LIS Mapping Initiative Phase II Physical Environment Data and Data Standards Inventory

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METADATA

1. Introduction

There are five types of data that were collected during the field programs supported under Phase-II of the mapping initiative. We refer to these and CTD (conductivity and temperature depth) profiles, moored CTDs (to measure time series of near bottom salinity and temperature), two types of moored ADCPs (time series of the vertical profile of current, and wave parameters), and moored CTD time series. These data were used to develop and evaluate the model used to create maps of bottom temperature and shear stress. The data and metadata standards for each of these are described in the following sections.

2. CTD Profiles

Data Originator: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu)*

Publication Date: *31-Aug-21*

Dataset Title: *Eastern LIS water column properties*

Online Linkage: *None*

Abstract: *The data were obtained during ship survey cruises using two instrument systems lowered over the side: a SeaBird Electronic SBE9plus (https://www.seabird.com/profiling/sbe-911plus-ctd/family?productCategoryId=54627473769), or a SeaBird Electronics SBE19plus V2 (https://www.seabird.com/sbe-19plus-v2-seacat-profiler-ctd/product?id=60761421596). These instruments provide data in a "raw" machine-readable (.hex) format that can be further processed by the manufacturer's software to an ASCII text file (.cnv). The critical data are the pressure at the instrument level, seawater conductivity ratio and temperature. With these the depth dependence of the "practical salinity" and temperature can be computed, and the water density inferred from conventional parameterizations. These variables are reported in the ASCII files. These were then converted using MATLAB to NETCDF format files that use CF-1.6, based on OceanSITES-1.2 standards (http://www.oceansites.org/docs/oceansites_data_format_reference_manual.pdf).*

Dataset purpose: *The data was used in the development and testing of the model used to map temperature and bottom stress.*

Time period of content: *March 28-29, 2017; June 7-8, 2017; Nov 28-Dec 3, 2017; Mar 19, 2018; May 8-15, 2019.*

Dataset Status: *Complete*

Update Frequency: *None*

Theme Keywords: *Long Island Sound, Salinity, Temperature, Density, Depth-profiles*

Access Constraints: *None*

Use Constraints: *None*

Point of Contact: *James O'Donnell, University of Connecticut, james.odonnell@uconn.edu; (860) 992-2499*

Dataset Credit: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu); LISMARC II*

Data Quality Considerations: *None*

Attribute accuracy: *Research quality*

Completeness: *Complete*

Positional accuracy: *Location was recorded at the beginning of the instrument deployment. Ship drift during the collection of data (30-60s) may be several tens of meters.*

Process Steps: SeaBird *SeasoftV2*

Attributes:
'time' - days since 1950-01-01T00:00:00Z
'LATITUDE' - Station latitude, [degrees north]
'LONGITUDE' -Station longitude, [degrees east]
'scan' or sample number
'timeS' - Time Elapsed since start of profile
'prDM' - 'Pressure, Digiquartz [deciBar]
't090C' - Temperature [ITS-90, deg C]
'c0Sm' - Conductivity [S/m]
'sal00' - Salinity, Practical [PSU]
'sigma-t00' - Density [sigma-t, kg/m^3]

Metadata reference: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; 860 992 2499B8A7:B27A6:B27A5:B27A2:B27A1:B27B5B9:B27*

3. Moored CTD Data

Dataset Originator: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu)*

Publication Date: *31-Aug-21*

Dataset Title: *Eastern LIS water column properties*

Online Linkage: *None*

Abstract: *The distribution of temperature and salinity of the eastern part of Long Island Sound directly impacts the coastal ecology. These parameters are also tracers that indicate the relative importance of ocean and terrestrial influences. The salinity, temperature and*

pressure data described here were obtained using SeaBird Instruments SBE37 (https://www.seabird.com/moored/sbe-37-sm-smp-smp-odo-microcat/family?productCategoryId=54627473786) deployed with ADCP on the bottom of the Sound. In the spring of 2017 three stations, (labeled SOW1, EID2, and WID3) were sampled. In the winter of 2017-18 five stations were used (SOW1, EID2, WID3, WFW4, and SFW5). These instruments provide data in a "raw" machine-readable (.hex) format that can be further processed by the manufacturer's software to an ASCII text file (.cnv). The critical data are the pressure at the instrument level, seawater conductivity ratio and temperature. With these the depth dependence of the "practical salinity" and temperature can be computed, and the water density inferred from conventional parameterizations. These variables are reported in the ASCII files. These were then converted using MATLAB to NETCDF format files that use CF-1.6, based on OceanSITES-1.2 standards. (http://www.oceansites.org/docs/oceansites_data_format_reference_manual.pdf).

Dataset purpose: *The data was used in the development and testing of the model used to map temperature and bottom stress.*

Time period of content: *Spring 2017: SOW1 (March 30-June 7), EID2 (28 March-June 8th); Winter 2017-18: SOW1 (March 30-June 7), EID2 (28 March-June 8th) WID3, WFW4, and SFW5*

Dataset Status: *Complete*

Update Frequency: *None*

Theme Keywords: *Long Island Sound, Near Bottom Salinity, Temperature, Density, Depth*

Access Constraints: *None*

Use Constraints: *None*

Point of Contact: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; (860) 992-2499*

Dataset Credit: *James O'Donnell (james.odonnell@uconn.edu); Kay Howard Strobel (kay.howard-strobel@uconn.edu); LISMARC II*

Data Quality Considerations: *None*

Attribute accuracy: *Research quality*

Completeness: *Complete*

Positional accuracy: *Location was recorded at the beginning of the instrument deployment. Ship drift during the deployment (60s) may be several tens of meters*

Process Steps: *SeaBird SeasoftV2*

Attributes:
'time' - days since 1950-01-01T00:00:00Z
'LATITUDE' - Station latitude, [degrees north]
'LONGITUDE' -Station longitude, [degrees east]

'scan' or sample number
'timeS' - Time Elapsed since start of profile
'prDM' - 'Pressure, Digiquartz [deciBar]
't090C' - Temperature [ITS-90, deg C]
'c0Sm' - Conductivity [S/m]
'sal00' - Salinity, Practical [PSU]
'sigma-t00' - Density [sigma-t, kg/m^3]

Metadata reference: *James O'Donnell, University of Connecticut; james.odonnell@uconn.edu; (860) 992-2499*