

# The Creation of High Resolution Bathymetric Grids for the Bremer Sub-Basin

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N/O L'Atalante



R.V. Marion Dufresne



R.V. Southern Surveyor

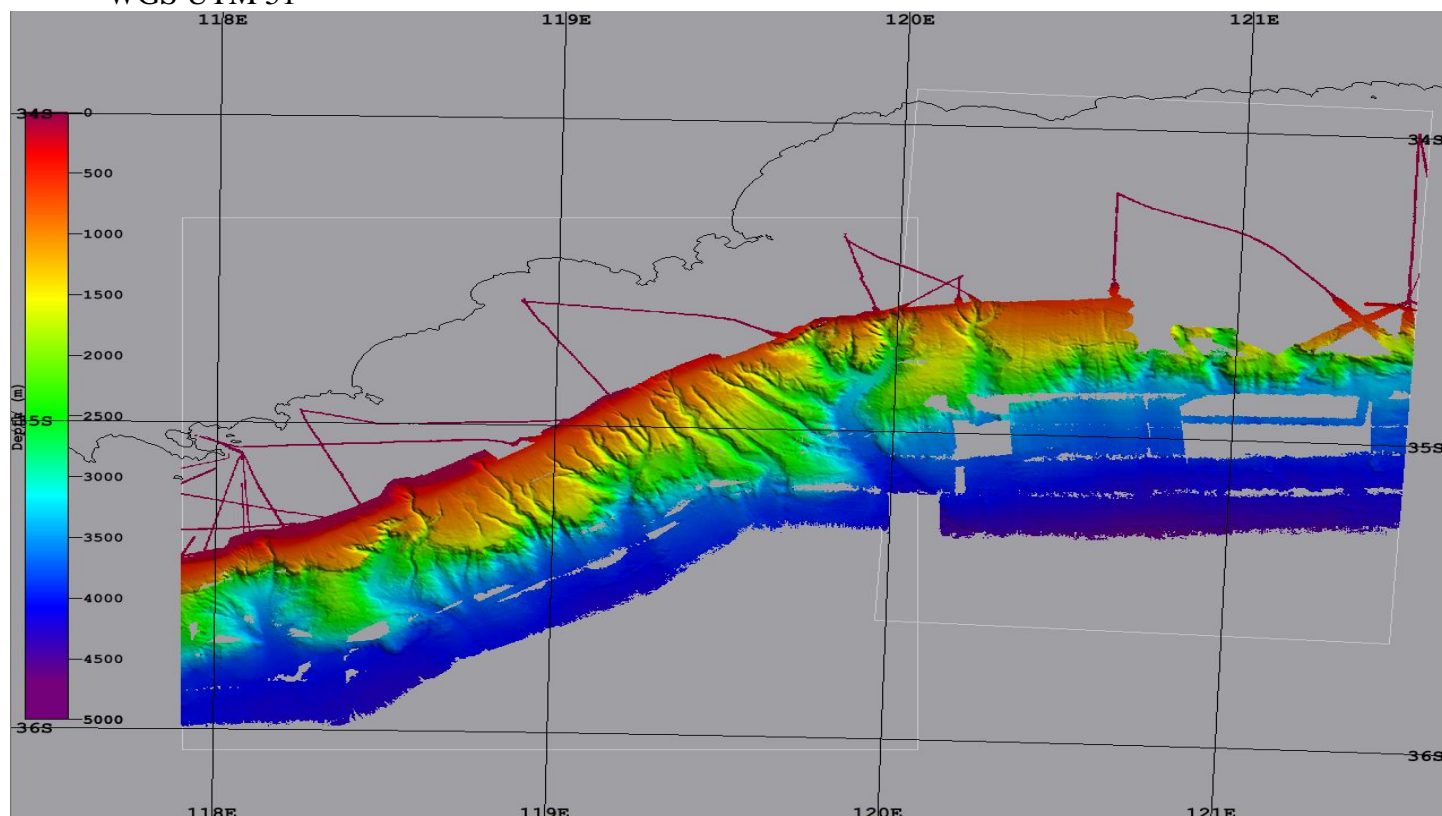
## Introduction

The compilation and processing of GA's bathymetric data in the Bremer region was produced following a request by an external client in August 2011.

This data was acquired by three research vessels, the N/O L'Atalante from IFREMER, the R.V. Marion Dufresne from IPEV and the R.V. Southern Surveyor from CSIRO.

The Bremer Sub-basin was divided into two grids:

- a- Bremer1 grid and extends from Longitude 118° to 120° East, and Latitude -34° to -36° South WGS UTM 50
- b- Bremer2 grid and extends from Longitude 120° to 121°.30 East and Latitude -34° to -36° South, WGS UTM 51



Bremer Sub-basin

The Bremer Sub-basin lies between Albany and Esperance in Southern Western Australia. The Bremer Sub-basin referred to previously as the Albany Sub-Basin of the Bremer Basin, and extends over an area of 11,500Km<sup>2</sup> in water depth ranging from 100 to 4600meters. The Sub-basin is a frontier region for petroleum exploration as few wells have been drilled.

Under the Australian government's Petroleum initiative Geoscience Australia conducted a study of the geology and petroleum potential of the Bremer Sub-Basin. The bathymetric study (GA-0265\_Bremer Basin SS03/2004) started the 8th of February 2004 and ended on the 10<sup>th</sup> of March 2004, onboard the RV Southern Surveyor using a Multibeam swath system EM300 (30kHz). The GA-0265 Bremer survey consists most of the bathymetric data acquired in the Sub-basin and the depth ranges from 100m to a depth of 4000meters.

### **Available Data:**

A search of the multibeam bathymetric data holding at Geoscience Australia for the bounding rectangle NSWE Latitude -34° to -36° South and Longitude 118° to 121° 30 East gave the following results:

#### **Bremer Sub-Basin region bathymetry**

#	Survey Name	Vessel Name	Multibeam System	Institution	Start Date	End Date	Start Port	End Port
1	GA-0157_Adedav	N/O Latalante	EM120D (12 kHz) EM950 (95kHz)	GA/IFREMER	3/04/1994	15/04/1994	Adelaide	SW Timor
2	GA-0208_Margau (MD110)	RV Marion Dufresne	TSM 5256 (12 kHz)	GA/IPEV	29/04/1998	29/05/1998	Fremantle	Fremantle
3	GA-0236_Auscan1 (MD130)	RV Marion Dufresne	TSM 5256 (12 kHz)	GA/IPEV	23/01/2003	16/02/2003	Fremantle	Hobart
4	GA-0245_Auscan2 (MD131)	RV Marion Dufresne	TSM 5256 (12 kHz)	GA/IPEV	18/02/2003	4/03/2003	Hobart	Fremantle
5	GA-0265_Bremer_Basin (SS03/2004)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	9/02/2004	9/03/2004	Fremantle	Hobart
6	GA-0296_WA Bio1 (SS07/2005)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	21/07/2005	15/08/2005	Dampier	Fremantle
7	GA-2390_WA Bio2 (SS10/2005)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	17/11/2005	14/12/2005	Fremantle	Dampier
8	GA-2396_Ausfair-GAB Transit (VT82)	RV Marion Dufresne	TSM 5256 (12 kHz)	GA/IPEV	27/02/2006	6/03/2006	Sydney	Albany
9	GA-2400_Leuwin Currents (SS04/2006)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	9/04/2006	30/04/2006	Esperance	Fremantle

10	GA-2433_Hobart_Fremantle Transit (SST03/2007)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	30/04/2007	9/05/2007	Hobart	Fremantle
11	GA-4304_Hobart_Broome Transit (SST01/2010)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	29/03/2010	13/04/2010	Hobart	Broome
12	GA-4324_Fremantle-Hobart Transit (SST02/2010)	RV Southern Surveyor	EM300 (30 kHz)	CSIRO	10/08/2010	18/08/2010	Fremantle	Hobart

## **Swath Data Processing**

Due to the exceptionally good quality data being acquired, post processing of the raw data was kept to a minimum, which meant that we were able to keep up with the data volumes.

Swath data was processed through Caris HIPS/SIPS version 6.1 Service Pack 2.

1. First a vessel configuration file was created where the co-ordinates of the motion sensor and DGPS antenna and patch test offsets were recorded.
2. A new project was then created and the vessel configuration file was attached to the project file.
3. The raw swath sonar data, in raw.all format, for each line was then imported into the project and the vessel information assigned to the data.
4. The motion sensor, DGPS and heading data were then cleaned using a filter that averaged adjacent data to remove artifacts.
5. Different sound velocity profiles data for each block were attached to the corresponding raw swath sonar data files to correct the depths for changes in the speed of sound through the water column.
6. Then a new blank field area was defined that specified the geographic area of study and the co-ordinate system used. The co-ordinates for all the study areas were WGS84 UTM-49S.
7. The data was cleaned by applying several filters that removed any remaining spikes in the bathymetry data using user defined threshold values. A visual inspection of the data for each line was then undertaken where artifacts and noisy data not removed by the filtering process were removed manually using Swath and subset editors modules of the Caris HIPS/SIPS software.
8. All the data for each bathymetric, motion sensor, DGPS, heading, tide and sound velocity profile data were merged to produce the final processed data file. A weighted grid of the processed data was then created for each Block.
9. The processed data was finally exported as grid soundings or false colored images for presentation and reporting and as final processed data in GSF (Generic Sensor Format) format that can be read by any non Caris user. The data was also exported as ASCII XYZ file format with header information exported as (Easting, Northing and negative depth) in Universal transverse Mercator UTM projection (UTM 50S for Bremer1 grid and UTM51S for Bremer2 grid) and WGS84 (World Geodetic System 1984) Datum.

