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HIGH-RESOLUTION SEISMIC-REFLECTION PROFILES AND SIDESCAN-SONAR RECORDS COLLECTED ON EASTERN LONG ISLAND SOUND AND BLOCK ISLAND SOUND BY U.S. GEOLOGICAL SURVEY, R/V ASTERIAS CRUISE AST 82-3

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Cruise AST 82-3 was conducted aboard the R/V ASTERIAS during September 8-19, 1982, in Block Island Sound (fig. 1) and eastern Long Island Sound (figs. 2 and 3) by the U.S. Geological Survey. It was funded in part by the Connecticut Geologic and Natural History Survey. The purpose of the study in eastern Long Island Sound was to define and map the geology and shallow structure, to determine the geologic framework and Quaternary development, and to identify and map potential geologic hazards of the area. The survey in Block Island Sound was made to compare subbottom profiles collected using two different types of high-resolution seismic-reflection equipment.

The data were obtained using a 300-joule pressurized minisparker system in Block Island Sound (fig. 1) and using an EG&G Uniboom seismic system and a EDO Western sidescan-sonar system in eastern Long Island Sound (figs. 2 and 3). Seismic signals were band-passed between 400 and 4,000 Hz and were recorded at a quarter-second sweep rate. Sidescan sonographs were collected at a 100-m scan range to each side of the ship track. Navigation was by Loran-C, and the ship position was recorded at 5-minute intervals.

The data included 43 km of minisparker seismic-reflection profiles, 677 km of Uniboom seismic-reflection profiles, and 511 km of sidescan-sonar records. The Uniboom profiles are very good in quality; they have excellent resolution and good subbottom penetration except in areas where gas in the sediments attentuated the seismic signal. Sidescan sonographs are satisfactory; however, data collection was intermittent due to equipment failure and to excessive water depths. The minisparker records are satisfactory, but they are inferior to Uniboom records collected in Block Island Sound during cruise AST 81-2.

Original records can be seen and studied at the U.S. Geological Survey Offices, Woods Hole, MA 02543. Copies of the seismic-reflection profiles and the sidescan sonographs can be puchased only from the National Geophysical Data Center, NOAA-E64, 325 Broadway, Boulder, CO 80303 (telephone 303/497-6338).

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS or the Connecticut Geological and Natural History Survey.

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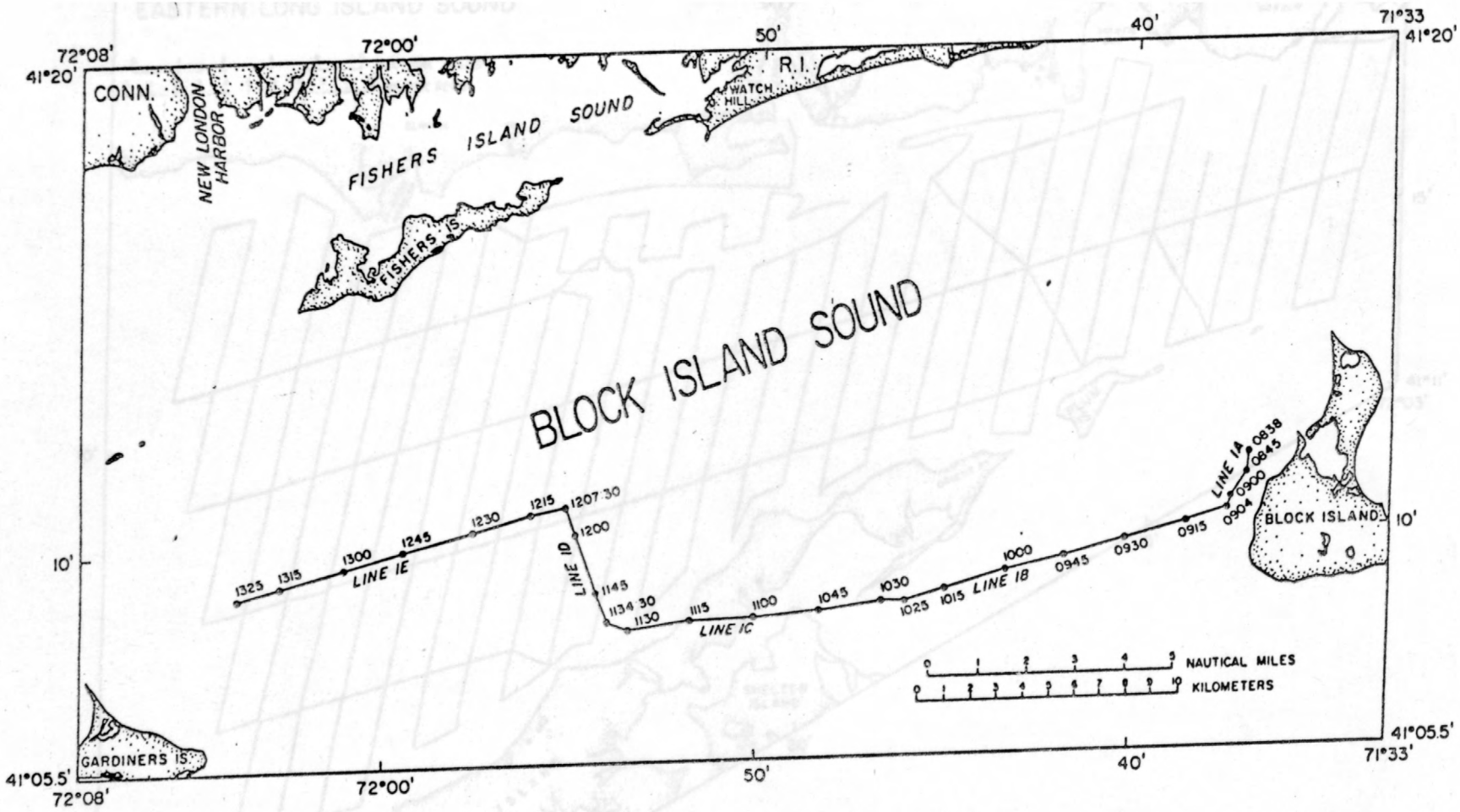

