



**A REPORT ON**

**TASK 5a: BENTHIC SAMPLING AND PROCESSING**

**FOR THE 2007 IMPLEMENTATION OF THE  
SARASOTA TIDAL CREEK CONDITION INDEX**

**Specific Authorization No. 2 to Contract 2004-134  
Sarasota County Water Resources  
Contract No. 2007-274  
Purchase Order No. P737068**

**Submitted September 24, 2007 and  
January 25, 2008 to**

**Kathy Meaux  
Sarasota County Water Resources  
1001 Sarasota Center Boulevard  
Sarasota, Florida 24240**

**By**

**Mote Marine Laboratory  
1600 Ken Thompson Parkway  
Sarasota Florida, 34236**

**E.D. Estevez, Ph.D.  
Principal Investigator**

**Mote Marine Laboratory Technical Report No. 1211**



## TABLE OF CONTENTS

LIST OF TABLES .....	<i>i</i>
LIST OF FIGURES .....	<i>ii</i>
BACKGROUND .....	1
Index Application And Creek Assessment .....	2
Task 5a: Benthic Sampling And Processing.....	2
Methods.....	2
FIELD AND LABORATORY SAMPLE PROCESSING.....	3
Benthic Fauna .....	3
Sediment Analysis .....	3
DATA ANALYSIS METHODS .....	5
Indices Of Community Structure .....	5
FINDINGS.....	7
Benthic Macroinfauna.....	7
Sediment Composition.....	9
DISCUSSION.....	11
ACKNOWLEDGMENTS .....	11
LITERATURE CITED .....	32
APPENDICES .....	33
Appendix Table 1. Rank order species list for each creek .....	34
Appendix Table 2. Benthic species data representing the percentage composition of the total fauna by species for each station, and .....	46
Appendix Table 3. Percentage distribution of sediment particulates among grain size categories.....	52

### LIST OF TABLES

Table 1.	Benthic community parameters for 16 tidal creeks of the Sarasota Bay system. ....	7
Table 2.	Percentage composition of solids, moisture, organic content, sand silt and clay for each creek .....	9
Table 3.	Sediment grain size distribution statistics for each creek .....	10

## LIST OF FIGURES

Figure 1.	Number of taxa arranged in N-S order (top) and in rank value order (bottom).....	12
Figure 2.	Abundance as number of individuals per square meter arranged in N-S order (top) and in rank value order (bottom) .....	13
Figure 3.	Shannon-Weiner Index of diversity arranged in N-S order (top) and in rank value order (bottom) .....	14
Figure 4.	Pielou's Index of equitability arranged in N-S order (top) and in rank bottom Order (bottom).....	15
Figure 5.	Margalef's Index of species richness arranged in N-S order (top) and in rank value order (bottom) .....	16
Figure 6.	Percentage of fauna comprised of polychaetes at each creek in N-S order (top) and in rank value ordre (bottom).....	17
Figure 7.	Gini's Index of diversity arranged in N-S order (top) and in rank value order (bottom) .....	18
Figure 8.	Cluster diagram illustrating similarity levels for faunal community composition with data normalized to counts per square meter. ....	19
Figure 9.	Cluster diagram illustrating similarity levels for faunal community composition with data reduced to species presence (1).....	20
Figure 10.	Percentage sand present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).....	21
Figure 11.	Percentage clay present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).....	22
Figure 12.	Percentage silt present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).....	23
Figure 13.	Percentage organic content (volatile solids) present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).....	24
Figure 14.	Percentage moisture present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).....	25
Figure 15.	Percentage solids present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).....	26
Figure 16.	Mean sediment grain size for samples from at each location arranged in N-S order (top) and in rank value order (bottom).....	27
Figure 17.	Median sediment grain size for samples from each location arranged in N-S order (top) and in rank value order (bottom).....	28
Figure 18.	Value for the graphic standard deviation of mean grain size for samples from each location arranged in N-S order (top) and in rank value order (bottom) .....	29
Figure 19.	Value for the graphic skewness of grain size distribution for samples from each location arranged in N-S order (top) and in rank value order (bottom).....	30
Figure 20.	Value for the graphic kurtosis of grain size distribution for samples from each location arranged in N-S order (top) and in rank value order (bottom).....	31

## **LETTER REPORT**

### **SARASOTA COUNTY TIDAL CREEK CONDITION INDEX**

#### **PHASE 4 (2007): TASK 5A**

#### **BACKGROUND**

The importance of tidal creeks, including their headwater areas and the narrow reaches of coastal rivers, cannot be overstated. They are valuable environmental resources in that they are unique ecosystems that function as a link between uplands and estuaries. While comparative ecological health assessment indices have been developed for marine, estuarine, and freshwater ecosystems, none has been developed for tidal creeks using rapid survey techniques. Sarasota County and Mote Marine Laboratory have collaborated to develop biological indicators for tidal creeks. The preliminary effort to develop a Tidal Creek Condition Index for County tidal creeks by Mote Marine Laboratory was divided into three phases.

During the first phase of the project in 2004, County staff conducted research to collect existing data for the sub-basins of the 20 tidal creeks. The data were compared to establish the ecological condition of those streams, characterize the condition of their sub-basins, and select 2 streams that could be deemed as opposites (best and worst) by the condition of their respective sub-basins. Phase I resulted in a preliminary rough grading of 16 coastal watersheds and streams in order of best condition to worst condition, and concluded that there were enough streams with very different major basin features to be able to move forward with the next phase of the project.

During the second phase in 2005, Mote Marine Laboratory conducted field studies to characterize extremes among County coastal systems to determine the range of ecological conditions available for index development. The assessment resulted in two reports: “The Gottfried Creek Reconnaissance Report”, July 12, 2005 and “The Whitaker Bayou Reconnaissance Report”, August 17, 2005 and concluded that there were a sufficient number of county systems to develop a biologically based stream condition index.

During the third phase in 2006, Mote Marine Laboratory developed and tested a prototypic creek index based on ecological attributes that could be measured using rapid survey techniques. The test was made in 15 County coastal creek systems. A report, “Biological Condition Index for Tidal Streams in Coastal Sarasota County, Florida,” provided methods and results of the test, and a recapitulation of previous planning efforts, was submitted on September 30, 2006. Details of Phase III conclusions and recommendations appear in the July 23, 2007 “Report on Preparatory Tasks 1-4 for the 2007 Implementation of the Sarasota Tidal Creek Condition Index.”

## **Index Application and Creek Assessment**

To accomplish the project, Mote Marine Laboratory has applied the prototype index to the following 16 tidal creeks in Sarasota County: Whitaker Bayou (aka Walker Creek), Hudson Bayou, Phillippi Creek, Matheny Creek, Clower Creek, Catfish Creek, North Creek, South Creek, Shakett Creek, Curry Creek, Hatchett Creek, Alligator Creek, Woodmere Creek, Forked Creek, Gottfried Creek, and Ainger Creek. This report addresses Task 5A of the 2007 effort.

### **Task 5A: Benthic Sampling and Processing**

Task 5A provides for the sorting, identification and data summaries for the benthic macroinfauna collections. Deliverables include an Excel spreadsheet of all data and metadata, plus Word files of all graphs.

### **METHODS**

The July 23, 2007 “Report on Preparatory Tasks 1-4 for the 2007 Implementation of the Sarasota Tidal Creek Condition Index” provided an Appendix 1 (standard operating procedures), Appendix 2 (final site selections) and Appendix 3 (Version 7.0 field sheets) that were employed in all sixteen coastal creeks of Sarasota County. From north to south these were Whitaker Bayou/Walker Creek, Hudson Bayou, Phillippi, Matheny, Clower, Catfish, North, South, Cow Pen/Shakett, Curry, Hatchett, Alligator, Woodmere, Forked, Gottfried, and Ainger Creeks.

Sampling began on May 20 and ended on June 8, 2007. The same two surveyors worked in every creek and they were assisted by a third person in all cases. Two adjacent creeks were surveyed on a given day. Time on-station ranged from 75 to 210 minutes and averaged 127 minutes.

Standard procedures and methods defined previously were adhered to in all creeks except as follows. In Catfish and North Creeks, where boat access is strictly limited by tidal conditions, sediment samples for *Tagelus*, other mollusks, and benthic infauna were collected but not processed until the crew could return to navigable waters. In Whitaker Bayou, Matheny Creek, and Clower Creek, methods requiring total immersion of a surveyor were substituted by alternative methods (dip net samples were taken from the vessel using handle extensions; petite ponar grabs were used instead of diver-operated box cores, etc.). An effort to use underwater photography failed because of the high turbidity associated with thick sediments comprised of fine particulate organic matter on some creek bottoms. Other safety measures described in Appendix 1 of the July 23, 2007 report were employed as needed.

## **FIELD AND LABORATORY SAMPLE PROCESSING**

### **Benthic Fauna**

After collection samples were washed through a 0.5 mm mesh sieve to remove the fine sediment. The material remaining on the sieve was placed into a labeled plastic container, which also contained an internal label identifying the project, location, date, and sampling methods. The contents were then preserved by adding a solution of 10% buffered Formalin™ by volume, which contained rose bengal stain. Rose bengal stains animal tissue which facilitates the sorting process.

After return to the Laboratory samples remain in the preservative for a minimum of 72 hours after which they may be decanted and processed. Samples are processed in two separate steps; 1) rough sorting the sample to separate the fauna from the detritus and 2) identification of the fauna to the lowest practical taxonomic level (LPTL). Rough sorting is accomplished by placing small aliquots in a small dish and examining the material under a stereo-zoom dissecting microscope. Fauna are sorted into four major categories, and placed in labeled vials containing 70% isopropyl alcohol to await final identification. For the identification process each vial is opened and the contents emptied into a small dish for microscopic examination. Fauna are separated and identified to the LPTL utilizing published identification keys and the Mote reference collection. Each species (or other category) name is entered on a bench sheet and the total count for the species tabulated. After completion of all of the samples data from the bench sheets are entered into an electronic database for analysis.

### **Sediment Analysis**

Sediment particle size analysis was conducted using a laser particle size analyzer. The instrumentation is important for the field of benthic ecology since sediment particle size distribution is based on a wet sample which more closely approximates the condition of the sediment that the benthic fauna “see”. It provides a much greater resolution of the fine particle grades which are so important to benthic ecology and the distribution of benthic organisms.

Grain size distributions of field moist sediment was determined using a laser diffraction instrument (Coulter LS-200), capable of measurement between 0.4 and 2000  $\mu\text{m}$  equivalent spherical diameters. In this instrument, the angle and intensity of laser light scattered by a solution of sediment sample are selectively measured and converted to volume distributions based on a Fraunhofer optical model. Similar to other methods of particle sizing (pipette or hydrometer analyses), the optical model is based on assumptions of partial sphericity.

During operation, filtered tap water is used for background determinations and sample suspensions. Samples are homogenized and representative portions introduced to the sample chamber. Samples are circulated for 60 seconds, and then analyzed for 60 seconds. Experience with repetitive analyses of sample aliquots has indicated that a 60 second analysis time was sufficient for reproducible data. The recirculation time was determined based on experiments with sediments which showed the time was sufficient for samples distributions to stabilize (destruction of loose agglomerates).

As QA checks a percentage of duplicate evaluations were also conducted utilizing a separate aliquot from a sample jar introduced into the instrument. As sample aliquots are comparatively small (1-2 g wet weight), low or non-representative concentrations of coarser fragments which are not readily homogenized will produce variations which are more extensive than from a more uniform sediment. Instrument calibrations are performed with glass beads of known mean grain size.

The instrument provides results as 93 logarithmically distributed size channels as the volume percent of the entire sample within that spherical size range. Within rounding error, the sum of volume percent from all size ranges will total 100%. As the instrument is sensitive only to 2,000  $\mu\text{m}$  (2.000 mm), sediments are sieved through a 2 mm mesh prior to diffraction analysis. Coarse material was then weighed separately and added back to the total sample.

Total percent sand, silt and clay was calculated as the sum of volume percent between 2,000 and 62.5  $\mu\text{m}$ , 62.5 and 3.91  $\mu\text{m}$ , and 3.91 to 0.04  $\mu\text{m}$ , respectively, using the Wentworth size scales and a  $8.0\phi$  value as the clay-silt boundary. Sand, silt, and clay percentages are provided only for the raw sample. Geometric distributional statistics were computed from the logarithmic center of each size grouping as sediment distributions are typically more log-normal than normal. Statistics provided include mean, median, and modal grain sizes and are in units of  $\mu\text{m}$ . The standard deviation is also in  $\mu\text{m}$  and is a measure of the spread of the sediment distribution,

Skewness, a unit-less coefficient, is a measure of the distortion from a symmetrical distribution, with a skewness of zero (where mean, median, and mode coincide) being perfectly symmetrical. Samples with an excess of material in the finer sizes (left-hand skewed) will have negative skewness coefficients, while samples with an excess of coarser material (right-hand skewed) will have skewness values greater than zero.

Kurtosis is also unit-less and is a measure of the peakedness of a distribution, with kurtosis values of zero representing a normal distribution (mesokurtic), values greater than zero (leptokurtic) indicating a higher sharper peak, and values less than zero (platykurtic) indicating a comparatively broad distribution.

Ash-free organic matter (total volatile solids) was determined by combustion at 550°C for 1 hour after the methods suggested by the Environmental Protection Agency (1973), *Standard Methods* (1989) and Gross (1971) for determination of organic carbon in sediments and plankton samples.

Percentage moisture and solids of sediment are determined by oven drying an aliquot of sample to a constant weight at 103-105°C.

## DATA ANALYSIS METHODS

### Indices of Community Structure

Several standard data analysis and community metrics are included in this report:

- Number of taxa per station,
- Number of individuals collected per station,
- Number of individuals per square meter of bottom (calculated),
- Shannon-Wiener Diversity Index (H', for three commonly used log bases),
- Pielou's Index of equitability (J').

The method used to calculate the Shannon-Weaver Index and Pielou's Index are presented below.

Shannon-Wiener Diversity Index will be calculated as the Shannon-Wiener (also known as Shannon-Weaver) Index (Shannon and Weaver, 1972) using the formula:

$$H' = - \sum_{i=1}^s (p_i)(\log p_i)$$

where  $s$  = total number of species for the sample and  $p_i$  = the proportion of total individuals for the  $i^{\text{th}}$  species. The index was calculated using various log bases ( $\log_{10}$ ,  $\log_2$ ,  $\ln$ ) to enable comparisons to other data sets. The use of a particular log base is immaterial but should be consistent between comparisons. The State of Florida uses  $\log_2$  for reporting of diversity values.

The use and biological meaning of the Shannon-Weaver Index has been strongly criticized by several authors (Hurlbert, 1971; Goodman, 1975; Patten, 1968; Washington, 1984). An increase or decrease in  $H'$  does not necessarily indicate an improvement or decline in the quality of a benthic community. In addition both high and low diversity values can be found in "natural" undisturbed systems. Environmental impact assessments must consider the natural state of the community under consideration. Nevertheless the index has utility in certain circumstances but caution should be used when interpreting values of  $H'$  as related to impact assessments.

Gini's Index of Diversity (Gini, 1912; Simpson 1949) and the compliment known as Simpson's Index are not often used. The index is a measure of dominance in a sample and is sometimes referred to as dominance diversity. However, it is usually insensitive to rare species and is usually referenced as a diversity index. The computational formula for Gini's index of diversity is:

$$DM = \frac{\sum_{i=1}^s n(n-1)}{N(N-1)} \quad (\text{Gini 1912))}$$

A low value for DM indicates low diversity.

Simpson's Index is calculated as:



$$d = 1 - DM \quad (\text{Simpson 1949})$$

For the above;  $n$  = number of individuals of species  $s$ , and  $N$  = the total number of individuals from a sample.

Species Richness is usually measured as the total number of taxa (species,  $S$ ) recovered from a sample or station. An index of species richness is also sometimes used and is known as **Margalef's index**, calculated as follows:

$$D = (S - 1)/\log_e N$$

where  $S$  is the number of species in the sample.

Pielou's Index of Equitability, or evenness of distribution of fauna among species was calculated by Pielou's conventional method (Pielou, 1975). Values for the index range from 0-1, with a value of 1 being the maximum possible evenness of distribution in the community. The computational formula is:

$$J' = \frac{H'}{\log_e S}$$

where  $e = 2.30$ ,  $H'$  = value for Shannon-Wiener Index, and  $S$  = total number of species for a sample.

## FINDINGS

### Benthic Macroinfauna

For the 16 creeks sampled by this project a total of 9,489 organisms were recovered from 48 samples, representing 3 samples per creek. A total of 138 macroinvertebrate taxa were identified from the samples. Two creeks, Matheny and Clower, were sampled with a petite PONAR grab (surface area 0.0232 m<sup>2</sup>) and the remaining 14 were sampled with a hand held box core (surface area 0.0156 m<sup>2</sup>). Data from all three replicates were combined for the data analysis.

**Table 1** presents a summary of the benthic community parameters for each creek. The number of taxa collected at a creek ranged from 7 at Whitaker Bayou to 52 at Gottfried Creek, with an overall median value of 31 taxa. Abundance of individuals ranged from 108 organisms at Clower Creek to 1,457 individuals at Ainger Creek. Shannon-Wiener diversity (log base 2) ranged from 1.21 at Whitaker Bayou to 4.27 at Forked Creek.

Table 1. Benthic community parameters for 16 tidal creeks of the Sarasota Bay system.

Creek	No. of Taxa	Number of Individuals	Individuals per m <sup>2</sup>	Shannon-Wiener Index			Pielou's Index	Margalef's Index	Simpson's Index	Gini's Index
				logE	log10	log2				
Ainger	46	1,457	31,132	2.18	0.95	3.14	0.57	6.18	0.23	0.77
Alligator	33	809	17,286	2.34	1.01	3.37	0.67	4.78	0.14	0.86
Catfish	17	261	5,577	1.68	0.73	2.42	0.59	2.88	0.32	0.68
Clower	21	108	1,552	2.53	1.10	3.65	0.83	4.27	0.10	0.90
Curry	26	672	14,359	1.62	0.70	2.33	0.50	3.84	0.38	0.62
Forked	44	362	7,735	2.96	1.28	4.27	0.78	7.30	0.09	0.91
Gottfried	52	1,430	30,556	2.05	0.89	2.96	0.52	7.02	0.23	0.77
Hatchett	22	297	6,346	2.14	0.93	3.09	0.69	3.69	0.17	0.83
Hudson B.	19	230	4,915	1.84	0.80	2.65	0.62	3.31	0.23	0.77
Matheny	28	211	3,032	2.49	1.08	3.59	0.75	5.04	0.13	0.87
North	13	387	8,269	1.54	0.67	2.22	0.60	2.01	0.35	0.65
Phillippi	45	945	20,192	2.58	1.12	3.72	0.68	6.42	0.11	0.89
Shakett	39	711	15,192	2.49	1.08	3.59	0.68	5.79	0.12	0.88
South	48	630	13,462	2.65	1.15	3.83	0.68	7.29	0.15	0.85
Whitaker B.	7	244	5,214	0.84	0.36	1.21	0.43	1.09	0.51	0.49
Woodmere	39	735	15,705	2.61	1.13	3.76	0.71	5.76	0.13	0.87
Average:	31	593	12,533	2.16	0.94	3.11	0.64	4.79	0.21	0.79
St.Dev:	14	415	9,032	0.54	0.24	0.78	0.11	1.89	0.12	0.12
Median:	31	509	10,865	2.26	0.98	3.26	0.67	4.91	0.16	0.84
Minimum:	7	108	1,552	0.84	0.36	1.21	0.43	1.09	0.09	0.49
Maximum:	52	1,457	31,132	2.96	1.28	4.27	0.83	7.30	0.51	0.91

The benthic data are presented in a series of appendix tables. **Appendix Table 1** is a rank order species list for each creek. **Appendix Table 2** lists the benthic species data for the percentage composition of the total fauna by each species for each station, and the data were then sorted by greatest to least percentage.

Benthic community metrics are graphically compared between stations in **Figures 1 - 7**. For each pair of figures the top figure is arranged on a north to south axis and the bottom figure is arranged in rank order of value.

**Figures 8 and 9** present the results of a community cluster analysis, one conducted with species abundance counts normalized to numbers per meter square (Figure 8) and the second conducted with the database reduced to species presence or absence (1/0) as the data input. The illustrations are color coded to stations that grouped together based on levels of faunal similarity. The stations that are linked closest to the left are those that were most similar to one another. Linkages that occur farther to the right are less similar.

## Sediment Composition

A tabulation of sediment parameters for each location is presented in **Tables 2** and **3**. Table 2 presents the relative percentages of various measures of sediment structure. Appendix Table 3 presents the raw data of percentage distribution of sediment particulates among 26 grain size categories.

There was a wide range of the various sediment structure values, Table 2. For example the organic content of the soils ranged from 0.6 percent (Forked Creek) to 23.7 percent (Hudson Bayou). The percentage of silt ranged from 3.7 percent (Forked Creek) to 32.6 percent (Hudson Bayou).

Table 2. Percentage composition of solids, moisture, organic content, sand, silt, and clay for each creek.

Station	Percentage					
	Solids	Moisture	Organic	Sand	Silt	Clay
Phillippi	75.1	24.9	0.9	95.0	4.0	1.0
Matheny	59.0	41.0	4.3	79.6	18.8	1.5
Ainger	76.3	23.7	1.2	87.3	10.9	1.8
Gottfried	57.7	42.3	1.1	94.0	5.3	0.7
Forked	80.2	19.8	0.6	95.6	3.7	0.6
Woodmere	64.2	35.8	1.6	86.5	12.5	1.1
Hatchett	63.6	36.4	1.0	90.3	8.6	1.1
Alligator	64.9	35.1	0.7	95.0	4.5	0.5
Curry	65.1	34.9	1.8	89.1	9.9	1.0
Shakett	63.2	36.8	2.2	87.0	11.7	1.3
Catfish	66.1	33.9	1.9	89.5	9.9	0.5
North	65.7	34.3	2.2	80.8	18.0	1.1
South	68.5	31.5	1.2	89.5	9.6	0.9
Clower	22.8	77.2	22.1	70.3	28.3	1.4
Whitaker	69.6	30.4	1.7	89.3	10.1	0.6
Hudson	18.0	82.0	23.7	65.5	32.6	1.9
Average	61.3	38.8	4.3	86.5	12.4	1.1
St.Dev.	17.0	17.0	7.3	8.6	8.3	0.4
Median	65.0	35.0	1.7	89.2	10.0	1.1
Minimum	18.0	19.8	0.6	65.5	3.7	0.5
Maximum	80.2	82.0	23.7	95.6	32.6	1.9

**Table 3** presents a summary of the calculated sediment statistics for each location. **Figures 10-20** present graphic representations of the data contained in Tables 2 and 3.

Table 3. Sediment grain size distribution statistics for each creek.

