



HORIZONTAL AND VERTICAL CONTROL REPORT

Gulf of Maine Survey

Horizontal and Vertical Control Report

Field Procedures & Computations

2019 Summer Hydrographic Field

Course CCOM-UNH

June 2019

Project Metadata

Project Name: Summer Hydro 2019
General Locality: Gulf of Maine
State or Territory: Maine
Field Unit: CCOM / JHC
Chief Party: Semme Dijkstra and Andrew Armstrong
Project Start Date: 06/03/2019
Project End Date: 07/03/2019
Field Year: 2019

Position and Height Information Utilized for Project

Horizontal Datum: World Geodetic System 1984
Realizations: WGS84 1150
Ellipsoid: GRS80

Final Products:

Horizontal Datum: NAD 1983 (2011)
Projection: NAD 1983 (2011) UTM 19N
Vertical Datum: MLLW

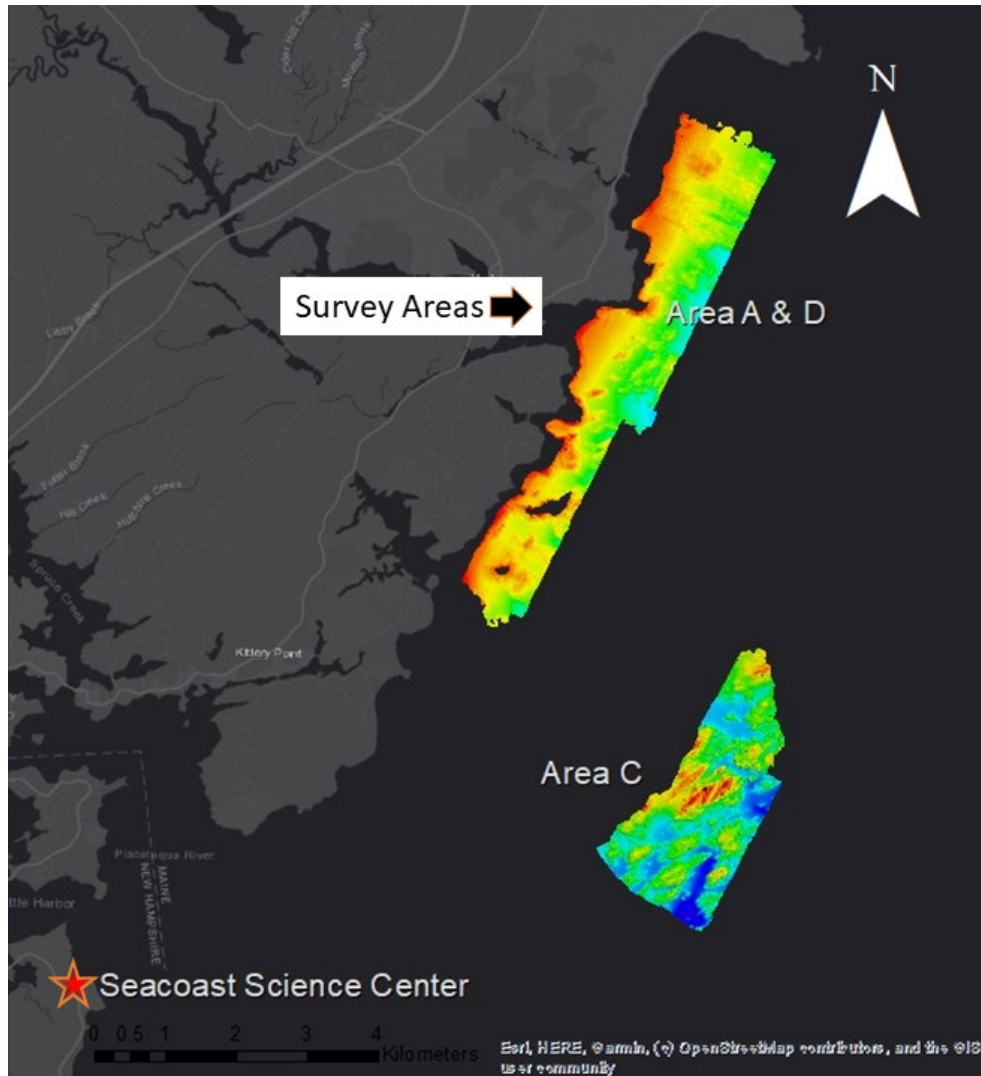


Figure 1: Horizontal and Vertical Control Stations for the Survey Area: Orange and red Star: UNH base station at the Seacoast Science Center served as the primary control station for the RTK.

Non User Installed Base Stations

CORS Station			
Station ID	Position		Ellipsoid Height
UNH_SCIC WGS84	Latitude 43.0453851	Longitude 70.71381611	15.884 m
Antenna: Zephyr Geodetic			

Vertical Techniques

Figure 2: Instrumentation of the RTK Base Station at the Seacoast Science Center, Odiorne Park, Rye, NH



RTK GNSS corrections were used for real time positioning and motion sensing. For the RTK positioning CMR+ correctors were transmitted from a Trimble 450L UHF modem connected to a Trimble 5700 base station located at the at the Seacoast Science Center in Rye, NH.

The survey was referenced to WGS84 and then transformed to NAD83 and MLLW as the horizontal and vertical datum respectively.

Motion and position data were post processed using POSPac using the University of New Hampshire (UNH) Continuously Operating Reference Station (CORS) NHUN. The processed data were then exported to SBET files for use in processing the bathymetric data in CARIS; see the POSPac Processing procedure or Caris Office Workflow in the appendices for more information.

Horizontal Techniques

The latitude and longitude were referenced to the ellipsoid with the same RTK GNSS corrections as explained above in Vertical Techniques. VDatum was used to calculate the offset between the Ellipsoid and MLLW with the static value being applied in CARIS.