Appendix Chapter 2 Water Quality Assessment and Monitoring

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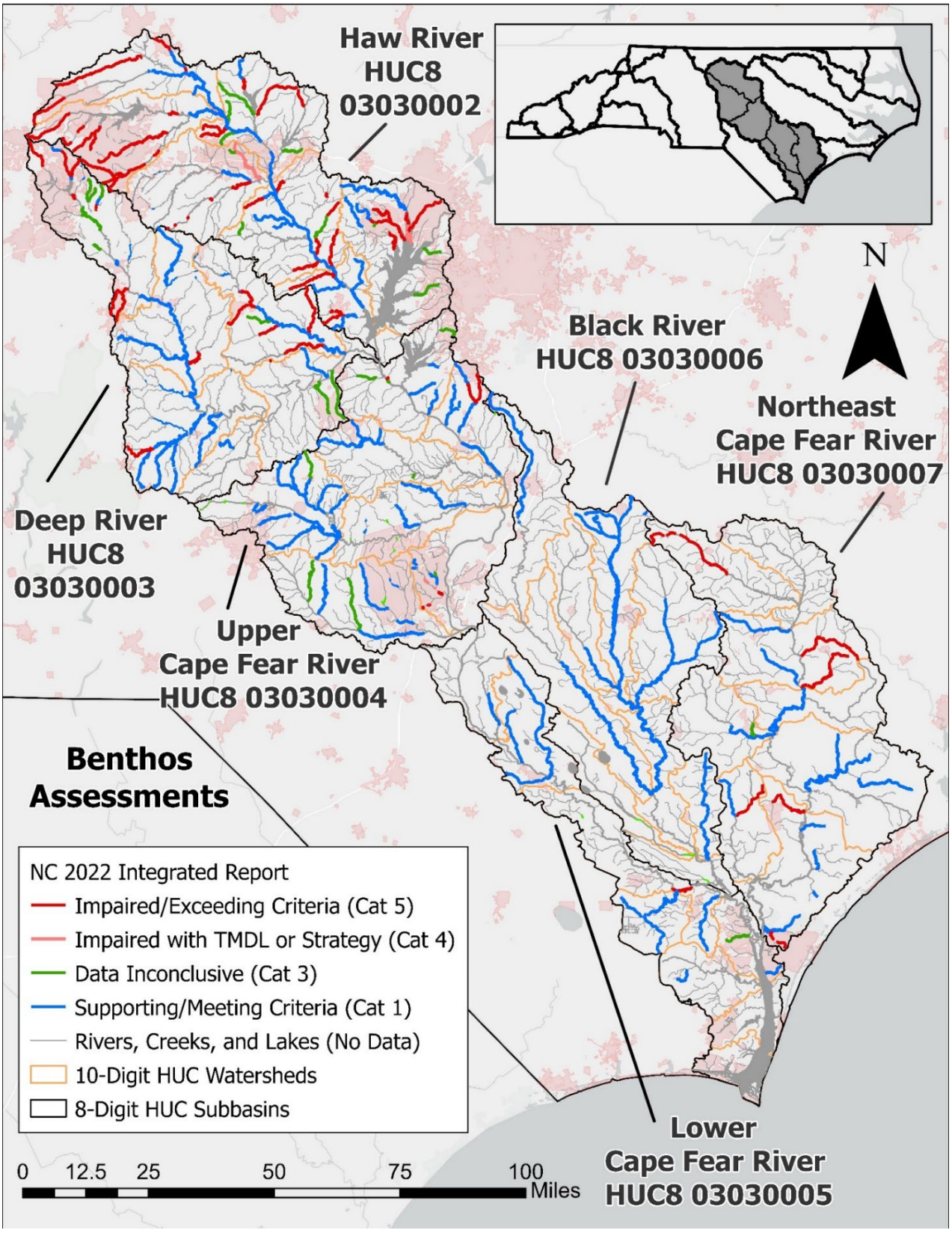

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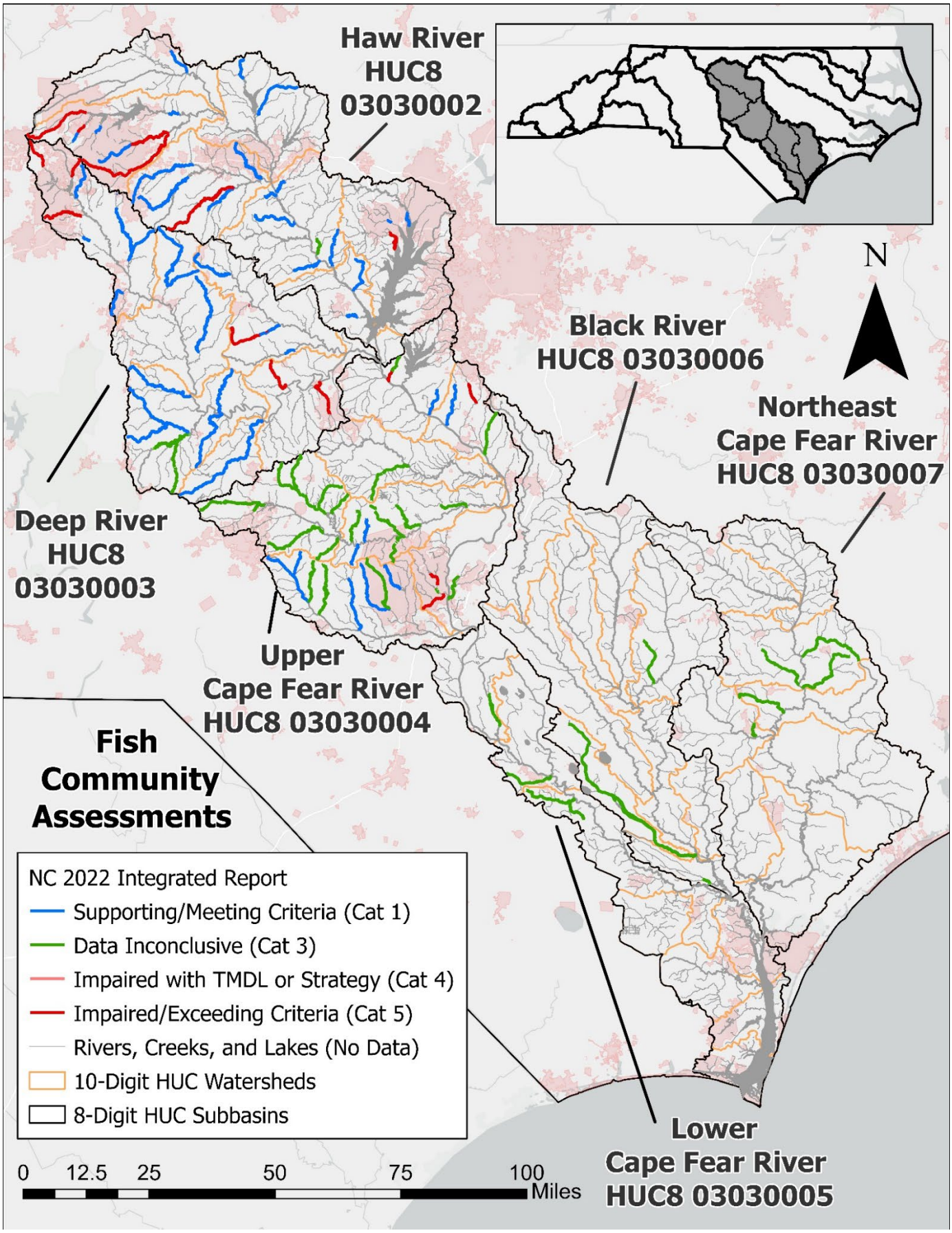

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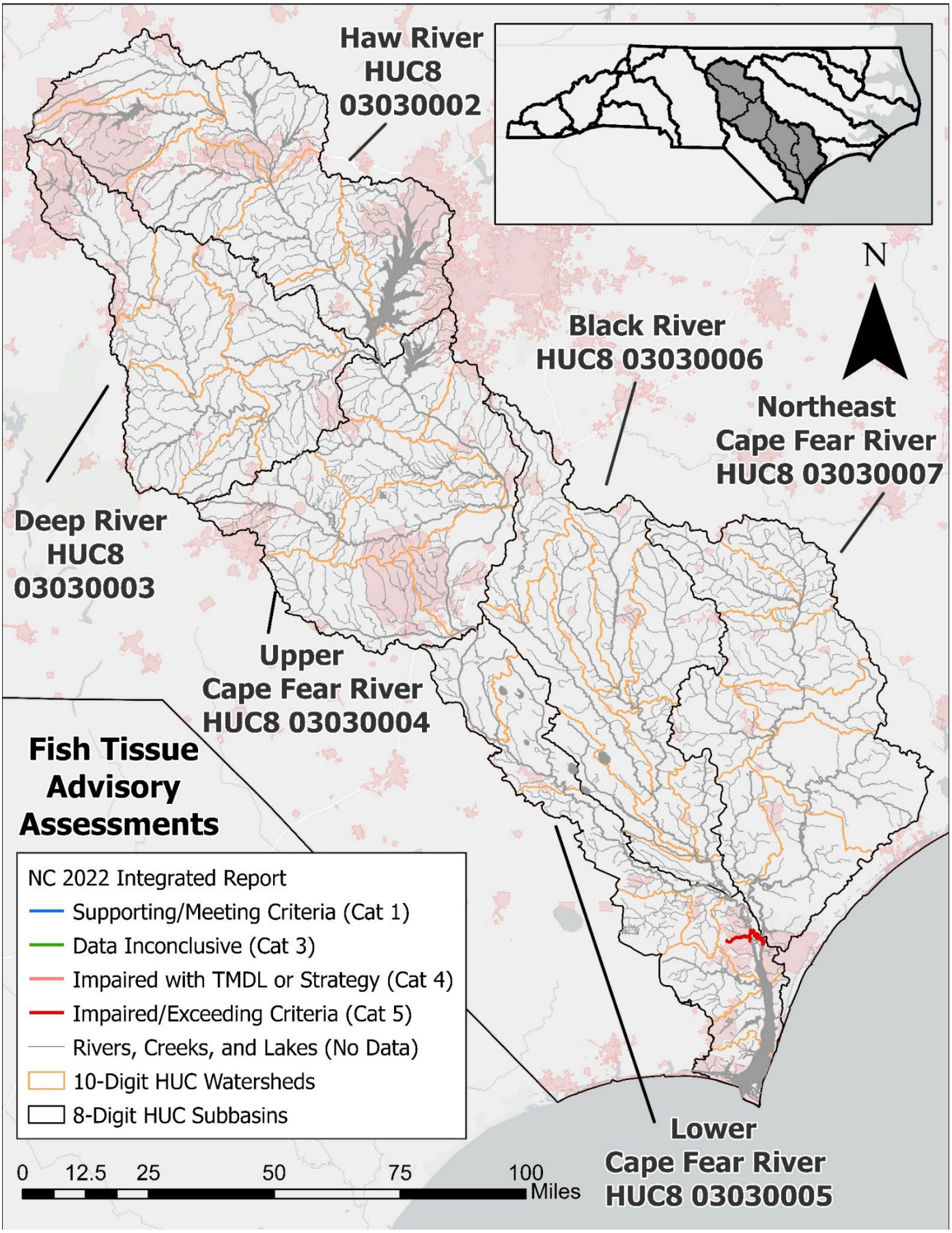

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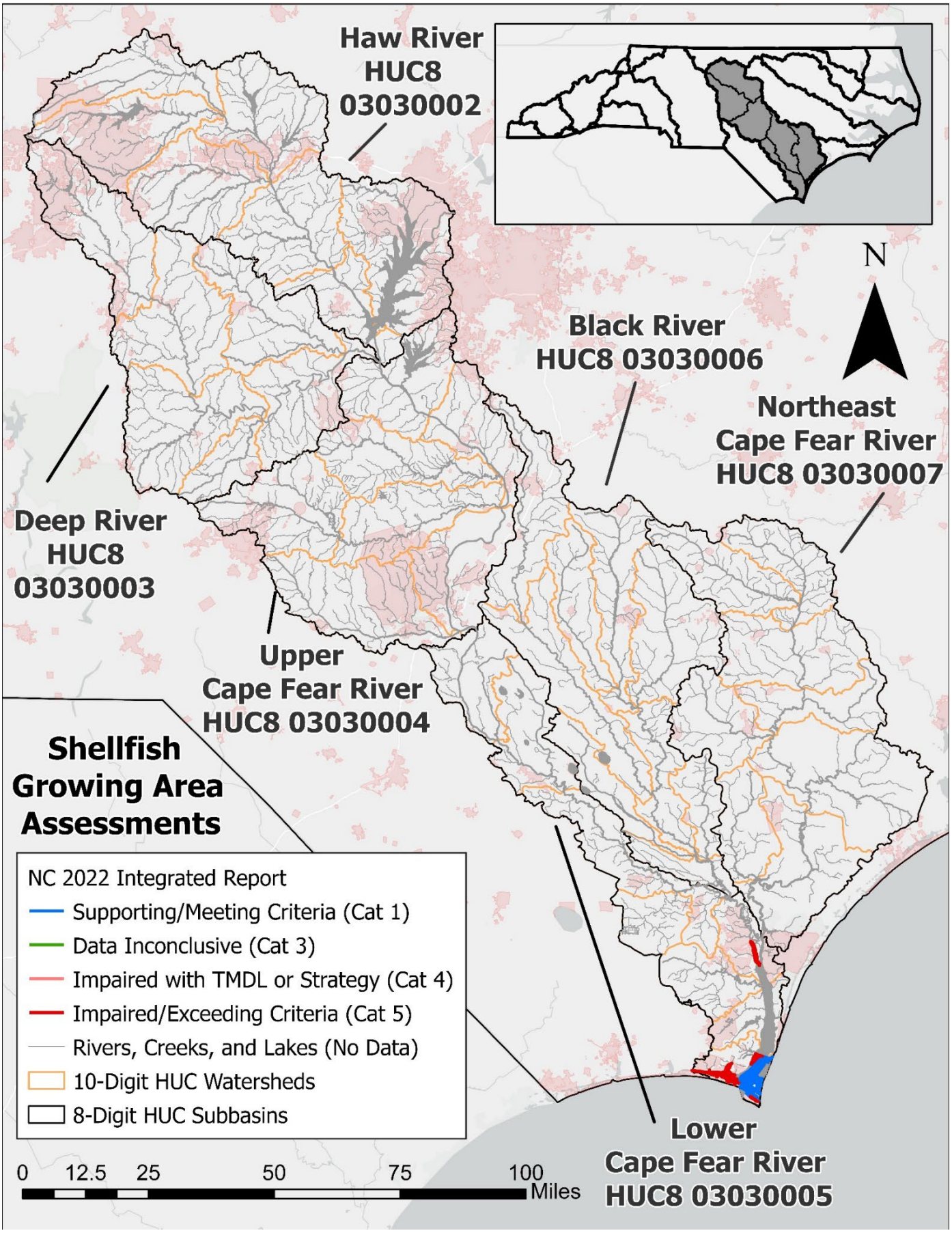

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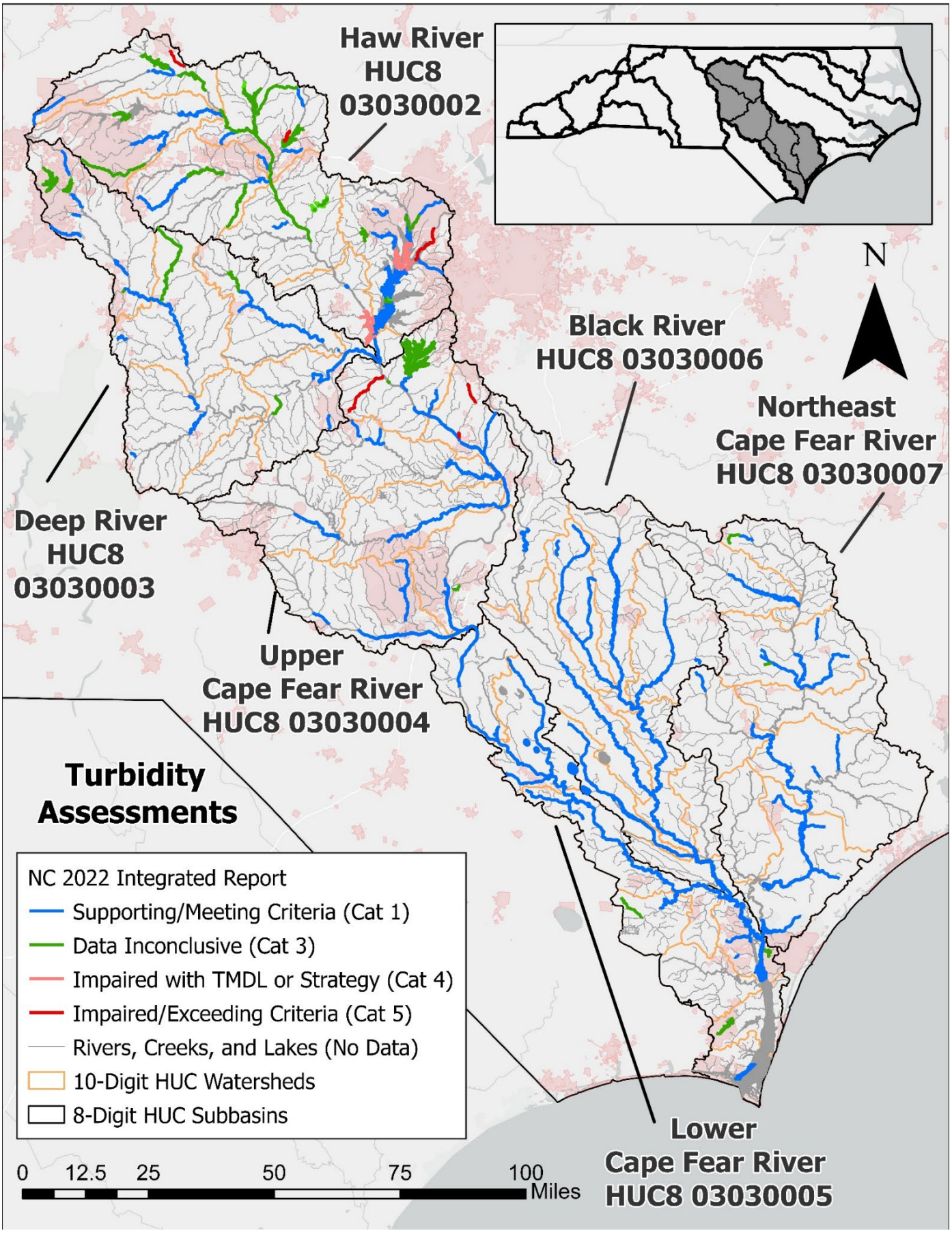

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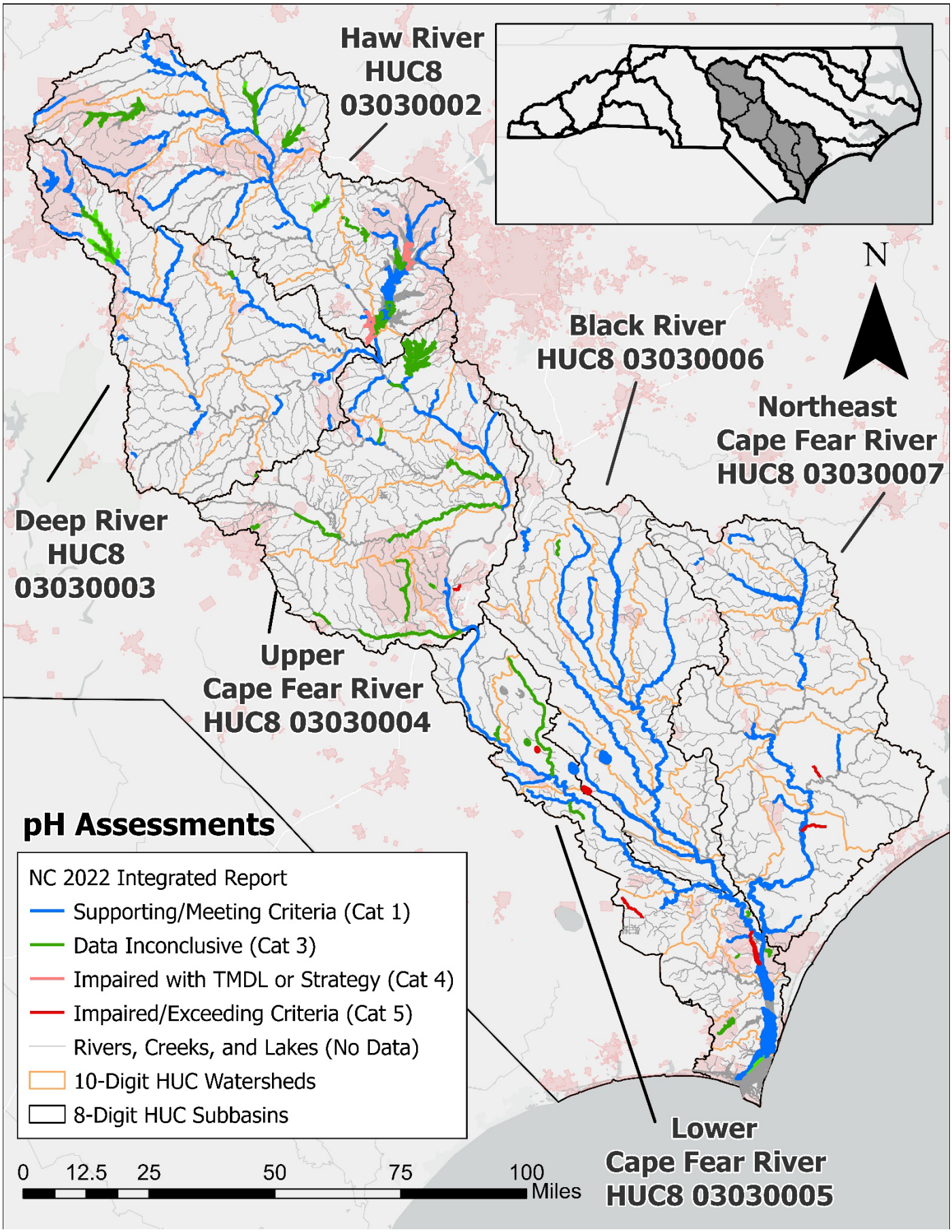

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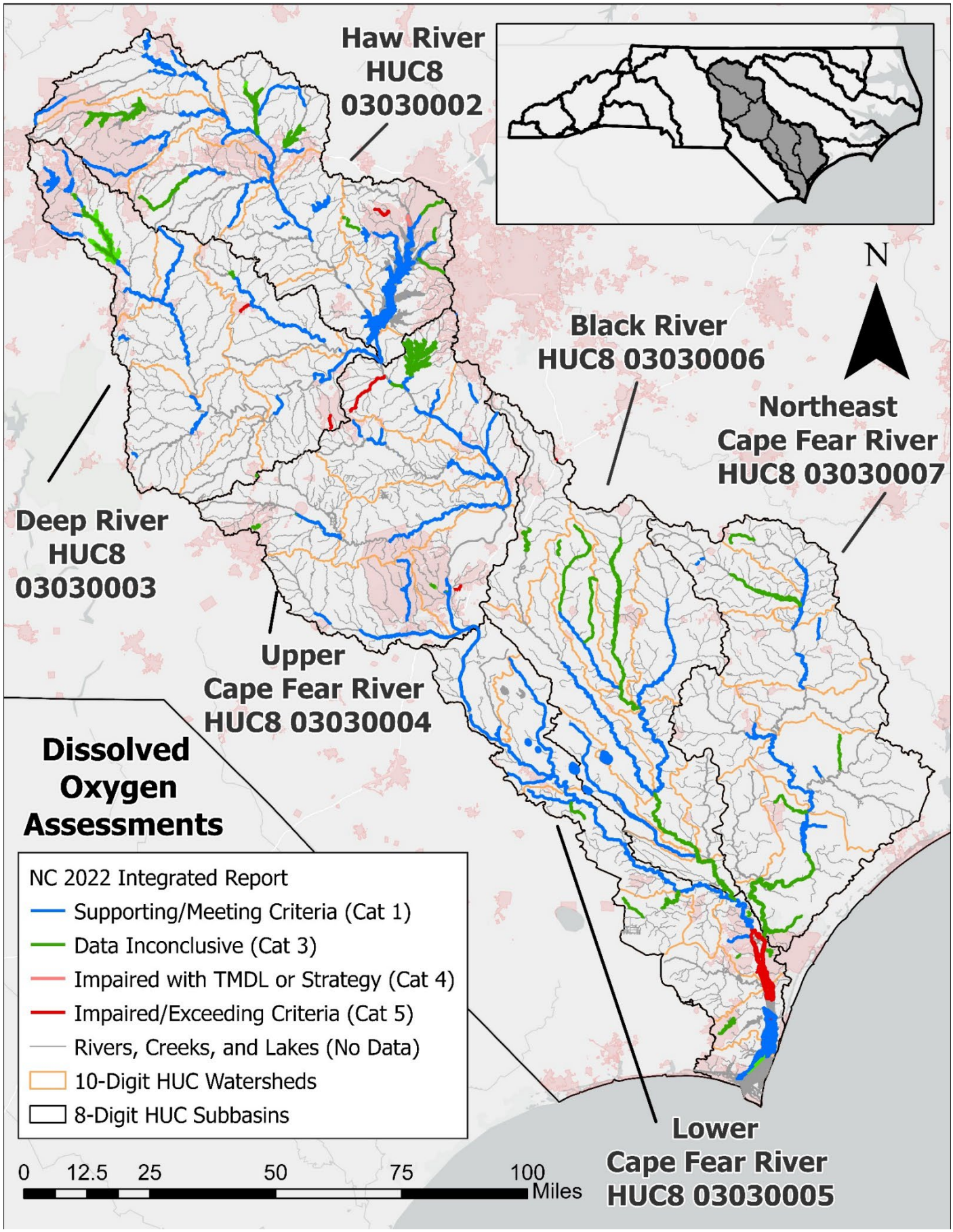

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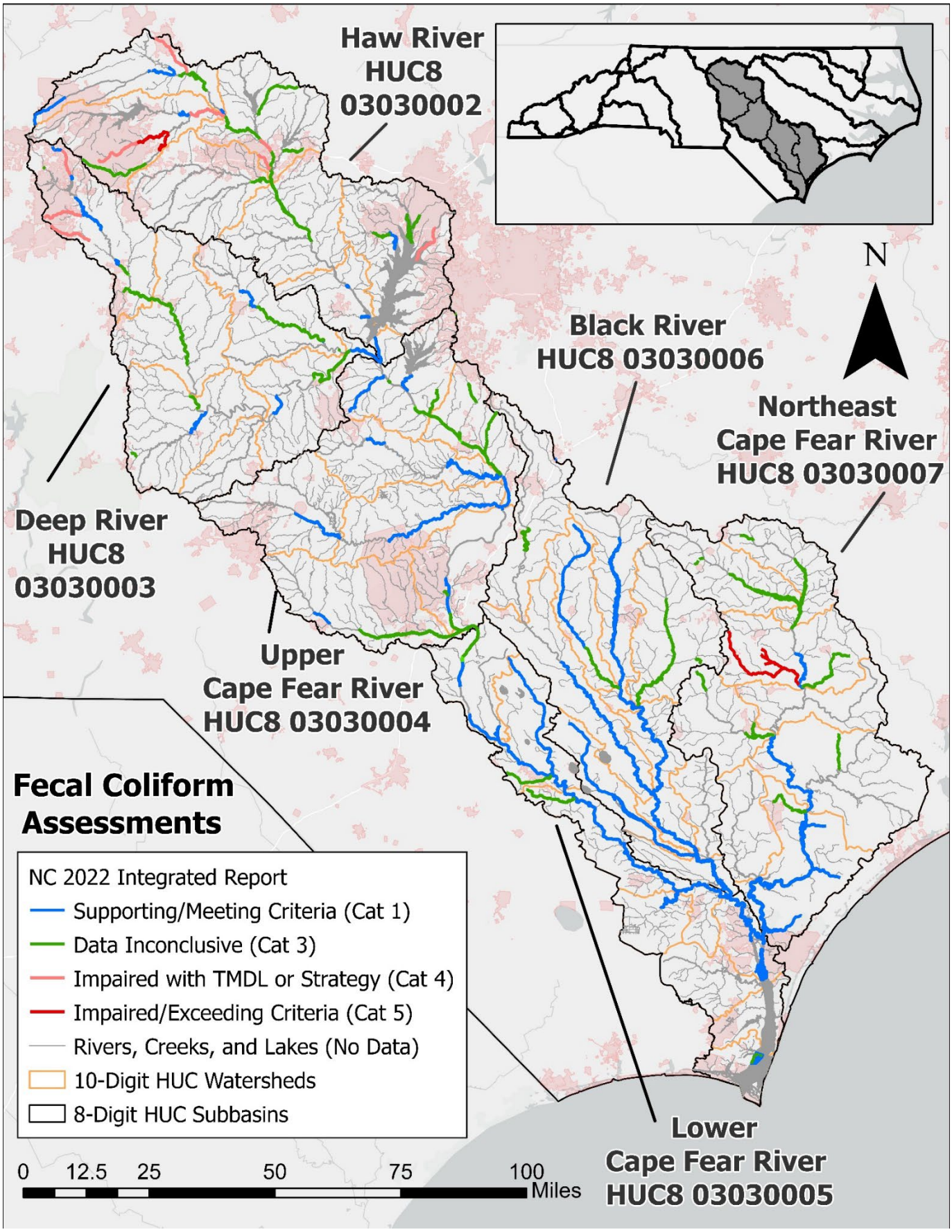

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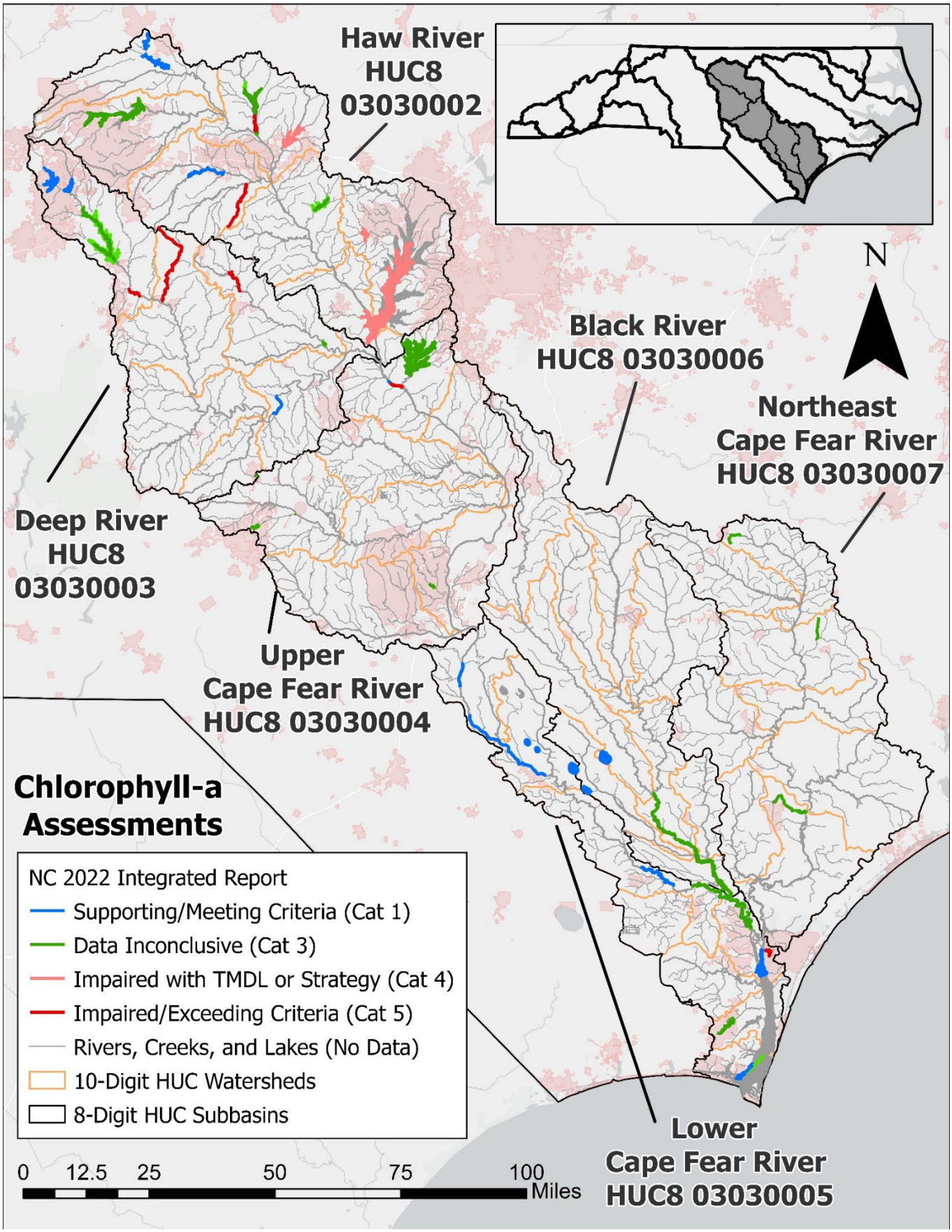


Figure 10: Cape Fear Total and Dissolved Chronic Copper Assessments 2022 Integrated Report

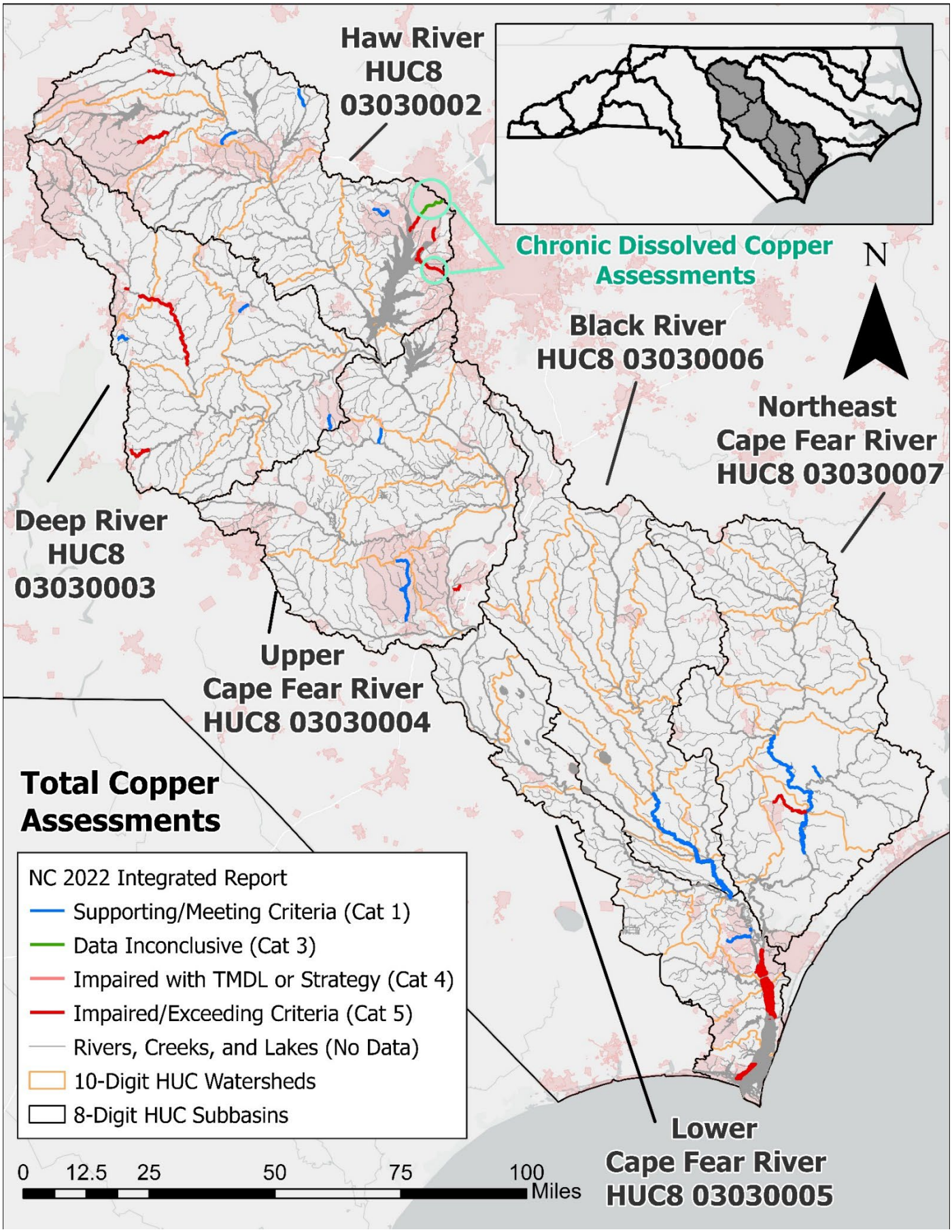
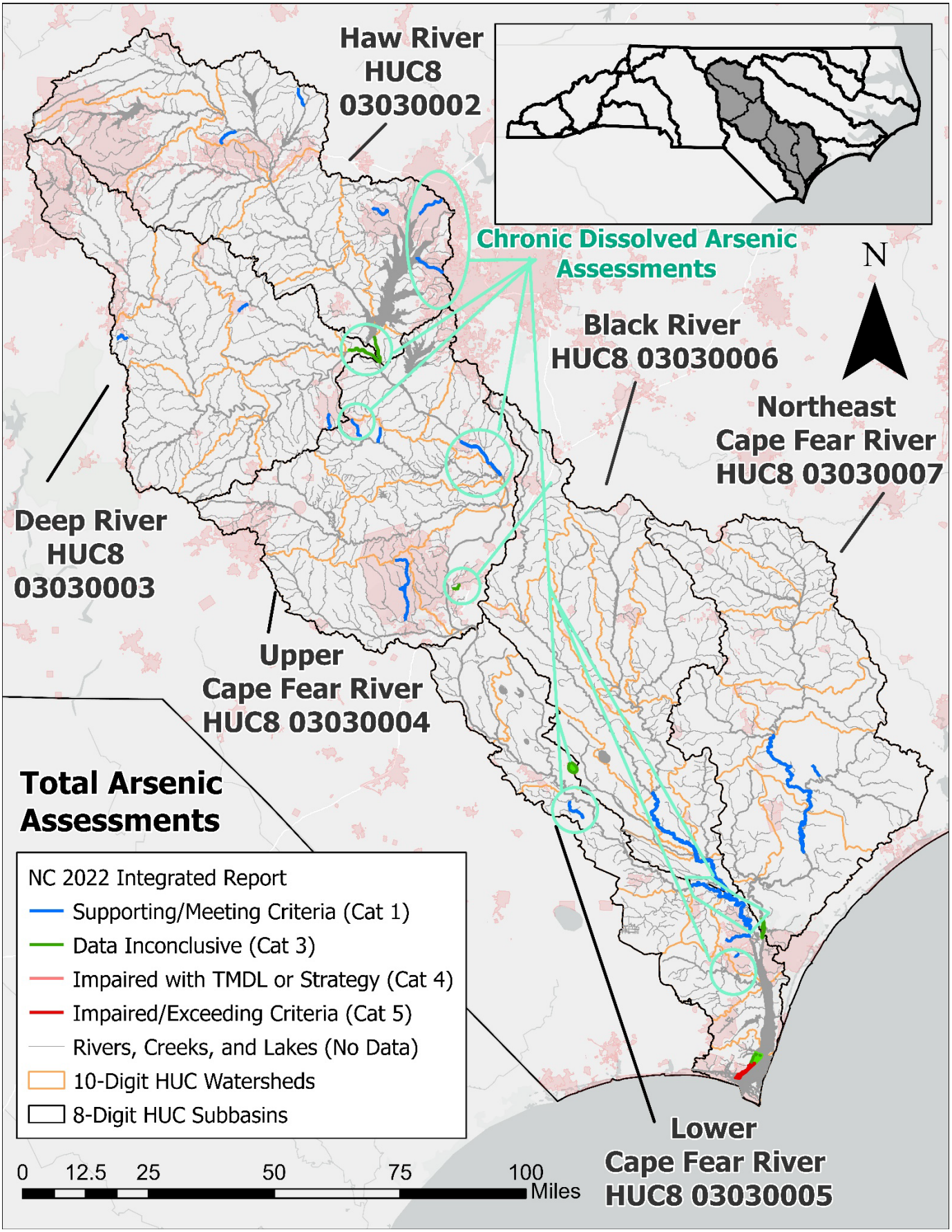


Figure 11: Cape Fear Total and Dissolved Chronic Arsenic Assessments 2022 Integrated Report



Classifications from 01/01/2009 to 01/01/2009

Records Found: 18

Name of Stream	Description	Class	Date	Basin	Stream Index #
CAPE FEAR RIVER	From City of Fayetteville water suppl intake to a point approximately 1 mile upstream of Grays Creek.	C	01/01/09	Cape Fear	18-(26)
CAPE FEAR RIVER	From a point approximately 1 mile upstream of Grays Creek to a point approximately 0.5 mile upstream of Smithfield Packing Company's intake	WS-IV	01/01/09	Cape Fear	18-(26.25)
Grays Creek	From N.C. Hwy. 87 to a point approximately 0.04 mile downstream of County Road 2233	C	01/01/09	Cape Fear	18-35-(2)
Grays Creek	From a point approximately 0.04 mile downstream of County Road 2233 to Cape Fear River	WS-IV	01/01/09	Cape Fear	18-35-(3)
Hairs Mill Creek	From source to Cape Fear River	WS-IV	01/01/09	Cape Fear	18-36
Willis Creek	From source to Cape Fear River	WS-IV	01/01/09	Cape Fear	18-37
Swans Creek	From source to a point approximately 0.2 mile downstream of County Road 2233	C	01/01/09	Cape Fear	18-37-1-(0.5)
Swans Creek	From a point approximately 0.2 mile downstream of County Road 2233 to Willis Creek	WS-IV	01/01/09	Cape Fear	18-37-1-(0.75)
Longs Branch (McNeill Pond)	From source to a point approximately 0.04 mile downstream of County Road 2261	C	01/01/09	Cape Fear	18-37-1-1-(1)
Longs Branch (McNeill Pond)	From a point approximately 0.04 mile downstream of County Road 2261 to Swans Creek	WS-IV	01/01/09	Cape Fear	18-37-1-1-(2)
Kirks Mill Creek	From source to Willis Creek	WS-IV	01/01/09	Cape Fear	18-37-2
Unnamed Tributary at Willis Creek Church (McGaugans Lake)	From source to dam at McGougans Lake	WS-IV,B	01/01/09	Cape Fear	18-37-3-(1)
Unnamed Tributary at Willis Creek Church	From dam at McGaugans Lake to Willis Creek	WS-IV	01/01/09	Cape Fear	18-37-3-(2)
Georgia Branch (Prospect Hall Creek)	From source to Cape Fear River	WS-IV	01/01/09	Cape Fear	18-38

Mines Creek (Pages Lake)	From source to dam at Pages Lake	WS-IV,B	01/01/09	Cape Fear	18-38-1-(1)
Mines Creek	From dam at Pages Lake to Georgia Branch	WS-IV	01/01/09	Cape Fear	18-38-1-(2)

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
CAPE FEAR RIVER	From a point approximately 0.5 mile upstream of Smithfield Packing Company's intake to Smithfield Packing Company's intake (approximately 2 miles upstream of County Road 1316)	WS-IV;CA	01/01/09	Cape Fear	18-(26.5)
CAPE FEAR RIVER	From Smithfield Packing Company's intake (approximately 2 miles upstream of County Road 1316) to mouth of Hammond Creek	C	01/01/09	Cape Fear	18-(26.75)

Classifications from 08/11/2009 to 08/11/2009

Records Found: 114

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
Mears Fork Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-3
Benaja Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-4
Rock Branch (Rocky Branch)	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-2
Unnamed Tributary at Brooks Lake (Brooks Lake)	From source to dam at Brooks Lake	WS-V;NSW	08/11/09	Cape Fear	16-4-1-(1)
Unnamed Tributary at Brooks Lake	From dam at Brooks Lake to Benaja Creek	WS-V;NSW	08/11/09	Cape Fear	16-4-1-(2)
Candy Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-5
Troublesome Creek	From dam at Lake Reidsville to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-6-(3)
Reedy Fork (Hardys Mill Pond)	From Lake Townsend Dam to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-11-(9)
Unnamed Tributary at Camp Herman (Lake Herman)	From source to dam at Lake Herman	WS-V,B;NSW	08/11/09	Cape Fear	16-11-10-(1)
Unnamed Tributary at Camp Herman	From dam at Lake Herman to Reedy Fork	WS-V;NSW	08/11/09	Cape Fear	16-11-10-(2)
Smith Branch	From source to Reedy Fork	WS-V;NSW	08/11/09	Cape Fear	16-11-11
Rocky Branch	From source to Reedy Fork	WS-V;NSW	08/11/09	Cape Fear	16-11-12
Katie Branch	From source to Reedy Fork	WS-V;NSW	08/11/09	Cape Fear	16-11-13
Buffalo Creek	From junction of North Buffalo Creek and South Buffalo Creek to Reedy Fork	WS-V;NSW	08/11/09	Cape Fear	16-11-14
North Buffalo Creek	From source to Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-1
Lake Hamilton, Lake Euphemia	Entire lakes and connecting streams to North Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-1-1
Philadephia Lake, Buffalo Lake, and White Oak Lake)	Entire lakes and connecting stream to North Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-1-2
Muddy Creek	From source to North Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-1-3
Jorden Branch	From source to North Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-1-4
South Buffalo Creek	From source to Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-2
Piedmont Creek	From source to South Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-2-1

Glenwood Creek	From source to South Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-2-2
Ryan Creek	From source to South Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-2-3

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
Mile Run Creek	From source to South Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-2-4
Blackwood Creek	From source to Buffalo Creek	WS-V;NSW	08/11/09	Cape Fear	16-11-14-3
Parks Creek	From source to Reedy Fork	WS-V;NSW	08/11/09	Cape Fear	16-11-15
Travis Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-12
Tickle Creek (Trickle Creek)	From source to Travis Creek	WS-V;NSW	08/11/09	Cape Fear	16-12-1
Dry Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-13
Stony Creek	From dam at Copland Fabrics, Inc., water supply to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-14-(9)
Service Creek (Servis Creek)	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-15
Staley Creek	From source to Service Creek	WS-V;NSW	08/11/09	Cape Fear	16-15-1
Boyds Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-16
Town Branch	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-17
County Home Branch (Still House Branch)	From source to Town Branch	WS-V;NSW	08/11/09	Cape Fear	16-17-1
Back Creek	From dam at Graham-Mebane Reservoir to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-18-(6)
Moadams Creek (Latham Lake)	From source to Back Creek	WS-V;NSW	08/11/09	Cape Fear	16-18-7
Big Alamance Creek (Alamance Creek)	From Lake Mackintosh dam to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-19-(4.5)
Back Creek (Little Creek)	From source to Big Alamance Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-5
Michael Branch	From source to Back Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-5-1
Ingle Branch	From source to Back Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-5-2
Gum Creek	From source to Big Alamance Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-7
Stinking Quarter Creek	From source to Big Alamance Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8
North Prong Stinking Quarter Creek	From source to Stinking Quarter Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-1
Chocolate Creek	From source to North Prong Stinking Quarter Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-1-1
South Prong Stinking Quarter Creek (Kimesville Lake)	From source to dam at Kimesville Lake	WS-V,B;NSW	08/11/09	Cape Fear	16-19-8-2-(1)
South Prong Stinking Quarter Creek	From dam at Kimesville Lake to Stinking Quarter Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-2-(2)

Poppaw Creek (Pappaw Creek)	From source to South Prong Stinking Quarter Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-2-3

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
Timber Ridge Lake	Entire lake and connecting stream to Poppaw Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-2-3-1
Little Creek	From source to South Prong Stinking Quarter Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-2-4
Rock Creek	From source to Stinking Quarter Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-8-3
Moccasin Creek	From source to Big Alamance Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-9
Little Alamance Creek (Gant Lake, Mays Lake) (Alamance County)	From source to Big Alamance Creek	WS-V;NSW	08/11/09	Cape Fear	16-19-11
Brown Branch	From source to Little Alamance Cree	WS-V;NSW	08/11/09	Cape Fear	16-19-11-1
Dye Branch	From source to Brown Branch	WS-V;NSW	08/11/09	Cape Fear	16-19-11-1-1
Bowden Branch	From source to Little Alamance Cree	WS-V;NSW	08/11/09	Cape Fear	16-19-11-2
Haw Creek	From N. C. Hwy. 54 to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-20-(4)
McAdams Creek	From source to Haw Creek	WS-V;NSW	08/11/09	Cape Fear	16-20-5
Varnals Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-21
Rock Creek	From source to Varnals Creek	WS-V;NSW	08/11/09	Cape Fear	16-21-1
Chub Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-22
Meadow Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-23
Whiteheat Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-24
Motes Creek (Newland Creek)	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-25
Marys Creek	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-26
Long Branch	From source to Marys Creek	WS-V;NSW	08/11/09	Cape Fear	16-26-1
Cane Creek	From dam at Cane Creek Reservoir t Haw River	WS-V;NSW	08/11/09	Cape Fear	16-27-(7)
Cane Creek (South side of Haw River)	From source to Haw River	WS-V;NSW	08/11/09	Cape Fear	16-28
Wells Creek	From source to Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-1
Hunting Branch	From source to Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-2
Reedy Branch	From source to Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-3
Foust Creek	From source to Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-4
South Fork Cane Creek	From source to Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-5

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
Pine Hill Branch	From source to South Fork Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-5-1
Pine Branch	From source to Cane Creek	WS-V;NSW	08/11/09	Cape Fear	16-28-6
Big Branch	From source to a point 0.3 mile upstream of Alamance County SR 2182	WS-V;NSW	08/11/09	Cape Fear	16-29-(1)
Collins Creek	From source to a point 0.8 mile downstream of Orange County SR 1005	WS-V;NSW	08/11/09	Cape Fear	16-30-(0.5)
Wildcat Branch	From source to Collins Creek	WS-V;NSW	08/11/09	Cape Fear	16-30-1
Terrells Creek (South Side Haw River)	From source to Cattail Creek	WS-V;NSW	08/11/09	Cape Fear	16-31-(0.5)
Johnson Branch	From source to Terrells Creek	WS-V;NSW	08/11/09	Cape Fear	16-31-1
Cattail Creek	From source to Terrells Creek	WS-V;NSW	08/11/09	Cape Fear	16-31-2
Lick Creek	From source to a point 0.8 mile upstream of N.C. Hwy. 87	WS-V;NSW	08/11/09	Cape Fear	16-31-3-(1)
Dry Creek	From source to a point 0.3 mile downstream of Chatham County SR 1506	WS-V;NSW	08/11/09	Cape Fear	16-34-(0.3)
Robeson Creek	From source to a point 0.7 mile downstream of Chatham County SR 2159	WS-V;NSW	08/11/09	Cape Fear	16-38-(1)
Hill Creek	From source to U.S. Hwy. 64	WS-V;NSW	08/11/09	Cape Fear	16-38-2-(1)
New Hope Creek	From source to a point 0.3 mile upstream of Durham County SR 222	WS-V;NSW	08/11/09	Cape Fear	16-41-1-(0.5)
Long Branch	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-2
Garrett Branch	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-3
Steep Bottom Creek	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-4
Mountain Creek	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-5
Unnamed Tributary at Camp New Hope (Camp New Hope Lake)	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-6
Old Field Creek	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-7
Piney Mountain Creek (Little Creek)	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-8
Church Branch	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-9
Mud Creek	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-10
Sandy Creek	From source to New Hope Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-11

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
Third Fork Creek	From source to a point 2.0 miles upstream of N.C. Hwy. 54	WS-V;NSW	08/11/09	Cape Fear	16-41-1-12-(1)
Bolin Creek (Hogan Lake)	From source to U.S. Hwy. 501 Business	WS-V;NSW	08/11/09	Cape Fear	16-41-1-15-1-(0.
Jones Creek	From source to Bolin Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-15-1-1
Buckhorn Branch	From source to Jones Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-15-1-1-1
Jolly Branch	From source to Bolin Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-15-1-2
Tanbark Branch	From source to Bolin Creek	WS-V;NSW	08/11/09	Cape Fear	16-41-1-15-1-3
Booker Creek (Eastwood Lake)	From source to dam at Eastwood Lake	WS-V,B;NSW	08/11/09	Cape Fear	16-41-1-15-2-(1)
Cedar Fork	From source to Eastwood Lake, Booker Creek	WS-V,B;NSW	08/11/09	Cape Fear	16-41-1-15-2-3
Unnamed Tributary at Wright Mobile Homes	From source to Cedar Fork	WS-V,B;NSW	08/11/09	Cape Fear	16-41-1-15-2-3-1
Booker Creek	From dam at Eastwood Lake to U.S. Hwy. 15	WS-V;NSW	08/11/09	Cape Fear	16-41-1-15-2-(4)
Northeast Creek	From source to N.C. Hwy. 55	WS-V;NSW	08/11/09	Cape Fear	16-41-1-17-(0.3)
Burdens Creek	From source to Durham County SR 2028	WS-V;NSW	08/11/09	Cape Fear	16-41-1-17-1-(0.
Kit Creek	From source to a point 1.3 miles upstream of N.C. Hwy. 55	WS-V;NSW	08/11/09	Cape Fear	16-41-1-17-2-(0.
Morgan Creek	From dam at University Lake to Orange County SR 1919	WS-V;NSW	08/11/09	Cape Fear	16-41-2-(5)
White Oak Creek	From source to a point 0.6 mile upstream of Jack Branch	WS-V;NSW	08/11/09	Cape Fear	16-41-6-(0.3)
Jack Branch	From source to a point 0.8 mile upstream of mouth	WS-V;NSW	08/11/09	Cape Fear	16-41-6-1-(1)
Bachelor Branch	From source to a point 2.0 miles upstream of mouth	WS-V;NSW	08/11/09	Cape Fear	16-41-6-2-(1)
Beaver Creek	From source to NC Hwy 55	WS-IV;NSW	08/11/09	Cape Fear	16-41-10-(0.3)

Classifications from 09/01/2009 to 09/01/2009

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
HAW RIVER	From 0.4 miles downstream of Crane Creek (16-28) to a 0.5 miles upstrea of the Town of Pittsboro water supply intake (located 0.15 mile upstream of U.S. 15/501).	WS-IV;NSW	09/01/09	Cape Fear	16-(28.5)
HAW RIVER	From 0.5 miles upstream of the Town of Pittsboro water supply intake to Town of Pittsboro water supply intake (located 0.15 mile upstream of U.S. 15/501).	WS-IV;NSW,CA	09/01/09	Cape Fear	16-(28.75)
HAW RIVER	From the Town of Pittsboro water supply intake (located 0.15 mile upstream of U.S. 15/501) to a point 0.4 mile downstream of Brooks Branch.	WS-IV;NSW	09/01/09	Cape Fear	16-(28.875)

Name of Stream	*Description*	*Class*	*Date*	*Basin*	*Stream Index #*
HAW RIVER	From source to a point 0.6 miles downstream of U.S. Route 29	WS-V;NSW	03/01/12	Cape Fear	16-(1)
HAW RIVER	From a point 0.6 miles downstream o U.S. Route 29 to a point 0.5 miles upstream of City of Greensboro's intake	WS-IV;NSW	03/01/12	Cape Fear	16-(6.5)
Little Troublesome Creek	From source to a point 0.05 mile upstream from SR2600	WS-V;NSW	03/01/12	Cape Fear	16-7-(1)
Little Troublesome Creek	From a point 0.05 mile upstream from SR2600 to Haw River	WS-IV;NSW	03/01/12	Cape Fear	16-7-(2)
Rose Creek (Apple Pond)	From source to Haw River	WS-IV;NSW	03/01/12	Cape Fear	16-8
Giles Creek	From source to Haw River	WS-IV;NSW	03/01/12	Cape Fear	16-9
HAW RIVER	From a point 0.5 miles upstream of the City of Greensboro's intake to the City of Greensboro's intake, which is located approximately 0.1 mile upstream of Guilford County 2712	WS-IV;NSW,CA	03/01/12	Cape Fear	16-(10)
HAW RIVER	From a point 0.1 mile upstream of SR2712 to a point 0.4 mile downstream of Cane Creek (South side of Haw River)	WS-V;NSW	03/01/12	Cape Fear	16-(10.5)

Benthos Stations

Table 1: Cape Fear Benthos Stations 2002-2020

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
Haw River Subbasin, HUC8 03030002												
303000201	BB32	NC 87	REEDY FK	36.1731	-79.5106	Alamance	7/15/2008	Basin Sample	Full Scale	6.42	Good-Fair	255
303000201	BB32	NC 87	REEDY FK	36.1731	-79.5106	Alamance	8/16/2018	Basin Sample	Full Scale	5.83	Good-Fair	255
303000201	BB362	SR 2128	REEDY FK	36.1728	-79.9533	Guilford	7/10/2003	Basin Sample	EPT	4.5	Good-Fair	20.5
303000201	BB362	SR 2128	REEDY FK	36.1728	-79.9533	Guilford	7/16/2008	Basin Sample	EPT	4.17	Good-Fair	20.5
303000201	BB362	SR 2128	REEDY FK	36.1728	-79.9533	Guilford	9/10/2013	Basin Sample	EPT	4.66	Fair	20.5
303000201	BB362	SR 2128	REEDY FK	36.1728	-79.9533	Guilford	8/13/2018	Basin Sample	EPT	5.04	Fair	20.5
303000201	BB364	SR 2136	BRUSH CR	36.1400	-79.9142	Guilford	6/19/2003	Basin Sample	Full Scale	6.67	Fair	7.4
303000201	BB364	SR 2136	BRUSH CR	36.1400	-79.9142	Guilford	9/18/2013	Basin Sample	EPT	5.57	Fair	7.4
303000201	BB369	BALLINGER RD	HORSEPEN CR	36.1014	-79.9097	Guilford	6/27/2011	Special Study	EPT	6.16	Fair	3.4
303000201	BB386	SR 2269	REEDY FK	36.1578	-79.9683	Guilford	6/19/2003	Special Study	EPT	4.22	Good-Fair	12.7
303000201	BB404	SR 2728	REEDY FK	36.1794	-79.6478	Guilford	7/11/2003	Basin Sample	EPT	6.4	Fair	125
303000201	BB404	SR 2728	REEDY FK	36.1794	-79.6478	Guilford	7/15/2008	Basin Sample	EPT	5.15	Good-Fair	125
303000201	BB404	SR 2728	REEDY FK	36.1794	-79.6478	Guilford	9/18/2013	Basin Sample	EPT	5.33	Fair	125
303000201	BB404	SR 2728	REEDY FK	36.1794	-79.6478	Guilford	8/15/2018	Basin Sample	EPT	6.15	Fair	125
303000201	BB406	SR 2821	S BUFFALO CR	36.0597	-79.7256	Guilford	7/11/2003	Basin Sample	Full Scale	7.28	Poor	33.95
303000201	BB406	SR 2821	S BUFFALO CR	36.0597	-79.7256	Guilford	7/23/2008	Basin Sample	Full Scale	7.02	Fair	33.95

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000201	BB406	SR 2821	S BUFFALO CR	36.0597	-79.7256	Guilford	8/15/2018	Basin Sample	Full Scale	6.88	Fair	33.95
303000201	BB407	SR 2832	N BUFFALO CR	36.1203	-79.7083	Guilford	7/10/2003	Basin Sample	Full Scale	7.89	Poor	37.1
303000201	BB407	SR 2832	N BUFFALO CR	36.1203	-79.7083	Guilford	7/23/2008	Basin Sample	Full Scale	7.32	Fair	37.1
303000201	BB407	SR 2832	N BUFFALO CR	36.1203	-79.7083	Guilford	9/10/2013	Basin Sample	Full Scale	6.89	Fair	37.1
303000201	BB407	SR 2832	N BUFFALO CR	36.1203	-79.7083	Guilford	8/15/2018	Basin Sample	Full Scale	6.96	Fair	37.1
303000201	BB427	US 220	HORSEPEN CR	36.1364	-79.8608	Guilford	7/10/2003	Basin Sample	EPT	6.2	Poor	14.61
303000201	BB427	US 220	HORSEPEN CR	36.1364	-79.8608	Guilford	7/16/2008	Basin Sample	EPT	6.06	Fair	14.61
303000201	BB427	US 220	HORSEPEN CR	36.1364	-79.8608	Guilford	9/11/2013	Basin Sample	EPT	5.98	Fair	14.61
303000201	BB444	US 70	S BUFFALO CR	36.0450	-79.7694	Guilford	7/11/2003	Basin Sample	Full Scale	7.12	Fair	28.1
303000201	BB524	UPS SR 2085 WITHIN RESTORATION	UT TO HORSEPEN CR	36.1067	-79.8789	Guilford	5/7/2013	Special Study	Qual 4	7.17	Poor	1
303000201	BB525	UPS SR 2085 REFERENCE	UT TO HORSEPEN CR	36.1032	-79.8819	Guilford	5/15/2013	Special Study	Qual 4	6.77	Fair	0.81
303000201	BB527	W FRIENDLY AVE	N BUFFALO CR	36.0820	-79.8288	Guilford	6/6/2014	Special Study	Full Scale	7.2	Fair	4.8
303000201	BB533	FRIENDLY RD	UT RYAN CR	36.0218	-79.8220	Guilford	5/6/2016	Special Study	Qual 4	7.14	Poor	1.29
303000201	BB534	RIVERSIDE DR	UT RYAN CR	36.0253	-79.8144	Guilford	5/4/2016	Special Study	Qual 4	7.56	Poor	1.6
303000201	BB535	LYNNHAVEN RD	UT RYAN CR	36.0255	-79.8088	Guilford	5/4/2016	Special Study	Qual 4	7.03	Poor	1.7
303000201	BB536	RANDLEMAN RD	UT RYAN CR	36.0287	-79.8030	Guilford	5/4/2016	Special Study	Qual 4	6.65	Fair	4.2
303000201	BB537	ELM ST	UT RYAN CR	36.0300	-79.7910	Guilford	4/5/2016	Special Study	Qual 4	7.08	Poor	5
303000201	BB93	MARRIOT DR	BRUSH CR	36.1086	-79.9406	Guilford	6/19/2003	Special Study	Qual 5	6.72	Not Rated	1.8
303000202	BB163	NC 87	HAW R	36.1825	-79.5094	Alamance	9/15/2003	Basin Sample	Full Scale	6.11	Good-Fair	188

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000202	BB163	NC 87	HAW R	36.1825	-79.5094	Alamance	7/15/2008	Basin Sample	Full Scale	6.25	Good-Fair	188
303000202	BB163	NC 87	HAW R	36.1825	-79.5094	Alamance	9/26/2013	Basin Sample	Full Scale	6.49	Good-Fair	188
303000202	BB212	SR 1001	TROUBLESOME CR	36.3000	-79.7781	Rockingham	4/10/2002	Special Study	Full Scale	5.86	Good-Fair	25.8
303000202	BB392	SR 2344	TROUBLESOME CR	36.2656	-79.8897	Rockingham	4/9/2002	Special Study	Full Scale	5.87	Good-Fair	8.76
303000202	BB395	SR 2351	TROUBLESOME CR	36.2786	-79.8500	Rockingham	4/9/2002	Basin Sample	Full Scale	5.52	Good	13.6
303000202	BB396	SR 2422	TROUBLESOME CR	36.3072	-79.7381	Rockingham	4/9/2002	Basin Sample	Full Scale	5.33	Good-Fair	32.2
303000202	BB396	SR 2422	TROUBLESOME CR	36.3072	-79.7381	Rockingham	7/16/2008	Basin Sample	EPT	4.67	Good-Fair	32.2
303000202	BB396	SR 2422	TROUBLESOME CR	36.3072	-79.7381	Rockingham	9/25/2013	Basin Sample	EPT	5.38	Fair	32.2
303000202	BB400	SR 2600	L TROUBLESOME CR	36.2825	-79.6119	Rockingham	8/26/2003	Basin Sample	EPT	5.54	Fair	12
303000202	BB400	SR 2600	L TROUBLESOME CR	36.2825	-79.6119	Rockingham	7/16/2008	Basin Sample	Full Scale	6.25	Good-Fair	12
303000202	BB400	SR 2600	L TROUBLESOME CR	36.2825	-79.6119	Rockingham	8/14/2018	Basin Sample	Full Scale	6	Fair	12
303000202	BB490	SR 2719	UT HAW R	36.2372	-79.5717	Guilford	5/17/2007	Special Study	Qual 4	5.44	Not Impaired	1.54
303000202	BB5	NC 150	HAW R	36.2667	-79.6042	Rockingham	7/15/2008	Basin Sample	EPT	4.6	Good-Fair	160
303000203	BB130	NC 49	BIG ALAMANCE CR	36.0281	-79.4414	Alamance	8/26/2003	Basin Sample	EPT	6.4	Fair	156
303000203	BB130	NC 49	BIG ALAMANCE CR	36.0281	-79.4414	Alamance	7/14/2008	Basin Sample	EPT	6.1	Fair	156
303000203	BB130	NC 49	BIG ALAMANCE CR	36.0281	-79.4414	Alamance	7/18/2013	Basin Sample	EPT	5.64	Good-Fair	156
303000203	BB130	NC 49	BIG ALAMANCE CR	36.0281	-79.4414	Alamance	8/15/2018	Basin Sample	EPT	5.91	Good-Fair	156
303000203	BB131	NC 49	L ALAMANCE CR	36.0528	-79.4350	Alamance	6/23/2003	Special Study	Full Scale	7.02	Poor	9
303000203	BB193	OVERBROOK RD	L ALAMANCE CR	36.0833	-79.4528	Alamance	6/24/2003	Special Study	Qual 4	7.03	Poor	4.4

