DRAFT VOYAGE PLAN

RV SOUTHERN SURVEYOR

SSTransit 07/2007

Itinerary
Depart Newcastle 08:00hrs, Saturday 24th November, 2007
Arrive Hobart, 18:00hrs Wednesday 28th November 2007

Chief Scientist
Tim Ryan
CSIRO Marine and Atmospheric Research
Castray Esplanade
HOBART 7000

Voyage Manager
Pamela Brodie
CSIRO Marine and Atmospheric Research
Castray Esplanade
HOBART 7000
Tel. 03 62325490
Mob. 0419 004744

Scientific Objectives

As part of a trial national seabed mapping initiative map the upper-slope and mid-slope seabed focusing on the 200 m to 1500 m depth range and regions important for regional marine planning, biodiversity and conservation assessments and fisheries habitat mapping.

Objectives for the transit voyages:

1. Using transit time, map key areas as identified in gap analysis.

2. Develop methods of improving data quality and calibrating the EM300 backscatter data.

3. Develop and test new rapid methods of "ground truthing" acoustic backscatter maps with optical and physical sampling.

4. Process bathymetry and backscatter data and create maps suitable for ecological interpretation.

The objectives to be accomplished on this transit are to complete a swath survey line from Newcastle to Hobart, predominately along the 400m contour, map and resample reference sites at 100, 200 and 400 m and deploy XBTs and the CTD in order to provide

calibration data for the swath mapper and test new CTD acquisition software currently under development.

