

Chapter 1 Outline of the Survey

1-1 Survey Title

Joint Basic Study for the Development of Mineral Resources in the Exclusive Economic Zone of the Republic of Fiji Islands, Fiscal Year 2001

1-2 The Purpose of the Survey

The purpose of the survey is to assess the potential of submarine mineral resources within the Exclusive Economic Zones of the Republic of Fiji Islands, a member of SOPAC, through bathymetric survey, sampling and other surveys.

1-3 Survey Area

The area was selected in accordance with the joint study program for deep sea mineral resources in the exclusive economic zone (EEZ) of the SOPAC member countries agreed upon by the Japanese executing agency and the South Pacific Applied Geoscience Commission (SOPAC) on February 3, 2000. The survey area for this study is the area connecting the points shown below (Figure 1-3-1).

	Latitude	Longitude		Latitude	Longitude
1	16° 50' S	173° 50' E	2	16° 50' S	174° 00' E
3	17° 05' S	174° 00' E	4	17° 05' S	173° 50' E
1	16° 50' S	173° 50' E			

1-4 Duration of the Survey

Survey cruise: November 29, 2001 to January 4, 2002

Analysis and other work: April 1, 2001 to March 31, 2002

1-5 Survey Participants

Coordinator

Japanese participants

Shinya Aoki (Metal Mining Agency of Japan)

Yoshiyuki Kita (Metal Mining Agency of Japan)

Yuji Tokumasu (Metal Mining Agency of Japan)

