



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

**MARINE TOPOGRAPHY OF OFFSHORE ANTARCTICA:
CLARIE COAST TO ROSS ICE SHELF (LONG 130° E. TO 170° W.)**

Edited by T.E. Chase¹ and B.A. Seekins²

Explanatory Text

OPEN-FILE REPORT 02-419-N

Sheets A–M of the areas shown on the location map (see p. 3) have been prepared as USGS Open-File Reports 02-419-A through -M. These reports, as well as this explanatory text chapter, are available individually for sale from the U.S. Geological Survey, Information Services, Box 25286, Denver, CO 80225; telephone 1-888-ASK-USGS. Purchase of chapter N is recommended with purchase of any of the sheets.

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

¹U.S. Geological Survey, deceased.

²U.S. Geological Survey; presently with
National Marine Fisheries Service.

DISCUSSION

U.S. Geological Survey (USGS) Open-File Report 02-419 includes 13 marine topography charts that were compiled in 1984 and 1985 from the *General Bathymetric Chart of the Oceans* (GEBCO) and other sources of data (Anonymous, 1961, 1966, 1980; Vanney and Johnson, 1979) to support marine geologic and geophysical surveys and other investigations across the Wilkes Land (Clarie Coast, Adélie Coast, George V Coast, and Oates Coast), Victoria Land (Pennell Coast, Borchgrevink Coast, Scott Coast, and Hillary Coast), and Ross Sea segments of the Antarctic continental margin (see location map on p. 3). Two of the charts (corresponding to map areas A and B; see location map) were published previously (Chase and others, 1987) at a smaller scale in both Mercator and polar stereographic projections.

Compilation of the 13 marine topography charts was completed in 1985. Preliminary preparation for release was completed in 1996, but the death of T.E. Chase, coupled with other factors, delayed release until 2002. The names given to the charts are unofficial; prominent subaerial and submarine features are the source of the names. Names of subaerial features are approved names listed in the second edition of *Geographic Names of the Antarctic* (Alberts, 1995); names of submarine features are names from hydrographic charts or are descriptive names derived from a coastal subaerial feature. The charts were compiled from various types of data to make a presentation of the known sea-floor topography in the region between long 130° E. and 170° W. The compilation process was done at 4 inches per degree on Mercator projection worksheets. The charts were reduced for publication to approximately 1:715,000 scale. Previously collected soundings and published contours were incorporated with data collected aboard the research vessel *S.P. Lee* during USGS cruises L1-84 in January 1984 and L2-84 in February 1984. U.S. Geological Survey Circular 935 and other publications describe the investigations conducted on these cruises (Eittreim, Cooper, and Scientific Staff, 1984; Eittreim and Hampton, 1987).

Because of the remoteness of the region and the extreme weather conditions that often prevail in the Southern Ocean around Antarctica, the navigational control of the base is variable in quality and quantity. Therefore, these charts do not represent the final configuration of the sea floor but are an interpretation from the source material available at the time of compilation. It must also be noted that the shorelines of the Antarctic landmass are subject to change due to changes in the cryospheric coastline of grounded (ice wall) and floating (ice front) glacier ice (see USGS Fact Sheets FS 50-98 [<http://pubs.usgs.gov/fs/fs50-98>] and FS 130-02 [<http://pubs.usgs.gov/fs/fs130-02>]).

The authorship of the 13 charts is indicated on each, with their affiliations indicated on each map by a superscript number. The authors' names and their affiliations at the time of map compilation are as follows:

John B. Anderson, Department of Geology and Geophysics, Rice University,
Houston, Texas

Christopher F. Brake, Shell Oil Company, Houston, Texas

Thomas E. Chase, Coastal and Marine Geology Program, U.S. Geological Survey,
Menlo Park, California

