Baffin 90-024 cruise report

Prepared by: H.W. Josenhans and
B.L. Johnston

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CRUISE OBJECTIVES

To collect baseline environmental data near the Great Whale and Little Whale rivers in anticipation of the proposed river diversions for hydroelectric development. The seismic and sample data will be interpreted and analyzed in order to prepare maps illustrating the geological conditions and seafloor processes in the vicinity of the river mouths.

CRUISE SUMMARY

SHIP AND CRUISE NUMBER: Baffin 90-024

DATES: October 8-12, 1990

PROJECT NUMBER: 87-0051

AREA OF OPERATION: Eastern Hudson Bay- Great Whale River

STAFF:

Master: J. Lewis
Senior scientist: H. Josenhans
Second scientist: J. Zevenhuizen
Terrain Sciences Geologist: J. Veillette
Technical staff: L. Johnston
D. Locke
S. Rujajaruswong
Hydro Quebec Observers: R. Perreault
P. Guilmont
S . Sally
N. Gonthier

RESULTS

Favorable weather facilitated the collection of 856 km of high quality seismic reflection and sidescan sonar data, 8 Leheigh cores,11 benthos gravity cores and 8 van veen grab samples. Poor weather during the previous cruise resulted in our having to dismantle the hydrographic navigation towers in the northern regions of the study area during our program. Consequently,more data was collected in Little Whale River area than in the central region of the study area (see control maps,Fig 2-6) because the ship was required to stay within range of the helicopter during the dismantling procedure.

SCIENTIFIC HIGHLGHTS

Some of the scientific highlights observed during the cruise are illustrated in this report. These figures document the dynamic conditions active on the seafloor seaward of both deltas. The most interesting geological process in the region is the presence of sedimentary furrows in the deep (bedrock controlled) channels caused by turbulent bottom currents which effectively erode the muddy seafloor and transport sediments toward the south west.

ACKNOWLEDGEMENTS

We thank the officers and crew of the C.S.S. Baffin for their willing and able support at sea. Don Locke and Larry Johnston set up the equipment and allowed us to collect excellent data at sea. I also thank John Zevenhuizen and Jean Veillette for their dedicated support and long hours of work.

INDEX OF FIGURES AND TRACK CHARTS

APPENDIX : A
(compiled by B.L. Johnston)

BAFFIN 90-024 FACTS SHEET

SAMPLE INVENTORY:

VANVEEN GRABS ----	8
GRAVITY CORES ----	8
LEHEIGH CORES ----	11

KILOMETRES RUN:

100 KHZ KLEIN SIDESCAN ----------	367 Km
3.5 KHZ BATHYMETRY ----------	856 Km
GEOPULSE SEISMICS ----------	501 Km

HIGH RES SEISMICS

High res seismics was provided by a Geopulse system consisting of a boomer plate mounted on a surfboard towed approximately twenty five metres behind the vessel. Signals were recieved on a 25 ft. NSRF streamer and displayed on an EPC 4100 recorder having passed through a preamp. Annotations were made manually each 1/2 hour.

BATHYMETER 3.5 Khz ACOUSTIC PROFILER (HULL MOUNTED)

Bathymetry/high res seismic information was recorded every 5 minutes on an EPC 4100 recorder triggering the ORE 140 Transceiver to hull mounted transducers.

The 3.5 Khz was run during transit between stations, while on station and during transit to new survey areas. Having the 3.5 going while on station, records a true indication of the sub-bottom at the time the sampling equipment hits bottom. The 3.5 worked very well in good to fair weather conditions but deteriorates with increased ship motion.

KLEIN SIDE SCAN SONAR

Sidescan records were produced using the Klein 100 Khz, high resolution one degree standard Klein towfish attached to the new K-WING II depressor.
The K-WING II depressor decreased Klein towfish layback and increased winch response over tow depth.
The 100 Khz data was recorded on the Klein 431T wet paper recorder and manually annotated at frequent time intervals.

NAVIGATION LOGGING

Accurate navigation was achieved using a Trimble 400OSX GPS survey reciever rented for this cruise from McElhanney Services Ltd. Coverage amounted to about 20 hours per day with a an accuracy of 20 to 50 metres. Data were logged directly from the reciever via an RS232 link to a NEC laptop computer. One minute records of time, latitude and longitude were logged on 3 1/2 dickettes using the Mirror communications package. A continuous hard copy was produced on a HP Thinkjet. Radar was used during times of no GPS coverage.

