Important!

This is the "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 LTER Database" *original metadata*, created 7/15/2003 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/Microbial.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. 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 a larger North Inlet Ecosystem monitoring program; see other North Inlet LTER datasets listed in Cross Reference.
8.10 Online linkage: http://links.baruch.sc.edu/data/

1.2 Description

1.2.1 Abstract:

Water samples were collected daily at approximately 10:00 AM, from a depth of 50 cm at three stations, and transported immediately to the laboratory. The three stations included Town Creek (TC), Oyster Landing (OL), and Clambank Creek (CB). Twenty milliliter aliquots were extracted in duplicates or triplicates from each sample using sterile techniques. These extractions were filtered, frozen, and later analyzed on an SIA 3000 photometer to determine quantities of adenosine 5′-triphosphate (ATP). Increases and decreases in measured ATP indicated both seasonal and tidal changes occurring within portions of the microbial community.

1.2.2 Purpose:

The purpose of this portion of the Long Term Ecological Research study was to form a well-defined data set of microbial data for the North Inlet Estuary and for comparative purposes to other data sets collected within the boundaries of the North Inlet LTER site. Further, patterns and control of organic accumulation (biomass) in the water column, surface layers, and substrate were studied in relation to time or natural and induced stresses or disturbances.

1.2.3. Supplemental Information:

Publications from the LTER ATP data and other related works published by the Primary Investigators:

Chrzanowski, T., L.H. Stevenson, and B. Kjerfve. 1979. Adenosine 5'triphosphate flux through the North Inlet marsh system. Appl. Environ. Microbiol. 37: 841-848.

Stevenson, L.H., T. Chrzanowski, and C. Erkenbecker. 1979. The adenosine triphosphate assay: Conceptions and misconceptions. P. 99-116. Symposia proceedings. Native Aquatic Bacteria. American Society for Testing and Materials, Philadelphia, PA.

Chrzanowski, T.H. and J.D. Spurrier. 1987. Exchange of microbial biomass between a Spartina alterniflora marsh and the adjacent tidal creek. Estuaries. 10(2): 118-125.

Chrzanowski, T.H. and R.G. Zingmark. 1989. Bacterial abundance, biomass, and secondary production along a forest to ocean landscape gradient. J. Exp. Mar. Biol. Ecol. 125(3): 253-266.

Stevenson, L.H., T.H. Chrzanowski, and B. Kjerfve. 1980. Short-term fluxes through major outlets of the North Inlet marsh in

terms of adenosine 5'-triphosphate. P. 355-369. In: Estuarine and Wetland Processes. P. Hamilton and K.B. MacDonald (eds.). Plenum Press, NY.

Wilson, C., H. Stevenson, and T. Chrzanowski. 1981. The contribution of bacteria to the total adenosine triphosphate extracted from the microbiota in the water of a salt marsh creek. J. Exp. Mar. Biol. Ecol. 50: 183-195.

Stevenson, L.H. C.A. Wilson, and T.H. Chrzanowski. 1981. The assay of adenosine 5'triphosphate extracted from salt-marsh microbiota. Can. J. Microbiol. 27: 633-635.

Dame, R.F., T. Chrzanowski, K. Bildstein, B. Kjerfve, H.N. McKellar Jr., D. Nelson, J. Spurrier, S. Stancyk, H. Stevenson, F.J. Vernberg, and R. Zingmark. 1986. The outwelling hypothesis in North Inlet, South Carolina. Mar. Ecol. Prog. Ser. 333: 217-229.

Additional ATP data were generated at North Inlet as a part of an Outwelling study during the period from November 1977 to November 1979. The data set includes ATP, ATP spline, POC, POC spline, DOC, DOC spline, fungi, fungi spline, and velocity.

Additional ATP data were also generated as part of the Bly Creek study done at North Inlet during the period of June 1983 – June 1984. The data consists of BCSYN1 – BCSYN34 (raw unedited ATP data), SYN1COR - SYN34COR (raw but corrected and edited ATP data), SYN1 – SYN34 (ATP means). Also included in the Bly Creek data are several other related datasets: BSCAL (marsh flume calibration, unedited ATP), VMARATP (mean ATP values from marsh flume calibration), BCSCAL2 (oyster reef calibration, unedited data), OYSREATP (mean ATP values from oyster reef calibration), BCSCAL3 (transect calibration, unedited data), TRANSATP (mean ATP values from transect calibration), VDOMECO1 (oyster dome calibration, edited data), VDOMECO2 (oyster dome calibration, edited data), WEIRATP (WEIR data), and WEIRMEAN (mean ATP values for WEIR data).

The Outwelling and Bly Creek ATP data are not accessible on the Internet as of June 2003; however, digital files are available at Belle W. Baruch Institute for Marine and Coastal Sciences. See Contact Information.

1.3 Time Period of Content:

9.3 Range of Dates/Times

9.3.1 Beginning Date: 19810317
9.3.2 Beginning Time: 1000 EST
9.3.3 Ending Date: 19850331
9.3.4 Ending Time: 1009 EST

1.3.1 Currentness Reference: Ground condition

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:

Clambank Creek (CB): The Clambank Creek monitoring site is located roughly in the center of the North Inlet. The site is surrounded by a Spartina marsh and drains associated uplands. Salinity ranges from 0 to 36. The bottom is mostly comprised of oyster shell hash and some fine sediment. This site is considered pristine and is influenced by its close proximity to the Inlet mouth. Clambank Creek monitoring site: 33.20'0" Lat., 79.11'33" Long.

