

# *FRANKLIN*

National Facility  
Oceanographic Research Vessel

## **CRUISE PLAN**

**R/V FRANKLIN**

**Fr07/98**

Depart:	Portland	1000h, Saturday, 30 May 1998
Arrive	Hobart	1400h, Monday, 8 June 1998

**Principal Investigator**  
Dr Francisco Niera  
Marine and Freshwater Resources Institute

April, 1998

For further information contact:

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## O.R.V. *FRANKLIN* CRUISE PLAN - Fr 7/98

### PROJECT.

Spawning and larval recruitment processes of commercially important species in coastal waters off Victoria - Winter Cruise 1.

### ITINERARY.

**Sail:** Portland, Vic 10:00 hrs Saturday, May 30, 1998  
**Disembark:** Melbourne, Vic PM, Monday, June 8, 1998

### PRINCIPAL INVESTIGATOR.

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### PLANKTON SAMPLING.

The winter (May/June 1998) ichthyoplankton survey on board O.R.V. *Franklin* will involve sampling along seven of the eight parallel transects already established during the January and December 1997 summer cruises. Sampling during this cruise will be carried out at 35 stations along seven transects between Gabo Island (Vic) and Portland (Vic). The transect off Port MacDonnell was omitted from this cruise since similar sampling will be carried out along this transect by SARDI (SA) scientists at the same time. 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 Portland, sampling will commence at the 2 nm station off Portland (May 30) and will be replicated during the night (May 30-31), before continuing eastward to the next transect (Port Campbell). The Barwon Heads transect, off the entrance to Port Phillip Bay, will also be replicated during the night. All sampling except that carried out along the Portland and Barwon Heads transects will be conducted during daylight hours and would commence daily at 07:00.

Sampling along each transect will commence either at the offshore station (32 nm) and continue progressively north to the 2 nm station or the other way around depending on weather. Including steaming, it is estimated that 10-12 hours will be required to sample each of the five stations along each transect. When finishing at the 2 nm station, the vessel would have to be re-positioned at the offshore (32 nm) station on the next transect during the night, which will result in a eastward 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  $\mu\text{m}$  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 east 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 Melbourne (Vic).

Ichthyoplankton samples will be taken with the O.R.V. *Franklin* EZ sampler fitted with four 500  $\mu\text{m}$  mesh nets, and the MAFRI 60 cm diameter, 3 metre long Bongo sampler, equipped with two 500  $\mu\text{m}$  mesh nets. For depths between 100 m and the surface, samples will be taken with the EZ net in 25 metre depth strata, ie., 100-75, 75-50, 50-25, and 25-surface. Each depth stratum will be sampled for 15 minutes giving a maximum sampling time of 1 hour per station. Allowing for CTD sampling prior to towing the EZ sampler, and 15 minutes each for deployment and retrieval of the net, the maximum time on each station should not be greater than 2 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 (salinity, sigma-t, dissolved oxygen, fluorescence, temperature, etc), including water samples at different depths, will also be obtained at each of the 35 stations. The ADCP will be recording current data throughout the entire cruise.

## CRUISE PLAN.

<b>May 29</b>	Franklin arrives Portland. MAFRI staff and equipment arrive and load in afternoon.
<b>May 30</b>	Franklin departs Portland at 10:00. Sampling commenced at 2 nautical mile station on Portland transect. Sampling is replicated at night.
<b>May 31</b>	Transect 2 - Port Campbell.
<b>June 1</b>	Transect 3 - Barwon Heads. Sampling is replicated at night.
<b>June 2</b>	Transect 4 - Cape Liptrap.
<b>June 3</b>	Transect 5 - Seaspray.
<b>June 4</b>	Transect 6 - Cape Conron.
<b>June 5</b>	Transect 7 - Gabo Island.
<b>June 6</b>	Steaming to Melbourne.
<b>June 6</b>	Steaming to Melbourne.
<b>June 8</b>	<i>O.R.V. Franklin</i> arrives Melbourne. MAFRI staff and equipment disembark.

## 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. N<sub>2</sub> 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.

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

**Chemicals, reagents, etc.**

Chemical type	Reagent	Chemical	Concentration g L <sup>-1</sup>	Total volume (L)	Experi. vol (L)
	Artificial seawater	NaCl	35	90	5
Corrosive	NH <sub>4</sub> complexing reagent	K Na tartrate	33		
		Na <sub>3</sub> 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 <sub>4</sub> Cl-CuSO <sub>4</sub> solution	NH <sub>4</sub> Cl	15	5	1
		CuSO <sub>4</sub>	0.004		
Corrosive, poison	NO <sub>2</sub> colour	H <sub>3</sub> PO <sub>4</sub>	50		
		Sulphanilamide	5	27	2
		NNED	0.25		
Poison	PO <sub>4</sub> colour	Ascorbic acid	0.5		
		NH <sub>4</sub> molybdate	0.6		
		H <sub>2</sub> SO <sub>4</sub>	6.2	3.5	1
		Sb K tartrate	0.01		
Poison	Silicate NH <sub>4</sub> molybdate	NH <sub>4</sub> molybdate	10	6	1
		H <sub>2</sub> SO <sub>4</sub>	3		
Poison	Oxalic acid	Oxalic acid	50	5	1
	Ascorbic acid	Ascorbic acid	18	6	1
		Acetone	50		
Inert gas	Compressed N <sub>2</sub> gas	N <sub>2</sub>		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.**

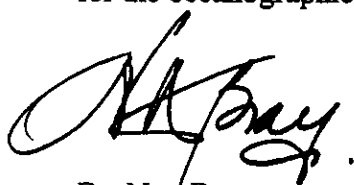
### **A. MAFRI**

Dr Francisco J. Neira	Chief Scientist
Mr Paul Hamer	Scientific Officer
Mr Geoff Nicholson	Chemist.
Mr Martin Lowry	Chemist.
Mr David McKeown	Technical Officer

### **B. CSIRO**

Lindsay Pender	Cruise Manager / Computer Systems
To be advised	Electronics
To be advised	EZ technician
Val Latham	Hydro-Chemist

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

O.R.V. FRANKLIN CRUISE PLAN - MAY-JUNE 1998

Transect and station positions - west to east

	123° 20'	123° 00'	122° 26'	121° 48'	121° 10'	120° 38'	119° 55'
	38° 27.0'	38° 41.0'	38° 19.0'	38° 44.5'	38° 26.0'	37° 50.5'	37° 36.0'
	52 m	50 m	30 m	16 m	20 m	29 m	100 m
	38° 29.0'	38° 43.0'	38° 21.0'	38° 46.5'	38° 28.0'	37° 52.5'	37° 38.0'
	57 m	64 m	48 m	42 m	20 m	40 m	120 m
	38° 33.0'	38° 47.0'	38° 25.0'	38° 50.5'	38° 32.0'	37° 56.5'	37° 42.0'
	75 m	67 m	63 m	67 m	30 m	54 m	120 m
	38° 41.0'	38° 55.0'	38° 33.0'	38° 58.5'	38° 40.0'	38° 04.5'	37° 50.0'
	135 m	82 m	75 m	76 m	40 m	62 m	100 m
	38° 57.0'	39° 11.0'	38° 49.0'	39° 15.5'	38° 56.0'	38° 20.5'	38° 06.0'
	1760 m	84 m	80 m	80 m	60 m	361 m	150 m