Station	Grain Size Statistics					
	Mean ( $\mu\text{m}$ )	Median ( $\mu\text{m}$ )	Mode ( $\mu\text{m}$ )	ST.Dev.	Skewness	Kurtosis
Phillippi	241	274	269	2.42	-2.92	11.70
Matheny	146	199	223	3.59	-1.15	1.40
Ainger	154	187	185	3.33	-1.49	3.01
Gottfried	197	193	169	2.48	-1.41	5.52
Forked	268	289	324	2.50	-1.88	6.78
Woodmere	150	167	154	2.99	-1.22	2.87
Hatchett	151	168	169	2.54	-1.91	6.71
Alligator	274	304	296	2.34	-2.43	9.25
Curry	173	204	204	2.78	-1.79	4.57
Shakett	154	186	185	3.01	-1.56	3.60
Catfish	250	298	324	2.99	-1.41	2.92
North	168	247	324	3.52	-1.29	1.30
South	187	217	204	2.88	-1.60	3.78
Clower	118	133	154	4.05	-0.41	0.04
Whitaker	244	313	324	2.88	-1.91	4.10
Hudson	90	113	185	3.73	-0.60	0.41
Average	185.2	218.0	230.9	3.0	-1.6	4.2
St.Dev.	55.0	62.4	67.3	0.5	0.6	3.2
Median	170.5	201.3	203.5	2.9	-1.5	3.7
Minimum	90.5	112.7	153.8	2.3	-2.9	0.0
Maximum	273.6	312.5	324.4	4.1	-0.4	11.7

## **DISCUSSION**

This project consisted of a dry season sampling of 16 tidal creek tributaries flowing into the Sarasota Bay system. This is the first effort within Sarasota Bay and perhaps within Florida to simultaneously characterize the benthos of all of the tidal creeks within an estuary for the purpose of determining habitat quality. For the 16 creeks sampled by this project a total of 9,489 organisms were recovered from 48 samples, representing 3 samples per creek. A total of 138 macroinvertebrate taxa were identified from the samples.

A wide range of habitat and sediment conditions were encountered during the survey. The benthos also exhibited a wide range of values for species numbers, abundance and community composition of species. The data obtained by the sampling program are presented in this report and are also provided as Excel and MS Word files.

## **ACKNOWLEDGMENTS**

Kathy Meaux of Sarasota County participated in the sampling of every creek and her assistance is gratefully acknowledged. County oyster data were provided by Mike Jones, who also assisted in sampling for the Condition Index. Other field assistants included Matthew Phillips, Gary Raulerson, and Jay Leverone. Data management and graphical analyses were managed by Jay Sprinkel with assistance from Jan Gannon. Invertebrate taxonomy conducted by Anamari Boyes, Lucas Jennings and Jay Leverone. The summary benthic data report was prepared by Jim Culter. Rusty Holmes provided assistance with document production.

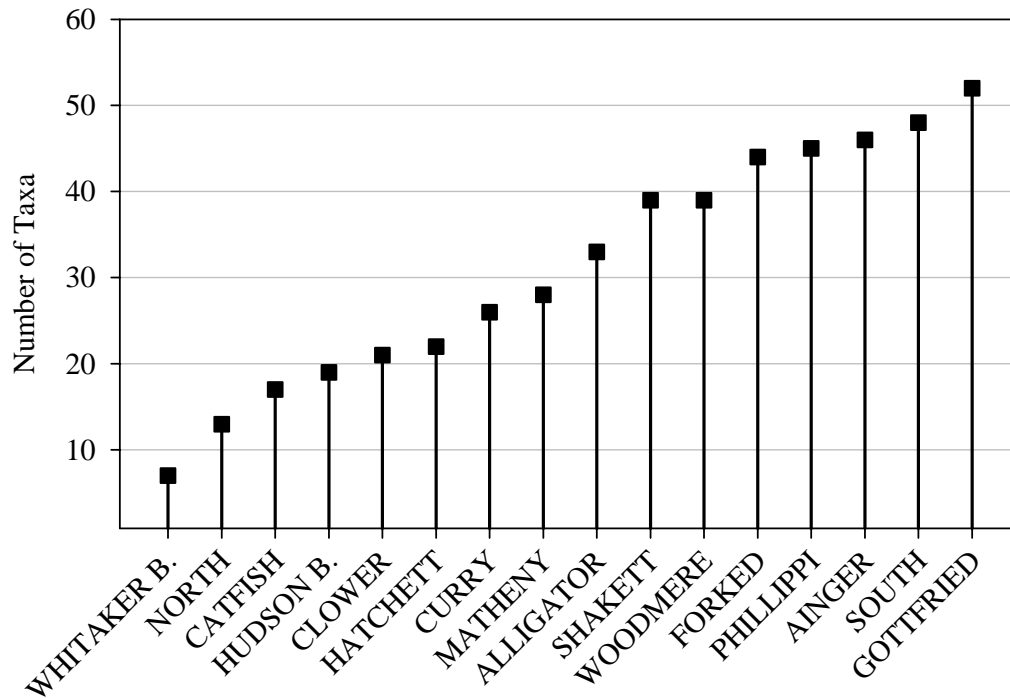
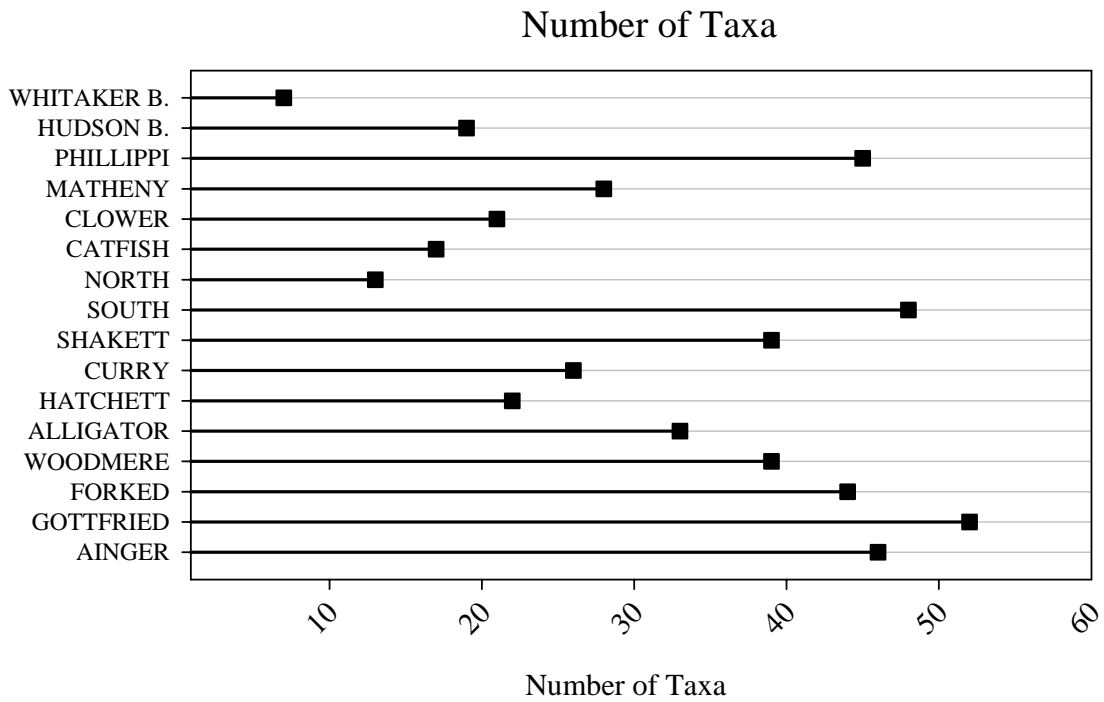


Figure 1. Number of taxa arranged in N-S order (top) and in rank value order (bottom).

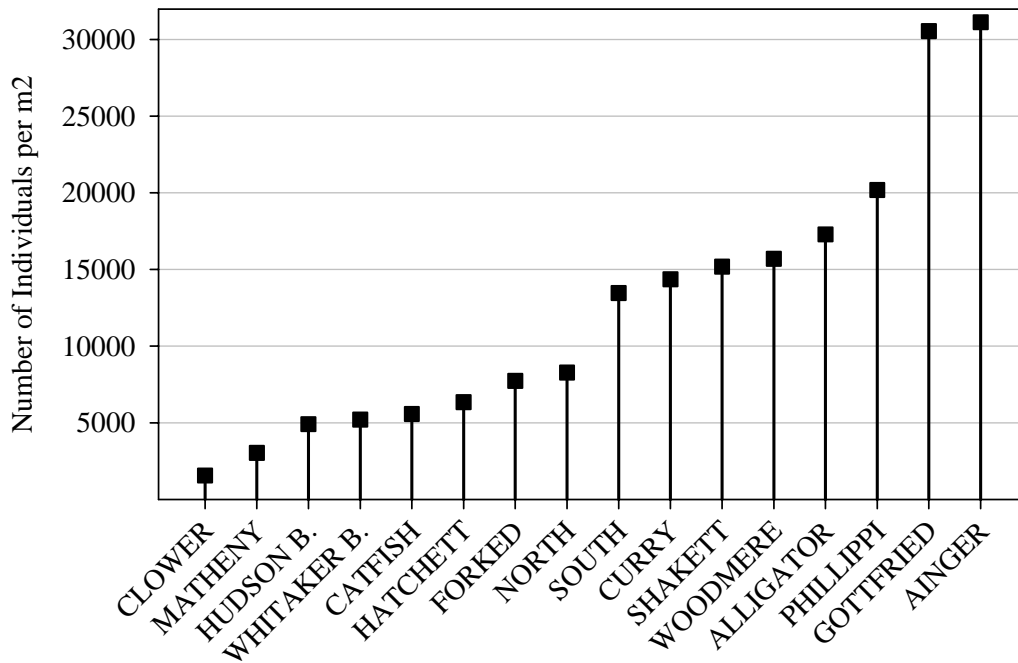
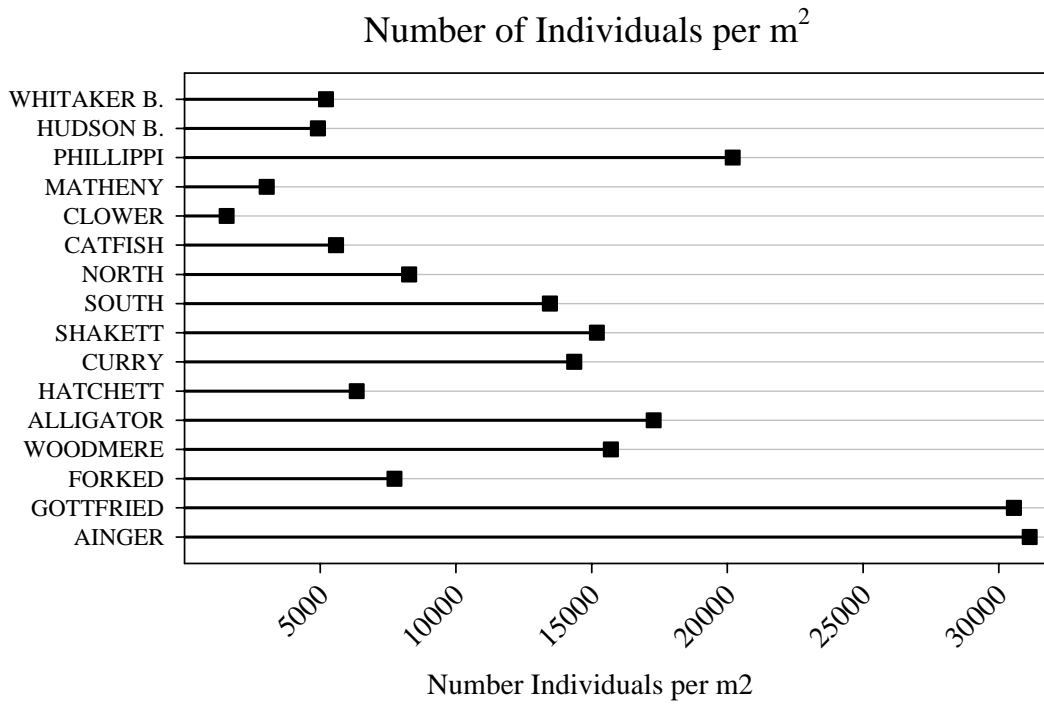


Figure 2. Abundance as number of individuals per square meter arranged in N-S order (top) and in rank value order (bottom).



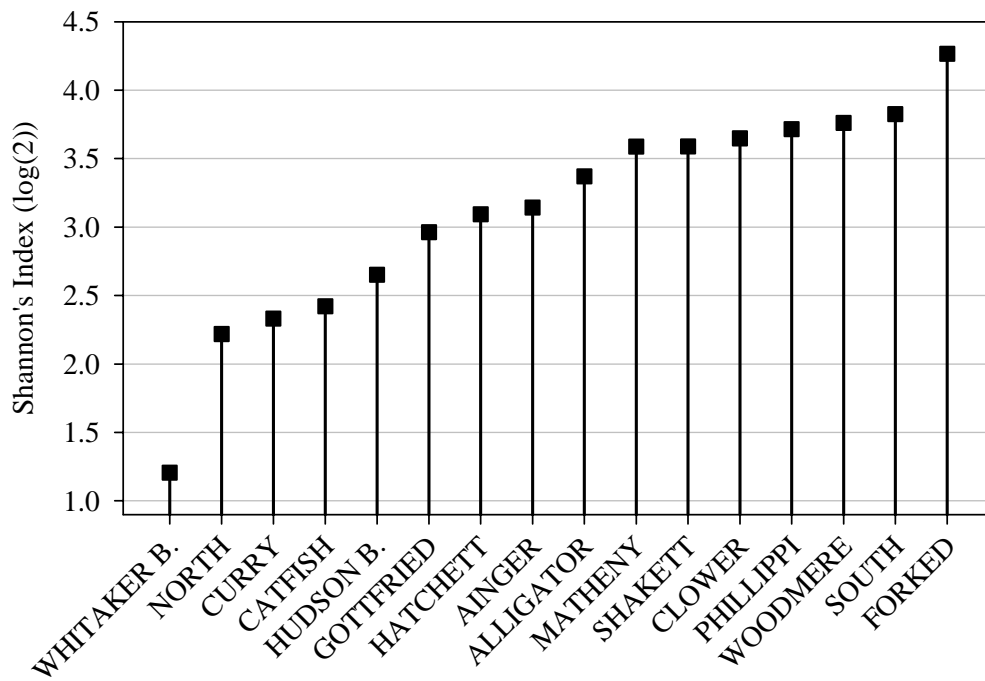
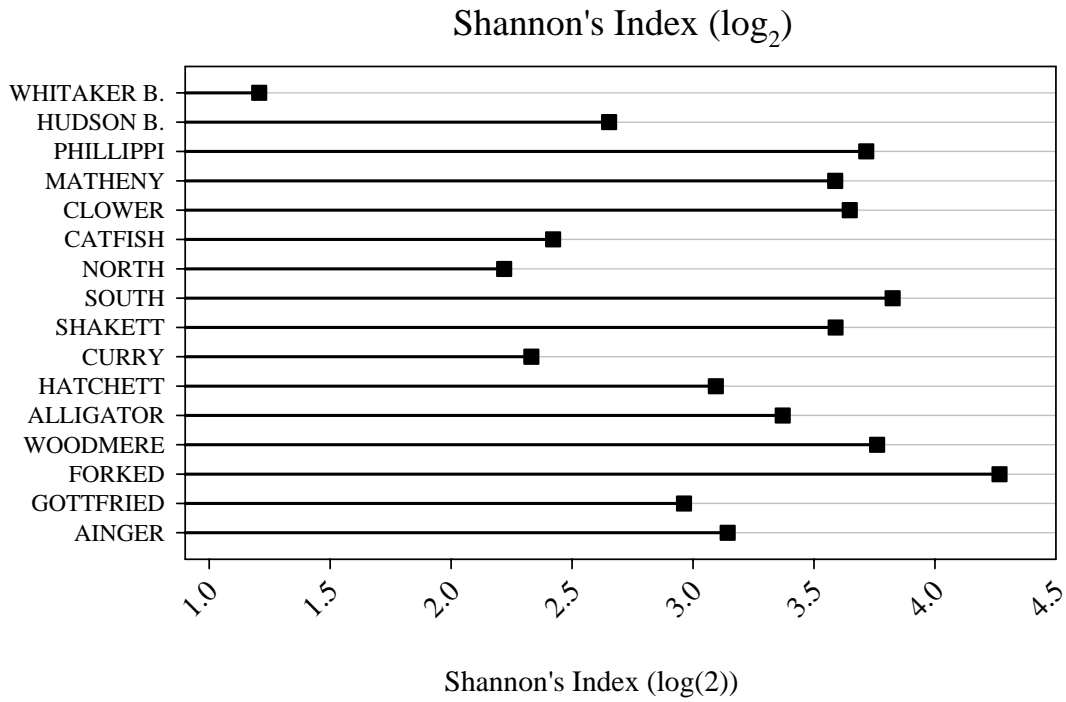


Figure 3. Shannon-Weiner Index of diversity arranged in N-S order (top) and in rank value order (bottom).

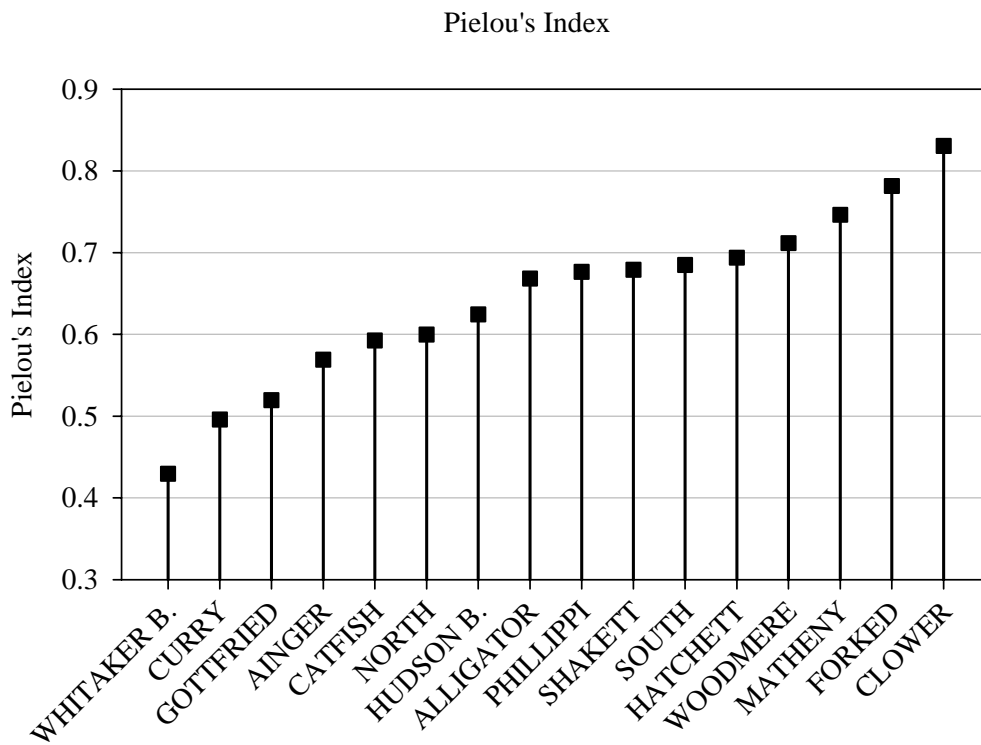
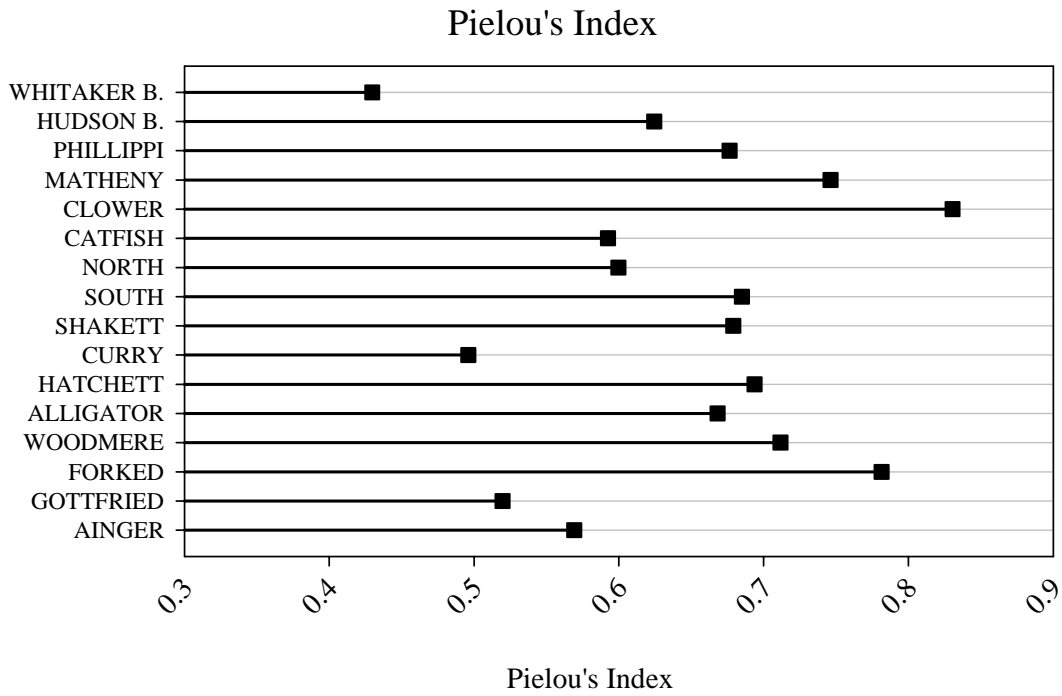


Figure 4. Pielou's Index of equitability arranged in N-S order (top) and in rank value order (bottom).