Figure 1. Location of minisparker tracks, RV ASTERIAS cruise AST 82-3

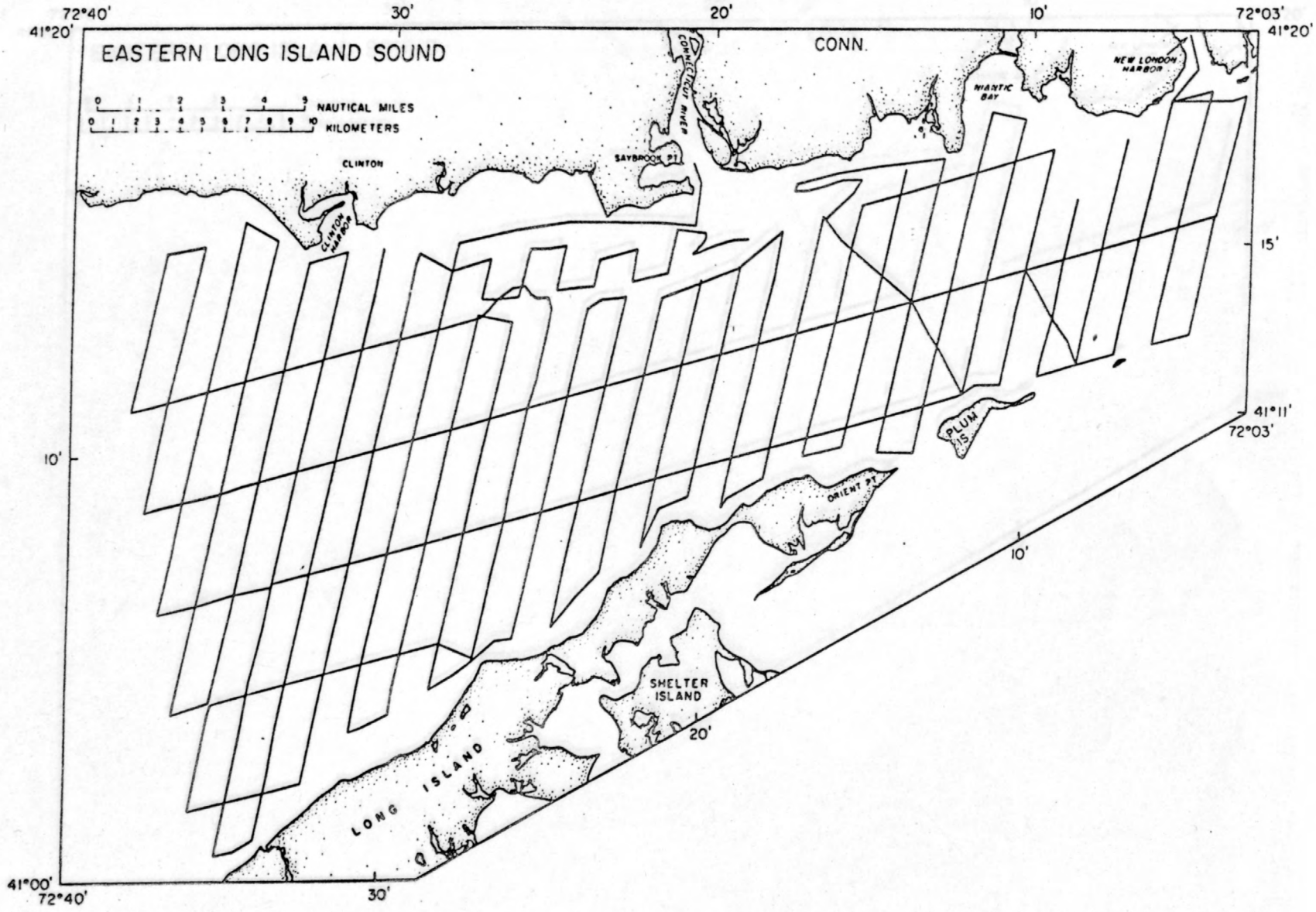

Figure 2. Location of Uniboom