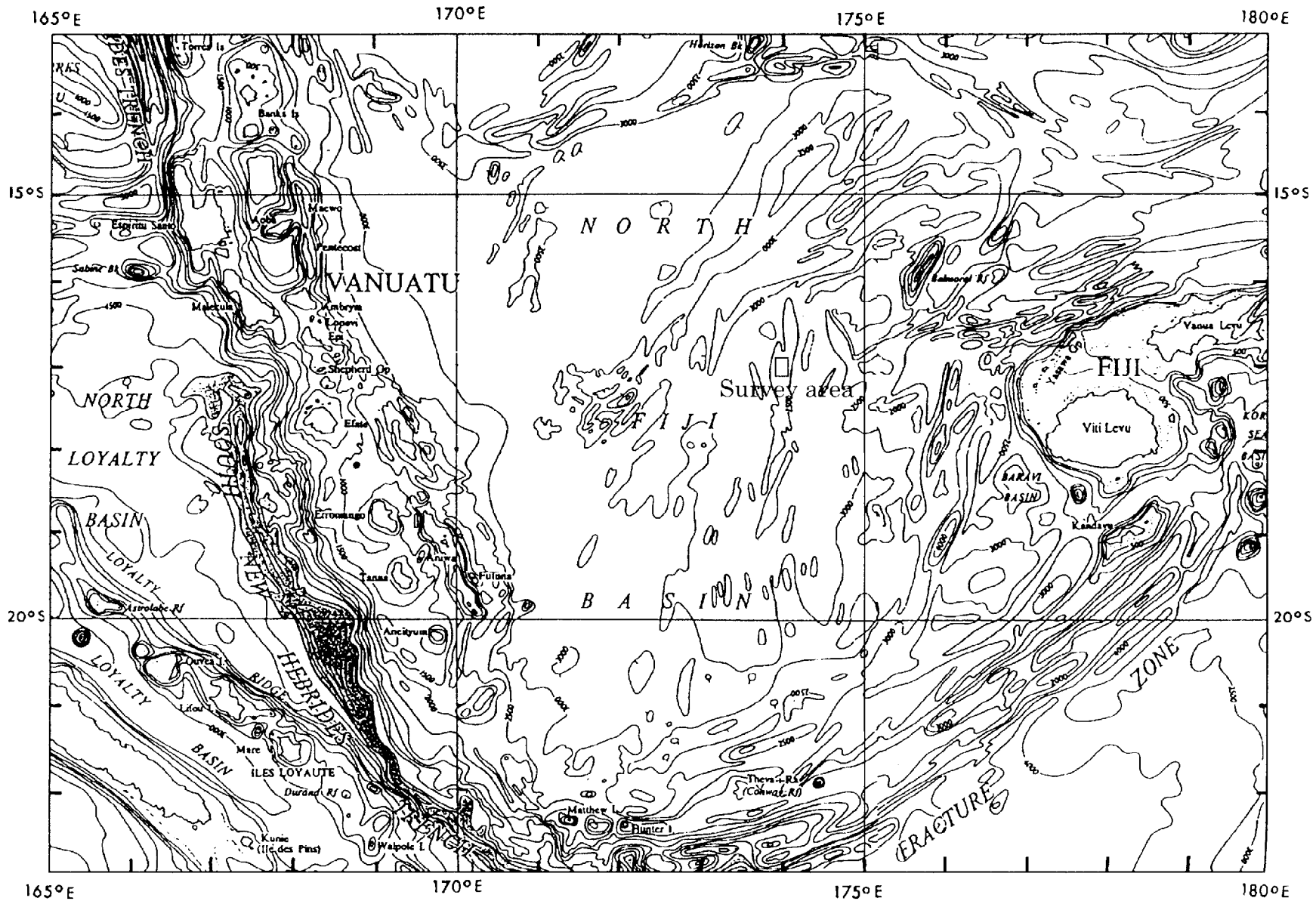


Figure 1-3-1 Location Map of the Survey Area

Tomoo Hayakawa (Japan International Cooperation Agency)

Fijian participants

Tanian Tagicakibau (Mineral Resources Department)

Bhaskar Rao (Mineral Resources Department)

Marshall Island participant

Raynard Gideon (Republic of Marshall Islands)

Edwin Pittman (Republic of Marshall Islands)

SOPAC participants

Alfred Simpson (SOPAC)

Russel Howorth (SOPAC)

Jacson Lum (SOPAC)

Kazuhiro Kojima (SOPAC)

Participants of Field Survey

Katsutoki Matsumoto	DORD, Leadr
Nadao Saito	DORD
Akinori Uchiyama	DORD
Masatsugu Okazaki	DORD
Nobuhiro Goto	DORD
Saburo Tachikawa	DORD
Mutsuo Kondo	DORD
Hiroshi Shibasaki	DORD
Kazushi Furusawa	DORD
Tateki Yoshida	OED
Yoshikazu Yoshino	OED
Masaaki Kikuchi	OED
Masahiro Hamasaki	OED
Takemasa Kobayashi	OED
Masaki Sakuma	OED
Yutaka Hashimoto	OED

Consigned Participants

Trainee Mr. Wong Hen Loon (Republic of Fiji Islands)

1-6 Survey Achievements

The work given on Table 1-6-1 was conducted during the survey cruise according to the schedule given on Table 1-6-2

1-7 Survey Apparatus and Equipments

Major apparatus and equipments used during the survey are shown in Table 1-7-1 and the photographs in Figure 1-7-1.

Table 1-6-1 Survey Achievements

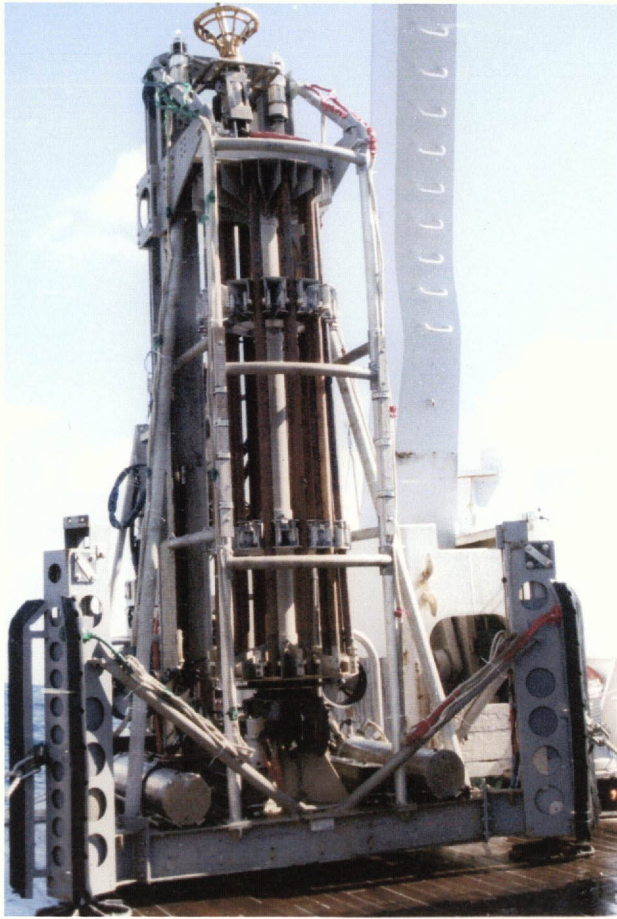
Item		Accomplishment	
Survey Schedule	Depart from Guam Arrive at survey area / Start the Survey Finish the Survey Depart from survey area Arrive at Port Vila Total Survey Days	Dec 01 16:00 Dec 11 15:00 / 16:00 Jan01 12:00 / 13:00 Jan03 9:00 22 Days	
Sampling	Large gravity corer (LC) Multi Corer (MC) Drilling by BMS Rosette Sample (RO)	20 points Heat Flow measurement was conducted at 13 points 7 points 22 holes 5 points	
Acoustic Survey	NBS (30.0kHz) PDR (12.0kHz) SBP (3.5kHz)	420.6 nm 420.6 nm 420.6 nm	
Magnetic Survey	PGM	420.6 nm	
Date Processing	Map Drawing	Track Line Map, Bathymetrical Maps, Cross Sections Magnetic Anomaly Map , etc.,	