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000203	BB249	SR 1136	STINKING QUARTER CR	36.0142	-79.4328	Alamance	7/7/2003	Basin Sample	EPT	5.34	Fair	81
303000203	BB249	SR 1136	STINKING QUARTER CR	36.0142	-79.4328	Alamance	11/21/2003	Basin Sample	EPT	4.9	Good-Fair	81
303000203	BB249	SR 1136	STINKING QUARTER CR	36.0142	-79.4328	Alamance	7/17/2013	Basin Sample	EPT	5.68	Fair	81
303000203	BB388	SR 2309	L ALAMANCE CR	36.0347	-79.4086	Alamance	6/23/2003	Basin Sample	Full Scale	6.79	Fair	14.6
303000203	BB388	SR 2309	L ALAMANCE CR	36.0347	-79.4086	Alamance	9/12/2006	Special Study	Full Scale	6.98	Poor	14.6
303000203	BB388	SR 2309	L ALAMANCE CR	36.0347	-79.4086	Alamance	7/14/2008	Basin Sample	Full Scale	7.06	Fair	14.6
303000203	BB388	SR 2309	L ALAMANCE CR	36.0347	-79.4086	Alamance	7/18/2013	Basin Sample	Full Scale	6.68	Fair	14.6
303000203	BB388	SR 2309	L ALAMANCE CR	36.0347	-79.4086	Alamance	8/13/2018	Basin Sample	Full Scale	7.1	Fair	14.6
303000203	BB42	ENGLEMAN AVE	COBLE BR	36.0861	-79.4697	Alamance	6/24/2003	Special Study	Qual 4	6.91	Not Rated	0.98
303000203	BB46	I-85 FRONTAGE RD	L ALAMANCE CR	36.0650	-79.4378	Alamance	9/12/2006	Special Study	Full Scale	7.74	Poor	7.5
303000203	BB47	NC 54	L ALAMANCE CR	36.0744	-79.4439	Alamance	9/12/2006	Special Study	Full Scale	7.71	Poor	6.52
303000203	BB505	SR 1131	STINKING QUARTER CR	36.0026	-79.4677	Alamance	3/11/2009	Basin Sample	EPT	4.66	Good-Fair	62.2
303000203	BB78	NR I-85	L ALAMANCE CR	36.0650	-79.4378	Alamance	6/23/2003	Special Study	Full Scale	7.58	Poor	7.4
303000204	BB19	SR 1594	BASIN CR	36.1747	-79.4831	Alamance	9/11/2006	Special Study	Qual 4	7.26	Not Rated	2.6
303000204	BB2	SR 1549	W UT HAW R	36.1417	-79.4339	Alamance	9/25/2006	Special Study	Qual 4	5.84	Not Rated	1.47
303000204	BB20	SR 1529	DRY CR	36.1303	-79.4775	Alamance	9/11/2006	Special Study	Qual 4	6.91	Not Rated	2.7
303000204	BB214	SR 1002	JORDAN CR	36.2050	-79.3839	Alamance	8/26/2003	Basin Sample	EPT	4.91	Good-Fair	13.8
303000204	BB214	SR 1002	JORDAN CR	36.2050	-79.3839	Alamance	3/9/2009	Basin Sample	EPT	4.39	Fair	13.8
303000204	BB214	SR 1002	JORDAN CR	36.2050	-79.3839	Alamance	7/12/2013	Basin Sample	EPT	6.1	Fair	13.8

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000204	BB22	NC 54	HAW R	36.0484	-79.3667	Alamance	7/14/2008	Basin Sample	Full Scale	6.1	Good-Fair	607
303000204	BB22	NC 54	HAW R	36.0484	-79.3667	Alamance	6/25/2018	Basin Sample	Full Scale	5.96	Good-Fair	607
303000204	BB231	SR 1100	STONY CR	36.2561	-79.4428	Caswell	7/10/2003	Basin Sample	EPT	6.32	Fair	23.9
303000204	BB231	SR 1100	STONY CR	36.2561	-79.4428	Caswell	7/17/2013	Basin Sample	EPT	5.83	Fair	23.9
303000204	BB231	SR 1100	STONY CR	36.2561	-79.4428	Caswell	8/14/2018	Basin Sample	EPT	5.16	Fair	23.9
303000204	BB3	SR 1500	W UT TRAVIS CR	36.1242	-79.5275	Alamance	9/25/2006	Special Study	Qual 4	6.04	Not Rated	1.6
303000204	BB33	SR 1504	TICKLE CR	36.1381	-79.5128	Alamance	9/11/2006	Special Study	Full Scale	6.74	Fair	3.8
303000204	BB34	NC 87	TRAVIS CR	36.1425	-79.4972	Alamance	9/11/2006	Special Study	Full Scale	6.66	Fair	13.7
303000204	BB35	SR 1504	TRAVIS CR	36.1281	-79.5125	Alamance	9/11/2006	Special Study	Full Scale	6.35	Fair	8.81
303000204	BB485	SR 1504	E UT TRAVIS CR	36.1272	-79.5127	Alamance	9/25/2006	Special Study	Qual 4	6.44	Not Rated	2.02
303000204	BB492	SR 1579	BUTTERMILK CR	36.2311	-79.5017	Alamance	5/18/2007	Special Study	Qual 4	4.97	Not Rated	0.87
303000204	BB503	SR 1104	STONY CR	36.2573	-79.4471	Caswell	3/9/2009	Basin Sample	EPT	5.16	Good-Fair	12.5
303000204	BB518	NC 49	UT STAGG CR	36.1933	-79.2686	Alamance	8/11/2010	Special Study	Qual 4	5.89	Fair	2.6
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	7/15/2003	Basin Sample	EPT	5.26	Fair	21
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	11/21/2003	Basin Sample	EPT	4.68	Good-Fair	21
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	3/12/2008	Special Study	EPT	4.29	Fair	21
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	3/10/2009	Special Study	EPT	4.29	Good-Fair	21
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	3/19/2009	Basin Sample	EPT	4.37	Good-Fair	21
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	6/4/2013	Basin Sample	EPT	5.16	Poor	21

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000205	BB158	NC 87	TERRELLS CR	35.8217	-79.2556	Chatham	4/30/2018	Basin Sample	EPT	3.32	Fair	21
303000205	BB220	SR 1005	HAW R	35.8950	-79.2583	Alamance	10/3/2002	Basin Sample	EPT	4.7	Good-Fair	1042
303000205	BB220	SR 1005	HAW R	35.8950	-79.2583	Alamance	7/23/2008	Basin Sample	Full Scale	5.38	Good	1042
303000205	BB241	SR 1114	CANE CR	35.9869	-79.2064	Orange	7/15/2003	Basin Sample	EPT	4.92	Good-Fair	7.57
303000205	BB241	SR 1114	CANE CR	35.9869	-79.2064	Orange	8/14/2003	Basin Sample	EPT	5	Good-Fair	7.57
303000205	BB241	SR 1114	CANE CR	35.9869	-79.2064	Orange	3/11/2009	Basin Sample	EPT	4.46	Good-Fair	7.57
303000205	BB241	SR 1114	CANE CR	35.9869	-79.2064	Orange	5/17/2012	Special Study	Full Scale	5.51	Good-Fair	7.57
303000205	BB241	SR 1114	CANE CR	35.9869	-79.2064	Orange	4/26/2018	Basin Sample	EPT	5.09	Fair	7.57
303000205	BB241	SR 1114	CANE CR	35.9869	-79.2064	Orange	6/2/2021	Special Study	EPT	5.1	Good-Fair	7.57
303000205	BB310	SR 1539	COLLINS CR	35.8569	-79.2319	Chatham	7/15/2003	Basin Sample	EPT	5.21	Good-Fair	19.5
303000205	BB310	SR 1539	COLLINS CR	35.8569	-79.2319	Chatham	3/19/2009	Basin Sample	EPT	5.06	Fair	19.5
303000205	BB310	SR 1539	COLLINS CR	35.8569	-79.2319	Chatham	6/4/2013	Basin Sample	EPT	4.45	Fair	19.5
303000205	BB310	SR 1539	COLLINS CR	35.8569	-79.2319	Chatham	4/30/2018	Basin Sample	EPT	3.96	Fair	19.5
303000205	BB359	SR 2116	VARNALS CR	35.9872	-79.3589	Alamance	6/6/2014	Special Study	Full Scale	4.91	Good	11.45
303000205	BB374	SR 2158	HAW CR	36.0003	-79.3439	Alamance	7/7/2003	Basin Sample	EPT	5.5	Good-Fair	28.5
303000205	BB374	SR 2158	HAW CR	36.0003	-79.3439	Alamance	7/14/2008	Basin Sample	EPT	4.87	Fair	28.5
303000205	BB374	SR 2158	HAW CR	36.0003	-79.3439	Alamance	6/5/2013	Basin Sample	EPT	4.72	Fair	28.5
303000205	BB374	SR 2158	HAW CR	36.0003	-79.3439	Alamance	5/2/2018	Basin Sample	EPT	4.46	Fair	28.5
303000205	BB374	SR 2158	HAW CR	36.0003	-79.3439	Alamance	6/25/2018	Basin Sample	EPT	5.44	Fair	28.5

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000205	BB377	SR 2174	MARYS CR	35.9158	-79.3081	Alamance	3/10/2003	Basin Sample	EPT	3.62	Good-Fair	11.37
303000205	BB377	SR 2174	MARYS CR	35.9158	-79.3081	Alamance	7/15/2003	Basin Sample	EPT	4.8	Good-Fair	11.37
303000205	BB377	SR 2174	MARYS CR	35.9158	-79.3081	Alamance	3/9/2009	Basin Sample	EPT	3.97	Good	11.37
303000205	BB377	SR 2174	MARYS CR	35.9158	-79.3081	Alamance	4/30/2018	Basin Sample	EPT	4.01	Good	11.37
303000205	BB488	SR 1525	FERRELS CR	35.8266	-79.1912	Chatham	3/12/2008	Special Study	EPT	5.41	Fair	15.8
303000205	BB488	SR 1525	FERRELS CR	35.8266	-79.1912	Chatham	3/30/2012	Special Study	Full Scale	6.69	Fair	15.8
303000205	BB491	SR 1005	WELLS CR	35.8986	-79.4569	Alamance	5/18/2007	Special Study	Qual 4	5.72	Not Rated	3.09
303000205	BB522	ABOVE SR 1006	COLLINS CR	35.9461	-79.1946	Orange	5/17/2012	Special Study	Qual 4	7.2	Poor	1.66
303000205	BB523	HWY 54	COLLINS CR	35.9314	-79.2059	Orange	5/17/2012	Special Study	Qual 4	6.47	Not Rated	3.29
303000205	BB529	SR 1545	HAW R	35.8332	-79.2201	Chatham	9/25/2013	Basin Sample	Full Scale	5.8	Good	1210
303000205	BB529	SR 1545	HAW R	35.8332	-79.2201	Chatham	6/26/2018	Basin Sample	Full Scale	5.51	Good	1210
303000205	BB530	SR 2338	LONG BR	35.9199	-79.3290	Alamance	5/7/2015	Special Study	Qual 4	5.08	Good-Fair	2.4
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	9/24/2002	Special Study	EPT	4.25	Poor	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	1/9/2003	Special Study	EPT	3.97	Fair	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	3/5/2003	Special Study	EPT	3.04	Fair	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	5/6/2003	Special Study	EPT	3.72	Good-Fair	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	7/7/2003	Basin Sample	EPT	4.5	Good-Fair	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	10/1/2003	Special Study	EPT	4.25	Good	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	6/2/2004	Special Study	EPT	4.21	Good-Fair	8.26

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	3/12/2008	Special Study	EPT	3.9	Fair	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	3/11/2009	Basin Sample	EPT	4.13	Good	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	6/5/2013	Basin Sample	EPT	4.81	Good-Fair	8.26
303000206	BB146	NC 54	MORGAN CR	35.9236	-79.1156	Orange	4/26/2018	Basin Sample	EPT	3.98	Good	8.26
303000206	BB150	NC 55	KIT CR	35.8533	-78.8950	Wake	4/24/2003	Special Study	EPT	4.56	Fair	6.8
303000206	BB238	SR 1107	NEW HOPE CR	35.8847	-78.9667	Durham	7/7/2003	Basin Sample	Full Scale	6.67	Fair	74.4
303000206	BB238	SR 1107	NEW HOPE CR	35.8847	-78.9667	Durham	7/22/2008	Basin Sample	Full Scale	6.54	Fair	74.4
303000206	BB314	SR 1603	WHITE OAK CR	35.7601	-78.9204	Wake	3/5/2003	Basin Sample	EPT	5.12	Poor	12
303000206	BB314	SR 1603	WHITE OAK CR	35.7601	-78.9204	Wake	4/24/2003	Special Study	EPT	4.68	Fair	12
303000206	BB324	SR 1730	NEW HOPE CR	35.9919	-79.0458	Orange	6/12/2003	Special Study	Full Scale	5.46	Good-Fair	22.4
303000206	BB416	UMSTEAD RD	TANBARK BR	35.9203	-79.0647	Orange	3/14/2002	Special Study	Qual 5	7.22	Not Rated	0.55
303000206	BB449	VILLAGE RD	BOLIN CR	35.9228	-79.0667	Orange	3/14/2002	Special Study	Full Scale	6.8	Fair	7.93
303000206	BB493	NC 86	BOOKER CR	35.9525	-79.0578	Orange	5/22/2007	Special Study	Qual 4	5.92	Not Rated	0.79
303000206	BB506	ESTES DR UPS 400M	BOLIN CR	35.9248	-79.0742	Orange	7/9/2009	Basin Sample	Full Scale	5.71	Good-Fair	7.17
303000206	BB53	BE OWASA	MORGAN CR	35.8928	-79.0165	Orange	7/7/2003	Basin Sample	Full Scale	6.7	Fair	41.6
303000206	BB545	FAN BRANCH TRAIL	WILSON CR	35.8920	-79.0614	Orange	2/9/2021	Special Study	EPT	5.17	Fair	3.52
303000206	BB62	BOLINWOOD DR	BOLIN CR	35.9247	-79.0542	Orange	3/14/2002	Special Study	Full Scale	7.66	Poor	9
303000207	BB226	SR 1012	TURKEY CR	35.7025	-79.1739	Chatham	5/8/2009	Special Study	Qual 4	6.13	Fair	4.07
303000207	BB307	SR 1520	DRY CR	35.8036	-79.2119	Chatham	7/15/2003	Basin Sample	EPT	5.72	Fair	17.7

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000207	BB307	SR 1520	DRY CR	35.8036	-79.2119	Chatham	11/21/2003	Basin Sample	EPT	5.25	Fair	17.7
303000207	BB307	SR 1520	DRY CR	35.8036	-79.2119	Chatham	3/19/2009	Basin Sample	EPT	4.18	Fair	17.7
303000207	BB307	SR 1520	DRY CR	35.8036	-79.2119	Chatham	6/4/2013	Basin Sample	EPT	4.83	Fair	17.7
303000207	BB307	SR 1520	DRY CR	35.8036	-79.2119	Chatham	5/1/2018	Basin Sample	EPT	3.25	Poor	17.7
303000207	BB320	SR 1711	POKEBERRY CR	35.7742	-79.1200	Chatham	3/5/2003	Basin Sample	EPT	4.42	Good	11.5
303000207	BB320	SR 1711	POKEBERRY CR	35.7742	-79.1200	Chatham	7/15/2003	Basin Sample	EPT	5	Good-Fair	11.5
303000207	BB320	SR 1711	POKEBERRY CR	35.7742	-79.1200	Chatham	3/19/2009	Basin Sample	EPT	4.06	Good-Fair	11.5
303000207	BB320	SR 1711	POKEBERRY CR	35.7742	-79.1200	Chatham	6/4/2013	Basin Sample	EPT	4.76	Fair	11.5
303000207	BB320	SR 1711	POKEBERRY CR	35.7742	-79.1200	Chatham	4/26/2018	Basin Sample	EPT	3.98	Excellent	11.5
303000207	BB423	US 15-501	TURKEY CR	35.7022	-79.1788	Chatham	5/8/2009	Special Study	Qual 4	6.25	Fair	3.34
303000207	BB443	US 64	HAW R	35.7311	-79.1061	Chatham	10/3/2002	Basin Sample	EPT	4.01	Good	1296
303000207	BB443	US 64	HAW R	35.7311	-79.1061	Chatham	7/23/2008	Basin Sample	Full Scale	5.13	Excellent	1296
303000207	BB443	US 64	HAW R	35.7311	-79.1061	Chatham	9/26/2013	Basin Sample	Full Scale	5.07	Excellent	1296
303000207	BB443	US 64	HAW R	35.7311	-79.1061	Chatham	6/26/2018	Basin Sample	Full Scale	5.21	Good	1296
303000207	BB52	SR 1012 UPS OF UT	CAMP CR	35.6962	-79.1595	Chatham	5/5/2009	Special Study	Qual 4	4.45	Good	2.6
303000207	BB520	SR 1012 DNS FROM UT	CAMP CR	35.6969	-79.1595	Chatham	5/5/2009	Special Study	Qual 4	5.16	Good	2.5
Deep River Subbasin, HUC8 03030003												
303000301	BB115	MILLHOUSE SCHOOL RD	UT E FK DEEP R	36.0606	-79.9636	Guilford	5/19/2003	Special Study	Qual 5	5.59	Not Impaired	2.6
303000301	BB135	US 220	HASKETTS CR	35.7336	-79.8203	Randolph	4/14/2003	Special Study	Full Scale	7.02	Poor	1.6

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000301	BB137	US 220 BUS	HASKETTS CR	35.7642	-79.8069	Randolph	4/15/2003	Special Study	Full Scale	6.81	Poor	4.3
303000301	BB240	SR 1113	HICKORY CR	35.9694	-79.8642	Guilford	4/14/2003	Special Study	Full Scale	5.57	Good-Fair	4.81
303000301	BB247	SR 1131	HICKORY CR	35.9636	-79.8653	Guilford	4/16/2003	Basin Sample	Full Scale	4.26	Good-Fair	8.14
303000301	BB247	SR 1131	HICKORY CR	35.9636	-79.8653	Guilford	3/9/2009	Basin Sample	EPT	5.06	Good-Fair	8.14
303000301	BB247	SR 1131	HICKORY CR	35.9636	-79.8653	Guilford	9/12/2013	Basin Sample	EPT	6.05	Fair	8.14
303000301	BB248	SR 1132	HICKORY CR	35.9403	-79.8689	Guilford	4/16/2003	Special Study	Full Scale	5.39	Good-Fair	10.3
303000301	BB251	SR 1145	RICHLAND CR	35.9406	-79.9022	Guilford	7/7/2003	Basin Sample	Full Scale	6.91	Fair	16
303000301	BB302	SR 1504	HASKETTS CR	35.7542	-79.8106	Randolph	4/14/2003	Special Study	Full Scale	7.14	Poor	2.9
303000301	BB302	SR 1504	HASKETTS CR	35.7542	-79.8106	Randolph	4/18/2006	Special Study	Qual 4	6.89	Poor	2.9
303000301	BB312	SR 1541	E FK DEEP R	36.0375	-79.9458	Guilford	5/20/2003	Basin Sample	Full Scale	6.87	Fair	14.7
303000301	BB312	SR 1541	E FK DEEP R	36.0375	-79.9458	Guilford	7/22/2008	Basin Sample	EPT	5.72	Good-Fair	14.7
303000301	BB312	SR 1541	E FK DEEP R	36.0375	-79.9458	Guilford	9/11/2013	Basin Sample	EPT	5.85	Fair	14.7
303000301	BB312	SR 1541	E FK DEEP R	36.0375	-79.9458	Guilford	8/13/2018	Basin Sample	EPT	5.86	Fair	14.7
303000301	BB313	SR 1556	E FK DEEP R	36.0653	-79.9558	Guilford	5/19/2003	Special Study	Full Scale	6.96	Fair	6.32
303000301	BB333	SR 1850	W FK DEEP R	36.0564	-80.0217	Guilford	4/15/2003	Special Study	Full Scale	5.18	Good-Fair	11.6
303000301	BB333	SR 1850	W FK DEEP R	36.0564	-80.0217	Guilford	7/7/2003	Basin Sample	EPT	4.91	Good-Fair	11.6
303000301	BB333	SR 1850	W FK DEEP R	36.0564	-80.0217	Guilford	7/22/2008	Basin Sample	EPT	5.23	Good-Fair	11.6
303000301	BB333	SR 1850	W FK DEEP R	36.0564	-80.0217	Guilford	9/11/2013	Basin Sample	EPT	5.31	Fair	11.6
303000301	BB333	SR 1850	W FK DEEP R	36.0564	-80.0217	Guilford	6/25/2018	Basin Sample	EPT	4.31	Fair	11.6

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000301	BB339	SR 1929	MUDDY CR	35.8747	-79.8778	Randolph	7/8/2003	Basin Sample	EPT	6.3	Fair	16.6
303000301	BB363	SR 2128	HASKETTS CR	35.7681	-79.7792	Randolph	4/16/2003	Special Study	Full Scale	7.45	Poor	11.8
303000301	BB370	SR 2149	HASKETTS CR	35.7597	-79.7922	Randolph	4/16/2003	Special Study	Full Scale	7.32	Fair	10.5
303000301	BB378	SR 2182	PENWOOD BR	35.7367	-79.7858	Randolph	4/15/2003	Special Study	Full Scale	6.5	Fair	2.8
303000301	BB378	SR 2182	PENWOOD BR	35.7367	-79.7858	Randolph	4/18/2006	Special Study	Qual 4	6.2	Fair	2.8
303000301	BB382	SR 2261	PENWOOD BR	35.7517	-79.7892	Randolph	4/15/2003	Special Study	Full Scale	6.28	Fair	4.3
303000301	BB414	THATCHER RD	E FK DEEP R	36.0906	-79.9678	Guilford	5/19/2003	Special Study	Qual 5	5.69	Good-Fair	2.74
303000301	BB429	US 220 BUS	DEEP R	35.8235	-79.8027	Randolph	7/22/2003	Basin Sample	Full Scale	5.85	Good-Fair	168
303000301	BB429	US 220 BUS	DEEP R	35.8235	-79.8027	Randolph	9/12/2013	Basin Sample	Full Scale	6.55	Fair	168
303000301	BB429	US 220 BUS	DEEP R	35.8235	-79.8027	Randolph	6/26/2018	Basin Sample	Full Scale	6.43	Good-Fair	168
303000301	BB494	SR 1915	UT MUDDY FK	35.9083	-79.9386	Randolph	4/18/2006	Special Study	Qual 4	6.55	Fair	2.56
303000301	BB531	CHATFIELD DR	UT DEEP R	35.9724	-79.9363	Guilford	5/7/2015	Special Study	Qual 4	5.89	Fair	0.7
303000301	BB59	BISBEE RD	REDDICKS CR	35.9778	-79.8939	Guilford	4/16/2003	Special Study	Qual 5	6.9	Fair	5.41
303000301	BB60	BISHOP RD	HICKORY CR	35.9919	-79.8494	Guilford	4/14/2003	Special Study	Qual 5	6.1	Fair	2.39
303000301	BB64	BRANDY RD	JENNY BR	35.9719	-79.8889	Guilford	4/15/2003	Special Study	Qual 5	6.02	Fair	1.67
303000301	BB77	GROOMTOWN RD	REDDICKS CR	35.9747	-79.8850	Guilford	4/15/2003	Special Study	Full Scale	5.72	Good-Fair	-1
303000301	BB87	JAMESFORD RD	LONG BR	36.0306	-79.9386	Guilford	5/19/2003	Special Study	Full Scale	6.55	Fair	3.48
303000302	BB113	NC 22	BRUSH CR	35.6014	-79.5833	Randolph	7/8/2003	Basin Sample	EPT	5.05	Good-Fair	67
303000302	BB113	NC 22	BRUSH CR	35.6014	-79.5833	Randolph	3/10/2009	Basin Sample	EPT	4.85	Good-Fair	67

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000302	BB113	NC 22	BRUSH CR	35.6014	-79.5833	Randolph	4/3/2018	Basin Sample	EPT	4.58	Poor	67
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	9/30/2002	Special Study	EPT	4.59	Good	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	4/16/2003	Special Study	Full Scale	5.04	Good	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	7/8/2003	Basin Sample	EPT	4.51	Good-Fair	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	3/10/2009	Basin Sample	EPT	4.35	Good	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	5/18/2010	Special Study	Full Scale	5.7	Good-Fair	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	4/2/2012	Special Study	Full Scale	5.11	Good	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	4/5/2012	Special Study	Full Scale	5.23	Good	45
303000302	BB398	SR 2481	SANDY CR	35.7850	-79.6658	Randolph	4/3/2018	Basin Sample	Full Scale	5.23	Excellent	45
303000302	BB409	SR 2873	RICHLAND CR	35.6083	-79.6194	Randolph	7/8/2003	Basin Sample	EPT	4.42	Good	65.1
303000302	BB409	SR 2873	RICHLAND CR	35.6083	-79.6194	Randolph	3/10/2009	Basin Sample	EPT	4.08	Good	65.1
303000302	BB409	SR 2873	RICHLAND CR	35.6083	-79.6194	Randolph	4/3/2018	Basin Sample	EPT	4.51	Good-Fair	65.1
303000302	BB452	SR 2615	DEEP R	35.7276	-79.6548	Randolph	7/22/2003	Basin Sample	Full Scale	5.61	Good	354
303000302	BB452	SR 2615	DEEP R	35.7276	-79.6548	Randolph	7/22/2008	Basin Sample	Full Scale	5.69	Good	354
303000302	BB452	SR 2615	DEEP R	35.7276	-79.6548	Randolph	9/12/2013	Basin Sample	EPT	3.88	Good	354
303000302	BB452	SR 2615	DEEP R	35.7276	-79.6548	Randolph	6/26/2018	Basin Sample	Full Scale	5.08	Good	354
303000303	BB173	SR 1628	MCLENDONS CR	35.4503	-79.4225	Moore	5/18/2016	Special Study	Full Scale	6.25	Fair	98.55
303000303	BB175	NC 22	PARKWOOD BR	35.4081	-79.4850	Moore	5/16/2005	Special Study	Qual 4	5.04	Good	2.9
303000303	BB456	NR MOUTH	HAYSTACK CR	35.3389	-79.5661	Moore	3/4/2021	Special Study	Qual 4	4.06	Not Impaired	0.63

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000304	BB119	NC 24-27	WET CR	35.3903	-79.6408	Moore	7/9/2003	Basin Sample	EPT	4.53	Good	16
303000304	BB152	NC 705	BEAR CR	35.4408	-79.5892	Moore	7/9/2003	Basin Sample	Full Scale	5.4	Good	138
303000304	BB152	NC 705	BEAR CR	35.4408	-79.5892	Moore	7/24/2008	Basin Sample	Full Scale	6.69	Fair	138
303000304	BB152	NC 705	BEAR CR	35.4408	-79.5892	Moore	6/5/2013	Basin Sample	Full Scale	6.12	Good-Fair	138
303000304	BB159	NC 22	BUFFALO CR	35.4708	-79.5169	Moore	7/9/2003	Basin Sample	EPT	4.82	Good-Fair	22
303000304	BB159	NC 22	BUFFALO CR	35.4708	-79.5169	Moore	3/23/2009	Basin Sample	EPT	3.87	Good-Fair	22
303000304	BB159	NC 22	BUFFALO CR	35.4708	-79.5169	Moore	6/5/2013	Basin Sample	EPT	4.13	Good-Fair	22
303000304	BB159	NC 22	BUFFALO CR	35.4708	-79.5169	Moore	4/2/2018	Basin Sample	EPT	4.03	Good-Fair	22
303000304	BB167	SR 1275	MILL CR	35.4017	-79.6611	Moore	7/9/2003	Basin Sample	EPT	3.8	Good	17.4
303000304	BB167	SR 1275	MILL CR	35.4017	-79.6611	Moore	2/5/2008	Special Study	EPT	3.9	Good-Fair	17.4
303000304	BB167	SR 1275	MILL CR	35.4017	-79.6611	Moore	3/23/2009	Basin Sample	EPT	3.57	Excellent	17.4
303000304	BB274	SR 1370	COTTON CR	35.3872	-79.7375	Montgomery	7/26/2007	Special Study	Full Scale	5.75	Good-Fair	6.98
303000304	BB279	SR 1400	CABIN CR	35.3806	-79.7192	Moore	9/30/2002	Special Study	EPT	4.67	Poor	11.9
303000304	BB279	SR 1400	CABIN CR	35.3806	-79.7192	Moore	2/4/2003	Special Study	EPT	3.98	Good	11.9
303000304	BB279	SR 1400	CABIN CR	35.3806	-79.7192	Moore	4/30/2003	Special Study	EPT	3.75	Good	11.9
303000304	BB298	SR 1456	DEEP R	35.5003	-79.5811	Moore	10/3/2002	Special Study	EPT	3.69	Good	628
303000304	BB298	SR 1456	DEEP R	35.5003	-79.5811	Moore	7/22/2003	Basin Sample	Full Scale	4.91	Excellent	628
303000304	BB298	SR 1456	DEEP R	35.5003	-79.5811	Moore	7/22/2008	Basin Sample	Full Scale	5.3	Good	628
303000304	BB298	SR 1456	DEEP R	35.5003	-79.5811	Moore	9/13/2013	Basin Sample	Full Scale	5.31	Good	628

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000304	BB298	SR 1456	DEEP R	35.5003	-79.5811	Moore	7/2/2018	Basin Sample	Full Scale	4.53	Excellent	628
303000304	BB526	SR 1270	WET CR	35.3469	-79.6414	Moore	6/5/2013	Basin Sample	EPT	3.99	Good-Fair	8.4
303000304	BB526	SR 1270	WET CR	35.3469	-79.6414	Moore	4/2/2018	Basin Sample	EPT	3.86	Good	8.4
303000305	BB166	NC 902	HARLANDS CR	35.6917	-79.2444	Chatham	7/21/2003	Basin Sample	EPT	4.88	Good-Fair	12.7
303000305	BB166	NC 902	HARLANDS CR	35.6917	-79.2444	Chatham	3/19/2009	Basin Sample	EPT	4.11	Good-Fair	12.7
303000305	BB166	NC 902	HARLANDS CR	35.6917	-79.2444	Chatham	6/4/2013	Basin Sample	EPT	3.92	Fair	12.7
303000305	BB166	NC 902	HARLANDS CR	35.6917	-79.2444	Chatham	5/1/2018	Basin Sample	EPT	2.2	Fair	12.7
303000305	BB174	NR US 64	LOVES CR	35.7306	-79.4261	Chatham	6/24/2003	Special Study	Full Scale	6.82	Fair	8.22
303000305	BB192	US 64	ROCKY R	35.7353	-79.4234	Chatham	7/21/2003	Basin Sample	Full Scale	6.5	Fair	69.4
303000305	BB192	US 64	ROCKY R	35.7353	-79.4234	Chatham	9/24/2013	Basin Sample	Full Scale	6.29	Good-Fair	69.4
303000305	BB192	US 64	ROCKY R	35.7353	-79.4234	Chatham	5/2/2018	Basin Sample	Full Scale	6.3	Fair	69.4
303000305	BB195	GREENSBORO RD	UT LOVES CR	35.7189	-79.4597	Chatham	6/23/2003	Special Study	Qual 5	7.31	Not Rated	0.05
303000305	BB206	REEVES CHAPEL RD	MEADOW CR	35.6908	-79.3725	Chatham	6/25/2003	Special Study	Full Scale	6.69	Fair	4.6
303000305	BB210	SECOND AVE	LOVES CR	35.7186	-79.4553	Chatham	6/24/2003	Special Study	Full Scale	6.94	Fair	5.61
303000305	BB221	SR 1006	LOVES CR	35.6931	-79.4736	Chatham	6/23/2003	Special Study	Qual 5	7.23	Not Rated	1.08
303000305	BB29	WWTP RD	LOVES CR	35.7267	-79.4417	Chatham	6/24/2003	Special Study	Full Scale	7.31	Fair	7.65
303000305	BB36	NR PATTERSON ST	LOVES CR	35.7069	-79.4606	Chatham	6/23/2003	Special Study	Qual 5	6.08	Not Rated	2.32
303000305	BB360	SR 2120	TICK CR	35.6658	-79.3855	Chatham	7/22/2003	Basin Sample	Full Scale	6.19	Good-Fair	16.8
303000305	BB360	SR 2120	TICK CR	35.6658	-79.3855	Chatham	3/24/2009	Basin Sample	EPT	4.72	Fair	16.8

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000305	BB360	SR 2120	TICK CR	35.6658	-79.3855	Chatham	6/4/2013	Basin Sample	EPT	5.1	Poor	16.8
303000305	BB360	SR 2120	TICK CR	35.6658	-79.3855	Chatham	4/5/2018	Basin Sample	EPT	4.05	Fair	16.8
303000305	BB372	SR 2155	BEAR CR	35.6319	-79.2367	Chatham	3/10/2003	Basin Sample	EPT	4.99	Good-Fair	50.4
303000305	BB372	SR 2155	BEAR CR	35.6319	-79.2367	Chatham	3/23/2009	Basin Sample	EPT	4.78	Good-Fair	50.4
303000305	BB372	SR 2155	BEAR CR	35.6319	-79.2367	Chatham	6/4/2013	Basin Sample	EPT	5.23	Fair	50.4
303000305	BB372	SR 2155	BEAR CR	35.6319	-79.2367	Chatham	4/5/2018	Basin Sample	EPT	4.63	Fair	50.4
303000305	BB376	SR 2170	ROCKY R	35.6992	-79.3764	Chatham	9/30/2002	Special Study	EPT	4.83	Fair	95.3
303000305	BB376	SR 2170	ROCKY R	35.6992	-79.3764	Chatham	7/22/2003	Basin Sample	Full Scale	6.09	Good-Fair	95.3
303000305	BB376	SR 2170	ROCKY R	35.6992	-79.3764	Chatham	7/23/2008	Basin Sample	Full Scale	6.71	Fair	95.3
303000305	BB376	SR 2170	ROCKY R	35.6992	-79.3764	Chatham	9/24/2013	Basin Sample	Full Scale	5.87	Good-Fair	95.3
303000305	BB376	SR 2170	ROCKY R	35.6992	-79.3764	Chatham	5/1/2018	Basin Sample	Full Scale	5.85	Good-Fair	95.3
303000305	BB422	US 15-501	ROCKY R	35.6222	-79.1881	Chatham	7/21/2003	Basin Sample	Full Scale	5.53	Good	237
303000305	BB422	US 15-501	ROCKY R	35.6222	-79.1881	Chatham	7/22/2008	Basin Sample	Full Scale	6.28	Good-Fair	237
303000305	BB422	US 15-501	ROCKY R	35.6222	-79.1881	Chatham	9/24/2013	Basin Sample	Full Scale	5.4	Good	237
303000305	BB422	US 15-501	ROCKY R	35.6222	-79.1881	Chatham	6/28/2018	Basin Sample	Full Scale	5.21	Good	237
303000305	BB495	SR 2187	BEAR CR	35.6256	-79.2988	Chatham	3/12/2008	Special Study	EPT	4.22	Fair	42.6
303000305	BB517	OFF MOONRISE MEADOW RD	LOVES CR	35.7290	-79.4379	Chatham	10/29/2009	Special Study	Full Scale	7.42	Poor	7.65
303000306	BB291	SR 1420	L BUFFALO CR	35.5317	-79.1747	Lee	3/5/2003	Basin Sample	EPT	6.66	Poor	4.71
303000306	BB368	SR 2142	GEORGES CR	35.6025	-79.2583	Chatham	3/10/2003	Basin Sample	EPT	4.27	Good-Fair	2.76

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000306	BB368	SR 2142	GEORGES CR	35.6025	-79.2583	Chatham	3/23/2009	Basin Sample	EPT	3.72	Good-Fair	2.76
303000306	BB368	SR 2142	GEORGES CR	35.6025	-79.2583	Chatham	4/5/2018	Basin Sample	EPT	3.68	Good-Fair	2.76
303000306	BB538	SR 1318	BIG GOVERNORS CR	35.4738	-79.3567	Lee	5/16/2016	Special Study	Full Scale	6.58	Fair	0
303000306	BB541	DYCUS RD	DRY CR	35.4356	-79.2767	Lee	5/19/2016	Special Study	Qual 4	5.24	Good	1.56
303000306	BB542	CHRIS COLE RD	UT POCKET CR	35.4043	-79.2690	Lee	5/19/2016	Special Study	Qual 4	5.8	Good-Fair	0.8
Upper Cape Fear River Subbasin, HUC8 03030004												
303000401	BB105	SR 1153	LITTLE BR	35.6742	-78.8639	Wake	3/12/2003	Special Study	Full Scale	7.16	Poor	5.8
303000401	BB185	NC 42	UT CAPE FEAR R	35.5442	-79.0331	Lee	3/12/2003	Special Study	Qual 5	5.73	Not Rated	0.66
303000401	BB213	SR 1002	HUGHES CR	35.5636	-79.0933	Lee	3/10/2003	Basin Sample	EPT	5.83	Poor	10.7
303000401	BB243	SR 1117	BUCKHORN CR	35.5903	-78.9042	Wake	3/13/2003	Special Study	Full Scale	5.25	Good	8.9
303000401	BB287	SR 1403	PARKERS CR	35.5475	-78.8947	Harnett	3/14/2003	Special Study	Qual 5	4.35	Not Impaired	0.8
303000401	BB290	SR 1418	AVENTS CR	35.4872	-78.9100	Harnett	3/12/2003	Special Study	Full Scale	4.99	Excellent	14.2
303000401	BB290	SR 1418	AVENTS CR	35.4872	-78.9100	Harnett	11/27/2006	Special Study	Full Scale	5.28	Excellent	14.2
303000401	BB290	SR 1418	AVENTS CR	35.4872	-78.9100	Harnett	4/23/2007	Special Study	Full Scale	4.99	Excellent	14.2
303000401	BB290	SR 1418	AVENTS CR	35.4872	-78.9100	Harnett	5/28/2013	Special Study	Full Scale	5.36	Excellent	14.2
303000401	BB297	SR 1450	PARKERS CR	35.5392	-78.9197	Harnett	4/30/2003	Basin Sample	EPT	4	Excellent	3.9
303000401	BB297	SR 1450	PARKERS CR	35.5392	-78.9197	Harnett	7/21/2008	Basin Sample	EPT	4.5	Good	3.9
303000401	BB297	SR 1450	PARKERS CR	35.5392	-78.9197	Harnett	7/23/2013	Basin Sample	EPT	3.53	Good	3.9
303000401	BB297	SR 1450	PARKERS CR	35.5392	-78.9197	Harnett	8/13/2018	Basin Sample	EPT	4.33	Good	3.9

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000401	BB539	POPLAR SPRINGS CHURCH RD	L LICK CR	35.5221	-79.0909	Lee	5/18/2016	Special Study	Full Scale	6.15	Good-Fair	6.79
303000401	BB546	SR 1265	CEDAR CR	35.4565	-78.9700	Harnett	6/2/2021	Special Study	Qual 4	5.2	Good-Fair	2.29
303000402	BB209	SR 1128	L ROCKY RUN	35.3317	-78.9547	Harnett	5/16/2005	Special Study	Qual 4	4.87	Good-Fair	0.3
303000402	BB261	SR 1222	UPPER LITTLE R	35.4069	-79.0633	Harnett	7/22/2003	Basin Sample	Full Scale	6.1	Good-Fair	63.5
303000402	BB261	SR 1222	UPPER LITTLE R	35.4069	-79.0633	Harnett	7/21/2008	Basin Sample	Full Scale	6.5	Good-Fair	63.5
303000402	BB261	SR 1222	UPPER LITTLE R	35.4069	-79.0633	Harnett	9/11/2013	Basin Sample	EPT	5.74	Poor	63.5
303000402	BB261	SR 1222	UPPER LITTLE R	35.4069	-79.0633	Harnett	7/28/2015	Special Study	Full Scale	5.87	Good-Fair	63.5
303000402	BB261	SR 1222	UPPER LITTLE R	35.4069	-79.0633	Harnett	9/5/2018	Basin Sample	Full Scale	6.34	Good-Fair	63.5
303000402	BB484	SR 1279	UT UPR LITTLE R	35.4253	-79.0511	Harnett	5/23/2007	Special Study	Qual 4	5.18	Not Impaired	0.86
303000402	BB544	US 421	CARRS CR	35.4473	-79.1179	Lee	4/18/2017	Special Study	Qual 4	4.96	Good	1.2
303000403	BB111	NC 22	NICKS CR	35.2536	-79.4125	Moore	7/23/2003	Basin Sample	EPT	4.72	Good-Fair	26.7
303000403	BB111	NC 22	NICKS CR	35.2536	-79.4125	Moore	9/11/2013	Basin Sample	EPT	4.13	Good-Fair	26.7
303000403	BB117	NC 24-27	HERDS CR	35.3192	-79.3017	Moore	4/23/2002	Special Study	Qual 5	4.66	Not Impaired	9.05
303000403	BB118	NC 24-27	L CRANE CR	35.3250	-79.2511	Moore	4/30/2003	Special Study	Full Scale	5.27	Good-Fair	15.2
303000403	BB191	NR US 1	L CRANE CR	35.2975	-79.2661	Moore	4/30/2003	Special Study	Full Scale	4.99	Good	16.7
303000403	BB218	MANCHESTER RD	FLAT CR	35.1828	-79.1783	Hoke	7/1/2008	Special Study	Full Scale	4.15	Excellent	7.84
303000403	BB218	MANCHESTER RD	FLAT CR	35.1828	-79.1783	Hoke	11/28/2018	Special Study	EPT	3	Good-Fair	7.84
303000403	BB218	MANCHESTER RD	FLAT CR	35.1828	-79.1783	Hoke	1/9/2019	Special Study	EPT	3.49	Good-Fair	7.84
303000403	BB218	MANCHESTER RD	FLAT CR	35.1828	-79.1783	Hoke	2/13/2019	Special Study	EPT	3.05	Good-Fair	7.84

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000403	BB218	MANCHESTER RD	FLAT CR	35.1828	-79.1783	Hoke	3/13/2019	Special Study	EPT	3.1	Good-Fair	7.84
303000403	BB236	SR 1103	CYPRESS CR	35.2594	-79.1769	Harnett	4/22/2002	Special Study	Qual 5	5.44	Not Impaired	4.55
303000403	BB331	SR 1810	CRANE CR	35.3100	-79.3244	Moore	4/23/2002	Special Study	Full Scale	5.14	Good	16.8
303000403	BB331	SR 1810	CRANE CR	35.3100	-79.3244	Moore	4/3/2003	Special Study	EPT	3.06	Good	16.8
303000403	BB332	SR 1825	BEAVER CR	35.2692	-79.2269	Moore	4/23/2002	Special Study	Full Scale	5.6	Good-Fair	13.3
303000403	BB349	SR 2005	CRANE CR	35.2614	-79.2522	Moore	4/22/2002	Special Study	Full Scale	5.91	Good-Fair	60.7
303000403	BB350	SR 2018	CRANE CR	35.1953	-79.1697	Moore	4/22/2002	Special Study	Full Scale	5.4	Good	100
303000403	BB352	SR 2023	LOWER LITTLE R	35.2040	-79.2161	Moore	10/2/2002	Special Study	EPT	4.19	Good-Fair	112
303000403	BB352	SR 2023	LOWER LITTLE R	35.2040	-79.2161	Moore	1/21/2003	Special Study	EPT	3.97	Good	112
303000403	BB352	SR 2023	LOWER LITTLE R	35.2040	-79.2161	Moore	3/25/2004	Special Study	EPT	4.11	Excellent	112
303000403	BB352	SR 2023	LOWER LITTLE R	35.2040	-79.2161	Moore	7/2/2008	Special Study	Full Scale	4.29	Excellent	112
303000403	BB352	SR 2023	LOWER LITTLE R	35.2040	-79.2161	Moore	9/11/2013	Basin Sample	Full Scale	5.05	Good	112
303000403	BB352	SR 2023	LOWER LITTLE R	35.2040	-79.2161	Moore	9/5/2018	Basin Sample	EPT	3.9	Excellent	112
303000403	BB418	US 1	CRANE CR	35.2844	-79.2719	Moore	4/23/2002	Special Study	Full Scale	5.48	Good	33
303000403	BB500	OFF SR 2026	JAMES CR	35.1872	-79.2933	Moore	6/30/2008	Special Study	Full Scale	4.51	Excellent	11.2
303000403	BB528	SR 2017	CRANE CR	35.2096	-79.1844	Moore	6/3/2014	Special Study	Full Scale	5.6	Good-Fair	96.2
303000404	BB229	NC 210	JUMPING RUN CR	35.2175	-78.9436	Cumberland	7/1/2008	Special Study	Full Scale	5.34	Good	28.4
303000404	BB234	SR 1117	N PR ANDERSON CR	35.3097	-78.9739	Harnett	5/16/2005	Special Study	Qual 4	4.54	Good	0.9
303000404	BB234	SR 1117	N PR ANDERSON CR	35.3097	-78.9739	Harnett	4/5/2006	Special Study	Qual 4	4.42	Good	0.9

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000404	BB353	SR 2031	ANDERSON CR	35.2661	-78.8194	Harnett	7/23/2003	Basin Sample	EPT	3.61	Good	34.7
303000404	BB353	SR 2031	ANDERSON CR	35.2661	-78.8194	Harnett	7/21/2008	Basin Sample	EPT	3.79	Good	34.7
303000404	BB353	SR 2031	ANDERSON CR	35.2661	-78.8194	Harnett	9/13/2013	Basin Sample	EPT	3.54	Good	34.7
303000404	BB353	SR 2031	ANDERSON CR	35.2661	-78.8194	Harnett	8/24/2018	Basin Sample	EPT	3.63	Good	34.7
303000404	BB487	NC 609	UT LITTLE R	35.1869	-79.0739	Cumberland	5/5/2006	Special Study	Qual 4	4.55	Not Rated	1.95
303000404	BB489	SR 1126	N PR ANDERSON CR	35.3056	-78.9403	Harnett	5/5/2006	Special Study	Qual 4	5.15	Not Impaired	3.27
303000404	BB502	NC 690	MUDDY CR	35.1967	-78.9985	Cumberland	7/11/2008	Special Study	Full Scale	4.54	Excellent	15.7
303000405	BB228	SR 1100	KENNETH CR	35.5661	-78.8103	Wake	3/12/2003	Special Study	Full Scale	4.88	Good	4.2
303000405	BB228	SR 1100	KENNETH CR	35.5661	-78.8103	Wake	4/23/2007	Special Study	Full Scale	6.04	Good-Fair	4.2
303000405	BB283	SR 1403	NEILLS CR	35.4669	-78.8053	Harnett	3/14/2003	Special Study	Full Scale	6.76	Fair	31.4
303000405	BB283	SR 1403	NEILLS CR	35.4669	-78.8053	Harnett	4/23/2007	Special Study	Full Scale	6	Good	31.4
303000405	BB284	SR 1403	COOPERS BR	35.4853	-78.8425	Harnett	3/12/2003	Special Study	Full Scale	4.32	Good	2.1
303000405	BB289	SR 1412	HECTOR CR	35.4669	-78.8586	Harnett	3/13/2003	Special Study	Full Scale	4.74	Excellent	17.1
303000405	BB289	SR 1412	HECTOR CR	35.4669	-78.8586	Harnett	11/27/2006	Special Study	Full Scale	5.08	Excellent	17.1
303000405	BB289	SR 1412	HECTOR CR	35.4669	-78.8586	Harnett	4/24/2007	Special Study	Full Scale	4.83	Excellent	17.1
303000405	BB292	SR 1427	HECTOR CR	35.5106	-78.8475	Harnett	3/12/2003	Special Study	Full Scale	4.24	Excellent	9.3
303000405	BB294	SR 1441	NEILLS CR	35.5142	-78.7653	Harnett	3/12/2003	Basin Sample	EPT	4.45	Fair	4
303000405	BB294	SR 1441	NEILLS CR	35.5142	-78.7653	Harnett	4/24/2007	Special Study	Full Scale	5.67	Good-Fair	4
303000405	BB294	SR 1441	NEILLS CR	35.5142	-78.7653	Harnett	7/23/2013	Basin Sample	EPT	6.31	Fair	4

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000405	BB294	SR 1441	NEILLS CR	35.5142	-78.7653	Harnett	8/24/2018	Basin Sample	EPT	6.07	Fair	4
303000405	BB295	SR 1441	KENNETH CR	35.5144	-78.7869	Harnett	3/10/2003	Basin Sample	EPT	6.2	Poor	15.37
303000405	BB295	SR 1441	KENNETH CR	35.5144	-78.7869	Harnett	4/24/2007	Special Study	Full Scale	6.49	Fair	15.37
303000405	BB437	US 401	CAPE FEAR R	35.4083	-78.8133	Harnett	10/2/2002	Special Study	EPT	3.29	Fair	3464
303000405	BB437	US 401	CAPE FEAR R	35.4083	-78.8133	Harnett	1/21/2003	Special Study	EPT	4.52	Good-Fair	3464
303000406	BB151	NC 59	L ROCKFISH CR	34.9872	-78.9661	Cumberland	9/3/2003	Basin Sample	EPT	4.6	Good	84
303000406	BB151	NC 59	L ROCKFISH CR	34.9872	-78.9661	Cumberland	9/4/2008	Basin Sample	EPT	4.51	Good	84
303000406	BB151	NC 59	L ROCKFISH CR	34.9872	-78.9661	Cumberland	9/10/2013	Basin Sample	EPT	4.34	Good	84
303000406	BB200	PLANK RD	PUPPY CR	35.0500	-79.1306	Hoke	10/23/2003	Special Study	EPT	2.9	Fair	0.1
303000406	BB201	PLANK RD	L ROCKFISH CR	35.0547	-79.0917	Hoke	10/23/2003	Special Study	EPT	2.61	Good-Fair	11.2
303000406	BB201	PLANK RD	L ROCKFISH CR	35.0547	-79.0917	Hoke	7/2/2008	Special Study	Full Scale	4.95	Good	11.2
303000406	BB203	PLANK RD	JUNIPER CR	35.0606	-79.2522	Hoke	10/23/2003	Special Study	EPT	3.26	Good-Fair	11
303000406	BB293	SR 1432	ROCKFISH CR	34.9681	-79.1097	Hoke	9/3/2003	Basin Sample	EPT	3.81	Good	148
303000406	BB293	SR 1432	ROCKFISH CR	34.9681	-79.1097	Hoke	9/4/2008	Basin Sample	EPT	4.05	Good	148
303000406	BB293	SR 1432	ROCKFISH CR	34.9681	-79.1097	Hoke	9/10/2013	Basin Sample	EPT	3.82	Good-Fair	148
303000406	BB293	SR 1432	ROCKFISH CR	34.9681	-79.1097	Hoke	8/20/2018	Basin Sample	EPT	3.73	Excellent	148
303000406	BB499	SR 1301	NICHOLSON CR	35.0308	-79.2106	Hoke	7/2/2008	Special Study	Full Scale	5.11	Good	16.6
303000407	BB207	SR 1615	UT CROSS CR	35.0961	-78.8914	Cumberland	8/4/2003	Special Study	Qual 4	6.15	Not Rated	3
303000407	BB436	US 401 BYP	L CROSS CR	35.0867	-78.9233	Cumberland	8/4/2003	Special Study	Full Scale	6.36	Fair	5.9

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000407	BB451	BE FILTER PLANT DR	L CROSS CR	35.0678	-78.8950	Cumberland	8/4/2003	Basin Sample	Full Scale	7.34	Fair	9.7
303000407	BB451	BE FILTER PLANT DR	L CROSS CR	35.0678	-78.8950	Cumberland	8/14/2008	Basin Sample	EPT	7.03	Poor	9.7
303000407	BB451	BE FILTER PLANT DR	L CROSS CR	35.0678	-78.8950	Cumberland	7/22/2013	Basin Sample	EPT	6.66	Poor	9.7
303000407	BB486	W. OF LAKE	UT LITTLE CROSS CR	35.1142	-78.9497	Cumberland	8/21/2007	Special Study	Qual 4	4.75	Not Impaired	0.54
303000407	BB67	US 401 BYP	CROSS CR	35.1003	-78.9069	Cumberland	8/8/2003	Special Study	Full Scale	6.17	Good-Fair	9.4
303000407	BB75	NC 24-210	CROSS CR	35.0556	-78.8725	Cumberland	8/8/2003	Basin Sample	Full Scale	6.13	Good-Fair	26.4
303000407	BB75	NC 24-210	CROSS CR	35.0556	-78.8725	Cumberland	8/14/2008	Basin Sample	EPT	6.09	Fair	26.4
303000407	BB75	NC 24-210	CROSS CR	35.0556	-78.8725	Cumberland	7/22/2013	Basin Sample	EPT	6.57	Fair	26.4
303000407	BB75	NC 24-210	CROSS CR	35.0556	-78.8725	Cumberland	8/20/2018	Basin Sample	EPT	6.19	Fair	26.4
303000407	BB88	LANGDON ST	CROSS CR	35.0797	-78.8886	Cumberland	8/8/2003	Special Study	Full Scale	6.24	Fair	14.6
Lower Cape Fear River Subbasin, HUC8 03030005												
303000501	BB271	SR 1318	HARRISON CR	34.7472	-78.7092	Bladen	8/23/2003	Basin Sample	EPT	3.92	Good-Fair	29.6
303000502	BB143	NC 53	ELLIS CR	34.6944	-78.6597	Bladen	8/26/2003	Basin Sample	EPT	3.74	Good-Fair	42.9
303000502	BB155	NC 87	BROWNS CR	34.6139	-78.5847	Bladen	2/20/2003	Basin Sample	Swamp	6.74	Moderate	16.7
303000502	BB155	NC 87	BROWNS CR	34.6139	-78.5847	Bladen	2/7/2008	Basin Sample	Swamp	6.37	Moderate	16.7
303000502	BB155	NC 87	BROWNS CR	34.6139	-78.5847	Bladen	2/18/2013	Basin Sample	Swamp	5.63	Natural	16.7
303000502	BB155	NC 87	BROWNS CR	34.6139	-78.5847	Bladen	2/19/2018	Basin Sample	Swamp	5.98	Natural	16.7
303000502	BB305	SR 1511	TURNBULL CR	34.6931	-78.5861	Bladen	8/26/2003	Basin Sample	EPT	3.94	Good-Fair	64
303000503	BB446	US 74	LIVINGSTON CR	34.3161	-78.2386	Columbus	9/4/2003	Basin Sample	Full Scale	5.8	Good-Fair	86.1

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000504	BB447	US 74-76	HOOD CR	34.2783	-78.1258	Brunswick	2/25/2003	Basin Sample	Swamp	5.83	Moderate	22.3
303000504	BB447	US 74-76	HOOD CR	34.2783	-78.1258	Brunswick	2/7/2008	Basin Sample	Swamp	6.61	Moderate	22.3
303000504	BB447	US 74-76	HOOD CR	34.2783	-78.1258	Brunswick	3/11/2013	Basin Sample	Swamp	5.93	Natural	22.3
303000504	BB447	US 74-76	HOOD CR	34.2783	-78.1258	Brunswick	2/19/2018	Basin Sample	Swamp	5.48	Moderate	22.3
303000504	BB507	SR 1426	HOOD CR	34.3111	-78.1195	Brunswick	2/11/2009	Basin Sample	Swamp	6.27	Moderate	33.5
303000505	BB438	US 421	BARNARDS CR	34.1583	-77.9125	New Hanover	2/12/2003	Basin Sample	Swamp	7.32	Moderate	1.98
303000505	BB438	US 421	BARNARDS CR	34.1583	-77.9125	New Hanover	3/11/2013	Basin Sample	Swamp	6.55	Moderate	1.98
303000505	BB483	OFF HIGHLAND HILLS DR	STURGEON CR	34.2374	-78.0413	Brunswick	5/19/2008	Special Study	Qual 4	6.36	Not Rated	0.3
303000506	BB288	SR 1410	LEWIS SWP	34.1625	-78.1700	Brunswick	2/25/2003	Basin Sample	Swamp	6.56	Natural	5.69
Black River Subbasin, HUC 8 03030006												
303000601	BB316	SR 1777	BLACK R	35.2828	-78.6381	Harnett	3/12/2004	Special Study	Swamp	6.76	Moderate	40.7
303000601	BB316	SR 1777	BLACK R	35.2828	-78.6381	Harnett	3/12/2009	Special Study	Swamp	6.65	Moderate	40.7
303000601	BB317	US 421	BLACK R	35.3230	-78.6418	Harnett	3/12/2004	Special Study	Swamp	6.12	Moderate	49.1
303000601	BB317	US 421	BLACK R	35.3230	-78.6418	Harnett	3/12/2009	Special Study	Swamp	6.82	Moderate	49.1
303000602	BB301	SR 1502	SOUTH R	34.8367	-78.4847	Bladen	10/9/2002	Special Study	EPT	4.46	Good-Fair	377
303000602	BB301	SR 1502	SOUTH R	34.8367	-78.4847	Bladen	8/8/2008	Basin Sample	Full Scale	5.64	Good	377
303000603	BB259	SR 1214	L COHARIE CR	34.8892	-78.4425	Sampson	9/17/2003	Basin Sample	EPT	4.07	Good	139
303000603	BB259	SR 1214	L COHARIE CR	34.8892	-78.4425	Sampson	7/7/2008	Basin Sample	EPT	4.83	Good	139
303000603	BB259	SR 1214	L COHARIE CR	34.8892	-78.4425	Sampson	8/5/2013	Basin Sample	EPT	4.04	Good	139

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000604	BB508	SR 1636	GREAT COHARIE CR	35.1831	-78.3652	Sampson	2/23/2010	Special Study	Swamp	6.16	Natural	50.9
303000604	BB509	SR 1703	SEVENMILE SWP	35.1893	-78.3952	Sampson	2/23/2010	Special Study	Swamp	7.05	Moderate	15.2
303000604	BB510	US 13	UT SEVENMILE SWP	35.2097	-78.4180	Sampson	2/23/2010	Special Study	Swamp	7.65	Moderate	2
303000604	BB511	SR 1703	GREAT COHARIE CR	35.2200	-78.3715	Sampson	2/23/2010	Special Study	Swamp	6.9	Moderate	10.9
303000604	BB512	OFF BIZZELL ST, NEWTON GROVE	BEAVERDAM SWP	35.2356	-78.3536	Sampson	2/24/2010	Special Study	Swamp	7.48	Moderate	7.7
303000604	BB513	US 701	KILL SWP	35.2170	-78.3458	Sampson	2/24/2010	Special Study	Swamp	7.32	Moderate	7.9
303000604	BB514	SR 1706	KILL SWP	35.2259	-78.3356	Sampson	2/24/2010	Special Study	Swamp	7.28	Moderate	7.1
303000604	BB515	SR 1710	KILL SWP	35.2374	-78.3052	Sampson	3/9/2010	Special Study	Swamp	7.88	Moderate	3.9
303000604	BB516	NC 50/55	UT KILL SWP	35.2439	-78.2872	Sampson	3/9/2010	Special Study	Swamp	7.27	Moderate	0.3
303000605	BB343	SR 1943	STEWARTS CR	34.8911	-78.2003	Sampson	3/5/2003	Special Study	Swamp	6.23	Not Rated	55.2
303000605	BB343	SR 1943	STEWARTS CR	34.8911	-78.2003	Sampson	8/26/2003	Special Study	EPT	4.88	Good	55.2
303000605	BB348	SR 1960	SIX RUNS CR	34.8519	-78.2450	Sampson	9/17/2003	Basin Sample	EPT	4.58	Good	225
303000605	BB348	SR 1960	SIX RUNS CR	34.8519	-78.2450	Sampson	7/7/2009	Basin Sample	EPT	4.5	Excellent	225
303000607	BB244	SR 1128	MOORES CR	34.5564	-78.1236	Pender	2/26/2003	Basin Sample	Swamp	6.91	Moderate	51.7
303000607	BB244	SR 1128	MOORES CR	34.5564	-78.1236	Pender	2/20/2013	Basin Sample	Swamp	6.17	Natural	51.7
303000607	BB244	SR 1128	MOORES CR	34.5564	-78.1236	Pender	2/20/2018	Basin Sample	Swamp	6.21	Natural	51.7
303000608	BB128	NC 411 NR TOMAHAWK	BLACK R	34.7547	-78.2892	Sampson	10/9/2002	Basin Sample	EPT	4.32	Excellent	677
Northeast Cape Fear River Subbasin, HUC8 03030007												
303000701	BB322	SR 1725	GOSHEN SWP	35.1972	-78.2100	Sampson	2/19/2003	Basin Sample	Swamp	7.25	Severe	12.9

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000701	BB322	SR 1725	GOSHEN SWP	35.1972	-78.2100	Sampson	2/9/2009	Basin Sample	Swamp	7.38	Severe	12.9
303000701	BB322	SR 1725	GOSHEN SWP	35.1972	-78.2100	Sampson	2/2/2013	Basin Sample	Swamp	7.03	Severe	12.9
303000703	BB125	NC 41	MUDDY CR	34.8389	-77.8325	Duplin	8/4/2003	Basin Sample	EPT	5.64	Fair	46.54
303000703	BB319	SR 1702	LIMESTONE CR	34.9083	-77.8386	Duplin	9/17/2003	Basin Sample	EPT	4.96	Good-Fair	60.3
303000703	BB319	SR 1702	LIMESTONE CR	34.9083	-77.8386	Duplin	8/14/2008	Basin Sample	EPT	4.72	Good-Fair	60.3
303000703	BB319	SR 1702	LIMESTONE CR	34.9083	-77.8386	Duplin	9/6/2018	Basin Sample	EPT	5.13	Fair	60.3
303000703	BB346	SR 1953	STOCKINGHEAD CR	34.8703	-77.8656	Duplin	9/17/2003	Basin Sample	EPT	4.99	Good-Fair	66
303000703	BB346	SR 1953	STOCKINGHEAD CR	34.8703	-77.8656	Duplin	8/6/2013	Basin Sample	EPT	4.95	Good-Fair	66
303000703	BB346	SR 1953	STOCKINGHEAD CR	34.8703	-77.8656	Duplin	9/6/2018	Basin Sample	EPT	4.86	Good-Fair	66
303000704	BB126	NC 41	NE CAPE FEAR R	34.8276	-77.8324	Duplin	8/5/2008	Basin Sample	Full Scale	6.14	Good-Fair	607
303000705	BB100	NC 11	L ROCKFISH CR	34.7228	-77.9819	Duplin	2/19/2003	Special Study	Swamp	7.55	Not Rated	9.2
303000705	BB254	SR 1165	ROCKFISH CR	34.7269	-78.0047	Duplin	9/3/2003	Basin Sample	Full Scale	5.97	Good	131
303000705	BB254	SR 1165	ROCKFISH CR	34.7269	-78.0047	Duplin	8/6/2013	Basin Sample	Full Scale	5.66	Good	131
303000705	BB81	I-40	ROCKFISH CR	34.7183	-77.9483	Duplin	9/3/2003	Basin Sample	Full Scale	6.37	Good-Fair	175
303000706	BB136	NC 50	HOLLY SHELTER CR	34.6567	-77.6897	Pender	3/5/2003	Basin Sample	Swamp	6.92	Moderate	20.09
303000706	BB136	NC 50	HOLLY SHELTER CR	34.6567	-77.6897	Pender	2/9/2009	Basin Sample	Swamp	7.01	Moderate	20.09
303000706	BB136	NC 50	HOLLY SHELTER CR	34.6567	-77.6897	Pender	5/4/2013	Basin Sample	Swamp	6.51	Natural	20.09
303000706	BB141	NC 53	ANGOLA CR	34.6561	-77.7356	Pender	9/4/2003	Basin Sample	EPT	5.15	Good	38.11
303000707	BB139	NC 53	LONG CR	34.5417	-78.0008	Pender	2/10/2003	Basin Sample	Swamp	8.06	Severe	34.3

HUC10	Site ID	Location	Water Body	Latitude	Longitude	County	Sample Date	Study	Sample Type	Biotic Index	Final Rating	Drainage Area Mi²
303000707	BB139	NC 53	LONG CR	34.5417	-78.0008	Pender	3/12/2013	Basin Sample	Swamp	8.23	Severe	34.3
303000707	BB140	NC 53	CYPRESS CR	34.5444	-78.0361	Pender	2/10/2003	Basin Sample	Swamp	7.48	Moderate	18.31
303000707	BB140	NC 53	CYPRESS CR	34.5444	-78.0361	Pender	3/12/2013	Basin Sample	Swamp	7.16	Moderate	18.31
303000708	BB107	NC 210	MERRICKS CR	34.4467	-77.8033	Pender	2/11/2003	Basin Sample	Swamp	6.26	Natural	35.79
303000708	BB107	NC 210	MERRICKS CR	34.4467	-77.8033	Pender	2/10/2009	Basin Sample	Swamp	6.82	Moderate	35.79
303000708	BB107	NC 210	MERRICKS CR	34.4467	-77.8033	Pender	2/25/2013	Basin Sample	Swamp	6.27	Moderate	35.79
303000708	BB272	SR 1336	UT TO ISLAND CR	34.3419	-77.7994	New Hanover	2/11/2003	Basin Sample	Swamp	7.77	Not Rated	3.15
303000708	BB272	SR 1336	UT TO ISLAND CR	34.3419	-77.7994	New Hanover	2/11/2009	Basin Sample	Swamp	6.57	Moderate	3.15
303000708	BB272	SR 1336	UT TO ISLAND CR	34.3419	-77.7994	New Hanover	3/4/2013	Basin Sample	Swamp	6.19	Moderate	3.15
303000708	BB272	SR 1336	UT TO ISLAND CR	34.3419	-77.7994	New Hanover	2/20/2018	Basin Sample	Swamp	6	Moderate	3.15
303000708	BB306	SR 1520	LILLINGTON CR	34.5086	-77.8164	Pender	2/10/2003	Basin Sample	Swamp	6.15	Natural	11.55
303000708	BB306	SR 1520	LILLINGTON CR	34.5086	-77.8164	Pender	2/10/2009	Basin Sample	Swamp	6.41	Moderate	11.55
303000708	BB306	SR 1520	LILLINGTON CR	34.5086	-77.8164	Pender	2/25/2013	Basin Sample	Swamp	5.92	Natural	11.55
303000708	BB306	SR 1520	LILLINGTON CR	34.5086	-77.8164	Pender	2/21/2018	Basin Sample	Swamp	5.39	Natural	11.55
303000708	BB496	SR 2165	SMITH CR	34.2907	-77.8537	New Hanover	2/26/2008	Basin Sample	Swamp	7.14	Moderate	3.71
303000708	BB496	SR 2165	SMITH CR	34.2907	-77.8537	New Hanover	3/13/2013	Basin Sample	Swamp	6.48	Natural	3.71
303000708	BB496	SR 2165	SMITH CR	34.2907	-77.8537	New Hanover	2/20/2018	Basin Sample	Swamp	6.88	Moderate	3.71
303000708	BB79	I-40	SMITH CR	34.2789	-77.8675	New Hanover	2/26/2003	Basin Sample	Swamp	7.55	Severe	8.26

