Important!

This is the "Long-Term Low Tide Monitoring Data for Fishes, Shrimps, & Crabs in Oyster Landing Creek, North Inlet Estuary, Georgetown, South Carolina: 1983-2003" *original metadata*, created 2/22/2005 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/Nekton_20mm_Low_Tide_Motile.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: Dr. Dennis Allen
8.1 Originator: Ginger Ogburn-Matthews
8.1 Originator: Paul Kenny
8.1 Originator: Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina
8.1 Originator: North Inlet – Winyah Bay National Estuarine Research Reserve (NIW NERR)
8.2 Publication Date: 20040930
8.4 Title: Long-Term Low Tide Monitoring Data for Fishes, Shrimps, & Crabs in Oyster Landing Creek, North Inlet Estuary, Georgetown, South Carolina: 1983-2003.
8.5 Edition: Second
8.6 Geospatial Data Presentation Form: comma delimited digital text data and Microsoft Excel spreadsheets. Documentation is in Microsoft Word and text formats.
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: The 1983 through June 1993 data were collected under the auspices and protocols of the Long-Term Ecological Research (LTER) Program. This database called, NIN10 - LTER Oyster Landing Biweekly Fish Sampling, was originally published on the LTER Program's website from 1993 to 1996. Data collected from June 1993 through 2003 was collected under the auspices of the North Inlet - Winyah Bay National Estuarine Research Reserve's monitoring program.
8.10 Online linkage: www.baruch.sc.edu or 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: The 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

1.2 Description
1.2.1 Abstract:
Seine samples of the nekton community were taken every 2 weeks with a 6-millimeter mesh bag seine at low tide, in an intertidal creek pool in the Oyster Landing basin, a finger creek off Crab Haul Creek. From April 15, 1983 through April 19, 1993, two seine tows were completed during each sampling event. Initially [samples l through 26 (April 15, 1983 through April 16, 1984)], two tows were completed at two sites, OA and OB. For the remainder of the database, both tows were conducted only at the OA site, which was renamed OL. From May 4, 1993 through the end of this database, the sample was reduced to one seine tow. The seine collections were taken to a processing laboratory where the field technicians identified and sorted the nekton to species (when possible). Total number (abundance), length, and weight (biomass) measurements for each species were recorded. Between 1984 and 1988, collection efficiency data were obtained seasonally in order to

determine the efficacy of the regular sampling procedures. On efficiency sample dates, an additional 12 to 14 sweeps (tows) of the low tide pool were made following the standard tows. For the last two efficiency dates, the 15 sweeps were followed with a rotenone treatment to ensure that all individuals present were collected. All of the efficiency data, as well as physical data (water temperature, salinity, dissolved oxygen, etc.) collected prior to each sample event, were included in the database as ancillary data files. Species length/weight and *Callinectes* spp. sex data occur periodically in the early to mid- 1980s raw data sheets and in the early LTER digital files. These data are not available in the final rescued 2005 database or on the web site. However, these data can be attained by accessing: 1) the raw data sheets stored at the Baruch Marine Field Laboratory (BMFL), 2) the scanned images of these sheets which are archived on the OL.LowTideNekton.1983-2003.RAW Archive CD, or 3) the MAINFRAME directory/files on the OL.LowTideNekton.1983-2003.PROCESS CD.

1.2.2 Purpose: The purposes of this long term study were to: 1) determine the abundance, biomass, and length frequency patterns of nekton over seasons, years, and decades, 2) relate the nekton data to coincidentally collected physical/environmental data and determine factors affecting distribution and occurrence, and 3) correlate the nekton data to other biotic data from North Inlet, including zooplankton, epibenthos, benthic macrofauna, and meiofauna.

1.2.3. Supplemental Information:
Most of the 20 years of biweekly Oyster Landing nekton samples have been archived for future use. A representative sample of nekton from each collection date was preserved in 10% buffered formalin. Usually, when organisms survived handling and processing, they were released back into the estuary, downstream of the collecting pool. Archived collection jars from Sample #1 to #254 have been labeled, documented, and placed in the Leonard shed which is located near the Kimbel Lodge at the front gate of Hobcaw Barony. For samples #1 through #167, two sample jars (one for each tow) have been kept as part of the archive collection. Beginning on January 10, 1990, (sample #168) fishes from both tows were placed together in one jar (except sample #180, collected July 5, 1990, has two jars because of the high species richness and abundance of the catch). After May 1993, the one tow catch was preserved in one jar. Several samples were lost due to Hurricane Hugo, but the bulk of the collection remains intact. Samples #255 through #495 are stored in the Archive Sample room at the BMFL as of the publication date of this metadata record. There are a few gaps in sample jar availability, as some samples were temporarily placed in freezers and then later preserved in 10% formalin in batches. Occasionally, the freezer broke or the power went out, and the samples were too decomposed to keep. The archived preserved samples are available to students and researchers for further study.

Allen, D. M.; S. K. Service; M. V. Ogburn-Matthews. 1992. Factors influencing the collection efficiency of estuarine fishes. Transactions of the American Fisheries Society 121: 234-244.

Allen, D.M., D. Edwards, R.J. Feller, S.E. Hutchinson, V. Ogburn-Matthews. 1996. Detection and analysis of unusual events in long-term zooplankton and nekton data sets from North Inlet Estuary, South Carolina, USA. Oceanologica Acta 20:165-175.

1.3 Time Period of Content:
9.3 Range of Dates/Times
9.3.1 Beginning Date: 19830415
9.3.3 Ending Date: 20030331

1.3.1 Currentness Reference: The nekton weight and abundance data were usually collected the same day that the seine haul(s) were taken. Editing and verification of the data took up to 6 months. The final data in this database is current as of the publication date in this metadata record.

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 Hobcaw Barony property is bordered by the Debordieu Colony property and Highway 17 to the north. Winyah Bay borders the Hobcaw Barony peninsula to the south and west. It is located in Georgetown County, South Carolina, USA. The North Inlet Estuary lies east of the uplands of Hobcaw Barony and contains Crab Haul Creek, where the Oyster Landing pier and research site are located.

The Oyster Landing (originally named OA, now called OL) nekton- sampling site is a small intertidal creek pool, which is practically isolated from the rest of the creek during an average low tide. The bottom substrate is primarily muddy with scattered oyster shells. After a heavy rain, a soft, fluffy, flocculent layer settles near and in the deepest portion of the pool. The pool is surrounded by *Spartina alterniflora* along the steepest banks, and live oyster reefs occur on one side of the pool's inflow and outflow (block net sites). From 1980 to about 1993, the pool was 13.7 meters wide and 22.4 meters long, and the maximum depth was 90 centimeters on an average low tide. The upstream block net site was 7.0 meters wide, and its depth averaged 20 centimeters. The downstream blocknet site was 6.2 meters wide and also averaged about 20 centimeters in depth. These measurements were taken in 1988. In September 1989, Hurricane Hugo's surge scoured the creek bed and pool, removing most of the mud and accumulated organic material, and leaving a sandy-hard bottom ("hardpan"). In subsequent years, the mud and detritus accumulated at a high rate. In the mid -1990s through the early 2000s, the pool continuously migrated north, and the southwest side of the pool silted in with pluff mud. This may have been related to the vertical expansion of the oyster reef on the downstream side of the pool and the resulting reduced outflow from the pool during the ebbing tide. In February 1995, a 3-D survey of the pool determined that, due to the accumulation of mud on the southwestern side in particular, the water volume of the pool decreased by half during low tide conditions. This condition persists at the time of this metadata preparation (2004).

The water quality of the Oyster Landing pool is influenced drastically by external conditions: Salinity ranges from zero parts per thousand during heavy rains to greater than 35 parts per million during droughts, extremely high tides, or strong easterly winds. Water temperatures range from 3 degrees Celsius in winter to 38 degrees Celsius during the summer months. The headwaters of this tidal creek originate from a nearby surrounding forest (approximately 1000 meters from the OL pool). During drought conditions, the creek beds in the forest dry up, thereby preventing freshwater input from the forest.

The OB sampling site of the LTER Oyster Landing project is about 100 meters downstream from the regular OL (OA) sampling site. This site was sampled only during the first year of the study (samples 1-26, April 1983 through April 1984). The OB pool occurs slightly downstream of the junction of Oyster Landing creek and the manmade drainage creek (causeway canal). This pool is not nearly as isolated as the OL tidal pool during low tide. The dimensions of the pool are about 15 meters by 20 meters and approximately 1.3 meters in depth at low tide. The inflow and outflow areas of this pool have average depths of about 60 cm during a good low tide. An oyster bar lines the northern bank while very soft mud occurs on the opposite shore. A mosaic of soft and hard mud intermixed with oyster shells dominates the pool bottom. *Spartina alterniflora* is the dominant plant surrounding the OB site.

1.5.2 Bounding 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

Theme_Keyword_Thesaurus: GCMD Parameter keywords
Theme_Keyword: EARTH SCIENCE > BIOSPHERE > ZOOLOGY > ARTHROPODS **Theme_Keyword:** EARTH SCIENCE > BIOSPHERE > AQUATIC HABITAT > BENTHIC HABITAT **Theme_Keyword:** EARTH SCIENCE > BIOSPHERE > AQUATIC HABITAT > ESTUARINE HABITAT **Theme_Keyword:** EARTH SCIENCE > BIOSPHERE > ZOOLOGY > FISH
Theme_Keyword: EARTH SCIENCE > BIOSPHERE > ZOOLOGY > INVERTEBRATES
Theme_Keyword: EARTH SCIENCE > BIOSPHERE > WETLANDS > MARSHES
Theme_Keyword: ABUNDANCE
Theme_Keyword: COASTAL
Theme_Keyword: ECOSYSTEMS
Theme_Keyword: ESTUARINE
Theme_Keyword: ESTUARY
Theme_Keyword: STANDARD LENGTH
Theme_Keyword: LIFE STAGE
Theme_Keyword: LTER
Theme_Keyword: MARINE INVERTEBRATES
Theme_Keyword: MARINE VERTEBRATES
Theme_Keyword: FISH BIOMASS
Theme_Keyword: NIN010
Theme_Keyword: NORTH INLET
Theme_Keyword: RECRUITMENT
Theme_Keyword: SALT MARSH
Theme_Keyword: SOUTH CAROLINA
Theme_Keyword: SPECIES ABUNDANCE
Theme_Keyword: SPECIES COMPOSITION
Theme_Keyword: ESTUARINE INVERTEBRATES
Theme_Keyword: ESTUARINE VERTEBRATES

1.6.2 Place

1.6.2.1 Place Keyword Thesaurus: None
1.6.2.2 Place Keyword: NORTH AMERICA
1.6.2.2 Place Keyword: NORTH INLET ESTUARY
1.6.2.2 Place Keyword: SOUTH CAROLINA
1.6.2.2 Place Keyword: SC
1.6.2.2 Place Keyword: OYSTER LANDING
1.6.2.2 Place Keyword: EAST COAST
1.6.2.2 Place Keyword: CRAB HAUL CREEK
1.6.2.2 Place Keyword: GEORGETOWN COUNTY
1.6.2.2 Place Keyword: ATLANTIC COAST
1.6.2.2 Place Keyword: HOBCAW BARONY

1.6.3 Stratum

1.6.3.1 Stratum Keyword Thesaurus: None
1.6.3.2 Stratum Keyword: BENTHIC
1.6.3.2 Stratum Keyword: WATER COLUMN
1.6.3.2 Stratum Keyword: INTERTIDAL

1.6.4 Temporal

1.6.4.1 Temporal Keyword Thesaurus: None
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: 1993
1.6.4.2 Temporal Keyword: 1994
1.6.4.2 Temporal Keyword: 1995
1.6.4.2 Temporal Keyword: 1996
1.6.4.2 Temporal Keyword: 1997
1.6.4.2 Temporal Keyword: 1998
1.6.4.2 Temporal Keyword: 1999
1.6.4.2 Temporal Keyword: 2000
1.6.4.2 Temporal Keyword: 2001
1.6.4.2 Temporal Keyword: 2002
1.6.4.2 Temporal Keyword: 2003
1.6.4.2 Temporal Keyword: 1980s
1.6.4.2 Temporal Keyword: 1990s
1.6.4.2 Temporal Keyword: 2000s
1.6.4.2 Temporal Keyword: Biweekly

99.1.6.5 Taxonomy

99.1.6 Keywords/Taxon
99.1.6.1 Taxonomic Keyword Thesaurus: NONE
99.1.6.1 Taxonomic Keywords: CRAB
99.1.6.1 Taxonomic Keywords: CRUSTACEAN
99.1.6.1 Taxonomic Keywords: INVERTEBRATES
99.1.6.1 Taxonomic Keywords: VERTEBRATES
99.1.6.1 Taxonomic Keywords: FISH
99.1.6.1 Taxonomic Keywords: NEKTON
99.1.6.1 Taxonomic Keywords: SHRIMP
99.1.6.1 Taxonomic Keywords: MULTIPLE SPECIES
99.1.6.1 Taxonomic Keywords: FISH COMMUNITY
99.1.6.1 Taxonomic Keywords: SHRIMP COMMUNITY
99.1.6.1 Taxonomic Keywords: CRAB COMMUNITY

99.1.6.6 Taxonomic Classification

Taxon Rank Name: Kingdom
Taxon Rank Value: Animalia

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 University of South Carolina's Belle W. Baruch Institute for Marine and Coastal Sciences, the North Inlet – Winyah Bay NERR site, and Grantors (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 Grantors are not responsible for the use and/or misuse of data from this database. See the section on Distribution Liability for more information.

According to the Ocean and Coastal Resource Management Data Dissemination Policy for the NERRS System-wide Monitoring Program:

> NOAA/ERD retains the right to analyze, synthesize and publish summaries of the NERRS System-wide Monitoring Program data. The PI retains the right to be fully credited for having collected and processed the data. Following academic courtesy standards, the PI and NERR site where the data were collected will be contacted and fully acknowledged in any subsequent publications in which any part of the data are used. Manuscripts resulting from the NOAA/OCRM supported research that are produced for publication in open literature, including refereed scientific journals, will acknowledge that the research was conducted under an award from the Estuarine Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration.