Oyster Landing (OL): The Oyster Landing monitoring site is considered a fairly pristine and undisturbed area. Samples are collected at the end of the Oyster Landing pier. The pier stretches into the upper reaches of Crab Haul Creek in the mid-western portion of North Inlet. The creek drains pine forested uplands and wetlands. Salinity can range from 0 to 36 parts per thousand and average tidal flux is approximately 1.4 m. The creek has an average depth of ~2 m MHW and an average width of ~150m MHW at the sample site. The bottom is mostly comprised of oyster shell hash with some fine sediment and detritus. Oyster Landing monitoring site (in Crab Haul Creek): 33.21'2" Lat., 79.11'27" Long.

Town Creek (TC): The Town Creek monitoring site is located the closest to the ocean, in the mouth of North Inlet just behind the southern tip of Debidue Island. Salinities are dominated by the oceanic conditions. The current velocities are the strongest here, and the bottom is comprised of course sand with some shell hash. Town Creek monitoring site: 33.19'38" Lat., 79.10'0" Long.

These three tidal marsh creeks reside 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.

1.5.1 Bounding Coordinates:

1.5.1.1 West Bounding Coordinate: -79.192
1.5.1.2 East Bounding Coordinate: -79.167
1.5.1.3 North Bounding Coordinate: 33.350

1.5.1.4 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:	ADENOSINE 5′-TRIPHOSPHATE
1.6.1.2 Theme Keyword:	ATP
1.6.1.2 Theme Keyword:	MARINE MICROORGANISMS
1.6.1.2 Theme Keyword:	MICROBIAL BIOMASS
1.6.1.2 Theme Keyword:	MICROBIAL POPULATION
1.6.1.2 Theme Keyword:	LUCIFERIN
1.6.1.2 Theme Keyword:	LUCIFERASE
1.6.1.2 Theme Keyword:	BACTERIA
1.6.1.2 Theme Keyword:	PHYTOPLANKTON
1.6.1.2 Theme Keyword:	COASTAL
1.6.1.2 Theme Keyword:	ESTUARINE
1.6.1.2 Theme Keyword:	ESTUARY
1.6.1.2 Theme Keyword:	LONG-TERM
1.6.1.2 Theme Keyword:	LONG-TERM ECOLOGICAL RESEARCH
1.6.1.2 Theme Keyword:	LTER
1.6.1.2 Theme Keyword:	TIDAL CREEK
1.6.1.2 Theme Keyword:	MARSH
1.6.1.2 Theme Keyword:	SALT MARSH

1.6.2 Place

1.6.2.1 Place Keyword Thesaurus:	None
1.6.2.2 Place Keyword:	CLAMBANK CREEK
1.6.2.2 Place Keyword:	COASTAL
1.6.2.2 Place Keyword:	CRAB HAUL CREEK
1.6.2.2 Place Keyword:	EAST COAST
1.6.2.2 Place Keyword:	GEORGETOWN COUNTY
1.6.2.2 Place Keyword:	NORTH INLET ESTUARY
1.6.2.2 Place Keyword:	OYSTER LANDING
1.6.2.2 Place Keyword:	SOUTH CAROLINA
1.6.2.2 Place Keyword:	SOUTHEAST COAST
1.6.2.2 Place Keyword:	TOWN CREEK
1.6.2.2 Place Keyword:	USA

1.6.3 Stratum

1.6.3.1 Stratum Keyword Thesaurus:	None
1.6.3.2 Stratum Keyword:	UPPER WATER COLUMN

1.6.4 Temporal

1.6.4.1 Temporal Keyword Thesaurus:	None
1.6.4.2 Temporal Keyword:	1981
1.6.4.2 Temporal Keyword:	1982
1.6.4.2 Temporal Keyword:	1983
1.6.4.2 Temporal Keyword:	1984
1.6.4.2 Temporal Keyword:	1985
1.6.4.2 Temporal Keyword:	1981-1985
1.6.4.2 Temporal Keyword:	1980s
1.6.4.2 Temporal Keyword:	DAILY

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, and Grantor (see Data Set Credit section) should be fully acknowledged in any subsequent publications in which any part of these data are used. Use of the data without completely reading and understanding the metadata is not recommended. The Baruch Institute, Baruch Institute researchers, and Grantor are not responsible for the use and/or misuse of data from this database. See the section on Distribution Liability for more information.

1.9 Point of Contact:

10.2 Contact Organization Primary

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

10.2.2 Contact Person:	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:

Funding was provided by the National Science Foundation, grants DEB 8012165 and BSR 8514326, to the North Inlet Long-Term Ecological Research (LTER) Program, Belle W. Baruch Institute, University of South Carolina, Dr. F. J. Vernberg, as project director. Associated researchers include: Dr. Harold Stevenson, Dr. Tom Chrzanowski, Dr. Richard Zingmark, Dr.F. John Vernberg, Dr. Bjorn Kjerve, Dr. Elizabeth Blood, Dr. Dennis M. Allen, Dr. Bruce C. Coull, Dr. Richard F. Dame, Dr. John M. Dean, Dr. Donald G. Edwards, Dr. Robert J. Feller, Dr. Leonard R. Gardner, Dr. Henry N. McKeller, Dr. James Morris, Dr. Douglas D. Nelson, Dr. Stephen E. Stancyk, and Dr. Thomas Wolaver. Steve Knoche was the technician in charge of the sample analysis and data computer entry and verification. Computer program authors include H. Stevenson, T.Chrzanowski, M. Marozas and S. Knoche.

