

Cool-Water Carbonate Sedimentation, Great Australian Bight

RESEARCH PLAN

CRUISE FR ~~6/95~~ 7/95

Sail Fremantle, WA: 0700 Hrs Sat. 8th July 1995
Arrive Fremantle, WA: 1200 Hrs Tues. 1st Aug. 1995

Chief Investigator

Dr. Yvonne Bone

Dept. Geology & Geophysics University of Adelaide, South Australia, 5005

RESEARCH PLAN

FRANKLIN

FR 6/95

July 8th - Aug. 1st 1995

Scientific Program

The specific objectives of this research cruise are to:-

- (1) characterise the Holocene sedimentary facies
- (2) document the nature of the shelf margin
- (3) endeavour to sample the Miocene Reefs on the shelf margin
- (4) ascertain controls governing the distribution of warmer-water large foraminifers and coralline algae
- (5) document the systematics of the bryozoans, molluscs, foraminifera, sponges and deep-water corals present
- (6) collect biota for screening for active metabolites
- (7) ascertain the chemical characteristics of the waters across the shelf and down the slope margin

The seismic work proposed earlier has had to be abandoned due to the unavailability of the necessary equipment. The time allocated to this facet can now be re-directed to a more rigorous coverage of bottom sampling, especially of the areas overlying the recently discovered Miocene reefs.

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Cruise Track & Time Estimates

GREAT AUSTRALIAN BIGHT / CAPE LEEUWIN

1505 nautical miles Precision Depth Profiling (Site A to Site CC)

80+ Bottom Samples (+ 50)

48 CTD Profiles (+ 8)

12 Camera Stations (+ 6)

The following cruise plan is a framework within which we intend to operate. Since this is in large part an exploration research cruise, the plan will inevitably be modified on the basis of on-site discoveries. The proposed cruise track is attached.

Date	Time	Site	Dist. n.m.	Co-ordinates	Activity en route
Sat 08/7	0700				Fremantle departure
Sat 08/7	2300	A	140	34°02'-115°00'	2 CTD
Sun 09/7	1230	B	26	34°02'-114°22'	7 samples; 3 CTD; 1 camera
Sun 09/7	1900	C	34	34°23'-115°00'	2 samples; 1 CTD
Sun 09/7	2130	D	5	34°23'-115°06'	1 sample
Mon 10/7	0100	E	5	34°24'-115°10'	1 sample; 1 CTD
Mon 10/7	1230	F	35	35°02'-115°10'	6 samples; 2 CTD
Tue 11/7	0500	G	84	35°05'-116°52'	5 samples; 3 CTD
Tue 11/7	1130	H	24	35°22'-117°13.5'	3 samples; 1 CTD
Tue 11/7	2030	I	51	35°22'-118°18'	3 samples; 1 CTD
Thu 13/7	0230	J	250	34°37'-123°13.5'	4 samples; 1 CTD
Thu 13/7	0530	K	21	34°21'-123°36'	1 sample
Thu 13/7	1200	L	25	34°24'-124°08'	4 samples; 1 CTD
Thu 13/7	1530	M	26	34°12'-124°48'	1 camera
Thu 13/7	2100	N	4	34°09'-124°48'	4 samples; 1 CTD
Fri 14/7	0230	O	34	34°00'-125°22'	1 sample; 1 CTD
Sat 15/7	0530	P	12	33°47'-125°22'	Miocene reef sampling (~12), 1 CTD; 2 camera
Sat 15/7	2130	Q	150	33°30'-128°29'	1 CTD
Mon 17/7	1300	R	84	31°58'-128°29'	Miocene reef sampling (~12), 4 samples, 3 CTD; 3 camera
Tue 18/7	0130	S	76	31°38'-130°00'	3 samples; 1 CTD; 1 camera
Tue 18/7	2300	T	95	33°21'-130°00'	7 samples; 4 CTD; 1 camera
Wed 19/7	0500	U	30	33°21'-129°20'	3 samples

Wed 19/7 0930	V	5	33°18'-129°17'	3 samples; 1 CTD
Wed 19/7 2000	W	85	33°26'-127°30'	1 sample; 1 CTD
Thu 20/7 1130	X	65	32°19'-127°30'	6 samples; 3 CTD
Sat 22/7 0000	Y	73	32°22'-125°58'	2 samples; 3 CTD
Mon 24/7 1530	Z	73	33°40'-125°58'	Miocene reef sampling (~12) 2 samples; 3 CTD; 2 camera
Mon 24/7 1730	O/P	12		1 CTD
Tue 25/7 0730	AA	60	33°32'-124°04'	4 samples; 4 CTD
Tue 25/7 1230	BB	19	33°49'-123°53'	2 samples; 1 CTD
Tue 25/7 2330	CC	42	34°20'-123°15'	3 samples; 3 CTD; 1 camera

From Site CC it is approximately 575 nautical miles directly back to Fremantle. However, if it is possible, we need to take detailed bottom samples between Site CC, Esperance and Albany; particularly in the somewhat neglected more shallow areas and the critical shelf break areas.

Three sheets of the Cruise track are appended. These are plotted on the ORMS Charts - ALBANY, ESPERANCE and EYRE.

ORV Equipment required

All standard systems, including deck laboratory, CTD and water analysis equipment, bottom profiling, Smith McIntyre grab, winch cable on both frames.

Personnel


Yvonne Bone	(University of Adelaide	Chief Scientist)
Lindsay Collins	(Curtin University - 2IC)	
Steve Hageman	(University of Adelaide - bryozoans)	
Frank Brunton	(Queens University, Canada - sponges)	
Jeff Lukasik	(Queens University, Canada - sediments)	
Jason Gultjaeff	(University of Adelaide - student - bryozoa)	
Peter Strutton	(Flinders Univ. PhD- chlorophyll, bio. product.)	
PhD student	(Curtin University - sediments)	
PhD student	(LaTrobe University - calcareous algae)	
PhD student	(Melbourne University - metabolite bioscreening)	
PhD student	(Adelaide University - sediments)	
Dave Vaudrey	(CSIRO - ORV)	Cruise Manager
Eric Marsden	(CSIRO - ORV)	

This crew allows for an emergency withdrawal of one of the senior members.

This Research Plan is in accordance with the directions of the National Facility Steering Committee for the oceanographic research vessel *Fanklin*



C B Fandry
CSIRO Division of Oceanography



G W Paltridge
National Facility Steering Committee

April 1995

