

CRN

90+12

DAILY LOG

INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

15 June - 21 June

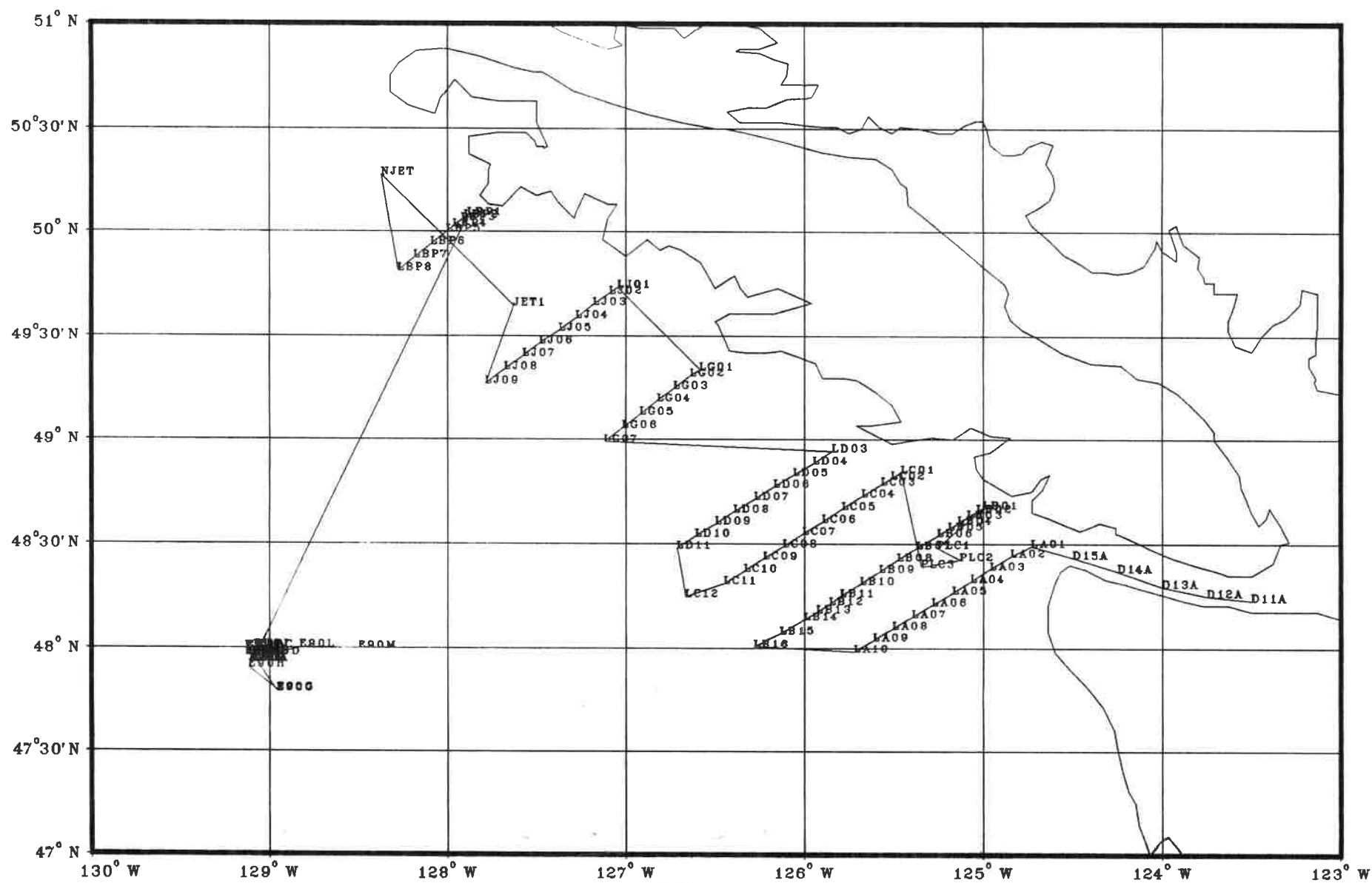
VESSEL

CGS Parizeau

PROJECT

La Recherche

Cruise 90-12



YEAR	1990	MONTH	JUNE	TIME	ZONE	U.T.C	SHIP	PARIZEAU	CRUISE	9012	PAGE	1	OF	
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSENGER TIME	SALINITY #/CALIBRATION LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE / SALINITY			NOTES
											Sail			
11	D11A	165	23:30	48 14 00	001	2333								
			2340	123 30 00	165									
12	D12A	170	0105	48 15 20	002	0110	1	0133	1	1040				GPS POS
			0138	123 44 92	165	0133	150			1049				481500N 1234492W
12	D13A	185	0258	48 17 80	003									
			0305	124 00.00	184	0300								
12	D14A	178	0427	48 21.7	004		2	0455		1050	11567			
				124 14.98		0430	175			1060	30683			Lineas @ 0455' UT
12	D15A	234	0615	48 26.08	005									
			0630	124 29.79	233	0618								
12	LA01	263	0738	48 29.20	006	0745	3	0818	2	1061				No GPS - only 2 sv's
			0828	124 43.90	257		275		LOOP	1074				J-Buoy very close
12	LA02	310	0907	48 26.513	7	0909	4	0940	3	1075				Program garbled - numbers
			0951	124 50.880	308		300		LOOP	1088				weird on upcast.
12	LA03	111	1023	48 22.80	8	1024	-							upcast OK
			1031	124 57.65	109									
12	LA04	195	1105	48 19 30	9	1113	5	1137	/	1089				No GPS FIX ONLY 2 SV's
				125 04 25	195		175		/	2027				Good cast no problems
12	LA05	115	1220	48 15 97	10	1222	/		4		12935			Up cast taken
			1232	125 10 35	110				LOOP	/	30280			
12	LA06	110	1305	48 12 63	11	1309	6	1326	5	2028				Hydro Station
			1332	125 17 20	110		100		LOOP	2037				
12	LA07	110	1413	48 09 20	12	1414	/	/	/	/				Good NO GPS
				125 23 86	105				/	/				cast.