1.14 Native Data Set Environment

Original LTER ATP data, computer programs, and documentation files are in ascii text format. The final rescued and disseminated data files are in MS Excel 2000 and .csv formats. Graphics are in .jpg format, and the FGDC/NBII rescued metadata (documentation) files are in MS Word Professional 2000, Rich Text Format (.rtf), and plain text (.txt) formats.

1.15 Cross Reference:

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, spreadsheet, and hardcopy
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 (LTER 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:// www.baruch.sc.edu
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: published book
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

1.15 Cross Reference:
8. Citation Information
8.1 Originator: Daniel S. Taylor
8.1 Originator: William K. Michener
8.2 Publication Date: 1990
8.4 Title: "North Inlet National Weather Service Station"
8.6 Geospatial Data Presentation Form: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN002
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

1.15 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, South Carolina: 1978-1993
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 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
8.9 Other Citation Details: This database is a combination of three LTER databases that were all derived from the same water sample. The three separate databases, LTER Data Set Code: NIN003, NIN004, and NIN005, are listed below this cross reference citation and are from a larger North Inlet Ecosystem monitoring program listed in the Larger Work Citation.

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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN003

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN004

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN005

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN006
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN007
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN008
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN009
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN010
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN011
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN012
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN013
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

1.15 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: comma delimited digital data and spreadsheet
8.9 Other Citation Details: LTER Data Set Code: NIN014
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

1.15 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), 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/

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

1.15 Cross Reference:

8. Citation Information

8.1 Originator: Belle W. Baruch Institute for Marine Biology and Coastal Research
8.1 Originator: Dr. Thomas H. Chrzanowski
8.2 Publication Date: Unpublished Material
8.4 Title: Bly Creek Microbial (ATP) Data Set for North Inlet
8.6 Geospatial Data Presentation Form: ascii text and hardcopy computer printouts

8.9 Other Citation Details: Database covers from 20 June 1983 through to 19 June 1984

1.15 Cross Reference:

8. Citation Information

8.1 Originator: Belle W. Baruch Institute for Marine Biology and Coastal Research
8.1 Originator: Dr. Harold Stevenson
8.1 Originator: Thomas H. Chrzanowski
8.2 Publication Date: Unpublished Material
8.4 Title: OUTWELLING Microbial (ATP) Data Set for North Inlet
8.6 Geospatial Data Presentation Form: ascii text and hardcopy computer printouts

8.9 Other Citation Details: Database covers from November 1977 through November 1979

1.16 Analytical Tool

1.16.1 Analytical Tool Description

The program ATPCOR was designed to merge a raw data set with sets of standards in order to create a new data set consisting of ATP concentrations from the raw data. This program was run in conjunction with a full screen manager. The raw data were entered into a file named ATPINPUT. The file, ATPINPUT, was a series of screens preset to hold both ATP raw data and standards. After the file ATPINPUT was completed with the entry of raw and standard data, it was then downloaded into a file named ATPRAW, for corrections. When the quality of the data was verified, the command 'Run ATPCOR' was given. This command took the ATPRAW file and merged it with the ATPCOR program and ran it. The output was placed in a file named ATPCON. This file consisted of the ATP concentrations created from ATPRAW. The ATP concentrations are given in both grams of ATP/ml and grams of ATP/m^3.

Related programs include CVMEAN, SASMEAN, and MNMEAN. CVMEAN is a basic means job run on the triplicates, which lists in the output, variable, N, mean, standard deviation, minimum value, maximum value, standard error of the mean, sum, variance and coefficient of the variance. Coefficient of the variance was used to create an edited data set. SASMEAN was a means job run on the edited data set created above. The output from this job consisted only of the variables: date, site, and ATP mean. MNMEAN was a means job run on the edited data set also. The output from this job consisted only of a year, month and ATP mean for the entire month.

1.16.2 Tool Access Information

1.16.2.2 Tool Access Instructions: printed versions of programs are located in the printed 3-ring notebook at the BMFL computer laboratory. Digital versions are on the published/archived CD.

8. Citation Information:

8.1 Originator: Dr. Harold Stevenson
8.1 Originator: Dr. Thomas H. Chrzanowski
8.1 Originator: Marvin Marozas
8.1 Originator: Steven Knoche

8.2 Publication Date: 20030715
8.4 Title: LTER ATP data merging and analysis programs
8.6 Geospatial Data Presentation Form: digital and hardcopy versions
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

2. Data Quality Information

2.1 Attribute Accuracy

2.1.1 Attribute Accuracy Report:

There was no mention of the accuracy of procedures or values in the original 1980's documentation. However, ATP values in grams per milliliter and per cubic meter in the original database were listed to four decimal places multiplied by an exponent. In the data files with calculated means, the grams ATP per cubic meter values were listed to eight decimal places. See **Entity_and_Attribute_Overview Section.** See example below:

Variable	Type	Units and Range of measurement
ATP (ml)	real (6.4)	0.0001-0.9999 x grams x exp
ATP (m^3)	real (6.4)	0.0000-0.9999 x grams x exp
ATP (m^3)	real (10.8)	0.00000000-0.99999999 grams

Note: In 2003, the Data Rescue and Dissemination Project changed the units of measurement for the Disseminated Rescued files. Original text files remain unchanged. ATP data that were originally recorded as grams per milliliter or per cubic meter multiplied by an exponent were converted to nanograms per milliliter. However, the number of decimal places was kept to four based on the original data values being four. See Process Step for more details on this change.

