

# DAILY LOG

CRUISE  
NUMBER

2001-13

INSTITUTE OF OCEAN SCIENCES

OCEAN SCIENCES AND PRODUCTIVITY DIVISION

DATE

May 19 - 27, 2001

VESSEL

J. P. Tully

PROJECT

La Perouse, Juan de Fuca,  
Aquaculture, Georgia Strait  
Ettingham.

Captain: Paul Frost First Officer: Mke

Second Officer: Rick Third Officer: Russ

Mission Participants / Agencies: U.B.C. / O. I.E. (OSAP) / O. Phy. (OSAP)

Scientific Personnel: Party Chief: Tom Lukasz

Name	Watch	Cabin	Name	Watch	Cabin
<u>Dave Spear</u>					
<u>John Love</u>					
<u>Bernard Minkley</u>					
<u>Angelia Peng</u>					
<u>Steve Romeira</u>					
<u>Adrian Marchetti</u>					
<u>Nicolas</u>					
<u>Jennifer Jackson</u>					
<u>Doug Moore</u>					
<u>Jennifer Patland</u>					

Second leg of Mission: Party Chief: \_\_\_\_\_

Name	Watch	Cabin	Name	Watch	Cabin
<u>Same Jane Fert</u>					
<u>Jouis</u>					
<u>Angelica Jennifer</u>					
<u>Jennifer Adrian</u>					
<u>Nicolas leave</u>					

Data logging computer: \_\_\_\_\_

Data acquisition program: \_\_\_\_\_ model: \_\_\_\_\_ serial number: \_\_\_\_\_

**Primary CTD**

Make: Seabird model: 9117 serial number: 0443  
Primary temperature sensor serial number: 2106 Calibration date: 2 Nov 2000  
Primary conductivity sensor serial number: 1763 Calibration date: 31 Oct 2000  
Secondary temperature sensor serial number: 2023 Calibration date: 1 Nov 2000  
Secondary conductivity sensor serial number: 2128 Calibration date: 31 Oct 2000  
Other sensors: Trans. Wetlab C-star s/n: 333 DR  
Other sensors: primary fluorometer s/n: 2229 secondary pump  
Other sensors: red pump fluorometer s/n: 2228  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

**Secondary CTD**

Make: \_\_\_\_\_ model: \_\_\_\_\_ serial number: \_\_\_\_\_  
Primary temperature sensor serial number: \_\_\_\_\_ Calibration date: \_\_\_\_\_  
Primary conductivity sensor serial number: \_\_\_\_\_ Calibration date: \_\_\_\_\_  
Secondary temperature sensor serial number: \_\_\_\_\_ Calibration date: \_\_\_\_\_  
Secondary conductivity sensor serial number: \_\_\_\_\_ Calibration date: \_\_\_\_\_  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_  
Other sensors: \_\_\_\_\_ s/n: \_\_\_\_\_

Comments: \_\_\_\_\_

HYDRO WINCH  $X = 1.9729$

$Y = 10^{-3}$

$X = 1.9886$

314  
25  

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3165xTT

May 19

- 0800 PDT Winches loaded

- 0900-2030 - science equipment loading and lab set up and test cast with Rosette
- had problems with CTD program setup being no pressure reading from CTD until the 2 fluorometers on the probe were entered correctly in the program (identified)
  - this caused a late departure which was planned for 1900 hrs

- 2030 - depart and head for Angelica's station in Juan de Fuca for sun rise

May 20

0637 - complete station VF01 for Angelica Rena phytoplankton to 183 m. 48 20.76 124 12.36

0822 - complete station VF1A for Adrian Marchetti phytoplankton to 197 m. 48 23.05 124 20.41

1007 - approaching (slowly) VF2C-F app 1/2 cables - sent CDF

- received 543 range, 470 range

- over top range 190 m - 200 m

- moved off for release

- sent BEFG received positive response range (start 234) m

ranges  
292 293 294 295

- sent BEFG again received positive response

- sent BFGH no response - not surfacing

- sent BFGH got positive response

- range 235 - 231 230  
232 228 224

Trans S/n 3330R

calibrated 26 May 2001

air value 4.729

M =

blank -.058

B =

factory air = 4.853

Vref = 4.753

factory blank = .062

Cal temp 25.3°C

used Super-Cat Cleaner made by Douglas Division of Denton Vacuum Inc.  
Cherry Hill NJ 08003

old cal values M = 18.977

calibration date 14 July 2000.

B = -1.176

channel & voltage 2 = Trans.

