1. Identification Information
1.1 Citation
8. Citation Information
8.1 Originator: Belle W. Baruch Institute for Marine Biology and Coastal Research
8.1 Originator: F. John Vernberg
8.1 Originator: B. Kjerfve
8.1 Originator: W.K. Michener
8.2 Publication Date: 20020515
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: 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 Long-Term Monitoring Database for the North Inlet Estuary, South Carolina
8.7.2 Issue Identification: June 3, 1982 – April 29, 1996
8.8 Publication Information:
8.8.1 Publication Place: Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina, USA
8.8.2 Publisher: Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina
8.9 Other Citation Details: This is just one database (Data Set Code NIN001) from a larger Ecosystem monitoring program (see Larger Work Citation). Other North Inlet LTER datasets are listed under Cross Reference.
8.10 Online linkage: http://links.baruch.sc.edu/data/
8.11 Larger Work Citation
8. Citation Information
8.1 Originator: W.K. Michener (Editor)
8.1 Originator: A.B. Miller (Editor)
8.1 Originator: R. Nottrott (Editor)
8.2 Publication Date: 1990
8.4 Title: "Long-Term Ecological Research Network Core Data Set Catalog"
8.6 Geospatial Data Presentation Form: catalog in book and on-line form
8.8 Publication Information:
8.8.1 Publication Place: Columbia, South Carolina, USA
8.8.2 Publisher: Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina
8.9 Other Citation Details: Published for the Long-Term Ecological Research Network

1.2.1 Abstract:

Meteorological data with water parameters were collected on an hourly basis from June 3, 1982 through April 29, 1996 in the North Inlet Estuary, Georgetown County, SC. Readings were taken 24 hours a day, every day of the year, except when individual probes or the entire meteorological station were down. Most sensors were scanned once per second (3600 times per hour), and hourly averages for the previous hour were generated and recorded. Three different meteorological systems were used during this period (see Supplemental Information). The first and last systems were designed to measure and transmit wind speed, wind direction, air temperature, barometric pressure, solar radiation, precipitation, water level, water temperature, and conductivity data. The temporary system, deployed from October 1989 to December 1990, was substituted for the meteorological station destroyed by Hurricane Hugo in September of 1989. It measured all of the parameters detailed above plus relative humidity, but did not measure water level, water temperature, and conductivity. NO PRECIPITATION DATA ARE CONTAINED IN THE FINAL 1982-1996 DATABASE. Data from this sensor were removed because of problems with the recording device. Rain data does exist in another database called RAINDAZE. The water level and conductivity data should be used with CAUTION!! Twenty-four hour minimum and maximum values for the meteorological data occur in the 15 ancillary data files: LTER.MET1982.24HRMAXMIN.FINAL.CSV to LTER.MET1996.24HRMAXMIN.FINAL.CSV. An additional database contains daily maximum and minimum relative humidity values recorded by the National Weather Service observing station, located near the meteorological station. See the Supplemental Information.

1.2.2 Purpose:

To monitor and archive weather data for the North Inlet Estuary LTER site for short- and long-term studies at North Inlet and for comparisons to other LTER sites and other estuarine sites in the nation and world.

1.2.3. Supplemental Information:

The destruction of the first meteorological station by Hurricane Hugo in September 1989 resulted in the utilization of different systems to complete this data set (see Field Methodology Description). This inconsistency should be taken into consideration when data is utilized from different phases of the collection period. In particular, the water level parameter may have been affected by the loss of the first station. The water level sensors were placed in rigid PVC wells in the water in both instances; however, the relative location of the sensor was not duplicated. The sensor was never initially leveled to a fixed point or benchmark on the mainland. This data should be used with caution, and possibly relegated to use simply as an indicator of the change in water level, not a sea level value. Conductivity data from the first system should also be used with care. There were often problems with the conductivity sensor during this time.
The precipitation sensor did not perform reliably throughout the data collection period. The data were often affected by the presence of debris and bird fecal matter in the rain gauge. As a result, these data were removed from completely from the database. As an alternative, please see the "Raindaze" database currently held at the Baruch Institute's Marine Field Laboratory or at Baruch's on-line website.

Relative humidity was not recorded as part of the meteorological station, however, a National Weather Service (NWS) observing station was located approximately 1200 ft from the meteorological station. A minimum and maximum daily value was recorded from 1987 to 1995. If the data are not available on-line, contact the Baruch Data Manager and request the NWS data.

Three documents have been made available along with the climate data. These include the Climatronics Meteorological System Log, Meteorological Missing Data Documentation, and Meteorological Anomalous Data Documentation. The Climatronics Meteorological System Log (Filename= LTERMET.ClimatSysLog) is a complete log of problems and maintenance on the weather station. It is also the only documentation available from the weather technicians regarding data that were censored or manipulated. The log is often incomplete, and as a result, there is not always an explanation for data that is missing or corrections that may or may not have been made to the data. The missing (Filename= LTERMET.MissingData) and anomalous data (Filename= LTERMET.AnomalousData) documents were made available to help point out these inconsistencies. The missing data document notes the date and time of missing data and gives an explanation from the Met System Log if one is available. The anomalous data document points out data that was found to be questionable or erroneous by the data reviewer. It also correlates this data with comments and possible explanations from the system log when possible. All three of these documents, along with this metadata should be utilized along with the climate data (access via web: http://links.baruch.sc.edu/data/LTERMET/metadata/metadata.htm). All data and metadata were reviewed and verified by Baruch data managers and finalized in January 2002.

The publication date for this data set is 05/15/2002. However, this is the second version of these data and metadata to be released. The first version was released in October of 1992 on the LTER web page and these same data were available on Baruch's Web presentation using Gopher access until 1999.

1.3 Time Period of Content:

9.3 Range of Dates/Times

9.3.1 Beginning Date: 19820603

9.3.3 Ending Date: 19960429

1.3.1 Currentness Reference:

Observed

1.4 Status:

1.4.1 Progress: Complete

1.4.2 Maintenance and update frequency: As needed

99.1.5.1 Description of Geographic Extent:

Oyster Landing pier in Crab Haul Creek: 33.21'2'' Lat., 79.11'27'' Lon. This tidal marsh creek resides in the North Inlet Estuary. The North Inlet Estuary lies east of the uplands of Hobcaw Barony (also known as the Belle W. Baruch Property). To the north of the Estuary is the Debordieu Colony Property. The Estuary is located in Georgetown County, South Carolina.

1.5.2 Bounding Rectangle Coordinates:

1.5.2.1 West Bounding Coordinate: -79.192

1.5.2.2 East Bounding Coordinate: -79.167

1.5.2.3 North Bounding Coordinate: 33.350

1.5.2.4 South Bounding Coordinate: 33.327

1.6 Keywords

1.6.1 Theme

1.6.1.1 Theme Keyword Thesaurus:	NONE
1.6.1.2 Theme Keyword:	WEATHER
1.6.1.2 Theme Keyword:	METEOROLOGICAL
1.6.1.2 Theme Keyword:	WATER TEMPERATURE
1.6.1.2 Theme Keyword:	COASTAL
1.6.1.2 Theme Keyword:	WATER LEVEL
1.6.1.2 Theme Keyword:	AIR TEMPERATURE
1.6.1.2 Theme Keyword:	WIND VELOCITY
1.6.1.2 Theme Keyword:	BAROMETRIC PRESSURE
1.6.1.2 Theme Keyword:	ESTUARY
1.6.1.2 Theme Keyword:	ECOSYSTEM
1.6.1.2 Theme Keyword:	CONDUCTIVITY
1.6.1.2 Theme Keyword:	LTER
1.6.1.2 Theme Keyword:	LONG-TERM ECOLOGICAL RESEARCH
1.6.1.2 Theme Keyword:	LONG-TERM
1.6.1.2 Theme Keyword:	SOLAR RADIATION
1.6.1.2 Theme Keyword:	TIDE
1.6.1.2 Theme Keyword:	TIDAL CREEK
1.6.1.2 Theme Keyword:	MARSH
1.6.1.2 Theme Keyword:	WIND DIRECTION
1.6.1.2 Theme Keyword:	SALINITY
1.6.1.2 Theme Keyword:	SALT MARSH
1.6.1.2 Theme Keyword:	TIDAL ELEVATION
1.6.1.2 Theme Keyword:	TIDE
1.6.1.2 Theme Keyword:	CLIMATE
1.6.1.2 Theme Keyword:	WATER QUALITY

