modificatio	on (5)			5	4.82	100	1.1	The lot		and the second		The second	
Instream Habitat (20	0)			12	28.46		3. S	Sec. 1				and the second second	
Bottom Substrate (1	15)			6	COLOR-					1.1	Mar Low	Store States	
Pool Variety (10)				4					100		100	The second second	
Riffle Habitat (16)				12	100			12	100		a superior	State of the second	
Left Bank Stability (7)			5				n ser la r		100		and the second second	
Right Bank Stability	· (7)			5					- Back	2.2		and some stand	
Light Penetration (1	0)			10		in the second		and the second	E.E			A ST THE	
Left Riparian Score (5) 5						-	2. 12. 19. 19.		-		and the second second		
Right Riparian Scor													
Total Habitat Score	e (100)			69	Substrate	•	Grave	I, Sand, S	Silt, F	Rubble, B	oulder		

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

Waterboo	dy		Location				Date				Bioclassification		
Abbotts	. Cr		S	R 1800			05/ 1	0/06			Fai	r	
County	Subb	basin	8 digit HUC	Latitude		Longitude	I	ndex Numbe	er	Le	vel IV E	coregion	
Davidson	7	7	03040103	355619		800853		12-119-(4.5)		South	nern Oute	er Piedmont	
		Dra	inago Aroa										
Stream Classifica	tion	Dia	(mi2)	Elevatio	n (ft)	Stre	am Wi	dth (m)	Ave	rage Depth	(m)	Reference Site	
WS-III; CA			37.1				8			0.3		No	
		For	ested/Wetland	I U	rban		Agı	riculture		Ot	her (des	cribe)	
Visible Landuse	(%)		75		0			25			0		
	cohora	ore (> 1	MGD or -1MG	D and within	1 mil	a)			Numbo	-	Ve		
opstream NPDES Di	scharg	ers (>1	None		1 1111	e)		NFDES	-	1	V0		
			None										
Water Quality Param	eters							Sit	e Phot	ograph			
Temperature (°C)			15.0	3.6	1				×	and to a	and the		
Dissolved Oxygen (mg	g/L)		8.9				- Set	and the second	17 Par		100		
Specific Conductance	e (µS/cn	ר)	138			Res Plan	14-1			EN SAL	An	State of the state of	
pH (s.u.)			6.2			· 读: 74		A State		444 /		- SEL OF	
				100					R.A.		1.25		
Water Clarity			Turbid	- 13 m			UNEXPE	64 家子公里。	Sec. 1	CALLER	1 >	A second	
							St 4 4	To sold	the fait	in all	durte-		
Habitat Assessment	Scores	s (max)						A DECK		- Said	E E	the state of the	
Channel Modification	(5)		5		-Re-		Step.	THE L				Sector and the sector	
Instream Habitat (20)			12			and the last	-				-		
Bottom Substrate (15))		3	2000								and the second s	
Pool Variety (10)			8								and the second		
Riffle Habitat (16)			3			and a	-				and the second	the section	
Left Bank Stability (7)	7)		2			the second					1200	Contraction of the	
Right Bank Stability (7	()		2	100	97.				- 27		-	and the second	
Light Penetration (10)	:)		9	200	-			- Maria	an the	Pro-			
Pight Piparian Score (J	") (5)		5	20 A.	-	100	2.5	and the second sec	and the second	and the second second	Station State	And the second second	
Total Habitat Score ((J) (100)		54	Su	bstrat	te Sand							
	,												
Sample Date)	-	Sampl	e ID		Species To	otal		NCIBI		Bio	classification	
05/10/06			2006	-37		14			40			Fair	
05/01/01		_	2001	-32	_	15			46			Good-Fair	
04/24/96			96-3	34		15			44			Good-Fair	
Most Abundant Spec	cies		Bluehead Chu	b (2006)		E	xotic S	opecies (Green S	Sunfish			
Species Change Sind	Gizzard Sh Chub, Flat Bull	iad, R head,	osyside Dace , and Green S	e, White Sunfish	e Sucker, Not (first time col	tchlip R llected	edhorse, an at the site).	d Pumpk	inseed. Gains				
Data Analysis													
Watershed drains to the City of Kernersville	he extre	eme so	utheastern corr	her of Forsyth a	and th	ne northeaste Lex. Habitat	rn corn	er of Davidso	on coun	ties, includin ne deadfalls	g the so	uthern portion of proded vertical	

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.

				Location			Date				Bioclassification		
ABBOT	TS CF	ł		SR 1	243		09/	12/06			I	Fair	
County	Subb	asin	8 dig	it HUC	Index Nur	nber		La	titude			Longitude	
DAVIDSON	7	7	0304	40103	12-119-	(6)		35	4824			801407	
Level	IV Ecore	egion		Stream	Classification	Drain	age Are	ea (mi2)	Str	eam Widtl	h (m)	Stream Depth (m)	
Southern	Outer P	iedmont			С		175.0)		12		0.3	
		Fo	orested/We	etland	Urban		Agr	riculture		Other (describe)			
Visible Landuse	e (%)		70		0			30				0	
Upstream NPDES	Upstream NPDES Dischargers (>1MGD o				within 1 mile)			NPD	ES Nu	mber		Volume (MGD)	
None													
Water Quality Para	ameters							s	ite Ph	otograph			
Temperature (°C)				21.2		300			1	10			
Dissolved Oxygen ((mg/L)			5.3	State 1		10	Sec. O.	See.		den .		
Specific Conductan	ice (µS/c	m)		153		122	100		() · · · ·		1000		
pH (s.u.)				6.6		21	-	and y		C	and the		
Water Clarity	[turbid							1			
Habitat Assessme	nt Score	es (max))						1			ALCONT OF THE REAL	
Channel Modificatio	on (5)			4	P Distal	and a				- A. A		NO. T.	
Instream Habitat (2	0)			13		1000	-			The state	-		
Bottom Substrate (*	15)			8		7							
Pool Variety (10)				6		8		Cond.	2.70	Contraction of the second	TO and	and the second	
Riffle Habitat (16)				14	-					-		and the party	
Left Bank Stability ((7)			6	(Lange)	and the	- AN	19125	0	Sile	200	and the second second	
Right Bank Stability	<i>i</i> (7)			6	1000		Frid.	-		Mart .	31.020	(State 5 - 1	
Light Penetration (1	0)			7	17.18		1.20	Fines	2.37	1.1			
Left Riparian Score	5	1000	Men 1	Sec.	140-5	684	2033	1 martin					
Right Riparian Scor	re (5)			5	1								
Total Habitat Scor	e (100)			74	Substrate	e I	Rubble	e, Grave	l, Bou	lder, Sar	nd, Silt,	Bedrock	

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 Abbotts Creek. It has consistently received a Fair rating since 1985. Abbotts Creek receives urban runoff from the city of Lexington. In addition, the city of Lexington WWTP is permitted to discharge 5.5 MGD to Abbotts Creek Arm of High Rock Lake, which is located approximately 2.5 miles downstream.