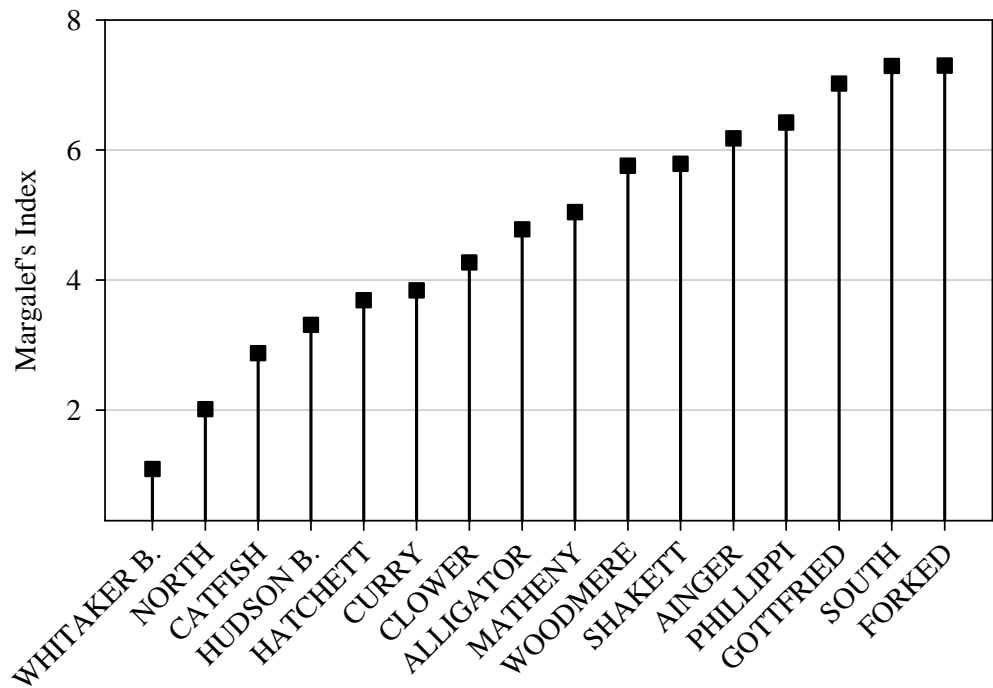
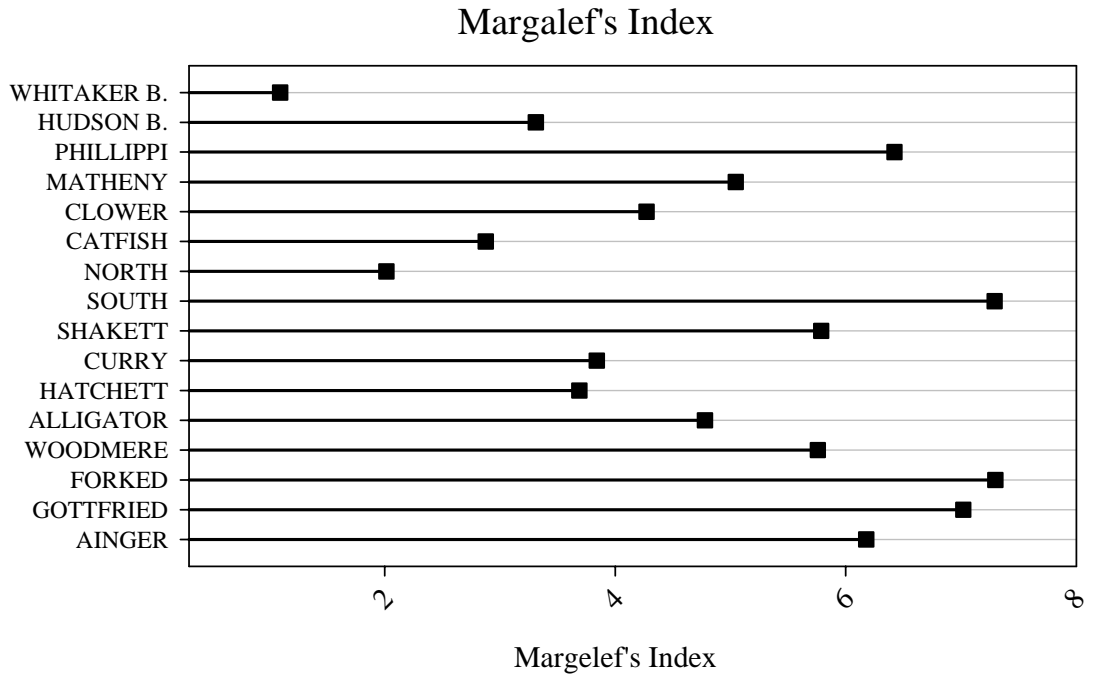


Figure 5. Margalef's Index of species richness arranged in N-S order (top) and in rank value order (bottom).

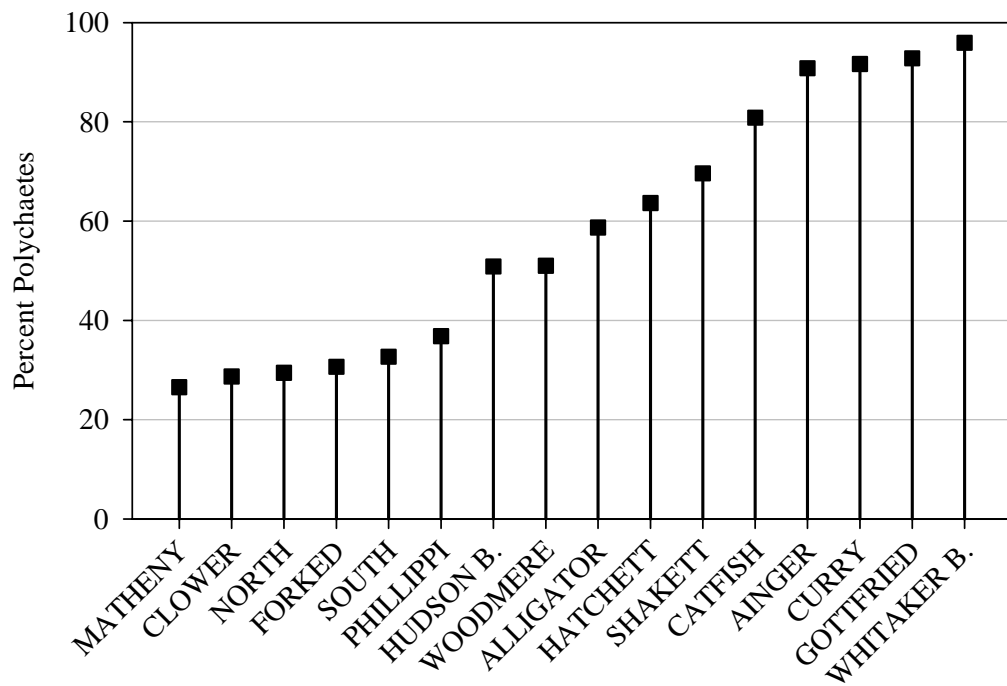
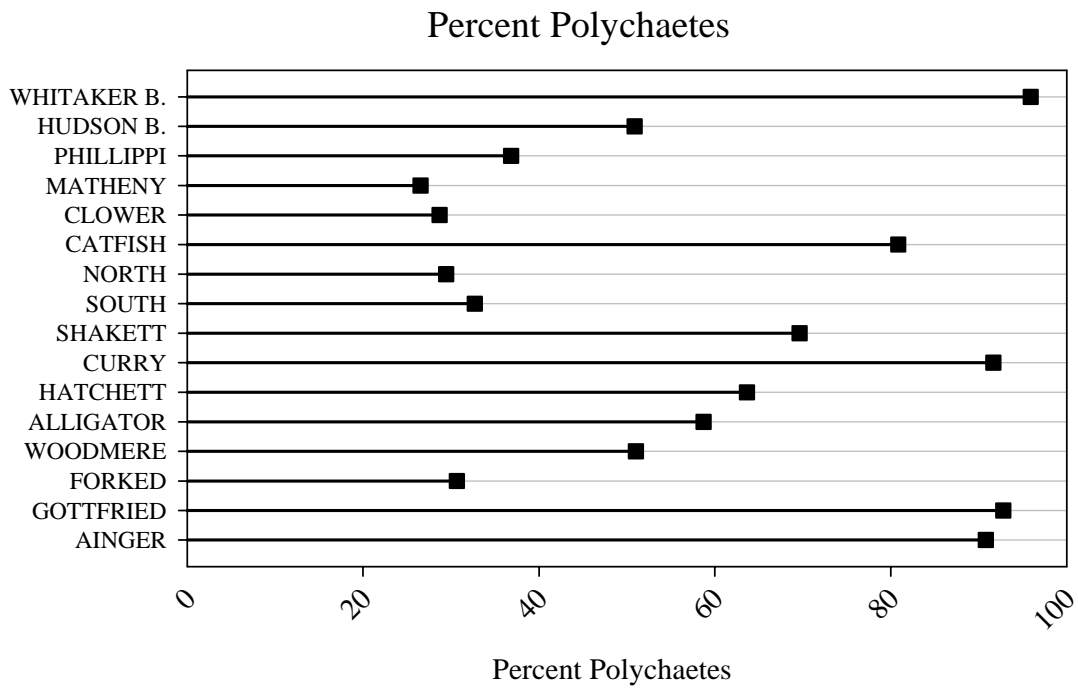


Figure 6. Percentage of fauna comprised of polychaetes at each creek in N-S order (top) and in rank value order (bottom).

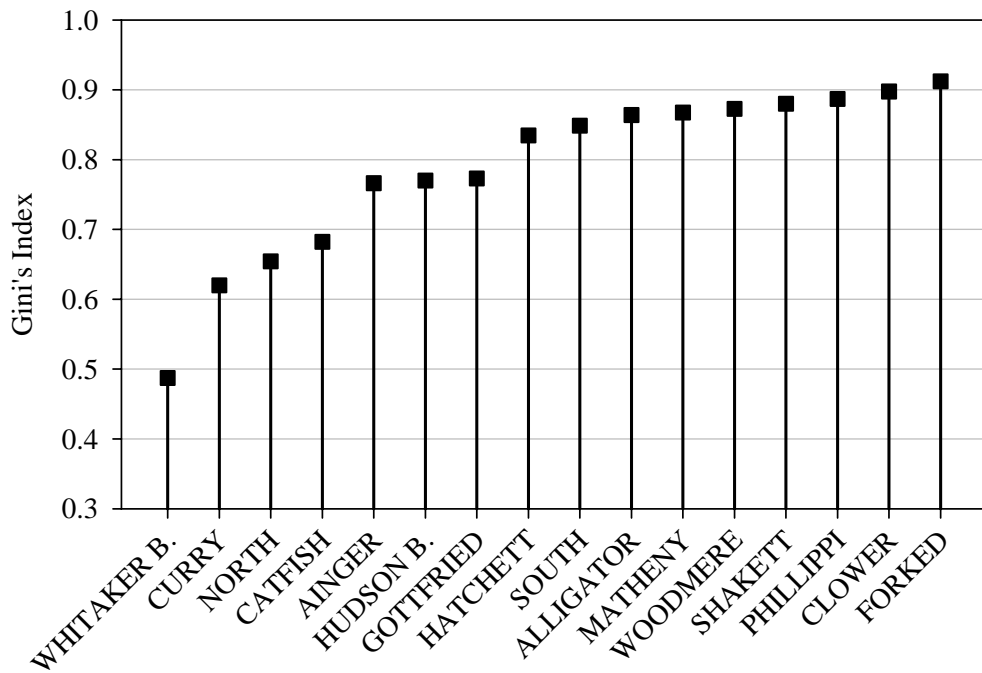
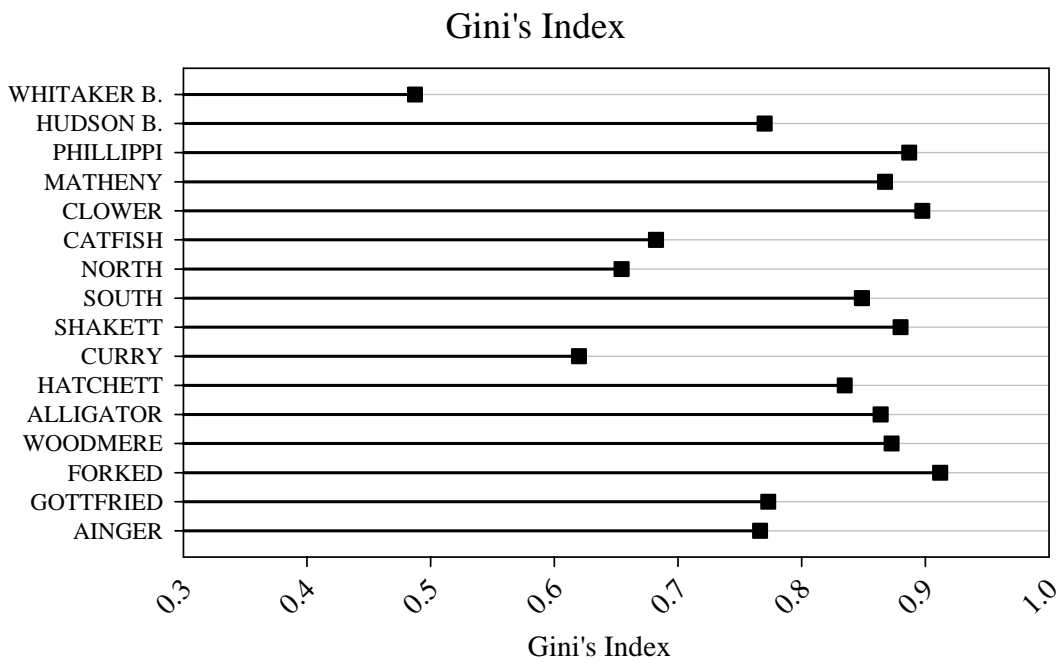


Figure 7. Gini's Index of diversity arranged in N-S order (top) and in rank value order (bottom).

Figure 8. Cluster diagram illustrating similarity levels for faunal community composition with data normalized to counts per square meter.

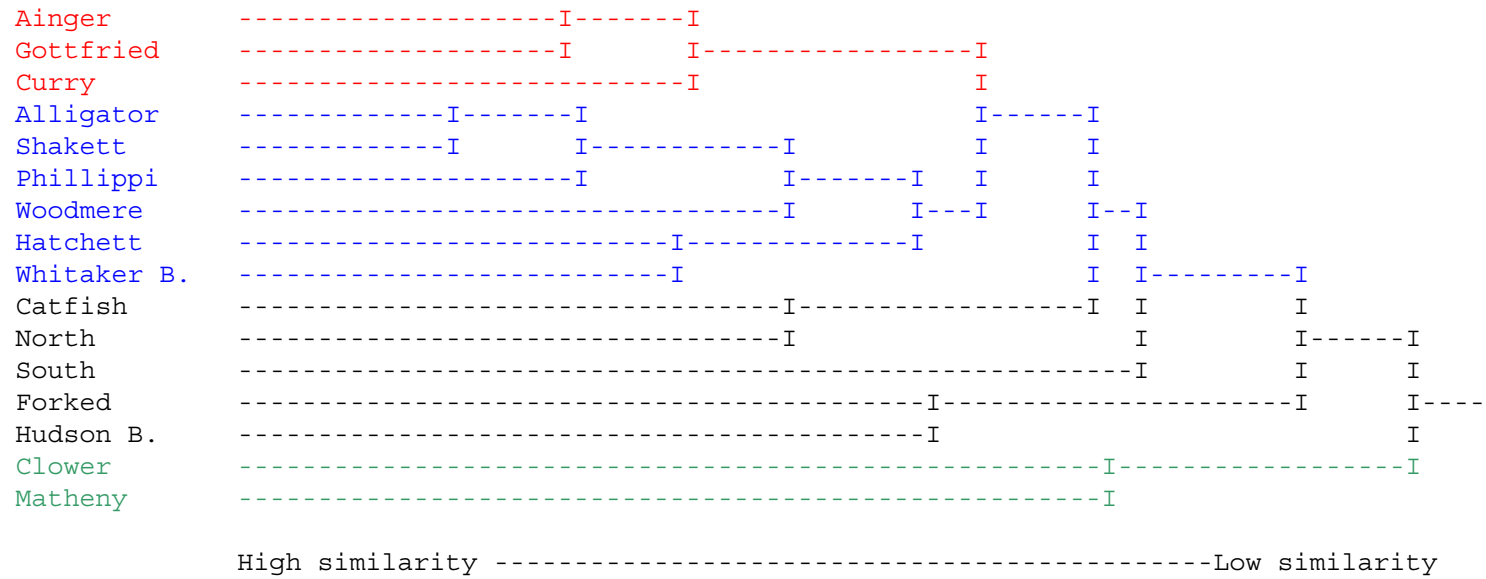
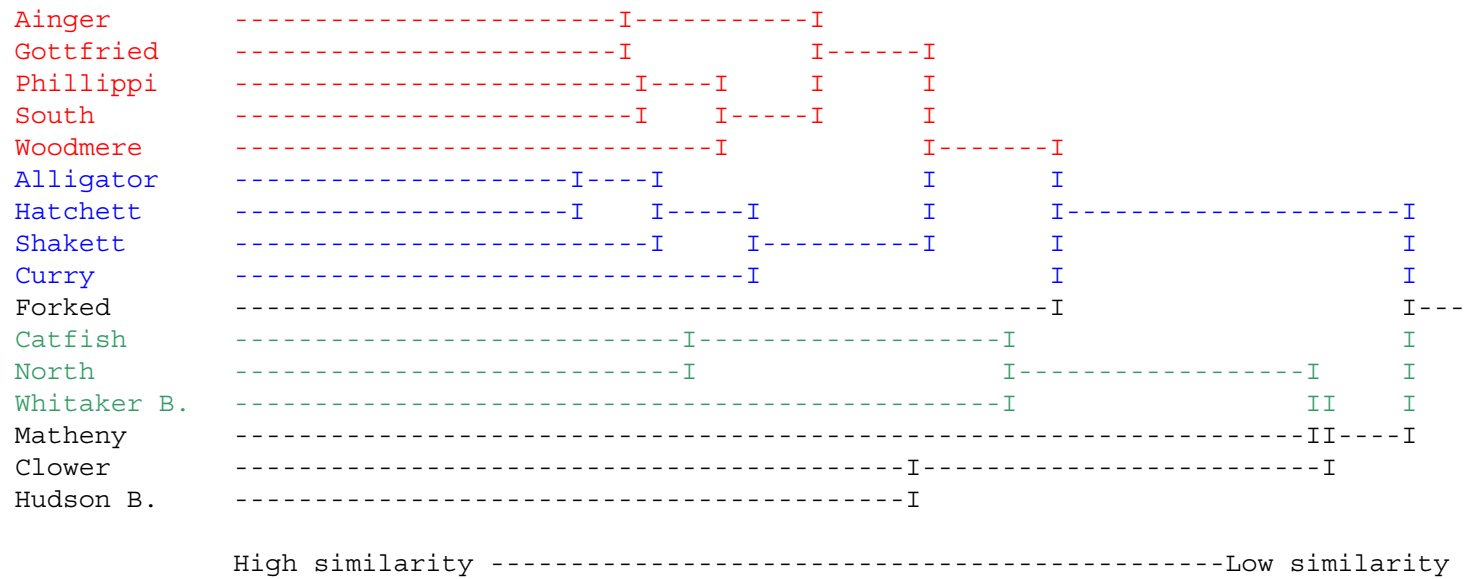


Figure 9. Cluster diagram illustrating similarity levels for faunal community composition with data reduced to species presence (1) or absence (0).



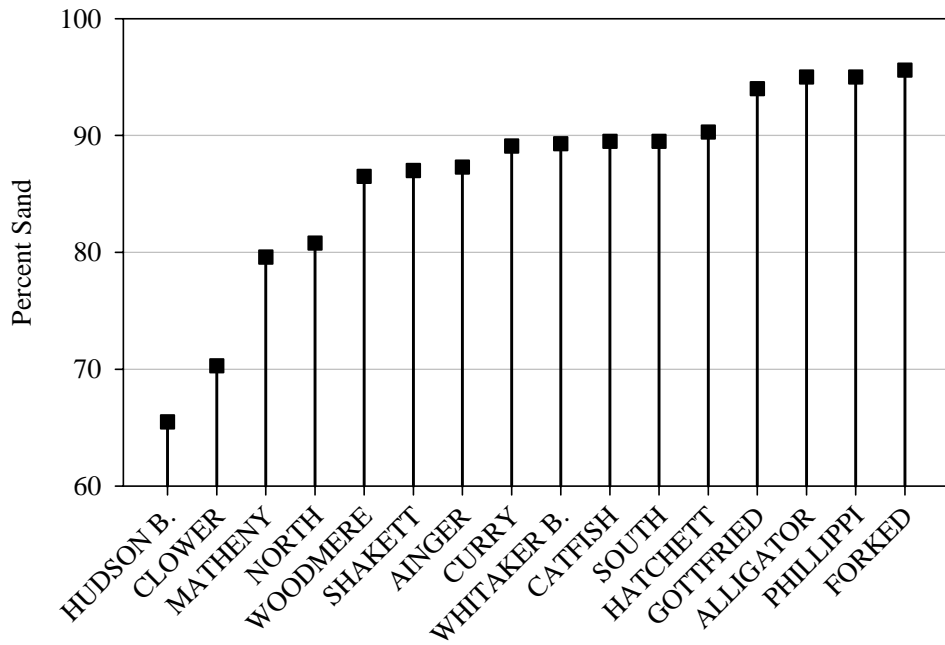
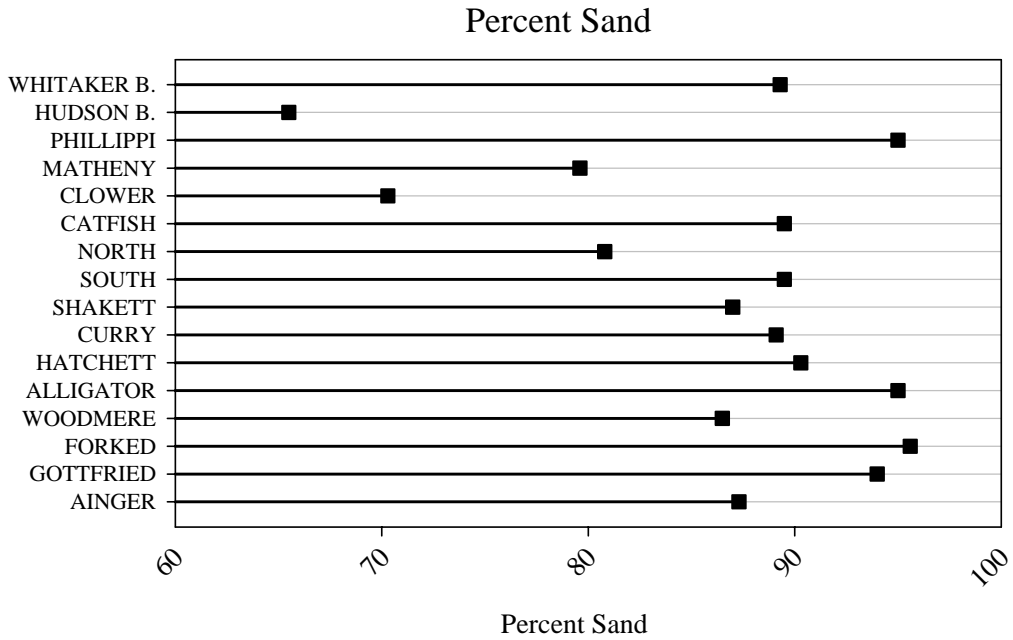


Figure 10. Percentage sand present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).