Table 1-6-2 Records of Survey Schedule

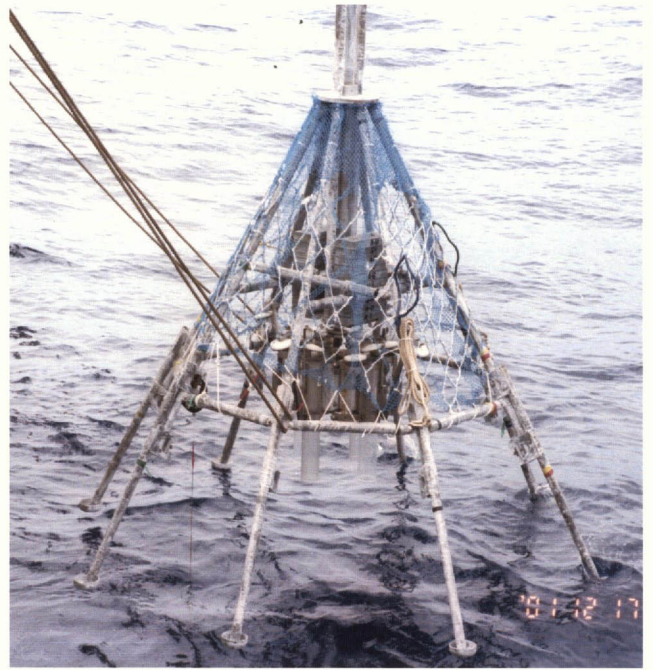
Days	Month/Day	Survey Items	Bathymetric Survey	Survey Area	Remarks
1	11/29 Thu				Data compilation, maintenance of survey equipments
2	11/30 Fri				Data compilation, maintenance of survey equipments
3	12/01 Sat	Departure from Guam (4:00 p.m)			Data compilation, maintenance of survey equipments
4	12/02 Sun	Sailing			Data compilation, maintenance of survey equipments
5	12/03 Mon	Sailing			Data compilation, maintenance of survey equipments
6	12/04 Tue	Sailing			Data compilation, maintenance of survey equipments
7	12/05 Wed	Sailing			Data compilation, maintenance of survey equipments
8	12/06 Thu	Sailing			Data compilation, maintenance of survey equipments
9	12/07 Fri	Sailing			Data compilation, maintenance of survey equipments
10	12/08 Sat	Sailing			Data compilation, maintenance of survey equipments
11	12/09 Sun	Sailing			Data compilation, maintenance of survey equipments
12	1 12/10 Mon	Sailing. Sampling (RO 3 points)		Survey Area	Arrive at Survey Area Start Survey sampling(01SFRO01, 02, 03)
13	2 12/11 Tue	Sampling (RO 2 points)		Survey Area	sampling(01SFRO04, 05)
14	3 12/12 Wed	Sampling (BMS 1hole)		Survey Area	sampling(01SFBMS06)
15	4 12/13 Thu	Sampling (BMS 2 holes)		Survey Area	sampling(01SFBMS07,08)
16	5 12/14 Fri	Sampling (BMS 2 holes)		Survey Area	sampling(01SFBMS09,10)
17	6 12/15 Sat	Sampling (MC 3 points, LC 2 points)		Survey Area	sampling(01SFMCO1,02,03, 01SFLC07,08)
18	7 12/16 Sun	Sampling (BMS 1hole)		Survey Area	sampling(01SFBMS11)
19	8 12/17 Mon	Sampling (LC 1point, MC 1point, BMS 1hole)		Survey Area	sampling(01SFLC09,01SFMCO4, 01SFBMS12)
20	9 12/18 Tue	Sampling (LC 2 points, BMS 1hole)		Survey Area	sampling(01SFLC10,11, 01SFBMS13)
21	10 12/19 Wed	Sampling (BMS 1hole)		Survey Area	sampling(01SFBMS14) Observation of see floor
22	11 12/20 Thu	Sampling (LC 3 points, MC 1point)		Survey Area	sampling(01SFLC12,13,14,01SFMCO6)
23	12 12/21 Fri	Sampling (BMS 1hole, LC 1point, MC 1point)		Survey Area	sampling(01SFBMS15, 01SFLC15, 01SFMCO6), Observation of see floor
24	13 12/22 Sat	Sampling (MC 1 point, LC 4 points)		Survey Area	sampling(01SFMCO7, 01SFLC16,17,18,19)
25	14 12/23 Sun	Sampling (BMS 2 holes)		Survey Area	sampling(01SFBMS16,17) Observation of see floor
26	15 12/24 Mon	Sampling(LC 5 points)		Survey Area	sampling(01SFLC19, 20, 21, 22, 23, 24)
27	16 12/25 Tue	Bathymetric Survey with PGM	221.3nm	Survey Area	
28	17 12/26 Wed	Sampling(BMS 1hole) Bathymetric Survey with PGM		Survey Area	sampling(01SFBMS18) Observation of see floor Bathymetric Survey with PGM until 10:00
29	18 12/27 Thu	Sampling(BMS 1hole, LC2 points)		Survey Area	sampling(01SFBMS19,01SFLC25,26)
30	19 12/28 Fri	Sampling(BMS 2 holes)		Survey Area	sampling(01SFBMS20,21) Observation of see floor
31	20 12/29 Sat	Sampling(BMS 2 holes)		Survey Area	sampling(01SFBMS22,23) Observation of see floor
32	21 12/30 Sun	Sampling(BMS 1hole)		Survey Area	sampling(01SFBMS24) Observation of see floor
33	12/31 Mon	Sampling(BMS 3 holes) Bathymetric Survey with PGM	79.7nm	Survey Area	sampling(01SFBMS25,26,27) Bathymetric Survey with PGM
34	1/01 Tue	Bathymetric Survey with PGM	119.6nm	Survey Area	Bathymetric Survey with PGM
35	1/02 Wed	Sailing			Data compilation, Selection of samples for analyses
36	1/03 Thu	Arrive at Port Vila (9:00 a.m)			Data Compilation
37	1/04 Fri				Data Compilation