Fish Community Stations

Table 2: Cape Fear Fish Community Stations 2002-2020

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
Haw River Subbasin, HUC8 03030002											
303000201	BF106	off 9th Street	N Buffalo Cr	16-11-14-1	36.1031	-79.7697	Guilford	6/9/2004	32	Poor	15.7
303000201	BF11	off 16th St and US 29	N Buffalo Cr	16-11-14	36.1069	-79.7531	Guilford	4/22/2003	42	Good-Fair	22.1
303000201	BF11	off 16th St and US 29	N Buffalo Cr	16-11-14	36.1069	-79.7531	Guilford	6/3/2009	30	Poor	22.1
303000201	BF113	Merritt Dr	S Buffalo Cr	16-11-14-2	36.0494	-79.8550	Guilford	5/21/2004	32	Poor	7.3
303000201	BF113	Merritt Dr	S Buffalo Cr	16-11-14-2	36.0494	-79.8550	Guilford	5/21/2009	38	Fair	7.3
303000201	BF124	SR 2128	Reedy Fk	16-11-(1)	36.1729	-79.9531	Guilford	6/8/2004	48	Good	20.6
303000201	BF18	off SR 3300	S Buffalo Cr	16-11-14-2	36.0344	-79.7803	Guilford	6/11/2004	44	Good-Fair	23.8
303000201	BF18	off SR 3300	S Buffalo Cr	16-11-14-2	36.0344	-79.7803	Guilford	6/22/2009	38	Fair	23.8
303000201	BF36	SR 1400	N Buffalo Cr	16-11-14	36.0843	-79.7998	Guilford	6/2/2004	44	Good-Fair	11.7
303000201	BF36	SR 1400	N Buffalo Cr	16-11-14	36.0843	-79.7998	Guilford	5/27/2009	32	Poor	11.7
303000201	BF54	SR 2128	Reedy Fk	16-11-(1)	36.1797	-79.9072	Guilford	6/18/2004	36	Fair	26.6
303000201	BF54	SR 2128	Reedy Fk	16-11-(1)	36.1797	-79.9531	Guilford	6/24/2009	38	Fair	26.6
303000201	BF64	SR 2628	N Buffalo Cr	16-11-14-1	36.0817	-79.8286	Guilford	5/13/2013	40	Good-Fair	4.8
303000201	BF65	SR 2728	Reedy Fk	16-11-(9)	36.1796	-79.6473	Guilford	6/25/2003	52	Good	127
303000201	BF65	SR 2728	Reedy Fk	16-11-(9)	36.1796	-79.6473	Guilford	9/5/2013	48	Good	127
303000201	BF66	SR 2770	N Buffalo Cr	16-11-14	36.1298	-79.6627	Guilford	6/23/2003	28	Poor	43.8
303000201	BF66	SR 2770	N Buffalo Cr	16-11-14	36.1298	-79.6627	Guilford	5/13/2013	38	Fair	43.8
303000201	BF66	SR 2770	N Buffalo Cr	16-11-14	36.1298	-79.6627	Guilford	5/1/2018	38	Fair	43.8
303000201	BF69	SR 3820	Brush Cr	16-11-4-(1)	36.1280	-79.9240	Guilford	6/8/2004	40	Good-Fair	5.2
303000201	BF69	SR 3820	Brush Cr	16-11-4-(1)	36.1280	-79.9240	Guilford	6/10/2009	40	Good-Fair	5.2
303000201	BF71	US 220	Horsepen Cr	16-11-5-(0.5)	36.1364	-79.8608	Guilford	6/25/2004	36	Fair	14.7

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000201	BF71	US 220	Horsepen Cr	16-11-5-(0.5)	36.1364	-79.8608	Guilford	7/1/2009	40	Good-Fair	14.7
303000201	BF73	US 70	S Buffalo Cr	16-11-14-2	36.0894	-79.6881	Guilford	6/23/2003	26	Poor	39.5
303000201	BF73	US 70	S Buffalo Cr	16-11-14-2	36.0894	-79.6881	Guilford	4/23/2013	24	Poor	39.5
303000201	BF78	SR 2136	Brush Cr	16-11-4-(1)	36.1400	-79.9139	Guilford	7/6/2004	38	Fair	7.5
303000202	BF63	SR 2600	Little Troublesome Cr	16-7	36.2825	-79.6116	Rockingham	4/21/2003	44	Good-Fair	12.1
303000202	BF63	SR 2600	Little Troublesome Cr	16-7	36.2825	-79.6116	Rockingham	6/3/2009	44	Good-Fair	12.1
303000202	BF63	SR 2600	Little Troublesome Cr	16-7	36.2825	-79.6116	Rockingham	4/22/2013	40	Good-Fair	12.1
303000203	BF135	SR 1129	N Pr Stinking Quarter Cr	16-19-8-1	35.9935	-79.5146	Alamance	6/4/2009	50	Good	20.8
303000203	BF135	SR 1129	N Pr Stinking Quarter Cr	16-19-8-1	35.9935	-79.5146	Alamance	4/24/2013	44	Good-Fair	20.8
303000203	BF135	SR 1129	N Pr Stinking Quarter Cr	16-19-8-1	35.9935	-79.5146	Alamance	4/10/2018	28	Poor	20.8
303000203	BF145	SR 3388	Big Alamance Cr	16-19-(1)	35.9735	-79.6619	Guilford	5/5/2015	50	Good	17.8
303000203	BF27	SR 1113	N Pr Stinking Quarter Cr	16-19-8-1	36.0039	-79.4925	Alamance	4/24/2003	46	Good	27
303000203	BF28	SR 1117	S Pr Stinking Quarter Cr	16-19-8-2-(2)	35.9893	-79.4967	Alamance	4/24/2003	54	Excellent	33.6
303000203	BF28	SR 1117	S Pr Stinking Quarter Cr	16-19-8-2-(2)	35.9893	-79.4967	Alamance	6/4/2009	52	Good	33.6
303000203	BF28	SR 1117	S Pr Stinking Quarter Cr	16-19-8-2-(2)	35.9893	-79.4967	Alamance	4/24/2013	56	Excellent	33.6
303000203	BF28	SR 1117	S Pr Stinking Quarter Cr	16-19-8-2-(2)	35.9893	-79.4967	Alamance	4/10/2018	40	Good-Fair	33.6
303000203	BF60	SR 2309	Little Alamance Cr	16-19-11	36.0346	-79.4090	Alamance	4/23/2003	52	Good	14.5
303000203	BF60	SR 2309	Little Alamance Cr	16-19-11	36.0346	-79.4090	Alamance	4/16/2009	50	Good	14.5
303000203	BF60	SR 2309	Little Alamance Cr	16-19-11	36.0346	-79.4090	Alamance	4/24/2013	44	Good-Fair	14.5
303000203	BF67	SR 3039	Little Alamance Cr	16-19-3-(0.5)	36.0298	-79.7192	Guilford	4/22/2003	44	Good-Fair	10.4

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000203	BF67	SR 3039	Little Alamance Cr	16-19-3-(0.5)	36.0298	-79.7192	Guilford	4/16/2009	44	Good-Fair	10.4
303000203	BF67	SR 3039	Little Alamance Cr	16-19-3-(0.5)	36.0298	-79.7192	Guilford	4/23/2013	44	Good-Fair	10.4
303000203	BF67	SR 3039	Little Alamance Cr	16-19-3-(0.5)	36.0298	-79.7192	Guilford	5/1/2018	40	Good-Fair	10.4
303000203	BF68	SR 3088	Big Alamance Cr	16-19-(1)	35.9989	-79.6429	Guilford	4/22/2003	42	Good-Fair	30.5
303000203	BF68	SR 3088	Big Alamance Cr	16-19-(1)	35.9989	-79.6429	Guilford	4/16/2009	44	Good-Fair	30.5
303000203	BF68	SR 3088	Big Alamance Cr	16-19-(1)	35.9989	-79.6429	Guilford	4/23/2013	50	Good	30.5
303000203	BF68	SR 3088	Big Alamance Cr	16-19-(1)	35.9989	-79.6429	Guilford	5/2/2018	40	Good-Fair	30.5
303000203	BF98	SR 3056	Little Alamance Cr	16-19-3-(4.5)	36.0553	-79.6028	Guilford	7/26/2004	48	Good	42.5
303000204	BF26	SR 1104	Stony Cr	16-14-(1)	36.2573	-79.4470	Caswell	4/21/2003	44	Good-Fair	12.5
303000204	BF26	SR 1104	Stony Cr	16-14-(1)	36.2573	-79.4470	Caswell	6/3/2009	48	Good	12.5
303000204	BF26	SR 1104	Stony Cr	16-14-(1)	36.2573	-79.4470	Caswell	4/22/2013	46	Good	12.5
303000204	BF26	SR 1104	Stony Cr	16-14-(1)	36.2573	-79.4470	Caswell	4/23/2018	50	Good	12.5
303000204	BF46	SR 1754	Jordan Cr	16-14-6-(0.5)	36.1889	-79.3948	Alamance	4/23/2003	40	Good-Fair	24.1
303000204	BF46	SR 1754	Jordan Cr	16-14-6-(0.5)	36.1889	-79.3948	Alamance	6/3/2009	46	Good	24.1
303000204	BF46	SR 1754	Jordan Cr	16-14-6-(0.5)	36.1889	-79.3948	Alamance	4/22/2013	42	Good-Fair	24.1
303000204	BF46	SR 1754	Jordan Cr	16-14-6-(0.5)	36.1889	-79.3948	Alamance	4/5/2018	42	Good-Fair	24.1
303000205	BF101	SR 2174	Marys Cr	16-26	35.9160	-79.3067	Alamance	6/9/2004	54	Excellent	11.9
303000205	BF101	SR 2174	Marys Cr	16-26	35.9160	-79.3067	Alamance	4/13/2009	50	Good	11.9
303000205	BF101	SR 2174	Marys Cr	16-26	35.9160	-79.3067	Alamance	4/18/2013	48	Good	11.9
303000205	BF119	SR 2116	Varnals Cr	16-21	35.9872	-79.3588	Alamance	6/9/2004	46	Good	11.6
303000205	BF119	SR 2116	Varnals Cr	16-21	35.9872	-79.3588	Alamance	4/13/2009	54	Excellent	11.6
303000205	BF119	SR 2116	Varnals Cr	16-21	35.9872	-79.3588	Alamance	4/18/2013	48	Good	11.6
303000205	BF119	SR 2116	Varnals Cr	16-21	35.9872	-79.3588	Alamance	4/4/2018	46	Good	11.6
303000205	BF43	SR 1525	Ferrels Cr	16-32	35.8268	-79.1912	Chatham	5/2/2003	48	Good	15.7

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000205	BF43	SR 1525	Ferrels Cr	16-32	35.8268	-79.1912	Chatham	3/13/2008	38	Fair	15.7
303000205	BF43	SR 1525	Ferrels Cr	16-32	35.8268	-79.1912	Chatham	5/15/2008	54	Excellent	15.7
303000205	BF43	SR 1525	Ferrels Cr	16-32	35.8268	-79.1912	Chatham	5/16/2013	46	Good	15.7
303000205	BF43	SR 1525	Ferrels Cr	16-32	35.8268	-79.1912	Chatham	4/11/2018	40	Good-Fair	15.7
303000205	BF44	SR 1539	Collins Cr	16-30-(1.5)	35.8542	-79.2308	Chatham	5/2/2003	28	Not Rated	19.4
303000205	BF55	SR 2158	Haw Cr	16-20-(4)	36.0004	-79.3427	Alamance	4/23/2003	52	Good	28
303000205	BF55	SR 2158	Haw Cr	16-20-(4)	36.0004	-79.3427	Alamance	4/13/2009	48	Good	28
303000205	BF55	SR 2158	Haw Cr	16-20-(4)	36.0004	-79.3427	Alamance	4/18/2013	44	Good-Fair	28
303000205	BF55	SR 2158	Haw Cr	16-20-(4)	36.0004	-79.3427	Alamance	4/5/2018	48	Good	28
303000205	BF9	NC 87	Terrells Cr	16-31-(2.5)	35.8219	-79.2555	Chatham	4/24/2003	56	Excellent	21
303000205	BF9	NC 87	Terrells Cr	16-31-(2.5)	35.8219	-79.2555	Chatham	3/13/2008	42	Good-Fair	21
303000205	BF9	NC 87	Terrells Cr	16-31-(2.5)	35.8219	-79.2555	Chatham	4/17/2008	46	Good	21
303000205	BF9	NC 87	Terrells Cr	16-31-(2.5)	35.8219	-79.2555	Chatham	5/15/2008	44	Good-Fair	21
303000205	BF9	NC 87	Terrells Cr	16-31-(2.5)	35.8219	-79.2555	Chatham	6/12/2008	48	Good	21
303000205	BF9	NC 87	Terrells Cr	16-31-(2.5)	35.8219	-79.2555	Chatham	5/16/2013	48	Good	21
303000206	BF14	off SR 1750	Bolin Cr	16-41-1-15-1-(0.5)	35.9263	-79.0283	Orange	5/10/2013	40	Good-Fair	11.5
303000206	BF14	off SR 1750	Bolin Cr	16-41-1-15-1-(0.5)	35.9263	-79.0283	Orange	4/4/2018	42	Good-Fair	11.5
303000206	BF147	SR 1992	Morgan Creek	16-41-2-(5.5)	35.8912	-79.0405	Orange	4/12/2018	48	Good	38
303000206	BF15	off SR 1900	Morgan Cr	16-41-2-(5.5)	35.8928	-79.0164	Orange	5/10/2013	38	Fair	41.6
303000206	BF57	SR 2220	New Hope Cr	16-41-1-(11.5)	35.9425	-78.9756	Durham	5/3/2003	40	Good-Fair	52.2
303000207	BF109	SR 1711	Pokeberry Cr	16-37	35.7740	-79.1200	Chatham	7/19/2004	48	Good	11.5
303000207	BF109	SR 1711	Pokeberry Cr	16-37	35.7740	-79.1200	Chatham	4/15/2009	56	Excellent	11.5
303000207	BF109	SR 1711	Pokeberry Cr	16-37	35.7740	-79.1200	Chatham	4/17/2013	48	Good	11.5
303000207	BF16	off SR 1943	Robeson Cr	16-38-(3)	35.7067	-79.1336	Chatham	5/5/2003	52	Good	24.5
Deep River Subbasin, HUC8 03030003											

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000301	BF100	off SR 1551	Long Br	17-2-1-(2)	36.0306	-79.9386	Guilford	7/6/2004	38	Fair	3.5
303000301	BF110	off SR 1145	Richland Cr	17-7-(4)	35.9386	-79.9094	Guilford	6/7/2004	36	Fair	15.3
303000301	BF120	SR 1850	W Fk Deep R	17-3-(0.3)	36.0564	-80.0217	Guilford	6/8/2004	32	Poor	11.5
303000301	BF13	off SR 1549	Bull Run Cr	17-5-(1)	36.0109	-79.9138	Guilford	5/27/2004	44	Good-Fair	5.2
303000301	BF13	off SR 1549	Bull Run Cr	17-5-(1)	36.0109	-79.9138	Guilford	6/26/2009	42	Good-Fair	5.2
303000301	BF29	SR 1140	Hickory Cr	17-8.5-(3)	35.9339	-79.8697	Guilford	6/23/2003	46	Good	20.1
303000301	BF30	SR 1144	Bull Run Cr	17-5-(2)	35.9808	-79.9261	Guilford	6/24/2003	42	Good-Fair	7.8
303000301	BF31	SR 1154	Richland Cr	17-7-(4)	35.9412	-79.9320	Guilford	4/22/2003	36	Fair	12.4
303000301	BF31	SR 1154	Richland Cr	17-7-(4)	35.9412	-79.9320	Guilford	5/13/2013	40	Good-Fair	12.4
303000301	BF31	SR 1154	Richland Cr	17-7-(4)	35.9412	-79.9320	Guilford	5/2/2018	38	Fair	12.4
303000301	BF50	SR 1929	Muddy Cr	17-9-(1)	35.8756	-79.8772	Randolph	6/24/2003	50	Good	16.8
303000301	BF53	SR 2114	Polecat Cr	17-11-(1)	35.8799	-79.7703	Randolph	6/24/2003	46	Good	29.3
303000301	BF53	SR 2114	Polecat Cr	17-11-(1)	35.8799	-79.7703	Randolph	6/4/2009	60	Excellent	29.3
303000301	BF53	SR 2114	Polecat Cr	17-11-(1)	35.8799	-79.7703	Randolph	5/14/2013	46	Good	29.3
303000301	BF53	SR 2114	Polecat Cr	17-11-(1)	35.8799	-79.7703	Randolph	5/3/2018	40	Good-Fair	29.3
303000301	BF92	SR 2149	Haskett Cr	17-12	35.7597	-79.7922	Randolph	6/7/2004	40	Good-Fair	10.9
303000301	BF96	SR 1132	Hickory Cr	17-8.5-(1)	35.9497	-79.8689	Guilford	7/6/2004	38	Fair	9.1
303000301	BF99	SR 2114	Little Polecat Cr	17-11-3	35.8750	-79.7458	Randolph	6/7/2004	50	Good	7.2
303000302	BF105	SR 2442	Mount Pleasant Cr	17-16-3	35.7883	-79.6442	Randolph	7/28/2004	48	Good	7.6
303000302	BF24	SR 1102	Brush Cr	17-23	35.7093	-79.5400	Chatham	6/26/2003	52	Good	19.1
303000302	BF24	SR 1102	Brush Cr	17-23	35.7093	-79.5400	Chatham	6/8/2009	50	Good	19.1
303000302	BF24	SR 1102	Brush Cr	17-23	35.7093	-79.5400	Chatham	5/15/2013	56	Excellent	19.1
303000302	BF24	SR 1102	Brush Cr	17-23	35.7093	-79.5400	Chatham	4/19/2018	44	Good-Fair	19.1
303000302	BF62	SR 2481	Sandy Cr	17-16-(3.5)	35.7853	-79.6656	Randolph	6/24/2003	52	Good	45.1
303000302	BF62	SR 2481	Sandy Cr	17-16-(3.5)	35.7853	-79.6656	Randolph	5/14/2013	56	Excellent	45.1
303000303	BF103	SR 1210	McLendons Cr	17-30	35.3170	-79.5433	Moore	6/8/2009	46	Good	14.3

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000303	BF103	SR 1210	McLendons Cr	17-30	35.3170	-79.5433	Moore	9/4/2013	46	Good	14.3
303000303	BF103	SR 1210	McLendons Cr	17-30	35.3170	-79.5433	Moore	5/9/2018	46	Good	14.3
303000303	BF142	SR 1006	McLendons Cr	17-30	35.4604	-79.4015	Moore	9/4/2013	54	Excellent	99.8
303000304	BF123	SR 1403	Wolf Cr	17-26-4	35.4322	-79.7119	Moore	7/27/2004	52	Good	8
303000304	BF23	SR 1003	Fork Cr	17-25	35.5278	-79.6423	Randolph	6/26/2003	50	Good	31.2
303000304	BF23	SR 1003	Fork Cr	17-25	35.5278	-79.6423	Randolph	6/8/2009	52	Good	31.2
303000304	BF23	SR 1003	Fork Cr	17-25	35.5278	-79.6423	Randolph	5/14/2013	58	Excellent	31.2
303000304	BF23	SR 1003	Fork Cr	17-25	35.5278	-79.6423	Randolph	5/3/2018	50	Good	31.2
303000304	BF32	SR 1275	Cabin Cr	17-26-5-(1)	35.4021	-79.6602	Moore	6/27/2003	42	Good-Fair	46.9
303000304	BF32	SR 1275	Cabin Cr	17-26-5-(1)	35.4021	-79.6602	Moore	6/9/2009	54	Excellent	46.9
303000304	BF32	SR 1275	Cabin Cr	17-26-5-(1)	35.4021	-79.6602	Moore	9/23/2014	32	Not Rated	46.9
303000304	BF38	SR 1405	Bear Cr	17-26-(1)	35.4642	-79.6955	Moore	6/27/2003	48	Good	25.2
303000304	BF38	SR 1405	Bear Cr	17-26-(1)	35.4642	-79.6955	Moore	6/9/2009	54	Excellent	25.2
303000304	BF38	SR 1405	Bear Cr	17-26-(1)	35.4642	-79.6955	Moore	9/23/2014	48	Good	25.2
303000304	BF38	SR 1405	Bear Cr	17-26-(1)	35.4642	-79.6955	Moore	5/9/2018	54	Excellent	25.2
303000304	BF5	NC 22	Buffalo Cr	17-28	35.4706	-79.5167	Moore	6/26/2003	56	Excellent	21.4
303000304	BF5	NC 22	Buffalo Cr	17-28	35.4706	-79.5167	Moore	6/11/2009	56	Excellent	21.4
303000304	BF6	NC 24/27	Wet Cr	17-26-5-5	35.3903	-79.6408	Moore	6/27/2003	40	Good-Fair	15.9
303000304	BF86	SR 1606	Falls Cr	17-27	35.4831	-79.5161	Moore	6/9/2009	44	Good-Fair	14.4
303000304	BF86	SR 1606	Falls Cr	17-27	35.4831	-79.5161	Moore	6/15/2010	58	Excellent	14.4
303000305	BF136	SR 2170	Tick Cr	17-43-13	35.6735	-79.3659	Chatham	6/11/2009	52	Good	19.3
303000305	BF136	SR 2170	Tick Cr	17-43-13	35.6735	-79.3659	Chatham	5/15/2013	42	Good-Fair	19.3
303000305	BF136	SR 2170	Tick Cr	17-43-13	35.6735	-79.3659	Chatham	4/18/2018	42	Good-Fair	19.3
303000305	BF33	SR 1300	Rocky R	17-43-(1)	35.8070	-79.5277	Chatham	5/6/2003	40	Good-Fair	7.4
303000305	BF33	SR 1300	Rocky R	17-43-(1)	35.8070	-79.5277	Chatham	4/15/2009	50	Good	7.4

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000305	BF33	SR 1300	Rocky R	17-43-(1)	35.8070	-79.5277	Chatham	4/17/2013	44	Good-Fair	7.4
303000305	BF33	SR 1300	Rocky R	17-43-(1)	35.8070	-79.5277	Chatham	4/19/2018	40	Good-Fair	7.4
303000305	BF56	SR 2187	Bear Cr	17-43-16	35.6256	-79.2988	Chatham	6/13/2003	44	Good-Fair	42.6
303000305	BF56	SR 2187	Bear Cr	17-43-16	35.6256	-79.2988	Chatham	3/13/2008	34	Fair	42.6
303000305	BF56	SR 2187	Bear Cr	17-43-16	35.6256	-79.2988	Chatham	4/17/2008	46	Good	42.6
303000305	BF56	SR 2187	Bear Cr	17-43-16	35.6256	-79.2988	Chatham	5/15/2008	44	Good-Fair	42.6
303000305	BF56	SR 2187	Bear Cr	17-43-16	35.6256	-79.2988	Chatham	6/12/2008	42	Good-Fair	42.6
303000305	BF56	SR 2187	Bear Cr	17-43-16	35.6256	-79.2988	Chatham	5/16/2013	48	Good	42.6
303000305	BF58	SR 2229	Loves Cr	17-43-10	35.7292	-79.4288	Chatham	5/5/2003	44	Good-Fair	8.2
303000305	BF58	SR 2229	Loves Cr	17-43-10	35.7292	-79.4288	Chatham	4/15/2009	52	Good	8.2
303000305	BF58	SR 2229	Loves Cr	17-43-10	35.7292	-79.4288	Chatham	4/17/2013	32	Not Rated	8.2
303000305	BF58	SR 2229	Loves Cr	17-43-10	35.7292	-79.4288	Chatham	7/31/2014	44	Good-Fair	8.2
303000305	BF58	SR 2229	Loves Cr	17-43-10	35.7292	-79.4288	Chatham	4/11/2018	38	Fair	8.2
303000305	BF72	US 421	Tick Cr	17-43-13	35.6603	-79.4022	Chatham	6/13/2003	38	Fair	15.5
303000306	BF37	SR 1403	Big Buffalo Cr	17-40	35.5417	-79.2297	Lee	6/16/2003	36	Fair	19.7
303000306	BF59	SR 2306	Indian Cr	17-35	35.5383	-79.3358	Chatham	6/13/2003	36	Fair	25.3
303000306	BF59	SR 2306	Indian Cr	17-35	35.5383	-79.3358	Chatham	4/26/2005	52	Good	25.3
303000306	BF59	SR 2306	Indian Cr	17-35	35.5383	-79.3358	Chatham	5/15/2013	24	Poor	25.3
303000306	BF59	SR 2306	Indian Cr	17-35	35.5383	-79.3358	Chatham	4/18/2018	28	Poor	25.3
Upper Cape Fear River Subbasin, HUC8 03030004											
303000401	BF41	SR 1418	Avents Cr	18-13-(2)	35.4872	-78.9100	Harnett	6/6/2003	44	Good-Fair	14.2
303000401	BF41	SR 1418	Avents Cr	18-13-(2)	35.4872	-78.9100	Harnett	6/10/2009	46	Good	14.2
303000401	BF41	SR 1418	Avents Cr	18-13-(2)	35.4872	-78.9100	Harnett	8/14/2013	40	Good-Fair	14.2
303000401	BF41	SR 1418	Avents Cr	18-13-(2)	35.4872	-78.9100	Harnett	5/4/2018	46	Good	14.2

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000402	BF125	SR 1285	Barbeque Cr	18-20-13	35.3380	-79.0455	Harnett	4/16/2008	9	Good-Fair	31.4
303000403	BF1	Manchester Rd	Flat Cr	18-23-15	35.1825	-79.1775	Hoke	9/16/2003	11	Good	7.6
303000403	BF1	Manchester Rd	Flat Cr	18-23-15	35.1825	-79.1775	Hoke	4/10/2008	11	Good	7.6
303000403	BF17	off SR 2026	James Cr	18-23-13	35.1872	-79.2933	Moore	9/16/2003	12	Good	12.8
303000403	BF17	off SR 2026	James Cr	18-23-13	35.1872	-79.2933	Moore	4/10/2008	13	Excellent	12.8
303000403	BF25	SR 1103	Cypress Cr	18-23-16-10	35.2594	-79.1769	Harnett	4/22/2002	9	Good-Fair	4.5
303000403	BF3	NC 22	Nicks Cr	18-23-3-(3)	35.2533	-79.4125	Moore	9/15/2003	10	Good-Fair	26.8
303000403	BF4	NC 22	Little R	18-23-(1)	35.2694	-79.4169	Moore	9/15/2003	13	Excellent	27.3
303000403	BF4	NC 22	Little R	18-23-(1)	35.2694	-79.4169	Moore	4/9/2008	6	Poor	27.3
303000403	BF48	SR 1810	Crane Cr	18-23-16	35.3100	-79.3244	Moore	4/23/2002	42	Good-Fair	16.8
303000403	BF48	SR 1810	Crane Cr	18-23-16	35.3100	-79.3244	Moore	4/9/2008	22	Not Rated	16.8
303000403	BF49	SR 1825	Beaver Cr	18-23-16-8	35.2692	-79.2269	Moore	4/22/2002	9	Good-Fair	13.5
303000403	BF49	SR 1825	Beaver Cr	18-23-16-8	35.2692	-79.2269	Moore	4/9/2008	8	Fair	13.5
303000403	BF51	SR 2005	Crane Cr	18-23-16	35.2614	-79.2522	Moore	4/22/2002	36	Fair	60.2
303000403	BF7	NC 24/27	Herds Cr	18-23-16-3	35.3192	-79.3017	Moore	4/23/2002	46	Good	8.9
303000403	BF70	US 1	Crane Cr	18-23-16	35.2844	-79.2719	Moore	4/22/2002	40	Good-Fair	32.7
303000404	BF126	Manchester Rd	Tank Cr	18-23-27	35.1877	-79.0062	Cumberland	6/27/2008	4	Poor	5.7
303000404	BF137	SR 1001	Hector Cr	18-23-21	35.1831	-79.0985	Moore	10/15/2013	11	Good	4.7
303000404	BF138	Manchester Road	Jumping Run	18-23-20	35.1638	-79.1169	Hoke	10/15/2013	12	Good	5
303000404	BF2	NC 210	Jumping Run Cr	18-23-29	35.2172	-78.9431	Cumberland	10/2/2003	8	Fair	29
303000404	BF21	SR 1001	Buffalo Cr	18-23-18	35.1897	-79.1367	Moore	9/15/2003	11	Good	18.3
303000404	BF21	SR 1001	Buffalo Cr	18-23-18	35.1897	-79.1367	Moore	4/10/2008	11	Good	18.3
303000404	BF22	SR 1001	Muddy Cr	18-23-26	35.1967	-78.9986	Cumberland	9/16/2003	9	Good-Fair	16.1
303000404	BF22	SR 1001	Muddy Cr	18-23-26	35.1967	-78.9986	Cumberland	4/18/2008	13	Excellent	16.1
303000404	BF52	SR 2031	Anderson Cr	18-23-32	35.2658	-78.8194	Harnett	10/2/2003	11	Good	34.7

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000404	BF52	SR 2031	Anderson Cr	18-23-32	35.2658	-78.8194	Harnett	4/16/2008	7	Fair	34.7
303000405	BF12	off SR 1519	Buies Cr	18-18	35.3989	-78.7497	Harnett	6/6/2003	22	Not Rated	7.7
303000405	BF40	SR 1412	Hector Cr	18-15-(0.7)	35.4668	-78.8583	Harnett	6/6/2003	56	Excellent	17
303000405	BF40	SR 1412	Hector Cr	18-15-(0.7)	35.4668	-78.8583	Harnett	8/13/2013	44	Good-Fair	17
303000405	BF40	SR 1412	Hector Cr	18-15-(0.7)	35.4668	-78.8583	Harnett	5/4/2018	48	Good	17
303000405	BF42	SR 1441	Kenneth Cr	18-16-1-(2)	35.5145	-78.7861	Harnett	6/6/2003	46	Good	15.4
303000405	BF42	SR 1441	Kenneth Cr	18-16-1-(2)	35.5145	-78.7861	Harnett	6/10/2009	40	Good-Fair	15.4
303000405	BF42	SR 1441	Kenneth Cr	18-16-1-(2)	35.5145	-78.7861	Harnett	8/13/2013	34	Not Rated	15.4
303000405	BF42	SR 1441	Kenneth Cr	18-16-1-(2)	35.5145	-78.7861	Harnett	7/31/2014	40	Good-Fair	15.4
303000405	BF42	SR 1441	Kenneth Cr	18-16-1-(2)	35.5145	-78.7861	Harnett	5/10/2018	38	Fair	15.4
303000406	BF139	Plank Road	Rockfish Cr	18-31-(1)	35.0591	-79.2780	Hoke	10/16/2013	11	Good	39
303000406	BF139	Plank Road	Rockfish Cr	18-31-(1)	35.0591	-79.2780	Hoke	6/19/2018	13	Excellent	39
303000406	BF140	Plank Road	Puppy Cr	18-31-19	35.0498	-79.1295	Hoke	10/16/2013	13	Excellent	19.5
303000406	BF140	Plank Road	Puppy Cr	18-31-19	35.0498	-79.1295	Hoke	6/19/2018	14	Excellent	19.5
303000406	BF141	Fire Service Road # 25	Piney Bottom Cr	18-31-4	35.1027	-79.3003	Hoke	10/18/2013	13	Excellent	8.1
303000406	BF141	Fire Service Road # 25	Piney Bottom Cr	18-31-4	35.1027	-79.3003	Hoke	6/22/2018	12	Good	8.1
303000406	BF19	Plank Rd	Little Rockfish Cr	18-31-24-(1)	35.0544	-79.0908	Hoke	10/20/2003	13	Excellent	11.2
303000406	BF19	Plank Rd	Little Rockfish Cr	18-31-24-(1)	35.0544	-79.0908	Hoke	4/15/2008	14	Excellent	11.2
303000406	BF19	Plank Rd	Little Rockfish Cr	18-31-24-(1)	35.0544	-79.0908	Hoke	10/16/2013	13	Excellent	11.2
303000406	BF20	Plank Rd	Juniper Cr	18-31-10	35.0583	-79.2522	Hoke	10/21/2003	13	Excellent	11.3
303000406	BF20	Plank Rd	Juniper Cr	18-31-10	35.0583	-79.2522	Hoke	4/15/2008	14	Excellent	11.3
303000406	BF34	SR 1301	Nicholson Cr	18-31-14	35.0308	-79.2106	Hoke	10/20/2003	14	Excellent	16.2
303000406	BF34	SR 1301	Nicholson Cr	18-31-14	35.0308	-79.2106	Hoke	4/15/2008	13	Excellent	16.2
303000406	BF35	SR 1400	Bones Cr	18-31-24-2	35.0633	-79.0389	Cumberland	10/20/2003	10	Good-Fair	12.2

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000406	BF35	SR 1400	Bones Cr	18-31-24-2	35.0633	-79.0389	Cumberland	4/11/2008	13	Excellent	12.2
303000406	BF39	SR 1406	Puppy Cr	18-31-19	34.9908	-79.1197	Hoke	10/21/2003	10	Good-Fair	25.8
303000406	BF39	SR 1406	Puppy Cr	18-31-19	34.9908	-79.1197	Hoke	4/15/2008	11	Good	25.8
303000407	BF10	NC 87/210/24	Cross Cr	18-27-(3)	35.0583	-78.8844	Cumberland	10/20/2003	5	Poor	25.2
303000407	BF143	Person Street	Blounts Cr	18-27-5	35.0498	-78.8706	Cumberland	6/24/2014	4	Poor	12.2
303000407	BF144	Langdon Street	Cross Cr	18-27-(1)	35.0796	-78.8885	Cumberland	6/24/2014	7	Fair	14.4
303000407	BF144	Langdon Street	Cross Cr	18-27-(1)	35.0796	-78.8885	Cumberland	5/14/2018	6	Poor	14.4
303000407	BF45	SR 1728	Gum Log Canal	18-28-1	35.0644	-78.8425	Cumberland	10/2/2003	60	Excellent	30.8
303000407	BF45	SR 1728	Gum Log Canal	18-28-1	35.0644	-78.8425	Cumberland	4/16/2008	58	Excellent	30.8
Lower Cape Fear River Subbasin, HUC8 03030005											
303000501	BF91	SR 1318	Harrison Cr	18-42	34.7472	-78.7089	Bladen	6/4/2008	40	Not Rated	29.6
303000502	BF77	NC 87	Browns Cr	18-45	34.6137	-78.5853	Bladen	4/21/2008	44	Not Rated	16.5
303000504	BF122	SR 1704	Whites Cr	18-50-5	34.5458	-78.5056	Bladen	4/22/2008	44	Not Rated	10.9
303000504	BF132	SR 1709	Hammond Cr	18-50	34.5699	-78.5605	Bladen	4/22/2008	36	Not Rated	12
Black River Subbasin, HUC 8 03030006											
303000605	BF134	SR 1146	Crane Cr	18-68-2-12	34.8815	-78.2815	Sampson	4/23/2008	48	Not Rated	12.2
303000606	BF133	off SR 1536	Diversion Canal	18-68-17	34.4903	-78.3322	Bladen	4/22/2008	42	Not Rated	-1
303000606	BF82	US 701	Colly Cr	18-68-17	34.7108	-78.4568	Bladen	6/4/2008	28	Not Rated	13
Northeast Cape Fear River Subbasin, HUC8 03030007											
303000703	BF127	SR 1702	Limestone Cr	18-74-23	34.9083	-77.8384	Duplin	6/3/2008	42	Not Rated	60.3
303000703	BF128	NC 50	Stockinghead Cr	18-74-24	34.8796	-77.8942	Duplin	6/3/2008	40	Not Rated	7.8
303000703	BF129	NC 41/NC 111	Muddy Cr	18-74-25	34.8427	-77.7973	Duplin	6/3/2008	48	Not Rated	41.9

HUC10	StationID	Station	Waterbody	Stream Index Number	Latitude	Longitude	County	Date	NCIBI Score	Bioclass	Drainage Area Mi^2
303000704	BF130	NC 11	Island Cr	18-74-27	34.8024	-77.9419	Duplin	6/2/2008	48	Not Rated	15
303000705	BF131	NC 11	Little Rock Fish Cr	18-74-29-6	34.7224	-77.9816	Duplin	6/2/2008	36	Not Rated	9.2

Figure 12: Cape Fear River Basin Ambient Water Quality Stations

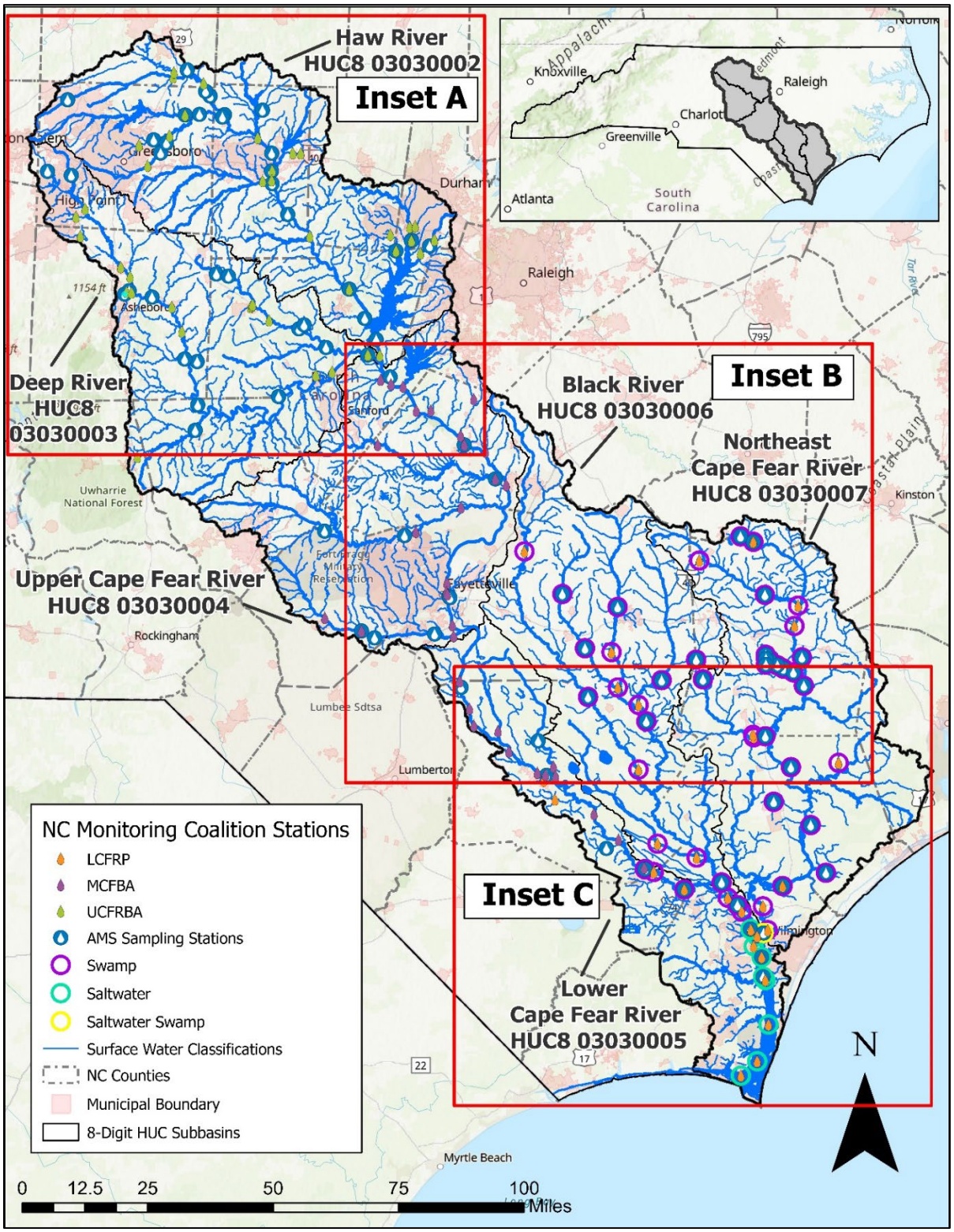


Figure 13: Cape Fear Ambient Water Quality Stations - Inset A

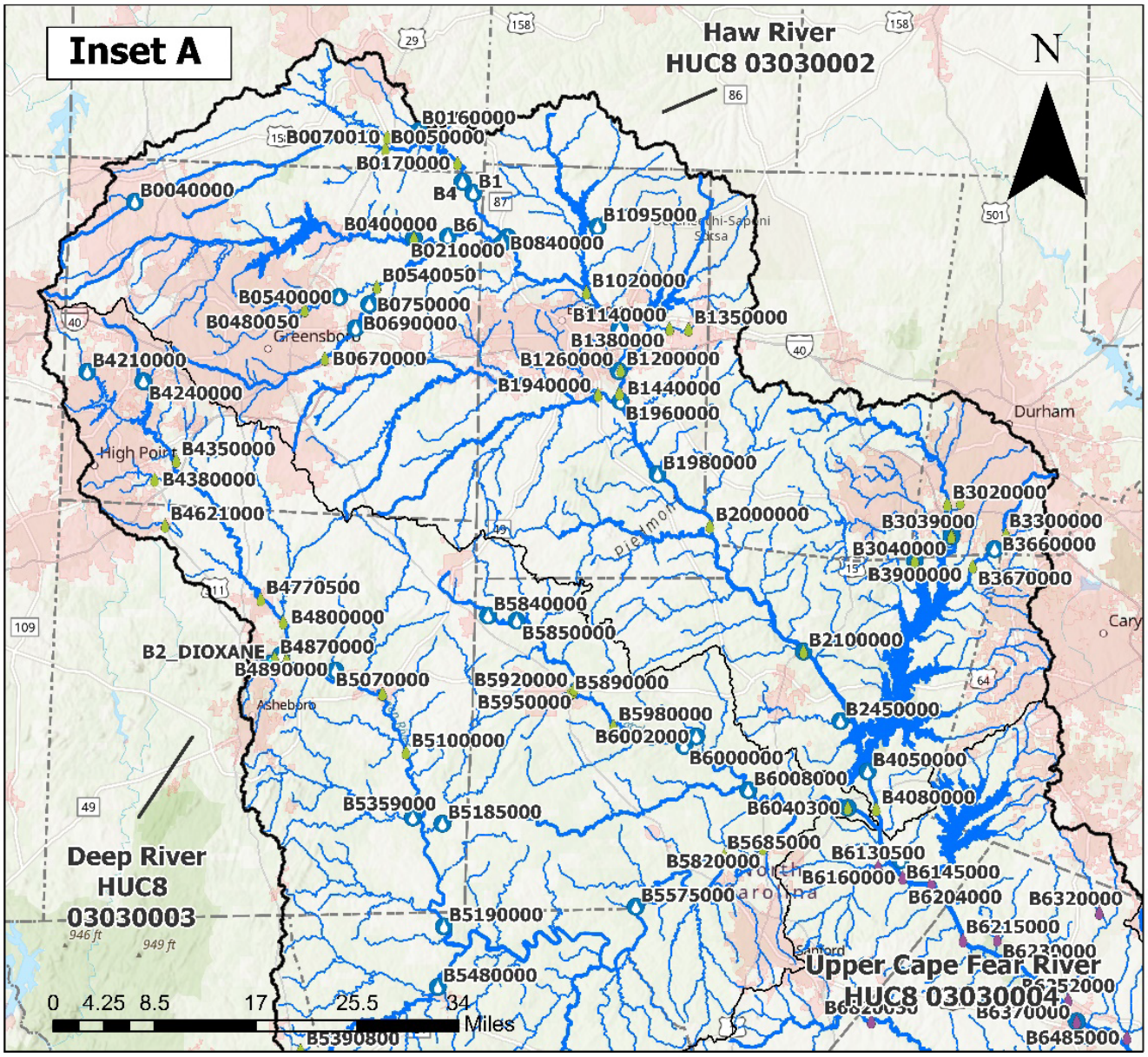


Figure 14: Cape Fear Ambient Water Quality Stations – Inset B

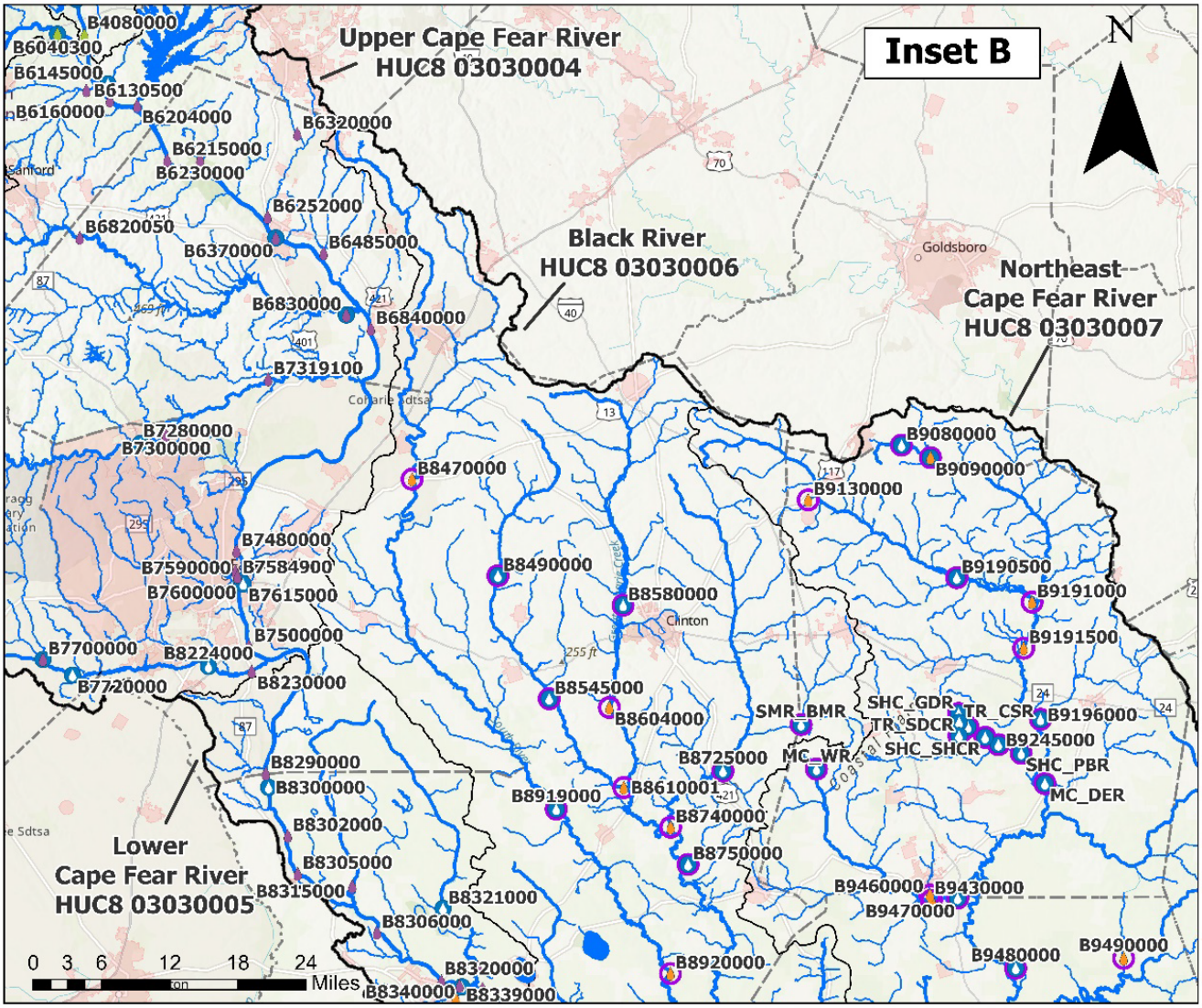


Figure 15: Cape Fear Ambient Water Quality Stations – Inset C

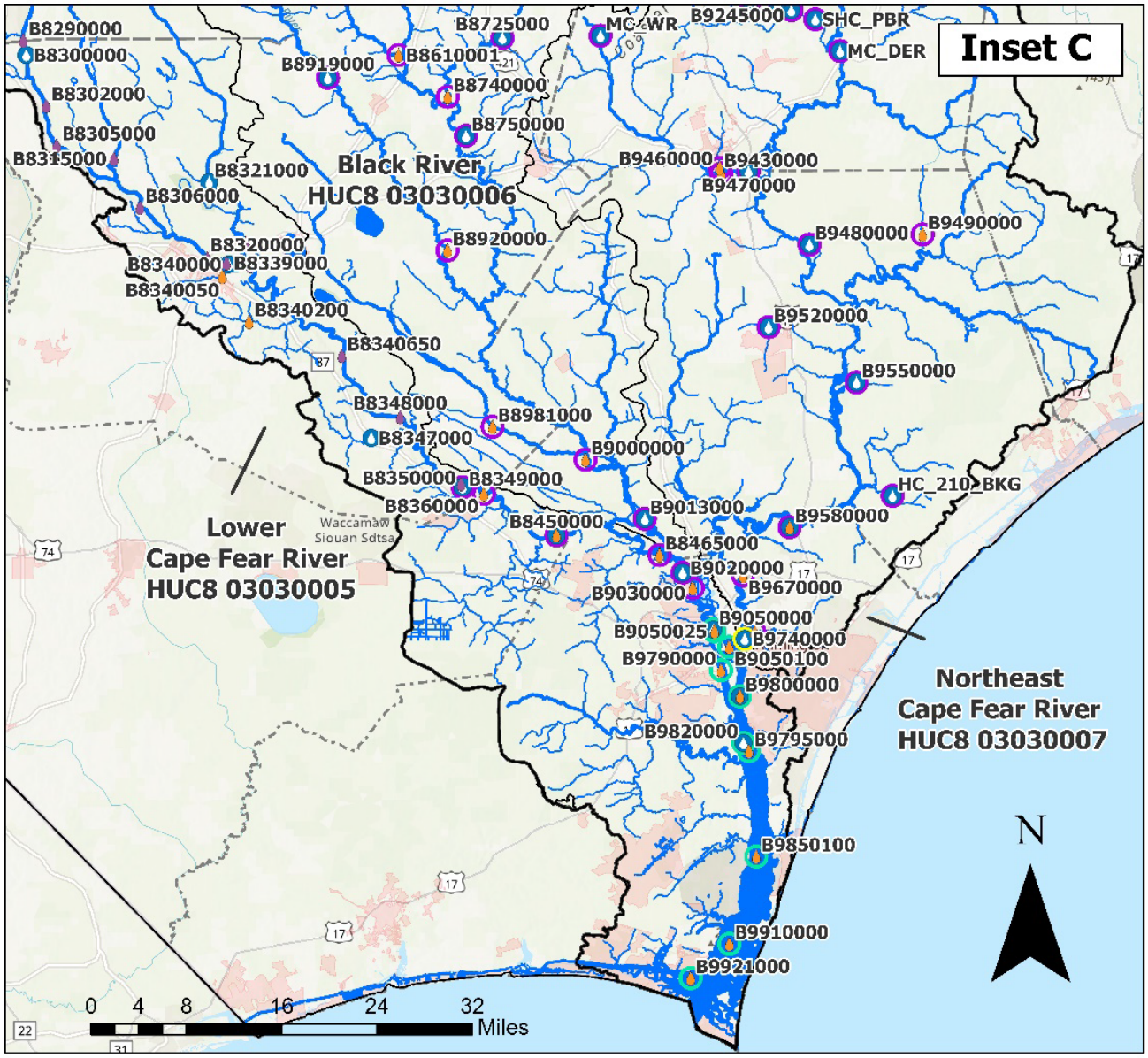


Table 3: Ambient Monitoring Stations 2000-2020

HUC 10	StationID	ProjectID*	Monitoring Location	Location Type	Ecoregion Code^	BIMS Index	Stream Classification	Latitude	Longitude	No. Years 2000-2020	No. Ave Day Records
Haw River Subbasin, HUC8 03030002											
0303000202	B0040000	NCAMBNT	HAW RIVER AT SR 2109 NR OAK RIDGE	River/Stream	45	16-(1)	WS-V;NSW	36.2133	-79.9562	21	240
0303000202	B0050000	NCAMBNT	HAW RIVER AT US 29 BUS NR BENAJA	River/Stream	45	16-(1)	WS-V;NSW	36.2652	-79.6523	6	61
0303000202	B0050000	UCFRBA	Haw River at US 29 Bus near Benaja	River/Stream	45	16-(1)	WS-V;NSW	36.2652	-79.6523	21	356
0303000202	B0070010	UCFRBA	Troublesome Crk at US 29 Bus near Reidsville	River/Stream	45	16-6-(3)	WS-V;NSW	36.2768	-79.6499	21	256
0303000202	B0160000	NCAMBNT	LITTLE TROUBLESOME CRK AT SR 2600 NR REIDSVILLE	River/Stream	45	16-7-(2)	WS-IV;NSW	36.2826	-79.6116	21	236
0303000202	B0170000	UCFRBA	Haw River at SR 2620 High Rock Rd near Williamsburg	River/Stream	45	16-(6.5)	WS-IV;NSW	36.2514	-79.5648	21	357
0303000202	B0190000	NCAMBNT	HAW RIVER AT NC 87 ALTAMAHAW	River/Stream	45	16-(10.5)	WS-V;NSW	36.1824	-79.5102	2	20
0303000202	B0210000	NCAMBNT	HAW RIVER AT SR 1561 NR ALTAMAHAW	River/Stream	45	16-(10.5)	WS-V;NSW	36.1786	-79.5042	20	224
0303000201	B0400000	NCAMBNT	REEDY FORK AT SR 2719 HIGH ROCK RD NR MONTICELLO	River/Stream	45	16-11-(9)	WS-V;NSW	36.1778	-79.6177	2	16
0303000201	B0400000	UCFRBA	Reedy Fork at SR 2719 High Rock Rd near Monticello	River/Stream	45	16-11-(9)	WS-V;NSW	36.1778	-79.6177	19	226
0303000201	B0410000	NCRNDM	N BUFFALO CRK AT W FRIENDLY AVE AT GREENSBORO	River/Stream	45	16-11-14-1	WS-V;NSW	36.0819	-79.8283	2	24
0303000201	B0480050	UCFRBA	N Buffalo Crk at N Buffalo Crk WWTP Influent Conduit Pier at Greensboro	River/Stream	45	16-11-14-1	WS-V;NSW	36.1074	-79.7502	21	357
0303000201	B0540000	NCAMBNT	N BUFFALO CRK AT SR 2832 NR GREENSBORO	River/Stream	45	16-11-14-1	WS-V;NSW	36.1199	-79.7082	21	241
0303000201	B0540050	UCFRBA	N Buffalo Crk at SR 2770 Huffine Mill Rd near McLeansville	River/Stream	45	16-11-14-1	WS-V;NSW	36.13	-79.6626	21	357
0303000201	B0670000	UCFRBA	S Buffalo Crk at SR 3000 McConnell Rd near Greensboro	River/Stream	45	16-11-14-2	WS-V;NSW	36.0598	-79.7256	21	357
0303000201	B0690000	NCAMBNT	S BUFFALO CRK AT OLD US 70 NR GREENSBORO	River/Stream	45	16-11-14-2	WS-V;NSW	36.0894	-79.6883	3	29
0303000201	B0750000	NCAMBNT	S BUFFALO CRK AT SR 2821 AT MCLEANSVILLE	River/Stream	45	16-11-14-2	WS-V;NSW	36.1128	-79.6718	21	244
0303000201	B0750000	UCFRBA	S Buffalo Crk at SR 2821 Harvest Rd at McLeansville	River/Stream	45	16-11-14-2	WS-V;NSW	36.1128	-79.6718	11	174
0303000201	B0840000	NCAMBNT	REEDY FORK AT NC 87 AT OSSIPEE	River/Stream	45	16-11-(9)	WS-V;NSW	36.173	-79.5103	21	245
0303000201	B0840000	UCFRBA	Reedy Fork at NC 87 at Ossipee	River/Stream	45	16-11-(9)	WS-V;NSW	36.173	-79.5103	3	34
0303000204	B0850000	UCFRBA	Haw River at SR 1530 Gerringer Mill Rd near Ossipee	River/Stream	45	16-(10.5)	WS-V;NSW	36.1531	-79.4895	11	173
0303000202	B1	NCAMBNT	HAW RIVER AT SR 1712 BROOKS BRIDGE RD	River/Stream	45	16-(10.5)	WS-V;NSW	36.2219	-79.5456	2	21

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0303000204	B1000000	NCRNDM	DRY CRK BESIDE SR 1530 NR BURLINGTON	River/Stream	45	16-13	WS-V;NSW	36.1327	-79.4673	2	24
0303000204	B1020000	UCFRBA	Haw River at SR 1700 (Lower Hopedale Rd) at Hopedale	River/Stream	45	16-(10.5)	WS-V;NSW	36.1247	-79.4083	11	183
0303000204	B1095000	NCAMBNT	JORDAN CRK AT SR 1754 NR UNION RIDGE	River/Stream	45	16-14-6-(0.5)	WS-II;HQW,NSW	36.189	-79.3948	21	223
0303000204	B1140000	NCAMBNT	HAW RIVER AT NC 49N AT HAW RIVER	River/Stream	45	16-(10.5)	WS-V;NSW	36.0889	-79.3682	21	243
0303000204	B1200000	UCFRBA	Haw River at NC 54 near Graham	River/Stream	45	16-(10.5)	WS-V;NSW	36.0481	-79.3667	21	356
0303000204	B1260000	NCAMBNT	TOWN BRANCH AT SR 2109 NR GRAHAM	River/Stream	45	16-17	WS-V;NSW	36.0473	-79.3691	21	241
0303000204	B1279000	NCRNDM	UT TO STAGG CRK OFF NC 49 NR PLEASANT GROVE	River/Stream	45	16-18-2-(0.5)	WS-II;HQW,NSW	36.1933	-79.2686	2	24
0303000204	B1350000	UCFRBA	Moadams Crk at Corrigdor Rd ups of Discharge near Mebane	River/Stream	45	16-18-7	WS-V;NSW	36.0885	-79.2844	21	355
0303000204	B1380000	UCFRBA	Moadams Crk at SR 1940 Gibson Rd near Florence Town	River/Stream	45	16-18-7	WS-V;NSW	36.0891	-79.3075	21	356
0303000204	B1440000	UCFRBA	Haw River at SR 2158 Swepsonville Rd near Swepsonville	River/Stream	45	16-(10.5)	WS-V;NSW	36.0256	-79.3682	21	356
0303000203	B1480000	NCRNDM	Big Alamance Creek at Woody Ln off SR 3336 (Coble Church Rd) nr Pleasant Garden	River/Stream	45	16-19-(1)	WS-IV;NSW	35.9734	-79.6619	2	20
0303000203	B1940000	UCFRBA	Big Alamance Crk at NC 87 near Swepsonville	River/Stream	45	16-19-(4.5)	WS-V;NSW	36.0242	-79.3943	21	356
0303000203	B1960000	NCAMBNT	BIG ALAMANCE CRK AT SR 2116 AT SWEPSONSVILLE	River/Stream	45	16-19-(4.5)	WS-V;NSW	36.0177	-79.367	21	242
0303000203	B1960000	UCFRBA	Big Alamance Crk at SR 2116 Boy Wood Rd at Swepsonsville	River/Stream	45	16-19-(4.5)	WS-V;NSW	36.0177	-79.367	10	155
0303000205	B1972000	NCRNDM	VARNALS CRK AT SR 2116 NR SWEPSONVILLE	River/Stream	45	16-21	WS-V;NSW	35.9875	-79.3589	2	24
0303000205	B1980000	NCAMBNT	HAW RIVER AT SR 2171 AT SAXAPAHAW	River/Stream	45	16-(10.5)	WS-V;NSW	35.9461	-79.3221	20	224
0303000205	B1980000	UCFRBA	Haw River at SR 2171 at Saxpahaw	River/Stream	45	16-(10.5)	WS-V;NSW	35.9461	-79.3221	4	52
0303000205	B1985000	NCRNDM	Long Branch at SR 2338 (Stockard Rd) near Snow Camp	River/Stream	45	16-26-1	WS-V;NSW	35.9199	-79.3291	2	20
0303000205	B2000000	NCAMBNT	HAW RIVER AT SR 1005 NR SAXAPAHAW	River/Stream	45	16-(10.5)	WS-V;NSW	35.8953	-79.2585	2	19
0303000205	B2000000	UCFRBA	Haw River at SR 1005 near Saxpahaw	River/Stream	45	16-(10.5)	WS-V;NSW	35.8953	-79.2585	17	204
0303000207	B2100000	NCAMBNT	HAW RIVER AT SR 1713 NR BYNUM	River/Stream	45	16-(28.875)	WS-IV;NSW	35.7717	-79.145	21	413
0303000207	B2100000	UCFRBA	Haw River at SR 1713 near Bynum	River/Stream	45	16-(28.875)	WS-IV;NSW	35.7717	-79.145	16	219
0303000207	B2210000	UCFRBA	Haw River at US 64 near Pittsboro	River/Stream	45	16-(36.7)	WS-IV;NSW	35.7309	-79.107	6	68
0303000207	B2450000	NCAMBNT	ROBESON CRK AT BOAT ACCESS OFF SR 1943 NR HANKS CHAPEL	Reservoir	45	16-(37.5)	WS-IV,B;NSW,CA	35.7032	-79.1003	21	210

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0303000207	B2450000	UCFRBA	Robeson Crk at Boat Access Off SR 1943 near Hanks Chapel	Reservoir	45	16-(37.5)	WS-IV,B;NSW,CA	35.7032	-79.1003	11	173
0303000206	B2970000	NCAMBNT	THIRD FORK CRK AT NC 55 AT DURHAM	River/Stream	45	16-41-1-12-(1)	WS-V;NSW	35.9671	-78.8952	2	10
0303000206	B2970000	NCRNDM	THIRD FORK CRK AT NC 55 AT DURHAM	River/Stream	45	16-41-1-12-(1)	WS-V;NSW	35.9671	-78.8952	2	24
0303000206	B3020000	UCFRBA	New Hope Creek at NC 54 near Durham	River/Stream	45	16-41-1-(11.5)	WS-IV;NSW	35.9167	-78.9704	21	355
0303000206	B3025000	NCAMBNT	THIRD FORK CRK AT NC 54 NR DURHAM	River/Stream	45	16-41-1-12-(2)	WS-IV;NSW	35.9187	-78.9548	1	3
0303000206	B3025000	UCFRBA	Third Fork Crk at NC 54 near Durham	River/Stream	45	16-41-1-12-(2)	WS-IV;NSW	35.9187	-78.9548	21	255
0303000206	B3039000	NCAMBNT	NEW HOPE CRK AT CONCRETE IMPOUNDMENT	River/Stream	45	16-41-1-(11.5)	WS-IV;NSW	35.8859	-78.9653	2	14
0303000206	B3039000	UCFRBA	New Hope Creek above SR1107 at concrete impoundment	River/Stream	45	16-41-1-(11.5)	WS-IV;NSW	35.8859	-78.9653	2	20
0303000206	B3040000	NCAMBNT	NEW HOPE CRK AT SR 1107 NR BLANDS	River/Stream	45	16-41-1-(11.5)	WS-IV;NSW	35.8847	-78.9656	20	381
0303000206	B3040000	UCFRBA	New Hope Crk at SR 1107 Stagecoach Rd near Blands	River/Stream	45	16-41-1-(11.5)	WS-IV;NSW	35.8847	-78.9656	20	335
0303000206	B3050000	NCRNDM	BOOKER CRK AT NC 86 AT CHAPEL HILL	River/Stream	45	16-41-1-15-2-(1)	WS-V,B;NSW	35.9526	-79.0574	2	24
0303000206	B3300000	UCFRBA	Northeast Crk at SR 1102 Sedwick Road near RTP	River/Stream	45	16-41-1-17-(0.7)	WS-IV;NSW	35.887	-78.8994	17	284
0303000206	B3660000	NCAMBNT	NORTHEAST CRK AT SR 1100 NR NELSON	River/Stream	45	16-41-1-17-(0.7)	WS-IV;NSW	35.8724	-78.9132	21	409
0303000206	B3670000	UCFRBA	Northeast Crk at SR 1731 O Kelly Church Road near Durham	River/Stream	45	16-41-1-17-(0.7)	WS-IV;NSW	35.8555	-78.9397	21	356
0303000206	B3670500	NCRNDM	UT PANTHER CRK OFF SR 3120 AT CARY	River/Stream	45	16-41-1-17-3	WS-IV;NSW	35.8056	-78.8996	2	17
0303000206	B3750000	NCAMBNT	PHILS CRK NR CALVANDER	River/Stream	45	16-41-2-2-(0.3)	WS-II;HQW,NSW	35.9119	-79.1341	1	5
0303000206	B3899180	UCFRBA	Morgan Crk at Mason Farm WWTP Entrance at Chapel Hill	River/Stream	45	16-41-2-(5.5)	WS-IV;NSW	35.8987	-79.0263	21	356
0303000206	B3900000	NCAMBNT	MORGAN CRK AT SR 1726 NR FARRINGTON	River/Stream	45	16-41-2-(9.5)	WS-IV;NSW,CA	35.8612	-79.01	21	406
0303000206	B3900000	UCFRBA	Morgan Crk at SR 1726 Old Farrington Rd near Farrington	River/Stream	45	16-41-2-(9.5)	WS-IV;NSW,CA	35.8612	-79.01	21	355
0303000202	B4	NCAMBNT	HAW RIV AT TROXLER MILL RD NR REIDSVILLE	River/Stream	45	16-(6.5)	WS-IV;NSW	36.2329	-79.5588	2	21
0303000207	B4050000	NCAMBNT	HAW RIV BELOW JORDAN DAM NR MONCURE	River/Stream	45	16-(42)	WS-IV	35.6534	-79.0673	21	213
0303000207	B4080000	UCFRBA	Haw River at SR 1011 Old US 1 near Haywood	River/Stream	45	16-(42)	WS-IV	35.6164	-79.0569	21	355