FINSS INVENTORY SYSTEM (RECORDS,TAPES,SAMPLES)

Because of time restraints on the cruise, the inventory of collected data was maintained in a logbook only and was finalized into the appropriate databases upon return to BIO.
The Dbase 3 Plus (based) inventory system (FINSS) was used to handle the storage and report generation of all samples and records collected on the cruise. A full inventory generated by FINS of all collected data is included at the end of this report.

Hardware for this system includes a BULL Power Mate 386 computer operating at 16 Mh with a 1.2 Mb floppy drive and a 20 Mb hard disc. Printing capability was provided by a HEWLETT PACKARD Thinkjet and a backup EPSON FX-100 printer.

TABLE 1

LINE NUMBER START/STOPS

LINE NUMBER	START DAY/TIME	STOP DAY/TIME
1	278/1350	278/1917
2	280/1818	281/0300
3	281/1700	282/0000
4	282/0004	282/0246
5	282/0250	282/0538
6	282/0545	282/0650
7	282/0700	282/1015
8	282/2250	283/0218
9	283/0219	283/0452
10	283/0458	283/0830
11	283/0832	283/1030
12	283/1115	283/1245
13	283/1300	283/1519
14	283/1523	283/1645
15	283/1649	283/1800
16	283/1801	283/1920
17	283/1925	283/1945
18	283/2345	284/0000
19	284/0015	284/0100
20	284/0101	284/0351
21	284/0400	284/0522
22	284/0525	284/0600
23	284/0607	284/0924
24	284/0945	284/1230
25	284/1604	284/1707
26	284/1715	284/1833
27	284/1840	284/2110
28	284/2111	284/2359
29	284/2358	285/0000

TABLE 2

LINE NUMBER PARAMETER OCCURANCE

LINE NUMBER	KLEIN SIDESCAN	GEOPULSE SEISMICS	3.5 KHZ
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29

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TABLE 3

PARAMETER START/STOP TIMES

3.5 KHZ BATHYMETRY

278/1325 278/1923
280/1818 281/0300
281/1700 282/1015
282/2250 283/1945
283/2345 285/0000

GEOPULSE SEISMICS

282/0009 282/1025
282/2250 283/1946
283/2327 284/1232
284/1604 285/0000

100 KHZ KLEIN SIDESCAN

282/2245 283/0420
283/0543 283/1600
283/1908 283/1948
283/2328 284/1230
284/1609 285/0000

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TABLE 4

TOTAL SAMPLE INVENTORY

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

SAMPLE NUMBER	SAMPLE TYPE	DAY/TIME (GMT)	LATITUDE	LONGITUDE	DEPTH (M)	GEOGRAPHIC LOCATION
001	CORE	2821347	56 01.76N	76 49.10W	126.0	LITTLE WHALE RIVER
002	CORE	2821427	56 03.20N	76 52.13W	85.0	LITTLE WHALE RIVER
003	CORE	2821517	56 04.20N	76 57.40W	167.0	LITTLE WHALE RIVER
004	CORE	2821609	56 04.71N	77 00.56W	131.0	LITTLE WHALE RIVER
005	GRAB	2821625	56 04.96N	77 00.85W	71.0	LITTLE WHALE RIVER
006	CORE	2821704	56 01.70N	77 01.80W	166.0	LITTLE WHALE RIVER
007	GRAB	2821826	56 02.14N	77 16.37W	37.0	LITTLE WHALE RIVER
008	CORE	2821916	56 06.21N	77 07.55W	72.0	LITTLE WHALE RIVER
009	CORE	2822000	56 12.13N	77 06.87W	56.0	LITTLE WHALE RIVER
010	CORE	2822133	56 06.40N	76 57.19W	160.0	LITTLE WHALE RIVER
011	GRAB	2822235	56 00.46N	76 48.47W	42.0	LITTLE WHALE RIVER DELTA
011A	CORE	2822230	56 00.42N	76 48.51W	49.0	LITTLE WHALE RIVER DELTA
012	CORE	2832235	55 15.83N	77 51.21W	31.0	GREAT WHALE RIVER DELTA
013	CORE	2832300	55 16.78N	77 49.11W	40.0	GREAT WHALE RIVER DELTA
014	CORE	2850054	55 16.63N	78 14.62W	113.0	GREAT WHALE RIVER ESTUARY
015	GRAB	2850105	55 16.90N	78 14.47W	112.0	GREAT WHALE RIVER ESTUARY
016	CORE	2850125	55 16.20N	78 16.10W	110.0	GREAT WHALE RIVER ESTUARY

