

## Important!

This is “Long-Term Ecological Research (LTER) Macrobenthos Data for the North Inlet Estuary, Georgetown, South Carolina: 1981-1992” *original metadata*, created 11/9/2004 by Ginger Ogburn-Matthews. *Links and email addresses* in this document *have not been updated* as those locations and people may no longer be available.

The *condensed metadata* may be accessed at:

[http://links.baruch.sc.edu/data/accessfiles/condensed\\_metadata/Macrobenthic\\_Infauna\\_0\\_5mm\\_20mm.zip](http://links.baruch.sc.edu/data/accessfiles/condensed_metadata/Macrobenthic_Infauna_0_5mm_20mm.zip).

Because it is condensed, please consult this original metadata for additional information and more extensive description.

Questions about the data should be addressed to the data manager identified on the *condensed metadata form*.

## 1. Identification Information

### 1.1 Citation Information

**8.1 Originator:** Belle W. Baruch Institute for Marine and Coastal Sciences

**8.1 Originator:** Robert J. Feller

**8.2 Publication Date:** 20040917

**8.4 Title:** Long-Term Ecological Research (LTER) Macrobenthos Data for the North Inlet Estuary, Georgetown, South Carolina: 1981-1992

**8.6 Geospatial Data Presentation Form:** comma delimited text and MS Excel spreadsheet

### 8.7 Series Information

**8.7.1 Series Name:** Baruch Institute’s Macrobenthos Long-Term Monitoring Database for the North Inlet and Winyah Bay Estuaries, South Carolina

**8.7.2 Issue Identification:** January 20, 1981 – January 31, 1992

### 8.8 Publication Information:

**8.8.1 Publication Place:** Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina, USA

**8.8.2 Publisher:** Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina

**8.9 Other Citation Details:** This is just one database (Data Set Code NIN013) from a larger Ecosystem monitoring program (see Larger Work Citation). Other North Inlet LTER datasets are listed under Cross Reference.

**8.10 Online linkage:** <http://links.baruch.sc.edu/data/>

### 8.11 Larger Work Citation:

#### 8. Citation Information

**8.1 Originator:** W.K. Michener (Editor)

**8.1 Originator:** A.B. Miller (Editor)

**8.1 Originator:** R. Nottrott (Editor)

**8.2 Publication Date:** 1990

**8.4 Title:** “Long-Term Ecological Research Network Core Data Set Catalog”

**8.6 Geospatial Data Presentation Form:** catalog in book and on-line form

#### 8.8 Publication Information:

**8.8.1 Publication Place:** Columbia, South Carolina, USA

**8.8.2 Publisher:** Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina

**8.9 Other Citation Details:** Published for the Long-Term Ecological Research Network

**8.10 Online linkage:** <http://www.lternet.edu/DTOC/>

## 1.2 Description

### 1.2.1 Abstract:

Samples were taken from two estuarine tidal creek stations (designated BB and DD) in the North Inlet Estuary, SC. Two large cores, with a sediment surface area of 83.3 square centimeters and a depth of 15 centimeters, were collected from each of the two sites from 1981 -1985. For most of this period, cores were processed in separate 5 centimeter increments for the top, middle, and bottom portions of the core. Throughout the remainder of the study (1985-1992), eight smaller cores were collected from the BB site only in an effort to increase sampling accuracy. Although the core size and number of replicates changed, the total surface area of sediment sampled remained similar. The smaller cores had a surface area of 18.1 square centimeters and a depth of 5 centimeters. Cores were collected every two weeks during the midday low tide, on the same day as almost all other LTER FAUNA samples, except when water levels were prohibitively high. Macrobenthic animals (defined here as those animals retained on a 0.5 millimeter mesh screen) were identified to the lowest practical taxa. All dominant polychaetes were identified to species. Counts per core were converted to numbers per square meter of surface sediment and standardized for core depth (to 5 centimeters) where necessary. Physical data including tide level, surface water temperature, air temperature, temperature of the sediment/water interface, surface water salinity, and the observed depth of the

reduction/oxidation layer were recorded at the same time as the macrobenthic collections.

**1.2.2 Purpose:**

The purpose of this study was to document the long-term composition and abundance of estuarine macrobenthic subtidal populations within the North Inlet Estuary LTER site, in order to observe variability or trends over time, for use in short and long-term studies at North Inlet, and for comparisons to other LTER sites.

**1.2.3. Supplemental Information:**

*LTER FAUNA Dataset*

LTERMACRO.1981-1992.FGDC.METADATA

1

11/9/2004

The LTER FAUNA dataset includes the LTER MACRO (macrobenthos species), LTER MEIO (meiobenthos species), LTER ZPK (zooplankton), LTER EPI (epibenthic macrozooplankton), LTER NIFISH (nekton species), and LTER OLFISH (nekton species) databases. During each Fauna Cruise, samples and physical data were collected for the MACRO, MEIO, ZPK, EPI, and NIFISH databases. Occasionally, due to abnormal water levels or other difficulties, not all of the samples/data could be collected on the same day and the Fauna Cruise had to be completed on the following workday. Samples and physical data for the OLFISH database were usually collected on the weekday immediately following the Fauna Cruise (sometimes these were collected on the same day, especially during holidays). For more information on these databases, contact Baruch's Data Manager or go to <http://links.baruch.sc.edu/Data/index.html>.

### ***Tide Stage Data (TSTAGE)***

The 2004 Rescue Data Manager found apparent inconsistencies regarding negative versus positive values, which indicate whether the water level was higher or lower than an average low tide (noted as zero). Over the course of the database, multiple technicians recorded the physical data for the FAUNA cruises, and it appears that they occasionally used contradictory notations. Attempts were made to correct these errors where comments from the field technicians in the raw field notes made it possible to do so, and where they were obvious. The subjectivity of this parameter and the notations recorded by the field technicians made it impossible to comprehensively QA/QC and correct the data. In addition, some portions of the data reported only values of zero, despite comments in the field notes on various departures from average. Tide stage data for these samples may have simply had no number value assigned to them and been reported as zero by default. Inadequate reporting resolution in the early years of the database also resulted in values of zero when comments on the departure from average were recorded in the field notes. The Data Manager did not attempt to estimate values for either of these occurrences and could not rule out that the technician classified the departures as zero because they were minimal. As a result of these difficulties, all tide stage data ***should be used with caution***. Users may want to refer back to the JPG images of the raw Field Notes (archived on the LTERMACRO RAW.ARCHIVE CDs) with questions or for verification if they have concerns.

### ***Reduction/Oxidation Layer Data (REDOX)***

REDOX values are also estimates and should be used with caution. In addition, all values of 10 or greater are simply referred to as 10 in the database and should be regarded as a notation not a value. These data were recorded as "greater than 10" by the Macro Technicians in the Raw Field Notes because the redox layer was below the core depth, and therefore not recorded as an actual estimate. As a result, all instances of a value of 10 recorded in the database were noted as anomalous in the Anomalous Data Document.

### ***TOTSPECI and TOTUNIDORG***

In the final database, the TOTSPECI (Total number of polychaete species identified in a sample) and the TOTUNIDORG (Total number of unidentified organisms in a sample) parameters were affected by changes in methodology. These discrepancies were not corrected by the Data Manager and users should be aware that data for these parameters are not consistent throughout the database and should be used with caution. See the Entity and Attribute Overview and Methodology sections for more information.

### ***Identification Notes:***

The species *Capitella capitata* was misidentified beginning with sample 1 (01-20-1981), these organisms are actually *Mediomastus ambiseta*. ***All count data were corrected in the final database.*** Raw Counting/Data Entry Sheets that indicate a count for *Capitella capitata* during this period were not corrected, and are actually counts of *Mediomastus ambiseta*. Archived animals in storage jars for samples 1-146 (01-20-1981 through 12-02-1986) are also still labeled incorrectly as *Capitella capitata*. Beginning with sample 147 (12-15-1986), animals are correctly labeled in storage jars and in raw Counting/Data Entry Sheets as *Mediomastus ambiseta* and *Capitella capitata* respectively.

The multiple Polydora categories identified from 10/01/1982 through 11/15/1982 in the Raw Counting/Data Entry Sheets were lumped together as POLYDSP01 (Polydora species number 1) in the final database, as they were most likely different growth stages of an unidentified polydorid. However, the final database does include two Polydora categories and there is one instance of an organism classified as POLYDSP02 on 12/19/1991. Since this identification came at a much later date, we assume that the organism belongs to a different species, but it is possible that it also represents a different growth stage of the same unidentified polydorid. See the Raw Counting Sheets for descriptions of the organisms.

Organisms noted as Miscellaneous species #1 in the Raw Data Entry Sheets (samples 112-274) are unidentified shelled gastropods and were categorized correctly in the final database.

### ***Ancillary Databases:***

There are two ancillary datasets associated with the LTERMACRO database. Both were smaller, shorter-term studies designed to supplement the macrobenthic core data. For the ancillary Biomass study, partial documentation is included in this metadata document and a portion of the data was published on the LTERMACRO.PUBLISH CD. Scanned digital images of the laboratory notebook pages containing raw data and methods information were archived on the LTERMACRO.RAW Archive CD. The Biomass data and documentation included with the LTERMACRO 1981-1992 database represent the sum of what is available at this point in time. Incomplete documentation at the time the study was conducted and the loss of original MACRO technicians make further rescue of this ancillary database impossible. For the ancillary Predation study, no documentation or data are included in this metadata document or published on the LTERMACRO.PUBLISH CD. However, scanned digital images of the raw data sheets were archived on the LTERMACRO.RAW Archive CD and a copy of the publication resulting from the study is included in the LTERMACRO Notebook. The publication contains information on methodology and details the results of the study.

### **1.3 Time Period of Content:**

#### **9.3 Range of Dates/Times**

**9.3.1 Beginning Date:** 19810120

**9.3.2 Beginning Time:** unknown

**9.3.3 Ending Date:** 19920131

**9.3.4 Ending Time:** 1137

**1.3.1 Currentness Reference:** Observed

### **1.4 Status:**

**1.4.1 Progress:** Complete

**1.4.2 Maintenance and update frequency:** As needed

#### **99.1.5.1 Description of Geographic Extent:**

The North Inlet Estuary is located on the southeastern coast of the United States, approximately 10 kilometers east of Georgetown, South Carolina. The North Inlet Estuary is a bar-built Class C type estuary (Pritchard, 1955). It is composed of numerous winding tidal creeks dominated by *Spartina alterniflora* and is considered a pristine tidal estuary due to minimal anthropogenic impacts. The watershed drains a 24.8 square kilometer area of mostly pine forest and a moderately developed residential watershed to the north. Sample sites were chosen due to their proximity to an existing long-term meiofauna sampling site.

Pritchard, D.W. 1955. Estuarine circulation patterns. Proc. Am. Soc. Civ. Eng. 81(717):1-11.

#### ***Individual sampling site information:***

Debidue Site (DD): The Debidue Site is located about 500 meters inside the mouth of the inlet, adjacent to the confluence of Debidue and Town Creeks (two major marsh creeks). This site has a sandy bottom and is at the south end of an extensive sand bar. It is subject to strong current and wave action. Debordieu Colony, a large development partially built on man-made canals, drains into the northern portion of Debidue Creek.

Bread and Butter Site (BB): This site is located on Bread and Butter Creek, about 600 meters upstream from its juncture with Town Creek, on a muddy subtidal bank. Bread and Butter Creek is a medium sized creek lined with mud banks and oyster bars. The sediment at the sampling site is fine, silty mud and the site is sheltered from strong current and wave action. At low tide the creek is approximately 10 meters wide at the sampling location. The creek is located about 1.5 kilometers southwest of the Debidue site.

Debidue Site: -79.16792 E, 33.33361 N

Bread and Butter Site: -79.18431 E, 33.3305 N

#### **1.5.2 Bounding Rectangle Coordinates:**

**1.5.1.1 West Bounding Coordinate:** -79.270

**1.5.1.2 East Bounding Coordinate:** -79.153

**1.5.1.3 North Bounding Coordinate:** 33.366

**1.5.1.4 South Bounding Coordinate:** 33.296

## 1.6 Keywords

### 1.6.1 Theme

1.6.1.1 Theme Keyword Thesaurus:	None
1.6.1.2 Theme Keyword:	ABUNDANCE
1.6.1.2 Theme Keyword:	AIR TEMPERATURE
1.6.1.2 Theme Keyword:	ANIMALS
1.6.1.2 Theme Keyword:	BENTHOS
1.6.1.2 Theme Keyword:	COASTAL
1.6.2.2 Theme Keyword:	CORE
1.6.1.2 Theme Keyword:	ECOSYSTEMS
1.6.1.2 Theme Keyword:	ESTUARINE
1.6.1.2 Theme Keyword:	ESTUARY
1.6.1.2 Theme Keyword:	LONG-TERM
1.6.1.2 Theme Keyword:	LONG-TERM ECOLOGICAL RESEARCH
1.6.1.2 Theme Keyword:	LTER
1.6.1.2 Theme Keyword:	MACROBENTHIC
1.6.1.2 Theme Keyword:	MACROBENTHOS
1.6.1.2 Theme Keyword:	MARSH
1.6.1.2 Theme Keyword:	MONITORING DATA
1.6.1.2 Theme Keyword:	OXIDATION
1.6.1.2 Theme Keyword:	PHYSICAL DATA
1.6.1.2 Theme Keyword:	REDUCTION
1.6.1.2 Theme Keyword:	REDOX LAYER
1.6.1.2 Theme Keyword:	SALINITY
1.6.1.2 Theme Keyword:	SALT MARSH
1.6.1.2 Theme Keyword:	SEDIMENT
1.6.1.2 Theme Keyword:	SEDIMENT WATER INTERFACE
1.6.2.2 Theme Keyword:	TAXA
1.6.2.2 Theme Keyword:	TAXONOMIC
1.6.1.2 Theme Keyword:	TAXONOMY
1.6.1.2 Theme Keyword:	TEMPERATURE
1.6.1.2 Theme Keyword:	TIDAL CREEK
1.6.1.2 Theme Keyword:	TIDE LEVEL
1.6.1.2 Theme Keyword:	TIDE STAGE
1.6.1.2 Theme Keyword:	WATER TEMPERATURE

