#94029

BRANCH OF ATLANTIC MARINE GEOLOGY
U.S. GEOLOGICAL SURVEY
Woods Hole, MA 02543

CRUISE REPORT

1. Ship Name/Owner Operator: RV Asterias/Woods Hole Oceanographic

2. Cruise No.: AST94-1

3. Project #: 9470-61059

4. Funding Agency: University of New Haven, USGS, and the State of Connecticut

5. Area of Operation: Central Long Island Sound

6. Cruise Dates: 6/10-6/16/94; Woods Hole, MA to Clinton, CT to Woods Hole, MA

7. Chief Scientist: Larry Poppe

8. Scientific Party:
   Larry Poppe, USGS
   Ken Parolski, USGS
   Amy Harmon, USGS
   Ralph Lewis, Connecticut Geologic Survey
   Mary Cohen, CGS
   Doug Wheat (Yale University)

9. Ship's Captain: Dave Olmstead, Woods Hole Oceanographic Institution

10. Purpose of Cruise: Conduct both detailed (continuous) and spaced-line 100 kHz sidescan surveys. The detailed survey (Fig. 1) was conducted off Hammonasset Beach State Park to (1) determine the textural distributions of surficial sediments and to relate these distributions to active sedimentary processes; (2) to evaluate habitats and to relate them to benthic community structure. The spaced-line survey (Fig. 2) was performed as part of an effort to map regional sedimentary environments and oceanographic conditions.

11. Navigation Techniques: Differential GPS, Megapulse Loran-C; recorded on 3.5" diskettes

12. Scientific Equipment: Klein dual-frequency sidescan system, Q-MIPS, and a 3.5 kHz profiler

13. Days at Sea: 5

14. Sidescan Surveys:

Area	Lines Length (km)
Hammonasset Survey	108
Spaced-Line Survey	121

15. Remarks:

The Hammonasset Beach survey is the third 100 kHz sidescan survey to be sucessfully completed as part of a cooperative effort between the USGS, the University of New Haven, and the State of Connecticut.

Unfortunately, problems associated with the sidescan sonar system corrupted some of the data (Fig. 3). The Q-MIPS digital sidescan sonar acquisition system used during this study was designed to function with the BOB mid-range sidescan sonar system, and had to be "jury-rigged" with S.I.U. boxes to get it to function with the Klein system. The noise problem occurred during periods of high return (for example, from exposed bedrock, boulders, and glacial moraines), when the system apparently could not differentiate between the trigger and signal. While this problem does not prevent scientific interpretation of the records, the aesthetic value of the mosaic is clearly diminished. This system should not be used when conducting future, detailed, sidescan sonar surveys.

Figure 1. Map showing the location and tracklines of the 100 kHz sidescan sonar survey conducted off Hammonasset Beach State Park.