A total of **11,128.5** sail Km of swath data was discovered in Geoscience Australia's data holding.  
Please see Appendix 1

The acquired swath was presented as a 100 m and 50m resolution grid for Bremer1 and Bremer2 grids

# Appendix 1

## Statistics for Bremer Sub-basin

### 1-Survey GA-0157 Adedav

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
LA1994_98.mb75	573,666	555,078	18,588	3.24	414048.08	32:48.8
adedav_em950_19940408.mb75	1,779,000	1,672,725	106,275	5.97	88897.321	46:42.3
adedav_em950_19940409.mb75	6,404,280	6,269,655	134,625	2.1	434741.92	44:06.5

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>8,756,946</b>	<b>8,497,458</b>	<b>259,488</b>	<b>2.96</b>	<b>937.69</b>

### 2- Survey GA-0208 Margau (MD110)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
8E051242	1,005,566	829,312	176,254	17.53	78444.99	54:09.0
8E051636	768,861	481,970	286,891	37.31	53710.16	40:14.4
8E051925	969,818	757,004	212,814	21.94	34778.88	00:45.2

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>2,744,245</b>	<b>2,068,286</b>	<b>675,959</b>	<b>24.63</b>	<b>166.93</b>

### 3- Survey 0236 Auscan1 (MD130)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
030124_1503	442,848	413,934	28,914	6.53	20551.269	47:52.7
030124_1551	427,101	406,651	20,450	4.79	23237.978	54:51.2
030124_1646	433,791	408,415	25,376	5.85	19953.431	46:52.3
030124_1733	419,157	391,939	27,218	6.49	19411.566	45:50.8
030124_1819	457,640	444,320	13,320	2.91	19711.922	46:52.3
030124_1907	412,626	395,970	16,656	4.04	18919.002	45:26.3
030124_1952	406,101	385,542	20,559	5.06	19760.724	46:40.0
030124_2039	492,591	458,157	34,434	6.99	21564.993	49:31.9
030124_2129	570,920	550,245	20,675	3.62	16451.882	36:45.8
030124_2206	552,430	528,567	23,863	4.32	15429.503	34:21.8
030124_2240	448,533	441,753	6,780	1.51	14351.844	32:34.2
030124_2313	411,777	396,246	15,531	3.77	20708.653	47:14.5
030125_0001	523,618	516,985	6,633	1.27	17034.246	38:38.6
030125_0040	439,064	428,432	10,632	2.42	19467.581	43:40.3

030125_0123	416,706	402,540	14,166	3.4	19184.826	43:59.3
030125_0208	405,377	385,796	19,581	4.83	21333.304	49:07.3
030125_0258	408,670	375,558	33,112	8.1	22006.195	50:21.0
030125_0349	396,838	380,346	16,492	4.16	19855.952	45:01.7
030125_0435	384,121	372,188	11,933	3.11	19224.016	43:23.5
030125_0521	369,474	365,792	3,682	1	20348.711	45:50.8

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>8,819,383</b>	<b>8,449,376</b>	<b>370,007</b>	<b>4.20</b>	<b>388.51</b>

#### 4- Survey GA-0245 Auscan2 (MD131)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
030303_0034	339,814	329,420	10,394	3.06	70396.75	23:16.2
030303_0257	349,103	335,275	13,828	3.96	63395.02	08:37.1
030303_0507	356,972	347,506	9,466	2.65	60944.85	05:05.4
030303_0718	366,978	339,247	27,731	7.56	48790.17	49:28.5
030303_0908	425,485	394,008	31,477	7.4	42869.17	25:56.8
030303_1034	370,303	351,153	19,150	5.17	50340.52	40:02.9
030303_1215	418,663	374,452	44,211	10.56	46020.86	33:20.7
030303_1348	41,080	39,190	1,890	4.6	3090.825	07:26.7
030303_1356	379,975	354,447	25,528	6.72	27994.78	22:28.0
030303_1827	369,020	316,796	52,224	14.15	63158.27	16:29.6
030303_2044	309,957	289,274	20,683	6.67	77530.61	39:00.5

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>3,727,350</b>	<b>3,470,768</b>	<b>256,582</b>	<b>6.88</b>	<b>554.53</b>

#### 5- Survey GA-0265 Bremer Basin (SS03/2004)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
0006_20040210_190941_raw	306,394	250,971	55,423	18.09	43287.55	00:03.1
0007_20040210_230941_raw	296,953	243,022	53,931	18.16	54777.78	00:06.1
0001_20040211_120908_raw	118,160	83,196	34,964	29.59	11901	16:54.4
0002_20040211_142431_raw	12,352	9,722	2,630	21.29	149.983	12:12.9
0003_20040211_155106_raw	340,900	263,500	77,400	22.7	56072.11	59:58.1
0004_20040211_195106_raw	250,646	209,724	40,922	16.33	40388.54	41:55.7
0005_20040211_223300_raw	59,699	52,950	6,749	11.31	5841.282	24:21.8
0006_20040211_225722_raw	36,964	35,278	1,686	4.56	910.443	03:51.0
0007_20040211_230134_raw	134,245	109,637	24,608	18.33	3613.537	15:00.9
0008_20040211_030941_raw	280,800	218,522	62,278	22.18	48352.34	00:14.1
0008_20040211_231634_raw	1,090,165	959,939	130,226	11.95	16642.86	04:01.5
0009_20040211_070941_raw	39,444	34,527	4,917	12.47	631.041	36:03.7
0010_20040211_092326_raw	64,169	34,254	29,915	46.62	1347.893	59:01.5
0001_20040212_090436_raw	17,807	7,457	10,350	58.12	1775.23	12:52.9

0001_20040212_092356_raw	111,591	84,537	27,054	24.24	14232.89	39:40.2
0001_20040212_111428_raw	276,043	240,529	35,514	12.87	52616.72	00:02.1
0002_20040212_151428_raw	276,654	228,364	48,290	17.46	50457.2	00:02.1
0003_20040212_191428_raw	304,413	282,742	21,671	7.12	57556.22	00:03.1
0004_20040212_231428_raw	345,041	328,203	16,838	4.88	56610.38	00:03.1
0009_20040212_005143_raw	645,788	515,320	130,468	20.2	12682.96	43:23.7
0010_20040212_013516_raw	629,986	574,617	55,369	8.79	4393.458	17:59.9
0011_20040212_030343_raw	766,408	248,402	518,006	67.59	6314.655	28:14.8
0012_20040212_033215_raw	22,219	115	22,104	99.48	337.042	49:55.2
0013_20040212_033408_raw	1,031,844	872,094	159,750	15.48	21188.22	00:00.5
0014_20040212_043408_raw	757,172	740,418	16,754	2.21	17436.64	52:50.6
0015_20040212_052714_raw	150,745	132,472	18,273	12.12	15236.22	00:05.5
0016_20040212_062714_raw	57,180	33,974	23,206	40.58	14505.83	00:04.5
0017_20040212_072714_raw	57,532	31,032	26,500	46.06	17686.96	00:05.5
0018_20040212_082714_raw	31,598	29,379	2,219	7.02	5530.527	25:40.8
0019_20040212_085252_raw	945	870	75	7.94	124.934	49:55.2
0005_20040213_031428_raw	248,349	161,289	87,060	35.06	51577.1	00:02.1
0006_20040213_071428_raw	273,484	233,905	39,579	14.47	53170	00:06.1
0007_20040213_111428_raw	301,903	255,579	46,324	15.34	58967.67	00:05.1
0008_20040213_151428_raw	320,327	277,766	42,561	13.29	58876.73	00:02.1
0009_20040213_191428_raw	350,068	310,679	39,389	11.25	57984.02	00:02.1
0010_20040213_231428_raw	181,191	155,148	26,043	14.37	34100.23	14:35.9
0011_20040214_012918_raw	294,440	203,934	90,506	30.74	63326.01	00:05.1
0012_20040214_052918_raw	161,610	120,416	41,194	25.49	34780.06	18:06.9
0013_20040214_074723_raw	255,071	183,661	71,410	28	59314.39	00:03.1
0014_20040214_114723_raw	269,378	224,612	44,766	16.62	56075.77	44:28.2
0015_20040214_153149_raw	272,114	219,316	52,798	19.4	60578.28	00:00.1
0016_20040214_193149_raw	279,195	231,820	47,375	16.97	55773.74	00:04.1
0017_20040214_233149_raw	242,685	180,158	62,527	25.76	57889.48	00:06.1
0018_20040215_033149_raw	305,991	237,854	68,137	22.27	43542.75	50:30.2
0019_20040215_072218_raw	121,341	85,254	36,087	29.74	22709.47	49:16.1
0020_20040215_091133_raw	157,185	129,059	28,126	17.89	34948.69	19:11.9
0021_20040215_113040_raw	127	107	20	15.75	86.657	57:07.2
0022_20040215_113249_raw	1,452	1,315	137	9.44	379.397	01:33.0
0023_20040215_113426_raw	N/A	N/A	N/A	N/A	18.471	00:00.0
0025_20040215_113454_raw	243,380	188,112	55,268	22.71	57296.97	46:12.2
0026_20040215_152056_raw	300,622	282,705	17,917	5.96	52205.34	00:00.1
0027_20040215_192056_raw	305,296	286,969	18,327	6	47789.13	00:02.1
0028_20040215_232056_raw	292,445	259,666	32,779	11.21	53874.72	00:02.1
0001_20040216_141327_raw	15,685	11,043	4,642	29.6	176.714	07:34.9
0001_20040216_144400_raw	21,876	18,440	3,436	15.71	240.399	08:34.9
0002_20040216_143026_raw	945	816	129	13.65	11.804	54:14.4
0002_20040216_152311_raw	477,500	424,681	52,819	11.06	61958.19	00:02.1
0003_20040216_192311_raw	376,224	349,998	26,226	6.97	49302.95	02:29.6
0004_20040216_222539_raw	1,072,286	1,070,825	1,461	0.14	20417.97	02:54.5
0005_20040216_232833_raw	1,180,960	1,158,307	22,653	1.92	19832.5	00:01.5
0029_20040216_032056_raw	209,876	164,072	45,804	21.82	33126.55	49:51.7
0030_20040216_061045_raw	124,350	114,202	10,148	8.16	11668.87	15:22.4
0031_20040216_072605_raw	121,912	103,520	18,392	15.09	4758.325	10:39.4
0032_20040216_083644_raw	152,299	138,685	13,614	8.94	2193.253	06:37.5
0033_20040216_095029_raw	18,749	17,552	1,197	6.38	179.388	09:28.9
0034_20040216_100027_raw	237,835	178,759	59,076	24.84	12155.31	22:12.9