### 1.6.2 Place

1.6.2.1 Place Keyword Thesaurus:	None
1.6.2.2 Place Keyword:	ATLANTIC COAST
1.6.2.2 Place Keyword:	BREAD AND BUTTER CREEK
1.6.2.2 Place Keyword:	COASTAL
1.6.2.2 Place Keyword:	DEBIDUE CREEK
1.6.2.2 Place Keyword:	DEBORDIEU COLONY
1.6.2.2 Place Keyword:	EAST COAST
1.6.2.2 Place Keyword:	GEORGETOWN COUNTY
1.6.2.2 Place Keyword:	HOBCAW BARONY
1.6.2.2 Place Keyword:	NORTH INLET
1.6.2.2 Place Keyword:	SOUTH CAROLINA
1.6.2.2 Place Keyword:	SOUTHEAST COAST
1.6.2.2 Place Keyword:	TOWN CREEK
1.6.2.2 Place Keyword:	WINYAH BAY
1.6.2.2 Place Keyword:	USA

### 1.6.3 Stratum

1.6.3.1 Stratum Keyword Thesaurus:	None
1.6.3.2 Stratum Keyword:	BENTHIC

## 1.6.4 Temporal

1.6.4.1 Temporal Keyword Thesaurus:	None
1.6.4.2 Temporal Keyword:	DAY
1.6.4.2 Temporal Keyword:	BIWEEKLY
1.6.4.2 Temporal Keyword:	FORTNIGHTLY
1.6.4.2 Temporal Keyword:	MONTH
1.6.4.2 Temporal Keyword:	YEAR
1.6.4.2 Temporal Keyword:	1981
1.6.4.2 Temporal Keyword:	1982
1.6.4.2 Temporal Keyword:	1983
1.6.4.2 Temporal Keyword:	1984
1.6.4.2 Temporal Keyword:	1985
1.6.4.2 Temporal Keyword:	1986
1.6.4.2 Temporal Keyword:	1987
1.6.4.2 Temporal Keyword:	1988
1.6.4.2 Temporal Keyword:	1989
1.6.4.2 Temporal Keyword:	1990
1.6.4.2 Temporal Keyword:	1991
1.6.4.2 Temporal Keyword:	1992
1.6.4.2 Temporal Keyword:	1981-1992
1.6.4.2 Temporal Keyword:	1980s
1.6.4.2 Temporal Keyword:	1990s

## BDP1.7 Taxonomy Information

### BDP1.7.1 Keywords

1.7.1.1 Taxonomic Keyword Thesaurus:	NONE
1.7.1.2 Taxonomic Keyword:	ANIMALS
1.7.1.2 Taxonomic Keyword:	BENTHIC ANIMALS
1.7.1.2 Taxonomic Keyword:	COLLECTION
1.7.1.2 Taxonomic Keyword:	CLASS
1.7.1.2 Taxonomic Keyword:	FAMILY
1.7.1.2 Taxonomic Keyword:	GENUS
1.7.1.2 Taxonomic Keyword:	INVERTEBRATES
1.7.1.2 Taxonomic Keyword:	MULTIPLE SPECIES
1.7.1.2 Taxonomic Keyword:	SPECIES
1.7.1.2 Taxonomic Keyword:	POLYCHAETES
1.7.1.2 Taxonomic Keyword:	BIVALVES
1.7.1.2 Taxonomic Keyword:	AMPHIPODS

### BDP1.7.2 Taxonomic System

#### BDP1.7.2.1 Classification System/Authority

##### BDP1.7.2.1.1 Classification System Citation

8.1 Originator: J. A. Blake

8.2 Publication Date: 1971

8.4 Title: Revisions of the Genus Polydora from the East Coast of North America (Polychaeta: spionidae).

8.6 Geospatial Data Presentation Form: Published Manuscript

8.8 Publication Information:

8.8.1 Publication Place: Washington, D.C.

8.8.2 Publisher: Smithsonian Institution Press

#### BDP1.7.2.1 Classification System/Authority

##### BDP1.7.2.1.1 Classification System Citation

8.1 Originator: N. J. Day

8.2 Publication Date: 1967

8.4 Title: A Monograph on the Polychaeta of Southern Africa

8.6 Geospatial Data Presentation Form: Published Manuscript

8.8 Publication Information:

- 8.8.1 Publication Place:** unknown
- 8.8.2 Publisher:** British Museum of Natural History
- 8.9 Other Citation Details:** Publication No. 656, 878 pages

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** N. J. Day
- 8.2 Publication Date:** 1973
- 8.4 Title:** New Polychaeta from Beaufort, with a Key to All Species Recorded from North Carolina
- 8.6 Geospatial Data Presentation Form:** Technical Report
- 8.8 Publication Information:**
  - 8.8.1 Publication Place:** Washington, D.C.
  - 8.8.2 Publisher:** U. S. Government Printing Office
- 8.9 Other Citation Details:** NOAA Technical Report NMFS CIRC-375.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** R. M. Ewing and D. M. Dauer
- 8.2 Publication Date:** 1981
- 8.4 Title:** A New Species of Amastigos (Polychaeta: Capitellidae) from the Chesapeake Bay and Atlantic Coast of the United States with notes on the Capitellidae of the Chesapeake Bay
- 8.6 Geospatial Data Presentation Form:** Scientific Publication
- 8.8 Publication Information:**
  - 8.8.1 Publication Place:** unknown
  - 8.8.2 Publisher:** Proceedings of the Biological Society of Washington
- 8.9 Other Citation Details:** 94(1):163-168

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** K. Fauchald
- 8.2 Publication Date:** 1977
- 8.4 Title:** The Polychaete Worms. Definitions and Keys to the Orders, Families, and Genera
- 8.6 Geospatial Data Presentation Form:** Book
- 8.8 Publication Information:**
  - 8.8.1 Publication Place:** Los Angeles, CA
  - 8.8.2 Publisher:** Natural History Museum of Los Angeles County in Conjunction with the Allan Hancock Foundation, University of Southern California

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** N. M. Foster
- 8.2 Publication Date:** 1971
- 8.4 Title:** Spionidae (Polychaeta) of the Gulf of Mexico and the Caribbean Sea.
- 8.6 Geospatial Data Presentation Form:** Published Manuscript
- 8.8 Publication Information:**
  - 8.8.1 Publication Place:** unknown
  - 8.8.2 Publisher:** unknown
- 8.9 Other Citation Details:** Studies on the fauna of Curacao and other Caribbean Islands. No. 129

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** S. L. Gardiner
- 8.2 Publication Date:** 1975
- 8.4 Title:** Errant Polychaete Annelids from North Carolina
- 8.6 Geospatial Data Presentation Form:** Scientific Publication
- 8.8 Publication Information:**
  - 8.8.1 Publication Place:** unknown

- 8.8.2 Publisher:** Journal of the Elisha Mitchell Scientific Society  
**8.9 Other Citation Details:** Volume 91, Number 3, Fall, Pages 77-220

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** S. L. Gardiner and W. H. Wilson, Jr.  
**8.2 Publication Date:** 1977  
**8.4 Title:** New Records of Polychaete Annelids from North Carolina with the Description of a New Species of *Sphaerosyllis* (Syllidae)  
**8.6 Geospatial Data Presentation Form:** Scientific Publication  
**8.8 Publication Information:**  
**8.8.1 Publication Place:** unknown  
**8.8.2 Publisher:** Journal of the Elisha Mitchell Scientific Society  
**8.9 Other Citation Details:** Volume 93, Number 4, Winter, Pages 159-172.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** O. Hartman  
**8.2 Publication Date:** 1940  
**8.4 Title:** Polychaetous Annelids. Part II. Chrysopetalidae to Goniadidae. Allan Hancock Pacific Expeditions.  
**8.6 Geospatial Data Presentation Form:** Manuscript in a Book  
**8.8 Publication Information:**  
**8.8.1 Publication Place:** Los Angeles, CA  
**8.8.2 Publisher:** University of Southern California Press  
**8.9 Other Citation Details:** Volume 17, Number 3, pages 173-286.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** O. Hartman  
**8.2 Publication Date:** 1941  
**8.4 Title:** Some Contributions to the Biology and Life History of Spionidae from California. Allan Hancock Pacific Expeditions.  
**8.6 Geospatial Data Presentation Form:** Manuscript in a Book  
**8.8 Publication Information:**  
**8.8.1 Publication Place:** Los Angeles, CA  
**8.8.2 Publisher:** University of Southern California Press  
**8.9 Other Citation Details:** Volume 7, Number 4, pages 289-323.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** O. Hartman  
**8.2 Publication Date:** 1945  
**8.4 Title:** The Marine Annelids of North Carolina.  
**8.6 Geospatial Data Presentation Form:** Technical Report  
**8.8 Publication Information:**  
**8.8.1 Publication Place:** Durham, NC  
**8.8.2 Publisher:** Duke University Press  
**8.9 Other Citation Details:** Duke University Marine Station Bulletin Number 2

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

- 8.1 Originator:** O. Hartman  
**8.2 Publication Date:** 1951  
**8.4 Title:** The Littoral Marine Annelids of the Gulf of Mexico  
**8.6 Geospatial Data Presentation Form:** Published Manuscript  
**8.8 Publication Information:**  
**8.8.1 Publication Place:** unknown

**8.8.2 Publisher:** Publications of the Institute of Marine Science.

**8.9 Other Citation Details:** Volume II, Number 1, pages 7-124.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

**8.1 Originator:** O. Hartman

**8.2 Publication Date:** 1959

**8.4 Title:** Capitellidae and Nereidae (Marine Annelids) from the Gulf Side of Florida with a Review of Freshwater Nereidae

**8.6 Geospatial Data Presentation Form:** Published Manuscript

**8.8 Publication Information:**

**8.8.1 Publication Place:** Miami, Florida

**8.8.2 Publisher:** Bulletin of Marine Science of the Gulf and Caribbean (now the Bulletin of Marine Science)

**8.9 Other Citation Details:** Volume 9, pages 153-168.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

**8.1 Originator:** P. S. Mikkelsen and R. W. Virnstein

**8.2 Publication Date:** 1982

**8.4 Title:** An Illustrated Glossary of Polychaete Terms

**8.6 Geospatial Data Presentation Form:** Technical Report

**8.8 Publication Information:**

**8.8.1 Publication Place:** unknown

**8.8.2 Publisher:** Harbor Branch Foundation, Inc.

**8.9 Other Citation Details:** Technical Report Number 46, 92 pages.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

**8.1 Originator:** M. H. Pettibone

**8.2 Publication Date:** 1963

**8.4 Title:** Marine Polychaete Worms of the New England region I. Families Aphroditidae through Trochochaetidae

**8.6 Geospatial Data Presentation Form:** Published Manuscript

**8.8 Publication Information:**

**8.8.1 Publication Place:** unknown

**8.8.2 Publisher:** U.S. National Museum Bulletin

**8.9 Other Citation Details:** Volume 227, Number 1, pages 1-356.

**BDP1.7.2.1 Classification System/Authority**

**BDP1.7.2.1.1 Classification System Citation**

**8.1 Originator:** J. M. Uebelacker and P.G. Johnson, Editors.

**8.2 Publication Date:** 1984

**8.4 Title:** Taxonomic Guide to the Polychaetes of the Northern Gulf of Mexico

**8.6 Geospatial Data Presentation Form:** Technical Report

**8.8 Publication Information:**

**8.8.1 Publication Place:** Mobile, Ala.

**8.8.2 Publisher:** Barry A. Vittor & Associates, Inc., 7 Vols.

**8.9 Other Citation Details:** Final Report to the Minerals Management Service, Contract 14-12-001-29091

**BDP1.7.2.4 Taxonomic Procedures:**

Animals were identified to the lowest possible taxa by trained research technicians using identification keys.