CRUISE 9012 - LaPerouse

Captain	John Anderson
1 st Mate	Siraj
2 nd "	Howard Elliot
3 rd "	Brian Pennell
Chief Eng	Dave Purdy

Scientists

Chief Scientist -

Reg Bigham	A	8-12
John Love	G	4-8
Doug Yelland	B	12-4 / O ₂
Dave Spear	F	12-4
Andrew Thomas	D	8-12
Jody	E	12-4
Steve Garner	C	4-8

~~PDI~~
1400

- Depart Colwood fueling jetty

- RDI not logging on startup - fixed
- SAIL sampling & recording every minute - CTF header overwrites wind dir
- Reset both computers' clocks to UTC

1630 - arrive Station D11A - all OK (hit bottom?)

Gap in GPS from ~ 0400 to 10:00
PDT

YEAR	MONTH		TIME		ZONE		SHIP		CRUISE		PAGE	OF	
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSANGER TIME	SALINITY #/CALIBRATION	LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	NOTES
12	LA08	135	1457	48 05.78	13	7			26	2038	12.377		
			1531	125 30.33	134	1501	125	1522	26	2045	31.915		< 5° wind 20-25
12	LA09	326	1610	48 02.21	14								
			1626	125 36.95	326	1614							
12	LA10	882	1705		15			loop					programme bombed
					913	1708		47					on way up - T alone
12	LB16	1840	2055	48 00.50	16	2107		loop					
			2146	126 16.71	1501			#8					
12	LB15	1550	2248	48 04.35	17			loop					
				126 08.40	1510	2251		#9					Porpoises
13	LB14	1145	0029	48 08.40	18	0028	8	Loop	2046				Hydro Stn. 1000m
			1156	125 59.70			1000	0135	10	2000			Hit bottom with STD
13	LB13	900	0229	48 10.56	19	0229							GPS Position
			0259	125 55.85									Hit bottom with STD-JL
13	LB12	500	0331	48° 12.76	20		9	0409	2001				
			0425	125 51.68	501	0333	475		2018				
13	LB11	205	0457	48 15.17	21		10	0524	2019				bottle cast to 190m
			0534	125 47.87	204	0459	190		2058				
13	LB10	150	0617	48 18.58	22			10		12.810			
			0630	125 41.21	0150	0622		Loop		31.220			loop 5% #10
13	LB09	150	0708	48 21.96	23		11	0739					
			0743	125 34.88	148	0710	125						
13	LB08	132	0817	48 25.22	24		12	0839	2068				
			0844	125 28.84	131	0818	125		2075				

12 June / 90. P.d. time

LA 8 CTD to 134 m.
Bottle cast to 125' m.
loop sample # 6.

LA 9 CTD to 325 m.

LA 10 CTD to 883 m.
loop sample #7 ✓.

Programme bombed on way up - Telok
File OK, but programme would not
acknowledge it. Dong fixed.

LB 16 CTD to 1500 m
loop sample #8
Ship having pitch control problems

LB 15 CTD to 1510 m
loop sample #9

LB 14 CTD to 1100, loop 10

LB 13 CTD, Hydros Stn.

LB 12. CTD to 501 m.
Hydros No 9 to 475 m.
mess 2109 hrs.
wire LO →

LB 11

LB 10

LB 9

LB 8

LB 7

LB 6

0330 hrs. June 13/90 Break of CTD's after
this stn. CTD and O₂ cast - proceed towards
AES buoy.

June 13/90 Fdt cont.

- 1000 Arrive @ AES buoy and start deployment of drift net, at same time talk to Tom Gulag on radio with confirmation, weather etc
- 1030 Finish deployment of net, start grid for Andy Thomas
- 1300 Back in area of AES buoy, no sightings, no VHF signal
Start search pattern, call Tom J.
- 1400 - and request satellite position.
Recd Sat Posn
- 1630 - Locate net 5 miles north of drop site.
- 1825 - Net aboard, heading back to LB05

YEAR	1990	MONTH	June	TIME ZONE	UTC	SHIP	Parizeau	CRUISE	9012	PAGE	OF	
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSENGER TIME	SALINITY #/CALIBRATION LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/SALINITY	NOTES
13	LB07	154	921	48 28.70	25	0920						
			0930	125 27.53	154							
13	LB06	112	1006	48 32.29	26	1005	13		2076			noise on sounder
			1034	125 15.30	106	100	1020		1073			Bottle cast.
14	LB05	101	0500	48 34.17	27							
			0508	125 11.70	102.2	0503						
14	LB04	102	0528	48 35.88	28	14			1074			
			0550	125 08.45	103.9	0530	100	0545	1081			Bottle cast.
14	LB03	88	0611	48 37.47	29							
			0619	125 05.38	91.1	0614						
14	LB02	51	0639	48 39.16	30	15			loop. 1082			
			0654	125 02.17	55	0641	50	0650	11 1086			Bottle cast
14	LB01	29	0711	48 40.17	31	16			loop 1087			
			0729	125 00.07	34.5	0713	30	0725	12 1090			Bottle cast.
14	PA32	238	1033	48 58.82	32							
			1047	124 54.70	237	1037						
14	PA22	260	1121	49 03.43	33	1121			Loop			No GPS SV's
			1133	124 51.04	270				13			
14	PA12	124	1216	49 08.41	34	1214			Loop			CLK 2 MIN SLOW
			1222	124 48.35	125				14			changed clock
14	PA8	107	1242	49 10.31	35	1244			Loop			Garbage data first
			1248	124 49.08	109				15			Tag erased file and repeat.
14	PA5	66	1304	49 12.07	36	1305						
			1308	124 49.03	66							

13 June /90 Pdt.

LB05 - 2203 hrs to 102 m.