FISH COMMUNITY SAMPLE

Waterboo	dy	L	ocation		Date			Bioclassification		
Rich F	k	N	IC 109		05/10/	06		Poc	or	
County	Subbasi	n 8 digit HUC	Latitude	Longitude	e Inde	x Number	L	evel IV E	coregion	
Davidson	7	03040103	355615	800652	1:	2-119-7	Sou	thern Out	er Piedmont	
		Drainago Aroa								
Stream Classifica	tion	(mi2)	Elevation (ft) St	ream Width	(m) A	Average Dept	h (m)	Reference Site	
С		25.6			6		0.3		No	
	F	orested/Wetland	Urba	an	Agricu	lture	c	ther (des	scribe)	
Visible Landuse	(%)	100	0		0			0	,	
Upstream NPDES Di	schargers	(>1MGD or <1MGI	D and within 1 r	mile)		NPDES Num	nber	Volume (MGD)		
City of High Point's W	estside WV	/TP; Instream Was	te Concentratior	n = 93%		NC002422	28		6.2	
Water Quality Param	eters					Site Pl	notograph			
Temperature (°C)		16.4		The second	Start				A CARLON	
Dissolved Oxygen (mg	g/L)	8.4	(set		A		14 14	20.21	and the state	
Specific Conductance	e (µS/cm)	372		A SEC	and a			(4) (A)	a charles	
pH (s.u.)		6.2		A CONTRACT	S. Park	1-1-		A	The second	
Water Clarity		Clear		ALL ST						
				Total States			and the second		A SPAL	
Habitat Assessment	Scores (m	ax)	Sec. 1	福氏部 前	A DIN NOT	Stages A		and the second	States .	
Channel Modification	(5)	5	Ser.		a lores	- Aller	derind .			
Instream Habitat (20)		12		1 also	-				A CONTRACTOR	
Bottom Substrate (15))	3	the second		1.2-	STATES IN	ALL	-	and a set of the	
Pool Variety (10)		9	1000		14 K-	the second				
Riffle Habitat (16)		2	-		-	- State			and the	
Left Bank Stability (7)		2	1.45		100	-		-	and the second s	
Right Bank Stability (7	7)	2		1	-			1	Standing of the	
Light Penetration (10)		7		E 1	and the second second		1.0	0	1	
Left Riparian Score (5	5)	5				and and		24	and the second s	
Right Riparian Score	(5)	5								
Total Habitat Score ((100)	52	Subst	trate Soft, s	sinking sand					
Sample Date)	Sample	ID	Species	Total	NCI	BI	Bio	classification	
05/10/06		2006-3	38	16		34			Poor	
05/01/01		2001-3	33	13		40			Fair	
04/25/96 96-35			5	10		34			Poor	
						0		<u> </u>	() D	

Most Abundant Species

Redbreast Sunfish and Bluegill

Exotic Species Swallowtail Shiner, Green Sunfish, and Redear Sunfish

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).

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.

Waterb	ody		Location				Date				Bioclassification		
BRUSH	IY FK			SR 1	810	C	9/12/06			Goo	od-Fair		
County	Subl	basin	8 dig	jit HUC	Index Nur	nber	La	atitude			Longitude		
DAVIDSON	-	7	030	40103	12-119-5	5-(1)	35	55528			801049		
Level	IV Ecore	egion		Stream	Classification	Drainage	Area (mi2)	Strea	am Width	n (m)	Stream Depth (m)		
Southern	Outer P	Piedmont		١	NS-III	2	20.8		7		0.3		
		Fo	rested/W	etland	Urban		Agriculture			Other (c	lescribe)		
Visible Landuse	e (%)		25		50		25				0		
Upstream NPDES	Dischar	aers (>1	MGD or <	1MGD and	d within 1 mile) NPDES Nu				lumber Volume (MGD)				
None	ne										· •····· (• _)		
Water Quality Para	ameters							Site Photo	ograph				
Temperature (°C) Dissolved Oxygen (Specific Conductan pH (s.u.) Water Clarity	(mg/L) ice (µS/c	cm)	clear	19.5 7.1 116 6.4		V		1					
Habitat Assessme	nt Score	es (max)	1										
Habitat Assessment Scores (max)Channel Modification (5)5Instream Habitat (20)11Bottom Substrate (15)3Pool Variety (10)9Riffle Habitat (16)3Left Bank Stability (7)6Light Panetration (10)9Left Riparian Score (5)1Right Riparian Score (5)5Total Habitat Score (100)55				5 11 3 9 3 3 6 9 1 5 55	Substrate	e Sar	nd, Silt						
Sample Date	ST	EPT	BI		EPT	BI	Bioclassification						
09/12/06			9999		61	15	5.9)	5.0)	Good-Fair		

Taxonomic Analysis

07/30/01

08/08/96

8498

7159

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

53

20

13

5.4

4.4

4.7

Good

Fair

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.

Waterb	ody			Location			Date				Bioclassification		
HAMB	Y CR			SR 2	017		09/′	12/06			F	⁻ air	
County	Subb	asin	8 digit	HUC	Index Nun	nber		La	titude			Longitude	
DAVIDSON	7	,	03040	0103	12-119-	7-4		35	4953			800948	
Level	IV Ecore	gion		Stream	Classification	Draina	ige Are	ea (mi2)	Stre	eam Width	n (m)	Stream Depth (m)	
Southern	Outer Pi	iedmont			С		21.0			10 0.2			
		Fo	rested/Wet	land	Urban		Agr	iculture		Other (describe)			
Visible Landuse	e (%)		50		50			0				0	
Upstream NPDES	Dischar	gers (>1	MGD or <1	MGD and	within 1 mile)			NPD	ES Nu	mber	,	Volume (MGD)	
Thomasville WWTF	2							NC	C00241	12		4.0	
Water Quality Para	ameters							s	ite Pho	otograph			
Temperature (°C) Dissolved Oxygen (Specific Conductan pH (s.u.)	(mg/L) ice (µS/c	m)		20 7.1 379 6.8			ALC: NO		No.				
Water Clarity			slightly turb	id				H.	P				
Habitat Assessme	nt Score	s (max)				i di ta				-		Tata Maria	
Channel Modification Instream Habitat (20 Bottom Substrate (17 Pool Variety (10) Riffle Habitat (16) Left Bank Stability (Right Bank Stability Light Penetration (1 Left Riparian Score Right Riparian Score	on (5) 0) 15) (7) (7) (7) (7) (5) re (5)			5 15 8 9 14 3 6 10 2 5							のないであると		
Total Habitat Scor	e (100)			77	Substrate	e R	lubble	e, Sand,	Bould	ler, Grav	el		

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

Waterboo	dy			Location			Date	Bioclassification		
Hamby	Cr		S	R 2017		05/10/06			Go	od
County	Subb	asin	8 digit HUC	Latitude	Lon	gitude	Index Num	ber	Level IV	Ecoregion
Davidson	7	,	03040103	354954	80	0947	12-119-7-	4	Southern C	uter Piedmont
Stream Classifica	tion	Dra	inage Area (mi2)	Elevation (ft)	Strear	n Width (m)	Aver	age Depth (m)	Reference Site
С			20.4				10		0.3	No
		For	ested/Wetland	Urb	an		Agriculture		Other (d	lescribe)
Visible Landuse	(%)		75	0			0		25 re	sidential
	(**)									
Upstream NPDES Dis	scharg	ers (>1	MGD or <1MG	D and within 1 r	nile)		NPDES	6 Number	,	/olume (MGD)
City of Thomasville's H	Hamby	Creek \	NWTP; Instrea	m Waste Concer	ntration	= 94% N	IC0024112			6
Water Quality Param	eters						s	Site Photo	graph	
Temperature (°C)			15.6			6.55		11	Sector 1	
Dissolved Oxygen (mg	g/L)		6.4		- N	A BURNER		Pas		A State of the sector of the
Specific Conductance	(µS/cm	ı)	305				A MARK	A States		
pH (s.u.)			6.8			1	and the second	- 月代	A REAL	
				all a					et aller	All contract
Water Clarity		Ver	y slightly turbid			Sales II a			1 - E Star	Constant -
Habitat Assessment	Scores	(max)								and the
Channel Medification	(5)	(max)	5	100	6.3	4			A State of the second	A BAR HOLES
Instream Habitat (20)	(5)			100 M	-	San China		e e	No 2 Charman	and the second second
Bottom Substrate (15)	,		10	and and	17	*				
Pool Variety (10)	,		9	3		1-		-		Contract days and
Riffle Habitat (16)			7		SP	1	「日本語」			
Left Bank Stability (7)			6	and served	1St	1017			And the second second	and the second second
Right Bank Stability (7	7)		7	1	-	-	The age	1 . A.	AL SPACE	
Light Penetration (10)	,		9		Curity .			1		and the second
Left Riparian Score (5	5)		3	-	11	A Alter	- AF		And the second	
Right Riparian Score ((5)		5							
Total Habitat Score (100)		75	Subst	trate	Cobble, bo	oulder			
Sample Date	•		Sample	e ID	Sp	ecies Tota	I	NCIBI	В	ioclassification
05/10/06			2006-	39		15		48		Good
Most Abundant Spec	cies		Redbreast Sur Chub	fish and Bluehea	ad	Exc	tic Species	Green Su	unfish and Redea	r Sunfish
Species Change Sind	ce Last	Cycle	N/A; ne	w site in 2006.						
Data Analvsis										

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.