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0303000201	B6	NCAMBNT	REEDY FORK AT NC 61 NR OSSIPEE	River/Stream	45	16-11-(9)	WS-V;NSW	36.1792	-79.5763	2	16
Deep River Subbasin, HUC8 03030003											
0303000301	B2_DIOXANE	NCAMBNT	HASKETTS CRK AT HUB MORRIS RD NR ASHEBORO	River/Stream	45	17-12	C	35.7599	-79.7919	2	19
0303000301	B4210000	NCAMBNT	W FORK DEEP RIV AT SR 1818 NR HIGH POINT	River/Stream	45	17-3-(0.7)	WS-IV;CA	36.0466	-80.0141	21	231
0303000301	B4240000	NCAMBNT	E FORK DEEP RIV AT SR 1541 NR HIGH POINT	River/Stream	45	17-2-(0.3)	WS-IV	36.0373	-79.9458	21	236
0303000301	B4280000	NCRNDM	UT to Deep River at Chatfield Dr nr High Point	River/Stream	45	17-(3.7)	WS-IV;CA	35.9724	-79.9369	2	16
0303000301	B4350000	UCFRBA	Deep River at SR 1113 Kivett Dr near Hayworth Spring	River/Stream	45	17-(4)	WS-IV;CA	35.9594	-79.9061	21	358
0303000301	B4378000	UCFRBA	RICHLAND CRK AT SR 1193 BAKER RD near HIGH POINT	River/Stream	45	17-7-(0.5)	WS-IV	35.9474	-79.9542	4	68
0303000301	B4380000	UCFRBA	Richland Crk at SR 1154 Kersey Valley Rd near High point	River/Stream	45	17-7-(4)	WS-IV;CA	35.941	-79.9322	17	289
0303000301	B4410000	NCAMBNT	RICHLAND CRK AT SR 1145 NR HIGH POINT	River/Stream	45	17-(4)	WS-IV;CA	35.941	-79.902	1	5
0303000301	B4410000	UCFRBA	Richland Creek at SR 1145 Riverdale Road near High point	River/Stream	45	17-(4)	WS-IV;CA	35.941	-79.902	4	53
0303000301	B4440000	NCAMBNT	DEEP RIVER AT SR 1129 NR HIGH POINT	River/Stream	45	17-(4)	WS-IV;CA	35.9377	-79.8901	7	75
0303000301	B4440000	UCFRBA	DEEP RIVER AT SR 1129 near HIGH POINT	River/Stream	45	17-(4)	WS-IV;CA	35.9377	-79.8901	6	90
0303000301	B4480000	NCRNDM	Reddicks Creek at SR 1478 Postbridge Dr nr Groometown	River/Stream	45	17-8-(0.5)	WS-IV	35.9963	-79.8862	2	22
0303000301	B4614500	UCFRBA	Randleman Lake at SR 1921 near Randleman	Reservoir	45	17-(4)	WS-IV;CA	35.9062	-79.8565	3	32
0303000301	B4615000	NCAMBNT	DEEP RIVER AT SR 1921 NR RANDLEMAN	River/Stream	45	17-(4)	WS-IV;CA	35.9043	-79.8542	7	80
0303000301	B4621000	UCFRBA	Muddy Crk at SR 1917 (Suits Rd) near Glenola	River/Stream	45	17-9-(1)	WS-IV	35.8958	-79.9195	11	124
0303000301	B4625000	UCFRBA	Muddy Crk at SR 1922 Muddy Creek Rd near Glenola	River/Stream	45	17-9.3-(2)	WS-IV;CA	35.8836	-79.895	7	60
0303000301	B4626000	UCFRBA	MUDDY CRK AT SR 1929 CEDAR SQUARE RD near GLENOLA	River/Stream	45	17-(4)	WS-IV;CA	35.8749	-79.8769	6	71
0303000301	B4770500	UCFRBA	Deep River at Bus 220 Main St at Randleman	River/Stream	45	17-(10.5)	C	35.8233	-79.8033	21	356
0303000301	B4800000	NCAMBNT	DEEP RIVER AT SR 2122 AT WORTHVILLE	River/Stream	45	17-(10.5)	C	35.8007	-79.7762	7	63
0303000301	B4800000	UCFRBA	Deep River at SR 2122/2128 Worthville Rd at Worthville	River/Stream	45	17-(10.5)	C	35.8007	-79.7762	20	340
0303000301	B4850000	UCFRBA	HASKETT CRK AT US 220 BUS near NORTH ASHEBORO	River/Stream	45	17-12	C	35.7646	-79.8068	7	78
0303000301	B4870000	UCFRBA	Haskett Crk at Asheboro WWTP Bridge near Asheboro	River/Stream	45	17-12	C	35.7649	-79.7864	16	178
0303000301	B4890000	NCAMBNT	HASKETT CRK AT SR 2128 NR CENTRAL FALLS	River/Stream	45	17-12	C	35.7679	-79.779	21	235

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0303000301	B4890000	UCFRBA	HASKETT CRK AT SR 2128 near CENTRAL FALLS	River/Stream	45	17-12	C	35.7679	-79.779	2	17
0303000301	B4920000	UCFRBA	Deep River at SR 2261 Old Liberty Rd near Central Falls	River/Stream	45	17-(10.5)	C	35.7635	-79.7721	21	357
0303000301	B4960000	NCAMBNT	Bush Creek at SR 2226 Cedar Falls Rd nr Franklinville	River/Stream	45	17-15	C	35.753	-79.713	2	19
0303000302	B5070000	NCAMBNT	DEEP RIVER AT SR 2615 AT RAMSEUR	River/Stream	45	17-(10.5)	C	35.7302	-79.6558	6	60
0303000302	B5070000	UCFRBA	Deep River at SR 2615 Brooklyn Ave at Ramseur	River/Stream	45	17-(10.5)	C	35.7302	-79.6558	21	356
0303000302	B5100000	UCFRBA	Deep River at SR 2628 Hinshaw Town Rd near Parks Crossroads	River/Stream	45	17-(10.5)	C	35.6725	-79.6274	21	356
0303000302	B5131000	NCAMBNT	DEEP RIVER AT NC 42 NR COLERIDGE	River/Stream	45	17-(10.5)	C	35.6406	-79.6194	7	74
0303000302	B5185000	NCAMBNT	Brush Creek at NC 22/42 nr Cheeks	River/Stream	45	17-23	C	35.602	-79.583	2	19
0303000304	B5190000	NCAMBNT	DEEP RIVER AT SR 1456 NR HIGH FALLS	River/Stream	45	17-(10.5)	C	35.5005	-79.5814	21	232
0303000302	B5231000	NCRNDM	TANTRAUGH BRANCH OFF SR 2839 NR ASHEBORO	River/Stream	45	17-22-3	C	35.6543	-79.798	2	22
0303000302	B5359000	NCAMBNT	Richland Creek at SR 2873 Riverside Rd nr Cheeks	River/Stream	45	17-22	C	35.608	-79.619	2	19
0303000304	B5390800	UCFRBA	Cotton Crk at SR 1372 Auman Rd near Star	River/Stream	45	17-26-5-3	WS-III	35.3782	-79.7551	21	356
0303000304	B5480000	NCAMBNT	BEAR CRK AT NC 705 AT ROBBINS	River/Stream	45	17-26-(6)	C	35.4407	-79.5886	21	240
0303000304	B5520000	NCAMBNT	DEEP RIVER AT NC 22 AT HIGH FALLS	River/Stream	45	17-(25.7)	C;HQW	35.4777	-79.5195	1	8
0303000304	B5520000	UCFRBA	Deep River at NC 22 at High Falls	River/Stream	45	17-(25.7)	C;HQW	35.4777	-79.5195	11	128
0303000303	B5564000	NCRNDM	McLendons Creek at SR 1628 Cool Springs Rd nr Glendon	River/Stream	45	17-30	C	35.4504	-79.4221	2	21
0303000303	B5565000	NCRNDM	MCLENDONS CRK AT SR 1006 NR GLENDON	River/Stream	45	17-30	C	35.4603	-79.4015	2	24
0303000306	B5569000	NCRNDM	BIG GOVERNORS CRK OFF SR 1651 NR CARTHAGE	River/Stream	45	17-32	C	35.3928	-79.3322	2	24
0303000306	B5575000	NCAMBNT	DEEP RIVER AT NC 42 AT CARBONTON	River/Stream	45	17-(33.5)	WS-IV	35.52	-79.3485	21	225
0303000306	B5575000	UCFRBA	DEEP RIVER AT NC 42 AT CARBONTON	River/Stream	45	17-(33.5)	WS-IV	35.52	-79.3485	6	71
0303000306	B5685000	UCFRBA	Deep River at Deep River Park Bridge near Cumnock	River/Stream	45	17-(38.7)	C	35.5705	-79.2412	21	352
0303000306	B5700000	NCRNDM	PERSIMMON CRK AT SR 1237 AT SANFORD	River/Stream	45	17-40-2	C	35.4586	-79.1995	2	24
0303000306	B5820000	NCAMBNT	DEEP RIVER AT US 15 AND 501 NR SANFORD	River/Stream	45	17-(38.7)	C	35.5782	-79.1942	6	61
0303000306	B5820000	UCFRBA	Deep River at US 15 And 501 near Sanford	River/Stream	45	17-(38.7)	C	35.5782	-79.1942	21	354
0303000305	B5840000	NCAMBNT	ROCKY RIVER AT SR1300 NR CRUTCHFIELD CROSSROADS NC	River/Stream	45	17-43-(1)	WS-III	35.807	-79.5277	2	17

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0303000305	B5850000	NCAMBNT	Rocky River at SR 1362 Piney Grove Church Rd nr Staley	River/Stream	45	17-43-(1)	WS-III	35.802	-79.493	2	20
0303000305	B5885000	NCRNDM	LOVES CRK OFF MOONRISE MEADOW DR AT SILER CITY	River/Stream	45	17-43-10	C	35.729	-79.4379	2	24
0303000305	B5890000	UCFRBA	Loves Creek at Waste Treatment Plant Rd at Siler City	River/Stream	45	17-43-10	C	35.7298	-79.4289	12	199
0303000305	B5920000	UCFRBA	Loves Creek at Progress Blvd at Siler City	River/Stream	45	17-43-10	C	35.7322	-79.4246	12	200
0303000305	B5950000	UCFRBA	Rocky River at US 64 near Siler City	River/Stream	45	17-43-(8)	C	35.7351	-79.4233	21	355
0303000305	B5980000	UCFRBA	Rocky River at SR 2170 Rives Chapel Rd near Siler City	River/Stream	45	17-43-(8)	C	35.6985	-79.3756	21	342
0303000305	B6000000	NCAMBNT	ROCKY RIVER AT NC 902 NR PITTSBORO	River/Stream	45	17-43-(8)	C	35.6787	-79.2898	21	225
0303000305	B6002000	NCAMBNT	Landrum Creek at NC 902 nr Pittsboro	River/Stream	45	17-43-14	C	35.688	-79.275	2	20
0303000305	B6008000	NCAMBNT	Bear Creek at SR 2156 Woody Dam Rd nr Asbury	River/Stream	45	17-43-16	C	35.635	-79.212	2	20
0303000306	B6040300	NCAMBNT	DEEP RIV AT SR 1011 OLD US 1 NR MONCURE	River/Stream	45	17-(43.5)	WS-IV	35.6176	-79.0912	18	193
0303000306	B6040300	UCFRBA	Deep River at SR 1011 Old US 1 near Moncure	River/Stream	45	17-(43.5)	WS-IV	35.6176	-79.0912	21	256
0303000306	B6050000	NCAMBNT	DEEP RIVER AT CSX RR BRIDGE NR MONCURE	River/Stream	45	17-(43.5)	WS-IV	35.6153	-79.0831	3	34
Upper Cape Fear River Subbasin, HUC8 03030004											
0303000401	B6130500	MCFBA	Lick Creek at SR 1500 near Corinth	River/Stream	45	18-4-(2)	WS-IV	35.5595	-79.0544	21	196
0303000401	B6145000	NCAMBNT	Gulf Creek at SR 1916 Corinth Rd nr Brickhaven	River/Stream	45	18-5-(1)	WS-IV	35.566	-79.027	1	3
0303000401	B6160000	MCFBA	Cape Fear River at NC 42 near Corinth	River/Stream	45	18-(5.5)	WS-V	35.5491	-79.0246	21	361
0303000401	B6160000	NCAMBNT	CAPE FEAR RIVER AT NC 42 NR CORINTH	River/Stream	45	18-(5.5)	WS-V	35.5491	-79.0246	7	83
0303000401	B6200000	MCFBA	Buckhorn Creek at NC 42 near Fuquay Varina	River/Stream	45	18-7-(11)	C	35.5594	-78.9734	6	72
0303000401	B6204000	MCFBA	Buckhorn Crk beside SR 1921 Buckhorn Rd near Corinth	River/Stream	45	18-7-(11)	C	35.5435	-78.9899	16	193
0303000401	B6215000	MCFBA	Cape Fear River at Captains Landing Subdivision near Cokesbury	River/Stream	45	18-(10.5)	WS-IV	35.4871	-78.9516	11	177
0303000401	B6230000	MCFBA	Avents Creek at SR 1418 near Cokesbury	River/Stream	45	18-13-(2)	WS-IV;HQW	35.4877	-78.9099	21	196
0303000405	B6252000	MCFBA	Neills Creek at US 401 near Lillington	River/Stream	45	18-16-(0.7)	WS-IV	35.4281	-78.824	20	243
0303000405	B6320000	MCFBA	Kenneth Creek at SR 1441 Chalybeate Springs Road near Angier	River/Stream	45	18-16-1-(2)	WS-IV	35.5144	-78.7862	21	196
0303000405	B6370000	MCFBA	Cape Fear River at US 401 at Lillington	River/Stream	65	18-(16.7)	WS-IV	35.4065	-78.8135	21	363
0303000405	B6370000	NCAMBNT	CAPE FEAR RIVER AT US 401 AT LILLINGTON	River/Stream	65	18-(16.7)	WS-IV	35.4065	-78.8135	21	249
0303000405	B6480000	MCFBA	BUIES CRK AT US 421 AT BUIES CREEK	River/Stream	65	18-18	WS-IV	35.4073	-78.7472	2	11

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0303000405	B6483000	MCFBA	E BUIES CRK AT SR 2054 AT BUIES CREEK	River/Stream	65	18-18-1-(2)	WS-IV	35.4005	-78.734	3	30
0303000405	B6485000	MCFBA	Buies Creek behind Keith Hills Golf Course Maintenance Shop at Buies Creek	River/Stream	65	18-18	WS-IV	35.3907	-78.7527	18	150
0303000402	B6750000	NCRNDM	CARRS CRK AT US 421 BYP NR SANFORD	River/Stream	65	18-20-7	C	35.4477	-79.119	2	24
0303000402	B6820050	MCFBA	Upper Little River at SR 1222 (Broadway Road) near Broadway	River/Stream	45	18-20-(8)	C	35.4067	-79.0628	13	150
0303000402	B6820100	NCRNDM	UT TO UPPER LITTLE RIV AT SR 1279 NR SEMINOLE	River/Stream	45	18-20-10	C	35.4251	-79.0512	2	23
0303000402	B6830000	MCFBA	Upper Little River at SR 2021 Titan Roberts Road near Lillington	River/Stream	65	18-20-(24.5)	WS-IV	35.3266	-78.7238	21	256
0303000402	B6830000	NCAMBNT	UPPER LITTLE RIV AT SR 2021 NR LILLINGTON	River/Stream	65	18-20-(24.5)	WS-IV	35.3266	-78.7238	21	247
0303000405	B6840000	MCFBA	Cape Fear River at NC 217 at Erwin	River/Stream	65	18-(20.7)	WS-V	35.3122	-78.6925	21	364
0303000405	B6840000	NCAMBNT	CAPE FEAR RIVER AT NC 217 AT ERWIN	River/Stream	65	18-(20.7)	WS-V	35.3122	-78.6925	7	71
0303000403	B7245000	NCAMBNT	LOWER LITTLE RIVER AT SR 2023 NR LOBELIA	River/Stream	65	18-23-(10.7)	WS-III;HQW	35.2037	-79.2159	21	231
0303000403	B7256000	NCRNDM	CRANE CRK AT SR 2017 NR LOBELIA	River/Stream	65	18-23-16	WS-III	35.2097	-79.1846	2	24
0303000404	B7280000	MCFBA	Lower Little River at SR 1451 at Manchester	River/Stream	65	18-23-(24)	C	35.1932	-78.9856	6	60
0303000404	B7280000	NCAMBNT	LOWER LITTLE RIVER AT SR 1451 AT MANCHESTER	River/Stream	65	18-23-(24)	C	35.1932	-78.9856	21	233
0303000404	B7300000	MCFBA	Lower Little River at NC 210 near Spring Lake	River/Stream	65	18-23-(24)	C	35.2021	-78.953	21	256
0303000404	B7319100	MCFBA	Lower Little River at SR 1609 (West Reeves Bridge Road) near Walkertown	River/Stream	65	18-23-(24)	C	35.2598	-78.8231	13	160
0303000407	B7480000	MCFBA	Cape Fear River at Hoffer Water Treatment Plant intake at Fayetteville	River/Stream	65	18-(26)	C	35.0814	-78.8636	21	365
0303000407	B7480000	NCAMBNT	CAPE FEAR RIVER AT HOFFER WTP INTAKE AT FAYETTEVILLE	River/Stream	65	18-(26)	C	35.0814	-78.8636	2	15
0303000407	B7500000	MCFBA	Cape Fear River at I-95 below Fayetteville	River/Stream	65	18-(26)	C	34.982	-78.8478	21	363
0303000407	B7546500	MCFBA	CROSS CRK OFF BRAGG BLVD AT FAYETTEVILLE	River/Stream	65	18-27-(3)	C	35.0586	-78.8853	1	39
0303000407	B7547000	MCFBA	Cross Crk at Cross Creek Park at Fayetteville	River/Stream	65	18-27-(3)	C	35.0539	-78.8769	9	135
0303000407	B7584000	MCFBA	Blount's Crk at US 301A Person St at Fayetteville	River/Stream	65	18-27-5	C	35.0498	-78.8703	9	96
0303000407	B7584005	MCFBA	BLOUNTS CRK OFF ADAMS ST AT FAYETTEVILLE	River/Stream	65	18-27-5	C	35.0504	-78.8698	1	34
0303000407	B7584800	MCFBA	UT to Cross Crk off Anne St at Fayetteville	River/Stream	65	18-27-(3)	C	35.0628	-78.8718	9	133
0303000407	B7584900	MCFBA	UT to Cross Crk at Cross Creek WRF at Fayetteville	River/Stream	65	18-27-(3)	C	35.0599	-78.8647	16	121

HUC 10	StationID	ProjectID*	Monitoring Location	Location Type	Ecoregion Code^	BIMS Index	Stream Classification	Latitude	Longitude	No. Years 2000-2020	No. Ave Day Records
0303000407	B7589000	MCFBA	CROSS CRK AT WALKWAY AT PWC WWTP	River/Stream	65	18-27-(3)	C	35.0568	-78.8642	3	35
0303000407	B7590000	MCFBA	Cross Creek at Bus NC 301/Bus I-95 in Fayetteville	River/Stream	65	18-27-(3)	C	35.0547	-78.8622	19	215
0303000407	B7600000	NCAMBNT	CAPE FEAR RIVER AT NC 24 AT FAYETTEVILLE	River/Stream	65	18-(26)	C	35.0499	-78.8575	21	246
0303000407	B7610000	MCFBA	CAPE FEAR RIVER AT RIVERSIDE LANDING	River/Stream	65	18-(26)	C	35.0464	-78.8583	4	65
0303000407	B7615000	NCAMBNT	Locks Creek at SR 1006 Clinton Rd at Fayetteville	River/Stream	65	18-28	C	35.047	-78.855	2	21
0303000407	B7616000	NCAMBNT	UT TO LOCKS CRK AT US 301 NR FAYETTEVILLE	River/Stream	65	18-28	C	35.0646	-78.8341	2	13
0303000407	B7616000	NCRNDM	UT TO LOCKS CRK AT US 301 NR FAYETTEVILLE	River/Stream	65	18-28	C	35.0646	-78.8341	2	16
0303000406	B7679000	MCFBA	ROCKFISH CRK AT SR 1300 VASS ROAD	River/Stream	65	18-31-(12)	B	35.0054	-79.2354	4	45
0303000406	B7679300	MCFBA	Rockfish Creek at US 401 bypass near Raeford	River/Stream	65	18-31-(12)	B	34.9993	-79.2151	18	210
0303000406	B7700000	MCFBA	Rockfish Creek at SR 1432 Golf Course Road near Raeford	River/Stream	65	18-31-(18)	B	34.9683	-79.1096	21	251
0303000406	B7700000	NCAMBNT	ROCKFISH CRK AT SR 1432 NR RAEFORD	River/Stream	65	18-31-(18)	B	34.9683	-79.1096	21	234
0303000406	B7720000	NCAMBNT	ROCKFISH CRK NR RAEFORD SR 1406	River/Stream	65	18-31-(18)	B	34.952	-79.072	1	1
0303000406	B8060000	NCRNDM	BEAVER CRK AT SR 1141 AT CUMBERLAND	River/Stream	65	18-31-24-5	C	35.0031	-78.9785	2	24
0303000406	B8224000	NCAMBNT	ROCKFISH CRK AT SR 2350 NR CEDAR CREEK	River/Stream	65	18-31-(23)	C	34.961	-78.8991	21	237
0303000406	B8229000	MCFBA	ROCKFISH CRK AT SPECIAL FORCES CLUB	River/Stream	65	18-31-(23)	C	34.9533	-78.8558	3	27
0303000406	B8230000	MCFBA	Rockfish Creek at NC 87 near Fayetteville	River/Stream	65	18-31-(23)	C	34.9561	-78.8441	20	238
Lower Cape Fear River Subbasin, HUC8 03030005											
0303000501	B8290000	MCFBA	Cape Fear River at Dupont water intake ups of L&D3	River/Stream	65	18-(26.25)	WS-IV	34.8495	-78.8263	21	351
0303000501	B8300000	NCAMBNT	CAPE FEAR RIVER AT WO HUSKE LOCK NR TAR HEEL	River/Stream	65	18-(26.25)	WS-IV	34.8349	-78.8226	18	180
0303000501	B8301000	MCFBA	CAPE FEAR RIVER BELOW LOCK AND DAM 3 BOAT RAMP	River/Stream	65	18-(26.25)	WS-IV	34.8318	-78.8224	4	57
0303000501	B8302000	MCFBA	Cape Fear River at power lines -no road- near Tolarsville	River/Stream	65	18-(26.25)	WS-IV	34.7843	-78.7983	21	348
0303000501	B8305000	MCFBA	Cape Fear River at SR 1316 at Tar Heel	River/Stream	65	18-(26.75)	C	34.7448	-78.7856	21	354
0303000501	B8305000	NCAMBNT	CAPE FEAR RIVER AT SR 1316 AT TAR HEEL	River/Stream	65	18-(26.75)	C	34.7448	-78.7856	7	73
0303000502	B8306000	MCFBA	Cape Fear River at RM 80 near Ruskin	River/Stream	65	18-(26.75)	C	34.6831	-78.6847	21	349
0303000501	B8315000	MCFBA	Harrison Creek at SR 1320 at Burney	River/Stream	63	18-42	C	34.7316	-78.7162	21	190
0303000502	B8320000	MCFBA	Cape Fear River at US 701 at Elizabethtown	River/Stream	65	18-(26.75)	C	34.6324	-78.6029	21	352

HUC 10	StationID	ProjectID*	Monitoring Location	Location Type	Ecoregion Code^	BIMS Index	Stream Classification	Latitude	Longitude	No. Years 2000-2020	No. Ave Day Records
0303000502	B8321000	NCAMBNT	TURNBULL CRK AT SR 1509 NR JOHNSONTOWN	River/Stream	63	18-46	C	34.7084	-78.6008	20	224
0303000502	B8330000	MCFBA	CAPE FEAR RIVER DNS MOUTH OF ELLIS CRK	River/Stream	65	18-(26.75)	C	34.6548	-78.6422	4	56
0303000502	B8339000	MCFBA	Cape Fear River above Lock & Dam 2	River/Stream	65	18-(26.75)	C	34.6276	-78.5797	21	352
0303000502	B8340000	NCAMBNT	CAPE FEAR RIVER AT LOCK 2 NR ELIZABETHTOWN	River/Stream	65	18-(26.75)	C	34.6264	-78.5768	19	189
0303000502	B8340050	LCFRP	Browns Creek at NC87 near Elizabethtown	River/Stream	65	18-45	C	34.614	-78.5848	21	248
0303000502	B8340100	MCFBA	Turnbull Creek at US 701, NC 53, and NC 41 near Elizabethtown	River/Stream	63	18-46	C	34.6472	-78.5565	21	182
0303000502	B8340130	MCFBA	Cape Fear River at RM 70 near Elizabethtown	River/Stream	65	18-(26.75)	C	34.6246	-78.5505	21	348
0303000504	B8340200	LCFRP	Hammond Creek at SR 1704 near Mt. Olive	River/Stream	65	18-50	C	34.569	-78.5523	21	250
0303000504	B8340300	NCRNDM	WHITES CRK AT SR 1715 NR BLADEN SPRINGS	River/Stream	65	18-50-5	C	34.5351	-78.4768	2	24
0303000504	B8340650	MCFBA	Cape Fear River at RM 55-no road-near Bladen Springs	River/Stream	63	18-(49)	WS-V	34.5352	-78.4398	21	350
0303000504	B8347000	NCAMBNT	Carvers Creek at NC 87 nr Carvers	River/Stream	63	18-56-(0.7)	WS-IV	34.453	-78.404	2	19
0303000504	B8348000	MCFBA	Cape Fear River at SR 1730 -Elwell Ferry Road-near Carvers	River/Stream	63	18-(53.5)	WS-IV	34.474	-78.369	21	356
0303000504	B8349000	MCFBA	Cape Fear River above Lock & Dam 1 near East Arcadia	River/Stream	63	18-(58.5)	WS-IV;CA	34.4069	-78.2951	21	356
0303000504	B8350000	NCAMBNT	CAPE FEAR RIVER AT LOCK 1 NR KELLY	River/Stream	63	18-(59)	WS-IV;Sw	34.4038	-78.2932	21	236
0303000504	B8360000	LCFRP	Cape Fear River at NC 11 near East Arcadia	River/Stream	63	18-(59)	WS-IV;Sw	34.3969	-78.2675	21	431
0303000504	B8360000	NCAMBNT	CAPE FEAR RIVER AT NC 11 NR EAST ARCADIA	River/Stream	63	18-(59)	WS-IV;Sw	34.3969	-78.2675	7	76
0303000503	B8374000	NCRNDM	UT to Mill Creek nr NC-74/76 nr Bolton	River/Stream	63	18-64-7-2	C;Sw	34.3309	-78.3362	2	19
0303000503	B8441000	LCFRP	Livingston Creek at Wright Corp. Walkway near Acme	River/Stream	63	18-64	C;Sw	34.3353	-78.2011	11	122
0303000503	B8441000	NCAMBNT	LIVINGSTON CRK AT WRIGHT CORPORATION WALKWAY NR ACME	River/Stream	63	18-64	C;Sw	34.3353	-78.2011	12	134
0303000503	B8445000	LCFRP	LIVINGSTON CRK AT MOUTH near RIEGELWOOD	River/Stream	63	18-64	C;Sw	34.3516	-78.2011	6	62
0303000503	B8445000	NCAMBNT	LIVINGSTON CRK AT MOUTH near RIEGELWOOD	River/Stream	63	18-64	C;Sw	34.3516	-78.2011	4	37
0303000504	B8450000	LCFRP	Cape Fear River at Neils Eddy Landing near Acme	River/Stream	63	18-(63)	C;Sw	34.3555	-78.1794	21	432
0303000504	B8450000	NCAMBNT	CAPE FEAR RIVER AT NEILS EDDY LANDING near ACME	River/Stream	63	18-(63)	C;Sw	34.3555	-78.1794	21	218
0303000504	B8459000	NCRNDM	HOOD CRK OFF SR 1422 NR HOOPER HILL	River/Stream	63	18-66	C;Sw	34.3261	-78.1027	2	24
0303000504	B8465000	LCFRP	Cape Fear River at Intake near Hooper Hill	River/Stream	63	18-(63)	C;Sw	34.3358	-78.0544	21	432

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0303000505	B9017000	NCRNDM	BULLDOG CUT BELOW BLACK RIVER NR NAVASSA	River/Stream	63	18-68-23	C;Sw	34.3365	-78.0456	2	22
0303000505	B9020000	NCAMBNT	CAPE FEAR RIVER DNS HALE PT LANDING NR PHOENIX	River/Stream	63	18-(63)	C;Sw	34.3181	-78.0264	21	225
0303000505	B9030000	LCFRP	Cape Fear River ups Indian Creek near Phoenix	River/Stream	63	18-(63)	C;Sw	34.3028	-78.0141	21	433
0303000505	B9050000	NCAMBNT	CAPE FEAR RIVER AT NAVASSA	River/Stream	63	18-(71)	SC	34.2612	-77.9891	21	232
0303000505	B9050025	LCFRP	Cape Fear River Dns RR Bridge at Navassa	Estuary	63	18-(71)	SC	34.2594	-77.9877	21	429
0303000505	B9050100	LCFRP	Cape Fear River at Horseshoe Bend near Wilmington	Estuary	63	18-(71)	SC	34.2437	-77.9698	21	430
0303000505	B9776000	NCRNDM	STURGEON CRK OFF HIGHLAND HILLS DR NE NR LELAND	River/Stream	63	18-77-1	C;Sw	34.237	-78.0413	2	23
0303000505	B9790000	LCFRP	Brunswick River dns NC 17 at park near Belville	Estuary	63	18-77	SC	34.2205	-77.9797	21	248
0303000505	B9790500	NCRNDM	PINEY BRANCH AT WIRE RD NR BELVILLE	River/Stream	63	18-77-3-1	C;Sw	34.1983	-78.0261	2	24
0303000505	B9795000	LCFRP	Cape Fear River at Channel Marker 54	Estuary	63	18-(71)	SC	34.1393	-77.946	21	331
0303000505	B9800000	LCFRP	Cape Fear River at Channel Marker 61 at Wilmington	Estuary	63	18-(71)	SC	34.1943	-77.9568	21	331
0303000505	B9800000	NCAMBNT	CAPE FEAR RIVER AT CM 61 AT WILMINGTON	Estuary	63	18-(71)	SC	34.1943	-77.9568	21	224
0303000505	B9820000	NCAMBNT	CAPE FEAR RIVER AT CM 56 NR WILMINGTON	Estuary	63	18-(71)	SC	34.1475	-77.9526	21	222
0303000506	B9841000	NCRNDM	UT TO LEWIS SWAMP OFF SR 1413 NR RABONTOWN	River/Stream	63	18-81	C;Sw	34.1814	-78.2235	2	24
0303000507	B9845100	LCFRP	Cape Fear River at Channel Marker 42	Estuary	63	18-(71)	SC	34.0902	-77.9336	12	185
0303000507	B9850100	LCFRP	Cape Fear River at Channel Marker 35	Estuary	63	18-(71)	SC	34.0335	-77.937	21	332
0303000508	B9910000	LCFRP	Cape Fear River at Channel Marker 23	Estuary	63	18-88-2	SC	33.9456	-77.9696	21	332
0303000508	B9921000	LCFRP	Cape Fear River at Channel Marker 18	Estuary	63	18-88-3.5	SC	33.9113	-78.0166	21	333
0303000508	B9980000	LCFRP	Intracoastal Waterway near Southport	Canal Transport	63	18-88-9	SA;HQW	33.9173	-78.0379	12	184
0303000508	I9380000	NCAMBNT	ICW AT CM R16 AT BEAVERDAM CRK NR LONG BEACH	Canal Transport	63	18-88-9	SA;HQW	33.922	-78.1078	3	28
Black River Subbasin, HUC 8 03030006											
0303000601	B8470000	LCFRP	South River at US 13 near Cooper	River/Stream	65	18-68-12-(0.5)	C;Sw	35.156	-78.6401	21	248
0303000603	B8482000	NCRNDM	UT to Caesar Swamp at Straw Pond School Rd nr Falcon	River/Stream	65	18-68-1-17-4-(1)	B;Sw	35.1661	-78.526	2	23
0303000603	B8484000	NCRNDM	BEARSKIN SWAMP AT SR 1325 NR CLINTON	River/Stream	65	18-68-1-17-10	C;Sw	35.0875	-78.4346	2	17

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0303000603	B8490000	NCAMBNT	LITTLE COHARIE CRK AT SR 1414 MINNIE HALL RD NR SALEMBURG	River/Stream	65	18-68-1-17	C;Sw	35.0555	-78.531	20	221
0303000603	B8545000	NCAMBNT	LITTLE COHARIE CRK AT SR 1240 NR ROSEBORO	River/Stream	65	18-68-1-17	C;Sw	34.9274	-78.4657	21	229
0303000604	B8580000	NCAMBNT	GREAT COHARIE CRK AT SR 1311 NR CLINTON	River/Stream	65	18-68-1	C;Sw	35.0248	-78.3717	20	219
0303000604	B8604000	LCFRP	Great Coharie Creek at SR 1214 near Butler Crossroads	River/Stream	65	18-68-1	C;Sw	34.9182	-78.3892	21	248
0303000603	B8610001	LCFRP	Little Coharie Creek at SR 1207 near Ingold	River/Stream	65	18-68-1-17	C;Sw	34.8347	-78.3709	21	248
0303000605	B8679500	NCAMBNT	SIX RUNS CRK AT SR 1919 NR MOLTONVILLE	River/Stream	65	18-68-2-(0.3)	C;Sw	35.0149	-78.2295	6	49
0303000605	B8725000	NCAMBNT	SIX RUNS CRK AT SR 1960 NR TAYLORS BRIDGE	River/Stream	65	18-68-2-(11.5)	C;Sw,ORW	34.852	-78.2448	21	232
0303000605	B8740000	LCFRP	Six Runs Creek at SR 1003 near Ingold	River/Stream	65	18-68-2-(11.5)	C;Sw,ORW	34.7933	-78.3113	21	243
0303000608	B8750000	NCAMBNT	BLACK RIVER AT NC 411 NR TOMAHAWK	River/Stream	65	18-68	C;Sw,ORW	34.7544	-78.2891	21	228
0303000602	B8919000	NCAMBNT	SOUTH RIVER AT SR 1503 NR PARKERSBURG	River/Stream	65	18-68-12-(8.5)	C;Sw,ORW	34.8122	-78.4568	21	234
0303000602	B8920000	LCFRP	South River at SR 1007 nr Kerr	River/Stream	63	18-68-12-(8.5)	C;Sw,ORW	34.6402	-78.3116	8	90
0303000606	B8981000	LCFRP	Colly Creek at NC 53 at Colly	River/Stream	63	18-68-17	C;Sw	34.4641	-78.2569	21	241
0303000608	B9000000	LCFRP	Black River at NC 210 at Still Bluff	River/Stream	63	18-68	C;Sw,ORW	34.4312	-78.1441	21	248
0303000608	B9001000	NCRNDM	Black River off Tram Rd off SR 1103 (Heading Bluff Rd) nr Currie	River/Stream	63	18-68	C;Sw,ORW	34.4218	-78.1345	2	23
0303000608	B9013000	NCAMBNT	BLACK RIV AT RACCOON ISLAND NR HUGGINS	River/Stream	63	18-68	C;Sw,ORW	34.372	-78.0721	21	224
0303000605	SMR_BMR	NCAMBNT	Sikes Mill Run at Beasley Mill Rd	River/Stream	65	18-68-2-10-4	C;Sw	34.9004	-78.1454	1	10
Northeast Cape Fear River Subbasin, HUC8 03030007											
0303000702	B9080000	NCAMBNT	NORTHEAST CAPE FEAR RIVER AT SR 1937 NR MT OLIVE	River/Stream	65	18-74-(1)	C;Sw	35.1914	-78.0176	19	208
0303000702	B9080000	NCRNDM	NORTHEAST CAPE FEAR RIVER AT SR 1937 NR MT OLIVE	River/Stream	65	18-74-(1)	C;Sw	35.1914	-78.0176	2	24
0303000702	B9090000	LCFRP	Northeast Cape Fear River at NC 403 near Williams	River/Stream	65	18-74-(1)	C;Sw	35.1784	-77.9807	21	243
0303000702	B9090000	NCAMBNT	NORTHEAST CAPE FEAR RIVER AT NC 403 NR WILLIAMS	River/Stream	65	18-74-(1)	C;Sw	35.1784	-77.9807	21	236
0303000701	B9130000	LCFRP	Panther Branch near Faison	River/Stream	65	18-74-19-3	C;Sw	35.1345	-78.1363	21	246
0303000701	B9190500	NCAMBNT	GOSHEN SWAMP AT SR 1004 NR WESTBROOK CROSSROAD	River/Stream	65	18-74-19	C;Sw	35.0535	-77.9474	19	214
0303000701	B9191000	LCFRP	Goshen Swamp at NC 11 and NC 903 near Kornegay	River/Stream	65	18-74-19	C;Sw	35.0281	-77.8516	21	247

HUC 10	StationID	ProjectID*	Monitoring Location	Location Type	Ecoregion Code^	BIMS Index	Stream Classification	Latitude	Longitude	No. Years 2000-2020	No. Ave Day Records
0303000702	B9191500	LCFRP	Northeast Cape Fear River SR 1700 near Sarecta	River/Stream	65	18-74-(1)	C;Sw	34.9801	-77.8622	21	248
0303000703	B9196000	NCAMBNT	NORTHEAST CAPE FEAR RIVER AT SR 1961 AT HALLSVILLE	River/Stream	63	18-74-(1)	C;Sw	34.9059	-77.8409	21	245
0303000703	B9245000	NCAMBNT	Stocking Head Cr at SR 50	River/Stream	63	18-74-24	C;Sw	34.8795	-77.8944	1	4
0303000705	B9430000	LCFRP	Rockfish Creek at US 117 near Wallace	River/Stream	63	18-74-29	C;Sw	34.7168	-77.9795	21	248
0303000705	B9460000	LCFRP	Little Rockfish Creek at NC 11 near Wallace	River/Stream	63	18-74-29-6	C;Sw	34.7224	-77.9814	21	244
0303000705	B9470000	NCAMBNT	ROCKFISH CRK AT I 40 AT WALLACE	River/Stream	63	18-74-29	C;Sw	34.7191	-77.9462	21	240
0303000706	B9480000	NCAMBNT	NORTHEAST CAPE FEAR RIVER AT SR 1318 NR WATHA	River/Stream	63	18-74-(29.5)	C;Sw	34.6459	-77.8725	21	243
0303000706	B9481000	NCRNDM	Dero Creek at SR 1318 Croomsbridge Rd nr Shelter Neck	River/Stream	63	18-74-32	C;Sw	34.6458	-77.867	2	23
0303000706	B9490000	LCFRP	Angola Creek at NC 53 near Maple Hill	River/Stream	63	18-74-33-3	C;Sw	34.6562	-77.7351	21	247
0303000706	B9490000	NCAMBNT	ANGOLA CRK AT NC 53 NR MAPLE HILL	River/Stream	63	18-74-33-3	C;Sw	34.6562	-77.7351	5	51
0303000706	B9496000	NCRNDM	MILL POND AT NC 53 NR MAPLE HILL	River/Stream	63	18-74-33-5	C;Sw	34.6247	-77.79	2	24
0303000708	B9500000	LCFRP	Burgaw Creek at SR 1345 Wright St. at Burgaw	River/Stream	63	18-74-39	C;Sw	34.5633	-77.9348	13	157
0303000708	B9520000	LCFRP	Burgaw Creek at US 117 at Burgaw	River/Stream	63	18-74-39	C;Sw	34.5638	-77.922	13	156
0303000708	B9520000	NCAMBNT	BURGAW CRK AT US 117 AT BURGAW	River/Stream	63	18-74-39	C;Sw	34.5638	-77.922	19	206
0303000708	B9548000	NCRNDM	Northeast Cape Fear River off Oxbow Landing near Saint Helena	River/Stream	63	18-74-(29.5)	C;Sw	34.5121	-77.8401	2	25
0303000708	B9550000	NCAMBNT	LILLINGTON CRK AT SR 1520 NR STAG PARK	River/Stream	63	18-74-42	C;Sw	34.5084	-77.8154	19	210
0303000708	B9580000	LCFRP	Northeast Cape Fear River at US 117 at Castle Hayne	River/Stream	63	18-74-(47.5)	B;Sw	34.3637	-77.8965	21	246
0303000708	B9580000	NCAMBNT	NORTHEAST CAPE FEAR RIVER AT US 117 AT CASTLE HAYNE	River/Stream	63	18-74-(47.5)	B;Sw	34.3637	-77.8965	21	235
0303000708	B9670000	LCFRP	Northeast Cape Fear River near Wrightsboro	River/Stream	63	18-74-(52.5)	C;Sw	34.3153	-77.9531	21	331
0303000708	B9720000	LCFRP	Smith Creek at US 117 and NC 133 at Wilmington	River/Stream	63	18-74-63	C;Sw	34.2586	-77.9391	17	196
0303000708	B9740000	NCAMBNT	NORTHEAST CAPE FEAR RIVER AT NC 133 AT WILMINGTON	Estuary	63	18-74-(61)	SC;Sw	34.2518	-77.951	21	230
0303000708	HC_210_BKG	NCAMBNT	Harrisons Cr at NC 210	River/Stream	63	18-74-49	C;Sw	34.3951	-77.7716	1	10
0303000703	MC_DER	NCAMBNT	Muddy Cr at Durwood Evans Rd	River/Stream	63	18-74-25	C;Sw	34.8389	-77.8353	1	10
0303000705	MC_WR	NCAMBNT	Murpheys Cr at Waycross Rd	River/Stream	65	18-74-29-0.5	C;Sw	34.854	-78.1258	1	10
0303000703	SHC_GDR	NCAMBNT	Stocking Head Cr at Graham Dobson Rd	River/Stream	63	18-74-24	C;Sw	34.912	-77.9451	1	10
0303000703	SHC_PBR	NCAMBNT	Stocking Head Cr at Pasture Branch Rd	River/Stream	63	18-74-24	C;Sw	34.8704	-77.8654	1	10

HUC 10	StationID	ProjectID*	Monitoring Location	Location Type	Ecoregion Code^	BIMS Index	Stream Classification	Latitude	Longitude	No. Years 2000-2020	No. Ave Day Records
0303000703	SHC_SDCR	NCAMBNT	Stocking Head Cr at S Dobson Chapel Rd	River/Stream	63	18-74-24	C;Sw	34.898	-77.9333	1	10
0303000703	SHC_SHCR	NCAMBNT	Stocking Head Cr at Stocking Head Creek Rd	River/Stream	63	18-74-24	C;Sw	34.8871	-77.9112	1	10
0303000703	TR_CSR	NCAMBNT	UT to Stocking Head Cr at Cool Springs Rd	River/Stream	63	18-74-24	C;Sw	34.9028	-77.9444	1	9
0303000703	TR_SDCR	NCAMBNT	UT to Stocking Head Cr at S Dobson Chapel Rd	River/Stream	63	18-74-24	C;Sw	34.8888	-77.9445	1	7

*Project ID – NCAMBNT - NC Ambient, NCRNDM – NC Random Ambient Monitoring, UCFRBA - Upper Cape Fear River Basin Association, MCFBA – Middle Cape Fear Basin Association, LCFRP – Lower Cape Fear River Program

^EPA Ecoregion Level III Code, 45 - Piedmont, 63 Middle Atlantic Coastal Plain, 65 Southeastern Plains

Table 4: Cape Fear River Basin HUC8 Subbasin Ambient Water Quality Means for 2016 to 2020

Cape Fear River (CFR) HUC 030300_ _		Statistic*	Number of Stations**	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
CPF Basin Mean 030300*		**x̄**	**140**	**6.84**	**7.83**	**217**	**0.06**	**0.77**	**0.84**	**1.61**	**0.13**	**14.52**	**19.17**	**668**
		N		**9,584**	**9,596**	**9,032**	**7,940**	**7,868**	**7,924**	**7,845**	**7,937**	**7,574**	**513**	**8,020**
Haw River[1]	**01**	**x̄**	35	7.20	8.27	222	0.06	0.77	1.34	2.10	0.13	20.19	22.90	749
		N		2,590	2,594	2,604	1,971	1,954	1,968	3,902	1,971	2,114	211	2,094
Deep River	**03**	**x̄**	24	7.16	8.34	189	0.06	0.76	1.32	2.08	0.11	16.32	16.83	732
		N		1,831	1,833	1,833	1,411	1,397	1,411	2,794	1,411	1,516	172	1,442
Upper CPF	**04**	**x̄**	20	6.52	8.21	90	0.03	0.65	0.35	1.00	0.07	13.08	16.38	360
		N		1,883	1,865	1,879	1,362	1,355	1,362	2,710	1,362	1,408	135	1,312
Lower CPF[2]	**05**	**x̄**	30	6.74	7.20	117	0.06	0.75	0.53	1.29	0.15	13.64		423
		N		3,707	3,705	3,094	1,567	1,542	1,562	3,070	1,561	1,235		1,424
Black River	**06**	**x̄**	14	6.14	7.06	101	0.07	0.86	0.43	1.29	0.13	4.83		754
		N		719	729	725	696	689	689	1,364	696	637		748
Northeast CPF[3]	**07**	**x̄**	17	6.47	6.96	711	0.09	0.92	0.61	1.54	0.21	6.45		1,093
		N		907	922	925	939	937	938	1,862	942	670		1,000
Healthy Piedmont Stream***						12-90	0.05		0.30	0.80	0.05			
Minimally Impacted Streams****							<0.05	<0.5	<0.3	<0.8	<0.05			
EPA Nutrient Criteria - Piedmont+										0.70	0.038			
EPA Nutrient Criteria - Coastal Plain+										0.72	0.032			

Cape Fear River (CFR) HUC 030300_ _	Statistic*	Number of Stations**	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)

* Statistic symbols $\bar{x}$ - mean and N - Number

**Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis.

Lower portion of subbasin watershed influenced by salt water from Atlantic Ocean.

^ Portions of the subbasin influenced by Mount Olive Pickle NPDES permitted discharge. They have an NPDES permit variance for discharging high concentrations of salt in their wastewater. Lower portion of the watershed influenced by natural saltwater influences.

***DWQ ESS- ISU Special Study. March 24, 2004, Rocky River Survey (Chatham County) Subbasin 03-06-12.

**** DWQ ESS- ISU Special Study. March 14, 2005, Lower Cape Fear River/Estuary TMDL Study.

+ USGS Circular #1350 – The Quality of Our Nation's Water – Nutrients in the Nation's Streams and Groundwater, 1992-2004. Neil Dubrovsky et al., 2010.

Orange highlighted values represent the highest mean instream concentration in comparison to the other HUC 8 watersheds.

Green highlighted row represents the overall basin watershed mean for each constituent for comparison purposes.

[1]The Haw River subbasin has one Reservoir station, all 34 other stations are River/Stream stations.

[2]The Lower CPF River subbasin includes nine Estuaray stations, all 21 other stations are River/Stream stations.

[3]The Northeast CPF River subbasin includes one Estuary station, all 17 other stations are River/Stream stations.

Table 5: Cape Fear River Basin HUC10 Watershed Ambient Water Quality Means for 2016-2020

Watershed HUC 10	Watershed Name	Statistic^	Number of Stations#	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
Highest HUC8 in Cape Fear River Basin		**x̄**				711	0.09	0.92	1.34	2.10	0.21	20.19	22.90	1,093
Highest HUC10 in Cape Fear River Basin		**x̄**				1,413	0.27	1.44	2.62	3.48	0.38	26.63	26.64	2,478
03030002*	**HUC8 Haw River Watershed**	**x̄**	35	7.20	8.27	222	0.06	0.77	1.34	2.10	0.13	20.19	22.90	749
		N		2,590	2,594	2,604	1,971	1,954	1,968	3,902	1,971	2,114	211	2,094
0303000201	Reedy Fork	x̄	7	7.23	8.47	270	0.10	0.84	2.53	3.35	0.19	12.92		947
		N		492	490	496	400	393	400	786	400	401		405
0303000202	Headwaters Haw	x̄	6	6.95	8.30	110	0.04	0.58	0.40	0.98	0.06	20.76		429
		N		381	381	385	337	333	335	662	337	337		333
0303000203	Big Alamance Creek	x̄	2	7.07	7.62	164	0.04	0.73	0.45	1.19	0.11	20.85		1,056
		N		137	136	138	113	113	113	226	113	114		114
0303000204	Back Creek-Haw	x̄	8	7.31	8.57	248	0.07	0.84	1.39	2.23	0.16	21.38		983
		N		575	578	581	407	407	406	812	407	458		458
0303000205	Cane Creek-Haw	x̄	2	7.38	9.01	217	0.04	0.89	1.23	2.12	0.11	23.61		848
		N		111	112	113	60	60	60	120	60	113		113
0303000206	B Everett Jordan Lake-New Hope	x̄	6	7.11	7.52	275	0.05	0.75	1.45	2.19	0.14	26.63	26.64	732
		N		540	540	537	424	421	424	842	424	400	138	395
0303000207	Roberson Creek-Haw*	x̄	7	7.41	8.61	176	0.05	0.82	0.80	1.61	0.09	17.27	15.85	313
		N		354	357	354	230	227	230	454	230	291	73	276

Watershed HUC 10	Watershed Name	Statistic^	Number of Stations#	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
^ Statistic symbols x̄ - mean and N - Number, Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis. *HUC10 Roberson Creek-Haw River watershed (0303000207) includes one Reservoir station and three River/Stream stations, all other stations in the HUC8 Haw River subbasin (03030002) are River/Stream stations. Orange highlighted values represent the highest mean instream concentration or lowest DO concentration in comparison to the other HUC 10 watersheds. Green highlighted row represents the overall HUC 8 watershed mean for each constituent for comparison purposes.														
03030003*	**HUC8 Deep River Watershed**	**x̄**	24	7.16	8.34	189	0.06	0.76	1.32	2.08	0.11	16.32	16.83	732
		N		1,831	1,833	1,833	1,411	1,397	1,411	2,794	1,411	1,516	172	1,442
0303000301	Headwaters Deep	x̄	10	7.21	8.72	186	0.06	0.71	1.00	1.70	0.08	15.98		848
		N		695	700	699	581	575	581	1150	581	583		571
0303000302	Upper Deep	x̄	2	7.19	8.24	168	0.05	0.80	0.69	1.48	0.07	13.93		671
		N		170	170	170	120	120	120	240	120	120		120
0303000304	Middle Deep	x̄	3	6.97	8.28	140	0.07	0.86	1.82	2.69	0.37	18.06	20.35	882
		N		209	204	207	114	113	114	226	114	180	40	169
0303000305	Rocky	x̄	5	7.25	8.11	275	0.09	0.85	2.62	3.48	0.07	13.33	6.97	670
		N		401	401	401	316	314	316	628	316	316	41	294
0303000306	Lower Deep	x̄	4	7.06	7.93	135	0.05	0.72	0.57	1.29	0.14	19.87	19.79	501
		N		356	358	356	280	275	280	550	280	317	91	288

^ Statistic symbols x̄ - mean and N - Number,
Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis.
Orange highlighted values represent the highest mean instream concentration or lowest DO concentration in comparison to the other HUC 10 watersheds.
Green highlighted row represents the overall HUC 8 watershed mean for each constituent for comparison purposes.

Watershed HUC 10	Watershed Name	Statistic^	Number of Stations#	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
03030004*	**HUC8 Upper CPF Watershed**	**x̄**	20	6.52	8.21	90	0.03	0.65	0.35	1.00	0.07	13.08	16.38	360
		N		1,883	1,865	1,879	1,362	1,355	1,362	2,710	1,362	1,408	135	1,312
0303000401	Buckhorn Creek-CPF	x̄	3	7.02	7.75	138	0.05	0.84	0.35	1.19	0.09	16.80		401
		N		235	235	235	207	207	207	414	207	207		177
0303000402	Upper Little	x̄	2	6.56	8.03	75	0.04	0.61	0.34	0.95	0.05	8.64	7.79	261
		N		189	186	189	188	186	188	372	188	186	42	173
0303000403	Headwaters Little	x̄	1	6.54	8.47	40	0.02	0.44	0.15	0.58	0.02	3.78		124
		N		55	54	54	50	48	50	96	50	52		52
0303000404	Outlet Little	x̄	3	6.10	8.85	48	0.03	0.52	0.24	0.77	0.06	7.01		262
		N		185	183	185	181	180	181	360	181	181		171
0303000405	Buies Creek-CPF	x̄	3	6.99	8.25	125	0.04	0.72	0.48	1.195	0.08	20.57	18.78	480
		N		303	300	303	251	250	251	500	251	249	47	237
0303000406	Rockfish Creek	x̄	4	5.55	8.40	44	0.02	0.49	0.22	0.71	0.04	8.26		280
		N		293	286	293	235	235	235	470	235	285		275
0303000407	Cross Creek-CPF	x̄	4	6.86	8.03	107	0.04	0.71	0.49	1.200	0.08	17.73	21.78	506
		N		623	621	620	250	249	250	498	250	248	46	227

^ Statistic symbols x̄ - mean and N - Number,
Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis.
Orange highlighted values represent the highest mean instream concentration or lowest DO concentration in comparison to the other HUC 10 watersheds.
Green highlighted row represents the overall HUC 8 watershed mean for each constituent for comparison purposes.

Watershed HUC 10	Watershed Name	Statistic^	Number of Stations#	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
03030005*	**HUC8 Lower CPF Watershed**	**x̄**	30	6.74	7.20	117	0.06	0.75	0.53	1.29	0.15	13.64		423
		N		3,707	3,705	3,094	1,567	1,542	1,562	3,070	1,561	1,235		1,424
0303000501	Harrison Creek-CPF	x̄	3	6.72	7.57	109	0.03	0.88	0.73	1.61	0.13	18.52		294
		N		735	735	735	180	180	180	360	180	180		170
0303000502	Turnbull Creek-CPF	x̄	7	6.36	7.47	104	0.05	0.84	0.72	1.56	0.14	13.86		466
		N		1131	1128	1130	292	291	291	580	292	343		332
0303000504	Hood Creek-CPF	x̄	8	6.59	7.36	121	0.06	0.75	0.60	1.35	0.16	14.94		603
		N		1152	1154	1158	499	492	499	982	494	369		491
0303000505	Brunswick -CPF*	x̄	9	6.88	6.48	201	0.07	0.72	0.38	1.09	0.17	10.05		289
		N		470	469	71	426	414	423	822	424	287		343
0303000507	Liliput Creek-CPF**	x̄	1	7.56	7.12		0.06	0.64	0.20	0.84	0.16			
		N		71	71		57	55	57	110	57			
0303000508	Cape Fear***	x̄	2	7.86	7.27		0.08	0.53	0.12	0.65	0.15	6.39		32
		N		148	148		113	110	112	216	114	56		88

^ Statistic symbols x̄ - mean and N - Number,
Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis.
*HUC10 Brunswick River CPF River watershed (0303000505) includes six Estuary stations and three River/Stream stations, **HUC10 Liliput Creek - CPF River watershed (0303000507) includes one estuary station, ***HUC10 Cape Fear River watershed (0303000508) includes two Estuary stations, all other stations in the HUC8 Lower Cape Fear River subbasin (03030005) are River/Stream stations.
Orange highlighted values represent the highest mean instream concentration or lowest DO concentration in comparison to the other HUC 10 watersheds.
Green highlighted row represents the overall HUC 8 watershed mean for each constituent for comparison purposes.

Watershed HUC 10	Watershed Name	Statistic^	Number of Stations#	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
03030006*	**HUC8 Black River Watershed**	**x̄**	14	6.14	7.06	101	0.07	0.86	0.43	1.29	0.13	4.83		754
		N		719	729	725	696	689	689	1,364	696	637		748
0303000601	Upper South	x̄	1	6.21	5.74	83	0.12	1.00	0.15	1.14	0.10	7.86		1,458
		N		57	57	57	57	56	56	110	57	57		57
0303000602	Lower South	x̄	2	5.76	7.29	70	0.04	0.78	0.21	0.99	0.07	3.28		510
		N		110	109	110	107	106	106	210	107	108		107
0303000603	Little Coharie Creek	x̄	3	6.43	7.10	98	0.04	0.76	0.51	1.26	0.09	4.02		659
		N		166	168	166	107	106	106	210	107	157		157
0303000604	Great Coharie Creek	x̄	2	6.45	6.59	129	0.05	0.78	0.41	1.19	0.21	3.51		1,106
		N		110	111	110	107	106	106	210	107	51		107
0303000605	Six Runs Creek	x̄	2	6.62	8.00	137	0.08	0.83	0.90	1.73	0.17	6.46		1,337
		N		112	113	112	107	106	106	210	107	108		108
0303000606	Colly Creek	x̄	1	3.97	6.42	57	0.27	1.44	0.03	1.47	0.18	5.45		581
		N		51	57	57	57	56	56	110	57	57		57
0303000608	Black	x̄	3	6.28	7.31	108	0.04	0.77	0.49	1.26	0.14	4.61		176
		N		113	114	113	154	153	153	304	154	99		155

^ Statistic symbols x̄ - mean and N - Number,
Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis.
Orange highlighted values represent the highest mean instream concentration or lowest DO concentration in comparison to the other HUC 10 watersheds.
Green highlighted row represents the overall HUC 8 watershed mean for each constituent for comparison purposes.

Watershed HUC 10	Watershed Name	Statistic^	Number of Stations#	pH	DO (mg/L)	Conductivity (µS/cm)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TN (mg/L)	TP (mg/L)	Turbidity (NTU)	TSS (mg/L)	Fecal Coliform (CFU/100 mL)
03030007*	**HUC8 Northeast CPF Watershed**	**x̄**	17	6.47	6.96	711	0.09	0.92	0.61	1.54	0.21	6.45		1,093
		N		907	922	925	939	937	938	1,862	942	670		1,000
0303000701	Goshen Swamp	x̄	3	6.72	7.28	621	0.07	0.86	0.55	1.41	0.20	3.75		2,478
		N		153	156	156	161	161	162	320	162	108		163
0303000702	Headwaters Northeast CPF	x̄	2	6.63	7.38	478	0.11	0.88	1.05	1.92	0.19	4.60		1,418
		N		151	154	154	149	151	151	302	151	49		160
0303000703	Limestone Creek-Northeast CPF	x̄	1	6.61	7.71	162	0.04	0.85	0.60	1.44	0.15	5.59		269
		N		44	44	44	52	51	52	102	52	53		52
0303000705	Rockfish Creek	x̄	3	6.81	8.00	159	0.108	1.05	1.09	2.14	0.38	6.58		1,284
		N		154	157	157	162	163	161	322	163	107		163
0303000706	Angola Swamp-Northeast CPF	x̄	2	5.98	6.76	115	0.10	1.13	0.38	1.52	0.26	6.56		759
		N		97	99	100	104	105	104	208	105	106		105
0303000708	Harrisons Creek-Northeast CPF*	x̄	6	6.23	6.04	1,413	0.07	0.85	0.27	1.12	0.14	8.08		446
		N		308	312	314	311	306	308	608	309	247		357

^ Statistic symbols x̄ - mean and N - Number,
Ambient stations with a minimum of data collected for 5 years from 2016 to 2020 and 40 average day records were included in the analysis.
*HUC10 Harrison Creek-Northeast CPF (0303000708) includes one Estuary station and five River/Stream stations, all other stations in the HUC8 Northeast Cape Fear River subbasin (03030007) are River/Stream stations.
Orange highlighted values represent the highest mean instream concentration or lowest DO concentration in comparison to the other HUC 10 watersheds.
Green highlighted row represents the overall HUC 8 watershed mean for each constituent for comparison purposes.

