

Chapter 24

Cape Fear River Subbasin 03-06-24

Including: Masonboro Sound, Topsail Sound and ICWW

24.1 Subbasin Overview

Subbasin 03-06-24 at a Glance

Land and Water Area

Total area:	162 mi ²
Land area:	142 mi ²
Water area:	20 mi ²

Population Statistics

2000 Est. Pop.:	58658 people
Pop. Density:	361 persons/mi ²

Land Cover (percent)

Forest/Wetland:	63.0%
Surface Water:	17.5%
Urban:	8.3%
Cultivated Crop:	6.7%
Pasture/ Managed Herbaceous:	4.5%

Counties

New Hanover, Onslow and Pender

Municipalities

Carolina Beach, Holly Ridge, North Topsail Beach, Surf City, Topsail, Wilmington and Wrightsville Beach

Subbasin 03-06-24 drains entirely to the ICWW and the Atlantic Ocean. There are large urban areas around Wilmington and many beach communities. Population is expected to grow by 110,000 people in counties with portions or all of their areas in this subbasin by 2020.

There are three individual NPDES wastewater discharge permits in this subbasin with a permitted flow of 0.1 MGD (Figure 27). Refer to Appendix VI and Chapter 30 for more information on NPDES permit holders. Issues related to compliance with NPDES permit conditions are discussed below in Section 24.3 for Impaired waters and in Section 24.4 for other waters.

There is one registered swine operation in this subbasin.

There was one benthic community sample (Figure 27 and Table 27) collected during this assessment period. Data were also collected from six DWQ ambient stations. Refer to the *2003 Cape Fear River Basinwide Assessment Report* at <http://www.esb.enr.state.nc.us/bar.html> and Appendix IV for more information on monitoring.

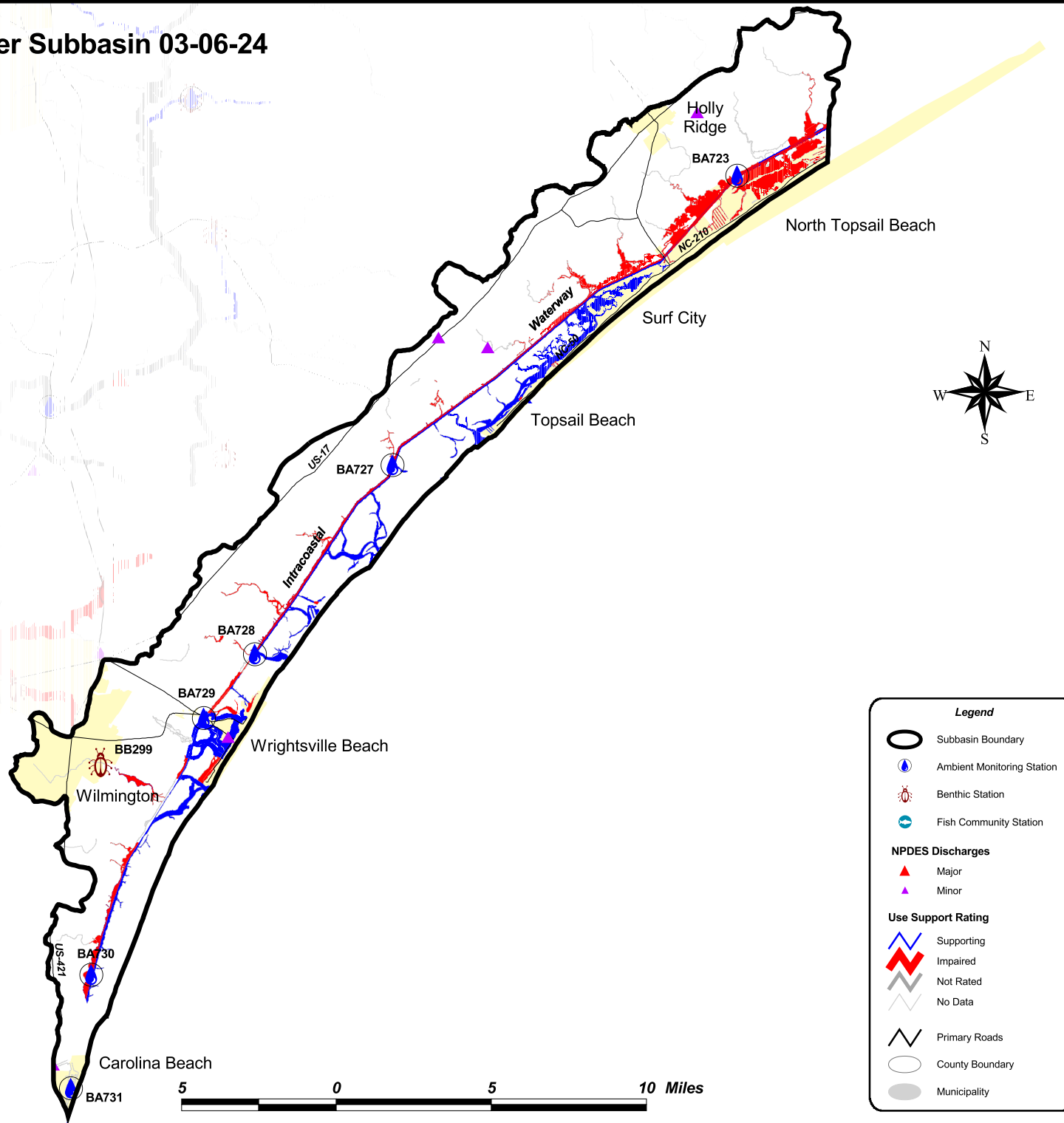
Waters in the following sections are identified by assessment unit number (AU#). This number is used to track defined segments in the water quality assessment database, 303(d) Impaired waters list and the various

