

RV Investigator Scientific Highlights

Voyage #:	IN2016_E02		
Voyage title:	MNF & ASP Equipment Sea Trials & DECAF Experiments		
Mobilisation:	Thales Shipyard, Garden Island, Sydney, Wednesday, 14 and Thursday, 15 December, 2017		
Depart:	1500: Thales Shipyard, Garden Island, Sydney, Thursday, 15 December 2017		
Return:	0700: CSIRO Wharf Hobart, Tuesday December 20 th , 2017		
Demobilisation:	CSIRO Wharf Hobart, Tuesday, 20 December 2017		
Voyage Manager:	Don McKenzie	Contact details:	Don.mckenzie@csiro.au
Deputy Voyage Manager:	Max McGuire	Contact details:	Max.mcguire@csiro.au
Principal Investigator:	Dr Rudy Kloser		
Project name:	Deep Water Calibration Facility Experiments (DECAF)		
Affiliation:	CSIRO O&A	Contact details:	Rudy.kloser@csiro.au
Principal Investigator:	John Pogonoski		
Project name:	MNF Fish Trawling Trials		
Affiliation:	CSIRO NF&C	Contact details:	John.pogonoski@csiro.au

Scientific Highlights

Dr Rudy Kloser - Research Charter

Objectives:

Dr Rudy Kloser and his team from CSIRO O&A was allocated 12 hours of sea time to conduct calibration tests in conjunction with the primary objectives of the voyage which were to test and verify ship's equipment in a series of sea trials.

Calibration of deep water acoustic transducers is vital for the ongoing research and monitoring of deep-water fish resources both national and internationally. CSIRO has built a specialised deep water calibration facility (DECAF) that enables both the on-axis and beam pattern of transducers to be measured to 1000m depths. His objective was to calibrate two sets of transducers used recently to estimate fish biomass in Australia and New Zealand. A major bias (~30%) in the estimation of deep water fish stocks may be due to the conflicting literature formulas of sound absorption in sea water. To determine which formula is appropriate for our conditions we plan to infer sound absorption by measuring the target strength of a large glass float at ranges from 40 to 800 m using the unique directional orientation capability of the DECAF facility. These experiments will be nominally done with 3 operations of 4 hours duration spaced during the voyage and at suitable weather windows due to the need to have the vessel stationary and stable.

Outcomes:

1. The calibration of two sets of 38 kHz and 120 kHz deep water transducers to 1000m on both axis and beam pattern measurements.
2. Conducted an experiment to measure the absorption of sound at 38 kHz and 120 kHz at DECAF depths from 20-500m and ranges of 40 to 700m.

Argo Float Deployments

Three Argo floats were deployed during transit from Sydney to Hobart at the below nominated deployment sites in line with the Argo integrated global observation strategy:

1. ID7605 – lat: 35*40.00 S / lon: 150*50.74 E into 2866m of water
2. ID0633 – lat: 35*40.53 S / lon: 150*50.17 E into 2963m of water
3. ID0763 – lat: 39*00.74 S / lon: 149*38.19 E into 3087m of water