Waterb	oody		Location				Date Bioclassification					Date			
LICK	CR			NC	8		0)8/1	1/06	Fair					
County	Subb	basin	8 digi	t HUC	Inde	x Nun	nber	-	Latitud	e		Longitude			
DAVIDSON	8	3	0304	0103	12	-126-(3)		353647	•		801026			
Level	IV Ecore	egion		Stream	Classificati	on	Drainage	e Are	ea (mi2) S	tream Widt	h (m)	Stream Depth (m)			
Caroli	ina Slate	Belt			WS-IV 28.7 8						0.2				
		Fore	ested/We	etland Urban Agriculture Other (describe)						describe)					
Visible Landus	e (%)		30 0 0 70 (50 fallow,						w, 20 disturbed)						
Upstream NPDES	DES Dischargers (>1MGD or <1MGD and within 1 mile) NPDES Number Vo						Volume (MGD)								
	none														
Water Quality Parameters Site Photograph															
Temperature (°C)			Γ	24.9			12.28		Land . K		Harris				
Dissolved Oxvaen ((ma/L)			4.2	3						a second	A state the			
Specific Conductan	nce (µS/c	:m)		179		-	RAPE	3	1	Y and the	A T	Call States			
pH (s.u.)		,		6.5				50		「山田三山	产生的	I where a state of			
,						1				Dor Frit	1	Visit Not			
Water Clarity			turbid		- 3.	A				Par al	44	T AND S A			
Habitat Assessme	ent Score	es (max)							1 - This						
Channel Modificatio	on (5)			5	6				CHER Shares	a dealer in the	71				
Instream Habitat (2	20)			12			1240								
Bottom Substrate (, 15)			15	5 m	95		-			-	the second			
Pool Variety (10)				6			and the second	-	and the	Sec.	-	- Assert			
Riffle Habitat (16)				10			and the second				-	and the second			
Left Bank Stability ((7)			4		-					1 m 1	The state of the s			
Right Bank Stability	/ (7)			4	- 115			2	Contrading and	200	and and	4 3			
Light Penetration (1	10)			8	-		- 25		-	Start.	-1	Sand Strange			
Left Riparian Score	e (5)			1					The second	-	100	X-X			
Right Riparian Scor	re (5)		Ī	5											
Total Habitat Scor	e (100)		70 Substrate Boulder, cobble and gravel												
Sample Dat	e	:	Sample I	ID ST EPT BI EPT BI Bioclassifica					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			

Taxonomic Analysis

08/06/96

7128

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 hydropsychid 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.

12

5.6

Fair

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

Waterboo	dy			Location			Date Bioclassification				ication
Lick C	r			NC 8			05/10/06		Good-Fair		
County	Subb	asin	8 diait HUC	Latitude	Lon	aitude	Index Num	ber	Le	evel IV E	coregion
Davidson	8	3	03040103	353647	80	1024	12-126-3	3	C	arolina	Slate Belt
Stream Classifica	tion	Dra	iinage Area (mi2)	Elevation (ft)	Strea	am Width (m)	Ave	erage Depth	n (m)	Reference Site
WS-IV			28				10		0.4		No
		For	ested/Wetland	Urba	an		Agriculture		O	ther (de	scribe)
Visible Landuse	(%)		80	0			0		20 0	lirt bike t	track on left
Upstream NPDES Di	scharg	ers (>1	MGD or <1MG	D and within 1 r	nile)		NPDE	S Numbo	er	Vo	olume (MGD)
Town of Denton's WW	VTP; Ins	stream	Waste Concent	ration = 100%			NCO	026689			0.8
Water Quality Param	eters			Site Photograph							
Temperature (°C)			15.8		1	and the second s	A Real	12.0		and a	
Dissolved Oxygen (m	a/L)		8.7	DVE.				-	and the	100	A CAR
Specific Conductance	e/uS/cm	1)	123				Contraction of the second				
pH (s.u.)	(µ .c/on	.,	6.5	1 1	1	-	A ST. THERE			- US	STATE
						1		1. 4.		A. A.	
Water Clarity		Ver	ry slightly turbid				We have				AN LE
Habitat Assessment	Scores	(max))		Carlos and		THE REAL PROPERTY AND				1 North
Channel Modification	(5)		5	ST ARE		-			12.20	1	the stand as the second
Instream Habitat (20)			18		12			2	1		- Alter
Bottom Substrate (15))		10		- ·	100	1 - 6 - 6		A AND THE REAL PROPERTY AND THE REAL PROPERT	9.00	and the second second
Pool Variety (10)			9	1.000					-	an n	Contraction of the
Riffle Habitat (16)			4	100	- 18	· ·	a seattle			M -	and the second
Left Bank Stability (7)			6	and the second sec	1	Regar		ALC: THE			Strates and
Right Bank Stability (7	7)		7	1		-	1 The Long	and a second			
Light Penetration (10)			10		-		A State	Seales -			State State
Left Riparian Score (5	5)		4	-	al all	Alt -				- Teles	
Right Riparian Score	(5)		5								
Total Habitat Score ((100)		78	Subst	trate	Cobble, I	boulder, bedrock				
Sample Date	•		Sampl	e ID	Sp	ecies To	tal	NCIBI	<u> </u>	Bic	classification
05/10/06			2006-	40		14		44			Good-Fair
04/19/01			2001-	27		16		44			Good-Fair
04/23/96			96-3	1		14		44			Good-Fair
Most Abundant Spec	cies		Redbreast Sur	ifish		Б	otic Species	Green	Sunfish		
Species Change Sin	ce Last	Cycle	Losses Shiner	Golden Shine and Largemouth	r, Easte Bass.	ern Mosqu	uitofish, Pumpkin	seed, an	d Fantail Dai	rter. Ga	ins Highfin