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:	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 Laboratory
10.4.2 Address:	P.O. 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 Mon.- Friday

1.11 Data Set Credit:

The National Science Foundation provided funding, under grants DEB 8012165 and BSR 8514326, to the North Inlet Long-Term Ecological Research (LTER) Program, Belle W. Baruch Institute, University of South Carolina, with Dr. F. J. Vernberg, as project director. From 1993 through 2003, data collection was supported by the University of South Carolina (USC) and the National Oceanic & Atmospheric Administration (NOAA) through the Office of Ocean and Coastal Resource Management, Estuarine Reserves Division (initial award number NA270R0322-01 October 15, 1992). The North Inlet – Winyah Bay National Estuarine Research Reserve, overseen by the USC's Belle W. Baruch Institute for Marine and Coastal Sciences, is in charge of gathering, managing, and distributing these data for research, education, and coastal zone management purposes. Several researchers and data managers, with many technicians and volunteers contributed to the dataset.

1.13 Native Data Set Environment

Original data files retrieved from the University of South Carolina's mainframe computer are in ASCII text format, while the SAS programs are in both SAS language and text. The original files up to 1992 have been imported into spreadsheet style formatting and merged with data from 1992-2003 into one large Microsoft (MS) Excel spreadsheet. The electronic Fish Measuring Board files (beginning in January 1991) are ASCII text formatted, but a SAS program is required to read them so that the length data are read into their proper columns. There are no spaces between the 100 lengths. Final data were graphed in Sigma Plot version 8.02. The final rescued data for publication, archival and dissemination are in MS Excel (XLS) version 2000 and comma separated value (CSV) formats, programs are in text (TXT) and Statistical Analysis System (SAS) language Release 8.02 and SAS Windows Version 5.0.2195, documentation files are in text (TXT) and MS Word (DOC) version 2000 format, and graphics are all JPG images.

1.14 Cross Reference:

8. Citation Information

8.1 Originator: Dr. Dennis Allen

8.1 Originator: Virginia Ogburn-Matthews

8.1 Originator: Paul Kenny

8.1 Originator: Tracy Buck

8.1 Originator: Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina

8.1 Originator: North Inlet – Winyah Bay National Estuarine Research Reserve (NIW NERR)

8.2 Publication Date: 20050630

8.4 Title: Long-Term High Tide Marsh Enclosure Data for Fishes, Shrimps, & Crabs in Oyster Landing Basin, North Inlet Estuary, Georgetown, South Carolina: 1994-2004.

8.6 Geospatial Data Presentation Form: comma delimited digital text data and Microsoft Excel spreadsheets. Documentation is in Microsoft Word and text formats.

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

8.7 Series Information

8.7.1 Series Name: Baruch Institute's Oyster Landing Nekton Long-Term Monitoring Database for the North Inlet Estuary, South Carolina

8.7.2 Issue Identification: 1994 - 2004

8.9 Other Citation Details: Data were collected under the auspices of the North Inlet - Winyah Bay National Estuarine Research Reserve's monitoring program.

8.10 Online linkage: http://links.baruch.sc.edu/data/OLHT.Nekton/

1.14 Cross Reference:

8. Citation Information

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

8.1 Originator: North Inlet-Winyah Bay (NIW) National Estuarine Research Reserve

8.2 Publication Date: 20030328

8.4 Title: North Inlet-Winyah Bay National Estuarine Research Reserve's (NERR) Estuarine Surface Water Nutrient, Suspended Sediment, and Chlorophyll a Data for the North Inlet and Winyah Bay Estuaries, Georgetown, South Carolina: 1993-2001

8.5 Edition: Second Edition

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

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: June 30, 1993 - December 31, 2001

8.8 Publication Information:

8.8.1 Publication Place: 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: These data were collected under the auspices and protocols of the North Inlet-Winyah Bay NERR. The National Estuarine Research Reserve's (NERR's) System-Wide Monitoring Program (SWMP) began their own protocols in the year 2002.

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: North Inlet-Winyah Bay (NIW) National Estuarine Research Reserve

8.2 Publication Date: 20031121

8.4 Title: North Inlet-Winyah Bay National Estuarine Research Reserve's (NERR) Estuarine Water Quality Data for the North Inlet and Winyah Bay Estuaries, Georgetown, South Carolina: 1993-2002

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

8.7 Series Information

8.7.1 Series Name: Baruch Institute's Water Quality Long-Term Monitoring Database for the North Inlet and Winyah Bay Estuaries, South Carolina

8.7.2 Issue Identification: October 25, 1993 - December 31, 2002

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: These data were collected under the auspices and protocols of the North Inlet-Winyah Bay NERR. The National Estuarine Research Reserve's (NERR's) System-Wide Monitoring Program (SWMP) protocols took effect in 1995. This database and the associated metadata are the Baruch Institute's versions, are independent of the NERR/CDMO versions, and follow Baruch's quality control and assurance procedures in addition to NERR SWMP protocols.

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

8.11 Larger Work Citation:

8. Citation Information:
8.1 Originator: National Oceanic and Atmospheric Administration (NOAA)
8.1 Originator: Office of Ocean and Coastal Resource Management (OCRM)
8.1 Originator: National Estuarine Research Reserve System (NERR)
8.2 Publication Date: 2003
8.4 Title: NERR System-Wide Monitoring Program (SWMP)
8.6 Geospatial Data Presentation Form: tab-delimited text (spreadsheet)
8.8 Publication Information:
8.8.1 Publication Place: Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina
8.8.2 Publisher: NERR Centralized Data Management Office
8.10 Online Linkage: http://cdmo.baruch.sc.edu/

1.14 Cross Reference:

8. Citation Information:
8.1 Originator: Belle W. Baruch Institute for Marine and Coastal Sciences
8.1 Originator: North Inlet - Winyah Bay (NIW) National Estuarine Research Reserve
8.1 Originator: D. Allen
8.1 Originator: A. Lohrer
8.2 Publication Date: 20021111
8.4 Title: North Inlet - Winyah Bay (NIW) National Estuarine Research Reserve Meteorological Data, North Inlet Estuary, Georgetown, South Carolina: 2001-2003.
8.6 Geospatial Data Presentation Form: MS Access database and tab delimited text (spreadsheet)
8.8 Publication Information:
8.8.1 Publication Place: Georgetown, South Carolina
8.8.2 Publisher: NERR Centralized Data Management Office
8.10 Online Linkage: http://cdmo.baruch.sc.edu/
8.11 Larger Work Citation:

8. Citation Information:
8.1 Originator: National Oceanic and Atmospheric Administration (NOAA)
8.1 Originator: Office of Ocean and Coastal Resource Management (OCRM)
8.1 Originator: National Estuarine Research Reserve System (NERR)
8.2 Publication Date: 2002
8.4 Title: NERR System-Wide Monitoring Program (SWMP)
8.6 Geospatial Data Presentation Form: tab delimited text (spreadsheet)
8.8 Publication Information:
8.8.1 Publication Place: Georgetown, South Carolina
8.8.2 Publisher: NERR Centralized Data Management Office
8.10 Online Linkage: http://cdmo.baruch.sc.edu/

1.14 Cross Reference:

8. Citation Information:
8.1 Originator: Belle W. Baruch Institute for Marine Biology and Coastal Research
8.1 Originator: North Inlet - Winyah Bay (NIW) National Estuarine Research Reserve
8.1 Originator: D. Allen
8.1 Originator: A. Lohrer
8.2 Publication Date: Unpublished material
8.4 Title: North Inlet - Winyah Bay (NIW) National Estuarine Research Reserve Meteorological Data, North Inlet Estuary, Georgetown, South Carolina: 2000.
8.6 Geospatial Data Presentation Form: MS Access database and tab delimited text (spreadsheet)
8.11 Larger Work Citation:

8. Citation Information:
8.1 Originator: National Oceanic and Atmospheric Administration (NOAA)
8.1 Originator: Office of Ocean and Coastal Resource Management (OCRM)
8.1 Originator: National Estuarine Research Reserve System (NERR)
8.2 Publication Date: 2001

8.4 Title: NERR System-Wide Monitoring Program (SWMP)
8.6 Geospatial Data Presentation Form: tab delimited text (spreadsheet)
8.8 Publication Information:
8.8.1 Publication Place: Georgetown, South Carolina
8.8.2 Publisher: NERR Centralized Data Management Office URL: http://cdmo.baruch.sc.edu/

1.14 Cross Reference:
8. Citation Information
8.1 Originator: Belle W. Baruch Institute of Coastal Ecology and Forest Science, Clemson University
8.1 Originator: National Weather Service
8.1 Originator: T. Williams
8.1 Originator: M. Gibson
8.2 Publication Date: unpublished material
8.4 Title: National Weather Service Data for Hobcaw Barony
8.1 Geospatial Data Presentation Form: hardcopy handwritten data sheets

1.14 Cross Reference:
9. Citation Information
8.1 Originator: Belle W. Baruch Institute for Marine Biology and Coastal Research
8.1 Originator: North Inlet – Winyah Bay (NIW) National Estuarine Research Reserve
8.1 Originator: D. Allen
8.1 Originator: E. Chipouras
8.2 Publication Date: 20020701
8.4 Title: North Inlet – Winyah Bay (NIW) National Estuarine Research Reserve Meteorological Data, North Inlet Estuary, Georgetown, South Carolina: 1997 – 1999.
8.6 Geospatial Data Presentation Form: comma delimited text 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
8.10 Online Linkage: http://links.baruch.sc.edu/data/
8.11 Larger Work Citation:
8. Citation Information:
8.1 Originator: National Oceanic and Atmospheric Administration (NOAA)
8.1 Originator: Office of Ocean and Coastal Resource Management (OCRM)
8.1 Originator: National Estuarine Research Reserve System (NERR)
8.2 Publication Date: 2002
8.4 Title: NERR System-Wide Monitoring Program (SWMP)
8.6 Geospatial Data Presentation Form: tab delimited text (spreadsheet)
8.8 Publication Information:
8.8.1 Publication Place: Georgetown, South Carolina
8.8.2 Publisher: NERR Centralized Data Management Office URL: http://cdmo.baruch.sc.edu/

1.14 Cross Reference:
8. Citation Information
8.1 Originator: Dr. Harold Stevenson
8.1 Originator: Dr.Tom Chrzanowski
8.1 Originator: Belle W. Baruch Institute for Marine and Coastal Sciences
8.2 Publication Date: 20030715
8.4 Title: The Dynamics of the Microbial Population as Measured by the Quantification of adenosine 5′-triphosphate (ATP) at Three Sampling Locations Within the North Inlet Estuary, Georgetown, SC: 1981-1985.
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: This is just one database from the larger North Inlet Ecosystem LTER monitoring program; see other North Inlet LTER datasets listed in Cross Reference below.
8.10 Online linkage: http://links.baruch.sc.edu/data/

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 Dataset called " 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" - see below) 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
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: Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina
8.1 Originator: North Inlet – Winyah Bay National Estuarine Research Reserve (NIW NERR)
8.1 Originator: Belle W. Baruch Institute of Coastal Ecology and Forest Science, Clemson University
8.2 Publication Date: 200301
8.4 Title: Long-Term Rainfall Monitoring Database (RAINDAZE) for Hobcaw Barony and the North Inlet Estuary, Georgetown, South Carolina: 1978 – 2001.
8.5 Edition: First Edition

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

8.7 Series Information

8.7.1 Series Name: Baruch Institute's Meteorological Database for the North Inlet Estuary, South Carolina

8.7.2 Issue Identification: April 1, 1978 – December 31, 2001

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: The 1997 through 2001 data were collected under the auspices and protocols of the National Estuarine Research Reserve's (NERR's) System-Wide Monitoring Program (SWMP), but the data are not considered official SWMP data until the year 2000. This metadata document was produced by Baruch's Data Managers, and is independent of the NERR/CDMO version of the data and metadata.

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*

8.5 Edition: First

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*

8.5 Edition: First

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*

8.5 Edition: First

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: Second 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: 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
8.5 Edition: First Edition
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
8.5 Edition: First Edition
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
8.5 Edition: First Edition
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 µm)
8.5 Edition: First Edition
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
8.5 Edition: First Edition
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
8.5 Edition: First Edition
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
8.5 Edition: First Edition
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: 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: Data Set Code NIN013
8.10 Online linkage: http://links.baruch.sc.edu/data/

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
8.5 Edition: First Edition
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN014

1.15 Analytical_Tool:
1.15.1 Analytical_Tool_Description:

Program Name: OLSEINE SASEDIT A1
Function: abundance and biomass validation program written in July 1989
Infiled Filename: seine1.dat and seine2.dat - includes species abundance and biomass data.
SAS programs can be found in SAS language and in text form on the OL.LowTideNekton.1983-2003.PROCESS CD and on Baruch's Data Archive Server, which is overseen by Baruch's Data Manager. See the Original.Process/PROGRAMS/EasyEntryValidation directory.

Fish Easy Entry Programs

Program Names: Easy Help File, EasyEd.exe, and Easy.Exe files are the main application programs needed for the screen programs below. The programs below were written by the Baruch Institute's data management staff in order to enter, edit, and otherwise manage the long-term nekton collection data.

Program Names: FISH.FLB, FISH.EAS, FISH2.EAS, FISH3.EAS, FISH.LST, FISH2.LST, FISH3.LST, FISHCTRL.EAS
Function: All handwritten abundance and biomass data from the EasyEntry Data Sheets named, "Oyster Landing Seine Study (LTER)" from the 151 -194 samples (May 4, 1989 through January 20, 1991) were entered and managed using these Easy Entry programs. There were four data entry screens, and data were entered by sample or date and replicate.
Infiled and Output Filename: Infile filename was Seine2.dat, and it was appended each time. No separate output file existed.
Easy Entry Usage Documentation: See the " **OYSTER LANDING SEINE ABUNDANCE/BIOMASS DATA ENTRY AND EDITING PROTOCOL**" Documentation in Appendix I of the hardcopy version of this metadata, or click the link for web access.

Program Names: FISH.FLB, LENGTHS.EAS, LENGTHS.LST
Function: In July 1989, these Easy Entry programs were created to enter the nekton length data. See process description below for more information.
Infiled and Output Filename: No infile file was used; each length file was created and named separately. Easy Entry length data file names begin with "Length", followed by a number or letter, with .dat as the suffix (e.g. LengthA.dat or Length2.dat)

Easy Entry Usage Documentation: See the " **Oyster Landing Length DATA ENTRY AND EDITING PROTOCOL**" Documentation in Appendix II of the hardcopy version of this metadata, or click the link for web access.