2.2 Logical Consistency Report: Not applicable

2.3 Completeness Report:

Missing Data:

Missing data values are due to either the sample not having been collected on the day in question or a lack of necessary materials to process the sample. Sometime in late October/November 1982 Oyster Landing and Clambank Creek were sampled on the weekends. At Clambank Creek there were 196 days sampled in 1981, 238 days sampled in 1982, 350 days sampled in 1983, 361 days sampled in 1984, and 89 days sampled in 1985. At Oyster Landing there were 191 days sampled in 1981, 237 days sampled in 1982, 347 days sampled in 1983, 362 days sampled in 1984, and 89 days sampled in 1985. At Town Creek there were 280 days sampled in 1981, 310 days sampled in 1982, 342 days sampled in 1983, 350 days sampled in 1984, and 88 days sampled in 1985. Go to Appendix A in the hardcopy version of this documentation or go to this link to view or print out the list of missing values at each site for each date: http://links.baruch.sc.edu/data/LTERATP/metadata/LTERATP.MissingData.htm. Missing data were denoted with a period (.) and were inserted into the Final Rescued data files.

Missing "Replicate" Samples:

Data Files LTERCO 1 – 32 contains data from samples taken at Oyster Landing, Town Creek and Clambank Creek. The majority of samples taken included 2 and 3 "replicate" samples, per water sample, per day. In some cases, only 1 sample (no replication) was taken, and in one instance, 4 "replicate" samples were taken.

Data Files: PLOT 1 -32 and LTER 1 -32 contain means from each site for each date; however, caution must be used in using these data because some means may only be based on 1 sample from each site while the majority of the means are derived from 2 or 3 or 4 "replicate" samples. The following table lists the site and date when only one "replicate" sample was taken from the water sample.

List of dates where only one "replicate" sample was taken per site

1981 CB	1981 OL	1981 TC
12/17/1981	11/19/1981	12/15/1981
12/21/1981	12/09/1981	12/21/1981
12/22/1981	12/18/1981	12/22/1981
	12/31/1981	

1982 CB	1982 OL	1982 TC
07/26/1982	01/07/1982	01/07/1982
10/08/1982	01/08/1982	04/05/1982
11/12/1982	07/16/1982	06/19/1982
12/21/1982	07/24/1982	10/08/1982
12/29/1982		

1983 CB	1983 OL	1983 TC
NA	NA	01/07/1983
		02/20/1983
		04/19/1983
		07/16/1983
		08/27/1983

1984 CB	1984 OL	1984 TC
04/12/1984	04/13/1984	09/08/1984
04/14/1984		

1985 CB	1985 OL	1985 TC
NA	01/17/1985	NA

4 samples taken:

1982 CB
12/20/1982

2.5 Lineage

2.5.1 Methodology

2.5.1.1 Methodology Type: Field Collection Procedures and Protocols

2.5.1.3 Methodology Description: Overall Field Collection Protocol:

Water samples were collected daily at approximately 10:00 AM, from a depth of 50 centimeters at three tidal creek stations, and transported immediately to the laboratory. Sampling sites included Oyster Landing (OL), Town Creek (TC), and Clambank Creek (CB). Usually only one 1-liter bottle of tidal creek water was collected from each site. See the LTER Daily Water Sample (LTERDWS) published metadata for more information about other water chemistry analyses that were completed on this same water sample.

2.5.1 Methodology

2.5.1.1 Methodology Type: Laboratory Procedures and Protocols

2.5.1.3 Methodology Description: ATP Extraction and Analysis:

Adenosine triphosphate (ATP) was extracted in triplicate from each site's 1-liter water sample. Three 20-milliliter aliquots were filtered through sterilized Whatman GF/F 0.7 micron filters. These extractions were filtered, frozen, and later analyzed on an SIA 3000 photometer to determine quantities of adenosine 5′-triphosphate (ATP). Each filter was placed in 5 milliliter of tris buffer which was boiling in a sand bath. The filter was boiled for 5 minutes to fully release the ATP into the tris buffer. When cool, the vial containing the tris buffer and the ATP was restored to its original level by the addition of sterile filtered water. This replaced any liquid lost to evaporation during the boiling. Analysis was done on an SAI integrating photometer in the peak height mode using luciferin purchased from Sigma Chemical Corp.

2.5.1.4 Methodology Citation:

8. Citation Information

8.1 Originator: O. Holm-Hansen

8.1 Originator: L.H. Stevenson and R.R. Colwell, Eds.

8.2 Publication Date: 1973

8.4 Title: Determination of total micorobial biomass by measurement of adenosine triphosphate

8.6 Geospatial Data Presentation Form: Scientific publication

8.8 Publication Information:

8.8.1 Publication Place: Columbia, South Carolina

8.8.2 Publisher: University of South Carolina Press

8.9 Other Citation Details: In Estuarine Microbial Ecology, p.73-89

2.5.3: Process Step

2.5.3.1 Process Description:

Data Entry, Programs used and Verification completed by original LTER technicians and programmers

Peak Height Numbers from the output SAI integrating photometer were written down by hand into a LTER ATP notebook. These numbers were entered into a computer system using the computer punch card technique. The raw data was entered and edited by statistically comparing the coefficient of variances on each set of triplicates. All computer work was accomplished by using the Conversational Monitoring System (CMS), which is part of the University of South Carolina's IBM Virtual Machine/System Product (VM/SP) computer system. The edited data set was then used to generate means. Each one of these steps was visually monitored for entry errors or omissions. See Analytical Tools Section for more data processing and analysis. All files were saved as ascii text in the mainframe computer, mass storage, and tape system on USC main campus.

