BASELINE BENTHIC MONITORING RESULTS

APRIL, JULY, OCTOBER 2003 AND JANUARY 2004

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 1 BOGUE NW

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
AMPHIPOD	HAUSTORIUS CANADENSIS	1	1	0	2	67
CHAETOGNATHA	CHAETOGNATHA SP.	1	0	0	1	33
	TOTAL ORGANISMS	2	0	0	3	
	TOTAL TAXA				2	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 2 BOGUE CENTRAL

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
BIVALVE	DONAX VARIABILIS	1	1	1	3	50
ISOPOD	EDOTEA TRILOBA	0	1	0	1	17
DECAPOD	EMERITA TALPOIDA	1	0	0	1	17
AMPHIPOD	HAUSTORIUS CANADENSIS	0	0	1	1	17
	TOTAL ORGANISMS	2	2	2	6	
	TOTAL TAXA				4	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 3 BOGUE SE

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
POLYCHAETE	SCOLELEPIS SQUAMATA	2	1	5	8	89
DECAPOD	EMERITA TALPOIDA	0	1	0	1	11
	TOTAL ORGANISMS	2	2	5	9	
	TOTAL TAXA				2	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 4 INLET NE

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
AMPHIPOD	BATHYPOREIA PARKERI	0	6	2	8	40
AMPHIPOD	ACANTHOHAUSTORIUS MILLSI	0	4	0	4	20
AMPHIPOD	HAUSTORIUS CANADENSIS	2	0	0	2	10
POLYCHAETE	LEITOSCOLOPLOS FRAGILIS	1	0	1	2	10
CHAETOGNATHA	CHAETOGNATHA SP.	0	1	0	1	5
BIVALVE	DONAX VARIABILIS	0	1	0	1	5
NEMERTEAN	NEMERTEA SP.	0	0	1	1	5
POLYCHAETE	PARAONIS FULGENS	0	0	1	1	5
	TOTAL ORGANISMS	3	12	5	20	
	TOTAL TAXA				8	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 5 INLET CENTRAL WEST

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
AMPHIPOD	ACANTHOHAUSTORIUS MILLSI	9	2	1	12	63
POLYCHAETE	PARAONIS FULGENS	1	1	1	3	16
TANAID	HARGERIA REPAX	1	0	1	2	11
BIVALVE	DONAX VARIABILIS	1	0	0	1	5
ISOPOD	EDOTEA TRILOBA	0	1	0	1	5
	TOTAL ORGANISMS	12	4	3	19	
	TOTAL TAXA				5	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 6 INLET SW

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
AMPHIPOD	PARAHAUSTORIUS LONGIMERUS	2	3	0	5	25
AMPHIPOD	ACANTHOHAUSTORIUS MILLSI	1	3	0	4	20
AMPHIPOD	BATHYPOREIA PARKERI	0	1	2	3	15
BIVALVE	DONAX VARIABILIS	0	0	3	3	15
DECAPOD	EMERITA TALPOIDA	0	2	0	2	10
ISOPOD	ANCINUS DEPRESSUS	1	0	0	1	5
POLYCHAETE	PARAONIS FULGENS	0	1	0	1	5
POLYCHAETE	SCOLELEPIS SQUAMATA	0	0	1	1	5
	TOTAL ORGANISMS	4	10	6	20	
	TOTAL TAXA				8	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 7 ISLAND #2

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
AMPHIPOD	ACANTHOHAUSTORIUS MILLSI	2	2	1	5	25
AMPHIPOD	BATHYPOREIA PARKERI	0	3	1	4	20
AMPHIPOD	PARAHAUSTORIUS LONGIMERUS	1	2	1	4	20
BIVALVE	MACOMA BALTHICA	0	1	1	2	10
POLYCHAETE	MAGELONA PAPILLICORNIS	1	1	0	2	10
TANAID	HARGERIA REPAX	0	0	1	1	5
ECHINODEM	MELLITA ISOMETRA	1	0	0	1	5
DECAPOD	SQUILLA EMPUSA	0	1	0	1	5
	TOTAL ORGANISMS	5	10	5	20	
	TOTAL TAXA				8	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 8 MARSH-BOGUE