LB04 - 2230 hrs to 104 m.
Bottle cast to 100 m.

LB03 - 2314 hrs to 91 m.

LB02 - 2339 to 55m
Bottle Cast to 50m

LB01 - 0011 CTD to 34m
Bottle Cast to 30m

PA37 - 0337 CTD to 237 m

PA 22 0420 CTD to 260

PA12 05:16 to 0522 Noted system clk

was 2 min slow. Used setting utility to
change the system time.

PA8 107 ✓

PA5 66 ✓

Port Alberni Mooring Deployment

June 14/90

- 0900 - arrived at geodysne
- lifted on deck (separated)
- lifted 2nd portion
- began assembling 54's into line
- wheels lifted off bottom - replaced same depth & position
- 0945 - mooring deployed
- 1030 - began Deploying PANZ - Reg in small boat to pull surface float away from ship
- 1045 - anchor dropped - sounder depth 34 m
- Locks OK
- 1050 - Rubber Boat away to pick up R Forbes and T. Juhasz
- 1100 - Both aboard, Tom for discussion of priorities re drift net and Andy Thomas. Andy's grid tonight will have priority.
- 1145 - T Juhasz leaves ship. Parizeau proceeds towards La Perouse.
- 1600 - Proceeding on Andy Thomas's zig-zag chlorophyll sampling course. No stops.
- 1730 - Red call from Observer on Foreign fishing vessel re ③ yellow floats in water with antenna sticking up. Proceed to that location. It proved to be a long line marker pole. There was one sighted that appeared to use a 28" yellow OXE as a float - probably one of ours.

Note

The foreign fishing fleet Observers are told in their course to look for our gear and report it if seen, But they have never seen any up close - could we send pictures of all our gear to the course? videos?

cont.

The courses have concluded for this season but we could still send photos to remain for distribution - The photos with a person in them will give them an idea of size as well as shape colour etc.

various buoys, current meters, therm chains, trans, releases etc.

Roy's son Steve will be an observer this season.

YEAR	MONTH		TIME			ZONE		SHIP				CRUISE				PAGE	OF
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE		STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSANGER TIME	SALINITY #/CALIBRATION	LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/	SALINITY	NOTES		
14	PA03	33	1325	49 12.9	37	1326	/									CTD Surface 2.6 m offset	
			1329	124 49.1	33												
14	PA02	23	1340	49 13.4	38	1341											
			1344	124 49.1	25												
14	PA01	15	1402	49 13.95	39	1402											
			1404	124 49.05	16												
14	B2	95	2316	48 44.84	/											Vertical Plankton Haul	
			2330	125 21.88	/												
15	B4	165	0002	48 41.26	/											Vertical Plankton Haul	
			0030	125 26.67	/												
15	PL C1	150	0938	48 28.84	40	0939										Vertical Plankton Haul	
			1014	125 15.44	150.8												
15	PL C2	112	1104	48 25.36	41	1105			16							CTD + Vertical Plankton haul	
				125 07.71	108				Loop								
15	PL C3	120	1233	48 23.45	42	1235			17							CTD Vertical plankton haul	
				125 20.80	110				Loop								
15	LC1	93	1605	48 50.43	43	1608	17	1636	18	1073							
			1641	125 27.58	93		75		Loop	1079							
15	LC2	105'	1700	48 48.70	44												
			107	125 30.54	107	1705											
15	LC03	132	1731	48 47.00	47*											*lost 45, 46 - lost fight with computer.	
			1741	125 34.15	132	1734											
15	LC04	162	1821	48 43.52	48												
			1830	125 40.71	161.5	1824											

June 15 0239 CTD to 150.8 m
Vertical Plankton Haul

June 15 0404 CTD + Vertical plankton haul
to 110 m No problems with CTD No
GPS Fix at this time of the morning.

Depart Station D 04:30 PDT for Station C3

LC1 - 0908 CTD to 93 m, loop #18
O₂ cast to 75 m.

LC2 - 1005 CTD to 106 m.

0900-0930 Phone call from Tom J. - it was decided
in the interest of efficiency to put off
drift net/overflight until Sat 16th
@ E03, on line G.

LC3 - 1034 CTD to 132 m.

LC4 - 1124 CTD to 161.5 m.

