

EXPLANATION

- Above sea level
- 0 to -2000 m
- 2000 to -4000 m
- 4000 to -5000 m
- 5000 to -6000 m
- Greater than -6000 m

Atolls, in red text
Islands, in red text
Seamounts, in black text
Nations, in white text

Depressions

Unofficial boundaries of the Exclusive Economic Zones. Boundaries are equidistant lines between islands of different nations within 200 nautical miles (370 km) of one another or arcs constructed with a radius of 200 nautical miles (370 km) from emergent parts of islands (Tau Rho Alpha, USGS, oral commun., 1998).

INDEX MAP

The index map is labeled with the sources of data keyed to the following numbers:

- 1, 2, 3, 5, 6: USGS-KORDI 1989 survey F-10-89-CP (digitized 1998), Hein and others (1998)
- 4, 7: KORDI-USGS 1997 survey KODOS 97-4, Hein and others (in press)
- 1, 7: KORDI-USGS 1998 survey KODOS 98-3, Hein and others (in press)
- 8: Chase and others (1984) coastline

Remainder of coastline from GMT (Wessel and Smith, 1995)
Remainder of bathymetric data from Smith and Sandwell (1997)

DISCUSSION

This bathymetric map of the Republic of the Marshall Islands was constructed from (1) unpublished data collected during surveys conducted by the U.S. Geological Survey (USGS) and the Korean Ocean Research Development Institute (J.W. Moon and K.Y. Lee; Hein and others, in press), (2) the two-minute gridded satellite altimetry data from Smith and Sandwell (1997), and (3) coastline data from the Generic Mapping Tools (GMT) software (Wessel and Smith, 1995) and Chase and others (1984).

These data sets were merged by the following method. The new USGS-KORDI survey data were resampled to a 250-m spacing. A buffer zone 4500 m on either side of the new data was used to mask out the underlying two-minute data. The resulting data sets were combined to construct a surface according to the triangular irregular network (TIN) model supported by ArcInfo. The data were gridded on 1000-m grid cells with a smoothing (quintic) option. Contours were extracted at 200-m intervals.

The spellings of island, atoll, and seamount names follow the recommendation of the Republic of the Marshall Islands government and are consistent with those in the Marshallese-English dictionary, including the diacritical marks (Abo and others, 1976). We provided a list of names for the seamounts by Alfred Capelle (Alele Museum and National Archives, now located at the College of the Marshall Islands), who solicited these traditional names from village leaders from the various islands. We applied the appropriate names to seamounts located within specifically defined sectors adjacent to the various atolls and islands. The names are primarily from Marshallese legends and the meaning of each is provided by Hein and others (1990).

REFERENCES CITED

Abo, Takaji, Bender, Byron W., Capelle, Alfred, and Debrun, Tony, 1976, Marshallese-English Dictionary: Honolulu, University Press of Hawaii, 589 p.

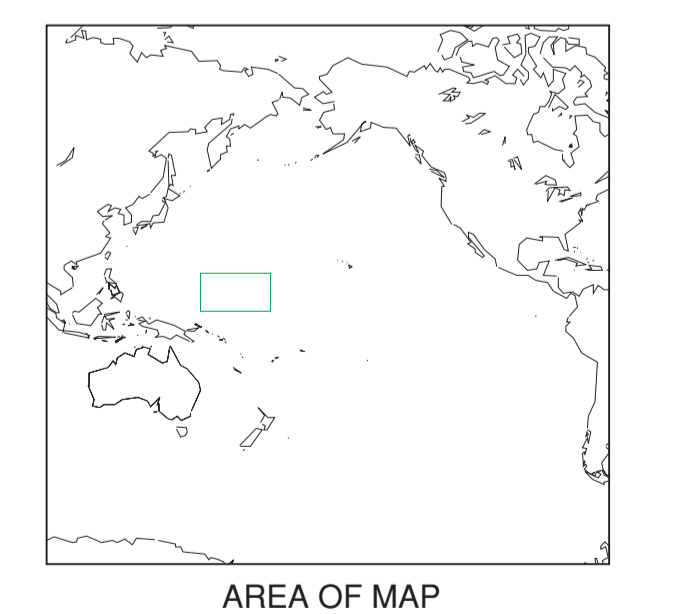
Chase, T.E., Seekins, B.A., and Land, K.E., 1984, Marine physiography of the Marshall Islands: unpublished map, scale 1:2.5 million.

Hein, J.R., Kang, Jung Keuk, Schultz, M.S., and others, 1990, Geological, geochemical, geophysical, and oceanographic data and interpretations of seamounts and co-rich ferromanganese crusts from the Marshall Islands, KORDI-USGS R.V. Farnella Cruise F10-89-CP, U.S. Geological Survey Open-File Report 90-407, 245 p.

Hein, J.R., Moon, J.W., Lee, K.Y., and others, in press, Co-rich Fe-Mn crusts from RMI (Leg 1) and hydrothermal/hydrogenetic Fe-Mn deposits from FSM (Leg 2), KODOS 98-3 Cruise, West Pacific: U.S. Geological Survey Open-File Report.

Smith, W.H.F., and Sandwell, D.T., 1997, Global seafloor topography from satellite altimetry and ship depth soundings: Science, v. 277, no. 5334, p. 1956-1962.

Wessel, Paul, and Smith, W.H.F., 1995, The Generic Mapping Tools (GMT), version 3, technical reference and cookbook: Manoa, SOEST, University of Hawaii, 70 p.



Base from Smith and Sandwell, 1997
Mercator Projection, Central Meridian 165°,
Standard Parallel 10°, WGS84

SCALE 1:2,000,000
(1 inch represents 31.7 miles)

100 STATUTE MILES

BATHYMETRIC CONTOUR INTERVAL 200 METERS

BATHYMETRY OF THE REPUBLIC OF THE MARSHALL ISLANDS AND VICINITY

By
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