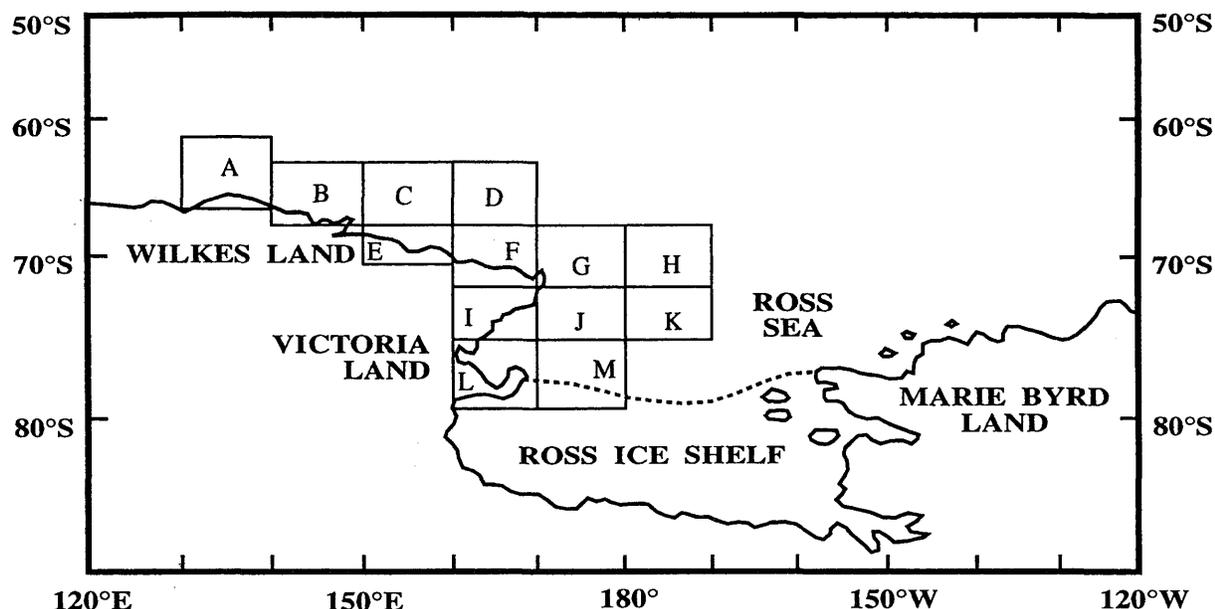
Shawn V. Dadisman, Coastal and Marine Geology Program, U.S. Geological Survey,
Menlo Park, California

Eugene W. Domack, Department of Geology, Hamilton College, Clinton, New York
G. Leonard Johnson, Office of Naval Research, Department of the Navy,
Arlington, Virginia
Nathan Myers, Amoco Oil Company, Houston, Texas
Barbara A. Seekins, Coastal and Marine Geology Program, U.S. Geological Survey,
Woods Hole, Massachusetts (now with National Marine Fisheries Service, National
Oceanic and Atmospheric Administration, Portland, Oregon)
J.R. Vanney, Laboratoire de Géologie Dynamique, Université de Pierre et Marie Curie,
Paris, France
Susan C. Vath, Coastal and Marine Geology Program, U.S. Geological Survey,
Menlo Park, California
Jacques Wannesson, Institut Français du Pétrole, 92506 Rueill, Malmaison Cedex, France
Jeffrey D. Young, Coastal and Marine Geology Program, U.S. Geological Survey,
Menlo Park, California