1.6.2 Place

1.6.2.1 Place Keyword Thesaurus:	NONE
1.6.2.2 Place Keyword:	NORTH INLET
1.6.2.2 Place Keyword:	NORTH INLET Estuary
1.6.2.2 Place Keyword:	SOUTH CAROLINA
1.6.2.2 Place Keyword:	ATLANTIC COAST
1.6.2.2 Place Keyword:	OYSTER LANDING
1.6.2.2 Place Keyword:	CRAB HAUL CREEK
1.6.2.2 Place Keyword:	EAST COAST
1.6.2.2 Place Keyword:	SOUTHEAST COAST
1.6.2.2 Place Keyword:	COASTAL
1.6.2.2 Place Keyword:	GEORGETOWN COUNTY
1**.6.2.2 Place Keyword:**	USA

1.6.4 Temporal

1.6.4.1 Temporal Keyword Thesaurus:	NONE
1.6.4.2 Temporal Keyword:	1982
1.6.4.2 Temporal Keyword:	1983
1.6.4.2 Temporal Keyword:	1984
1.6.4.2 Temporal Keyword:	1985
1.6.4.2 Temporal Keyword:	1986
1.6.4.2 Temporal Keyword:	1987
1.6.4.2 Temporal Keyword:	1988
1.6.4.2 Temporal Keyword:	1989
1.6.4.2 Temporal Keyword:	1990
1.6.4.2 Temporal Keyword:	1991
1.6.4.2 Temporal Keyword:	1992
1.6.4.2 Temporal Keyword:	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:	1982-1996
1.6.4.2 Temporal Keyword:	1980s
1.6.4.2 Temporal Keyword:	1990s
1.6.4.2 Temporal Keyword:	HOUR
1.6.4.2 Temporal Keyword:	DAY
1.6.4.2 Temporal Keyword:	WEEK
1.6.4.2 Temporal Keyword:	MONTH
1.6.4.2 Temporal Keyword:	YEAR
1.6.4.2 Temporal Keyword:	DECADE

1.8 Access constraints:

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

1.9 Use constraints:

Following academic courtesy standards, the Principal Investigators (originators), the University of South Carolina's Belle W. Baruch Institute for Marine Biology and Coastal Research, and Grantor (see Data Set Credit) 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 NSF are not responsible for the misuse of data from this database. See the section on Distribution Liability.

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

1.12 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. Numerous researchers, faculty, post-docs, technicians, students, and data managers have contributed to these datasets.

1.14 Native Data Set Environment

From June 3, 1982 through September 21, 1989, the Climatronics meteorological system and IMP 803 cassette data acquisition system provided raw data on IMP 803 output magnetic cassette tapes. Data files were read directly from this magnetic tape and reformatted into a readable data set by a computer program called Metclean, written by Baruch Institute data managers.

Following the loss of the original meteorological station, September 21, 1989 through December 31, 1990 a National Center for Atmospheric Research (NCAR) meteorological station was borrowed and collected data from October 14, 1989 to December 31, 1990 in 5 minute increments. The NCAR system sent a signal every 15 minutes by satellite to a computer at NCAR in Boulder, Colorado. Once there, the data were recorded onto tapes. These tapes were then sent to the Baruch Marine Laboratory where the data were downloaded and reformatted by the University of South Carolina, Computer Services Division's (CSD).

On December 31, 1990, a new Campbell Scientific CR10 measurement and control module meteorological system was installed. The raw data output provided by this system were read and reformatted into a readable data set by a computer program called Smcom.exe, written by Baruch Institute data managers.

Until about 1993, all three station's data files were written to ASCII files and saved in text space delimited format in the CSD computer storage system, CMS system. In January 1993 the files were read directly off of the weather station and the data was processed from csv format into a Microsoft Excel format where data were compiled by year, formatted, and saved in a text space delimited format. Final data files available on Baruch's webpage are in csv (comma separated) format. See the Process Description Section for processing details and program descriptions.

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: 20021111
8.4 Title: North Inlet - Winyah Bay (NIW) National Estuarine Research Reserve Meteorological Data, North Inlet Estuary, Georgetown, South Carolina: 2001.
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 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: Belle W. Baruch Institute for Marine Biology and Coastal Research
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
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) as part of the NERRMET databases.
8.10 Online linkage: http://links.baruch.sc.edu/data/
8.11 Larger Work Citation
8. Citation Information
8.1 Originator: W.K. Michener (Editor)
8.1 Originator: A.B. Miller (Editor)
8.1 Originator: R. Nottrott (Editor)
8.2 Publication Date: 1990
8.4 Title: Long-Term Ecological Research Network Core Data Set Catalog
8.6 Geospatial Data Presentation Form: catalog in book and on-line form
8.8 Publication Information:
8.8.1 Publication Place: Columbia, South Carolina, USA

8.8.2 Publisher: 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

1.14 Cross Reference:
8. Citation Information
8.1 Originator: W.K. Michener
8.1 Originator: D.M. Allen
8.1 Originator: E.R. Blood
8.1 Originator: T.A. Hiltz
8.1 Originator: B. Kjerfve
8.1 Originator: F.H. Sklar
8.2 Publication Date: 1990
8.4 Title: Climatic Variability and Salt Marsh Ecosystem Response: Relationship to Scale. In: D. Greenland and W. Lloyd, Jr. (eds.): Climate Variability and Ecosystem Response: Proceedings of a long-term ecological research workshop; Boulder, CO. Gen. Tech. Rep. SE-65
8.6 Geospatial Data Presentation Form: scientific publication
8.8 Publication Information:
8.8.1 Publication Place: Asheville, NC
8.8.2 Publisher: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station
8.9 Other Citation Details: 90pp.

1.14 Cross Reference:
8. Citation Information
8.1 Originator: W.K. Michener
8.1 Originator: B. Kjerfve
8.1 Originator: D. Greenland (editor)
8.2 Publication Date: 1987
8.4 Title: North Inlet, SC. P.56-60 In: D. Greenland (ed.): The Climate of the Long-Term Ecological Research Sites.
8.6 Geospatial Data Presentation Form: scientific publication

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) 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 and Coastal Sciences
8.1 Originator: W. K. Michener
8.1 Originator: D. Taylor
8.2 Publication Date: 20030627
8.4 Title: Long-Term Ecological Research (LTER) National Weather Service Station Data for the North Inlet Estuary, Georgetown, South Carolina: 1986 – 1996
8.5 Edition: Second Edition
8.6 Geospatial Data Presentation Form: comma delimited digital data and spreadsheet
8.8 Publication Information:
8.8.1 Publication Place: Belle W. Baruch Marine Field Laboratory, Georgetown, South Carolina, USA

8.8.2 Publisher: Belle W. Baruch Institute for Marine and Coastal Sciences, University of South Carolina
8.9 Other Citation Details: LTER Data Set Code NIN002
8.10 Online linkage: http://links.baruch.sc.edu/data/

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Elizabeth R. Blood
8.2 Publication Date: 1990
8.4 Title: Estuarine Surface Water Nutrient Chemistry and Water Quality Data for Clambank and Oyster Landing*
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN003

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Richard G. Zingmark
8.2 Publication Date: 1990
8.4 Title: Long-Term Variations in Phytoplankton Biomass in North Inlet Estuary*
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN004

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Leonard R. Gardner
8.2 Publication Date: 1990
8.4 Title: Suspended Sediment*
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN005

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

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Elizabeth Blood (Daily Estuarine Surface Water Nutrient Chemistry and Water Quality Data)
8.1 Originator: Leonard Robert Gardener (Suspended Sediments)
8.1 Originator: Richard Zingmark (Phytoplankton Biomass - Chlorophyll a and Phaeophytin)
8.1 Originator: Belle W. Baruch Institute for Marine Biology and Coastal Research
8.2 Publication Date: 19981120
8.4 Title: Long Term Ecological Research (LTER) Daily Estuarine Surface Water Nutrient and Water Quality, Suspended Sediment, and Chlorophyll a Data for the North Inlet Estuary, Georgetown, SC: 1978-1993
8.6 Geospatial Data Presentation Form: comma delimited digital data and spreadsheet
8.5 Edition: First Edition
8.7 Series Information:
8.7.1 Series Name: Baruch Institute's Water Chemistry, Chlorophyll a, and Suspended Sediment Long-Term Monitoring Database for the North Inlet Estuary, South Carolina
8.7.2 Issue Identification: September 1, 1978 - June 30, 1993
8.8 Publication Information:
8.8.1 Publication Place: Georgetown, South Carolina USA
8.8.2 Publisher: Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina
8.10 Online Linkage: http://links.baruch.sc.edu/data/

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Elizabeth R. Blood
8.2 Publication Date: 1990
8.4 Title: Precipitation Chemistry
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN006

1.14 Cross Reference:

8. Citation Information:
8.1 Originator: Dr. James T. Morris
8.2 Publication Date: 1990
8.4 Title: Spartina Production
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN007

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Dennis M. Allen
8.2 Publication Date: 1990
8.4 Title: Motile Epibenthos, Macrozooplankton
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN008

