W00487

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service

DESCRIPTIVE REPORT

Type of Survey:	Navigable Area
Registry Number:	W00487

LOCALITY

State(s):	Massachusetts
General Locality:	Massachusetts Coastline
Sub-locality:	Northern Cape Cod Bay

2006

CHIEF OF PARTY
Jane Denny

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**W00487**

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State(s):	**Massachusetts**
General Locality:	**Massachusetts Coastline**
Sub-Locality:	**Northern Cape Cod Bay**
Scale:	**10000**
Dates of Survey:	**08/16/2006 to 05/07/2008**
Instructions Dated:	**N/A**
Project Number:	**ESD-PHB-19**
Field Unit:	**USGS**
Chief of Party:	**Jane Denny**
Soundings by:	**SEA SWATHplus (Interferometric)**
Imagery by:	**Klein Marine Systems System 3000 (SSS)**
Verification by:	**Pacific Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via http://www.ncei.noaa.gov/.

DESCRIPTIVE REPORT MEMO

November 12, 2019

MEMORANDUM FOR: Pacific Hydrographic Branch

FROM: Report prepared by PHB on behalf of field unit
Adam Argento
Physical Scientist, Pacific Hydrographic Branch

SUBJECT: Submission of Survey W00487

The U.S. Geological Survey (USGS) and the Massachusetts Office of Coastal Zone Management (CZM) have cooperated to map approximately 480 km2 of the inner continental shelf in northern Cape Cod Bay Massachusetts. This report contains geophysical and sampling data collected by the USGS during five research cruises between 2006 and 2008. The geophysical data include (1) swath bathymetry from interferometric sonar, (2) acoustic backscatter from interferometric and sidescan sonars, and (3) subsurface stratigraphy and structure from seismic-reflection profilers. The seafloor sampling data include sediment samples, photographs, and videos. These spatial data support research on the influence that sea-level change and sediment supply have on coastal evolution and help identify the type, distribution, and quality of subtidal marine habitats within the coastal zone of Massachusetts.

The USGS survey party developed chart-datum bathymetric grids (5m) from and interferometric sonar and acoustic backscatter mosaics from a SSS sonar.

All soundings were reduced to Mean Lower Low Water using Constant Separation. The horizontal datum for this project is North American Datum of 1983 (NAD 83). The projection used for this project is Universal Transverse Mercator (UTM) Zone 19.

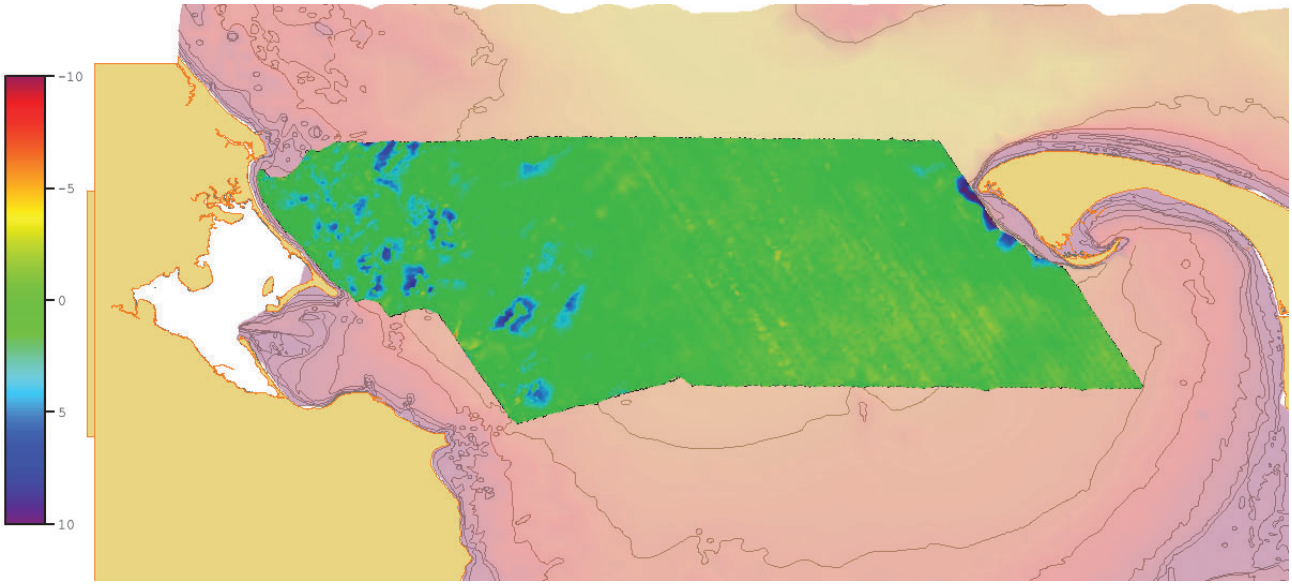
Survey soundings were collected to the Ellipse using realtime GNSS correctors, then reduced to MLLW based on the NAVD88-MLLW corrector value at the Brant Rock, MA tide gauge (8446009)