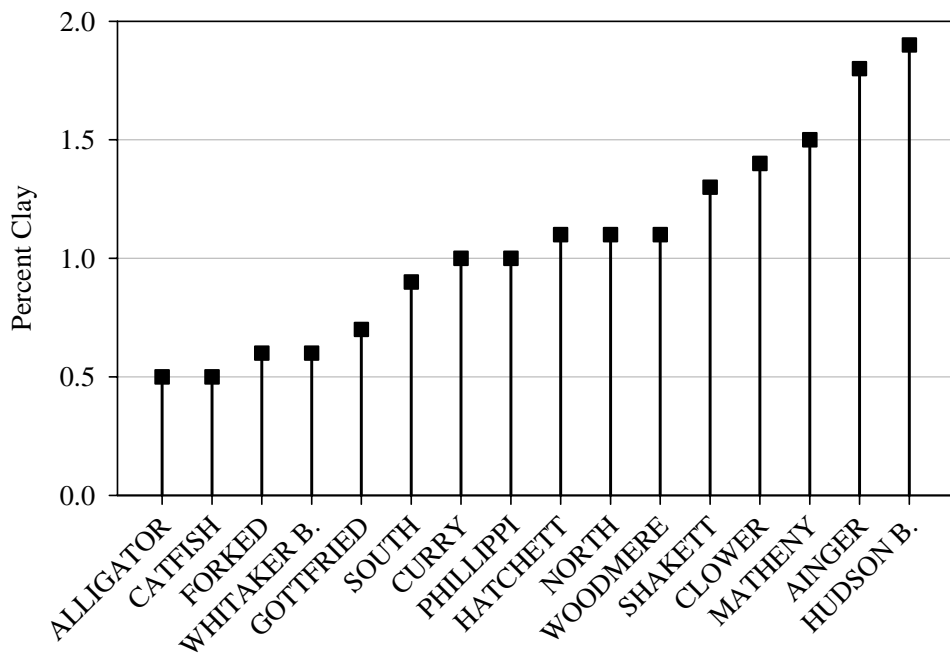
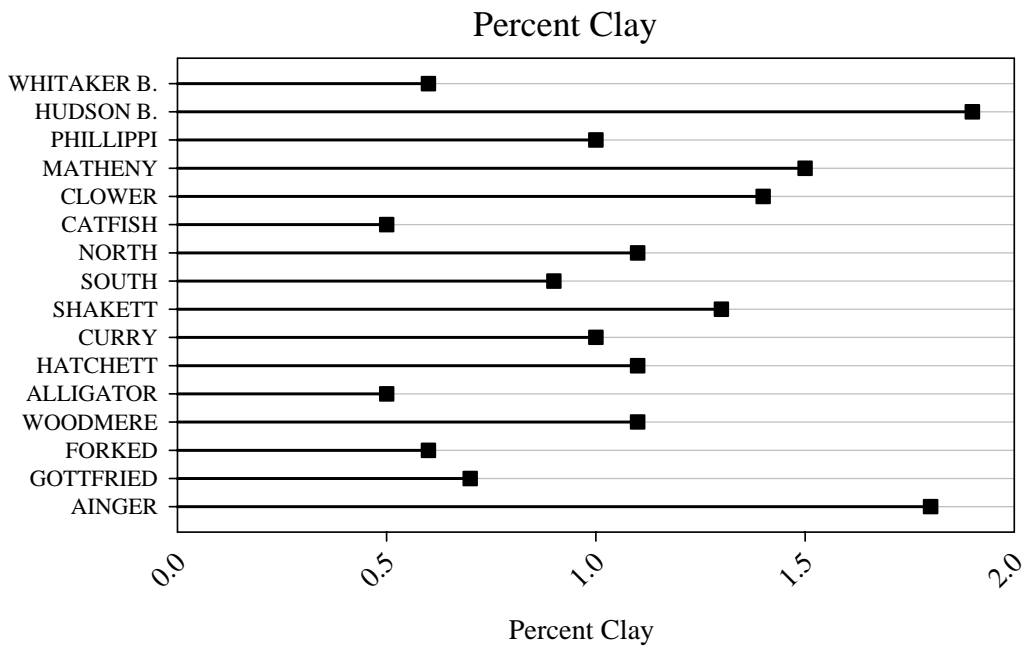


Figure 11. Percentage clay present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).

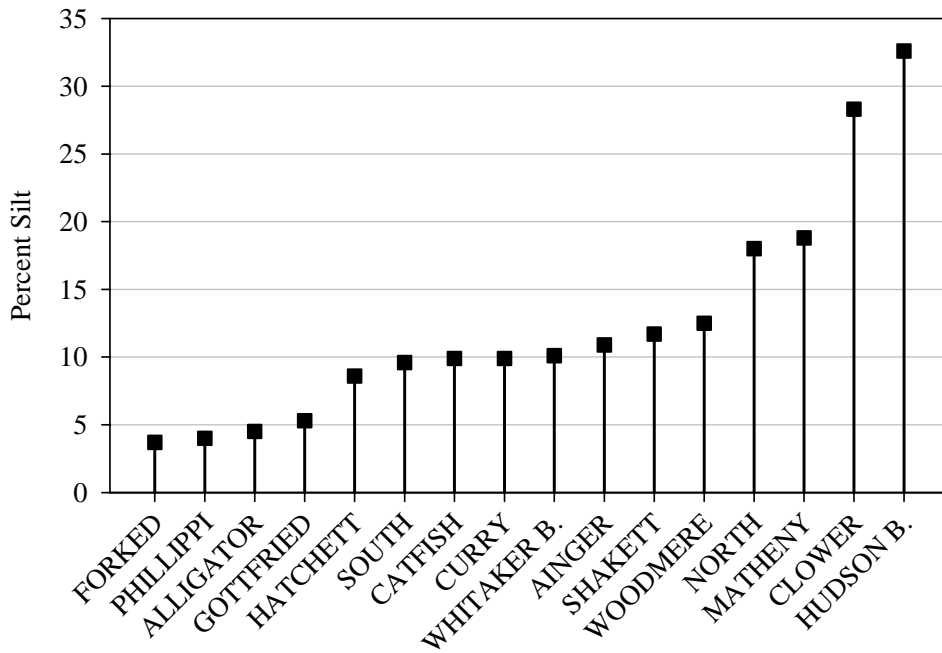
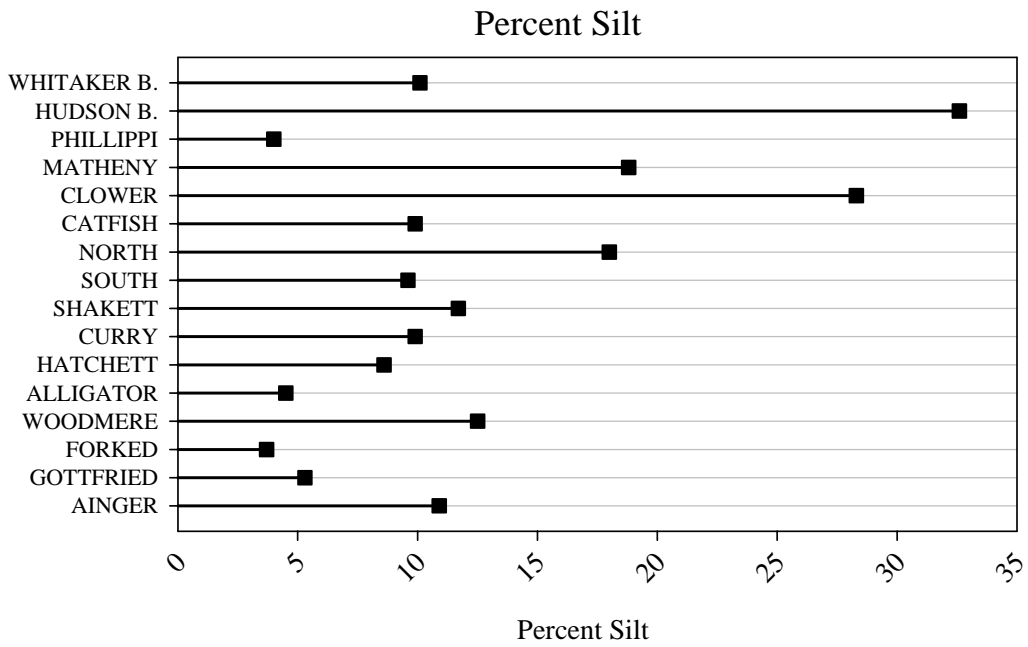


Figure 12. Percentage silt present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).

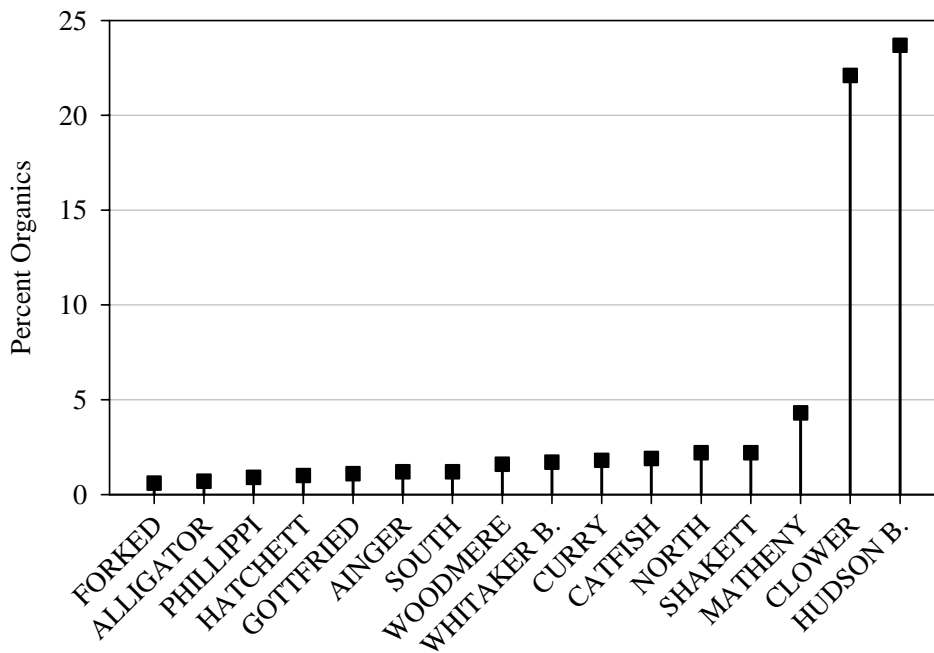
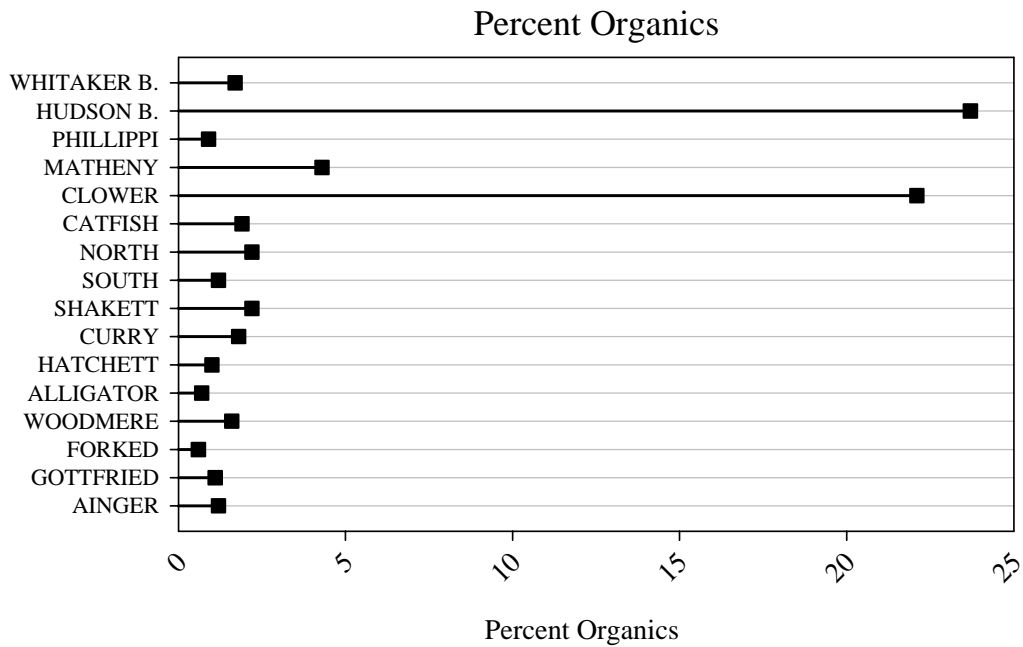
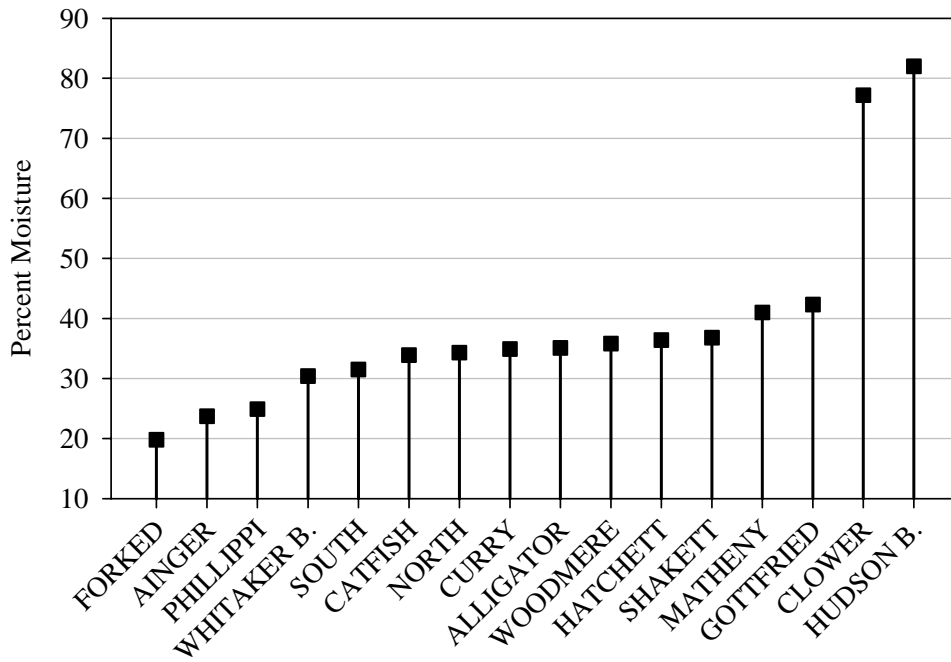
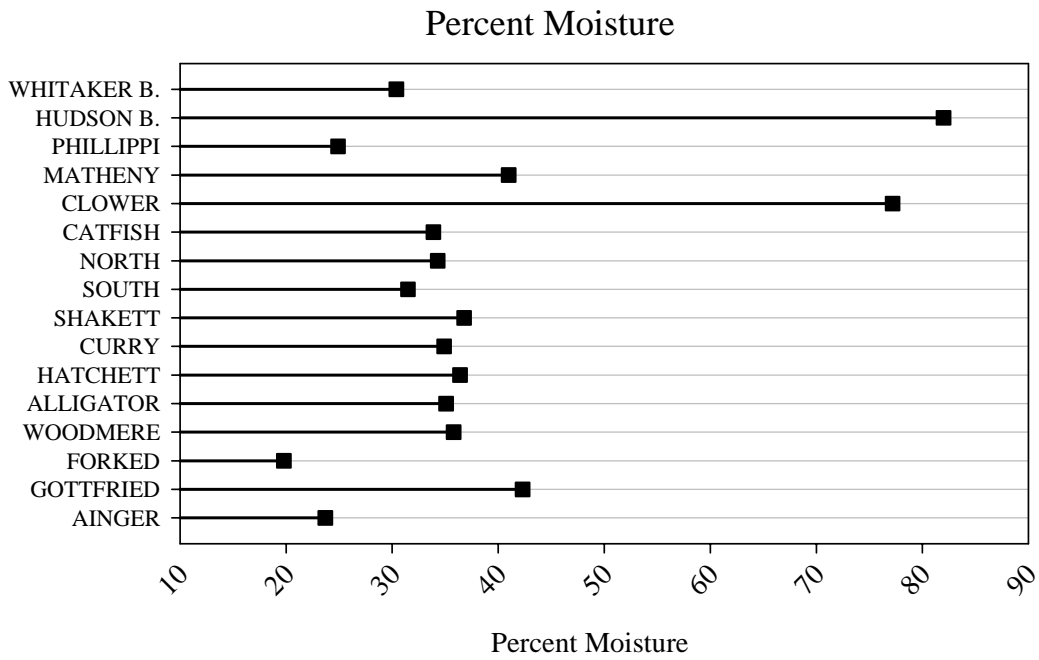


Figure 13. Percentage organic content (volatile solids) present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).



14. Percentage moisture present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).

Figure

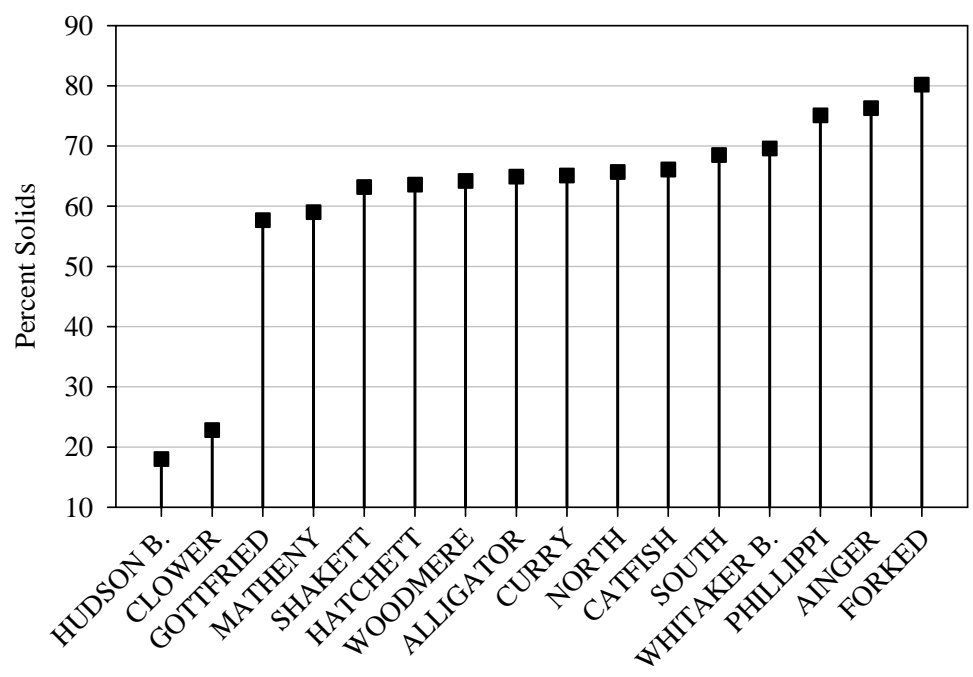
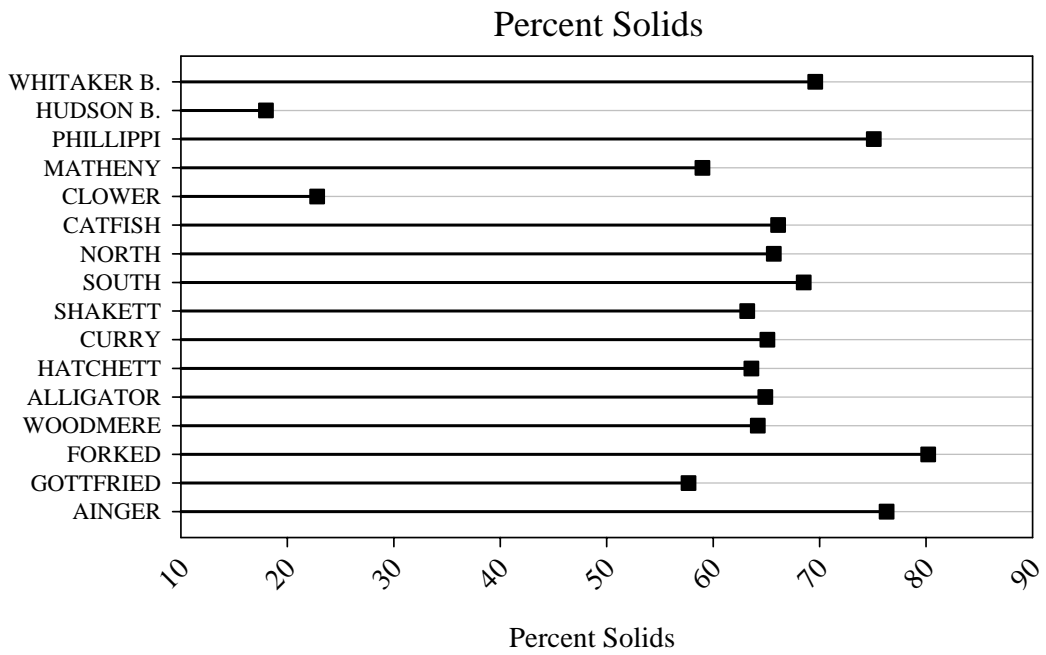


Figure 15. Percentage solids present in the sediment at each location arranged in N-S order (top) and in rank value order (bottom).

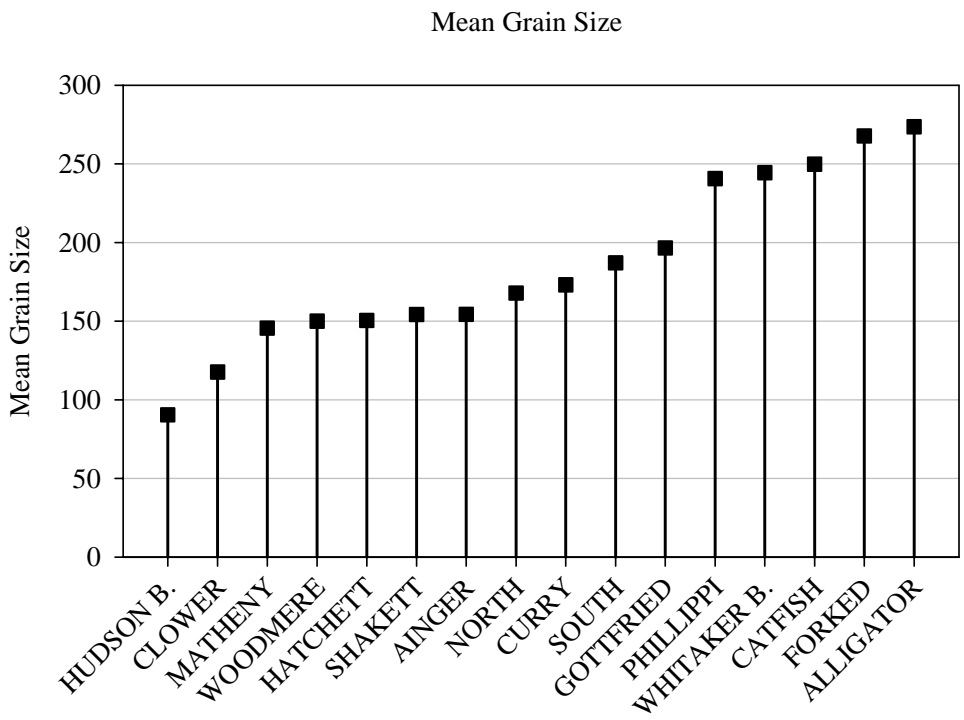
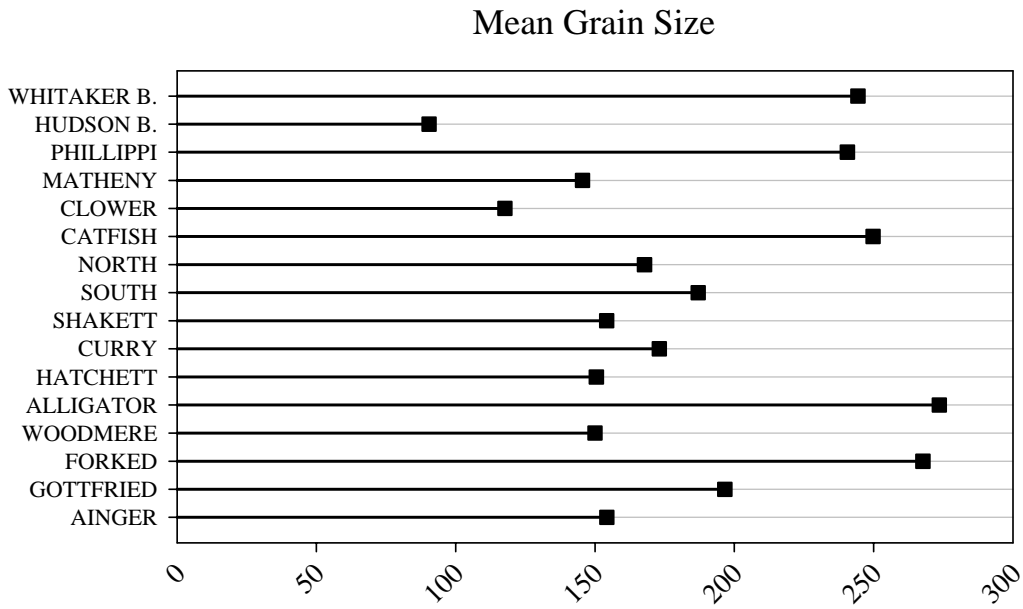


Figure 16. Mean sediment grain size for samples from at each location arranged in N-S order (top) and in rank value order (bottom).