Data Capture of Original Raw and Final Data Files and Documentation (2002-2003)

Original ascii text data files, which were uploaded in the 1980's to the main campus of the University of South Carolina's mainframe computer, were downloaded to Baruch Institute's data manager's personal computer in 2002. The original data files were archived onto CD and onto Baruch Field Laboratory's Data Management Server; they have not been modified and remain in ascii text format. These original files were imported into Microsoft Excel 2000, reviewed and modified for rescue, documentation, and dissemination purposes.

Rescue Process Data set file editing and description (June 2003):

Original corrected "triplicate" files, LTERCO1-32, were imported into Microsoft Excel and saved for further rescue processing. The Rescue Process file contains chem #, day.month.year, site, time, I Depth, Depth, ATP (grams per milliliter) times an Exponent, and ATP (grams per cubic meter) times an Exponent. PLOT1-32, LTER1-32, and MONTHS were also imported and saved as Excel files. File: LTER13 and PLOT1-32/PLOT13: problem with years jumping from 1983 to 1984 and then back to 1983 in the next file. The problem was corrected by verifying the years with a final computer printout (blue IBM binder that was labeled LTERATP) . File: PLOT11 and PLOT12 are the same file, however PLOT11 does not contain the correct information and dates. The problem was corrected by verifying the original data to the file LTER1-32. PLOT1-32 and LTER1-32 contain the same information; however the files are sorted by different categories. PLOT1-32 is sorted by month, day, year and LTER1-32 is sorted by site. File: PLOT13: Two mean values were listed for one site for the same date which was erroneous. The data were corrected by comparing values with the corresponding LTERCO file.

Data Verification, Editing, and Graphing (June 2003)

The data files, LTERCO1-32, were merged into annual files. The ATP values are originally listed as real numbers with exponents following the values. As this is not a standard way to publish data, the data rescue team changed the notation of units from **grams** per milliliter to **nanograms** per milliliter. This enabled us to remove the exponents in the final, rescued ATP data values. For example: an original value of 0.2927 D-09 **grams** per milliliter was converted by the rescue team and recorded as 0.2927 **nanograms** per milliliter (i.e. the exponent D-09 equals 10^{-9}, and a nanogram is equal to 10^{-9} grams). The number of decimal places the data value had was changed to reflect the exponent value as shown below:

0.2927 D-09 **grams** per milliliter = 0.2927 **nanograms** per milliliter
0.0023 D-08 **grams** per milliliter = 0.0230 **nanograms** per milliliter
0.0048 D-07 **grams** per milliliter = 0.4800 **nanograms** per milliliter

Columns of data that were redundant for final dissemination purposes, were removed from the final database. These were Time, IDepth, Depth, and ATP measured in grams per cubic meter. Site codes of 1, 2, or 3 were changed to the letter codes: TC, OL, CB, respectively. Missing data were inserted into the corrected "triplicate" files. The computer program Sigma Plot

was used to generate the graphs by year by site. All triplicate values were plotted to help find anomalous data. Anomalous data points were identified and then verified with original data.

Anomalous Data:
In the Data Rescue and Dissemination Project of 2003, Baruch's data managers found the following files to have erroneous data values and/or documentation and were corrected as described below. For a complete listing of data files and their content, go to the Distribution Section of this documentation.

LTERCO Datafiles: Data values were plotted and based on data value patterns, the data from 10/28/1983 to 11/9/1983 at all three sample sites and from Oyster Landing on 3/26/1982 were listed as anomalous. Caution should be used when using the data. This does not imply that the values are erroneous, just that they are suspect. Data in October and November of 1983 are especially suspect; the values are all well above the normal for the season or year. No mention of probable cause was listed in the original data documentation.

File: LTERCO21: 1/15/84, SITE 3, value of 0.6888 D-03: exponent looked out of place since other "replicates" were D-09, however, the value was compared with a final computer printout (blue IBM binder that was labeled LTERATP) and was corrected to 0.6888 D-09. Note: D-03 values $=10^{-3}$; D-09 $=10^{-9}$.

File: LTERDMT: Data that was not actually missing were listed in the missing data section of the original LTERATP documentation file called LTERDMT. The dates included 2/24/1983 - TC, 11/15/1983 - TC, OL, CB, 4/8/1984 - CB and 4/9/1984 - CB. This was corrected in the missing documentation located within this FGDC metadata document.

File: LTERCO1-32 lists the sample depth as 0.1 meter, but the original documentation lists it as 50 centimeters (0.50meters). The data managers of the Data Rescue and Dissemination project verified that the water samples were taken at the 0.5 meter depth.

Creation of Final Rescued/Disseminated Databases (June 2003)
The final, disseminated LTERCO file was renamed as LTERATP.CB.1981-1985 or LTERATP.OL.1981-1985 or LTERATP.TC.1981-1985; all five years were combined into one file for each site. They contain 3 variables: Date, Site, and ATP measured in nanograms per milliliter. The LTERATP.1981-1985 files were used to create a mean with standard error files, using Statistical Analysis System (SAS). These summary data files called ATPMEAN.CB or OL or TC.1981-1985 were exported into Microsoft Excel 2000 and then graphed using Sigma Plot. Both the triplicate LTERATP.1981-1985 files and ATPMEAN.81-85 files were saved as Excel and .csv formatted files. All plots were exported as .jpg images.