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
POLYCHAETE	NEANTHES SUCCINEA	10	8	13	31	19
TANAID	HARGERIA REPAX	4	1	21	26	16
POLYCHAETE	STREBLOSPIO BENEDICTI	0	0	25	25	15
POLYCHAETE	CAPITELLA CAPITATA	0	0	16	16	10
OLIGOCHAETE	TUBIFICIDAE SP. W/OUT HAIRS	2	0	13	15	9
POLYCHAETE	POLYDORA LIGNI	2	1	12	15	9
POLYCHAETE	CHONE AMERICANA	0	0	6	6	4
CIRRIPEDIA	BALANUS IMPROVISUS	0	0	4	4	2
POLYCHAETE	FABRICIA SP.	0	0	4	4	2
AMPHIPOD	GAMMARUS PALUSTRIS	0	0	3	3	2
OLIGOCHAETE	MONOPYLEPHORUS PARVUS	0	0	3	3	2
DECAPOD	UCA SP.	2	0	1	3	2
BIVALVE	AMYGDALUM PAPYRIUM	0	0	2	2	1
GASTROPOD	GASTROPODA SP.	2	0	0	2	1
BIVALVE	GEUKENSIA DEMISSA	1	0	2	3	2
DECAPOD	RHITHROPANOPEUS HARRISII	0	0	2	2	1
BIVALVE	CRASSOSTREA VIRGINICA	0	0	1	1	1
DECAPOD	XANTHIDAE SP.	0	1	0	1	1
CIRRIPEDIA	CIRRIPEDIA SP.	0	1	0	1	1
	TOTAL ORGANISMS	23	12	128	163	
	TOTAL TAXA				19	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 9 MARSH- DUDLEY

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
POLYCHAETE	NEANTHES SUCCINEA	4	1	0	5	63
CIRRIPEDIA	CIRRIPEDIA SP.	2	0	0	2	25
TANAID	HARGERIA REPAX	0	1	0	1	13
	TOTAL ORGANISMS	6	2	0	8	
	TOTAL TAXA				3	

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:
STATION: 10 MARSH- BEAR

		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
POLYCHAETE	CAPITELLA CAPITATA	0	4	5	9	50
OLIGOCHAETE	MONOPYLEPHORUS PARVUS	1	1	0	2	11
OLIGOCHAETE	TUBIFICIDAE SP. W/OUT HAIRS	0	2	0	2	11
DECAPOD	UCA SP.	1	0	1	2	11
BIVALVE	AMYGDALUMPAPYRIUM	1	0	0	1	6
CHAETOGNATHA	CHAETOGNATHA SP.	0	1	0	1	6
AMPHIPOD	ORCHESTIA GRILLUS	1	0	0	1	6
	TOTAL ORGANISMS	4	8	6	18	
	TOTAL TAXA				7	

	COMPREHENSIVE SPECIES LIST	
NEMERTEAN	NEMERTEA SP.	1
POLYCHAETE	STREBLOSPIO BENEDICTI	2
POLYCHAETE	SCOLELEPIS SQUAMATA	2
POLYCHAETE	PARAONIS FULGENS	2
POLYCHAETE	NEANTHES SUCCINEA	2
POLYCHAETE	MAGELONA PAPILLICORNIS	2
POLYCHAETE	LEITOSCOLOPLOS FRAGILIS	2
POLYCHAETE	FABRICIA SP.	2
POLYCHAETE	CHONE AMERICANA	2
POLYCHAETE	CAPITELLA CAPITATA	2
OLIGOCHAETE	TUBIFICIDAE SP. W/OUT HAIRS	3
OLIGOCHAETE	MONOPYLEPHORUS PARVUS	3
GASTROPOD	GASTROPODA SP.	4

BIVALVE	AMYGDALUMPAPYRIUM	5
BIVALVE	CRASSOSTREA VIRGINICA	5
BIVALVE	DONAX VARIABILIS	5
BIVALVE	MACOMA BALTHICA	5
BIVALVE	GEUKENSIA DEMISSA	5
TANAID	HARGERIA REPAX	6
ISOPOD	ANCINUS DEPRESSUS	7
ISOPOD	EDOTEA TRILOBA	7
AMPHIPOD	PARAHAUSTORIUS LONGIMERUS	8
AMPHIPOD	ORCHESTIA GRILLUS	8
AMPHIPOD	HAUSTORIUS CANADENSIS	8
AMPHIPOD	GAMMARUS PALUSTRIS	8
AMPHIPOD	BATHYPOREIA PARKERI	8
AMPHIPOD	ACANTHOHAUSTORIUS MILLSI	8
DECAPOD	XANTHIDAE SP.	9
DECAPOD	UCA SP.	9
DECAPOD	SQUILLA EMPUSA	9
DECAPOD	RHITHROPANOPEUS HARRISII	9
DECAPOD	EMERITA TALPOIDA	9
CIRRIPEDIA	CIRRIPEDIA SP.	10
ECHINODEM	MELLITA ISOMETRA	11
CHAETOGNATHA	CHAETOGNATHA SP.	12