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

Waterboo	dy			Location	Date 05/11/06			Bioclassification			
Cabin	Cr		S	R 2536	05/11/06				Fair		
County	Subba	sin	8 digit HUC	Latitude	Lon	gitude	Index Num	ber	Level IV	Ecoregion	
Davidson	8		03040103	353406	80	1046	12-127-(2	2)	Carolina	Slate Belt	
	41.0.0	Dra	inage Area	Flowetian (6 4.)	Ctores		A	nene Denth (m)	Deference Cite	
	tion		(m2)	Elevation (n)	Strea		AVE		Reference Site	
WS-IV			10.7				0		0.3	INO	
		For	ested/Wetland	Urba	an		Agriculture		Other (d	escribe)	
Visible Landuse	(%)		65	0			35		()	
Upstream NPDES Di	scharge	rs (>1	MGD or <1MG	D and within 1 r	nile)		NPDE	S Numbe	er \	/olume (MGD)	
			None								
Water Quality Param	neters						\$	Site Phot	ograph		
Temperature (°C)			16.0		11		GAT &				
Dissolved Oxygen (mg	g/L)		8.0		1	1221.3	and the set	AL STR			
Specific Conductance	e (µS/cm)		102	10.00	A AL	SE M	51/	9-14	A DE PROVE	Contract 1	
pH (s.u.)			6.3		ig in a	1	State of the second				
,	_				The second			5-54	100 12		
Water Clarity		Clea	ır, tannin staine	н <u>Г</u>			The state		Star P		
Habitat Assessment	Scores (max)		San and	- inter					- Instanting and the	
Channel Modification	(5)	,,	5			Sec.	and the	-	200		
Instream Habitat (20)	(3)		16	1.5		100	1 mart	-	States-		
Bottom Substrate (15))		10			- Contraction		AND AND	States -	The second	
Pool Variety (10))		9	and the second second						-1-2-1-2-1-2-1-2-1-2-1-2-1-2-1-2-1-2-1-	
Riffle Habitat (16)			4			1					
Left Bank Stability (7)			3	2	-						
Right Bank Stability (7)	7)		3								
Light Penetration (10))		10							A THOMAS	
Left Rinarian Score (5	5)		5	T						Contraction of the second	
Pight Piparian Score	(5)		0				and the second second				
Total Habitat Score ((J) (100)		4 69	Subst	rate	Cobble, b	oulder, gravel				
	(100)					000010,0	ouldor, gravor				
Sample Date	•	•	Sampl	e ID	Sp	ecies Tota	al	NCIBI	Bi	oclassification	
05/11/06			2006-	41		16		38		Fair	
05/01/01			2001-	34		15		48		Good	
04/24/96			96-3	2		12		52		Good	
Most Abundant Spec	cies		Bluegill			Exc	otic Species	Black B Sunfish	ullhead, Green Su , and Yellow Perch	nfish, Redear	
Species Change Sin	ce Last (Cycle	Losses Bullhea	Spotted Suck d, Chain Pickere	er, Mar I, and F	gined Mad Pumpkinse	tom, and Larger ed.	nouth Ba	ss. Gains Notch	lip Redhorse, Black	
Data Analysis											
Watershed small d	rainage a	rea in	the southeaste	ern corner of Dav	idson C	County, sou	th of the Town	of Dentor	n; ~ 0.8 mi. above T	uckertown	
Reservoir. Habitat a NCWRC Gamelands)	a typical (. 2006	Caroli decre	ina Slate Belt ty ease in the num	pe stream; short, ber of fish; skew	, but rai ed trop	e riffles (a hic metrics	function of low f (91% of all fish	flow); po were ins	ols; good riparian o ectivores); increase	n left (bordered by in the percentage	

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 μ S/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.

Waterb	ody		Location			on Date Bioclassification					Date		ssification
UWHAR		R		SR 1	406	0	5/16/06		OOD				
County	Subb	basin	8 dig	it HUC	Index Nur	nber	La	atitude			Longitude		
RANDOLPH	Ç,	Ð	304	0103	13-2-(0.	5)	3	54556			795933		
Level	IV Ecore	egion		Stream	Classification	Drainage	Area (mi2)	Str	eam Widtl	h (m)	Stream Depth (m)		
Caroli	na Slate	Belt		,	WS-III	4	0.7		10	0.2			
		Fo	orested/We	etland	Urban	-	Agriculture	-		Other (describe)			
Visible Landuse	e (%)		100										
Upstream NPDES	DES Dischargers (>1MGD or <1MGD and within 1 mile) NPDES Number								Volume (MGD)				
None													
Water Quality Para	/ater Quality Parameters Site Photogra							otograph					
Temperature (°C)				15.6	1012		1.5.0	1 carl	Co. A.	Carder	Sale and		
Dissolved Oxygen (mg/L)			10.5	a serie t	11212	1 38		34 - Z -	and the second			
Specific Conductan	ce (µS/c	m)		142			C. C. Mar	6 10	Cine.	1	5 X 199 4 4.1		
pH (s.u.)				6.8			in the second		¥				
Water Clarity			Slightly Tu	rbid				N					
Habitat Assessme	nt Score	es (max))					1	die -		A DAY		
Channel Modificatio	on (5)			5			and a state				No Martin		
Instream Habitat (20	0)			8				24	L Harts M.	ALLINGT	STOLEN MA. I STOLE		
Bottom Substrate (1	15)			3				64	the Ba	ALC: NO.	and the lot of		
Pool Variety (10)				4					A CONTRACTOR	dar a se			
Riffle Habitat (16)				3		-	A-F	Sale P	Section 1				
Left Bank Stability (7)			6			- Alter and a little				A PERSON AND A SECOND		
Right Bank Stability	7 (7)			6									
Light Penetration (1	0)			10		1 May Pr							
Left Riparian Score	(5)			5				- 515	CEN D	No.			
Right Riparian Scor	e (5)			5									
Total Habitat Score	e (100)			55	Substrate	strate Gravel with some sand and rubble							
Sample Date	е		Sample	ID	ST	EPT BI EPT BI Bioclass ا			Bioclassification				
05/16/06			9902		72	24	5.8	3	4.5	5	Good		
08/09/01			8556		NA	18	NA	\	5.3	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 course sand. Some bank erosion if 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

Waterboo	dy			Location Date Bioclassification				ication				
Uwharri	e R		S	R 1406			05/02	2/06		Excellent		
County	Subk	acin		Lotitudo	Lon	aitudo	In	day Num	hor			oorogion
Randolph	JUDE	asin	03040103	35/556	70	5033		13-2-(0.5				Slate Belt
Randolph		,	03040103	334330	13	0900		13-2-(0.5)	,		
		Dra	inage Area									
Stream Classifica	tion		(mi2)	Elevation	(ft)	Strea	am Wid	th (m)	Ave	rage Deptl	h (m)	Reference Site
WS-III			41.3				10			0.4		No
		For	ested/Wetland	Urb	an		Aario	culture		o	ther (des	scribe)
Visible Landuse	(%)		100	0			0	0			0	,
				-								
Upstream NPDES Di	scharg	ers (>1	MGD or <1MG	D and within 1	mile)			NPDES	S Numbe	r	Vo	olume (MGD)
			None									
Water Quality Param	eters							s	ite Phot	ograph		
Temperature (°C)			14.4	100			1.50		and the second		12-5	
Dissolved Oxygen (mo	a/L)		9.7	State and	22	4	Caro.	Carrier State			12	
Specific Conductance	uS/cn	า)	131			Con .		1000	Sec.	32-1	AN A	
pH (s.u.)	(-)	7.2	and the second	52			1000	10.3		6.1	and the second
F (=)				1000	1	and the second					and the second	the second second
Water Clarity		S	lightly turbid							-		A Start
Habitat Assessment	Scores	(max)									1	
Channel Modification	(5)	()	5		利用を見	100	-		1 1	Carrie A	1000	
Instream Habitat (20)	(0)		16	Part of	1		The second		Chineses and	Constant of	A COMPANY OF	and the second se
Bottom Substrate (15)			8	and the second	-	1124 1928	Seco	And in the second s		-	-	The Walk
Pool Variety (10)			9	1			-				6.1	Street Littles
Riffle Habitat (16)			3								-	-
Left Bank Stability (7)			3									The Arrest States
Right Bank Stability (7)	7)		4									
Light Bonotration (10))		4									
Light Penetration (10)	۱		5									10000
Pight Diparian Score (5	(F)		5		-			1241			-	
Total Habitat Score (100)		68	Subs	trate	Sand, be	drock, s	slate, boul	der			
Sample Date	•		Sampl	e ID	Sp	ecies To	tal		NCIBI		Bio	classification
05/02/06			2006-	30		22			58		_	Excellent
10/26/99			99-7	1		15			52			Good
06/15/99			99-4	9		20			56			Excellent
04/14/99			99-1	3		18			58			Excellent
04/24/96			96-3	3		24			54			Excellent
Most Abundant Spec	ies		Bluegill			Ex	otic Sp	ecies	Swallow Sunfish	rtail Shiner,	Green S	unfish, and Redear
Species Change Sine	ce Last	Cycle	Losses White S	Rosyside Dao ucker; Pumpkin	ce, Whit seed (al	efin Shine	er, Warr d for the	nouth, and first time	d Piedmo at the sit	ont Darter. e), and Red	Gains dear Sun	Creek Chub, fish.

