Table S1. Main multibeam bathymetry datasets collected in study area before cruise JR284.

Ship	Cruise ID	Year	Source
RVIB Nathaniel B Palmer	NBP0107	2001-02	IEDA MGDS[1]
	NBP0201	2001-02	IEDA MGDS[2]

Table S2. Additional multibeam bathymetry datasets incorporated into grid.

Ship	Cruise ID	Year	Source
RRS James Clark Ross	JR69-67	2001-02	UK PDC
	JR71	2001-02	
	JR84	2002-03	
	JR112	2004-05	
	JR157-166	2006-07	
	JR158	2006-07	
	JR165	2006-07	
	JR179	2007-08	
	JR185	2007-08	
	JR188	2008-09	
	JR193-196	2007-08	
	JR228	2009-10	
	JR240	2010-11	
	JR254D-264-265	2011-12	
	JR279-286	2012-13	
RVIB Nathaniel B Palmer	NBP9902	1998-99	IEDA MGDS
	NBP9903	1998-99	
	NBP9905	1998-99	
	NBP0001	1999-2000	
	NBP0104	2001-02	
	NBP0202	2001-02	
	NBP0703	2006-07	
RV Maurice Ewing	EW9101	1990-91	IEDA MGDS
HMS Endurance		2005-06	UKHO
		2006-07	
		2008-09	
HMS Scott		2009-10	UKHO
HMS Protector		2011-12	UKHO
		2015-16	HMS Protector Hydrographer
		2016-17	HMS Protector Hydrographer

UK PDC – United Kingdom Polar Data Centre; https://www.bas.ac.uk/data/uk-pdc/
IEDA MGDS – Interdisciplinary Earth Data Alliance Marine Geoscience Data System; http://www.marine-geo.org/index.php
UKHO – United Kingdom Hydrographic Office; https://www.gov.uk/government/organisations/uk-hydrographic-office

References

Anderson, J.: Processed Multibeam Sonar Data (version 2) near the Antarctic Peninsula acquired during Nathaniel B. Palmer expedition NBP0201 (2002), Interdisciplinary Earth Data Alliance (IEDA), https://doi.org/10.1594/IEDA/100309, 2005.
Domack, E.: Processed Multibeam Sonar Data (version 2) near the Antarctic Peninsula acquired during Nathaniel B. Palmer expedition NBP0107 (2001), Interdisciplinary Earth Data Alliance (IEDA), https://doi.org/10.1594/IEDA/100307, 2005.

Figure caption

Fig. S1. Multibeam bathymetry data over Anvers-Hugo Trough, Perrier Trough and Palmer Deep collected **a** before cruise JR284, and **b** on cruise JR284.

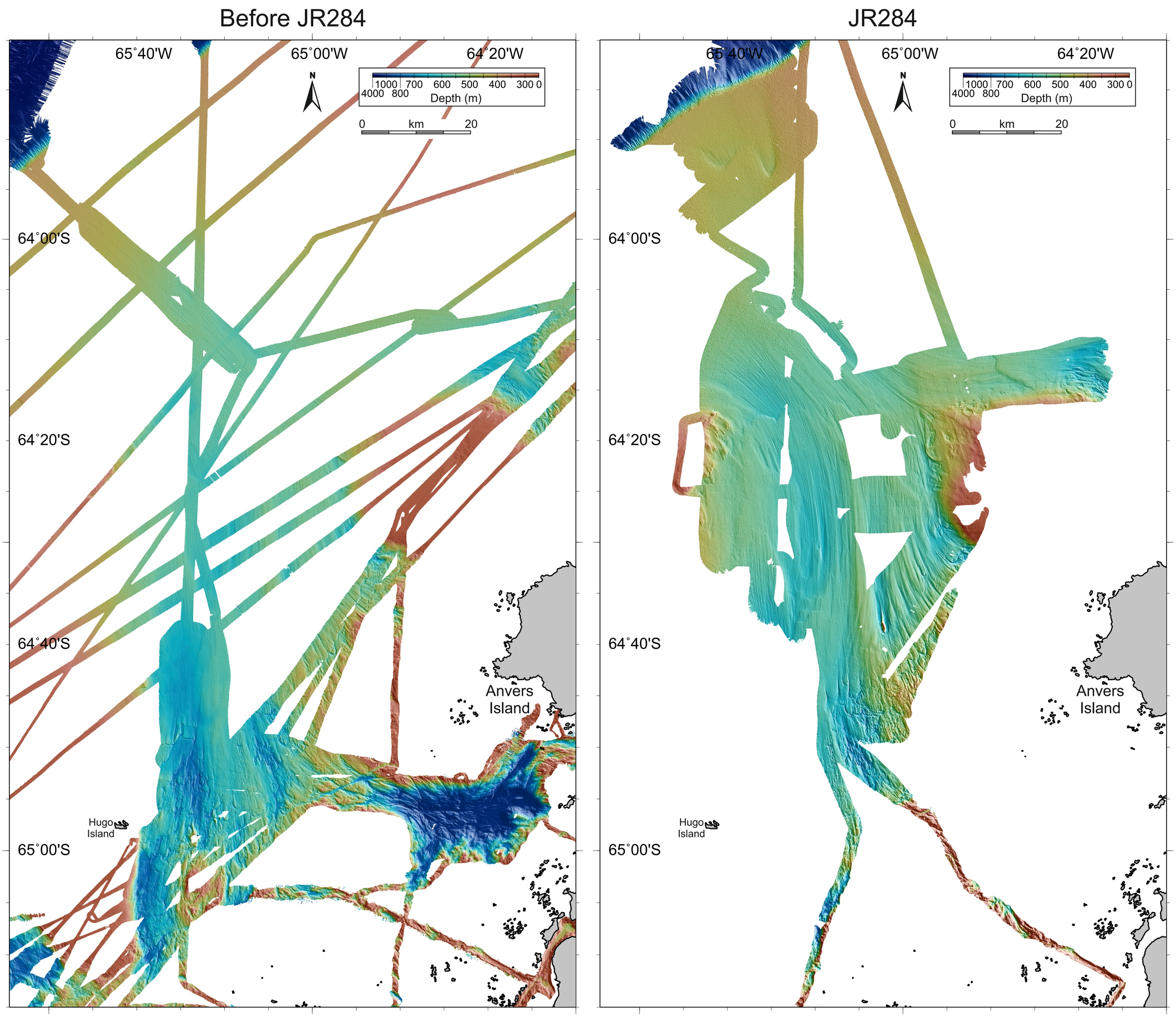
Before JR284
JR284
65˚40'W
65˚00'W
64˚20'W
N
1000 700 600 500 400 300 0
4000 800
Depth (m)
0 km 20
64˚00'S
64˚20'S
64˚40'S
65˚00'S
Anvers Island
Hugo Island

Fig. S1