

UNITED STATES DEPARTMENT OF INTERIOR
GEOLOGICAL SURVEY

Description of a high-resolution seismic reflection profile
collected between the Chesapeake Bay, Virginia
and Cape Romain, South Carolina
Sept. 26 to Oct. 2, 1981
(Cruise RV GYRE 81-G-14)

by
Peter Popenoe¹

Open File Report 83- 514

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.

¹U.S. Geological Survey
Woods Hole, MA 02543

The U.S. Geological Survey collected multichannel high-resolution seismic-reflection and echo-sounder data for 840 km of traverse, and single-channel high-resolution reflection data for 640 km of traverse between Norfolk, Va., and Cape Romain, S.C., between Sept. 26 and Oct. 2, 1981 (fig. 1) (R.V. GYRE 81-G-14, Leg 2). Data were collected along a continuous traverse from Chesapeake Bay, Va., to Cape Hatteras, N.C., following the near-shore buoys. A traverse was run from the Cape Hatteras buoy "R-2" to the Cape Lookout Shoal Buoy "R-4" and then southeast through the offshore ASP-5 well (Hathaway and others, 1979). The traverse proceeded northeast from the well for 20 km, and turned northwest to pass near the Frying Pan Shoals Light and then southwest for 120 km toward Cape Romain, S.C. (See fig. 1). The purpose of the survey was to provide stratigraphic control for previously obtained offshore data. This data release makes available the near-trace monitor records of this survey, and the single-channel and 3.5 kHz data; common-depth-point records are not yet available.

A 40-in³ airgun with a waveshaper was used as a seismic source. Returning signals were gathered by a 400-element, single-channel and a 600-m-long, six-channel (50 m active, 50 m dead) multi-channel streamer. Incoming signals were digitally recorded on magnetic tape and displayed after band-pass filtering on EPC graphic recorders set for 1- and 2-sec sweep rates. Navigation was by an Integrated Navigation System including range-range and hyperbolic Loran-C, gyro compass, and satellite fixes.

Data are of excellent quality. Original records can be inspected and studied at the U.S. Geological Survey offices, Woods Hole, MA 02543. Microfilm or copies of the records can be purchased only from the National Geophysical Data Center, NOAA/EDIS, NGDC, Code E-64, 325 Broadway, Boulder, CO 80303 (303-497-6338).

Hathaway, J.C. and others, 1979, U.S. Geological Survey Core drilling on the Atlantic shelf: *Science*, v. 206, no. 4418, p. 515-527.

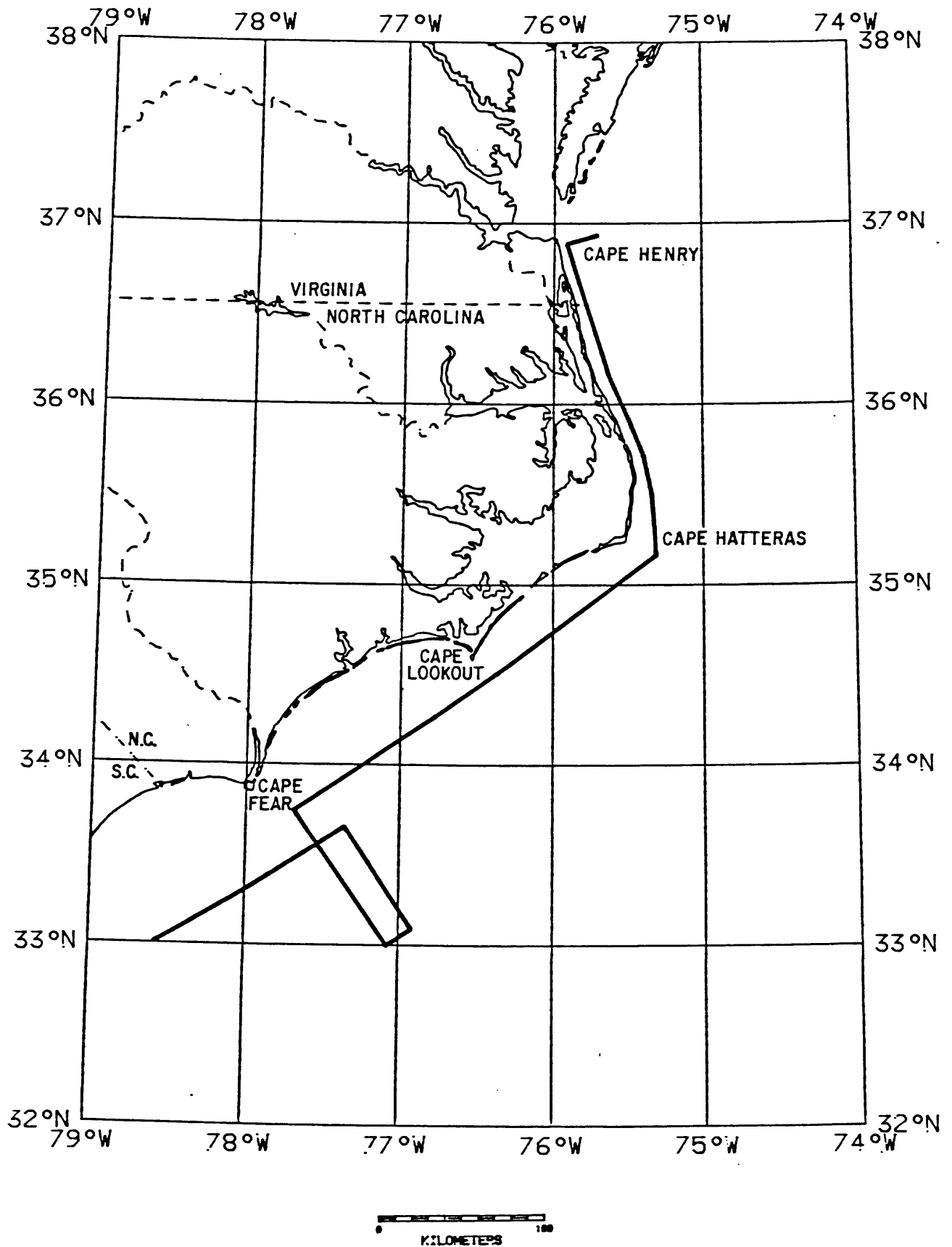


Figure 1: Tracklines, GYRE 81-G-14, Sept. 26 - Oct. 2, 1981.