Table 6: Land Use Land Cover for AMS and Coalition Station Watersheds

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
Haw River Subbasin, HUC8 03030002								
0303000201	B0400000 - Reedy Fork at SR 2719 High Rock Rd near Monticello (~131.3 Square Miles)	Agriculture	19.10%	16.62%	15.56%	15.23%	15.00%	-4.10%
		Barren Land	0.06%	0.06%	0.06%	0.22%	0.06%	0.00%
		Developed	31.51%	35.31%	37.46%	37.90%	38.54%	7.02%
		Forest	42.87%	40.14%	38.90%	38.19%	37.53%	-5.34%
		Grassland/Shrub	0.78%	2.31%	2.51%	3.00%	3.24%	2.46%
		Open Water	3.91%	3.81%	3.76%	3.71%	3.88%	-0.03%
		Wetland	1.76%	1.76%	1.76%	1.74%	1.75%	-0.01%
	B0480050 - N Buffalo Crk at N Buffalo Crk WWTP Influent Conduit Pier at Greensboro (~22.5 Square Miles)	Agriculture	0.23%	0.21%	0.19%	0.19%	0.19%	-0.04%
		Barren Land	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%
		Developed	96.42%	96.64%	97.03%	97.07%	97.10%	0.68%
		Forest	2.75%	2.33%	2.17%	2.14%	2.11%	-0.64%
		Grassland/Shrub	0.04%	0.26%	0.05%	0.05%	0.05%	0.00%
		Open Water	0.54%	0.54%	0.54%	0.53%	0.54%	0.00%
		Wetland	0.02%	0.02%	0.02%	0.02%	0.02%	0.00%
	B0540000 - N BUFFALO CRK AT SR 2832 NR GREENSBORO (~37.2 Square Miles)	Agriculture	4.06%	3.82%	3.52%	3.24%	3.19%	-0.87%
		Barren Land	0.07%	0.07%	0.07%	0.07%	0.06%	-0.01%
		Developed	83.55%	84.61%	85.32%	85.49%	85.79%	2.24%
		Forest	11.45%	10.21%	9.74%	8.97%	8.92%	-2.54%
		Grassland/Shrub	0.36%	0.79%	0.85%	1.72%	1.55%	1.19%
		Open Water	0.39%	0.39%	0.38%	0.39%	0.39%	0.00%
		Wetland	0.12%	0.12%	0.12%	0.12%	0.11%	-0.01%
	B0540050 - N Buffalo Crk at SR 2770 Huffine Mill Rd near McLeansville (~43.8 Square Miles)	Agriculture	7.43%	7.11%	6.74%	6.47%	6.42%	-1.01%
		Barren Land	0.06%	0.06%	0.06%	0.06%	0.05%	-0.01%
		Developed	73.29%	74.31%	75.00%	75.15%	75.48%	2.19%
		Forest	18.23%	17.11%	16.63%	15.69%	15.69%	-2.54%
		Grassland/Shrub	0.40%	0.83%	1.00%	2.04%	1.78%	1.38%
		Open Water	0.48%	0.47%	0.47%	0.47%	0.48%	0.00%
		Wetland	0.11%	0.11%	0.11%	0.11%	0.11%	-0.01%
	B0670000 - S Buffalo Crk at SR 3000 McConnell Rd near Greensboro (~33.9 Square Miles)	Agriculture	3.12%	2.70%	2.33%	2.20%	2.18%	-0.94%
		Barren Land	0.02%	0.02%	0.02%	0.01%	0.02%	0.00%
		Developed	86.01%	87.26%	87.92%	88.11%	88.16%	2.15%
		Forest	9.16%	8.36%	8.24%	8.40%	8.37%	-0.79%
		Grassland/Shrub	0.83%	0.80%	0.64%	0.41%	0.41%	-0.42%
		Open Water	0.18%	0.17%	0.17%	0.18%	0.18%	0.00%
		Wetland	0.68%	0.69%	0.68%	0.68%	0.68%	0.00%
	B0750000 - S BUFFALO CRK AT SR 2821 AT	Agriculture	7.55%	7.03%	6.54%	6.29%	6.23%	-1.32%
		Barren Land	0.02%	0.01%	0.02%	0.01%	0.02%	0.00%
		Developed	73.42%	74.82%	75.55%	75.83%	75.98%	2.56%
		Forest	16.67%	15.44%	15.40%	15.39%	15.38%	-1.29%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
0303000202	MCLEANSVILLE (~43.5 Square Miles)	Grassland/Shrub	1.09%	1.45%	1.27%	1.23%	1.13%	**0.04%**
		Open Water	0.27%	0.27%	0.27%	0.28%	0.29%	**0.01%**
		Wetland	0.97%	0.97%	0.97%	0.97%	0.97%	**0.00%**
	B0840000 - REEDY FORK AT NC 87 AT OSSIPEE (~254.9 Square Miles)	Agriculture	18.63%	17.03%	16.29%	16.00%	15.86%	**-2.77%**
		Barren Land	0.05%	0.04%	0.04%	0.13%	0.04%	**0.00%**
		Developed	42.59%	45.15%	46.52%	46.83%	47.24%	**4.65%**
		Forest	34.52%	32.56%	31.60%	31.04%	30.73%	**-3.79%**
		Grassland/Shrub	0.79%	1.84%	2.21%	2.68%	2.71%	**1.92%**
		Open Water	2.30%	2.26%	2.24%	2.22%	2.31%	**0.01%**
		Wetland	1.11%	1.11%	1.10%	1.10%	1.10%	**-0.01%**
	B0040000 - HAW RIV AT SR 2109 NR OAK RIDGE (~14.2 Square Miles)	Agriculture	31.84%	28.56%	27.06%	26.45%	25.91%	**-5.92%**
		Barren Land	0.03%	0.02%	0.02%	0.02%	0.03%	**0.00%**
		Developed	14.63%	19.29%	21.23%	21.87%	22.46%	**7.83%**
		Forest	47.51%	45.85%	42.73%	43.13%	44.05%	**-3.46%**
		Grassland/Shrub	0.74%	1.06%	3.75%	3.33%	2.33%	**1.59%**
		Open Water	0.53%	0.50%	0.48%	0.49%	0.49%	**-0.04%**
		Wetland	4.73%	4.72%	4.72%	4.72%	4.72%	**-0.01%**
	B0050000 - Haw Riv at US 29 Bus near Benaja (~79.6 Square Miles)	Agriculture	30.57%	28.24%	27.32%	26.84%	26.63%	**-3.93%**
		Barren Land	0.01%	0.01%	0.01%	0.02%	0.02%	**0.01%**
		Developed	10.69%	13.77%	14.80%	15.29%	15.70%	**5.01%**
		Forest	51.45%	49.28%	47.72%	47.30%	47.81%	**-3.64%**
		Grassland/Shrub	0.81%	2.26%	3.70%	4.12%	3.39%	**2.58%**
		Open Water	1.02%	1.00%	1.01%	0.99%	1.00%	**-0.02%**
		Wetland	5.45%	5.44%	5.44%	5.45%	5.45%	**-0.01%**
	B0070010 - Troublesome Crk at US 29 Bus near Reidsville (~54.9 Square Miles)	Agriculture	33.94%	32.88%	32.41%	32.13%	32.03%	**-1.91%**
		Barren Land	0.18%	0.18%	0.18%	0.19%	0.21%	**0.02%**
		Developed	10.99%	11.87%	12.18%	12.29%	12.41%	**1.42%**
		Forest	47.88%	46.38%	44.80%	43.85%	44.91%	**-2.97%**
		Grassland/Shrub	0.92%	2.54%	4.51%	5.42%	4.32%	**3.41%**
		Open Water	3.24%	3.28%	3.06%	3.25%	3.24%	**0.00%**
		Wetland	2.85%	2.87%	2.86%	2.88%	2.88%	**0.03%**
	B0160000 - LITTLE TROUBLESOME CRK AT SR 2600 NR REIDSVILLE (~12 Square Miles)	Agriculture	19.10%	17.28%	16.12%	15.70%	15.60%	**-3.50%**
		Barren Land	0.01%	0.00%	0.00%	0.00%	0.10%	**0.09%**
		Developed	41.38%	42.50%	43.08%	43.27%	43.64%	**2.26%**
		Forest	36.08%	34.91%	33.69%	34.00%	35.31%	**-0.77%**
		Grassland/Shrub	1.52%	3.40%	5.20%	5.13%	3.47%	**1.96%**
		Open Water	0.55%	0.54%	0.55%	0.54%	0.50%	**-0.05%**
		Wetland	1.38%	1.36%	1.37%	1.36%	1.38%	**0.01%**
	B0170000 - Haw Riv at SR 2620 High Rock Rd near Williamsburg	Agriculture	32.20%	30.57%	29.83%	29.45%	29.31%	**-2.89%**
		Barren Land	0.07%	0.07%	0.07%	0.08%	0.09%	**0.02%**
		Developed	12.78%	14.63%	15.29%	15.60%	15.86%	**3.08%**
		Forest	48.25%	46.58%	44.69%	44.15%	45.11%	**-3.14%**
		Grassland/Shrub	0.87%	2.31%	4.34%	4.88%	3.78%	**2.92%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	(~168.3 Square Miles)	Open Water	1.76%	1.77%	1.70%	1.76%	1.75%	**0.00%**
		Wetland	4.08%	4.07%	4.08%	4.09%	4.09%	**0.01%**
	B0190000 - HAW RIV AT NC 87 ALTAMAHAW (~188 Square Miles)	Agriculture	33.26%	31.77%	31.10%	30.76%	30.66%	**-2.60%**
		Barren Land	0.07%	0.07%	0.07%	0.07%	0.09%	**0.02%**
		Developed	12.29%	13.98%	14.58%	14.85%	15.09%	**2.80%**
		Forest	48.03%	46.30%	44.48%	43.98%	44.66%	**-3.37%**
		Grassland/Shrub	0.99%	2.51%	4.46%	4.95%	4.12%	**3.13%**
		Open Water	1.70%	1.71%	1.65%	1.70%	1.70%	**0.01%**
		Wetland	3.67%	3.66%	3.67%	3.68%	3.68%	**0.01%**
	B0210000 - HAW RIV AT SR 1561 NR ALTAMAHAW (~188.3 Square Miles)	Agriculture	33.23%	31.75%	31.08%	30.73%	30.64%	**-2.60%**
		Barren Land	0.07%	0.07%	0.07%	0.07%	0.09%	**0.02%**
		Developed	12.35%	14.04%	14.65%	14.92%	15.15%	**2.80%**
		Forest	48.00%	46.27%	44.45%	43.96%	44.63%	**-3.37%**
		Grassland/Shrub	0.99%	2.51%	4.45%	4.95%	4.12%	**3.13%**
		Open Water	1.69%	1.71%	1.65%	1.70%	1.70%	**0.01%**
		Wetland	3.67%	3.66%	3.66%	3.67%	3.68%	**0.01%**
03030002 03	B1940000 - Big Alamance Crk at NC 87 near Swepsonville (~259.3 Square Miles)	Agriculture	28.93%	27.99%	27.08%	26.60%	26.54%	**-2.39%**
		Barren Land	0.10%	0.09%	0.09%	0.09%	0.12%	**0.03%**
		Developed	20.54%	21.71%	22.81%	23.10%	23.25%	**2.71%**
		Forest	47.18%	44.89%	43.19%	44.06%	44.66%	**-2.52%**
		Grassland/Shrub	1.44%	3.49%	5.01%	4.31%	3.58%	**2.14%**
		Open Water	1.43%	1.44%	1.45%	1.46%	1.45%	**0.02%**
		Wetland	0.38%	0.38%	0.38%	0.38%	0.39%	**0.01%**
	B1960000 - BIG ALAMANCE CRK AT SR 2116 AT SWEPSONSVILLE (~262.2 Square Miles)	Agriculture	28.92%	27.99%	27.08%	26.59%	26.54%	**-2.38%**
		Barren Land	0.10%	0.09%	0.09%	0.09%	0.12%	**0.03%**
		Developed	20.63%	21.79%	22.88%	23.17%	23.32%	**2.69%**
		Forest	47.12%	44.86%	43.09%	43.99%	44.61%	**-2.51%**
		Grassland/Shrub	1.43%	3.47%	5.06%	4.32%	3.57%	**2.14%**
		Open Water	1.42%	1.43%	1.43%	1.44%	1.44%	**0.02%**
		Wetland	0.38%	0.37%	0.38%	0.38%	0.39%	**0.01%**
03030002 04	B0850000 - Haw Riv at SR 1530 Gerringer Mill Rd near Ossipee (~450.5 Square Miles)	Agriculture	25.08%	23.54%	22.83%	22.52%	22.40%	**-2.67%**
		Barren Land	0.06%	0.05%	0.05%	0.10%	0.06%	**0.01%**
		Developed	29.47%	31.64%	32.66%	32.96%	33.28%	**3.81%**
		Forest	40.29%	38.44%	37.13%	36.62%	36.74%	**-3.55%**
		Grassland/Shrub	0.90%	2.16%	3.19%	3.66%	3.30%	**2.40%**
		Open Water	2.03%	2.01%	1.97%	1.98%	2.04%	**0.01%**
		Wetland	2.16%	2.16%	2.16%	2.16%	2.16%	**0.00%**
	B1000000 - DRY CRK BESIDE SR 1530 NR BURLINGTON (~4 Square Miles)	Agriculture	10.62%	9.15%	8.53%	8.47%	8.25%	**-2.37%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	55.16%	57.72%	59.08%	59.12%	59.64%	**4.48%**
		Forest	33.52%	32.00%	31.06%	30.70%	30.06%	**-3.47%**
		Grassland/Shrub	0.35%	0.73%	0.93%	1.32%	1.66%	**1.31%**
		Open Water	0.29%	0.34%	0.34%	0.34%	0.34%	**0.04%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
		Wetland	0.05%	0.05%	0.05%	0.05%	0.05%	**0.00%**
	B1020000 - Haw River at SR 1700 (Lower Hopedale Rd) at Hopedale (~478.7 Square Miles)	Agriculture	25.41%	23.89%	23.20%	22.88%	22.77%	**-2.64%**
		Barren Land	0.05%	0.05%	0.05%	0.10%	0.06%	**0.01%**
		Developed	29.17%	31.27%	32.28%	32.56%	32.90%	**3.73%**
		Forest	40.44%	38.61%	37.23%	36.81%	36.96%	**-3.48%**
		Grassland/Shrub	0.91%	2.18%	3.27%	3.66%	3.28%	**2.37%**
		Open Water	1.98%	1.96%	1.92%	1.93%	1.98%	**0.01%**
		Wetland	2.05%	2.04%	2.04%	2.05%	2.05%	**0.00%**
	B1095000 - JORDAN CRK AT SR 1754 NR UNION RIDGE (~24 Square Miles)	Agriculture	35.98%	34.96%	33.54%	32.32%	32.23%	**-3.75%**
		Barren Land	0.00%	0.01%	0.00%	0.00%	0.02%	**0.02%**
		Developed	7.18%	7.28%	7.33%	7.39%	7.45%	**0.27%**
		Forest	51.86%	51.84%	48.96%	48.78%	52.28%	**0.42%**
		Grassland/Shrub	2.50%	3.42%	7.68%	9.03%	5.53%	**3.03%**
		Open Water	1.00%	1.03%	1.03%	1.02%	1.02%	**0.02%**
		Wetland	1.47%	1.46%	1.46%	1.47%	1.47%	**-0.01%**
	B1140000 - HAW RIV AT NC 49N AT HAW RIVER (~603.3 Square Miles)	Agriculture	26.77%	25.40%	24.72%	24.33%	24.22%	**-2.55%**
		Barren Land	0.06%	0.06%	0.06%	0.09%	0.07%	**0.01%**
		Developed	26.02%	27.76%	28.59%	28.84%	29.12%	**3.10%**
		Forest	42.11%	40.39%	38.82%	38.69%	39.37%	**-2.74%**
		Grassland/Shrub	1.35%	2.71%	4.19%	4.38%	3.51%	**2.16%**
		Open Water	1.98%	1.97%	1.92%	1.95%	1.99%	**0.01%**
		Wetland	1.71%	1.71%	1.71%	1.71%	1.72%	**0.00%**
	B1200000 - Haw Riv at NC 54 near Graham (~607 Square Miles)	Agriculture	26.66%	25.30%	24.61%	24.22%	24.12%	**-2.55%**
		Barren Land	0.06%	0.05%	0.06%	0.09%	0.07%	**0.01%**
		Developed	26.13%	27.88%	28.71%	28.96%	29.24%	**3.11%**
		Forest	42.07%	40.36%	38.82%	38.71%	39.38%	**-2.69%**
		Grassland/Shrub	1.39%	2.74%	4.18%	4.36%	3.50%	**2.10%**
		Open Water	1.98%	1.97%	1.92%	1.95%	1.99%	**0.01%**
		Wetland	1.71%	1.70%	1.70%	1.70%	1.71%	**0.00%**
	B1260000 - TOWN BRANCH AT SR 2109 NR GRAHAM (~4 Square Miles)	Agriculture	3.13%	3.06%	2.94%	2.92%	2.92%	**-0.21%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.03%	**0.03%**
		Developed	80.47%	80.92%	81.30%	81.75%	81.83%	**1.35%**
		Forest	15.71%	12.23%	12.58%	13.73%	13.46%	**-2.25%**
		Grassland/Shrub	0.69%	3.79%	3.18%	1.60%	1.76%	**1.08%**
		Open Water	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	B1279000 - UT TO STAGG CRK OFF NC 49 NR PLEASANT GROVE (~2.6 Square Miles)	Agriculture	31.97%	30.99%	30.54%	30.30%	30.28%	**-1.68%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	6.44%	6.69%	6.69%	6.70%	6.70%	**0.26%**
		Forest	54.93%	54.39%	51.09%	57.71%	58.18%	**3.24%**
		Grassland/Shrub	5.44%	6.66%	10.07%	3.89%	3.44%	**-2.00%**
		Open Water	0.83%	0.87%	0.91%	1.01%	1.01%	**0.18%**
		Wetland	0.39%	0.41%	0.69%	0.39%	0.39%	**0.00%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B1350000 - Moadams Crk at Corrigdor Rd ups of Discharge near Mebane (~0.9 Square Miles)	Agriculture	6.56%	3.68%	3.50%	3.46%	3.17%	**-3.39%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	76.02%	80.44%	80.62%	80.99%	82.28%	**6.25%**
		Forest	16.83%	15.36%	15.36%	12.90%	12.68%	**-4.16%**
		Grassland/Shrub	0.59%	0.52%	0.52%	2.65%	1.88%	**1.29%**
		Open Water	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	B1380000 - Moadams Crk at SR 1940 Gibson Rd near Florence Town (~3.2 Square Miles)	Agriculture	21.91%	18.47%	15.83%	12.87%	12.44%	**-9.48%**
		Barren Land	0.01%	0.01%	0.00%	0.00%	0.46%	**0.45%**
		Developed	51.30%	56.75%	59.73%	63.23%	63.96%	**12.65%**
		Forest	25.65%	23.30%	23.33%	21.17%	19.02%	**-6.63%**
		Grassland/Shrub	0.78%	1.18%	0.82%	2.35%	3.75%	**2.96%**
		Open Water	0.23%	0.25%	0.24%	0.25%	0.25%	**0.02%**
		Wetland	0.11%	0.04%	0.05%	0.13%	0.13%	**0.02%**
	B1440000 - Haw Riv at SR 2158 Swepsonville Rd near Swepsonville (~693.4 Square Miles)	Agriculture	26.88%	25.56%	24.82%	24.40%	24.30%	**-2.59%**
		Barren Land	0.05%	0.05%	0.05%	0.08%	0.07%	**0.02%**
		Developed	25.27%	26.89%	27.72%	28.03%	28.31%	**3.04%**
		Forest	42.76%	41.07%	39.66%	39.53%	40.20%	**-2.56%**
		Grassland/Shrub	1.49%	2.92%	4.26%	4.43%	3.57%	**2.07%**
		Open Water	2.01%	1.98%	1.95%	1.98%	2.01%	**0.01%**
		Wetland	1.54%	1.54%	1.54%	1.54%	1.54%	**0.00%**
0303000205	B1980000 - HAW RIV AT SR 2171 AT SAXAPAHAW (~1012.5 Square Miles)	Agriculture	27.35%	26.15%	25.36%	24.92%	24.83%	**-2.52%**
		Barren Land	0.06%	0.06%	0.06%	0.08%	0.08%	**0.02%**
		Developed	23.46%	24.91%	25.81%	26.13%	26.38%	**2.91%**
		Forest	44.63%	42.81%	41.32%	41.49%	42.12%	**-2.50%**
		Grassland/Shrub	1.52%	3.10%	4.50%	4.40%	3.59%	**2.08%**
		Open Water	1.81%	1.80%	1.78%	1.80%	1.82%	**0.01%**
		Wetland	1.17%	1.17%	1.17%	1.17%	1.17%	**0.01%**
	B2000000 - Haw Riv at SR 1005 near Saxpahaw (~1079.9 Square Miles)	Agriculture	27.41%	26.24%	25.47%	25.04%	24.95%	**-2.46%**
		Barren Land	0.06%	0.05%	0.05%	0.07%	0.08%	**0.02%**
		Developed	22.47%	23.84%	24.69%	25.00%	25.24%	**2.76%**
		Forest	45.54%	43.79%	42.32%	42.48%	43.20%	**-2.34%**
		Grassland/Shrub	1.60%	3.18%	4.58%	4.49%	3.61%	**2.00%**
		Open Water	1.81%	1.80%	1.78%	1.80%	1.82%	**0.01%**
		Wetland	1.10%	1.10%	1.10%	1.10%	1.11%	**0.01%**
0303000206	B2970000 - THIRD FORK CRK AT NC 55 AT DURHAM (~2.4 Square Miles)	Agriculture	0.01%	0.01%	0.00%	0.00%	0.00%	**-0.01%**
		Barren Land	0.36%	0.30%	0.23%	0.23%	0.29%	**-0.07%**
		Developed	89.18%	89.29%	89.42%	89.43%	90.19%	**1.02%**
		Forest	10.35%	10.33%	10.32%	10.31%	9.47%	**-0.88%**
		Grassland/Shrub	0.10%	0.06%	0.03%	0.03%	0.04%	**-0.06%**
		Open Water	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Agriculture	6.84%	6.60%	6.32%	6.21%	6.16%	**-0.69%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B3020000 - New Hope Creek at NC 54 near Durham (~56.1 Square Miles)	Barren Land	0.10%	0.10%	0.09%	0.09%	0.11%	**0.01%**
		Developed	30.16%	31.13%	32.10%	32.44%	32.95%	**2.79%**
		Forest	56.31%	54.56%	54.78%	54.94%	54.03%	**-2.28%**
		Grassland/Shrub	2.16%	3.24%	2.34%	1.93%	2.37%	**0.21%**
		Open Water	0.35%	0.31%	0.32%	0.34%	0.34%	**-0.01%**
		Wetland	4.07%	4.06%	4.05%	4.05%	4.05%	**-0.02%**
	B3025000 - Third Fork Crk at NC 54 near Durham (~15.9 Square Miles)	Agriculture	0.22%	0.21%	0.22%	0.22%	0.22%	**0.00%**
		Barren Land	0.15%	0.09%	0.07%	0.05%	0.09%	**-0.07%**
		Developed	84.65%	85.69%	86.72%	87.00%	87.12%	**2.48%**
		Forest	10.20%	9.11%	8.17%	7.88%	7.73%	**-2.47%**
		Grassland/Shrub	0.19%	0.31%	0.29%	0.32%	0.31%	**0.13%**
		Open Water	0.22%	0.22%	0.22%	0.20%	0.20%	**-0.02%**
		Wetland	4.37%	4.35%	4.33%	4.32%	4.32%	**-0.05%**
	B3040000 - NEW HOPE CRK AT SR 1107 NR BLANDS (~76.2 Square Miles)	Agriculture	5.17%	4.98%	4.78%	4.70%	4.64%	**-0.53%**
		Barren Land	0.12%	0.10%	0.08%	0.08%	0.11%	**-0.01%**
		Developed	41.00%	42.23%	43.37%	43.68%	44.13%	**3.14%**
		Forest	45.60%	43.80%	43.56%	43.57%	42.81%	**-2.79%**
		Grassland/Shrub	1.68%	2.49%	1.82%	1.58%	1.92%	**0.23%**
		Open Water	0.32%	0.29%	0.29%	0.32%	0.32%	**0.00%**
		Wetland	6.12%	6.11%	6.09%	6.07%	6.07%	**-0.05%**
	B3050000 - BOOKER CRK AT NC 86 AT CHAPEL HILL (~0.8 Square Miles)	Agriculture	2.47%	2.34%	2.46%	2.46%	1.28%	**-1.19%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	66.77%	73.60%	73.64%	74.56%	76.19%	**9.42%**
		Forest	30.06%	23.36%	23.20%	21.52%	21.17%	**-8.89%**
		Grassland/Shrub	0.35%	0.35%	0.35%	1.10%	1.01%	**0.66%**
		Open Water	0.35%	0.35%	0.35%	0.35%	0.35%	**0.00%**
		Wetland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	B3300000 - Northeast Crk at SR 1102 Sedwick Road near RTP (~12.9 Square Miles)	Agriculture	2.29%	2.17%	2.10%	2.03%	1.96%	**-0.33%**
		Barren Land	0.17%	0.12%	0.12%	0.09%	0.22%	**0.06%**
		Developed	55.00%	57.29%	59.42%	61.85%	64.24%	**9.25%**
		Forest	36.79%	35.05%	33.25%	29.59%	27.19%	**-9.60%**
		Grassland/Shrub	1.99%	1.62%	1.37%	2.73%	2.65%	**0.67%**
		Open Water	0.37%	0.36%	0.35%	0.33%	0.34%	**-0.03%**
		Wetland	3.40%	3.39%	3.39%	3.39%	3.39%	**-0.01%**
	B3660000 - NORTHEAST CRK AT SR 1100 NR NELSON (~21.2 Square Miles)	Agriculture	1.81%	1.73%	1.60%	1.54%	1.50%	**-0.32%**
		Barren Land	0.27%	0.23%	0.21%	0.17%	0.33%	**0.05%**
		Developed	54.07%	56.02%	59.09%	61.05%	62.82%	**8.75%**
		Forest	36.48%	34.71%	30.85%	28.46%	27.40%	**-9.08%**
		Grassland/Shrub	2.25%	2.28%	3.27%	3.79%	2.91%	**0.66%**
		Open Water	0.81%	0.76%	0.72%	0.75%	0.79%	**-0.03%**
		Wetland	4.31%	4.26%	4.25%	4.25%	4.26%	**-0.05%**
	B3670000 - Northeast Crk at SR	Agriculture	2.58%	2.16%	1.82%	1.74%	1.61%	**-0.97%**
		Barren Land	0.25%	0.20%	0.16%	0.13%	0.27%	**0.02%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	1731 O Kelly Church Road near Durham (~35.1 Square Miles)	Developed	40.89%	47.37%	52.77%	55.44%	57.64%	**16.75%**
		Forest	46.28%	40.22%	34.89%	32.44%	30.83%	**-15.45%**
		Grassland/Shrub	2.88%	3.03%	3.44%	3.31%	2.69%	**-0.19%**
		Open Water	0.92%	0.88%	0.99%	1.02%	1.05%	**0.13%**
		Wetland	6.20%	6.15%	5.93%	5.92%	5.92%	**-0.29%**
	B3899180 - Morgan Crk at Mason Farm WWTP Entrance at Chapel Hill (~39.9 Square Miles)	Agriculture	10.32%	10.14%	9.97%	9.84%	9.79%	**-0.53%**
		Barren Land	0.26%	0.22%	0.21%	0.21%	0.28%	**0.02%**
		Developed	23.73%	24.09%	24.59%	24.86%	24.96%	**1.23%**
		Forest	63.44%	62.56%	61.94%	61.93%	61.74%	**-1.70%**
		Grassland/Shrub	1.11%	1.88%	2.14%	1.93%	2.01%	**0.90%**
		Open Water	1.01%	0.99%	1.03%	1.12%	1.12%	**0.12%**
		Wetland	0.13%	0.13%	0.12%	0.10%	0.11%	**-0.02%**
	B3900000 - MORGAN CRK AT SR 1726 NR FARRINGTON (~46 Square Miles)	Agriculture	9.64%	9.50%	9.34%	9.26%	9.21%	**-0.43%**
		Barren Land	0.24%	0.20%	0.20%	0.19%	0.26%	**0.02%**
		Developed	24.22%	24.57%	25.16%	25.46%	25.55%	**1.32%**
		Forest	61.84%	60.94%	60.07%	60.08%	59.89%	**-1.95%**
		Grassland/Shrub	1.10%	1.84%	2.26%	1.98%	2.07%	**0.96%**
		Open Water	0.95%	0.93%	0.97%	1.05%	1.04%	**0.10%**
		Wetland	2.00%	2.01%	2.00%	1.98%	1.98%	**-0.02%**
0303000207	B2100000 - Haw Riv at SR 1713 near Bynum (~1270.4 Square Miles)	Agriculture	27.24%	26.17%	25.42%	25.02%	24.95%	**-2.28%**
		Barren Land	0.05%	0.05%	0.05%	0.06%	0.07%	**0.02%**
		Developed	20.16%	21.40%	22.16%	22.43%	22.65%	**2.49%**
		Forest	47.98%	46.23%	45.16%	45.31%	45.88%	**-2.10%**
		Grassland/Shrub	1.93%	3.52%	4.59%	4.53%	3.79%	**1.86%**
		Open Water	1.64%	1.63%	1.61%	1.64%	1.66%	**0.02%**
		Wetland	1.00%	1.00%	1.00%	1.00%	1.01%	**0.01%**
	B2450000 - ROBESON CRK AT BOAT ACCESS OFF SR 1943 NR HANKS CHAPEL (~28.1 Square Miles)	Agriculture	9.38%	9.01%	8.50%	8.34%	8.41%	**-0.97%**
		Barren Land	0.03%	0.03%	0.02%	0.02%	0.06%	**0.03%**
		Developed	11.62%	12.11%	12.66%	12.83%	12.88%	**1.25%**
		Forest	70.61%	71.33%	74.84%	74.81%	74.27%	**3.66%**
		Grassland/Shrub	7.82%	6.98%	3.45%	3.45%	3.83%	**-3.99%**
		Open Water	0.51%	0.52%	0.51%	0.53%	0.53%	**0.02%**
		Wetland	0.02%	0.02%	0.03%	0.02%	0.02%	**0.00%**
	B4050000 - HAW RIV BELOW JORDAN DAM NR MONCURE (~1686.6 Square Miles)	Agriculture	21.96%	21.08%	20.45%	20.10%	20.01%	**-1.95%**
		Barren Land	0.08%	0.09%	0.09%	0.08%	0.09%	**0.01%**
		Developed	21.24%	22.60%	23.64%	24.14%	24.61%	**3.37%**
		Forest	50.14%	48.34%	47.26%	47.09%	47.24%	**-2.90%**
		Grassland/Shrub	2.09%	3.45%	4.15%	4.09%	3.54%	**1.45%**
		Open Water	2.66%	2.58%	2.57%	2.74%	2.71%	**0.05%**
		Wetland	1.84%	1.85%	1.85%	1.76%	1.81%	**-0.03%**
	B4080000 - Haw Riv at SR 1011 Old US 1 near Haywood	Agriculture	21.93%	21.06%	20.42%	20.07%	19.98%	**-1.95%**
		Barren Land	0.08%	0.09%	0.09%	0.08%	0.09%	**0.01%**
		Developed	21.20%	22.56%	23.59%	24.10%	24.56%	**3.36%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	(~1691.6 Square Miles)	Forest	50.20%	48.40%	47.32%	47.14%	47.29%	-2.91%
		Grassland/Shrub	2.09%	3.46%	4.15%	4.10%	3.56%	1.47%
		Open Water	2.66%	2.59%	2.57%	2.74%	2.71%	0.05%
		Wetland	1.84%	1.85%	1.85%	1.77%	1.81%	-0.03%
Deep River Subbasin, HUC8 03030003								
0303000301	B4210000 - W FORK DEEP RIV AT SR 1818 NR HIGH POINT (~16.9 Square Miles)	Agriculture	25.45%	23.67%	21.81%	21.11%	20.86%	-4.59%
		Barren Land	0.02%	0.01%	0.01%	0.01%	0.51%	0.49%
		Developed	29.89%	31.75%	34.35%	35.38%	35.47%	5.58%
		Forest	42.25%	40.62%	38.31%	38.77%	37.43%	-4.83%
		Grassland/Shrub	0.56%	2.15%	3.71%	2.91%	3.91%	3.35%
		Open Water	0.24%	0.23%	0.22%	0.20%	0.20%	-0.03%
		Wetland	1.59%	1.57%	1.59%	1.62%	1.62%	0.03%
	B4240000 - E FORK DEEP RIV AT SR 1541 NR HIGH POINT (~14.7 Square Miles)	Agriculture	14.98%	12.17%	10.50%	9.75%	9.51%	-5.47%
		Barren Land	0.02%	0.03%	0.02%	0.00%	0.16%	0.14%
		Developed	61.64%	66.59%	68.58%	69.39%	69.81%	8.17%
		Forest	22.17%	17.78%	17.05%	18.09%	17.60%	-4.57%
		Grassland/Shrub	0.68%	2.92%	3.36%	2.27%	2.44%	1.76%
		Open Water	0.48%	0.46%	0.47%	0.47%	0.47%	-0.01%
		Wetland	0.04%	0.05%	0.02%	0.03%	0.01%	-0.03%
	B4350000 - Deep Riv at SR 1113 Kivett Dr near Hayworth Spring (~77.6 Square Miles)	Agriculture	11.49%	9.98%	8.97%	8.54%	8.39%	-3.10%
		Barren Land	0.50%	0.50%	0.51%	0.52%	0.72%	0.22%
		Developed	57.27%	60.24%	62.11%	62.81%	62.95%	5.67%
		Forest	27.34%	24.55%	23.34%	23.59%	22.86%	-4.48%
		Grassland/Shrub	0.57%	1.93%	2.25%	1.74%	2.27%	1.70%
		Open Water	2.23%	2.18%	2.22%	2.18%	2.18%	-0.05%
		Wetland	0.59%	0.62%	0.61%	0.62%	0.63%	0.03%
	B4380000 - Richland Crk at SR 1154 Kersey Valley Rd near High point (~12.4 Square Miles)	Agriculture	5.79%	5.26%	4.06%	3.93%	3.88%	-1.91%
		Barren Land	0.12%	0.11%	0.11%	0.11%	0.15%	0.03%
		Developed	76.31%	76.99%	78.85%	78.92%	79.07%	2.76%
		Forest	16.98%	16.60%	15.19%	15.71%	16.03%	-0.94%
		Grassland/Shrub	0.54%	0.77%	1.53%	1.08%	0.61%	0.07%
		Open Water	0.13%	0.13%	0.13%	0.13%	0.13%	0.00%
		Wetland	0.13%	0.13%	0.13%	0.13%	0.13%	0.00%
	B4410000 - Richland Creek at SR 1145 Riverdale Road near High point (~16 Square Miles)	Agriculture	10.26%	9.48%	7.89%	7.64%	7.55%	-2.71%
		Barren Land	0.09%	0.11%	0.08%	0.08%	0.14%	0.05%
		Developed	64.27%	65.05%	67.95%	68.23%	68.41%	4.13%
		Forest	23.53%	22.21%	20.46%	21.34%	21.80%	-1.74%
		Grassland/Shrub	0.93%	2.30%	2.74%	1.86%	1.25%	0.32%
		Open Water	0.27%	0.20%	0.26%	0.23%	0.23%	-0.04%
		Wetland	0.64%	0.65%	0.61%	0.62%	0.62%	-0.02%
		Agriculture	11.62%	10.27%	9.17%	8.76%	8.62%	-3.00%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B4440000 - DEEP RIV AT SR 1129 NR HIGH POINT (~96.1 Square Miles)	Barren Land	0.42%	0.43%	0.43%	0.44%	0.61%	**0.19%**
		Developed	57.23%	59.76%	61.76%	62.38%	62.53%	**5.30%**
		Forest	27.44%	25.04%	23.76%	24.10%	23.55%	**-3.89%**
		Grassland/Shrub	0.80%	2.01%	2.32%	1.79%	2.16%	**1.36%**
		Open Water	1.89%	1.86%	1.96%	1.90%	1.90%	**0.02%**
		Wetland	0.60%	0.63%	0.60%	0.62%	0.63%	**0.03%**
	B4614500 - Randleman Lake at SR 1921 near Randleman (~124.6 Square Miles)	Agriculture	13.78%	12.51%	11.38%	10.93%	10.80%	**-2.98%**
		Barren Land	0.37%	0.37%	0.37%	0.38%	0.52%	**0.15%**
		Developed	51.46%	53.59%	55.37%	55.92%	56.06%	**4.60%**
		Forest	31.40%	28.87%	27.82%	28.11%	27.64%	**-3.76%**
		Grassland/Shrub	0.88%	2.34%	2.38%	2.04%	2.34%	**1.46%**
		Open Water	1.59%	1.77%	2.16%	2.08%	2.08%	**0.50%**
		Wetland	0.53%	0.54%	0.52%	0.54%	0.56%	**0.03%**
	B4615000 - DEEP RIV AT SR 1921 NR RANDLEMAN (~124.7 Square Miles)	Agriculture	13.80%	12.54%	11.40%	10.95%	10.82%	**-2.98%**
		Barren Land	0.37%	0.37%	0.37%	0.38%	0.52%	**0.15%**
		Developed	51.42%	53.54%	55.33%	55.87%	56.01%	**4.60%**
		Forest	31.42%	28.87%	27.82%	28.12%	27.65%	**-3.77%**
		Grassland/Shrub	0.88%	2.35%	2.38%	2.04%	2.34%	**1.46%**
		Open Water	1.59%	1.77%	2.18%	2.10%	2.11%	**0.52%**
		Wetland	0.53%	0.54%	0.52%	0.54%	0.56%	**0.03%**
	B4621000 - Muddy Crk at SR 1917 (Suits Rd) near Glenola (~9.6 Square Miles)	Agriculture	12.47%	11.42%	10.90%	10.72%	10.72%	**-1.75%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	67.90%	69.38%	70.17%	70.41%	70.41%	**2.51%**
		Forest	19.03%	17.82%	17.73%	17.98%	17.79%	**-1.24%**
		Grassland/Shrub	0.32%	1.12%	0.94%	0.64%	0.84%	**0.52%**
		Open Water	0.27%	0.23%	0.24%	0.24%	0.24%	**-0.03%**
		Wetland	0.02%	0.02%	0.02%	0.02%	0.02%	**0.00%**
	B4625000 - Muddy Crk at SR 1922 Muddy Creek Rd near Glenola (~14.4 Square Miles)	Agriculture	18.93%	17.67%	16.36%	16.08%	16.08%	**-2.85%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.02%	**0.01%**
		Developed	50.64%	51.93%	54.41%	54.63%	54.63%	**3.99%**
		Forest	26.94%	26.38%	27.07%	27.71%	27.57%	**0.63%**
		Grassland/Shrub	2.82%	3.40%	1.53%	0.96%	1.08%	**-1.74%**
		Open Water	0.51%	0.47%	0.47%	0.47%	0.47%	**-0.04%**
		Wetland	0.16%	0.15%	0.15%	0.15%	0.15%	**0.00%**
	B4626000 - MUDDY CRK AT SR 1929 CEDAR SQUARE RD near GLENOLA (~16.7 Square Miles)	Agriculture	22.17%	20.84%	19.47%	19.16%	19.16%	**-3.01%**
		Barren Land	0.00%	0.00%	0.00%	0.02%	0.02%	**0.02%**
		Developed	45.08%	46.26%	48.42%	48.73%	48.73%	**3.65%**
		Forest	29.47%	28.73%	29.30%	29.87%	29.74%	**0.28%**
		Grassland/Shrub	2.55%	3.47%	1.75%	1.21%	1.32%	**-1.23%**
		Open Water	0.57%	0.54%	0.93%	0.87%	0.88%	**0.31%**
		Wetland	0.16%	0.16%	0.13%	0.14%	0.14%	**-0.02%**
	B4770500 - Deep Riv at Bus 220 Main St	Agriculture	19.24%	17.85%	16.35%	15.82%	15.72%	**-3.52%**
		Barren Land	0.30%	0.31%	0.28%	0.28%	0.38%	**0.08%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	at Randleman (~176.3 Square Miles)	Developed	44.15%	45.89%	47.47%	48.03%	48.13%	**3.98%**
		Forest	33.40%	29.95%	28.91%	29.48%	29.19%	**-4.21%**
		Grassland/Shrub	1.14%	3.92%	2.76%	2.26%	2.42%	**1.28%**
		Open Water	1.35%	1.65%	3.83%	3.73%	3.73%	**2.38%**
		Wetland	0.42%	0.43%	0.40%	0.41%	0.42%	**0.00%**
	B4800000 - Deep Riv at SR 2122/2128 Worthville Rd at Worthville (~235.4 Square Miles)	Agriculture	22.10%	20.90%	19.60%	19.12%	19.05%	**-3.06%**
		Barren Land	0.23%	0.23%	0.21%	0.21%	0.29%	**0.06%**
		Developed	36.97%	38.46%	39.77%	40.23%	40.31%	**3.34%**
		Forest	37.81%	34.83%	33.45%	34.23%	34.15%	**-3.66%**
		Grassland/Shrub	1.32%	3.75%	3.53%	2.84%	2.82%	**1.51%**
		Open Water	1.19%	1.42%	3.06%	2.99%	2.99%	**1.80%**
		Wetland	0.38%	0.40%	0.37%	0.38%	0.39%	**0.00%**
	B4850000 - HASKETT CRK AT US 220 BUS near NORTH ASHEBORO (~4.9 Square Miles)	Agriculture	5.74%	5.17%	3.50%	3.33%	3.21%	**-2.53%**
		Barren Land	0.03%	0.03%	0.01%	0.01%	0.06%	**0.03%**
		Developed	64.92%	65.13%	67.16%	67.48%	67.60%	**2.68%**
		Forest	28.05%	27.65%	27.56%	27.04%	25.41%	**-2.64%**
		Grassland/Shrub	1.22%	1.98%	1.72%	2.09%	3.68%	**2.46%**
		Open Water	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	0.04%	0.04%	0.04%	0.04%	0.04%	**0.00%**
	B4870000 - Haskett Crk at Asheboro WWTP Bridge near Asheboro (~11.8 Square Miles)	Agriculture	5.58%	4.88%	3.38%	3.21%	3.15%	**-2.43%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.02%	**0.01%**
		Developed	59.09%	59.49%	61.56%	61.73%	61.86%	**2.78%**
		Forest	33.63%	32.47%	30.13%	30.41%	31.67%	**-1.95%**
		Grassland/Shrub	1.21%	2.66%	4.46%	4.19%	2.83%	**1.62%**
		Open Water	0.16%	0.16%	0.13%	0.13%	0.13%	**-0.03%**
		Wetland	0.33%	0.33%	0.33%	0.33%	0.33%	**0.00%**
	B4890000 - HASKETT CRK AT SR 2128 NR CENTRAL FALLS (~12.2 Square Miles)	Agriculture	5.68%	4.97%	3.51%	3.34%	3.29%	**-2.39%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.02%	**0.01%**
		Developed	57.60%	57.99%	59.99%	60.17%	60.30%	**2.70%**
		Forest	34.99%	33.92%	31.72%	31.98%	33.20%	**-1.79%**
		Grassland/Shrub	1.25%	2.63%	4.33%	4.06%	2.74%	**1.50%**
		Open Water	0.16%	0.16%	0.13%	0.13%	0.13%	**-0.03%**
		Wetland	0.32%	0.32%	0.32%	0.32%	0.32%	**0.00%**
	B4920000 - Deep Riv at SR 2261 Old Liberty Rd near Central Falls (~253.6 Square Miles)	Agriculture	21.18%	19.97%	18.65%	18.18%	18.12%	**-3.06%**
		Barren Land	0.21%	0.22%	0.20%	0.20%	0.27%	**0.06%**
		Developed	37.46%	38.91%	40.25%	40.69%	40.78%	**3.32%**
		Forest	38.28%	35.47%	34.04%	34.79%	34.79%	**-3.49%**
		Grassland/Shrub	1.37%	3.71%	3.63%	2.96%	2.87%	**1.50%**
		Open Water	1.13%	1.34%	2.86%	2.80%	2.80%	**1.67%**
		Wetland	0.38%	0.39%	0.36%	0.37%	0.38%	**0.00%**
030300 0302	B5070000 - Deep Riv at SR 2615 Brooklyn Ave at Ramseur	Agriculture	23.35%	22.35%	21.25%	20.80%	20.77%	**-2.58%**
		Barren Land	0.16%	0.16%	0.14%	0.14%	0.20%	**0.04%**
		Developed	29.83%	30.94%	31.98%	32.30%	32.38%	**2.56%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
0303000304	(~353.8 Square Miles)	Forest	43.02%	40.34%	38.72%	39.56%	39.80%	-3.22%
		Grassland/Shrub	2.17%	4.57%	5.19%	4.51%	4.16%	1.99%
		Open Water	1.04%	1.20%	2.29%	2.25%	2.24%	1.20%
		Wetland	0.44%	0.44%	0.43%	0.43%	0.45%	0.01%
	B5100000 - Deep Riv at SR 2628 Hinshaw Town Rd near Parks Crossroads (~397.9 Square Miles)	Agriculture	24.92%	23.93%	22.90%	22.46%	22.44%	-2.48%
		Barren Land	0.14%	0.14%	0.13%	0.13%	0.18%	0.04%
		Developed	27.64%	28.69%	29.65%	29.95%	30.03%	2.38%
		Forest	43.55%	40.77%	39.34%	40.07%	40.29%	-3.26%
		Grassland/Shrub	2.31%	4.87%	5.43%	4.87%	4.55%	2.24%
		Open Water	0.98%	1.13%	2.10%	2.06%	2.05%	1.07%
		Wetland	0.46%	0.47%	0.45%	0.45%	0.47%	0.01%
	B5231000 - TANTRAUGH BRANCH OFF SR 2839 NR ASHEBORO (~0.6 Square Miles)	Agriculture	6.85%	6.57%	6.18%	6.29%	6.29%	-0.55%
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Developed	27.60%	27.88%	28.01%	28.17%	28.17%	0.57%
		Forest	57.72%	63.75%	51.04%	34.30%	33.48%	-24.24%
		Grassland/Shrub	7.28%	1.26%	14.22%	30.69%	31.51%	24.23%
		Open Water	0.05%	0.05%	0.05%	0.05%	0.05%	0.00%
		Wetland	0.49%	0.49%	0.49%	0.49%	0.49%	0.00%
	B5190000 - DEEP RIV AT SR 1456 NR HIGH FALLS (~628.2 Square Miles)	Agriculture	25.38%	24.52%	23.73%	23.32%	23.36%	-2.03%
		Barren Land	0.09%	0.10%	0.09%	0.09%	0.13%	0.04%
		Developed	20.53%	21.29%	21.96%	22.17%	22.24%	1.71%
		Forest	48.99%	46.45%	45.25%	45.70%	46.25%	-2.74%
		Grassland/Shrub	3.84%	6.37%	7.10%	6.86%	6.15%	2.32%
		Open Water	0.78%	0.88%	1.50%	1.47%	1.47%	0.69%
		Wetland	0.39%	0.40%	0.39%	0.39%	0.40%	0.00%
	B5390800 - Cotton Crk at SR 1372 Auman Rd near Star (~2.2 Square Miles)	Agriculture	27.80%	28.42%	26.63%	24.18%	24.29%	-3.51%
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Developed	25.08%	25.14%	25.16%	27.09%	27.09%	2.01%
		Forest	42.15%	40.22%	39.92%	41.22%	42.44%	0.29%
		Grassland/Shrub	3.69%	4.92%	6.99%	6.22%	4.89%	1.21%
		Open Water	1.25%	1.25%	1.25%	1.25%	1.25%	0.00%
		Wetland	0.05%	0.05%	0.05%	0.05%	0.05%	0.00%
	B5480000 - BEAR CRK AT NC 705 AT ROBBINS (~139.3 Square Miles)	Agriculture	15.73%	14.83%	14.27%	13.85%	13.84%	-1.89%
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.04%	0.03%
		Developed	8.01%	8.17%	8.23%	8.49%	8.55%	0.54%
		Forest	64.51%	63.73%	63.83%	63.93%	64.66%	0.16%
		Grassland/Shrub	10.62%	12.13%	12.54%	12.58%	11.74%	1.13%
		Open Water	0.50%	0.53%	0.50%	0.55%	0.56%	0.06%
		Wetland	0.62%	0.60%	0.62%	0.60%	0.60%	-0.02%
	B5520000 - Deep Riv at NC 22 at High	Agriculture	23.78%	22.90%	22.19%	21.79%	21.82%	-1.96%
		Barren Land	0.08%	0.08%	0.07%	0.07%	0.11%	0.04%
		Developed	17.82%	18.45%	18.98%	19.20%	19.26%	1.44%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	Falls (~800.8 Square Miles)	Forest	52.04%	49.89%	49.05%	49.40%	49.98%	-2.06%
		Grassland/Shrub	5.12%	7.44%	7.98%	7.82%	7.11%	1.99%
		Open Water	0.74%	0.82%	1.30%	1.29%	1.29%	0.56%
		Wetland	0.43%	0.43%	0.42%	0.42%	0.43%	0.00%
0303000305	B5885000 - LOVES CRK OFF MOONRISE MEADOW DR AT SILER CITY (~7.8 Square Miles)	Agriculture	13.25%	13.03%	12.46%	12.29%	12.28%	-0.97%
		Barren Land	0.00%	0.00%	0.00%	0.02%	0.03%	0.03%
		Developed	40.00%	40.60%	41.45%	41.48%	41.48%	1.48%
		Forest	41.92%	40.63%	43.17%	42.79%	42.30%	0.38%
		Grassland/Shrub	4.00%	4.91%	2.08%	2.60%	3.08%	-0.91%
		Open Water	0.39%	0.39%	0.39%	0.39%	0.39%	0.00%
		Wetland	0.43%	0.43%	0.43%	0.43%	0.43%	0.00%
	B5890000 - Loves Creek at Waste Treatment Plant Rd at Siler City (~8.2 Square Miles)	Agriculture	12.80%	12.59%	12.05%	11.87%	11.85%	-0.95%
		Barren Land	0.00%	0.00%	0.00%	0.02%	0.03%	0.03%
		Developed	41.11%	41.82%	42.64%	42.66%	42.66%	1.55%
		Forest	41.32%	39.98%	42.39%	41.93%	41.35%	0.03%
		Grassland/Shrub	3.98%	4.81%	2.13%	2.74%	3.32%	-0.66%
		Open Water	0.37%	0.37%	0.37%	0.37%	0.37%	0.00%
		Wetland	0.41%	0.41%	0.41%	0.41%	0.41%	0.00%
	B5920000 - Loves Creek at Progress Blvd at Siler City (~8.3 Square Miles)	Agriculture	12.72%	12.51%	11.97%	11.79%	11.77%	-0.94%
		Barren Land	0.00%	0.00%	0.00%	0.02%	0.03%	0.03%
		Developed	41.13%	41.84%	42.65%	42.67%	42.67%	1.54%
		Forest	41.41%	40.09%	42.47%	42.01%	41.44%	0.03%
		Grassland/Shrub	3.96%	4.78%	2.13%	2.73%	3.31%	-0.65%
		Open Water	0.37%	0.37%	0.37%	0.37%	0.37%	0.00%
		Wetland	0.41%	0.41%	0.41%	0.41%	0.41%	0.00%
	B5950000 - Rocky Riv at US 64 near Siler City (~69.4 Square Miles)	Agriculture	37.56%	37.08%	36.50%	35.96%	36.14%	-1.41%
		Barren Land	0.03%	0.03%	0.03%	0.03%	0.05%	0.02%
		Developed	11.00%	11.26%	11.36%	11.44%	11.44%	0.44%
		Forest	47.04%	44.78%	44.11%	44.39%	44.71%	-2.32%
		Grassland/Shrub	2.96%	5.50%	6.48%	6.43%	5.91%	2.95%
		Open Water	0.88%	0.81%	0.97%	1.18%	1.17%	0.30%
		Wetland	0.55%	0.55%	0.55%	0.56%	0.57%	0.02%
	B5980000 - Rocky Riv at SR 2170 Rives Chapel Rd near Siler City (~95.4 Square Miles)	Agriculture	34.30%	33.85%	33.25%	32.81%	32.95%	-1.34%
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.04%	0.02%
		Developed	12.84%	13.11%	13.31%	13.38%	13.40%	0.56%
		Forest	48.23%	46.66%	46.68%	46.60%	46.83%	-1.40%
		Grassland/Shrub	3.36%	5.15%	5.41%	5.70%	5.29%	1.93%
		Open Water	0.76%	0.70%	0.82%	0.98%	0.97%	0.22%
		Wetland	0.50%	0.51%	0.50%	0.51%	0.52%	0.02%
	B6000000 - ROCKY RIV AT NC 902 NR PITTSBORO (~134.2 Square Miles)	Agriculture	30.93%	30.54%	29.98%	29.61%	29.71%	-1.22%
		Barren Land	0.04%	0.04%	0.03%	0.03%	0.04%	0.00%
		Developed	11.09%	11.33%	11.49%	11.56%	11.58%	0.49%
		Forest	52.50%	51.06%	51.77%	51.60%	51.50%	-1.00%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
		Grassland/Shrub	4.34%	5.95%	5.57%	5.92%	5.88%	**1.54%**
		Open Water	0.64%	0.61%	0.69%	0.81%	0.82%	**0.17%**
		Wetland	0.46%	0.46%	0.46%	0.47%	0.47%	**0.01%**
0303000306	B5575000 - DEEP RIV AT NC 42 AT CARBONTON (~1034.8 Square Miles)	Agriculture	21.16%	20.38%	19.82%	19.49%	19.52%	**-1.64%**
		Barren Land	0.07%	0.07%	0.06%	0.06%	0.10%	**0.04%**
		Developed	15.09%	15.64%	16.07%	16.25%	16.30%	**1.21%**
		Forest	55.30%	53.41%	53.15%	53.23%	53.60%	**-1.69%**
		Grassland/Shrub	6.69%	8.75%	8.76%	8.84%	8.33%	**1.65%**
		Open Water	0.76%	0.83%	1.20%	1.19%	1.19%	**0.44%**
		Wetland	0.94%	0.93%	0.93%	0.93%	0.94%	**0.01%**
	B5685000 - Deep Riv at Deep River Park Bridge near Cumnock (~1135.2 Square Miles)	Agriculture	20.65%	19.90%	19.38%	19.07%	19.11%	**-1.54%**
		Barren Land	0.07%	0.07%	0.06%	0.06%	0.11%	**0.04%**
		Developed	14.43%	14.95%	15.35%	15.53%	15.57%	**1.15%**
		Forest	56.26%	54.54%	54.41%	54.36%	54.63%	**-1.63%**
		Grassland/Shrub	6.85%	8.74%	8.66%	8.86%	8.44%	**1.58%**
		Open Water	0.77%	0.83%	1.17%	1.17%	1.17%	**0.40%**
		Wetland	0.96%	0.96%	0.96%	0.96%	0.97%	**0.01%**
	B5700000 - PERSIMMON CRK AT SR 1237 AT SANFORD (~1.5 Square Miles)	Agriculture	37.01%	32.10%	30.81%	29.29%	29.25%	**-7.76%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	7.91%	11.72%	16.01%	17.85%	17.94%	**10.03%**
		Forest	43.34%	42.89%	46.84%	43.73%	46.00%	**2.66%**
		Grassland/Shrub	10.63%	12.20%	5.25%	8.04%	5.72%	**-4.91%**
		Open Water	1.11%	1.09%	1.09%	1.09%	1.09%	**-0.02%**
		Wetland	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
	B5820000 - Deep Riv at US 15 And 501 near Sanford (~1174.3 Square Miles)	Agriculture	20.30%	19.55%	19.04%	18.73%	18.78%	**-1.52%**
		Barren Land	0.07%	0.07%	0.06%	0.06%	0.11%	**0.04%**
		Developed	14.68%	15.23%	15.65%	15.85%	15.90%	**1.23%**
		Forest	56.34%	54.57%	54.47%	54.37%	54.66%	**-1.68%**
		Grassland/Shrub	6.82%	8.72%	8.59%	8.80%	8.36%	**1.54%**
		Open Water	0.77%	0.84%	1.16%	1.17%	1.16%	**0.39%**
		Wetland	1.02%	1.02%	1.02%	1.02%	1.03%	**0.01%**
	B6040300 - Deep Riv at SR 1011 Old US 1 near Moncure (~1445.7 Square Miles)	Agriculture	21.06%	20.36%	19.88%	19.58%	19.63%	**-1.43%**
		Barren Land	0.09%	0.09%	0.09%	0.08%	0.13%	**0.04%**
		Developed	13.71%	14.22%	14.57%	14.75%	14.80%	**1.09%**
		Forest	56.90%	55.17%	55.36%	55.15%	55.34%	**-1.56%**
		Grassland/Shrub	6.52%	8.40%	8.06%	8.39%	8.03%	**1.51%**
		Open Water	0.76%	0.81%	1.09%	1.10%	1.09%	**0.33%**
		Wetland	0.95%	0.95%	0.95%	0.95%	0.96%	**0.01%**
Upper Cape Fear River Subbasin, HUC8 03030004								
03030004	B6130500 - Lick Creek at SR 1500	Agriculture	11.84%	11.58%	11.25%	11.09%	11.03%	**-0.82%**
		Barren Land	0.14%	0.17%	0.12%	0.11%	0.17%	**0.03%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	near Corinth (~45.8 Square Miles)	Developed	8.20%	8.96%	9.33%	9.55%	9.74%	1.54%
		Forest	66.22%	65.95%	68.36%	67.57%	66.66%	0.43%
		Grassland/Shrub	8.71%	8.44%	5.99%	6.72%	7.45%	-1.26%
		Open Water	0.70%	0.71%	0.75%	0.76%	0.75%	0.06%
		Wetland	4.19%	4.19%	4.19%	4.20%	4.20%	0.01%
	B6160000 - Cape Fear River at NC 42 near Corinth (~3226 Square Miles)	Agriculture	21.21%	20.44%	19.88%	19.56%	19.54%	-1.67%
		Barren Land	0.09%	0.09%	0.09%	0.08%	0.12%	0.03%
		Developed	17.47%	18.42%	19.13%	19.48%	19.75%	2.28%
		Forest	53.59%	51.87%	51.45%	51.24%	51.38%	-2.21%
		Grassland/Shrub	4.33%	5.88%	6.04%	6.17%	5.74%	1.41%
		Open Water	1.77%	1.75%	1.87%	1.96%	1.94%	0.18%
		Wetland	1.54%	1.54%	1.54%	1.50%	1.53%	-0.01%
	B6204000 - Buckhorn Crk beside SR 1921 Buckhorn Rd near Corinth (~78.7 Square Miles)	Agriculture	7.02%	6.88%	6.49%	6.37%	6.19%	-0.83%
		Barren Land	0.39%	0.37%	0.39%	0.35%	0.42%	0.03%
		Developed	8.23%	9.42%	10.63%	12.53%	13.60%	5.37%
		Forest	64.53%	62.49%	57.04%	57.35%	59.48%	-5.05%
		Grassland/Shrub	8.92%	10.01%	14.67%	12.50%	9.41%	0.50%
		Open Water	8.53%	8.45%	8.44%	8.64%	8.54%	0.02%
		Wetland	2.38%	2.38%	2.35%	2.26%	2.35%	-0.03%
	B6215000 - Cape Fear River at Captains Landing Subdivision near Cokesbury (~3354.2 Square Miles)	Agriculture	20.78%	20.03%	19.49%	19.18%	19.15%	-1.63%
		Barren Land	0.09%	0.10%	0.10%	0.09%	0.12%	0.03%
		Developed	17.08%	18.03%	18.74%	19.12%	19.40%	2.32%
		Forest	54.05%	52.34%	51.79%	51.57%	51.76%	-2.29%
		Grassland/Shrub	4.48%	6.00%	6.27%	6.37%	5.88%	1.40%
		Open Water	1.92%	1.91%	2.02%	2.12%	2.09%	0.17%
		Wetland	1.60%	1.60%	1.60%	1.55%	1.59%	-0.01%
	B6230000 - Avents Creek at SR 1418 near Cokesbury (~14.2 Square Miles)	Agriculture	22.96%	22.68%	22.47%	22.40%	22.39%	-0.57%
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.02%	0.00%
		Developed	7.44%	8.00%	8.16%	8.22%	8.22%	0.78%
		Forest	58.15%	59.32%	57.72%	56.76%	53.53%	-4.62%
		Grassland/Shrub	7.14%	5.72%	7.38%	8.34%	11.57%	4.44%
		Open Water	0.90%	0.93%	0.77%	0.93%	0.93%	0.03%
		Wetland	3.39%	3.34%	3.49%	3.35%	3.34%	-0.04%
0303000402	B6820050 - Upper Little River at SR 1222 (Broadway Road) near Broadway (~63.9 Square Miles)	Agriculture	24.23%	23.81%	23.55%	23.43%	23.37%	-0.86%
		Barren Land	0.50%	0.61%	0.59%	0.56%	0.69%	0.19%
		Developed	17.79%	18.38%	18.72%	19.12%	19.15%	1.36%
		Forest	43.72%	41.42%	42.12%	42.36%	42.38%	-1.34%
		Grassland/Shrub	6.97%	8.99%	8.21%	7.65%	7.54%	0.56%
		Open Water	1.79%	1.82%	1.83%	1.91%	1.87%	0.08%
		Wetland	5.01%	4.97%	4.99%	4.96%	5.01%	0.00%
	B6820100 - UT TO UPPER LITTLE RIV AT SR 1279 NR	Agriculture	46.63%	46.28%	44.28%	43.69%	43.65%	-2.98%
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Developed	7.63%	7.86%	7.83%	8.22%	8.22%	0.59%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	SEMINOLE (~0.9 Square Miles)	Forest	43.32%	42.62%	40.81%	41.36%	42.17%	**-1.15%**
		Grassland/Shrub	1.91%	2.72%	6.58%	6.23%	5.45%	**3.54%**
		Open Water	0.16%	0.16%	0.16%	0.16%	0.16%	**0.00%**
		Wetland	0.35%	0.35%	0.35%	0.35%	0.35%	**0.00%**
	B6830000 - UPPER LITTLE RIV AT SR 2021 NR LILLINGTON (~217 Square Miles)	Agriculture	22.46%	22.22%	21.86%	21.75%	21.68%	**-0.78%**
		Barren Land	0.69%	0.68%	0.68%	0.54%	0.70%	**0.01%**
		Developed	11.39%	12.03%	12.38%	12.64%	12.70%	**1.31%**
		Forest	41.83%	39.86%	40.98%	41.28%	41.43%	**-0.40%**
		Grassland/Shrub	9.81%	11.34%	10.26%	9.80%	9.50%	**-0.31%**
		Open Water	1.47%	1.58%	1.42%	1.71%	1.51%	**0.04%**
		Wetland	12.35%	12.29%	12.42%	12.28%	12.47%	**0.13%**
0303000403	B7245000 - LOWER LITTLE RIV AT SR 2023 NR LOBELIA (~112 Square Miles)	Agriculture	9.40%	9.24%	9.15%	9.09%	9.00%	**-0.39%**
		Barren Land	0.07%	0.07%	0.07%	0.07%	0.23%	**0.16%**
		Developed	19.84%	20.29%	20.70%	20.94%	21.07%	**1.23%**
		Forest	45.62%	44.12%	45.25%	45.86%	45.30%	**-0.32%**
		Grassland/Shrub	11.12%	12.40%	10.97%	10.16%	10.52%	**-0.60%**
		Open Water	1.73%	1.78%	1.77%	1.81%	1.77%	**0.04%**
		Wetland	12.21%	12.10%	12.09%	12.07%	12.11%	**-0.11%**
0303000404	B7280000 - LOWER LITTLE RIV AT SR 1451 AT MANCHESTER (~345.3 Square Miles)	Agriculture	9.83%	9.72%	9.66%	9.61%	9.55%	**-0.28%**
		Barren Land	1.84%	1.82%	1.82%	1.81%	1.93%	**0.09%**
		Developed	12.53%	13.05%	13.51%	13.71%	13.78%	**1.25%**
		Forest	51.83%	49.81%	50.02%	50.99%	50.86%	**-0.97%**
		Grassland/Shrub	11.16%	12.82%	12.22%	11.08%	11.09%	**-0.07%**
		Open Water	1.52%	1.54%	1.50%	1.58%	1.08%	**-0.44%**
		Wetland	11.29%	11.24%	11.26%	11.22%	11.70%	**0.41%**
	B7300000 - Lower Little River at NC 210 near Spring Lake (~357.9 Square Miles)	Agriculture	9.57%	9.44%	9.38%	9.32%	9.26%	**-0.31%**
		Barren Land	1.77%	1.76%	1.76%	1.75%	1.86%	**0.09%**
		Developed	14.29%	14.95%	15.48%	15.68%	15.75%	**1.46%**
		Forest	50.86%	48.77%	48.88%	49.85%	49.69%	**-1.17%**
		Grassland/Shrub	10.90%	12.49%	11.94%	10.80%	10.84%	**-0.06%**
		Open Water	1.49%	1.51%	1.47%	1.55%	1.08%	**-0.42%**
		Wetland	11.12%	11.07%	11.09%	11.05%	11.52%	**0.40%**
	B7319100 - Lower Little River at SR 1609 (West Reeves Bridge Road) near Walkertown (~413.4 Square Miles)	Agriculture	9.40%	9.32%	9.23%	9.14%	9.08%	**-0.32%**
		Barren Land	1.58%	1.58%	1.61%	1.59%	1.70%	**0.11%**
		Developed	14.19%	14.92%	15.48%	15.76%	15.83%	**1.64%**
		Forest	50.72%	48.39%	48.59%	49.58%	49.51%	**-1.21%**
		Grassland/Shrub	11.53%	13.25%	12.57%	11.36%	11.33%	**-0.20%**
		Open Water	1.51%	1.53%	1.48%	1.57%	1.14%	**-0.37%**
		Wetland	11.07%	11.02%	11.05%	11.00%	11.42%	**0.34%**
0303000405	B6252000 - Neills Creek at US 401 near Lillington (~37.6 Square Miles)	Agriculture	27.01%	25.58%	24.89%	24.13%	23.67%	**-3.33%**
		Barren Land	0.04%	0.04%	0.04%	0.03%	0.07%	**0.03%**
		Developed	17.19%	20.62%	21.97%	23.42%	24.40%	**7.21%**
		Forest	40.28%	39.02%	39.41%	38.53%	36.86%	**-3.42%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
		Grassland/Shrub	7.59%	6.92%	5.86%	6.02%	7.15%	**-0.44%**
		Open Water	0.96%	0.96%	0.77%	1.01%	0.99%	**0.03%**
		Wetland	6.94%	6.86%	7.05%	6.86%	6.87%	**-0.08%**
	B6320000 - Kenneth Creek at SR 1441 Chalybeate Springs Road near Angier (~15.4 Square Miles)	Agriculture	23.81%	22.61%	21.27%	19.97%	19.40%	**-4.41%**
		Barren Land	0.05%	0.05%	0.05%	0.04%	0.04%	**-0.01%**
		Developed	25.43%	28.59%	31.35%	33.96%	35.25%	**9.83%**
		Forest	39.75%	38.52%	38.52%	38.17%	36.79%	**-2.95%**
		Grassland/Shrub	6.93%	6.35%	4.91%	3.95%	4.61%	**-2.32%**
		Open Water	1.01%	1.01%	0.82%	0.98%	0.98%	**-0.02%**
		Wetland	3.02%	2.88%	3.08%	2.92%	2.92%	**-0.10%**
	B6370000 - CAPE FEAR RIV AT US 401 AT LILLINGTON (~3471.2 Square Miles)	Agriculture	20.79%	20.05%	19.51%	19.20%	19.16%	**-1.63%**
		Barren Land	0.09%	0.10%	0.10%	0.09%	0.12%	**0.03%**
		Developed	16.87%	17.84%	18.55%	18.94%	19.22%	**2.35%**
		Forest	54.03%	52.37%	51.85%	51.58%	51.73%	**-2.31%**
		Grassland/Shrub	4.58%	6.03%	6.28%	6.42%	5.97%	**1.40%**
		Open Water	1.90%	1.89%	1.99%	2.09%	2.07%	**0.17%**
		Wetland	1.73%	1.73%	1.73%	1.68%	1.72%	**-0.01%**
	B6485000 - Buies Creek behind Keith Hills Golf Course Maintenance Shop at Buies Creek (~27.5 Square Miles)	Agriculture	43.44%	42.87%	42.71%	42.36%	42.32%	**-1.12%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.03%	**0.02%**
		Developed	12.95%	13.86%	14.06%	14.45%	14.54%	**1.59%**
		Forest	21.51%	21.54%	21.65%	21.33%	21.28%	**-0.23%**
		Grassland/Shrub	7.27%	6.86%	6.69%	6.92%	6.93%	**-0.34%**
		Open Water	1.03%	1.04%	0.97%	1.24%	1.22%	**0.19%**
		Wetland	13.80%	13.82%	13.90%	13.69%	13.68%	**-0.12%**
	B6840000 - Cape Fear River at NC 217 at Erwin (~3767.3 Square Miles)	Agriculture	21.23%	20.52%	20.00%	19.71%	19.67%	**-1.56%**
		Barren Land	0.15%	0.15%	0.14%	0.13%	0.17%	**0.02%**
		Developed	16.48%	17.42%	18.10%	18.48%	18.75%	**2.27%**
		Forest	52.70%	51.05%	50.64%	50.40%	50.55%	**-2.14%**
		Grassland/Shrub	4.95%	6.37%	6.53%	6.64%	6.21%	**1.25%**
		Open Water	1.88%	1.87%	1.96%	2.07%	2.04%	**0.16%**
		Wetland	2.62%	2.61%	2.63%	2.57%	2.61%	**0.00%**
03030004 06	**B7679300 - Rockfish Creek at US 401 bypass near Raeford (~93 Square Miles)**	Agriculture	2.13%	2.17%	2.17%	2.26%	2.23%	**0.10%**
		Barren Land	3.91%	3.90%	3.89%	3.88%	3.87%	**-0.04%**
		Developed	10.13%	10.16%	10.20%	10.30%	10.35%	**0.21%**
		Forest	61.70%	61.82%	61.98%	59.50%	58.34%	**-3.36%**
		Grassland/Shrub	9.19%	9.02%	8.83%	11.13%	12.28%	**3.09%**
		Open Water	0.51%	0.53%	0.52%	0.56%	0.50%	**-0.01%**
		Wetland	12.41%	12.40%	12.41%	12.38%	12.42%	**0.01%**
	B7700000 - Rockfish Creek at SR 1432 Golf Course Road near Raeford	Agriculture	6.66%	6.47%	6.08%	5.98%	5.96%	**-0.70%**
		Barren Land	4.73%	4.70%	4.69%	4.66%	4.43%	**-0.29%**
		Developed	12.58%	13.28%	14.00%	14.32%	14.43%	**1.85%**
		Forest	50.44%	50.31%	50.60%	48.70%	47.82%	**-2.62%**
		Grassland/Shrub	10.51%	10.17%	9.59%	11.31%	12.33%	**1.82%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	(~147.7 Square Miles)	Open Water	0.40%	0.42%	0.42%	0.46%	0.41%	**0.01%**
		Wetland	14.68%	14.66%	14.62%	14.58%	14.62%	**-0.07%**
	B8060000 - BEAVER CRK AT SR 1141 AT CUMBERLAND (~32.1 Square Miles)	Agriculture	2.81%	2.34%	2.13%	2.00%	2.00%	**-0.82%**
		Barren Land	0.14%	0.13%	0.13%	0.22%	0.23%	**0.08%**
		Developed	59.55%	63.71%	66.15%	67.70%	68.05%	**8.50%**
		Forest	23.94%	21.03%	19.12%	18.16%	17.94%	**-6.00%**
		Grassland/Shrub	3.15%	2.65%	2.68%	2.52%	2.41%	**-0.74%**
		Open Water	1.00%	0.98%	0.92%	0.81%	0.67%	**-0.33%**
		Wetland	9.40%	9.16%	8.87%	8.60%	8.71%	**-0.69%**
	B8224000 - ROCKFISH CRK AT SR 2350 NR CEDAR CREEK (~294.3 Square Miles)	Agriculture	8.82%	8.14%	7.56%	7.34%	7.34%	**-1.48%**
		Barren Land	3.30%	3.36%	3.28%	3.27%	3.04%	**-0.25%**
		Developed	23.98%	26.69%	28.33%	29.13%	29.31%	**5.34%**
		Forest	39.06%	37.86%	37.64%	35.94%	35.41%	**-3.66%**
		Grassland/Shrub	9.44%	8.80%	8.09%	9.30%	9.88%	**0.44%**
		Open Water	0.71%	0.62%	0.70%	0.71%	0.52%	**-0.19%**
		Wetland	14.69%	14.53%	14.41%	14.32%	14.50%	**-0.18%**
	B8230000 - Rockfish Creek at NC 87 near Fayetteville (~306.6 Square Miles)	Agriculture	8.99%	8.31%	7.73%	7.51%	7.51%	**-1.48%**
		Barren Land	3.17%	3.23%	3.15%	3.14%	2.92%	**-0.24%**
		Developed	24.18%	26.95%	28.66%	29.48%	29.66%	**5.48%**
		Forest	38.80%	37.57%	37.30%	35.57%	35.08%	**-3.72%**
		Grassland/Shrub	9.47%	8.81%	8.06%	9.28%	9.81%	**0.35%**
		Open Water	0.70%	0.61%	0.69%	0.70%	0.52%	**-0.19%**
		Wetland	14.68%	14.53%	14.40%	14.32%	14.50%	**-0.19%**
03030000407	B7480000 - CAPE FEAR RIV AT HOFFER WTP INTAKE AT FAYETTEVILLE (~4355.5 Square Miles)	Agriculture	20.19%	19.56%	19.09%	18.82%	18.79%	**-1.41%**
		Barren Land	0.30%	0.29%	0.29%	0.27%	0.32%	**0.02%**
		Developed	15.99%	16.93%	17.58%	17.95%	18.20%	**2.20%**
		Forest	51.70%	50.00%	49.75%	49.62%	49.72%	**-1.97%**
		Grassland/Shrub	5.79%	7.20%	7.19%	7.16%	6.81%	**1.01%**
		Open Water	1.83%	1.84%	1.90%	2.02%	1.95%	**0.12%**
		Wetland	4.19%	4.18%	4.20%	4.14%	4.22%	**0.03%**
	B7500000 - Cape Fear River at I-95 below Fayetteville (~4453 Square Miles)	Agriculture	20.11%	19.48%	19.01%	18.75%	18.71%	**-1.40%**
		Barren Land	0.30%	0.29%	0.29%	0.27%	0.31%	**0.02%**
		Developed	16.43%	17.39%	18.05%	18.43%	18.67%	**2.24%**
		Forest	51.02%	49.36%	49.10%	48.96%	49.07%	**-1.95%**
		Grassland/Shrub	5.78%	7.12%	7.11%	7.10%	6.74%	**0.96%**
		Open Water	1.82%	1.83%	1.89%	2.01%	1.93%	**0.11%**
		Wetland	4.55%	4.54%	4.55%	4.49%	4.58%	**0.03%**
	B7547000 - Cross Crk at Cross Creek Park at Fayetteville (~26.3 Square Miles)	Agriculture	2.33%	2.38%	2.38%	2.23%	2.26%	**-0.07%**
		Barren Land	0.51%	0.45%	0.44%	0.40%	0.49%	**-0.02%**
		Developed	54.15%	56.51%	57.75%	58.87%	58.89%	**4.74%**
		Forest	29.67%	28.22%	26.59%	25.83%	26.08%	**-3.60%**
		Grassland/Shrub	4.17%	3.37%	3.89%	3.69%	3.30%	**-0.87%**
		Open Water	1.83%	1.65%	1.72%	1.75%	1.32%	**-0.51%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
		Wetland	7.33%	7.43%	7.23%	7.23%	7.66%	**0.33%**
	B7584000 - Blount's Crk at US 301A Person St at Fayetteville (~12.2 Square Miles)	Agriculture	0.85%	0.78%	0.78%	0.84%	0.84%	**-0.01%**
		Barren Land	0.01%	0.02%	0.02%	0.02%	0.02%	**0.01%**
		Developed	80.54%	82.43%	85.08%	85.27%	85.28%	**4.74%**
		Forest	11.94%	10.38%	8.34%	7.56%	7.48%	**-4.47%**
		Grassland/Shrub	1.13%	1.00%	0.53%	1.14%	1.21%	**0.09%**
		Open Water	0.84%	0.81%	0.79%	0.81%	0.78%	**-0.06%**
		Wetland	4.69%	4.58%	4.46%	4.37%	4.40%	**-0.29%**
	B7584800 - UT to Cross Crk off Anne St at Fayetteville (~0.4 Square Miles)	Agriculture	11.13%	10.82%	10.82%	10.82%	10.82%	**-0.31%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	79.14%	80.16%	80.16%	80.16%	80.16%	**1.01%**
		Forest	5.53%	5.29%	5.29%	5.29%	5.29%	**-0.23%**
		Grassland/Shrub	1.71%	1.25%	1.25%	1.25%	1.25%	**-0.47%**
		Open Water	0.31%	0.31%	0.31%	0.31%	0.31%	**0.00%**
		Wetland	2.18%	2.18%	2.18%	2.18%	2.18%	**0.00%**
	B7584900 - UT to Cross Crk at Cross Creek WRF at Fayetteville (~0.1 Square Miles)	Agriculture	24.56%	24.56%	24.56%	24.56%	24.56%	**0.00%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	10.88%	10.88%	10.88%	10.88%	10.88%	**0.00%**
		Forest	34.04%	34.04%	34.04%	34.04%	34.04%	**0.00%**
		Grassland/Shrub	2.11%	2.11%	2.11%	2.11%	2.11%	**0.00%**
		Open Water	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	28.42%	28.42%	28.42%	28.42%	28.42%	**0.00%**
	B7590000 - Cross Creek at Bus NC 301/Bus I-95 in Fayetteville (~39.8 Square Miles)	Agriculture	2.11%	2.11%	2.11%	2.02%	2.04%	**-0.07%**
		Barren Land	0.34%	0.30%	0.30%	0.27%	0.33%	**-0.01%**
		Developed	62.77%	64.93%	66.56%	67.37%	67.38%	**4.62%**
		Forest	23.53%	22.08%	20.38%	19.64%	19.78%	**-3.75%**
		Grassland/Shrub	3.14%	2.58%	2.77%	2.83%	2.59%	**-0.55%**
		Open Water	1.47%	1.34%	1.38%	1.41%	1.11%	**-0.36%**
		Wetland	6.64%	6.66%	6.50%	6.47%	6.76%	**0.13%**
	B7600000 - CAPE FEAR RIV AT NC 24 AT FAYETTEVILLE (~4398.4 Square Miles)	Agriculture	20.03%	19.40%	18.94%	18.67%	18.64%	**-1.40%**
		Barren Land	0.30%	0.29%	0.29%	0.27%	0.32%	**0.02%**
		Developed	16.42%	17.37%	18.03%	18.41%	18.65%	**2.23%**
		Forest	51.42%	49.73%	49.46%	49.33%	49.43%	**-1.99%**
		Grassland/Shrub	5.77%	7.15%	7.15%	7.12%	6.77%	**1.00%**
		Open Water	1.83%	1.84%	1.90%	2.02%	1.94%	**0.11%**
		Wetland	4.23%	4.22%	4.23%	4.18%	4.26%	**0.03%**
	B7616000 - UT TO LOCKS CRK AT US 301 NR FAYETTEVILLE (~1 Square Miles)	Agriculture	16.09%	16.46%	16.65%	16.58%	16.58%	**0.49%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	9.32%	9.39%	10.15%	10.21%	10.21%	**0.89%**
		Forest	33.47%	33.91%	35.10%	27.85%	28.94%	**-4.53%**
		Grassland/Shrub	6.63%	5.78%	4.12%	11.41%	10.32%	**3.68%**
		Open Water	0.03%	0.03%	0.00%	0.00%	0.00%	**-0.03%**
		Wetland	34.46%	34.42%	33.98%	33.95%	33.95%	**-0.51%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
Lower Cape Fear River Subbasin, HUC8 03030005								
0303000501	B8290000 - Cape Fear River at Dupont water intake ups of L&D3 (~4869.6 Square Miles)	Agriculture	19.59%	18.96%	18.49%	18.24%	18.20%	**-1.39%**
		Barren Land	0.47%	0.47%	0.46%	0.45%	0.47%	**0.00%**
		Developed	16.77%	17.83%	18.56%	18.96%	19.20%	**2.44%**
		Forest	49.67%	48.09%	47.83%	47.57%	47.63%	**-2.04%**
		Grassland/Shrub	6.04%	7.20%	7.15%	7.23%	6.93%	**0.89%**
		Open Water	1.74%	1.74%	1.80%	1.91%	1.83%	**0.09%**
		Wetland	5.73%	5.71%	5.71%	5.65%	5.74%	**0.01%**
	B8300000 - CAPE FEAR RIV AT WO HUSKE LOCK NR TAR HEEL (~4874.9 Square Miles)	Agriculture	19.59%	18.96%	18.49%	18.23%	18.19%	**-1.39%**
		Barren Land	0.47%	0.47%	0.46%	0.44%	0.47%	**0.00%**
		Developed	16.75%	17.82%	18.54%	18.94%	19.19%	**2.43%**
		Forest	49.65%	48.07%	47.81%	47.55%	47.61%	**-2.04%**
		Grassland/Shrub	6.04%	7.20%	7.15%	7.23%	6.93%	**0.89%**
		Open Water	1.74%	1.74%	1.80%	1.92%	1.83%	**0.09%**
		Wetland	5.76%	5.74%	5.74%	5.68%	5.78%	**0.01%**
	B8302000 - Cape Fear River at power lines -no road- near Tolarsville (~4895.1 Square Miles)	Agriculture	19.61%	18.98%	18.51%	18.25%	18.21%	**-1.39%**
		Barren Land	0.47%	0.47%	0.46%	0.44%	0.47%	**0.00%**
		Developed	16.71%	17.77%	18.49%	18.89%	19.14%	**2.43%**
		Forest	49.57%	48.01%	47.75%	47.49%	47.54%	**-2.03%**
		Grassland/Shrub	6.05%	7.19%	7.14%	7.23%	6.94%	**0.89%**
		Open Water	1.74%	1.74%	1.80%	1.91%	1.83%	**0.09%**
		Wetland	5.86%	5.84%	5.84%	5.78%	5.87%	**0.01%**
	B8305000 - Cape Fear River at SR 1316 at Tar Heel (~4899.8 Square Miles)	Agriculture	19.60%	18.98%	18.51%	18.25%	18.21%	**-1.39%**
		Barren Land	0.47%	0.46%	0.46%	0.44%	0.47%	**0.00%**
		Developed	16.70%	17.76%	18.48%	18.88%	19.13%	**2.43%**
		Forest	49.55%	48.00%	47.74%	47.47%	47.53%	**-2.02%**
		Grassland/Shrub	6.05%	7.19%	7.14%	7.23%	6.93%	**0.88%**
		Open Water	1.74%	1.74%	1.80%	1.92%	1.83%	**0.09%**
		Wetland	5.89%	5.87%	5.87%	5.81%	5.91%	**0.01%**
	B8315000 - Harrison Creek at SR 1320 at Burney (~33 Square Miles)	Agriculture	13.62%	13.51%	13.40%	13.81%	13.85%	**0.23%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	3.06%	3.11%	3.13%	3.15%	3.15%	**0.09%**
		Forest	19.09%	21.04%	20.43%	19.32%	18.13%	**-0.95%**
		Grassland/Shrub	7.98%	6.06%	6.75%	7.40%	8.53%	**0.55%**
		Open Water	0.32%	0.33%	0.32%	0.67%	0.26%	**-0.06%**
		Wetland	55.94%	55.95%	55.96%	55.66%	56.07%	**0.14%**
0303000502	B8306000 - Cape Fear River at RM 80 near Ruskin (~4954.3 Square Miles)	Agriculture	19.55%	18.92%	18.46%	18.20%	18.16%	**-1.38%**
		Barren Land	0.46%	0.46%	0.46%	0.44%	0.46%	**0.00%**
		Developed	16.56%	17.60%	18.32%	18.71%	18.96%	**2.40%**
		Forest	49.26%	47.76%	47.50%	47.22%	47.26%	**-2.00%**
		Grassland/Shrub	6.07%	7.17%	7.12%	7.22%	6.94%	**0.88%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
		Open Water	1.73%	1.73%	1.79%	1.91%	1.82%	**0.09%**
		Wetland	6.38%	6.36%	6.36%	6.30%	6.39%	**0.01%**
	B8320000 - Cape Fear River at US 701 at Elizabethtown (~5021.5 Square Miles)	Agriculture	19.44%	18.82%	18.35%	18.10%	18.07%	**-1.37%**
		Barren Land	0.46%	0.45%	0.45%	0.43%	0.46%	**0.00%**
		Developed	16.39%	17.42%	18.12%	18.52%	18.76%	**2.37%**
		Forest	48.99%	47.50%	47.26%	46.98%	47.01%	**-1.98%**
		Grassland/Shrub	6.10%	7.19%	7.14%	7.25%	6.97%	**0.87%**
		Open Water	1.75%	1.76%	1.82%	1.94%	1.84%	**0.08%**
		Wetland	6.87%	6.85%	6.85%	6.79%	6.89%	**0.02%**
	B8321000 - TURNBULL CRK AT SR 1509 NR JOHNSONTOWN (~61.7 Square Miles)	Agriculture	11.38%	11.23%	10.95%	10.98%	11.02%	**-0.36%**
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.02%	**0.00%**
		Developed	3.12%	3.17%	3.17%	3.18%	3.19%	**0.07%**
		Forest	31.61%	28.90%	28.93%	28.11%	30.48%	**-1.13%**
		Grassland/Shrub	6.86%	9.67%	9.92%	10.70%	8.25%	**1.39%**
		Open Water	0.12%	0.14%	0.12%	0.14%	0.13%	**0.01%**
		Wetland	46.88%	46.86%	46.88%	46.88%	46.89%	**0.01%**
	B8339000 - Cape Fear River above Lock & Dam 2 (~5022.2 Square Miles)	Agriculture	19.44%	18.82%	18.35%	18.10%	18.07%	**-1.37%**
		Barren Land	0.46%	0.45%	0.45%	0.43%	0.46%	**0.00%**
		Developed	16.39%	17.42%	18.12%	18.52%	18.76%	**2.37%**
		Forest	48.99%	47.50%	47.26%	46.97%	47.01%	**-1.98%**
		Grassland/Shrub	6.10%	7.19%	7.14%	7.25%	6.97%	**0.87%**
		Open Water	1.76%	1.76%	1.82%	1.94%	1.84%	**0.08%**
		Wetland	6.88%	6.86%	6.86%	6.80%	6.90%	**0.02%**
	B8340000 - CAPE FEAR RIV AT LOCK 2 NR ELIZABETHTOWN (~5022.2 Square Miles)	Agriculture	19.44%	18.82%	18.35%	18.10%	18.07%	**-1.37%**
		Barren Land	0.46%	0.45%	0.45%	0.43%	0.46%	**0.00%**
		Developed	16.39%	17.42%	18.12%	18.52%	18.76%	**2.37%**
		Forest	48.98%	47.50%	47.26%	46.97%	47.01%	**-1.98%**
		Grassland/Shrub	6.10%	7.19%	7.14%	7.25%	6.97%	**0.87%**
		Open Water	1.76%	1.76%	1.82%	1.94%	1.84%	**0.08%**
		Wetland	6.88%	6.86%	6.86%	6.80%	6.90%	**0.02%**
	B8340050 - Browns Creek at NC87 near Elizabethtown (~16.7 Square Miles)	Agriculture	20.76%	20.72%	19.68%	19.46%	19.64%	**-1.12%**
		Barren Land	0.01%	0.01%	0.02%	0.01%	0.03%	**0.02%**
		Developed	20.61%	20.83%	20.92%	21.04%	21.05%	**0.45%**
		Forest	31.48%	29.66%	32.05%	29.84%	31.01%	**-0.48%**
		Grassland/Shrub	8.42%	10.07%	8.62%	10.95%	9.57%	**1.15%**
		Open Water	0.53%	0.55%	0.55%	0.52%	0.52%	**-0.01%**
		Wetland	18.19%	18.16%	18.15%	18.17%	18.17%	**-0.02%**
	B8340100 - Turnbull Creek at US 701, NC 53, and NC 41 near Elizabethtown (~81.2 Square Miles)	Agriculture	11.61%	11.39%	11.03%	11.14%	11.17%	**-0.44%**
		Barren Land	0.02%	0.02%	0.03%	0.03%	0.02%	**0.00%**
		Developed	3.62%	3.88%	3.89%	3.90%	3.92%	**0.30%**
		Forest	34.00%	31.40%	31.20%	30.31%	31.67%	**-2.33%**
		Grassland/Shrub	7.07%	9.64%	10.19%	10.96%	9.54%	**2.47%**
		Open Water	0.57%	0.58%	0.56%	0.57%	0.56%	**-0.01%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
		Wetland	43.11%	43.07%	43.10%	43.10%	43.11%	**0.01%**
	B8340130 - Cape Fear River at RM 70 near Elizabethtown (~5134.9 Square Miles)	Agriculture	19.29%	18.68%	18.21%	17.97%	17.93%	**-1.35%**
		Barren Land	0.45%	0.44%	0.44%	0.42%	0.45%	**0.00%**
		Developed	16.18%	17.20%	17.88%	18.27%	18.50%	**2.33%**
		Forest	48.60%	47.10%	46.87%	46.57%	46.64%	**-1.97%**
		Grassland/Shrub	6.13%	7.25%	7.20%	7.32%	7.02%	**0.89%**
		Open Water	1.76%	1.77%	1.82%	1.94%	1.84%	**0.08%**
		Wetland	7.59%	7.57%	7.57%	7.51%	7.61%	**0.02%**
03030005 03	**B8441000 - Livingston Creek at Wright Corp. Walkway near Acme (~101.6 Square Miles)**	Agriculture	9.19%	9.16%	9.15%	9.17%	9.40%	**0.21%**
		Barren Land	0.03%	0.04%	0.04%	0.04%	0.03%	**-0.01%**
		Developed	4.48%	4.57%	4.59%	4.65%	4.67%	**0.19%**
		Forest	39.11%	35.09%	40.71%	40.83%	41.99%	**2.88%**
		Grassland/Shrub	15.17%	19.06%	13.47%	13.28%	11.85%	**-3.32%**
		Open Water	0.19%	0.28%	0.25%	0.21%	0.17%	**-0.01%**
		Wetland	31.84%	31.80%	31.79%	31.83%	31.89%	**0.05%**
	B8445000 - LIVINGSTON CRK AT MOUTH near RIEGELWOOD (~103 Square Miles)	Agriculture	9.16%	9.13%	9.11%	9.14%	9.36%	**0.21%**
		Barren Land	0.16%	0.17%	0.18%	0.17%	0.13%	**-0.02%**
		Developed	4.46%	4.55%	4.57%	4.63%	4.65%	**0.19%**
		Forest	38.73%	34.81%	40.43%	40.54%	41.68%	**2.96%**
		Grassland/Shrub	15.10%	18.90%	13.31%	13.12%	11.72%	**-3.39%**
		Open Water	0.38%	0.45%	0.42%	0.39%	0.34%	**-0.04%**
		Wetland	32.02%	31.99%	31.97%	32.01%	32.11%	**0.09%**
03030005 04	**B8340200 - Hammond Creek at SR 1704 near Mt. Olive (~17.5 Square Miles)**	Agriculture	27.89%	27.75%	27.00%	26.91%	27.37%	**-0.52%**
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.01%	**-0.02%**
		Developed	6.71%	6.89%	6.94%	7.00%	7.11%	**0.40%**
		Forest	44.59%	40.03%	44.51%	43.85%	40.54%	**-4.04%**
		Grassland/Shrub	7.18%	11.69%	7.89%	8.59%	11.33%	**4.15%**
		Open Water	0.18%	0.21%	0.23%	0.21%	0.21%	**0.03%**
		Wetland	13.44%	13.41%	13.40%	13.43%	13.44%	**0.00%**
	B8340650 - Cape Fear River at RM 55-no road-near Bladen Springs (~5195.5 Square Miles)	Agriculture	19.25%	18.65%	18.18%	17.94%	17.91%	**-1.34%**
		Barren Land	0.44%	0.44%	0.44%	0.42%	0.44%	**0.00%**
		Developed	16.04%	17.04%	17.72%	18.10%	18.34%	**2.30%**
		Forest	48.49%	46.95%	46.75%	46.41%	46.47%	**-2.02%**
		Grassland/Shrub	6.15%	7.30%	7.23%	7.40%	7.11%	**0.96%**
		Open Water	1.76%	1.77%	1.82%	1.94%	1.84%	**0.08%**
		Wetland	7.88%	7.85%	7.86%	7.79%	7.89%	**0.02%**
	B8348000 - Cape Fear River at SR 1730 -Elwell Ferry Road-near Carvers (~5212.5 Square Miles)	Agriculture	19.22%	18.62%	18.15%	17.91%	17.88%	**-1.34%**
		Barren Land	0.44%	0.44%	0.43%	0.42%	0.44%	**0.00%**
		Developed	15.99%	17.00%	17.67%	18.05%	18.29%	**2.29%**
		Forest	48.43%	46.89%	46.70%	46.35%	46.41%	**-2.02%**
		Grassland/Shrub	6.15%	7.31%	7.23%	7.41%	7.12%	**0.97%**
		Open Water	1.76%	1.77%	1.82%	1.94%	1.84%	**0.08%**
		Wetland	8.00%	7.98%	7.98%	7.92%	8.02%	**0.02%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B8349000 - Cape Fear River above Lock & Dam 1 near East Arcadia (~5258.5 Square Miles)	Agriculture	19.19%	18.59%	18.13%	17.89%	17.86%	-1.33%
		Barren Land	0.44%	0.43%	0.43%	0.41%	0.44%	0.00%
		Developed	15.88%	16.88%	17.55%	17.93%	18.16%	2.27%
		Forest	48.34%	46.80%	46.63%	46.28%	46.34%	-2.00%
		Grassland/Shrub	6.19%	7.35%	7.26%	7.43%	7.14%	0.95%
		Open Water	1.75%	1.77%	1.81%	1.94%	1.83%	0.08%
		Wetland	8.21%	8.18%	8.19%	8.12%	8.23%	0.02%
	B8350000 - CAPE FEAR RIV AT LOCK 1 NR KELLY (~5258.7 Square Miles)	Agriculture	19.19%	18.59%	18.13%	17.89%	17.86%	-1.33%
		Barren Land	0.44%	0.43%	0.43%	0.41%	0.44%	0.00%
		Developed	15.88%	16.88%	17.55%	17.93%	18.16%	2.27%
		Forest	48.34%	46.80%	46.63%	46.28%	46.34%	-2.00%
		Grassland/Shrub	6.19%	7.35%	7.26%	7.43%	7.14%	0.95%
		Open Water	1.75%	1.77%	1.81%	1.94%	1.84%	0.08%
		Wetland	8.21%	8.18%	8.19%	8.12%	8.23%	0.02%
	B8360000 - Cape Fear River at NC 11 near East Arcadia (~5264 Square Miles)	Agriculture	19.17%	18.58%	18.12%	17.88%	17.85%	-1.33%
		Barren Land	0.44%	0.43%	0.43%	0.41%	0.44%	0.00%
		Developed	15.87%	16.86%	17.53%	17.91%	18.14%	2.27%
		Forest	48.30%	46.77%	46.59%	46.24%	46.30%	-2.00%
		Grassland/Shrub	6.19%	7.35%	7.26%	7.44%	7.15%	0.96%
		Open Water	1.75%	1.77%	1.82%	1.94%	1.84%	0.08%
		Wetland	8.27%	8.24%	8.25%	8.18%	8.29%	0.02%
	B8450000 - CAPE FEAR RIV AT NEILS EDDY LANDING NR ACME (~5409.2 Square Miles)	Agriculture	18.93%	18.34%	17.89%	17.66%	17.64%	-1.29%
		Barren Land	0.43%	0.43%	0.42%	0.41%	0.43%	0.00%
		Developed	15.57%	16.54%	17.19%	17.55%	17.78%	2.21%
		Forest	48.07%	46.48%	46.46%	46.11%	46.19%	-1.88%
		Grassland/Shrub	6.44%	7.66%	7.42%	7.60%	7.29%	0.85%
		Open Water	1.72%	1.74%	1.78%	1.91%	1.80%	0.08%
		Wetland	8.85%	8.82%	8.83%	8.76%	8.87%	0.02%
	B8465000 - Cape Fear River at Intake near Hooper Hill (~5468.5 Square Miles)	Agriculture	18.77%	18.21%	17.76%	17.54%	17.52%	-1.25%
		Barren Land	0.42%	0.43%	0.42%	0.40%	0.43%	0.00%
		Developed	15.45%	16.41%	17.06%	17.44%	17.66%	2.21%
		Forest	47.91%	46.31%	46.34%	45.97%	46.04%	-1.87%
		Grassland/Shrub	6.54%	7.75%	7.46%	7.66%	7.35%	0.81%
		Open Water	1.72%	1.74%	1.78%	1.91%	1.80%	0.08%
		Wetland	9.19%	9.16%	9.17%	9.09%	9.21%	0.02%
0303000505	B9020000 - CAPE FEAR RIV DNS HALE PT LANDING NR PHOENIX (~7041.6 Square Miles)	Agriculture	21.79%	21.34%	20.96%	20.77%	20.78%	-1.01%
		Barren Land	0.34%	0.34%	0.34%	0.32%	0.35%	0.00%
		Developed	13.40%	14.20%	14.72%	15.05%	15.23%	1.83%
		Forest	42.69%	41.27%	41.61%	41.07%	41.15%	-1.54%
		Grassland/Shrub	6.87%	7.94%	7.42%	7.80%	7.50%	0.64%
		Open Water	1.51%	1.57%	1.57%	1.70%	1.57%	0.06%
		Wetland	13.40%	13.34%	13.38%	13.29%	13.42%	0.02%
		Agriculture	21.77%	21.32%	20.94%	20.76%	20.77%	-1.00%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B9030000 - Cape Fear River ups Indian Creek near Phoenix (~7046.5 Square Miles)	Barren Land	0.34%	0.35%	0.34%	0.33%	0.35%	**0.01%**
		Developed	13.39%	14.19%	14.71%	15.04%	15.22%	**1.83%**
		Forest	42.66%	41.25%	41.58%	41.04%	41.12%	**-1.54%**
		Grassland/Shrub	6.87%	7.94%	7.43%	7.80%	7.50%	**0.63%**
		Open Water	1.54%	1.59%	1.59%	1.72%	1.60%	**0.06%**
		Wetland	13.42%	13.36%	13.40%	13.31%	13.44%	**0.02%**
	B9050000 - CAPE FEAR RIV AT NAVASSA (~7064.5 Square Miles)	Agriculture	21.72%	21.27%	20.90%	20.71%	20.72%	**-1.00%**
		Barren Land	0.34%	0.35%	0.34%	0.33%	0.35%	**0.01%**
		Developed	13.39%	14.19%	14.70%	15.03%	15.22%	**1.83%**
		Forest	42.63%	41.22%	41.56%	41.02%	41.09%	**-1.54%**
		Grassland/Shrub	6.89%	7.96%	7.43%	7.80%	7.51%	**0.62%**
		Open Water	1.55%	1.60%	1.61%	1.74%	1.61%	**0.06%**
		Wetland	13.48%	13.41%	13.46%	13.37%	13.50%	**0.02%**
	B9050025 - Cape Fear River Dns RR Bridge at Navassa (~7064.5 Square Miles)	Agriculture	21.72%	21.27%	20.90%	20.71%	20.72%	**-1.00%**
		Barren Land	0.34%	0.35%	0.34%	0.33%	0.35%	**0.01%**
		Developed	13.39%	14.19%	14.70%	15.03%	15.22%	**1.83%**
		Forest	42.63%	41.22%	41.56%	41.02%	41.09%	**-1.54%**
		Grassland/Shrub	6.89%	7.96%	7.43%	7.80%	7.51%	**0.62%**
		Open Water	1.55%	1.60%	1.61%	1.74%	1.61%	**0.06%**
		Wetland	13.48%	13.41%	13.46%	13.37%	13.50%	**0.02%**
	B9050100 - Cape Fear River at Horseshoe Bend near Wilmington (~7067.3 Square Miles)	Agriculture	21.71%	21.26%	20.89%	20.71%	20.71%	**-1.00%**
		Barren Land	0.35%	0.35%	0.35%	0.33%	0.35%	**0.01%**
		Developed	13.39%	14.18%	14.70%	15.03%	15.21%	**1.83%**
		Forest	42.61%	41.20%	41.55%	41.00%	41.08%	**-1.54%**
		Grassland/Shrub	6.89%	7.96%	7.43%	7.80%	7.51%	**0.62%**
		Open Water	1.55%	1.61%	1.61%	1.74%	1.61%	**0.06%**
		Wetland	13.50%	13.44%	13.48%	13.39%	13.52%	**0.02%**
	B9776000 - STURGEON CRK OFF HIGHLAND HILLS DR NE NR LELAND (~3.1 Square Miles)	Agriculture	3.69%	3.54%	3.39%	2.96%	2.96%	**-0.72%**
		Barren Land	0.03%	0.02%	0.03%	0.02%	0.02%	**-0.01%**
		Developed	21.77%	23.30%	23.77%	25.88%	26.03%	**4.26%**
		Forest	44.98%	37.57%	40.39%	41.87%	40.85%	**-4.13%**
		Grassland/Shrub	10.80%	16.84%	13.63%	9.39%	10.30%	**-0.50%**
		Open Water	0.00%	0.00%	0.10%	1.49%	1.49%	**1.49%**
		Wetland	18.74%	18.73%	18.70%	18.37%	18.35%	**-0.39%**
	B9790000 - Brunswick River dns NC 17 at park near Belville (~18.8 Square Miles)	Agriculture	1.61%	1.63%	1.51%	1.46%	1.42%	**-0.19%**
		Barren Land	0.15%	0.14%	0.14%	0.14%	0.12%	**-0.02%**
		Developed	25.01%	30.37%	32.16%	33.23%	34.53%	**9.52%**
		Forest	25.72%	22.06%	21.23%	21.99%	21.36%	**-4.36%**
		Grassland/Shrub	10.76%	9.47%	8.92%	7.14%	7.10%	**-3.67%**
		Open Water	3.08%	3.10%	3.61%	3.35%	3.32%	**0.24%**
		Wetland	33.66%	33.23%	32.43%	32.68%	32.14%	**-1.52%**
	B9795000 - Cape Fear River at	Agriculture	22.04%	21.69%	21.39%	21.26%	21.27%	**-0.76%**
		Barren Land	0.31%	0.32%	0.31%	0.29%	0.31%	**0.00%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	Channel Marker 54 (~8873.3 Square Miles)	Developed	12.15%	12.89%	13.33%	13.63%	13.80%	1.65%
		Forest	39.13%	37.80%	38.22%	37.74%	37.76%	-1.38%
		Grassland/Shrub	6.79%	7.74%	7.15%	7.46%	7.23%	0.44%
		Open Water	1.42%	1.49%	1.50%	1.60%	1.48%	0.06%
		Wetland	18.15%	18.07%	18.09%	18.03%	18.14%	-0.01%
	B9800000 - CAPE FEAR RIV AT CM 61 AT WILMINGTON (~8819.2 Square Miles)	Agriculture	22.17%	21.81%	21.52%	21.38%	21.40%	-0.77%
		Barren Land	0.31%	0.31%	0.31%	0.29%	0.31%	0.00%
		Developed	12.09%	12.79%	13.22%	13.50%	13.67%	1.58%
		Forest	39.20%	37.90%	38.32%	37.84%	37.87%	-1.33%
		Grassland/Shrub	6.78%	7.74%	7.15%	7.46%	7.24%	0.46%
		Open Water	1.38%	1.45%	1.46%	1.55%	1.44%	0.06%
		Wetland	18.07%	17.99%	18.02%	17.96%	18.07%	0.00%
	B9820000 - CAPE FEAR RIV AT CM 56 NR WILMINGTON (~8864.9 Square Miles)	Agriculture	22.06%	21.71%	21.41%	21.28%	21.29%	-0.77%
		Barren Land	0.31%	0.32%	0.31%	0.29%	0.31%	0.00%
		Developed	12.12%	12.86%	13.29%	13.59%	13.76%	1.64%
		Forest	39.16%	37.82%	38.24%	37.76%	37.79%	-1.37%
		Grassland/Shrub	6.79%	7.74%	7.15%	7.46%	7.23%	0.44%
		Open Water	1.42%	1.48%	1.49%	1.59%	1.48%	0.06%
		Wetland	18.15%	18.07%	18.10%	18.03%	18.14%	-0.01%
0303000507	B9845100 - Cape Fear River at Channel Marker 42 (~9010.5 Square Miles)	Agriculture	21.80%	21.45%	21.16%	21.03%	21.04%	-0.75%
		Barren Land	0.31%	0.31%	0.31%	0.29%	0.31%	0.00%
		Developed	12.07%	12.81%	13.24%	13.54%	13.72%	1.64%
		Forest	39.10%	37.71%	38.20%	37.69%	37.70%	-1.40%
		Grassland/Shrub	6.87%	7.86%	7.21%	7.54%	7.32%	0.46%
		Open Water	1.46%	1.53%	1.54%	1.63%	1.51%	0.06%
		Wetland	18.40%	18.32%	18.35%	18.29%	18.39%	-0.01%
	B9850100 - Cape Fear River at Channel Marker 35 (~9065.9 Square Miles)	Agriculture	21.67%	21.33%	21.04%	20.91%	20.93%	-0.74%
		Barren Land	0.31%	0.31%	0.31%	0.29%	0.31%	0.00%
		Developed	12.08%	12.83%	13.25%	13.55%	13.72%	1.64%
		Forest	39.01%	37.63%	38.09%	37.57%	37.59%	-1.42%
		Grassland/Shrub	6.89%	7.88%	7.25%	7.59%	7.36%	0.47%
		Open Water	1.52%	1.58%	1.60%	1.69%	1.57%	0.05%
		Wetland	18.52%	18.44%	18.46%	18.40%	18.51%	-0.01%
0303000508	B9910000 - Cape Fear River at Channel Marker 23 (~17.1 Square Miles)	Agriculture	5.71%	5.91%	5.80%	6.08%	6.36%	0.65%
		Barren Land	0.84%	0.56%	0.74%	0.84%	0.65%	-0.18%
		Developed	8.72%	9.18%	9.56%	9.68%	9.88%	1.15%
		Forest	32.29%	30.50%	31.51%	31.81%	32.08%	-0.21%
		Grassland/Shrub	8.33%	9.51%	7.86%	7.61%	7.09%	-1.25%
		Open Water	8.92%	9.25%	10.02%	8.83%	8.49%	-0.43%
		Wetland	35.19%	35.10%	34.50%	35.16%	35.45%	0.26%
	B9921000 - Cape Fear River at	Agriculture	0.06%	0.06%	0.06%	0.06%	0.06%	0.00%
		Barren Land	1.49%	1.38%	1.37%	1.10%	1.18%	-0.32%
		Developed	37.60%	38.93%	39.34%	41.13%	41.38%	3.78%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	Channel Marker 18 (~2.7 Square Miles)	Forest	9.89%	9.24%	9.23%	7.97%	7.26%	-2.63%
		Grassland/Shrub	1.16%	0.93%	1.00%	0.65%	1.20%	0.04%
		Open Water	32.43%	32.91%	32.55%	33.00%	32.18%	-0.24%
		Wetland	17.36%	16.55%	16.44%	16.08%	16.74%	-0.63%
	B9980000 - Intracoastal Waterway near Southport (~1.9 Square Miles)	Agriculture	0.27%	0.37%	0.37%	0.26%	0.26%	-0.02%
		Barren Land	0.51%	0.22%	0.22%	0.20%	0.20%	-0.31%
		Developed	9.02%	11.43%	11.44%	11.50%	11.50%	2.48%
		Forest	28.72%	27.01%	30.65%	30.86%	30.86%	2.14%
		Grassland/Shrub	5.41%	5.30%	1.59%	1.54%	1.54%	-3.87%
		Open Water	13.05%	12.97%	13.20%	12.85%	12.85%	-0.19%
		Wetland	43.03%	42.70%	42.52%	42.79%	42.79%	-0.23%
Black River Subbasin, HUC 8 03030006								
0303000601	B8470000 - South River at US 13 near Cooper (~162.2 Square Miles)	Agriculture	45.04%	44.57%	44.35%	44.00%	43.95%	-1.09%
		Barren Land	0.13%	0.10%	0.09%	0.09%	0.10%	-0.03%
		Developed	12.98%	13.71%	14.01%	14.40%	14.48%	1.50%
		Forest	13.95%	13.97%	14.37%	14.00%	13.96%	0.01%
		Grassland/Shrub	5.38%	5.11%	4.66%	4.98%	4.97%	-0.41%
		Open Water	0.92%	0.98%	0.93%	1.30%	0.84%	-0.08%
		Wetland	21.61%	21.55%	21.59%	21.24%	21.70%	0.09%
0303000602	B8919000 - SOUTH RIV AT SR 1503 NR PARKERSBURG (~384.6 Square Miles)	Agriculture	38.03%	37.77%	37.55%	37.34%	37.35%	-0.68%
		Barren Land	0.07%	0.05%	0.05%	0.04%	0.05%	-0.01%
		Developed	8.80%	9.24%	9.40%	9.68%	9.75%	0.95%
		Forest	19.92%	19.44%	20.53%	19.94%	20.27%	0.36%
		Grassland/Shrub	6.56%	6.86%	5.85%	6.34%	5.91%	-0.65%
		Open Water	0.56%	0.65%	0.56%	0.96%	0.53%	-0.02%
		Wetland	26.08%	26.00%	26.07%	25.69%	26.14%	0.06%
0303000603	B8490000 - LITTLE COHARIE CRK AT SR 1414 MINNIE HALL RD NR SALEMBURG (~66.7 Square Miles)	Agriculture	50.54%	50.49%	50.67%	50.68%	50.78%	0.24%
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.02%	0.00%
		Developed	6.64%	6.93%	6.98%	7.11%	7.11%	0.47%
		Forest	16.82%	16.04%	17.38%	16.88%	16.20%	-0.62%
		Grassland/Shrub	5.07%	5.61%	4.07%	4.46%	5.05%	-0.02%
		Open Water	0.41%	0.51%	0.43%	0.36%	0.30%	-0.11%
		Wetland	20.50%	20.38%	20.46%	20.49%	20.54%	0.04%
	B8545000 - LITTLE COHARIE CRK AT SR 1240 NR ROSEBORO (~127.6 Square Miles)	Agriculture	47.01%	47.04%	47.05%	47.44%	47.50%	0.49%
		Barren Land	0.05%	0.05%	0.06%	0.06%	0.06%	0.02%
		Developed	7.51%	7.75%	7.78%	7.97%	8.03%	0.52%
		Forest	18.75%	16.99%	18.25%	18.17%	18.07%	-0.67%
		Grassland/Shrub	6.09%	7.58%	6.27%	5.77%	5.73%	-0.36%
		Open Water	0.49%	0.61%	0.53%	0.50%	0.44%	-0.05%
		Wetland	20.10%	19.99%	20.06%	20.09%	20.16%	0.06%
		Agriculture	44.65%	44.67%	44.65%	44.94%	45.04%	0.39%

