Alfred Wegener Institute for Polar and Marine Research

AWI Bathymetric Chart of the Weddell Sea, Antarctica, 1 : 1 000 000 at 70°S

AWI BCWS 552 Antarctic Canyon

Legend

Depths

Metres
0
200
500
1000
2000
4000
6000

Depth Contours and Grid Data

50 m
100 m
1000 m
Depression
Grid data point

Scientific Stations

Permanently occupied station
Summer station

Continental and coastal features

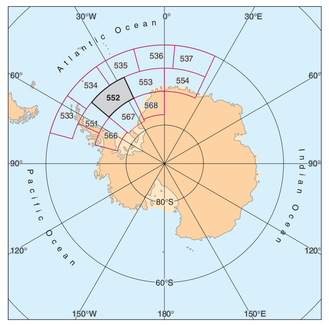
Ice shelf
Grounded ice
Glacier tongue
Coastline (1994/1998)
Ice front (e/n/O/S/s/ 1994/1997)
with date
Flowline on ice shelf

Kilometres (70°S)
50 km 0 km 150 km

Nautical Miles (70°S)
10 nm 0 nm 100 nm

Scale: 1 : 1 000 000
Map projection: Mercator
Standard parallel: 70° S
Horizontal reference system: Geodetic Reference System 1980 (GRS80)
Horizontal datum: World Geodetic System 1984 (WGS84)

Sheet Index of the AWI BCWS



Scale 1 : 80 000 000

Sheet Index of the AWI Bathymetric Chart of the Weddell Sea, Antarctica (AWI BCWS)

Vertical reference system: Mean Sea Level (MSL)
Vertical datum: Instantaneous Sea Level

The map projection parameters are in accordance with the regulations of the IOC/IHO GEBCO guidelines, IHB Bathymetric Publication No. B-7.
One kilometre on the map at the standard parallel represents one kilometre in natural size on the Earth.
Chart datum is the instantaneous sea level at the time of observation. Tidal heights are in the order of 2 m. Depths are shown in metres assuming a sound velocity in water of 1500 m/s.
Conversion parameters (nominal values) to achieve elevations in feet multiply by 3.2808 and to achieve depths in fathoms multiply by 0.5468.

Geographical names and their spelling do not necessarily reflect recognition of the political status of an area by the editor.
References:
• IHO, IOC: Gazetteer of Geographical Names of Undersea Features. IHB Publication B-6, 1990.
• Gazetteer of the Antarctic. DMA, 4th edition April 1990.
• Hydrographer of the Navy (USA) 1974: The Antarctic Pilot. 4th edition, corrected to 2nd Sept. 1981.
• Alfred-Wegener-Lexikon Language: Antarctic Place Names. Institut für Angewandte Geodäsie, Frankfurt am Main, 1993.

Multibeam survey by RV "Polarstern" carried out by Jens Ficcke, Rick Hagen, Klemens Heidland, Heinrich Hinze, Jürgen Mohr, Fred Niederjasper, Hans Werner Schenke, Tilo Schöne and Stefan Steinmetz.

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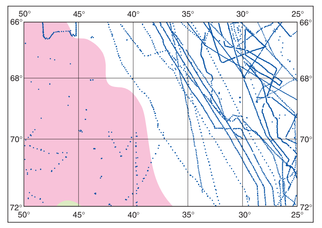
Source Data Diagram



Scale 1 : 10 000 000

Data from	Area	Track Line	Spot Data
GEBCO			
Hydrographic Institutions			
Scientific Institutions			
Satellite Altimetry			

Original and interpreted data, digital data and digitized data

1. General Bathymetric Chart of the Oceans (Data from GEBCO Digital Atlas)
IOC, IHO, and BODC, 1994. Supporting Volume to the GEBCO Digital Atlas, published on behalf of the Intergovernmental Oceanographic Commission (of UNESCO) and the International Hydrographic Organization as part fo the General Bathymetric Chart of the Oceans (GEBCO). British Oceanographic Data Centre, Birkenhead.
GEBCO Sheets 5.15 and 5.16, bathymetric contours, track lines, and bedrock contours

2. Hydrographic Institutions

2.1 Hydrographic Organization (IHO)
• IHO/GEBCO Publication 5.15, NGDC, GEODAS searches on bathymetry: November 1992, April 1993

2.2 National Hydrographic Offices: Nautical Charts (various scales):
Argentina
Russian Federation / Russia
United Kingdom

2.3 National Hydrographic Offices: Plotting Sheets (various scales)
• GEBCO Ocean Plotting Sheets (IOPS) 1:1000000 by:
Argentina
Republic of South Africa
United Kingdom
• Plotting Sheets 1:500000 by:
United Kingdom