**BDP1.7.4 Taxonomic Classification**

**BDP1.7.4.1 Taxon Rank Name:** Kingdom

**BDP1.7.4.2 Taxon Rank Value:** Animalia

**BDP1.7.4.3 Applicable Common Name:** Animals

**BDP1.7.4.1 Taxon Rank Name:** Phylum

BDP1.7.4.2 Taxon Rank Value: Annelida

BDP1.7.4.3 Applicable Common Name: Annelids

BDP1.7.4.1 Taxon Rank Name: Class

BDP1.7.4.2 Taxon Rank Value: Polychaeta

BDP1.7.4.3 Applicable Common Name: Polychaetes

BDP1.7.4.1 Taxon Rank Name: Subclass

BDP1.7.4.2 Taxon Rank Value: Scolecida

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Capitellidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Mediomastus

BDP1.7.4.1 Taxon Rank Name: Species

BDP1.7.4.2 Taxon Rank Value: *Mediomastus ambiseta*

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Capitellidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Heteromastus

BDP1.7.4.1 Taxon Rank Name: Species

BDP1.7.4.2 Taxon Rank Value: *Heteromastus filiformis*

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Capitellidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Capitella

BDP1.7.4.1 Taxon Rank Name: Species

BDP1.7.4.2 Taxon Rank Value: *Capitella capitata*

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Orbiniidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Haploscoloplos

BDP1.7.4.1 Taxon Rank Name: Species

BDP1.7.4.2 Taxon Rank Value: *Haploscoloplos robustus*

BDP1.7.4.1 Taxon Rank Name: Subclass

BDP1.7.4.2 Taxon Rank Value: Palpata

BDP1.7.4.1 Taxon Rank Name: Order

BDP1.7.4.2 Taxon Rank Value: Canalipalpata

BDP1.7.4.1 Taxon Rank Name: Suborder

BDP1.7.4.2 Taxon Rank Value: Terebellida

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Cirratulidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Caulleriella

BDP1.7.4.1 Taxon Rank Name: Species

BDP1.7.4.2 Taxon Rank Value: *Caulleriella killariensis*

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Cirratulidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Tharyx

BDP1.7.4.1 Taxon Rank Name: Suborder

BDP1.7.4.2 Taxon Rank Value: Spionida

BDP1.7.4.1 Taxon Rank Name: Family

BDP1.7.4.2 Taxon Rank Value: Magelonidae

BDP1.7.4.1 Taxon Rank Name: Genus

BDP1.7.4.2 Taxon Rank Value: Magelona

BDP1.7.4.1 Taxon Rank Name: Species BDP1.7.4.2  
Taxon Rank Value: *Magelona phyllisae*

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Spionidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Paraprionospio  
BDP1.7.4.1 Taxon Rank Name: Species  
BDP1.7.4.2 Taxon Rank Value: *Paraprionospio pinnata*

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Spionidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Polydora

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Spionidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Minuspio  
BDP1.7.4.1 Taxon Rank Name: Species  
BDP1.7.4.2 Taxon Rank Value: *Minuspio cirrifera*

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Spionidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Minuspio  
BDP1.7.4.1 Taxon Rank Name: Species  
BDP1.7.4.2 Taxon Rank Value: *Minuspio cirrobranchiata*

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Spionidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Spiophanes  
BDP1.7.4.1 Taxon Rank Name: Species BDP1.7.4.2  
Taxon Rank Value: *Spiophanes bombyx*

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Spionidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Streblospio  
BDP1.7.4.1 Taxon Rank Name: Species  
BDP1.7.4.2 Taxon Rank Value: *Streblospio benedicti*

BDP1.7.4.1 Taxon Rank Name: Order  
BDP1.7.4.2 Taxon Rank Value: Aciculata  
BDP1.7.4.1 Taxon Rank Name: Suborder  
BDP1.7.4.2 Taxon Rank Value: Phyllodocida  
BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Glyceridae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Glycera  
BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Goniadidae  
BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Nereididae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Neanthes  
BDP1.7.4.1 Taxon Rank Name: Species  
BDP1.7.4.2 Taxon Rank Value: *Neanthes succinea*

BDP1.7.4.1 Taxon Rank Name: Family  
BDP1.7.4.2 Taxon Rank Value: Phyllodocidae  
BDP1.7.4.1 Taxon Rank Name: Genus  
BDP1.7.4.2 Taxon Rank Value: Eteone  
BDP1.7.4.1 Taxon Rank Name: Species

**BDP1.7.4.2 Taxon Rank Value:** *Eteone heteropoda*

**BDP1.7.4.1 Taxon Rank Name:** Genus

**BDP1.7.4.2 Taxon Rank Value:** Phyllodoce

**BDP1.7.4.1 Taxon Rank Name:** Family

**BDP1.7.4.2 Taxon Rank Value:** Syllidae

**BDP1.7.4.1 Taxon Rank Name:** Suborder

**BDP1.7.4.2 Taxon Rank Value:** Eunicida

**BDP1.7.4.1 Taxon Rank Name:** Family

**BDP1.7.4.2 Taxon Rank Value:** Lumbrineridae

**BDP1.7.4.1 Taxon Rank Name:** Genus

**BDP1.7.4.2 Taxon Rank Value:** Lumbrineris

**BDP1.7.4.1 Taxon Rank Name:** Species

**BDP1.7.4.2 Taxon Rank Value:** *Lumbrineris tenuis*

**BDP1.7.4.1 Taxon Rank Name:** Phylum

**BDP1.7.4.2 Taxon Rank Value:** Arthropoda

**BDP1.7.4.3 Applicable Common Name:** Arthropods

**BDP1.7.4.1 Taxon Rank Name:** Subphylum

**BDP1.7.4.2 Taxon Rank Value:** Crustacea

**BDP1.7.4.3 Applicable Common Name:** Crustaceans

**BDP1.7.4.1 Taxon Rank Name:** Class

**BDP1.7.4.2 Taxon Rank Value:** Malacostraca

**BDP1.7.4.1 Taxon Rank Name:** Subclass

**BDP1.7.4.2 Taxon Rank Value:** Eumalacostraca

**BDP1.7.4.1 Taxon Rank Name:** Superorder

**BDP1.7.4.2 Taxon Rank Value:** Peracarida

**BDP1.7.4.1 Taxon Rank Name:** Order

**BDP1.7.4.2 Taxon Rank Value:** Amphipoda

**BDP1.7.4.2 Applicable Common Name:** Amphipods

**BDP1.7.4.1 Taxon Rank Name:** Order

**BDP1.7.4.2 Taxon Rank Value:** Cumacea

**BDP1.7.4.2 Applicable Common Name:** Cumaceans

**BDP1.7.4.1 Taxon Rank Name:** Order

**BDP1.7.4.2 Taxon Rank Value:** Isopoda

**BDP1.7.4.2 Applicable Common Name:** Isopods

**BDP1.7.4.1 Taxon Rank Name:** Superorder

**BDP1.7.4.2 Taxon Rank Value:** Eucarida

**BDP1.7.4.1 Taxon Rank Name:** Order

**BDP1.7.4.2 Taxon Rank Value:** Decapoda

**BDP1.7.4.2 Applicable Common Name:** Decapods

**BDP1.7.4.1 Taxon Rank Name:** Phylum

**BDP1.7.4.2 Taxon Rank Value:** Mollusca

**BDP1.7.4.3 Applicable Common Name:** Molluscs

**BDP1.7.4.1 Taxon Rank Name:** Class

**BDP1.7.4.2 Taxon Rank Value:** Bivalvia

**BDP1.7.4.3 Applicable Common Name:** Bivalves

**BDP1.7.4.1 Taxon Rank Name:** Class

**BDP1.7.4.2 Taxon Rank Value:** Gastropoda

**BDP1.7.4.3 Applicable Common Name:** Gastropods

**BDP1.7.4.1 Taxon Rank Name:** Phylum

**BDP1.7.4.2 Taxon Rank Value:** Annelida  
**BDP1.7.4.1 Taxon Rank Name:** Class  
**BDP1.7.4.2 Taxon Rank Value:** Clitellata  
**BDP1.7.4.1 Taxon Rank Name:** Subclass  
**BDP1.7.4.2 Taxon Rank Value:** Oligochaeta

**BDP1.7.4.1 Taxon Rank Name:** Phylum  
**BDP1.7.4.2 Taxon Rank Value:** Nemertea  
**BDP1.7.4.3 Applicable Common Name:** Ribbon Worms, Proboscis Worms

**BDP1.7.4.1 Taxon Rank Name:** Phylum  
**BDP1.7.4.2 Taxon Rank Value:** Sipuncula  
**BDP1.7.4.3 Applicable Common Name:** Peanut Worms, Shore Worms  
**BDP1.7.4.1 Taxon Rank Name:** Family  
**BDP1.7.4.2 Taxon Rank Value:** Sipunculidae

#### **1.7 Access Constraints:**

None; however, it is strongly recommended that these data be acquired directly from the Belle W. Baruch Institute for Marine and Coastal Sciences and not indirectly through other sources which may have changed the data in some way.

#### **1.8 Use Constraints:**

Following academic courtesy standards, the PIs (originators), the North Inlet Long-Term Ecological Research (LTER) Program, the University of South Carolina's Belle W. Baruch Institute for Marine and Coastal Sciences, and Grantor (see Data Set Credit section) should be fully acknowledged in any subsequent publications in which any part of these data are used. Use of the data without completely reading and understanding the metadata is not recommended. The Baruch Institute, Baruch Institute researchers, and Grantor are not responsible for the use and/or misuse of data from this database. See the section on Distribution Liability for more information.

#### **1.9 Point of Contact:**

##### **10.2 Contact Organization Primary**

**10.2.1 Contact Organization:** Univ. of South Carolina's Baruch Institute

**10.2.2 Contact Person:** Dr. Robert Feller

**10.3 Contact Position:** Professor of Biological and Marine Sciences

##### **10.4 Contact Address**

**10.4.1 Address Type:** Mailing Address

**10.4.2 Address:** University of South Carolina

**10.4.2 Address:** Baruch Institute

**10.4.3 City:** Columbia

**10.4.4 State or Province:** South Carolina

**10.4.5 Postal Code:** 29208

**10.4.6 Country:** USA

**10.5 Contact Voice Telephone:** (803) 777-3937

**10.8 Contact Electronic Mail Address:** feller@biol.sc.edu

#### **1.11 Data Set Credit:**

Data collection was supported by the University of South Carolina (USC) and the National Science Foundation under grants DEB 8012165 and BSR 8514326, awarded to the North Inlet Long-Term Ecological Research (LTER) Program, Belle W. Baruch Institute, University of South Carolina, Dr. F. J. Vernberg as project director. Numerous researchers, faculty, post-docs, technicians, students and data managers have contributed to the dataset.

#### **1.14 Native Data Set Environment**

The raw data were handwritten on forms called Counting Sheets as organisms were identified and counted. These data were then transferred by hand to forms called Data Entry Sheets, which facilitated digital data entry. From these sheets the raw data were entered on a personal computer, using a Full Screen Manager data entry program, and archived in text format on the University of South Carolina's Columbia Campus mainframe computer. This was accomplished by using

the Virtual Machine/System Product (VM/SP) Conversational Monitor System (CMS). In the early 1990's, data files were archived on the SUN workstation at the Baruch Institute Data Management Office and on 8mm tapes at the main campus in Columbia. Data were processed using SAS statistical analysis programs and, later, Microsoft Excel. Final data are maintained in Microsoft Excel 2000 and duplicates are saved in comma delimited text (.csv) format. Some process files are also available in text formats.

**1.14 Cross Reference:**

**8. Citation Information**

**8.1 Originator:** S.K. Service

**8.1 Originator:** R.J. Feller

**8.2 Publication Date:** 1992

**8.4 Title:** Long-term Trends of Subtidal Macrobenthos in North Inlet, South Carolina.

**8.6 Geospatial Data Presentation Form:** Scientific Publication

**8.8 Publication Information:**

**8.8.1 Publication Place:** Belgium

**8.8.2 Publisher:** Hydrobiologia

**8.9 Other Citation Details:** Volume 231, pages 13-40

**1.14 Cross Reference:**

**8. Citation Information**

**8.1 Originator:** S.K. Service

**8.1 Originator:** R.J. Feller

**8.1 Originator:** B.C. Coull

**8.1 Originator:** R Woods

**8.2 Publication Date:** 1992

**8.4 Title:** Predation Effect of Three Fish Species and a Shrimp on Macrobenthos and Meiobenthos in Microcosms

**8.6 Geospatial Data Presentation Form:** Scientific Publication

**8.8 Publication Information:**

**8.8.1 Publication Place:** Oxford, United Kingdom

**8.8.2 Publisher:** Estuarine, Coastal and Shelf Science

**8.9 Other Citation Details:** Volume 34, pages 277-293

**1.14 Cross Reference:**

**8. Citation Information**

**8.1 Originator:** W.K. Michener

**8.1 Originator:** B. Kjerfve

**8.1 Originator:** D. Greenland (editor)

**8.2 Publication Date:** 1987

**8.4 Title:** North Inlet, SC. P.56-60 In: D. Greenland (ed.): The Climate of the Long-Term Ecological Research Sites.

**8.6 Geospatial Data Presentation Form:** Published Manuscript

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** W.K. Michener (Editor)

**8.1 Originator:** A.B. Miller (Editor)

**8.1 Originator:** R. Nottrott (Editor)

**8.2 Publication Date:** 1990

**8.4 Title:** Long-Term Ecological Research Network Core Data Set Catalog

**8.6 Geospatial Data Presentation Form:** catalog in book and on-line form

**8.8 Publication Information:**

**8.8.1 Publication Place:** Columbia, South Carolina USA

**8.8.2 Publisher:** Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina

**8.9 Other Citation Details:** Published for the Long-Term Ecological Research Network

*The following databases (with the exception of the merged data set denoted by \*\*) are all part of the larger Michener, Miller, and Nottrott (1990) work listed above:*

**1.14 Cross Reference:**

**8. Citation Information**

**8.1 Originator:** Belle W. Baruch Institute for Marine Biology and Coastal Research

**8.1 Originator:** F.J. Vernberg

**8.1 Originator:** B. Kjerfve

**8.1 Originator:** W.K. Michener

**8.2 Publication Date:** 20011219

**8.4 Title:** Long Term Ecological Research (LTER) Climate Data with Water Parameters from North Inlet Meteorological Station, North Inlet Estuary, Georgetown, South Carolina: 1982-1996.