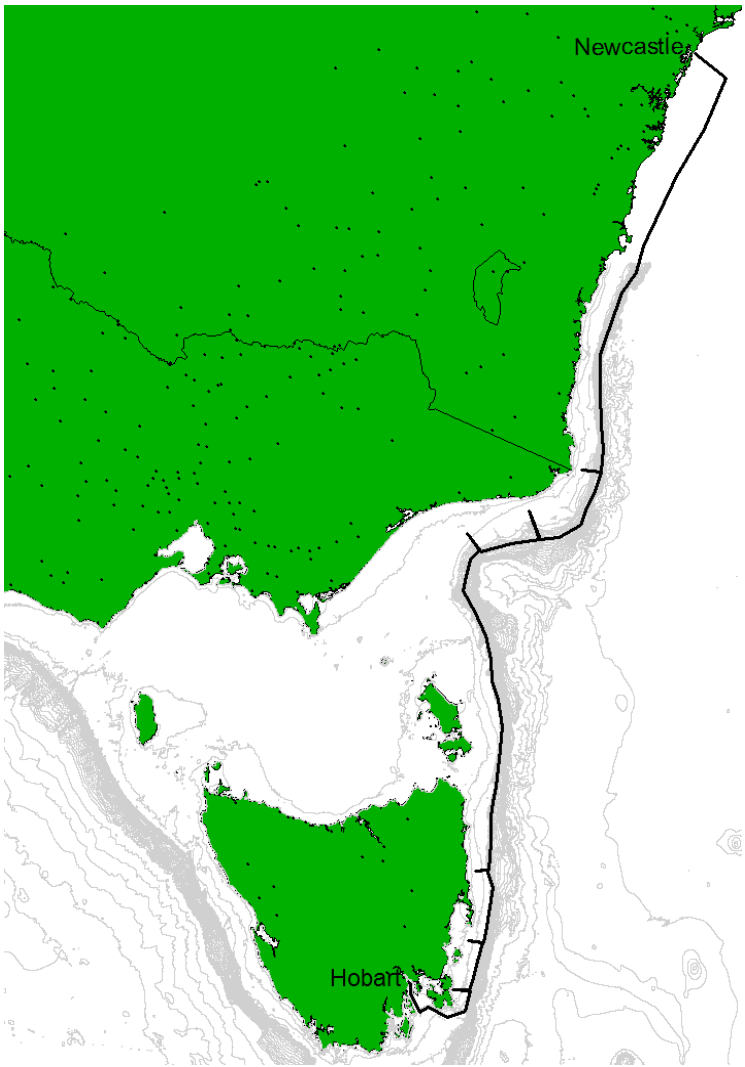
Swath Survey

On route to Hobart from Newcastle map the upper slope targeting gaps based on existing EM1002 and EM300 multibeam data and resample scientific reference sites created during SS012000 with orthogonal cross transects at 100, 200, and 400 m. At selected locations obtain temperature profiles to provide calibration inputs to the multi-beam echo sounder for sound speed and absorption measurements and quantify measurement uncertainty when compared to the blue link hind cast and forecast sound velocity and absorption profiles. The most recent sea surface temperature and height anomaly map of the region will be used to target water masses for sampling as well as indications from the multi beam across track bathymetric profile. The estimated swath distance from Newcastle to Hobart following the voyage track shown in Figure 1 is 900 n.miles with detailed maps over areas of interest covering 80 n.miles. Experiments will be carried out on route for training and optimisation of the bathymetry and backscatter data quality including minimisation of motion induced artefacts due to high turning rates of the vessel.

CTD Acquisition Software Testing

Over the past couple of years CSIRO/CMAR has been developing a new CTD acquisition application as a background task with a view to replacing the existing but obsolete MNF system. This system has many features which extend the usability, visualization and interface to hydrology and CTD processing beyond anything which currently exists. The application is nearing its first release and this transit provides an idea opportunity to do preliminary testing. The testing can be undertaken on an opportunistic basis, but the preference would be to do 2 CTD deployments, one on the second day of the transit and another close to the end of the transit. The first deployment can be in water as shallow as 100m, but the second would preferably be undertaking in water of at least 1000m depth. The estimated time on station required for both deployments would be approximately 2 hours. The 24 bottle rosette with at least 10 bottles is required. There will be no water sampling requiring hydrology support.

Voyage Track



Voyage track following predominantly the 400 m depth contour

Time Estimates

Swath mapping from Newcastle to Hobart, 900 n.miles at 10 knots = 90 hrs.
Detailed swath mapping of high priority region, 80 n.miles at 10 knots = 8 hrs.
Deploy CTD and sediment grab * 4 sites = 4 hrs.
Drop off film crew = 4 hrs.

Total time required = 106 hrs.

Specific Southern Surveyor Equipment

Smith-McIntyre sediment Grab
CTD

Proposed Media Visit
The ABC Science program Catalyst will be undertaking a media event on the Southern Surveyor. Several Scientists who have undertaken research voyages on the vessel have been asked to attend and travel on the ship from Newcastle to Sydney. The visiting scientists and media crew will join the ship on November 24th and disembark from the vessel just inside Sydney Heads late in the afternoon of 24th. A charter vessel will be arranged to take them from the Southern Surveyor.

Media and Invited Scientists

Participant	Affiliation	Role
Prof Craig Johnson	UTAS	MNF Steering Committee representative
Prof Richard Arculus	ANU	Visiting Scientist
Dr Alan Williams	CMAR	Visiting Scientist
Dr Bernadette Sloyan	CMAR	Visiting Scientist
Capt Fred Stein	CMAR	MNF Director
Paul Willis	ABC Catalyst program	Media representative
Ingrid Arnott	ABC Catalyst program	Media representative
David Marshall	ABC Catalyst program	Media representative
Nick Wood	ABC Catalyst program	Media representative

Personnel List

Participant	Affiliation	Role
Tim Ryan (MSIC ACM40603)	CMAR	Chief Scientist
Rick Smith (MSIC ACM40604)	CMAR	Swath mapping
Pamela Brodie MSIC ACM 40518)	CMAR / MNF	Computing support/Voyage Manager
Karl Forcey (MSIC ACM40577)	CMAR / MNF	Electronics support

Tim Ryan
Chief Scientist