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
0303000604	B8610001 - Little Coharie Creek at SR 1207 near Ingold (~158.1 Square Miles)	Barren Land	0.04%	0.04%	0.05%	0.07%	0.05%	**0.02%**
		Developed	6.78%	6.98%	7.01%	7.17%	7.22%	**0.44%**
		Forest	20.96%	19.48%	20.39%	20.16%	20.13%	**-0.83%**
		Grassland/Shrub	6.33%	7.56%	6.64%	6.42%	6.30%	**-0.03%**
		Open Water	0.48%	0.58%	0.53%	0.48%	0.43%	**-0.05%**
		Wetland	20.76%	20.68%	20.73%	20.76%	20.82%	**0.06%**
	B8580000 - GREAT COHARIE CRK AT SR 1311 NR CLINTON (~134.4 Square Miles)	Agriculture	49.26%	49.33%	49.45%	49.39%	49.48%	**0.22%**
		Barren Land	0.03%	0.03%	0.03%	0.03%	0.03%	**0.00%**
		Developed	6.99%	7.16%	7.17%	7.33%	7.34%	**0.36%**
		Forest	18.86%	17.71%	18.87%	18.87%	18.94%	**0.08%**
		Grassland/Shrub	5.05%	5.90%	4.62%	4.52%	4.37%	**-0.68%**
		Open Water	0.43%	0.73%	0.56%	0.55%	0.49%	**0.06%**
		Wetland	19.38%	19.14%	19.30%	19.31%	19.34%	**-0.04%**
	B8604000 - Great Coharie Creek at SR 1214 near Butler Crossroads (~180.3 Square Miles)	Agriculture	45.67%	45.70%	45.73%	45.69%	45.75%	**0.08%**
		Barren Land	0.03%	0.03%	0.03%	0.02%	0.02%	**0.00%**
		Developed	9.52%	9.71%	9.77%	9.94%	9.99%	**0.47%**
		Forest	19.09%	18.10%	18.99%	18.77%	18.76%	**-0.33%**
		Grassland/Shrub	5.24%	5.97%	4.98%	5.09%	5.01%	**-0.23%**
		Open Water	0.49%	0.72%	0.59%	0.57%	0.51%	**0.02%**
		Wetland	19.97%	19.78%	19.90%	19.91%	19.96%	**-0.01%**
0303000605	B8679500 - SIX RUNS CRK AT SR 1919 NR MOLTONVILLE (~72.1 Square Miles)	Agriculture	48.36%	48.50%	48.90%	49.17%	49.30%	**0.94%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.01%	**0.00%**
		Developed	5.39%	5.50%	5.51%	5.61%	5.63%	**0.25%**
		Forest	22.41%	21.10%	21.67%	20.38%	19.82%	**-2.59%**
		Grassland/Shrub	5.53%	6.57%	5.58%	6.49%	6.91%	**1.38%**
		Open Water	0.40%	0.47%	0.46%	0.47%	0.39%	**0.00%**
		Wetland	17.92%	17.86%	17.87%	17.87%	17.94%	**0.02%**
	B8725000 - SIX RUNS CRK AT SR 1960 NR TAYLORS BRIDGE (~225.4 Square Miles)	Agriculture	41.16%	41.17%	41.24%	41.05%	41.13%	**-0.03%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.02%	**0.01%**
		Developed	6.71%	7.00%	7.06%	7.41%	7.43%	**0.72%**
		Forest	26.57%	25.20%	26.17%	25.37%	25.18%	**-1.39%**
		Grassland/Shrub	6.63%	7.69%	6.58%	7.23%	7.30%	**0.68%**
		Open Water	0.42%	0.47%	0.47%	0.46%	0.43%	**0.01%**
		Wetland	18.51%	18.47%	18.47%	18.47%	18.51%	**0.01%**
	B8740000 - Six Runs Creek at SR 1003 near Ingold (~273.2 Square Miles)	Agriculture	40.13%	40.21%	40.28%	40.12%	40.23%	**0.10%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.02%	**0.01%**
		Developed	6.44%	6.71%	6.76%	7.07%	7.09%	**0.64%**
		Forest	26.81%	25.66%	26.87%	25.88%	25.70%	**-1.11%**
		Grassland/Shrub	7.49%	8.28%	6.95%	7.79%	7.84%	**0.35%**
		Open Water	0.45%	0.51%	0.49%	0.49%	0.45%	**0.00%**
		Wetland	18.67%	18.63%	18.63%	18.64%	18.67%	**0.00%**
0303 0006	B8981000 - Colly Creek at NC 53 at	Agriculture	8.63%	8.52%	8.38%	8.31%	8.47%	**-0.16%**
		Barren Land	0.03%	0.04%	0.04%	0.04%	0.04%	**0.01%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	Colly (~101.7 Square Miles)	Developed	2.58%	2.60%	2.62%	2.63%	2.63%	**0.05%**
		Forest	18.87%	18.46%	19.38%	17.55%	17.64%	**-1.23%**
		Grassland/Shrub	7.37%	7.84%	7.05%	8.92%	8.68%	**1.31%**
		Open Water	1.01%	1.51%	1.03%	1.06%	1.02%	**0.01%**
		Wetland	61.51%	61.02%	61.50%	61.48%	61.53%	**0.02%**
0303000608	B8750000 - BLACK RIV AT NC 411 NR TOMAHAWK (~677.4 Square Miles)	Agriculture	41.48%	41.52%	41.51%	41.50%	41.61%	**0.12%**
		Barren Land	0.02%	0.02%	0.02%	0.03%	0.03%	**0.01%**
		Developed	7.17%	7.40%	7.45%	7.66%	7.70%	**0.52%**
		Forest	24.07%	22.99%	23.99%	23.30%	23.25%	**-0.82%**
		Grassland/Shrub	6.92%	7.71%	6.67%	7.17%	7.07%	**0.15%**
		Open Water	0.47%	0.59%	0.53%	0.51%	0.46%	**-0.02%**
		Wetland	19.87%	19.77%	19.83%	19.84%	19.89%	**0.02%**
	B9000000 - Black River at NC 210 at Still Bluff (~1407 Square Miles)	Agriculture	34.07%	34.00%	33.85%	33.81%	33.92%	**-0.16%**
		Barren Land	0.05%	0.05%	0.05%	0.05%	0.06%	**0.01%**
		Developed	6.60%	6.86%	6.93%	7.11%	7.15%	**0.55%**
		Forest	23.60%	22.84%	24.11%	23.06%	23.14%	**-0.46%**
		Grassland/Shrub	7.68%	8.25%	7.07%	7.97%	7.73%	**0.05%**
		Open Water	0.77%	0.91%	0.81%	0.92%	0.76%	**-0.01%**
		Wetland	27.21%	27.09%	27.19%	27.08%	27.24%	**0.03%**
	B9013000 - BLACK RIV AT RACCOON ISLAND NR HUGGINS (~1514.7 Square Miles)	Agriculture	32.76%	32.70%	32.56%	32.52%	32.62%	**-0.14%**
		Barren Land	0.05%	0.05%	0.05%	0.05%	0.06%	**0.01%**
		Developed	6.39%	6.63%	6.70%	6.87%	6.90%	**0.51%**
		Forest	24.86%	24.06%	25.39%	24.25%	24.35%	**-0.51%**
		Grassland/Shrub	7.89%	8.48%	7.24%	8.24%	7.99%	**0.11%**
		Open Water	0.78%	0.94%	0.82%	0.92%	0.77%	**-0.01%**
		Wetland	27.27%	27.13%	27.24%	27.15%	27.30%	**0.03%**
Northeast Cape Fear River Subbasin, HUC8 03030007								
0303000701	B9130000 - Panther Branch near Faison (~6.8 Square Miles)	Agriculture	47.78%	47.79%	48.29%	48.35%	48.34%	**0.56%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	12.25%	12.36%	12.43%	14.16%	14.26%	**2.01%**
		Forest	15.76%	16.66%	19.73%	18.62%	19.14%	**3.37%**
		Grassland/Shrub	10.54%	9.53%	5.91%	5.15%	4.60%	**-5.95%**
		Open Water	0.86%	0.89%	0.86%	0.94%	0.80%	**-0.06%**
		Wetland	12.80%	12.76%	12.78%	12.78%	12.87%	**0.07%**
	B9190500 - GOSHEN SWAMP AT SR 1004 NR WESTBROOK CROSSROAD (~151.1 Square Miles)	Agriculture	53.06%	53.41%	53.67%	54.02%	54.12%	**1.06%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.02%	**0.01%**
		Developed	6.34%	6.45%	6.47%	6.56%	6.59%	**0.26%**
		Forest	16.83%	14.76%	15.51%	16.13%	16.44%	**-0.39%**
		Grassland/Shrub	4.35%	5.95%	4.92%	3.83%	3.40%	**-0.95%**
		Open Water	0.44%	0.51%	0.46%	0.48%	0.47%	**0.02%**
		Wetland	18.98%	18.91%	18.96%	18.96%	18.96%	**-0.02%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B9191000 - Goshen Swamp at NC 11 and NC 903 near Kornegay (~1.3 Square Miles)	Agriculture	31.85%	31.98%	31.98%	32.11%	32.11%	**0.26%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	3.39%	3.49%	3.44%	3.44%	3.44%	**0.05%**
		Forest	23.26%	23.46%	23.49%	17.03%	17.66%	**-5.60%**
		Grassland/Shrub	5.52%	5.08%	5.08%	11.41%	10.78%	**5.26%**
		Open Water	0.18%	1.82%	1.17%	0.60%	0.60%	**0.42%**
		Wetland	35.81%	34.17%	34.84%	35.42%	35.42%	**-0.39%**
0303000702	B9080000 - NORTHEAST CAPE FEAR RIV AT SR 1937 NR MT OLIVE (~10.2 Square Miles)	Agriculture	59.73%	59.41%	59.01%	60.13%	60.18%	**0.46%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.01%	**0.01%**
		Developed	19.99%	20.33%	20.82%	20.89%	20.90%	**0.91%**
		Forest	9.62%	9.76%	8.92%	8.09%	7.89%	**-1.74%**
		Grassland/Shrub	2.56%	2.41%	3.03%	2.68%	2.89%	**0.33%**
		Open Water	0.12%	0.13%	0.23%	0.23%	0.23%	**0.10%**
		Wetland	7.97%	7.95%	7.97%	7.97%	7.90%	**-0.07%**
	B9090000 - NORTHEAST CAPE FEAR RIV AT NC 403 NR WILLIAMS (~23.7 Square Miles)	Agriculture	55.24%	55.12%	55.12%	55.47%	55.67%	**0.43%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.01%	**0.00%**
		Developed	11.89%	12.13%	12.37%	12.55%	12.56%	**0.67%**
		Forest	15.20%	13.63%	14.33%	14.85%	14.43%	**-0.77%**
		Grassland/Shrub	4.04%	5.48%	4.50%	3.42%	3.82%	**-0.22%**
		Open Water	0.28%	0.36%	0.36%	0.41%	0.41%	**0.13%**
		Wetland	13.34%	13.27%	13.31%	13.29%	13.10%	**-0.24%**
	B9191500 - Northeast Cape Fear River SR 1700 near Sarecta (~343.2 Square Miles)	Agriculture	48.59%	48.76%	48.90%	49.11%	49.22%	**0.63%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.01%	**0.01%**
		Developed	6.62%	6.76%	6.79%	6.87%	6.90%	**0.28%**
		Forest	18.64%	17.30%	17.84%	17.99%	18.18%	**-0.46%**
		Grassland/Shrub	4.64%	5.67%	4.94%	4.50%	4.21%	**-0.43%**
		Open Water	0.38%	0.49%	0.43%	0.43%	0.40%	**0.02%**
		Wetland	21.12%	21.02%	21.08%	21.10%	21.09%	**-0.03%**
0303000703	B9196000 - NORTHEAST CAPE FEAR RIV AT SR 1961 AT HALLSVILLE (~476.3 Square Miles)	Agriculture	43.91%	44.16%	44.30%	44.52%	44.62%	**0.71%**
		Barren Land	0.01%	0.01%	0.01%	0.01%	0.01%	**0.01%**
		Developed	6.72%	6.86%	6.89%	6.99%	7.01%	**0.30%**
		Forest	22.11%	20.52%	20.98%	21.17%	21.30%	**-0.81%**
		Grassland/Shrub	5.37%	6.57%	5.92%	5.40%	5.17%	**-0.20%**
		Open Water	0.36%	0.46%	0.40%	0.40%	0.37%	**0.01%**
		Wetland	21.52%	21.43%	21.49%	21.50%	21.50%	**-0.02%**
0303000705	B9430000 - Rockfish Creek at US 117 near Wallace (~161 Square Miles)	Agriculture	32.39%	32.47%	32.44%	32.54%	32.62%	**0.24%**
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.03%	**0.01%**
		Developed	5.84%	5.94%	5.99%	6.00%	6.02%	**0.18%**
		Forest	31.70%	31.28%	31.56%	30.57%	29.75%	**-1.95%**
		Grassland/Shrub	7.98%	8.17%	7.88%	8.76%	9.48%	**1.50%**
		Open Water	0.20%	0.37%	0.27%	0.28%	0.26%	**0.05%**
		Wetland	21.87%	21.75%	21.83%	21.82%	21.85%	**-0.02%**
		Agriculture	29.73%	29.74%	29.71%	29.64%	29.63%	**-0.10%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	B9460000 - Little Rockfish Creek at NC 11 near Wallace (~9.2 Square Miles)	Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	22.34%	22.43%	22.44%	22.56%	22.57%	**0.23%**
		Forest	19.08%	18.95%	19.15%	19.66%	20.02%	**0.94%**
		Grassland/Shrub	5.18%	5.20%	4.97%	4.43%	4.07%	**-1.11%**
		Open Water	0.22%	0.26%	0.44%	0.41%	0.36%	**0.14%**
		Wetland	23.46%	23.41%	23.28%	23.30%	23.35%	**-0.10%**
	B9470000 - ROCKFISH CRK AT I 40 AT WALLACE (~175.3 Square Miles)	Agriculture	32.18%	32.26%	32.20%	32.28%	32.36%	**0.17%**
		Barren Land	0.02%	0.02%	0.02%	0.02%	0.03%	**0.01%**
		Developed	6.79%	6.89%	6.97%	6.99%	7.01%	**0.22%**
		Forest	30.75%	30.36%	30.65%	29.76%	29.01%	**-1.74%**
		Grassland/Shrub	7.78%	7.95%	7.66%	8.45%	9.09%	**1.32%**
		Open Water	0.23%	0.38%	0.31%	0.31%	0.29%	**0.06%**
		Wetland	22.24%	22.13%	22.20%	22.20%	22.22%	**-0.03%**
0303000706	B9480000 - NORTHEAST CAPE FEAR RIV AT SR 1318 NR WATHA (~972.1 Square Miles)	Agriculture	36.80%	36.97%	37.04%	37.17%	37.25%	**0.45%**
		Barren Land	0.01%	0.02%	0.02%	0.01%	0.02%	**0.01%**
		Developed	6.53%	6.68%	6.73%	6.81%	6.83%	**0.29%**
		Forest	26.06%	24.71%	25.30%	25.10%	24.89%	**-1.17%**
		Grassland/Shrub	6.09%	7.11%	6.39%	6.38%	6.51%	**0.42%**
		Open Water	0.38%	0.50%	0.44%	0.45%	0.42%	**0.03%**
		Wetland	24.12%	24.01%	24.08%	24.08%	24.08%	**-0.04%**
	B9490000 - Angola Creek at NC 53 near Maple Hill (~39.5 Square Miles)	Agriculture	15.52%	15.82%	16.15%	16.28%	16.44%	**0.93%**
		Barren Land	0.05%	0.07%	0.07%	0.05%	0.06%	**0.01%**
		Developed	2.61%	2.64%	2.66%	2.67%	2.67%	**0.07%**
		Forest	23.14%	23.08%	23.60%	24.45%	24.15%	**1.01%**
		Grassland/Shrub	5.33%	5.03%	4.17%	3.20%	3.48%	**-1.85%**
		Open Water	0.63%	0.63%	0.67%	0.62%	0.49%	**-0.14%**
		Wetland	52.72%	52.72%	52.69%	52.73%	52.70%	**-0.02%**
	B9496000 - MILL POND AT NC 53 NR MAPLE HILL (~16.4 Square Miles)	Agriculture	0.38%	0.38%	0.38%	0.38%	0.38%	**0.00%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	0.16%	0.17%	0.16%	0.16%	0.16%	**0.00%**
		Forest	4.14%	4.26%	4.63%	3.97%	3.63%	**-0.51%**
		Grassland/Shrub	0.76%	0.64%	0.27%	0.93%	1.27%	**0.50%**
		Open Water	0.00%	0.03%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	94.55%	94.52%	94.55%	94.55%	94.55%	**0.00%**
0303000708	B9500000 - Burgaw Creek at SR 1345 Wright St. at Burgaw (~2.4 Square Miles)	Agriculture	22.98%	23.21%	23.19%	23.19%	23.17%	**0.19%**
		Barren Land	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Developed	24.67%	24.79%	24.77%	24.80%	24.80%	**0.12%**
		Forest	27.82%	32.55%	31.75%	33.14%	35.16%	**7.34%**
		Grassland/Shrub	14.76%	9.68%	10.55%	9.13%	7.13%	**-7.63%**
		Open Water	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
		Wetland	9.77%	9.77%	9.75%	9.75%	9.75%	**-0.02%**
	B9520000 - BURGAW CRK AT US	Agriculture	35.00%	34.90%	34.78%	34.69%	34.79%	**-0.21%**
		Barren Land	0.04%	0.04%	0.04%	0.04%	0.04%	**0.00%**

HUC10	Station Information	Land Use Land Cover[1,2]	2001	2006	2011	2016	2019	Change (2001 - 2019)
	117 AT BURGAW (~8.1 Square Miles)	Developed	18.86%	19.12%	19.32%	19.44%	19.44%	0.59%
		Forest	27.75%	30.04%	30.35%	30.43%	30.80%	3.05%
		Grassland/Shrub	9.35%	6.89%	6.50%	6.37%	5.83%	-3.52%
		Open Water	0.06%	0.09%	0.11%	0.08%	0.08%	0.02%
		Wetland	8.94%	8.92%	8.90%	8.94%	9.02%	0.08%
	B9550000 - LILLINGTON CRK AT SR 1520 NR STAG PARK (~11.5 Square Miles)	Agriculture	1.45%	1.45%	1.47%	1.45%	1.45%	0.01%
		Barren Land	0.03%	0.05%	0.03%	0.05%	0.08%	0.06%
		Developed	1.26%	1.27%	1.28%	1.28%	1.28%	0.02%
		Forest	14.82%	14.70%	14.71%	14.68%	14.82%	0.00%
		Grassland/Shrub	1.74%	1.76%	1.71%	1.75%	1.60%	-0.14%
		Open Water	0.02%	0.11%	0.52%	0.16%	0.11%	0.08%
		Wetland	80.68%	80.65%	80.28%	80.63%	80.65%	-0.03%
	B9580000 - NORTHEAST CAPE FEAR RIV AT US 117 AT CASTLE HAYNE (~1497.1 Square Miles)	Agriculture	25.96%	26.03%	26.06%	26.14%	26.20%	0.23%
		Barren Land	0.13%	0.14%	0.13%	0.12%	0.12%	-0.02%
		Developed	5.25%	5.45%	5.50%	5.57%	5.60%	0.35%
		Forest	25.05%	24.12%	24.79%	24.61%	24.41%	-0.64%
		Grassland/Shrub	5.77%	6.42%	5.67%	5.71%	5.83%	0.06%
		Open Water	0.48%	0.59%	0.62%	0.58%	0.52%	0.04%
		Wetland	37.36%	37.24%	37.23%	37.27%	37.32%	-0.04%
	B9670000 - Northeast Cape Fear River near Wrightsboro (~1698.2 Square Miles)	Agriculture	24.64%	24.68%	24.71%	24.77%	24.82%	0.18%
		Barren Land	0.14%	0.14%	0.13%	0.12%	0.13%	-0.01%
		Developed	5.36%	5.61%	5.67%	5.76%	5.79%	0.43%
		Forest	25.90%	25.06%	25.84%	25.61%	25.48%	-0.42%
		Grassland/Shrub	6.39%	6.95%	6.08%	6.17%	6.22%	-0.17%
		Open Water	0.59%	0.71%	0.73%	0.68%	0.63%	0.04%
		Wetland	36.97%	36.86%	36.84%	36.89%	36.93%	-0.04%
	B9720000 - Smith Creek at US 117 and NC 133 at Wilmington (~31.5 Square Miles)	Agriculture	5.18%	4.75%	4.59%	4.58%	4.54%	-0.64%
		Barren Land	0.07%	0.07%	0.04%	0.03%	0.07%	0.00%
		Developed	60.41%	63.67%	64.85%	66.05%	67.01%	6.60%
		Forest	10.86%	9.51%	9.19%	8.41%	8.05%	-2.81%
		Grassland/Shrub	5.36%	4.22%	3.56%	3.62%	3.35%	-2.01%
		Open Water	0.97%	1.08%	1.18%	1.12%	1.12%	0.14%
		Wetland	17.15%	16.68%	16.59%	16.18%	15.86%	-1.28%
	B9740000 - NORTHEAST CAPE FEAR RIV AT NC 133 AT WILMINGTON (~1742.5 Square Miles)	Agriculture	24.14%	24.17%	24.19%	24.25%	24.30%	0.16%
		Barren Land	0.14%	0.14%	0.14%	0.12%	0.13%	0.00%
		Developed	6.54%	6.86%	6.94%	7.05%	7.11%	0.57%
		Forest	25.56%	24.70%	25.45%	25.20%	25.06%	-0.50%
		Grassland/Shrub	6.36%	6.88%	6.02%	6.12%	6.16%	-0.20%
		Open Water	0.66%	0.77%	0.80%	0.75%	0.70%	0.04%
		Wetland	36.61%	36.48%	36.46%	36.50%	36.54%	-0.07%

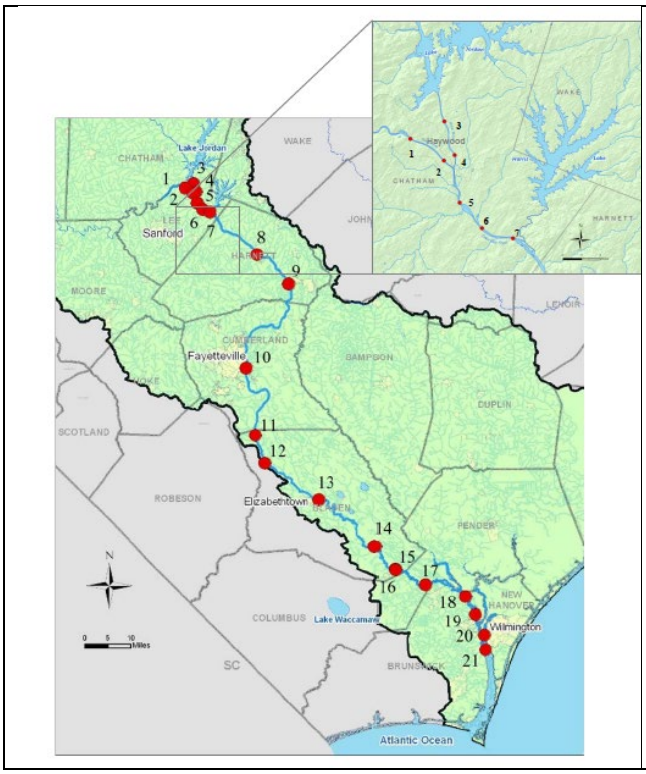
[1]Data was downloaded from the Multi-Resolution Land Characteristics NLCD website and processed for each Cape Fear River Basin watershed in 2022. Watershed boundaries were generated using USGS StreamStats.

[2] Barren Land is a catch-all category for tilled land, new development, cutover, bare rock areas.

Algal Blooms in the Cape Fear River – 2011

Timeline of Events
April 18th , 2012

This document serves as a summary of the various reports and investigations regarding algal blooms along the Cape Fear River during 2011. Portions of this timeline cite locations of a study of algal assemblages along the Cape Fear River conducted in 2010[1].



1	Deep River at NC 1
2	Deep River above the Haw River
3	Haw River at NC 1
4	Haw River above the Deep River
5	Cape Fear River at railroad bridge
6	Cape Fear River at NC 42
7	Cape Fear River at Buckhorn Dam (upstream)
8	Cape Fear River at NC 401 (Lillington)
9	Cape Fear River at NC 217 (Erwin)
10	Cape Fear River at NC 24 (Fayetteville)
11	Cape Fear River at of Lock & Dam 3 (downstream)
12	Cape Fear River at Tar Heel
13	Cape Fear River at Lock & Dam 2 (upstream)
14	Cape Fear River at Elwell Ferry
15	Cape Fear River at Lock & Dam 1 (upstream)
16	Cape Fear River at Lock & Dam 1 (downstream)
17	Cape Fear River at Neils Eddy Landing
18	Cape Fear River at Hale Point Landing
19	Cape Fear River at Navassa
20	Cape Fear River at Channel Marker 61
21	Cape Fear River at Channel Marker 56

Figure 1. Map of the stations monitoring during 2010. Stations on this map are referred to in this document.

[1] NCDWQ. 2011. Algal Assemblage Assessments in the Cape Fear River in 2010. North Carolina Division of Water Quality. Environmental Science Section, Raleigh, North Carolina; December 2011.

June 2nd - MCFRBA reports stratification occurring above Lock and Dam 1 (LD1), LD2 and LD3.

Table 1. Physical parameters above the Lock and Dams as reported by MCFRBA.

Location	Date	Depth	Temp (C)	DO mg/L	pH su
CPFLD1 above	6/2/12	Surface	30.1	9.53	7.52
CPFLD1 above	6/2/12	Bottom	27.8	7.17	6.55
CPFLD2 above	6/2/12	Surface	29.5	8.98	7.44
CPFLD2 above	6/2/12	Bottom	28.2	6.54	6.60
CPFLD3 above	6/2/12	Surface	28.9	8.27	7.32
CPFLD3 above	6/2/12	Bottom	27.9	6.71	6.70

June 7th - WiRO conducts routine ambient monitoring below LD1 and reports an elevated DO concentration of 119% saturation. No visible algae. Analysis of the phytoplankton assemblage by ESS determines that the elevated algal productivity is a bloom of diatoms.

June 15th - LCFRP reports elevated DO and pH above NC 11 which they attribute to a bloom of green algae. No visible algae reported.

June 16th - FRO conducts a site visits to LD1 and Elwell Ferry and collects grab and photic zone samples to compare methods. DO and pH were not elevated and phytoplankton analysis gives no indication of any blooms. The assemblage was dominated by diatoms and cryptomonads. *Microcystis* was present at very low densities and not enumerated. Results of the method comparison were inconclusive.

June 27th - WiRO investigates a report by the Lockmaster that algal blooms are occurring above LD3 and LD1 and a fish kill occurred below LD1. The contractor working on the LD1 fish ladder construction project says the fish died because they got stranded on the rocks which were exposed during changes in flow. WiRO finds a *Microcystis* bloom around NC 11 (Figure 2) which is believed to be a result of a vessel being locked through and the *Microcystis* accumulation above LD1 being released.

Figure 2. *Microcystis* @ NC 11 (WiRO 6/27/11)

July 5th - Lockmaster reports blooms above LD1 and 3.

July 7th - DENR Public Water Supply (PWS) reports a very thick bloom extending shore to shore above LD1 (Figure 3).

Figure 3. *Microcystis* above LD1 (PWS 7/7/11).

July 8th - ESS confers with MCPRBA and the LCFRP monitors and sends out an update to WiRO, FRO & RRO (ROs) and other stakeholders that the coalition monitors will be on the river over the next few days and will provide updates on the bloom status.

July 9th - Tim Otten, a graduate student in Hans Paerl's lab at UNC-Institute of Marine Science (Morehead City), collects samples for microcystin analysis below LD1. He also collects samples from the Wilmington water treatment plant (WTP) distribution system (i.e. drinking water) at various locations.

July 11th - PWS reports that the bloom has substantially subsided (Figure 4).

Figure 4. *Microcystis* above LD1 (PWS 7/11/11)

July 12th - The Fish and Wildlife Service (FWS) reports that the bloom is occurring from Elwell Ferry down to LD1.

First Bloom Investigation (ESS, FRO & WiRO)

DWQ coordinates a bloom investigation (photic zone, all standard parameters) in conjunction with routine AMS monitoring. The goal of the investigation is to determine the magnitude of the bloom as measured by documenting the where it starts and how far down the river it goes as well.