### Median Grain Size

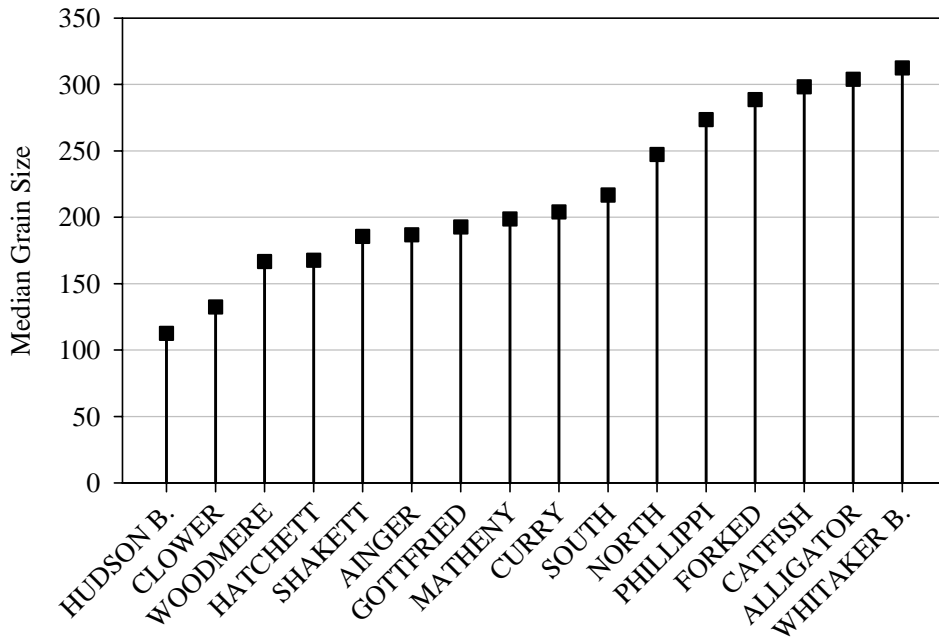
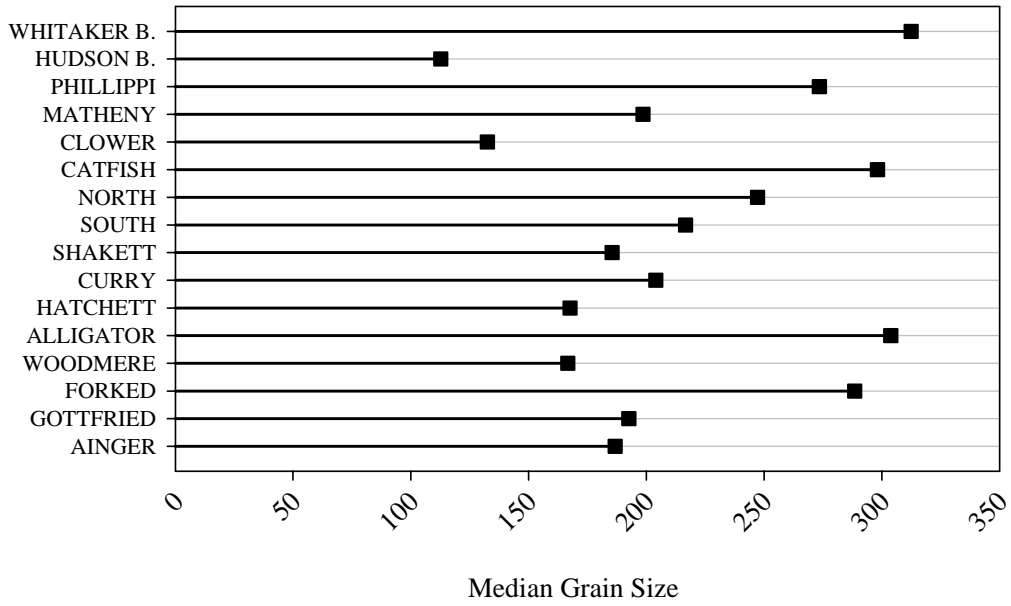


Figure 17. Median sediment grain size for samples from each location arranged in N-S order (top) and in rank value order (bottom).

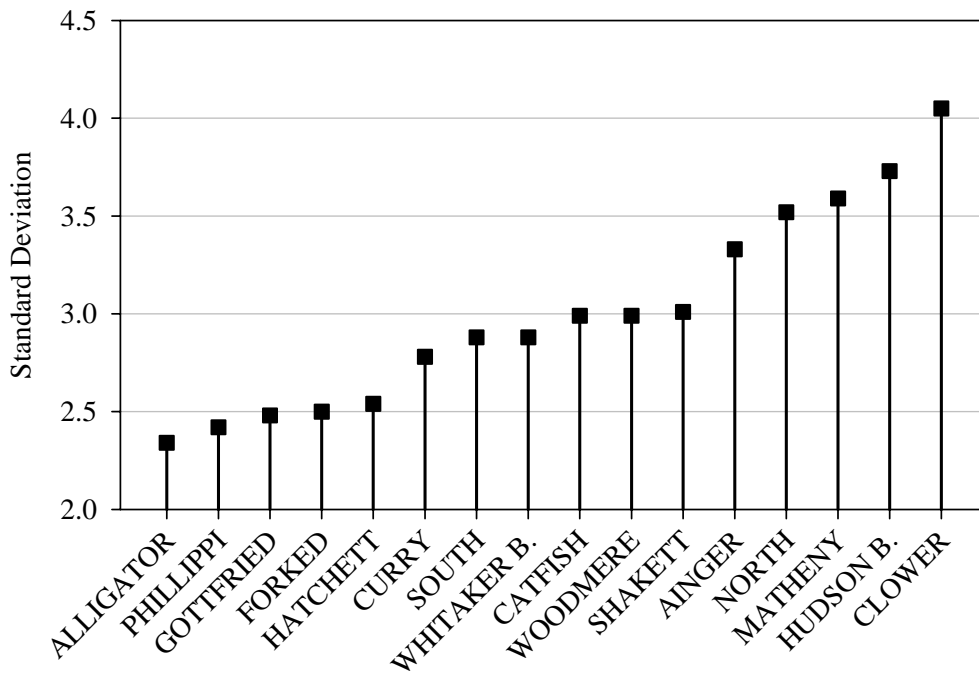
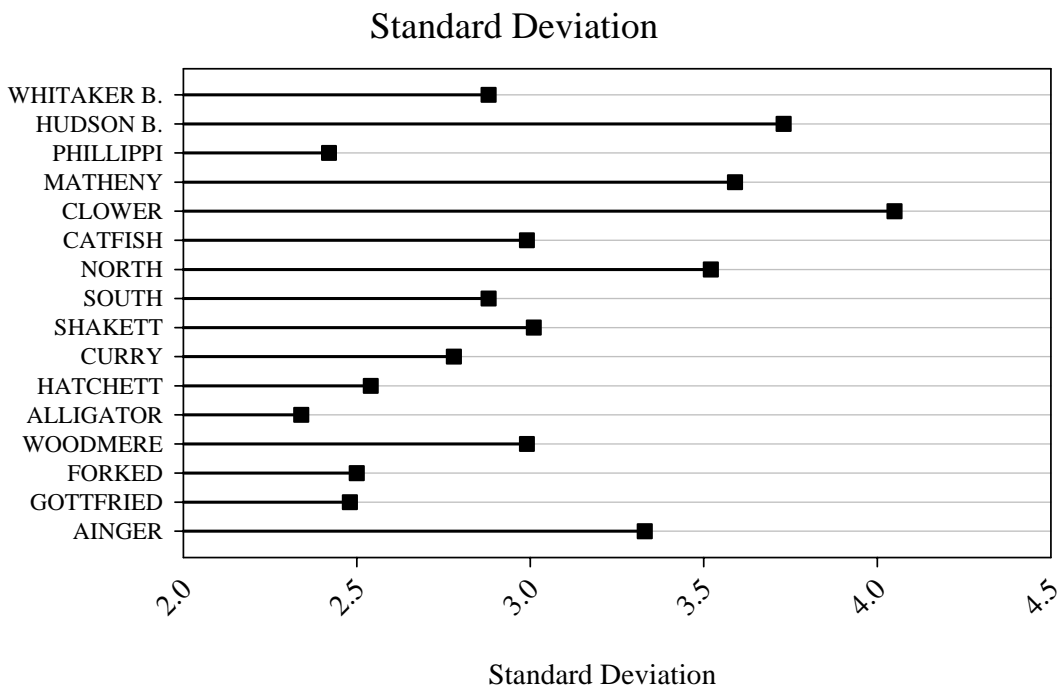


Figure 18. Value for the graphic standard deviation of mean grain size for samples from each location arranged in N-S order (top) and in rank value order (bottom).



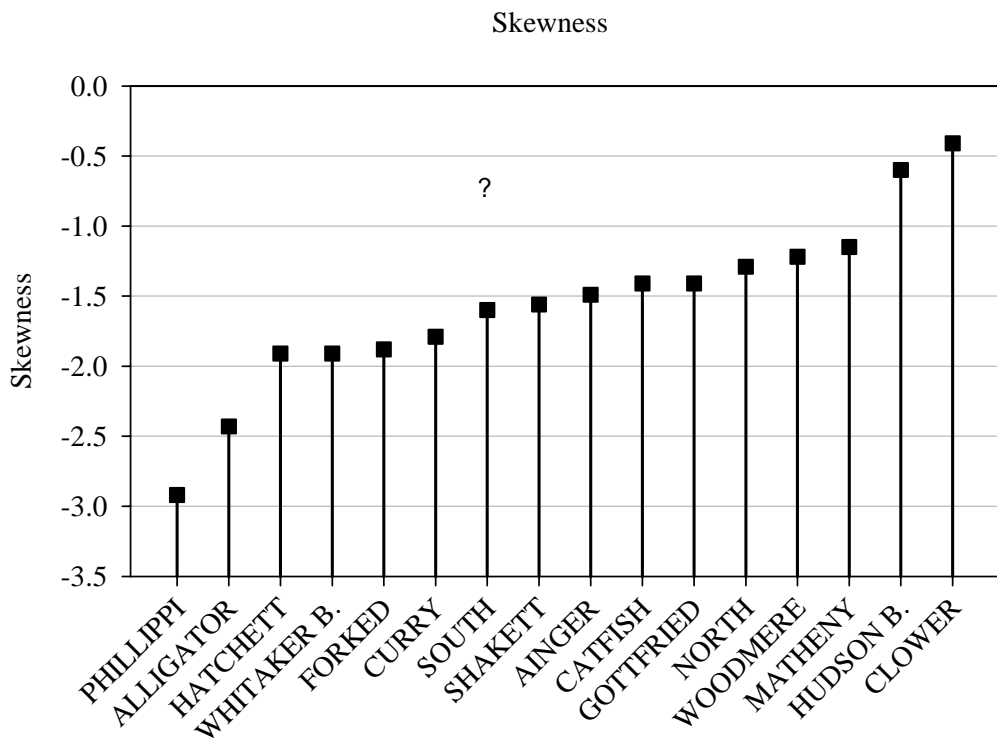
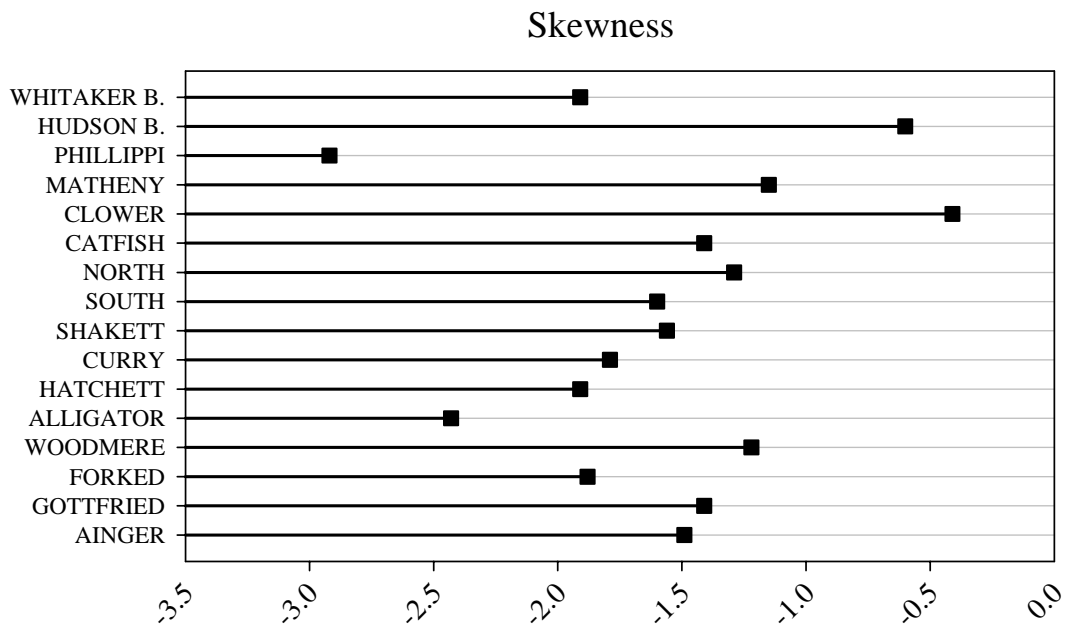


Figure 19. Value for the graphic skewness of grain size distribution for samples from each location arranged in N-S order (top) and in rank value order (bottom).

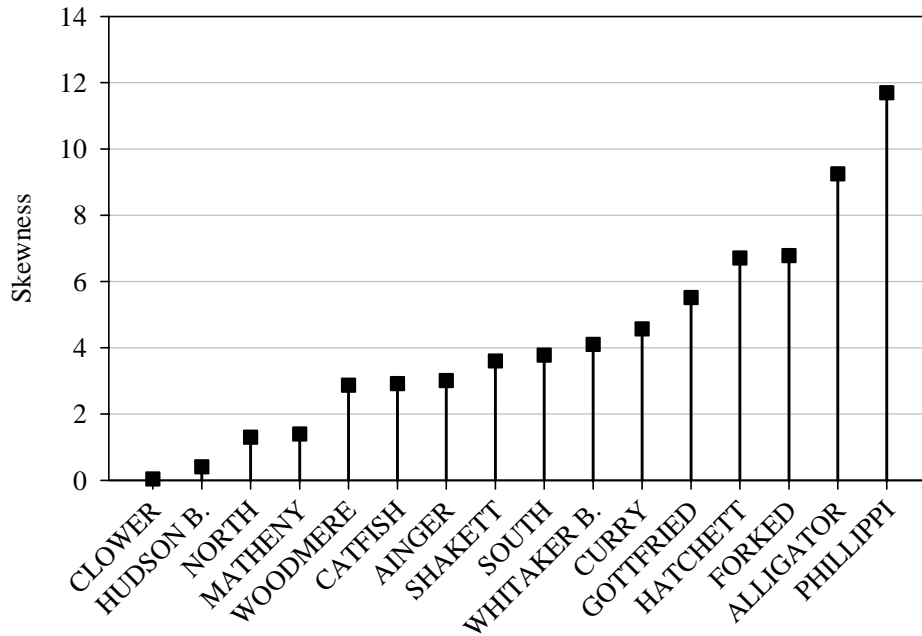
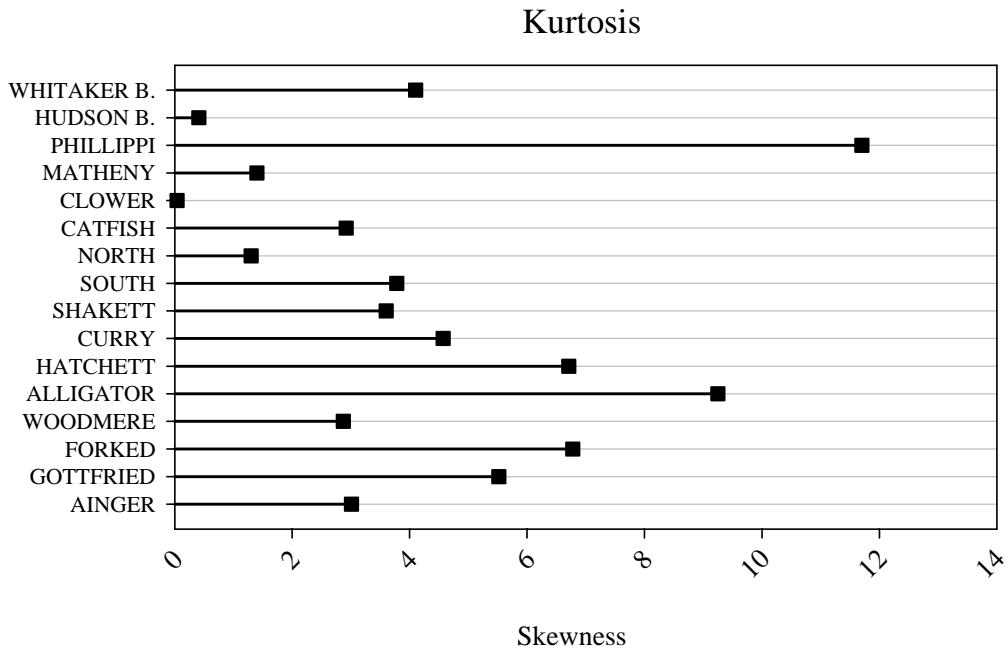


Figure 20. Value for the graphic kurtosis of grain size distribution for samples from each location arranged in N-S order (top) and in rank value order (bottom).

## Literature Cited

- American Public Health Association, American Water Works Association, and Water Pollution Control Federation. 1989. Standard Methods for the Examination of Water and Wastewater. 17th Edition. Washington, DC.
- Environmental Protection Agency. 1986. Test Methods for Evaluating Solid Waste. Office of Solid Waste and Emergency Response. SW-846. Washington, DC.
- Faherty, K.F., and T.G. Williamson. 1989. Wood engineering and construction handbook. McGraw-Hill Publishing Company. New York, NY.
- Folk, R.L. 1974. Petrology of Sedimentary Rocks. Hemphill Publishing Company. Austin, TX.
- Gini. 1912. Variability e mutabilita. Studi Economico-Guirida Fac. Giurisprudence Univ. Cagliari A. III, parte II.
- Goodman, D. 1975. The theory of diversity-stability relationships in ecology. Q. Rev. Biol. 50:237-266.
- Gross, M.G. 1971. Chapter 25. Carbon Determination. In: Procedures is sedimentary Petrology. R.E. Carver, editor. University of Georgia, Athens, Ga. Wiley Interscience. p. 587.
- Hurlbert, S.H. 1971. The non-concept of species diversity: a critique and alternative parameters. Ecology 52:577-586.
- Klute, A., (ed). 1986. Methods of Soil Analysis: Part 1: Physical and Mineralogical Methods. Second Edition. American Society of Agronomy, Inc. and Soil Science Society of America, Inc. Madison, WI.
- Kunze, G.W. and J.B. Dixon. 1986. Pretreatment for Mineralogical Analysis. Chapter 5. In: Methods of Soil Analysis: Part 1: Physical and Mineralogical Methods. Second Edition. A. Klute (ed), American Society of Agronomy, Inc. and Soil Science Society of America, Inc. Madison, WI.
- Margalef, R. 1958. Information theory in ecology. Gen Sys. 3:36-71.
- Patten, B.C. 1968. Mathematical models of plankton production. Int. Revue. ges Hydrobiol. Hydrogr. 53:357-408.
- Pielou, E.C. 1977. Mathematical Ecology. Wiley, New York.
- Shannon, C.E. and W. Weaver. 1972. The Mathematical Theory of Communications. Univ. of Ill. Press, Urbana. 117 p. [first printed in 1949].
- Simpson, E.H. 1949. Measurement of diversity. Nature 163: 688.
- Washington, H.G. 1984. Review: Diversity, biotic and similarity indices. A review with special relevance to aquatic ecosystems. Water Res. 18(6):653-694.

# APPENDICES

- Appendix Table 1. Rank order species list for each creek
- Appendix Table 2. Benthic species data representing the percentage composition of the total fauna by species for each station, and sorted by greatest percentage
- Appendix Table 3. Percentage distribution of sediment particulates among grain size categories.