0035_20040216_122238_raw	72,467	63,050	9,417	12.99	2765.791	38:26.7
0036_20040216_133736_raw	12,057	8,305	3,752	31.12	149.953	05:23.0
0001_20040217_122145_raw	911,380	754,249	157,131	17.24	11906.61	40:01.7
0002_20040217_130154_raw	851,547	825,200	26,347	3.09	20148.5	00:00.5
0003_20040217_140154_raw	733,237	720,028	13,209	1.8	19885.35	00:00.5
0004_20040217_150154_raw	111,365	100,150	11,215	10.07	18464.6	00:03.5
0005_20040217_160154_raw	304,818	263,190	41,628	13.66	50878.29	05:53.1
0006_20040217_002833_raw	601,087	500,687	100,400	16.7	5687.253	17:16.9
0001_20040218_213902_raw	337,482	293,641	43,841	12.99	57103.12	00:04.1
0014_20040218_184016_raw	213,499	136,342	77,157	36.14	26266.68	45:40.7
0002_20040219_013903_raw	291,353	248,521	42,832	14.7	58885.14	00:01.1
0003_20040219_053903_raw	305,663	271,012	34,651	11.34	59532.19	00:05.1
0004_20040219_093903_raw	336,741	290,954	45,787	13.6	49047.37	00:03.1
0005_20040219_133903_raw	267,998	247,825	20,173	7.53	51037.18	31:11.4
0006_20040219_171018_raw	282,412	257,419	24,993	8.85	59027.35	59:55.1
0007_20040219_211018_raw	16,724	16,073	651	3.89	2955.702	12:06.9
0008_20040219_212230_raw	304,272	272,293	31,979	10.51	57859.73	59:53.1
0009_20040220_012230_raw	327,614	306,430	21,184	6.47	58274.62	00:01.1
0010_20040220_052230_raw	333,085	298,070	35,015	10.51	51086.67	25:35.4
0012_20040220_084817_raw	277,774	247,628	30,146	10.85	47018.8	09:26.5
0013_20040220_115746_raw	258,671	238,786	19,885	7.69	38720.88	32:07.8
0014_20040220_142950_raw	264,703	240,390	24,313	9.19	43887.01	50:11.7
0015_20040220_172001_raw	194,343	175,036	19,307	9.93	31389.61	59:43.1
0016_20040220_191949_raw	257,649	222,690	34,959	13.57	50315.91	15:25.5
0017_20040220_223513_raw	320,661	297,187	23,474	7.32	50620.58	24:10.4
0018_20040221_015918_raw	353,382	316,214	37,168	10.52	60052.1	00:05.1
0019_20040221_055918_raw	375,843	346,831	29,012	7.72	58894.32	00:02.1
0020_20040221_095918_raw	288,108	262,393	25,715	8.93	42269.39	49:58.7
0021_20040221_124915_raw	349,361	317,961	31,400	8.99	53259.52	34:39.3
0022_20040221_162353_raw	401,800	361,135	40,665	10.12	58988.91	52:49.2
0023_20040221_201639_raw	379,236	346,717	32,519	8.57	60458.09	00:01.1
0024_20040222_001639_raw	282,180	232,182	49,998	17.72	47902.7	10:24.5
0025_20040222_032702_raw	317,167	300,861	16,306	5.14	40414.59	44:45.7
0026_20040222_061148_raw	331,522	320,941	10,581	3.19	40076.56	43:07.7
0027_20040222_085453_raw	425,516	395,544	29,972	7.04	51948.45	32:06.3
0028_20040222_122659_raw	255,129	202,621	52,508	20.58	25743.59	43:02.2
0029_20040222_141000_raw	342,993	320,700	22,293	6.5	38863	39:50.8
0030_20040222_164948_raw	294,493	280,469	14,024	4.76	39009.37	40:09.7
0031_20040222_192956_raw	318,478	300,169	18,309	5.75	37532	33:43.8
0032_20040222_220340_raw	300,608	276,697	23,911	7.95	39505.95	37:17.8
0033_20040223_004058_raw	290,241	259,296	30,945	10.66	47338.72	12:51.5
0034_20040223_035348_raw	315,923	289,420	26,503	8.39	50798.3	24:59.4
0035_20040223_071845_raw	348,156	314,046	34,110	9.8	64829.68	00:01.1
0036_20040223_111845_raw	225,903	181,485	44,418	19.66	51676.53	48:27.7
0037_20040223_140711_raw	198,805	178,397	20,408	10.27	40601.03	11:28.0
0038_20040223_161839_raw	157,448	137,516	19,932	12.66	33010.47	45:30.2
0039_20040223_180405_raw	161,580	135,019	26,561	16.44	35070.75	57:55.1
0040_20040223_200206_raw	266,360	209,816	56,544	21.23	41364.04	44:46.7
0041_20040223_224659_raw	743,989	711,047	32,942	4.43	16868.87	53:27.6
0042_20040223_234006_raw	408,623	393,186	15,437	3.78	9742.007	30:10.8
0001_20040224_090140_raw	599,647	543,461	56,186	9.37	11136.79	30:00.8

0002_20040224_093140_raw	531,747	518,491	13,256	2.49	11304.88	29:58.8
0007_20040226_013944_raw	331,871	305,331	26,540	8	75507.6	59:59.1
0008_20040226_053944_raw	291,131	272,929	18,202	6.25	13582.5	00:03.1
0009_20040226_093944_raw	326,318	298,330	27,988	8.58	24066.98	59:56.1
0010_20040226_133944_raw	403,732	357,958	45,774	11.34	18243.29	59:58.1
0011_20040226_173944_raw	429,311	398,941	30,370	7.07	34342.41	00:03.1
0012_20040226_213944_raw	397,662	365,032	32,630	8.21	13503.02	00:01.1
0013_20040227_013944_raw	391,504	355,468	36,036	9.2	29353.81	00:00.1
0014_20040227_053944_raw	307,259	282,639	24,620	8.01	15339.77	12:01.5
0015_20040227_085144_raw	394,610	365,603	29,007	7.35	32532.42	00:01.1
0016_20040227_125144_raw	353,481	320,508	32,973	9.33	16022.48	00:05.1
0017_20040227_165144_raw	409,224	388,794	20,430	4.99	25124.88	00:02.1
0018_20040227_205144_raw	474,921	468,160	6,761	1.42	21793.56	00:02.1
0001_20040228_044233_raw	475,797	440,401	35,396	7.44	29136.84	59:59.1
0002_20040228_084233_raw	27,230	22,390	4,840	17.77	6370.536	18:22.9
0003_20040228_090058_raw	333,540	301,921	31,619	9.48	25627	00:00.1
0004_20040228_130058_raw	331,427	248,095	83,332	25.14	14438.86	50:33.2
0005_20040228_165128_raw	284,657	262,190	22,467	7.89	15434.03	43:17.7
0006_20040228_193443_raw	394,913	365,745	29,168	7.39	44572.7	00:02.1
0007_20040228_233443_raw	408,713	386,158	22,555	5.52	19067.8	00:02.1
0019_20040228_005144_raw	514,996	505,616	9,380	1.82	15841.15	34:58.3
0020_20040228_042658_raw	364	158	206	56.59	598.377	02:29.0
0001_20040229_061123_raw	273,178	251,553	21,625	7.92	12025.36	49:47.7
0002_20040229_090109_raw	262,739	240,983	21,756	8.28	22678.97	49:43.7
0003_20040229_115048_raw	301,092	281,178	19,914	6.61	15974.03	18:20.5
0004_20040229_150906_raw	378,177	365,861	12,316	3.26	15149.13	45:18.2
0005_20040229_185420_raw	460,483	446,746	13,737	2.98	19123.96	00:03.1
0008_20040229_033443_raw	246,846	229,365	17,481	7.08	20183.34	28:14.8
0007_20040301_025420_raw	425,399	379,378	46,021	10.82	15800.42	00:02.1
0008_20040301_065420_raw	789,361	754,515	34,846	4.41	29040.52	59:56.1
0009_20040301_085415_raw	30,927	29,788	1,139	3.68	237.764	02:25.0
0010_20040301_085648_raw	685,217	650,728	34,489	5.03	5052.675	00:00.5
0011_20040301_095648_raw	460,162	434,866	25,296	5.5	7677.276	00:00.5
0012_20040301_105648_raw	138,369	131,229	7,140	5.16	643.615	00:00.5
0013_20040301_115648_raw	263,935	250,591	13,344	5.06	14675.23	06:46.0
0014_20040301_140331_raw	268,709	255,660	13,049	4.86	3455.569	10:17.0
0015_20040301_161344_raw	471,634	454,337	17,297	3.67	27571.47	00:01.1
0016_20040301_201344_raw	435,906	378,364	57,542	13.2	18637.26	00:04.1
0001_20040302_110818_raw	356,213	299,298	56,915	15.98	27701.49	59:58.1
0002_20040302_150818_raw	423,095	402,986	20,109	4.75	32090.25	00:02.1
0003_20040302_190818_raw	425,850	405,765	20,085	4.72	9703.73	00:01.1
0004_20040302_230818_raw	384,150	360,730	23,420	6.1	9258.336	00:02.1
0017_20040302_001344_raw	392,888	381,248	11,640	2.96	15365.63	29:12.4
0018_20040302_034254_raw	368,422	334,889	33,533	9.1	14900.28	56:10.2
0019_20040302_073859_raw	239,640	175,543	64,097	26.75	9253.914	18:48.5
0001_20040303_215017_raw	365,496	292,468	73,028	19.98	27394.72	59:54.1
0005_20040303_030818_raw	477,477	462,981	14,496	3.04	18479.26	00:00.1
0006_20040303_070818_raw	425,715	387,700	38,015	8.93	36919.71	59:59.1
0007_20040303_110818_raw	284,707	258,867	25,840	9.08	21555.06	56:34.6
0008_20040303_140448_raw	380,199	345,342	34,857	9.17	20539.82	00:03.1
0009_20040303_180448_raw	292,582	249,934	42,648	14.58	11910.24	16:58.5



0010_20040303_212148_raw	28,195	21,372	6,823	24.2	6460.618	20:09.8
0002_20040304_015017_raw	332,119	256,483	75,636	22.77	16185.32	30:38.4
0003_20040304_052050_raw	174,283	117,577	56,706	32.54	16743.06	07:28.0
0004_20040304_072828_raw	320,749	276,962	43,787	13.65	7693.273	59:58.1
0005_20040304_112828_raw	386,395	348,599	37,796	9.78	34900.5	00:01.1
0006_20040304_152828_raw	377,314	349,974	27,340	7.25	50982.51	00:04.1
0007_20040304_192828_raw	41,362	31,591	9,771	23.62	10473.4	30:32.8
0008_20040304_195855_raw	293,029	251,222	41,807	14.27	83443.51	00:03.1

	<b>No. of Soundings</b>	<b>Accepted Soundings</b>	<b>Rejected Soundings</b>	<b>% of Rejected Soundings</b>	<b>Distance (Km)</b>
<b>Totals</b>	<b>55,099,523</b>	<b>48,842,802</b>	<b>6,256,721</b>	<b>11.36</b>	<b>5095.85</b>