**8.5 Edition:** Second Edition

**8.6 Geospatial Data Presentation Form:** comma delimited digital data and spreadsheet

**8.8 Publication Information:**

**8.8.1 Publication Place:** Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina, USA

**8.8.2 Publisher:** The Belle W. Baruch Institute for Marine Biology and Coastal Research, Baruch Marine Field Lab, University of South Carolina

**8.9 Other Citation Details:** Data Set Code: NIN001

**8.10 Online Linkage:** <http://links.baruch.sc.edu/data/>

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Belle W. Baruch Institute for Marine and Coastal Sciences

**8.1 Originator:** W. K. Michener

**8.1 Originator:** D. Taylor

**8.2 Publication Date:** 20030627

**8.4 Title:** Long-Term Ecological Research (LTER) National Weather Service Station Data for the North Inlet Estuary, Georgetown, South Carolina: 1986 – 1996

**8.5 Edition:** Second Edition

**8.6 Geospatial Data Presentation Form:** comma delimited digital data and spreadsheet

**8.8 Publication Information:**

**8.8.1 Publication Place:** Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina, USA

**8.8.2 Publisher:** Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina

**8.9 Other Citation Details:** LTER Data Set Code NIN002

**8.10 Online linkage:** <http://links.baruch.sc.edu/data/>

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. Elizabeth R. Blood

**8.2 Publication Date:** 1990

**8.4 Title:** Estuarine Surface Water Nutrient Chemistry and Water Quality Data for Clambank and Oyster Landing\*

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN003

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. Richard G. Zingmark

**8.2 Publication Date:** 1990

**8.4 Title:** Long-Term Variations in Phytoplankton Biomass in North Inlet Estuary\*

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN004

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. Leonard R. Gardner

**8.2 Publication Date:** 1990

**8.4 Title:** Suspended Sediment\*

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN005

*\*The three databases above were merged into the following data set:*

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Elizabeth Blood (Daily Estuarine Surface Water Nutrient Chemistry and Water Quality Data)

**8.1 Originator:** Leonard Robert Gardener (Suspended Sediments)

**8.1 Originator:** Richard Zingmark (Phytoplankton Biomass - Chlorophyll a and Phaeophytin)

**8.1 Originator:** Belle W. Baruch Institute for Marine Biology and Coastal Research

**8.2 Publication Date:** 19981120

**8.4 Title:** Long Term Ecological Research (LTER) Daily Estuarine Surface Water Nutrient and Water Quality, Suspended Sediment, and Chlorophyll a Data for the North Inlet Estuary, Georgetown, SC: 1978-1993

**8.6 Geospatial Data Presentation Form:** comma delimited digital data and spreadsheet

**8.5 Edition:** First Edition

**8.7 Series Information:**

**8.7.1 Series Name:** Baruch Institute's Water Chemistry, Chlorophyll a, and Suspended Sediment Long-Term Monitoring Database for the North Inlet Estuary, South Carolina

**8.7.2 Issue Identification:** September 1, 1978 - June 30, 1993

**8.8 Publication Information:**

**8.8.1 Publication Place:** Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina USA

**8.8.2 Publisher:** Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina

**8.10 Online Linkage:** <http://links.baruch.sc.edu/data/>

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. Elizabeth R. Blood

**8.2 Publication Date:** 1990

**8.4 Title:** Precipitation Chemistry

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN006

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. James T. Morris

**8.2 Publication Date:** 1990

**8.4 Title:** Spartina Production

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN007

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. Dennis M. Allen

**8.2 Publication Date:** 1990

**8.4 Title:** Motile Epibenthos, Macrozooplankton

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN008

**1.14 Cross Reference:**

**8. Citation Information:**

**8.1 Originator:** Dr. Stephen E. Stancyk

**8.2 Publication Date:** 1990

**8.4 Title:** Zooplankton (153  $\mu$ m)

**8.6 Geospatial Data Presentation Form:** digital text

**8.9 Other Citation Details:** Data Set Code: NIN009

**1.14 Cross Reference:**

**8. Citation Information:**

- 8.1 Originator:** Dr. Dennis M. Allen
- 8.2 Publication Date:** 1990
- 8.4 Title:** Fishes, Shrimps and Crabs: Oyster Landing Basin
- 8.6 Geospatial Data Presentation Form:** digital text and spreadsheet
- 8.9 Other Citation Details:** Data Set Code: NIN010

**1.14 Cross Reference:**

**8. Citation Information:**

- 8.1 Originator:** Dr. Keith L. Bildstein
- 8.2 Publication Date:** 1990
- 8.4 Title:** Size of the Feeding Population of White Ibises (*Eudocimus albus*), an Avian Secondary Consumer
- 8.6 Geospatial Data Presentation Form:** unknown
- 8.9 Other Citation Details:** Data Set Code: NIN011

**1.14 Cross Reference:**

**8. Citation Information:**

- 8.1 Originator:** Dr. Keith L. Bildstein
- 8.2 Publication Date:** 1990
- 8.4 Title:** Size of the Nesting Population of White Ibises (*Eudocimus albus*), an Avian Secondary Consumer
- 8.6 Geospatial Data Presentation Form:** unknown
- 8.9 Other Citation Details:** Data Set Code: NIN012

**1.14 Cross Reference:**

**8. Citation Information:**

- 8.1 Originator:** Dr. Bruce C. Coull
- 8.2 Publication Date:** 1990
- 8.4 Title:** Meiobenthos Abundance, Copepod Species Data
- 8.6 Geospatial Data Presentation Form:** digital text
- 8.9 Other Citation Details:** Data Set Code: NIN014

**1.16 Analytical Tool**

**1.16.1 Analytical Tool Description:**

Easy Entry Programs and Screens (Easy Entry is a DOS data entry program, this application and customized Easy Entry screens were used to enter Macrobenthic data):

MACRO.FLB  
 MACRO.EAS  
 MACRO2.EAS  
 MACRO3.EAS  
 MACRO.LST  
 MACRO2.LST  
 MACRO3.LST  
 MACROCTR.EAS  
 MACRO.PRT

SAS Programs:

- macro.raw.hardcpy:** creates a hardcopy of the IBM "Easy Entry" digital text data for data entry, verification, and editing.
- ibmdat.new.lmarray:** inputs final raw MACRO digital data and converts raw count numbers to numbers per meter squared.
- convert.new.lmsubset:** converts Easy Entry variable categories from previously entered data to be compatible with data entered on and after 07/15/1985 when a change in identification categories occurred (see Methodology section).
- array.macro.1-274:** inputs and merges all data (numbers per meter squared) into one complete data file with the same data (variable name and position) format.

**1.16.2 Tool Access Information**

**1.16.2.2 Tool Access Instructions**

The SAS programs and Easy Entry files listed above have been archived in digital form on the LTERMACRO.PROCESS CD. The SAS programs were also archived as hardcopies in the LTERMACRO Notebook, which is kept at the Baruch Marine Field Laboratory in the Data Management Office.

### 1.16.2.3. Tool Computer and Operating System

SAS and Easy Entry programs can be run on any computer operating system that will run the SAS software package and/or Easy Entry application. However, programs may need to be modified in order to run properly with newer computer operating systems or versions of SAS/Easy Entry. For more information about the SAS or Easy Entry programs used in the MACRO database, contact the Baruch Marine Field Lab's Data Manager.

### 1.16.3 Tool Contact

#### 10.2 Contact Organization Primary

**10.1.2 Contact Organization:** Univ. of South Carolina's Baruch Institute

**10.1.1 Contact Person:** Ginger Ogburn-Matthews

**10.3 Contact Position:** Research Data Manager & Analyst

#### 10.4 Contact Address

**10.4.1 Address Type:** Mailing Address

**10.4.2 Address:** USC Baruch Marine Field Lab

**10.4.2 Address:** PO Box 1630

**10.4.3 City:** Georgetown

**10.4.4 State or Province:** South Carolina

**10.4.5 Postal Code:** 29442

**10.4.6 Country:** USA

**10.5 Contact Voice Telephone:** (843) 546-6219

**10.7 Contact Facsimile Telephone:** (843) 546-1632

**10.8 Contact Electronic Mail Address:** ginger@belle.baruch.sc.edu

**10.9 Hours of Service:** 8:30 am to 4:30 pm EST/EDT Mon.- Friday

## 2. Data Quality Information

### 2.1 Attribute Accuracy

#### 2.1.1 Attribute Accuracy Report:

Animals were identified by trained technicians using identification keys and overseen by the primary investigator. Every effort was made to ensure that identifications were consistent and correct. Information on Anomalous/Erroneous data, and notes that may help clarify differences between the raw data sheets and final database, may be found in the Anomalous Data Document. Additional clarification on identification practices and discrepancies throughout the course of the database can be found in the Entity and Attribute Overview section of this document.

#### 2.1.2 Quantitative Attribute Accuracy Assessment

##### 2.1.2.1 Attribute Accuracy Value

<u>Parameter</u>	<u>Number of Decimal Places</u>
TSTAGE	0-1
STEMP	0-1
AIRTEMP	0-1
SEDWATER	0-1
SSAL	0-1
REDOX	0
COREAREA	0
COREDIAAM	0
SEDEVOL	0
COREDEP	0

##### 2.1.2.2 Attribute Accuracy Explanation:

DATE: The date values are integers and have no decimal places assigned to them, they are accurate to the whole number.

SAMTIME: The time values are integers and have no decimal places assigned to them. Time is generally considered to be accurate to within 5 minutes.

TSTAGE: The tide stage value reported is the estimated departure from average low tide and is dependent on the field technician's ability to gauge the water level in the tidal creek relevant to the water level at mean low tide.

Experienced technicians taught new technicians how to evaluate tide level using oyster reefs and other physical cues at each site. The technicians felt that they could estimate this value to within a tenth of a meter. As a result, where

available, tide stage is reported in meters with one decimal place. For the period of 1/20/1981 through 7/21/1983, only whole numbers were reported in the raw data and available for the final database.

STEMP: The surface water temperature readings were taken with a conductivity meter accurate to the nearest tenth of a degree Celsius. Values are reported in degrees Celsius with one decimal place.

AIRTEMP: The air temperature readings were taken with a hand held thermometer with markings for each degree Celsius. Technicians were able to read the air temperature to the nearest half-degree. From 1/20/1981 through 6/28/1985 readings were recorded to the nearest whole degree and reported with no decimal places. From 7/15/1985 through the end of the database (1/31/1992) readings were recorded to the nearest half degree and reported with one decimal place.

SEDWATER: The sediment/water interface temperature readings were taken with a hand held thermometer with markings for each degree Celsius. Technicians were able to read the air temperature to the nearest half-degree. From 1/20/1981 through 6/28/1985 readings were recorded to the nearest whole degree and reported with no decimal places. From 7/15/1985 through the end of the database (1/31/1992) readings were recorded to the nearest half degree and reported with one decimal place.

SSAL: The surface water salinity readings were taken with a conductivity meter, which reads in parts per thousand and is accurate to the nearest tenth. Values are reported in parts per thousand with one decimal place.

REDOX: The depth of the redox line was estimated by the field technician taking the samples. The discontinuity line was typically distinct and technicians felt that they could estimate to the nearest centimeter. Values are reported in centimeters with no decimal places.

COREAREA = The core area was determined by a technician who measured the inside diameter of the coring device with a ruler marked in millimeter increments. The area was then calculated using this value and reported in square centimeters with no decimal places.

COREDIA = The inside diameter was determined by a technician who measured the coring device with a ruler marked in millimeter increments. The value is reported in centimeters with no decimal places.

SEDEVOL = The volume of the sediment core was determined by a technician who measured the depth of the core and then calculated the volume using the core area and depth values. Value reported is for the section of core used to determine count information in the final database. The value is reported in cubic centimeters with no decimal places.

COREDEP = The depth of the core sample was determined by a technician who removed the excess bottom portion of the sample and retained only the desired depth of core from the top. Some cores were also sectioned into 5 centimeter depth segments for processing. In these instances, the COREDEP reported is for the section of core used in the final database, not the size of the total core collected. The technique was accurate to the nearest 0.5 centimeter and values are reported in centimeters with no decimal places.

All Macroinvertebrate Animal Count Parameters = Counts per core were converted to the number of individuals per square meter of surface sediment. Count accuracy is dependent on the identification skills of the technician processing the sample. For the purpose of this database, the calculated number of individuals per square meter of surface sediment is reported with one decimal place, despite the fact that only whole organisms were counted and recorded.

## **2.2 Logical Consistency Report:**

Not applicable

## **2.3 Completeness Report:**

The MS Excel final data files were verified for typographical errors by both the Macroinvertebrate Data Technician and the Rescue Project Data Manager. The following schedule provides availability information for the final data set, however, there may be missing data within these availability periods. In particular, several unprocessed samples were destroyed when Hurricane Hugo struck the coast of South Carolina (September 21, 1989) and partially destroyed the field lab facilities. All missing and anomalous data are detailed in separate files, which are also published on the LTERMACRO.PUBLISH CD, the LTERMACRO Notebook, and Baruch's web site. The missing and anomalous data documentation pertains only to Baruch's final rescued/published 2004 data set, and may differ from earlier versions of the database. All occurrences of missing data were marked with a period in the final data set.

### ***Data Availability (mm/dd/yyyy):***

#### **Bread and Butter Site:**

01/20/1981 – 01/08/1985: 2 replicates

01/18/1985 – 01/31/1992: 8 replicates

#### **Debidue Site:**

01/20/1981 – 01/08/1985: 2 replicates

## 2.5 Lineage

### 2.5.1 Methodology

#### 2.5.1.1 Methodology Type: Field Collection Procedures and Protocols

#### 2.5.1.3 Methodology Description: Overall Field Collection Protocol

Two cores, from each of the two sample sites, were collected from 1981-1985 and eight cores, from the BB site only, were collected throughout the remainder of the study (1985-1992). Cores were taken every two weeks during the midday low tide, on the same day as all other LTER FAUNA samples. Occasionally weather conditions (generally north and east winds) produced higher than usual water levels and made sample collection impossible. In these instances, cores were obtained on the next suitable low tide.

During most of the first four years of the study, a 20-centimeter long PVC pipe with 10.3 centimeter inside diameter served as the coring device and was used to collect sediment core samples with a surface area of 83.3 square centimeters. Cores were taken to a depth of 15 centimeters. On January 18, 1985 (Sample 100), sampling at the Debidue site was suspended and the core size and number of replicates changed at the Bread and Butter site, but the total surface area of sediment sampled remained similar to previous years. The coring device used from this date, and throughout the rest of the database, was a 30 centimeter length of plexiglass pipe with an inside diameter of 4.8 centimeters. The resulting sediment core samples had a sediment surface area of 18.1 square centimeters. Eight cores were collected, as opposed to 2, in an effort to increase sampling accuracy. In addition, cores were only taken to a depth of 5 centimeters.

