

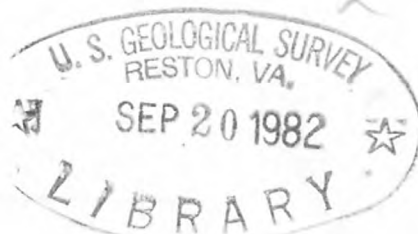
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High-resolution seismic-reflection profiles collected aboard
R/V EASTWARD, cruise ESTW 80-8, over the Blake Escarpment

by

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During October and November 1980, the U.S. Geological Survey (USGS) collected 7,170 km of single-channel seismic-reflection data from the Blake Escarpment (fig. 1) at three sites east of Florida. These data were collected aboard R/V EASTWARD (cruise ESTW 80-8) while it operated as an escort vessel for R/V LULU and DSRV ALVIN. The seismic records were obtained to map features and study the morphology at the base and top of the Blake Escarpment and for correlation with direct observation data.

Navigation aboard the EASTWARD was by hyperbolic Loran-C; position fixes were automatically recorded on magnetic tape at 5-minute intervals and manually plotted at 30-minute intervals. The navigation equipment included a Northstar 6000 receiver and a Texas Instruments Silent 700 tape and paper recorder.

The seismic equipment used to obtain these data included a Bolt 600B 40-in³ airgun, a Teledyne 600-joule minisparker, and 3.5-kHz and 12-kHz hull-mounted transducers. The profiles obtained were recorded on paper by EPC (EPC Labs Inc.) recorders and on magnetic tape by a Honeywell 7-channel analog tape recorder.

Overall, the seismic data quality is good. One-second penetration was achieved with the minisparker, and greater than 2-second penetration was obtained with the airgun. Reflections from the surface of the escarpment were usually obscured by diffractions and side echos because of the steepness of the slope. Reflections from the base of the escarpment are continuous and nearly parallel, and some onlap reflections from a variable-sized erosional bench. Those from the top of the escarpment are more variable, suggesting alternate periods of erosion, deposition, and reef growth. Of the 7,170 km of data obtained along the 2,080 km cruise track, 1,800 km are airgun, 1,930 km are minisparker, 2,080 km are 3.5 kHz, and 1,360 km are 12 kHz.

The original records may be seen at the USGS office in Woods Hole, Massachusetts. Microfilm copies of the data may be purchased only from the National Geophysical Data Center, NOAA, Code E64, 325 Broadway, Boulder, CO 80303 (telephone: 303-497-6338).

Open-file report
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(U.S.)

*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.

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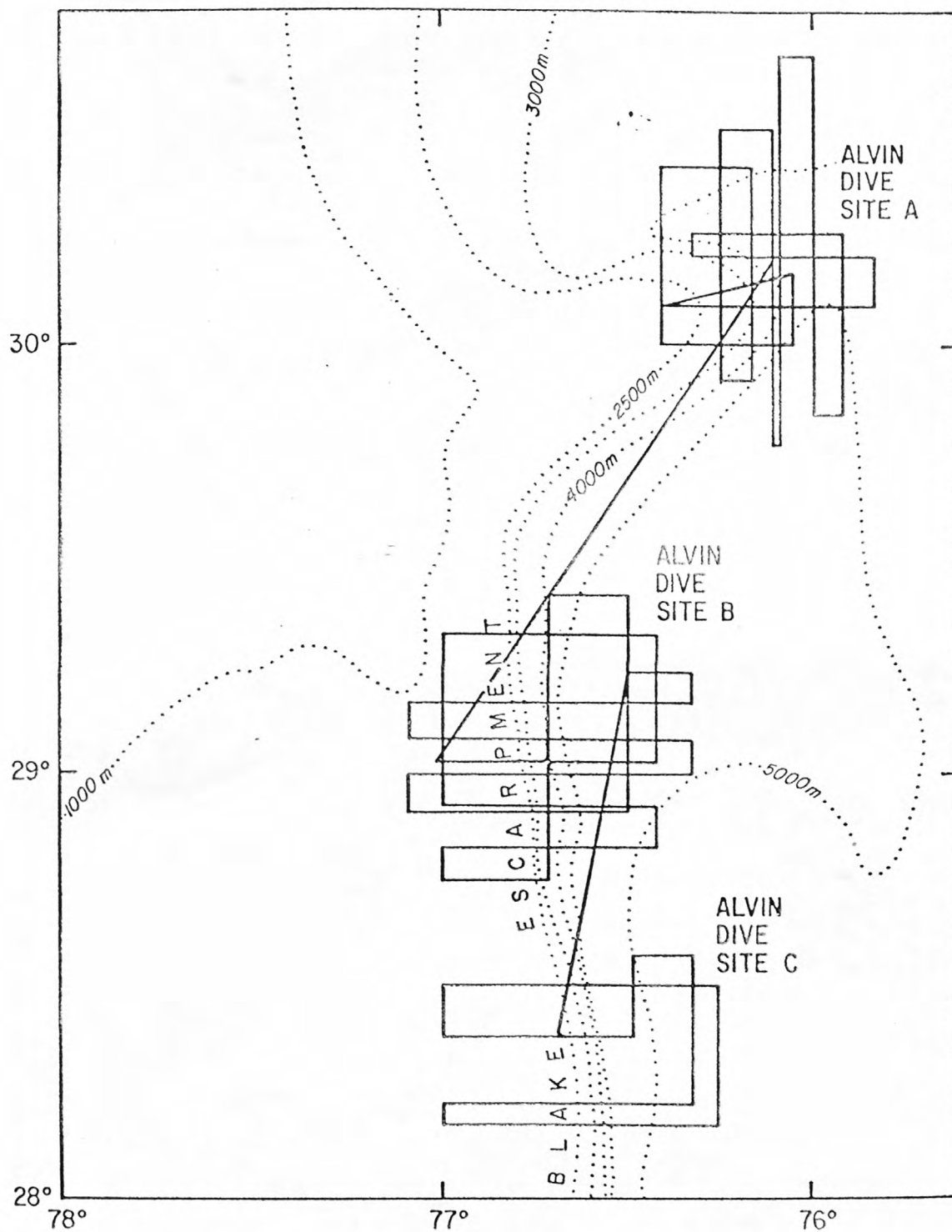