Program Names: FMB.EAS, FMB.FLB, FMB.LST
Function: To enter nekton length, abundance, and biomass data when the FMB was not working or edit fish data that were collected using the Fish Measuring Board, use this EasyEntry full screen data entry program, which emulates the data entry information.
Infiled and Output filename: No infile file was used if the FMB was not working; each nekton sample file was created and named separately. The names for these data files were created by the first two letters of the sampling site (OL), followed by the sample #, and ending with the suffix .dat, .add, or .agn (e.g. OL200.dat). If there was a FMB file in existence, it was named using the same naming convention described above.
Easy Entry Usage Documentation: See the " **Fish Measuring Board (FMB) DATA ENTRY AND EDITING PROTOCOL**" Documentation in Appendix III of the hardcopy version of this metadata, or click the link for web access.

These ***Easy Entry*** programs can be found on the OL.LowTideNekton.1983-2003 PROCESS CD and on Baruch's Data Archive Server, which is overseen by Baruch's Data Manager. See the Original.Process/PROGRAMS/EasyEntryPrograms Directory. These programs only run in the DOS mode or window.

Program Name: merge.1-193.sas
Function: SAS program that merges all final edited OL nekton abundance, biomass, length, and efficiency data (3 files listed below) prior to electronic Fish Measuring Board (FMB) use (samples 1-193).
Infiled Filename: seine1_2.dat - includes species abundance and biomass data.
Infiled Filename: all.lengths.dat - includes the length files which are entered by species code
Infiled Filename: efficiency.edited - includes all species length data for efficiency samples collected on samples
27, 32, 37, 42, 48, 56, 63, 67, 74, 105, and 123
SAS programs can be found in SAS language and in text form on the OL.LowTideNekton.1983-2003 PROCESS CD and on Baruch's Data Archive Server, which is overseen by Baruch's Data Manager. See the Original.Process/MERGEOLD2NEW/Programs Directory. As of the year 2004, the computer is a 2 GHz machine running Windows 2000 Professional with SAS Release 8.02 and SAS Windows Version 5.0.2195.

Program Name: fmb.sasout.check
Program Lineage: Original=fmb.input by Scott Chapel, 1992; modified to "fmb.inout" (1993), then to "fmb.inout.Original.modified" (2003) by Ginger Ogburn Matthews.
Function: This program reads in FMB files that contain the physical, abundance, biomass, and length data. Removes all physical data and outputs the variables so that the FMB data file can be error-checked for data format compatibility into SAS.
Infiled Filename: OL###.dat or OL###.txt, etc.
Input Statement:

```
INPUT DATE MMDDYY6. STATION $ 7-8 SAMPLE 9-12 TIME 13-16
      REPLICAT 17-18 ATEMP 19-20 WTEMP 21-22 SAL 23-24 VIZ 25 -
      26 WINDIR $ 27- 29 WVEL 30- 31 TIDLVL 32-33 WEATHER $ 34-
      35 REDOX 36-37 DO 38- 41 ID $ 42-48 SPECIES 49 -51 LTYPE $ 52-
      53 @54 (LEN1-LEN100) (3.) SUBSAMWT 354-359 TOTWT 360-367
      TOTNUM 368-373;
```

Output Filename: This output file is named with the following naming convention: OLSAS.sample # (olsas.##) in the following formats:

DATE (MMDDYY10.)
STATION $
SAMPLE
REPLICAT
SPECIES
NAME LEN1-
LEN100
TOTWT
TOTNUM

Program Name: fmb.Original.inout
Function: Does the same thing as the program above, "fmb.sasout.check", but formats the output differently so that the statistical analysis programs that were created for the olsas.## files will run on the outputted data properly (all data must be compatible in the olsas.samp#s output file).
Infiled Filename: OL###.dat or OL###.txt, etc.

Input Statement: same as above
Output Filename: This output file is named with the following naming convention: OLSAS.sample #.txt (olsas.##.txt) in the following formats:
FILE '../FinalData.Work/SAS.fmbdata/olsas.406-471.txt';
PUT @**1** DATE YYMMDD6. @**8** SAMPLE @**12** REPLICAT @**15** SPECIES @**19** TOTWT **8.1**
@**29** TOTNUM @ **36** (LEN1-LEN100) (**3.**);

99.1.15.2 Tool Access Information:

Tool Access Instructions: SAS programs can be found in SAS language and in text form on the OL.LowTideNekton.1983-2003 PROCESS CD and on Baruch's Data Archive Server, which is overseen by Baruch's Data Manager. See the Original.Process/PROGRAMS/EasyEntryValidation/Programs Directory.

Tool Computer and Operating System: As of the year 2004, the computer is a 2 GHz machine running Windows 2000 Professional with SAS Release 8.02 and SAS Windows Version 5.0.2195.

2. Data Quality Information

2.1 Attribute Accuracy

2.1.1 Attribute Accuracy Report:

Efficiency tests for the pool seining method found that the efficiency of the nekton collections changed seasonally and depended on the species of interest (*Fundulus* spp. swam to oyster reefs in shallows, mullet jumped over seine, and many benthic species burrowed in mud) and life stage (size of individuals). Efficiency was also influenced by the abundance of total nekton in the pool (increasing with more fish in the pool). See the efficiency publication cited in Supplemental Information. Even though efficiency fluctuated with these factors, samples in the time series were directly comparable to each other because the gear, protocols, and techniques used were very consistent from date-to-date over the 20 years.

Total catch biomass measurements using the large hanging scale were accurate to plus or minus 15 grams, and the top loading electronic balance, which was used for weighing each species, was accurate to plus or minus 0.1gram. In the mid- to late-1980's some samples were not measured and weighed the same day they were collected and/or sorted into species groups. These samples were frozen one to three days before being thawed and processed. No length or weight comparisons between fresh collected and frozen samples have been made, but it is reasonable to estimate that the loss of weight from freezer dehydration was no more than 5%.

Standard length (SL) was measured for fishes, carapace width (CW) for crabs, carapace length (CL) for shrimps, and wing width (WW) for skates and rays. Before the Fish Measuring Board (FMB) came into use, individuals measured nekton using a meter stick that was divided into millimeter increments. When the FMB came into use, the sample processor placed the nekton on the board's calibrated line (in millimeter increments) and touched a magnet to the line to input the length. Statistical analysis demonstrated no statistical differences between the two methods of length measurement. The variation among the measurements taken by the different technicians was estimated to be about 2 millimeters.

The accuracy of species identification was very high. Most fishes, shrimps, and crabs were identified to species at all times. *Alpheus* spp. and *Callinectes* spp. were identified only to genus. Due to the difficulties of juvenile life stage identification, the following young-of-the-year were also only identified to genus: *Astroscopus* sp., *Menticirrhus* sp., *Urophycis* sp., and if less than 30 mm SL, *Eucinostomus* spp. Rarely or occasionally *Alosa*, *Anchoa*, *Paralichthys*, *Prionotus*, and *Syngnathus* young-of-the-year were only identified to genus. See the **Entity and Attribute Information** sections for more detailed information about species names.

When the genus name and "sp." (to designate the species name) were used, no more than one species of a genus occurred in each catch. When more than one species occurred, "spp." was used. Typically, only two or three species made up the "spp." category. More information on each category is included below:

Alpheus sp. = primarily *Alpheus heterochaelis*, a few may be *A. normanni*
Callinectes spp. = primarily composed of *Callinectes sapidus*; less commonly *C. similis* and rarely *C. ornatus*.
Astroscopus spp. = *Astroscopus guttatus* and *A. y-graecum*
Menticirrhus sp. = *Menticirrhus americanus* or *M.*
saxatilis Urophycis sp. = *Urophycis floridana* or *U. regia*
Eucinostomus spp. = when greater than 35 mm SL, primarily composed of *Eucinostomus argenteus*, less commonly *E. lefroyi*
Less than 35 mm SL cannot be distinquished apart
Alosa spp. = *Alosa aestivalis, A. sapidissima, A. pseudoharengus*
Anchoa sp. = *Anchoa mitchilli* or *A. hepsetus*
Paralichthys spp. = *Paralichthys dentatus* and/or *P. lethostigma*; rarely *P. albigutta*
Syngnathus sp. = *Syngnathus floridae*, or *S. fuscus*, or *S. louisianae*
Symphurus plagiusa = Primarily *Symphurus plagiusa*, less commonly (2% in North Carolina) *S. civitatium*
Prionotus spp. = *Prionotus carolinus, P. evolans, P. scitulus,* and *P. tribulus*

2.1.2 Quantitative Attribute Accuracy Assessment

2.1.2 .1 Attribute Accuracy Value

Abundance	± 1 whole numbers (number of individuals)
Biomass for each species	± 0.1 grams
	± 15 grams (if large hanging balance was used)
	± 15 grams ± 5% (if large hanging balance was used and the sample had been frozen)
Length	± 2 millimeters Standard Length

Parameter	Number of Decimal Places
ABUNDANCE	0 (reported in number of individuals)
BIOMASS	1 (reported in grams of wet weight)
LENGTH	0 (reported in millimeters)

2.1.2.2 Attribute Accuracy Explanation

Abundance: Counts are expressed as number of individuals; parts of animals were added to total weight of species but not counted as a portion of a whole organism.

Biomass: If the top loading electronic balance was used, the biomass value is accurate to the nearest 0.1 gram. This scale is calibrated yearly. If the spring loaded hanging scale was used, this scale is only accurate to ± 15 grams (based on calibration study of scales on June 2, 1998). No length or weight comparisons between fresh collected samples versus frozen were made, but it was estimated that the loss of weight from freezer dehydration was no more than 5%. Therefore, if the hanging scale was used and the sample was frozen, the accuracy of the biomass value was plus or minus 15 grams plus 5% of the weight value. All values are reported to one decimal place for ease of use.

Length: The accuracy of this measurement is estimated to be about 2 millimeters. Error within this measurement is attributed to variation between technicians.

2.2 Logical Consistency Report: not applicable

2.3 Completeness Report: Sampling Irregularities, Additional Sampling, Missing Data, and Anomalous Data:

Site selection and method changes:

For the first year of sampling (15 April 1983 to 16 April 1984) at Oyster Landing (samples 1-26), two sites, OA and OB, were sampled biweekly during low tide. The two seine hauls taken at each site were combined and processed together as one sample. Block nets, which were later used to isolate organisms in the pools, were not used at OA or OB prior to seining. On May 1, 1984 (sample 27), the OB site was dropped, block nets were implemented at the OA site, and each of the two seine hauls were processed separately. At this time, the OA site was renamed OL, in order to delineate the collection protocol change. No individual species total weights were recorded before April 2, 1984 (sample 25); however, individual species' abundances, total catch numbers, and total collection weight were recorded. For samples 25 through sample 495, all collection and species parameters were measured and recorded, except as noted in the **Missing Data Report** below.

Collection Processing changes:

Over the course of the 18-year project, changes occurred in the way in which the length data were managed, and subsequently, how the final length data compares over the years. The length data for April 15, 1983 through April 19, 1993 (samples 1-190) contain lengths for individuals collected in two sweeps of the bag seine (known as replicates 1 and 2). Occasionally, subsampling of the replicates occurred (see below for specific dates). On May 4, 1993, Replicate 2 (OLII) seine haul was terminated, so catch data for this time frame are based on only one sweep of the bag seine (statistics showed that replicate one's species abundance, biomass, and lengths were representative of the entire catch). In addition, on that date a new North Inlet-Winyah Bay-NERR subsampling protocol began with OLI; only four 5- gallon buckets were processed and the rest of the catch was released in the field. The number of 5-gallon buckets (or parts of buckets) that were released was noted in the field notebook or on the raw data process sheets. Beginning around May 1, 1996, other subsampling techniques were used for processing the catch. These included: 1) sorting out the larger nekton and only sorting as much as ½ half of the smaller organisms (young-of-the-year transient and smaller resident species) and 2) sorting only two or three 5- gallon buckets instead of four and calculating the weight released. See the hardcopy data sheets or their scanned image in the archived digital files to determine the subsampling technique used for each sample date.

Length Data Management changes:
From April 1983 through December of 1990, all size (age) classes of a single species were sorted and measured separately, up to 100 length measurements per size class in each sample and replicate. For data management purposes only 100 lengths for each species were entered into the database. Therefore, the number of lengths entered from each size class was altered to match the percentage that each size class comprised of the total species' catch number. Beginning in 1991, when the FMB was used, the numbers of lengths recorded for each species' size class was no longer edited to match the percent composition it made up of each species' total catch. Therefore, the number of lengths for each species size class in the database before and after 1991 were not handled the same way and cannot be compared directly. Before length distribution comparisons are undertaken, the 1991-2003 percentages of each size class should be calculated.

Efficiency Study:
The purpose of this study was to determine how the regular two seine samples represented the entire fish, shrimp, and crab populations occurring in the Oyster Landing pool during different seasons of the year. During sample #27, an additional 12 seine hauls were made after the first two hauls (for a total of 14 seine collections); at two to three month intervals for the next 2 years, an additional 13 seine hauls were made for a total of 15 seine hauls. To evaluate this method of determining catch efficiency, a dose of rotenone was applied after the 15th seine haul during sample #105 and #123. This collection was called Replicate 16 in the database. The fishes, shrimps, and crabs collected during this two-year study were processed in the laboratory identically to the regular two seine haul collections. The following table gives the sample number and date upon which efficiency samplings were undertaken:

Sample No.	Date
27	1 MAY 1984
32	12 JUL 1984
37	24 SEP 1984
42	7 DEC 1984
48	7 MAR 1985
56	1 JUL 1985
63	14 OCT 1985
67	10 DEC 1985
74	25 MAR 1986
105	24 JUN 1987 (Rotenone)
123	16 MAR 1988 (Rotenone)

Missing Data:
Missing data are represented by a period (.) in all data files associated with this nekton database.

No replicate 2 exists for samples 1 through 26 (April 15, 1983 through April 16, 1984) and for samples 5/4/1993 (sample 250) through 3/31/2003 (sample 495); see methods section.

Sample 41 November 21, 1984: Sampling date was missed due to severe high tides that occurred over several days. There are no abundance, biomass, species, or length data for that sample date, for either replicate.