2.4 National Hydrographic Offices: Digital Data
United Kingdom
United States of America

3. Scientific Institutions

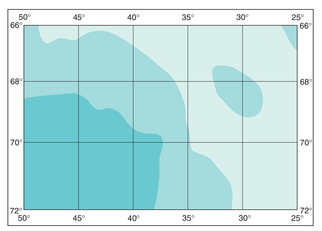
3.1 Scientific Research Institutes
• Alfred-Wegener-Institut für Polar- und Meeresforschung, Germany:
Kapitän Dr. Meyer, RV "Polarstern" Cruise ANT VIII/3, 1990.
Multibeam data from SeaBeam and Hydrosweep system, single beam data from navigation echo sounder, narrow beam echo sounder, and Parasound sediment echo sounder.
• Norsk Polar Institutt, Oslo, Norway:
NARE expedition data 1977, 1979, 1980, A. Solheim, pers. comm.
• Seismic Survey, Soviet Antarctic Expedition:
V. Kruzlov and V.S. Pozdeev, digital data, pers. comm.

3.2 Scientific Publications
• Hinze, H. and Hoppmann, 1988: Ice thickness and bedrock elevation in Western Neuschwabenland and Berkner Island, Antarctica. Annals of Glaciology, vol 11, 42-45, 1988.
• Hellmer, H. et al., 1992:
The Antarctic ice sheet and environmental change: a three-dimensional modelling study. Berichte zur Polarforschung 99, 1992.
• Polish Data: Birula, A. et al., 1959: Geomorfologia i osady (morfologii lodowej lodu/mórz) rejonie podwodnego rzeku i morskiego lodu w zatoce lazarewa Morza Uwodzilla (Sagadinaja Antarktika). Antarktika, Doklady Komissii, 28, 68-77, 1987.

4. Satellite Altimetry Geophysical Data
• Geosat, 1986:
• Schöne, T., 1997:
Satellitenaltimetrie zum Schneefeld im Bereich des Wilddeltmeers, Antarktis, Nutzung von Altimetermessungen des GEOSAT und ERS-1. Berichte zur Polarforschung 225, 1997.

5. Topographic Data
• KRAGWI Digital Topographic Antarctic Database, Version 1.04 (©). Institut für Angewandte Geodäsie, Frankfurt am Main, and Alfred-Wegener-Institut, Bremerhaven, Germany, 1994.

Accuracy of Bathymetric Depths



Scale 1 : 10 000 000

Accuracy

± 50 m
± 100 m
± 200 m
Worse than ± 200 m

The bathymetric data contained in this chart is evaluated from various data sets of different quality and, therefore, of varying accuracy. Compilation and contouring are in accordance with the IHO publication S-44 "Standards for Hydrographic Surveys".
Reported, but unconfirmed or suspicious depths were omitted if they conflict with morphologic evidence from other sources.
Reference: Hinze, H., 1994: Charting the Bathymetry of Weddell Sea, Antarctica. Marine Geodesy, vol.17, 139-145.

The positional accuracy of bathymetric data, contour lines and features in relation to the graticule is approximately 1 mm (or 1 kilometre on the Earth).
Mean depth error: accuracy a_d of a contour or interpolated depth value from the map may be estimated by the formula:
$a_d = 5 + s + 0.01 d$,
where s = slope in degrees and d = depth in metres.
A vertical accuracy of better than 2% of depth was achieved with the compilation from heterogeneous depth data. However, some suspect data may still be present.
Mean depth error: accuracy a_d of a contour or interpolated depth value from the map may be estimated by
$a_d = 5 + s + 5 \cdot \tan s$,
where s = slope in degrees and d = depth in metres.
(a=50 m and b=0.05 m).
In areas with slopes greater than 20° the error may exceed 200 m due to generalization effects.

Despite an automatic accuracy estimation, a classification may reflect how closely the ideal has been approached under the existing constraints, i. e. inhomogeneous data and seabed roughness. Thus, categories of confidence in bathymetric depths were chosen. This map of bathymetric accuracy gives a rule-of-thumb estimate, but it does not reflect special features, i. e. canyons or seamounts. Areas where depths are more accurate than 200 m, better than 200 m, better than 100 m, and better than 50 m are given.

Caution.
Due to incomplete survey coverage dangers may exist, particularly within the 200 metre depth contour. Vessels should therefore navigate with due caution.
For further information on navigation, magnetic variation, ocean currents, and ice in the area of the map see Sailing Directions and Routing Charts and contact the Hydrographic Offices or IHB. For further information on bathymetry contact the IHB-IOC GEBCO Committee or AWI.

NOT TO BE USED FOR NAVIGATION

AWI BCWS 552