tables in this basin plan. The assessment unit number is a subset of the DWQ index number (classification identification number). A letter attached to the end of the AU# indicates that the assessment is smaller than the DWQ index segment. No letter indicates that the assessment unit and the DWQ index segment are the same.

24.2 Use Support Assessment Summary

Use support ratings were assigned for waters in subbasin 03-06-24 in the aquatic life, recreation, fish consumption and water supply categories. All waters are Impaired on an evaluated basis in the fish consumption category because of fish consumption advice that applies to the entire basin. In the water supply category, all waters are Supporting on an evaluated basis based on reports from DEH regional water treatment plant consultants.

Figure 27 Cape Fear River Subbasin 03-06-24



Legend

- Subbasin Boundary
- Ambient Monitoring Station
- Benthic Station
- Fish Community Station
- NPDES Discharges**
- Major
- Minor
- Use Support Rating**
- Supporting
- Impaired
- Not Rated
- No Data
- Primary Roads
- County Boundary
- Municipality

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
Description													
Atlantic Ocean													
99-(3)c	SB	38.3	Coast Miles	ND				S	S-22a	NCE			
									S-23	NCE			
									S-25	NCE			
									S-28	NCE			
									S-29	NCE			
The waters of the Atlantic Ocean contiguous to that portion of the Cape Fear River Basin that extends from the edge of White Oak River Basin to the subbasin 17/24 boundary													
Banks Channel													
18-87-10-1a	SA HQW	313.5	S acres	ND				ND		S	APP		
From New Topsail Inlet to Topsail Sound excluding prohibited area at Annamarina													
18-87-10-1b	SA HQW	4.2	S acres	ND				ND		I	PRO	Fecal Coliform Bacteria Marina	
Prohibited area at Annamarina													
18-87-24-3	SA HQW	111.1	S acres	ND				ND		I	CAO	Fecal Coliform Bacteria MS4 NPDES	
Entire Channel south of the Wrightsville Recreational Area													
Batts Mill Creek													
18-87-6	SA HQW	40.8	S acres	ND				ND		I	CAO	Fecal Coliform Bacteria Unknown	
From source to Intracoastal Waterway													
Beckys Creek (Bi)													
18-87-8a	SA HQW	42.5	S acres	ND				ND		I	PRO	Fecal Coliform Bacteria Impervious Surface	
From source 0.5 miles inland Intracoastal Waterway													
18-87-8b	SA HQW	66.4	S acres	ND				ND		I	CAO	Fecal Coliform Bacteria Impervious Surface	
From 0.5 miles inland of ICWW to Intracoastal Waterway													