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Stephen E. Stancyk
8.2 Publication Date: 1990
8.4 Title: Zooplankton (153 µm)
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN009

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

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

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

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Robert J. Feller
8.2 Publication Date: 1990
8.4 Title: North Inlet Subtidal Macrobenthos
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN013

1.14 Cross Reference:
8. Citation Information:
8.1 Originator: Dr. Bruce C. Coull
8.2 Publication Date: 1990

8.4 Title: Meiobenthos Abundance, Copepod Species Data
8.6 Geospatial Data Presentation Form: digital text
8.9 Other Citation Details: Data Set Code: NIN014

2. Data Quality Information
2.1 Attribute Accuracy
2.1.1 Attribute Accuracy Report:

Jun. 1982 - Sept. 1989 (Pre- Hurricane Hugo) Meteorological System Accuracy:

Wind Velocity:	± 0.11 Meters per Second
Wind Direction:	± 3.0 Degrees
Air Temperature:	± 1.0% of full scale
Water Temperature:	± 1.0% of full scale
Solar Radiation (Eppley):	± 1.0% (measures wavelengths of 280 to 2800 nanometers)
Water Level:	± 0.5% of full scale
Conductivity:	± 1.0% of full scale
Barometric Pressure:	± 1.0%

There is no accuracy information available for the NCAR system utilized after Hurricane Hugo. We assume that the measurements provided by NCAR were at least as accurate as those from the other two meteorological systems, it is likely that they are more accurate.

Jan. 1991 - April 1996 Meteorological System Accuracy:

Wind Velocity:	± 0.12 Meters per Second
Wind Direction:	± 4.0 degrees
Air Temperature:	± 0.4 degrees Celsius
Water Temperature:	± 0.4% degrees Celsius
Solar Radiation (Eppley):	± 1.0% (measures wavelengths of 280 to 2800 nanometers)

Water Level: Unknown, assume at least as accurate as former sensor which was ± 0.5% of full scale, probably more accurate.

Conductivity:	± 0.5% of full scale
Barometric Pressure:	± 0.5 millibars at +20 degrees C, ± 2.0 millibars at 0-40 degrees C
Solar Radiation (Licor):	± 1.0% (measures wavelengths of 400 to 700 nanometers)

2.1.2 Quantitative Attribute Accuracy Assessment
2.1.2 .1 Attribute Accuracy Value:

For Final Dataset only:
LTER.MET.1982.FINAL & LTER.MET.1982.FINAL.CSV to LTER.MET.1996.FINAL &LTER.MET.1996.FINAL.CSV.

Variable	Number of decimal places
Date (mm/dd/yyyy)	0
Jday	0
Hour	0
Date/Time	0
Wind Velocity	1
Max Wind Velocity	1
Wind Direction	0
Air Temperature	1
Water Temperature	1
Solar Radiation (Eppley)	1 up to 9/89, 2 from 10/89 - 12/90, 3 from 1/91 to 2/96
Water Level	1
Conductivity	1

Barometric Pressure	0
Solar Radiation (Licor)	1

2.1.2.2 Attribute Accuracy Explanation:

Information on the Climatronics IMP 803 and the Climatronics CR10 systems and the accuracy of their components were taken from the Climatronics instruction manuals stored on site at the Baruch Marine Field Lab. Number of decimal places that were published for the final database were based on the accuracy of the sensors and the range of measurement for each sensor. The number of decimal places that were published for some sensors are limited by the number that were initially recorded by the sensors in the raw database. They cannot be rescued.

Date, Jday, Hour, and Date/Time have no decimal places assigned to them because they are integers, and are accurate to the whole number.

Wind Velocity: accuracy is to ±0.11 or ±0.12, so values were rounded to the nearest 10^{th} or 1 decimal place.

Max Wind Velocity: accuracy is to ±0.11 or ±0.12, so values were rounded to the nearest 10^{th} or 1 decimal place.

Wind Direction: accuracy is ± 3.0 or ± 4.0 degrees, so values were rounded to the nearest whole number.

Air Temperature: accuracy is ± 1.0% of full scale or ± 0.4 degrees Celsius, so one decimal place was kept.

Water Temperature: accuracy is ± 1.0% of full scale or ± 0.4 degrees Celsius, so one decimal place was kept.

Solar Radiation (Eppley): accuracy is ± 1.0% of the reading, so accuracy ranges from 0.00001 to 0.0299. A minimum of three decimal places are needed to use the database. The number of decimal places recorded in the Final data for the Eppley sensor is solely based on (or limited by) the number of decimal places in the original data files. From 1982 to 9/89, the original data managers and weather station technicians only kept one decimal place in the raw files. When the NCAR system was deployed (10/89 - 12/90), two decimal places were kept in the raw and edited files. From 1/1991 to 2/96, the weather technician/data manager recorded three decimal places in the raw downloaded file.

Water Level: accuracy is ± 0.5% of full scale which is 0.0 to 1.5 cm, so one decimal place was kept.

Conductivity: accuracy is ± 1.0% of full scale (before 9/1989) and ± 0.5% of full scale (beginning 1/91), so accuracy ranges from 0.001 to 0.7 before 9/1989 and 0.0005 to 0.35 after this. Therefore, one decimal place was kept. Barometric Pressure: accuracy is ± 1.0% of full scale before 9/1989 and ± 0.5 millibars at +20 degrees C, ± 2.0 millibars at 0 to 40 degrees C after this time. Therefore, no decimal places were kept with this sensor's output.

Solar Radiation (Licor): accuracy is ± 1.0% of reading of 0 to approx. 2000. Since accuracy is based on the reading, one decimal place has been kept, but it is up to the user to note the decrease in accuracy as the reading increases.

A log of maintenance, problems, and observations relevant to the meteorological station may be found in the Climatronics Meteorological System Log. A list of observations or difficulties that may have led to anomalous data, also correlated with entries in the system log, may be found in the Anomalous Data Documentation file, called LTERMET.ANOMALOUSDATA.doc. These documents have been provided on-line with the database and are also published in the LTER Weather Compact Disk.

2.2 Logical Consistency Report:

Not applicable

2.3 Completeness Report:

The data files were verified for typographical errors by the Data Manager.

The weather station technicians' log of maintenance, problems, and observations relevant to the meteorological station may be found in the Climatronics Meteorological System Log file, called LTERMET.ClimatSysLog.

Specific data availability information correlated to entries in the system log may be found in the Missing Data Documentation file, called LTERMET.MissingData. Missing data values are represented by periods in the dataset. The Missing Data Documentation (59 pages long) identifies data that are missing from the meteorological data set, 1982-1996.

A list of observations or difficulties that may have led to anomalous data, also correlated with entries in the Meteorological System Log, may be found in the Anomalous Data Documentation file called, LTERMET.AnomalousData. The Anomalous Data Documentation document identifies data that are present in the meteorological data set (1982-1996), but that the final data reviewer believes may be compromised in quality and accuracy. These entries are found under the heading "Data Review" and include the dates and times of the suspect readings. Entries made in the Climatronics Meteorological System Log on particular dates are also included in the Anomalous Data Documentation under the "Weather Log" heading for each year. The data reviewer included these System Log excerpts in an attempt to make the user aware of any potential problems with data quality. It is important to remember that the Weather Log is the only

documentation available for use in checking for errors and anomalous data. There is no further documentation regarding what specific steps were taken by technicians to remove or correct anomalous data.

All three of these documents, LTERMET.ClimatSysLog, LTERMET.MissingData, and LTERMET.AnomalousData have been provided on-line (http://links.baruch.sc.edu/data/LTERMET/metadata/metadata.htm) and are also published in the LTER Weather Compact Disk.

2.5 Lineage

2.5.1 Methodology

2.5.1.1 Methodology Type: Field Collection Procedures and Protocols

2.5.1.3 Methodology Description:

Meteorological data with water parameters were collected on an hourly (value is an average of the 3600 instantaneous secondly readings before the hour of record) basis from June 3, 1982 through April 29, 1996, at Oyster Landing at the end of an 800 foot boardwalk ending in Crab Haul Creek. "Standardized Meteorological Measurements for Long Term Ecological Research Sites," published in 1986, was used as a guideline for assembling meteorological data. Readings were taken 24 hours a day, every day of the year, except when individual probes or the entire meteorological station were down. Three different meteorological systems were used during this period.