Data Archive and Dissemination of Rescued Data, Documentation, and Graphics (July 2003)
Rescued final data, graphics, and metadata are all printed out into a hardcopy paper version and also burned onto CD. All original ascii text data was also burned to CD; the hardcopy and CD versions are compiled into a 3 -ring binder notebook and stored at the BMFL Computer Laboratory. All original printed documentation is also in the 3-ring notebook. CD's of the Original files and Rescued Final data files are kept in a fireproof cabinet at the BMFL data manager's office. Final data, graphics, and metadata are also available on Baruch Institute's web site: http://links.baruch .sc.edu/data/ and archived on Baruch's Rescue Server. Metadata are published on the BMFL's Isite Node. The original blue IBM binder that was labeled LTERATP.

2.5.2.3 Process Date:
20030715

3 Spatial Data Organization Information:

3.1 Indirect Spatial Reference:
North Inlet Estuary is part of Hobcaw Barony and are located in Georgetown County, South Carolina, USA. Each water sample site is at a specific point within the North Inlet Estuary.

3.2 Direct Spatial Reference Method: Point

5. Entity_and_Attribute_Information:
5.2 Overview_Description:
5.2.1 Entity_and_Attribute_Overview:

Original data file variable list of names, column delineation, type, format, range and units based on original 1980's documentation.

LTERDA (unedited triplicates)

Var #	Var Name	Cols.	Type/Format	Range/Units
1	Chem #	2-5	integer/I4	0/Consecutive
2	Day	8-9	integer/I2	Numbers 1-31/Day of
3	Month	11-12	integer/I2	month 1-12/Month of
4	Year	14-15	integer/I2	year 81-85/Year
5	Site	18	integer/I1	1-3/1=Town Creek (TC), 2=Oyster Landing (OL), 3=Clambank Creek (CB)
6	Time	20-23	integer/I4	1200/Hour of Day 1-
7	IDepth	25	integer/I1	3/1=Surface, 2=Mid, 3=Bottom
8	Depth	27-30	real/F4.2	0.1/Meters
9	ATP (ml)	34-43	real/F6.4	0.0000-0.1381/Grams/ml x Exponent
10	ATP (m^3)	46-55	real/F6.4	0.0000-0.1381/Grams/ m^3 x Exponent

LTERCO (corrected, edited data)

Var #	Var Name	Cols.	Type/Format	Range/Units
1	Chem #	1-4	integer/I4	0/Consecutive
2	Day	7-8	integer/I2	Numbers 1-31/Day of
3	Month	10-11	integer/I2	month 1-12/Month of
4	Year	13-14	integer/I2	year 81-85/Year
5	Site	17	integer/I1	1-3/1=TC, 2=OL, 3=CB
6	Time	19-22	integer/I4	0100-2400/Hour of Day
7	IDepth	24	integer/I1	1-3/1=Surface, 2=Mid,
8	Depth	26-29	real/F4.2	3=Bottom 0.1/Meters
9	ATP (ml)	33-34	real/F6.4	0.0001-0.1158/Grams/ml, x Exponent
10	ATP (m^3)	45-54	real/F6.4	0.0001-0.1158/Grams/ m^3, x Exponent

LTER (means by date, by site)

Var #	Var Name	Cols.	Type/Format	Range/Units 1-
1	Month	1-2	integer/I2	12/Month of year
2	Day	5-6	integer/I2	1-31/Day of month
3	Year	9-10	integerI2	81-85/Year
4	Site	13	integer/I1	1-3/1=TC, 2=OL, 3=CB
5	ATP	16-25	real/F10.8	0.00001066-0.34666667/Grams/m^3

PLOT (means by site, by date)

Var #	Var Name	Cols.	Type/Format	Range/Units
1	Site	1	integer/I1	1-3/1=TC, 2=OL, 3=CB
2	Month	4-5	integer/I2	1-12/Month of year
3	Day	9-10	integer/I2	1-31/Day of month
4	Year	12-13	integer/I2	81-85/Year
5	ATP	16-25	real/F10.8	0.00001066-0.34666667/Grams/ m^3

MONTHS (means by site, by year, by month)

Var #	Var Name	Cols.	Type/Format	Range/Units
1	Site	1	integer/I1	1-3/1=TC, 2=OL, 3=CB
2	Month	4-5	integer/I2	1-12/Month of year
3	Year	8-9	integer/I2	81-85/Year
5	ATP	12-21	real/F10.8	0.00036164-0.00240109/Grams/ m^3

Coded Variable Definitions (In Original Databases, LTERDA, LTERCO, LTER, PLOT, and MONTHS)

Variable Name	Code	Definition
Chem #	0	No Chem #'s found in LTER data
Site	1,2, or 3	1 = Town Creek (TC), 2 = Oyster Landing (OL), 3 = Clambank Creek (CB)
IDepth	1,2, or 3	1 = top, 2 = mid, 3 = bottom

Data Rescue Managers discerned from original documentation that "top" means 0.5m from water surface.

Rescued Data Files 2003

Variable list of names, column delineation, type, format, range and units for final "Triplicate" Data (**LTERATP.sitename.1981-1985**) and final Averaged Data (**ATPMEAN. sitename.1981-1985**). These files were used to create graphics. (Derived from original LTERCO - corrected, edited files). Coded Variable Definitions are the same as used in the original data files.

