RV *Investigator* Voyage Plan

Voyage #:	**IN2017_E02**		
Voyage title:	MNF Equipment Sea Trials		
Mobilisation:	Hobart: Friday, 31 March 2017		
Depart:	Hobart: By 13:00 Friday, 31 March 2017		
Return:	Hobart: 10:00 Sunday, 2 April 2017		
Voyage Manager:	Don McKenzie	Contact details:	Don.mckenzie@csiro.au
Deputy VM:	Matt Kimber	Contact details:	Matt.kimber@csiro.au
Affiliation:	MNF (CSIRO)	Contact details:	N/A

General

The trials voyage will start & finish in Hobart. It will comprise predominantly of testing the modified trawling arrangements and testing of the new Brenke Sled in preparation for future voyages, with other opportunistic function testing taking place as time permits.

Scientific Objectives

For any catch landed during the trials collect voucher specimens of fishes and invertebrates for CSIRO and state museum collections for taxonomic, genetic and ecological studies of species living in deep water ecosystems.

Voyage Objectives

The Primary objectives of IN2017_E02 is to complete the sea trial regime as follows:

- Demonstrate the trawling capability of the vessel following modifications & inclusion of new trawl doors at 2,500m and 4,000m sites;
- Testing of newly constructed Brenke sled
- Testing of newly installed flaked ice machine

Voyage Activity Summary

The following list details the key activities planned for IN2017_E01:

- Transit from Hobart to Storm Bay
- Complete shallow water Brenke Sled mechanical function testing with cameras fitted but no nets
- Transit to first trawl site at around 2,500m;
- Complete trawl trials;
- Transit to second trawl site at around 4,000m;
- Complete trawl trials;
- Complete Deepwater Brenke Sled trials;
- Transit to Hobart.

Voyage Specific Risks

The key challenge around completion of the sea trials program will be managing safe operations in testing new / modified equipment for the first time. A number of high risk activities have been identified and will be mitigated as follows:

- Maintaining exclusion zone around back deck trawling activities and wires under tension;
- Ensuring all personnel wear appropriate PPE during all operations.
- ASP Standard Operating Procedures, JSA's and toolbox meetings will be followed throughout the voyage to identify hazards and mitigate risk.
- Confirm with Bridge before each deployment that the vessel is within the approved area.

Investigator equipment (MNF & User) Requirements

- Trawl doors and trawling nets
- ITI net monitoring system
- Deepwater net monitoring system
- Brenke Sled – with cameras fitted for shallow water trial but no nets connected
- Flaked ice machine

Voyage Activity Plan

The following vessel schedule for IN2017_E02 is based on a steaming speed of 11 knots and is indicative in nature. The schedule has been arranged to allow for the trawling trials to be completed in daylight hours. Changes to the voyage execution plan may be made by the Master in conjunction with the Voyage Manager & to ensure the most efficient and safe use of the vessel is achieved. This may include re sequencing works taking into consideration the weather / sea state encountered on site.

Day	Date	Time		Activity
		From	To	
Day 1	31/03/2017	1300	1330	Depart PW4 & transit to Hobart PBG
				Disembark pilot at Hobart PBG & steam to Storm Bay (5Nm, 0.5hrs @11knots)
		1500	1700	Test Brenke Sled in shallow water (50m) (2 hours)
		1700		Steam from Storm Bay to 2,500m trawl site (120Nm, 11Hrs @11knots)
Day 2	1/04/2017	0600	1800	Trawling trials at 2,500m and 4,000m
		1800	2300	Brenke sled testing at 4,000m

Day	Date	Time		Activity
		From	To	
				(if trial testing needs more time, return to Hobart may be delayed) Depart for PBG
Day 3	2/04/2017	0900	0930	Board pilot @ Hobart PBG & transit to PW4 (5Nm, 1hrs @5knots)
		0930	1000	Tie up alongside PW4

Voyage Track

The voyage track will be adjusted as required by the Master / crew taking into consideration weather, other vessels and the other operational considerations as required.