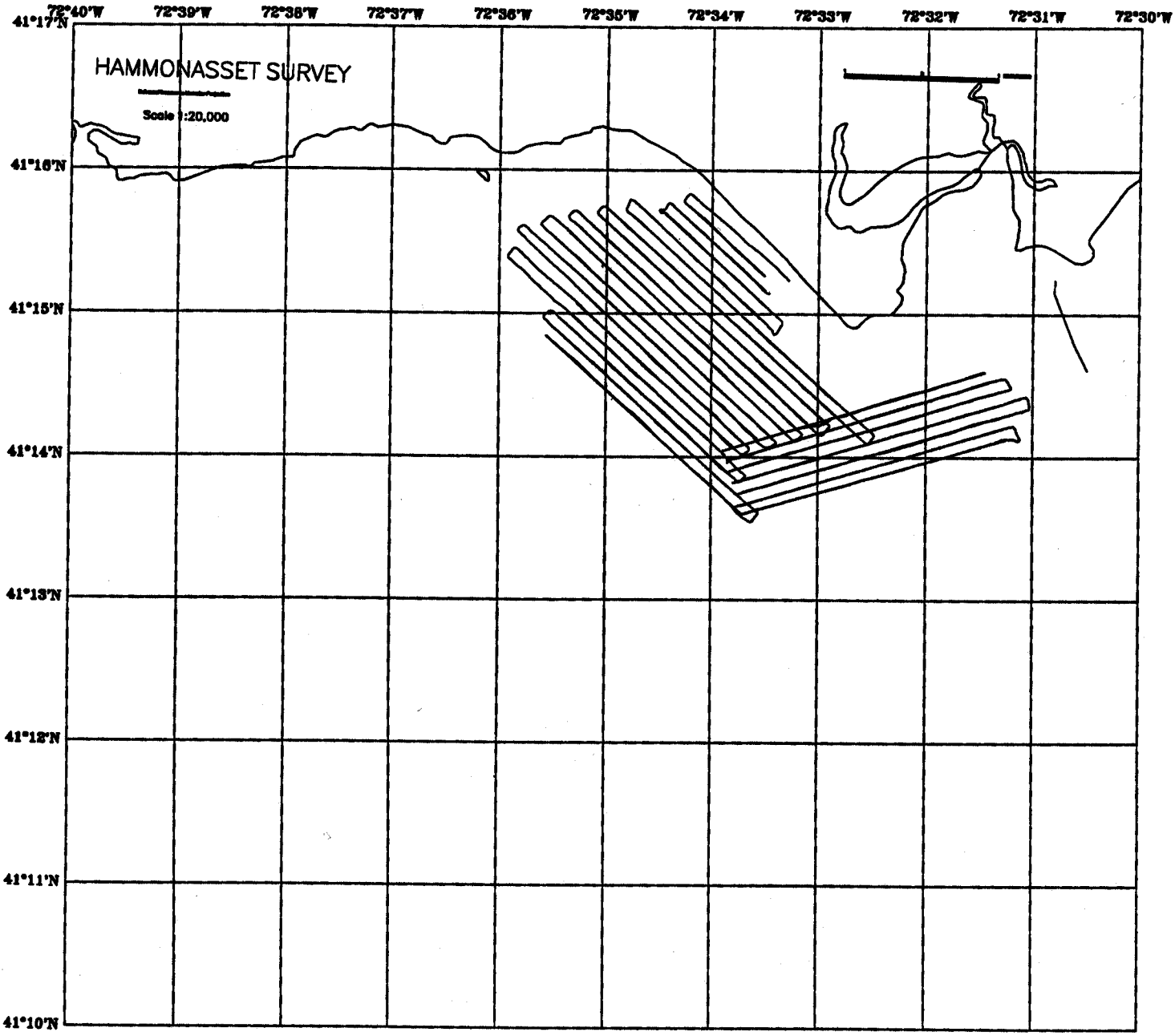


Figure 2. Map showing the location and tracklines of the 100 kHz spaced-line sidescan sonar conducted in central Long Island Sound. Map also shows the outline originally proposed for the Hammonasset survey.