$A_0 = 4.853$

$Y_0 = .062$

$W_0 = 4.753$

$T_w = 91.3\%$

$A_1 = 4.729$

$Y_1 = -.058$

$$M = (T_w / W_0) * (A_0 - Y_0) / (A_1 - Y_1) = 19.22497$$

$$= 1.115$$

$$B = -M Y_1$$

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## INSTITUTE OF OCEAN SCIENCES

Year 2001					Month May			Ship Tully			Cruise I.D. 2001-13			
Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
20	JF01	ROS	1337		1.	48 20.76	124 12.36	✓	193	183	1-19	19.		unsuccessful floor net connected
20	JFA	ROS	1522		2	48 23.05	124 20.41	✓	205	197	21-40	20		trans net working
21	C2	ROS	0308		3	48 25.35	125 07.94		143	135	—			
	C2	NET	0335	BO	4	48 25.36	125 07.97		"	138				BONGO
21	C1	ROS	0432		5	48 28.97	125 15.28		150.	145	—			
	C1	NET	0456	BO	6	48 28.99	125 15.26		153	145				VNA 6 145 BONGO
21	C3	ROS	0552		7	48 23.445	125 20.769		124.		—			
	C3	NET	0613	BO	8	48 23.44	125 20.80		124	116				VNH BONGO
	C3	NET	0630	BE	9					SURF.				Neuton Tow HNH
21	B8	ROS	0806		10	48 34.44	125 30.02		139					
	B8	NET	0829	BO	11	48 23.44	125 20.76		135	130				Bongo VNH.
21	B7	ROS	0914		12	48 32.01	125 35.48	✓	80		41-46	6.		Rosette.
21	B7	NET	0940	BO	13	48 32.01	125 35.49		80	75				Bongo VNH.
21	B7	ROS	0958		14	48 32.00	125 35.57	✓	80					Adriatic Water Samples
21	B7	NET			15	48 32.01	125 35.49							Plankton Net
21	B7	Net	1030	BE	16				80	SURF.				Neuston.

Cast type:

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May 30

- recovery at JFRC continues

1027 - sent BFGH received positive response  
- range 226, 228, 224, 280  
- sent BFGH received positive response  
- range 244, 247, 247  
- not rising

- sent CDFG - still received ranges  
should be off

1033 - sent CDF - range 283, 283  
- sent BEFG - received positive response  
- range 294, 292  
- sent BFGH - received positive response  
- range 303, 302, 304

1040 - setting up for drag - sending acoustic release  
commands meantime  
- BFGH - positive response  
- BEFG - no response  
- BFFG - positive response  
NB: no double  
ping for  
fill not filled.

range 385, 387, 390, 391  
- 14F DF being monitored  
- Argos being monitored  
- conditions are clear, sunny, low swell no sea  
rippled - idea  
- we are 1/2 cable off station  
1057 - sent BEFG - no response range 457  
- " - positive response  
range 458  
- sent BFGH - no response  
- " - positive response  
range 459

1126 - set up counter on winch  
- start drag

1135 - on bottom

1203 - steamed "U" around mooring 1800m wire out  
range 359m  
- maintaining station + heave in.

1229 - caught mooring with and pulled it in.

1245 - all on board cleaning up  
- TG flooded - slight damage by our wire to main  
floor.

May 20

- 1328 - on station JF2E-F
  - sent 6462 FR 1+2 ON
  - ranges 164 163
  - moving off to release position
  - range 283 m
- 1335 - sent 6461 and 6484
  - received "executed" confirmation
  - mooring sighted on surface
  - recovered without incident
  - head for JF2A-F
- 1506 - on station JF2A-F for recovery
  - sent 6452 FR 1+2 ON
  - range 137, 130, 123, 118 m
  - approaching mooring
  - range 109, 106, 101 m - right on top
- 1511 - moved away to release.
  - range 139 m
  - sent 6451 + 6484 received positive response
  - sighted on surface
  - recover + cleanup
  - launched 733 with Dave to service Port Penfrew TG
- 1657 - new TG deployed
  - hardware has to be replaced - well cleaned out next servicing
- 1720 - picked up small boat heading for C2 Fosette's + Bongo
  - completed C1-C3 B7 B8 Bongo/Neuston stations, all sampling for Adrian Marchetti and all for Angelica Pena.