System 1

During the phase preceding September 21, 1989, the Climatronics Corporation of Bohemia, NY, designed the system in use. It consisted of a remote meteorological system with telemetry and an IMP 803 cassette data acquisition system. The system was designed to measure and transmit wind speed, wind direction, air temperature, barometric pressure, solar radiation, precipitation (see Supplemental Information), water level, water temperature, and conductivity data. This system consisted of the following components:

Remote Site:
1. Wind Speed and Direction sensors with cross arm Climatronics Wind Mark III
2. Naturally Aspirated Temperature Shield w/ YSI 703 - Dual Element Air Temperature Thermistor
3. Solar Radiation sensor with mount, Eppley 8-48 radiometer
4. Barometric Pressure sensor, YSI 2014 transducer
5. Precipitation Gauge, Belfort Instruments tipping bucket gauge
6. Water Depth, Enviro-Labs Water Level Sensor
7. Water Temperature, YSI 701 Water Temperature Thermistor
8. Conductivity Meter, YSI Conductivity Sensor, glass conductivity cell and temperature compensator
9. Remote Meteorological System mainframe in a NEMA environmental enclosure (with mounting hardware), housing the following equipment:
    a. signal conditioning electronics
    b. modem transmitter
    c. conductivity meter
    d. line protectors
10. Ten meter aluminum tower with guying kit
11. Cables, connectors and a sensor mounting boom

The wind cross arm was mounted to the 4 foot extension mast located at the top of the tower. The temperature shield and solar radiation sensor were mounted on a tower boom near the top of the tower. The precipitation gauge was mounted on a level surface approximately 20 meters from the tower base. The barometric pressure sensor was mounted inside of the NEMA enclosure. The water temperature, water level and conductivity cables were placed in a rigid PVC well in the water.
All of the sensor cables were wired through the signal line protector except the conductivity cell. The remote meteorological site's NEMA enclosure housed the signal conditioning electronics, the conductivity meter, an AC/DC converter, and a battery back-up pack.

Base Site:
1. Pre-wired Instrument Cabinet containing a mainframe with a power supply and Modem Receiver, a multiplexing (MUX) recorder, and an IMP 803 Microprocessor based Cassette Data Acquisition System.
2. 2,500 feet of telemetry cable.

All sensors were scanned once per second (3600 times per hour) except wind direction, water level, and precipitation. Wind direction hourly data is based on a mean of 120 scans per hour. Final hourly data values are an average of the number of scans for the previous hour. Water level and precipitation (cumulative) values are instantaneous readings recorded at the time indicated.

System 2

Hurricane Hugo destroyed the original meteorological station on September 21, 1989. From October 14, 1989 through December 31, 1990, the meteorological system utilized was borrowed from the National Center for Atmospheric Research (NCAR) in Boulder, Colorado. The signal was scanned every second and a 5 minute mean was transmitted every 15 minutes to a satellite, which in turn sent the signal to a computer in Boulder, CO. NCAR designed and built the system to measure, transmit, and store wind speed, wind direction, maximum wind velocity, dry air temperature, wet air temperature, barometric pressure, solar radiation, precipitation, dew point, and relative humidity. This data set was modified in the final form to only include the wind speed, wind direction, air temperature, barometric pressure, and solar radiation data in order for it to be compatible with the previous long-term climate data. The water temperature, water level, and conductivity parameters measured previously are absent from this portion of the data set.

The NCAR system consisted of the following components:
1. Anemometer is mounted to the top of the 8 meter mast
2. The temperature sensors are located near the shield within a cylinder.
3. The solar radiation sensor is mounted on a separate post approx 5 m away from the tower.
4. Precipitation gauge is mounted on a level surface approx 5 m from the tower base.
5. Barometric pressure sensor is mounted inside the NEMA enclosure.

All sensors were scanned 3600 times per hour (including wind direction with this frequency), except for precipitation which was a cumulative value for the hour.

System 3

On December 31, 1990, a new Campbell Scientific CR10 measurement and control module meteorological system was installed. The system was designed by Climatronics Corporation to measure and transmit wind speed, wind direction, air temperature, barometric pressure, solar radiation, precipitation (see Supplemental Information), water level, water temperature, and conductivity data. This system is still in use to date, however, this data set concludes on April 29, of 1996 because of electrical problems. The entire system was rebuilt and calibrated and back online in July 1997 as part of the National Estuarine Research Reserve (NERR) Program.

The system consists of the following components:
1. Wind speed and direction sensors with cross arm Climatronics Wind Mark III
2. Naturally Aspirated Temperature Shield w/ YSI 703 - Dual Element Air Temperature Thermistor
3. Solar radiation sensor with mount, Eppley 8-48 radiometer
4. Barometric pressure sensor, YSI 2014 transducer
5. Precipitation gauge, Sierra-Misco 2500-8 Tipping Bucket Precipitation Gauge
6. Water depth, Keller PSI PT108V-50-15PSI Water Level Sensor
7. Water temperature, YSI 070/44018/NA/RN/300 - Water Temperature Thermistor
8. Conductivity Meter, Rosemount 1181T-00-02-99 Water Conductivity Probe
9. Remote Meteorological System mainframe in a NEMA environmental enclosure (with mounting hardware), housing the following equipment:
    a. signal conditioning electronics
    b. modem transmitter
    c. conductivity meter
    d. line protectors
    e. CR10 data logger
10. Ten meter aluminum tower with guying kit
11. Cables, connectors, and a sensor mounting boom
12. Solar radiation sensor, Licor LI190SB Quantum Sensor (added in 1994)

The wind cross arm is mounted to the 4 foot extension mast located at the top of the tower. The temperature shield and solar radiation sensor are mounted on the tower boom near the top of the tower. The barometric pressure sensor is mounted outside of the NEMA enclosure. The water temperature, water level and conductivity cables are placed in a rigid

PVC well in the water. All of the sensor cables are wired through the signal line protector. The remote meteorological site's NEMA enclosure houses the Campbell control module, the storage module, the Rosemont conductivity transmitter, and a backup 12-volt battery. The primary power source is a solar panel.

All sensors were scanned once per second (3600 times per hour) and hourly means (from the previous 3600 seconds) were generated on the hour. The only exception was the water level parameter, which recorded an instantaneous value every six minutes. An instantaneous water level value was also recorded on the hour.

As of November 1992:
Once a week the storage module that records data was retrieved from the field, and the data were downloaded to a PC in Baruch's data management office using a program called SMCOM, written by Campbell Scientific. This was done because the field laboratory was not completely reconstructed after Hurricane Hugo and the remote phone line to the MET station tower was not yet installed. The data were reformatted and appended to the yearly data set. The data were archived in six month blocks.

As of July 1993:
The dedicated phone line was installed and the weather module data was accessed by phone line. The remote station was called up through the program called "TELCOM". This program downloads all data that have not already been retrieved. Another program called "TERM", displays a form screen which displays the realtime data as it is happening, but the program does not record any data to the computer file.

As of 10/5/94:
The Licor LI-190SB solar radiation sensor was added. This sensor uses a unique multiplier for each individual sensor that is based on a calibration constant obtained during the calibration process. The calibration constants and multipliers for this data set (94-96) were not documented, but were simply part of the datalogger program.

2.5.1.4 Methodology Citation:
8. Citation Information
8.1 Originator: U.S. Department of Commerce, Environmental Science Services Administration, Weather Bureau
8.2 Publication Date: 1970
8.4 Title: Weather Bureau Observing Handbook No. 2; Substation Observations
8.6 Geospatial Data Presentation Form: Published Manuscript
8.8 Publication Information:
8.8.1 Publication Place: Silverspring, MD
8.8.2 Publisher: U.S. Government Printing Office
8.9 Other Citation Details: 77pp.

2.5.1.4 Methodology Citation:
8. Citation Information
8.1 Originator: D. Greenland (ed.)
8.2 Publication Date: 198606
8.4 Title: Standardized meteorological measurements for Long-Term Ecological Research Sites
8.6 Geospatial Data Presentation Form: scientific publication
8.8 Publication Information:
8.8.1 Publication Place: University of Colorado
8.8.2 Publisher: Bulletin of the Ecological Society of America
8.9 Other Citation Details: Volume 67(4): pp.275-277

2.5.1.4 Methodology Citation:
8. Citation Information
8.1 Originator: Climatronics Corporation
8.2 Publication Date: unknown
8.4 Title: Climatronics System Description - 4 operation manuals
8.6 Geospatial Data Presentation Form: manuals
8.8 Publication Information:
8.8.1 Publication Place: Bohemia, NY
8.8.2 Publisher: Climatronics Corporation

2.5.1.4 Methodology Citation:

8. Citation Information

8.1 Originator: Baruch researchers, technicians, and data managers
8.2 Publication Date: 1996
8.4 Title: Meteorological Station System Log
8.6 Geospatial Data Presentation Form: Field Notebook (hardcopy) and digital text document
8.8 Publication Information:
8.8.1 Publication Place: Belle W. Baruch Marine Field Laboratory, Georgetown, SC
8.8.2 Publisher: Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina

2.5.3.1 Process Description:

Meteorological System 1

From June 3, 1982 through September 21, 1989, the Climatronics meteorological system and IMP 803 cassette data acquisition system provided raw data on LA50 80 character printouts and on IMP 803 magnetic cassette tapes. Data were edited on a daily basis from the 80 character printouts and data files were read directly from the magnetic tapes approximately every 45 days. These files were then reformatted into a readable data set by a computer program called "Metclean", written by Baruch Institute data managers (see Data Set Environment). "Metclean" also performed a number of error checking routines. Metclean flagged values outside of their ranges (designated with a -88 by the program). The program output was renamed to fit the date of the data file by the operator, written to an ASCII file and visually checked for errors, and sent by phone line to the Computer Services Division of the University of South Carolina in Columbia, South Carolina.