## 6- Survey GA-0296 WA Bio Leg1 (SS07/2005)

<b>Line</b>	<b>Total Depth</b>	<b>Accept Depth</b>	<b>Reject Depth</b>	<b>%Reject Depth</b>	<b>Length</b>	<b>Total Time</b>
0149_20050808_111235_raw	175,997	167,687	8,310	4.72	20946.78	00:00.5
0150_20050808_121235_raw	182,152	173,823	8,329	4.57	20961.16	00:01.5
0151_20050808_131235_raw	197,726	190,312	7,414	3.75	20195.93	00:01.5
0152_20050808_141235_raw	51,330	49,824	1,506	2.93	1559.406	16:51.9
0153_20050808_142925_raw	162,146	157,013	5,133	3.17	3716.027	00:03.5
0154_20050808_152925_raw	57,824	56,119	1,705	2.95	902.979	20:12.8
0155_20050808_164334_raw	410,090	404,577	5,513	1.34	3783.443	00:01.5
0156_20050808_174334_raw	184,156	181,799	2,357	1.28	658.56	22:02.8
0157_20050808_180536_raw	233,464	230,956	2,508	1.07	15112.67	54:11.6
0158_20050808_185947_raw	295,805	290,116	5,689	1.92	17422.78	59:58.5
0159_20050808_195947_raw	422,957	409,581	13,376	3.16	13195.78	00:00.5
0160_20050808_205947_raw	398,123	391,220	6,903	1.73	8387.782	00:00.5
0161_20050808_215947_raw	228,608	215,282	13,326	5.83	6263.769	00:02.5
0162_20050808_225947_raw	161,423	149,674	11,749	7.28	11273.41	51:25.6
0163_20050808_235112_raw	193,336	187,484	5,852	3.03	3928.644	00:01.5
0164_20050809_005112_raw	161,374	156,739	4,635	2.87	13419.35	00:00.5
0165_20050809_015112_raw	139,979	135,361	4,618	3.3	20822.3	00:04.5
0166_20050809_025112_raw	123,418	119,832	3,586	2.91	12897.09	00:00.5
0167_20050809_035112_raw	26,872	26,313	559	2.08	1422.138	11:15.9
0168_20050809_040225_raw	136,770	133,557	3,213	2.35	3630.532	59:59.5
0169_20050809_050225_raw	131,593	130,557	1,036	0.79	5364.283	00:00.5
0170_20050809_060225_raw	137,321	135,812	1,509	1.1	7459.964	00:00.5
0171_20050809_070225_raw	132,188	131,298	890	0.67	3166.81	00:01.5
0172_20050809_080225_raw	36,986	36,694	292	0.79	970.867	17:15.9
0173_20050809_081939_raw	124,201	122,696	1,505	1.21	5120.732	00:02.5
0174_20050809_091939_raw	60,430	52,403	8,027	13.28	5152.837	31:12.8
0175_20050809_095051_raw	338,030	337,312	718	0.21	2356.174	59:58.5
0176_20050809_105051_raw	183,324	182,860	464	0.25	2982.41	32:10.8
0177_20050809_112307_raw	185,440	179,604	5,836	3.15	19137.75	00:02.5
0178_20050809_122307_raw	27,436	26,060	1,376	5.02	4734.782	12:19.9
0179_20050809_123531_raw	7,251	6,822	429	5.92	1967.672	05:04.0
0180_20050809_124045_raw	97,307	94,258	3,049	3.13	20544.73	59:54.5
0181_20050809_134045_raw	88,294	82,891	5,403	6.12	14601.18	54:40.6

0182_20050809_143523_raw	12,015	12,002	13	0.11	1450.211	05:19.0
0183_20050809_144042_raw	33,615	33,571	44	0.13	2491.38	13:31.9
0184_20050809_145410_raw	4,860	4,860	0	0	23.588	02:00.0
0185_20050809_145616_raw	12,849	12,437	412	3.21	73.81	07:20.9
0186_20050809_150336_raw	N/A	N/A	N/A	N/A	0.28	2.999
0187_20050809_150345_raw	108,622	108,353	269	0.25	1698.228	59:58.5
0188_20050809_160345_raw	106,820	104,242	2,578	2.41	3599.082	00:00.5
0189_20050809_170345_raw	102,270	98,881	3,389	3.31	3968.664	00:00.5
0190_20050809_180345_raw	104,887	100,945	3,942	3.76	3013.321	00:00.5
0191_20050809_190345_raw	16,918	16,899	19	0.11	521.777	09:25.9
0192_20050809_191309_raw	103,547	97,412	6,135	5.92	3729.378	00:01.5
0194_20050809_201325_raw	111,398	107,164	4,234	3.8	2621.147	00:01.5
0195_20050809_211325_raw	113,933	107,045	6,888	6.05	7306.344	00:01.5
0196_20050809_221325_raw	22,713	22,123	590	2.6	4231.994	11:11.9
0197_20050809_222438_raw	107,315	103,608	3,707	3.45	8389.037	40:04.7
0198_20050809_230444_raw	163,554	136,832	26,722	16.34	3389.124	50:06.6
0199_20050810_004431_raw	159,096	153,902	5,194	3.26	15570.46	00:01.5
0200_20050810_014431_raw	178,770	170,747	8,023	4.49	17411.54	00:00.5
0201_20050810_024431_raw	217,858	212,277	5,581	2.56	17444.68	59:59.5
0202_20050810_034431_raw	91,402	87,807	3,595	3.93	8922.971	30:29.8
0203_20050810_041459_raw	131,395	128,042	3,353	2.55	8049.056	30:49.8
0204_20050810_044548_raw	243,728	236,159	7,569	3.11	16109.86	00:01.5
0205_20050810_054548_raw	205,017	197,241	7,776	3.79	16001.81	00:01.5
0206_20050810_064548_raw	177,157	174,624	2,533	1.43	5550.597	32:48.7
0207_20050810_071836_raw	362,957	354,050	8,907	2.45	3786.13	47:36.6
0208_20050810_080611_raw	73,520	71,457	2,063	2.81	3897.518	16:21.9
0209_20050810_082232_raw	326,722	322,699	4,023	1.23	19277.85	00:00.5
0210_20050810_092232_raw	313,798	311,102	2,696	0.86	17582.9	00:00.5
0211_20050810_102232_raw	110,016	107,062	2,954	2.69	6344.024	23:27.8
0212_20050810_104601_raw	413,328	410,495	2,833	0.69	17560.61	56:30.6
0213_20050810_114232_raw	221,254	217,231	4,023	1.82	1437.479	31:45.8
0214_20050810_121420_raw	255,826	150,106	105,720	41.32	4203.495	00:00.5
0215_20050810_131420_raw	129,201	118,298	10,903	8.44	1447.317	00:02.5
0216_20050810_141420_raw	122,594	47,106	75,488	61.58	3411.617	00:00.5
0217_20050810_151420_raw	108,678	96,642	12,036	11.07	4615.621	00:01.5
0218_20050810_161420_raw	5,713	4,201	1,512	26.47	688.371	04:14.0
0219_20050810_161842_raw	109,456	106,958	2,498	2.28	3382.23	59:58.5
0220_20050810_171842_raw	210,043	203,960	6,083	2.9	13666.67	21:49.4
0221_20050810_184033_raw	621,648	597,084	24,564	3.95	10470.06	36:12.8
0222_20050810_211644_raw	292,868	265,394	27,474	9.38	10344.41	05:57.0
0223_20050810_232240_raw	89,297	86,277	3,020	3.38	13463.4	47:30.6
0224_20050811_001008_raw	75,561	72,733	2,828	3.74	13937.31	46:15.6
0225_20050811_005623_raw	301,384	287,469	13,915	4.62	14590.25	15:09.0
0226_20050811_031132_raw	407,352	384,657	22,695	5.57	15964.96	00:59.5
0227_20050811_041230_raw	60,930	56,577	4,353	7.14	2425.115	18:43.9
0228_20050811_043113_raw	158,279	147,160	11,119	7.02	3048.29	54:51.6
0229_20050811_060108_raw	453,121	445,094	8,027	1.77	10802.37	34:30.3
0230_20050811_073539_raw	271,303	266,598	4,705	1.73	15519.95	01:54.5
0231_20050811_083733_raw	134,614	127,431	7,183	5.34	8905.681	33:57.7
0232_20050811_091130_raw	141,702	137,748	3,954	2.79	16960.12	45:46.6
0233_20050811_095715_raw	24,870	23,868	1,002	4.03	2607.275	08:56.9
0234_20050811_100610_raw	156,359	151,996	4,363	2.79	14493.94	00:00.5

0235_20050811_110610_raw	171,624	168,090	3,534	2.06	15210.24	00:02.5
0236_20050811_120610_raw	200,671	199,112	1,559	0.78	15269.31	59:59.5

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>14,347,779</b>	<b>13,712,364</b>	<b>635,415</b>	<b>4.43</b>	<b>730.94</b>

