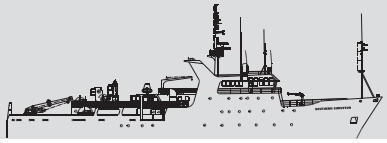

MARINE
NATIONAL FACILITY

2006 program

RV *Southern Surveyor*

voyageplan
SS10-2006

NSW Continental Slope Survey

Itinerary

Mobilise Sydney, Thursday 12 October 2006
Depart Sydney, 0800hrs Friday 13 October 2006 or when ready
Arrive Sydney, 0800hrs Thursday 26 October 2006 and demobilise

Principal Investigator

Dr Kriton C Glenn (Chief Scientist), Marine and Coastal Environment Group,
Geoscience Australia
GPO Box 378, Canberra, ACT 2601, Australia

Phone: 61 2 6249 9379 **Fax:** 61 2 6249 9980 **Email:** Kriton.Glenn@ga.gov.au

Scientific Objectives

- This survey is to assess the physical nature of the NSW continental slope.
- To improve the understanding surficial and sub surface structure of the slope
- To investigate the history of sediment movement along and down the continental slope.

CSIRO

Voyage Objectives

To ascertain the rate and nature of sediment movement across and along the NSW continental slope. This will be achieved by first imaging the area utilising the Swath, and sub bottom profiles. After this data has been acquired a range of potential sampling sites will be selected for side scan, seismic acquisition followed by the physical sampling effort including gravity cores, box cores and piston cores. These sites are anticipated to reveal the timing and extent of sediment movement.

Voyage Track

The proposed ship tracks are ex Sydney New South Wales and they clearly show the area of operation and the intended voyage track.

The program may need to be flexible from the start. This is due to the potential change in weather patters along the east coast. A Southern area 'Area A' and a Northern area 'Area B' have been identified (Figure 1).

Time Estimates

Day 1	Load the vessel with container and equipment and set up from earliest time possible.	Survey Staff arrive and complete the set up.
Day 2	Depart Sydney at earliest time possible head south to "Area A' This area extends from the southern most Area up to a line approximately perpendicular from the city of Newcastle.	Start the Swath mapping in area 'A' and Sub bottom profiling as soon as we can after departure.
Day 2-6	Continue with the swath sub bottom profiling and seismic activity over the areas of interest.	Proposed 3 day Swath and a one day seismic/sub bottom profiling depending on water depth and sea floor features.
Day 7-8	Sediment analysis	Gravity, box and piston core acquisition. Video/camera if applicable.
Day 9-12	Proceed to 'Area B' and start the digital acquisition program. Area B extends from a line approximately perpendicular from the city of Newcastle up to 30 degrees 40 minutes south	Proposed a 3 day Swath and a one day seismic/sub bottom profiling depending on water depth and sea floor features.
Day 13-14	Sediment analysis	Gravity, box and piston core acquisition, video/camera if applicable, and return to Sydney.
Day 15	Arrive Sydney 08.00 hrs	Demobilise vessel