Appendix Table 1. Rank order species list for each creek.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Ainger	<i>Laeonereis culveri</i>	<i>Polychaete (worm)</i>	256	202	190	648	13,846
Ainger	<i>Axiiothella mucosa</i>	<i>Polychaete (worm)</i>	34	129	58	221	4,722
Ainger	<i>Caulleriella</i>	<i>Polychaete (worm)</i>	26	23	50	99	2,115
Ainger	<i>Heteromastus filiformis</i>	<i>Polychaete (worm)</i>	23	20	33	76	1,624
Ainger	<i>Prionospio heterobranchia</i>	<i>Polychaete (worm)</i>	19	25	19	63	1,346
Ainger	<i>Fabriciola</i>	<i>Polychaete (worm)</i>	14	26	1	41	876
Ainger	<i>Leitoscoloplos robustus</i>	<i>Polychaete (worm)</i>	12	8	19	39	833
Ainger	<i>Grandidierella bonnieroides</i>	<i>Amphipod (crustacean)</i>	3	2	32	37	791
Ainger	<i>Neanthes acuminata</i>	<i>Polychaete (worm)</i>	11	17	7	35	748
Ainger	<i>Capitella capitata</i>	<i>Polychaete (worm)</i>	10	2	17	29	620
Ainger	<i>Typosyllis</i>	<i>Polychaete (worm)</i>	4	8	16	28	598
Ainger	Corophiidae	Corophiid amphipod	9	8	8	25	534
Ainger	<i>Lyonsia floridana</i>	<i>Bivalve</i>	4	7	6	17	363
Ainger	<i>Amphicteis gunneri</i>	<i>Polychaete (worm)</i>	4	1	4	9	192
Ainger	<i>Hargeria rapax</i>	<i>Tanaid (crustacean)</i>	1	4	3	8	171
Ainger	<i>Cyclaspis varians</i>	<i>Cumacean (crustacean)</i>	3	3	1	7	150
Ainger	<i>Ctenodrilus</i>	<i>Polychaete (worm)</i>	1	0	5	6	128
Ainger	<i>Xenanthura brevitelson</i>	<i>Isopod (crustacean)</i>	2	2	2	6	128
Ainger	<i>Arenicola cristata</i>	<i>Polychaete (worm)</i>	1	3	1	5	107
Ainger	<i>Brania</i>	<i>Polychaete (worm)</i>	2	1	1	4	85
Ainger	<i>Crepidula plana</i>	<i>Gastropod</i>	0	0	4	4	85
Ainger	<i>Parastarte triquetra</i>	<i>Bivalve</i>	2	1	1	4	85
Ainger	Sipuncula	Peanut worm	1	2	1	4	85
Ainger	<i>Ophryotrocha</i>	<i>Polychaete (worm)</i>	0	3	0	3	64
Ainger	<i>Aricidea philbiniae</i>	<i>Polychaete (worm)</i>	0	1	2	3	64
Ainger	<i>Polydora socialis</i>	<i>Polychaete (worm)</i>	2	0	1	3	64
Ainger	<i>Chone</i>	<i>Polychaete (worm)</i>	0	1	2	3	64
Ainger	<i>Tellina mera</i>	<i>Bivalve</i>	1	0	2	3	64
Ainger	<i>Ampelisca</i>	<i>Amphipod (crustacean)</i>	3	0	0	3	64
Ainger	<i>Ampelisca agassizi</i>	<i>Amphipod (crustacean)</i>	0	1	2	3	64
Ainger	<i>Ampelisca holmesi</i>	<i>Amphipod (crustacean)</i>	1	0	2	3	64
Ainger	Nemertea	Ribbon worm	1	0	1	2	43
Ainger	<i>Exogone</i>	<i>Polychaete (worm)</i>	1	0	1	2	43
Ainger	<i>Streptosyllis pettiboneae</i>	<i>Polychaete (worm)</i>	0	1	1	2	43
Ainger	Platyhelminthes	Flatworm	0	1	0	1	21
Ainger	<i>Eteone heteropoda</i>	<i>Polychaete (worm)</i>	0	1	0	1	21
Ainger	<i>Sphaerosyllis taylora</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Ainger	<i>Cirriformia</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Ainger	Terebellidae	<i>Polychaete (worm)</i>	0	0	1	1	21
Ainger	Gastropoda juv	Gastropod	0	0	1	1	21
Ainger	<i>Astyris lunata</i>	<i>Gastropod</i>	0	1	0	1	21
Ainger	<i>Gastroperon rubrum</i>	<i>Gastropod</i>	0	1	0	1	21
Ainger	<i>Anomalocardia auberiana</i>	<i>Bivalve</i>	1	0	0	1	21
Ainger	<i>Bowmaniella floridana</i>	<i>Mysid (crustacean)</i>	0	1	0	1	21
Ainger	<i>Taphromysis bowmani</i>	<i>Mysid (crustacean)</i>	0	0	1	1	21
Ainger	<i>Oxyurostylis smithi</i>	<i>Cumacean (crustacean)</i>	0	1	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Alligator	<i>Laeonereis culveri</i>	Polychaete (worm)	70	42	86	198	4,231
Alligator	<i>Hargeria rapax</i>	Tanaid (crustacean)	37	62	37	136	2,906
Alligator	Corophiidae	Corophiid amphipod	44	18	47	109	2,329
Alligator	<i>Leitoscoloplos robustus</i>	Polychaete (worm)	26	23	46	95	2,030
Alligator	<i>Capitella capitata</i>	Polychaete (worm)	30	17	22	69	1,474
Alligator	<i>Heteromastus filiformis</i>	Polychaete (worm)	34	20	15	69	1,474
Alligator	<i>Halmyrapseudes bahamensis</i>	Mysid (crustacean)	8	9	8	25	534
Alligator	<i>Cyclaspis varians</i>	Cumacean (crustacean)	3	13	4	20	427
Alligator	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	6	3	6	15	321
Alligator	<i>Prionospio heterobranchia</i>	Polychaete (worm)	3	5	1	9	192
Alligator	<i>Eteone heteropoda</i>	Polychaete (worm)	4	4	0	8	171
Alligator	<i>Streptosyllis pettiboneae</i>	Polychaete (worm)	2	1	5	8	171
Alligator	<i>Mysella planulata</i>	Bivalve	1	3	2	6	128
Alligator	<i>Amphicteis gunneri</i>	Polychaete (worm)	3	2	0	5	107
Alligator	<i>Chone</i>	Polychaete (worm)	1	2	2	5	107
Alligator	<i>Scolelepis texana</i>	Polychaete (worm)	1	1	2	4	85
Alligator	Nemertea	Ribbon worm	0	3	0	3	64
Alligator	<i>Chione cancellata</i>	Bivalve	0	1	2	3	64
Alligator	<i>Ampelisca agassizi</i>	Amphipod (crustacean)	2	0	1	3	64
Alligator	<i>Cauleriella</i>	Polychaete (worm)	0	0	2	2	43
Alligator	Oligochaeta	Oligochaete (worm)	1	1	0	2	43
Alligator	<i>Oxyurostylis smithi</i>	Cumacean (crustacean)	1	1	0	2	43
Alligator	<i>Ampelisca</i>	Amphipod (crustacean)	1	0	1	2	43
Alligator	<i>Ampelisca holmesi</i>	Amphipod (crustacean)	0	2	0	2	43
Alligator	<i>Neanthes acuminata</i>	Polychaete (worm)	0	1	0	1	21
Alligator	<i>Polydora ligni</i>	Polychaete (worm)	0	1	0	1	21
Alligator	<i>Mediomastus ambiseta</i>	Polychaete (worm)	0	0	1	1	21
Alligator	<i>Haminoea</i>	Gastropod	1	0	0	1	21
Alligator	<i>Haminoea antillarum</i>	Gastropod	0	0	1	1	21
Alligator	<i>Tellina</i>	Bivalve	1	0	0	1	21
Alligator	<i>Anomalocardia auberiana</i>	Bivalve	1	0	0	1	21
Alligator	<i>Taphromysis bowmani</i>	Mysid (crustacean)	0	1	0	1	21
Alligator	<i>Edotea montosa</i>	Isopod (crustacean)	0	1	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Catfish	<i>Laonereis culveri</i>	Polychaete (worm)	77	25	37	139	2,970
Catfish	<i>Stenonereis martini</i>	Polychaete (worm)	21	2	15	38	812
Catfish	<i>Streblospio gynobranchiata</i>	Polychaete (worm)	11	7	3	21	449
Catfish	Oligochaeta	Oligochaete (worm)	13	0	4	17	363
Catfish	<i>Capitella capitata</i>	Polychaete (worm)	6	2	3	11	235
Catfish	<i>Lioplax</i>	Gastropod	1	4	5	10	214
Catfish	Corophiidae	Corophiid amphipod	0	8	1	9	192
Catfish	<i>Almyracuma nr. proximoculae</i>	Cumacean (crustacean)	1	0	2	3	64
Catfish	Nemertea	Ribbon worm	0	1	1	2	43
Catfish	<i>Leitoscoloplos</i>	Polychaete (worm)	0	1	1	2	43
Catfish	<i>Hydrobiidae sp. B</i>	Gastropod	0	1	1	2	43
Catfish	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	0	2	0	2	43
Catfish	Hirudinea	leach	1	0	0	1	21
Catfish	<i>Hydrobiidae sp. A</i>	Gastropod	0	1	0	1	21
Catfish	Thiaridae	Gastropod	0	0	1	1	21
Catfish	<i>Mytilopsis leucophaeata</i>	Bivalve	0	1	0	1	21
Catfish	<i>Ampelisca</i>	Amphipod (crustacean)	0	0	1	1	21
Clower	Oligochaeta	Oligochaete (worm)	14	2	6	22	316
Clower	<i>Ophryotrocha</i>	Polychaete (worm)	8	8	3	19	273
Clower	<i>Tellina mera</i>	Bivalve	3	2	7	12	172
Clower	<i>Elasmopus laevis</i>	Isopod (crustacean)	5	0	6	11	158
Clower	<i>Ampelisca abdita</i>	Amphipod (crustacean)	4	2	3	9	129
Clower	<i>Parastarte triquetra</i>	Bivalve	2	1	2	5	72
Clower	<i>Paraehesione luteola</i>	Polychaete (worm)	1	0	3	4	57
Clower	<i>Prionospio heterobranchia</i>	Polychaete (worm)	4	0	0	4	57
Clower	<i>Haminoea</i>	Gastropod	1	1	1	3	43
Clower	<i>Mysella planulata</i>	Bivalve	2	1	0	3	43
Clower	<i>Laonereis culveri</i>	Polychaete (worm)	0	2	0	2	29
Clower	Vitrinellidae	Gastropod	0	1	1	2	29
Clower	<i>Acteocina canaliculata</i>	Gastropod	0	1	1	2	29
Clower	Bivalvia juv.	Bivalve	0	0	2	2	29
Clower	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	1	0	1	2	29
Clower	Actiniaria	Anemone	0	1	0	1	14
Clower	<i>Glycinde solitaria</i>	Polychaete (worm)	1	0	0	1	14
Clower	<i>Mediomastus ambiseta</i>	Polychaete (worm)	1	0	0	1	14
Clower	<i>Mulinia lateralis</i>	Bivalve	0	1	0	1	14
Clower	<i>Sphenia antillensis</i>	Bivalve	0	0	1	1	14
Clower	<i>Cyclaspis varians</i>	Cumacean (crustacean)	1	0	0	1	14

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Curry	<i>Laeonereis culveri</i>	Polychaete (worm)	95	151	155	401	8,568
Curry	<i>Capitella capitata</i>	Polychaete (worm)	24	25	33	82	1,752
Curry	<i>Leitoscoloplos robustus</i>	Polychaete (worm)	4	26	19	49	1,047
Curry	<i>Amphicteis gunneri</i>	Polychaete (worm)	20	6	6	32	684
Curry	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	7	6	6	19	406
Curry	<i>Streblospio gynobranchiata</i>	Polychaete (worm)	5	5	6	16	342
Curry	<i>Cautleriella</i>	Polychaete (worm)	9	1	2	12	256
Curry	<i>Heteromastus filiformis</i>	Polychaete (worm)	3	5	2	10	214
Curry	<i>Mesanthura floridensis</i>	Isopod (crustacean)	3	3	3	9	192
Curry	<i>Cyclaspis varians</i>	Cumacean (crustacean)	3	1	3	7	150
Curry	<i>Prionospio heterobranchia</i>	Polychaete (worm)	2	3	1	6	128
Curry	<i>Hargeria rapax</i>	Tanaid (crustacean)	3	0	3	6	128
Curry	<i>Taphromysis bowmani</i>	Mysid (crustacean)	2	0	2	4	85
Curry	<i>Ampelisca burkei</i>	Amphipod (crustacean)	1	1	1	3	64
Curry	Nemertea	Ribbon worm	1	1	0	2	43
Curry	<i>Eteone heteropoda</i>	Polychaete (worm)	0	2	0	2	43
Curry	<i>Fabriciella</i>	Polychaete (worm)	0	1	1	2	43
Curry	<i>Rictaxis punctostriatus</i>	Gastropod	1	1	0	2	43
Curry	Actiniaria	Anemone	1	0	0	1	21
Curry	<i>Neanthes acuminata</i>	Polychaete (worm)	1	0	0	1	21
Curry	<i>Stenoninereis martini</i>	Polychaete (worm)	0	1	0	1	21
Curry	<i>Armandia maculata</i>	Polychaete (worm)	0	1	0	1	21
Curry	<i>Pectinaria gouldii</i>	Polychaete (worm)	0	1	0	1	21
Curry	Oligochaeta	Oligochaete (worm)	1	0	0	1	21
Curry	<i>Haminoea</i>	Gastropod	1	0	0	1	21
Curry	<i>Amygdalum papyrium</i>	Bivalve	0	1	0	1	21



Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Forked	<i>Parastarte triquetra</i>	Bivalve	37	25	18	80	1,709
Forked	<i>Ampelisca agassizi</i>	Amphipod (crustacean)	11	17	24	52	1,111
Forked	<i>Acteocina canaliculata</i>	Gastropod	4	13	5	22	470
Forked	<i>Scolelepis texana</i>	Polychaete (worm)	6	4	10	20	427
Forked	<i>Mysella planulata</i>	Bivalve	7	6	4	17	363
Forked	<i>Lyonsia floridana</i>	Bivalve	6	7	4	17	363
Forked	<i>Prionospio heterobranchia</i>	Polychaete (worm)	5	6	5	16	342
Forked	<i>Magelona pettiboneae</i>	Polychaete (worm)	5	5	5	15	321
Forked	<i>Capitella capitata</i>	Polychaete (worm)	2	5	7	14	299
Forked	<i>Cyclaspis varians</i>	Cumacean (crustacean)	3	3	7	13	278
Forked	<i>Laeonereis culveri</i>	Polychaete (worm)	5	2	3	10	214
Forked	<i>Asychis elongata</i>	Polychaete (worm)	1	2	6	9	192
Forked	<i>Oxyurostylis smithi</i>	Cumacean (crustacean)	1	2	5	8	171
Forked	<i>Chone</i>	Polychaete (worm)	2	1	4	7	150
Forked	<i>Haminoea succinea</i>	Gastropod	4	0	1	5	107
Forked	<i>Eteone heteropoda</i>	Polychaete (worm)	1	1	2	4	85
Forked	<i>Megalomma pigmentum</i>	Polychaete (worm)	0	0	4	4	85
Forked	<i>Amygdalum papyrium</i>	Bivalve	1	1	2	4	85
Forked	Actiniaria	Anemone	1	0	2	3	64
Forked	Nemertea	Ribbon worm	0	1	2	3	64
Forked	<i>Haminoea antillarum</i>	Gastropod	3	0	0	3	64
Forked	Corophiidae	Corophiid amphipod	1	1	1	3	64
Forked	<i>Erichthonius brasiliensis</i>	Amphipod (crustacean)	0	1	2	3	64
Forked	<i>Glycinde solitaria</i>	Polychaete (worm)	0	0	2	2	43
Forked	<i>Leitoscoloplos robustus</i>	Polychaete (worm)	0	0	2	2	43
Forked	<i>Pectinaria gouldii</i>	Polychaete (worm)	0	0	2	2	43
Forked	<i>Teinostoma</i>	Gastropod	0	0	2	2	43
Forked	<i>Eulimastoma</i>	Gastropod	0	0	2	2	43
Forked	Bivalvia juv.	Bivalve	2	0	0	2	43
Forked	<i>Laevicardium mortoni</i>	Bivalve	0	0	2	2	43
Forked	<i>Anomalocardia auberiana</i>	Bivalve	0	2	0	2	43
Forked	<i>Hargeria rapax</i>	Tanaid (crustacean)	0	1	1	2	43
Forked	<i>Glycera</i>	Polychaete (worm)	0	1	0	1	21
Forked	<i>Paraprionospio pinnata</i>	Polychaete (worm)	0	0	1	1	21
Forked	<i>Streblospio gynobranchiata</i>	Polychaete (worm)	0	1	0	1	21
Forked	<i>Heteromastus filiformis</i>	Polychaete (worm)	1	0	0	1	21
Forked	<i>Mediomastus ambiseta</i>	Polychaete (worm)	0	1	0	1	21
Forked	<i>Melinna maculata</i>	Polychaete (worm)	0	1	0	1	21
Forked	Oligochaeta	Oligochaete (worm)	1	0	0	1	21
Forked	Gastropoda juv	Gastropod	1	0	0	1	21
Forked	<i>Nassarius vibex</i>	Gastropod	0	0	1	1	21
Forked	Turridae	Gastropod	0	0	1	1	21
Forked	<i>Bulla striata</i>	Gastropod	0	0	1	1	21
Forked	Caprellidae	Caprellid amphipod	1	0	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Gottfried	<i>Fabriciola</i>	<i>Polychaete (worm)</i>	162	125	236	523	11,175
Gottfried	<i>Laeonereis culveri</i>	<i>Polychaete (worm)</i>	130	118	144	392	8,376
Gottfried	<i>Axiothella mucosa</i>	<i>Polychaete (worm)</i>	62	26	83	171	3,654
Gottfried	<i>Heteromastus filiformis</i>	<i>Polychaete (worm)</i>	28	18	5	51	1,090
Gottfried	<i>Monticellina dorsobranchialis</i>	<i>Polychaete (worm)</i>	7	18	19	44	940
Gottfried	<i>Leitoscoloplos robustus</i>	<i>Polychaete (worm)</i>	15	10	14	39	833
Gottfried	<i>Cyclaspis varians</i>	<i>Cumacean (crustacean)</i>	4	21	8	33	705
Gottfried	<i>Prionospio heterobranchia</i>	<i>Polychaete (worm)</i>	7	6	8	21	449
Gottfried	<i>Neanthes acuminata</i>	<i>Polychaete (worm)</i>	4	7	8	19	406
Gottfried	<i>Caulleriella</i>	<i>Polychaete (worm)</i>	1	12	0	13	278
Gottfried	<i>Aricidea philbinae</i>	<i>Polychaete (worm)</i>	1	6	4	11	235
Gottfried	Oligochaeta	Oligochaete (worm)	4	5	1	10	214
Gottfried	<i>Xenanthura brevitelson</i>	<i>Isopod (crustacean)</i>	0	4	5	9	192
Gottfried	Nemertea	Ribbon worm	3	1	4	8	171
Gottfried	<i>Lyonsia floridana</i>	<i>Bivalve</i>	1	5	2	8	171
Gottfried	<i>Ophryotrocha</i>	<i>Polychaete (worm)</i>	3	1	2	6	128
Gottfried	<i>Ctenodrilus</i>	<i>Polychaete (worm)</i>	3	1	2	6	128
Gottfried	<i>Capitella capitata</i>	<i>Polychaete (worm)</i>	0	4	2	6	128
Gottfried	<i>Streblosoma hartmanae</i>	<i>Polychaete (worm)</i>	5	0	0	5	107
Gottfried	<i>Ampelisca agassizi</i>	<i>Amphipod (crustacean)</i>	0	4	1	5	107
Gottfried	<i>Typosyllis</i>	<i>Polychaete (worm)</i>	4	0	0	4	85
Gottfried	<i>Ampelisca holmesi</i>	<i>Amphipod (crustacean)</i>	1	0	3	4	85
Gottfried	<i>Leptosynapta</i>	<i>Sea Cucumber</i>	2	0	2	4	85
Gottfried	<i>Cirriformia</i>	<i>Polychaete (worm)</i>	1	1	1	3	64
Gottfried	Sipuncula	Peanut worm	1	1	1	3	64
Gottfried	<i>Kinbergonuphis simoni</i>	<i>Polychaete (worm)</i>	1	0	1	2	43
Gottfried	<i>Polydora socialis</i>	<i>Polychaete (worm)</i>	1	1	0	2	43
Gottfried	Sabellidae	<i>Polychaete (worm)</i>	1	0	1	2	43
Gottfried	<i>Astyris lunata</i>	<i>Gastropod</i>	2	0	0	2	43
Gottfried	<i>Tellina mera</i>	<i>Bivalve</i>	1	0	1	2	43
Gottfried	Actiniaria	Anemone	0	1	0	1	21
Gottfried	Polynoidae	<i>Polychaete (worm)</i>	0	1	0	1	21
Gottfried	<i>Streptosyllis pettiboneae</i>	<i>Polychaete (worm)</i>	0	1	0	1	21
Gottfried	<i>Spio pettiboneae</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Gottfried	<i>Scolelepis texana</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Gottfried	<i>Polycirrus</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Gottfried	<i>Chone</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Gottfried	<i>Branchiomma nigromaculata</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Gottfried	<i>Cerithium muscarum</i>	<i>Gastropod</i>	0	0	1	1	21
Gottfried	<i>Haminoea antillarum</i>	<i>Gastropod</i>	1	0	0	1	21
Gottfried	Aplysiidae	Gastropod	1	0	0	1	21
Gottfried	<i>Musculus lateralis</i>	<i>Bivalve</i>	1	0	0	1	21
Gottfried	<i>Amygdalum papyrium</i>	<i>Bivalve</i>	0	0	1	1	21
Gottfried	<i>Mysella planulata</i>	<i>Bivalve</i>	0	1	0	1	21
Gottfried	<i>Macoma tenta</i>	<i>Bivalve</i>	0	1	0	1	21
Gottfried	<i>Tellina</i>	<i>Bivalve</i>	0	0	1	1	21
Gottfried	<i>Bowmaniella floridana</i>	<i>Mysid (crustacean)</i>	0	0	1	1	21
Gottfried	<i>Oxyurostylis smithi</i>	<i>Cumacean (crustacean)</i>	1	0	0	1	21
Gottfried	<i>Almyracuma nr. proximoculae</i>	<i>Cumacean (crustacean)</i>	0	1	0	1	21
Gottfried	<i>Hargeria rapax</i>	<i>Tanaid (crustacean)</i>	0	0	1	1	21
Gottfried	Corophiidae	Corophiid amphipod	1	0	0	1	21
Gottfried	<i>Grandidierella bonnieroides</i>	<i>Amphipod (crustacean)</i>	0	1	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Hatchett	<i>Laeonereis culveri</i>	<i>Polychaete (worm)</i>	30	22	37	89	1,902
Hatchett	<i>Capitella capitata</i>	<i>Polychaete (worm)</i>	21	8	27	56	1,197
Hatchett	<i>Grandidierella bonnieroides</i>	<i>Amphipod (crustacean)</i>	5	3	35	43	919
Hatchett	<i>Leitoscoloplos robustus</i>	<i>Polychaete (worm)</i>	16	5	9	30	641
Hatchett	<i>Hargeria rapax</i>	<i>Tanaid (crustacean)</i>	8	8	10	26	556
Hatchett	<i>Chione cancellata</i>	<i>Bivalve</i>	6	3	5	14	299
Hatchett	<i>Heteromastus filiformis</i>	<i>Polychaete (worm)</i>	1	1	5	7	150
Hatchett	Bivalvia juv.	<i>Bivalve</i>	4	0	1	5	107
Hatchett	<i>Cyclaspis varians</i>	<i>Cumacean (crustacean)</i>	3	0	2	5	107
Hatchett	<i>Mysella planulata</i>	<i>Bivalve</i>	0	1	2	3	64
Hatchett	<i>Taphromysis bowmani</i>	<i>Mysid (crustacean)</i>	0	0	3	3	64
Hatchett	<i>Ampelisca holmesi</i>	<i>Amphipod (crustacean)</i>	0	0	3	3	64
Hatchett	<i>Eteone heteropoda</i>	<i>Polychaete (worm)</i>	1	0	1	2	43
Hatchett	Aplysiidae	<i>Gastropod</i>	0	0	2	2	43
Hatchett	<i>Oxyurostylis smithi</i>	<i>Cumacean (crustacean)</i>	0	0	2	2	43
Hatchett	<i>Neanthes acuminata</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Hatchett	<i>Polydora ligni</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Hatchett	<i>Prionospio heterobranchia</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Hatchett	<i>Streblospio gynobranchiata</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Hatchett	<i>Caulleriella</i>	<i>Polychaete (worm)</i>	0	1	0	1	21
Hatchett	Oligochaeta	<i>Oligochaete (worm)</i>	1	0	0	1	21
Hatchett	<i>Almyracuma nr. proximoculae</i>	<i>Cumacean (crustacean)</i>	0	0	1	1	21
Hudson B.	<i>Parastarte triquetra</i>	<i>Bivalve</i>	18	64	10	92	1,966
Hudson B.	<i>Streblospio gynobranchiata</i>	<i>Polychaete (worm)</i>	17	16	5	38	812
Hudson B.	<i>Laeonereis culveri</i>	<i>Polychaete (worm)</i>	12	14	9	35	748
Hudson B.	<i>Ophryotrocha</i>	<i>Polychaete (worm)</i>	17	12	4	33	705
Hudson B.	Oligochaeta	<i>Oligochaete (worm)</i>	2	2	4	8	171
Hudson B.	<i>Stenoninereis martini</i>	<i>Polychaete (worm)</i>	1	1	2	4	85
Hudson B.	<i>Mysella planulata</i>	<i>Bivalve</i>	1	2	1	4	85
Hudson B.	<i>Capitella capitata</i>	<i>Polychaete (worm)</i>	1	2	0	3	64
Hudson B.	<i>Mediomastus ambiseta</i>	<i>Polychaete (worm)</i>	2	0	0	2	43
Hudson B.	<i>Abra aequalis</i>	<i>Bivalve</i>	0	1	1	2	43
Hudson B.	Actiniaria	<i>Anemone</i>	1	0	0	1	21
Hudson B.	<i>Podarkeopsis levifuscina</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Hudson B.	<i>Streblosoma hartmanae</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Hudson B.	<i>Acteocina canaliculata</i>	<i>Gastropod</i>	1	0	0	1	21
Hudson B.	<i>Tellina versicolor</i>	<i>Bivalve</i>	0	0	1	1	21
Hudson B.	<i>Tellina mera</i>	<i>Bivalve</i>	0	0	1	1	21
Hudson B.	<i>Chione cancellata</i>	<i>Bivalve</i>	0	1	0	1	21
Hudson B.	<i>Ampelisca burkei</i>	<i>Amphipod (crustacean)</i>	0	0	1	1	21
Hudson B.	<i>Grandidierella bonnieroides</i>	<i>Amphipod (crustacean)</i>	1	0	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Matheny	<i>Cymadusa compta</i>	Amphipod (crustacean)	17	8	38	63	905
Matheny	<i>Hourstonius laguna</i>	Amphipod (crustacean)	5	3	19	27	388
Matheny	<i>Ophryotrocha</i>	Polychaete (worm)	2	1	18	21	302
Matheny	<i>Harrieta faxoni</i>	Isopod (crustacean)	9	2	8	19	273
Matheny	Oligochaeta	Oligochaete (worm)	0	4	9	13	187
Matheny	<i>Melita</i>	Amphipod (crustacean)	0	0	13	13	187
Matheny	<i>Exogone</i>	Polychaete (worm)	1	1	8	10	144
Matheny	<i>Laeonereis culveri</i>	Polychaete (worm)	5	0	0	5	72
Matheny	<i>Hargeria rapax</i>	Tanaid (crustacean)	0	0	5	5	72
Matheny	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	0	0	5	5	72
Matheny	<i>Polydora ligni</i>	Polychaete (worm)	2	0	2	4	57
Matheny	<i>Ctenodrilus</i>	Polychaete (worm)	1	1	2	4	57
Matheny	<i>Capitella capitata</i>	Polychaete (worm)	2	0	2	4	57
Matheny	<i>Podarkeopsis levifuscina</i>	Polychaete (worm)	0	0	2	2	29
Matheny	<i>Stenonereis martini</i>	Polychaete (worm)	0	2	0	2	29
Matheny	Opisthobranchia	Sea slug	0	0	2	2	29
Matheny	Actiniaria	Anemone	1	0	0	1	14
Matheny	<i>Paraehesione luteola</i>	Polychaete (worm)	1	0	0	1	14
Matheny	<i>Autolytus</i>	Polychaete (worm)	0	1	0	1	14
Matheny	Sphaerodoridae	Polychaete (worm)	1	0	0	1	14
Matheny	<i>Aricidea philbinae</i>	Polychaete (worm)	0	0	1	1	14
Matheny	<i>Vitrinella</i>	Gastropod	1	0	0	1	14
Matheny	<i>Caecum nitidum</i>	Gastropod	0	0	1	1	14
Matheny	<i>Anomalocardia auberiana</i>	Bivalve	1	0	0	1	14
Matheny	<i>Erichsonella filiformis</i>	Isopod (crustacean)	0	0	1	1	14
Matheny	<i>Ampelisca burkei</i>	Amphipod (crustacean)	0	0	1	1	14
Matheny	Corophiidae	Corophiid amphipod	0	0	1	1	14
Matheny	<i>Dulichella appendiculata</i>	Amphipod (crustacean)	1	0	0	1	14
North	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	51	126	39	216	4,615
North	<i>Laeonereis culveri</i>	Polychaete (worm)	16	23	15	54	1,154
North	<i>Stenonereis martini</i>	Polychaete (worm)	4	1	28	33	705
North	<i>Streblospio gynobranchiata</i>	Polychaete (worm)	4	8	11	23	491
North	Corophiidae	Corophiid amphipod	0	16	5	21	449
North	Oligochaeta	Oligochaete (worm)	1	6	7	14	299
North	Actiniaria	Anemone	4	2	5	11	235
North	Nemertea	Ribbon worm	1	6	1	8	171
North	<i>Capitella capitata</i>	Polychaete (worm)	0	2	0	2	43
North	Hirudinea	leach	0	2	0	2	43
North	<i>Eteone heteropoda</i>	Polychaete (worm)	1	0	0	1	21
North	<i>Polydora ligni</i>	Polychaete (worm)	0	1	0	1	21
North	<i>Edotea montosa</i>	Isopod (crustacean)	0	1	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Phillippi	<i>Xenanthura brevitelson</i>	Isopod (crustacean)	70	47	68	185	3,953
Phillippi	Corophiidae	Corophiid amphipod	29	17	103	149	3,184
Phillippi	<i>Leitoscoloplos robustus</i>	Polychaete (worm)	54	30	55	139	2,970
Phillippi	<i>Laeonereis culveri</i>	Polychaete (worm)	29	43	41	113	2,415
Phillippi	<i>Hargeria rapax</i>	Tanaid (crustacean)	41	17	31	89	1,902
Phillippi	<i>Almyracuma nr. proximoculae</i>	Cumacean (crustacean)	8	7	19	34	726
Phillippi	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	9	0	24	33	705
Phillippi	<i>Ampelisca burkei</i>	Amphipod (crustacean)	14	8	7	29	620
Phillippi	<i>Capitella capitata</i>	Polychaete (worm)	11	1	16	28	598
Phillippi	<i>Cyclaspis varians</i>	Cumacean (crustacean)	6	4	14	24	513
Phillippi	<i>Heteromastus filiformis</i>	Polychaete (worm)	4	6	9	19	406
Phillippi	<i>Prionospio heterobranchia</i>	Polychaete (worm)	7	2	4	13	278
Phillippi	<i>Lyonsia floridana</i>	Bivalve	1	5	6	12	256
Phillippi	Nemertea	Ribbon worm	2	2	3	7	150
Phillippi	<i>Scolelepis texana</i>	Polychaete (worm)	3	3	1	7	150
Phillippi	<i>Amphicteis gunneri</i>	Polychaete (worm)	4	2	1	7	150
Phillippi	<i>Eteone heteropoda</i>	Polychaete (worm)	2	0	3	5	107
Phillippi	<i>Rictaxis punctostriatus</i>	Gastropod	1	1	2	4	85
Phillippi	<i>Parastarte triquetra</i>	Bivalve	0	2	2	4	85
Phillippi	<i>Aricidea philbinae</i>	Polychaete (worm)	0	2	1	3	64
Phillippi	<i>Streblospio gynobranchiata</i>	Polychaete (worm)	1	1	1	3	64
Phillippi	<i>Chone</i>	Polychaete (worm)	2	1	0	3	64
Phillippi	<i>Mysella planulata</i>	Bivalve	0	1	2	3	64
Phillippi	<i>Oxyurostylis smithi</i>	Cumacean (crustacean)	1	1	1	3	64
Phillippi	<i>Edotea montosa</i>	Isopod (crustacean)	0	0	3	3	64
Phillippi	Platyhelminthes	Flatworm	1	0	1	2	43
Phillippi	Oligochaeta	Oligochaete (worm)	0	2	0	2	43
Phillippi	<i>Acteocina canaliculata</i>	Gastropod	0	1	1	2	43
Phillippi	<i>Mulinia lateralis</i>	Bivalve	1	1	0	2	43
Phillippi	<i>Macoma tenta</i>	Bivalve	1	0	1	2	43
Phillippi	<i>Tellina mera</i>	Bivalve	0	1	1	2	43
Phillippi	Actiniaria	Anemone	0	0	1	1	21
Phillippi	<i>Typosyllis</i>	Polychaete (worm)	0	0	1	1	21
Phillippi	<i>Brania</i>	Polychaete (worm)	0	1	0	1	21
Phillippi	<i>Neanthes acuminata</i>	Polychaete (worm)	0	0	1	1	21
Phillippi	<i>Spio pettiboneae</i>	Polychaete (worm)	1	0	0	1	21
Phillippi	<i>Caulleriella</i>	Polychaete (worm)	0	1	0	1	21
Phillippi	<i>Asychis elongata</i>	Polychaete (worm)	0	0	1	1	21
Phillippi	<i>Axiothella mucosa</i>	Polychaete (worm)	0	1	0	1	21
Phillippi	<i>Branchiomma nigromaculata</i>	Polychaete (worm)	0	0	1	1	21
Phillippi	<i>Amygdalum papyrium</i>	Bivalve	0	1	0	1	21
Phillippi	<i>Anomalocardia auberiana</i>	Bivalve	0	1	0	1	21
Phillippi	<i>Taphromysis bowmani</i>	Mysid (crustacean)	0	0	1	1	21
Phillippi	<i>Halmyrapseudes bahamensis</i>	Mysid (crustacean)	0	1	0	1	21
Phillippi	<i>Rudilemboides naglei</i>	Amphipod (crustacean)	0	1	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Shakett	<i>Laeonereis culveri</i>	Polychaete (worm)	34	40	85	159	3,397
Shakett	<i>Leitoscoloplos robustus</i>	Polychaete (worm)	30	55	18	103	2,201
Shakett	<i>Capitella capitata</i>	Polychaete (worm)	38	27	35	100	2,137
Shakett	<i>Streblospio gynobranchiata</i>	Polychaete (worm)	32	26	21	79	1,688
Shakett	<i>Hargeria rapax</i>	Tanaid (crustacean)	11	25	30	66	1,410
Shakett	<i>Cyclaspis varians</i>	Cumacean (crustacean)	21	13	14	48	1,026
Shakett	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	12	8	20	40	855
Shakett	<i>Heteromastus filiformis</i>	Polychaete (worm)	5	4	6	15	321
Shakett	<i>Caulleriella</i>	Polychaete (worm)	5	4	4	13	278
Shakett	<i>Mesanthura floridensis</i>	Isopod (crustacean)	4	2	6	12	256
Shakett	<i>Chione cancellata</i>	Bivalve	4	2	5	11	235
Shakett	<i>Eteone heteropoda</i>	Polychaete (worm)	1	2	4	7	150
Shakett	<i>Prionospio heterobranchia</i>	Polychaete (worm)	1	4	1	6	128
Shakett	<i>Tellina</i>	Bivalve	2	1	3	6	128
Shakett	Ampharetidae	Polychaete (worm)	0	1	3	4	85
Shakett	Oligochaeta	Oligochaete (worm)	2	0	2	4	85
Shakett	<i>Almyracuma nr. proximoculae</i>	Cumacean (crustacean)	1	0	3	4	85
Shakett	Nemertea	Ribbon worm	2	0	1	3	64
Shakett	<i>Haminoea</i>	Gastropod	2	0	1	3	64
Shakett	<i>Lucinoma filosa</i>	Bivalve	0	3	0	3	64
Shakett	<i>Mysella planulata</i>	Bivalve	0	3	0	3	64
Shakett	<i>Ampelisca burkei</i>	Amphipod (crustacean)	1	1	1	3	64
Shakett	<i>Amphicteis gunneri</i>	Polychaete (worm)	0	0	2	2	43
Shakett	<i>Edotea montosa</i>	Isopod (crustacean)	1	0	1	2	43
Shakett	<i>Diopatra cuprea</i>	Polychaete (worm)	1	0	0	1	21
Shakett	<i>Polydora ligni</i>	Polychaete (worm)	1	0	0	1	21
Shakett	<i>Scolelepis texana</i>	Polychaete (worm)	0	0	1	1	21
Shakett	<i>Ctenodrilus</i>	Polychaete (worm)	1	0	0	1	21
Shakett	<i>Armandia maculata</i>	Polychaete (worm)	1	0	0	1	21
Shakett	<i>Mediomastus ambiseta</i>	Polychaete (worm)	0	1	0	1	21
Shakett	<i>Fabriciella</i>	Polychaete (worm)	0	0	1	1	21
Shakett	Gastropoda juv	Gastropod	1	0	0	1	21
Shakett	Bivalvia juv.	Bivalve	1	0	0	1	21
Shakett	<i>Anadara transversa</i>	Bivalve	1	0	0	1	21
Shakett	<i>Parvilucina multilineata</i>	Bivalve	1	0	0	1	21
Shakett	<i>Laevicardium mortoni</i>	Bivalve	0	0	1	1	21
Shakett	<i>Trachycardium egmontianum</i>	Bivalve	1	0	0	1	21
Shakett	<i>Ampelisca holmesi</i>	Amphipod (crustacean)	0	1	0	1	21
Shakett	Corophiidae	Corophiid amphipod	0	1	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
South	<i>Xenanthura brevitelson</i>	Isopod (crustacean)	79	56	86	221	4,722
South	<i>Halmyrapseudes bahamensis</i>	Mysid (crustacean)	25	3	29	57	1,218
South	<i>Laeonereis culveri</i>	Polychaete (worm)	18	13	21	52	1,111
South	<i>Hargeria rapax</i>	Tanaid (crustacean)	15	8	19	42	897
South	<i>Ampelisca burkei</i>	Amphipod (crustacean)	5	7	24	36	769
South	<i>Caulleriella</i>	Polychaete (worm)	7	8	13	28	598
South	<i>Prionospio heterobranchia</i>	Polychaete (worm)	12	4	7	23	491
South	<i>Kinbergonuphis simoni</i>	Polychaete (worm)	14	3	2	19	406
South	<i>Ampelisca holmesi</i>	Amphipod (crustacean)	4	2	11	17	363
South	<i>Aricidea philbinae</i>	Polychaete (worm)	10	2	1	13	278
South	<i>Heteromastus filiformis</i>	Polychaete (worm)	0	5	4	9	192
South	<i>Neanthes acuminata</i>	Polychaete (worm)	0	1	7	8	171
South	<i>Cyclaspis varians</i>	Cumacean (crustacean)	3	1	4	8	171
South	<i>Monticellina dorsobranchialis</i>	Polychaete (worm)	1	5	1	7	150
South	<i>Streblosoma hartmanae</i>	Polychaete (worm)	1	1	5	7	150
South	<i>Typosyllis</i>	Polychaete (worm)	2	1	3	6	128
South	<i>Leitoscoloplos robustus</i>	Polychaete (worm)	3	1	2	6	128
South	<i>Chione cancellata</i>	Bivalve	5	0	1	6	128
South	<i>Grandidierella bonnieroides</i>	Amphipod (crustacean)	2	3	0	5	107
South	Nemertea	Ribbon worm	1	0	3	4	85
South	<i>Axiothella mucosa</i>	Polychaete (worm)	1	3	0	4	85
South	<i>Rudilemboides naglei</i>	Amphipod (crustacean)	0	2	2	4	85
South	<i>Polydora socialis</i>	Polychaete (worm)	0	0	3	3	64
South	<i>Armandia maculata</i>	Polychaete (worm)	3	0	0	3	64
South	<i>Mediomastus ambiseta</i>	Polychaete (worm)	1	0	2	3	64
South	<i>Asychis elongata</i>	Polychaete (worm)	2	0	1	3	64
South	<i>Fabriciella</i>	Polychaete (worm)	0	1	2	3	64
South	<i>Acteocina canaliculata</i>	Gastropod	0	0	3	3	64
South	<i>Amygdalum papyrium</i>	Bivalve	1	2	0	3	64
South	<i>Oxyurostylis smithi</i>	Cumacean (crustacean)	2	1	0	3	64
South	<i>Mesanthura floridensis</i>	Isopod (crustacean)	0	1	2	3	64
South	<i>Podarkeopsis levifuscina</i>	Polychaete (worm)	1	0	1	2	43
South	<i>Tellina mera</i>	Bivalve	1	0	1	2	43
South	<i>Lyonsia floridana</i>	Bivalve	2	0	0	2	43
South	<i>Taphromysis bowmani</i>	Mysid (crustacean)	0	2	0	2	43
South	<i>Eteone heteropoda</i>	Polychaete (worm)	0	0	1	1	21
South	<i>Glycinde solitaria</i>	Polychaete (worm)	0	0	1	1	21
South	<i>Scolecopsis texana</i>	Polychaete (worm)	0	0	1	1	21
South	<i>Carazziella hobsonae</i>	Polychaete (worm)	0	1	0	1	21
South	<i>Capitella capitata</i>	Polychaete (worm)	0	0	1	1	21
South	<i>Pectinaria gouldii</i>	Polychaete (worm)	1	0	0	1	21
South	<i>Branchiomma nigromaculata</i>	Polychaete (worm)	1	0	0	1	21
South	<i>Haminoea antillarum</i>	Gastropod	0	1	0	1	21
South	<i>Mysella planulata</i>	Bivalve	1	0	0	1	21
South	<i>Laevicardium mortoni</i>	Bivalve	1	0	0	1	21
South	<i>Tellina</i>	Bivalve	0	0	1	1	21
South	<i>Tagelus divisus</i>	Bivalve	0	1	0	1	21
South	Sipuncula	Peanut worm	1	0	0	1	21

Appendix Table 1. Continued.

Creek	Taxa	Type of Organism	Rep1	Rep2	Rep3	Total	Number per m2
Whitaker B.	<i>Capitella capitata</i>	<i>Polychaete (worm)</i>	35	66	57	158	3,376
Whitaker B.	<i>Laeonereis culveri</i>	<i>Polychaete (worm)</i>	9	39	27	75	1,603
Whitaker B.	Oligochaeta	Oligochaete (worm)	1	4	2	7	150
Whitaker B.	<i>Stenonereis martini</i>	<i>Polychaete (worm)</i>	0	1	0	1	21
Whitaker B.	Mysidae	Mysid (crustacean)	0	1	0	1	21
Whitaker B.	<i>Cyclaspis varians</i>	<i>Cumacean (crustacean)</i>	1	0	0	1	21
Whitaker B.	<i>Grandidierella bonnieroides</i>	<i>Amphipod (crustacean)</i>	0	0	1	1	21
Woodmere	<i>Laeonereis culveri</i>	<i>Polychaete (worm)</i>	77	29	113	219	4,679
Woodmere	Oligochaeta	Oligochaete (worm)	4	65	6	75	1,603
Woodmere	<i>Grandidierella bonnieroides</i>	<i>Amphipod (crustacean)</i>	28	30	3	61	1,303
Woodmere	<i>Leitoscoloplos</i>	<i>Polychaete (worm)</i>	19	19	22	60	1,282
Woodmere	<i>Xenanthura brevitelson</i>	<i>Isopod (crustacean)</i>	27	18	7	52	1,111
Woodmere	<i>Ampelisca burkei</i>	<i>Amphipod (crustacean)</i>	11	26	3	40	855
Woodmere	Corophiidae	Corophiid amphipod	33	3	2	38	812
Woodmere	<i>Capitella capitata</i>	<i>Polychaete (worm)</i>	10	7	12	29	620
Woodmere	<i>Tellina mera</i>	<i>Bivalve</i>	11	12	1	24	513
Woodmere	<i>Hargeria rapax</i>	<i>Tanaid (crustacean)</i>	16	7	0	23	491
Woodmere	<i>Amphicteis gunneri</i>	<i>Polychaete (worm)</i>	1	14	0	15	321
Woodmere	<i>Chone</i>	<i>Polychaete (worm)</i>	4	8	0	12	256
Woodmere	<i>Ophryotrocha</i>	<i>Polychaete (worm)</i>	0	0	10	10	214
Woodmere	<i>Halmyrapseudes bahamensis</i>	<i>Mysid (crustacean)</i>	5	5	0	10	214
Woodmere	<i>Aricidea philbinae</i>	<i>Polychaete (worm)</i>	0	6	0	6	128
Woodmere	<i>Cauleriella</i>	<i>Polychaete (worm)</i>	3	1	2	6	128
Woodmere	<i>Almyracuma</i> nr. <i>proximoculae</i>	<i>Cumacean (crustacean)</i>	0	3	3	6	128
Woodmere	<i>Ampelisca holmesi</i>	<i>Amphipod (crustacean)</i>	3	3	0	6	128
Woodmere	<i>Mysella planulata</i>	<i>Bivalve</i>	3	2	0	5	107
Woodmere	<i>Cyclaspis varians</i>	<i>Cumacean (crustacean)</i>	1	4	0	5	107
Woodmere	Nemertea	Ribbon worm	1	1	1	3	64
Woodmere	<i>Prionospio heterobranchia</i>	<i>Polychaete (worm)</i>	0	3	0	3	64
Woodmere	<i>Amygdalum papyrium</i>	<i>Bivalve</i>	0	3	0	3	64
Woodmere	<i>Edotea montosa</i>	<i>Isopod (crustacean)</i>	2	1	0	3	64
Woodmere	<i>Eteone heteropoda</i>	<i>Polychaete (worm)</i>	1	1	0	2	43
Woodmere	<i>Glycinde solitaria</i>	<i>Polychaete (worm)</i>	2	0	0	2	43
Woodmere	<i>Polydora</i>	<i>Polychaete (worm)</i>	1	1	0	2	43
Woodmere	<i>Scolecopsis texana</i>	<i>Polychaete (worm)</i>	1	1	0	2	43
Woodmere	<i>Pectinaria gouldii</i>	<i>Polychaete (worm)</i>	0	2	0	2	43
Woodmere	<i>Tagelus plebeius</i>	<i>Bivalve</i>	1	1	0	2	43
Woodmere	<i>Exogone</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Woodmere	<i>Neanthes acuminata</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Woodmere	<i>Glycera americana</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Woodmere	<i>Armandia maculata</i>	<i>Polychaete (worm)</i>	0	0	1	1	21
Woodmere	<i>Mediomastus ambiseta</i>	<i>Polychaete (worm)</i>	1	0	0	1	21
Woodmere	<i>Nassarius vibex</i>	<i>Gastropod</i>	0	1	0	1	21
Woodmere	<i>Rictaxis punctostriatus</i>	<i>Gastropod</i>	0	1	0	1	21
Woodmere	Bivalvia juv.	<i>Bivalve</i>	0	1	0	1	21
Woodmere	<i>Acteocina canaliculata</i>	<i>Gastropod</i>	0	0	1	1	21