Cores were collected in approximately 20 centimeters of water and care was taken to ensure that all replicates were collected in the same area, but that they never overlapped and were all collected from undisturbed sediment. The coring device was marked in centimeter increments with a waterproof pen. For each sediment sample, the technician would core deeper into the sediment than the desired depth. After inserting the coring device into the sediment, a rubber stopper was placed securely into the upper end to facilitate core removal. The technician would then pull up the coring device and allow the sediment to flow out the bottom, until the core sample was at the correct level, so that the desired core depth remained in the coring device (e.g. 5 cm depth). This technique was at least accurate to the nearest 0.5 centimeters. The discarded bottom section of the core was tossed out on the other side of the boat to ensure that it would not interfere with any other replicates to be collected. The excess water in the top portion of the coring device was retained to ensure that no animals were lost from the top layer. Core samples were immediately placed into 1-Liter jars, and from the mid-1980's to early 1990's, they were preserved in 10 percent buffered formalin-seawater preservative mixture stained with Rose Bengal.

For the period of January 20, 1981 through December 19, 1983 (samples 1-73), cores were taken to a depth of 15 centimeters and, where feasible, split into 5-centimeter deep increments in order to determine the depth at which animals occurred in the substrate. Occasionally the substrate was too watery to be sectioned successfully and the core was processed as either one 15 centimeter section, or as a 10 and a 5 centimeter section. For the period of January 3, 1984 through January 8, 1985 (samples 74- 99), cores were taken to a depth of 15 centimeters and were not sectioned, but processed as a whole. For the remainder of the database (01/18/1985 – 01/31/1992) cores were taken to a depth of 5 centimeters and were processed as a whole.

### 2.5.1 Methodology

#### 2.5.1.1 Methodology Type: Field Collection Procedures and Protocols

#### 2.5.1.3 Methodology Description: Physical Field Data collection

After securing the boat at each station and prior to core collection, the LTER MACRO technician(s) recorded physical data and field observations in waterproof Field Notebooks. The Eastern Standard Time and the tide stage were recorded first. The tide stage value is an experienced/trained field technician's estimate of the departure from the average low tide. The estimate is dependent on the field technician's ability to gauge (using oyster reefs and other physical cues) the water level in the tidal creek relevant to the water level at mean low tide. Positive values were used to indicate the water level's departure above (higher than) an average low tide, and negative values indicate the departure below (lower than) the average low tide mark. Using a hand-held thermometer, the air temperature was then measured in the shade, followed by the sediment/water interface temperature. Measurements were taken in this order to ensure that a wet thermometer would not influence the air temperature values. Next, a conductivity meter was used to determine the surface water temperature and surface water salinity values. Finally, the depth of the reduction/oxidation layer was estimated and recorded by the field technician. The redox layer depth was generally observed when the meiobenthic samples were collected (immediately prior to the MACRO core collection).

### 2.5.1 Methodology

#### 2.5.1.1 Methodology Type: Laboratory Procedures and Protocols

#### 2.5.1.3 Methodology Description: Benthic Core Sample Processing, Sorting

During the first years of the study, core samples were soaked for 48 hours in a 10 percent buffered formalin-seawater preservative mixture stained with Rose Bengal, immediately after returning to the lab. After soaking, each sample was gently rotated in the jar to suspend the sample in the formalin mixture. Beginning in 1987, the samples were preserved in the field immediately after collection in the same manner. The jars were then stored on shelves in the field laboratory and shaken lightly every few days until they were processed. When the technicians were ready to begin processing, the samples were poured onto/through a 0.5 millimeter mesh sieve. All remaining sample debris was rinsed from the inside of the jar and lid onto the sieve. The sieve, with the sample on it, was then placed into a water bath and gently raised and lowered in the water (not rotated) until no more sediment or small particulate matter were lost with this method. The sample remaining on the screen was then rinsed from underneath to remove lingering sediment and concentrate the animals in one location on the screen. This prevented the animals from being damaged or forced through the screen. All sample material was then gently washed into a beaker. From the beaker, small amounts of sample were rinsed into a small, homemade PVC sieve with 0.5 millimeter mesh and a 3.5 centimeter interior diameter. The sample was carefully rinsed again in this smaller sieve until only the macrobenthic organisms (larger than 0.5 mm) remained. These small subsamples were then rinsed into gridded petri dishes and the animals were removed, grid by grid, from any remaining sediment with forceps and the aid of a dissecting microscope at 12x power. The petri dish was then reexamined for animals using 6x power to ensure that no animals were overlooked. If any additional animals were found, the petri dish was reexamined once again, until no animals were found on the last examination. This process was repeated until the entire sample core was sorted. Animals from each sorting dish were placed in a small jar or vial of 70 percent pure ethanol (not denatured) with glycerin (alcohol:water:glycerin = 15:15:1 by volume) and labeled inside and out with the date, sample, sample station, and replicate number.

## **2.5.1 Methodology**

### **2.5.1.1 Methodology Type:** Laboratory Procedures and Protocols

#### **2.5.1.3 Methodology Description:** Benthic Core Sample Processing, Animal Identifications

The sample replicate to be identified was rinsed with alcohol (same concentration as above) into a watch glass. For samples 1-111, all animals were identified to the lowest possible taxa. Beginning with sample 112 (07/15/1985), and for the remainder of the database, only dominant polychaetes were identified to species. Other organisms were identified to family, class, or phylum. For more information on the transformation of the count data from this earlier identification protocol to the later (to be included in the final, published database), see the Process Section of this document. Animals of the same species or category were counted and placed together into labeled shell vials containing the alcohol:water:glycerin preservative described above. The MACRO technician used a Counting Sheet (hardcopy) to record the identification and count results for each sample replicate, as well as any other relevant comments, measurements, or notes. Jar (shell vial) numbers were also recorded on the Counting Sheets.

## **2.5.1 Methodology**

### **2.5.1.1 Methodology Type:** Laboratory Procedures and Protocols

#### **2.5.1.3 Methodology Description:** Archival of Samples

The processed animals (separated, identified, and counted) were placed in shell vials containing a 70 percent Ethanol solution (stock = 95% ETOH + tap water + glycerin, 15:5:1 by volume). Each shell vial contains a label detailing the sample date, station, replicate, jar (vial) number, and identity of the animals. The jar (vial) numbers correspond to those listed on the Counting Sheets, and therefore, the Counting Sheets can be used to trace specimens for recounting or identification purposes. The shell vials are then placed in sealed quart-size storage jars and maintained in the archive sample room at the Baruch Marine Field Laboratory, Georgetown, SC. For more information on the archival of raw data sheets, see the Process section.

Example jar label: 04/18/1981 D1 Top #4 *Spiophanes bombyx* contains all *Spiophanes bombyx* found at the Debidue station, on 04/18/1981, replicate 1, in the top 5 centimeters of sediment, and was the fourth jar in that replicate.

## **2.5.1 Methodology**

### **2.5.1.1 Methodology Type:** Laboratory Procedures and Protocols of Ancillary Data

#### **2.5.1.3 Methodology Description:** Macrobenthic Biomass Determination

Beginning in May of 1986 and for an entire year, researchers collected three additional (replicate) cores from the BB site during each sampling event and determined the biomass of these macrobenthic samples. These cores were processed in the same manner as described above, however the preserved animals sieved out of the samples were rinsed thoroughly in fresh water and then placed in pre-weighed and oven-dried aluminum pans. These pans were oven-dried at 60 degrees Celsius for 24 hours, cooled for 15 minutes in the desiccator, and weighed. They were then placed back into the oven for an additional 3 hours, cooled, and weighed again. This process was repeated until a constant weight (in milligrams) was attained. These data were used to track monthly changes in the total biomass of an 18.1 square centimeter area.

Species level biomass data were also obtained seasonally for abundant taxa and over the entire year for less abundant taxa. Qualitative samples were collected periodically and preserved animals were identified and placed into species-specific size classes based on measurements of a specific body dimension (in ocular micrometer units from the dissecting scope). Several specimens of each size class, for each species, were placed in pre-weighed aluminum pans. These pans were also oven-dried at 60 degrees Celsius for 24 hours, cooled for 15 minutes in the desiccator, and weighed. As described above, the technician continued to dry, cool, and weigh until a constant weight (expressed in micrograms) was attained. Each size class/species pan was replicated at least 3 times and an average weight was calculated for each size class. These biomass values were then converted to non-preserved values following the procedures of Frithsen et al. (1986). Finally, a width (or length)/weight regression was then calculated for each species using natural log(ln)-transformed data. With these regressions, average species biomass could be estimated from the biweekly samples simply by measuring the appropriate dimension under the microscope.

Size classes were determined by making the following body dimension measurements:

Polychaetes: measured by the width of the first setigerous segment in micrometer units at 12x magnification (some of the larger polychaetes were measured at lower magnification).

Oligochaetes: measured by the width of the first setigerous segment in micrometer units at 12x magnification.

Amphipods: measured by carapace length in micrometer units at 25x magnification.

Cumaceans: measured by carapace length in micrometer units at 12x magnification.

Isopods: measured by \_\_\_\_\_ at 12x magnification.\*

Shrimp: measured by carapace length at 12x magnification.

Bivalves: measured by the longest anterior-posterior dimension in micrometer units at 12x magnification.

\*This information is unavailable.

TAXON	REGRESSION EQUATION	R**2
<i>Streblospio benedicti</i>	$\ln(\text{weight}) = 3.485[\ln(\text{size})] - 8.07$	0.968
<i>Mediomastus ambiseta</i>	$\ln(\text{weight}) = 2.766[\ln(\text{size})] - 6.35$	0.957
Cirratulidae	$\ln(\text{weight}) = 1.96[\ln(\text{size})] - 5.736$	0.852
Oligochaetes	$\ln(\text{weight}) = 2.08[\ln(\text{size})] - 6.255$	0.953
Juvenile Bivalves (Shelled)	$\ln(\text{weight}) = 3.048[\ln(\text{size})] - 11.398$	0.932

#### 2.5.1.4 Methodology Citation:

##### 8. Citation Information

8.1 Originator: J. B. Frithsen

8.1 Originator: D. T. Rudnick

8.1 Originator: P. H. Doering

8.2 Publication Date: 1986

8.4 Title: The determination of fresh organic weight from formaldehyde preserved macrofaunal samples

8.6 Geospatial Data Presentation Form: Scientific Publication

##### 8.8 Publication Information

8.8.1 Publication Place: Unknown

8.8.2 Publisher: Hydrobiologia

8.9 Other Citation Details: Volume 133, Pages 203-208

### 2.5.3.1 Process Description:

After identifying and counting the macrobenthic organisms, the MACRO technician recorded the results on the Counting Sheets. Most of the physical data, initially recorded in Field Notebooks at the time of sample collection, were also noted on the appropriate Counting Sheets. Data from the Counting Sheets (physical and count data) were then transferred to the Data Entry Sheets to facilitate data entry. This transfer helped to consolidate the organisms into appropriate categories.

#### **Data Entry:**

Count and physical data were entered by a Data Technician using a Full Screen Manager data entry program. The program used for samples 1-111 consisted of 11 entry screens and 663 data entry fields. The Data Technician reexamined all data entered to check for entry errors. Hardcopies of the digital data were then sent to the MACRO Technician (who initially counted the samples) and the technician verified the digital data with the original raw data sheets. The Full Screen Manager format used for samples 112-274 was condensed to include only 92 data entry fields within 3 entry screens. All data were entered and verified by either the MACRO Technician or Data Technician and certified error free by Baruch's Data Manager. After verification, all data were uploaded to the mainframe.

#### **Standardization of Data for Coring Protocols:**

In order to standardize the final data for protocol changes throughout the data collection period, only the counts from the top 5 centimeters of each sediment core were used to obtain the final reported number of individuals per square meter. For the earlier data (01/20/1981 – 01/08/1985), this meant that in cases where deeper portions of core were processed as a whole (either 10 or 15 centimeters deep), counts had to be converted to an estimate for only the top 5 centimeters. Conversion factors for this manipulation were determined by examining the percentage of individuals found in the top, middle, and bottom 5 centimeters for cores that were sectioned before being sorted and counted. The primary investigator then made a determination as to standardized percentages that could be used as conversion factors for specific subgroups at each station and for the depth of core that was processed. The depth of core processed is reported under COREDEP in the final database, and for any sample with a COREDEP listed as 10 or 15 centimeters, counts were converted to numbers per meter squared and then multiplied by the appropriate conversion factor to standardize for a depth of 5 centimeters. These conversion factors are listed below:

SUBGROUP	STATION BB	STATION DD
<u>Total Organisms</u>		
10 cm depth	0.91	0.86
15 cm depth	0.85	0.77
<u>All Polychaetes</u>		
10 cm depth	0.78	0.67
15 cm depth	0.66	0.56
<u>All Other Macrofauna</u> (Amphipods, Cumaceans, Shrimps, etc.)		
10 cm depth	0.77	0.75
15 cm depth	0.65	0.62

#### **Standardization of Data for Identification Protocols:**

The final data were standardized for the two different identification protocols used during this database so that direct comparisons could be made. For samples 1-111, all organisms were identified to the lowest possible taxa. The new format, beginning with sample 112, identified only dominant polychaetes to species. Other organisms were identified to family, class, or phylum. Families and species that were no longer identified in the new format were lumped under "unidentified" categories in their respective families, classes, or phyla, until a category identified in the new format was reached. In addition, in the new format, the category "TOTSHRIMPS" or (total shrimps) contains the individuals identified as *Alpheus normanni*, *Calianassa* sp., *Ogyrides limicola*, *Palaemonetes* sp., *P. pugio*, *P. vulgaris* and Penaeid shrimps in the old format. The category "CUMACEAN" includes the *Osyurostylis smithi* individuals from the original format. Categories "AMPHIPOD" and "ISOPODS" remained the same in both formats. For more information, see the Entity and Attribute Overview and Attribute Accuracy Report Sections.

#### **2004 Data Rescue Project:**

As part of the 2004 Data Rescue Project, the Data Rescue Project Data Manager performed quality assurance and quality control procedures, formatted, updated, graphed, documented, and archived the MACRO database. The Data Manager

first imported the .csv format file into Excel and changed the date format from the 1904 calculation system to the 1900 system with values reported as mm/dd/yyyy. All count data were formatted to one decimal place. Physical data were examined for appropriate reporting accuracy and subsequently formatted. In some instances, this required returning to the raw data to obtain the original readings/observations. REDOX values of 10 centimeters or greater were defined as anomalous and originally denoted with values of "99" in the database. These occurrences were verified with the raw Field Notes (all were noted as >10), changed to a value of 10, and noted in the Anomalous Data Document. Missing data markers were inserted and all missing data were documented (see the Missing Data Document) for both physical parameters and core samples.