RAW Data Storage:

1) Raw data were stored on IMP 803 output cassette tapes labeled tape 1 through tape 53. Each tape contains approximately 45 days of data.
2) The IMP 803 also produced 80 character printouts, which were bound and labeled in blue printout binders.
3) Copies of the IMP 803 tapes were made on 5 ¼" 800K digital diskettes and labeled tape 1.log through tape 53.log.

Note: All raw data forms were stored at the Baruch Marine Laboratory in Georgetown, SC. These were damaged in Hurricane Hugo and are not available for use.

Program: Metclean.basic (note: this program is obsolete as of September 21, 1989)
Data Set: Meteorological
Program Author: Bob McLaughlin
Program Author: Daniel Taylor
Principle Investigator: F.J.Vernberg
Principle Investigator: B. Kjerfve
Program Definition: This program reads a raw, undesirably formatted data file as the Weather Station (IMP 803) writes it, and reformats it into a readable data set. Input: Data is read into the program from a file that is copied from the IMP 803 magnetic tape. Conditions Required to Run Program: All missing days and channels must be known before running "Metclean" in order to produce corrected missing data values.

Hourly Data storage:
The reformatted and cleaned hourly data files from this period are stored in the following locations:

1) 5 ¼" 800K Digital Diskettes, output from program Metclean.BAS, labeled Y82154.DAT through Y89054.DAT, Baruch Marine Laboratory, Georgetown, SC. These are missing as of January 2002.
2) University of South Carolina, Computer Services Division Mass Storage System, archived in a partitioned data set structure, University of South Carolina, Columbia, SC. These hourly data files called A200208.LTER.METHOUR.Y1982(JUN) through LTER METHOUR.Y1989(SEP) were downloaded to the Baruch Institute's data manager's computer on Aug 9, 2001. In January 2002 these files were then placed in the folder: LTER.METHOUR.Y1982-89.MO under the directory: LTER/weather/LTER.MET.EditedData/Processed1989. Later in 2002 they were archived onto a CD with the rest of the weather data, documentation and graphics.
3) University of South Carolina, Computer Services Division Tape Library, 2400 Ft. 9 track tape, University of South Carolina, Columbia, SC. It is unknown, as of February 2002, whether these are still available.

Meteorological System 2

Following the loss of the original meteorological station after September 21, 1989, a National Center for Atmospheric Research (NCAR) meteorological station was borrowed, and it collected data from October 14, 1989 to December 31, 1990. The meterological station's signal was scanned every second and averaged every 5 minutes. The NCAR system sent a signal every 15 minutes by satellite to a computer at NCAR in Boulder, Colorado. Hourly means were performed on the data by the staff at NCAR. This dataset was sent to the Baruch Marine Field Laboratory (BMFL) on a 2400 bpi magnetic tape.
The staff at the BMFL sent the data to USC CSD IBM Mainframe computer. The files were visually checked for errors that could have occurred during satellite monitoring or uploading on the dedicated phone line from the BMFL to campus. Missing data are indicated by a -99.0.

The original, raw, 5 minute, error flagged, NCAR data files from 10/14/89 to 12/31/90 and the error flagging information are on the following CSD 2400ft. 9 track tapes:

a) 010321: contains data for 12/30/89 to 2/28/90
b) 010322: contains data for 10/14/89 to 12/14/89
c) 010323: contains data for 5/1/90 to 6/30/90
d) 010324: contains data for 3/1/90 to 4/30/90
e) 010325: not able to recover data as of 1/30/02. All i/o errors.
f) 008524: contains data for 7/1/90 to 8/31/90
g) 008526: contains data for 9/1/90 to 9/30/90
h) 008529: contains data for 10/1/90 to 12/19/90
i) 008537: contains data for 12/20/90 to 12/31/90

The information below describes the data rescue of CSD tapes above because of age and obsolete technology (January 2002):

a) The tapes were identified and downloaded onto USC's CMS system by CSD staffer, Dorothy Tudor.
b) Each tape contained multiple files; all were identified and named in numerical order.
c) Odd numbered files = 80 record length, 3 kb in size, and contain the flagging information (all are duplicates of the same information); even numbered files are mostly 660 record length, 73 kb, and contain the 5 minute data for one day.
d) All files except those on tape 010325 were ftp'd to the Baruch Data manager's personal computer, and archived to CD.
e) Column headings for daily 5 minute tape files:
    Date (yy/mm/dd)
    Time (hh:mm:ss)
    Barometric pressure
    Dry Air Temperature
    Wet Air Temperature
    Dew Point
    MR (As of February 1, 2002, do not know what this is)
    Relative Humidity
    U_Wind
    V_Wind
    Wmax
    RainA

Program: NCAR1 SASJOB
Data set: Meteorological
Program Authors: Karen Maloney & Daniel Taylor
Program Definition: The program reads a raw undesirably formatted NCAR file, and reformats it into a readable data set.
Input: Data is read from a file that is recorded onto one of the eight magnetic tapes that was provided by NCAR.
Output: The program output is renamed by the operator in the program before it is run. The output data file is then sent to Mass Storage at the USC Computer Services Division.
Conditions required to run NCAR1 SASJOB: The VOLSER must be changed in all of the DD cards, the odd numbered DD cards define the text files which contain the number of parameters for the data files. The label numbers will always be odd. Do not change the DD names, just change the label numbers when going against the second month on the tape. To add additional days, repeat the last odd DD card and increment the in61 to in63 est. and increment the label number by two. You must change the DASN to reflect the DASD DSN you want to use. The number in the do statement must match the number of the days you are running against. It should be one half the number of DD cards.

The raw, reformatted, and flagged (for missing and out-of-range) hourly data were stored as partitioned data sets in the University of South Carolina's Mass Storage System called A200208.LTER.NCARHALF.Y1989.OCT-DEC through LTER.NCARHALF.Y1990.JLY-DEC. These files were downloaded to the Baruch Institute's data manager's computer, placed in the folder, LTER.NCARHALF.Y1989-90 under the directory, LTER/weather/LTER.MET.NCAR.RawData and archived onto a CD with the rest of the weather data, documentation and graphics.

The reformatted, cleaned, edited hourly data files from this period are stored in the following locations:

a) Partitioned data sets in the University of South Carolina's Mass Storage System
b) University of South Carolina, Computer Services Division Tape Library, 2400 Ft. 9 track tape, University of South Carolina, Columbia, SC. (Used as a backup for the mass storage.)
c) On CD at the Baruch Marine Field Lab in directory LTERMET.EditedDATA/Processed1991, in the NCAReditedFiles folder, file names: NCAR89OD, NCAR90JJ, NCAR90JD. These files are text and CSV formatted files.

The final edited data set was then read into a Microsoft Excel form where data were compiled by year, formatted, and saved in Excel and in a csv (comma separated) format. Data files available on Baruch's webpage are in csv (comma separated) format.

SAS programs for NCAR data are also published on CD with the rest of the LTERMET data.

Meteorological System 3

On December 4, 1990, a new Campbell Scientific CR10 measurement and control module meteorological system was installed. The raw data output provided by this system were read and reformatted into a readable data set by a computer program called "Smcom.exe", written by Baruch Institute data managers. Once the Smcom program was installed, this process occurred automatically at the data logger stored in the NEMA enclosure on the met station tower at Oyster Landing. Data were downloaded once a week and visually edited to identify any errors. The data were then formatted to be consistent with the pre-existing data sets and transferred in six-month blocks to a SUN workstation and archived on 8mm tapes. Data were then read into a Microsoft Excel format, edited by hand for any errors, formatted, compiled by year, and saved in a text tab format.

Program "Smcom.exe"
Data Set: "Meteorological"
Program Author: Campbell Scientific Inc.
Principle Investigator: F.J. Vernberg
Principle Investigator: B. Kjerfve
Program Definition: This program reads a raw, undesirably formatted data file as the Weather Station (CR 10 datalogger) writes it, and reformats it into a readable data set.
Conditions Required to Run Program: Basic questions about the connection must be answered during the program execution, and the current Julian day must be entered.

Raw data from Dec 31,1991 to Dec 31, 1992 were archived onto a 3 ½" diskettes labeled by year and stored at the Baruch Marine Laboratory in Georgetown, SC labeled with the following names.