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
Description													
Bradley Creek													
18-87-24-4-(1)	SC HQW #	28.8	S acres	ND					ND				
From source to US Hwys 17, 74 & 76 bridge													
18-87-24-4-(2)	SC #	55.9	S acres	ND					ND				
From US Hwy 17, 74 & 76 bridge to Intracoastal Waterway													
Butler Creek													
18-87-18	SA ORW	30.9	S acres	ND					ND		S	APP	
From Nixon Channel to Intracoastal Waterway													
Carolina Beach													
18-87-31.2	SB	102.8	S acres	ND		BA731	NCE		ND				
All waters beginning at a point on the northern side of Snows Cut and running directly east across the Intracoastal Waterway to a point on the eastern side, thence follow													
Cedar Snag Cree													
18-87-17	SA ORW	3.2	S acres	ND					ND		S	APP	
From Green Channel to Intracoastal Waterway													
County Line Bra													
18-87-6-1	SA HQW	1.0	S acres	ND					ND		I	CAC Fecal Coliform Bacteria Unknown	
From source to Batts Mill Creek													
Cypress Branch													
18-87-6-2	SA HQW	1.0	S acres	ND					ND		I	CAC Fecal Coliform Bacteria Unknown	
From source to Batts Mill Creek													

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
Description													
Everett Bay													
18-87-2	SA ORW	240.6	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria
Entire Bay excluding that portion in King Creek Restricted Area													
Everett Creek													
18-87-29	SA HQW	0.7	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria MS4 NPDES
From source to Intracoastal Waterway													
Futch Creek													
18-87-19a	SA HQW	13.7	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria Impervious Surface
From source to 0.35 miles inland of Intracoastal Waterway													
18-87-19b	SA HQW	14.3	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria Impervious Surface
From 0.35 miles inland of Intracoastal Waterway to ICWW													
Green Channel													
18-87-16	SA ORW	111.5	S acres	ND				ND			S	APP	
From Rich Inlet to Intracoastal Waterway													
Hewletts Creek													
18-87-26a	SA HQW	78.3	S acres	S				ND			I	PRO	Fecal Coliform Bacteria MS4 NPDES
From source to 0.5 miles inland of Intracoastal Waterway													
						BB299	M	2003					
18-87-26b	SA HQW	19.9	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria MS4 NPDES
From 0.5 miles inland of ICWW to Intracoastal Waterway													
Howard Channel													
18-87-13	SA ORW	38.3	S acres	ND				ND			S	APP	
From Old Topsail Inlet to Intracoastal Waterway													

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
Howe Creek													
18-87-23	SA ORW	28.6	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria
From source to Intracoastal Waterway													
Intracoastal Wat													
18-87-(5.5)	SA HQW	159.6	S acres	ND				S	S-52	NCE	I	CAO	Fecal Coliform Bacteria Impervious Surfac
From Morris Landing to the eastern mouth of Old Topsail Creek													
S-53 NCE													
S-54 NCE													