All survey systems and methods utilized during this survey were as described in the Geophysical and Sampling Data from the Inner Continental Shelf: Northern Cape Cod Bay, Massachusetts document.

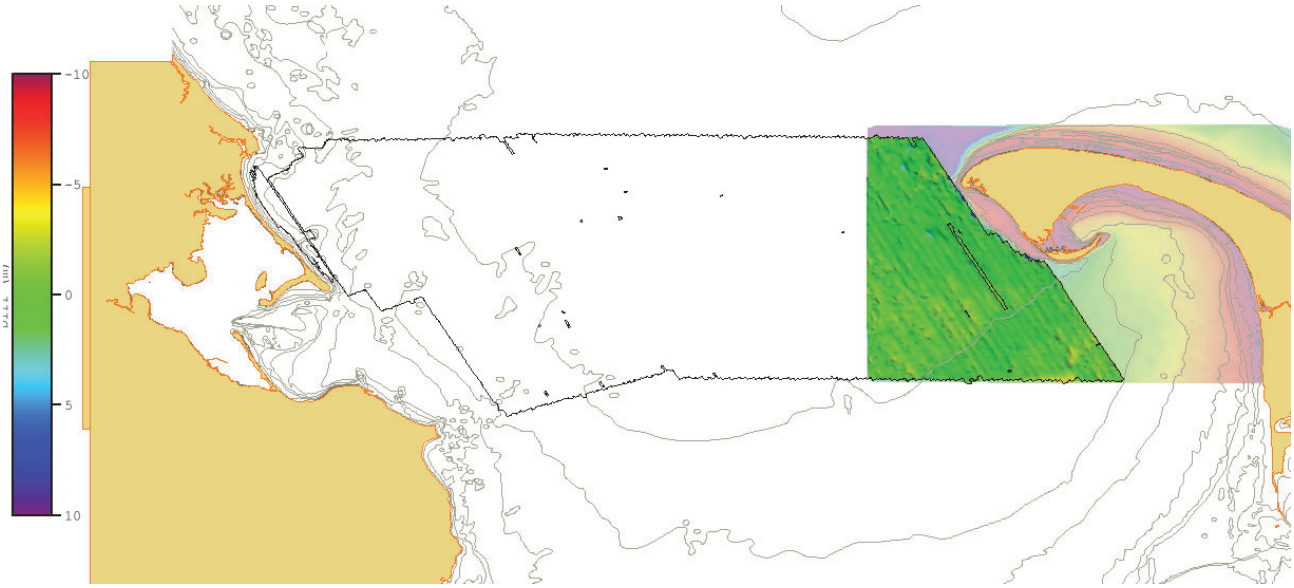
All data were reviewed for DTONs and none were identified in this survey.