CPE
NORTH CAROLINA
COLLECTED: APRIL 2003
SAMPLE TYPE:

STATISTICS	STATION				
	1	2	3	4	5
Taxa	2	4	2	8	5
Individuals	3	6	9	20	19
ORGS/m2	127	255	382	849	807
H'ln	0.6365	1.2425	0.3488	1.7481	1.1286
H'log10	0.2764	0.5396	0.1515	0.7592	0.4901
H'log2	0.9183	1.7925	0.5033	2.5219	1.6282
J'(equitability)	0.9183	0.8962	0.5033	0.8406	0.7012
Marg, (richness)	0.9102	1.6743	0.4551	2.3367	1.3585
Simpson	0.3333	0.2000	0.7778	0.1895	0.4094
Gini	0.6667	0.8000	0.2222	0.8105	0.5906

STATISTICS	STATION				
	6	7	8	9	10
Taxa	8	8	19	3	7
Individuals	20	20	163	8	18
ORGS/m2	849	849	6921	340	764
H'ln	1.9172	1.9002	2.4163	0.9003	1.5607
H'log10	0.8326	0.8253	1.0494	0.3910	0.6778
H'log2	2.7660	2.7414	3.4860	1.2988	2.2516
J'(equitability)	0.9220	0.9138	0.8206	0.8194	0.8020
Marg, (richness)	2.3367	2.3367	3.5337	0.9618	2.0759
Simpson	0.1211	0.1263	0.1107	0.3929	0.2549
Gini	0.8789	0.8737	0.8893	0.6071	0.7451

MEMORANDUM

TO: Ms. Erin Haight, Coastal Planning & Engineering, Inc., 2481 Northwest Boca Raton Blvd., Boca Rotan, Fl 33431
CC: CP# 1937.03
FROM: Samuel Cooper, CZR Incorporated, 4709 College Acres Drive, Suite #2, Wilmington, NC 28403
DATE: 17 April 2003, via e-mail
RE: Summary of Benthic Collections Data

Sample site	Description	Target location[a]	Sample location[b]	Difference (ft) in target vs actual sample location	Sample date[c]	Approximate sample time
1	Bogue NW	34E 38' 57.29935" N 77E 06' 24.03596" W	34E 38' 59.59234" N 77E 06' 21.11735" W	336[d]	15 Apr 03	1016
2	Bogue central	34E 38' 49.06195" N 77E 06' 06.74718" W	34E 38' 51.28322" N 77E 06' 04.75231" W	280[d]	15 Apr 03	1040
3	Bogue SE	34E 38' 38.06959" N 77E 05' 50.46901" W	34E 38' 39.19653" N 77E 05' 48.94764" W	171[d]	15 Apr 03	1058
4	Inlet NE	34E 38' 40.84870" N 77E 06' 28.60567" W	34E 38' 40.99322" N 77E 06' 28.55452" W	15	15 Apr 03	1151
5	Inlet central W	34E 38' 29.17621" N 77E 06' 33.77104" W	34E 38' 29.08165" N 77E 06' 33.92654" W	16	15 Apr 03	1213
6	Inlet SW	34E 38' 19.56555" N 77E 06' 30.38936" W	34E 38' 23.64065" N 77E 06' 36.95745" W	686[e]	15 Apr 03	1328
7	Island #2	34E 38' 48.49" N 77E 06' 55.92" W	34E 38' 48.49961" N 77E 06' 55.94210" W	2	15 Apr 03	1404
8	Marsh - Bogue	34E 39' 14.61" N 77E 05' 44.38" W	34E 39' 17.98759" N 77E 05' 43.26482" W	354[f]	14 Apr 03	1243
9	Marsh - Dudley	34E 39' 30.96" N 77E 06' 20.32" W	34E 39' 31.78914" N 77E 06' 21.08452" W	105[f,g]	14 Apr 03	1330
10	Marsh - Bear	34E 38' 43.57" N 77E 07' 46.43" W	34E 38' 45.79215" N 77E 07' 49.30678" W	329[f,h]	14 Apr 03	1620

