

Copy Barley
80012

Cruise Report
Massachusetts Cooperative Marine Geologic Project
Uniboom Seismics
Cox Ledge - southern Rhode Island Sound
including
Muskeget Channel - Nantucket Sound

Research Vessel - ASTERIAS
Cruise AST - 80 - 6B
10 June - 12 June, 1980

C.J. O'Hara
U.S. Geological Survey
Office of Marine Geology
Woods Hole, MA 02543

RESEARCH VESSEL: ASTERIAS

CRUISE NUMBER: AST - 80 - 6B

CRUISE DATES: 10 June - 12 June, 1980

AREA OF STUDY: Southern Rhode Island Sound and inner shelf south
of Martha's Vineyard

BASE OF OPERATIONS: Cuttyhunk Island, Mass. and Block Island, Rhode Island

SCIENTIFIC OBJECTIVES:

1. To define the acoustic stratigraphy and structure of Cox Ledge (possible submarine extension of the late Wisconsinian morainal ridge of western Martha's Vineyard).
2. To determine the occurrence and seaward extent of large, deeply buried preglacial valleys cut into the submerged coastal plain rocks beneath this part of the inner continental shelf.

PERSONNEL:

Charles J. O'Hara, Chief Scientist, U.S.G.S.

John Eusden, Geological Field Assistant, U.S.G.S.

Ann Whitney, Geological Field Assistant, U.S.G.S.

Dick Colburn, Boat Operator, W.H.O.I.

SHIPBOARD SYSTEMS:

EG&G Uniboom Catamaran with mounted transducer

EG&G Trigger - Capacitor Bank

EPC Seismic Recorder (4100 series)

Teledyne Exploration Seismic Amplifier (Model 300)

Del Norte Hydrophone Streamer (30 element)

Krohn-Hite Band Pass Filter

Northstar 6000 Loran C Receiver and Repeater

OPERATIONAL PROCEDURES:

Sound source/receiver position - 15 m astern of vessel

Sound source/receiver separation - 10 m

Graphic recorder sweep rate - 0.25 sec.

Sound source trigger interval - 0.50 sec.

Band Pass filter - low 400 Hz, high 4000 Hz

Ship speed over the bottom - 5 knots

Positional data - logged at 15 minute intervals and
at major course changes

Loran-C master transmitter - Seneca, New York
(9960 Northeast Chain)

Loran-C slave transmitters - W- Caribou, Maine and
Y - Carolina Beach, North Carolina (9960 Northeast Chain)

STATISTICS:

Scheduled ship time - 3 days 10 June - 12 June

Working days at sea - 3 days 10 June - 12 June

Down-time

Inclement weather - 0 days

Equipment malfunction - 0 days

Actual survey time at sea - 3 days

Ship tracks

Line kilometers of high-resolution subbottom
profiles - 226 (122 nautical miles)

Figure 1a and 1b: Maps showing trackline coverage

UNIBOOM SEISMIC R/V + ASTERIAS
CRUISE • AST-6-80

Cox Ledge Survey - Southern Rhode Island
Sound Including Muskeget Channel - Muskeget Sound

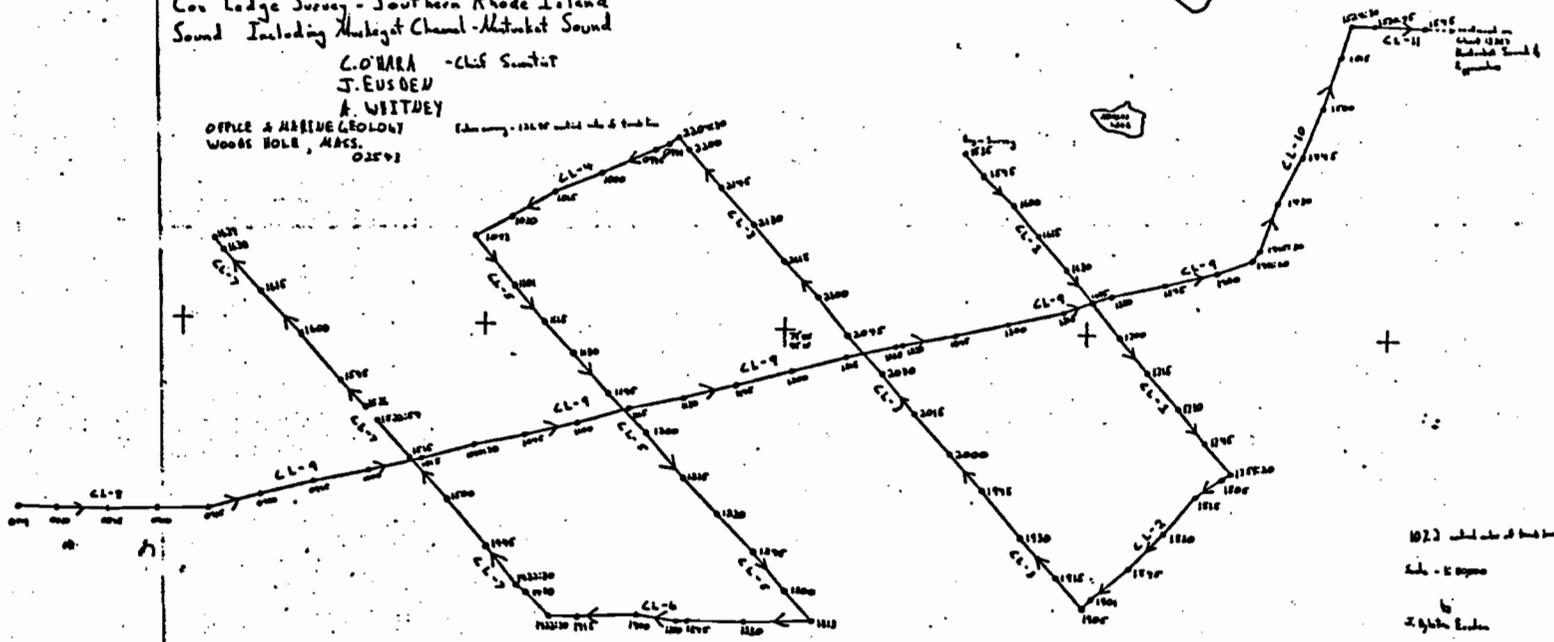
C. O'HARA - Chief Scientist
J. EUSGEN
A. WHITNEY