1)Met*.DAT / (pre Y9****.DAT) metfiles
2)Y91*.Dat / Metfiles
3)Y920*.DAT / metfiles
4)Y921*.DAT / Y922*.DAT Metfiles
5)Y923*.DAT

Data Rescue and compilation of Raw data above:

Raw data files above were downloaded to Baruch Institute's data manager's machine and written to a CD. The 3 ½" diskettes above have been discarded.

All raw data after July, 1993 were stored directly to the weather technicians computer from the weather module by phone line and archived to a SUN workstation at the BMFL.

Data for each year (1991-1996) were presumably run through a program entitled Metcheck. Metcheck was designed to check for anomalous data by flagging readings that may be within the suitable range of measurement but fairly extreme, or not within a suitable range for that variable at all. These flagged readings were then verified by hand. The criteria for flagging are values outside of the following ranges (designated or flagged with a -88 by the program):

Wind Velocity: 0-20 Meters per Second
Wind Direction: 0-540 Degrees
Air Temperature: -10-40 Degrees C.
Water Temperature: 34-0 Degrees C.
Solar Radiation (Eppley): 0-1.5 Langleys/minute
Water Level: 15-290 centimeters
Conductivity: 10-48 millivolts/centimeter
Barometric Pressure: 945-1030 Millibars

Program Metcheck
Data Set: Meteorological
Program Author: Unknown
Principle Investigator: F.J. Vernberg
Principle Investigator: B. Kjerfve
Program Definition: Reads data file and verifies that readings are within an acceptable range for the variable.

The 6-minute instantaneous water level readings were discarded from the final data set. Reformatted hourly "metchecked" data for all three meteorological systems are stored in the following locations:

a) Data Manager's PC and on CD in fireproof cabinet with all raw data, edited data, and final data and metadata at the Baruch Marine Field Laboratory, Georgetown, SC
b) 8mm tapes, Baruch Institute, Columbia, SC. Not sure if these still exist.

The 1992 originally processed data for submission to the LTER web page are named as follows and are space delimited:

LTER.NIN.MET.1982
LTER.NIN.MET.1983
LTER.NIN.MET.1984
LTER.NIN.MET.1985
LTER.NIN.MET.1986
LTER.NIN.MET.1987
LTER.NIN.MET.1988
LTER.NIN.MET.1989
LTER.NIN.MET.1990
LTER.NIN.MET.1991
LTER.NIN.MET.1992

The file naming convention was changed in 1995 to simply MET82, MET83, MET84,….., MET95, MET96. These files are in MS Excel 2000 and text space format, and now reside in the LTER.MET.EditedData directory in the Processed1996 folder on Archive CD One at the BMFL.

Final Process step (October 2001 - January 2002):

The space delimited data sets (MET.yyyy) above were read into a Microsoft Excel format (unless they were already in Excel) and the name changed to LTER.MET.yyyy. The data for each year were then formatted to a standard that would be used for the entire data set. Formatting and editing changes included:

1) All 24-hour maximum and minimum values were removed from the hourly Excel worksheet and pasted into a separate Excel worksheet within the same workbook as the hourly file. Maximum and minimum values were originally represented by several different time values: 2500, 25LO, or 2402 for minimum values and 2600, 25HI, or 2403 for maximum values. These representations were all changed to "max" or "min" under a variable column designated as "24 Hour" in the new worksheet. These files are included in the final excel formatted file (see number 12 below); the worksheet is entitled "24hour-maxmin". These 24 hour worksheets have been exported as csv (comma separated) files and are named: LTER.METYYYY.24HRMAXMIN.FINAL.CSV where YYYY=1982-1996.

2) Variable columns for maximum wind velocity and Licor solar radiation were added for all years prior to the new variable's implementation (1993 and 1994, respectively).

3) The column for max wind velocity was omitted from the 24-hour max/min worksheet (the maximum values were already represented in the wind velocity portion of this worksheet).

4) Data were formatted to show the sensitivity of the measurement that took place at that time (sensitivity sometimes changed throughout the data set) by displaying the correct number of decimal places.

5) All years were formatted to use the 1900 date calculating system.

6) Missing data or out-of-range indicators (including -99, -88, 9999, .9, etc.) were replaced with a (.).

7) Data for each year were saved in a csv (comma separated) format.

8) Original documentation and spreadsheets had meters as the units for water level and 0.0 – 3.0 meters as the range of measurement. After examining the data it was obvious that the readings were in centimeters, and the range of measurement 0.0 – 300.0 cm, so the units were changed throughout.

9) Precipitation variable was removed from all original yearly datasets. The data are available in the raw and edited directories on LTERMET Archive CD One, but it is not advised because of the problems associated with the instrumentation.

10) Data Rescue of Solar Radiation (Eppley) data:
To recover the solar radiation data to three decimal places, the raw (some were edited) data files were used to rebuild each year's data. All files used in this process are in the EditedProcessedData / SolarRadiation3decPlacesRescue directory. Data for 1989 and 1990, however, were only rescued to 2 decimal places. Another exception to recovery to 3 decimal places was in 1992, Julian day 55, hour 1000 to 56 hour 1000 where the data could not be recovered to 3 decimal places, it still is in one decimal place. To verify the new rebuilt solar database, all 2 and 3 decimal place recovered data was converted to one decimal place and verified with the NIN.MET final data. Over 99% of the values matched. Some errors were found and corrected in the final posted data.

NOTE: The processed data files (not final) LTER.NIN.MET.1982 - 1992 and MET82-96 mentioned above will have different solar radiation data for the Eppley sensor from final data listed in #12 below. The NIN.MET files had Eppley solar radiation values to one decimal place. The values were recovered to three decimal places from October 1989 to April 1996. The earlier data could not be rescued because the original data files could not be found. In the "24hour-maxmin" sheet of each LTER.MET.19YY.FINAL Excel file, the max/min solar Eppley data from 1982-1994 were removed because they were based on one decimal data and therefore inaccurate. The final exported csv files called, LTER.METYYYY.24HRMAXMIN.FINAL.CSV, also had their Eppley data removed for the same years.

11) Annual data were graphed in Deltagraph (version 4.05e) and data were visually inspected for errors. The few modifications that were made as a result of this process are documented in the missing data and/or anomalous data sections. In order for the time interval 2400 to be graphed properly, the time value was changed in Excel and Deltagraph to 2359. {When combining date & time into one variable column from Excel to Deltagraph, the program automatically changed all 2400 hour to 0000 hour which moved all data from the end of the day to the beginning of each day.} Final Deltagraph graphical data file names are: LTER.FINALMET.YYYY.GRAPHICS; where YYYY=1982 to 1996. TIF graphs were created from Deltagraph in order to post them to the web and are named LTER.MET.YYYY.(Variable name).graph.TIF.

12) **Final processed/edited data** are annual files containing the following variables in the following order:

- Date (mm/dd/yyyy)
- Julian day
- hour (time)
- datetime
- wind velocity
- wind velocity maximum (for the hour)
- wind direction
- air temperature
- water temperature

solar radiation (Eppley sensor)
water level
conductivity
barometric pressure
solar radiation (Licor)

These final annual hourly data files are in both Excel and csv (comma separated) formats and have the following names:

LTER.MET.1982.FINAL	LTER.MET.1982.FINAL.CSV
LTER.MET.1983.FINAL	LTER.MET.1983.FINAL.CSV
LTER.MET.1984.FINAL	LTER.MET.1984.FINAL.CSV
LTER.MET.1985.FINAL	LTER.MET.1985.FINAL.CSV
LTER.MET.1986.FINAL	LTER.MET.1986.FINAL.CSV
LTER.MET.1987.FINAL	LTER.MET.1987.FINAL.CSV
LTER.MET.1988.FINAL	LTER.MET.1988.FINAL.CSV
LTER.MET.1989.FINAL	LTER.MET.1989.FINAL.CSV
LTER.MET.1990.FINAL	LTER.MET.1990.FINAL.CSV
LTER.MET.1991.FINAL	LTER.MET.1991.FINAL.CSV
LTER.MET.1992.FINAL	LTER.MET.1992.FINAL.CSV
LTER.MET.1993.FINAL	LTER.MET.1993.FINAL.CSV
LTER.MET.1994.FINAL	LTER.MET.1994.FINAL.CSV
LTER.MET.1995.FINAL	LTER.MET.1995.FINAL.CSV
LTER.MET.1996.FINAL	LTER.MET.1996.FINAL.CSV

The final annual 24 hour max/min data files are in their own worksheet in the yearly Excel files above. The csv (comma separated) version of each year's min/max data are called: LTER.METYYYY.24HRMAXMIN.FINAL.CSV. Both the Excel version and the csv with the following variable order and information:

Date
Julian Day
24 Hour (min/max)
Wind Velocity
Wind Direction
Air Temperature
Water temperature
Solar radiation (Eppley sensor)
Water level
Conductivity
Barometric pressure
Solar radiation (Licor)

The hourly and 24 hour min/max final files are on CD, on the Baruch Webpage, and the Baruch Institute's Data Manager's computer.