Sample 45 January 21, 1985: Due to severe cold, there were no nekton collected in either replicate seine sample. There is no species or length information for that sample date. Total catch numbers and biomass values are zero for both replicates.

Missing Abundance and Biomass Data:
No individual species' total weights were recorded until April 2, 1984 (sample 25)
(However, individual species' abundances were recorded. Also, total sample abundances and weights were recorded and are available in the Data Rescue File called "CatchTotalWtAbunByDate".)

Sample 27 May 1, 1984 Replicate 1: Missing *Callinectes* spp. total weight value
Sample 28 May 14, 1984 Replicate 1: Missing *Callinectes* spp. total weight value
Sample 31 June 28, 1984 Replicate 2: Missing *Farfantepenaeus duorarum* total weight value
Sample 54 June 2, 1985 Replicate 2: Missing *Litopenaeus setiferus* total weight value.
Sample 54 June 2, 1985 Replicate 2: Missing *Farfantepenaeus duorarum* total weight value.
Sample 58 July 31, 1985 Replicate 1: Missing *Callinectes* spp. total weight value.
Sample 63 October 14, 1985 Replicate 1: Missing *Farfantepenaeus aztecus* total weight value
Sample 122 March 2, 1988 Replicate 1: Missing *Lagodon rhomboides* total weight value
Sample 131 July 13, 1988 Replicate 2: Missing *Menidia beryllina* total weight value
Sample 297 March 29, 1995 Replicate 1: Missing *Fundulus majalis* total weight value

Missing Length Data:

Date	Sample	Replicate	Species
5/12/1983	3	1	Caranx sp.
11/21/1984	41	1 & 2	No collections; no species data
1/21/1985	45	1 & 2	Zero Catch; no species data
5/2/1985	52	2	Penaeus spp.
6/17/1985	55	2	Fundulus luciae
5/30/1988	128	2	Penaeus spp.
9/23/1988	136	2	Mugil cephalus
9/23/1988	136	2	Litopenaeus setiferus
9/23/1988	136	2	Leiostomus xanthurus
9/23/1988	136	2	Mugil curema
9/23/1988	136	2	Brevoortia tyrannus
9/23/1988	136	2	Fundulus heteroclitus
9/23/1988	136	2	Fundulus majalis
9/23/1988	136	2	Dorosoma cepedianum
9/23/1988	136	2	Dorosoma petenense
9/23/1988	136	2	Eucinostomus spp.
6/2/1989	153	2	Farfantepenaeus aztecus
6/2/1989	153	2	Mugil cephalus
6/2/1989	153	2	Mugil curema
6/2/1989	153	2	Brevoortia tyrannus
6/2/1989	153	2	Fundulus heteroclitus
6/2/1989	153	2	Caranx hippos
6/2/1989	153	2	Fundulus majalis
6/2/1989	153	2	Paralichthys dentatus
6/2/1989	153	2	Citharichthys spilopterus
6/2/1989	153	2	Lagodon rhomboides
6/2/1989	153	2	Paralichthys lethostigma
6/2/1989	153	2	Symphurus plagiusa
6/16/1989	154	2	Farfantepenaeus aztecus
6/16/1989	154	2	Mugil cephalus
6/16/1989	154	2	Leiostomus xanthurus
6/16/1989	154	2	Callinectes spp.
6/16/1989	154	2	Mugil curema
6/16/1989	154	2	Menidia menidia
6/16/1989	154	2	Bairdiella chrysoura
6/16/1989	154	2	Fundulus majalis
6/16/1989	154	2	Cynoscion nebulosus
6/16/1989	154	2	Lagodon rhomboides
6/16/1989	154	2	Synodus foetens
6/16/1989	154	2	Symphurus plagiusa
6/30/1989	155	2	Farfantepenaeus aztecus
6/30/1989	155	2	Mugil cephalus
6/30/1989	155	2	Litopenaeus setiferus
6/30/1989	155	2	Leiostomus xanthurus
6/30/1989	155	2	Callinectes spp.
6/30/1989	155	2	Mugil curema
6/30/1989	155	2	Brevoortia tyrannus
6/30/1989	155	2	Fundulus heteroclitus
6/30/1989	155	2	Menidia menidia
6/30/1989	155	2	Bairdiella chrysoura
6/30/1989	155	2	Fundulus majalis
6/30/1989	155	2	Paralichthys dentatus
6/30/1989	155	2	Etropus crossotus
6/30/1989	155	2	Paralichthys lethostigma
6/30/1989	155	2	Lagodon rhomboides
6/30/1989	155	2	Menidia beryllina

6/30/1989	155	2	Eucinostomus spp.
7/17/1989	156	2	Farfantepenaeus aztecus
7/17/1989	156	2	Mugil cephalus
7/17/1989	156	2	Litopenaeus setiferus
7/17/1989	156	2	Leiostomus xanthurus
7/17/1989	156	2	Mugil curema
7/17/1989	156	2	Brevoortia tyrannus
7/17/1989	156	2	Bairdiella chrysoura
7/17/1989	156	2	Fundulus majalis
7/17/1989	156	2	Citharichthys spilopterus
7/17/1989	156	2	Lagodon rhomboides
7/17/1989	156	2	Menidia beryllina
7/17/1989	156	2	Microgobius thalassinus
7/17/1989	156	2	Paralichthys lethostigma
7/17/1989	156	2	Symphurus plagiusa
7/17/1989	156	2	Eucinostomus spp.
8/1/1989	157	2	Mugil cephalus
8/1/1989	157	2	Litopenaeus setiferus
8/1/1989	157	2	Leiostomus xanthurus
8/1/1989	157	2	Callinectes spp.
8/1/1989	157	2	Mugil curema
8/1/1989	157	2	Fundulus heteroclitus
8/1/1989	157	2	Fundulus majalis
8/1/1989	157	2	Citharichthys spilopterus
8/1/1989	157	2	Dorosoma petenense
8/1/1989	157	2	Lagodon rhomboides
8/1/1989	157	2	Menidia beryllina
8/1/1989	157	2	Morone americana
8/1/1989	157	2	Paralichthys lethostigma
8/1/1989	157	2	Symphurus plagiusa
8/1/1989	157	2	Eucinostomus spp.

Replicate 2s (OLII) of samples 136, 153, 154, 155, 156, and 157 were not worked up entirely. Only weights for the total catch and individual species were measured. Lengths and numbers of individual species were estimated using OLI sample haul catch statistics (proportions). This new protocol was established to handle OLII catches that were prohibitively large. See methods section for more details.

7/5/1990	180	2	Bairdiella chrysoura
5/4/1993	250 - 495	na	Dropped Replicate 2 sampling through end of study

Anomalous Data:

Anomalous data documentation for the nekton database can be found in a separate metadata document called, **OLLT.Nekton.AnomalousData**. Click on the filename to link to the file from the Internet or go to the metadata section of the archived notebooks. This file has also been archived on the OL.LowTideNekton.1983-2003.FINAL CD. Both the archived notebooks and the FINAL CD reside at the BMFL.

2.5 Lineage

2.5.1 Methodology

2.5.1.1 Methodology Type: FIELD Collections

2.5.1.3 Methodology Description:

One quarter (1/4) inch bag seine collections for sampling fishes, shrimps, and crabs were collected on a biweekly basis beginning on April 15, 1983 to March 31, 2003. Low tide nekton sampling dates were scheduled so that there were no less than 10 days or more than 18 days between samplings. Also, these sampling dates were scheduled in close proximity to the regular LTER faunal cruises (usually within 4 days). Seine collections of organisms occurred in the afternoon, at about the same time of day (between 1200 and 1600) and during the same tidal stage (at dead low tide). Two technicians would walk to within 5 meters of the sampling pool and then walk around the pool, through the Spartina grass via the marsh, swinging wide around the pool itself so as not to "spook" the fish present there. When they reached the inflow and outflow

constriction areas of the pool, a 6 mm (1/4 inch) mesh net was stretched across these sections of the creek as quickly as possible. This would, in effect, 'block off' the pool and prevent fishes from entering or exiting. The lead line of each block net was secured into the sandy bottom, and oyster shells (which prevented the lead line from lying properly on the bottom) were removed. After the pool was secured with the block nets and the physical data were recorded, a 15.24 meter long 1.22 wide 6 millimeter mesh bag (4ft x 4ft) seine was pulled across the pool, beginning on the east side and moving to the western shore (against the ebbing tide). Fish, shrimp, and crab were placed in 5 gallon buckets, in coolers, or in 20 gallon plastic bags. The second seine haul, moving in the opposite direction (west to east), was taken immediately after emptying the first seine haul. Organisms from the second seine were placed in separate buckets or bags. Both seine hauls were taken immediately to the laboratory for sorting and processing.

2.5.1 Methodology

2.5.1.1 Methodology Type: FIELD Physical Data

2.5.1.3 Methodology Description:

Air and water temperatures were measured prior to seine collections with a mercury filled thermometer. Additional water temperature data collection began on a continuous basis in January 1985 and ended December 1992. Continuous water temperature readings were recorded on a paper scroll by a Ryan brand thermograph, which was deployed in the deepest hole of the pool. At low tide, the thermograph measured the surface water temperature in the pool, and at an extreme high tide the thermograph would be submerged as much as one meter. Beginning on 11/26/85, the relative water level of the pool was measured between the two rebar poles, which held the downstream block net up. The measurement was made with a 10 centimeter marked wooden staff or a meter stick; it was not referenced to sea level or tide data, but measurements were taken in the same location prior to each sampling. Pool water level measurements using the wooden staff ended July 28, 1992. Salinity was determined to the nearest part per thousand with a refractometer, either in the laboratory or in the field, until August 31, 1993. Beginning on November 4, 1986, dissolved oxygen (D.O.) was measured in milligrams per liter with a calibrated D.O. meter. From August 24, 1987 through February 22, 1993, D.O. was determined by a modified version of the classical Winkler procedure (Strickland and Parsons, 1972), and a D.O. meter was no longer used. Turbidity or water clarity measurements began on February 28, 1991, using a secchi disk attached to a 10cm- marked rope. Beginning on September 14, 1993, water temperature, salinity, and dissolved oxygen were measured using a Scout DataSonde Brand water quality unit; depth measurements began on April 27, 1995. YSI brand water quality units were used for the same parameters beginning in 2002.

2.5.1.4 Methodology Citation:

8. Citation Information

8.1 Originator: J.D.H Strickland

8.1 Originator: T.R. Parsons

8.2 Publication Date: 1972

8.4 Title: The Practical Handbook of Seawater Analysis

8.6 Geospatial Data Presentation Form: Book

8.8 Publication Information:

8.8.1 Publication Place: Ottawa 4, Ontario, Canada

8.8.2 Publisher: Fisheries Research Board of Canada

8.9 Other Citation Details: Bulletin 167 (Second Edition), 310 pp.

2.5.1 Methodology

2.5.1.1 Methodology Type: LABORATORY Nekton Processing

2.5.1.3 Methodology Description:

Except for the first 26 samples, each seine haul was processed separately in the laboratory. Organisms were placed into a 1/4" mesh dip net or large colander pan, rinsed with seawater, and sorted by species into separate containers until the entire seine sample was completely sorted. If there were more than one life stage (size class) of a transient species, then the size classes were also sorted out (this occurred mostly for Spot, White and Striped Mullet, and the Mojarras) . If over 100 individuals of a particular species/size class were captured, 100 individuals were randomly selected and measured (if less than 100, all were measured). The total weight for each species/size class was measured to the nearest tenth of a gram. The total number of individuals of a particular species was determined by counting (if the number was less than 120). However, if the total number of individuals was larger than 120, then the 100 individuals, which were selected to be measured, were also weighed together, giving a subsample weight. The total number of individuals was calculated from the total weight and subsample weight for that species. All bony fishes were measured to standard length (SL), decapod crabs were to carapace width (CW), decapod shrimp to carapace length (CL), and squids to mantle length (ML). All lengths were taken to the nearest millimeter. After lengths and weights had been recorded for each species, a representative number of individuals from each species were preserved in glass jars filled with 10 % buffered formalin. All sample jars were labeled with collection information and were placed with the other archived samples. When catches were so large that all the nekton could not be processed the same day, the organisms were preserved in formalin (primarily in 1983), covered in airtight plastic bags and placed in cold storage overnight, or frozen in seawater and worked up within the next several days.

Trained technicians were used to identify the nekton species. Identifications were also made by the use of identification keys. Uncertain species identifications were verified by professionals. Fishes, shrimps, and crabs were identified to species in most samples. *Alpheus spp.* and *Callinectes* spp. were identified only to genus. *Callinectes* spp. is mainly *Callinectes sapidus.* Due to the difficulty of the identification of the juvenile life stage of some fishes, the juvenile life stage of the following were also identified only to genus: *Astroscopus* sp., *Menticirrhus* sp., *Urophycis* sp., and if less than 30 mm SL, *Eucinostomus* spp. Rarely or occasionally, *Alosa*, *Anchoa*, *Paralichthys*, *Prionotus*, *Syngnathus* young-of- the-year were only identified to genus. See the **Attribute Accuracy Report** and the **Entity and Attribute Information** sections for more detailed information about species names and occurrences.

Keys and publications used to identify species:

Bailey, R.M., J.E. Fitch, E.S. Herald, E.A. Lachner, C.C. Lindsey, C.R. Robins, and W.B. Scott. 1970. A list of common and scientific names of fishes from the United States and Canada (Third Edition). American Fisheries Society, Special Publication No. 6. 149 pp.

Berry, F.H. 1959. Young jack crevalles (Caranx species) off the Southeastern Atlantic coast of the United States. U.S. Bur. Fish. Bull. 59 (152): 417-535.

Berry, F.H. and L.E. Vogele. 1961. Filefishes (Monacanthidae) of the Western North Atlantic. U.S. Bur. Fish. Bull. 61(181):61-109.

Bigelow, H.B. and Schroeder, W.C. 1953. Fishes of the Gulf of Maine. Fishery Bulletin of the Fish and Wildlife Service, Vol. 53. United States Government Printing Office, Washington. 577 pp.

Carolina Power and Light Company, Brunswick Biological Lab (BSEP Southport). 1982. Uncontrolled fish identification document.