## 7- Survey GA-2390 WA Bio Leg2 (SS10/2005)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
0070_20051122_050607_raw	579,804	483,195	96,609	16.66	16402.874	00:01.5
0071_20051122_060607_raw	324,754	302,374	22,380	6.89	17561.621	00:01.5
0072_20051122_070608_raw	207,837	200,507	7,330	3.53	17327.334	59:59.5
0073_20051122_080608_raw	204,372	197,456	6,916	3.38	17227.256	00:01.5
0074_20051122_090608_raw	369,117	333,584	35,533	9.63	17213.375	59:59.5
0075_20051122_100608_raw	365,998	332,732	33,266	9.09	16485.158	00:00.5
0076_20051122_110608_raw	150,197	130,288	19,909	13.26	3423.193	16:57.9
0077_20051122_115819_raw	483,832	425,228	58,604	12.11	18310.454	00:00.5
0078_20051122_125820_raw	604,730	502,570	102,160	16.89	13351.248	00:00.5
0079_20051122_135820_raw	544,011	470,515	73,496	13.51	15861.338	59:59.5
0080_20051122_145820_raw	614,641	510,599	104,042	16.93	17196.323	00:01.5
0081_20051122_155820_raw	630,766	514,673	116,093	18.41	15574.038	00:00.5
0082_20051122_165820_raw	55,015	45,587	9,428	17.14	1384.508	05:15.0
0083_20051123_085218_raw	615,615	526,623	88,992	14.46	17825.526	00:01.5
0084_20051123_095218_raw	637,041	542,074	94,967	14.91	18159.501	00:01.5
0085_20051123_105219_raw	112,725	100,561	12,164	10.79	3626.922	12:07.9
0086_20051123_110425_raw	97,979	88,436	9,543	9.74	3914.117	12:44.9
0087_20051123_194644_raw	501,287	448,873	52,414	10.46	7881.15	00:01.5
0088_20051123_204644_raw	310,768	286,285	24,483	7.88	17244.586	00:00.5
0089_20051123_214644_raw	395,093	352,430	42,663	10.8	12801.254	44:53.7
0090_20051123_223316_raw	157,474	147,297	10,177	6.46	7877.448	27:28.8
0091_20051124_022240_raw	483,817	434,773	49,044	10.14	19323.67	59:59.5
0092_20051124_032240_raw	530,357	465,859	64,498	12.16	16856.614	56:36.6
0093_20051124_065103_raw	639,999	550,881	89,118	13.92	18872.094	00:00.5
0094_20051124_075103_raw	659,846	563,601	96,245	14.59	17523.504	59:59.5
0095_20051124_085103_raw	670,683	561,745	108,938	16.24	17811.728	00:01.5
0096_20051124_095103_raw	678,169	565,308	112,861	16.64	17715.032	00:00.5
0097_20051124_105103_raw	670,251	562,901	107,350	16.02	17882.181	00:01.5
0098_20051124_115103_raw	701,442	576,764	124,678	17.77	17857.325	00:00.5
0099_20051124_125103_raw	385,701	317,703	67,998	17.63	9586.292	32:37.7
0100_20051125_175113_raw	687,567	606,359	81,208	11.81	18653.996	00:01.5
0101_20051125_185113_raw	474,679	448,074	26,605	5.6	18523.641	00:00.5
0102_20051125_195113_raw	351,531	338,723	12,808	3.64	18809.194	00:01.5

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>14,897,098</b>	<b>12,934,578</b>	<b>1,962,520</b>	<b>13.17</b>	<b>486.06</b>

## 8- Survey GA-2396 Ausfair GAB Transit VT82)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
060304_1953	373,129	362,592	10,537	2.82	82744.64	34:19.5
060304_2228	371,715	362,295	9,420	2.53	82706.97	32:41.2
060305_0101	366,170	271,541	94,629	25.84	57533.35	46:49.4
060305_0319	396,079	362,496	33,583	8.48	111507.7	12:13.6
060306_0817	124,913	118,161	6,752	5.41	18714.06	36:40.0
060306_0854	381,017	371,425	9,592	2.52	57079.42	47:15.4
060306_1041	385,942	380,799	5,143	1.33	58753.76	46:54.9
060306_1228	428,373	414,276	14,097	3.29	78228.91	25:38.2
060306_1455	423,429	416,145	7,284	1.72	70202.24	16:43.6
060306_1712	638,555	635,773	2,782	0.44	41398.26	20:55.5
060306_1833	141,095	136,107	4,988	3.54	13897.77	26:33.1

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>4,030,417</b>	<b>3,831,610</b>	<b>198,807</b>	<b>4.93</b>	<b>672.77</b>

## 9- Survey Ga-2400 Leeuwin Current (SS04/2006)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
0149_20060409_161113_raw	408,778	403,217	5,561	1.36	17800.86	59:59.5
0150_20060409_171113_raw	473,968	469,672	4,296	0.91	20021.21	00:01.5
0151_20060409_181113_raw	1,228,500	1,040,360	188,140	15.31	22871.82	00:01.5
0152_20060409_191113_raw	1,432,849	1,429,694	3,155	0.22	22158.85	00:01.5
0001_20060412_080708_raw	246,854	160,754	86,100	34.88	2200.503	10:22.9
0002_20060412_081742_raw	759,030	584,503	174,527	22.99	14500.73	45:55.6
0003_20060412_090344_raw	681,384	587,148	94,236	13.83	20031.59	00:01.5
0004_20060412_100344_raw	581,268	519,626	61,642	10.6	19806.31	00:00.5
0005_20060412_110344_raw	186,858	165,493	21,365	11.43	6558.01	19:56.8
0006_20060412_112400_raw	550,711	489,400	61,311	11.13	19810.04	00:00.5
0007_20060412_122400_raw	181,954	162,018	19,936	10.96	6964.165	21:00.8
0008_20060412_124509_raw	69,631	61,697	7,934	11.39	2645.806	08:03.9
0009_20060412_125322_raw	465,734	422,333	43,401	9.32	23490.06	00:00.5
0010_20060412_135322_raw	437,626	417,043	20,583	4.7	24702.54	00:00.5
0011_20060412_145322_raw	451,638	429,429	22,209	4.92	23340.6	59:59.5
0012_20060412_155322_raw	477,264	450,826	26,438	5.54	22549.99	00:01.5
0013_20060412_165322_raw	456,454	434,272	22,182	4.86	22088.13	00:01.5
0014_20060412_175322_raw	230,010	217,665	12,345	5.37	21838.98	00:01.5
0015_20060412_185322_raw	207,978	197,521	10,457	5.03	23010.53	00:01.5
0016_20060412_195322_raw	1,761,076	1,631,656	129,420	7.35	102006.7	26:23.0
0122_20060417_104456_raw	566,400	502,426	63,974	11.29	20558.67	59:59.5
0123_20060417_114456_raw	569,865	509,125	60,740	10.66	20854.54	00:00.5
0124_20060417_124456_raw	380,008	353,660	26,348	6.93	8576.543	36:47.7
0125_20060417_132143_raw	331,993	295,757	36,236	10.91	1265.589	28:50.8
0126_20060417_135033_raw	590,349	545,209	45,140	7.65	18327.46	00:00.5
0127_20060417_145033_raw	575,780	526,459	49,321	8.57	18958.26	00:01.5

0128_20060417_155033_raw	526,883	482,278	44,605	8.47	17513.71	00:00.5
0129_20060417_165033_raw	457,831	426,588	31,243	6.82	7324.179	00:01.5
0130_20060417_175033_raw	181,171	172,534	8,637	4.77	1245.727	47:45.6
0131_20060417_183847_raw	25,363	24,318	1,045	4.12	320.028	06:42.9
0132_20060417_191555_raw	61,753	59,602	2,151	3.48	608.914	17:01.9
0133_20060417_194946_raw	66,727	63,145	3,582	5.37	2085.608	23:48.8
0134_20060417_202506_raw	470,051	377,786	92,265	19.63	24607.04	32:29.9
0135_20060418_005732_raw	318,510	252,392	66,118	20.76	30526.41	00:03.2
0136_20060418_045732_raw	190,555	177,475	13,080	6.86	15552.33	55:28.6
0137_20060418_055300_raw	570,182	523,841	46,341	8.13	18676.97	00:01.5
0138_20060418_065300_raw	611,881	531,006	80,875	13.22	18399.27	00:00.5
0139_20060418_075300_raw	649,408	582,444	66,964	10.31	18146.56	00:01.5
0140_20060418_085300_raw	549,225	473,775	75,450	13.74	12728.03	00:00.5
0141_20060418_095300_raw	623,994	561,361	62,633	10.04	13828.63	00:01.5
0142_20060418_105300_raw	239,334	210,077	29,257	12.22	3466.243	23:44.8
0143_20060418_112417_raw	580,407	517,054	63,353	10.92	13689.78	59:59.5
0144_20060418_122418_raw	173,456	155,059	18,397	10.61	1514.376	19:15.9
0145_20060418_124820_raw	323,405	302,590	20,815	6.44	3802.499	00:00.5
0146_20060418_134820_raw	247,474	232,370	15,104	6.1	3002.179	00:03.5
0147_20060418_144820_raw	198,459	186,289	12,170	6.13	4198.207	00:01.5
0148_20060418_154820_raw	179,614	165,984	13,630	7.59	2866.099	00:01.5
0149_20060418_164820_raw	143,788	130,715	13,073	9.09	6268.163	00:02.5
0150_20060418_174820_raw	126,293	111,713	14,580	11.54	5341.757	00:03.5
0151_20060418_184820_raw	112,397	102,020	10,377	9.23	2322.268	59:59.5
0152_20060418_194820_raw	447,882	386,584	61,298	13.69	61737.3	30:36.9
0153_20060419_001857_raw	2,092,196	1,749,205	342,991	16.39	56405.98	20:24.5
0154_20060419_033921_raw	1,304,863	1,185,378	119,485	9.16	26185.41	07:59.0
0155_20060419_054718_raw	181,245	169,161	12,084	6.67	2662.341	28:25.8
0156_20060419_061544_raw	242,511	225,507	17,004	7.01	2372.38	59:49.5
0157_20060419_071534_raw	155,229	147,037	8,192	5.28	1595.13	44:28.7
0158_20060419_080000_raw	55,849	52,649	3,200	5.73	1292.438	17:08.9
0159_20060419_081709_raw	52,929	48,858	4,071	7.69	663.651	21:25.8
0160_20060419_083836_raw	38,175	34,163	4,012	10.51	1269.561	19:15.9
0161_20060419_085750_raw	118,632	102,065	16,567	13.97	2381.905	01:37.5
0162_20060419_100816_raw	257,872	225,404	32,468	12.59	10686.63	41:18.8
0163_20060419_124933_raw	214,487	190,938	23,549	10.98	18388.39	23:13.9
0164_20060419_162308_raw	132,655	120,384	12,271	9.25	10171.27	36:58.3
0165_20060419_191402_raw	88,375	69,969	18,406	20.83	18539.33	59:23.5
0166_20060419_201325_raw	92,895	83,216	9,679	10.42	17896.91	55:00.6
0167_20060419_210822_raw	50,377	42,175	8,202	16.28	11137.26	32:18.8
0168_20060419_214037_raw	152,580	117,273	35,307	23.14	35349.54	45:11.2
0169_20060419_232547_raw	38,891	29,879	9,012	23.17	7654.164	25:26.8
0170_20060419_235131_raw	298,270	261,572	36,698	12.3	20641.57	00:02.2
0171_20060420_035131_raw	322,570	281,080	41,490	12.86	21158.01	00:01.2
0172_20060420_075131_raw	220,142	205,429	14,713	6.68	11961.33	31:04.8
0173_20060420_102235_raw	48,535	45,044	3,491	7.19	4924.398	35:51.7
0174_20060420_112019_raw	189,803	169,038	20,765	10.94	13345.91	01:21.5
0175_20060420_122141_raw	622,930	573,981	48,949	7.86	21005.79	00:05.5
0176_20060420_132145_raw	94,112	85,469	8,643	9.18	2856.645	08:05.9
0177_20060420_132956_raw	713,270	643,041	70,229	9.85	21184.09	00:00.5
0178_20060420_142956_raw	705,855	636,598	69,257	9.81	17541.56	00:00.5
0179_20060420_152956_raw	646,386	564,710	81,676	12.64	3377.556	58:53.5