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		Stressors	Sources	
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status			
Description															
Intracoastal Wat															
18-87	SA ORW	76.2	S acres	S	BA723	NCE			S	BA723 S-55	NCE NCE	I	CAO	Fecal Coliform Bacteria	Unknown
From southern edge of White Oak River Basin to Morris Landing															
18-87-(11.5)	SA ORW	112.9	S acres	ND					S	S-50 S-51	NCE NCE	I	CAO	Fecal Coliform Bacteria	Unknown
From the eastern mouth of Old Topsail Creek to the western mouth of Howe Creek															
18-87-(23.5)a	SA HQW	52.8	S acres	ND					S	S-48	NCE	S	APP		
Approved area south of Wrightsville Recreation area and east of ICWW															
18-87-(23.5)b	SA HQW	63.1	S acres	ND					ND			I	PRO	Fecal Coliform Bacteria	Unknown
Prohibited area north of Wrightsville Recreation area															
18-87-(23.5)c	SA HQW	70.4	S acres	I	BA728	CE	Low DO	11.4	S	BA728	NCE	I	CAO	Low Dissolved Oxygen	MS4 NPDES
Conditional area south of Wrightsville Recreation area and west of ICWW.															
	SA HQW	70.4	S acres	I	BA728	CE	Low DO	11.4	S	BA728	NCE	I	CAO	Low Dissolved Oxygen	MS4 NPDES
Conditional area south of Wrightsville Recreation area and west of ICWW.															
John Creek															
18-87-30	SA ORW	5.0	S acres	ND					ND			S	APP		
From source to Intracoastal Waterway															

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		Stressors	Sources
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status		
Description														
King Creek Restr														
18-87-4	SC Sw HQ	165.7	S acres	ND				ND						
Inside a line beginning at a point on the mainland and running due south 100 yards to reflector buoy #43 in the Intracoastal Waterway, thence along the south side of the														
Long Point Chan														
18-87-15	SA ORW	16.0	S acres	ND				ND			S	APP		
From Old Topsail Inlet to Intracoastal Waterway														
Masonboro Chan														
18-87-27	SA ORW	216.4	S acres	ND				ND			S	APP		
From Masonboro Inlet to Intracoastal Waterway														
Masonboro Soun														
18-87-25.7a	SA ORW	285.3	S acres	ND				S	S-47	NCE	S	APP		
East of ICWW														
18-87-25.7b	SA ORW	99.5	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria	Impervious Surface
Three prohibited areas inland of ICWW														
18-87-25.7c	SA ORW	215.9	S acres	S	BA730	NCE		S	BA730	NCE	I	CAO	Fecal Coliform Bacteria	Impervious Surface
West of ICWW														
18-87-25.7d	SA ORW	64.3	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria	MS4 NPDES
Prohibited area at mouth of Whiskey Creek														

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting			
				AL Rating	Station	Result	Parameter	% Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
Description														
Mill Creek (Betts)														
18-87-14	SA HQW	18.2	S acres	ND					ND		I	PRO	Fecal Coliform Bacteria	Impervious Surface
From source to Intracoastal Waterway														
Mullett Run														
18-87-9-1	SA HQW	7.5	S acres	ND					ND		I	PRO	Fecal Coliform Bacteria	Impervious Surface
From source to Virginia Creek														
Nixon Channel														
18-87-20	SA ORW	181.8	S acres	ND					ND		S	APP		
From Rich Inlet to Intracoastal Waterway														
Nixons Creek														
18-87-11	SA HQW	5.8	S acres	ND					ND		I	CAO	Fecal Coliform Bacteria	Marina
From source to Intracoastal Waterway														
Old Mill Creek														
18-87-7	SA HQW	0.1	S acres	ND					ND		I	CAO	Fecal Coliform Bacteria	Unknown
From source to Intracoastal Waterway														
Old Topsail Cree														
18-87-12a	SA HQW	16.5	S acres	ND					ND		I	PRO	Fecal Coliform Bacteria	Impervious Surface
From source to 0.5 miles inland of ICWW to Intracoastal Waterway														
18-87-12b	SA HQW	12.4	S acres	ND					ND		I	CAO	Fecal Coliform Bacteria	Impervious Surface
From 0.5 miles inland of Intracoastal Waterway to ICWW														