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.

Waterbody				Location			Date			Bioclassification		
UWHAR		R		SR 1	143		09/27/06			Goo	od-Fair	
County	Subb	basin	8 dig	it HUC	Index Nur	nber	La	ititude		-	Longitude	
RANDOLPH	ę	Э	0304	40103	13-2-(1.	5)	3	53348			795832	
Level	IV Ecore	egion		Stream	Classification	Drainage	e Area (mi2)	Sti	eam Widtl	h (m)	Stream Depth (m)	
Caroli	Carolina Slate Belt				С	2	91.5		14		0.6	
		Fo	orested/We	etland	Urban	Agriculture			Other (describe)			
Visible Landuse	e (%)		50		0		50				0	
Upstream NPDES	Dischar	gers (>	IMGD or <	1MGD and	within 1 mile)		NPC	ES Nu	ımber		Volume (MGD)	
·		<u> </u>	nor	ne								
Water Quality Para	ameters						Ş	Site Ph	otograph			
Temperature (°C)]	20.4			Str. Car	1		See.		
Dissolved Oxygen (mg/L)			8.1	- 2		e an	. 3	100	19	The second second	
Specific Conductan	ice (µS/c	:m)		104		STR.	AT and P	1.11.1		1	The second second	
pH (s.u.)				6.3	19.2		- Maria	S.A.	1 BAN	-		
					100		200			and a		
Water Clarity			slightly tur	bid	71 6	- Star					The section	
Habitat Assessme	nt Score	es (max))		24 K. 18		10	2	a lait		170	
Channel Modificatio	on (5)			5			2 N	-	a brade	1	- Million	
Instream Habitat (2	0)			16		N 70		C	- Walter		- Martine	
Bottom Substrate (7	15)			14			211			1 100	and the state of the	
Pool Variety (10)				6		-			-		Contraction of the second	
Riffle Habitat (16)				7			and the second				and the second s	
Left Bank Stability (7)			6				the fair	17.00		and the second second	
Right Bank Stability	· (7)			4	and the second division of the second divisio		10 min 10	-	hiter	A STREET	DAIRS	
Light Penetration (1	0)			7	- COLORADO	-Cha	- Contra		-	CO.	The state of the s	
Left Riparian Score	(5)			3		the said		1.07	1	100	E.	
Right Riparian Scor	e (5)			1								
Total Habitat Score	e (100)			69	Substrate	Bou	Ilder with cobb	le and	gravel			
				-								

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* occured at this site in 2006. Other notable taxa included the caddisfies *Ceraclea neffi* (15th state record) and *Triaenodes 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 occuring as evidenced by the year to year increase in the biotic index. Overall, no major water quality problems were observed at this site.

Waterb	ody			Loca	tion		Date		Bioclassification		
UWHAR		R		NC [·]	109		08/11/06			Exc	cellent
County	Subb	asin	8 dig	it HUC	Index Nur	nber	La	atitude			Longitude
MONTGOMERY	ç	9	0304	10103	13-2-(17	.5)	352551				800105
Level	Level IV Ecoregion Stream				Classification	Drainage Area (mi2)			eam Widt	h (m)	Stream Depth (m)
Caroli	na Slate	Belt		V	VS-IV, B		361		31		0.3
	Forested/Wetland						Agriculture	-		Other (describe)
Visible Landuse	Visible Landuse (%) 80 0 20										0
Upstream NPDES Dischargers (>1MGD or <1MGD and within 1 mile)							NPC	ES Nu	ımber		Volume (MGD)
	none										
Water Quality Para	ameters						Ş	Site Ph	otograph		
Temperature (°C)				26.3	and the second	No an	Salar Salar	-		4	
Dissolved Oxygen (mg/L)			5.3			10	P. Y	See.	and a	
Specific Conductan	ce (µS/c	m)		101		2 Non	No. of the second		10 3		
pH (s.u.)				6.6	1.2.2	Contra P		ALC: N		-	Marrie Ca
Water Clarity	[slightly tur	bid							
Habitat Assessme	nt Score	es (max))		1			1 h	12		
Channel Modificatio	on (5)	•	[5			A		10		
Instream Habitat (20	0)			18			and the second			ale staget	
Bottom Substrate (1	15)			15	and the second second	and the	and the second				a second second
Pool Variety (10)	,			6	1 200 14				and the second		
Riffle Habitat (16)				12		-	and the second	A-16			and the second sec
Left Bank Stability (7)			6		Section of the sectio	and the loss				
Right Bank Stability	[,] (7)			6					100		A Decision of the
Light Penetration (1	0)			6			Forter Lay				Contraction of the second
Left Riparian Score	(5)			5	1000	100			The second		
Right Riparian Scor	e (5)			4		_					
Total Habitat Score	e (100)			83	Substrate	e bo	oulder, cobble ar	nd grav	rel		

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 *Leucrocuta*, 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 guality.

Waterb	ody		Location Date Bioclassification						ssification				
L UWHA	RRIE	R		SR 1	405	(05/16/06			GOOD			
County	Subl	basin	8 dig	it HUC	Index Nun	nber	La	atitude			Longitude		
RANDOLPH	9	9	304	0103	13-2-1		3	54552			800015		
Level	IV Ecore	egion		Stream	Classification	Drainage	e Area (mi2)	Str	eam Widtl	h (m)	Stream Depth (m)		
Caroli	ina Slate	Belt			WS-III	48.4			12 0.2				
		Fo	orested/W	etland	Urban		Agriculture			Other (c	describe)		
Visible Landuse	e (%)		100										
Upstream NPDES	Dischar	gers (>1	MGD or <	1MGD and	within 1 mile)		NPC	DES Nu	mber		Volume (MGD)		
None													
Water Quality Para	ameters						ę	Site Ph	otograph				
Temperature (°C)				14.7					A. C. A.	and the second	No. Contraction		
Dissolved Oxygen ((mg/L)			9			and the second	1	R. P.M.	123			
Specific Conductan	ice (µS/o	cm)		133			Same State		a second	187 . 1			
pH (s.u.)				6.4	100	1	and the second s				A Sales and		
Water Clarity			Clear							R.			
Habitat Assessme	nt Score	es (max))		200		ALC: NOT	1		ford	-		
Channel Modificatio	on (5)			4		and the			50				
Instream Habitat (20	0)			16			ALL S PROPERTY	S. ASSA					
Bottom Substrate (1	15)			15	55 00	22 States	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		and the second s	a second second			
Pool Variety (10)				6	and the	and a state			-				
Riffle Habitat (16)				16	all and the second seco		12.00	and the second	S.P.	-			
Left Bank Stability (7)			6		-	and the second	44.2.	- E Tree	1	The line of		
Right Bank Stability	· (7)			6	and the second	1. 8			and the second	-	the second second		
Light Penetration (1	0)			7	State of State of State of State		State of Lot of		-				
Left Riparian Score	(5)			5		RAL R.		5	and the second	A State	State of the state		
Right Riparian Scor	e (5)			5									
Total Habitat Score	e (100)			86	Substrate	e Mix	of gravel,	rubble	, boulde	r			
Sample Date	е		Sample	ID	ST	EPT	BI		EPT	BI	Bioclassification		