[a] Lat/Long coordinates, NAD 83. Sites 1 through 7 provided by CPE. Sites 8 through 10 estimated from USGS topographic map.
[b] Coordinates obtained with Trimble Pro XR GPS unit.
[c] Ranges for water quality data collected in the vicinity of Bogue Inlet on 15 April 2003 were: salinity 26.6-32.4 ppt, temperature 18.2-21.1EC, dissolved oxygen 7.09-8.13 mg/P, and conductivity 32.4-38.62 ms.
[d] The differences between target and actual sample sites is due to erosion of the west end of Bogue Banks. Target Sites 1-3 were located in the inlet water, approximately 171 to 336 feet from shore. The actual sample sites were moved to the closest intertidal shore.
[e] Target site was in subtidal swash zone, within breaking waves. The actual sample site was moved to the closest intertidal area 686 feet to the NW, which is 606 feet from actual sampling Site 5. The difference between target site 5 and 6 is 1,012 feet.
[f] Difference is due largely to estimated target location from an old topographic map.
[g] Shoreline is eroding and marsh edge is an abrupt exposed peat scarp. Sample site was on slightly elevated berm.
[h] Target site was less than 200 feet from upland ridge behind Bear Island. To establish a 300-foot long transect from the target site would have required an orientation parallel and within 75 feet of a shoreline (either the main inlet or the channel behind Bear Island). Potential alternative sites included 1) across the channel parallel with Bear Island or 2) moving approximately 600 feet SW down the channel parallel with Bear. A discussion with CPE resulted in

selection of the first alternative.

NORTH CAROLINA
COLLECTED: July 2003
SAMPLE TYPE: 10 cm CORE

		SITE # 1				
		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
8 AMPHIPODA	NEOHAUSTORIUS SCHMITZI	17	6	6	29	46
9 DECAPODA	EMERITA TALPOIDA	27	0	2	29	46
8 AMPHIPODA	PARAHAUSTORIUS LONGIMERIS	0	0	2	2	3
5 BIVALVIA	DONAX VARIABILIS	0	2	0	2	3
2 POLYCHAETA	SCOLELEPIS SQUAMATA	0	1	0	1	2
	TOTAL ORGANISMS	**44**	9	10	63	
	TOTAL TAXA				5	

		SITE # 2				
		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
9 DECAPODA	EMERITA TALPOIDA	6	19	29	54	78
5 BIVALVIA	DONAX VARIABILIS	5	1	1	7	10
8 AMPHIPODA	NEOHAUSTORIUS SCHMITZI	4	0	1	5	7
2 POLYCHAETA	SCOLELEPIS SQUAMATA	0	1	0	1	1
7 ISOPODA	SPHAEROMA QUADRIDENTATA	0	1	0	1	1
	TOTAL ORGANISMS	15	22	31	68	
	TOTAL TAXA				5	

		SITE # 3				
		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
2 POLYCHAETA	SCOLELEPIS SQUAMATA	46	6	6	58	49
9 DECAPODA	EMERITA TALPOIDA	11	30	20	61	51
	TOTAL ORGANISMS	57	36	26	119	
	TOTAL TAXA				2	

		SITE # 4				
		REPLICATE				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
2 POLYCHAETA	LEITOSCOLOPLOS FRAGILIS	3	2	6	11	58
8 AMPHIPODA	ACANTHOHAUSTORIUS MILLSI	1	2	0	3	16
2 POLYCHAETA	PARAONIS FULGENS	1	1	0	2	11
8 TANAIDACEA	HARGERIA REPAX	0	1	0	1	5
8 AMPHIPODA	PARAHAUSTORIUS LONGIMERIS	0	0	1	1	5
8 AMPHIPODA	BATHYPOREIA PARKERI	0	0	1	1	5
	TOTAL ORGANISMS	5	6	8	19	
	TOTAL TAXA				6	