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
Description													
Pages Creek													
18-87-22a	SA HQW	48.4	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria
From source to 0.5 miles inland of Intracoastal Waterway													
18-87-22b	SA HQW	28.5	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria
From 0.5 miles inland of ICWW to Intracoastal Waterway													
Shinn Creek													
18-87-25	SA HQW	87.0	S acres	ND				ND			S	APP	
From Masonboro Inlet to Intracoastal Waterway													
Snows Cut													
18-87-31.5	SC	60.5	S acres	ND				ND					
From Carolina Beach Yacht Basin to Cape Fear River													
Stump Sound													
18-87-3	SA ORW	87.3	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria Unknown
Entire Sound excluding that portion in King Creek Restricted Area													
Stump Sound O													
18-87-0.5	SA ORW	939.9	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria Unknown
All waters between the s edge of the White Oak RB to the western end of Permuda Is. exclusive of the restricted area													

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		Stressors	Sources	
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status			
Description															
Topsail Sound															
18-87-10a	SA HQW	1,190.7	S acres	ND					ND			S	APP		
Entire Sound south of ICWW															
18-87-10b	SA HQW	56.2	S acres	ND					ND			I	PRO	Fecal Coliform Bacteria	Impervious Surface
Prohibited areas at Queens Grant and Hwy 210 Bridge															
18-87-10c	SA HQW	1,144.5	S acres	ND					ND			I	CAO	Fecal Coliform Bacteria	Impervious Surface
Entire Sound north of ICWW															
18-87-10d	SA HQW	12.7	S acres	ND					ND			I	CAC	Fecal Coliform Bacteria	Marina
Conditional areas at mouth of Batts Mill Creek and at Hwy 210 Bridge															

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting			
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors	Sources
Description														
Topsail Sound an														
18-87-11.7a	SA ORW	444.8	S acres	ND					ND			S	APP	
South of ICWW														
18-87-11.7b	SA ORW	2.1	S acres	ND					ND			I	PRO	Fecal Coliform Bacteria
Prohibited area north of ICWW														
18-87-11.7c	SA ORW	272.5	S acres	S	BA727	NCE			ND	BA727	NCE	I	CAO	Fecal Coliform Bacteria Marina
North of ICWW														
18-87-11.7d	SA ORW	2.7	S acres	ND					ND			I	PRO	Fecal Coliform Bacteria Marina
Prohibited area on northside of ICWW														
18-87-11.7e	SA ORW	2.7	S acres	ND					ND			I	PRO	Fecal Coliform Bacteria
Prohibited area at mouth of Mill Creek														
18-87-11.7f	SA ORW	6.8	S acres	ND					ND			I	PRO	Fecal Coliform Bacteria
Prohibited area at Figure Eight Island Marina														
Turkey Creek														
18-87-1a	SA ORW	79.5	S acres	ND					ND			I	CAC	Fecal Coliform Bacteria Unknown
From source to 0.25 miles inland of Intracoastal Waterway to ICWW														
18-87-1b	SA ORW	59.6	S acres	ND					ND			I	CAO	Fecal Coliform Bacteria Unknown
From 0.25 miles inland of ICWW to Intracoastal Waterway														

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area		Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting			
				AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors	Sources
Description														
Virginia Creek														
18-87-9a	SA HQW	23.5	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria	Impervious Surfac
From source to 0.75 miles inland of Intracoastal Waterway														
18-87-9b	SA HQW	73.6	S acres	ND				ND			I	CAO	Fecal Coliform Bacteria	Impervious Surfac
From 0.75 miles inland of ICWW to Intracoastal Waterway														
Whiskey Creek (
18-87-28	SA HQW	13.0	S acres	ND				ND			I	PRO	Fecal Coliform Bacteria	MS4 NPDES
From source to Intracoastal Waterway														
Wrightsville Recr														
18-87-24	SB #	478.7	S acres	S	BA729	NCE		ND	BA729	NCE				
In any waters within a line beginning at a point on the mainland along the Intracoastal Waterway 1400 feet north of the U.S. Hwy. 74-76 bridge extending directly across t														