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

Waterboo	dy			Location	cation Date			Date Bioclassification					
Little Uwha	arrie l	R	S	R 1405				05/0	2/06		I	Excel	lent
County	Subb	asin	8 digit HUC	Latituc	le	Lor	ngitude	lı	ndex Numl	ber	Le	evel IV E	coregion
Randolph	9		03040103	35455	2	8	00010		13-2-1		C	Carolina S	Slate Belt
		Dra	inage Area										
Stream Classifica	tion	2.4	(mi2)	Eleva	tion (f	t)	Strea	am Wi	dth (m)	Ave	erage Depth	n (m)	Reference Site
WS-III			42.9					13			0.4		No
		-						•				(h / .l	
Visible Landuse	(0/)	For	ested/wetland	1	Orba	n		Agr	25		0	ther (des	scribe)
	(/0)		15		0				20			0	
Upstream NPDES Di	scharge	ers (>1	MGD or <1MG	D and with	nin 1 n	nile)			NPDES	6 Numbe	er	Vo	lume (MGD)
			None										
Water Quality Param	otors								s	ite Phot	ograph		
Temperature (%C)			12.5	-	20	20.0		and a	A sale of the	Marrie H	Assert	110	A sala
Dissolved Oxygon (m	∼/L)		13.0				5-94 S.	1.2		1 Para			
Specific Conductance	y/⊏) \(uS/cm)	9.9		$1 \le$		1000			Sector 1			
pH (s u)	(μο/οιτι)	6.5				100	Sec.					
p (o)			010				0 . C.	a sub-			1.1.1		
Water Clarity		S	liahtly turbid			1.				22.			
			J , , , , , , , , , ,				1.15				E II		
Habitat Assessment	Scores	(max)		1		4.	in.						1024
Channel Modification	(5)		5				570	1	1.5			- A	1 412
Instream Habitat (20)			18	3	100	-	An and a second			for the	and the state of t		
Bottom Substrate (15))		12	100		-	-			-			
Pool Variety (10)			9								ALC: NO	-	
Riffle Habitat (16)			10							-	and the second		
Left Bank Stability (7)			6										
Right Bank Stability (7	7)		6					1					
Light Penetration (10)			7										
Left Riparian Score (5	5)		5		15	dia an	- 97				and the second		
Right Riparian Score	(5)		5				-						
Total Habitat Score (100)		87		Subst	rate	Gravel, c	obble,	boulder ou	itcrops			
Sample Date	•		Sampl	e ID		S	pecies To	tal		NCIBI		Bio	classification
05/02/06			2006	-29			23			56			Excellent
							1						
Most Abundant Spec	cies		Redlip Shiner	and Bluehe	ad Chi	ub	Ex	otic S	pecies	Swallov	vtail Shiner	and Gree	en Sunfish.
Species Change Sin	ce Last	Cvcle	N/A: ne	w site in 20	06.								
Data Analysis													
Watershed drains r	orthwe	stern R	andolph Count	v. a small n	ortion	of eas	tern David	lson C	ounty_inclu	idina the	area south	of the Ci	ty of Thomasville
and the US 64 corrido	r. Habi	t at p	ools; two good	riffles; snag	gs; larg	je dea	d trees ac	ross cl	nannel; goo	d riparia	an zones. 20	006 hig	h abundance and
species diversity inclu	ding 3 s	pecies	of darters, 4 s	pecies of su	unfish a	and ba	ass, 3 spec	cies of	suckers, a	nd 2 into	lerant speci	es; data	were summarized

in BAU Memorandum 20061121.

Waterb	ody			Locat	tion		Date		Bioclassification				
CARAW	AY CI	२		SR 1	331	0	5/15/06			GOC	DD-FAIR		
County	Subb	basin	8 dig	it HUC	Index Nun	nber		Latitude)		Longitude		
RANDOLPH	ę)	304	0103	13-2-3			354257			354257		795546
Level	Level IV Ecoregion Stream				Classification	Drainage	Area (mi2)	St	ream Widt	h (m)	Stream Depth (m)		
Caroli	ina Slate	Belt			С	4	2.9		12		0.1		
		Fo	rested/W	etland	Urban		Agricultur			Other (describe)		
Visible Landuse	e (%)		80		10		10				·		
Upstream NPDES	Dischar	gers (>1	MGD or <	1MGD and	within 1 mile)		N	DES N	umber		Volume (MGD)		
None													
Water Quality Para	ameters							Site Pl	notograph				
Temperature (°C)				16.2	20		1	CAN .	all constant	1200			
Dissolved Oxygen ((mg/L)			8.1	25		2						
Specific Conductan	ice (µS/c	m)		128	A.C.		Land a State	Ser Las		S			
pH (s.u.)				6.5	6 3	2.5		(r, 3)	A Sec		Ser Mi		
Water Clarity			Slightly Tu	rbid			(Ace						
Habitat Assessme	nt Score	es (max)	1					1000	ale an		A - 18 A.		
Channel Modificatio	on (5)			4				the second	and a first				
Instream Habitat (2	0)			8	24 3				TX AV	11	· 一下"""""		
Bottom Substrate (*	15)			8		Sec.					A BARRING AND		
Pool Variety (10)				4	and the second		All and a second				Contraction of the		
Riffle Habitat (16)				7	100	and and		12-21-		1			
Left Bank Stability ((7)			5			COL TRA		and the second	-			
Right Bank Stability	<i>י</i> (7)			5	and the second			Care Sa	THE NE	C. Sector			
Light Penetration (1	0)			10	- Contractor		- Cart		Stranger Stranger				
Left Riparian Score	(5)			4		1 74			State -	Carlo and			
Right Riparian Scor	re (5)			4									
Total Habitat Scor	e (100)			59	Substrate	Gra	vel with s	ome s	and and r	rubble			

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 *Leucrocuta* 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