Dahlberg, M.D. 1970. Atlantic and Gulf of Mexico Menhadens, Genus Brevoortia (Pisces: Clupeidae). Bull. Florida State Museum 15 (3): 1-162.

Dahlberg, M.D. and J.C. Conyers. 1973. An ecological study of Gobiosoma bosci and G. ginsburg (Pisces: Gobiidae) on the Georgia coast. U.S. Bur. Fish. Bull. 71 (1):279-287.

Dawson, C.E. 1969. Studies on the Gobies of Mississippi Sound and Adjacent Waters II. An Illustrated Key to the Gobioid Fishes. Gulf Coast Research Laboratory Museum, Ocean Springs, Mississippi. Publication #1. Wilkes Printing Company, Inc. Biloxi, Mississippi.

Eddy, S. and J.C. Underhill. 1978. How to know the Freshwater Fishes. Third Edition. The Pictured Key Nature Series. Wm C. Brown Company Publishers, Dubuque, Iowa. 215 pp.

Fields, H.M. 1962. Pompanoes (Trachinotus spp.) of the South Atlantic coast of the United States. U.S. Bur. Fish. Bull. 62 (207):189-222.

Fischer, W. (ed.) . 1978. FAO species identification sheets for fishery purposes. Western Central Atlantic (fishing area 31). Vols. 1-7. Rome, FAO.

Foltz, J.W. Key to South Carolina's Freshwater Fish Families: How to Use a "Dichotomus Key". http://people.clemson.edu/~jwfoltz/wfb416/subj/lab/keys/famkey.htm

Foltz, J.W. Partial Key to Common Freshwater Killifishes of S.C. http://people.clemson.edu/~jwfoltz/wfb416/subj/lab/keys/killfish/killfish.htm

Fritzsche, R.A. (ed.). 1978. Development of fishes of the Mid -Atlantic Bight. An atlas of egg, larval, and juvenile stages. Vol. V. Chaetodontidae through Ophidiidae. U.S. Fish. Wildl. Serv., Biol. Serv. Prog. 340 pp.

Gutherz, E.J. 1967. Field guide to the flatfishes of the family Bothidae in the Western North Atlantic. U.S. Fish. Wildl. Serv., Circ. 263.

Hardy, J.D. and B.K. Johnson. 1974. Descriptions of halfbeak larvae and juveniles from Chesapeake Bay (Pisces: Hemiramphidae). Ches. Sci. 15 (4):241-246.

Hardy, J.D. (ed.). 1978. Development of fishes of the Mid-Atlantic Bight. An atlas of egg, larval, and juvenile stages. Vol. II, Anguillidae through Syngnathidae, 458 pp. Vol. III, Aphredoderidae through Rachycentridae, 394 pp. U.S. Fish Wildl. Serv. Prog.

Hildebrand, S.F. and W.C. Schroeder. 1972. Fishes of Chesapeake Bay. Reprint of the 1928 Ed. for the Smithsonian Institution by T.F.H. Publications, Inc., New Jersey, 388 pp.

Hoese, H.D. and R.H. Moore, 1977. Fishes of the Gulf of Mexico, Texas, Louisiana and adjacent waters. Texas A & M University Press, 327 pp.

Hoese, H.D. and R.H. Moore, 1998. Fishes of the Gulf of Mexico, Texas, Louisiana and adjacent waters. Second Edition. Texas A & M University Press, 422 pp.

Johnson, G.D. (ed.). 1978. Development of fishes of the Mid-Atlantic Bight. An atlas of egg, larval, and juvenile stages. Vol. IV. Carangidae through Ephippidae. U.S. Fish Wildl. Serv., Biol. Serv. Prog. 314 pp.

Jones, P.W., F.D. Martin, and J.D. Hardy (eds.). 1978. Development of fishes of the Mid-Atlantic Bight. An atlas of egg, larval, and juvenile stages. Vol. I. Acipenseridae through Ictaluridae. U.S. Fish Wildl. Serv., Biol. Serv. Prog. 366 pp.

Manooch, C. H. 1984. Fishes of the Southeastern United States (Fisherman's Guide). North Carolina State Museum of Natural History, 362 pp.

Martin, F.D. and G.E. Drewry. 1978. Development of fishes of the Mid -Atlantic Bight. An atlas of egg, larval, and juvenile stages. Vol. VI. Stromateridae through Ogcocephalidae. U.S. Fish Wildl. Serv., Biol. Serv. Prog. 416 pp.

McClane, A.J. (ed.). 1974. McClane's field guide to saltwater fishes of North America. Holt, Rinehart, and Winston. New York, 283 pp.

Murdy, E.O., R.S. Birdsong, and J.A. Musick. 1997. Fishes of Chesapeake Bay. Smithsonian Institution Press, Washington. 324 pp.

Ogburn, M.V., D.M. Allen, and W.K. Michener. 1988. Fishes, shrimps, and crabs of the North Inlet Estuary, SC: A four-year seine and trawl survey. Baruch Institute Technical Report. No. 88-1. 299 pp. University of South Carolina. Columbia.

Powles, H. and B.W. Stender. 1978. Taxonomic data on theearly life history stages of Sciaenidae of the South Atlantic Bight of the United States. S.C. Resources Center, Tech. Rep. No. 31. 64 pp.

Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1980. A list of common and scientific names of fishes from the United States and Canada (Fourth Edition). American Fisheries Society, Special Publication No. 12. 174 pp.

Smith, C. L. 1961. Synopsis of biological data on groupers (Epinephelus and allied genera) of the Western North Atlantic. FAO Fisheries Biology Synopsis No. 23

Thompson, B.A. 1986. Identification Guide to Selected Estuarine Fishes of Louisiana. For Use at a Workshop to be Held at Louisiana State University. Sponsored by Louisiana Sea Grant College Program and LSU Coastal Fisheries Institute. LSU CFI 86-05.

2.5.1 Methodology

2.5.1.1 Methodology Type: LABORATORY

2.5.1.3 Methodology Description: Nekton Modifications in sample processing procedures from Sample #136 (09/23/1988) to #152 (05/18/1989)

The purpose of these procedural changes was to reduce the amount of time spent processing samples on collection day during the nine months of the year that only two or three people were available to help. At the same time, we ensured that sufficiently large sample sizes were processed in order to maintain the integrity of the long-term dataset and conduct the same kinds of analyses and comparisons that were possible with the complete processing of both hauls. No changes in the field collection protocol were made.

From biweekly sample #136 (9-23-88) to #152 (5-18-89), the following processing procedure was used for the second seine haul (OLII), no changes were made to the haul number 1 (OLI) procedure:

1. If the volume of second seine haul (OLII) was less than or equal to 4 gallons (80% of a 5 gallon bucket), the entire collection was processed according to the procedure used for OLI. Regardless of the volume of OLII, the total weight of the catch was recorded.

2. If the volume of OLII was greater than 4 gallons, the total weight of the catch was recorded, and 20% of the total weight of that collection was sorted by species and the following information was recorded:

A. Total number of individuals of each species

B. Weight (biomass) of each species

C. Lengths of individuals according to these criteria:

1. If lengths for 30 or more individuals of a species were obtained from OLI, no additional lengths were taken from OLII. This minimum of 30 was based on the requirement for most statistical comparisons of two samples (e.g. K-S test) to have an n > 25.
2. If lengths for more than 15 but less than 30 individuals of a species were obtained from OLI, we measured as many additional individuals from OLII as necessary to increase the sample size to greater than 30 (if possible, even if specimens needed to be isolated from the 80% of OLII not sorted).

3. If lengths for less than 15 individuals were available from OLI, no additional lengths were taken from OLII. (If there were not 15 in OLI, it is unlikely a large enough sample (n > 25) could be obtained with what is present in OLII).

Variables for data analysis:
Total catch biomass: no change, OLI + OLII = total

Total number of individuals: OLI (no change) + OLII (based on adjusted counts of species from 20% of OLII catch) = total

Total number of species: only number of species in OLI will be used

Number of individuals by species: OLI (no change) + OLII (based on adjusted counts from 20% of OLII, equals 5 times OLII subsample) = total

Biomass of each species: OLI (no change) + OLII (based on adjusted weights from 20% of OLII, equals 5 times OLII subsample) = total

Length of species: up to 100 individuals from OLI (no change) + additional data from OLII for less common species

2.5.1 Methodology

2.5.1.1 Methodology Type: LABORATORY & FIELD

2.5.1.3 Methodology Description: Nekton Modifications in sample processing procedures from 06/2/89 sample #153 to 03/31/2003 sample #495).

#153 OLI: 5 buckets collected: two buckets totally worked up and 13.3% (by weight) of other three buckets worked up. OLII subsampled according to earlier protocol.
#155 OLII lengths only taken for those species in OLI with between 15 and 30 lengths, abundance and biomass are correct for total
#157 Only ½ of OLI catch sorted and worked up, rest subsampled, OLII subsampled by protocols
#159 OLI & OLII all species worked up; shrimps were subsampled

#160 OLI & OLII all species worked up; shrimps were subsampled
#179 OLII subsampled by weight, not by protocol above
#194 January 31, 1991: First catch using Fish Measuring Board to work up species lengths and data entry for weights. Also measured catch with original meter stick method; K-S test showed no differences between the length distributions.
#203 OLII subsampled by weight not by protocol (fish had rotted)
#204 OLI & OLII shrimp subsampled by weight
#205 - #249 OLI & OLII began releasing fish in field and counting the number of buckets released. We were killing too many fish that were not going to be processed (were subsampled) . Weights of buckets were recorded when taken into lab for processing. Numbers of individuals for both hauls were adjusted in the Easy Entry program after calculations were tallied from species weights.

OLI: two to three buckets kept for lab processing
OLII: no more than two buckets were kept for lab processing.

#250 - #495 The second seine haul (OLII) was dropped all together. Statistics showed that the first seine haul (OLI) was sufficient to represent the species and life stages occurring in the pool. In addition, as part of the North Inlet-Winyah Bay NERR sampling protocol, only two five-gallon buckets were kept for the first seine haul sampling processing. Total weight was determined by the weight of the buckets taken into the lab to be processed, plus the weight of the buckets released in the field.

2.5.3.1 Process Step:

2.5.2.1 Process Description

Species and Total Catch Abundance and Biomass Data (April 1983 through January 1991)
Each sample collection's workup information was handwritten on "LTER" Abundance and Biomass Data Sheets. Total catch abundance and biomass, as well as, individual species abundance (but not species biomass) data were later copied by hand onto "LTER FISH AND MACROINVERTS DATA SHEETS" (LFAMDS). These LFAMDS were designed to look exactly like the full screen computer data entry and management system, designed specifically for the Oyster Landing Fish and Macroinvertebrate sampling. This first full screen management system had a total of eleven different computer screens per sample/replicate. Total catch abundance and biomass, as well as, individual species abundance data from the LFAMDS were entered, edited, and verified via the full screen management system which was installed on RS1 computers. The file name convention was as follows: Sample site (OL), sample number (###), and the letters, ABUN, to indicate that the file contains abundance data for each sample. These files were transferred to and stored on main campus mainframe computers and archived in Mass Storage.

The Fish and Macroinvertebrate data entry and management computer programs were updated and improved in July of 1989, using "Easy Entry" programming and IBM computers. The Easy Entry data management screens were not only more compact, with four management screens instead of eleven, but also allowed for the entry of species biomass information. These four screens were printed out onto one sheet of paper, became the new computer data entry sheets, entitled "Oyster Landing Seine Study (LTER)", and replaced the LFAMDS. All raw handwritten data from the "LTER" Abundance and Biomass Data Sheets for samples 143-194 (January 6, 1989 through January 31, 1991) were later transcribed on them. There was some overlap in computer data entry sheet use and data management of digital files when the data managers were implementing the new IBM Easy Entry data management programming.

All abundance and biomass digital data from samples 27 through 150 (May 1, 1984 - April 19, 1989), which were originally managed via the old programming, were converted to the new Easy Entry format by the data manager. These converted files were stored under the filename, Seine1.dat. (NOTE: Biomass and abundance information for samples 1-26 were not entered because of the inconsistent way in which they were collected.) Beginning on May 4, 1989 with sample #151, the abundance and biomass data were entered by data management technicians into a file called, "Seine2.dat". It contains data from samples 151-194 samples (May 4, 1989 through January 20, 1989). The two files were later combined into one file called "seine1_2.dat" and were archived on a SUN Microsystem computer.

Species Length Data (April 1983 through January 1991)
Each sample's species length measurements were handwritten on "LTER" Length Sheets. For samples 1-144, these data were then entered into digital text files by data technicians on the University of South Carolina's Columbia Campus mainframe computer, using the Virtual Machine/System Product (VM/SP) Conversational Monitor System (CMS). The file name was created from the sample site (OL), the first three letters of the genus name, and the first three letters of the species name (e.g. OLFunhet) . These length files were stored in mainframe accounts and in the Mass Storage System (MSS). In July 1989, Easy Entry length screens were created and replaced the VM/SP CMS method of entering the length data. All species lengths from samples 1-144, except for five of the most abundant species (*Fundulus heteroclitus*, *Fundulus majalis*, *Leiostomus xanthurus*, *Mugil cephalus*, and *Mugil curema)* were re-entered via the Easy Entry length screens. These new

length screens were also used to enter species' length data from samples 145-194. The Easy Entry length data file names from samples 145-194 begin with the word "Lengths" and a number or letter with .dat as a suffix (e.g. LengthA.dat or Length2.dat) and were archived on a SUN Microsystem computer. See below for the lists of these length files and their archived locations.

The following Length files are for the five most abundant species from samples 1-144. They were archived and later retrieved from MSS (see other Process steps below for more details). The list below gives the LTER Length file name, details the sample numbers and replicate number they contain, and provides the date the file was finalized (this list was derived from earlier January 30, 1992 documentation).