Several parameters were no longer necessary in the final database due to changes in identification methodology or "temporary" parameters that were added until organisms could be further identified or categorized by a qualified technician or the primary investigator. The following parameters were removed from the MACRO database as a result:

- CIRRSP01 = Cirratulidae Species #1
- GLYCSP01 = Glyceridae Species #1
- GONISP01 = Goniadidae Species #1
- SPIOSP01 = Spionidae Species #1
- SPIOSP02 = Spionidae Species #2
- POLYSP02 = Polychaete Species #2
- POLYSP03 = Polychaete Species #3
- POLYSP04 = Polychaete Species #4

In addition, the COREDEPA parameter was removed because all values were zero and COREDEPB, which designates the depth of the core sample used in the count analysis, was renamed COREDEP. The UNIDGONI (Unidentified Goniadidae) parameter was also removed. No members of the Goniadidae family were identified to the genus or species level and, as a result, the TOTGONIA (Total Goniadidae) parameter was identical and the duplication was unnecessary.

The 2004 Data Manager examined all previous documentation and included any relevant information in this metadata document. Some previous documentation referred to data values in counts per cubic meter (volume vs. area). The Data Manager verified that these references were incorrect and verified all calculations that were used to convert count data to numbers per meter squared. Any other relevant comments or notes from MACRO technicians that might pertain to missing or anomalous/erroneous data were documented in the Missing and Anomalous Data Documents. The Data Manager also used the Integrated Taxonomic Information System on-line database, <http://www.itis.usda.gov>, to complete taxonomic documentation for the database.

All count data (including subgroup and all organism totals) were calculated from the original count data represented on the Data Entry Sheets; they were totaled as count data and then converted, not vice versa. In order to QA/QC the final database, all totals for groups of parameters (i.e. polychaete families, polychaete totals, non-polychaete groups, all organism totals) were verified in the final database using the parameter values (after conversion) and equations within Excel to obtain expected totals. When the expected totals did not match the totals in the database, the 2004 Data Manager investigated with the raw data sheets to determine where errors occurred. This method revealed addition errors, data entry errors, errors caused by changes in methodology, and conversion process errors within both the totals and the individual parameters. All errors found in this manner were corrected and noted in the Anomalous Data Document, see this document for more information.

Final data for each count parameter and several physical parameters were then converted to averages of all replicates for each sample. These data were then graphed, as an additional QA/QC measure, and for publication on Baruch's website. Both the graphs and spreadsheets containing averages for each individual parameter are available as part of the LTERMACRO final database.

Also as part of the 2004 Data Rescue Project, all raw datasheets, including Counting Sheets, Data Entry Sheets, and Field Notes, were scanned into digital .JPG images and archived on the LTERMACRO RAW.ARCHIVE CDs. All raw hardcopies are maintained by Baruch's Data Management Office and are stored in the Data Archive Room at the Field Lab. All process data, documentation, and graphic files were archived on the LTERMACRO PROCESS CD. Finally, all final data, documentation, and graphics were published on the LTERMACRO PUBLISH CD, in the LTERMACRO Notebook, and on Baruch's website at <http://links.baruch.sc.edu/data/>.

### 2.5.2.3 Process Date: 20040907

### 3 Spatial Data Organization Information:

#### 3.1 Indirect Spatial Reference:

Hobcaw Barony and the North Inlet Estuary are located in Georgetown County, South Carolina, USA

#### 3.2 Direct Spatial Reference Method: Point

### 5. Entity and Attribute Information:

#### 5.2 Overview Description:

##### 5.2.1 Entity and Attribute Overview:

STATION = two letter code designation for the tidal marsh creek, within North Inlet Estuary, where the macrobenthic sample was collected. (BB = Bread and Butter site, DD = Debidue site)

DATE = date that the sample was collected (not necessarily processed or analyzed) in mm/dd/yyyy format.

SAMPLE = the sample number, assigned in sequential order (in increments of 1), to the macrobenthic collection based on date.

SAMTIME = the Eastern Standard Time that the macrobenthic sample was collected in hhmm format.

REPLICAT = the replicate number, assigned in sequential order (in increments of 1), to each replicate sample for each sample/date.

TSTAGE = the estimated tide level or stage (in meters). The value reported is the estimated departure from an average low tide at the time of sampling. A positive value indicates the estimated amount above (higher than) an average low tide water level and a negative value indicates the estimated amount below (lower than) the average low tide mark.

STEMP = surface water temperature measured in degrees Celsius.

AIRTEMP = air temperature taken in the shade with a hand-held thermometer, measured in degrees Celsius.

SEDWATER = temperature of the sediment / water interface measured with a hand-held thermometer in degrees Celsius. SSAL = salinity of the surface waters over the sample location, reported in parts per thousand.

REDOX = depth, in centimeters, at which the reduction/oxidation layer was observed below the surface sediments.

Measurements are reported from 0 to 10 centimeters. All values of 10 centimeters or greater are reported in the database as 10, and are considered anomalous because they are not true values.

COREAREA = surface sediment area, in square centimeters, sampled by the coring device. Calculated from the inside diameter of the coring device (COREDIAM).

COREDIAM = the inside diameter, in centimeters, of the coring device.

SEDEVOL = the volume, in cubic centimeters, of the sediment core sample used for count data in the final database, not necessarily the volume of the total core collected. Calculated from the core area (COREAREA) and core depth (COREDEP).

COREDEP = the depth, in centimeters, of the sediment core sample *used to calculate the number of individuals per square meter for the final database, not necessarily the depth of the total core collected*. Earlier protocols called for sample cores to be collected to a depth of 15 centimeters and either processed whole or sectioned into 5 centimeter top, middle, and bottom portions. Sectioning was sometimes impossible. Later protocol (beginning 01/18/1985 through the end of the database) called for only a 5 centimeter deep core. Results from cores that were processed in sections greater than 5 centimeters deep had to be converted for easy comparison to the later data in the final database. If the depth listed in the final database is greater than 5 centimeters (10 or 15 centimeters), the counts were converted estimates for the 5 centimeter top section of the sample core (see Method and Process sections for more information).

COLLECT = the initials of the technician who collected (not necessarily processed) the benthic samples.

The following categories are taxonomic listings for organism abundance. In the final dataset, these are expressed as number of individuals per surface area of sample core (number per square meter). The 2003-2004 Data Rescue Manager changed some of the variable codes (column headers) in the final dataset and graphics. The original codes are supplied in parenthesis and are still used in the raw data files.

UNIDCAPIT = (UNIDCAPI) = Unidentified Capitellidae: number of individuals in the family Capitellidae that were not identified as *Heteromastus filiformis*, *Mediomastus ambiseta*, or *Capitella capitata*.

TOTCAPIT = Total Capitellidae = UNIDCAPIT + MEDIAMBI + HETEFILI + CAPITCAPI, total number of individuals in the family Capitellidae.

MEDIAMBI = *Mediomastus ambiseta*: number of individuals identified as *Mediomastus ambiseta*. Includes animals that were originally identified incorrectly as *Capitella capitata* in samples 1-146.

HETEFILI = *Heteromastus filiformis*: number of individuals identified as *Heteromastus filiformis*.

CAPITCAPI = (CAPICAPI) = *Capitella capitata*: number of individuals identified as *Capitella capitata*. Does not include *Mediomastus ambiseta* individuals that were originally identified incorrectly as *Capitella capitata* in samples 1-146.

UNIDCIRRA = (UNIDCIRR) = Unidentified Cirratulidae: number of individuals in the family Cirratulidae that were not identified as species in the *Caulleriella* or *Tharyx* genus.

TOTCIRRA = Total Cirratulidae: UNIDCIRR + CAULLESP + THARYXSP, total number of individuals in the family Cirratulidae

CAULLESP = *Caulleriella* species: number of individuals identified as a species (most likely the juvenile *Caulleriella killariensis*) in the *Caulleriella* genus.

THARYXSP = *Tharyx* species: number of individuals identified as a species in the *Tharyx* genus.

UNIDGLYCE = (UNIDGLYC) = Unidentified *Glycera*: number of individuals in the genus *Glycera*, none of which were identified to the species level. Unidentified *Glycera* were the only members of the Glyceridae family collected. As a result, the **Total Glyceridae values are equal to the Unidentified *Glycera* (UNIDGLYC) values.**

TOTGLYCE = Total Glyceridae: Total number of individuals in the family Glyceridae, all of these individuals were members of the *Glycera* genus and were not identified to the species level. As a result, the Unidentified *Glycera* (UNIDGLYC) values are equal to the Total Glyceridae values.

TOTGONIA = Total Goniadidae: Total number of individuals in the family Goniadidae, **none of these were identified to the genus or species level.** The 2004 Data Manager removed the Unidentified Goniadidae (UNIDGONI) parameter because it was identical to the Total Goniadidae parameter.

UNIDLUMBR = (UNIDLUMB) = Unidentified Lumbrineridae: number of individuals in the family Lumbrineridae that were not identified as *Lumbrineris tenuis* or the other *Lumbrineris* species.

TOTLUMBR = Total Lumbrineridae: UNIDLUMBR + LUMBRTENU + LUMBRSP01, total number of individuals in the family Lumbrineridae.

LUMBRTENU = (LUMBTENU) = *Lumbrineris tenuis*: number of individuals identified as *Lumbrineris tenuis*.

LUMBRSP01 = (LUMBSP01) = *Lumbrineris* species number 1: number of individuals identified as a species (other than *Lumbrineris tenuis*) in the *Lumbrineris* genus.

UNIDMAGEL = (UNIDMAGE) = Unidentified Magelonidae: number of individuals in the family Magelonidae that were not identified as *Magelona phyllisae* or the other Magelonidae species.

TOTMAGEL = Total Magelonidae: UNIDMAGEL + MAGELPHYL + MAGELSP01, total number of individuals in the family Magelonidae.

MAGELPHYL = (MAGEPHYL) = *Magelona phyllisae*: number of individuals identified as *Magelona phyllisae*.

MAGELSP01 = (MAGESP01) = Magelonidae species number 1: number of individuals identified as a species (other than *Magelona phyllisae*) in the Magelonidae family.

UNIDNEREI = (UNIDNERE) = Unidentified Nereididae: number of individuals in the family Nereididae that were not identified as *Nereis succinea* or the other Nereididae species (after sample #111).

TOTNEREI = Total Nereididae: UNIDNEREI + NEREISUCC + NEREISP01, total number of individuals in the family Nereididae.

NEREISUCC = (NERESUCC) = *Nereis succinea*: number of individuals identified as *Nereis succinea*. According to the Integrated Taxonomic Information System on-line database (<http://www.itis.usda.gov>), as retrieved on 07/16/04, this species name is no longer valid. The correct name is: *Neanthes succinea* (it is classified as a member of the *Neanthes* genus).

NEREISP01 = (NERESP01) = Nereididae species number 1: number of individuals identified as a species (other than *Nereis succinea*) in the Nereididae family. In samples 112 -274 this is most likely a member of the *Nereis* genus, this category was not used before sample 112 and these individuals would have been lumped in with the UNIDNEREI.

UNIDORBIN = (UNIDORBI) = Unidentified Orbiniidae: number of individuals in the family Orbiniidae that were not identified as *Haploscoloplos robustus* or the other Orbiniidae species (after sample #111).

TOTORBIN = Total Orbiniidae: UNIDORBIN + HAPLROBU + ORBINSP01, total number of individuals in the family Orbiniidae.

HAPLROBU = *Haploscoloplos robustus*: number of individuals identified as *Haploscoloplos robustus*. ORBINSP01

= (ORBISP01) = Orbiniidae species number 1: number of individuals identified as a species (other than

*Haploscoloplos robustus*) in the Orbiniidae family. In samples 112-274, this is a member of the *Haploscoloplos*

genus, this category was not used before sample 112 and these individuals would have been lumped in with the UNIDORBIN.

UNIDPHYLL = (UNIDPHYL) = Unidentified Phyllodocidae: number of individuals in the family Phyllodocidae that were not identified as *Eteone heteropoda* or the other Phyllodocidae species.

TOTPHYLL = Total Phyllodocidae: UNIDPHYLL + ETEOHETE + PHYLLSP01, total number of individuals in the family Phyllodocidae.

ETEOHETE = *Eteone heteropoda*: number of individuals identified as *Eteone heteropoda*.

PHYLLSP01 = (PHYLLSP01) = Phyllodocidae species number 1: number of individuals identified as a species (other than *Eteone heteropoda*) in the Phyllodocidae family. In samples 190-274 this is a member of the *Phyllodoce* genus, prior to these samples it is uncertain.

UNIDSPION = (UNIDSPIO) = Unidentified Spionidae: number of individuals in the family Spionidae that were not identified as *Paraprionospio pinnata*, *Prionospio cirrifera*, *Prionospio cirrobranchiata*, *Spiophanes bombyx*, *Streblospio benedicti*, either of the *Polydora* species, or the other Spionidae species.

TOTSPION = Total Spionidae: UNIDSPION + SPIONSP01 + PARAPINN + POLYDSP01 + POLYDSP02 + PRICIRRI + PRICIRRO + SPIOBOMB + STREBENE, total number of individuals in the family Spionidae.

SPIONSP01 = (SPIONSPA) ((SPIONIDAE SP. A)) = Spionidae species number 1: number of individuals identified as a species (other than those listed below) in the Spionidae family.

PARAPINN = *Paraprionospio pinnata*: number of individuals identified as *Paraprionospio pinnata*.

POLYDSP01 = (POLYDSPA) = *Polydora* species number 1: number of individuals identified as a species in the *Polydora* genus. Possibly a different growth stage of the same species as POLYDSP02 (unidentified polydorid).