Waterboo	dy		Location Date							Bioclassification			
Caraway	/ Cr		S	R 1331				05/0	8/06		l	Excel	ent
County	Subb	asin	8 digit HUC	Latitude		Lon	gitude	lı	ndex Numb	er	Lo	evel IV E	coregion
Randolph	ę)	03040103	354257		79	5549		13-2-3		C	Carolina S	Slate Belt
Stream Classifica	tion	Dra	inage Area	Elevatio	n (fi	•)	Stroa	um Wi	dth (m)	۸.,	arago Donti	h (m)	Poforonco Sito
			43.0	Lievatio	<u>, </u>	·)	Silea	12					No.
		For	ested/Wetland		Irbai	n		Aar	iculture		0.4)ther (des	scribe)
Visible Landuse	(%)		75		0	-			25			0	
Upstream NPDES Di	scharg	ers (>1	MGD or <1MG	D and within	1 m	ile)			NPDES	Numbe	er	Va	lume (MGD)
			None						-				
Water Quality Param	eters								Si	ite Phot	tograph		
Temperature (°C) Dissolved Oxygen (mg Specific Conductance pH (s.u.)	g/L) : (µS/cn	1)	15.4 8.1 117 6.3										
Water Clarity			Turbid			1	花		Est				a la
Habitat Assessment	Scores	(max)					BUE	all the second			4		
Channel Modification	(5)		5						-	-	and the second	195	And the set of the
Instream Habitat (20)			16					1			-		
Bottom Substrate (15))		10								-		
Pool Variety (10)			9										
Riffle Habitat (16)			12						-				
Left Bank Stability (7)			4					-	and the second	12		Sal.	100 million
Right Bank Stability (7	7)		4					100	the states				-
Light Penetration (10)			9	-					See.	-	and the second s		and the state of the
Left Riparian Score (5	5)		5						2 Gra		State of the		
Right Riparian Score	(5)		5										
Total Habitat Score (100)		79	Su	bstr	ate	Gravel, sa	and, c	obble, bedr	ock bou	lders		
Sample Date	•		Sampl	e ID		Sp	ecies Tot	al		NCIBI		Bio	classification
05/08/06			2006	31			19			54			Excellent
Most Abundant Spec	cies		Redbreast Sur Chub	nfish and Blue	head	ł	Ex	otic S	pecies	Redear	Sunfish		
Species Change Sine	ce Last	Cycle	N/A; ne	w site in 2006	i.								
Data Analysis													
Watershed drains w corridor dissects the lo 2006 good species	vest-cer ower on diversit	ntral Ra e-third / includ	ndolph County of the watershe ing 3 species of	; the US 311 o ed west of Ash of darters. 4 sr	corrie nebo necie	dor trav ro. Ha es of su	verses its I bitat tw unfish and	headv /o goo I bass	vaters north d riffles, rur , 2 species (west of is; side of sucke	the City of A snags and p ers, and 2 in	Asheboro bools; goo tolerant s	, and the US 64 od riparian zones. pecies: data were

summarized in BAU Memorandum 20061121.

FISH COMMUNITY SAMPLE

Waterboo	dy		L	ocation	Date Bioclassification					ication	
Betty McGe	ees C	r	S	R 1107			05/08/06			Goo	d
County	Subba	asin	8 digit HUC	Latitude	Long	gitude	Index Nu	nber	L	evel IV E	coregion
Randolph	9		03040103	353638	795	5724	13-2-5	5	Carolina Slate		Slate Belt
		_									
Stream Classifier	tion	Dra	inage Area	Elevation (f 4\	Stroo	m Width (m)	A 1/	orago Donti	h (m)	Poforonao Sito
C			8		ity	Silea	5	AV	0.3	<u>, (iii)</u>	Ves
Ŭ			0				5		0.0		103
		For	ested/Wetland	Urba	an		Agriculture		0	ther (des	scribe)
Visible Landuse	(%)		100	0			0			0	
Upstream NPDES Di	scharge	ers (>1	MGD or <1MG	D and within 1 r	nile)		NPD	ES Numb	er	Vo	lume (MGD)
			None								
Water Quality Param	eters							Site Pho	tograph		
Tomporatura (°C)			14.0			T T	An Andrew A	ALC: N		S. Barres	A State of the second
Dissolved Oxygon (m	~/L)		14.0	ALC: NO							A CARLON
Specific Conductance	y,∟) (uS/cm	`	9.0	100 M				S La	ALC: NO		Const Erell
pH (s u)	(μ0/011	/	6.3	2/20		and the second				No.	Sector 12
			0.0		Ci.	Test			all in the		1. 1. 1. 1. C. F.
Water Clarity	Γ	Ver	v slightly turbid	The second			-	a su	and the	8/2	and in the
Water Clarity		VOI	y slightly tarbia	1 day	in land	1.20 T	AR P	and the second		2.44	
Habitat Assessment	Scores	(max)			100 A.S.					Sec.	Water Ar
Channel Modification	(5)	(,	5	1.00	1 × 1			and the second		and the	
Instream Habitat (20)	(0)		16	and the second	the second	N 04	1		and the		Carl March
Bottom Substrate (15)			10		-	in the second			1		and a set of the
Pool Variety (10)			10	5 mg 24	e partie			Sec. 3		a series	
Riffle Habitat (16)			7	and and	Provide a				The second	-	
Left Bank Stability (7)			3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ALC: N		Der Jeh	La P	W.C. C		and the second second
Right Bank Stability (7	")		3	-sizes			Tel.				Commenced of
Light Penetration (10)			9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Reading and	and the	and the	and a			
Left Riparian Score (5)		5	100	no.		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	AR L	and the	200	1 N 1 N 1 N 1
Right Riparian Score ((5)		5		_						
Total Habitat Score (100)		73	Subst	trate	Cobble, g	gravel, sand				
Comula Data			Commis	п	C	: T -4	-1	NOD		Die	-lessification
	;		Sample		Spe		ai	NCIBI		BIO	Cood
03/06/00			2000-3	5		10		52			Good
04/18/96			96-24	<u> </u>		14		54			Excellent
0 11 10/00			001								Excononic
Most Abundant Spec	ies		Bluehead Chub			Fx	otic Species	Green	Sunfish and	Redear {	Sunfish
most Abundant oper	100					_ ^	one opened	Croon		rtouour e	Samon
			1	Long on outh D		oine Ca		field (finate	time callesta		ita) Manainad
Species Change Sine	ce Last	Cycle	Losses	Largemouth E Bluegill and R	ass. G edear S	ains Ea unfish (fir:	astern Mosquito	nisn (first d at the si	time collecte	a at the s	site), Margined
Data Analysis			maatom						- /-		
Watershed drains a	a small ru	ural ar	ea in southweste	ern Randolph Co	ounty inc	cluding th	e northern port	on of the	Birkhead Wi	Iderness	Area in the USFS
Uwharrie National For	est. Ha	bitat	a typical Caroli	na Slate Belt str	eam; sh	ort and sh	hallow riffles; si	de snags;	a few pools	; poor qu	ality (Chinese
privet), but wide riparia	an zones	s; wate	er withdrawal stru	ucture within rea	ch may	affect stre	eam during low	flow perio	ods. 2006	increase	in the number of
species from 15 to 18	; increas	e in th	e percentage of	species with mu	ultiple ag	ge groups	; data were sur	nmarized	In BAU Men	10randum	120061120. 1996 -
Bluehead Chub and R	edbreas	as av	sh dominant she	cin, iotal specie ecies: NCIBL sco	s at site	ratings ra	ande from a high	h Good to	a low Exce	Hent.	5 TO SILICE 1990;
						go it	3				

Waterb	oody			Loca	tion		D	ate		Bioclassification				
BARNE	S CR			SR 1	303		05/1	6/06		EXC	ELLENT			
County	Subb	basin	8 dig	it HUC	Index Nur	nber		Latitu	de		Longitude			
MONTGOMERY	ę	Э	304	0103	13-2-18-(0.5)		3526	19		795956			
Level	IV Ecore	egion		Stream	Classification	Drainag	e Are	ea (mi2)	Stream Widt	.h (m)	Stream Depth (m)			
Caroli	ina Slate	Belt		WS	S-IV, ORW		23.3		23.3		12	0.5		
		Fc	prested/W	etland	Urban		Agri	iculture		Other (describe)			
Visible Landus	e (%)		100				_							
Upstream NPDES	Dischar	gers (>1	1MGD or <	<1MGD and	within 1 mile)			NPDES	Number		Volume (MGD)			
None														
Water Quality Para	ameters							Site	Photograph					
Temperature (°C)				15.3	5 C		10. A	2 Feb	S. A. A.		20 37 Far.			
Dissolved Oxygen ((mg/L)			9.8		and the second	2	14 - C. S. C.	The second second					
Specific Conductan	nce (µS/c	;m)		55		See X	20	and the second			indi Sana ana a			
pH (s.u.)				6.4	56.3.4	Con Policy	1	FI	- 11 - 2					
Water Clarity	ļ		Slightly Tu	ırbid	Tes.		1.0	PAL S	NIG-	N				
Habitat Assessme	ent Score	es (max))		2-11-	1				1 4	19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Channel Modificatic	on (5)			5	Section -	-	1	4.4						
Instream Habitat (2	:0)			16					Contraction of the local division of the loc	Lane -	and the second second			
Bottom Substrate (15)			11	and the second	1	La Contra		A STREET	-	and the second second			
Pool Variety (10)				8					- Martin	-				
Riffle Habitat (16)				16		-	Pranto P	the second second						
Left Bank Stability ((7)			7	1					The second				
Right Bank Stability	/ (7)			7	and the set	a an		23	2 mars	200				
Light Penetration (1	10)			10		1 de la	diana.	m - S		201				
Left Riparian Score	: (5)			5	-		100	and the	and the second	Contraction of the				
Right Riparian Scor	re (5)			5										
Total Habitat Scor	e (100)			90	Substrate	e Be	droc	k with bou	lder and ru	bble				