Table 27 CAPE FEAR Subbasin 03-06-24

AU Number	Classification	Length/Area	Aquatic Life Assessment				Recreation Assessment			Shellfish Harvesting		
			AL Rating	Station	Result	Year/ Parameter % Exc	REC Rating	Station	Result	SH Rating	GA Status	Stressors
AL - Aquatic Life	BF - Fish Community Survey				E - Excellent			S - Supporting, I - Impaired				
REC - Recreation	BB - Benthic Community Survey				G - Good			NR - Not Rated				
	BA - Ambient Monitoring Site				GF - Good-Fair			NR*- Not Rated for Recreation (screening criteria exceeded)				
	BL- Lake Monitoring				F - Fair			ND-No Data Collected to make assessment				
	S- DEH RECMON				P - Poor			Results				
	Miles/Acres				NI - Not Impaired			CE-Criteria Exceeded > 10% and more than 10 samples				
	FW- Fresh Water				S- Severe Stress			NCE-No Criteria Exceeded				
	S- Salt Water				M-Moderate Stress							
					N- Natural			GA Status- DEH SS Growing Area Status				

Aquatic Life Rating Summary

Recreation Rating Summary

Fish Consumption Rating Summary

S	m	1,121.6	S acres
I	m	70.4	S acres
ND		7,116.8	S acres
ND		38.3	Coast Mile

S	m	973.1	S acres
S	m	38.3	Coast Mile
ND		7,335.7	S acres

I	e	8,308.8	S acres
I	e	38.3	Coast Mile

There were 1,192 estuarine acres (14.3 percent) monitored during this assessment period in the aquatic life category with 70.4 acres (<1 percent) Impaired. There were 973.1 estuarine acres (11.7 percent) monitored during this assessment period in the recreation category with no Impaired acreage. There were 7,416.3 estuarine acres (100 percent) monitored during this assessment period in the shellfish harvesting category with 4,439.1 acres (59.8 percent) Impaired.

24.3 Status and Recommendations of Previously and Newly Impaired Waters

The following waters were either identified as Impaired in the previous basin plan (2000) or are newly Impaired based on recent data. If previously identified as Impaired, the water will either remain on the state's 303(d) list or will be delisted based on recent data showing water quality improvements. If the water is newly Impaired, it will likely be placed on the 2006 303(d) list. The current status and recommendations for addressing these waters are presented below, and each is identified by an assessment unit number (AU#). Refer to the overview for more information on AUs. Information regarding 303(d) listing and reporting methodology is presented in Appendix VII.

For Impaired Class SA waters presented below, refer to Chapter 27 for more information and recommendations on shellfish harvesting use support and DEH SS growing area classifications. All waters identified as Impaired in the shellfish harvesting category will be added to the 303(d) list of Impaired waters. TMDLs (Chapter 35) will be developed for identified stressors within 8-13 years of listing.

24.3.1 Banks Channel [AU# 18-87-10-1b and 18-87-24-3]

Current Status

Banks Channel [18-87-10-1b] Prohibited area at Annamarina (4.2 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as prohibited in growing area B-7.

Banks Channel [18-87-24.3] south of Wrightsville Beach Recreational area (111.1 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-8. These segments of Banks Channel will be added to the 303(d) list of Impaired waters.

24.3.2 Batts Mill Creek [AU# 18-87-6], County Line Branch [AU# 18-87-6-1] and Cypress Branch [AU# 18-87-6-2]

Current Status

Batts Mill Creek from source to the ICWW (40.8 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-9. County Line Branch from source to Batts Mill Creek (1 acres) and Cypress Branch from source to Batts Mill Creek (1 acre) are Impaired for shellfish harvesting because these segments are classified by DEH SS as conditionally approved-closed in growing area B-9. These segments of Batts Mill Creek will be added to the 303(d) list of Impaired waters.

24.3.3 Beckys Creek [AU# 18-87-8a and b]

Current Status

Beckys Creek [18-87-8a and b] from source to the ICWW (108.9 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-8. Beckys Creek will be added to the 303(d) list of Impaired waters.

24.3.4 Everett Bay [AU# 18-87-2]

Current Status

Everett Bay (240.6 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-9. Everett Bay will be added to the 303(d) list of Impaired waters.

24.3.5 Everett Creek [AU# 18-87-29]

Current Status

Everett Creek from source to ICWW (0.7 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as prohibited in growing area B-5. Everett Creek will be added to the 303(d) list of Impaired waters.