POLYDSP02 = (POLYDSP2) = *Polydora* species number 2: number of individuals identified as a second species in the *Polydora* genus. Possibly a different growth stage of the same species as POLYDSP01 (unidentified polydorid).

PRICIRRI = *Prionospio cirrifera*: number of individuals identified as *Prionospio cirrifera*. According to the Integrated Taxonomic Information System on-line database (<http://www.itis.usda.gov>), as retrieved on 06/18/04, this species name is no longer valid. The correct name is: *Minuspio cirrifera*

PRICIRRO = *Prionospio cirrobranchiata*: number of individuals identified as *Prionospio cirrobranchiata*. According to the Integrated Taxonomic Information System on-line database (<http://www.itis.usda.gov>), as retrieved on 06/18/04, this species name is no longer valid. The correct name is: *Minuspio cirrobranchiata*.

SPIOBOMB = *Spiophanes bombyx*: number of individuals identified as *Spiophanes bombyx*.

STREBENE = *Streblospio benedicti*: number of individuals identified as *Streblospio benedicti*.

UNIDSYLLI = (UNIDSYLL) = Unidentified Syllidae: number of individuals in the family Syllidae that were not identified as Syllidae species number 1.

TOTSYLLI = Total Syllidae: UNIDSYLLI + SYLLISP01, total number of individuals in the family Syllidae.

SYLLISP01 = (SYLLSP01) = Syllidae species number 1: number of individuals identified as a species in the Syllidae family.

POLYCSP01 = (POLYSP01) = Polychaete species number 1: number of individuals identified as a species in the class Polychaeta. In samples 141-274 this species is *Armandia maculata* from the family Ophellidae, prior to these samples it is uncertain.

UNIDPOLYC = (UNIDPOLY) = Unidentified Polychaetes: number of individuals in the class Polychaeta that were not identified by subclass, order, family, species, or otherwise categorized (POLYCSP01, POLYDSP01, and POLYDSO02, etc.)

Note: any families (and their associated species) identified on old data sheets (old format) from samples 1-111 that were not identified in the new format were lumped under this category. Species of polychaetes no longer identified in the new format, but whose families are (Cirratulidae, Glyceridae, Goniadidae, Lumbrineridae, Nereidae, Orbinidae, Spionidae, Magelonidae, Phyllodocidae, Syllidae, and Capitellidae), were lumped into the "unidentified" category of their respective families.

TOTPOLYC = Total Polychaetes: TOTCAPIT + TOTCIRRA + TOTGLYCE + TOTGONIA + TOTLUMBR + TOTMAGEL + TOTNEREI + TOTORBIN + TOTPHYLL + TOTSPION + TOTSYLLI + POLYCSP01 + UNIDPOLYC, total number of individuals in the class Polychaeta.

TOTSPECI = Total number of polychaete species identified in the sample. It appears that, from 01/20/1981 through 12/19/1983, only species that were identified to the species level were included in this count. For the remainder of the database, this value is a count of all unique species in the sample, whether they were identified to species level or not.

*As a result, data for this parameter are not consistent and should not be used to compare between these time frames. Users should consult the raw data sheets (RAW.ARCHIVE CDs) for detailed information on sample composition.*

TOTFAMIL = Total number of polychaete families identified in the sample.

AMPHIPOD = Amphipods: Number of individuals in the order Amphipoda.

TOTSHRIMPS = (TSHRIMPS) = Total Shrimps: number of individuals identified as shrimps.

CUMACEAN = Cumaceans: Number of individuals in the order Cumacea.

ISOPODS = Isopods: number of individuals in the order Isopoda.

UNIDCRUS = Unidentified Crustaceans: number of individuals in the subphylum Crustacea that were not identified as Amphipods, Shrimps, Cumaceans, or Isopods.

TOTCRUST = Total Crustaceans: AMPHIPOD + TOTSHRIMPS + CUMACEAN + ISOPODS + UNIDCRUS, total number of individuals in the subphylum Crustacea.

TOTBIVAL = Total Bivalves: number of individuals in the class Bivalvia.

UNIDNEME = Unidentified Nemertean: number of individuals in the phylum Nemertea.

OLIGOCHA = Oligochaetes: number of individuals in the subclass Oligochaeta.

SIPUNCUL = Sipunculids: number of individuals in the family Sipunculidae.

SHELGAST = Shelled Gastropods: number of individuals identified as shelled gastropods.

UNIDMISC = Unidentified Miscellaneous: number of unidentified animals that don't fit under any other category.

TOTMISCE = Total Miscellaneous: SHELGAST + UNIDMISC, total number of shelled gastropods and unidentified miscellaneous animals.

TOTUNIDORG = (TOTUNORG) = Total Unidentified Organisms: number of organisms not identified to the species level. Includes all non- Polychaete organisms, Polychaetes that were not identified by family or genus (UNIDPOLYC), and Polychaetes that were identified by family or genus, but classified as unidentified within that group (e.g. UNIDSPION). This count can be found on the raw Data Entry Sheets (.JPG images archived on the MACRO RAW.ARCHIVE CDs and hardcopies on site at the Baruch Marine Field Lab). ***Data for this parameter are not consistent due to changes in identification methodology. In the early years of the study (01/20/1981 – 06/28/1985) all organisms were identified to species level if at all possible. In the later years (07/15/1985 – 01/31/1992), only dominant species were identified to species. As a result, these data vary greatly and should not be used to compare between these time frames.***

TOTALLORG = (TALLORGA) = Total All Organisms: TOTPOLYC + TOTCRUST + TOTBIVAL + UNIDNEME + OLIGOCHA + SIPUNCUL + TOTMISCE, number of organisms counted and recorded for the sample core.

The following table describes the LTER MACRO final published database's variable names, value type and size (in total number of digits.number of decimal places format), and the value measurement range (maximum and minimum recorded values, may include anomalous data) with its unit of measurement.

<u>Variable</u>	<u>Type and Total Size of Value.Number of Decimal Places</u>	<u>Range of Measurement and Units</u>
STATION	Scaler, Alpha	BB, DD
DATE (mm/dd/yyyy)	Integer	1-12, 1-31, 1981-1992
SAMPLE	Integer	1 – 274
SAMTIME (hhmm; 24 hour)	Integer	0938 – 1715
REPLICAT	Integer	1 – 8
TSTAGE	Real 4.1	-0.9 – 1.0 meters
STEMP	Real 4.1	1.9 – 33.0 degrees Celsius
AIRTEMP	Real 4.1	-2.0 – 35.0 degrees Celsius
SEDWATER	Real 4.1	3.0 – 39.0 degrees Celsius
SSAL	Real 4.1	10.0 – 38.0 parts per thousand
REDOX	Integer	0 – 10 centimeters

COREAREA	Integer	18 – 170 square centimeters
COREDIA	Integer	5 – 18 centimeters
SEVOL	Integer	9 – 1700 cubic centimeters
COREDEP	Integer	5 – 15 centimeters
COLLECT	Scaler, Alpha	PM,CR,LB,SKS,DMA,GO,SS,GOM,RW
UNIDCAPI	Real 6.1	0.0 – 4419.9 number per square meter
TOTCAPIT	Real 7.1	0.0 – 43093.9 number per square meter
MEDIAMBI	Real 7.1	0.0 – 42541.4 number per square meter
HETEFILI	Real 6.1	0.0 – 4096.4 number per square meter
CAPICAPI	Real 6.1	0.0 – 1105.0 number per square meter
UNIDCIRR	Real 7.1	0.0 – 28588.2 number per square meter
TOTCIRRA	Real 7.1	0.0 – 35911.6 number per square meter
CAULLESP	Real 7.1	0.0 – 35359.1 number per square meter
THARYXSP	Real 6.1	0.0 – 6077.4 number per square meter
UNIDGLYC	Real 6.1	0.0 – 2762.4 number per square meter
TOTGLYCE	Real 6.1	0.0 – 2762.4 number per square meter
TOTGONIA	Real 6.1	0.0 – 1657.5 number per square meter
UNIDLUMB	Real 6.1	0.0 – 2530.1 number per square meter
TOTLUMBR	Real 6.1	0.0 – 4972.4 number per square meter
LUMBTENU	Real 6.1	0.0 – 4972.4 number per square meter
LUMBSP01	Real 6.1	0.0 – 3867.4 number per square meter
UNIDMAGE	Real 5.1	0.0 – 552.5 number per square meter
TOTMAGEL	Real 6.1	0.0 – 1105.0 number per square meter
MAGEPHYL	Real 6.1	0.0 – 1105.0 number per square meter
MAGESP01	Real 5.1	0.0 – 552.5 number per square meter
UNIDNERE	Real 6.1	0.0 – 2306.0 number per square meter
TOTNEREI	Real 6.1	0.0 – 6077.4 number per square meter
NERESUCC	Real 6.1	0.0 – 6077.4 number per square meter
NERESP01	Real 5.1	0.0 – 552.5 number per square meter
UNIDORBI	Real 6.1	0.0 – 6629.8 number per square meter
TOTORBIN	Real 7.1	0.0 – 13812.2 number per square meter
HAPLROBU	Real 6.1	0.0 – 7734.8 number per square meter
ORBISP01	Real 7.1	0.0 – 13812.2 number per square meter
UNIDPHYL	Real 6.1	0.0 – 1657.5 number per square meter
TOTPHYLL	Real 6.1	0.0 – 9392.3 number per square meter
ETEOHETE	Real 6.1	0.0 – 9392.3 number per square meter
PHYLSP01	Real 6.1	0.0 – 1105.0 number per square meter
UNIDSPIO	Real 6.1	0.0 – 3314.9 number per square meter
TOTSPION	Real 7.1	0.0 – 26519.3 number per square meter
SPIONSPA	Real 5.1	0.0 – 602.4 number per square meter
PARAPINN	Real 6.1	0.0 – 2209.9 number per square meter
POLYDSPI	Real 5.1	0.0 – 552.5 number per square meter
POLYSPII	Real 5.1	0.0 – 552.5 number per square meter
PRICIRRI	Real 6.1	0.0 – 9944.8 number per square meter
PRICIRRO	Real 6.1	0.0 – 4972.4 number per square meter
SPIOBOMB	Real 6.1	0.0 – 4216.9 number per square meter
STREBENE	Real 7.1	0.0 – 26519.3 number per square meter
UNIDSYLL	Real 6.1	0.0 – 8839.8 number per square meter
TOTSYLLI	Real 6.1	0.0 – 8839.8 number per square meter
SYLLSP01	Real 5.1	0.0 – 552.5 number per square meter
POLYSP01	Real 7.1	0.0 – 15469.6 number per square meter
UNIDPOLY	Real 6.1	0.0 – 3867.4 number per square meter
TOTPOLYC	Real 7.1	0.0 – 75138.1 number per square meter
TOTSPECI	Integer	0 – 16 number per sample
TOTFAMIL	Integer	0 – 14 number per sample
AMPHIPOD	Real 6.1	0.0 – 8839.8 number per square meter
TSHRIMPS	Real 6.1	0.0 – 2209.9 number per square meter

CUMACEAN	Real 6.1	0.0 – 1657.5 number per square meter
ISOPODSA	Real 6.1	0.0 – 2762.4 number per square meter
UNIDCRUS	Real 6.1	0.0 – 2762.4 number per square meter
TOTCRUST	Real 6.1	0.0 – 8839.8 number per square meter
TOTBIVAL	Real 7.1	0.0 – 29281.8 number per square meter
UNIDNEME	Real 6.1	0.0 – 3314.9 number per square meter
OLIGOCHA	Real 7.1	0.0 – 43093.9 number per square meter
SIPUNCUL	Real 6.1	0.0 – 2209.9 number per square meter
SHELCAST	Real 6.1	0.0 – 5524.9 number per square meter
UNIDMISC	Real 7.1	0.0 – 31491.7 number per square meter
TOTMISCE	Real 7.1	0.0 – 31491.7 number per square meter
TOTUNORG	Real 7.1	0.0 – 58011.1 number per square meter
TALLORGA	Real 7.1	91.7 – 98342.5 number per square meter

\*Range of measurement values are actual highest and lowest values collected during the database timeframe. They may include values that are considered anomalous.

### 5.2.2 Entity and Attribute Detail Citation:

Definitions were developed by Baruch Institute's researchers, data managers, and technicians; no published standards for entity definitions were used to define the entities used in this dataset. However, the general use of these entity type definitions are understood by biological communities at large.