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TOTAL SAMPLE INVENTORY

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
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SAMPLE NUMBER	SAMPLE TYPE	DAY/TIME (GMT)	LATITUDE	LONGITUDE	DEPTH (M)	GEOGRAPHIC LOCATION
017	GRAB	2850135	55 16.49N	78 15.88W	105.0	GREAT WHALE RIVER ESTUARY
018	CORE	2850202	55 15.80N	78 17.44W	106.0	GREAT WHALE RIVER ESTUARY
019	GRAB	2850212	55 15.85N	78 17.06W	109.0	GREAT WHALE RIVER ESTUARY
020	GRAB	2850317	55 17.50N	78 01.14W	80.0	GREAT WHALE RIVER ESTUARY
021	CORE	2850326	55 17.63N	78 00.73W	80.0	GREAT WHALE RIVER ESTUARY
022	CORE	2850400	55 16.45N	77 54.95W	82.0	GREAT WHALE RIVER ESTUARY
023	GRAB	2850408	55 16.50N	77 54.75W	81.0	GREAT WHALE RIVER ESTUARY
024	CORE	2851245	55 24.90N	77 35.94W	53.0	MANITOUNUK SOUND
025	CORE	2851312	55 24.10N	77 37.35W	58.0	MANITOUNUK SOUND
026	CORE	2851323	55 24.06N	77 37.80W	54.0	MANITOUNUK SOUND

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TABLE 5

GRAB SAMPLES

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

SAMPLE NUMBER	TYPE OF SAMPLER	DAY/TIME (GMT)	LATITUDE LONGITUDE	DEPTH (M)	NO. OF ATTEMPTS	GEOGRAPHIC LOCATION	GRAB SAMPLE NOTES
005	VAN VEEN	2821625	56 04.96N 77 00.85W	71.0	1	LITTLE WHALE RIVER	GRAVEL, COBBLE LAG OVER SANDY PEBBLY MUD (GREY).
007	VAN VEEN	2821826	56 02.14N 77 16.37W	37.0	2	LITTLE WHALE RIVER	BOULDER IN JAWS ON FIRST ATTEMPT. ROCKS, SAND, GRAVEL, MUD, AND CORAL.
011	VAN VEEN	2822235	56 00.46N 76 48.47W	42.0	1	LITTLE WHALE RIVER DELTA	GREY SANDY MUD.
015	VAN VEEN	2850105	55 16.90N 78 14.47W	112.0	1	GREAT WHALE RIVER ESTUARY	SAMPLE BAGGED IN A BUCKET.
017	VAN VEEN	2850135	55 16.49N 78 15.88W	105.0	1	GREAT WHALE RIVER ESTUARY	SAMPLE BAGGED IN A BUCKET.
019	VAN VEEN	2850212	55 15.85N 78 17.06W	109.0	1	GREAT WHALE RIVER ESTUARY	SAMPLE BAGGED IN A BUCKET.
020	VAN VEEN	2850317	55 17.50N 78 01.14W	80.0	1	GREAT WHALE RIVER ESTUARY	SAMPLE BAGGED IN A BUCKET.
023	VAN VEEN	2850408	55 16.50N 77 54.75W	81.0	1	GREAT WHALE RIVER ESTUARY	SAMPLE BAGGED IN A BUCKET.