24.3.6 Futch Creek [AU# 18-87-19a and b]

Current Status

Futch Creek [18-87-19a and b] from source to the ICWW (28 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-8. These segments of Futch Creek will be added to the 303(d) list of Impaired waters.

24.3.7 Hewletts Creek [AU# 18-87-26a and b]

Current Status

Hewletts Creek [18-87-26a and b] from source to the ICWW (98.2 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-6. Segment 18-87-26a (78.3 acres) is Supporting aquatic life because of a Moderate benthic community rating at site BB299. This upper portion of Hewletts Creek had good snag and root mat habitats, and some intolerant species were noted at the site. These segments of Hewletts Creek will be added to the 303(d) list of Impaired waters.

24.3.8 Howe Creek [AU# 18-87-23]

Current Status

Howe Creek from source to ICWW (28.6 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as prohibited in growing area B-7. Howe Creek will be added to the 303(d) list of Impaired waters.

24.3.9 Intracoastal Waterway (ICWW) [AU# 18-87, 18-87-(5.5), (11.5), (23.5)a, b and c]

Current Status

The ICWW [18-87] in DEH growing area B-9 (76.2 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-9. This segment is supporting aquatic life and recreation because no criteria were exceeded at sites BA 723 and S-55. This segment will be added to the 303(d) list of Impaired waters.

The ICWW [18-87-(5.5)] in DEH growing area B-8 (159.6 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-8. This segment is supporting recreation because no criteria were exceeded at sites S-52, S-53 and S-54. This segment will be added to the 303(d) list of Impaired waters.

The ICWW [18-87-(11.5) and (23.5)b] in DEH growing area B-7 (176 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-7. Segment 18-87-(11.5) is supporting recreation because no criteria were exceeded at sites S-50 and S-51. These segments will be added to the 303(d) list of Impaired waters.

The ICWW [18-87-(23.5)a] in DEH growing area B-7 (52.8 acres) is Supporting recreation and shellfish harvesting because this segment is classified by DEH SS as approved and because no criteria were exceeded at site S-48.

The ICWW [18-87-(23.5)c] in DEH growing area B-7 (70.4 acres) is Impaired for aquatic life and shellfish harvesting because dissolved oxygen violated water quality standards in 11 percent of samples at site BA728, and this segment is classified by DEH SS as conditionally approved-open. Site BA728 is at the mouth of Howe Creek in the ICWW. There is extensive development occurring in the headwaters of Howe Creek in and around Wilmington. This segment will be added to the 303(d) list of Impaired waters. DWQ will work with Wilmington and New Hanover County to identify potential sources of bacteria and oxygen-consuming materials.

24.3.10 Masonboro Sound ORW Area (ICWW) [AU# 18-87-25.7a, b, c and d]

Current Status

Masonboro Sound [18-87-25.7a] in DEH growing area B-5 and B-6 (285.3 acres) is Supporting recreation and shellfish harvesting because this segment is classified by DEH SS as approved and because no criteria were exceeded at site S-47.

Masonboro Sound [18-87-25.7b, c and d] in DEH growing area B-5 and B-6 (379.7 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open. Segment 18-87-25.7c is Supporting aquatic life because no criteria were exceeded at sites BA730. These segments will be added to the 303(d) list of Impaired waters.

24.3.11 Mill Creek [AU# 18-87-14]

Current Status

Mill Creek from source to ICWW (18.2 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as prohibited in growing area B-8. Mill Creek will be added to the 303(d) list of Impaired waters.

24.3.12 Virginia Creek [18-87-9a and b] and Mullett Run [AU# 18-87-9-1]

Current Status

Virginia Creek and Mullett Run from source to ICWW (104.6 acres) are Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-8. Both creeks will be added to the 303(d) list of Impaired waters.

24.3.13 Nixons Creek [AU# 18-87-11]

Current Status

Nixons Creek from source to ICWW (5.8 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-8. Nixons Creek will be added to the 303(d) list of Impaired waters.