LC5 - 1213 STD to 65 m
Vertical Bongo Haul

LC6 - 1308 STD to 84.4 m
Vertical Bongo
Wind 22 knts

YEAR	1990	MONTH	JUNE	TIME	ZONE	UTC	SHIP	PARIZEAU	CRUISE	90-12	PAGE	OF	
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSANGER TIME	SALINITY #/CALIBRATION	LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	NOTES
15	LC05	60	19:10	4839.87	49	19:13							BONGO
			19:30	12547.3	65								
	LC06	87	20:08	4836.32	50	20:10							BONGO
			2045	12554.00	84.4								
	LC07	123	2118	4832.78	51	2121							2m offset
			2127	12600.53	123.6								
	LC08	198	2203	4829.18	52	2206	18	2248	1080				O2 CAST, BONGO
			2256	12607.16	196.6								
	LC09	630	2330	4825.70	53	2333	19		19	321			O2 CAST, BONGO
			0050	12613.79	630								
16	LC10	1260	0130	4822.13	54	0131			20	1048			ALARM TRIP AT 550m
			0210	12620.29									
	LC11	1430	0240	4818.74	55	0248							Reset computer clk. 2min slow.
				12626.95	1615								
	LC12	2550	0443	4815.02	56	0447			21				BONGO
				12639.90	1500								
	LD11	1625	0745	4828.69	57	0749			22				Loran Position
			0835	12642.80	1607.5								
	LD10	1485	0920	4832.19	58	0926			23				
			1008	12636.66	1485.1								
	LD09	1075	1054	4835.70	59	1057			24				Wind ~ 25 Kn
				12629.92									
	LD08	785	1228	4839.06	60	1230	20	1319	25	1073			GPS POSITION
				12623.72	785								
						600			Loop	1089			Hydro O ₂ 600m

LC 10 Depth info in program 1200
alarms started at 580 m

LC 11 Touched bottom @ 1614.9 m
No double Fings.

LC 12

LD 11 0047 CTD to 1607.5
loop sample #22

06:00 PDT

LD 08 Hydro to 600 m chains under
water a few times wind down to 14k
from a high of 27k front gone thru, even
had some sun.

LD 07 - 1432 UTC
(0732) Pdt

LD 06 - 1529 UTC Because of time constraints
(0829) Pdt O2 cast cancelled.

LD 05 - 1613 UTC
(0913) Pdt

LD 04 - 1658 UTC O2 cast cancelled
(0958) Pdt. Plankton cancelled

LD 03 - CTD @ 1035 Pdt.
O2 cast No. 21 to 40 m.

Bongo plankton haul to 42 m.

* 1102 - Set course for E03-K moving for
deployment of net and 12 hr ADCP time
series

Cancel LD02 & LD01

16/6/90

2259 (UTC) - Seawater sampling pump keeps getting air-locked. Will shut it down until we stop pounding into weather.

17/6/90

1530 (UTC) Boat SAIL with new copy - some records with PDT - changed to UTC started on 90120007.D1

EP3-K. - Deploy net - small aircraft flying around us wind 30-35 knts.
1715 hrs. Check drift, it appears to be due south.
P.D.T. 16 June 1990 maintain position for ADCP time series as best as possible in wind/sea conditions

17 June 1990
0530 - finish 12 hr. ADCP time series and head south towards suspected net position.
0600 - Contact with VHF ch. 83
0625 - net in sight
0800 - Bring net aboard and call Tom J. to confirm recovery.
0820 - Head for G line, No 7.
0919 - Stn LG07 - CTD, loop.
1050 - Stn LG06 - CTD, Or cast

2120 UTC - Restarted SATL - attempted to get printer going but
(1423 PDT) COM2 to RD1 still doesn't work with printer on
- logging to 90120008.D1

Continued (5) Pages further on.

YEAR 90	MONTH 06	TIME ZONE UTC	SHIP PARIZEH	CRUISE 90-12	PAGE	OF						
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSANGER TIME	SALINITY #/CALIBRATION LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	NOTES
16	LD07 460	1430	48 42.59	61	1432	/		26				NO GPS.
		1445	126 16.87	473				LOOP				
16	LD06 135	1527	48 46.25	62								NO GPS
			126 10.22		1529							
16	LD05 87	1611	48 49.62	63.								NO GPS
			126 03.70	90.1	1613							
16	LD04 59	1656	48 53.0	64								NO GPS.
		1701	125 57.0	55	1658							
16	LD03 42	1733	48 56.64	65		21			1090			GPS O2 cast
		1802	125 50.61	47.1	1735	40	1744		337			Bengo haul
		1610	48 59.35	66				27				
17	LG07 1775	1630	127 07.22	1503	1619			loop				
		1747	49 03.50	67		22	1830		1040			O2 cast to 900 m
17	LG06 935	1907	127 01.09	951	1750	900			1058			GPS OK
		1945	49 07.42	68								GPS OK
17	LG05 267	2004	126 55.21	279	1950							
		2045	49 11.35	69		23			1060			GPS OK
17	LG04 146	2115	126 49.42	149.3	2048	140	2108		1068			O2 to 140 2108 UTC
		2148	49 14.96	70								GPS OK
17	LG03 118	2155	126 43.85	120.6	2150							
		2227	49 18.65	71				28				GPS OK
17	LG02 97	2239	126 38.33	996	2233			Loop				
		2300	49 20.33	72		24			2057			GPS POSITION
17	LG01 50		126 35.20	51	2303	50	2342		2061			