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TABLE 6

CORE SAMPLES

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

SAMPLE NUMBER	SAMPLE TYPE	DAY/TIME (GMT)	LATITUDE LONGITUDE	DEPTH (MTRS)	CORER LENGTH (CM)	APP. PENN (CM)	CORE LENGTH (CM)	NO OF SECT	GEOGRAPHIC LOCATION	NOTES
001	LEHEIGH	2821347	56 01.76N 76 49.10W	126.0	300	240	222	1	LITTLE WHALE RIVER	EXCELLENT RECOVERY, 3.5 KHZ DATA SWITCHED ON AFTER CORE TAKEN.
002	LEHEIGH	2821427	56 03.20N 76 52.13W	85.0	300	180	137	1	LITTLE WHALE RIVER	CATCHER INVERTED.
003	BENTHOS GRAVIT	2821517	56 04.20N 76 57.40W	167.0	300	200	135	1	LITTLE WHALE RIVER	
004	BENTHOS GRAVIT	2821609	56 04.71N 77 00.56W	131.0	300	210	141	1	LITTLE WHALE RIVER	CORE CATCHER SAMPLE BAGGED.
006	BENTHOS GRAVIT	2821704	56 01.70N 77 01.80W	166.0	300	240	164	1	LITTLE WHALE RIVER	
008	BENTHOS GRAVIT	2821916	56 06.21N 77 07.55W	72.0	300	240	127	1	LITTLE WHALE RIVER	
009	LEHEIGH	2822000	56 12.13N 77 06.87W	56.0	300	300	23	1	LITTLE WHALE RIVER	POSSIBLY ENTERED ON AN ANGLE. CUTTE BENT UP (MAY HAVE HIT A ROCK). COUL PICK UP ON THE SOUNDER (LET FREE FA VERY DISTURBED SAMPLE.
010	LEHEIGH	2822133	56 06.40N 76 57.19W	160.0	300	150	0	1	LITTLE WHALE RIVER	CUTTER FROCED UP BARREL, NO SAMPLE RECOVERED. CATCHER PULLED OUT.
011A	BENTHOS GRAVIT	2822230	56 00.42N 76 48.51W	49.0	240	60	30	1	LITTLE WHALE RIVER DELTA	
012	LEHEIGH	2832235	55 15.83N 77 51.21W	31.0	300		74	1	GREAT WHALE RIVER DELTA	
013	BENTHOS GRAVIT	2832300	55 16.78N 77 49.11W	40.0	240	240	116	1	GREAT WHALE RIVER DELTA	
014	BENTHOS GRAVIT	2850054	55 16.63N 78 14.62W	113.0	240		127	1	GREAT WHALE RIVER ESTUARY	CUTTER SAMPLE IN BUCKET.
016	BENTHOS GRAVIT	2850125	55 16.20N 78 16.10W	110.0	240	240	113	1	GREAT WHALE RIVER ESTUARY	
018	BENTHOS GRAVIT	2850202	55 15.80N 78 17.44W	106.0	240	240	123	1	GREAT WHALE RIVER ESTUARY	

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TABLE 6

CORE SAMPLES

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

SAMPLE NUMBER	SAMPLE TYPE	DAY/TIME (GMT)	LATITUDE LONGITUDE	DEPTH (MTRS)	CORER LENGTH (CM)	APP. PENN (CM)	CORE LENGTH (CM)	NO OF SECT	GEOGRAPHIC LOCATION	NOTES
021	BENTHOS GRAVIT	2850326	55 17.63N 78 00.73W	80.0	240	240	122	1	GREAT WHALE RIVER ESTUARY	
022	BENTHOS GRAVIT	2850400	55 16.45N 77 54.95W	82.0	240	240	118	1	GREAT WHALE RIVER ESTUARY	
024	LEHEIGH	2851245	55 24.90N 77 35.94W	53.0	300	180	127	1	MANITOUNUK SOUND	
025	LEHEIGH	2851312	55 24.10N 77 37.35W	58.0	300	150	94	1	MANITOUNUK SOUND	
026	LEHEIGH	2851323	55 24.06N 77 37.80W	54.0	300	150	28	1	MANITOUNUK SOUND	

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TABLE 7

SEISMIC RECORDS

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

ROLL NUMBERS	START DAY/TIME	STOP DAY/TIME	HYDROPHONE	LINE NUMBERS	RECORD TYPE	GEOGRAPHIC LOCATION	RECORDER	SYSTEM / SOUND SOURCE
001	2820009	2820245	NSRF 25'	4	SINGLE	HUDSON BAY GRAET WHALE AREA	EPC 4100	GEOPULSE BOOMER
002	2820246	2820548	NSRF 25'	5	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
003	2820547	2820651	NSRF 25'	6	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
004	2820652	2821025	NSRF 25'	7	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
005	2822250	2830032	NSRF 25'	8	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
006	2830038	2830210	NSRF 25'	8	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
007	2830218	2830452	NSRF 25'	9	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
008	2830452	2830829	NSRF 25'	10	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
009	2830830	2831032	NSRF 25'	11	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
010	2831033	2831245	NSRF 25'	12	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
011	2831246	2831325	NSRF 25'	13	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
012	2831326	2831645	NSRF 25'	13, 14	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
013	2831645	2831801	NSRF 25'	15	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
014	2831801	2831946	NSRF 25'	16, 17	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
015	2832327	2840100	NSRF 25'	18, 19	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
016	2840101	2840351	NSRF 25'	20	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
017	2840352	2840525	NSRF 25'	21	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER

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TABLE 7

SEISMIC RECORDS

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

ROLL NUMBERS	START DAY/TIME	STOP DAY/TIME	HYDROPHONE	LINE NUMBERS	RECORD TYPE	GEOGRAPHIC LOCATION	RECORDER	SYSTEM / SOUND SOURCE
018	2840526	2840602	NSRF 25'	22	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
019	2840605	2840925	NSRF 25'	23	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
01A	2812124	2820004	NSRF 25'	3	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
020	2840926	2841232	NSRF 25'	24	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
021	2841604	2841707	NSRF 25'	25	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
022	2841709	2841833	NSRF 25'	26	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
023	2841840	2842110	NSRF 25'	27	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER
024	2842112	2850000	NSRF 25'	28	SINGLE	HUDSON BAY GREAT WHALE RIVER	EPC 4100	GEOPULSE BOOMER

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TABLE 8

SIDESCAN RECORDS

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

ROLL NUMBERS	START DAY/TIME	STOP DAY/TIME	LINE NUMBERS	RECORD TYPE	GEOGRAPHIC LOCATION	RECORDER	SIDESCAN SYSTEM
001	2822245	2830220	8	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
002	2830220	2830420	9	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
003	2830543	2830830	10	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
004	2830830	2831245	11, 12	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
005	2831248	2831712	13, 14, 15	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
006	2831908	2831948	16	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
007	2832328	2840100	18, 19	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
008	2840100	2840353	20	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
009	2840353	2840522	21	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
010	2840523	2840607	22	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
011	2840600	2841020	23	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
012	2841025	2841230	25	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
013	2841609	2841834	25, 26	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
014	2841849	2842110	27	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)
015	2842110	2850002	28, 29	SINGLE	HUDSON BAY GREAT WHALE RIVER	KLEIN 521	KLEIN 401 (100 KHZ)

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TABLE 9

3.5 KHZ RECORDS

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

ROLL NUMBERS	START DAY/TIME	STOP DAY/TIME	LINE NUMBERS	GEOGRAPHIC LOCATION	RECORDER	SYSTEM / SOUND SOURCE
001	2781325	2781923	1	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
002	2801818	2810300	2	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
003	2811700	2820009	3	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
004	2820009	2820245	4	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
005	2820246	2820547	5	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
006	2820548	2821025	6, 7	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
007	2822250	2830210	8	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
008	2830218	2830452	9	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
009	2830452	2830830	10	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
010	2830832	2831245	11, 12	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
011	2831246	2831645	13, 14	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
012	2831650	2831922	15, 16	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
013	2831924	2840000	17, 18	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
014	2840001	2840351	19, 20	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
015	2840352	2840607	21, 22	GREAT WHALE RIVER HUDSON BAY	EPC 4100	ORE HULL MOUNTED
016	2840605	2840924	23	GREAT WHALE RIVER HUDSON BAY	EPC 4100	3.5 HULL MOUNTED
017	2840925	2841230	24	GREAT WHALE RIVER HUDSON BAY	EPC 4100	3.5 HULL MOUNTED

ATLANTIC GEOSCIENCE CENTRE
DATA SECTION
-FINS- REPORTING PACKAGE

TABLE 9

3.5 KHZ RECORDS

CRUISE NUMBER = 90024
CHIEF SCIENTIST = H. JOSENHANS
PROJECT NUMBER = 87-0051

ROLL NUMBERS	START DAY/TIME	STOP DAY/TIME	LINE NUMBERS	GEOGRAPHIC LOCATION	RECORDER	SYSTEM / SOUND SOURCE
018	2841240	2841605	24A	GREAT WHALE RIVER HUDSON BAY	EPC 4100	3.5 HULL MOUNTED
019	2841605	2841836	25, 26	GREAT WHALE RIVER HUDSON BAY	EPC 4100	3.5 HULL MOUNTED
020	2841840	2850000	27, 28, 29	GREAT WHALE RIVER HUDSON BAY	EPC 4100	3.5 HULL MOUNTED