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21	A1	ROS	1339		17	48 31.06	126 11.97	✓	532		47-68	22		
	A1=LC8	NET	1455	BO	18	48 30.97	126 12.07		540	250				Bongo @ 250m
21	LC12	ROS	2308	BE	19	48° 15.02'	126° 39.97'		2520	2450	69	1		PAR removed
21			2358	BO		48° 15.02'	126° 39.99'							Sal. Cal #69
22			0044	EN		48 15.003	126 39.986							
22	LC12	NET	0102	BO	20	"	"							Bongo
22	LC12	NET	0130	BO	21	"	"							Bongo - DNA
22	LC11	ROS	0250	BE	22	48° 18.93'	126° 26.69'		1450	1473	70-89	20		1446 on counter
			0325	BO		48 18.956	126 26.676							
			0412	EN		48 18.934	126 26.689							
22	LC10	ROS	0505	BE	23	48 22.36	126 20.19		1250					
			0556	EN						1246				
22	LC09	ROS	0645	BE	24	48 25.90	126 13.65		610	605	90-105	16		
			0658	BO		48° 25.93	126° 13.94							
			0722	EN		48° 25.93	126° 13.69							
22	LC09	NET	0738	BO	25	48° 25.93	126° 13.69			250				Bongo
22	<del>LC08</del>	<del>CTD</del>	<del></del>	<del></del>	<del>26</del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>	<del></del>

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May 21

- 0730 - completing biological work at AI  
- turned mooring on during this work  
ranges 1574-1571 m

- 0830 - on site AI for recovery  
- range 480, 478 m.

- 0832 - moved of to release position  
range 522 m

- sent 6421 and 6484 + received positive  
response

- 0835 - sighted on surface + recovered without  
incident

- while mooring cleaned up and  
new one prepared, we completed  
a detailed survey of bottom to  
locate depth anomalies in a trench  
that may explain previous deeper  
deployments.

- for more than 1 cable radius around the  
old mooring site the depth is  $500 \pm 1-2$  m.

- 1256 PDT - launched mooring AI-GG in 498.50 m  
at  $48^\circ 31.807'$   $126^\circ 12.175'$

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22	LC08	CTD	0839	BE	26	48° 29.41	126° 07.13'		202	198				
			0846	BO		48° 29.42	126° 07.13'							
			0850	EN		48° 29.42	126° 07.13'							
22	LC08	NET	0904	BO	27	48° 29.42	126° 07.13		202	198				Bongo
22	LC07	ROS	1000	BE	28	48° 32.90'	126° 0.49'		120	116	106-114	9		
			1005	BO		48° 32.95	126° 0.48'							
			1014	EN		48° 32.90'	126° 0.49'							
22	LC06	CTD	1102	BE	29	48 36.43	125 53.99		93					
		NET	1125	BO	30	48 36.42	125 53.98							BONGO
22	LC05	CTD	1222		31	48 39.950	125 47.443		65					
		NET	1236	BO	32	48 39.96	125 47.44							BONGO
22	LC04	ROS	1321		33	48 43.43	125 40.84		166					
22	LC03	CTD	1420		34	48 46.94	125 34.23		135	120				

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## May 22

- 1800 - science crew change in Bowfield  
Angelica, Jennifer P., Adrian  
and Nicholas leave ship.
- Jane Fent joins ship.

## May 23

- 0700 - landed Jennifer Jackson in Hot Springs  
Cove  
- head for mooring
- 0845 - on station E01-FF for recovery  
- sent 6442  
- ranges 89, 87, 88. - right on top.  
- moving off to releasing position  
- ranging 159 → 197 - 261 m.
- 0853 - sent 6441 and 6484 received positive  
response with 305 m range
- 0856 - sighted on surface 381 m range.  
- recovered without incident  
- prepare to redeploy
- 1135 - deployed E01-GG in 100m water  
at position 49° 17.520'  
126° 35.755'
- head for E03-FF for recovery.

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22	LCO2	ROS	1503		35	48 48.709	125 30.937		109	105	125-133	9		
22	LCO1	CTD	1554		36	48 50.435	125 27.722		95.6	90	/			
22	EFF1	ROS	1852		37	49 05.508	125 11.590		39	36	134-137	4		
22	EFF2	ROS	1928		38	49 05 002	125 10 329				138-143	6		
23	EFF3	ROS	20:00		39	49 4 25	125 9 41		123	117	144-151			
23	EFF4	ROS	20 39		40	49 3 06	125 8 60		69		152-156			
23	EFF5	ROS	21:00		41	49 2.53	125 9.16		207		157-167			
23	EFF6	ROS	21:39		42	49 1.80	125 9.18		153		168-176			
23	EFF7	ROS	22:00		43	49 1.23	125 9.42		120		177-184			
23	EFF8	ROS	22:37		44	49 0 68	125 10.22		89		185-191			

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May 23

1340 - on station E03-FF

- sent 6432 - received executed  
- range 444 m

- moving on station

- range 410 m

- 379 m, 378 m

- moving to release position.

- conditions are marginal. 25-30 kn winds  
seas rising.