## 6. Distribution Information

### 6.1 Distributor:

#### 10.2 Contact Organization Primary

**10.1.2 Contact Organization:** Univ. of South Carolina's Baruch Institute

**10.1.1 Contact Person:** Ginger Ogburn-Matthews

**10.3 Contact Position:** Research Data Manager & Analyst

#### 10.4 Contact Address

**10.4.1 Address Type:** Mailing Address

**10.4.2 Address:** USC Baruch Marine Field Lab

**10.4.2 Address:** PO Box 1630

**10.4.3 City:** Georgetown

**10.4.4 State or Province:** South Carolina

**10.4.5 Postal Code:** 29442

**10.4.6 Country:** USA

**10.5 Contact Voice Telephone:** (843) 546-6219 extension 225

**10.7 Contact Facsimile Telephone:** (843) 546-1632

**10.8 Contact Electronic Mail Address:** ginger@belle.baruch.sc.edu

**10.9 Hours of Service:** 8:30 am to 4:30 pm EST/EDT Mon.- Friday

### 6.2 Resource Description:

#### Data Set Identification names:

North Inlet LTER Macrobenthos

North Inlet LTER MACRO

LTER NIN013

North Inlet MACRO

#### Identification of Directories and Files:

The LTERMACRO CDs contain the complete final 1981-1992 database, graphics, and metadata, as well as all raw and process files used or created throughout the archival of this database. The LTERMACRO PUBLISH 1981-1992 CD contains the following files in the following directories:

**LTERMACRO.FINAL** (Directory Size: 63.8 MB, 30 folders, 449 files)

**FINAL.DOCUMENTATION** (Directory Size: 20.7 MB, 24 folders, 107 files)

LTERMACRO.1981-1992.FGDC.METADATA.doc

LTERMACRO.1981-1992.FGDC.METADATA.txt  
LTERMACRO.AnomalousData.doc  
LTERMACRO.AnomalousData.txt  
LTERMACRO.MissingData.doc  
LTERMACRO.MissingData.txt

**PreservedMicroscopePhotos** (Directory Size: 18.6 MB, 22 folders, 94 files)  
(the following subdirectories contain photos taken of preserved macrobenthic organisms with a microscope)

**Oligochaeta**  
**OtherInvertebrates**  
**Polychaeta**  
ReadMe.doc

**SiteProcessPhotos** (Directory Size: 1.5 MB, 7 files)

LgMacroCore2.jpg  
LgMacroCores.jpg  
MacroId.jpg  
SquillaCore.jpg  
SmMacroCore.jpg  
MacroCollect.jpg  
MacroCollect2.jpg

**FINAL.DATA** (Directory Size: 14.2 MB, 3 folders, 213 files)

LTERMACRO.ALL.1981-1992.xls (contains a worksheet for site BB and DD)  
LTERMACRO.ALL.BB.1981-1992.csv  
LTERMACRO.ALL.DD.1981-1985.csv

**AncillaryData** (Directory Size: 17.5 KB, 3 files)

LTERMACRO.Biomass.xls (contains a worksheet for Seasonal and Annual biomass)  
LTERMACRO.AnnualBiomass.csv (comma separated version duplicate of the Annual worksheet above)  
LTERMACRO.SeasonalBiomass.csv (comma separated version duplicate of the Seasonal worksheet above)

**AverageFiles** (Directory Size: 12.5 MB, 1 folder, 207 files)

(all Excel average files below contain a worksheet for site BB and DD)

AIRTEMP.xls  
AMPHIPOD.Avg.xls  
CAPITCAPI.Avg.xls  
CAULLESP.Avg.xls  
CUMACEAN.Avg.xls  
ETEOHETE.Avg.xls  
HAPLROBU.Avg.xls  
HETEFILL.Avg.xls  
ISOPODS.Avg.xls  
LUMBRSP01.Avg.xls  
LUMBRSTENU.Avg.xls  
MAGELPHYL.Avg.xls  
MAGELSP01.Avg.xls  
MEDIAMBI.Avg.xls  
NEREISP01.Avg.xls  
NEREISUCC.Avg.xls  
OLIGOCHA.Avg.xls  
ORBINSP01.Avg.xls  
PARAPINN.Avg.xls  
PHYLLSP01.Avg.xls  
POLYCSP01.Avg.xls  
POLYDSP01.Avg.xls  
POLYDSP02.Avg.xls

PRICIRRI.Avg.xls  
PRICIRRO.Avg.xls  
SEDWATER.xls  
SHELGAST.Avg.xls  
SIPUNCUL.Avg.xls  
SPIOBOMB.Avg.xls  
SPIONSP01.Avg.xls  
STEMP.xls  
STREBENE.Avg.xls  
SYLLISP01.Avg.xls  
THARYXSP.Avg.xls  
TOTALLOG.Avg.xls  
TOTBIVAL.Avg.xls  
TOTCAPIT.Avg.xls  
TOTCIRRA.Avg.xls  
TOTCRUST.Avg.xls  
TOTFAMIL.Avg.xls  
TOTGLYCE.Avg.xls  
TOTGONIA.Avg.xls  
TOTLUMBR.Avg.xls  
TOTMAGEL.Avg.xls  
TOTMISCE.Avg.xls  
TOTNEREI.Avg.xls  
TOTORBIN.Avg.xls  
TOTPHYLL.Avg.xls  
TOTPOLYC.Avg.xls  
TOTSHRIMPS.Avg.xls  
TOTSPECI.Avg.xls  
TOTSPION.Avg.xls  
TOTSYLLI.Avg.xls  
TOTUNIDORG.Avg.xls  
UNIDCAPIT.Avg.xls  
UNIDCIRRA.Avg.xls  
UNIDCRUS.Avg.xls  
UNIDGLYCE.Avg.xls  
UNIDGONIA.Avg.xls  
UNIDLUMBR.Avg.xls  
UNIDMAGEL.Avg.xls  
UNIDMISC.Avg.xls  
UNIDNEME.Avg.xls  
UNIDNEREI.Avg.xls  
UNIDORBIN.Avg.xls  
UNIDPHYLL.Avg.xls  
UNIDPOLYC.Avg.xls  
UNIDSPION.Avg.xls  
UNIDSYLLI.Avg.xls

**CSV.Average Files** (Directory Size: 505 KB, 138 files)

(these are duplicates of the above Excel files, with a file for each site, in comma separated version format)

AIRTEMP.BB.csv  
AIRTEMP.DD.csv  
AMPHIPOD.Avg.BB.csv  
AMPHIPOD.Avg.DD.csv  
CAPITCAPI.Avg.BB.csv  
CAPITCAPI.Avg.DD.csv  
CAULLESP.Avg.BB.csv  
CAULLESP.Avg.DD.csv



THARYXSP.Avg.BB.csv  
THARYXSP.Avg.DD.csv  
TOTALORG.Avg.BB.csv  
TOTALORG.Avg.DD.csv  
TOTBIVAL.Avg.BB.csv  
TOTBIVAL.Avg.DD.csv  
TOTCAPIT.Avg.BB.csv  
TOTCAPIT.Avg.DD.csv  
TOTCIRRA.Avg.BB.csv  
TOTCIRRA.Avg.DD.csv  
TOTCRUST.Avg.BB.csv  
TOTCRUST.Avg.DD.csv  
TOTFAMIL.Avg.BB.csv  
TOTFAMIL.Avg.DD.csv  
TOTGLYCE.Avg.BB.csv  
TOTGLYCE.Avg.DD.csv  
TOTGONIA.Avg.BB.csv  
TOTGONIA.Avg.DD.csv  
TOTLUMBR.Avg.BB.csv  
TOTLUMBR.Avg.DD.csv  
TOTMAGEL.Avg.BB.csv  
TOTMAGEL.Avg.DD.csv  
TOTMISCE.Avg.BB.csv  
TOTMISCE.Avg.DD.csv  
TOTNEREI.Avg.BB.csv  
TOTNEREI.Avg.DD.csv  
TOTORBIN.Avg.BB.csv  
TOTORBIN.Avg.DD.csv  
TOTPHYLL.Avg.BB.csv  
TOTPHYLL.Avg.DD.csv  
TOTPOLYC.Avg.BB.csv  
TOTPOLYC.Avg.DD.csv  
TOTSHRIMPS.Avg.BB.csv  
TOTSHRIMPS.Avg.DD.csv  
TOTSPECI.Avg.BB.csv  
TOTSPECI.Avg.DD.csv  
TOTSPION.Avg.BB.csv  
TOTSPION.Avg.DD.csv  
TOTSYLLI.Avg.BB.csv  
TOTSYLLI.Avg.DD.csv  
TOTUNIDORG.Avg.BB.csv  
TOTUNIDORG.Avg.DD.csv  
UNIDCAPIT.Avg.BB.csv  
UNIDCAPIT.Avg.DD.csv  
UNIDCIRRA.Avg.BB.csv  
UNIDCIRRA.Avg.DD.csv  
UNIDCRUS.Avg.BB.csv  
UNIDCRUS.Avg.DD.csv  
UNIDGLYCE.Avg.BB.csv  
UNIDGLYCE.Avg.DD.csv  
UNIDGONIA.Avg.BB.csv  
UNIDGONIA.Avg.DD.csv  
UNIDLUMBR.Avg.BB.csv  
UNIDLUMBR.Avg.DD.csv  
UNIDMAGEL.Avg.BB.csv  
UNIDMAGEL.Avg.DD.csv  
UNIDMISC.Avg.BB.csv

UNIDMISC.Avg.DD.csv  
UNIDNEME.Avg.BB.csv  
UNIDNEME.Avg.DD.csv  
UNIDNEREI.Avg.BB.csv  
UNIDNEREI.Avg.DD.csv  
UNIDORBIN.Avg.BB.csv  
UNIDORBIN.Avg.DD.csv  
UNIDPHYLL.Avg.BB.csv  
UNIDPOLYC.Avg.BB.csv  
UNIDPOLYC.Avg.DD.csv  
UNIDSPION.Avg.BB.csv  
UNIDSPION.Avg.DD.csv  
UNIDSYLLI.Avg.BB.csv  
UNIDSYLLI.Avg.DD.csv

**FINAL.GRAPHICS** (Directory Size: 29.0 MB, 129 files)

AIRTEMP.BB.JPG  
AIRTEMP.DD.JPG  
AMPHIPOD.BB.JPG  
AMPHIPOD.DD.JPG  
CAPITCAPI.BB.JPG  
CAULLESP.BB.JPG  
CAULLESP.DD.JPG  
CUMACEAN.BB.JPG  
CUMACEAN.DD.JPG  
ETEOHETE.BB.JPG  
ETEOHETE.DD.JPG  
HAPLROBU.BB.JPG  
HAPLROBU.DD.JPG  
HETEFILI.BB.JPG  
HETEFILI.DD.JPG  
ISOPODS.BB.JPG  
ISOPODS.DD.JPG  
LUMBRSP01.BB.JPG  
LUMBRSP01.DD.JPG  
LUMBRSP02.BB.JPG  
LUMBRSP02.DD.JPG  
MAGELPHYL.BB.JPG  
MAGELSP01.BB.JPG  
MAGELSP01.DD.JPG  
MEDIAMBI.BB.JPG  
MEDIAMBI.DD.JPG  
NEREISP01.BB.JPG  
NEREISP01.DD.JPG  
NEREISUCC.BB.JPG  
NEREISUCC.DD.JPG  
OLIGOCHA.BB.JPG  
OLIGOCHA.DD.JPG  
ORBINSPO1.BB.JPG  
ORBINSPO1.DD.JPG  
PARAPINN.BB.JPG  
PARAPINN.DD.JPG  
PHYLLSP01.BB.JPG  
POLYCSP01.BB.JPG  
POLYCSP01.DD.JPG  
POLYDSP01.BB.JPG  
POLYDSP01.DD.JPG  
POLYDSP02.BB.JPG  
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The LTERMACRO.PROCESS 1981-1992 CD contains various “process” files created over the course of the database. These files include SAS programs, EASY ENTRY programs, raw digital data files and other versions of the dataset, versions of metadata, and the files used to create the final graphics in the SigmaPlot graphing software package.

The LTERMACRO.RAW Archive 1981-1992 CDs contain scanned digital images of the raw data sheets and field notebooks for the LTERMACRO database, as well as images of the laboratory notebooks and data sheets containing raw data for the ancillary Predation and Biomass databases.

### **6.3 Distribution Liability:**

According to the Belle W. Baruch Institute for Marine and Coastal Sciences:

The data sets are only as good as the quality assurance and quality control procedures outlined in the Metadata. The user bears all responsibility for its subsequent use in any further analyses or comparisons. No warranty expressed or implied is made regarding the accuracy or utility of any data collected, managed, or disseminated for general or scientific purposes by the Belle W. Baruch Institute for Marine and Coastal Sciences. This disclaimer applies both to individual use of the data and aggregate use with other data. It is strongly required that these data be directly acquired from the Belle W. Baruch Institute for Marine and Coastal Sciences and not indirectly through other sources which may have changed the data in some way. It is strongly recommended that careful attention be paid to the contents of the metadata file associated with these data. Neither the Belle W. Baruch Institute for Marine and Coastal Sciences, nor the National Science Foundation shall be held liable for unprofessional use of the data described and/or contained herein.

### **6.4 Standard Order Process**

## 6.4.2. Digital Form

### 6.4.2.1 Digital Transfer Information

**Format Name:** EXCEL (.XLS) or WORD (.DOC) format as well as .CSV or .TXT (text only) format.

**6.4.2.1.2 Format Version Number:** Microsoft Office Professional 2000

**6.4.2.1.6 File Decompression Technique:** No compression applied

### 6.4.2.2 Digital Transfer Option

#### Computer Contact Information

##### Network Address

**Network Resource Name:** <http://links.baruch.sc.edu/data/>

**6.4.3 Fees:** None

## 6.5 Custom Order Process:

If requesting Non-digital (Paper (hard copy) printout), a fee of \$50 per hour (with a one-hour minimum) plus the cost of supplies will be imposed. As an offline option, CD-ROMs are available at the cost of \$5.00 each. This fee pays for the CD, the creation of the CD, and mailing charges.

## 7. Metadata Reference Information

**7.1 Metadata Date:** 20040917

**7.2 Metadata Review Date:** 20041104

### 7.4 Metadata Contact:

#### 10.2 Contact Organization Primary

**10.1.2 Contact Organization:** Univ. of South Carolina's Baruch Institute

**10.1.1 Contact Person:** Ginger Ogburn-Matthews

**10.3 Contact Position:** Research Data Manager & Analyst

#### 10.4 Contact Address

**10.4.1 Address Type:** Mailing Address

**10.4.2 Address:** USC Baruch Marine Field Lab

**10.4.2 Address:** PO Box 1630

**10.4.3 City:** Georgetown

**10.4.4 State or Province:** South Carolina

**10.4.5 Postal Code:** 29442

**10.4.6 Country:** USA

**10.5 Contact Voice Telephone:** (843) 546-6219

**10.7 Contact Facsimile Telephone:** (843) 546-1632

**10.8 Contact Electronic Mail Address:** ginger@belle.baruch.sc.edu

**10.9 Hours of Service:** 8:30 am to 4:30 pm EST/EDT Mon.- Friday

### 7.5 Metadata Standard Name:

Content Standard for Digital Geospatial Metadata, Part 1: Biological Data Profile

**7.6 Metadata Standard Version:** FGDC-STD\_001.1-1999