YEAR	1990	MONTH	JUNE	TIME	ZONE	UTC	SHIP	PARIZEAU	CRUISE	90-12	PAGE	OF
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSANGER TIME	SALINITY #/CALIBRATION LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/SALINITY	NOTES
18	LJ01	60	0332	49°44.06 73		25		29	1040			O2 CAST
			0345	127°02.68 60	0333	50	0340	LOOP	1045			GPS
18	LJ02	84	0406	49°42.34 74								GPS.
				127°05.51 84	0411							UPCAST - PROBLEM(?)
	LJ02			75								WITH 5% ON DYCST
			0416		0413							
18	LJ03	123	0454	49°39.12 76.								NO GPS
			0504	127°10.93 124	0456							
18	LJ04	153	0537	49°35.40 77		26.			1046			O2 CAST
			0607	127°16.77 154	0542	150	0600		1054			NO GPS
18	LJ05	1080	0642	49°31.70 78				30				NO GPS.
			0712	127°22.4 1078	0647			LOOP.				
18	LJ06	1005	0749	49°28.00 80								GPS
			0824	127°28.98 1051.8	0754							
18	LJ07	1813	0853	49°24.30 81								GPS Interesting Bump in Turbidity @ 150m
			0944	127°34.61 1799	0857							
18	LJ08	1680	1013	49°20.43 82				31				GPS
			11:00	127°40.83 1502	1015							
18	LJ09	2510	1134	49°16.34 83				31				GPS 3 SV's
			1226	127°47.22 1500	1139			LOOP				
18	JET 1	578	1503	49°38.90 84		27						NO GPS - CHLOROPHYLL
				127°37.80 573	1506	200						10, 30, 100, 200
												BONGO
18	NJET	790	2058	50°16.11 86	2101	28	2150					BONGO
			2159	128°22.09 8257		200						CHLOROPHYLL 10 30 100 200

Sunday 18 June/90 cont. Pacific Daylight Time

LJ01 - CTD consec No. 73
02 cast

0440 PDT Loop #31 Station LJ09 #83

Wind speed 11 knt sea state is better ≈ 2 m

JET Moving - Stop @ 0803

CTD to bottom (575m).

Cast for Chlorophyll 30, 70, 100, 200 m.

Bongo net haul to 250 m.

- Low on disk space in drive D:

- Backed up 9001 casts 1-112 (filled bernoulli!)
& deleted

2058 UTC

- CTD to 825.7m

- Bongo Haul (Vertical)

- Hydro cast to 200 m 10, 50, 100, 200 m

JUNE 18/90

ANDREW THOMAS

ROD TORRES

JOBIE

} OFF

Rick Thomson

ANDREW PHILLIPS } ON

ADRIAN DOLLING }

JUNE 18/90

@ 1900 Repeat WINTER HARBOUR
PDT. COURSE TO BP Line (Beam Sea, 3 1/2 hours)

PROCEED TO END OF BP LINE BP08.
CTDT INBOUND ALONG BP Line

SCANNER ON @ 0320 GMT June 19
0-750 m scan

GPS @ 0330 GMT: 50° 14.118
128° 08.306

June 19/90

LORAN C 50 14.07
(1 minute later) 128 08.33

GPS @ 0335 GMT: 50 13.280
128 08.546

LORAN-C 50 13.32
128 08.56

GPS @ 0410 GMT: 50 07.499
128 10.751

LORAN C 50 07.44
128 10.74

June 19/90

0540 GMT: Newton Tow: 1 NM mi before BP08.
(ANTAND). Tow @ 4 kts.
100% Crab Megalopae: High Concentration!

0620 GMT STM BP08. 2095 m water
Low swell / Foggy. wind ~ 10 knots.

June 19 @ 1825 PDT

Talked with Ralph Currie on Tully. They're
doing SIDE SCAN Tows parallel to ridge
From South.

Need to coordinate ACTIVITIES

YEAR		MONTH		TIME		ZONE		SHIP		CRUISE		PAGE	OF
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP / START TIME	LATITUDE / LONGITUDE	STD CONSEC. # / DEPTH	STD TIME	HYDRO CONSEC. # / DEPTH	MESSENGER TIME	SALINITY # / CALIBRATION LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE / SALINITY	ADCP #	NOTES
19	LBP8	2095	0618 0710	49 48.73 128 16.71	87 2052	0620	2095						GPS.
19	LBP7	2175	0801 0831	49 52.42 128 11.34	88 2152	0801							GPS
19	LBP6	740	0945 1008	49 58.28 128 05.68	89 740	0948							GPS
19	LBP5	1250	1053	49 59.90 128 00.73	90 1286	1054							No GPS
19	LBP4	880	1150	50 01.47 127 58.08	91 912	1149							No GPS 50 01.53 127 57.93
19	LBP3	160	1236 1243	50 03.19 127 55.35	92 158	1234							GPS POSITION OK 351°
19	LBP2	95	1257 1302	50 03.90 127 54.31	93 9	1255							GPS POSITION ON 354°S
19	LBP1	50	1318 1326	50 04.68 127 53.20	94 50	1219							GPS POSITION 351°
START ADCP													
20	ER90A		47 56.13 129 05.53	95 2200	0408						A001		SAME LOCATION AS 1988 Profile ADCP ST TIME 04:09:50
	ER90A		47 56.32 129 05.54	96 2200	END 0540						A001		UPCAST CALM SEAS
	ER90B	0550	47 58.22 129 05.47	97 2200	0555						A002		G.P.S. POSITION HIT PLUME TOP @ 1870 m

JUNE 19

1900 PDT

ARRIVE WEST END OF SOUNDING LINE

Run Sounding Line From W → E along LORAN C
47°58'N Approx 129°10' to 129°02' @ 6 knots

Fix No.	TIME GMT	LORAN C		GPS (4 satellites)	
		LAT	LONG	LAT	LONG
1	0205	47 58.02	129 09.89	47 58.26	129 09.42
2	0209	58.02	09.56	58.23	09.13
3	0212	58.02	09.02	58.23	08.56
4	0216	58.00	08.41	58.22	08.93
5	0219	58.01	07.94	58.22	07.56
6	0222	57.98	07.43	58.21	07.02
7	0224	57.97	07.14	58.20	06.66
8	0228	57.98	06.51	58.21	06.08
9	0230	58.00	06.27	58.21	05.82
10	0233	57.98	05.83	58.22	05.37
11	0234	57.99	05.55	58.21	05.12
12	0236	57.99	05.21	58.20	04.78
13	0241	57.98	04.48	58.21	04.05
14	0243	58.00	04.17	58.22	03.74
15	0248	57.98	03.46	58.22	02.98

Change depth
scale

8 Tully
Nanbu
to P of
Crest

PASS

Tully

with

1 cable

49 is near top of west ridge @ 2090 m. Just passed
closely to Tully.