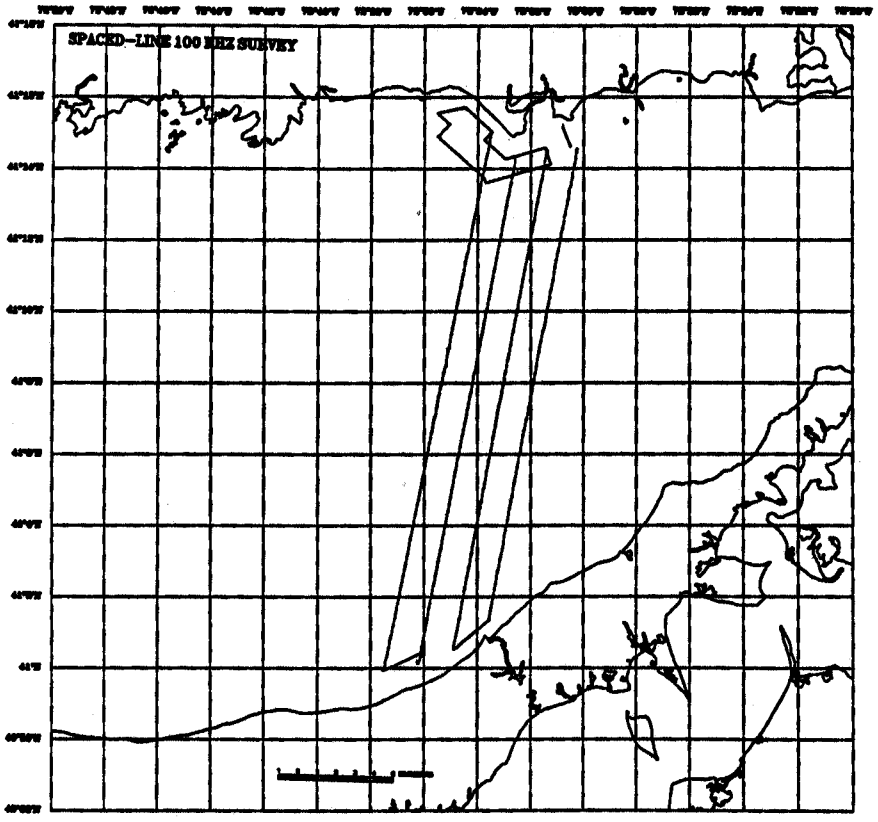
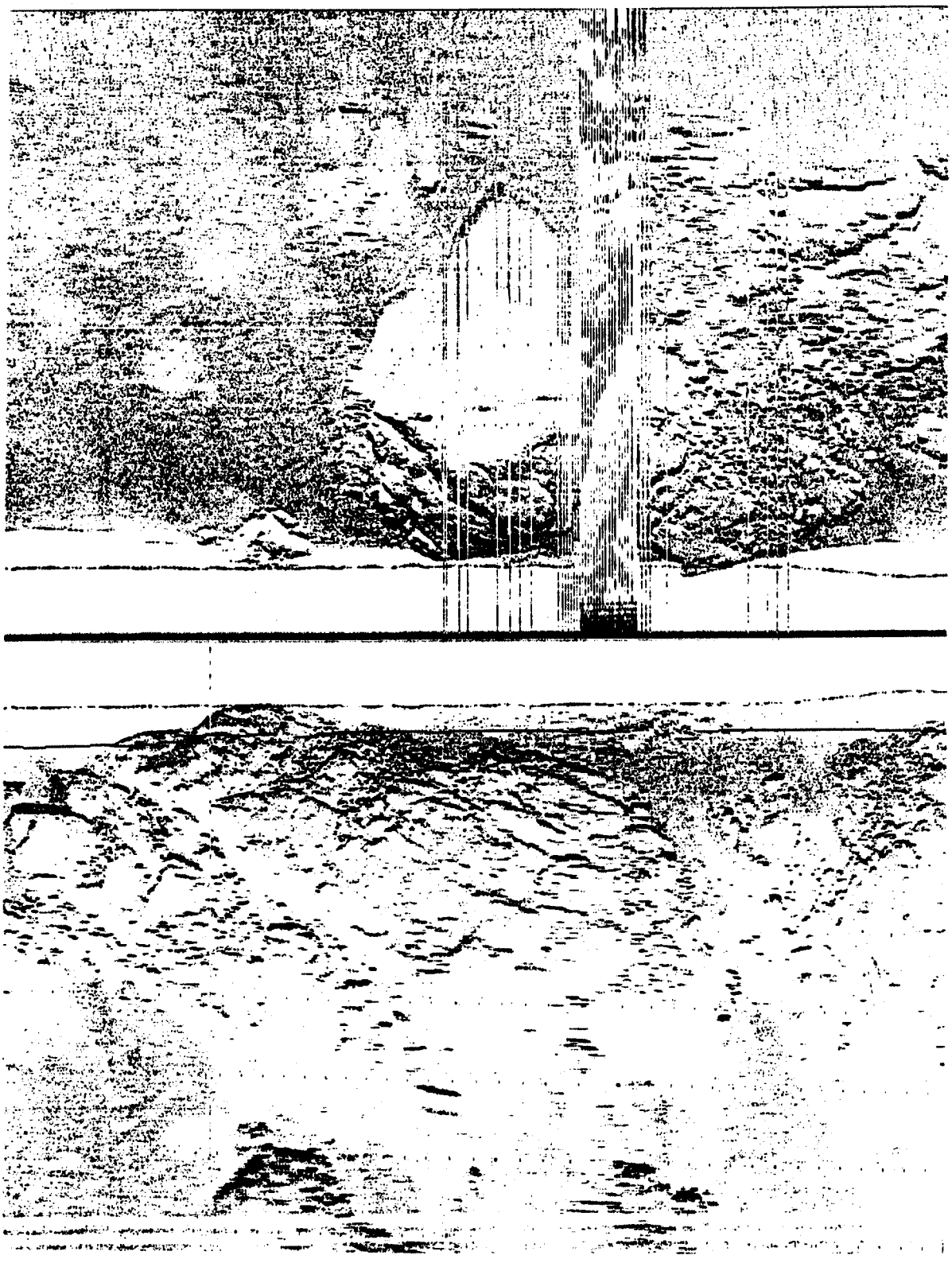