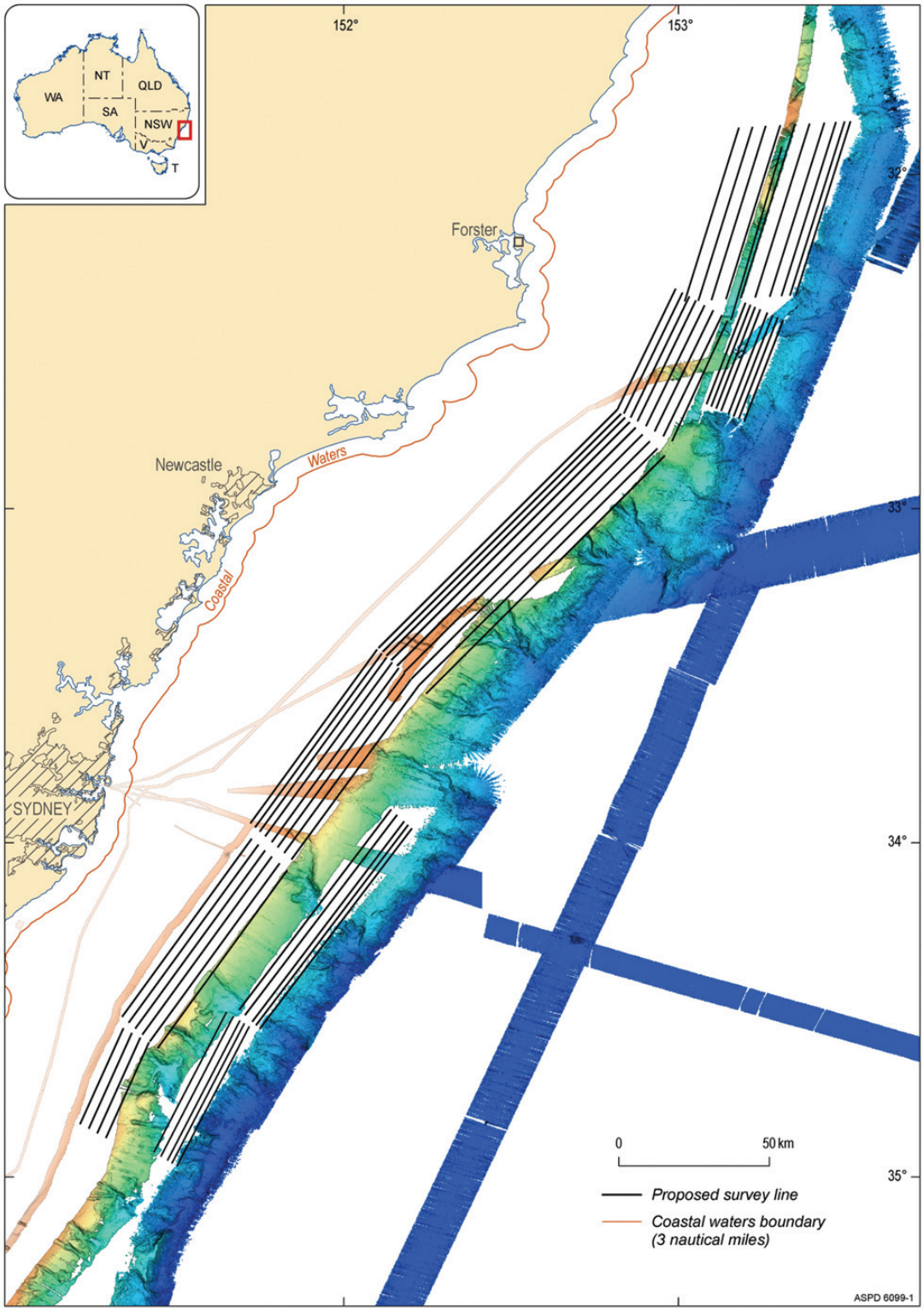

Figure 1: Diagram shows the initial ship tracks for the swath acquisition (the locations of the cores and seismic will be determined from the Swath data).

User Supplied Equipment

- Side-scan sonar (Winch, Power pack, Side Scan fish, Acquisition system)
- Seismic System (Compressor, Seismic cable, Seismic winch, Seismic guns, Stratavisor Navigation system)
- Gravity/piston Corer (1 Tonne)
- THOMAS Core deployment system.
- Deep-water Camera system (using side-scan winch)
- Box Corer
- Sampling / storage equipment (bags, buckets ....)

RV Southern Surveyor Equipment

- EM300 multibeam swath with sound velocity profiler
- Topas 3.5 kHz sub-bottom profiler
- CTD Water temperature and thermo-salinograph profiles.
- 12 & 120 kHz echo-sounder of water column data to be recorded digitally
- Coring winch (for the gravity core)
- Blast freezer for quick freezing of samples and storage of frozen samples
- Cold room for core storage (cores and Box cores) set at 4°C
- Camera station for video (operations room or if elsewhere with GPS feed)
- Diesel supply for Seismic Compressor. 1 tonne per day
- Fire pump water for compressor cooling.
- Stern ramp cover to be in position.
- Forecastle deck 20 feet shipping container mounting brackets and twist locks.

Special Requirements

- Space in PCs used for sub-bottom profile data processing in addition to TOPAS
- Loading berth capability to lift 10 tonne shipping (compressor) container
- Space for Swath processing
- Space in operations room for Side-scan Sonar and Seismic Acquisition system
- Space in operations room for deep water Camera Operations.
- Space in fish lab for sedimentology (processing sediments)
- Space for seismic Processor in Chemistry Lab (on inboard bench)
- Room for sampling gear on deck (core barrels, liners, box Corer)
- Room for Thomas (core deployment cradle)
- Room for deep water camera frame on rear deck.
- Room for Side-scan winch
- Room for Box corer on rear deck
- Room for Seismic Winch on rear deck.
- Room for Gun deployment system on rear deck.
- Room for Seismic compressor on Forecastle Deck.

Priority for Data and Sample Acquisition

High Priority	Intermediate Priority	Low Priority
EM300 multi-beam	Box Corer	Deep Water Camera
Topas 3.5 kHz sub-bottom profile	Side Scan Sonar	
Seismic Acquisition System	Piston cores	
12 & 120 kHz echo-sounder		
Gravity cores		

Data sets to be collected from the National Facility's instruments

- Navigation (digital)
- EM 300 Swath-bathymetry (digital)
- TOPAS 3.5 kHz Sub-bottom profiles (digital)
- 12 & 120 kHz Echo-sounder (digital
- All metrological data
- CTD Water temperature and thermo-salinograph profiles.