FIGURE 1. Map showing location of tracklines for R/V EASTWARD cruise ESTW 80-8.

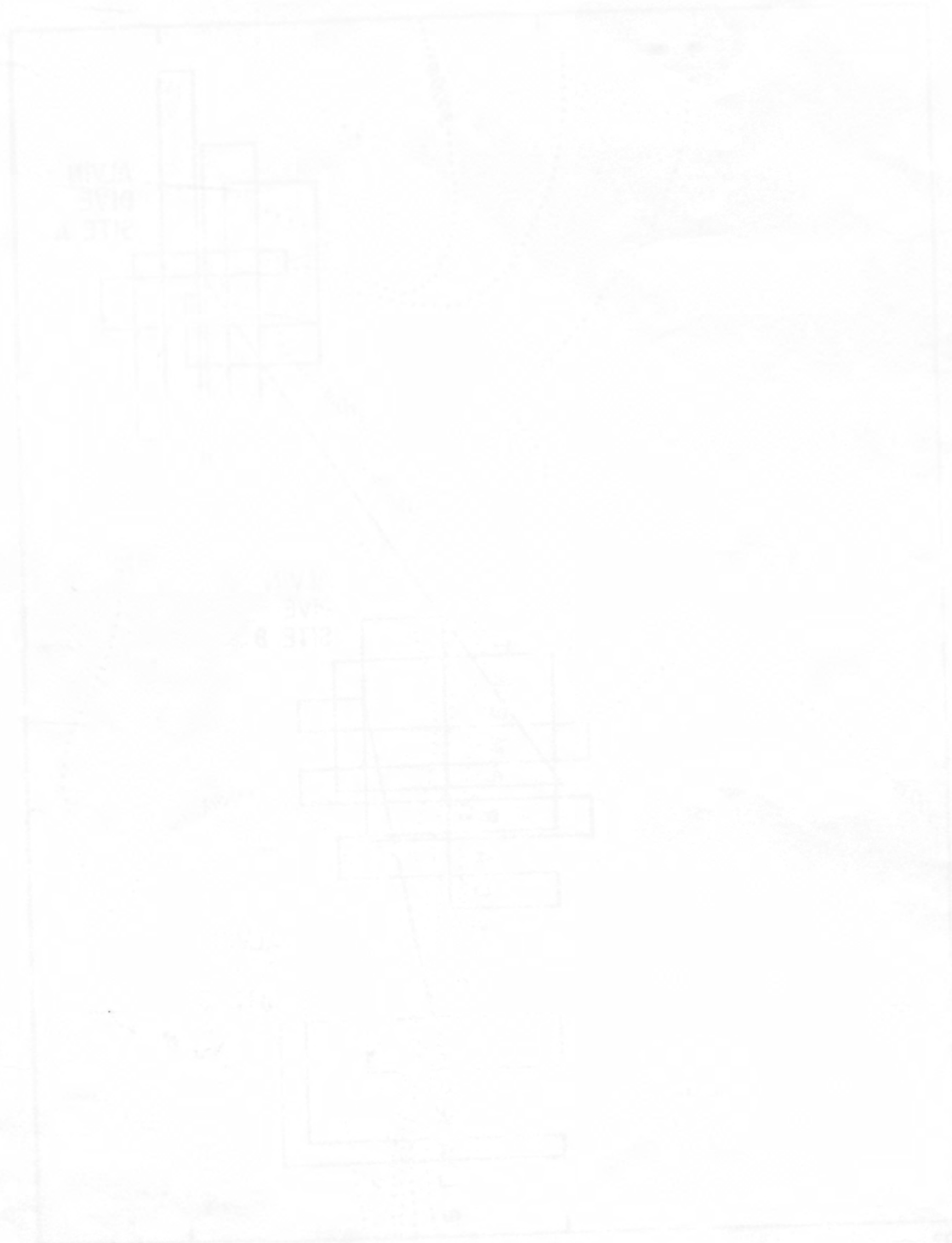


FIGURE 1. Map showing the layout of the sites for the study.