Georgia Coastal Ecosystems Metadata Report
(GCE)

Central Coast, Georgia

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Research Area Information

Georgia Coastal Ecosystems ..... GCE

Georgia Coastal Ecosystems

Research Area Information

Harvest URL - Option 1

http://gce-lter.marsci.uga.edu/harvest/gce_climdb.txt

Site URL

http://gce-lter.marsci.uga.edu/lter/index.htm

Site north bounding coordinate (decimal degree) 31.55050

Site west bounding coordinate (decimal degree) .....-81.53350

Site south bounding coordinate (decimal degree) 31.28350

Site east bounding coordinate (decimal degree) .....-81.14180

Site Climate URL

http://gce-lter.marsci.uga.edu/lter/research/mon/climate.htm

Site Map URL

http://gce-lter.marsci.uga.edu/lter/research/mon/climate.htm

USGS Harvest URL

http://gce-lter.marsci.uga.edu/harvest/usgs/gce_lter.txt

Meteorlogical Stations

Hudson Creek

Meteorological Station

Latitude (decimal degrees) 31.453333
Longitude (decimal degrees) .....-81.363056
Elevation (meters; a.m.s.l.) 4m
Exposure (degrees) 10
Wind Exposure (degrees azimuth) 10
Begin Date..... 3/1/2001

Topography

flat coastal plain

Surface

water

Area Description

The weather station is mounted on a wooden frame suspended over water from the Georgia DNR ferry landing at Hudson Creek near Meridian, Georgia. The nearest structure to the station is the DNR ferry facility, which is located approximately 50m to the west. There are no significant obstructions in other directions.

History

This weather and hydrography station was installed by USGS (in partnership with the GCE LTER project and Sapelo Island National Estuarine Research Reserve) in January, 2001, and began logging data in March, 2001. It is registered as USGS realtime climate station 022035975. Air temperature readings reported by USGS were invalid prior to October, 2002, due to formatting errors.

Photo URL

http://gce-lter.marsci.uga.edu/lter/research/mon/hudson_creek.htm

Air Temperature

Begin Date..... 5/29/2001
Data Logger Sampling Interval..... 1 hour
Summary Interval .....1 hour
Data Accuracy (degree celsius) .....+/- 0.2 degrees C
Instrument Height (meters) 2

Instrumentation Description

Vaisala (formerly Handar) thermistor temperature sensor

Methods Description

Sensor readings were taken at 1 hour intervals, logged to a memory storage module, and periodically transmitted via microwave to the USGS district office. Realtime data was downloaded from the USGS web site in tab-delmited format, parsed, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Minimum QC Threshold (degree celsius) .....-15

Maximum QC Threshold (degree celsius) 45

Precipitation

Begin Date..... 5/29/2001

Data Logger Sampling Interval..... 15 minute

Summary Interval .....15 minute

Instrument Height (meters) 2m

Instrumentation Description

Design Analysis H-340 SDI tipping bucket rain gage

Methods Description

Sensor readings were taken at 15 minute intervals, logged to a memory storage module, and transmitted via microwave to the USGS district office at approximately 30 min intervals. Realtime data was downloaded from the USGS web site in tab-delmited format, parsed, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Maximum QC Threshold (millimeters) 200

Wind Direction and Resultant Wind Direction

Begin Date..... 5/3/2001

Data Logger Sampling Interval..... 15 minute

Summary Interval .....1 hour

Instrument Height (meters) 2m

Instrumentation Description

Vaisala (formerly Handar) 425A ultrasonic wind sensor

Methods Description

Sensor readings were taken at 15 minute intervals, logged to a memory storage module, averaged hourly, and periodically transmitted via microwave to the USGS district office. Realtime data was downloaded from the USGS web site in tab-

delmited format, parsed, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Maximum QC Threshold (degrees azimuth) 360

Wind Speed and Resultant Wind Speed

Begin Date..... 5/3/2001

Data Logger Sampling Interval..... 15 minute

Summary Interval .....1 hour

Instrument Height (meters) 2m

Instrumentation Description

Vaisala (formerly Handar) 425A ultrasonic wind sensor

Methods Description

Sensor readings were taken at 15 minute intervals, logged to a memory storage module, averaged hourly, and periodically transmitted via microwave to the USGS district office. Realtime data was downloaded from the USGS web site in tab-delmited format, parsed, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Maximum QC Threshold (meters per second) 50

Marsh landiing

Meteorological Station

Latitude (decimal degrees) 31.417778

Longitude (decimal degrees) .....-81.296111

Elevation (meters; a.m.s.l.) 10

Exposure (degrees) 10

Begin Date..... 9/5/2002

Topography

flat plain

Surface

grass, mineral soil

Area Description

The weather station is located adjacent to an unpaved parking lot approximately

30m east of the Marsh Landing pier on western Sapelo Island. A line of scrub-shrub vegetation (<3m high) borders the station 10-15m to the north, and a 4m tall wooden shelter at the landing pier is 30m to the west-southwest. The nearby ground cover is exposed sand and dirt to the south, and short-form salt marsh vegetation to the north. No significant obstructions >4m tall are located within 100m of the station.