4 SAT. @ ±300' Accuracy (±100m)

Just east of Valley floor

CREST OF EAST RIDGE

Change to 122.50 — 3000 m scale

END

PROCEED TO STATION 47°56'N 129°06'W
STATION ER90A

Complete construction of unit 2100 PPT

JUNE 19/90

2105 PDT: ADCP/CTDT in water STN ER90A

START CAST @ 2110 PDT,

2130 POSN: 47 56.258 GPS 3 SATONTE

129 05.704

ER90A

47 56.03

129 06.17

} L.C

WENT TO 10 meters above bottom.

47 56.29

129 05.61

No Plume #96 cast is an up cast.

STN: ER90B To west of main Vent site.

0540 GMT

CAIM Seas / Light wind

POSITION 47 57.98 129 05.83

LOKAN C

@ 1300 m depth
(0617 GMT)

47 57.98

129 05.88

} LOKAN C

47 58.210

129 05.452

} GPS

STRONG Plume @ 11870 m. UP TO 3% of background

CTDT Depth: 2154 m; 10 m above bottom

START UP-CAST @ 0634 GMT

47 58.179

129 05.459

} GPS

47 57.93

129 05.84

} LOKAN C

STN ER90C To NE of main Vent site
Depth Sounder 2180

Tully to south 8 miles.

@ 0754 GMT

POSITION:

47 58.179

129 05.459

GPS

47 59.97

129 04.00

CTDT Depth:

Height above bottom 5m

0909 UTC ER90C Upcast (#100 consecutive)
GPS 4800.36 @ 12.60 m
12903.44

Add GPS time to Logs. Needed at start and end of each cast for ADCP calibration.

End of Cast @ 0933:02 UTC

0936 UTC - leave ER90C
- Newton tow @ 4 knots

1007 UTC - arrive ER90D

GPS Pos'n	Loran-C
49 58.227	49 58.01
129 01.297	129 01.77

- small transmissivity deflection at 1890 m $\approx 1.5\%$
- increasing to $\sim 1\%$ at 1950 m

1225 UTC arrive at ER90E CON # 103

Depth 2350 m No GPS POSITION
LORAN 'C' POS 'S' 48 5200
129 0802

Re Set computer clock before down cast.

	GPS	LORAN
GPS OK at 1282 m	47 58.31	47 58.12
	129 07.51	129 07.92

Plume detected at 1929 m Strongest at 2000 m
1.5%

Up cast at ER90E

GPS OK
475830
1290717

LORAN C
475816 @ 13:1755 UTC
1290760

Stop @ 2049m to let some wire back out to correct a wrap over on winch.

Plume start at 2000m. 1% over background

Plume ends at 1948m.

ER90E DOWNCAST ER90F
DN 4759.98 12907.92 LORAN C
@ 1423 GMT

Stop within 5m of bottom near 2365m.
No Plume Present.

ER90F UPCASt ER90F
UP @ 2000m depth 4759.97 / 12907.38
CALM Seas

Captain wants to leave area @ 0800 Thursday

ER90G DOWNCAST ER90G
DN 4747.766 12857.362 GPS @ 1740:32
4747.45 12857.89 LORAN @ 1741:

Sounder Rept 2680m

Low swell — zero wind. Sunny.

THIS is the station for Ed Baker of NOAA. Long-term intercomparison. CTD Depth @ end = 2655m Height above bottom = 5m

Release No (3) Serial 1613015 Release Code ACDF
Rearm Code A CDFG
(4) Serial 1613012 "ON" CDF
Release ABCE
"on" CDF

YEAR	MONTH	TIME	ZONE	SHIP	CRUISE	PAGE	OF							
90	06	UTC		Parizeau	90-12									
DAY	STATION NUMBER	DEPTH SOUNDING (M)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #/DEPTH	STD TIME	HYDRO CONSEC. #/DEPTH	MESSANGER TIME	SALINITY #/CALIBRATION	LOOP OR DEPTH	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	ADCP #	NOTES
20	ER90C	2180	0749	4800.02	99							A003		Newstr
				12903.95	2190	0807								
20	ER90C	2180		4800.02	100									Upcast at ER90C
		0936	12904.00	-	0848									
20	ER90D	2310	1007	4757.99	101									NO GPS -time reset at start -plume seen (see notes)
			12901.89											
20	ER90D		1004	4758.04	102	1058								UP CAST NO GPS. END 11:42 UTC
			12901.77											
20	ER90E	2350	1223	4758.00	103	1226								DOWN CAST NO GPS WORC POSITION
			12908.05											
20	ER90E	2350		4758.30	104	1315								UP CAST GPS OK
			12907.17											
20	ER90F	2365	1423	4759.98	105	1425								NO GPS LORAN C
			12907.92											
20	ER90F	2365	1510	4758.39	106	1513	4759.95							Upcast at ER90F MAY BE No plume GPS "OLD"
			12907.125				12907.53							
20	ER90G	2680	1740	4747.666	107	1742						A004		GPS (3 SAT. ±100m)
			12857.400		GMT									
20	ER90G	2656	1827	4747.807	108	1827						A004		UPCAST. GPS has 4 SAT LORAN C 4747.58 12857.85
			12857.376		GMT									
26	ER90H		2000	4754.43	109	2102						Tucker #1		GPS Pos'n FIRST TUCKER TRAWL
			12907.04		GMT									
21	ER90I	2110	0104	4757.94	110	0115						Tucker #2		NO GPS / LORAN 2nd trawl. Tully 2 miles
			12905.82											