LTERATP.CB.1981-1985

Variable Name	Type	Range/Units
Date (mm/dd/yyyy)	integer	1-12/Month, 1-31/Day, 1981-1985/Year
Site	alpha	CB=Clambank Creek
ATP	real (6.4)	0.0390-8.2970/nanograms per milliliter

LTERATP.OL.1981-1985

Variable Name	Type	Range/Units
Date (mm/dd/yyyy)	integer	1-12/Month, 1-31/Day, 1981-1985/Year
Site	alpha	OL=Oyster Landing
ATP	real (6.4)	0.0107-7.8390/nanograms per milliliter

LTERATP.TC.1981-1985

Variable Name	Type	Range/Units
Date (mm/dd/yyyy)	integer	1-12/Month, 1-31/Day, 1981-1985/Year
Site	alpha	TC=Town Creek
ATP	real (6.4)	0.0107-7.8390/nanograms per milliliter

ATPMEAN.CB.1981-1985

Variable Name	Type	Range/Units
Site	alpha	CB
Date (mm/dd/yyyy)	integer	1-12/Month, 1-31/Day, 1981-1985/Year
N	integer	1-3/sample size
ATP Mean	real (7.4)	0.0496-8.0965/nanograms per milliliter
ATP Standard Error	real (6.4)	0.0000-1.8598/nanograms per milliliter

ATPMEAN.OL.1981-1985

Variable Name	Type	Range/Units
Site	alpha	OL
Date (mm/dd/yyyy)	integer	1-12/Month, 1-31/Day, 1981-1985/Year
N	integer	1-3/sample size
ATP Mean	real (7.4)	0.0107-7.0015/nanograms per milliliter
ATP Standard Error	real (6.4)	0.0000-2.1425/nanograms per milliliter

ATPMEAN.TC.1981-1985

Variable Name	Type	Range/Units
Site	alpha	TC
Date (mm/dd/yyyy)	integer	1-12/Month, 1-31/Day, 1981-1985/Year
N	integer	1-3/sample size
ATP Mean	real (7.4)	0.0146-10.5163/nanograms per milliliter
ATP Standard Error	real (6.4)	0.0000-1.0492/nanograms per milliliter

5.2.2 Entity and Attribute Detail Citation:

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

6. Distribution Information

6.1 Distributor:

10.2 Contact Organization Primary

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

10.1.1 Contact Person:	Ginger Ogburn-Matthews
10.3 Contact Position:	Research Data Manager & Analyst
10.4 Contact Address	
10.4.1 Address Type:	Mailing Address
10.4.2 Address:	USC Baruch Marine Field Lab
10.4.2 Address:	PO Box 1630
10.4.3 City:	Georgetown
10.4.4 State or Province:	South Carolina
10.4.5 Postal Code:	29442
10.4.6 Country:	USA
10.5 Contact Voice Telephone:	(843) 546-6219
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 ATP database
LTER Microbial population database

Dataset Identification names and content for original database

LTERDA1 – LTERDA32: unedited triplicates
LTERCO1 – LTERCO32: corrected, edited data; sorted by year, month, day and site
LTER1 – LTER32: means sorted by date, by site
PLOT1 – PLOT32: means sorted by site, by date
MONTHS: means sorted by site, by year, by month
Computer programs and output: ATPCOR, WEIRATP, SASMEAN, CVMEAN
These files were stored in two locations: 1) on magnetic tape # T009766, and 2) in mass storage under a directory called Knoche. The tape and Knoche files are duplicates of each other as far as we know.

Date	Raw Triplicate Data	Corrected Triplicate Data	Means
17MAR81 - 29APR81	LTERDA1	LTERCO1	LTER1/PLOT1
30APR81 – 27JUN81	LTERDA2	LTERCO2	LTER2/PLOT2
28JUN81 12AUG81	LTERDA3	LTERCO3	LTER3/PLOT3
13AUG81 - 15OCT81	LTERDA4	LTERCO4	LTER4/PLOT4
15OCT81 – 26NOV81	LTERDA5	LTERCO5	LTER5/PLOT5
26NOV81 – 26JAN82	LTERDA6	LTERCO6	LTER6/PLOT6
27JAN82 – 14MAR82	LTERDA7	LTERCO7	LTER7/PLOT7
15MAR82 - 26MAY82	LTERDA8	LTERCO8	LTER8/PLOT8
26MAY82 - 20JUL82	LTERDA9	LTERCO9	LTER9/PLOT9
21JUL82 – 23SEP82	LTERDA10	LTERCO10	LTER10/PLOT10
24SEP82 – 23NOV82	LTERDA11	LTERCO11	LTER11/PLOT11
23NOV82 - 13JAN83	LTERDA12	LTERCO12	LTER12/PLOT12
14JAN83 – 23FEB83	LTERDA13	LTERCO13	LTER13/PLOT13
24FEB83 – 05APR83	LTERDA14	LTERCO14	LTER14/PLOT14