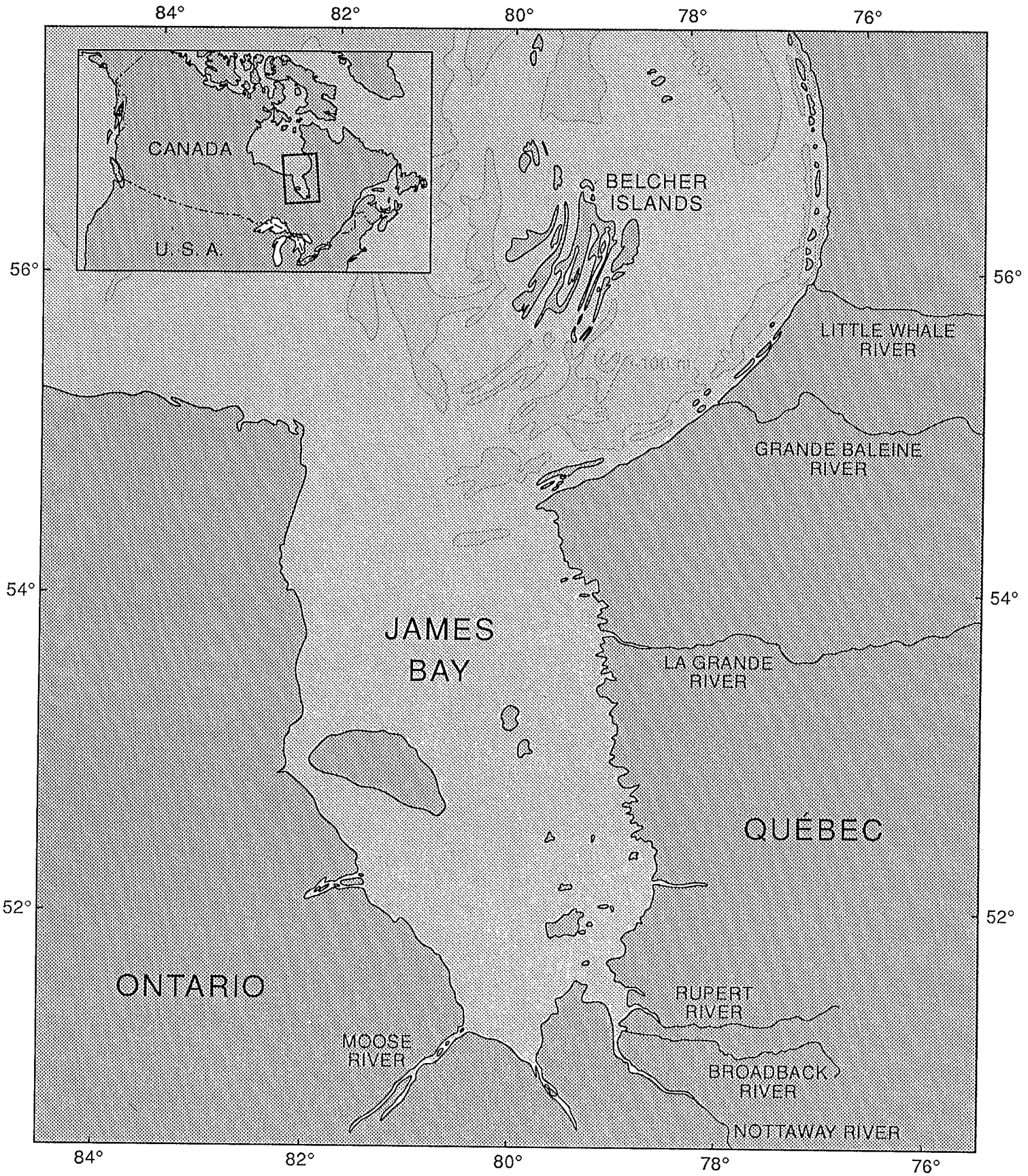

84°
82°
80°
78°
76°
CANADA
U. S. A.
BELCHER ISLANDS
56°
LITTLE WHALE RIVER
GRANDE BALEINE RIVER
54°
JAMES BAY
LA GRANDE RIVER
QUÉBEC
52°
ONTARIO
RUPERT RIVER
MOOSE RIVER
BROADBACK RIVER
NOTTAWAY RIVER