13) Summary statistics (average, N, SD, and 95%CI) were calculated for each year in Excel and the yearly average and 95%CI were graphed in Deltagraph. The Excel data table is called LTER.MET.1983-95.ANNUALAVE.FINAL and the summary graphics file is called LTER.FINALMET.1983-95.ANNUALAVE.GRAPHICS. These files are also on CD with the rest of the LTER weather data, programs, documentation, and processed files.

2.5.2.3 Process Date: 20020118

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:

For climate data for 1982-1989 processed in 1989

(Monthly text files in LTER.MET.EditedData/LTER.METHOUR.Y1982-89.MO directory). This is not for raw or Final data.

Variable	Type (total size of value .# of decimal places)	Range of Measurement (min-max)
Day	Integer	1-31
Month	Integer	1-12
Year	Integer	82-89
Julian Day	Integer	1-366
Hour	Integer, Alpha	100-2400, 25HI, 25LO (Hour/Min column combined)
Minute	Scaler Alpha	00, HI, LO (In orig. documentation)
Wind Velocity	Real (6.1)	0.0-50.0 Meters per second
Wind Direction	Real (6.0)	0-540 Degrees
Air Temperature	Real (6.1)	-20.0-50.0 Degrees C
Water Temperature	Real (6.1)	0.0-50.0 Degrees C
Solar Radiation (Eppley)	Real (6.1)	0.0-2.0 Langleys/minute, wavelength 280-2800 nm
Precipitation	Real (6.1)	0.0-25.0 millimeters
Water Level	Real (6.1)	0.0-300.0 centimeters (orig. doc states: 0.0-3.0M)
Conductivity	Real (6.1)	0.0-70.0 (80?)* millivolts/centimeter
Barometric Pressure	Real (6.1)	940-1040 Millibars

For NCAR Hourly Dataset only, not final files.

The following is a list of variable names, data types, and range of measurement for the columns of data in the directory LTER.MET.NCAR.RawData/ LTER.NCARHALF.Y1989-90 and in directory:

LTER.MET.EditedData/Processed1991/NCAReditedFiles.
The order of variable names correspond to the column order in each file.

Variable	Type (total size of value .# of decimal places)	Range of Measurement (min-max)
Year	Integer	89-90
Month	Integer	1-12
Day	Integer	1-31
Hour	Integer	01-24
Barometric Pressure	Real (7.2)	940.00-1040.00 Millibars
Dry Air Temperature	Real (6.2)	-20.00-50.00 Degrees C
Wet Air Temperature	Real (6.2)	-20.00-50.00 Degrees C
Dew point	Real (6.2)	-20.00-50.00 Degrees C
Relative humidity	Real (6.2)	0.00 to 10.000%
Solar Radiation (Eppley)	Real (6.2)	0.00-2.00 Langleys/minute, wavelength 280-2800 nm
Wind Direction	Real (6.2)	0.00-360.00 Degrees
Wind Velocity	Real (6.2)	0.00-50.00 Meters per second
Max Wind Velocity	Real (6.2)	0.00-50.00 Meters per second
Precipitation	Real (6.2)	0.00-25.00 millimeters

Each record (one hour) is an 80 character record; each day is 24 records; and each month is 65 kb in size.

For Final Dataset only

LTER.MET.1982.FINAL & LTER.MET.1982.FINAL.CSV to LTER.MET.1996.FINAL &LTER.MET.1996.FINAL.CSV. Raw and intermediately processed data will not necessarily contain all variables. Range of measurement should be the same for raw, processed, and final data.

Variable	Type (total size of value .# of decimal places)	Range of Measurement (min-max)

Date (mm/dd/yyyy)	Integer	1-12, 1-31, 1982-1996
Jday	Integer	1-366
Hour	Integer	0000-2400
Date/Time	Integer	1-12, 1-31, 1982-1996, 0:00-23:59
Wind Velocity	Real (6.1)	0.0-50.0 Meters per second
Max Wind Velocity	Real (6.1)	0.0-50.0 Meters per second
Wind Direction	Real (6.0)	0-540 Degrees
Air Temperature	Real (6.1)	-20.0-50.0 Degrees C
Water Temperature	Real (6.1)	0.0-50.0 Degrees C
Solar Radiation (Eppley)	Real (6.3)	0.0 -2.0 to 0.000-2.000 Langleys/minute,@280-2800nm
Water Level	Real (6.1)	0.0-300.0 centimeters
Conductivity	Real (6.1)	0.0-70.0 (80?)* millivolts/centimeter
Barometric Pressure	Real (6.1)	940-1040 Millibars
Solar Radiation (Licor)	Real (6.3)	0.0~2000 microEinsteins/M^2/Sec or micromoles/M^2/Sec

* The original documetation states the range for conductivity is 0.0 - 2.0 mv/cm, but data readings from final data range up to 70 and sometimes 80 mv/cm.

5.2.2 Entity and Attribute Detail Citation:
Definitions were developed by the 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 climatology.

Entity Type Definition:
For edited climate data from 1982-1989 and processed in 1989 (Monthly text files in LTER.MET.EditedData/LTER.METHOUR.Y1982-89.MO directory), not for raw or Final data:

When variables "hour"=25 and variable "minute"=HI, this record represents the instantaneous daily maximum values for the variables: wind velocity, air temperature, water temperature, solar radiation (Eppley), precipitation, conductivity, and barometric pressure.
When variables "hour"=25 and variable "minute"=LO, this record represents the instantaneous daily minimum values for the variables: wind velocity, air temperature, water temperature, solar radiation (Eppley), precipitation, conductivity, and barometric pressure.
When variables "hour"=25 and variable "minute"=HI or LO, then variable "wind direction" is not recorded.
When variables "hour"=25 and variable "minute"=HI or LO, the value indicated for variable "water level" only represents the maximum or minimum for the previous 6 minute interval.
24 Hour = Designation of the maximum or minimum instantaneous value of the identified variable over the 24 hour day.

For the FINAL processed data, published in 2002.

Date = month/day/year (mm/dd/yyyy) that the reading was taken (not necessarily processed).
Jday = Julian day that the reading was taken.
Hour = Time on the 24 hour clock that the reading was taken; reading represents the data from the previous hour.
Date/Time= the combination of the month/day/year column with the hour column; the hour 2400 was modified to 2359 in order for the graphics software to graph the data correctly.
Wind Velocity = The mean wind velocity of 3600 observations taken over the preceding hour.
Max Wind Velocity = The maximum wind velocity over the preceding hour.
Wind Direction = The mean wind direction (the wind is coming from) of 120 observations taken over the preceding hour (no correction for magnetic declination).
Air Temperature = The mean air temperature of 3600 observations taken over the preceding hour.
Water Temperature = The mean water temperature of 3600 observations taken over the preceding hour.
Solar Radiation (Eppley) = The mean solar radiation of 3600 observations taken over the preceding hour, as measured by the Eppley pyranometer. Note: the sensor does NOT subtract out whatever is reflected from the ground.
Water Level = The instantaneous water level at the time indicated.
Conductivity = The mean conductivity of 3600 observations taken over the preceding hour.
Barometric Pressure = The mean barometric pressure of 3600 observations taken over the preceding hour.
Solar Radiation (Licor) = The mean solar radiation of 3600 observations taken over the preceding hour, as measured by the Licor Quantum Sensor.