July 12th - FRO investigates from LD1 to LD2 and at Fayetteville (NC24)
July 13th - ESS investigates from LD2 and LD3.
July 14th - WiRO investigates from LD1 down to Wilmington.

July 15th- ESS sends out a bloom update to regional offices and stakeholders. The results of the investigation indicate that the bloom stretched from approximately four miles above LD2 to Sutton Lake, a distance of about 50 miles. The bloom was composed of flecks floating in the water column, collecting in swirls and eddies in the main channel and surface films along the banks and behind structures (Figures 5, 6, and 7).

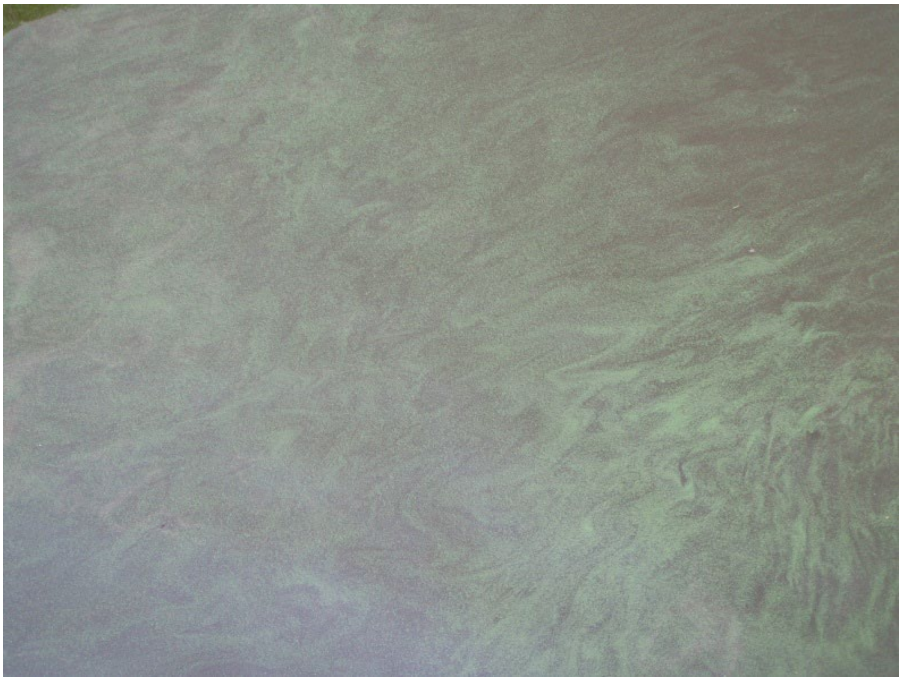


Figure 5. *Microcystis* flecks in lower Cape Fear River. (ESS 7/14/11)

Figure 6. *Microcystis* swirls in lower Cape Fear River. (ESS 7/14/11)

Figure 7. *Microcystis* flecks in lower Cape Fear River. (ESS 7/14/11).

July 18th - Tim Otten, (UNC-IMS) notifies DWQ that the results of the microcystin testing of samples collected on 7/9/11 found microcystins present at concentrations that ranged from 10 to 250+ (upper range of analysis) below LD1. The samples collected from the distribution system are negative for microcystins.

ESS issues an update to Regional Offices and other stakeholders that results of Tim Otten's investigation found microcystins present in the Cape Fear River below LD1 and that DWQ is in discussion on a second bloom investigation and continued monitoring of the bloom.

Second Bloom Investigation (ESS, FRO, PWS & DHHS)

ESS coordinates second bloom investigation from LD3 down to LD1 with FRO, DHHS and PWS. In addition to collecting the physical and chemical data, samples for microcystins testing in ambient and treated drinking water are also collected. Samples for toxicity analysis are collected from the photic zone and the surface at four stations (CPFLD1, CPFEF, CPFLD2 & CPFTH) and in the two WTP from their intake (raw) and their finished water.

July 20th - ESS and FRO investigate by boat, going from LD2 to below LD3. FRO conducting site visits to LD1, Elwell Ferry and above LD3. PWS arranges for finished water samples to be collected from Wilmington and Brunswick Co. WTPs. Swirls and visible blooms of *Microcystis* have substantially subsided but flecks are still present in the water from just above Tar Heel down to LD1. LCFRP conducts their regular monitoring and reports swirls and visible collections of *Microcystis* all the way down to Navassa.

July 22nd – ESS issues an update summarizing that the blooms have subsided to some extent but the growth of *Microcystis* is still present and can be seen as flecks in the water from LD3 (Figure 8) down to Navassa, a distance of about 75 miles. This update coincides with a DENR press release (the first of two) asking people to avoid visible pools of algae (i.e. green water) and details potential problems associated with blue green algae and their toxins (complete press release is at the end of this document.

Figure 8. Microcystis above LD3 (ESS 7/20/11)

July 27th - DHHS releases results of the microcystin testing. The levels of microcystins in the Cape Fear River are all below World Health Organization (WHO) guidelines (Chorus & Bartram, 1999) for recreational water exposure of 2.0 ppb. The levels of microcystins in the Wilmington WTP raw and finished water were below WHO guidelines of 1.0 ppb for drinking water. Brunswick Co. water samples did not meet holding times and were not tested.

Table 2. Results of the Microcystin testing provided by DHHS.

Station or location	Sample type	Results of Microcystin (ug/L)
CPFLD1	Surface	< 1.0 ug/L
CPFLD1	Photic	< 1.0 ug/L
CPFEF	Surface	< 1.0 ug/L
CPFEF	Photic	< 1.0 ug/L
CPFLD2	Surface	< 1.0 ug/L
CPFLD2	Photic	< 1.0 ug/L
CPFTH	Surface	1.6 ug/L
CPFTH	Photic	< 1.0 ug/L
Wilmington WTP	Raw water	≈ 0.99 ug/L
Wilmington WTP	Finished water	≈ 0.19 ug/L
Brunswick WTP	Raw water	N/A
Brunswick WTP	Finished water	N/A

Third Bloom Investigation. (ESS, FRO & WiRO)

July 27th - FRO and WiRO conducted follow-up investigations (visual observations, phytoplankton sampling and field parameter data collection). FRO conducted site visits from Tar Heel down to LD1 and WiRO made a boat run from LD1 down to Hale Point Landing. Some *Microcystis* was present from above LD1 down to Hales point landing. Most significant was in the lower stations.

July 29th - MCFRBA reports visual growth of *Microcystis* from Fayetteville (24) down to LD1. Growths range from small collections along shoreline at Fayetteville to slight streaks from LD3 down to LD1.

August 1st - FRO conducts routine ambient monitoring (phytoplankton samples collected) between LD2 and LD3. *Microcystis* is reported at LD2.

August 2nd - ESS does a follow-up investigation (photic zone samples collected for standard parameters) to the 2010 bloom in the upper Cape Fear R. No *Microcystis* reported but a surface bloom of green algae in the Deep River (Figure 9) and the usual photic blooms (elevated chl-a, DO and pH) from below the confluence down to Buckhorn Dam.

Figure 9. Green algae bloom in the Deep River at Moncure (ESS 8/2/11)

August 3rd - LCFRP conducts routine monitoring in the lower Cape Fear R. and reports *Microcystis* at NC11.

August 5th - ESS issues an update to Regional Offices and stakeholders stating that the *Microcystis* bloom appears to be dispersing. DENR sends out press release on continued water quality problems which now include fish kills and blue green blooms in other waters (Northeast Cape Fear R., Lake Tabor & Lake Waccamaw).

August 10th - MCFRBA reports flecks of Microcystis present from LD3 to LD1, with the highest concentration above LD1. MCFRBA also notes elevated DO (15.8 mg/L) above LD1. Lockmaster reports visual blooms above LD3 and LD1.

August 11th - WiRO conducts routine monitoring and reports light growths of *Microcystis* along shoreline at LD1.

August 24th - ESS sends out an update to Regional Offices and stakeholders that there has been no visible *Microcystis* growth reported and no further investigations are planned until September.

September 6th - DuPont reports green water and a pH of 9 to FRO.

<u>Forth Bloom Investigation</u> (ESS & FRO)

September 28th - ESS and FRO conducts follow-up investigation (photic, all parameters) from Fayetteville down to LD1. No visual blooms reported but *Microcystis* is still present in the assemblage.

Abbreviation	Description
DENR	Department of Environment and Natural Resources
DHHS	Department of Health and Human Services
DO	Dissolved Oxygen
DWQ	Division of Water Quality
ESS	Environmental Sciences Section (of DWQ)
FRO	Fayetteville Regional Office
FWS	Fish and Wildlife Service
LD1	Lock and Dam 1
LD2	Lock and Dam 2
LD3	Lock and Dam 3
MCFRBA	Middle Cape Fear River Basin Association
PWS	Public Water Supply
UNC-IMS	University of NC-Institute of Marine Sciences
WiRO	Wilmington Regional Office
WTP	Water Treatment Plant

References:

Chorus, I., J. Bartram (Eds), 1999 Toxic Cyanobacteria in Water. E & FN SPON, London.

July 22, 2011 Presss Release:

Diana Kees, Communications Director diana.kees@ncdenr.gov Phone: (919) 715-4112 Facebook: http://www.facebook.com/ncdenr 1601 Mail Service Center, Raleigh, NC 27699-1601 RSS feed: http://portal.ncdenr.org/web/opa/news-releases-rss Twitter: http://twitter.com/NCDENR An Equal Opportunity/Affirmative Action Employer
Beverly Eaves Perdue, Governor Dee Freeman, Secretary

N.C. Department of Environment and Natural Resources

Release: Immediate Contact: Susan Massengale
Date: July 22, 2011 Phone: (919) 807-6359

Hot Weather, Drought Conditions Contribute to Algal Blooms in Cape Fear River

RALEIGH – The hot and dry weather that has dominated the area over the last several weeks is contributing to extensive algal blooms in the Cape Fear River and the Northeast Cape Fear River, according to officials with the N.C. Division of Water Quality.

During the last several weeks algal blooms have appeared over a 50-mile stretch of the Cape Fear River from near Fayetteville in Cumberland County to Sutton Lake in New Hanover County. They are also seen currently in a seven-mile stretch of the Northeast Cape Fear River, from north of the Crooms Bridge Road in Pender County to south of where the river crosses Highway 53. The blooms are primarily composed of bluegreen algae and may have the potential to cause health problems for humans, pets and other animals. While it is safe to boat or fish in the affected areas, the N.C. Division of Public Health routinely encourages the public to avoid contact with large accumulations of the algae and to take precautions to prevent children and pets from swimming or ingesting water in an algae bloom. North Carolina has had no reports of adverse health effects in children associated with algal blooms.

Algae are usually beneficial and provide a rich food source for aquatic animals. However, when advantageous weather and biological conditions combine with nutrient-rich waters, large algal blooms may form that have the potential to negatively affect the environment.

Health officials and DWQ recommend the following steps to safeguard pets and children from any potentially harmful algae bloom:

Keep children and pets away from water that appear very green, discolored or scummy.

Do not handle or touch large mats of algae.

If you come into contact with an algal bloom, wash thoroughly. Also, use clean water to rinse off pets that may have come into contact with an algae bloom.

If your child appears ill after being in waters containing an algae bloom, seek medical care immediately.

If your pet appears to stumble, stagger or collapse after being in a pond, lake or river, seek veterinary care immediately.

For more information on potential health effects from cyanobacterial (algal) blooms, visit the N.C. Public Health website at: http://www.epi.state.nc.us/epi/oee/safefromhab.html . To learn more about algae, visit the DWQ waterUknow! website at: http://portal.ncdenr.org/web/wq/home/wyk.

August 5, 2011 Press Release:

Beverly Eaves Perdue, Governor

Dee Freeman, Secretary

N.C. Department of Environment and Natural Resources

Release: Immediate	Contact: Susan Massengale
Date: Aug. 5, 2011	Phone: (919) 807-6359

Hot, Dry Conditions Contributing to Fish Kills and Algal Blooms

RALEIGH –The hot weather and a lack of substantial rainfall experienced over the past few weeks continue to contribute to ongoing algal blooms and fish kills across North Carolina's lakes, estuaries and river systems.

Division of Water Quality staff has documented algal blooms in the Deep River below Highway 1, in the Northeast Cape Fear River and at Lake Waccamaw. Blooms are also being monitored in the Pamlico and Albemarle Sound. Algal blooms can vary in severity, composition, duration and size. They may visibly discolor water or form extensive mats. Algal blooms can cause taste and odor problems in drinking water, and decrease the amount of dissolved oxygen available to fish and other aquatic animals.

Fish kills have occurred in Lake Norman, Jordan Lake and in the lower Neuse River near Riverdale. Fish kills can be caused by many factors. During the warmer summer months, extreme changes in water temperature and drops in dissolved oxygen levels can result in fish kills.

While it is safe to boat in affected areas, the N.C. Division of Public Health routinely encourages the public to avoid direct contact with large accumulations of algae and areas where dead fish are present.

To assist DENR in its mission to protect and manage the state's natural resources, please report fish kills and algal blooms to the nearest DENR Regional Office. A clickable map of the regional offices can be found on the DWQ home page at: www.ncwaterquality.org. On weekends and after normal business hours, please report environmental emergencies to 1-800- 858-0368.

Algal Data Summary for Upper and Middle Cape Fear River

Modeling and Assessment Branch

NC Division of Water Resources

December, 2021

A watershed and receiving water model are being developed for the upper and middle Cape Fear River Basin to assist NPDES permit evaluations in this watershed. Algal assemblage data and the corresponding chlorophyll-a concentrations are analyzed in this brief summary to support model development.

Monitoring Locations and Sampling Frequencies

Algal data are available at 18 monitoring stations for the 2010-2020 period (Figure 1). These data were collected during episodic algal bloom investigations, a one summer synoptic study and a two-year special study for model development. Figure 2 shows time series plots of total unit density and total biovolume observed at each station from 2010 to 2020. Sampling data are available mainly during two time periods:

During 2010-2013 *Microcystis* blooms were reported in the basin and some subsequent monitoring occurred afterwards. During this period, algal data are available during growing seasons from May to October from 17 monitoring stations. Sampling frequencies are not consistent with different years or stations.

During 2019-2020 when intensive surveys were conducted to assist model development, data were collected approximately monthly at 4 monitoring stations in the upper and middle Cape Fear River above impoundments (B6160000, B8290000, B8339000 and B8349000).

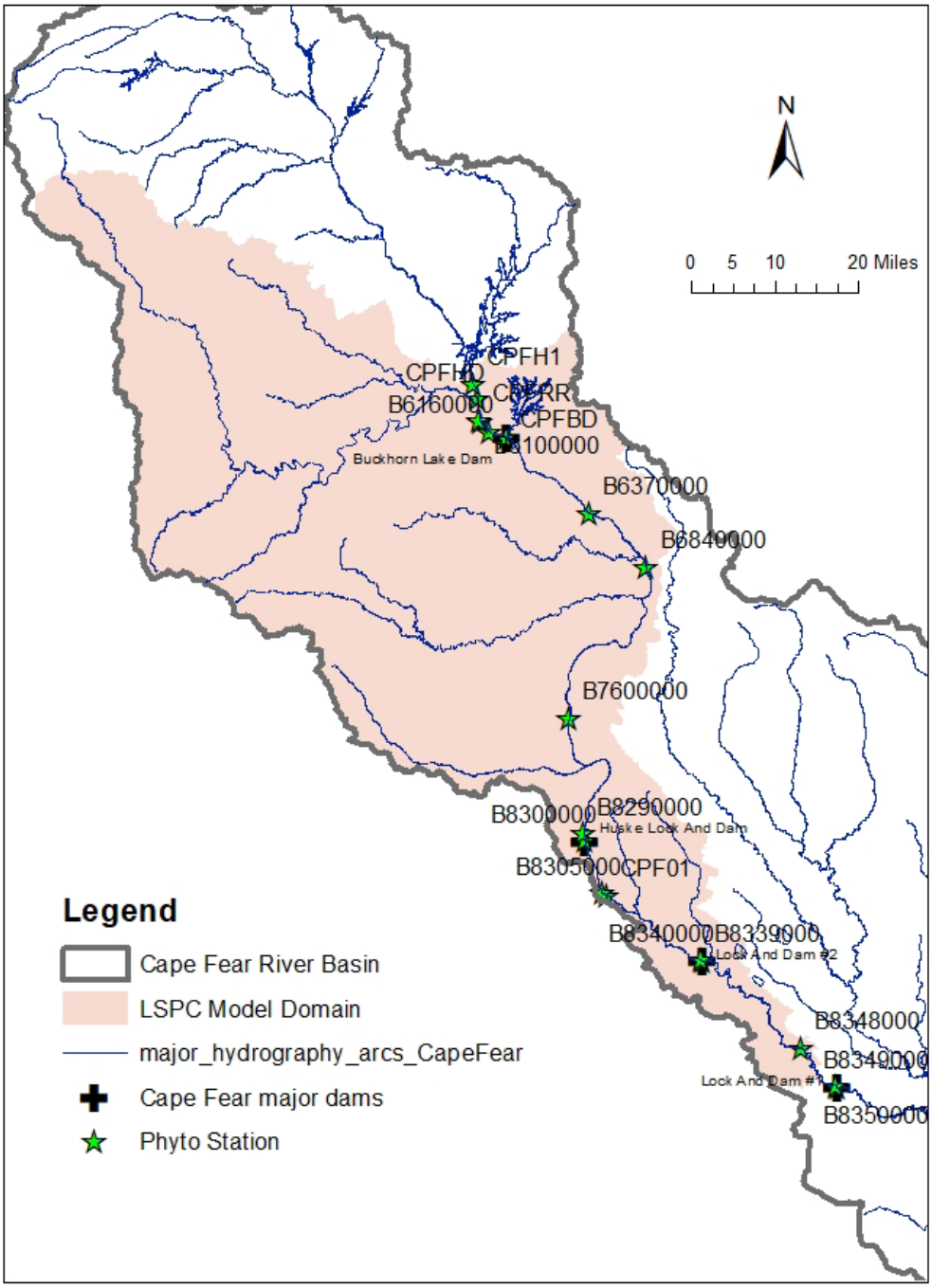


Figure 1. Algal monitoring stations within the Cape Fear River model domain.

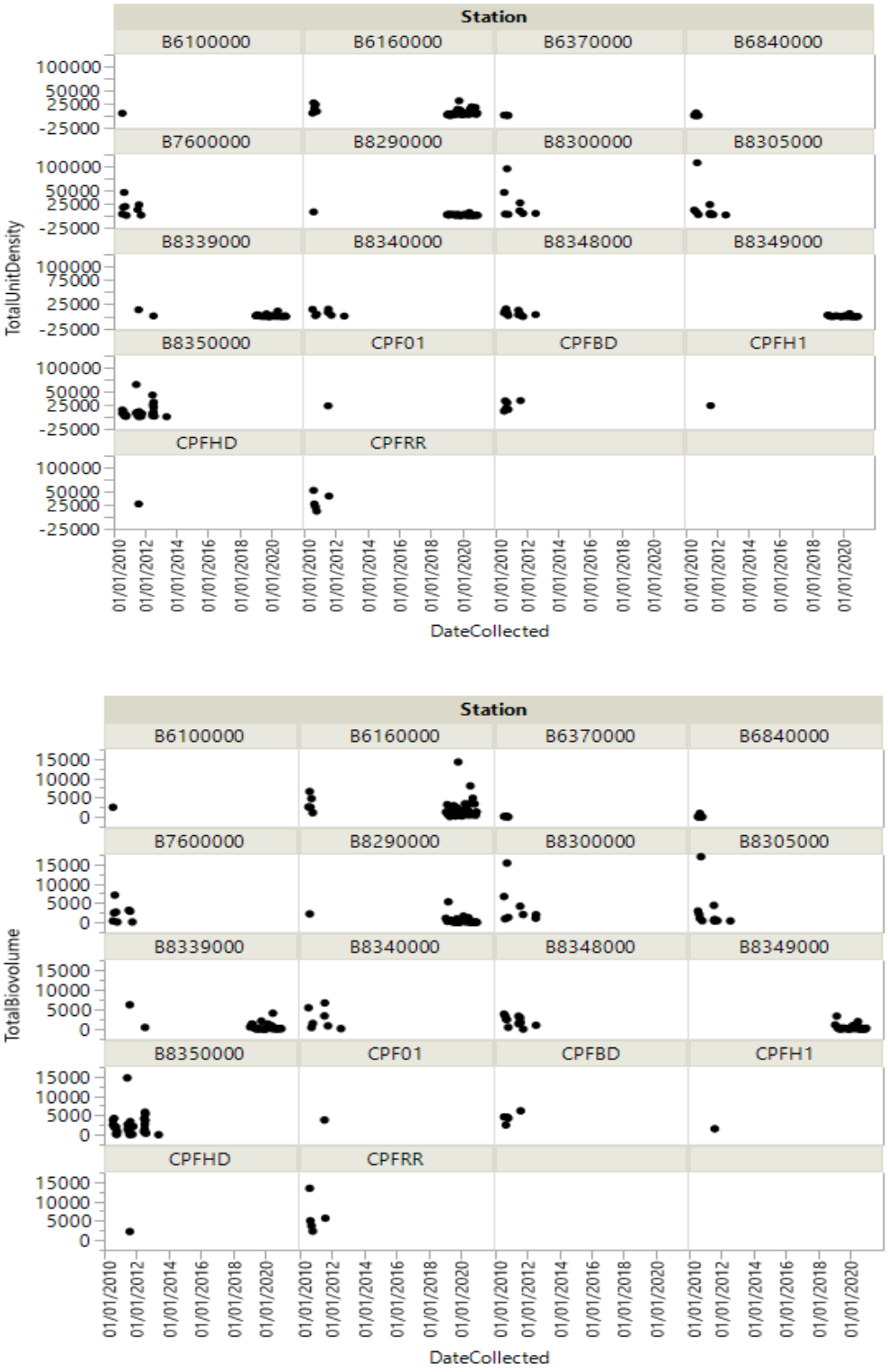


Figure 2. Time series plots of total unit density (in units/ml, upper panel) and total biovolume (in mm^3/m^3, lower panel) of all algal groups observed during 2010-2020 in the upper and middle Cape Fear River.

Algal group abundance

The distribution of unit density and biovolume for different algal groups within the model domain of upper and middle Cape Fear River are shown in Figure 3 to Figure 6. An algal unit is based on morphology and can be a colony, filament or single cell. Biovolume is based on the size, or biomass, of an alga. The Bacillariophyceae, commonly called Diatoms, have the overall highest mean unit density observed during the 2010-2020 period, followed by Cyanobacteria, commonly called bluegreen algae. Although the Raphidophyceae have the overall highest mean biovolume, it was only observed one time at station CPFRR on 9/23/2010, while 9 algal groups were identified at the time and no single algal group was dominant as to biovolume. Diatoms has the second highest overall mean biovolumes, with the Cryptophyta, commonly called Cryptomonads and Euglenophyta, commonly called Euglenoids, also have relatively high averaged biovolumes.

The highest mean unit density and biovolume were both observed at station CPFRR (Cape Fear River above RR bridge near Brickhaven) (Figure 4). These values were averaged using 4 observations during August to October of 2010 and 2011. Relatively high values (for both unit density and biovolume) were observed at station B8300000 (Cape Fear River at Lock & Dam 3) and CPFBD (Cape Fear River at Buckhorn Dam). For seasonal variations, relatively higher algal unit densities and biovolumes were observed during June to October (Figure 5).

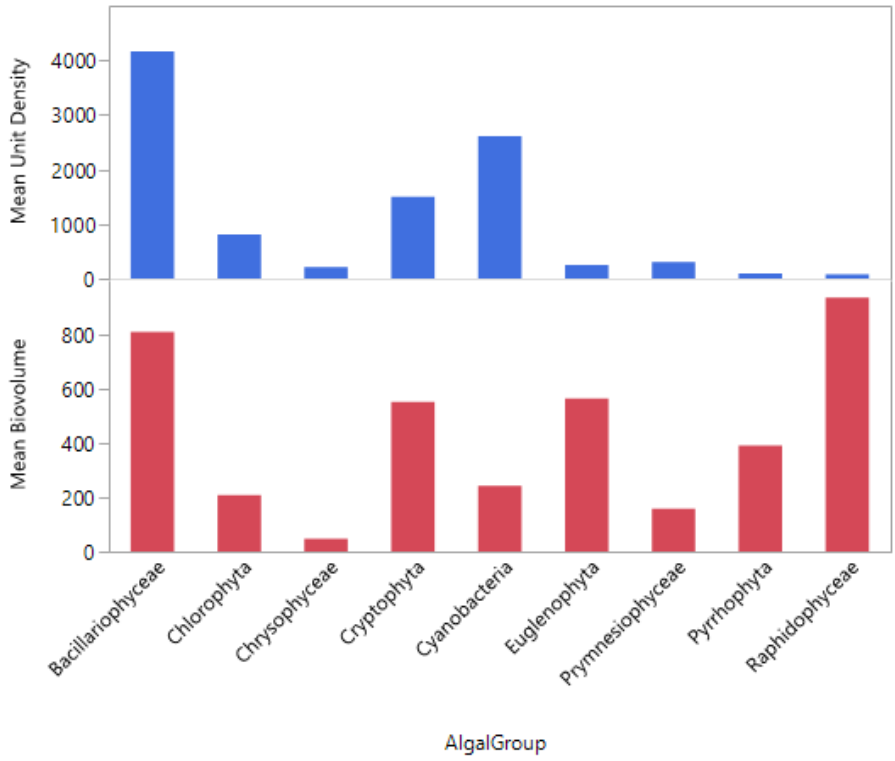


Figure 3. The mean unit densities (unit/ml) and biovolumes (mm^3/m^3) for different algal groups observed at all the stations within the modeling domain of the upper and middle Cape Fear River.

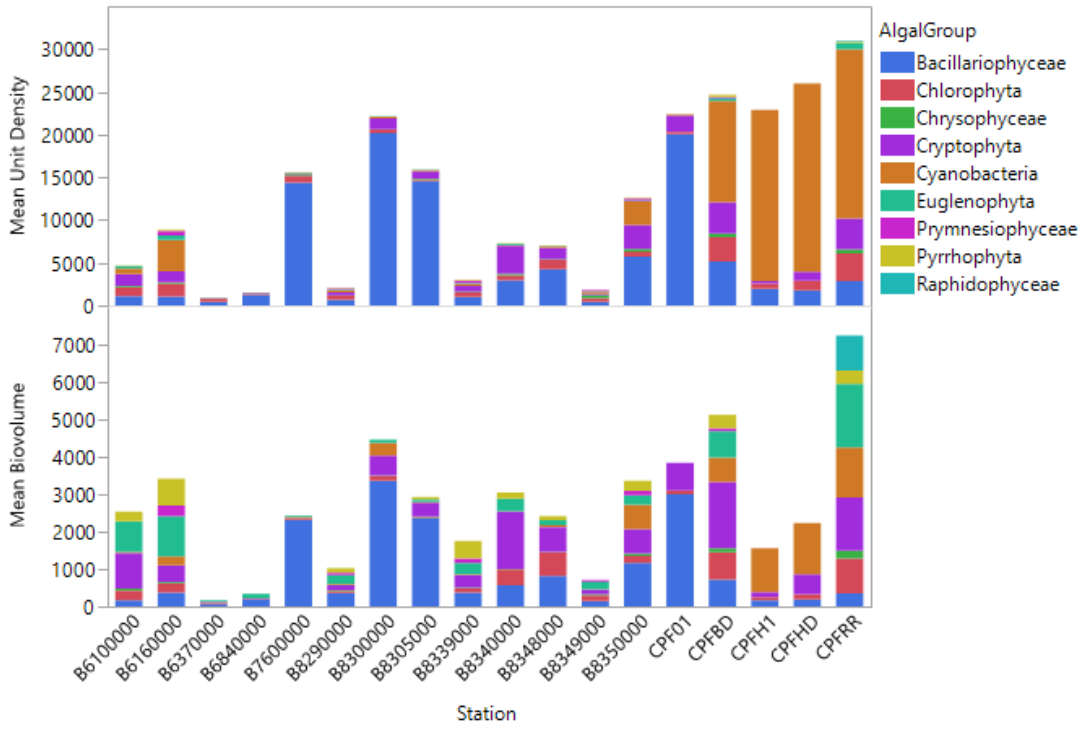


Figure 4. The mean unit densities (unit/ml) and biovolumes (mm^3/m^3) for different algal groups observed at each station within the modeling domain of the upper and middle Cape Fear River.

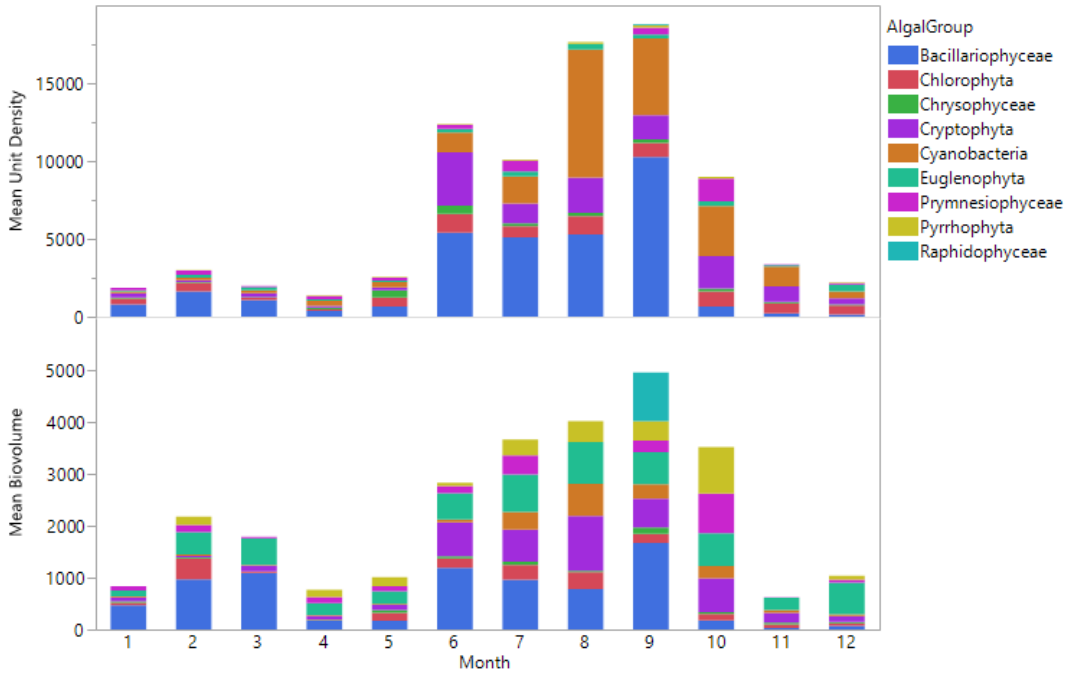


Figure 5. The monthly distribution of the mean unit densities (unit/ml) and biovolumes (mm^3/m^3) for different algal groups observed at all the stations within the modeling domain of the upper and middle Cape Fear River.

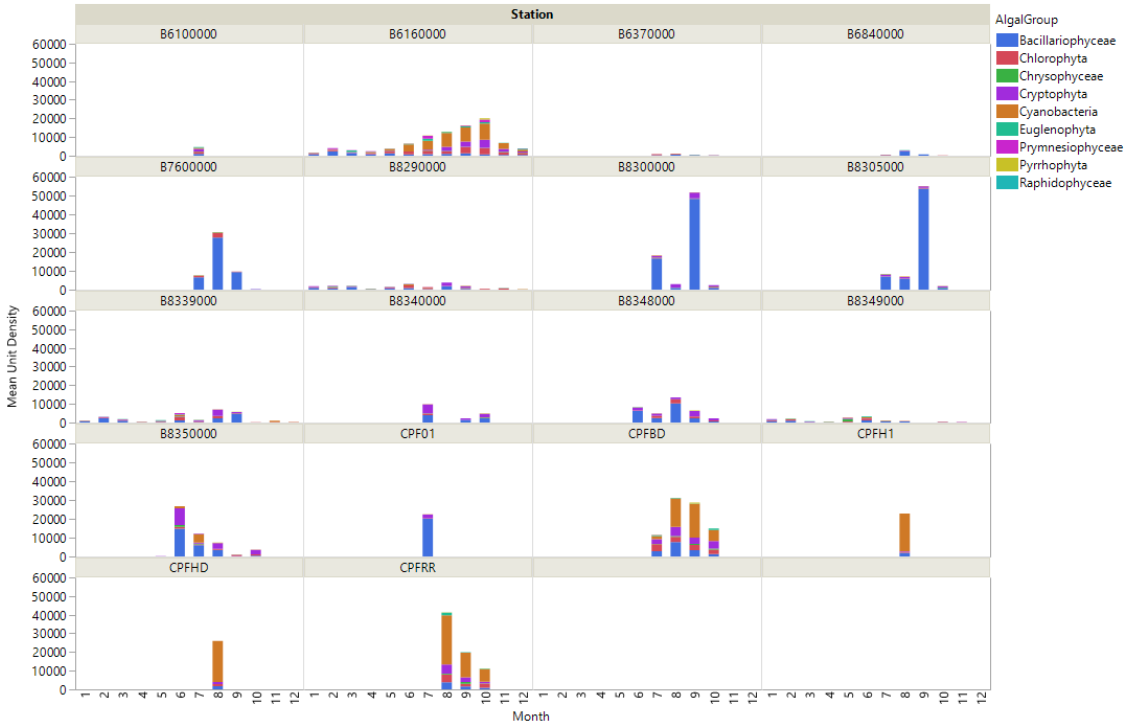


Figure 6. The monthly distribution of the mean unit densities (unit/ml, upper panel) and biovolumes (mm^3/m^3, lower panel) for different algal groups observed at each station within the modeling domain of the upper and middle Cape Fear River.

Algal group frequency

A total of 221 algal samples were collected during 2010-2020 within the modeling domain of the Upper and Middle Cape River. Among them, diatoms were identified in 210 samples and Chlorophyta, commonly called green algae in 207 samples. Bluegreen and Cryptomonads were also identified in most of the samples collected in the region (Figure 7).

Mosaic plots were also used here to examine how often a single algal group was observed within Cape Fear River. The mosaic plot is a graphical representation of the two-way frequency table. A mosaic plot is divided into rectangles, so that the vertical length of each rectangle is proportional to the proportions of the Y variable in each level of the X variable; The proportions on the x-axis represent the number of observations for each level of the X variable.

Figure 8 shows the frequency of the observed algal groups at different monitoring stations. Diatoms, Green algae, Cryptomonads, Bluegreens and Euglenoids were often observed at all the monitoring stations in the upper and middle Cape Fear River. Monthly distributions of the frequency of the observed algal groups (Figure 9) suggests that the above-mentioned algal groups were observed throughout the year.

Algal group frequency was further examined using the sub dataset when algal blooms were identified (Figure 10 and 11). Algal blooms occurred most often during July and August. Diatoms, Green algae, Cryptomonads, Bluegreens and Euglenoids were all observed during some algal bloom events.

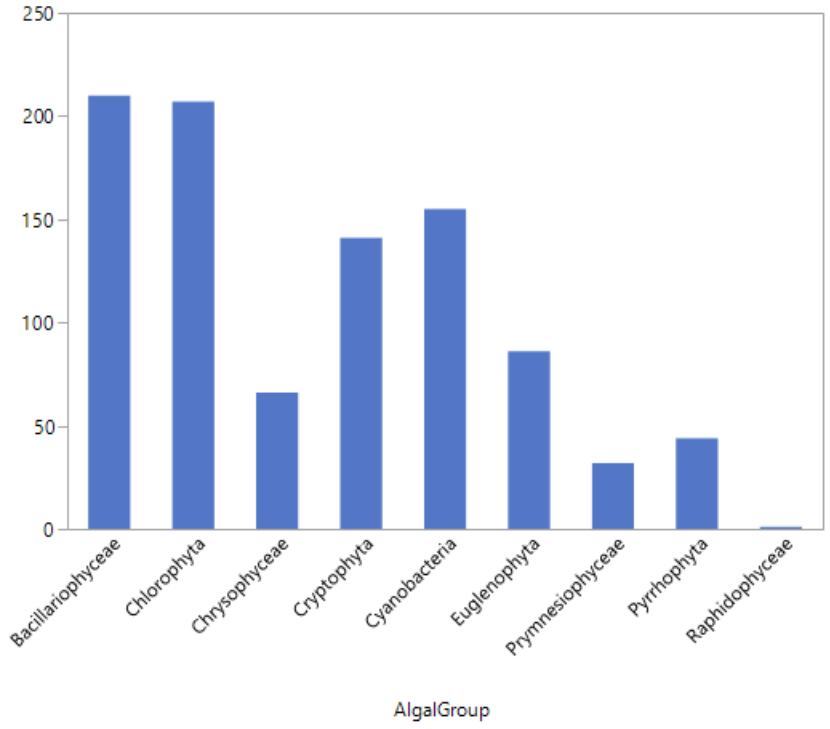


Figure 7. Number of observations algal groups were identified (out of total 221 samples).

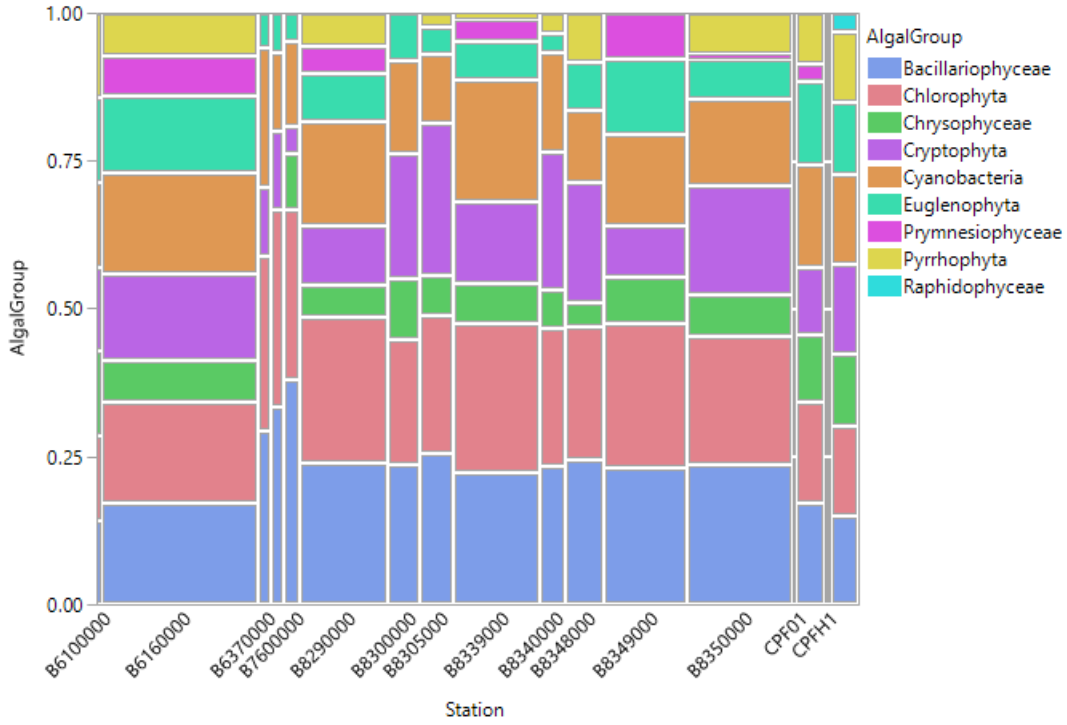


Figure 8. Mosaic plot of frequency distributions of algal groups at different monitoring stations in Upper and Middle Cape Fear River.

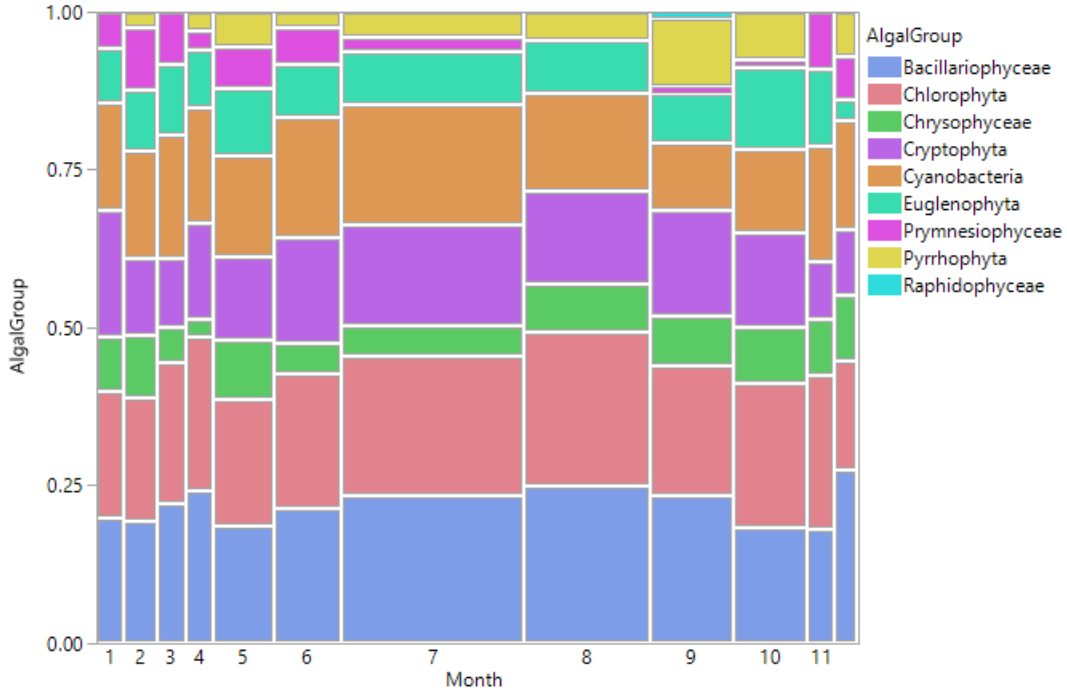


Figure 9. Mosaic plot of frequency distributions of algal groups in different months in Upper and Middle Cape Fear River.

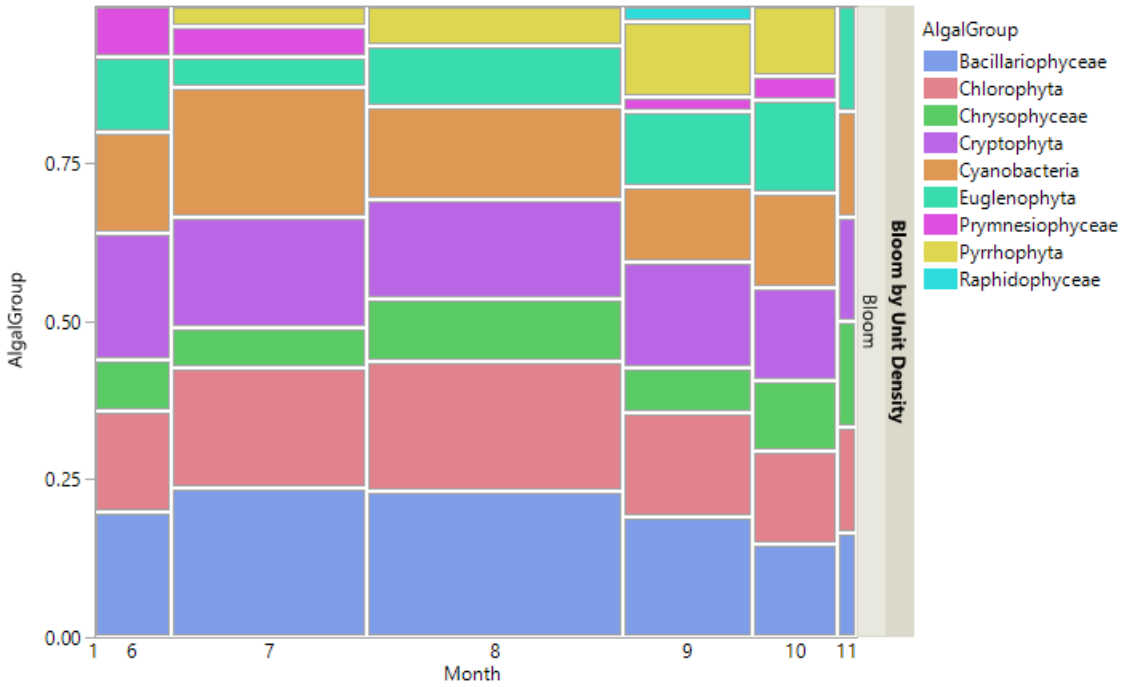


Figure 10. Mosaic plot of frequency distributions of algal groups in different months when algal blooms (according to bloom criteria using algal unit density) occurred in the Upper and Middle Cape Fear River.

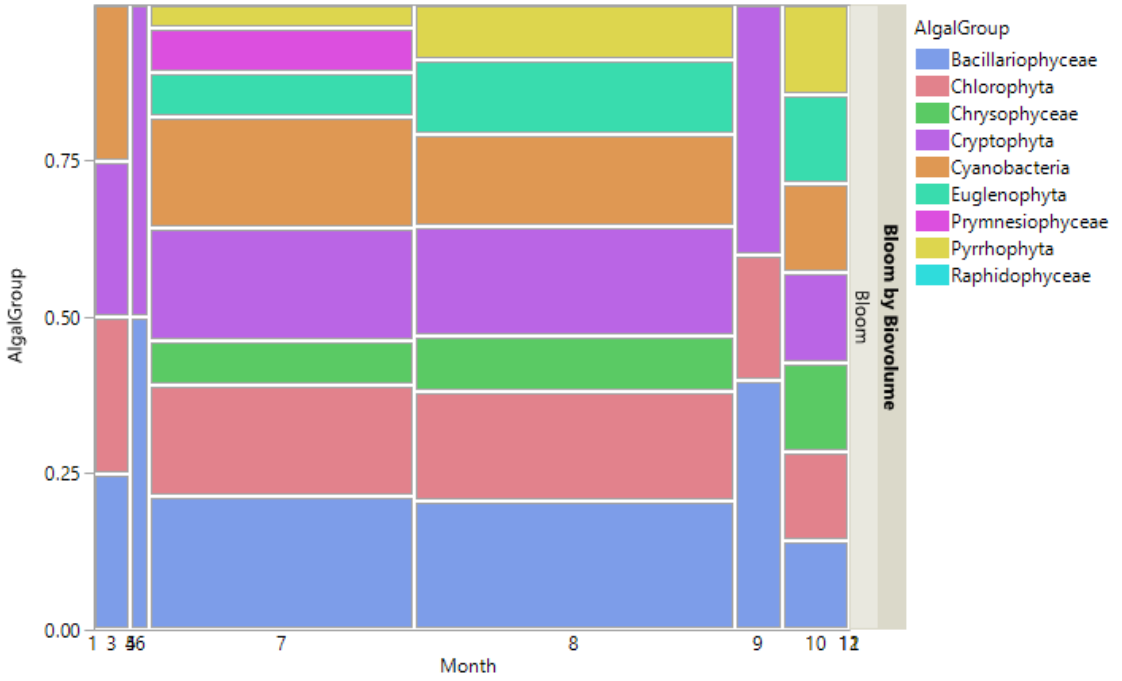


Figure 11. Mosaic plot of frequency distributions of algal groups in different months when algal bloom (according to bloom criteria using algal biovolume) occurred in the Upper and Middle Cape Fear River.

Algal group dominance frequency

A dominant algal group is defined here as the algal group whose unit density or biovolume is at or greater than 40% of the total algal unit density or biovolume of the water sample. The majority (84%-90%) of samples collected during 2010-2020 in Upper and Middle Cape Fear River had at least one dominant algal group (Table 1). Diatoms is the algal group which dominated the assemblage most often, followed by Greens and Bluegreens (Figure 12).

Algal group dominance was further examined using the sub dataset when algal blooms were identified. Algal blooms are defined here as when algal unit density was at or above 10,000 units/ml and/or algal biovolume was at or above 5,000 mm^3/m^3 (https://lnba.net/sites/default/files/North%20Carolina%20Algal%20Assessment%20Program_LNBA%20workshop.pdf). When algal blooms occurred, for the majority of observations, algal assemblages were dominated by a single algal group (Table 2). Using algal dominance criteria by unit density, when algal blooms occurred, algal assemblages were dominated most often by either Diatom or Bluegreens. Using algal dominance criteria by biovolume, when algal blooms occurred, algal assemblages were dominated most often by either diatom or cryptomonads (Figure 13).

Table 1. Frequency of algal groups which dominated the assemblage.

Dominant Algal Group	Frequency by Unit Density		Frequency by biovolume	
	%	Count	%	Count
No Dominant	10.4%	23	16.3%	36
Dominated by a single algal group	85.1%	188	75.1%	166
Dominated by 2 algal groups	4.5%	10	8.6%	19

Table 2. Frequency of algal groups which dominated the assemblage when algal blooms occurred.

Dominant Algal Group	Frequency by Unit Density		Frequency by biovolume	
	%	Count	%	Count
No Dominant	5.8%	3	22.2%	4
Dominated by a single algal group	94.2%	49	77.8%	14
Dominated by 2 algal groups	NA	NA	NA	NA

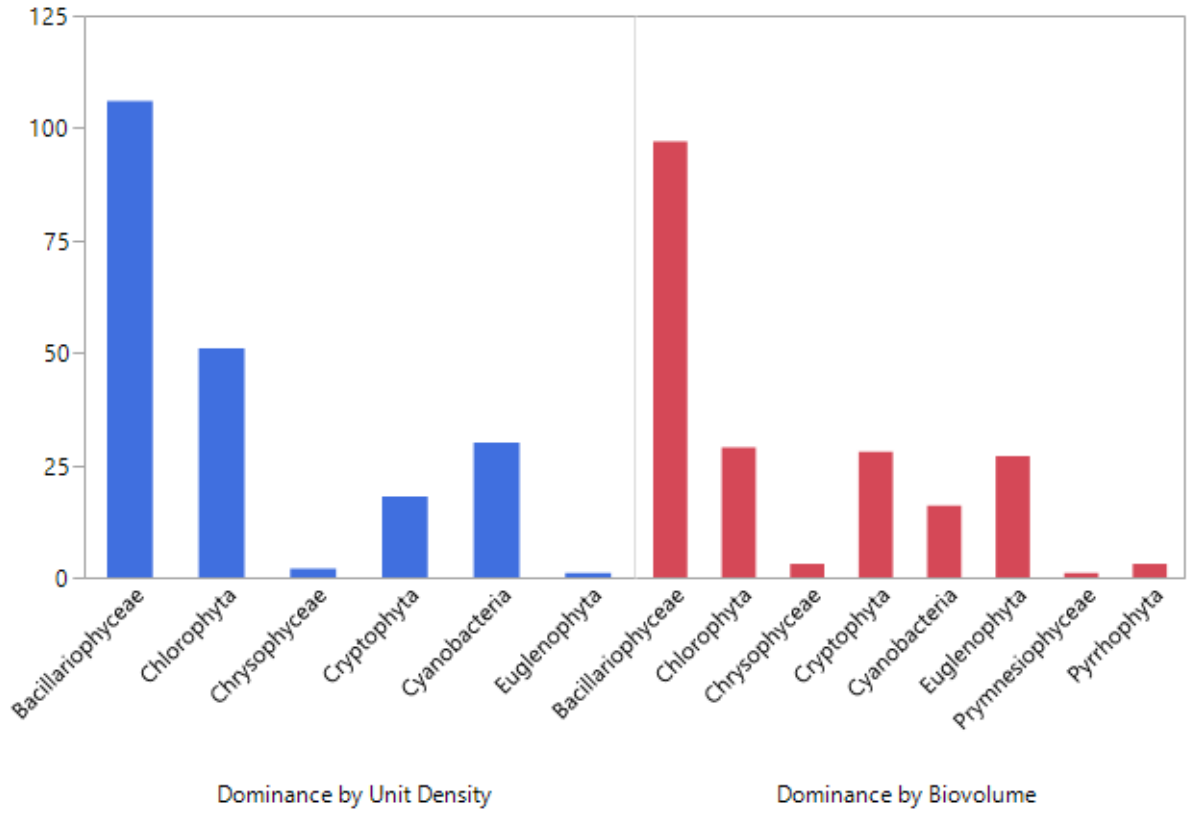


Figure 12. Counts of dominant algal groups observed during 2010-2020 in Upper and Middle Cape Fear River.

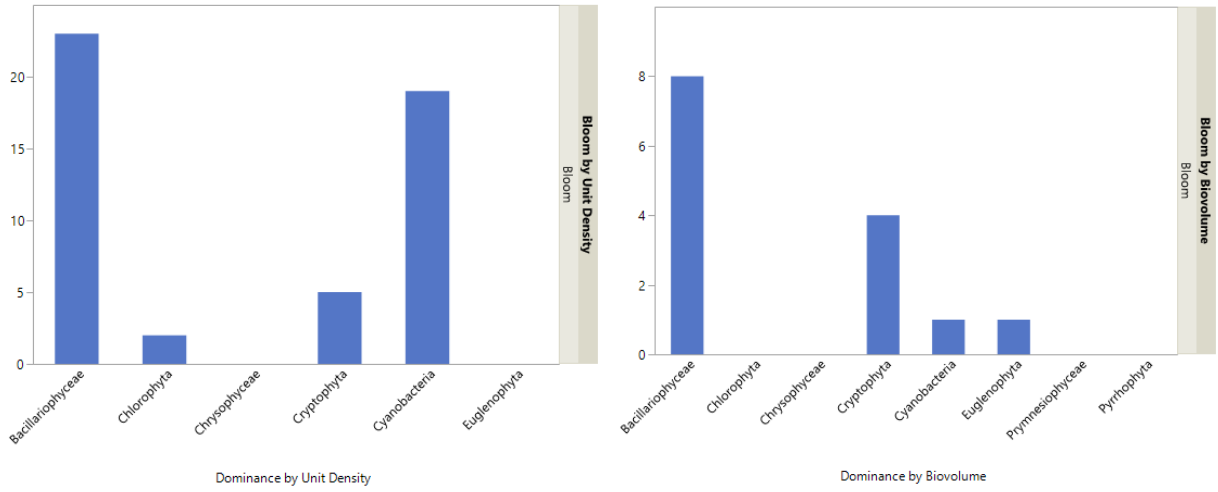


Figure 13. Counts of dominant algal groups observed during algal bloom events of 2010-2020 in Upper and Middle Cape Fear River.

Algae and Chlorophyll-*a*

In general, both algal unit density and biovolume tend to be higher when chlorophyll-a concentrations are higher. However, the relationship is not strictly linear. A linear regression between chlorophyll-a and algal unit density has a R-square of 0.245 (0.421 between chlorophyll-a and biovolume) (Figure 14).

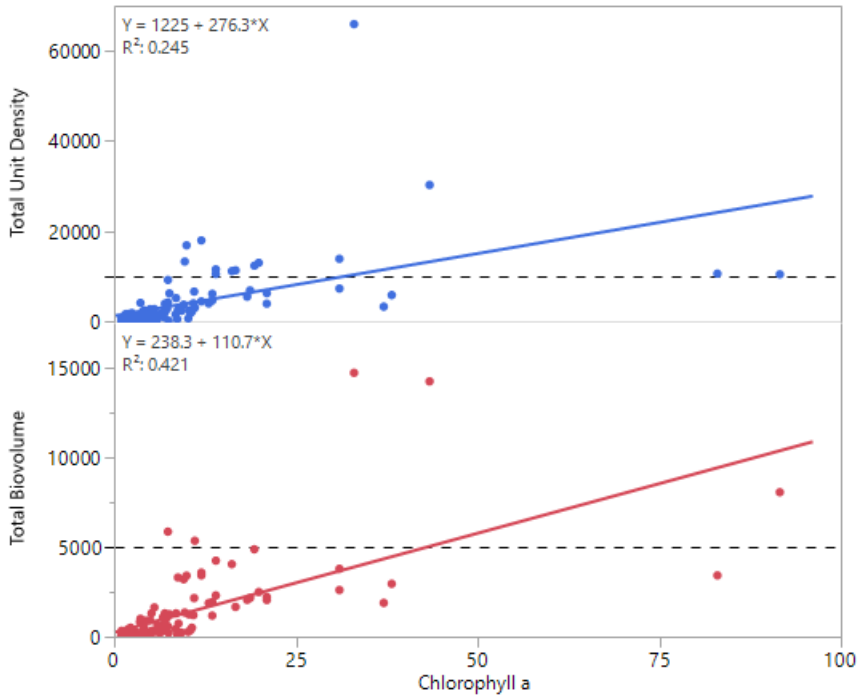


Figure 14. Relationship between chlorophyll-a (µg/L) and algal unit density (units/ml, upper panel) and between chlorophyll-a and algal biovolume (mm^3/m^3, lower panel)

Algae and Water Temperature

In general, as water temperature increases, algal unit density and biovolume appeared to increase as well. This trend showed up in all the algal groups frequently observed in Upper and Middle Cape Fear River (Figure 15).

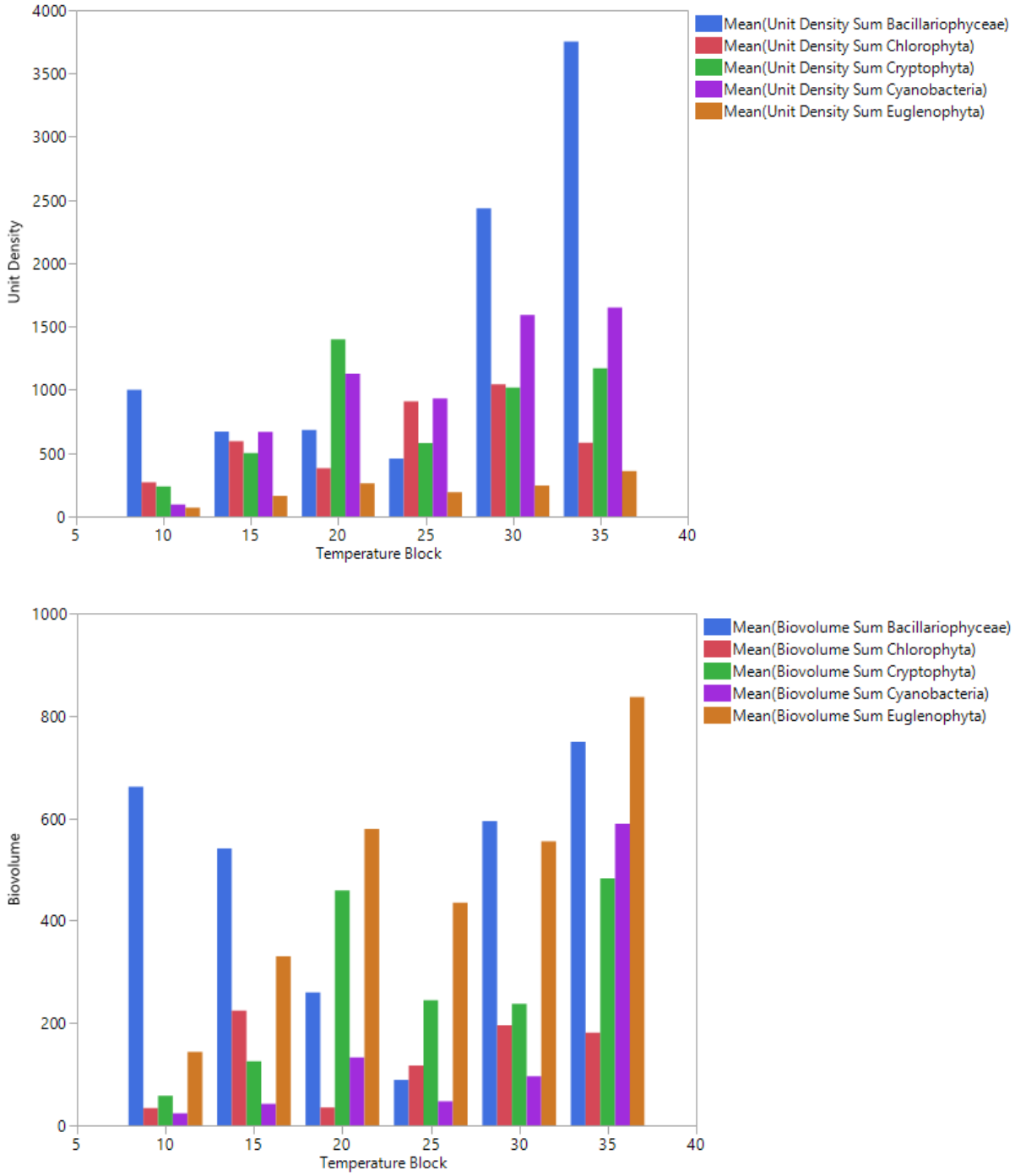


Figure 15. Average algal unit density (units/ml, upper panel) and between chlorophyll-a and biovolume (mm^3/m^3, lower panel) for different algal groups at different water temperature intervals (<= x deg C).

Summary

During the modeling period of 2010-2020 in the Upper and Middle Cape Fear River, relatively high mean algal unit density and biovolume were observed at station CPFRR (Cape Fear River above RR bridge near Brickhaven), B8300000 (Cape Fear River at Lock & Dam 3) and CPFBD (Cape Fear River at Buckhorn Dam). Diatoms have the highest average unit density, followed by Bluegreens.

Diatoms, Greens, Bluegreens, Cryptomonads and Euglenoids were often observed at all the monitoring stations in the upper and middle Cape Fear River and throughout the year. These are also the algal groups often observed during algal blooms.

Around 84% (according to criteria by algal biovolume) to 90% (according to criteria by algal unit density) of the observations, the algal assemblage was dominated by one or two algal groups. During algal blooms, the algal assemblage was dominated by a single algal group most of the time. Diatoms are the most frequently observed algal group that dominates the algal assemblage. During algal blooms, using algal dominance criteria by unit density, algal assemblage was dominated most often by either diatoms or cyanobacteria.

Diatoms, Bluegreens, Cryptomonads and Euglenoids appear to be the most commonly observed phytoplankton groups in the upper and middle Cape Fear River, especially when algal blooms occurred. Diatoms, Greens and Euglenoids could have relatively high values of unit density or biovolume from early spring to autumn when water temperature around or above 10 deg C, while Bluegreens and Cryptomonads tend to grow more rapidly during summer when water temperature are higher (Figure 5 and 15).

Model Recommendation

Multiple algal groups were observed in Cape Fear River throughout the year. Some algal groups, such as Diatoms and Greens appear to have relatively high abundance all year round. By contrast, some algal groups such as the Bluegreens tends to grow more rapidly during warm seasons. In addition, Diatoms appear to be the most frequently observed algal group with relatively high algal abundance. Bluegreens also tend to dominate during algal blooms. Two modeling approaches are recommended from this analysis as appropriate to represent algal simulation in upper and middle Cape Fear River. These two approaches have their own strengths and weaknesses. The final choice could depend on the complexity level of model parameterization.

1. Model simulation for 2 algal groups: one represents warm water algal groups and one represents cold water algal groups.
2. Model simulation for 3 algal groups: one represents Diatoms, one represents Bluegreens and the third one represents all the rest algal groups frequently observed in Cape Fear River.

Cape Fear Bloom Summary 2009-2011

DWQ - Environmental Science Section

Cape Fear River Bloom Review: February 15, 2012

DWQ – Environmental Science Section

Microcystis surface blooms have been occurring in the Cape Fear River for the past three years. The blooms have been concentrated around the Lock and Dam structures and down toward Acme.

2009.

- Excessive blooms first verified September 24th and lasted until the end of October
    - (approx. 1 month).
- Taste and odors in Brunswick Co. drinking water (intakes above LD1) began occurring around June 5th but DWQ was not aware or involved in any sampling
    - Brunswick Co. contracted with UNCW to investigate.
- WiRO reported elevated productivity (i.e. DO pH) at LD1 in August but no Microcystis was present.
- The blooms in September and October were sporadic occurring in various stretches of the river from around the Lock and Dam structures down toward Acme (aka Reiglewood).
- On October 21st, WiRO reported a 15 mile bloom from LD1 down to Rieglewood.
- Microcystis was still present in waters below LD1 (not blooming) in November.

2010

- The blooms were reported between LD2 and LD1 by the MCFRBA on July 12th.
- WiRO and UNCW monitored the blooms which concentrated around LD1 and below, lasting about 1 month.
- The blooms occurred earlier but were milder than those in 2009.
- A Synoptic “entire river” study found non-visual blooms occurring in various segments of the river (i.e above impoundments).
- Microcystis blooms were also reported in the Black River, Livingston Creek and Sutton Lake.

2011

- Extensive surface bloom was reported by Public Water Supply above LD1 on July 7th.
- The bloom was initially shore to shore then dissipating forming swirls and collecting in quiet areas along the shoreline and behind the LD structures. The bloom lasted until August 10th
    - (approx. 5 weeks)
- Coordinate monitoring efforts (ESS, FRO WiRO and UNCW) determined the bloom reached as far up as above LD3 and down to Sutton Lake (over 70 miles).
- Monitoring in 2011 was concentrated from Fayetteville to Wilmington as opposed to a synoptic entire river study.

- WiRO and UNCW had reported elevated algal productivity the first week in June (6/5) which was attributed to blooms of diatoms and greens.
- Microcystis began appearing in samples mid-June but not at bloom densities or collecting on the surface.
- Graduate student (UNC Paerl lab) reported the bluegreen algal toxin Microcystin found in water around LD1.
    - Samples collected on July 9th and reported to DWQ on July 18th.
- DWQ collects samples from multiple station on the river and Public Water Supply arranges for sample to be sent from the Wilmington WTP and DHHS analyzes for microcystins on July20th .
    - Brunswick WTP samples got lost.
- DHHS results found "negligible to none" toxins in 7 of 8 samples, the 8th collected Tar Heel had levels designated as "low risk".
- Various press releases were sent out on potentially harmful algal blooms occurring in the Cape Fear, Lake Tabor and NE Cape Fear.
- Microcystis booms also occurred in the Black River, NE Cape Fear and Lake Tabor.

Cape Fear River Algal Blooms Summary 2009

DWQ - Environmental Science Section March 25, 2010

The following is a timeline of bloom events and reporting as submitted to and by the Environmental Science Section. It does not include reports, sampling and/or information involving other agencies.