Figure 3. Portion of a 100 kHz sidescan sonar line showing the effects of the problem related to the sidescan sonar system's inability to differentiate the trigger from the signal.



R/V ASTERIAS

ASTR 94-1

Larry J. Poppe-Chief Scientist

LONG ISLAND SOUND/HAMMONASSET, CT

June 11-15, 1994

Line #	Date	JD/Start	JD/End	Zone	Data	Area
1	June 11	162/1139	162/1153	GMT	3.5 kHz	Hammonasset, CT
2		162/1200	162/1209	GMT		
3		162/1212	162/1226	GMT		
4		162/1230	162/1242	GMT		
5		162/1259	162/1330	GMT		
6		162/1334	162/1356	GMT		
7		162/1359	162/1430	GMT		
8		162/1434	162/1456	GMT		
9		162/1500	162/1531	GMT		
10		162/1552	162/1615	GMT		
11		162/1618	162/1647	GMT		
12		162/1650	162/1716	GMT		
13		162/1719	162/1744	GMT		
14		162/1747	162/1815	GMT		
15		162/1817	162/1840	GMT		
16		162/1846	162/1909	GMT		
17		162/1912	162/1933	GMT		
18		162/1941	162/2006	GMT		
18A		162/2010	162/2022	GMT		
1A		162/2024	162/2032	GMT		
26		162/2035	162/2045	GMT		
19	June 12	163/1059	163/1127	GMT	3.5 kHz	Hammonasset, CT
20		163/1131	163/1200	GMT		
21		163/1202	163/1224	GMT		
22		163/1227	163/1257	GMT		
23		163/1300	163/1320	GMT		
24		163/1324	163/1401	GMT		
25		163/1407	163/1424	GMT		
27	June 13	164/1140	164/1440	GMT	SSS+3.5 kHz	Reconaissance Survey
28		164/1447	164/1459	GMT		
29		164/1500	164/1824	GMT		
24A		164/1845	164/1909	GMT	SSS+3.5 kHz	Hammonasset, CT
25A		164/1913	164/1936	GMT		
22A		164/1941	164/2002	GMT		
23A		164/2005	164/2034	GMT		
20A		164/2039	164/2058	GMT		
21A		164/2101	164/2131	GMT		
19A		164/2134	164/2153	GMT		

ASTR 94-1 L.J.Poppe-Chief Scientist, Long Island Sound/Hammonasset, CT-June 11-15, 1994

Line #	Date	JD/Start	JD/End	Zone	Data	Area
30	June 14	165/1124	165/1442	GMT	SSS+3.5 kHz	Reconaissance Survey
31		165/1443	165/1502	GMT		
32		165/1503	165/1913	GMT		
26A	June 15	166/1133	166/1145	GMT	SSS+3.5 kHz	Hammonasset, CT
1B		166/1147	166/1156	GMT		
2A		166/1205	166/1218	GMT		
3A		166/1221	166/1232	GMT		
4A		166/1236	166/1253	GMT		
5A		166/1257	166/1321	GMT		
6A		166/1326	166/1357	GMT		
7A		166/1400	166/1430	GMT	SSS(100 kHz)	
8A		166/1433	166/1458	GMT		
9A		166/1501	166/1536	GMT		
10A		166/1538	166/1601	GMT		
11A		166/1605	166/1642	GMT		
12A		166/1645	166/1708	GMT		
13A		166/1710	166/1747	GMT		
14A		166/1750	166/1811	GMT		
15A		166/1814	166/1847	GMT		
16A		166/1852	166/1910	GMT		
17A		166/1913	166/1944	GMT		
18B		166/1949	166/2011	GMT		
34		166/2059	166/2122	GMT	SSS(500 kHz)	Reconaissance Survey