USGS acquired the data outlined in this report. Data are available at https://pubs.usgs.gov/of/2010/1006//

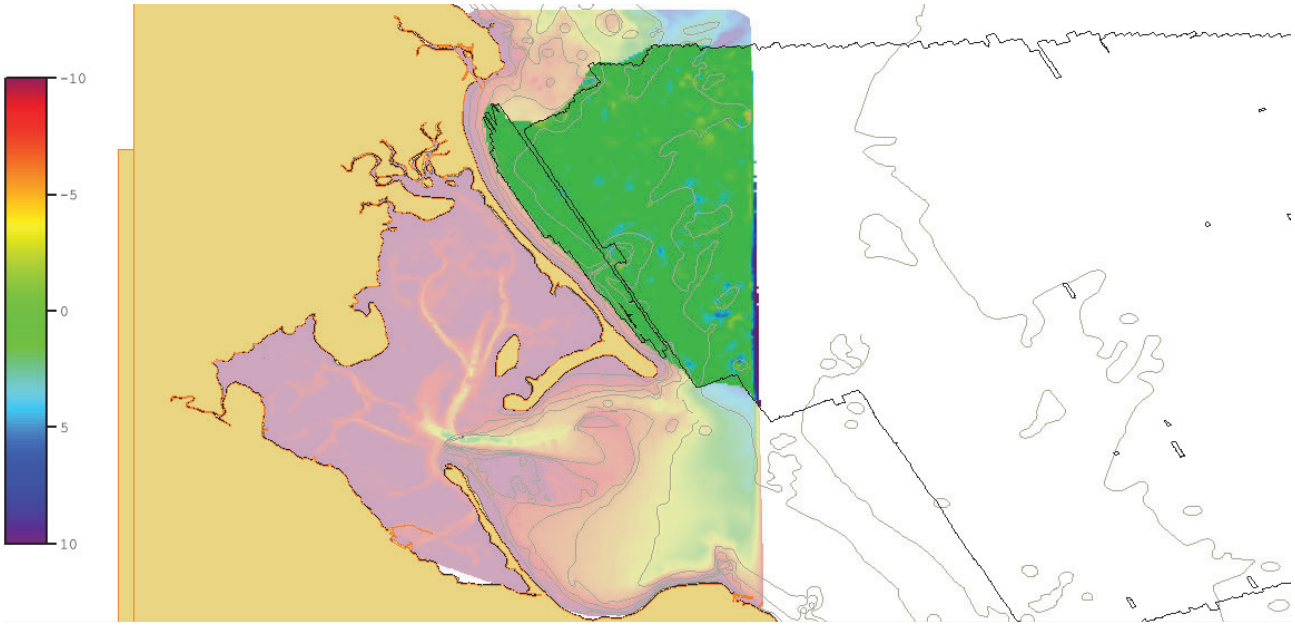
There are areas where surveyed depths are both shallower and deeper than charted. It is likely some contour lines along the cape have moved westward, as surveyed soundings generally trend shallower in that area. Here are graphic representations of depth differences, showing good general agreement for all overlapping charts.



Blue hues indicate survey soundings deeper than charted, yellow and red indicate surveyed depths are shallower than charted. W00487 compared with US4MA14M



Blue hues indicate survey soundings deeper than charted, yellow and red indicate surveyed depths are shallower than charted. W00487 compared with US5MA30M



Blue hues indicate survey soundings deeper than charted, yellow and red indicate surveyed depths are shallower than charted. W00487 compared with US5MA31M

The survey is partially adequate to supersede previous data. Sounding data from W00487 should be considered better than soundings from partial bottom NOS surveys from between 1940 and 1990. Sounding data from W00487 should not be considered better than soundings from modern, full-coverage surveys H11636, H11695, and W00037. While the soundings are adequate to supersede charted soundings, the reviewer recommends that all charted features not specifically addressed in the feature file be retained.

APPROVAL PAGE

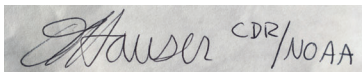
W00487

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- One Bathymetric Attributed Grid (BAGs)
- One backscatter mosaic
- Processed survey data and records
- GeoPDF of survey products

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.



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Approved:_____

Commander Olivia Hauser, NOAA
Chief, Pacific Hydrographic Branch