Table 1-7-1 Survey Apparatus and Equipments

Category	Survey Method	Survey Apparatus and System	Abbreviation	Remarks	
Positioning	Satellite Navigation	Global Positioning System GPS+GLONASS	GPS		
Sea Bottom Topography and Geological Survey	Acoustic Survey	Acoustic Sounding Bathymetry	Multi-narrow Beam Echo Sounder Narrow Beam Echo Sounder	MBES NBS	
		Subsurface Geological Structure	Narrow Beam Sub-Bottom Profiler	nSBP	
	Magnetic Survey	Proton Gradio Meter	PGM	Toward Type	
	Seawater Survey	Conductivity, Temperature and Pressure Measuring System	CTD		
	Light Transmission Survey	Transmission meter	TR		
	Sampling	Multi Corer	MC		
		Rosette sampling	RO		
		Large Gravity Corer	LC		
Benthic Multicoring System		BMS	Drilling Machine		
Sea Floor Observation	Photograph	Deep Sea Camera		with LC or MC	
Data Recording and Processing	On-line Functions Date Storage Functions Off-Line Functions ↓ Track Line Maps etc., Data Analysis	Data Processing System Sensor CPU File Server CPU Host CPU EWSCPU LAN, PC, ICM	DPS		



BMS (Benthic Multicoring System)



MC (Multi Corer)



RO (Rosette Sampler)



PGM (Proton Gradient Meter)



LC (Large Corer)

Figure 1-7-1 Photographs of Main Survey Equipments