PROCEED TO Southern end of TRAWL Line

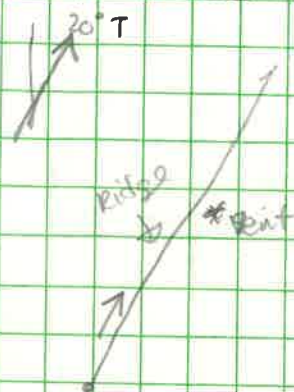
June 20/90

Plan is to have a 45 minute haul into the start of the line. Line is parallel to axial valley and just slightly to west, over west ridge

START LINE @ $47^{\circ}56.00'N$
 $129^{\circ}06.60'W$

END LINE @ $48^{\circ}00.00'N$
 $129^{\circ}04.80'W$

Tow Along $20^{\circ}T$



Tow Speed = 1.5 knots

Release Sequence

- #1 Messenger (Bottom net)
- #2 Messenger (2nd from bottom)
- #3 AR #15 (#3)
- #4 AR #12 (#4)

STATION ER90H TUCKER TRAWL (5 nets)

start @ 1402 PDT June 20/90

CTD + Transducer

Descent rate: 1 m/s

Sounder depth: 2250 m

Tow @ 1.5 kts

START lowering 2 miles to south of line

SAMPLING DEPTHS

GUESSES

NET 1 - OPEN DOWN TO 1900 m

NET 2 - 1900

NET 3 - 1800

NET 4 - 1750

NET 5 - OPEN UP

NOMINAL

Tow LOCATION'S South to North

@ 2137 GMT $47^{\circ}55.252'N$ $129^{\circ}06.637'W$ GPS

$47^{\circ}55.06'N$ $129^{\circ}07.07'W$ LORAN C

@ 2140 GMT $47^{\circ}55.336'N$ $129^{\circ}06.582'W$ GPS (1 mile from start: Bridge)

@ 2158 $47^{\circ}55.741'N$ $129^{\circ}06.304'W$ GPS

Lower again as unit beginning to surface

June 20/90

Tow Positions Cont'd

@ 2204 GMT 47 55.895 129 06.723 GPS
3 CABLES from start of line

Wire out = 2687m
CTD Depth = 1866m

@ 2221 47 56.358 129 06.003 GPS

D=1874m — going down
Called to Bridge. Tully (R. Lunn) is towing along
same direction. Will pass within 3 cables
Wanted me to move to east 2 cables.

@ 2234 GMT 47 56.666 129 05.887 GPS

@ 2302 47 57.299 129 05.655 GPS

Messenger #1 @ 2300 GMT
SENT

Depth Probe = 1900m (winch controlled)
Water depth = 2150m

Tow AT 1900m For 10 minutes

START Tow @ 1900m @ 2314 GMT
47 57.559 129 05.520 GPS

Messenger #2 @ 2316 GMT
SENT

47 57.605 129 05.503 GPS

Depth holding well at 1900m.

Package to sample
#1

RAISE PROBE TO 1850m @ 2327 GMT

(Radio open) 47 57.854 129 05.411 GPS
47 57.163 129 05.87 URAW

FIRST AR

Took pitch off props — probe sank to 1880m.
Raise to 1850m & hold with winch

@ 2340 start raising to 1800m

Stop @ 2343

END Release code to

2ND AR

Release confirmed

WIRE = 2587m
OUT
Probe = 1815m

NET ID	TRAWL TOW		GPS	LORAN-C	D
	TIME				
#1	2300	47 57.265 129 05.667		47 57.05 129 06.10	to bottom
#2	2316	47 57.605 129 05.503			
#3	2330	47 57.989 129 05.334		47 57.78 129 05.78	1900 -1895 m 1850- 1880
#4	2340	Probably only a short tow Saw NA too soon			1850 m 1800
#5					to surface

RAISE TO SURFACE (Tucker Trawl CONT'D)

ON SURFACE @ 01730 PDT

OBTAINED 5 Samples. 3x discrete samples @ 1900, 1850, 1800m

20/6/90

0104 UTC - Arrive station ER90I

47 58.00 N } LORAN-C
129 06.00 W }

47 58.18 } GPS
129 05.55 }

Start @ 0115 Jun 21 Posn 47° 58.146 129 05.358 OLD
47 57.94 129 05.82 W LORAN-C

2ND Tucker Trawl Tow

Tully behind us towing same course
2 miles behind @ 2 knots

Water
Sounder depth = 2110m Ship Speed = 1.5 kt

Plume Top @ 1930m @ 0149 47 58.884 129 05.104
GPS

RAISE Probe to 2000m :

ATTAIN DEPTH @ 0155 47 59.002 / 129 05.011 GPS

WIRE out = 2374m

Probe = 1996m

#1 Messenger @ 0156 GMT

RAISE TO 1900 m Hold using winch. This is plume depth. However we lost plume by the time we got messenger down
#1 Surface to 2000 m
#2 2000 → 1900 m Fly for 10 min then raise for 15 min
#3 1900 → 1800 m
#4 1800 → 1700 m
#5 1700 — surface

Fly @ 2000 m for 12 minutes until Messenger arrives
Then fly for 10 minutes
Plume held by now become very weak we've flown through most of it! Values @ 90.193%

2nd Messenger @ 0215 47°59.486 129 04.707 GPS
Probe rising slowly.