Appendix Table 2. Benthic species data representing the percentage composition of the total fauna by species for each station, and sorted by greatest percentage

Taxa	No. Creeks	Max %	Ainger	Alligator	Caffish	Clower	Curry	Forked	Gottfried	Hatchett	Hudson B.	Matheny	North	Phillippi	Shakett	South	Whitaker B.	Woodmere
<i>Capitella capitata</i>	15	64.75	1.99	8.53	4.21	--	12.20	3.87	0.42	18.86	1.30	1.90	0.52	2.96	14.06	0.16	64.75	3.95
<i>Laeonereis culveri</i>	16	59.67	44.47	24.47	53.26	1.85	59.67	2.76	27.41	29.97	15.22	2.37	13.95	11.96	22.36	8.25	30.74	29.80
<i>Grandidierella bonnieroides</i>	15	55.81	2.54	1.85	0.77	1.85	2.83	--	0.07	14.48	0.43	2.37	55.81	3.49	5.63	0.79	0.41	8.30
<i>Parastarte triquetra</i>	5	40.00	0.27	--	--	4.63	--	22.10	--	--	40.00	--	--	0.42	--	--	--	--
<i>Fabriciola</i>	5	36.57	2.81	--	--	--	0.30	--	36.57	--	--	--	--	--	0.14	0.48	--	--
<i>Xenanthura brevitelson</i>	5	35.08	0.41	--	--	--	--	--	0.63	--	--	--	--	19.58	--	35.08	--	7.07
<i>Cymadusa compta</i>	1	29.86	--	--	--	--	--	--	--	--	--	29.86	--	--	--	--	--	--
<i>Oligochaeta</i>	14	20.37	--	0.25	6.51	20.37	0.15	0.28	0.70	0.34	3.48	6.16	3.62	0.21	0.56	--	2.87	10.20
<i>Ophryotrocha</i>	6	17.59	0.21	--	--	17.59	--	--	0.42	--	14.35	9.95	--	--	--	--	--	1.36
<i>Hargeria rapax</i>	11	16.81	0.55	16.81	--	--	0.89	0.55	0.07	8.75	--	2.37	--	9.42	9.28	6.67	--	3.13
<i>Streblospio gynobranchiata</i>	8	16.52	--	--	8.05	--	2.38	0.28	--	0.34	16.52	--	5.94	0.32	11.11	--	--	--
Corophiidae	10	15.77	1.72	13.47	3.45	--	--	0.83	0.07	--	--	0.47	5.43	15.77	0.14	--	--	5.17
<i>Axiothella mucosa</i>	4	15.17	15.17	--	--	--	--	--	11.96	--	--	--	--	0.11	--	0.63	--	--
<i>Leitoscoloplos robustus</i>	9	14.71	2.68	11.74	--	--	7.29	0.55	2.73	10.10	--	--	--	14.71	14.49	0.95	--	--
<i>Stenoninereis martini</i>	6	14.56	--	--	14.56	--	0.15	--	--	--	1.74	0.95	8.53	--	--	--	0.41	--
<i>Ampelisca agassizi</i>	4	14.36	0.21	0.37	--	--	--	14.36	0.35	--	--	--	--	--	--	--	--	--
<i>Hourstonius laguna</i>	1	12.80	--	--	--	--	--	--	--	--	--	12.80	--	--	--	--	--	--
<i>Tellina mera</i>	7	11.11	0.21	--	--	11.11	--	--	0.14	--	0.43	--	--	0.21	--	0.32	--	3.27
<i>Elasmopus laevis</i>	1	10.19	--	--	--	10.19	--	--	--	--	--	--	--	--	--	--	--	--
<i>Halmyrapseudes bahamensis</i>	4	9.05	--	3.09	--	--	--	--	--	--	--	--	--	0.11	--	9.05	--	1.36
<i>Harrieta faxoni</i>	1	9.00	--	--	--	--	--	--	--	--	--	9.00	--	--	--	--	--	--
<i>Heteromastus filiformis</i>	9	8.53	5.22	8.53	--	--	1.49	0.28	3.57	2.36	--	--	--	2.01	2.11	1.43	--	--
<i>Ampelisca abdita</i>	1	8.33	--	--	--	8.33	--	--	--	--	--	--	--	--	--	--	--	--
<i>Leitoscoloplos</i>	2	8.16	--	--	0.77	--	--	--	--	--	--	--	--	--	--	--	--	8.16
<i>Caulleriella</i>	9	6.79	6.79	0.25	--	--	1.79	--	0.91	0.34	--	--	--	0.11	1.83	4.44	--	0.82
<i>Cyclaspis varians</i>	12	6.75	0.48	2.47	--	0.93	1.04	3.59	2.31	1.68	--	--	--	2.54	6.75	1.27	0.41	0.68

Appendix Table 2. Continued.

Taxa	No. Creeks	Max %	Ainger	Alligator	Catfish	Clower	Curry	Forked	Gottfried	Hatchett	Hudson B.	Matheny	North	Phillippi	Shakett	South	Whitaker B.	Woodmere
Melita	1	6.16	--	--	--	--	--	--	--	--	--	6.16	--	--	--	--	--	--
Acteocina canaliculata	6	6.08	--	--	--	1.85	--	6.08	--	--	0.43	--	--	0.21	--	0.48	--	0.14
Ampelisca burkei	7	5.71	--	--	--	--	0.45	--	--	--	0.43	0.47	--	3.07	0.42	5.71	--	5.44
Scolecipis texana	7	5.52	--	0.49	--	--	--	5.52	0.07	--	--	--	--	0.74	0.14	0.16	--	0.27
Amphicteis gunneri	6	4.76	0.62	0.62	--	--	4.76	--	--	--	--	--	--	0.74	0.28	--	--	2.04
Exogone	3	4.74	0.14	--	--	--	--	--	--	--	--	4.74	--	--	--	--	--	0.14
Chione cancellata	5	4.71	--	0.37	--	--	--	--	--	4.71	0.43	--	--	--	1.55	0.95	--	--
Lyonsia floridana	5	4.70	1.17	--	--	--	--	4.70	0.56	--	--	--	--	1.27	--	0.32	--	--
Mysella planulata	10	4.70	--	0.74	--	2.78	--	4.70	0.07	1.01	1.74	--	--	0.32	0.42	0.16	--	0.68
Prionospio heterobranchia	11	4.42	4.32	1.11	--	3.70	0.89	4.42	1.47	0.34	--	--	--	1.38	0.84	3.65	--	0.41
Magelona pettiboneae	1	4.14	--	--	--	--	--	4.14	--	--	--	--	--	--	--	--	--	--
Lioplax	1	3.83	--	--	3.83	--	--	--	--	--	--	--	--	--	--	--	--	--
Parahesionia luteola	2	3.70	--	--	--	3.70	--	--	--	--	--	0.47	--	--	--	--	--	--
Almyracuma nr. proximoculae	6	3.60	--	--	1.15	--	--	--	0.07	0.34	--	--	--	3.60	0.56	--	--	0.82
Monticellina dorsobranchialis	2	3.08	--	--	--	--	--	--	3.08	--	--	--	--	--	--	1.11	--	--
Kinbergonuphis simoni	2	3.02	--	--	--	--	--	--	0.14	--	--	--	--	--	--	3.02	--	--
Actiniaria	8	2.84	--	--	--	0.93	0.15	0.83	0.07	--	0.43	0.47	2.84	0.11	--	--	--	--
Haminoea	4	2.78	--	0.12	--	2.78	0.15	--	--	--	--	--	--	--	0.42	--	--	--
Ampelisca holmesi	7	2.70	0.21	0.25	--	--	--	--	0.28	1.01	--	--	--	--	0.14	2.70	--	0.82
Asychis elongata	3	2.49	--	--	--	--	--	2.49	--	--	--	--	--	0.11	--	0.48	--	--
Neanthes acuminata	8	2.40	2.40	0.12	--	--	0.15	--	1.33	0.34	--	--	--	0.11	--	1.27	--	0.14
Oxyurostylis smithi	7	2.21	0.07	0.25	--	--	--	2.21	0.07	0.67	--	--	--	0.32	--	0.48	--	--
Nemertea	11	2.07	0.14	0.37	0.77	--	0.30	0.83	0.56	--	--	--	2.07	0.74	0.42	0.63	--	0.41
Aricidea philbinae	6	2.06	0.21	--	--	--	--	--	0.77	--	--	0.47	--	0.32	--	2.06	--	0.82
Chone	6	1.93	0.21	0.62	--	--	--	1.93	0.07	--	--	--	--	0.32	--	--	--	1.63
Typosyllis	4	1.92	1.92	--	--	--	--	--	0.28	--	--	--	--	0.11	--	0.95	--	--

Appendix Table 2. Continued.

Taxa	No. Creeks	Max %	Ainger	Alligator	Catfish	Clower	Curry	Forked	Gottfried	Hatchett	Hudson B.	Matheny	North	Phillippi	Shakett	South	Whitaker B.	Woodmere
Ctenodrilus	4	1.90	0.41	--	--	--	--	--	0.42	--	--	1.90	--	--	0.14	--	--	--
Polydora ligni	5	1.90	--	0.12	--	--	--	--	--	0.34	--	1.90	0.26	--	0.14	--	--	--
Bivalvia	5	1.85	--	--	--	1.85	--	0.55	--	1.68	--	--	--	--	0.14	--	--	0.14
Vitrinellidae	1	1.85	--	--	--	1.85	--	--	--	--	--	--	--	--	--	--	--	--
Mesanthura floridensis	3	1.69	--	--	--	--	1.34	--	--	--	--	--	--	--	1.69	0.48	--	--
Haminoea succinea	1	1.38	--	--	--	--	--	1.38	--	--	--	--	--	--	--	--	--	--
Streblosoma hartmanae	3	1.11	--	--	--	--	--	--	0.35	--	0.43	--	--	--	--	1.11	--	--
Amygdalum papyrium	6	1.10	--	--	--	--	0.15	1.10	0.07	--	--	--	--	0.11	--	0.48	--	0.41
Eteone heteropoda	10	1.10	0.07	0.99	--	--	0.30	1.10	--	0.67	--	--	0.26	0.53	0.98	0.16	--	0.27
Megalomma pigmentum	1	1.10	--	--	--	--	--	1.10	--	--	--	--	--	--	--	--	--	--
Taphromysis bowmani	6	1.01	0.07	0.12	--	--	0.60	--	--	1.01	--	--	--	0.11	--	0.32	--	--
Streptosyllis pettiboneae	3	0.99	0.14	0.99	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--
Opisthobranchia	1	0.95	--	--	--	--	--	--	--	--	--	0.95	--	--	--	--	--	--
Podarkeopsis levifusca	3	0.95	--	--	--	--	--	--	--	--	0.43	0.95	--	--	--	0.32	--	--
Glycinde solitaria	4	0.93	--	--	--	0.93	--	0.55	--	--	--	--	--	--	--	0.16	--	0.27
Mediomastus ambiseta	7	0.93	--	0.12	--	0.93	--	0.28	--	--	0.87	--	--	--	0.14	0.48	--	0.14
Mulinia lateralis	2	0.93	--	--	--	0.93	--	--	--	--	--	--	--	0.21	--	--	--	--
Sphenia antillensis	1	0.93	--	--	--	0.93	--	--	--	--	--	--	--	--	--	--	--	--
Abra aequalis	1	0.87	--	--	--	--	--	--	--	--	0.87	--	--	--	--	--	--	--
Tellina	4	0.84	--	0.12	--	--	--	--	0.07	--	--	--	--	--	0.84	0.16	--	--
Erichthonius brasiliensis	1	0.83	--	--	--	--	--	0.83	--	--	--	--	--	--	--	--	--	--
Haminoea antillarum	4	0.83	--	0.12	--	--	--	0.83	0.07	--	--	--	--	--	--	0.16	--	--
Hydrobiidae sp. B	1	0.77	--	--	0.77	--	--	--	--	--	--	--	--	--	--	--	--	--
Aplysiidae	2	0.67	--	--	--	--	--	--	0.07	0.67	--	--	--	--	--	--	--	--
Rudilemboides naglei	2	0.63	--	--	--	--	--	--	--	--	--	--	--	0.11	--	0.63	--	--
Ampharetidae	1	0.56	--	--	--	--	--	--	--	--	--	--	--	--	0.56	--	--	--

Appendix Table 2. Continued.

Taxa	No. Creeks	Max %	Ainger	Alligator	Catfish	Clower	Curry	Forked	Gottfried	Hatchett	Hudson B.	Matheny	North	Phillippi	Shakett	South	Whitaker B.	Woodmere
Anomalocardia auberiana	5	0.55	0.07	0.12	--	--	--	0.55	--	--	--	0.47	--	0.11	--	--	--	--
Eulimastoma	1	0.55	--	--	--	--	--	0.55	--	--	--	--	--	--	--	--	--	--
Laevicardium mortoni	3	0.55	--	--	--	--	--	0.55	--	--	--	--	--	--	0.14	0.16	--	--
Pectinaria gouldii	4	0.55	--	--	--	--	0.15	0.55	--	--	--	--	--	--	--	0.16	--	0.27
Teinostoma	1	0.55	--	--	--	--	--	0.55	--	--	--	--	--	--	--	--	--	--
Hirudinea	2	0.52	--	--	0.38	--	--	--	--	--	--	--	0.52	--	--	--	--	--
Armandia maculata	4	0.48	--	--	--	--	0.15	--	--	--	--	--	--	--	0.14	0.48	--	0.14
Polydora socialis	3	0.48	0.21	--	--	--	--	--	0.14	--	--	--	--	--	--	0.48	--	--
Autolytus	1	0.47	--	--	--	--	--	--	--	--	--	0.47	--	--	--	--	--	--
Caecum nitidum	1	0.47	--	--	--	--	--	--	--	--	--	0.47	--	--	--	--	--	--
Dulichieila appendiculata	1	0.47	--	--	--	--	--	--	--	--	--	0.47	--	--	--	--	--	--
Erichsonella filiformis	1	0.47	--	--	--	--	--	--	--	--	--	0.47	--	--	--	--	--	--
Sphaerodoridae	1	0.47	--	--	--	--	--	--	--	--	--	0.47	--	--	--	--	--	--
Vitrinella	1	0.47	--	--	--	--	--	--	--	--	--	0.47	--	--	--	--	--	--
Tellina versicolor	1	0.43	--	--	--	--	--	--	--	--	0.43	--	--	--	--	--	--	--
Rictaxis punctostriatus	3	0.42	--	--	--	--	0.30	--	--	--	--	--	--	0.42	--	--	--	0.14
Lucinoma filosa	1	0.42	--	--	--	--	--	--	--	--	--	--	--	--	0.42	--	--	--
Mysidae	1	0.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.41	--
Edotea montosa	5	0.41	--	0.12	--	--	--	--	--	--	--	--	0.26	0.32	0.28	--	--	0.41
Ampelisca	3	0.38	0.21	0.25	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--
Hydrobiidae sp. A	1	0.38	--	--	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--
Mytilopsis leucophaeata	1	0.38	--	--	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--
Thiaridae	1	0.38	--	--	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--
Arenicola cristata	1	0.34	0.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Leptosynapta	1	0.28	--	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--
Bulla striata	1	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--

Appendix Table 2. Continued.

Taxa	No. Creeks	Max %	Ainger	Alligator	Caffish	Clower	Curry	Forked	Gottfried	Hatchett	Hudson B.	Matheny	North	Phillippi	Shakett	South	Whitaker B.	Woodmere
Caprellidae	1	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--
Gastropoda	3	0.28	0.07	--	--	--	--	0.28	--	--	--	--	--	--	0.14	--	--	--
Glycera	1	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--
Melinna maculata	1	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--
Nassarius vibex	2	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	0.14
Paraprionospio pinnata	1	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--
Turridae	1	0.28	--	--	--	--	--	0.28	--	--	--	--	--	--	--	--	--	--
Brania	2	0.27	0.27	--	--	--	--	--	--	--	--	--	--	0.11	--	--	--	--
Crepidula plana	1	0.27	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sipuncula	3	0.27	0.27	--	--	--	--	--	0.21	--	--	--	--	--	--	0.16	--	--
Polydora	1	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.27
Tagelus plebeius	1	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.27
Macoma tenta	2	0.21	--	--	--	--	--	--	0.07	--	--	--	--	0.21	--	--	--	--
Platyhelminthes	2	0.21	0.07	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--	--
Cirriformia	2	0.21	0.07	--	--	--	--	--	0.21	--	--	--	--	--	--	--	--	--
Branchiomma nigromaculata	3	0.16	--	--	--	--	--	--	0.07	--	--	--	--	0.11	--	0.16	--	--
Carazziella hobsonae	1	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	0.16	--	--
Tagelus divisus	1	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	0.16	--	--
Anadara transversa	1	0.14	--	--	--	--	--	--	--	--	--	--	--	--	0.14	--	--	--
Diopatra cuprea	1	0.14	--	--	--	--	--	--	--	--	--	--	--	--	0.14	--	--	--
Parvilucina multilineata	1	0.14	--	--	--	--	--	--	--	--	--	--	--	--	0.14	--	--	--
Trachycardium egmontianum	1	0.14	--	--	--	--	--	--	--	--	--	--	--	--	0.14	--	--	--
Astyris lunata	2	0.14	0.07	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--
Sabellidae	1	0.14	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--

Appendix Table 2. Continued.

Taxa	No. Creeks	Max %	Ainger	Alligator	Catfish	Clower	Curry	Forked	Gottfried	Hatchett	Hudson B.	Matheny	North	Phillippi	Shakett	South	Whitaker B.	Woodmere
<i>Glycera americana</i>	1	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.14
<i>Spio pettiboneae</i>	2	0.11	--	--	--	--	--	--	0.07	--	--	--	--	0.11	--	--	--	--
<i>Bowmaniella floridana</i>	2	0.07	0.07	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--
<i>Cerithium muscarum</i>	1	0.07	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--
<i>Musculus lateralis</i>	1	0.07	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--
<i>Polycirrus</i>	1	0.07	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--
Polynoidae	1	0.07	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--
<i>Gastroperon rubrum</i>	1	0.07	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<i>Sphaerosyllis taylori</i>	1	0.07	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Terebellidae	1	0.07	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix Table 3. Percentage distribution of sediment particulates among grain size categories.

Station	Lower size limit of fraction in microns												
	<0.49	0.49	0.69	0.98	1.38	1.95	2.76	3.91	5.52	7.81	11.00	15.60	22.10
Phillippi	0.00	0.01	0.05	0.11	0.18	0.27	0.38	0.47	0.55	0.58	0.59	0.55	0.42
Matheny	0.01	0.05	0.09	0.15	0.24	0.38	0.59	0.88	1.27	1.73	2.34	2.92	3.12
Ainger	0.01	0.03	0.08	0.16	0.29	0.50	0.76	1.06	1.39	1.65	1.82	1.66	1.23
Gottfried	0.00	0.00	0.01	0.08	0.14	0.19	0.24	0.29	0.37	0.49	0.68	0.84	0.83
Forked	0.00	0.00	0.01	0.07	0.12	0.18	0.24	0.30	0.38	0.45	0.55	0.61	0.52
Woodmere	0.01	0.04	0.07	0.11	0.17	0.26	0.39	0.57	0.82	1.12	1.52	1.89	2.06
Hatchett	0.00	0.02	0.11	0.18	0.23	0.27	0.32	0.40	0.55	0.74	1.01	1.28	1.37
Alligator	0.00	0.00	0.01	0.06	0.10	0.15	0.20	0.26	0.34	0.45	0.62	0.76	0.70
Curry	0.01	0.03	0.07	0.11	0.17	0.26	0.38	0.53	0.72	0.92	1.19	1.42	1.53
Shakett	0.01	0.04	0.08	0.13	0.22	0.34	0.52	0.73	1.00	1.28	1.59	1.76	1.69
Catfish	0.00	0.01	0.03	0.05	0.09	0.15	0.23	0.35	0.52	0.72	1.03	1.42	1.72
North	0.01	0.03	0.06	0.10	0.17	0.29	0.47	0.74	1.12	1.60	2.29	3.00	3.23
South	0.00	0.02	0.04	0.07	0.14	0.23	0.37	0.55	0.78	1.02	1.33	1.55	1.52
Clower	0.01	0.04	0.08	0.13	0.21	0.36	0.59	0.93	1.43	2.03	2.91	3.95	4.70
Whitaker	0.00	0.01	0.02	0.04	0.09	0.17	0.28	0.44	0.65	0.90	1.26	1.63	1.75
Hudson	0.02	0.09	0.15	0.21	0.30	0.44	0.69	1.09	1.66	2.37	3.40	4.63	5.50

Station	Lower size limit of fraction in microns												
	31.00	44.00	62.50	88.00	125	177	250	350	500	710	1000	1410	>2000
Phillippi	0.37	0.44	0.76	2.21	8.47	24.87	32.02	18.58	4.31	2.44	1.38	0.01	0.00
Matheny	3.24	3.33	3.57	6.50	13.59	18.78	16.50	10.64	4.56	2.59	2.07	0.85	0.00
Ainger	1.02	1.04	2.49	10.25	20.96	22.21	14.74	7.77	3.30	2.24	2.18	1.16	0.00
Gottfried	0.82	1.04	2.09	10.40	25.17	21.85	13.13	9.81	4.87	3.51	2.86	0.30	0.00
Forked	0.43	0.50	1.10	5.18	13.99	17.94	17.62	17.68	11.85	6.95	3.23	0.09	0.00
Woodmere	2.23	2.27	4.55	13.83	22.07	18.38	10.64	6.90	4.70	3.18	1.76	0.46	0.00
Hatchett	1.45	1.77	2.78	12.00	30.98	24.84	10.23	4.84	1.44	1.77	1.40	0.01	0.00
Alligator	0.66	0.72	0.90	1.86	7.24	19.46	27.07	22.28	9.90	4.34	1.90	0.01	0.00
Curry	1.72	1.88	2.95	8.99	18.28	21.33	17.16	12.07	5.83	2.03	0.43	0.01	0.00
Shakett	1.75	1.85	2.81	9.71	21.20	23.41	15.06	7.66	3.24	1.83	1.44	0.66	0.00
Catfish	2.00	2.17	2.40	3.93	8.34	15.16	18.87	17.60	11.05	6.31	4.05	1.81	0.00
North	3.15	2.91	3.10	5.34	9.17	13.82	18.31	17.79	9.00	3.20	1.05	0.06	0.00
South	1.49	1.38	2.22	7.96	17.13	20.74	17.22	12.50	6.74	3.18	1.48	0.34	0.00
Clower	5.57	6.73	8.03	10.36	12.09	10.55	7.86	5.90	4.56	4.76	4.29	1.93	0.00
Whitaker	1.74	1.72	1.68	1.93	5.29	15.19	23.67	22.94	12.33	4.76	1.46	0.08	0.00
Hudson	6.41	7.55	8.56	10.18	12.54	13.05	9.55	5.03	2.24	2.08	1.79	0.46	0.00