		REPLICATE				
		SITE # 5				
	TAXON	**A**	**B**	**C**	**TOTAL**	**%**
2 POLYCHAETA	SCOLELEPIS SQUAMATA	3	0	3	6	46
2 POLYCHAETA	PARAONIS FULGENS	3	0	1	4	31
8 AMPHIPODA	BATHYPOREIA PARKERI	0	0	2	2	15
8 AMPHIPODA	PARAHAUSTORIUS LONGIMERIS	0	1	0	1	8
	TOTAL ORGANISMS	6	1	6	13	
	TOTAL TAXA				4	

		REPLICATE SITE # 6					
	TAXA	A	B	C		TOTAL	%
8 AMPHIPODA	PARAHAUSTORIUS LONGIMERIS	2	1	1		4	57
2 POLYCHAETA	SCOLELEPIS SQUAMATA	0	2	0		2	29
8 AMPHIPODA	EOBROLGUS SPINOSUS	0	1	0		1	14
	TOTAL ORGANISMS	2	4	1	0	7	
	TOTAL TAXA					3	

		REPLICATE SITE # 7					
	TAXA	A	B	C		TOTAL	%
2 POLYCHAETA	MAGELONA PAPILLICORNIS	1	1	0		2	25
2 POLYCHAETA	DISPIO UNCINATA	0	0	1		1	13
2 POLYCHAETA	LEITOSCOLOPLOS FRAGILIS	1	0	0		1	13
2 POLYCHAETA	NEPHTYS PCTA	0	0	1		1	13
2 POLYCHAETA	PARAONIS FULGENS	0	1	0		1	13
5 BIVALVIA	DONAX VARIABILIS	0	1	0		1	13
8 AMPHIPODA	ACANTHOHAUSTORIUS MILLSI	0	1	0		1	13
	TOTAL ORGANISMS	2	4	2	0	8	
	TOTAL TAXA					7	

		REPLICATE SITE # 8					
	TAXA	A	B	C		TOTAL	%
9 DECAPODA	UCA SP.	3	2	5		10	43
2 POLYCHAETA	CAPITELLA CAPITATA	0	5	0		5	22
1 OLIGOCHAETA	TUBIFICIDAE SP. W/OUT HAIRS	0	3	0		3	13
1 OLIGOCHAETA	TUBIFICIDAE SP. WITH HAIRS	0	2	0		2	9
2 POLYCHAETA	NEANTHES SUCCINEA	2	0	0		2	9
6 TANAIDACEA	HARGERIA REPAX	0	1	0		1	4
	TOTAL ORGANISMS	5	13	5		23	
	TOTAL TAXA					6	

	TAXA	REPLICATE SITE # 9 A	B	C	TOTAL	%
	NOTHING					

	TAXA	REPLICATE SITE # 10 A	B	C	TOTAL	%
9 DECAPODA	UCA SP.	1	0	0	1	50
2 POLYCHAETA	CAPITELLA CAPITATA	0	1	0	1	50
	TOTAL ORGANISMS	1	1	0	2	
	TOTAL TAXA				2	

CPE
NORTH CAROLINA
COLLECTED: JULY 2003
SAMPLE TYPE:

STATISTICS	STATION				
	1	2	3	4	5
Taxa	5	5	2	6	4
Individuals	63	68	119	19	13
ORGS/m2	2675	2887	5053	807	552
H'ln	0.9991	0.7331	0.6928	1.3098	1.2048
H'log10	0.4339	0.3184	0.3009	0.5688	0.5232
H'log2	1.4414	1.0577	0.9995	1.8896	1.7381
J'(equitability)	0.6208	0.4555	0.9995	0.7310	0.8691
Marg, (richness)	0.9655	0.9480	0.2092	1.6981	1.1696
Simpson	0.4168	0.6418	0.4961	0.3450	0.2821
Gini	0.5832	0.3582	0.5039	0.6550	0.7179

STATISTICS	STATION				
	6	7	8	9	10
Taxa	3	7	6	NOTHING	2
Individuals	7	8	23		2
ORGS/m2	297	340	977		85
H'ln	0.9557	1.9062	1.5206		0.6931
H'log10	0.4151	0.8278	0.6604		0.3010
H'log2	1.3788	2.7500	2.1938		1.0000
J'(equitability)	0.8699	0.9796	0.8487		1.0000
Marg, (richness)	1.0278	2.8854	1.5946		1.4427
Simpson	0.3333	0.0357	0.2372		0.0000
Gini	0.6667	0.9643	0.7628		1.0000