Personnel List

Kriton Glenn	GA	Chief Scientist CCS
Alix Post	GA	CSS (Continental Slope Survey)
Leharne Fountain	GA	CSS
Anna Potter	GA	CSS
Monica Osuchowski	GA	CSS
Jock Keene	Uni of Sydney	
Ron Boyd	Uni of Newcastle	
Craig Wintle	GA	FES (Mechanical technician)
Andrew Hislop	GA	FES (Mechanical technician)
Franz Villagran	GA	FES (Electronics technician)
Ian Atkinson	GA	FES (System technician)
Michele Spinoccia	GA	Swath Processing and Data Acquisition
Cameron Buchanan	GA	Swath Processing and Data Acquisition
Karl Forcey	CSIRO	MNF Electronics
Bob Beattie	CSIRO	MNF Computing & Voyage Manager

Kriton Glenn
Chief Scientist

Attachments

Lines for Swath acquisition.

lat	long	lat	long	kms
-32.43750	153.14583	-31.91667	153.30833	60.3
-31.85920	153.18015	-32.38003	153.01838	60.3
-32.37774	153.05869	-31.85691	153.22069	60.3
-31.85467	153.26032	-32.37550	153.09810	60.3
-32.37303	153.14160	-31.85220	153.30407	60.3
-31.84973	153.34783	-32.37056	153.18510	60.3
-32.36809	153.22861	-31.84726	153.39158	60.3
-31.84479	153.43534	-32.36562	153.27212	60.4
-32.36365	153.30697	-31.84282	153.47039	60.4
-31.84138	153.49582	-32.36221	153.33226	60.4
-32.36121	153.34987	-31.84038	153.51354	60.4
-33.41667	152.10417	-32.70417	152.81667	104.1
-32.71595	152.82891	-33.42845	152.11631	104.1
-33.43978	152.12799	-32.72728	152.84068	104.1
-32.74087	152.85480	-33.45337	152.14200	104.1
-33.47014	152.15927	-32.75764	152.87222	104.1
-32.77746	152.89280	-33.48996	152.17969	104.1
-33.51046	152.20081	-32.79796	152.91409	104.1
-32.81960	152.93655	-33.53210	152.22308	104.1
-33.55374	152.24535	-32.84124	152.95900	104.1
-32.70417	152.81667	-32.34167	152.99167	43.8
-32.35317	153.01180	-32.71567	152.83672	43.8
-32.72718	152.85677	-32.36468	153.03193	43.8
-32.37626	153.05219	-32.73876	152.87695	43.8
-32.75339	152.90244	-32.39089	153.07779	43.8
-32.40583	153.10393	-32.76833	152.92848	43.8
-32.78328	152.95451	-32.42078	153.13007	43.8
-32.43572	153.15620	-32.79822	152.98054	43.9
-32.68750	153.08333	-32.38333	153.20000	35.8
-32.38984	153.21433	-32.69401	153.09761	35.8
-32.70052	153.11190	-32.39635	153.22867	35.8
-32.40325	153.24385	-32.70742	153.12703	35.8
-32.71715	153.14838	-32.41298	153.26527	35.8
-32.42014	153.28102	-32.72431	153.16408	35.8
-32.73146	153.17977	-32.42729	153.29677	35.8
-32.43470	153.31308	-32.73887	153.19602	35.8
-33.42083	152.10000	-33.94167	151.72083	68.2
-33.95385	151.73471	-33.43301	152.11397	68.2
-33.44519	152.12793	-33.96603	151.74859	68.2
-33.98033	151.76488	-33.45949	152.14432	68.2
-33.47676	152.16411	-33.99760	151.78455	68.2
-34.01317	151.80229	-33.49233	152.18195	68.2
-33.50960	152.20173	-34.03044	151.82195	68.2
-34.04983	151.84401	-33.52899	152.22393	68.2
-33.98750	151.72500	-34.52083	151.33750	69.7
-34.53850	151.35754	-34.00517	151.74516	69.7
-34.02262	151.76508	-34.55595	151.37733	69.7
-34.57404	151.39783	-34.04071	151.78572	69.7
-34.06092	151.80876	-34.59425	151.42073	69.7
-34.61446	151.44363	-34.08113	151.83180	69.7
-34.55417	151.34167	-34.84167	151.21250	34.3
-34.85561	151.23797	-34.56811	151.36723	34.3
-34.58205	151.39278	-34.86955	151.26343	34.3
-34.88364	151.28916	-34.59614	151.41859	34.3
-33.90000	152.14167	-34.50000	151.68750	79.3
-34.51597	151.70489	-33.91597	152.15918	79.3
-33.93563	152.18074	-34.53563	151.72629	79.3
-34.54606	151.73764	-33.94606	152.19217	79.3
-33.95649	152.20359	-34.55649	151.74898	79.3
-34.50583	151.64970	-34.92583	151.43315	51.1
-34.93861	151.45348	-34.51861	151.67013	51.1
-34.53090	151.68977	-34.95090	151.47302	51.1
-34.95940	151.48653	-34.53940	151.70335	51.1
-34.54856	151.71797	-34.96856	151.50108	51.1

kms	hours	days	at 10kts
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