Proposed positions for trawl trial at ~2500/3000 m and ~4000 m depth

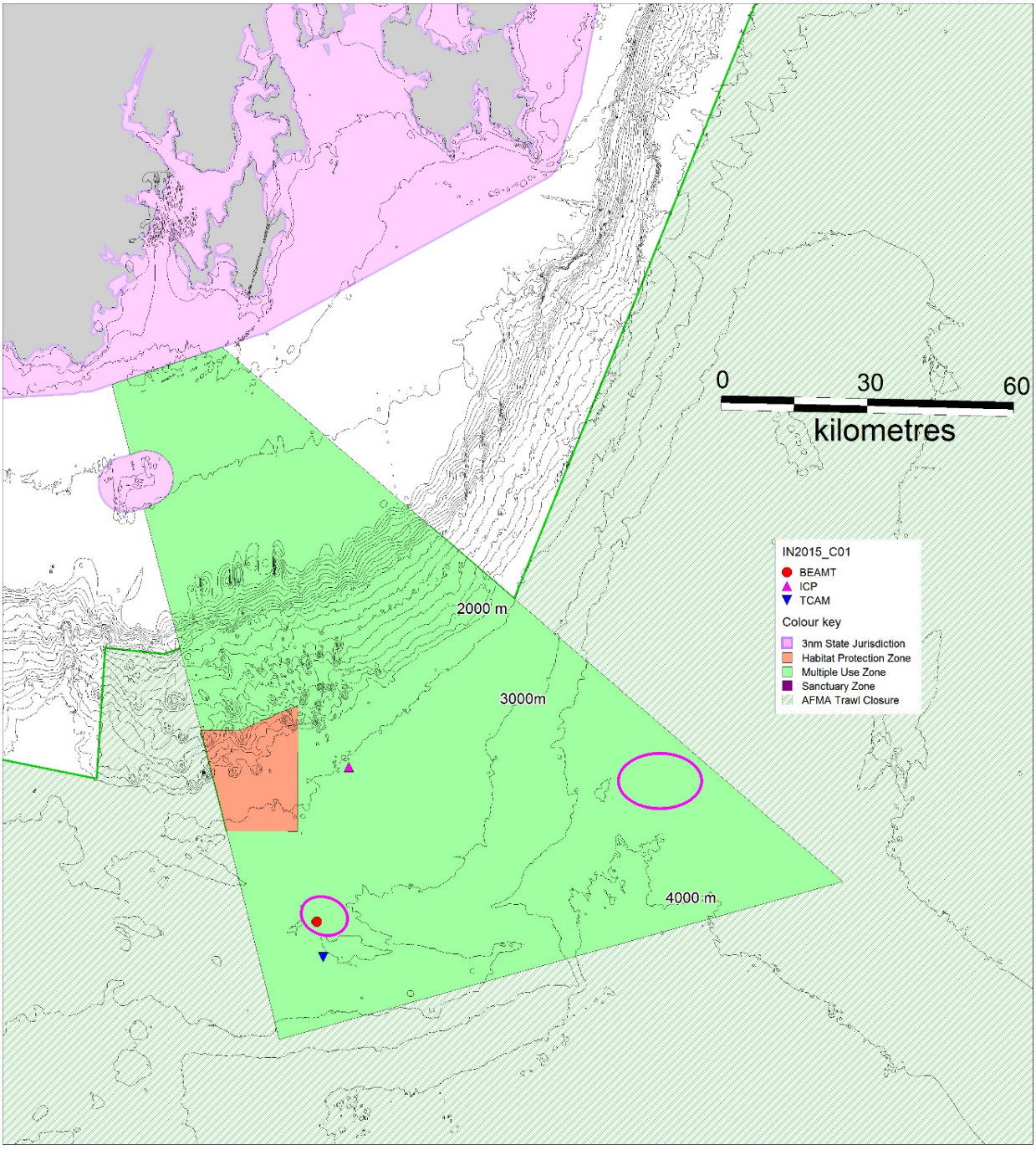

Figure 1:– Indicative Voyage track

With regard to the deeper site indicated in the map, GSM has located a potential area of flat bottom where the trawl could be deployed in ~4000 m depth. There is no available swath data for the location thus exact position of tow should ideally be determined after some swath data has been collected such that **a soft flat area within the CMR boundaries can** be targeted.

The centre of the oval on the map has Long/Lat of 148.351274, -44.399813 (decimal degrees); the actual red dot on the map Long/Lat 147.467077, -44.667011 (decimal degrees) (this is slightly different from what John has below)

Distances

Hobart to red dot:	205km,
Hobart to centre of oval:	192 km
Distance between oval & red dot:	76 km

Tests & Trials Activities

Voyage Prep

- Net drum relocation and testing (ASP)
- Modify bridles and sweeps including adding chains as per John Wakeford's specs (MNF SIT)
- Sweeps, bridles and messengers loaded and fitted (ASP)
- Trawl doors loaded, rigged and secured (ASP)
- Trawl nets delivered to wharf (MNF SIT)
- ITI door sensors, ITI net sensors and EvoLogics deepwater net monitoring fitted (SIT)
- Brenke sled ballast and flotation (SIT)
- Brrenke sled cameras fitted x 2 (SIT)
- Brenke Sled nets disconnected for 1st shallow trials
- Brenke sled loaded and secured (ASP)
- Transducers bolted on starboard drop keel (SIT)

Trials activities

- Trawling trials
- Brenke Sled
- Flaked Ice Machine
- Transit to Storm Bay (50m)
- Brenke Sled test trials with camera (2 hours)
- Depart for 2,500m trawl site.
- Deployment and retrieval to less than 2,000m to determine stability, performance and sink rate at various speeds with ITI and EvoLogics

- Deployment and retrieval to 2,500m with EvoLogics
- Transit to 4,000m site
- Deployment and retrieval to 4,000m with EvoLogics to determine time required for operation, performance of EvoLogics and confirmation of achieving target depths.
- Deep water Brenke sled trials to 4,000m.
- (1800 – 2300, if trials need to be extended arrival time into Hobart will be later)
- Flaked ice machine – run from Iron Pot continuously and monitor performance

Personnel List

	Surname	First name	Organisation	Role
1	McKenzie	Don	CSIRO MNF	Voyage Manager
2	Woodward	Lisa	CSIRO MNF	Operations Support
3	Lewis	Mark	CSIRO MNF	Seagoing Instrumentation
4	McRobert	Ian	CSIRO MNF	Seagoing Instrumentation
5	Baldwinson	Ben	CSIRO MNF	Seagoing Instrumentation
6	Shanks	Peter	CSIRO MNF	DAP Support
7	Watts	Dave	CSIRO MNF	GSM Support
8	Graham	Alistair	NCMI	Fish collection
9	O'Hara	Tim	Museums Victoria	Observer
10	Sherlock	Matt	CSIRO	Engineering support
11	Kimber	Matt	CSIRO	Deputy Voyage Manager
12	Wakeford	John	ASP	Fishing Master