REFERENCES CITED

- Alberts, F.G., comp. and ed., 1995, Geographic names of the Antarctic, second edition, 1995—Names approved by the United States Board on Geographic Names: Arlington, Va., National Science Foundation [Report] NSF 95-157, 834 p.
- Anonymous, 1961, revised 11/6/72, Antarctica, Porpoise Bay to Cape Adare, N.O. 29015, 3rd ed. (formerly H.O. 6644): Washington, D.C., Defense Mapping Agency Hydrographic Center, scale 1:500,000.
- Anonymous, 1966, revised 7/24/72, Antarctica, Ross Sea, N.O. 29012, 6th ed. (formerly H.O. 6636): Washington, D.C., Defense Mapping Agency Hydrographic Center, scale 1:500,000.
- Anonymous, 1980, General bathymetric chart of the oceans (GEBCO), Antarctic sheet: Ottawa, Ont., Department of Fisheries and Oceans, Hydrographic Chart Distribution Office, scale 1:6 million.
- Chase, T.E., Seekins, B.A., Young, J.D., and Eittreim, S.L., 1987, Marine topography of offshore Antarctica, *in* Eittreim, S.L., and Hampton, M.A., eds., the Antarctic continental margin; geology and geophysics of offshore Wilkes Land: Circum-Pacific Council for Energy and Mineral Resources, Earth Science Series, v. 5A, p. 147. [Contains composite map of the area shown in sheets A and B of U.S. Geological Survey Open-File Report 02-419. Map scale is 1:3,024,000; map is in Mercator and polar stereographic projections.]
- Eittreim, S.L., Cooper, A.K., and Scientific Staff, 1984, Marine geological and geophysical investigations of the Antarctic continental margin, 1984: U.S. Geological Survey Circular 935, 12 p.
- Eittreim, S.L., and Hampton, M.A., eds., 1987, The Antarctic continental margin; geology and geophysics of offshore Wilkes Land: Circum-Pacific Council for Energy and Mineral Resources, Earth Science Series, v. 5A, p. 147-150.
- Vanney, J.R., and Johnson, G.L., 1979, The seafloor morphology seaward of Terre Adélie (Antarctica): *Deutsches Hydrologisches Zeitschrift*, v. 32, p. 77-87.

LOCATION MAP



Map Map Title and Authors

Letter

- A Dibble Glacier and Environs (lat 61°30'–67° S., long 130°–140° E.)^{3, 8, 10, 9, 6, 11}
- B Buffon Canyon and Environs (lat 64°–68°30' S., long 140°–150° E.)^{3, 8, 10, 12, 9, 6, 11, 1, 5}
- C Mawson Peninsula and Environs (lat 64°–68°30' S., long 150°–160° E.)^{3, 8, 10, 12, 9, 6, 11}
- D Balleny Islands and Environs (lat 64°–68°30' S., long 160°–170° E.)^{3, 8, 10, 12, 9, 6, 4}
- E Terra Nova Canyon and Environs (lat 68°30'–71° S., long 150°–160° E.)^{3, 8, 10, 12, 9, 6}
- F Oates Canyon/Bank and Environs (lat 68°30'–72°30' S.,
long 160°–170° E.)^{3, 8, 10, 12, 4, 9, 6, 1, 2}
- G Possession Islands to Scott Seamounts and Environs
(lat 68°30'–72°30' S., long 170° E.–180°)^{3, 8, 10, 12, 4, 9, 6, 1}
- H Hillary Canyon, Iselin Bank, and Northern Environs
(lat 68°30'–72°30' S., long 180°–170° W.)^{3, 8, 10, 12, 9, 6, 4}
- I Drygalski Basin and Environs (lat 72°30'–75°30' S., long 160°–170° E.)^{3, 8, 12, 4, 9, 6, 1, 7}
- J Joides Basin and Environs (lat 72°30'–75°30' S., long 170° E.–180°)^{3, 8, 12, 4, 9, 6, 1, 7}
- K Iselin Bank and Southwest Environs (lat 72°30'–75°30' S.,
long 180°–170° W.)^{3, 8, 12, 4, 9, 6}
- L Ross Island and Environs (lat 75°30'–78°30' S., long 160°–170° E.)^{3, 8, 12, 4, 9, 6, 1, 7}
- M Ross Bank and Environs (lat 75°30'–78°30' S., long 170° E.–180°)^{3, 8, 12, 4, 9, 6, 1, 7}

Authors: ¹Anderson, John B.; ²Brake, Christopher F.; ³Chase, Thomas E.; ⁴Dadisman, Shawn V.; ⁵Domack, Eugene W.; ⁶Johnson, G. Leonard; ⁷Myers, Nathan; ⁸Seekins, Barbara A.; ⁹Vanney, J.R.; ¹⁰Vath, Susan C.; ¹¹Wannesson, Jacques; ¹²Young, Jeffrey D.