1347 - 399 m range, 403, 411, 416, 423,  
447

1350 - sent 6431 and 6434 got executed  
response range 481 m.

1352 - sighted on surface.

- recovered with difficulty and damage to  
instruments in worsening conditions  
- gale force 35-43 kn. winds

- mooring nearly all prepared for redeployment  
but Captain + Chief Scientist decide to  
postpone until conditions improve

- we go to LG 08 station and  
rig for CTD only operation  
CTD was removed from Rosette  
and bottom find pinger on bridle  
similar to Rosette ballast weight was  
a Hacked.

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23	EFF9	ROS	2300	BE	45	49° 0.11'	125° 10.85'		64	60	192-197			
			2302	BO		49° 0.10'	125° 10.85'							
			2306	EN		49° 0.10'	125° 10.85'							
23	EFF10	ROS	2322	BE	46	49° 0.10'	125° 11.26'		101	95	198-204			
			2325	BO		48° 59.83	125° 11.26'							
			2331	EN		48° 59.83	125° 11.26'							
23	EFF11	ROS	2345	BE	47	48° 59.09	125° 11.07'		85	81	205-214			
			2347	BO		48° 59.08	125° 11.05'							
			2352	EN		48° 59.05	125° 11.01'							
23	LDO2	CTD	0527		48	48 58.35	125 47.02		45.					
		NET			49					35				BONGO VNH.
		NET			50									BONGO VNH-DNA
23	LDO4	CTD	0708		51	48 53 10	125 56 82							
		NET			52									BONGO VNH.
23	LDO6	CTD	0853		53	48° 46.12	126° 10.10'		139					
										133				

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Removed  $\angle 10$  from Rosette

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24	LG08	CTD	0206	BE	54	48° 55.37'	127° 13.31'		2062					4 bottle trip lines appear with that
			0249	BO		48° 55.38'	127° 13.46'			2068				apparent cause.
			0325	EN										Beathos pinger shows on sonar
	LG07	CTD	0431	BE	55	48 57.35	127 07.097		1760	1767				
			0508	BO		48 59.439	127 07.247							
24	LG06	CTD	0706	BE	56	49° 03.45'	127 01.01		950	950				bottom depth in header is wrong.
			0730	BO		49° 3.47'	127° 1.07'							More Fake bottle
			07	EN		49° 03.49'	127° 01.19'							trips (2)
24	LG05	CTD	0858	BE	57	49° 07.35	126° 55.20'		260	264				
			0908	BO		49° 07.39	126° 55.22'							
24	LG04	CTD	1015	BE	58	49° 11.30'	126° 49.24'		146	137				
			1018	BO		49° 11.31	126° 49.25							
			1024	EN		49° 11.29	126° 49.29							sample for cause
24	LG03	CTD	1118	BE	59	49 14.97	126 43.62		125	120				
24	LG02	CTD	1215		60	49 18.69	126 38.01		101	88.				

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May 24

- 0800 - LG Line finished CTD's only
- on site E03 for deployment
- situation marginal winds 35 knots seas 2-3 m
- Captain decides to allow deployment
- we set up on deck
- winds continue to rise
- Captain calls off deployment
- app. 0900 - we decide to go into Muckahat Inlet to complete Storch stations until weather subsides
- will try E03 0600 tomorrow morning.
- will do MUC + LH Line stations until morning.

May 25

- 0500 - on station E03 to deploy E03-GG
- conditions acceptable but wind + seas rising, becoming marginal.
- 0530 - crew on deck assembling mooring
- 0602 - deployment starts
- 0628? - mooring deployed as E03-GG in 403m water. Con previous position
- sounder very erratic with few reliable readings - rough seas
- position is:  $49^{\circ} 05.540'$ ,  $126^{\circ} 55.989'$
- heading for Brooke's Penn mooring BPI-FF or CTD line LBP
- conditions deteriorating - gale force winds
- 1540 - arrive LBPR for CTD + Bouge
- mooring operation cancelled until wind drops
- Captain does not want to do LBPI because it is too shallow + close to land.