OFFICE & ARRIVE GEOLOGY
WOODS HOLE, MA. 02543

1:25000 scale chart used for track

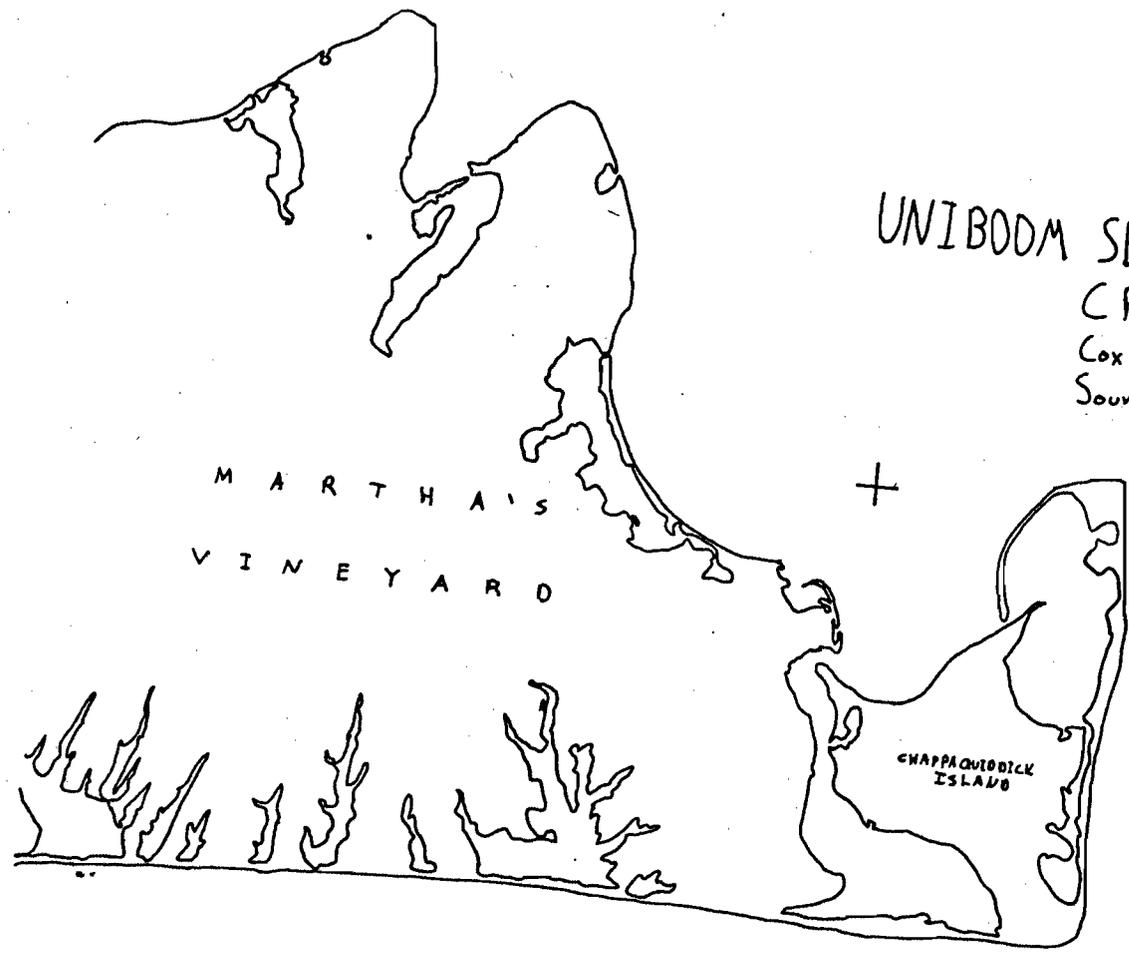


17° 00' W



17° 00' W

FIGURE 1a



UNIBOOM SEISMIC
CRUISE R/V AS
AST-6-80

Cox Ledge Survey - Southern Rhode
Sound Including Muskeget Channel -

C. O'HARA - Chief
J. BUSOEN
A. WHITNEY

OFFICE OF MARINE GEOLOGY
WOODS HOLE, MASS. 0254

+
70° 30'
41° 20'

Continued from
Chart 13218
Martha's Vineyard
to
Block Island

FIGURE 1b