Data File Name	Sample(Rep)	Date Final
1. OLFUNHET	1-32 (15)	7/91
2. OLFUNHE2	33-54 (1)	7/91
3. OLFUNHE3	54-73 (1)	7/91
4. OLFUNHE4	73-87 (2)	7/91
5. OLFUNHE5	88-128 (2)	7/91
6. OLFUNHE6	129-144 (2)	1/92
7. OLFUNMAJ	1-46 (2)	7/91
8. OLFUNMA2	46(1)-74 (14)	7/91
9. OLFUNMA3	75-87 (1)	1/92
10. OLFUNMA4	88-128 (2)	7/91
11. OLFUNMA5	129-144 (2)	7/91
12. OLLEIXAN	1-25	7/91
13. OLLEIXA1	26-32 (15)	7/91
14. OLLEIXA2	33-49 (2)	7/91
15. OLLEIXA3	50-57 (2)	7/91
16. OLLEIXA4	58-74 (7)	7/91
17. OLLEIXA5	74(8)-81 (2)	7/91
18. OLLEIXA6	82-87 (2)	1/92
19. OLLEIXA7	88-105 (16)	7/91
20. OLLEIXA8	106-128 (2)	1/92
21. OLLEIXA9	129-144 (2)	7/91
22. OLMUGCEP	1-29 (2)	7/91
23. OLMUGCE2	29-33 (2)	7/91
24. OLMUGCE3	34-48 (2)	7/91
25. OLMUGCE4	48(3)-55 (2)	7/91
26. OLMUGCE5	56-63 (15)	7/91
27. OLMUGCE6	64-77(2)	7/91
28. OLMUGCE7	78-87(2)	7/91
29. OLMUGCE8	88-105(16)	7/91
30. OLMUGCE9	106-122(2)	7/91
31. OLMUGCE10	123-130(2)	7/91
32. OLMUGCE11	131-144(2)	7/91
33. OLMUGCUR	6-35(2)	7/91
34. OLMUGCU2	36-79(2)	7/91
35. OLMUGCU3	80-87(2)	7/91
36. OLMUGCU4	88-139(2)	7/91

The following Easy Entry Length files (re-entered lengths from VM/SP CMS) are for samples 27-144. All species collected in samples 27 - 144 (except for the five above) were alphabetized and entered, in descending order, into a digital file until it reached a maximum file size. File names begin with "Length" and then have a letter (or letters) denoting the first letter of the Genus name for the first species occurring in the digital file. For example, LengthsA.dat contain length data for all species whose genus names start with A, B, and C; the last species that is contained the file is *Callinectes*.

Data File Name	Species lengths in files	Entered (date)	Final (date)
LengthsA.dat	*Alosa aestivalis* - *Callinectes*	2/92	5/92
LengthCX.dat	*Caranx* spp - *Cyprinodon variegatus*	2/92	6/92
LengthsD.dat	*Diapterus auratus* - *Evorthodus lyricus*	2/92	7/92
LengthsG.dat	*Gambusia affinis* - *Myrophis punctatus*	2/92	7/92
LengthsP.dat	*Paralichthys albigutta* - *Prionotus* spp	4/92	7/92
LengthsS.dat	*Sardinella aurita* - *Upogebia affinis*	4/92	7/92

The following Easy Entry Length files are for samples 144-194. The length data in these files were entered by sample number; therefore, all species lengths for each sample and replicate are contained within the designated files.

Data File Name	Cruise#	Entered (date)	1st Edit (date)	Final (date)
Lengths.dat	145-159	Yes (2-91)	2/92	4/92
Lengths2.dat	160-169	Yes (2-91)	2/92	4/92
Lengths3.dat	170-179	Yes (2-91)	4/92	4/92
Lengths4.dat	180-189	Yes (3-91)	4/92	4/92
Lengths5.dat	190-194	Yes (3-91)	4/92	4/92

Sample Abundance, Biomass, Length Data Entry and Editing Using the FMB and Easy Entry (January 1991 - March 2003)

Beginning with sample #194 (January 31, 1991), an electronic Fish Measuring Board (FMB) was used to enter nekton standard length, subsample weight, and total weight directly from the freshly sorted catch. The software for the FMB also calculated the total number when sample size of each species was 100 or greater. The output file was a space delimited text file. With the FMB, all the catch data for each date were entered into one file and organized by sample number. The names for these data files were created using the first two letters of the sampling site (OL) with the sample #, and end in the suffix .dat, .add, or .agn (e.g. OL200.dat). If there were multiple replicates, they were all contained under the same file name. A newly created EASY ENTRY "**form**" (data entry screen) for the FMB data, called "**fmb** ", was used to enter (when necessary- when the FMB was not working) and edit the OL catch data. All data during and after 1991 were also edited and verified using this "**fmb form**". The raw digital files and the edited version of the raw files were archived in separate directories. Final edited files were concatenated and then checked for formatting errors using SAS programs. Raw and final digital files, OL194.dat through OL495.dat, were archived on Baruch's computer systems. (NOTE: there is a duplication of abund/biomass/length data for sample #194, since this sample was entered using multiple **form** types, the Length and Abundance/Biomass **forms** and the FMB **form**).

Data Editing,Validation, and Finalization (April 1983 through September 1992)

Multiple levels of data entry verification were performed over the 20 years the data were collected. Data from 1983-1992 were entered by a data technician, then initially checked and corrected for errors by the same data technician. A second error-check was completed by the Research Specialist (who originally counted the samples), by comparing a hard copy printout of the error-checked digital data against the original, handwritten raw data sheets. All abundance, biomass, length, and physical data from samples 1-234 (4/15/93 to 9/9/92), were certified error-free by Ginger Ogburn- Matthews (date 7/28/93), and archived in the main campus' Mass storage system. "OLSEINE SASEDIT A1" was the abundance and biomass validation program written in July 1989. The file containing data entered as of 7/21/1989 was called OLFISH TEST D1; it was backed up in Mass Storage (MSS) as A200208.OLSEIN10.DATA. Later data sets were stored in MSS as A200208.OLSEINE.NXXXXXX, where XXXXXX is the starting and ending sample numbers of the data entered in that file (e.g. N27T150 represents samples 27 to 150). All of these data files and programs were downloaded from the mainframe, archived, and rescued in 1998 through 2002 with the rest of the files listed below. See below for more information.

Directories and Files From the North Inlet Estuary Long Term Ecological Research Program (1992):

A finalized text version of the 1983-1992 version of the database and its documentation was published on the LTER website (**http://www.lternet. edu/**) in 1992 and may still be accessed there via anonymous FTP (see Distribution Section below). These data files were archived in November 2004 on the Data Rescue Server and on Compact Disk at the BMFL. The Baruch's Data Manager does not recommend using the published LTER version of the database. The final 1983-2003 version along with its metadata (this record) has been more thoroughly documented and QA/QC'd.

Merger of Pre-1991 (Pre-FMB) and 1991 & 1992 (Post-FMB) Data

In 1991, the Baruch Institute data manager, Scott Chapal, developed SAS programs, which merged the data entry forms (pre- and post- FMB) for the nekton data and made the datasets compatible through 1992. The program was called, "merge.1-193.sas", and it specifically merged all final edited OL nekton abundance, biomass, length, and efficiency data (samples1-193) prior to the electronic FMB use. The files it merged were "seine1_2.dat" (species abundance and biomass data), "all.lengths.dat"(length files which are entered by species code), and "efficiency.edited"(all species length data for efficiency samples collected on samples 27, 32, 37, 42, 48, 56, 63, 67, 74, 105, and 123) . The output file from this program was identical to the FMB format; for each sample and replicate there was a record for each species' total weight, total abundance, and standard length up to 100 individuals.

Data Recovery from Main campus Mainframe and MSS (1998-2002)
Beginning in 1998, Baruch Institute's data manager contacted the main campus file storage manager in an attempt to recover Baruch's data holdings. The technology had changed so much from the 1980s and early 1990s that the tapes used to store data were obsolete. The tapes were so old that they were unreadable, and, as a result, main campus was destroying all old tape formats. Between 1998 and 2002, every effort was made to recover (download) all data and programs from all directories in the CMS and MSS accounts that were associated with the Baruch Institute. This included all of the Oyster Landing Nekton files (this database). All of the recoverable Oyster Landing Low Tide Nekton abundance, length, and computer program files were downloaded from the campus mainframe to the Baruch Data manager's computer. Abundance files **OL1ABUN** to **OL72ABUN** (April 15, 1983 to February 24, 1986) were recovered from the Mass Storage System (MSS), but OL73ABUN-144ABUN files were not recovered. All length files from samples 1-144 and many of the computer programs were recovered. These recovered files were archived during the 2004 Data Rescue process under the directory path: OL.LowTideNekton.PROCESS/ORIGINAL.PROCESS/DATA/MAINFRAME.FILES1983-1991.

Data Rescue, Finalization, and Archival Process (June-September 2004)
The Baruch Data Manager transformed the merged database (mentioned above) and the FMB data collected after 1992 into an Excel Spreadsheet to create one complete (1983-2003) database for dissemination. All of the data were graphed to check for outliers and errors. Anomalous data were documented and errors were corrected.

In June of 2004, when reviewing and plotting the final 1983-2003 length data, the Baruch Data Manager found that *Mugil curema*, *Mugil cephalus*, *Leiostomus xanthurus*, *Fundulus majalus* , and *Fundulus heteroclitus* species length and abundance data from April 1983-1984 (Cruises 1-26) had been omitted. The raw hardcopy datasheets and raw digital files were used to enter and verify the final/rescued database's abundance (and biomass in samples 24 and 25) for those species and dates. When adding sample 1 through 26 standard length data to the final/rescued database, the Baruch Data Manager first copied the data from the original mainframe digital length file and pasted the values into a temporary spreadsheet file. In verifying these data with the raw hardcopy datasheets, errors were found in these original OLFUNMAJ, OLMUGCEP, OLMUGCUR digital length files and corrections were made. No corrections were made to the duplicate tape back up files.

Other species' abundance and/or biomass data from April 1983 -1984 (Cruises 1-26) were also added to the final database to make it complete and correct. These species were: *Brevoortia tyrannus*, *Callinectes* spp., *Cyprinodon variegatus*, *Eucinostomus argenteus* (spp.), *Menidia menidia* , *Lagodon rhomboides*, *Micropogonias undulatus*, *Morone americana*, and *Symphurus plagiusa*. Length data were added or edited for *Dorosoma cepedianum*, *Dorosoma petenense*, *Eucinostomus argenteus* (spp.), and *Menidia menidia*.

It was determined that individuals less than 35 mm SL from the genus *Eucinostomus* were either *lefroyi* or *argenteus*, based on identifications from Dr. Richard Moore from Coastal Carolina University in 2003. As a result, for all collections that had lengths of individuals that ranged 35 mm SL and below, the identification became *Eucinostomus* spp. All those greater than 35 mm SL can be assumed to be *argenteus*.

The final database, called OLLT.NektonAllData.1983-2003, is organized by date or sample#, site, replicate, and species code. This database was used to create species abundance and biomass ranks, species total weight and abundance for each date, total catch weight and abundances for each date, and species richness databases. The OLLT.NektonAllData.1983- 2003 data file was also used to create the abundance, biomass, and length graphics. Ancillary data that were collected as part of this project were also verified and archived with the other primary data files; these are the physical information at the time of the nekton collections, efficiency catch data for the 12-14 additional hauls, and the data from the OB site for 1983-1984. All of the data files were formatted into MS Excel spreadsheets and duplicates were archived in text format. All graphics were created in SigmaPlot 8.0 and exported as jpg files. Document files were saved in MS Word and duplicates were archived in text only format.

All of the raw, processed, and final files were archived on the Field Lab's Rescue Server, CD, and DVD, which are stored in the Data manager's fireproof cabinet at the BMFL. See Resource Description below for directory names and their contents.

2.5.2.3 Process Date: 20041030

3 Spatial Data Organization Information:

3.1 Indirect Spatial Reference: North Inlet Estuary, which is part of Hobcaw Barony, is 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:

Variable List & Definitions for Final Rescued Nekton Data Files Only

1) OLLT.NektonAllData.1983-2003: the final catch abundance, biomass, and length data file which is organized by date, sample, site (OA & OL only), replicate, and species code

2) EfficiencyCatchData: the final data file for the efficiency study carried out seasonally at site OL from 1984 to 1988

3) OBFinalDataBase: the final data file for the seine collections at site OB (1983-1984); has no Replicate variable

Variable (format)	Type	Range (Min Max) & Units of Measurement
Date (mm/dd/yyyy)	Integer	mm=01-12, dd=01-31, yyyy=1983-2003; month, day, year
Sample	Integer	1 to 495, sequential number in ascending order
Site	Alphabetic	OA, OB, OL
Replicat	Integer	1 to 16, sequential numbering
Species (code)	Integer	1 to 149, sequential numbering
Name	Alphabetic	scientific name (genus and species)
Totwt	Real 7.1	0.0 to 486400.0 grams
Totnum	Integer	0 to 60408 individuals (abundance number)
Len1 to Len100	Integer	20 to 400 millimeters standard length

Missing data is represented by a period (.) in all data files associated with this nekton database.

Variable Definitions

Date = the calendar date that the nekton sample was taken, not necessarily processed.

Sample = the sample number of the nekton seine collection. The first sample was numbered 1, the second was numbered 2, and the rest were numbered consecutively up to the end of the project.

Site = physical collection site where the seine tows were made.

Replicate = replicate number; however, it represents a sequential seine haul rather than a true replicate. The first haul (Replicate 1 also known as OLI) was made in one direction across the intertidal pool, and the second haul (Replicate 2 also known as OLII) was made in the opposite direction. This continued up to 15 seine hauls for the efficiency study; replicate 16 contained the total amount of poisoned fish that were collected after the application of Rotenone. Replicate 16 ended when no more fish floated to the top to be dipped up.

Species = the species code number that was assigned to the species collected. There was no particular order given to this assigned numbering system. As new species were collected, they were added to the end of the numbering list. See list below.

Name = the scientific name given to each species or genera collected in each seine haul and site/replicate per date.

Totwt = the total weight of each species or genera collected in each seine haul and site/replicate per date.

Totnum = the total number or abundance of each species or genera collected in each seine haul and site/replicate per date.

Len1 = the length in millimeters for the first individual of each species measured. Fish were measure to standard length (SL), shrimp were measured to carapace length (CL), crabs to carapace width (CW), and skates and rays to wing width (WW). If only one individual of a species was collected, then only Len1 would have a number in it.

Len2 = the length in millimeters for the second individual of each species measured. Up to 100 individuals of each species per site/seine/replicate were measured; the length of the 100^{th} individual would be variable Len100.

4) SppBiomSum1984-2003Rep1: Final biweekly species biomass data file collected at OL site in Replicate 1.