History

Station was established in July 2002 using equipment formerly deployed at other GCE LTER and Sapelo Island NERR monitoring sites. A 10m steel super-structure was mounted on a concrete base, with wind vane and anemometer mounted at the top (10m), quantum sensor and pyranometer mounted at 8m, and other sensors mounted at 2-3m. Test data was acquired for calibration until Sept. 5, 2002, when the station was officially brought online. Air temperature data was invalid until Jan., 2003, when faulty sensor wiring was corrected.

Photo URL

http://gce-lter.marsci.uga.edu/lter/research/mon/marsh_landing.htm

Air Temperature

Begin Date..... 7/8/2002

Data Logger Sampling Interval..... 15 minute

Summary Interval .....15 minute

Data Accuracy (degree celsius) .....+/- 0.2 degrees C

Instrument Height (meters) 3m

Instrumentation Description

Campbell Scientific Instruments combined temperature/humidity sensor model HMP 45C

Methods Description

Sensor readings were taken at 15 minute intervals, converted from analog voltage to calibrated digital data, and logged to a memory storage module by custom Edlog programs on the Cambell Scientific Instruments (CSI) CR10X data logger. Stored data were periodically downloaded by telephone modem or direct serial connection using CSI LoggerNet 2.1 or PC208W software. Data arrays were parsed from the CSI data files, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Sensor History

The sensor was wired incorrectly when the station was reconfigured in August, 2002. This problem was corrected in January, 2003.

Calibration History

The sensor was recalibrated in July 2002

Minimum QC Threshold (degree celsius) .....-15

Maximum QC Threshold (degree celsius) 45

Atmospheric Pressure

Begin Date..... 7/8/2002
Data Logger Sampling Interval..... 15 minute
Summary Interval .....15 minute
Data Accuracy (hectopascals) ..... 0.5 hPa
Instrument Height (meters) 3m
Instrumentation Description

Campbell Scientific Instruments barometric pressure sensor model CS105

Methods Description

Sensor readings were taken at 15 minute intervals, converted from analog voltage to calibrated digital data, and logged to a memory storage module by custom Edlog programs on the Cambell Scientific Instruments (CSI) CR10X data logger. Stored data were periodically downloaded by telephone modem or direct serial connection using CSI LoggerNet 2.1 or PC208W software. Data arrays were parsed from the CSI data files, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Calibration History

Sensor was calibrated in July, 2002

Minimum QC Threshold (hectopascals) 600
Maximum QC Threshold (hectopascals) 1060

Precipitation

Begin Date..... 7/8/2002
Data Logger Sampling Interval..... 15 min
Summary Interval .....1 hour
Data Accuracy (millimeters) ..... +/-1%
Instrument Height (meters) .....6 m
Instrumentation Description

Fluid Isolation Technology, Inc., Model TE525 Tipping Bucket Rain Gauge

Methods Description

Sensor readings were taken at 15 minute intervals, and any readings were converted from analog voltage to calibrated digital data, and logged to a memory storage module, and totalled hourly by custom Edlog programs on the Cambell Scientific Instruments (CSI) CR10X data logger. Stored data were periodically downloaded by telephone modem or direct serial connection using CSI LoggerNet 2.1 or PC208W

software. Data arrays were parsed from the CSI data files, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Calibration History

Sensor was calibrated in July, 2002

Maximum QC Threshold (millimeters) 200

Relative Humidity

Begin Date..... 7/8/2002

Data Logger Sampling Interval..... 15 minute

Summary Interval .....15 minute

Data Accuracy (percent) 2%

Instrument Height (meters) .....3 m

Instrumentation Description

Campbell Scientific Instruments Model HMP 45C combination temperature, relative humidity probe

Methods Description

Sensor readings were taken at 15 minute intervals, converted from analog voltage to calibrated digital data, and logged to a memory storage module by custom Edlog programs on the Cambell Scientific Instruments (CSI) CR10X data logger. Stored data were periodically downloaded by telephone modem or direct serial connection using CSI LoggerNet 2.1 or PC208W software. Data arrays were parsed from the CSI data files, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Calibration History

