

# data summary

Southern Surveyor Voyage ss2009\_t03



## **Table of Contents**

Table of Contents .....	2
ss2009_t03 .....	3
Title .....	3
Principal Investigator .....	3
Ports .....	3
Date .....	3
Voyage Track .....	4
Underway Data.....	5
Completeness and Data Quality .....	5
Processing Comments .....	5
Final Underway Data.....	6
References .....	7

**ss2009\_t03**

***Title***

“The composition of shelf and deep sea benthos in the Bass Canyon and the distribution of larval fish off the Eastern Tasmanian coast”

***Principal Investigator***

Dr Sebastian Holmes (Chief Scientist)

The University of Sydney (USYD).

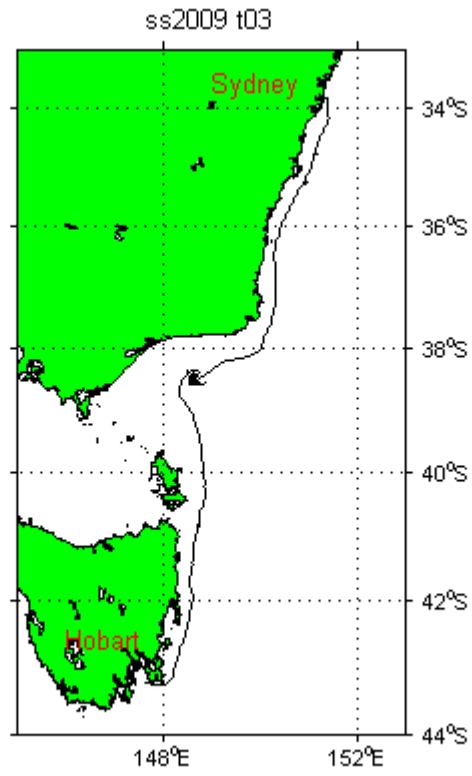
***Ports***

Hobart to Sydney

***Date***

10-Oct-2009 07:42:55 to 14-Oct-2009 22:29:35 (UTC)

### Voyage Track



## **Underway Data**

Navigation data is acquired using the Seapath 200 position and reference unit, which is also differentially corrected by data from the FUGRO DGPS receiver.

The Meteorological data consists of 2 relative humidity and temperature sensors; a barometer, wind sensor, and licor light sensor.

Thermosalinograph data is acquired with a Seabird TSG and remote temperature SBE 3T. Data from a flow meter is also recorded.

Digital depth data is recorded from a Simrad EA500 sounder. Echograms are also recorded using SonarData's Echolog software. Digital depth data can be re-picked using SonarData's Echoview software.

Data from "IMOS" (Integrated Marine Observing System) sensors was also included. The sensors are port and starboard radiometers and pyranometers; wind speed and gust along with direction; rain and rainrate.

See Electronics report for this voyage for instruments used and serial numbers.

Navigation, meteorological, thermosalinograph, IMOS and depth data are quality controlled by combining all data from hourly recorded files to 5 second values in a netCDF formatted file; the combined data is referred to as "underway data".

A combined file was made on 4 December 2009 by running a Java application, written by Lindsay Pender of CMAR, uwyLogger version 7.11 with data time range of 10-Oct-2009 07:42:55 to 14-Oct-2009 22:29:35 (UTC).

## **Completeness and Data Quality**

Position (latitude and longitude); meteorological data (air temperature, humidity, wind speed, wind direction, maximum wind gust, light, atmospheric pressure, speed over ground and course over ground) and IMOS data (port and starboard radiometers, port and starboard pyranometers, derived wind speed and direction, derived maximum wind gust and derived maximum wind gust direction, rain and rainrate), thermosalinograph (salinity and water temperature) data and depth data were evaluated and quality controlled.

## **Processing Comments**

The depth data was re-picked using Sonar Data's echoview software. Between 14/10/2009 00:31:58 to 00:52:35 there is a reduction in the echo sounder backscatter data, this is likely caused due to the configuration settings changes that were being examined and changed by Tim Ryan during that period.

During TSG/CTD calibration and examination of the overlapped salinity plots a notable discrepancy in the TSG salinity relative to the CTD salinity was observed.

The investigation of this anomaly has not been conclusive so far. However examination of TSG data has revealed that if the TSG conductivity is advanced by about 32 seconds relative to the TSG sensor temperature, when calculating the derived salinity, a significant improvement in TSG salinity relative to the CTD salinity is obtained.

Whilst this issues is being investigated further, a conductivity lag correction factor is introduced as part of TSG calibration and utilised for the calculation and processing of TSG salinity. This lag factor is henceforth documented in this processing report.

The CTD calibration data for the primary sensor was averaged using figures obtained from voyage 1 (file: ss200901\_ss200901128CTD.nc) and ss2009\_v05 CTD processing report (first 15 deployments) by Lindsay Pender and a scaling factor of 0.99984 was calculated and applied to the CTD data. This data was then used to calibrate the TSG against the (calibrated) CTD data where a scale factor of 1.003017282808568 was calculated (using TSG lag correction factor of 32 seconds) and applied to the TSG data. The thermosalinograph salinity QC was set to 'good' 'manually adjusted' 'no error'.

Between 11Oct09 02:36:05 and 03:02:45, there were air temperature spikes of above 2 degrees due to the ship becoming stationary for net deployment. These spikes have been removed and the QC flags set accordingly.

### Final Underway Data

The navigation, meteorological, thermosalinograph, IMOS and depth data will be entered into the CMAR Divisional data warehouse.

Filename	Parameters	resolution
ss2009_t01_uwy10.csv	latitude, latitudeQC, longitude, longitudeQC, speedOG, speedOGQC, courseOG, courseOGQC, waterDepth, waterDepthQC, airTemp, airTempQC, humidity, humidityQC, windSpeed, windSpeedQC, maxWindGust, maxWindGustQC, windDir, windDirQC, PAR, PARQC, atmPressure, atmPressureQC, waterTemp, waterTempQC, salinity, salinityQC, IMOSStbdRadiometer, IMOSStbdRadiometerQC, IMOSStbdPyranometer, IMOSStbdPyranometerQC, IMOSRainRate, IMOSRainRateQC, IMOSRain, IMOSRainQC	10 second
ss2009_t01_uwy5min.csv	latitude, latitudeQC, longitude, longitudeQC, speedOG, speedOGQC, courseOG, courseOGQC, waterDepth, waterDepthQC, airTemp, airTempQC, humidity, humidityQC, windSpeed, windSpeedQC, maxWindGust, maxWindGustQC, windDir, windDirQC, PAR, PARQC, atmPressure, atmPressureQC, waterTemp, waterTempQC, salinity, salinityQC, IMOSStbdRadiometer, IMOSStbdRadiometerQC, IMOSStbdPyranometer,	5 minute

	IMOSStbdPyranometerQC, IMOSRainRate, IMOSRainRateQC, IMOSRain, IMOSRainQC	
ss2009_t01_pdr10.csv	Latitude, longitude, waterDepth, waterDepthQC	10 second

## **References**

Pender, L., 2000. Data Quality Control flags.

[http://www.marine.csiro.au/datacentre/ext\\_docs/DataQualityControlFlags.Pdf](http://www.marine.csiro.au/datacentre/ext_docs/DataQualityControlFlags.Pdf)

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