5) SppAbunSum1984-2003Rep1: Final biweekly species abundance data file collected at OL site in Replicate 1.

Sample = the sample number of the nekton seine collection. The first sample was numbered 1, the second was numbered 2, and the rest were numbered consecutively up to the end of the project (sample 495).

Date = the calendar date that the nekton sample was taken, not necessarily processed.

After the sample and date variables, an abbreviated common name was used for the species variable names in each column header. The data in the column below the variable header name represent either the total biomass (in grams) or total abundance (whole numbers) (depending on the database) for each species in each sample for Replicate number ONE only! The table below denotes which species data are contained in the columns of the abundance and biomass files e.g. column 1 contains data for blue crab, column 2 contains the data for Atlantic menhaden, and column 23 contains the data for spotfin mojarra + sp., etc.

Columns 1-22	Columns 23-44	Columns 45-66	Columns 67-88
Blue Crab	SpfnMoj+(sp.)	Blck Drum	Alewife
At Menhdn	Bay Whiff	At Spadfish	No Sennet
SH Minnow	gag	At Needlef	FW Goby
At Silvers	Wh Shmp	LyreGoby	Snook
Pinfish	Irish Pomp	PHFilefh	Un Shad
Sum Flndr	So Flndr	Spanh Sard	SpWmEel
At Croakr	Lookdwn	Grn Goby	No SeaRbn
Wh Perch	Permit	Am Eel	No Puffer
Blck Tongfs	Spt Seatrt	St Anchvy	RedPorgy
St Mullet	At Bumpr	UnStargzr	FthrBlenny
Spot	Thred Shad	UnFlndr	UnHake
Mummi	Gizz Shad	Inshr Lzfish	Weakfish
B Anchvy	Bluefish	Tarpon	UnAnchvy
St Killi	Fring Flndr	HogChkr	Flier
Inl Silvr	R Silvrsd	Hifn Goby	AtThdHerr
Br Shmp	Unid Searbn	MantsShmp	ShHead
Blubk Herr	Pk Shmp	No Pipefish	StBlenny
Crev Jack	Darter Goby	Pigfish	SnapShmp
Wh Mullet	Sailfn Molly	FatSlpr	UnKingfish
Silvr Perch	Grey Snapr	Spfn Killif	HrsEy Jack
Ladyfish	Red Drum	Nkd Goby	UnPipefsh
Mosqfsh	AtBrf Squid	Am Shad	BH SeaRbn

6) RankSumsSppAbunBiom84-03Rep1: Final data file, which ranks each species by their total abundance and biomass, summed for all years (1984-2003) for replicate one only.

Variable (format)	Type	Range (Min Max) & Units of Measurement
AbunSpecies	Alphabetic	abbreviated common name for species (See Files 4 & 5 above)
Tot 84-03Abun	Integer	1 to 1,615,935 individuals
AbunRank	Integer	1 to 88 rank of species depending of Tot84-03Abun variable
Blank column	none	column left blank to separate between abundance & biomass ranks
BiomSpecies	Alphabetic	abbreviated common name for species (See Files 4 & 5 above)
Tot84-03Biom	Real	0.1 to 2,855,918.6 grams
BiomRank	Integer	1 to 88

AbunSpecies = Abbreviated common name of species for Abundance Rank Analysis
Tot 84-03Abun = Total number of individuals of each species collected in the first seine haul replicate from 1984-2003.
AbunRank = Rank of species in relation to the total number of individuals of other species in the first seine replicate
BiomSpecies = Abbreviated common name of species for Biomass Rank Analysis
Tot84-03Biom = Total weight (g) of corresponding species collected in the first seine haul replicate from 1984-2003.
BiomRank = Rank of species in relation to the total weight of individuals of other species in the first seine replicate

7) SppRichnessRep1.1984-2003: Final biweekly data file that contains the total number of different species collected in the first seine haul replicate for each sample.

8) TotalCatch.WtAbunByDate: Final biweekly biomass and abundance data for the entire catch in the first seine replicate for each sample date.

Variable (format)	Type	Range (Min Max) & Units of Measurement
Sample	Integer	1 to 495; sequential number in ascending order
Date (mm/dd/yyyy)	Integer	mm=01-12, dd=01-31, yyyy=1983-2003; month, day, year
SppRich1Haul	Integer	0 to 27; total number of different species
TotWtSum	Real	0.0 to 487440.6; total number of grams of the entire catch
TotNoSum	Integer	0 to 61196; total number of individuals of all species

Sample = the sample number of the nekton seine collection. The first sample was numbered 1, the second was numbered 2, and the rest were numbered consecutively up to the end of the project.
Date (mm/dd/yyyy) = the calendar date that the nekton sample was taken, not necessarily processed.
SppRich1Haul = the number of different species collected in the first seine haul replicate.
TotWtSum = the total weight of the entire catch in replicate one; this includes all individuals of all species. The exception to this is samples 1-26 (April 15, 1983 through April 16, 1984), where the two seine hauls were added together in the field and processed together in the lab.
TotNoSum = the total abundance of the entire catch in replicate one; this includes all individuals of all species. The exception to this is samples 1-26 (April 15, 1983 through April 16, 1984), where the two seine hauls were added together in the field and processed together in the lab.

9) OLLT.Nekton.PhysicalData: Final biweekly water physical data file that contains environmental measurements on the date of or prior to the nekton collection.

Variable (format)	Type	Range (Min Max) & Units of Measurement
Sample	Integer	1 to 495, sequential number in ascending order
Date (mm/dd/yyyy)	Integer	mm=01-12, dd=01-31, yyyy=1983-2003; month, day, year
STEMP	Real (4.1)	3.5 to 38.0 degrees Celsius
SSAL	Real (4.1)	0.0 to 36.0 parts per thousand
SDO	Real (4.1)	2.6 to 16.0 milligrams per liter
BTEMP	Real (4.1)	4.7 to 34.3 degrees Celsius
BSAL	Real (4.1)	0.4 to 37.1 parts per thousand
BDO	Real (4.1)	0.4 to 16.6 milligrams per liter
Chla	Real (4.1)	0.6 to 29.5 milligrams per liter
SeaLvl	Real (6.1)	1239.0 to 2171.0 millimeters
TRain	Real (4.1)	0.0 to 14.1 inches
MeanCLvl	Real (6.1)	1448.6 to 2123.0 millimeters

Sample = the sample number of the nekton seine collection. The first sample was numbered 1, the second was numbered 2, and the rest were numbered consecutively up to the end of the project.
Date (mm/dd/yyyy) = the calendar date that the nekton sample was taken, not necessarily processed.
STEMP = surface water temperature measured prior to nekton seining.
SSAL = surface water salinity; usually measured and recorded just prior to nekton seining. In the 1980s, water was sometimes collected in a bottle, and the salinity was read in the laboratory within a day of the nekton seining.
SDO = surface water dissolved oxygen; usually measured and recorded prior to nekton seining. When determining the DO by titration, the water was preserved and the titration was completed within a day or so.
BTEMP = bottom water temperature; if measured, it was measured and recorded prior to seining.
BSAL = bottom water salinity; if measured, it was measured and recorded prior to seining.
BDO = bottom water dissolved oxygen; if measured, it was measured and recorded prior to seining.
Chla = Chlorophyll a values; from 1984 through June 1993, the values were from the LTER 10am samples which were taken the same date that the low tide nekton collection was made. Data for Chlorophyll a values from July 1993 through March 2003 were from the 20 day North Inlet Winyah Bay NERR Water Chemistry monitoring program. The 13

(or 15) chlorophyll a values for dates/times prior to the OL collections were averaged together to provide one number. Chlorophyll a values for November 1999 thru April 2001, were not used because of problems with analyzer.

SeaLvl = sea level; this variable contains the daily average (based on six minute data) values recorded by the Charleston Sea level tide gauge on the same date as the nekton sample date.

TRain = total rain; the data values from Baruch's rain database, Raindaze, were summed together for the dates before the nekton sample collection (Approx 2 wks).

MeanCLvl = mean sea level; this variable is an average of the values recorded by the Charleston Sea level tide gauge for the seven days prior to the nekton sample date. Daily average values seven days prior to the sample date were averaged to create one value.

10) Directory: SpeciesList.Codes

Contains nekton species lists organized by common or scientific name with corresponding species codes and notes. These lists (tables) for the nekton database can be found in the Microsoft Excel spreadsheet called, **SppCodeList2004** or in the corresponding CSV version. Click on the filename to link to the file from the Internet or go to the 2005 archived metadata notebook, which resides at the BMFL.

5.2.2 Entity and Attribute Detail Citation:

Definitions were developed by the University of South Carolina 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, some of the entity type definitions are standard for the field of estuarine ecology.

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
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:

LTER FISH AND MACROINVERTBRATE DATA
LTER.NIN.OLFISH
Oyster Landing Efficiency Study
NIN10 - LTER Oyster Landing Biweeekly Fish Sampling
Fishes, Shrimps and Crabs: Oyster Landing Basin
NERR Nekton Monitoring
Biweekly Nekton
Oyster Landing Low Tide Fish Sampling
Fish, Shrimp, and Crab Composition and Abundance: Oyster Landing Basin

Identification of COMPACT DISKS, DIRECTORIES & FILES from 1983 - 2005

COMPACT DISKS: OL.LowTideNekton.1983-2003.RAW Archive (846 Directories & 8570 Files: 2.21Gb)

DIRECTORY: OLLT.Nekton.HardCopyRaw (Contains 844 Directories & 8257 JPG Image Files: 2.21 Gb)
This directory contains the digital images of the original hardcopy data sheets which were created each time the nekton sample catch was processed. There are multiple types of data sheets; each was scanned and placed into a single directory.

Directory: AbundanceBiomassSheets (Contains 17 Directories & 544 JPG Image Files: 186 Mb)
This directory is divided into a subdirectory for each year.

Directory: LengthSheets (Contains 788 Directories & 6436 JPG Image Files: 1.49 Gb)
This directory is divided into a subdirectory for each species found over the course of the database, and these species directories are further divided into subdirectories by year.

Directory: FishMeasuringBoardSheets (Contains 26 Directories & 779 JPG Image Files: 418 Mb)
This directory is divided into a subdirectory for each year that the Fish Length Measuring Board was in use. Occasionally the FMB would malfunction and the OL Fish Technicians had to use the old method and record data by hand on the Abundance/Biomass Sheets and Length Sheets. In these instances, these digital images can be found in the above directories.

Directory: FieldBooks (Contains 9 Directories & 498 JPG Image Files: 128 Mb)
This directory is divided into a subdirectory for each year.

DIRECTORY: OLLT.Nekton.FMBDigitalRaw (Contains 311 Text Files (Data=.dat: 2.22 Mb)
This directory contains the raw digital files for each biweekly collection that the Fish Length Measuring Board was used. Occasionally, the FMB would either malfunction or the technician would type a wrong key and the FMB would shut down. The technician would then have to restart the computer program, resulting in multiple files for the same biweekly sample. When the FMB was totally nonfunctional, the OL Fish Technicians used the old method and recorded data by hand onto Abundance/Biomass and Length sheet, as a result, there are no raw digital files for these samples. A list of the raw digital FMB data files is included in the table below.

OL194.add	OL235	OL280	OL325	OL372	OL409	OL461
OL194	OL236	OL281.add	OL325a	OL374	OL410	OL462
OL195	OL237	OL281	OL326.ed	OL375	OL411	OL463
OL196.add	OL238	OL282	OL327	OL376	Ol412	OL464
OL196	OL239	OL283	OL330	OL377	OL413	OL465
OL198	OL240	OL283.dat%	OL331	OL377A	Ol414	OL466
OL199.add	OL241	OL284.add	OL332	OL379	OL415	OL467
OL200.add	OL242	OL284	OL333	OL379A	OL416	OL468
OL200	OL243	OL285	OL334	OL380	OL418	OL469
OL201	OL244	OL286	OL334a	OL381	OL419	OL470
OL201a2	OL245	OL287	OL335	OL382	OL420	OL471
OL201add	OL246	OL288	OL336	OL383	OL421	OL472
OL202	OL247	OL289	OL337	OL384	OL424	OL472A
OL203.add	OL248	OL290	OL338	OL385	OL425	OL473
OL203.agn	OL249	OL295	OL338b	OL385A	OL426	OL474
OL203	OL250	OL296	OL339	OL386	OL427	OL474A
OL213.add	OL250.dat%	OL297	OL341	OL386A	OL428	OL475
OL213	OL251	OL297b	OL344a	OL387	OL429	OL476
OL214	OL252	OL298	OL345	OL387A	OL430	OL477
OL215	OL253.add	OL299	OL345a	Ol387a1	OL431	OL478
OL216	OL253	OL300	OL346	OL387B	OL432	OL479
OL217	OL254	OL301	OL347	OL388	OL432A	OL480
OL218	OL256	OL302	OL347A	OL389.dat	OL434	OL480A
OL219	OL257	OL303	OL348	OL391	OL435	OL481
OL220	OL258	OL303b	OL348a	OL392	OL435A	OL481A
OL221	OL259	OL305	OL349	OL393	OL436	OL482

OL222	OL259.dat%	OL305b	OL350	OL394	OL437	OL483
OL223	OL260.add	OL306	OL351	OL394OL1	OL438	OL483A
OL224	OL260	OL308	OL352	OL395	OL445	OL484
OL225	OL261	OL309	OL352a	OL396	OL446	OL485
OL226	OL262	OL309a	OL353	OL396A	OL447	OL485A
OL227.add	OL263	OL310	OL353a	OL397	OL448	OL486
OL227	OL264	OL310b	OL354	OL398	OL449	OL487
OL228	OL265	OL312	OL354a	OL399	OL450	OL488
OL229.add	OL270	OL313	OL355	OL399B	OL451	OL488A
OL229.agn	OL271	OL314	OL356	OL400	OL452	OL489
OL229	OL272	OL315	OL357	OL400A	OL453	OL491
OL230	OL273	OL316	OL357A	OL401	OL454	OL492
OL230.dat	OL274	OL317	OL358	OL402	OL455	OL493
OL231	OL275	OL318	OL358B	OL403	OL456	OL494
OL231.dat	OL276	OL319	OL359	OL403A	OL457	OL495
OL232.add	OL277.add	OL320	OL360	OL404	OL458	
OL232	OL277	OL321	OL361	OL405	OL459	
OL233.add	OL278.add	OL322	OL362	OL406	OL459A	
OL233	OL278	OL323	OL363	OL407	OL460	
OL234	OL279	OL324	OL364	OL408	OL460A	

