

An Integrated Surface Water Quality Monitoring Program for the South Florida Coastal Waters

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User Defined Information

[Section Index](#)

User Defined Text:

Label: Category

Value: Water Quality

Identification Information

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Citation:

Citation Information:

Originator:

Publication Date:

Publication Time:

Title: An Integrated Surface Water Quality Monitoring Program for the South Florida Coastal Waters

Edition:

Geospatial Data Presentation Form:

Series Information:

Series Name:

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Publisher:

Other Citation Details:

Online Linkage:

Larger Work Citation:

Description:

Abstract:

The Southeastern Environmental Research Center at Florida International University operates a network of 331 fixed sampling sites distributed throughout the estuarine and coastal ecosystems of south Florida. The purpose of this network is to address concerns in regional water quality which cross and overlap separate political boundaries. Funding has come from different sources with individual programs being added as funding became available. Biscayne Bay, Florida Bay, Whitewater Bay, Ten Thousand Islands, Rookery Bay, Estero Bay, and Pine Island Sound are sampled monthly while the Florida Keys National Marine Sanctuary (FKNMS) and the southwest shelf are sampled quarterly. Variables currently being measured include surface and bottom temperature, salinity, dissolved oxygen, nitrate, nitrite, ammonium, total nitrogen, total organic nitrogen, total phosphorus, soluble reactive phosphorus, total organic carbon, total silicate, chlorophyll a, alkaline phosphatase activity, turbidity, and light extinction.

Purpose:

The purpose of this network is to address concerns in regional water quality which cross and overlap separate political boundaries. One of the products is a quasi-synoptic big picture of nutrient and phytoplankton biomass distributions over the South Florida Coastal Waters. The SERC network will, in time, provide us with the data necessary to determine whether conditions within the estuaries and sanctuary are improving or declining.

Supplemental Information:

This work was supported by the South Florida Water Management District (Contract #C10244).

<http://www.fiu.edu/wqmnetwork>

Time Period of Content:

Time Period Information:

Range of Dates/Times:

Beginning Date: 3/1991

Beginning Time: Unknown

Ending Date: Present

Ending Time: Unknown

Currentness Reference: ground condition

Status:

Progress: In Work

Maintenance and Update Frequency: Monthly (SW Florida Shelf is sampled Quarterly)

Spatial Domain:

Description of Geographic Extent: South Florida Coastal Waters Including Florida Bay, Biscayne Bay, Whitewater Bay, Ten Thousand Islands, Cape Romano, Rookery Bay, Estero Bay, Pine Island Sound, and the Southwest Florida Shelf.

Bounding Coordinates:

West Bounding Coordinate: -82.205

East Bounding Coordinate: -80.1

North Bounding Coordinate: 26.635

South Bounding Coordinate: 24.692

Elevation Minimum:

Elevation Maximum:

Altitude Distance Units:

Data Set G-Polygon:

Data Set G-Polygon Outer G-Ring:

G-Ring:

Data Set G-Polygon Exclusion G-Ring:

G-Ring:

Keywords:

Theme:

Theme Keyword Thesaurus: none

Theme Keyword: aquatic

Theme Keyword: chemistry

Theme Keyword: freshwater

Theme Keyword: marine

Theme Keyword: nitrate

Theme Keyword: nutrients

Theme Keyword: organic

Theme Keyword: phosphorus

Theme Keyword: estuary

Theme Keyword: saltwater

Theme Keyword: surface water

Theme Keyword: water chemistry

Theme Keyword: water quality

Place:

Place Keyword Thesaurus: None

Place Keyword: Florida Bay

Place Keyword: Biscayne Bay

Place Keyword: Whitewater Bay

Place Keyword: Ten Thousand Islands

Place Keyword: Southwest Florida Shelf

Place Keyword: Estero Bay

Place Keyword: Everglades National Park

Place Keyword: Florida

Place Keyword: Gulf of Mexico

Place Keyword: Matalacha Pass NWR

Place Keyword: Rookery Bay

Place Keyword: southwest Florida

Place Keyword: state parks

Place Keyword: Ten Thousand Islands NWR

Stratum:

Stratum Keyword Thesaurus:

Stratum Keyword:

Temporal:

Temporal Keyword Thesaurus:

Temporal Keyword:

Taxonomy:

Keywords/Taxon:

Taxonomic Keyword Thesaurus:

Taxonomic Keywords:

Taxonomic System:

Classification System/Authority:

Classification System Citation:

Classification System Modifications:

Identification Reference:

Identifier:

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization:

Contact Position:

Contact Address:

Address Type:

Address:

City:

State or Province:

Postal Code:

Country:

Contact Voice Telephone:

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address:

Hours of Service:

Contact Instructions:

Taxonomic Procedures:

Taxonomic Completeness:

Vouchers:

Specimen:

Repository:

Contact Information:

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization:

Contact Position:

Contact Address:

Address Type:

Address:

City:

State or Province:

Postal Code:

Country:

Contact Voice Telephone:

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address:

Hours of Service:

Contact Instructions:

General Taxonomic Coverage:

Taxonomic Classification:

Taxon Rank Name: Kingdom

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Division

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Class

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Sub Class

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Family

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Genus

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name: Species

Taxon Rank Value:

Applicable Common Name:

Taxonomic Classification:

Taxon Rank Name:

Taxon Rank Value:

Applicable Common Name:

Access Constraints: Available

Use Constraints: Give Proper Credit

Point of Contact:

Contact Information:

Contact Person Primary:

Contact Person: Boyer, Joseph N.

Contact Organization: Florida International University

Contact Position: Associate Scientist

Contact Address:

Address Type: mailing and physical address

Address:

Southeast Environmental Research Center, OE 148, FIU

City: Miami

State or Province: FL

Postal Code: 33199

Country: USA

Contact Voice Telephone: 305-348-4076

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address: boyerj@fiu.edu

Hours of Service:

Contact Instructions:

Browse Graphic:

Browse Graphic File Name:

Browse Graphic File Description:

Browse Graphic File Type:

Data Set Credit: Data were provided by the SERC-FIU Water Quality Monitoring Network which is supported by SFWMD/SERC Cooperative Agreement #C-10244

Security Information:

Security Classification System:

Security Classification:

Security Handling Description:

Native Data Set Environment: Number of Records:1,001 - 10,000, File Size (Mb): 10 Mb

Cross Reference:

Analytical Tool:

Analytical Tool Description:

Tool Access Information:

Online Linkage:

Tool Access Instruction:

Tool Computer and Operating System:

Tool Contact:

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization:

Contact Position:

Contact Address:

Address Type:

Address:

City:

State or Province:

Postal Code:

Country:

Contact Voice Telephone:

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address:

Hours of Service:

Contact Instructions:

Tool Citation:

Analytical Tool:

Analytical Tool Description:

Tool Access Information:

Online Linkage:

Tool Access Instruction:

Tool Computer and Operating System:

Tool Contact:

Contact Information:

Contact Person Primary:

Contact Person:
Contact Organization:
Contact Position:
Contact Address:
Address Type:
Address:
City:
State or Province:
Postal Code:
Country:
Contact Voice Telephone:
Contact TDD/TTY Telephone:
Contact Facsimile Telephone:
Contact Electronic Mail Address:
Hours of Service:
Contact Instructions:

Tool Citation:

Analytical Tool:

Analytical Tool Description:

Tool Access Information:

Online Linkage:

Tool Access Instruction:

Tool Computer and Operating System:

Tool Contact:

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization:

Contact Position:

Contact Address:

Address Type:

Address:

City:

State or Province:

Postal Code:

Country:

Contact Voice Telephone:

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address:

Hours of Service:

Contact Instructions:

Tool Citation:

Web Published:

Data Quality Information

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Attribute Accuracy:

Attribute Accuracy Report:

Quantitative Attribute Accuracy Assessment:

Attribute Accuracy Value:

Attribute Accuracy Explanation:

Logical Consistency Report:

Completeness Report:

Positional Accuracy:

Horizontal Positional Accuracy:

Horizontal Positional Accuracy Report: 10 M

Quantitative Horizontal Positional Accuracy Assessment:

Horizontal Positional Accuracy Value:

Horizontal Positional Accuracy Explanation:

Vertical Positional Accuracy:

Vertical Positional Accuracy Report: 10 M

Quantitative Vertical Positional Accuracy Assessment:

Vertical Positional Accuracy Value:
Vertical Positional Accuracy Explanation:

Lineage:

Methodology:

Methodology Type: Field

Methodology Identifier:

Methodology Keyword Thesaurus:

Methodology Keyword:

Methodology Description: Water samples were collected and analyzed by SERC personnel using standard methodology outlined in the Quality Assurance Project Plan (QAPP) with prior approval from SFWMD and FDEP. Salinity and temperature (°C) were measured 10 cm below the surface and 10 cm above the bottom using a combination salinity-conductivity-temperature probe (Orion model 140). Surface and bottom dissolved oxygen (DO, mg l⁻¹) was measured using an oxygen electrode (Orion model 840), corrected for both salinity and temperature.

Duplicate, unfiltered water samples were collected from 10 cm below the surface using sample rinsed, 120 ml HDPE bottles and kept at ambient temperature in the dark during transport. Duplicate water samples for dissolved nutrient analysis were collected using sample rinsed 150 ml syringes. These samples were filtered by hand (25 mm glass fiber GF/F) into acetone-washed and sample rinsed 60 ml HDPE bottles, which were then capped and immediately placed on ice in the dark for transport. The wet filters, used for chlorophyll a analysis (CHLA), were placed in 2 ml plastic centrifuge tubes to which 1.5 ml of 90% acetone was added. They were then immediately capped and put into a dark bottle on ice for transport.

Unfiltered water samples were analyzed for total organic carbon (TOC), total nitrogen (TN), total phosphorus (TP), alkaline phosphatase activity (APA), and turbidity (NTU). TOC was measured by direct injection onto hot platinum catalyst in a Shimadzu TOC-5000 after first acidifying to pH<2 and purging with CO₂-free air. TN was measured using an ANTEK 7000N Nitrogen Analyzer using O₂ as carrier gas instead of argon to promote complete recovery of the nitrogen in the water samples. TP was determined using a dry ashing, acid hydrolysis technique. The APA assay measures the activity of alkaline phosphatase, an enzyme used by bacteria to mineralize phosphate from organic compounds. The assay is performed by adding a known concentration of an organic phosphate compound (o-methylfluorescein phosphate) to an unfiltered water sample. Alkaline phosphatase in the water sample cleaves the phosphate, leaving o-methylfluorescein, a highly fluorescent compound. The fluorescence of initial and 2 hr incubations were measured using a Gilford Fluoro IV spectrofluorometer (excitation = 430 nm, emission = 507 nm) and subtracted to give APA (μM h⁻¹). Turbidity was measured using an HF Scientific model DRT-15C turbidimeter and reported in NTU.

Filtrates were analyzed for soluble reactive phosphorus (SRP), nitrate + nitrite (NO_x), nitrite (NO_2^-), ammonium (NH_4^+), and silicate ($\text{Si}(\text{OH})_4$) by flow injection analysis (Alpkem model RFA 300). Filters for CHLA content ($\mu\text{g l}^{-1}$) were allowed to extract for a minimum of 2 days at -20°C before analysis. Extracts were analyzed using a Gilford Fluoro IV Spectrofluorometer (excitation = 435 nm, emission = 667 nm) and compared to a standard curve of pure CHLA (Sigma).