tracks, RV ASTERIAS cruise AST 82-3

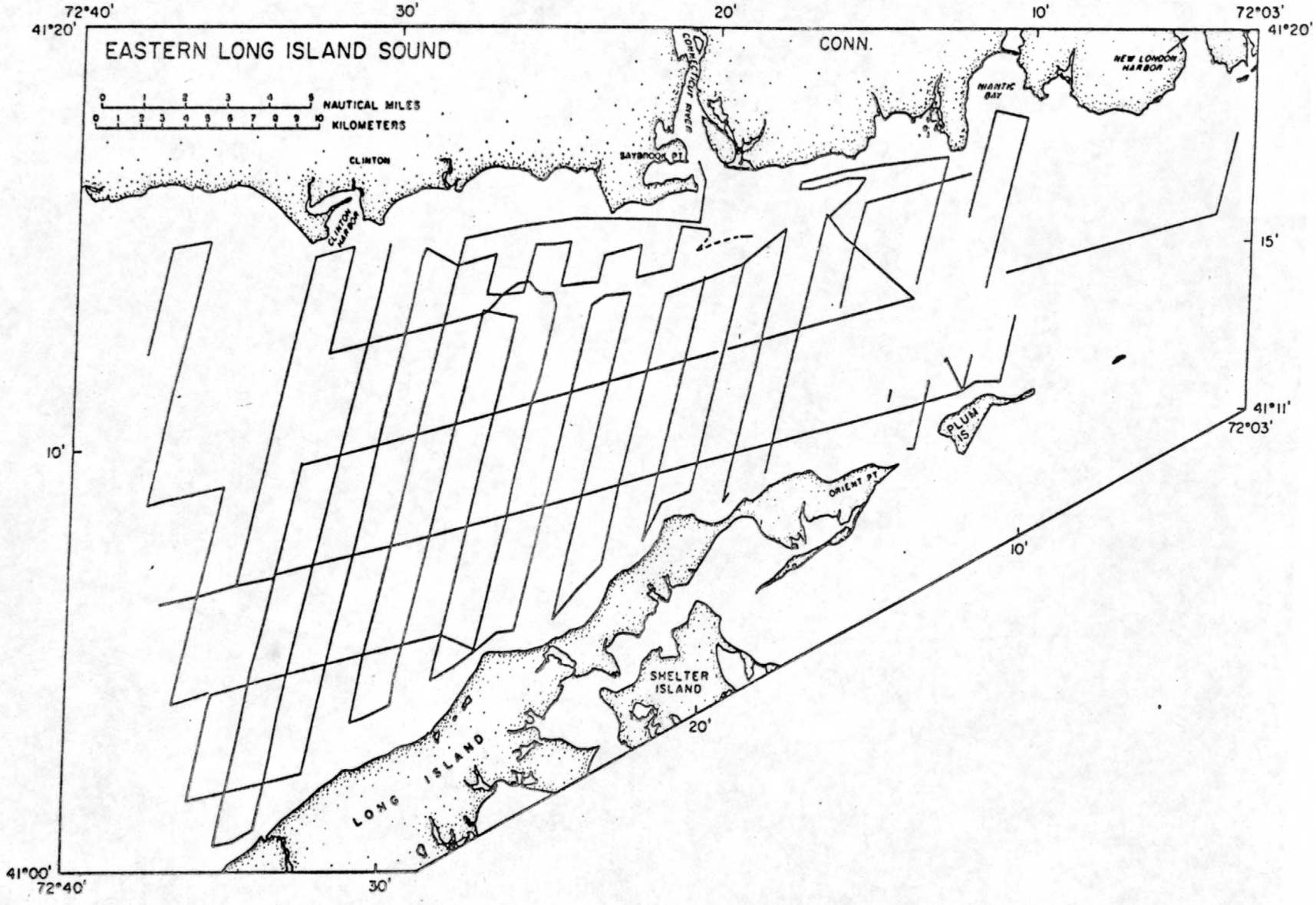

Figure 3. Location of sidescan-sonar tracks, RV ASTERIAS cruise AST 82-3