COMPACT DISKS: OL.LowTideNekton.1983-2003.PROCESS

DIRECTORY: ORIGINAL.PROCESS (Contains 19 Directories & 676 Files: 18.8 Mb)

DIRECTORY: ORIGINAL.PROCESS/DATA

Directory: ORIGINAL.PROCESS/DATA/MAINFRAME.FILES1983-1991 (Contains 4 Directories)

Directory: OLxxAbundance (Contains 60 Text Files: 0.39Mb)
OL1ABUN to OL72ABUN
OL120ABUN
OL1984-1987.ABUN

Directory: OLLength (Contains 1 Directory & 180 Text Files: 5.12Mb)

OLALOAES	OLFUNHE2	OLMONHIS	OLSYMPLA
OLANCHEP	OLFUNHE3	OLMORAME	OLSYNFOE
OLANCMIT	OLFUNHE4	OLMUGCE2	OLSYNFUS
OLANCQUA	OLFUNHET	OLMUGCE3	OLSYNLOU
OLANGROS	OLFUNMA2	OLMUGCE4	OLTRACAR
OLBAICHR	OLFUNMA3	OLMUGCE5	OLTRAFAL
OLBRETY2	OLFUNMAJ	OLMUGCE6	OLTRIMAC
OLBRETYR	OLFGAMAFF	OLMUGCE7	
OLCALSPP	OLGOBBOL	OLMUGCEP	
OLCARSPP	OLGOBBOS	OLMUGCU2	
OLCENUND	OLGOBSHU	OLMUGCU3	
OLCHAFAB	OLHYPHEN	OLMUGCUR	
OLCHLCHR	OLLAGRHO	OLMYCMIC	
OLCITSPI	OLLEIXA1	OLOPSTAU	
OLCITSPP	OLLEIXA2	OLPARALB	
OLCRABS	OLLEIXA3	OLPARDEN	
OLCYNNEB	OLLEIXA4	OLPARLET	
OLCYPVAR	OLLEIXA5	OLPOELAT	
OLDASSAB	OLLEIXAN	OLPOGCRO	
OLDIAAUR	OLLOLBREA	OLPOMSAL	
OLDORCEP	OLLUTGRI	OLPRIEVO	

OLDORMAC	OLMEMMAR	OLPRISPP
OLDORPEN	OLMENAME	OLPRITRI
OLELOSAU	OLMENBER	OLSARAUR
OLETRCRO	OLMENME2	OLSCIOCE
OLEUCARG	OLMENMEN	OLSELVOM
OLEUCGUL	OLMICTHA	OLSQUEMP
OLEVOLYR	OLMICUND	OLSTRMAR

Directory: TapeBackup.T011062.Lengths (Contains 89 Text Files: 2.6Mb)
Same files as in **OLLength** Directory, but file names are F001.MICHENER.OLALOAES to F090.MICHENER.OLMUGCE4 (Note: F012.MICHENER.CHLCHR is missing)

Directory: MiscDataFiles (Contains 7 Text Files: 1.18Mb)

MICHENER.NEWOLF	OLDOLF	OL.MDATA
NEWEST.OLFISH	OYSTER	
NUSEINE	SEINE	

Directory: ORIGINAL.PROCESS/DATA/EASYENTRY.LENGTHS.1984-1991 (Contains 2 Directories)

Dir Raw:	lengthsa	lengthscx	lengthsd	lengthsg
	lengthss	lengthsp	lengths_5	lengths
Dir Edited:	all.lengths	lengthsa	lengthcx	lengthsd
	lengthss	lengths	lengths2	lengths3
	lengths4	lengths5	lengthsp	lengthsg

Directory: ORIGINAL.PROCESS/DATA/FMB.EDITEDFILES.1991- 2004 (Contains 348 Files: 2.57 Mb)
The edited data files in this directory are the for the same samples listed in FMBDigitalRaw directory above, plus those that were entered by hand into the Easy Entry FMB Form. The files that were entered by hand directly into the FMB Easy Entry Form are:

OL197.dat	OL283.dat	OL311.dat	OL365.dat	OL373.dat	OL431.dat	OL444.dat
OL255.dat	OL291.dat	OL328.dat	OL366.dat	OL378.dat	OL433.dat	OL490.dat
OL257.dat	OL292.dat	OL329.dat	OL367.dat	OL389.dat	OL439.dat	
OL266.dat	OL293.dat	OL340.dat	OL368.dat	OL390.dat	OL440.dat	
OL267.dat	OL294.dat	OL342.dat	OL369.dat	OL417.dat	OL441.dat	
OL268.dat	OL304.dat	OL343.dat	OL370.dat	OL422.dat	OL442.dat	
OL269.dat	OL307.dat	OL362.dat	OL371.dat	OL423.dat	OL443.dat	

DIRECTORY: ORIGINAL.PROCESS/MERGEOLD2NEW (Contains 2 Directories)

Directory: Data (Contains 3 Text Files)

all.lengths	efficiency.edited	seine1_2

Directory: Programs (Contains 4 Text Files)

efficiency.convert	merge.1-193	merge.transp.orig
OL.merge.1-193.Disturbance		

DIRECTORY: ORIGINAL.PROCESS/PROGRAMS (Contains 5 Directories: 2.97 Mb)

Directory: EasyEntryValidation (Contains 2 directories, 21 Files)

Directory: Data (Contains 10 Text Files)

SEINE	OLSEINE9
OL2	SEINE2
OL32.A	SEINE3
OL46T96.A	SEINE4
OLSEIN10	OLFISHES.N27T150

Directory: Programs (fmb programs are in Text and SAS formats)

OLSEINE.SASEDIT
fmb.inout.Original.modified
fmb.inout
fmb.input
fmb.Orginal.inout
fmbin.sasout.check

Directory: EasyEntryPrograms (Contains 18 Text Files)

Easy.exe	Easy.flb	FMB.lst
EasyEd.exe	Fish.flb	Lengths.lst
Fish.eas	FMB.flb	Fish3.lst
Fish2.eas	Form.flb	Fish2.lst
Fish3.eas	Easy.help	Fish.lst
FishCtrl.eas	FMB.eas	Lengths.eas

Directory: MainframePrograms (Contains 15 Text and some SAS Files)

olfish.arima	olconden.print	rawfish.lfhrdcpy
oldseine.converts	olfcmout.sas	olfish.analyse
service.data	olfmsout.sas	oldfsm.test
olfish.diverse	rankfish.sas	olfishes.sums
convert.newtnew	convert.oldtnew	scott.olfish

DIRECTORY: DATARESCUE.2004.PROCESS (Contains 6 Directories & 105 Files: 181 Mb)

DIRECTORY: DATARESCUE.2004.PROCESS/WorkDataInput (Contains 12 Files: 9.95 Mb)

Text Tab & Excel Files: 83-03TotalAbunBiomCatchData
OLRep2Len
olsas.1-471.AllLINEfix
Rep1.2MergeLen

Text Files: all.lengths
seine1_2
efficiency.edited
Rep1.2MergeLenSp

DIRECTORY: DATARESCUE.2004.PROCESS/WorkGraphics (Contains 2 directories & 73 Files: 164 Mb)

SigmaPlot Files: PhysicalPlots
TotCatchAbunBiom.SppRich
Top25Spp.AbunBiom

Directory: Top33Spp.SigmaplotBoxLengths

Directory: DataUsed2CreatLenGraphs

DIRECTORY: DATARESCUE.2004.PROCESS/WorkOutput (Contains 14 Files: 6.55 Mb)

Excel & CSV Files:	83-03 AbunBiom.BySpName	83-03AbunWtLeng.BySppCode
	EfficiencyCatch.ByDateSpCode	RankSumsSppAbunBiom
	SppAbunSum1984-2003	SppBIOMSum1984-2003
	TotalCatchAbunBiom	

DIRECTORY: DATARESCUE.2004.PROCESS/WorkPrograms (Contains 6 Files: 0.31 Mb)

Text Files:	83-03FinalCatchData.sp	LengthMergeByDate	merge.1-193.sas
	SumAbun.ByDateSpp	SumBiom.ByDateSpp	TBiomass.Tabun.ByDate

COMPACT DISK: OL.LowTideNekton.1983-2003.FINAL

DIRECTORY: LTER.NIN.OLFISH.83-92.ORIGINAL.FINAL (Contains 2 Directories & 13 Files: 1.41Mb)

DIRECTORY: LTER.NIN.OLFISH.83-92.ORIGINAL.FINAL/LTER.NIN.OLFISH.83-92YrlyDataFiles

Text Files: LTER.NIN.OLFISH.1983
LTER.NIN.OLFISH.1984
LTER.NIN.OLFISH.1985
LTER.NIN.OLFISH.1986
LTER.NIN.OLFISH.1987
LTER.NIN.OLFISH.1988
LTER.NIN.OLFISH.1989
LTER.NIN.OLFISH.1990
LTER.NIN.OLFISH.1991
LTER.NIN.OLFISH.1992

DIRECTORY: LTER.NIN.OLFISH.83-92.ORIGINAL.FINAL/LTER.NIN.OLFISH.Documentation

Text Files: LTER.NIN.OLFISH.DOC
NIN10_2A.OLFISH.DOC
NBII.FGDC.OLFISH.METADATA.1996

DIRECTORY: OLLT.NEKTON.RESCUE.FINAL (Contains 8 Directories & 639 Files: 98.9Mb)

DIRECTORY: OLLT.NEKTON.FINAL.DATA {Contains 18 Files (MS Excel & .csv): 6.54 Mb}

EfficiencyCatchData
OLLT.Nekton.PhysicalData
OLLT.NektonAllData.1983-2003
SppBiomSum1984-2003Rep1
TotalCatch.WtAbunByDate
OBFinalDataBase
RankSumsSppAbunBiom84-03Rep1
SppAbunSum1984-2003Rep1
SppRichnessRep1.1984-2003

DIRECTORY: OLLT.NEKTON.FINAL.GRAPHICS (Contains 4 Directories & 610 JPG Files: 91.2 Mb)

Directory: Abundance.Biomass

Contains the abundance and biomass images for the top ranked 34 species from 1984 through 2003 (see the RankSumsSppAbunBiom84-03Rep1 data file for these top 34). File names were created by using the abbreviation for the type of data plotted: abundance (AB) or biomass (BM), the first 4 letters of the genus and species name, the years that the data were plotted (1984-03), and the file type (JPG). Example: AB.Anchmitc.1984.JPG = the jpg image for the 1984-2003 *Anchoa mitchilli* abundance data.

Directory: BoxPlotLengths

Contains the length images in box plot format for the top ranked 34 species (see the RankSumsSppAbunBiom84- 03Rep1 data file) . File names were created by using the abbreviation for the type of data plotted: length (LN), the species code, the first 4 letters of the genus and species name, the year(s) that the data were plotted (1983, 1984-1986, etc), and the file type (JPG) . Example: LN.001.Farfazte.1984.JPG = the jpg image for the 1984 *Farfantepenaeus aztecus* carapace length data.

Directory: PhysicalData

Contains the images for the environmental parameters from 1983-2003 (see the documentation above for variable code names). File names were created by using the variable type, years of data coverage, and file type.

Directory: TotalCatch

Contains the images for the biweekly total catch abundance, biomass, and species richness plots.

DIRECTORY: OLLT.NEKTON.FINAL.METADATA (Contains 1 Directory & 22 Files: 1.5 Mb)

MS Word & Text Files: OLLT.Nekton.Metadata
OLLT.Nekton.Physicals.Metadata
OLLT.Nekton.AnomalousData
OLLT.Nekton.RawArchiveDirectory
AppI.AbunEasyEntry.Metadata
AppII.LengthEasyEntry.Metadata
AppIII.FMBEasyEntry.Metadata
NektonMeasurementSheet

Directory: SpeciesList.Codes (Comma separated value format)

SppCodeList2004 (Microsoft Excel file)
OLInvertebratesByCommonName
OLNektonListByCommonName
OLNektonListBySpCode
OLNektonListBySpeciesName

6.3 Distribution Liability:

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

The datasets 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 LTER Program shall be held liable for the use and/or misuse of the data described and/or contained herein.

According to the Ocean and Coastal Resource Management Data Dissemination Policy for the NERRS System-wide Monitoring Program:

The dataset enclosed within this package/transmission is only as good as the quality assurance/quality control procedures outlined by the enclosed metadata reporting statement. The user bears all responsibility for its subsequent use/misuse in any further analyses or comparisons. The Federal government does not assume liability to the Recipient or third persons, nor will the Federal government reimburse or indemnify the Recipient for its liability due to any losses resulting in any way from the use of this data.

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.

A finalized text version of the 1983-1992 version of the database and its documentation was published on the LTER website (http://www.lternet.edu/) in 1992. They still exist on the website and can be accessed via anonymous FTP by performing the following steps: It is recommended though, that the final 1983- 2003 database and its metadata that is documented in this metadata record be used instead of the LTER.NIN files and documentation above.

Name/IP Address: type **LTERnet.edu**
Name: type or check the box **anonymous**
Password: anything

After entering into the system, change directory to go to **pub/archive/data/NIN/data** to access the data files.

LTER.NIN.OLFISH.1983
LTER.NIN.OLFISH.1984
LTER.NIN.OLFISH.1985
LTER.NIN.OLFISH.1986
LTER.NIN.OLFISH.1987
LTER.NIN.OLFISH.1988
LTER.NIN.OLFISH.1989
LTER.NIN.OLFISH.1990
LTER.NIN.OLFISH.1991
LTER.NIN.OLFISH.1992

Data file variable (or column format) is: Date (yymmdd), Sample#, Replicate#, Species Code#, Species Total Biomass (g), Species Total Number in catch/replicate, Length 1 - Length 100.

For the Documentation file, change directory to go to **pub/archive/data/NIN/meta**.

Documenting Metadata: LTER.NIN.OLFISH.DOC

7. Metadata Reference Information

7.1 Metadata Date: 200302
7.2 Metadata Review Date: 20041018
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