0180_20060420_162959_raw	690,455	609,285	81,170	11.76	6944.296	00:01.5
0181_20060420_172959_raw	682,884	621,983	60,901	8.92	8373.268	00:00.5
0182_20060420_182959_raw	716,948	644,430	72,518	10.11	15362.33	00:01.5
0183_20060420_192959_raw	688,643	624,533	64,110	9.31	12624.73	00:00.5
0184_20060420_202959_raw	285,211	250,336	34,875	12.23	3940.581	47:40.6
0185_20060420_213514_raw	244,935	236,305	8,630	3.52	1678.013	00:00.5
0186_20060420_223514_raw	13,278	12,053	1,225	9.23	612.43	05:24.0
0187_20060420_224036_raw	215,880	202,286	13,594	6.3	17982.02	00:03.5
0188_20060420_234036_raw	174,675	165,525	9,150	5.24	17027.38	00:01.5
0189_20060421_004036_raw	149,264	141,043	8,221	5.51	17898.12	00:01.5
0190_20060421_014036_raw	168,103	160,940	7,163	4.26	18231.36	00:01.5
0191_20060421_024036_raw	177,141	169,825	7,316	4.13	18265.41	00:01.5
0192_20060421_034036_raw	214,536	202,843	11,693	5.45	16543.63	59:59.5
0193_20060421_044036_raw	250,866	234,854	16,012	6.38	17611.06	00:00.5
0194_20060421_054036_raw	326,688	295,555	31,133	9.53	17332.3	00:01.5
0195_20060421_064036_raw	236,456	223,534	12,922	5.46	15497.35	00:00.5
0196_20060421_074036_raw	165,573	161,340	4,233	2.56	1738.523	00:01.5
0197_20060421_084036_raw	132,594	126,234	6,360	4.8	3246.47	00:02.5
0198_20060421_094036_raw	113,491	105,796	7,695	6.78	2426.671	00:01.5
0199_20060421_104036_raw	300,647	281,337	19,310	6.42	22395.46	18:44.9
0200_20060421_125919_raw	1,004,228	918,775	85,453	8.51	31979.4	32:04.3
0201_20060421_143122_raw	730,216	657,768	72,448	9.92	21124.08	00:00.5
0202_20060421_153122_raw	748,989	668,286	80,703	10.77	19040.92	00:01.5
0203_20060421_163122_raw	776,637	683,471	93,166	12	9525.569	00:00.5
0204_20060421_173122_raw	336,196	301,504	34,692	10.32	5220.05	29:25.8
0205_20060421_180834_raw	679,084	614,069	65,015	9.57	13030.59	00:00.5
0206_20060421_190835_raw	627,999	575,372	52,627	8.38	13903.02	00:01.5
0207_20060421_200835_raw	330,708	313,226	17,482	5.29	2387.251	00:00.5
0208_20060421_210835_raw	404,278	382,605	21,673	5.36	5726.624	34:28.8
0209_20060421_234303_raw	118,378	111,821	6,557	5.54	2076.439	08:38.5
0210_20060422_005138_raw	27,495	25,380	2,115	7.69	393.683	16:41.9
0211_20060422_010817_raw	185,641	165,361	20,280	10.92	6561.848	57:18.1
0212_20060422_030532_raw	332,934	300,897	32,037	9.62	16677.21	00:01.2
0213_20060422_070532_raw	1,499,939	1,396,506	103,433	6.9	43902.39	09:35.0
0214_20060422_091507_raw	711,251	644,812	66,439	9.34	18186.56	00:00.5

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>45,973,878</b>	<b>41,505,076</b>	<b>4,468,802</b>	<b>9.72</b>	<b>1624.83</b>

## 10- Survey GA-2433 Hobart Fremantle Transit (SST03/2007)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
0174_20070507_114926_raw	50,796	43,829	6,967	13.72	10228.96	30:11.8
0175_20070507_121926_raw	60,435	53,979	6,456	10.68	9666.634	30:19.8
0176_20070507_124926_raw	59,421	52,625	6,796	11.44	9781.453	30:19.8
0177_20070507_131926_raw	57,473	51,253	6,220	10.82	9849.385	30:24.8
0178_20070507_134926_raw	84,874	76,008	8,866	10.45	10061.91	30:22.8
0179_20070507_141926_raw	6,432	5,816	616	9.58	731.025	02:10.0

0180_20070507_142126_raw	226,967	207,935	19,032	8.39	10495.12	30:19.8
0181_20070507_145126_raw	349,594	317,838	31,756	9.08	10880.97	30:19.8
0182_20070507_152126_raw	355,075	323,508	31,567	8.89	11091.4	30:20.8
0183_20070507_155126_raw	343,869	314,218	29,651	8.62	10993.24	30:20.8
0184_20070507_162126_raw	349,860	319,824	30,036	8.59	11006.13	30:21.8

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>1,944,796</b>	<b>1,766,833</b>	<b>177,963</b>	<b>9.15</b>	<b>104.79</b>

## 11- Survey GA-4304 Hobart Broome Transit (SST01/2010)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
0090_20100403_222409	485,829	476,511	9,318	1.92	7955.858	00:19.5
0091_20100403_232409	515,286	506,518	8,768	1.7	7450.515	00:18.5
0092_20100404_002409	151,788	146,024	5,764	3.8	15007.92	00:19.5
0093_20100404_012409	109,138	103,934	5,204	4.77	6034.451	00:18.5
0094_20100404_022409	94,802	86,819	7,983	8.42	19899.89	00:19.5
0095_20100404_032409	79,113	63,175	15,938	20.15	17731.41	00:18.5
0096_20100404_042409	69,702	48,803	20,899	29.98	6718.891	00:19.5
0097_20100404_052409	69,768	43,287	26,481	37.96	19239.05	00:18.5
0098_20100404_062409	66,720	40,057	26,663	39.96	19622.52	00:19.5
0099_20100404_072409	65,944	43,243	22,701	34.42	4259.406	00:18.5
0100_20100404_082409	65,786	43,177	22,609	34.37	18892.4	00:19.5
0101_20100404_092409	66,200	39,742	26,458	39.97	20601.39	00:18.5
0102_20100404_102409	68,858	46,332	22,526	32.71	20748.36	00:18.5
0103_20100404_112410	75,989	57,992	17,997	23.68	20730.3	00:19.5
0104_20100404_122410	75,376	57,009	18,367	24.37	20596.45	00:18.5
0105_20100404_132410	76,395	62,164	14,231	18.63	20170.39	00:19.5
0106_20100404_142409	96,072	89,607	6,465	6.73	20174.78	00:18.5
0107_20100404_152410	108,113	101,557	6,556	6.06	19986.33	00:19.5
0108_20100404_162410	113,870	106,515	7,355	6.46	19600.1	00:18.5
0109_20100404_172410	123,475	117,917	5,558	4.5	19100.22	00:19.5
0110_20100404_182410	184,473	178,541	5,932	3.22	19190.48	00:18.5
0111_20100404_192410	448,788	441,701	7,087	1.58	19263.65	00:19.5
0112_20100404_202410	67,544	66,463	1,081	1.6	2659.8	08:15.9

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>3,279,029</b>	<b>2,967,088</b>	<b>311,941</b>	<b>9.51</b>	<b>365.63</b>

## 12- Survey GA-4324 Fremantle Hobart Transit (GAB-BPZ, SST02/2010)

Line	Total Depth	Accept Depth	Reject Depth	%Reject Depth	Length	Total Time
0036_20100811_173842	350,454	343,259	7,195	2.05	20908.25	00:19.5
0037_20100811_183842	325,191	319,064	6,127	1.88	20415.47	00:18.5
0038_20100811_193842	257,067	250,855	6,212	2.42	11275.67	33:53.7

0039_20100811_201216	323,527	317,866	5,661	1.75	19235.86	00:18.5
0040_20100811_211216	143,375	133,389	9,986	6.96	13769.5	45:10.7
0041_20100811_215708	126,349	119,276	7,073	5.6	18748.74	00:19.5
0042_20100811_225708	39,405	37,704	1,701	4.32	5648.324	18:49.9
0043_20100811_231539	104,115	95,148	8,967	8.61	16407.66	00:18.5
0044_20100812_001539	63,191	48,305	14,886	23.56	11319.39	40:18.7
0045_20100812_005539	94,199	82,059	12,140	12.89	14779.57	00:19.5
0046_20100812_015539	86,040	73,036	13,004	15.11	16833.39	00:18.5
0047_20100812_025539	8,645	6,851	1,794	20.75	1887.835	06:35.9
0048_20100812_030156	86,125	67,664	18,461	21.44	18141.52	00:19.5
0049_20100812_040156	89,362	72,463	16,899	18.91	19127.6	00:18.5
0050_20100812_050156	86,362	84,949	1,413	1.64	7909.889	38:19.7
0051_20100812_053956	134,869	130,284	4,585	3.4	628.188	00:19.5
0052_20100812_063956	23,893	23,490	403	1.69	1551.25	10:07.9
0053_20100812_064945	108,591	98,540	10,051	9.26	19484.18	00:18.5
0054_20100812_074945	42,221	41,884	337	0.8	7393.623	23:07.8
0055_20100812_081234	93,893	88,927	4,966	5.29	18682.37	00:19.5
0056_20100812_091234	49,326	48,450	876	1.78	9978.46	29:57.8
0057_20100812_094213	80,055	66,371	13,684	17.09	18891.76	57:43.6
0058_20100812_103938	84,390	62,897	21,493	25.47	20819.6	00:18.5
0059_20100812_113939	80,463	56,249	24,214	30.09	19902.57	00:19.5
0060_20100812_123938	83,134	65,908	17,226	20.72	19366.88	00:18.5
0061_20100812_133939	83,891	62,845	21,046	25.09	19809.55	00:19.5
0062_20100812_143939	83,596	70,667	12,929	15.47	20827.16	00:18.5

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
<b>Totals</b>	<b>3,131,729</b>	<b>2,868,400</b>	<b>263,329</b>	<b>8.41</b>	<b>393.74</b>