3rd Messenger as backup @ 0217

Fly @ 1900 m for 10 minutes until Acoustic Release
@ 0224 GMT 47 59.693 129 04.613
Depth varied 1900 ± 10 m

Begin raising to 1800 m @ 0240 GMT
@ 48 00.80 129 04.410 GPS

1st Acoustic Release @ 0251 GMT Probe at 1795 m
@ 48 00.372 129 04.240 GPS
48 00.19 129 04.72 LORAN C

@ 0300 let probe gradually rise on its own to 1700 m depth.

2nd Acoustic Release @ 0313 GMT Probe at 1705 m
@ 48 00.969 129 03.911 GPS
48 00.77 129 04.41 LORAN C

Tow Speed 1.5 kts UP CAST @ 0315 GMT

One of the chains got hooked onto center pin
Nets only opened part way! Small samples
Nets open 1/4

[illegible]

STATION ER90 J.

New have AR's first before messengers

START: 0449 GMT June 21 3 SATELLITES
@ 48 00.393 129 04.460 GPS
48 00.19 129 04.82
Start 0454 GMT

Steam along 200° T (parallel to Ridge)

Position @ 0526 GMT 47 59.823 129 04.747 GPS
WIRE OUT: 2205 m CTD = 1890 m

Position: @ 0558 GMT 47 59.118 129 05.092

Net #1 Surface to 1950 m AR @ 07:25 GMT

Net #2 1950 to 1936 m (top of plume)

Net #3 1936 to 1910 m

Net #4

Net #5

GPS TIME 7:24 26 / 47 57 17 N 129 06 41 W LORAN
1935 m @
FIRST RELEASE (PINGER)

#1 AR.

Values of around 89.5% from very stable
values prior of 90.5%. Down to 1950 m; values around
89.6%.

@ 07:35 Raise from 1950 m to 1936 m.
Top of plume at 1936 m (value = 90.295%)
07:32

#2 AR @ 07:37 Depth = 1937 m

RAISE TO 1910 m to try to catch Scattering layer

@ 1910 m @ 0740 47 56.87 129 06.51 LORANC
No GPS
Values 90.346% to 90.295%

#1 Messenger @ 0743:23 GMT This closes the trap
Probe @ 1910 m

Raise Probe to 1850 m @ 0758 GMT : AT Depth
#2 Messenger to close @ 0802 GMT

@ 0807 47 56.501 / 129 06.354 GPS
47 56.30 / 129 06.84 LORANC

Start down in preparation of UPCASt
@ 0820

Asked ship to halve speed. Let Package fall.
@ 0820 47 56.271 129 06.511 GPS

STATION ER90 K - GPS 47 56.17N
129 06.28W

START @ 2105 m depth
WIRE out = 2860 m
Probe depth = 2105 m

Top of plume near 1990 m

1055 UTC

Sta ER90 L - CTD only (Tucker removed) 2580 m

Sta ER90 M — CTD only

John Love then tested Coastal CTD.
Report of lost mooring north of Brooks. Talked to Tom
regarding us picking it up.
Home! Cape Flattery 2200 PDT

TO: CAPTAIN / BRIDGE

JUNE 19/90

FROM: RICK T.

1. ARRIVE WESTERN END OF SOUNDING LINE
@ $129^{\circ}10'W$
 $47^{\circ}58'N$

2. CONDUCT SOUNDING LINE WEST-EAST ALONG $47^{\circ}58'N$
This tells us where valley lies relative to ship's positioning
systems (Loran-C; GPS). SPEED = 6 knots

3. PROCEED TO FIRST ADCP/CTD profile station (corrected
relative to sounding line if needed).

Approx. location: $47^{\circ}56'N$
 $129^{\circ}06'W$

STATION E90A

4. CONDUCT Profile. Retrieve package and wait near completed
station to see if backscattering layer is present.

IF YES $\rightarrow$ Short deep Tucker Trawl at same site by
towing Tucker Trawl through the area. We would start 2 miles
to the SSW of station and tow at about $1\frac{1}{2}$ knots through it along
 $70^{\circ}TRUE$.

IF NO $\rightarrow$ Proceed to STATION E90B (North of E90A).

Approx. location: $47^{\circ}58'N$
 $129^{\circ}06'W$

5. BASED ON FINDINGS. Pick other profile stations.
Some stations will consist of both ADCP/CTD and
Tucker trawls; others will consist only of ADCP/CTD.

6. DEPART FOR EOS at 1600 PDT Thursday from last
station @ $47^{\circ}51.40'N$
 $128^{\circ}57.90'W$.

MARY THAMM

Rick

JUNE 20/90

TUCKER TRAWL TOW at 1800 m.

START TOW AT: $47^{\circ} 56.00' N$
 $129^{\circ} 06.60' W$

LORAN-C

END TOW AT: $48^{\circ} 00.00' N$
 $129^{\circ} 04.80' W$

LORAN-C

Tow is toward 20° TRUE
SPEED OF TOW: 1.5 knots

Thanks,

Rick

JUNE 20

SURVEY

ADCP/CTD

1. ER90D 47° 58.00' N
 129° 02.00' W
2. ER90E 47° 58.00' N
 129° 08.00' W
3. ER90F 48° 00.00' N
 129° 08.00' W
4. ER90G 47° 47.40' N
 128° 57.90' W

(2050 m depth)

~~5. ER90B~~

~~Repeat~~

~~Chautauq~~

Rick