Sensor was calibrated in July, 2002

Maximum QC Threshold (percent) 100

Wind Direction and Resultant Wind Direction

Begin Date..... 7/8/2002

Data Logger Sampling Interval..... 15 minute

Summary Interval .....15 minute

Instrument Height (meters) 10m

Instrumentation Description

Campbell Scientific Instruments Model 03001-5 Wind Sentry

Methods Description

Sensor readings were taken at 15 minute intervals, converted from analog voltage to calibrated digital data, and logged to a memory storage module by custom Edlog programs on the Cambell Scientific Instruments (CSI) CR10X data logger. Stored data were periodically downloaded by telephone modem or direct serial connection using CSI LoggerNet 2.1 or PC208W software. Data arrays were parsed from the CSI data files, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Calibration History

Sensors were calibrated in July, 2002

Maximum QC Threshold (degrees azimuth) 360

Wind Speed and Resultant Wind Speed

Begin Date..... 7/8/2002

Data Logger Sampling Interval..... 15 minute

Summary Interval .....15 minute

Instrument Height (meters) 10m

Instrumentation Description

Campbell Scientific Instruments Model 03001-5 Wind Sentry

Methods Description

Sensor readings were taken at 15 minute intervals, converted from analog voltage to calibrated digital data, and logged to a memory storage module by custom Edlog programs on the Cambell Scientific Instruments (CSI) CR10X data logger. Stored data were periodically downloaded by telephone modem or direct serial connection using CSI LoggerNet 2.1 or PC208W software. Data arrays were parsed from the CSI data files, validated, documented and subjected to automated quality control limit checking by custom Matlab programs in the GCE Data Toolbox. Flagged values were then removed and data aggregated by Year, Month and Day using GCE Data Toolbox functions to produce daily summary data for submission.

Calibration History

Sensor was calibrated in July, 2002

Maximum QC Threshold (meters per second) 50

University of Georiga Marine Institute Met Station

Meteorological Station

Latitude (decimal degrees) 31.3972
Longitude (decimal degrees) .....-81.2811
Elevation (meters; a.m.s.l.) .....3-4m above mean low water
Exposure (degrees) .....17.5 degrees
Wind Exposure (degrees azimuth) .....10 degrees
Begin Date..... 05/01/1957

Topography

flat plain

Surface

grass

Area Description

Station is located on a grass-covered field near the University of Georgia Marine Institute grounds, approximately 30m west of main laboratory building

History

The station equipment was moved from a 10m tower to a 1m stand ca. 1995, and data from Jan 1969 through Dec 1971 are not available in the NOAA NCDC archives for unspecified reasons

Photo URL

http://gce-lter.marsci.uga.edu/lter/research/mon/ugami.htm

Air Temperature

Begin Date..... 05/01/1957
Data Logger Sampling Interval..... not applicable (continuous analog measurements)
Summary Interval .....1 day
Data Accuracy (degree celsius) .....+/- 0.11 degrees C
Instrument Height (meters) 1m

Instrumentation Description

Two calibrated analog glass alcohol thermometers (one with maximum value float, one with minimum value float; standard NWS observing station equipment - makes and models not specified)

Methods Description

Air temperature is measured visually at 9:00-10:00 AM EST daily and logged. Maximum and minimum air temperature values are compared with calculated parameters from a backup digital weather station with 10 minute logging (Davis Weather Wizard). Validated data are transmitted by phone to the National Weather Service for archival. Accumulated data are obtained electronically from the NOAA National

Climatology Data Center and converted from English to SI units prior to incorporation in the GCE database.

Sensor History

not specified

Calibration History

not specified

Minimum QC Threshold (degree celsius) .....-17

Maximum QC Threshold (degree celsius) 45

Precipitation

Begin Date..... 05/01/1957

Data Logger Sampling Interval..... not applicable (continuous analog measurement)

Summary Interval .....1 day

Data Accuracy (millimeters) .....0.5 mm

Instrument Height (meters) .....1 m

Instrumentation Description

Manual rain gauge (standard NWS observing station equipment - makes and models not specified)

Methods Description

Precipitation is visually measured at 9:00-10:00 AM EST daily and logged, and the gauge is manually emptied and reset. Logged data are periodically transmitted by phone to the National Weather Service for verification and archival. Accumulated data are obtained electronically from the NOAA National Climatology Data Center and converted from English to SI units prior to incorporation in the GCE database.

Sensor History

not specified

Calibration History

not specified

Maximum QC Threshold (millimeters) 205

Watershed

Gauging Stations

Doctor Town (USGS)

Hydrologic Gauging Station

Stream Discharge

Begin Date..... 1925
Data Logger Sampling Interval..... 15 minute
Summary Interval .....15 minute
Maximum QC Threshold (liters per second) 3000000