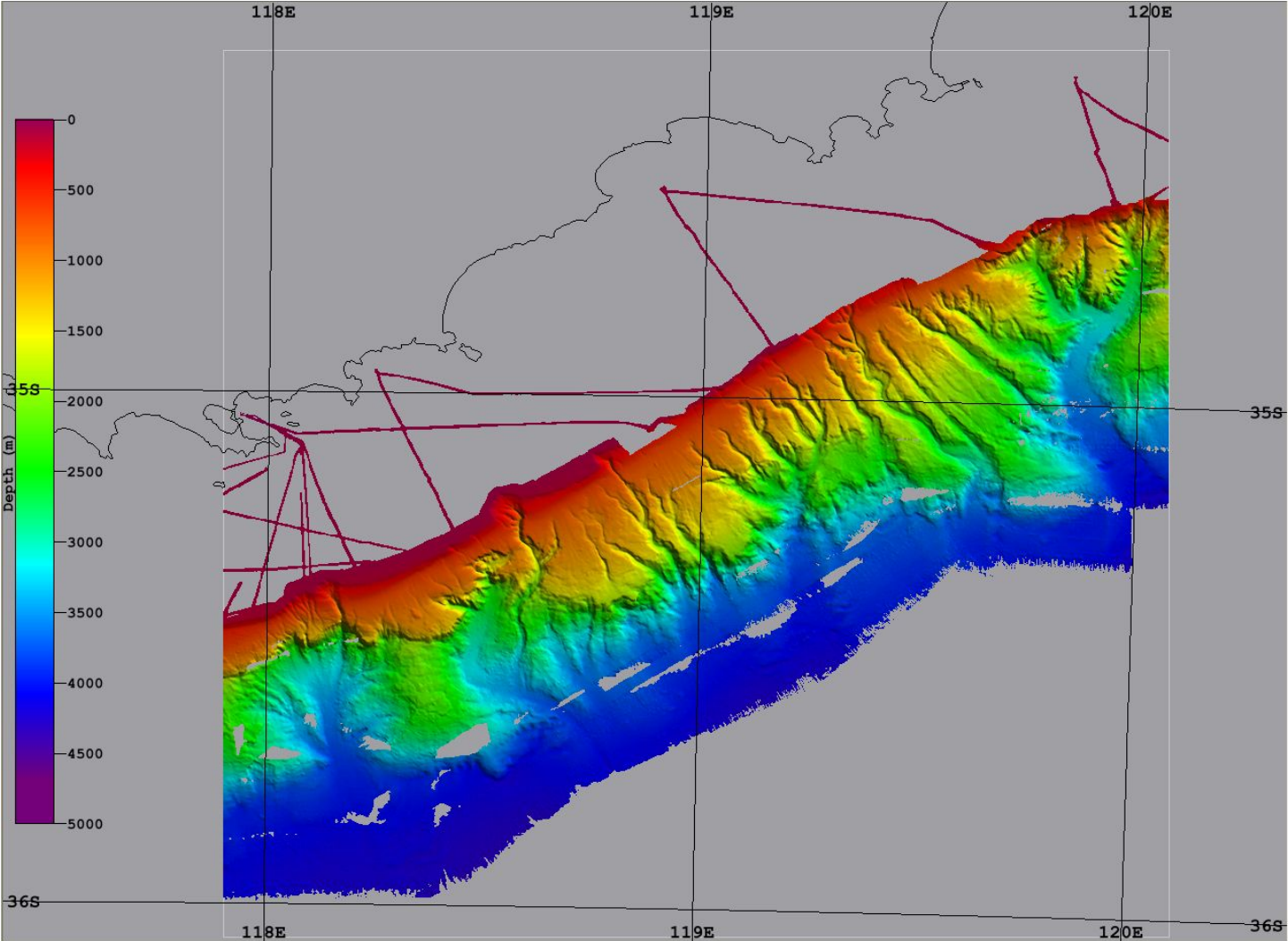
## TOTALS

	No. of Soundings	Accepted Soundings	Rejected Soundings	% of Rejected Soundings	Distance (Km)
GA-0157	8,756,946	8,497,458	259,488	3	937.7
GA-0208	2,744,245	2,068,286	675,959	25	166.9
GA-0236	8,819,383	8,449,376	370,007	4	388.5
GA-0245	3,727,350	3,470,768	256,582	7	554.5
GA-0265	55,099,523	48,842,802	6,256,721	11	5,095.8
GA-0296	14,347,779	13,712,364	635,415	4	731
GA-2390	14,897,098	12,934,578	1,962,520	13	486
GA-2396	4,030,417	3,831,610	198,807	5	673
GA-2400	45,973,878	41,505,076	4,468,802	10	1,625
GA-2433	1,944,796	1,766,833	177,963	9	105
GA-4304	3,279,029	2,967,088	311,941	10	366
GA-4324	3,131,729	2,868,400	263,329	8	394
<b>Totals for Voyage</b>	<b>163,620,444</b>	<b>148,046,239</b>	<b>15,574,205</b>	<b>9.52</b>	<b>11,128.5</b>