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 abundunce remained fairly consisitent 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 txa 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 Nationl Forest, a mostly undisturbed, and relatively mountianous 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

Waterboo	dy		Location Date Bioclassificat							ation	
Barnes	Cr		S	R 1303			05/09/06		E	xcelle	ent
County	Subba	sin	8 digit HUC	Latitude	Long	jitude	Index Num	ber	Leve	el IV Ec	oregion
Montgomery	9		03040103	352617	795	956	13-2-18-(0	.5)	Car	rolina Sl	ate Belt
Stream Classifica	tion	Dra	inage Area (mi2)	Elevation (ft)	Strea	am Width (m)	Av	erage Depth (I	m)	Reference Site
C,ORW			22.4				8		0.4		Yes
		For	ested/Wetland	Lirb:	an		Agriculture		Oth	or (dosi	cribe)
Visible Landuse	(%)	1.01	100	0			0		U	0	
				ł							
Upstream NPDES Dis	scharger	's (>1	MGD or <1MG	D and within 1	mile)		NPDE	S Numb	er	Vol	ume (MGD)
			None								
Water Quality Param	eters						\$	Site Pho	tograph		
Temperature (°C)			14.2		Yamara	156					
Dissolved Oxygen (mg	g/L)		10.2	Con and a		1.50	All the second	- and		的环	
Specific Conductance	(µS/cm)		51				and the second	124	and the second		
pH (s.u.)			6.4		Start D		and the				
	_						The second				Carlos and
Water Clarity			Clear					ent			
Habitat Assessment	Scores (max)				1 224	1.42	and a	A LOW NO	Ar.	
Channel Modification	(5)	,	5			The second		Start -			A NOSCOL
Instream Habitat (20)	(0)		19		1.27			1000		-	A DALAS
Bottom Substrate (15)			15		9		Contraction of the second	10			A CARGA
Pool Variety (10)			9	200		and the second second	the second second			State .	
Riffle Habitat (16)			16	Sec. 1		-		and the second	ATT A STATIO	Inter	Association and
Left Bank Stability (7)			7	17 A 19	·		Siles -	2.April			
Right Bank Stability (7	")		7		· /	and a	- Dirate		and a		Part I man had
Light Penetration (10)			8				and with	Acres 1		-	The Property
Left Riparian Score (5)		5	the		1 300	BE STA		Stor is a function	200	and the second sec
Right Riparian Score ((5)		5		-						
Total Habitat Score (100)		96	Subs	trate	Cobble, k	ooulder				
Sample Date)		Sampl	e ID	Spe	cies To	tal	NCIBI		Bioc	lassification
05/09/06			2006-	35		17		58		E	Excellent
04/16/01			2001-	16		16		54		E	Excellent
10/17/97			97-8	6		12		44		C	Bood-Fair
04/22/96			96-2	5		10		48			Good
Most Abundant Spec	ies		Bluehead Chul	b and Redlip Shii	ner	Ex	otic Species	Smallm	nouth Bass		
Species Change Sind	ce Last C	ycle	Losses	Rosyside Dad	ce and Ci	reek Chu	ıb. Gains Flat	Bullhead	d and Chain Pi	ckerel.	
Data Analysis											
Watershed drains r habitat score of any fis conductance of any fis 2006 consistently hi	ural north sh site in sh commu gh total h	2006; 2006; unity s abita	ern Montgomer ; good riffles an site in the Piedr t scores; specif	y and southweste d pools; angular nont in 2006. 20 ic conductance ~	ern Rand bedrock 006 Iow - 45 μS/c	lolph cou and bou ver than o m; total	Inties; no municip Ilders; <i>Podostem</i> expected percent species at site =	calities in um; wate tage of s 23, inclu	watershed. H er slightly stain pecies with mu ding 3 species	labitat - ed. Low Itiple ag	- second greatest vest specific ge groups. 1996 - ers and 3 species

of suckers; dominant species are Bluehead Chub, Redbreast Sunfish, and Redlip Shiner; 1996 sample collected near bridge, 1997 data collected afte very high flows in 1996 followed by low flows in 1997; 1996 - 2006 data were summarized in BAU Memorandum 20061121.

Waterb	ody			Location			Date Bioclassification					Date				ssification
DUTCHM	ANS (CR		SR 1	150		08/1	0/06			Exc	cellent				
County	Subb	basin	8 dig	it HUC	Index Nun	nber		Lat	titude			Longitude				
MONTGOMERY	ę	9	0304	40103	13-2-24	4		35	52247			800149				
Level	IV Ecore	egion		Stream	Classification	Draina	ge Are	a (mi2)	Sti	eam Widtl	h (m)	Stream Depth (m)				
Caroli	ina Slate	e Belt			WS-IV		3.5			3		0.1				
		Fo	orested/W	etland	Urban		Agri	culture			Other (d	describe)				
Visible Landuse	e (%)		100		0			0				0				
Upstream NPDES	Dischar	gers (>1	MGD or <	1MGD and	within 1 mile)			NPDI	ES Nu	ımber		Volume (MGD)				
		<u> </u>	noi	ne												
Water Quality Para	ameters							S	ite Ph	otograph						
Temperature (°C)				26.6		部での	-			3 . 44	344	A BANK				
Dissolved Oxygen (mg/L)			5.9	an an		8	ALES	2.00	1-20	Pal					
Specific Conductan	ice (µS/c	cm)		62						大社國	Ser.	1 1 2				
pH (s.u.)				6.5	the second		10			L RE	1.50	12 1 2 50				
Water Clarity			clear			S.F.		4			S					
Habitat Assessme	nt Score	es (max))			Print of	-		Tas	(· · · ·	1	and the second				
Channel Modificatio	on (5)			5				A 4.20	E.	to for the	1 4					
Instream Habitat (20	0)			16			G	27		AS .	4					
Bottom Substrate (1	15)			15							2	12 11				
Pool Variety (10)				9			Sec.		-	THE P	Y	all and the				
Riffle Habitat (16)				16	197	1		1	20	1	200					
Left Bank Stability (7)			6	2		-		Co.	- And	100	The states				
Right Bank Stability	· (7)			6	6-36.		-	1				STRACT				
Light Penetration (1	0)			10			TOA			5 × 1		175				
Left Riparian Score	(5)			5			a second	100	1.2	War Is	-	1				
Right Riparian Scor	e (5)			4												
Total Habitat Score	e (100)			92	Substrate	e bo	ulder, o	cobble wit	th som	ne gravel ar	nd bedro	ck				
Sample Date	е		Sample	ID	ST	EP1	г	ы		EPT	BI	Bioclassification				

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 *Diphetor 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 occured 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 occured during a spate of hurricanes in 2004.