- 6/5/09. Algal bloom reported at L&D1.
- 6/6/09 ESS (Mark Vander Borgh and Sam Whitaker) conduct site visits at L&D2 and L&D3 reporting only filamentous greens at L&D2. DO and pH normal.
- 8/17/09. WiRO (S Petter Garret) records >9mg DO at L&D1. Phytoplankton samples collected and sent to ESS. ESS (Elizabeth Fensin) reports low concentrations of algae in sample, no *Microcystis* present (algal samples, DO & pH)
- 9/22/09. L&D1 lockmaster (Robin Hall) reports extensive algal bloom in upper pool extending to Elwell Ferry and flowing downstream (photos)
- 9/24/09. ESS (Mark Vander Borgh) document blooms at L&D1. Algae present but not extensive at Elwell Ferry, large accumulation of *Microcystis* in upper pool, swirls and drift lines observed at NC 11 bridge and as far down as can be seen (end of run). DO and pH normal (photos, algal samples, DO & pH)

Cape Fear River @ Elwell Ferry 9/24/09 (photo by ESS)

Cape Fear River @ Elwell Ferry 9/24/09 (photo by ESS)

Cape Fear River behind Locke 1 at canoe launch 9/24/09 (photo by ESS)

Cape Fear River @ NC11, photo taken from the bridge 9/24/09. (photo by ESS)

- 9/25/09. L&D1 lockmaster reports things better at L&D1.
- 10/1/09 FRO (Paul Rawls) conducts follow-up to L&D1 and Elwell Ferry. Samples collected and sent to ESS. Analyses find *Microcystis* present at L&D1 (but not collecting at surface). No *Microcystis* at Elwell ferry.
- 10/8/09. FRO ambient run at L&D3. Some algae present but not extensive or appearing problematic, no samples taken.
- 10/9/09. FRO receives report on algal blooms at L&D3 (Lockmaster) and 701 bridge at E-town (FRO Staff)
- 10/9/09. Flow increased from Jordan lake.
- 10/11/09. FRO (Paul Rawls) reports algae present above L&D3, not observed at Tarheel or E-town. Samples sent to ESS confirms *Microcystis* still present at L&D3. (samples)
- 10/13/09. FRO reports no observable algae blooms at L&D3, Tarheel or E-town.
- 10/15/09. L&D3 lockmaster reports bloom at L&D3.
- 10/21/09. WiRO (S Petter Garret) reports bloom for about 15 miles from L&D1 down to Livingston Creek at Riegelwood, samples collected and sent to ESS (Elizabeth Fensin). *Microcystis* present in samples. (photos, algal samples, DO & pH)

Cape Fear River at Riegelwood intake

- 10/22/09. Lockmaster (Robin Hall) reports bloom at L&D2, has reports from boatman that it starts between E-town and L&D1 (photos). Lockmaster at L&D3 reports bloom in upper pool.
- 10/23/09. WiRO (Tom Tharrington) reports bloom at L&D1 all the way down to Livingston Creek (end of run). DO and pH normal. (photos, DO & pH)

Cape Fear River behind Lock and Dam # 1

Cape Fear River downstream of Lock & Dam # 1

Cape Fear River shoreline downstream Lock and Dam # 1.

- 10/26/09. FRO (Paul Rawls) conducts site visit to Buckhorn Dam, Lillington WTP, Person St. boat ramp and L&D3. Phytoplankton samples to ESS. No visible algae reported. DO, Temp and Conductivity recorded, all normal. Lillington WTP staff indicate one episode in September where they added carbon.
- 10/27/09 Lockmaster (Robin Hall) reports algal blooms still present at L&D1 and up to Elwell Ferry
- 10/29/09 ESS (Mark Vander Borgh) analyzed samples collected by FRO on 10/26/09. *Microcystis* still present at above L&D3, not present at Buckhorn, Lillington WTP or at the Person St. ramp.
- 11/4/09 ESS (Jennie Atkins) conducted field visits with UNCW monitors. Noted algae at four monitoring stations (B8360000 @ NC11, B8450000 @Neils Eddy landing, B84650000 nr Black River, B9030000 @ Indian Creek). Algal sample collected at B903000 was identified as *Microcystis*

Cape Fear River @ Neils Eddy Landing 11/4/09 (photo by ESS)

Contaminants of Emerging Concern

Table 7: Cape Fear River Basin Water Systems Required to do UCMR 5 Monitoring (May 8, 2023)

PWS ID	Water System Name	Water System Type	County	Size and Source	Schedule Year
NC0309055	BLADEN CO WTR DIST-WEST BLADEN	Community	Bladen	Large Groundwater	2023
NC0326127	BROOKWOOD COMM WTR SYSTEM	Community	Cumberland	Large Groundwater	2024
NC0326332	CLIFFDALE WEST	Community	Cumberland	Large Groundwater	2025
NC0347025	HOKE CO REGIONAL WATER SYSTEM	Community	Hoke	Large Groundwater	2024
NC0382010	CLINTON - CITY OF	Community	Sampson	Large Groundwater	2024
NC0431085	DUPLIN COUNTY WATER SYSTEM	Community	Duplin	Large Groundwater	2024
NC0465015	CAROLINA BEACH WATER SYSTEM	Community	New Hanover	Large Groundwater	2024
NC0465199	THE CAPE MASTER SYSTEM	Community	New Hanover	Large Groundwater	2024
NC0465232	CFPUA/NHC	Community	New Hanover	Large Groundwater	2025
NC0201010	BURLINGTON - CITY OF	Community	Alamance	Large Surface Water	2024
NC0201015	GRAHAM - CITY OF	Community	Alamance	Large Surface Water	2023
NC0201018	MEBANE - CITY OF	Community	Alamance	Large Surface Water	2024
NC0201025	ELON - TOWN OF	Community	Alamance	Large Surface Water	2024
NC0241010	GREENSBORO - CITY OF	Community	Guilford	Large Surface Water	2023
NC0241020	HIGH POINT - CITY OF	Community	Guilford	Large Surface Water	2024
NC0276010	ASHEBORO - CITY OF	Community	Randolph	Large Surface Water	2024
NC0276030	ARCHDALE - CITY OF	Community	Randolph	Large Surface Water	2023
NC0279020	REIDSVILLE - CITY OF	Community	Rockingham	Large Surface Water	2025
NC0319126	CHATHAM CO-NORTH	Community	Chatham	Large Surface Water	2025
NC0326010	FAYETTEVILLE PUBLIC WORKS COMM	Community	Cumberland	Large Surface Water	2023

PWS ID	Water System Name	Water System Type	County	Size and Source	Schedule Year
NC0326020	SPRING LAKE - TOWN OF	Community	Cumberland	Large Surface Water	2024
NC0332010	DURHAM - CITY OF	Community	Durham	Large Surface Water	2024
NC0343010	DUNN - CITY OF	Community	Harnett	Large Surface Water	2023
NC0343045	HARNETT REGIONAL WATER	Community	Harnett	Large Surface Water	2024
NC0353010	SANFORD - CITY OF	Community	Lee	Large Surface Water	2023
NC0363010	SOUTHERN PINES - TOWN OF	Community	Moore	Large Surface Water	2024
NC0368010	ORANGE WATER & SEWER AUTHORITY	Community	Orange	Large Surface Water	2025
NC0392045	APEX - TOWN OF	Community	Wake	Large Surface Water	2023
NC0392050	HOLLY SPRINGS - TOWN OF	Community	Wake	Large Surface Water	2024
NC0410020	OAK ISLAND - TOWN OF	Community	Brunswick	Large Surface Water	2023
NC0410070	BRUNSWICK REGIONAL WATER AND SEWER H2GO	Community	Brunswick	Large Surface Water	2024
NC5026019	OLD NORTH UTILITIES SERVICES/FT BRAGG	Community	Cumberland	Large Surface Water	2025
NC7071011	PENDER COUNTY UTILITIES	Community	Pender	Large Surface Water	2024
NC0309010	ELIZABETHTOWN - TOWN OF	Community	Bladen	Medium Groundwater	2023
NC0309030	WHITE LAKE - TOWN OF	Community	Bladen	Medium Groundwater	2023
NC0309060	BLADEN CO WTR DIST-EAST BLADEN	Community	Bladen	Medium Groundwater	2023
NC0347010	RAEFORD - CITY OF	Community	Hoke	Medium Groundwater	2023
NC0382070	SAMPSON CO WTR DIST II	Community	Sampson	Medium Groundwater	2025
NC0431010	WALLACE - TOWN OF	Community	Duplin	Medium Groundwater	2025
NC0431050	CHINQUAPIN WATER ASSOCIATION	Community	Duplin	Medium Groundwater	2024
NC0465025	KURE BEACH WATER SYSTEM	Community	New Hanover	Medium Groundwater	2025
NC0465137	CFPUA/MONTEREY HEIGHTS	Community	New Hanover	Medium Groundwater	2024

PWS ID	Water System Name	Water System Type	County	Size and Source	Schedule Year
NC0471010	BURGAW - TOWN OF	Community	Pender	Medium Groundwater	2023
NC0496015	MOUNT OLIVE - TOWN OF	Community	Wayne	Medium Groundwater	2023
NC0241025	GIBSONVILLE - TOWN OF	Community	Guilford	Medium Surface Water	2024
NC0241030	JAMESTOWN - TOWN OF	Community	Guilford	Medium Surface Water	2023
NC0276015	RANDLEMAN - CITY OF	Community	Randolph	Medium Surface Water	2025
NC0319010	SILER CITY - TOWN OF	Community	Chatham	Medium Surface Water	2025
NC0319015	PITTSBORO - TOWN OF	Community	Chatham	Medium Surface Water	2024
NC0343015	ANGIER - TOWN OF	Community	Harnett	Medium Surface Water	2024
NC0343025	LILLINGTON WATER SYSTEM	Community	Harnett	Medium Surface Water	2023
NC0347030	HOKE CO REGIONAL--ROCKFISH	Community	Hoke	Medium Surface Water	2024
NC0353101	CAROLINA TRACE WATER SYSTEM	Community	Lee	Medium Surface Water	2025
NC0363025	CARTHAGE - TOWN OF	Community	Moore	Medium Surface Water	2025
NC0363112	WHISPERING PINES DEVELOPMENT	Community	Moore	Medium Surface Water	2025
NC0368020	ORANGE-ALAMANCE WATER SYSTEM	Community	Orange	Medium Surface Water	2025
NC0410010	SOUTHPORT CITY OF	Community	Brunswick	Medium Surface Water	2024
NC5026027	EASTOVER SANITARY DISTRICT	Community	Cumberland	Medium Surface Water	2025
NC5043001	BRAGG COMMUNITIES/NTA	Community	Harnett	Medium Surface Water	2023
NC5063011	EAST MOORE WATER DISTRICT	Community	Moore	Medium Surface Water	2024
NC0431040	FAISON - TOWN OF	Community	Duplin	Small Groundwater	2024
NC3041076	SOUTHERN MIDDLE SCHOOL	Non-Transient Non-Community	Guilford	Small Groundwater	2023
NC0241035	STOKESDALE - TOWN OF	Community	Guilford	Small Surface Water	2024
NC0353127	FARM WATER WORKS	Community	Lee	Very Small Groundwater	2023

PWS ID	Water System Name	Water System Type	County	Size and Source	Schedule Year
NC3001006	COPPER TRACE S/D	Community	Alamance	Very Small Groundwater	2025
NC0241647	CHILDRENS CHOICE CHILDCARE	Non-Transient Non-Community	Guilford	Very Small Groundwater	2024

Table 8: Cape Fear River Basin ambient stations monitored for 1,4-Dioxane between 2017-2024.

Waterbody (Subbasin)	Assessment Unit Number (AU#)	AU Description	AU Stream Miles	Classification	Sampling Station Number
Haw River (Haw River)	16-(6.5)	From a point 0.9 miles downstream of Troublesome Creek to a point 0.5 miles downstream of SR2711 (Troxler Mill Rd.)	9.4	WS-IV NSW	B4
	16-(10.5)a	From a point 0.1 mile upstream of SR2712 to NC 87	4.2	WS-V NSW	B1
	16-(10.5)b	From NC 87 to Reedy Fork	1.3	WS-V NSW	B0210000
	16-(10.5)e	From NC 49 to a point 0.4 miles downstream of Cane Creek (at Saxapahaw)	18.5	WS-V NSW	B1980000
Reedy Fork (Haw River)	16-11-(9)a3	From UT at SR 2778 to Buffalo Creek (Upstream of Buffalo Creek confluence)	3.0	WS-V NSW	B0400000
	16-11-(9)b	From Buffalo Creek to Haw River	8.6	WS-V NSW	B6
					B0840000
North Buffalo Creek (Haw River)	16-11-14-1b	From North Buffalo Creek WWTP to Buffalo Creek	8.1	WS-V NSW	B0540000
South Buffalo Creek (Haw River)	16-11-14-2a	From source to McConnell Road	15.4	WS-V NSW	B055000
	16-11-14-2b	From McConnell Rd to US 70	4.7	WS-V NSW	B0690000
	16-11-14-2c	From US 70 to Buffalo Creek	4.8	WS-V NSW	B0750000
Haw River (Haw River)	16-(28.875)	From the Town of Pittsboro water supply intake to a point 0.4 mile downstream of Brooks Branch.	0.5	WS-IV NSW	B2100000
New Hope Creek (Haw River)	16-41-1-(11.5)c	From I-40 to a point 0.8 mile downstream of Durham County SR 1107	4	WS-IV NSW	B3039000
					B3040000
Third Fork Creek (Haw River)	16-41-1-12-(2)	From a point 2.0 miles upstream of NC HWY. 54 to New Hope Creek	3.9	WS-IV NSW	B3025000
Northeast Creek (Haw River)	16-41-1-17-(0.7)b1	From Durham Triangle WWTP to Kit Creek	3.3	WS-IV NSW	B3660000
Morgan Creek (Haw River)	16-41-2-(5.5)b	From Meeting of the Waters to Chatham County SR 1726 (Durham County SR 1109)	4.1	WS-IV NSW	B3900000
Phils Creek (Haw River)	16-41-2-2-(0.3)	From source to a point 0.2 mile downstream of Orange County SR 1005	5	WS-II	B3750000

Waterbody (Subbasin)	Assessment Unit Number (AU#)	AU Description	AU Stream Miles	Classification	Sampling Station Number
				HQW; NSW	
Haw River (Haw River)	16-(42)	From dam at B. Everett Jordan Lake to Cape Fear River (junction with Deep River)	4.3	WS-IV NSW	B4050000
Reddicks Creek (Deep River)	17-8-(0.5)a	From source to Groomtown Road	5.1	WS-IV; *	B4550000
Deep River (Deep River)	17-(10.5)b	From US 220 business to Subbasin 03-06-08 and 03-06-09 boundary (Downstream of Randleman Res.)	2.2	C	B4800000
	17-(10.5)d2	From Gabriels Creek to Brush Creek (at Hinshaw Town Rd.)	18.2	C	B5100000
	17-(10.5)e2	From Subbasin 03-06-09 and 03-06-10 boundary to Grassy Creek	2.8	C	B5190000
Haskett Creek (Deep River)	**17-12a**	**From source to SR 2149 (Upstream of WWTP discharge)**	**6.3**	**C**	**B2**
	17-12b2	**From Asheboro WWTP Outfall to Deep River**	**0.7**	**C**	**B4890000**
Deep River (Deep River)	17-(32.5)	From mouth of Big Governors Creek to Carbonton Dam	4	WS-IV HQW	B5575000
	17-(43.5)	From a point 0.4 mile upstream of Rocky Branch to Cape Fear River (junction with Haw River)	6	WS-IV	B6040300
Greenbrier Creek (Deep River)	17-43-5	From source to Rocky River	8.1	WS-III	B5500000
Rocky River (Deep River)	17-43-(8)b1	From Varnal Creek to backwater of Woody's Dam	15.1	C	B6000000
Cedar Creek (Upper CFR)	18-11-(2)	From a point 0.4 miles downstream of Harnett County SR 1265 to Cape Fear River (RAMS)	3.6	WS-IV	B6225000
Cape Fear River (Upper Cape Fear River)	18-(16.3)	From a point 0.2 mile downstream of Neills Creek to Lillington water supply (Harnett Co. Intake)	0.5	WS-IV CA	B8
	18-(16.7)	From Lillington water supply intake to Upper Little River	9.0	WS-IV	B6370000
	18-(25.5)	From a point 0.5 mile upstream of City of Fayetteville water supply intake to City of Fayetteville water supply intake	0.5	WS-IV CA	B7480000
Cape Fear River (Lower Cape Fear River)	18-(26.25)c	From Lock and dam 3 to a point approximately 0.5 mile upstream of Smithfield Packing Company's intake.	4.4	WS-IV	B8300000

Waterbody (Subbasin)	Assessment Unit Number (AU#)	AU Description	AU Stream Miles	Classification	Sampling Station Number
	18-(59)	From US Corps of Engineers Lock #1 near Acme to a pt 0.5 mile upstream of raw WSI at Fed. Paper (Riegelwood)	7.7	WS-IV Sw	B8350000
Piney Branch (Lower CFR)	18-77-3-1	From source to Jackeys Creek	0.9	C; Sw	B9790500
Keith Branch (Black River)	18-68-9	From source to Black River (at Scronce Rd.) (RAMS Station)	4.1	C; Sw	B8753000
Goshen Swamp (Northeast CFR)	18-74-19a	From source to Bear Swamp near Suttontown	16.6	C; Sw	B9000500

Algal Assemblage Assessments in the Cape Fear River in 2010

North Carolina Department of Environmental and Natural Resources

Division of Water Quality

Environmental Sciences Section

December 2011

Citation:

NCDWQ. 2011. Algal Assemblage Assessments in the Cape Fear River in 2010. North Carolina Division of Water Quality. Environmental Science Section, Raleigh, North Carolina; December 2011

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Recommended citation

NCDWQ. 2011. Algal Assemblage Assessments in the Cape Fear River in 2010. North Carolina Division of Water Quality. Environmental Science Section, Raleigh, North Carolina; December 2011.

EXECUTIVE SUMMARY

Algal blooms[1] in the Cape Fear River were characterized for species composition, magnitude (i.e., density) and duration from July to October of 2010. Two stations in the Haw River, two in the Deep River, and 17 stations along the Cape Fear River were sampled; a total of 97 site visits were completed. Algal blooms were documented at multiple locations. The algae that formed the blooms were specific to the locations where they occurred. Blooms of the filamentous bluegreen *Pseudanabaena* occurred above Buckhorn Dam and up in the Haw and Deep Rivers. Blooms of the diatom *Staurosira* occurred from Fayetteville down to Tar Heel. A bloom of *Euglena* and *Chlamydomonas* occurred briefly in the Deep River and a bloom of *Microcystis* occurred in the lower Cape Fear around Lock and Dam 1. Nutrient concentrations, an important requirement for algal growth, were highest in the upper Deep River station and around Tar Heel. Chlorophyll-*a* levels exceeded the Division of Water Quality state standard of 40 µg/L thirty three percent of the time (n=15) in the Cape Fear River above Buckhorn dam.

INTRODUCTION

Sporadic but geographically extensive *Microcystis aeruginosa* surface blooms occurred in the lower Cape Fear River during the summer of 2009. The blooms were first reported in June and began causing taste and odors problems in Brunswick County drinking water later in July 2009 (Ribeiro 2009). *Microcystis aeruginosa* is a planktonic (free floating in the water column) colonial bluegreen alga. It is generally considered one of the more problematic forms of algae because it can create intensive blooms and cause taste and odor problems. Some strains of *Microcystis* may produce toxins. No toxic effects of the algae were reported nor did any fish kills occur during the blooms in 2009.

The *Microcystis* blooms during 2009 were first noticed as flecks (Figure 1A) which began collecting above and around Lock and Dam 1 (LD1). They then formed more intensive surface blooms in August 2009 (Figure 1B). The surface blooms became extensive in September and continued through October 2009, at times covering over 15 miles from LD1 down to Livingston Creek. By the end of the growing season, blooms were reported as far upriver as above Lock and Dam 3 (LD3) and at multiple locations downriver past LD1. These reports of the blooms ranged from flecks in the water, swirls and streaks in the main channel and coves and quiet areas covered in films. The surface blooms eventually subsided in late October 2009 but *Microcystis* was still present in the river around Neils Eddy Landing in November.

[1] Algal blooms can be: 1) subjectively observed as flecks or surface films of algae or 2) quantitatively measured by unit density where a unit can be a filament, colony or a single-celled taxon.

A. *Microcystis* as flecks (green dots) B. *Microcystis* as a surface bloom

Figure 1. Views of *Microcystis* on the Cape Fear River in 2009

As a result of the 2009 algal blooms, a study plan was created to investigate the *Microcystis* surface blooms should they return again in 2010. The blooms did return and this report summarizes the algal assemblages in the Cape Fear River that were present during 2010. Specifically, this report describes the species composition of the algal blooms and the spatial and temporal patterns of the blooms. Environmental conditions (i.e., nutrients, dissolved oxygen, flow conditions) are also described.

METHODS

Study Area

The study was conducted during 2010 at 21 sites along the Cape Fear River (Table 1, Figure 2) from above the confluence of the Haw and Deep Rivers, which is the origin of the Cape Fear River, down to Wilmington. The river flows over 170 miles and meanders through or along the borders of seven counties, eventually emptying into the Atlantic Ocean between Oak and Bald Head Islands. Five sampling events were completed from July through October 2010. A total of 97 station visits were completed by the end of the study.

Table 1. Locations of the study sites

Site[1]	Site Description	Latitude	Longitude
1	Deep River at NC 1	35.6325	-79.0612
2	Deep River above the Haw River	35.6063	-79.0513
3	Haw River at NC 1	35.6188	-79.0935
4	Haw River above the Deep River	35.6020	-79.0615
5	Cape Fear River at railroad bridge	35.5694	-79.0465
6	Cape Fear River at NC 42	35.5496	-79.0253
7	Cape Fear River at Buckhorn Dam (upstream)	35.5419	-78.9957
8	Cape Fear River at NC 401 (Lillington)	35.4075	-78.8145
9	Cape Fear River at NC 217 (Erwin)	35.3126	-78.6924
10	Cape Fear River at NC 24 (Fayetteville)	35.0465	-78.8579
11	Cape Fear River at of Lock & Dam 3 (downstream)	34.8337	-78.8224
12	Cape Fear River at Tar Heel	34.7448	-78.7858
13	Cape Fear River at Lock & Dam 2 (upstream)	34.6274	-78.5793
14	Cape Fear River at Elwell Ferry	34.4790	-78.3701
15	Cape Fear River at Lock & Dam 1 (upstream)	34.4064	-78.2945
16	Cape Fear River at Lock & Dam 1 (downstream)	34.4038	-78.2932
17	Cape Fear River at Neils Eddy Landing	34.3555	-78.1794
18	Cape Fear River at Hale Point Landing	34.3181	-78.0264
19	Cape Fear River at Navassa	34.2612	-77.9891
20	Cape Fear River at Channel Marker 61	34.1943	-77.9568
21	Cape Fear River at Channel Marker 56	34.1475	-77.9526

[1]See Figure 2.

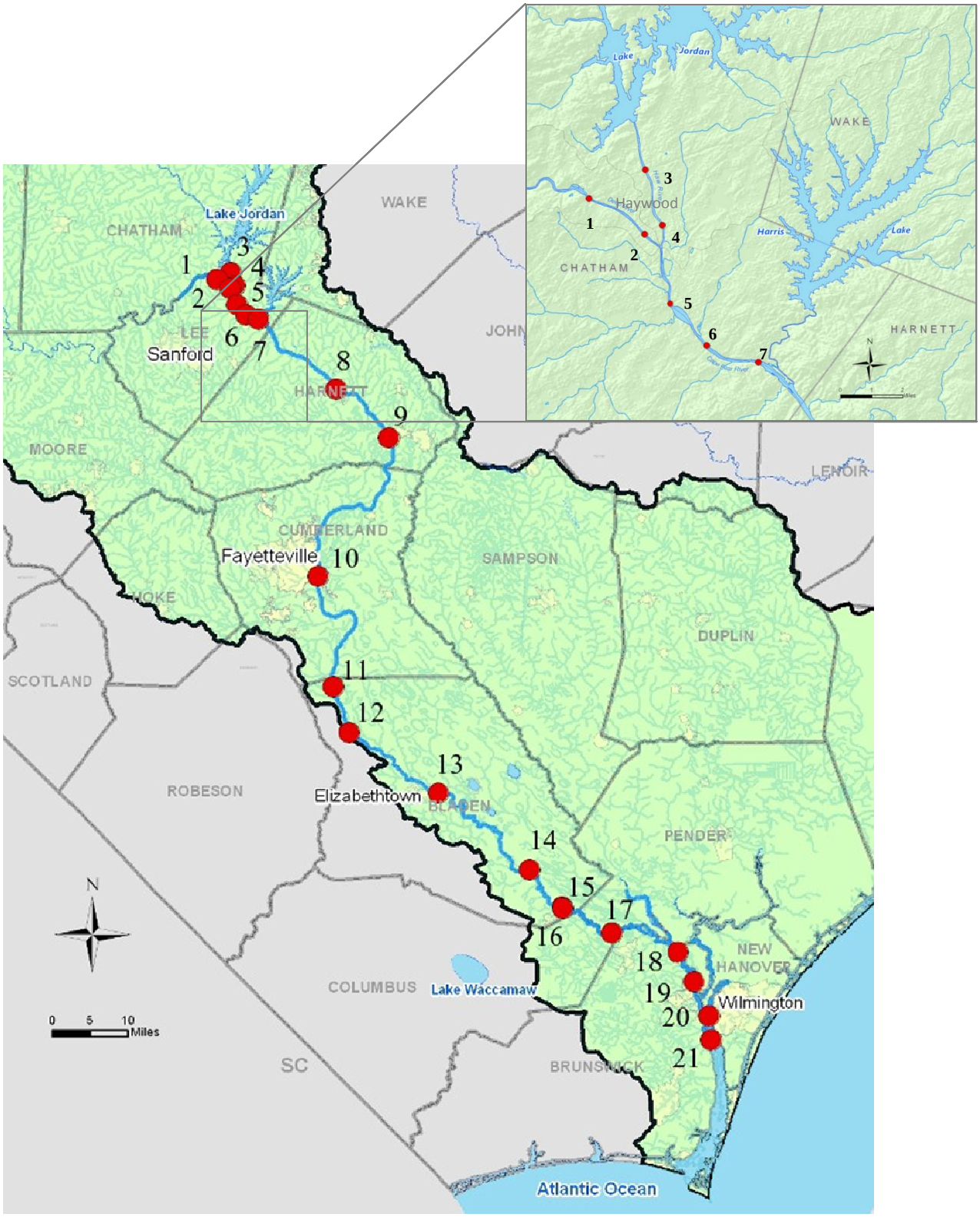

Figure 2. Site locations. (See Table 1 for site descriptions.)

Sampling Protocols

Phytoplankton and chemistry samples were collected from the photic zone following standard operating procedures for chemical and physical monitoring (NCDWQ 2006). The photic zone was defined as twice the Secchi depth. Physical parameters measured included: temperature, dissolved oxygen, pH, conductivity, and Secchi depth. Chemical samples were analyzed for nitrogen as nitrate/nitrite (NOx), ammonia as nitrogen (NH_3), and total Kjeldahl nitrogen as nitrogen (TKN), phosphorus and chlorophyll-a (Chl-*a*). Results for total organic nitrogen (TON) and total inorganic nitrogen (TIN) were calculated as:

$$TON = TKN - NH_3$$
$$TIN = NO_x + NH_3$$

Dissolved oxygen and pH were measured at three different depths (surface, mid-depth and bottom) at all sites when feasible. This was done to determine if there were differences between the surface and bottom measurements which would reflect changes in flow sufficient to allow stratification to occur. Although the sites were along a riverine ecosystem, changes in flow can occur due to dams. Changes in flow from lotic (flowing water) to lentic (still water) conditions could affect algal communities.

Algal Sample Enumeration

Phytoplankton samples were quantitatively evaluated by indentifying the algae to the lowest taxonomic level achievable (i.e., genus or species) and counting individual cells and units. This was completed in accordance with standard operating procedures (NCDWQ 2003).

Algal blooms were determined by measure of unit density. Unit density is a quantitative measure of the number of filaments, colonies or single-celled taxa in the waterbody expressed as units/mL. A bloom magnitude was assigned based on algal densities (Table 2).

Table 2. Algal bloom magnitude

Bloom magnitude	Density (units/mL)
Mild	10,000 to 20,000
Moderate	20,000 to 30,000
Severe	30,000 to 100,000
Extreme	> 100,000

The term “surface bloom” was used to describe visual films or concentrations of floating algae that were not quantified in terms of unit density.

An algal group (bluegreens, diatoms, etc.) was considered dominant when it comprised 40% or more of the total unit density. A taxon (*Pseudanabaena*, *Staurosira*, etc.) was considered dominant when it comprised 30% or more of the total unit density.

RESULTS

Algal Assemblages

Overall algal blooms were documented at 36 of the 97 site visits (Figure 3). The majority (53%) of the blooms were mild, 25% were moderate and 19% were severe. Only one bloom was considered extreme. The blooms occurred in two main stretches of the river: 1) from the upper Haw River down to Buckhorn Dam and 2) from Fayetteville down to LD1. Blooms from the upper Haw River down to Buckhorn Dam were persistent, occurring during 76% of the site visits during every month except July. Most of the blooms were moderate (50%). Thirty five percent were mild and fifteen percent were severe. Blooms from Fayetteville down to LD1 occurred at 42% of the site visits. The majority of the blooms were mild (71%) yet some were severe (21%) and one (8%) was extreme. The blooms were sporadic occurring at different sites at different times as densities increased substantially from mild or below bloom magnitude to severe and even extreme magnitudes. The densities then decreased back to mild or below by the next site visit. In contrast to the stretches of river that had blooms, algal densities were consistently low (<3,000 units/ml) in the upper Deep River, below Buckhorn Dam at Lillington and Erwin, and all sites below LD1.

The algae that formed the blooms were specific to particular stretches of the river. The algal blooms above Buckhorn Dam were dominated by the filamentous bluegreen alga *Pseudanabaena* (Appendix I). The algal blooms from Fayetteville to Tar Heel were dominated by the small diatom *Staurosira construens var. venter*. Unlike *Microcystis*, neither of these algae form surface films or flecks nor have strains that produce toxins.

Surface blooms occurred in two other stretches of the river. A surface bloom of *Microcystis* occurred below LD1 in July 2010 but was substantially smaller than those that occurred in 2009. The bloom lasted only three or four weeks. As in the 2009 blooms, no evidence of toxic effects or fish kills were observed. A surface bloom composed of the green alga *Chlamydomonas* and the euglenoid *Euglena* also occurred in the Deep River. The bloom was two miles long, shore to shore from above the confluence of the Haw River to up past Haywood.

Chlorophyll-*a*

Chlorophyll-*a* (Chl-*a*) concentrations followed algal density patterns (Figure 3). The highest concentrations were above Buckhorn Dam, specifically from the confluence of the Deep and Haw Rivers to directly above the dam (Appendix II). The concentrations in this segment were frequently (73% of site visits) above 30 µg/L, including five occasions when they exceeded the state standard of 40 µg/L (two and three exceedances out of five samples each at study sites 5 and 7, respectively (Table 3). Chlorophyll-*a* concentrations around the locks and dams did not exceed the standard, although they were >30 µg/L at multiple sites in July. Chlorophyll-*a* concentrations were low where algal densities were low, specifically the upper Deep River, at Lillington and Erwin and below LD1.

Table 3. Chlorophyll-*a* statistics

			Chlorophyll-*a* (µg/L)				
Site	Location	N	Min	Median	Max	N>40 µg/L	%>40 µg/L
1	Deep River at NC 1	5	1.0	2.9	7.4	.	.
2	Deep River above the Haw River	4	11.0	17.5	47.0	1	25
3	Haw River at NC 1	5	15.0	17.0	18.0	.	.
4	Haw River above the Deep River	6	12.0	15.5	22.0	.	.
5	Cape Fear River at railroad bridge	5	20.0	30.0	62.0	2	40
6	Cape Fear River at NC 42	5	12.0	34.0	36.0	.	.
7	Cape Fear River at Buckhorn Dam (upstream)	5	32.0	45.0	48.0	3	60
8	Cape Fear River at NC 401 (Lillington)	5	2.1	4.7	5.5	.	.
9	Cape Fear River at NC 217 (Erwin)	5	1.8	2.9	6.8	.	.
10	Cape Fear River at NC 24 (Fayetteville)	5	2.1	14.0	20.0	.	.
11	Cape Fear River at of Lock & Dam 3 (downstream)	5	9.9	22.0	39.0	.	.
12	Cape Fear River at Tar Heel	6	7.1	15.3	34.0	.	.
13	Cape Fear River at Lock & Dam 2 (upstream)	5	7.1	18.0	38.0	.	.
14	Cape Fear River at Elwell Ferry	5	2.4	14.0	38.0	.	.
15	Cape Fear River at Lock & Dam 1 (upstream)	5	3.1	8.5	35.0	.	.
16	Cape Fear River at Lock & Dam 1 (downstream)	4	1.5	10.8	31.0	.	.
17	Cape Fear River at Neils Eddy Landing	4	1.0	6.4	19.0	.	.
18	Cape Fear River at Hale Point Landing	4	1.0	3.8	5.0	.	.
19	Cape Fear River at Navassa	4	1.0	3.9	8.8	.	.
20	Cape Fear River at Channel Marker 61	4	1.0	9.2	15.0	.	.
21	Cape Fear River at Channel Marker 56	4	1.1	10.4	13.0	.	.

Notes:

N = number of samples collected at each site

Min = minimum Chl-*a* result; Max = maximum Chl-*a* result

N>40 µg/L and %>40 µg/L = number and percentage of results at each site that exceeded state Chl-*a* standard

Nutrients

Concentrations of total organic nitrogen (TON) remained fairly consistent throughout the river ranging from 0.32 to 0.92 mg/L (Figure 4). Organic nitrogen represents nitrogen bound in organic matter such as in algal cells. Concentrations of TIN ranged from 0.06 to 1.43 mg/L. Total inorganic nitrogen (TIN) represents the nitrogen available for biological uptake such as the nitrogen required for algal growth. The variability in TIN is exemplified in the upper Deep River where some of the highest concentrations of 0.61 to 1.32 mg/L decreased to 0.06 to 0.64 mg/L above the Buckhorn Dam. Concentrations increased again after Buckhorn Dam at Lillington to peak around Tar Heel, ranging from 0.76 to 1.32 mg/L. For the most part, concentrations decreased again as waters headed toward Wilmington, especially at Hales Point Landing where the Black River enters.

Phosphorous was measured as total phosphorous and represents both the phosphorous available for biological uptake and that which is bound to organic and particulate matter. The pattern in phosphorous concentrations was similar to that of TIN. The upper Deep River had some of the highest concentrations ranging from 0.28 to 0.49 mg/L and decreasing to 0.06 to 0.10 mg/L above Buckhorn Dam. Concentrations peaked again around Tar Heel ranging from 0.18 to 0.30 mg/L before decreasing as waters flowed toward Wilmington.

Physical Parameters

Differences in the concentrations of dissolved oxygen, pH and water temperature along vertical profiles of the water column may indicate stratification. Stratification can occur in very low or no flows. Slow flowing rivers with deep water, and still waters, such as in lakes and reservoirs, are frequently stratified during summer. There was no indication of stratification at other sites, thereby indicating flowing waters.

Conclusions

Algal assemblage structure and density varied temporally and spatially during 2010 in the Cape Fear River and its major tributaries over the three-month study. The observed patterns in structure and densities highlight various characteristics of the river, primarily the effect of the impoundments and the free flowing stretches.

Pseudanabaena is very prevalent in large Piedmont reservoirs during the summer. It grows throughout the water column and does not form flecks or surface films (personal observation). The abundance of *Pseudanabaena* growing above Buckhorn Dam coupled with the observed stratification suggests a more lacustrine system.

Staurosira construens var. *venter* is more common in ponds and lakes and prefers waters with high oxygen content (Manoylov et al. 2002). The abundance of *Staurosira construens* var. *venter* around the lock and dams suggests variable flows and waters well oxygenated.

Flowing water is not conducive to supporting large populations of phytoplankton. The lack of large algal populations and associated low chlorophyll-*a* concentrations in the upper Deep River, below Buckhorn Dam and after LD1 suggest faster flowing waters.

Microcystis surface blooms did occur in 2010 but not to the extent of those observed in 2009. *Microcystis* was present in the water column from LD2 down past LD1 in July but the majority of visual flecks and surface blooms were below LD1. Also, unlike the bloom in 2009, the bloom was concentrated only in the main channel within the windrows and eddies for less than one month as opposed to covering coves and collecting behind dam structures. *Microcystis*, as well as many other forms of bluegreen algae, prefer warm, nutrient rich waters. *Microcystis* will also regulate its buoyancy by producing polysaccharides that function to bring the colonies to the surface like a cork. Studies have shown increasing temperatures facilitate the polysaccharide production needed to remain buoyant in mixing waters (Kromkam et al. 1988). Surface blooms of *Microcystis* reflect the mixing, flowing environment around LD1 and warmer waters.

Algae go through a life cycle where they reproduce asexually when conditions are favorable then reproduce sexually forming akinetes (seed-like structures) when conditions become unfavorable. These akinetes are stored in the sediments and begin to grow again once favorable conditions return. The surface bloom in the Deep River is reflective of both favorable conditions and low flow. *Chlamydomonas* and *Euglena* are common in lakes and ponds throughout North Carolina in summer. The surface bloom of these algae occurring briefly in the Deep River was indicative of slow flowing or “ponding” conditions coupled with abundant nutrients, warming waters and longer day length (i.e., summer).

Chlorophyll-*a* levels exceeded the Division of Water Quality State Standard of 40 µg/L thirty three percent of the time (n=15) in the Cape Fear River above Buckhorn Dam. Chlorophyll-*a* levels approached the standard at multiple stations around the lock and dams in July. Concentrations of TON remained fairly consistent but TIN and TP concentrations varied with the most abundant available for biological uptake at the upper Deep River station and around Tar Heel.

Waters above Buckhorn Dam showed signs of stratification and therefore slow moving or waters with a longer retention time. Waters around the Lock & Dam 1 & 2 also showed signs of stratification to a much lesser extent.

Although the exact environmental cue(s) that triggered the *Microcystis aeruginosa* surface blooms in 2009 were not determined, the optimal environmental conditions and nutrient rich warm waters were likely contributing factors.

References

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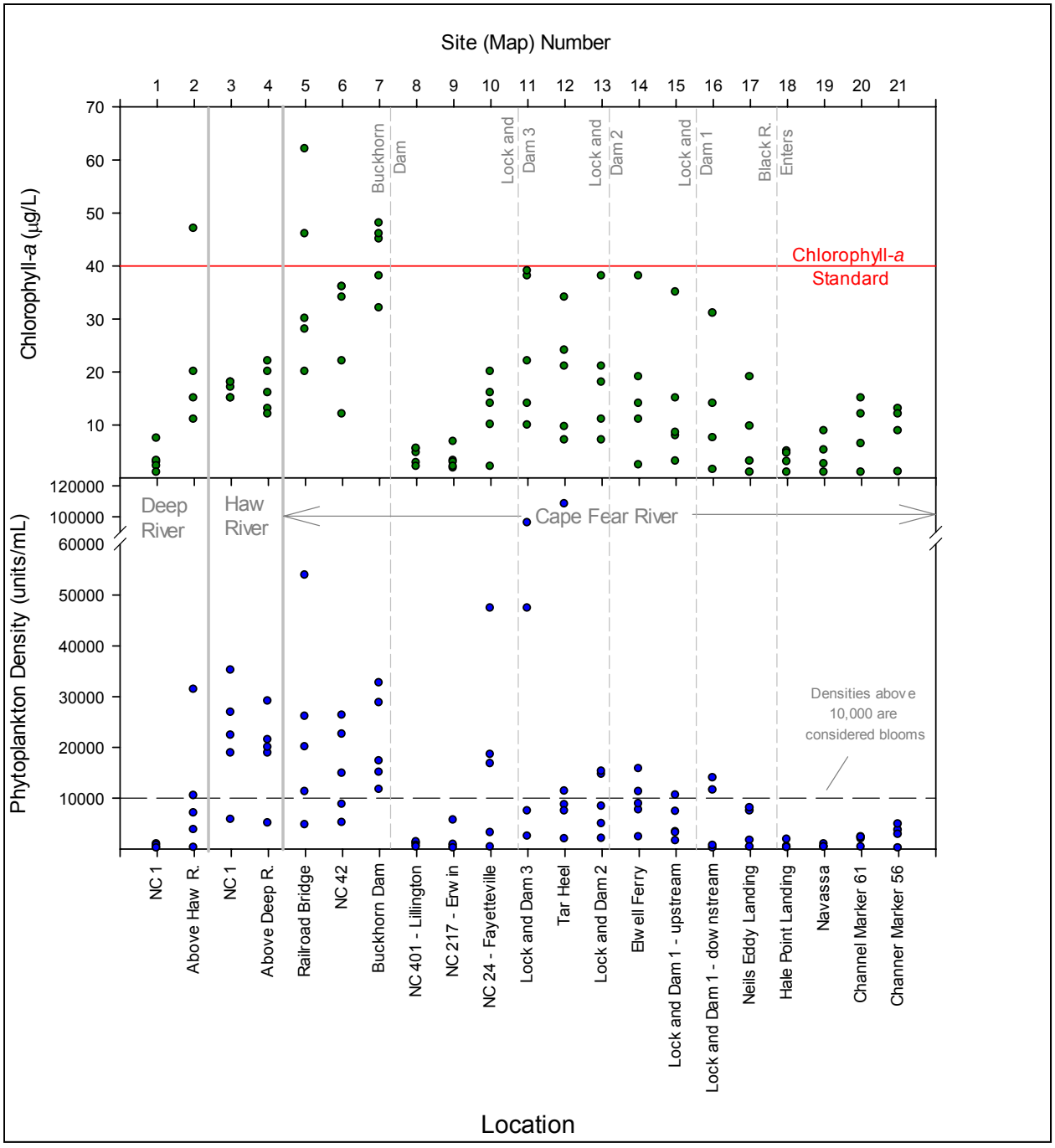

Figure 3. Unit densities and chlorophyll-*a* concentrations in the Cape Fear River 2010.

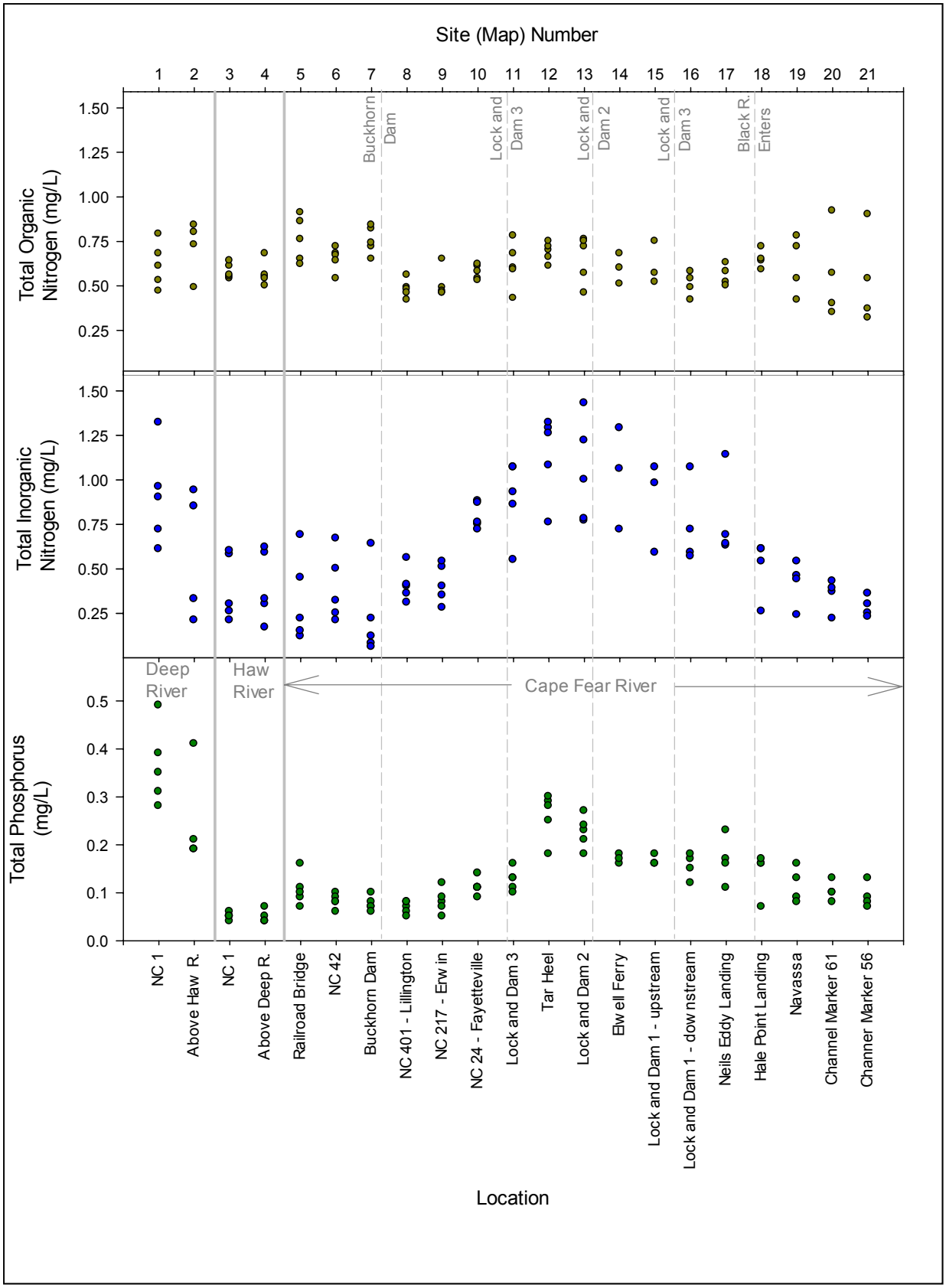

Figure 4. Nutrient concentrations in the Cape Fear River 2010

Appendix I. Algal densities and dominant taxa in the Cape Fear River 2010.

Site	Date	Unit Density (Units/mL)	Dominant Group	Percent Group Dominance	Dominant Genus	Percent Genus Dominance
1	8/12/2010	900	Greens	86	*Spermatozoopsis*	41
1	8/30/2010	200	Greens & Diatoms	45 & 45	No Dominant Genus	N/A
1	9/23/2010	600	Dinoflagellates	56	*Peridinium*	56
1	10/21/2010	100	Diatoms	80	No Dominant Genus	N/A
2	7/19/2010	200	Greens & Diatoms	50 & 40	*Spermatozoopsis*	30
2	8/12/2010	7,000	Greens	76	*Spermatozoopsis*	42
2	8/30/2010	3,700	Diatoms	83	*Staurosira*	82
2	9/23/2010	31,300	No Dominant Group	N/A	*Staurosira*	31
2	10/21/2010	10,400	Bluegreens	60	*Pseudanabaena*	39
3	7/19/2010	5,700	No Dominant Group	N/A	No Dominant Genus	N/A
3	8/12/2010	26,800	Bluegreens	86	*Pseudanabaena*	46
3	8/30/2010	35,100	Bluegreens	94	*Pseudanabaena*	69
3	9/23/2010	18,800	Bluegreens	85	*Pseudanabaena*	60
3	10/21/2010	22,300	Bluegreens	84	*Pseudanabaena*	66
4	7/19/2010	5,000	No Dominant Group	N/A	No Dominant Genus	N/A
4	8/12/2010	18,800	Bluegreens	81	*Pseudanabaena*	50
4	8/30/2010	21,400	Bluegreens	83	*Pseudanabaena*	58
4	9/23/2010	29,000	Bluegreens	83	*Pseudanabaena*	59
4	10/21/2010	19,900	Bluegreens	82	*Pseudanabaena*	60
5	7/19/2010	4,700	No Dominant Group	N/A	No Dominant Genus	N/A
5	8/12/2010	53,800	Bluegreens	72	*Pseudanabaena*	63
5	8/30/2010	26,000	Bluegreens	59	*Pseudanabaena*	41
5	9/23/2010	20,000	Bluegreens	66	*Pseudanabaena*	42
5	10/21/2010	11,200	Bluegreens	59	*Pseudanabaena*	39
6	7/19/2010	5,100	No Dominant Group	N/A	No Dominant Genus	N/A
6	8/12/2010	26,200	Bluegreens	61	*Pseudanabaena*	43
6	8/30/2010	14,800	Bluegreens	56	*Pseudanabaena*	41
6	9/23/2010	22,500	Bluegreens	63	*Pseudanabaena*	40
6	10/21/2010	8,700	Bluegreens	69	*Pseudanabaena*	50
7	7/19/2010	11,600	No Dominant Group	N/A	No Dominant Genus	N/A
7	8/12/2010	32,600	Bluegreens	80	*Pseudanabaena*	62
7	8/30/2010	17,200	Bluegreens	59	*Pseudanabaena*	37
7	9/23/2010	28,700	Bluegreens	62	*Pseudanabaena*	40
7	10/21/2010	15,000	Bluegreens	40	No Dominant Genus	N/A
8	7/19/2010	1,000	Greens & Diatoms	53 & 42	No Dominant Genus	N/A
8	8/12/2010	1,100	Greens	48	*Scenedesmus*	38
8	8/30/2010	1,300	Diatoms	82	*Staurosira*	75
8	9/23/2010	600	Diatoms	53	No Dominant	N/A

Site	Date	Unit Density (Units/mL)	Dominant Group	Percent Group Dominance	Dominant Genus	Percent Genus Dominance
8	10/21/2010	300	Greens & Diatoms	55 & 44	*Crucigenia* & Undetermined centric Genus	32 & 32
9	7/19/2010	600	Diatoms & Greens	51 & 46	*Staurosira*	37
9	8/12/2010	200	Greens	45	*Scenedesmus* & *Staurosira*	45 & 36
9	8/30/2010	5,600	Diatoms	91	*Staurosira*	87
9	9/23/2010	800	Diatoms	88	*Staurosira*	84
9	10/21/2010	100	Greens & Diatoms	56 & 44	*Selenastrum* & *Staurosira*	33 & 33
10	7/19/2010	3,100	Diatoms	67	*Staurosira*	61
10	8/12/2010	16,700	Diatoms	100	*Staurosira*	99
10	8/30/2010	47,300	Diatoms	100	*Staurosira*	100
10	9/23/2010	18,500	Diatoms	97	*Staurosira*	97
10	10/21/2010	300	Diatoms	55	No Dominant Genus	N/A
11	7/19/2010	47,300	Diatoms	95	*Staurosira*	95
11	8/12/2010	7,400	Diatoms	73	*Staurosira*	72
11	9/23/2010	95,800	Diatoms	97	*Staurosira*	97
11	10/21/2010	2,400	Diatoms	45	No Dominant Genus	N/A
12	7/19/2010	11,300	Diatoms	77	*Staurosira*	75
12	8/12/2010	8,600	Diatoms	74	*Staurosira*	73
12	8/30/2010	7,400	Diatoms	89	*Staurosira*	89
12	9/23/2010	108,000	Diatoms	98	*Staurosira*	97
12	10/21/2010	1,900	Diatoms & Cryptomonads	44 & 40	*Komma* & *Staurosira*	35 & 33
13	7/19/2010	14,600	Diatoms	57	*Staurosira*	57
13	8/12/2010	8,300	Diatoms	83	*Staurosira*	83
13	8/30/2010	15,200	Diatoms	91	*Staurosira*	90
13	9/23/2010	2,000	Cryptomonads	82	*Komma*	77
13	10/21/2010	4,900	Diatoms	48	*Staurosira* & *Komma*	37 & 31
14	7/19/2010	7,600	Diatoms	86	*Staurosira*	75
14	8/12/2010	11,200	Diatoms	58	*Staurosira*	57
14	8/30/2010	15,700	Diatoms	90	*Staurosira*	90
14	9/22/2010	8,800	Diatoms	52	*Staurosira*	51
14	10/21/2010	2,300	Cryptomonads	46	*Komma*	30
15	7/19/2010	7,300	Diatoms	86	*Staurosira*	68
15	8/12/2010	10,500	Cryptomonads	52	*Cryptomonas* & *Staurosira*	36 & 31
15	8/30/2010	3,300	Cryptomonads	46	No Dominant Genus	N/A
15	9/22/2010	1,500	Cryptomonads	42	No Dominant Genus	N/A
15	10/21/2010	3,100	Cryptomonads	61	*Komma*	48

Site	Date	Unit Density (Units/mL)	Dominant Group	Percent Group Dominance	Dominant Genus	Percent Genus Dominance
16	7/19/2010	13,900	Diatoms	83	*Staurosira*	74
16	8/12/2010	11,500	Diatoms	93	*Staurosira*	92
16	9/23/2010	100	Euglenoids	50	*Trachelomonas*	50
16	10/12/2010	600	Diatoms	50	Undetermined centric	38
17	7/19/2010	7,400	Diatoms	80	*Staurosira*	73
17	8/12/2010	8,000	Diatoms	97	*Staurosira*	96
17	9/23/2010	1,600	Diatoms	65	*Aulacoseira*	56
17	10/12/2010	300	Bluegreens	86	No Dominant Genus	N/A
18	7/19/2010	200	Diatoms	82	*Aulacoseira*	82
18	8/12/2010	1,800	Diatoms	76	*Staurosira & Aulocoseira*	43 & 33
18	9/23/2010	400	Diatoms & Greens	55 & 45	*Navicula & Scenedesmus*	45 & 45
18	10/12/2010	200	Chrysophytes	100	*Desmarella*	100
19	7/19/2010	300	Diatoms	86	*Staurosira*	33
19	8/12/2010	900	Diatoms	92	*Navicula*	40
19	9/23/2010	300	Diatoms	75	No Dominant Genus	N/A
19	10/12/2010	300	Bluegreens	44	*Coelastrum*	33
20	7/19/2010	2,300	Diatoms	55	*Staurosira*	31
20	8/12/2010	1,900	Diatoms	96	Undetermined centric	49
20	9/23/2010	2,200	Diatoms	84	Undetermined centric	44
20	10/12/2010	300	Chrysophytes	71	*Desmarella*	71
21	7/19/2010	3,600	Diatoms	81	*Staurosira*	51
21	8/12/2010	2,800	Diatoms	95	No Dominant Genus	N/A
21	9/23/2010	4,800	Diatoms	92	Undetermined centric	58
21	10/12/2010	100	No Dominant Group	N/A	No Dominant Genus	N/A

Appendix II. Chlorophyll-*a* and nutrient[2] concentrations in the Cape Fear River 2010. X = Data not collected and * = Results under detection level. (All measurement units are mg/L except for Chl-a, which is µg/L.)

Site	Date	Chl-*a* *(µg/L)*	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TIN (mg/L)	TON (mg/L)	TP (mg/L)
1	7/19/2010	2.9	0.02	0.49	0.59	0.61	0.47	0.31
1	8/12/2010	3.2	0.02*	0.63	0.88	0.90	0.61	0.39
1	8/30/2010	2.2	0.02	0.55	0.70	0.72	0.53	0.28
1	9/23/2010	7.4	0.02*	0.81	0.94	0.96	0.79	0.49
1	10/21/2010	1	0.02*	0.70	1.30	1.32	0.68	0.35
2	7/19/2010	X	X	X	X	X	X	X
2	8/12/2010	20	0.02*	0.82	0.92	0.94	0.80	0.41
2	8/30/2010	11	0.02*	0.51	0.31	0.33	0.49	0.19
2	9/23/2010	47	0.02*	0.86	0.19	0.21	0.84	0.19
2	10/21/2010	15	0.02*	0.75	0.83	0.85	0.73	0.21
3	7/19/2010	18	0.12	0.73	0.46	0.58	0.61	0.06
3	8/12/2010	15	0.14	0.68	0.12	0.26	0.54	0.05
3	8/30/2010	17	0.06	0.70	0.24	0.30	0.64	0.05
3	9/23/2010	18	0.16	0.71	0.05	0.21	0.55	0.04
3	10/21/2010	15	0.05	0.61	0.55	0.60	0.56	0.05
4	7/19/2010	22	0.08	0.76	0.51	0.59	0.68	0.07
4	8/12/2010	13	0.13	0.63	0.17	0.30	0.50	0.05
4	8/30/2010	15	0.05	0.63	0.28	0.33	0.58	0.04
4	8/30/2010	16	0.05	0.60	0.28	0.33	0.55	0.04
4	9/23/2010	20	0.10	0.66	0.07	0.17	0.56	0.04
4	10/21/2010	12	0.06	0.60	0.56	0.62	0.54	0.04
5	7/19/2010	28	0.02*	0.78	0.43	0.45	0.76	0.16
5	8/12/2010	62	0.02*	0.93	0.10	0.12	0.91	0.11
5	8/30/2010	46	0.02*	0.88	0.13	0.15	0.86	0.09
5	9/23/2010	30	0.04	0.69	0.18	0.22	0.65	0.07
5	10/21/2010	20	0.02	0.64	0.67	0.69	0.62	0.10
6	7/19/2010	22	0.04	0.72	0.46	0.50	0.68	0.10
6	8/12/2010	36	0.02*	0.74	0.30	0.32	0.72	0.09
6	8/30/2010	36	0.02*	0.69	0.23	0.25	0.67	0.08
6	9/23/2010	34	0.02*	0.66	0.19	0.21	0.64	0.06
6	10/21/2010	12	0.02	0.56	0.65	0.67	0.54	0.08
7	7/19/2010	32	0.02*	0.67	0.20	0.22	0.65	0.07
7	8/12/2010	48	0.02*	0.84	0.10	0.12	0.82	0.08
7	8/30/2010	45	0.02*	0.86	0.06	0.08	0.84	0.07

[2] Chl-α = Chlorophyll-a, NH3 = Ammonia as nitrogen, TKN = Total Kjeldahl Nitrogen, NOx = Nitrite+nitrate as nitrogen, TIN = Total Inorganic Nitrogen, calculated as the sum of NH3 and NOx, TON =Total Organic Nitrogen, calculated as TKN-NH3, TP= Total phosphorus.

Site	Date	Chl-*a* (µg/L)	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TIN (mg/L)	TON (mg/L)	TP (mg/L)
7	9/23/2010	46	0.02	0.74	0.04	0.06	0.72	0.06
7	10/21/2010	38	0.02*	0.76	0.62	0.64	0.74	0.10
8	7/19/2010	5.4	0.02*	0.51	0.38	0.40	0.49	0.07
8	8/12/2010	4.7	0.02*	0.50	0.34	0.36	0.48	0.08
8	8/30/2010	5.5	0.02*	0.58	0.39	0.41	0.56	0.08
8	9/23/2010	2.8	0.02	0.48	0.29	0.31	0.46	0.06
8	10/21/2010	2.1	0.02*	0.44	0.54	0.56	0.42	0.05
9	7/19/2010	3.2	0.02*	0.48	0.33	0.35	0.46	0.08
9	8/12/2010	2.9	0.02*	0.51	0.38	0.40	0.49	0.09
9	8/30/2010	6.8	0.02*	0.67	0.49	0.51	0.65	0.12
9	9/23/2010	1.8	0.02*	0.49	0.26	0.28	0.47	0.07
9	10/21/2010	2.1	0.02*	0.48	0.52	0.54	0.46	0.05
10	7/19/2010	10	0.02*	0.56	0.73	0.75	0.54	0.11
10	8/12/2010	16	0.02*	0.63	0.86	0.88	0.61	0.14
10	8/30/2010	20	0.02*	0.64	0.70	0.72	0.62	0.11
10	9/23/2010	14	0.02	0.60	0.74	0.76	0.58	0.11
10	10/21/2010	2.1	0.03	0.56	0.84	0.87	0.53	0.09
11	7/19/2010	38	0.03	0.63	0.52	0.55	0.60	0.11
11	8/12/2010	14	0.10	0.78	0.97	1.07	0.68	0.13
11	8/12/2010	22	0.09	0.68	0.98	1.07	0.59	0.13
11	9/23/2010	39	0.07	0.84	0.86	0.93	0.78	0.16
11	10/21/2010	9.9	0.02*	0.45	0.84	0.86	0.43	0.10
12	7/19/2010	24	0.12	0.82	0.64	0.76	0.70	0.18
12	8/12/2010	21	0.09	0.70	1.20	1.29	0.61	0.25
12	8/30/2010	9.2	0.08	0.76	1.00	1.08	0.68	0.30
12	8/30/2010	9.6	0.08	0.74	1.00	1.08	0.66	0.29
12	9/23/2010	34	0.06	0.78	1.20	1.26	0.72	0.30
12	10/21/2010	7.1	0.02	0.77	1.30	1.32	0.75	0.28
13	7/19/2010	38	0.02	0.74	0.75	0.77	0.72	0.21
13	8/12/2010	18	0.12	0.88	0.88	1.00	0.76	0.23
13	8/30/2010	21	0.02	0.59	0.76	0.78	0.57	0.18
13	9/23/2010	7.1	0.13	0.88	1.30	1.43	0.75	0.27
13	10/21/2010	11	0.02	0.48	1.20	1.22	0.46	0.24
14	7/19/2010	38	0.02	0.70	0.70	0.72	0.68	0.16
14	8/12/2010	19	0.04	X	X	X	X	X
14	8/30/2010	11	0.05	X	X	X	X	X
14	9/23/2010	14	0.19	0.79	1.10	1.29	0.60	0.18
14	10/21/2010	2.4	0.06	0.57	1.00	1.06	0.51	0.17
15	7/19/2010	35	0.05	0.80	0.54	0.59	0.75	0.16
15	8/12/2010	15	0.07	X	X	X	X	X
15	8/30/2010	7.9	0.05	X	X	X	X	X

Site	Date	Chl-*a* (µ*g/L)*	NH3 (mg/L)	TKN (mg/L)	NOx (mg/L)	TIN (mg/L)	TON (mg/L)	TP (mg/L)
15	9/23/2010	8.5	0.10	0.67	0.97	1.07	0.57	0.18
15	10/21/2010	3.1	0.05	0.57	0.93	0.98	0.52	0.16
16	7/19/2010	31	0.06	0.64	0.53	0.59	0.58	0.17
16	8/12/2010	14	0.07	0.61	0.50	0.57	0.54	0.15
16	9/23/2010	7.5	0.10	0.52	0.97	1.07	0.42	0.18
16	10/12/2010	1.5	0.08	0.57	0.64	0.72	0.49	0.12
17	7/19/2010	19	0.15	0.78	0.48	0.63	0.63	0.17
17	8/12/2010	9.7	0.22	0.74	0.47	0.69	0.52	0.16
17	9/23/2010	3.1	0.24	0.74	0.90	1.14	0.50	0.23
17	10/12/2010	1*	0.11	0.69	0.53	0.64	0.58	0.11
18	7/19/2010	5	0.12	0.76	0.42	0.54	0.64	0.16
18	8/12/2010	4.6	0.05	0.64	0.56	0.61	0.59	0.16
18	9/23/2010	3	0.03	0.68	0.58	0.61	0.65	0.17
18	10/12/2010	1*	0.08	0.80	0.18	0.26	0.72	0.07
19	7/19/2010	2.6	0.07	0.79	0.47	0.54	0.72	0.16
19	8/12/2010	8.8	0.02	0.56	0.44	0.46	0.54	0.13
19	9/23/2010	5.2	0.02*	0.44	0.42	0.44	0.42	0.09
19	10/12/2010	1*	0.07	0.85	0.17	0.24	0.78	0.08
20	7/19/2010	15	0.02*	0.59	0.41	0.43	0.57	0.10
20	8/12/2010	12	0.02*	0.42	0.35	0.37	0.40	0.10
20	9/23/2010	6.4	0.02*	0.37	0.37	0.39	0.35	0.08
20	10/12/2010	1	0.08	1.00	0.14	0.22	0.92	0.13
21	7/19/2010	13	0.02*	0.56	0.34	0.36	0.54	0.09
21	8/12/2010	12	0.02*	0.39	0.23	0.25	0.37	0.08
21	9/23/2010	8.8	0.02	0.34	0.28	0.30	0.32	0.07
21	10/12/2010	1.1	0.08	0.98	0.15	0.23	0.90	0.13

North Carolina Integrating Reporting Categories (IRC)

IRC	IRC Description
	Overall Integrated Reporting Category and EPA Category 1
1	Meeting Criteria
1b	Meeting Criteria-a management strategy in place for parameter
1f	Meeting Criteria-Fish tissue collected in Assessment Unit with no advisories other than statewide Mercury advice
1i	Meeting Criteria-Parameter assessed is addressed by a TMDL for a different parameter
1nc	Meeting Criteria-Parameter assessed was exceeding criteria but due to natural conditions (documentation required)
1r	Meeting Criteria-Parameter assessed as part of restoration project
1t	Meeting Criteria-Parameter assessed has an approved TMDL
	Overall Integrated Reporting Category and EPA Category 3a
3a	Data Inconclusive
3b	Data Inconclusive- management strategy in place for parameter
3c	Data Inconclusive- Parameter is a non-pollutant- TMDL not required
3i	Data Inconclusive-Parameter assessed is addressed by a TMDL for a different parameter
3r	Data Inconclusive- Parameter assessed as part of restoration project
3t	Data Inconclusive- Parameter assessed has an approved TMDL
3v	Data Inconclusive- Parameter is part of permit variance
3z1	Data Inconclusive-Data not assessed against a NC water quality standard
3z2	Data Inconclusive-No data or information to make assessment
	Overall Integrated Reporting Category and EPA Category 4a
4i	Exceeding Criteria- Parameter assessed is addressed by a TMDL for a different parameter
4t	Exceeding Criteria- Parameter assessed has an approved TMDL
	Overall Integrated Reporting Category and EPA Category 4b
4b	Exceeding Criteria- a management strategy in place for parameter
	Overall Integrated Reporting Category and EPA Category 4c
4c	Exceeding Criteria- Parameter is a non-pollutant- TMDL not required
4cr	Exceeding Criteria-recreational advisory postings greater than 61 days in the assessment period
4cs	Exceeding Criteria- Shellfish growing area- not approved. Approved fecal coliform bacteria TMDL assessed in category 4t
4r	Exceeding Criteria- ongoing restoration activities in place to address parameter. Also for restoration parameters without water quality standards

IRC	IRC Description
4s	Exceeding Criteria- another aquatic life parameter is assessed in category 4 or 5. For biological assessments only
4v	Exceeding Criteria- Parameter is part of permit variance

Overall Integrated Reporting Category and EPA Category 5

5	Exceeding Criteria- TMDL or other management strategy required
5e	EPA listed the assessment based on EPA guidance not NC methodology
5r	Exceeding Criteria- ongoing restoration activities in place to address parameter

Table 9: Cape Fear River Basin 2022 Integrated Report