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24	LG01	CTD	1248		61	49 20.49	126 34.89		58.	46.				
24	MUC1	ROS	2123	Be	62	49 37.56	126 3.59		132		215-222			
24	M5 KM	ROS	2215	Be	63	49 38.96	126 5.54		173		223 - 232	10		
24	MUC2	ROS	2316	Be	64	49° 40.18	126° 9.39'		366	356	233 - 246	14		
25	MUC3	ROS	0025	Be	65	49° 39.03'	126° 14.35'		340	366	247-260	14		Mud Sample!!
			0033	BO		49° 39.04	126° 14.38							Cleaned out CTD/R
			0048	EN		49° 39.02	126° 14.40'							
25	MUC4	ROS	0132	BE	66	49° 38.49'	126° 20.73'		291	287	261-273	13		
25	MUC5	ROS	0229	BE	67	49° 39.02	126° 28.46		212	189	274-285	12.		
			0235	BO		49° 39.02	126° 28.48							
			0247	EN		49° 39.04	126° 28.50							
25	TLU-1	ROS	0317	BE	68	49 41.57	126 30.84		260	253	286-297	12.		
25	MUC6	ROS	0436	BE	69	49 35.79	126 35.73		116.	110.	298-305	8.		
25	LH01	CTD	05:38	BE	70	49 34.35	126 44.11		36			1.		CTD removed from Rosette
25	LH02	CTD	0611		71	49 32.19	126 47.31		55.	49				

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May 25 cont'd

-1738 - weather improved stopped work  
along LBP line

- on station BPI-FF

- sent 6412 executed range 109

- range 111

- ready to recover

- waiting for extra engine + Captain

-1800 - range 247 m, 300m, 296 m

- sent 6411 and 6484 no received or executed.

- moving closer.

-1809 - sent 6412, 6411, 6484

- received positive response

- received 'executed'

range 153 m

-1811 - sighted on surface.

- quick turn around on deck

-1938 - launched BPI-GG in marginal conditions  
at  $50^{\circ}03.691'127''53.420'$  in 102m water.

- due to steaming time, tide, poor weather.  
program reduced to partial LBP Line  
some Copra stations as time permits a

# DAILY LOG

## Ocean Sciences and Productivity Division

## INSTITUTE OF OCEAN SCIENCES

Year		Month				Ship			Cruise I.D.					
2001		May				Tully			2001-13					
Day	Station I.D.	Cast Type	Time (UTC)	Time Code	Consec. Number	Latitude	Longitude	Position Code	Bottom Depth	Max Depth	Consec Sample #	# of Bottles	initials	Comments
25	LH03	CTD	0657	BE	72	49° 28.57'	126° 52.84'		104	96				Lots of squid dancing in the deck lights
25	LH04	CTD	0747	BE	73	49° 24.84'	126° 58.58'		139	129				no pinger trace on sonar
25	LH05	CTD	0835	BE	74	49° 21.27'	127° 04.40'		164	156		2		" + 2 fake bottle trips
25	LH06	CTD	0924	BE	75	49° 17.50'	127° 10.33'		478+	479		3		pinger showed up
25	LBP02	CTD	2250	BE	76	50° 03.975	127° 54.142	GPS	103	96				
			2301	BO		50° 03.96	127° 54.15							
			2304	EN		50° 03.95	127° 54.16							
25	LBP02	NET	2315	BE	77	50° 04.02	127° 54.26		102	95				Bongo VNH
25	LBP03	CTD	2345	BE	78	50° 03.15	127° 55.26		171					spike @ 115m in data
			2350	BO		50° 03.15	127° 55.25			162				
				EN		50° 03.15	127° 55.23							
26	LBP03	NET	0000	BO	79	50° 03.15	127° 55.33		161	155				Bongo VNH
26	LBP05	CTD	0325		80	50° 00.01	127° 59.93		1283	1285		4		clear but no mud!
		NET	04		81	50° 00.77	128° 00.00			250				BONGO VNH
26	LBP06	CTD	0516	BE	82	49° 56.174	128° 05.419		780	906		2		area of seamount

Cast type:

BOT = otter cast  
CTD = CTD  
MOR = mooring

ROS = Rosette  
NET = net haul  
DRF = drifter

USW = sea water loop

Time Code

BE = beginning time of cast  
BO = bottom time of cast  
EN = end of cast time

DE = deployment time  
MR = messenger release time  
RE = recover mooring time

May 26

- 0800 - entering Goletas Channel north end heading for FS1-A mooring.
- enroute examined mooring configuration
- there was no mooring design or drawing available from Aquaculture Project participants - even the components were in doubt
- rough calculations showed that if a SS28 buoy was used with  $5/16$ " wire the mooring is not buoyant at all
- called Darren Tuck for clarification found out that an SS28 with  $1/4$ " wire was used
- in this scenario the mooring proved to be app. 40-45 lbs total positive buoyancy
  - far too light!
- we are pressed for time to meet the right tides in Seymour Narrows. There is no space for a poorly designed marginal mooring. If we release, and it doesn't rise immediately, there is no opportunity to deal with the situation
- based on this we are bypassing this mooring and dealing with it at a future date.
- both engines on heading for Seymour Narrows