24.3.14 Old Mill Creek [AU# 18-87-7]

Current Status

Old Mill Creek from source to ICWW (0.1 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open in growing area B-9. Old Mill Creek will be added to the 303(d) list of Impaired waters.

24.3.15 Old Topsail Creek [AU# 18-87-12a and b]

Current Status

Old Topsail Creek from source to the ICWW (28.9 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-8. These segments of Old Topsail Creek will be added to the 303(d) list of Impaired waters.

24.3.16 Pages Creek [AU# 18-87-22a and b]

Current Status

Pages Creek from source to the ICWW (76.9 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing area B-7. These segments of Pages Creek will be added to the 303(d) list of Impaired waters.

24.3.17 Stump Sound [18-87-3] and Stump Sound ORW Area [AU# 18-87-0.5]

Current Status

Stump Sound and Stump Sound ORW Area from the White Oak River Basin to Permuda Island (1,027.2 acres) are Impaired for shellfish harvesting because these segments are classified by DEH SS as conditionally approved-open in growing area B-8. Both segments will be added to the 303(d) list of Impaired waters.

24.3.18 Topsail Sound [AU# 18-87-10a, b, c and d]

Current Status

Topsail Sound [18-87-10b, c, and d] areas north of the ICWW and around Queens Grant and the Hwy 210 bridge (1,213.4 acres) are Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited, conditionally approved-open and conditionally approved-closed in growing areas B-8 and B-9. These segments will be added to the 303(d) list of Impaired waters. Segment 18-87-10a (1,190.7 acres) south of the ICWW is Supporting shellfish harvesting because this area is classified by DEH SS as approved.

24.3.19 Topsail Sound and Middle Sound ORW Area [AU# 18-87-11.7a, b, c, d, e and f]

Current Status

Topsail Sound [18-87-11.7b, d, e and f] areas north of the ICWW and around the Figure Eight Island Marina (14.3 acres) are Impaired for shellfish harvesting because these segments are classified by DEH SS as prohibited and conditionally approved-open in growing areas B-7 and B-8.

Segment 18-87-11.7c (272.5 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as conditionally approved-open. This segment will be added to the 303(d) list of Impaired waters. This segment is Supporting aquatic life because no criteria were exceeded at site BA727.

Segment 18-87-11.7a (444.8 acres) south of the ICWW is Supporting shellfish harvesting because this area is classified by DEH SS as approved.

24.3.20 Turkey Creek [AU# 18-87-1a and b]

Current Status

Turkey Creek from source to the ICWW (139.1 acres) is Impaired for shellfish harvesting because these segments are classified by DEH SS as conditionally approved-open and conditionally approved-closed in growing area B-9. These segments of Turkey Creek will be added to the 303(d) list of Impaired waters.

24.3.21 Whiskey Creek [AU# 18-87-28]

Current Status

Whiskey Creek from source to ICWW (13 acres) is Impaired for shellfish harvesting because this segment is classified by DEH SS as prohibited in growing area B-6. Whiskey Creek will be added to the 303(d) list of Impaired waters.

24.4 Status and Recommendations for Waters with Noted Impacts

The surface waters discussed in this section are not Impaired. However, notable water quality problems and concerns have been documented for some waters based on this assessment. While these waters are not Impaired, attention and resources should be focused on these waters to prevent additional degradation or facilitate water quality improvement. Waters in the following section are identified by assessment unit number (AU#). Refer to the overview for more information on AUs.

24.4.1 Kings Creek Restricted Area [AU# 18-87-4]

Current Status and 2005 Recommendations

Kings Creek Restricted Area from source to ICWW (165.7 acres) is Not Rated on an evaluated basis for recreation because Holly Ridge WWTP (NC0025859) had significant violations of fecal coliform bacteria permit limits. This creek is Not Rated for aquatic life because the WWTP also had five whole effluent toxicity test failures that may have adversely impacted aquatic life during the last two years of the assessment period. The NPDES compliance process will be used to address the significant permit violations noted above.