05APR83 - 15MAY83	LTERDA15	LTERCO15	LTER15/PLOT15
16MAY83 - 24JUN83	LTERDA16	LTERCO16	LTER16/PLOT16
25JUN83 – 05AUG83	LTERDA17	LTERCO17	LTER17/PLOT17
06AUG83 - 15SEP83	LTERDA18	LTERCO18	LTER18/PLOT18
15SEP83 – 27OCT83	LTERDA19	LTERCO19	LTER19/PLOT19
28OCT83 - 07DEC83	LTERDA20	LTERCO20	LTER20/PLOT20
08DEC83 - 19JAN84	LTERDA21	LTERCO21	LTER21/PLOT21
19JAN84 – 29FEB84	LTERDA22	LTERCO22	LTER22/PLOT22
29FEB84 – 10APR84	LTERDA23	LTERCO23	LTER23/PLOT23
10APR84 - 23MAY84	LTERDA24	LTERCO24	LTER24/PLOT24
23MAY84 - 02JUL84	LTERDA25	LTERCO25	LTER25/PLOT25
02JUL84 – 11AUG84	LTERDA26	LTERCO26	LTER26/PLOT26
11AUG84 - 20SEP84	LTERDA27	LTERCO27	LTER27/PLOT27
22SEP84 – 01NOV84	LTERDA28	LTERCO28	LTER28/PLOT28
01NOV84 - 12DEC84	LTERDA29	LTERCO29	LTER29/PLOT29
12DEC84 - 09JAN85	LTERDA30	LTERCO30	LTER30/PLOT30
09JAN85 – 19FEB85	LTERDA31	LTERCO31	LTER31/PLOT31
20FEB85 – 31MAR85	LTERDA32	LTERCO32	LTER32/PLOT32

Dataset Identification names and content for Final Rescued database (2003)

The Rescued LTERATP database has the following Directories and Contents:

Directory: LTERATP.ORIGINAL RAW: (Total size 1.32 Mb, 2 Folders, 64 files)

CONTENTS: Knoche and Tape Directories; all unchanged by 2003 Baruch data managers.
LTERDA1 – LTERDA32: unedited triplicates

Directory: LTERATP.ORIGINAL.FINAL: (Total size 1.27 Mb; 5 Folders, 67 files)

CONTENTS: Knoche and Tape Directories; all unchanged by 2003 Baruch data managers.
Directory: DATA:
LTERCO1 – LTERCO32: corrected, edited data files; sorted by year, month, day and site
Directory: DOCUMENTATION:
LTERDMT files: original LTERATP documentation

Directory: LTERATP.ORIGINAL.ANALYSES: (Total size 0.64 Mb; 8 Folders, 137 files)

CONTENTS: Knoche and Tape Directories; all unchanged by 2003 Baruch data managers.
Directory: LTER1 – LTER32: means sorted by date, by site
Directory: PLOT1 – PLOT32: means sorted by site, by date
Directory: MONTHS: means sorted by site, by year, by month
Directory: PROGRAMS: computer programs and analyses output; ATPCOR, CVMEAN, WEIRATP, SASMEAN

Directory: LTERATP.RESCUE2003.PROCESS: (Total size 6.47 MB; 7 Folders, 101 files)

CONTENTS: Edits made by 2003 Baruch Data Managers documented in Process Step
Directory: **DATA**: all files are in **MICROSOFT EXCEL WORKBOOK FORMAT**
LTERCO1 – LTERCO32: corrected, edited data files; sorted by year, month, day and site
LTER1 – LTER32: daily means sorted by date, by site
PLOT1 – PLOT32: daily means sorted by site, by date
MONTHS: monthly means sorted by site, by year, by month
Directory: **GRAPHICS**: all files are in **SIGMAPLOT 8.0 FORMAT**
Contain 1981-1985 Triplicate and Mean and SE CB, OL, TC plots
LTERCO1981-1985
ATP Mean
Directory: **PROGRAMS**: ATPMEANSE program file is in **SAS** and **text FORMAT**

Directory: LTERATP.RESCUE2003.FINAL (Total size 6.08Mb, 3 Folders, 35 files)

CONTENTS: Files derived from LTERATP.RESCUE2003.PROCESS
Directory: **FINAL.DATA**: all files are in **.csv Text** and **EXCEL WORKBOOK FORMAT**
LTERATP.CB.1981-1985: corrected, edited data files; sorted by date
LTERATP.OL.1981-1985: corrected, edited data files; sorted by date
LTERATP.TC.1981-1985: corrected, edited data files; sorted by date
ATPMEAN.CB.1981-1985: daily means, by date
ATPMEAN.OL.1981-1985: daily means, by date
ATPMEAN.TC.1981-1985: daily means, by date
Directory: **FINAL.GRAPHICS**: all files are in **.JPG FORMAT**
81-85DailyAveCBATP
81-85DailyAveOLATP
81-85DailyAveTCATP
81DailyCBTripATP
81DailyOLTripATP
81DailyTCTripATP
82DailyCBTripATP
82DailyOLTripATP
82DailyTCTripATP
83DailyCBTripATP
83DailyOLTripATP
83DailyTCTripATP
84DailyCBTripATP
84DailyOLTripATP
84DailyTCTripATP
85DailyCBTripATP
85DailyOLTripATP
85DailyTCTripATP
Directory: **FINAL.DOCUMENTATION**: all files are in **Text** and **MICROSOFT WORD FORMAT**
LTERATP.FINAL.FGDC
LTERATP.MissingData

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 Need NSF info here shall be held liable for the use and/or misuse of the data described and/or contained herein.

6.4 Standard Order Process

6.4.2. Digital Form

6.4.2.1 Digital Transfer Information

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

6.4.2.1.2 Format Version Number: Microsoft Office Professional 2000

6.4.2.1.6 File Decompression Technique: No compression applied

6.4.2.2 Digital Transfer Option

Computer Contact Information

Network Address

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

6.4.3 Fees: None

6.5 Custom Order Process:

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

7. Metadata Reference Information

7.1 Metadata Date: 20030604

7.2 Metadata Review Date: 20030715

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