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:

Data Set Identification names:

North Inlet LTER Meteorological Data
North Inlet LTER Weather
North Inlet MET Station Data
LTER NIN001 database

Identification of Directories and Files:

The LTERMET.PUBLISH CD contains the complete Final 1982-1996 database; including all final data, graphics, and metadata files. The PUBLISH CD contains the following files in the following directories:

FINAL DOCUMENTATION (Directory Size: 912 KB, 8 files)
- LTERMET.FGDC.METADATA.doc
- LTERMET.FGDC.METADATA.txt
- LTERMET.AnomalousData.doc
- LTERMET.AnomalousData.txt
- LTERMET.MissingData.doc
- LTERMET.MissingData.txt
- LTERMET.ClimatSysLog.doc
- LTERMET.ClimatSysLog.txt

FINAL.DATA.SUMMARIES (Directory Size: 32.2 MB, 3 folders, 45 files
- FINAL.HRLY.24HrMinMax.xls (Directory Size: 23.3 MB, 15 files)
  - LTERMET.1982.FINAL.xls
  - LTERMET.1983.FINAL.xls
  - LTERMET.1984.FINAL.xls
  - LTERMET.1985.FINAL.xls
  - LTERMET.1986.FINAL.xls
  - LTERMET.1987.FINAL.xls
  - LTERMET.1988.FINAL.xls
  - LTERMET.1989.FINAL.xls
  - LTERMET.1990.FINAL.xls
  - LTERMET.1991.FINAL.xls
  - LTERMET.1992.FINAL.xls
  - LTERMET.1993.FINAL.xls
  - LTERMET.1994.FINAL.xls
  - LTERMET.1995.FINAL.xls

LTERMET.1996.FINAL.xls

FINAL.HRLY.csv (Directory Size: 8.4 MB, 15 files)
LTER.MET.1982.FINAL
LTER.MET.1983.FINAL
LTER.MET.1984.FINAL
LTER.MET.1985.FINAL
LTER.MET.1986.FINAL
LTER.MET.1987.FINAL
LTER.MET.1988.FINAL
LTER.MET.1989.FINAL
LTER.MET.1990.FINAL
LTER.MET.1991.FINAL
LTER.MET.1992.FINAL
LTER.MET.1993.FINAL
LTER.MET.1994.FINAL
LTER.MET.1995.FINAL
LTER.MET.1996.FINAL

FINAL.24HrMinMax.csv (Directory Size: 530 KB, 15 files)
LTERMET.1982.24HRMAXMIN.FINAL
LTERMET.1983.24HRMAXMIN.FINAL
LTERMET.1984.24HRMAXMIN.FINAL
LTERMET.1985.24HRMAXMIN.FINAL
LTERMET.1986.24HRMAXMIN.FINAL
LTERMET.1987.24HRMAXMIN.FINAL
LTERMET.1988.24HRMAXMIN.FINAL
LTERMET.1989.24HRMAXMIN.FINAL
LTERMET.1990.24HRMAXMIN.FINAL
LTERMET.1991.24HRMAXMIN.FINAL
LTERMET.1992.24HRMAXMIN.FINAL
LTERMET.1993.24HRMAXMIN.FINAL
LTERMET.1994.24HRMAXMIN.FINAL
LTERMET.1995.24HRMAXMIN.FINAL
LTERMET.1996.24HRMAXMIN.FINAL

FINAL.GRAPHICS (Directory Size: 11.2 MB, 15 folders, 123 files)
1982.jpg (Directory Size: 651 KB, 8 files)
1982.AirTemp.jpg
1982.BP.jpg
1982.Conductivity.jpg
1982.SolarRadEppley.jpg
1982.WaterLevel.jpg
1982.WaterTemp.jpg
1982.WindDirVel.jpg
1982.WindVelocity.jpg
1983.jpg (Directory Size: 735 KB, 8 files)
1983.AirTemp.jpg
1983.BP.jpg
1983.Conductivity.jpg
1983.SolarRadEppley.jpg
1983.WaterLevel.jpg
1983.WaterTemp.jpg
1983.WindDirVel.jpg
1983.WindVelocity.jpg
1984.jpg (Directory Size: 702 KB, 8 files)
1984.AirTemp.jpg
1984.BP.jpg
1984.Conductivity.jpg

1984.SolarRadEppley.jpg
1984.WaterLevel.jpg
1984.WaterTemp.jpg
1984.WindDirVel.jpg
1984.WindVelocity.jpg
1985.jpg (Directory Size: 808 KB, 8 files)
1985.AirTemp.jpg
1985.BP.jpg
1985.Conductivity.jpg
1985.SolarRadEppley.jpg
1985.WaterLevel.jpg
1985.WaterTemp.jpg
1985.WindDirVel.jpg
1985.WindVelocity.jpg
1986.jpg (Directory Size: 640 KB, 8 files)
1986.AirTemp.jpg
1986.BP.jpg
1986.Conductivity.jpg
1986.SolarRadEppley.jpg
1986.WaterLevel.jpg
1986.WaterTemp.jpg
1986.WindDirVel.jpg
1986.WindVelocity.jpg
1987.jpg (Directory Size: 725 KB, 8 files)
1987.AirTemp.jpg
1987.BP.jpg
1987.Conducitivity.jpg
1987.SolarRadEppley.jpg
1987.WaterLevel.jpg
1987.WaterTemp.jpg
1987.WindDirVel.jpg
1987.WindVelocity.jpg
1988.jpg (Directory Size: 746 KB, 8 files)
1988.AirTemp.jpg
1988.BP.jpg
1988.Conductivity.jpg
1988.SolarRadEppley.jpg
1988.WaterLevel.jpg
1988.WaterTemp.jpg
1988.WindDirVel.jpg
1988.WindVelocity.jpg
1989.jpg (Directory Size: 735 KB, 8 files)
1989.AirTemp.jpg
1989.BP.jpg
1989.Conductivity.jpg
1989.SolarRadEppley.jpg
1989.WaterLevel.jpg
1989.WaterTemp.jpg
1989.WindDirVel.jpg
1989.WindVelocity.jpg
1990.jpg (Directory Size: 472 KB, 5 files)
1990.AirTemp.jpg
1990.BP.jpg
1990.SolarRadEppley.jpg
1990.WindDirVel.jpg
1990.WindVelocity.jpg
1991.jpg (Directory Size: 658 KB, 7 files)
1991.AirTemp.jpg
1991.BP.jpg

1991.SolarRadEppley.jpg
1991.WaterLevel.jpg
1991.WaterTemp.jpg
1991.WindDirVel.jpg
1991.WindVelocity.jpg

1992.jpg (Directory Size: 838 KB, 8 files)
1992.AirTemp.jpg
1992.BP.jpg
1992.Conductivity.jpg
1992.SolarRadEppley.jpg
1992.WaterLevel.jpg
1992.WaterTemp.jpg
1992.WindDirVel.jpg
1992.WindVelocity.jpg

1993.jpg (Directory Size: 934 KB, 9 files)
1993.AirTemp.jpg
1993.BP.jpg
1993.Conductivity.jpg
1993.MaxWindVel.jpg
1993.SolarRadEppley.jpg
1993.WaterLevel.jpg
1993.WaterTemp.jpg
1993.WindDirVel.jpg
1993.WindVelocity.jpg

1994.jpg (Directory Size: 1.0 MB, 10 files)
1994.AirTemp.jpg
1994.BP.jpg
1994.Conductivity.jpg
1994.MaxWindVel.jpg
1994.SolarRadEppley.jpg
1994.SolarRadLiCor.jpg
1994.WaterLevel.jpg
1994.WaterTemp.jpg
1994.WindDirVel.jpg
1994.WindVelocity.jpg

1995.jpg (Directory Size: 1.1 MB, 10 files)
1995.AirTemp.jpg
1995.BP.jpg
1995.Conductivity.jpg
1995.MaxWindVel.jpg
1995.SolarRadEppley.jpg
1995.SolarRadLiCor.jpg
1995.WaterLevel.jpg
1995.WaterTemp.jpg
1995.WindDirVel.jpg
1995.WindVelocity.jpg

1996.jpg (Directory Size: 787 KB, 10 files)
1996.AirTemp.jpg
1996.BP.jpg
1996.Conductivity.jpg
1996.MaxWindVel.jpg
1996.SolarRadEppley.jpg
1996.SolarRadLiCor.jpg
1996.WaterLevel.jpg
1996.WaterTemp.jpg
1996.WindDirVel.jpg
1996.WindVelocity.jpg

The LTERMET ARCHIVE CD ONE contains the complete final database as well as all raw and process data, metadata, program documentation, and the table of contents for both the CD's and Notebooks.

The LTERMET ARCHIVE CD TWO contains the final graphics files created in the Deltagraph version 5.01 software package and the resulting yearly graphics images in .jpg format.

The LTERMET ARCHIVE CD THREE contains an earlier version of the graphics files in the Deltagraph version 4.05 software package.

6.3 Distribution Liability:

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 the data on any Belle W. Baruch Institute for Marine Biology and Coastal Research system for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data. It is strongly recommended that these data be acquired directly from the Belle W. Baruch Institute for Marine Biology and Coastal Research and not indirectly through other sources, which may have changed the data in some way. It is also strongly recommended that careful attention be paid to the contents of the metadata file associated with the particular data. Neither the Belle W. Baruch

6.4 Standard Order Process

6.4.2. Digital Form

6.4.2.1 Digital Transfer Information

6.4.2.1.1. 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

6.4.2.2.1.1 Computer Contact Information

6.4.2.2.1.1.1 Network Address

6.4.2.2.1.1.1.1 Network Resource Name: http://links.baruch.sc.edu/data/

6.4.3 Fees: None

6.5 Custom Order Process:

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

7 Metadata Reference Information

7.1 Metadata Date: 199210

7.2 Metadata Review Date: 20030903

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