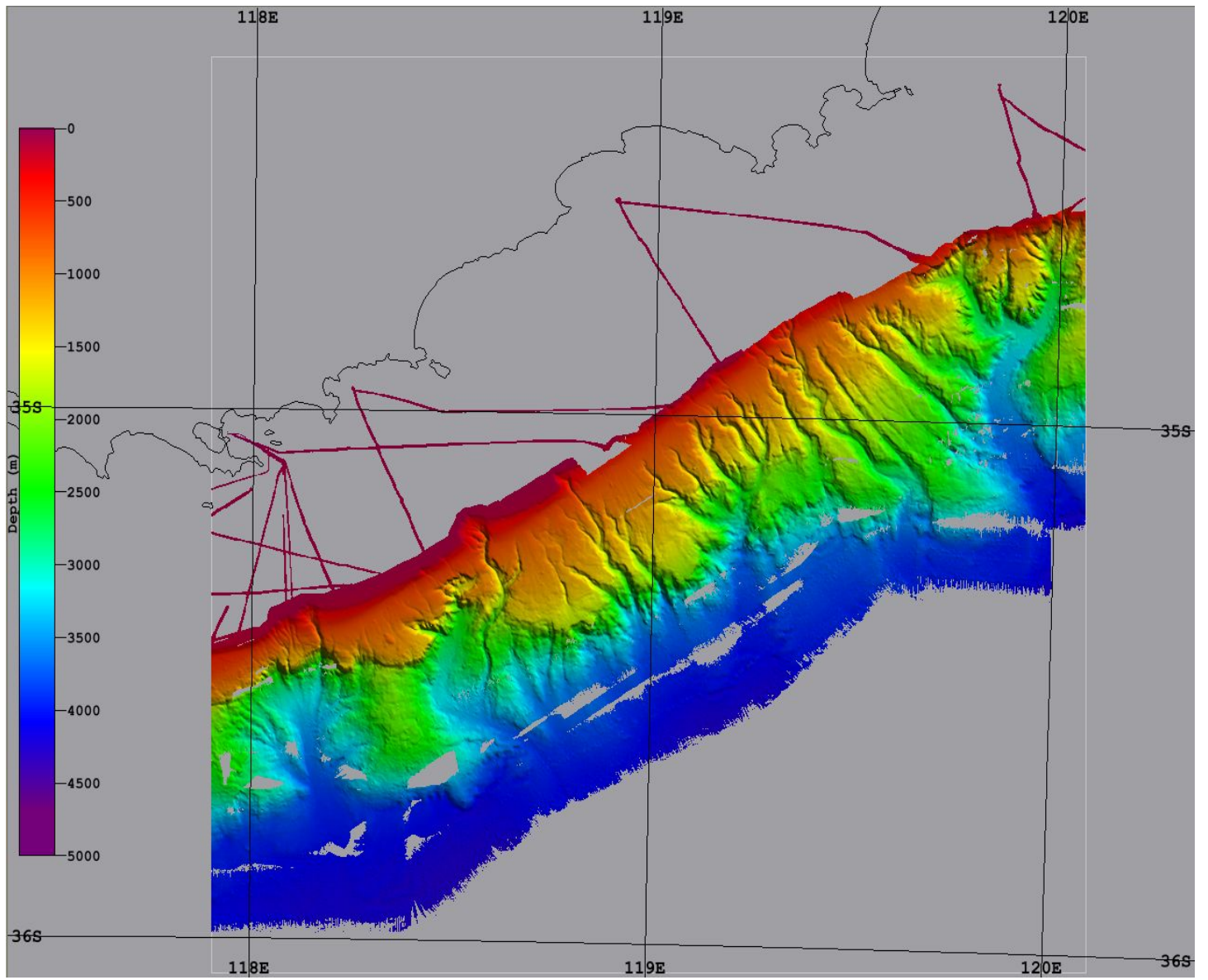


**Appendix 2**  
**Base Surface Images**

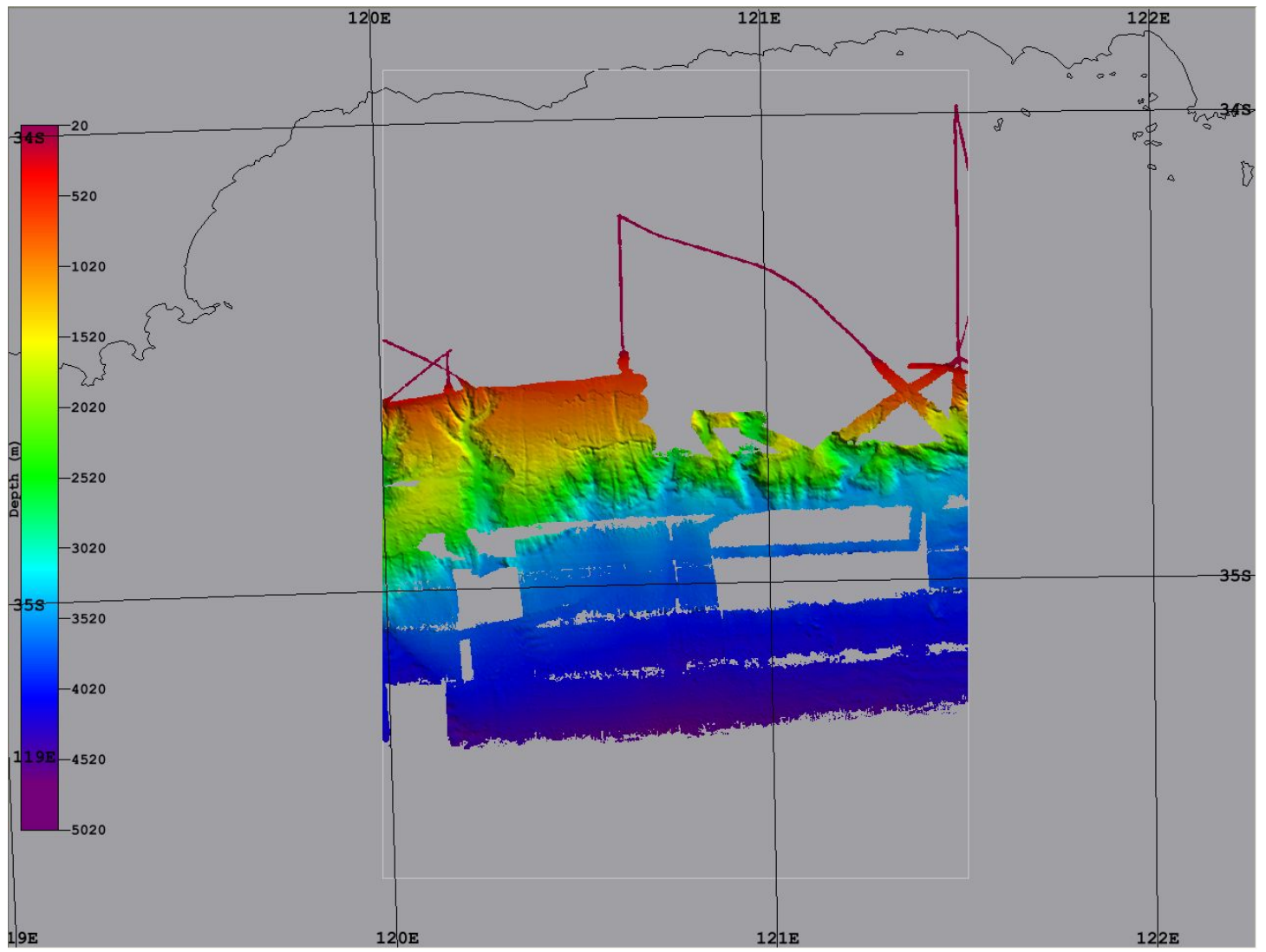
**Bremer1 Sub-basin**



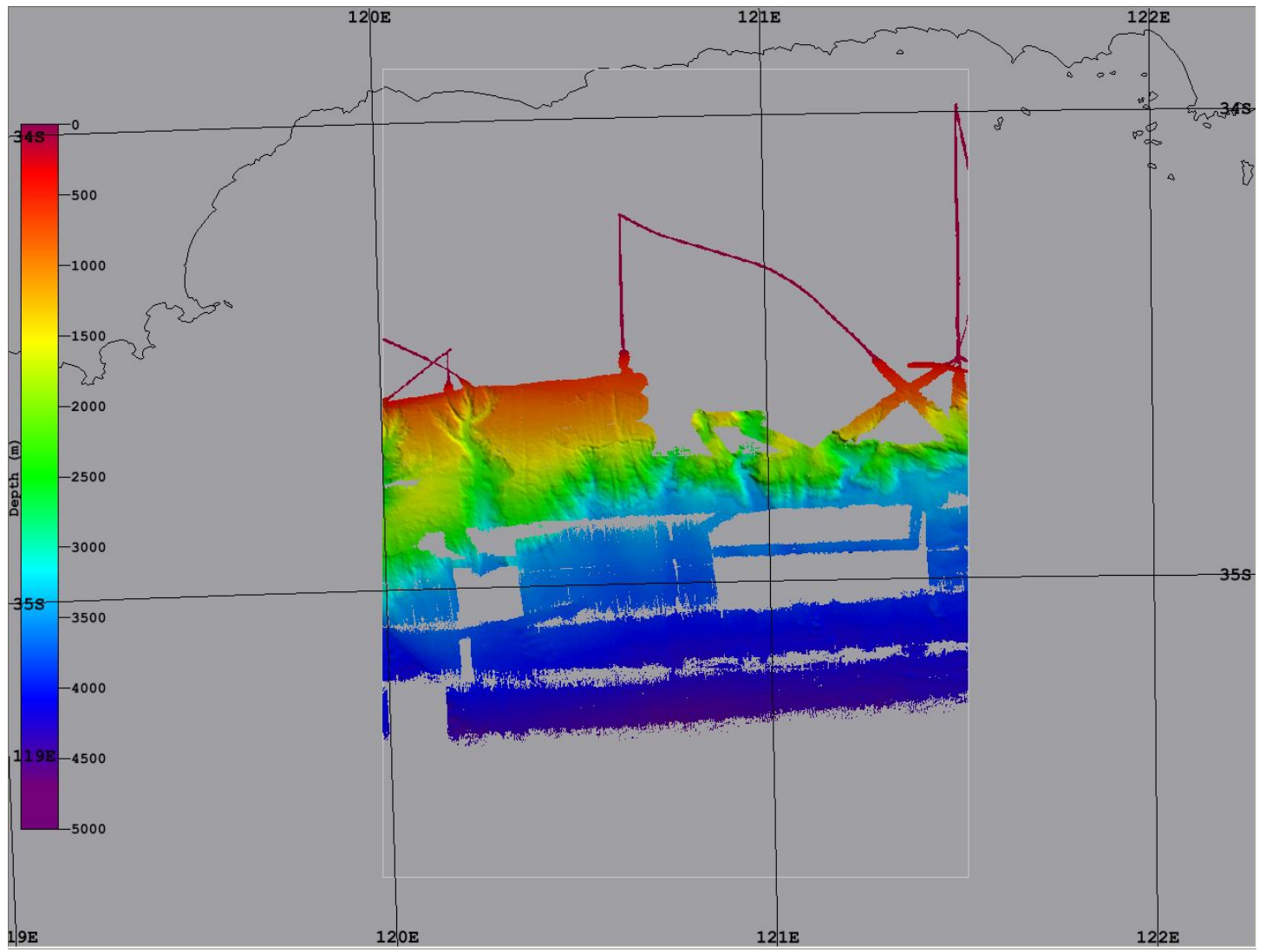
**Bremer1 100m Resolution WGS84, UTM50S**



**Bremer1 50m resolution WGS84, UTM50S**



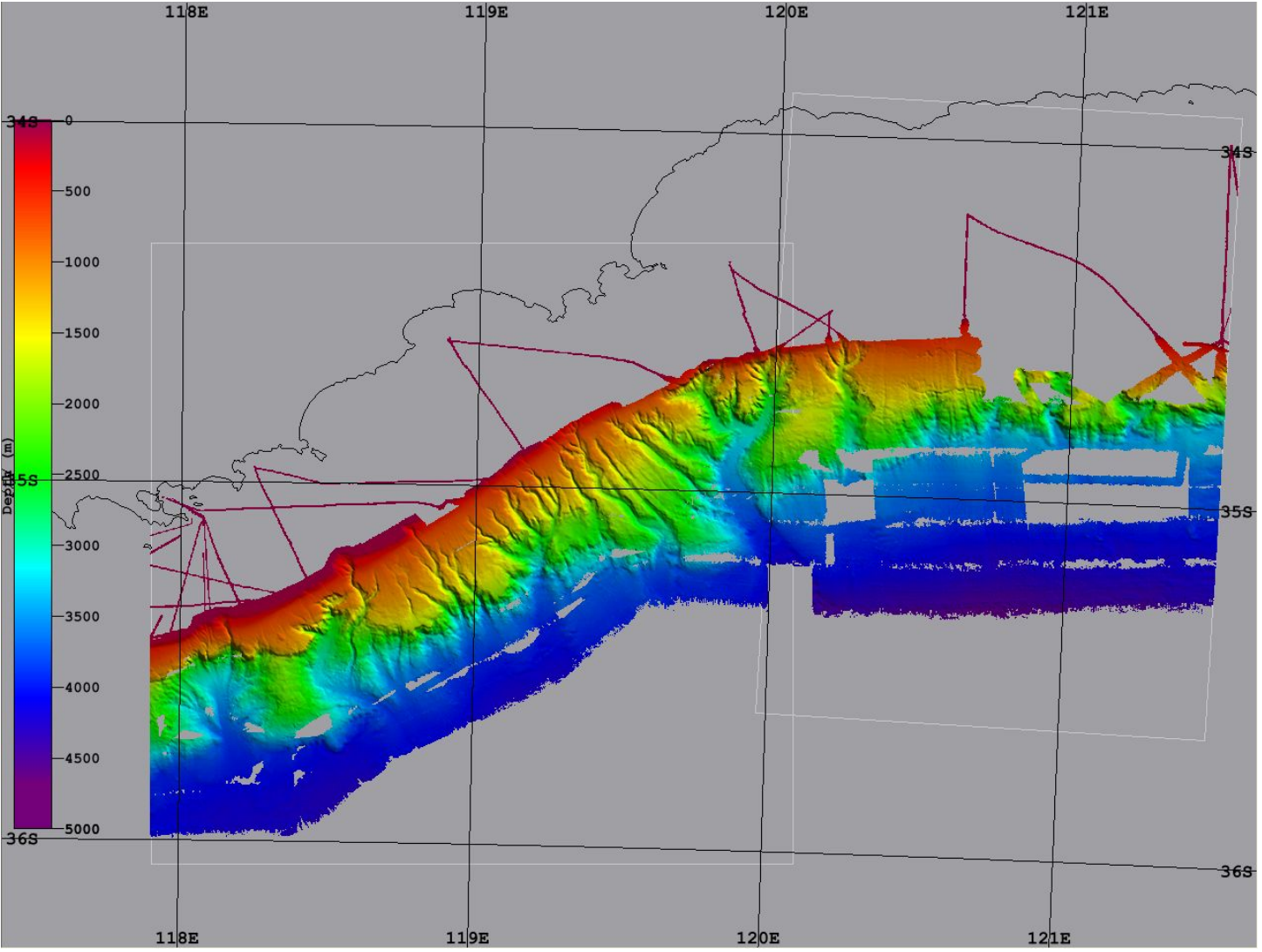
**Bremer2 100m Resolution WGS84, UTM51S**



**Bremer2 50m Resolution WGS84, UTM51S**



Overall view of Bremer Sub-basin multibeam bathymetry



## **Acknowledgment**

Geoscience Australia would like to acknowledge IFREMER for acquiring and providing the GA-0157\_Adedav survey onboard N.O. L'Atalante, and IPEV for acquiring and providing the following:

- a- GA-0208\_Margau (MD110)
- b- GA-236\_Auscan1 (MD130).
- c- GA-245\_Auscan2 (MD131).
- d- GA-2396\_Ausfair\_Transit (VT82)