Some parameters were not measured directly, but were calculated by difference. Nitrate (NO_3^-) was calculated as $\text{NO}_x - \text{NO}_2^-$. Dissolved inorganic nitrogen (DIN) was calculated as $\text{NO}_x + \text{NH}_4^+$. Total organic nitrogen (TON) was defined as $\text{TN} - \text{DIN}$. Concentrations for all of these water quality variables are reported in units of milligrams per liter (mg l^{-1}) or the equivalent parts per million (ppm), except where noted. All nutrient concentrations are based on the atomic weight of primary nutrient species (ppm-N, ppm-P, and ppm-C), not the molecular weight. All N:P ratios discussed are calculated on a molar basis.

Methodology Citation: JONES, R. D., AND J. N. BOYER. 2002. FY2001 Annual Report of the South Florida Estuarine Water Quality Monitoring Network. SFWMD/SERC Cooperative Agreement #C-10244.
<http://serc.fiu.edu/wqmnetwork/SFWMD-CD/Data/2001EWQS.pdf>

Source Information:

Source Citation:

Citation Information:

Originator:

Publication Date:

Publication Time:

Title: Big Cypress Basin Template

Edition:

Geospatial Data Presentation Form:

Series Information:

Series Name:

Issue Identification:

Publication Information:

Publication Place:

Publisher:

Other Citation Details:

Online Linkage:

Larger Work Citation:

Source Scale Denominator:

Type of Source Media:

Source Time Period of Content:

Time Period Information:

Single Date/Time:

Calendar Date:

Time of Day: Unknown

Source Currentness Reference:

Source Citation Abbreviation: short-form alias for the source citation

Source Contribution: brief statement identifying the information contributed by the source to the data set.

Process Step:

Process Description:

Source Used Citation Abbreviation:

Process Date:

Process Time:

Source Produced Citation Abbreviation:

Process Contact:

Contact Information:

Contact Person Primary:

Contact Person:

Contact Organization:

Contact Position:

Contact Address:

Address Type:

Address:

City:

State or Province:

Postal Code:

Country:

Contact Voice Telephone:

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address:

Hours of Service:
Contact Instructions:

Cloud Cover:

Spatial Data Organization Information

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Indirect Spatial Reference:
Direct Spatial Reference Method:
Raster Object Information:
 Raster Object Type:
 Row Count:
 Column Count:
 Vertical Count:

Spatial Reference Information

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Horizontal Coordinate System Definition:
 Geographic:
 Latitude Resolution:
 Longitude Resolution:
 Geographic Coordinate Units:
 Geodetic Model:
 Horizontal Datum Name:
 Ellipsoid Name:
 Semi-major Axis:
 Denominator of Flattening Ratio:
Vertical Coordinate System Definition:

Altitude System Definition:

Altitude Datum Name:

Altitude Resolution:

Altitude Distance Units:

Altitude Encoding Method:

Depth System Definition:

Depth Datum Name:

Depth Resolution:

Depth Distance Units:

Depth Encoding Method:

Entity and Attribute Information

[Section Index](#)

Detailed Description:

Entity Type:

Entity Type Label:

Entity Type Definition:

Entity Type Definition Source:

Attribute:

Attribute Label: %IO

Attribute Definition: % Surface Light Penetration To Bottom (%)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: %Sat-B

Attribute Definition: Bottom Percent DO Saturation (%)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: %Sat-S

Attribute Definition: Surface Percent DO Saturation (%)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Apa-B

Attribute Definition: Bottom Alkaline Phosphatase Activity ($\mu\text{M h}^{-1}$)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Apa-S

Attribute Definition: Surface Alkaline Phosphatase Activity ($\mu\text{M h}^{-1}$)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Chl a

Attribute Definition: Surface Chlorophyll A ($\mu\text{g l}^{-1}$)

Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Date
Attribute Definition: Date Of Sampling
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Depth
Attribute Definition: Station Depth (m)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:

Enumerated Domain Value:
Enumerated Domain Value Definition:
Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: DIN-B
Attribute Definition: Bottom Dissolved Inorganic Nitrogen (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: DIN-S
Attribute Definition: Surface Dissolved Inorganic Nitrogen (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: DO-B
Attribute Definition: Bottom Dissolved Oxygen (mg l⁻¹)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: DO-S
Attribute Definition: Surface Dissolved Oxygen (mg l⁻¹)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: DSIGT

Attribute Definition: Delta Sigma-T (kg m^{-3})

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: K_d

Attribute Definition: Diffuse Light Attenuation Coefficient (m^{-1})

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Latdec

Attribute Definition: Decimal Latitude

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Londec

Attribute Definition: Decimal Longitude

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: N:P

Attribute Definition: Surface Din To SRP Ratio (molar)

Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: NH4-B
Attribute Definition: Bottom Ammonium (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: NH4-S
Attribute Definition: Surface Ammonium (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:

Enumerated Domain Value:
Enumerated Domain Value Definition:
Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: NO2-B
Attribute Definition: Bottom Nitrite (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: NO2-S
Attribute Definition: Surface Nitrite (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: NO3-B
Attribute Definition: Bottom Nitrate (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: NO3-S
Attribute Definition: Surface Nitrate (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: NOX-B

Attribute Definition: Bottom Nitrate+Nitrite (ppm)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: NOX-S

Attribute Definition: Surface Nitrate+Nitrite (ppm)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Sal-B

Attribute Definition: Bottom Salinity (psu)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: Sal-S

Attribute Definition: Surface Salinity (psu)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: SI-B

Attribute Definition: Bottom Total Silicate (ppm)

Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: SI-S
Attribute Definition: Surface Total Silicate (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: SRP-B
Attribute Definition: Bottom Soluble Reactive Phosphorus (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:

Enumerated Domain Value:
Enumerated Domain Value Definition:
Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: SRP-S
Attribute Definition: Surface Soluble Reactive Phosphorus (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Sta
Attribute Definition: Sampling Station
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Surv
Attribute Definition: Survey Number
Attribute Definition Source: the authority of the definition.
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation: the definition of the Attribute Value Accuracy measure and units, and a description of how the estimate was derived.
Attribute Measurement Frequency: As needed

Attribute:

Attribute Label: Temp-B
Attribute Definition: Bottom Temperature (°C)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Temp-S
Attribute Definition: Surface Temperature (°C)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Time
Attribute Definition: Time Of Sample Collection
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: TN-B

Attribute Definition: Bottom Total Nitrogen (ppm)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: TN-S

Attribute Definition: Surface Total Nitrogen (ppm)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: TN:TP

Attribute Definition: Surface Total Nitrogen To Total Phosphorus Ratio (molar)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: TOC-B

Attribute Definition: Bottom Total Organic Carbon (ppm)

Attribute Definition Source:

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value:

Enumerated Domain Value Definition:

Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:

Ending Date of Attribute Values:

Attribute Value Accuracy Information:

Attribute Value Accuracy:

Attribute Value Accuracy Explanation:

Attribute Measurement Frequency:

Attribute:

Attribute Label: TOC-S

Attribute Definition: Surface Total Organic Carbon (ppm)

Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: TON-B
Attribute Definition: Bottom Total Organic Nitrogen (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: TON-S
Attribute Definition: Surface Total Organic Nitrogen (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:

Enumerated Domain Value:
Enumerated Domain Value Definition:
Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: TP-B
Attribute Definition: Bottom Total Phosphorus (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: TP-S
Attribute Definition: Surface Total Phosphorus (ppm)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:

Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Turb-B
Attribute Definition: Bottom Turbidity (NTU)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:

Attribute:

Attribute Label: Turb-S
Attribute Definition: Surface Turbidity (NTU)
Attribute Definition Source:
Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
Beginning Date of Attribute Values:
Ending Date of Attribute Values:
Attribute Value Accuracy Information:

Attribute Value Accuracy:
Attribute Value Accuracy Explanation:
Attribute Measurement Frequency:
Attribute:
 Attribute Label: Year
 Attribute Definition: Decimal Year
 Attribute Definition Source:
 Attribute Domain Values:
 Enumerated Domain:
 Enumerated Domain Value:
 Enumerated Domain Value Definition:
 Enumerated Domain Value Definition Source:
 Beginning Date of Attribute Values:
 Ending Date of Attribute Values:
 Attribute Value Accuracy Information:
 Attribute Value Accuracy:
 Attribute Value Accuracy Explanation:
 Attribute Measurement Frequency:
Overview Description:
 Entity and Attribute Overview:
 Entity and Attribute Detail Citation:

Distribution Information

[Section Index](#)

Distributor:
 Contact Information:
 Contact Person Primary:
 Contact Person: Boyer, Joseph N.
 Contact Organization: Florida International University

Contact Position: Associate Scientist

Contact Address:

Address Type: mailing and physical address

Address:

Southeast Environmental Research Center, OE 148, FIU

City: Miami

State or Province: FL

Postal Code: 33199

Country: USA

Contact Voice Telephone: 305-348-4076

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address: boyerj@fiu.edu

Hours of Service:

Contact Instructions:

Resource Description:

Distribution Liability:

Standard Order Process:

Digital Form:

Digital Transfer Information:

Format Name:

Format Version Number:

Format Specification:

ASCII File Structure:

Record Delimiter:

Number Header Lines:

Description of Header Content:

Orientation:

Case Sensitive:

Authentication:

Quote Character:

Data Field:

Data Field Name:
Missing Value Code:
Data Field Width:
Format Information Content:
File Decompression Technique:
Transfer Size:
Digital Transfer Option:
Online Option:
Computer Contact Information:
Network Address:
Network Resource Name:
Access Instructions:
Online Computer and Operating System:
Fees:
Ordering Instructions:
Turnaround:
Custom Order Process:
Technical Prerequisites:
Available Time Period:
Time Period Information:
Single Date/Time:
Calendar Date:
Time of Day:

Metadata Reference Information

[Section Index](#)

Metadata Date: 9/10/2002
Metadata Review Date:
Metadata Future Review Date:
Metadata Contact:

Contact Information:

Contact Person Primary:

Contact Person: Boyer, Joseph N.

Contact Organization: Florida International University

Contact Position: Associate Scientist

Contact Address:

Address Type: mailing and physical address

Address:

Southeast Environmental Research Center, OE 148, FIU

City: Miami

State or Province: FL

Postal Code: 33199

Country: USA

Contact Voice Telephone: 305-348-4076

Contact TDD/TTY Telephone:

Contact Facsimile Telephone:

Contact Electronic Mail Address: boyerj@fiu.edu

Hours of Service:

Contact Instructions:

Metadata Standard Name: FGDC Biological Data Profile of the Content Standard for Digital Geospatial Metadata

Metadata Standard Version: 1998

Metadata Time Convention: local time

Metadata Access Constraints:

Metadata Use Constraints:

Metadata Security Information:

Metadata Security Classification System:

Metadata Security Classification:

Metadata Security Handling Description:

Metadata Extensions:

Online Linkage:

Profile Name:

Keywords

[Section Index](#)

Theme:

Theme Keyword Thesaurus:

Theme Keyword:

Place:

Place Keyword Thesaurus:

Place Keyword:

Stratum:

Stratum Keyword Thesaurus:

Stratum Keyword:

Temporal:

Temporal Keyword Thesaurus:

Temporal Keyword:

Keywords/Taxon:

Methodology Identifier:

Methodology Keyword Thesaurus:

Methodology Keyword: