

FRANKLIN

National Facility
Oceanographic Research Vessel

CRUISE PLAN

R/V FRANKLIN

Fr11/97

Depart: Bell Bay 1000h, Wednesday, 10 December 1997
Arrive Hobart 1400h, Saturday, 20 December 1997

Principal Investigator

Dr Francisco Niera

Marine and Freshwater Resources Institute

September 1996

For further information contact:

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R.V. *FRANKLIN* CRUISE PLAN - Fr11/97

PROJECT.

Spawning and larval recruitment processes of commercially important species in coastal waters off Victoria - Summer Cruise 2.

ITINERARY.

Sail:	Bell Bay, Tas	10:00 hrs Wednesday, December 10, 1997
Disembark:	Portland, VIC	PM, Thursday, December 18, 1997
Arrive:	Hobart, TAS	14:00 hrs, Saturday, December 20, 1997

PRINCIPAL INVESTIGATOR.

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PLANKTON SAMPLING.

The summer (December 1997) ichthyoplankton survey on board R.V. *Franklin* will involve sampling along transects and stations already established during the January 1997 summer cruise. Sampling will be carried out along 8 parallel transects located between Gabo Island (Vic) and Port MacDonnell (SA). Transects are approximately 65 nautical miles apart, run north - south, with five sampling stations located along each transect at 2, 4, 8, 16 and 32 nautical miles (nm) offshore (see table). After departing from Bell Bay, sampling would commence at the 32 nm station in the Gabo Island transect, and continue westward until completion at Port MacDonnell (SA). All EZ sampling will be conducted during daylight hours and would commence daily at first light.

Sampling along each transect will commence at the offshore station (32 nm) and continue progressively north to the 2 nm station. Including steaming, it is estimated that 10-12 hours will be required to sample each of the five stations along each transect. The vessel would have to be re-positioned close to the offshore (32 nm) station on the next transect during the night, which will result in a westward zigzag steaming pattern along the coast. After completing the last station of the transect and with the vessel underway to the next transect, three additional neuston samples (15 minute tows) will be taken with the MAFRI 500 μ m Bongo sampler at approximately 1.5-2.0-hour intervals.

If one or more transects are not sampled due to bad weather or other circumstances, it is preferred that steaming to the west still follows the established zigzag pattern to continue the environmental monitoring. Upon completion of the cruise, MAFRI staff and equipment will disembark the vessel at Portland (Vic). This means that Transect 7 will be sampled last, starting at the 32 nm offshore station and finishing at the 2 nm inshore station to allow for shortest possible steaming time to Portland and the prompt unloading of staff and equipment.

Samples will be taken with both the R.V. *Franklin* EZ net (500 micron mesh) and a 60 cm diameter, 3 metre long, Bongo sampler, equipped with two 500 μ m mesh nets, supplied by MAFRI. For depths between 100 m and the surface, samples will be taken with the EZ net in 25 metre depth profiles, ie., 100-75, 75-50, 50-25, and 25-surface. Each depth range will be sampled for 15 minutes giving a

maximum sampling time of 1 hour per station. Allowing 15 minutes each for deployment and retrieval of the EZ sampler, the maximum time on a station will be 1.5-2.0 hours. For stations with depths of less than 40 metres, the EZ net will not be used and samples will be obtained with the Bongo sampler using 15-min oblique tows. An additional 15-min neuston (surface) tow using the Bongo sampler will be carried out at each station after the EZ net has been deployed. Upon completion of sampling, each net will be washed down with a deck-hose and the cod-end contents fixed with 10% formalin and stored in jars (1 to 2.5 litre capacity).

CTD profiles (sal., sigma-t, diss. oxygen, fluores., temp., etc), including water samples at different depths, will also be obtained at each of the 40 stations. The ADCP will be recording current data throughout the entire cruise.

EXPERIMENTAL PLAN.

November 24	MAFRI equipment arrives in Bell Bay (Tas), warehouse location to be advised by CSIRO.
December 9	MAFRI personal arrive in Launceston (Tas).
December 10	Franklin departs Bell Bay (TAS) for Gabo Island (Vic) transect at 10:00 hrs.
December 11	Arrive Transect 1-32 nm station at first light and commence sampling along Transect 1.
December 12	Transect 2.
December 13	Transect 3
December 14	Transect 4
December 15	Transect 5
December 16	Transect 6
December 17	Transect 8
December 18	Transect 7. Disembark MAFRI staff and equipment at Portland (Vic)
December 20	Franklin arrives Hobart.

EQUIPMENT.

A. FROM MAFRI

1. Bongo frame plus 4 nets (500 Micron).
2. depressor plates (20 kg).
3. flowmeters for Bongo net.
4. Plastic storage jars.
5. 3 x 20 litre drums formalin.
6. Charts AUS 359, 357A, 350, 349, 348.
7. Data sheets, labels, waterproof markers etc.
8. AutoAnalyser
9. N₂ gas
10. Flow-through fluorometer
11. Digitizers, computers
12. Reagents

B. From National facility:

1. CTD rosette, including submersible fluorometer
2. Thermo-salinograph - for underway surface S,T sampling
3. PAR from EZ net
4. Acoustic Doppler Current Profiler (ADCP)
5. ASCII file of GPS record (lat, long, time)
6. L Milli-Q water.
7. EZ Net.

Special requirements: Approx 3 m x 600 mm bench space in dry lab (GP); flowing surface seawater stream of approx 2 L min⁻¹ to bench; approx 3 cu ft freezer space.

CHEMICALS, REAGENTS, ETC.

Chemical type	Reagent	Chemical	Concentration g L ⁻¹	Total volume (L)	Experi. vol (L)
	Artificial seawater	NaCl	35	90	5
Corrosive	NH ₄ complexing reagent	K Na tartrate	33		
		Na ₃ citrate	24.5	12	2
		NaOH	0.5		
Corrosive	Alkaline phenol	Phenol	83	6	1
		NaOH	36		
Oxid agent	Hypochlorite	NaOCl	20	5	1
	Sodium nitroprusside	Na nitroprusside	0.5	6	1
	NH ₄ Cl-CuSO ₄ solution	NH ₄ Cl	15	5	1
		CuSO ₄	0.004		
Corrosive, poison	NO ₂ colour	H ₃ PO ₄	50		
		Sulphanilamide	5	27	2
		NNED	0.25		
Poison	PO ₄ colour	Ascorbic acid	0.5		
		NH ₄ molybdate	0.6		
		H ₂ SO ₄	6.2	3.5	1
		Sb K tartrate	0.01		
Poison	Silicate NH ₄ molybdate	NH ₄ molybdate	10	6	1
		H ₂ SO ₄	3		
Poison	Oxalic acid	Oxalic acid	50	5	1
	Ascorbic acid	Ascorbic acid	18	6	1
		Acetone	50		
Inert gas	Compressed N ₂ gas	N ₂		2 x "G" cyl.	2 x "G" cyl.
Poison	Cadmium coils	Cd		20 g	20 g

NOTES ON REAGENTS:

All chemicals are to be used in the GP lab.

There are no special storage requirements. All chemicals will be in sealed containers of 1-20L volume. If possible, we would like to store them in the GP Lab.

Personal protective equipment (labcoats, glasses, gloves) will be supplied.

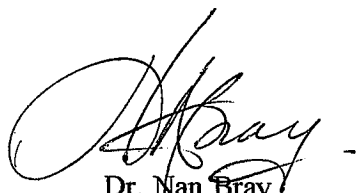
Those chemicals in use at any one time will be within a tray.

The majority of the effluent from the analyser is suitable for discharge, but one stream will be collected and taken off the vessel at the end of the cruise.

PARTICIPANTS.

Dr Francisco J. Neira	MAFRI	Chief Scientist
Mr Andy Longmore	MAFRI	Chemist
Mr Jeff Nicholson	MAFRI	Chemist
Mr David McKeown	MAFRI	Technical Officer
Ms Pamela Oliveira	MAFRI	Technical Officer
Mr Bob Beattie	CSIRO	Computing / Cruise Manager
Mr Phillip Adams	CSIRO	Electronics Technician
Mr Mark Lewis	CSIRO	EZ technician
Ms Rebecca Deed	CSIRO	Hydrologist

This cruise plan is in accordance with the directions of the National Facility Steering committee for the oceanographic research vessel *Franklin*.



Dr. Nan Bray
Chief
CSIRO Division of Marine Research



Prof. G W Paltridge
Chairman
National Facility Steering
Committee

September 1996

R.V. FRANKLIN CRUISE PLAN - DECEMBER 1997

Transect and Station Positions - east to west

Distance Offshore (Nautical miles)	Transect	1	2	3	4	5	6	7	8
	Location	Gabo Island	Cape Conran	Seaspray	Cape Liptrap	Port Phillip Heads	Port Campbell	Portland	Port MacDonnell
2	Latitude	37° 36.0'	37° 50.5'	38° 26.0'	38° 44.5'	38° 19.0'	38° 41.0'	38° 27.0'	37° 49.0'
	Depth	100 m	29 m	20 m	16 m	30 m	50 m	52 m	22 m
4	Latitude	37° 38.0'	37° 52.5'	38° 28.0'	38° 46.5'	38° 21.0'	38° 43.0'	38° 29.0'	37° 51.0'
	Depth	120 m	40 m	20 m	42 m	48 m	64 m	57 m	26 m
8	Latitude	37° 42.0'	37° 56.5'	38° 32.0'	38° 50.5'	38° 25.0'	38° 47.0'	38° 33.0'	37° 55.0'
	Depth	120 m	54 m	30 m	67 m	63 m	67 m	75 m	50 m
16	Latitude	37° 50.0'	38° 04.5'	38° 40.0'	38° 58.5'	38° 33.0'	38° 55.0'	38° 41.0'	38° 03.0'
	Depth	100 m	62 m	40 m	76 m	75 m	82 m	135 m	120 m
32	Latitude	38° 06.0'	38° 20.5'	38° 56.0'	39° 15.5'	38° 49.0'	39° 11.0'	38° 57.0'	38° 19.0'
	Depth	150 m	361 m	60 m	80 m	80 m	84 m	1760 m	1470 m