Fig 1

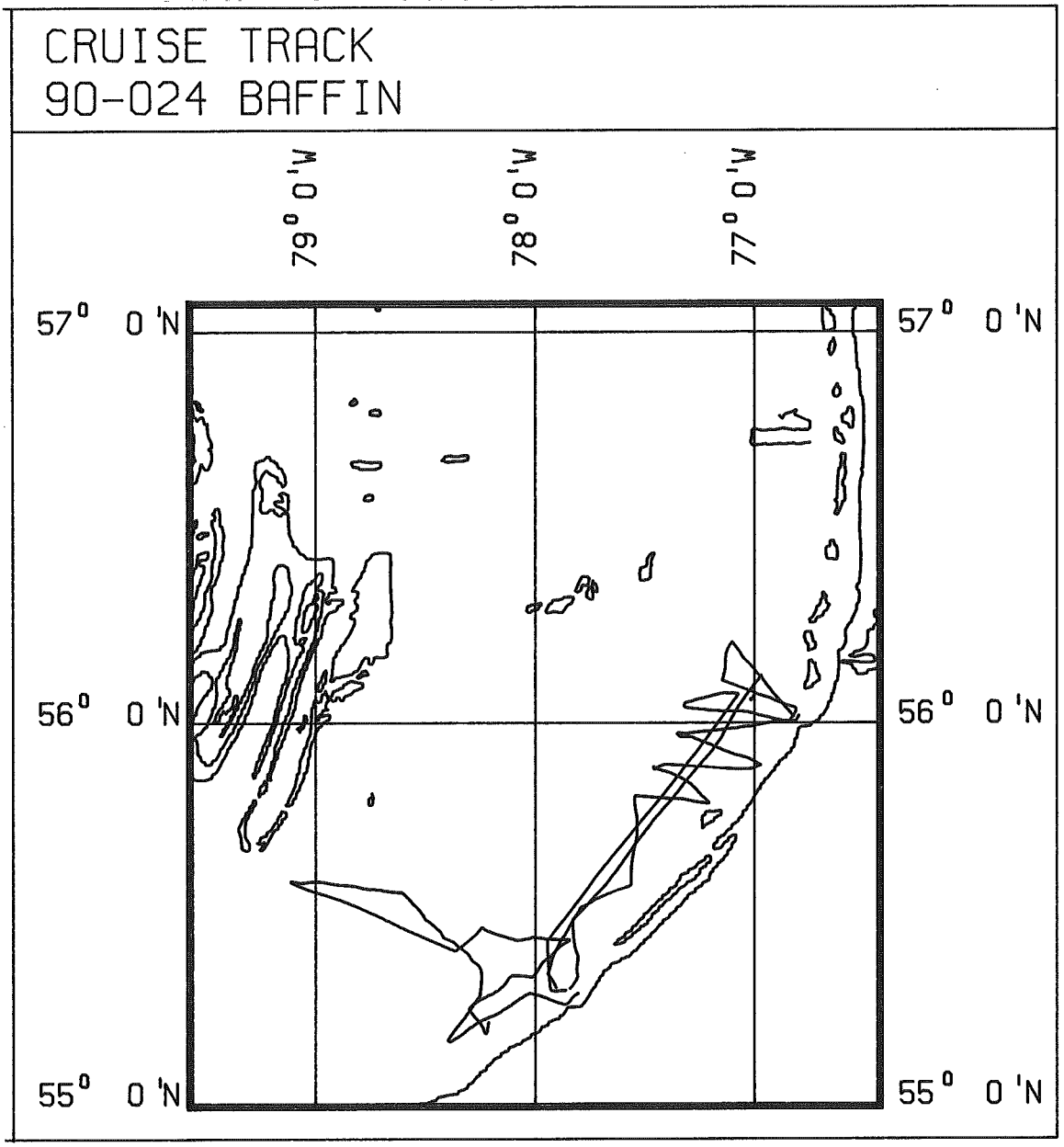

CRUISE TRACK
90-024 BAFFIN
79° 0'W
78° 0'W
77° 0'W
57° 0'N
56° 0'N
55° 0'N
ATLANTIC GEOSCIENCE CENTRE

Fig 2

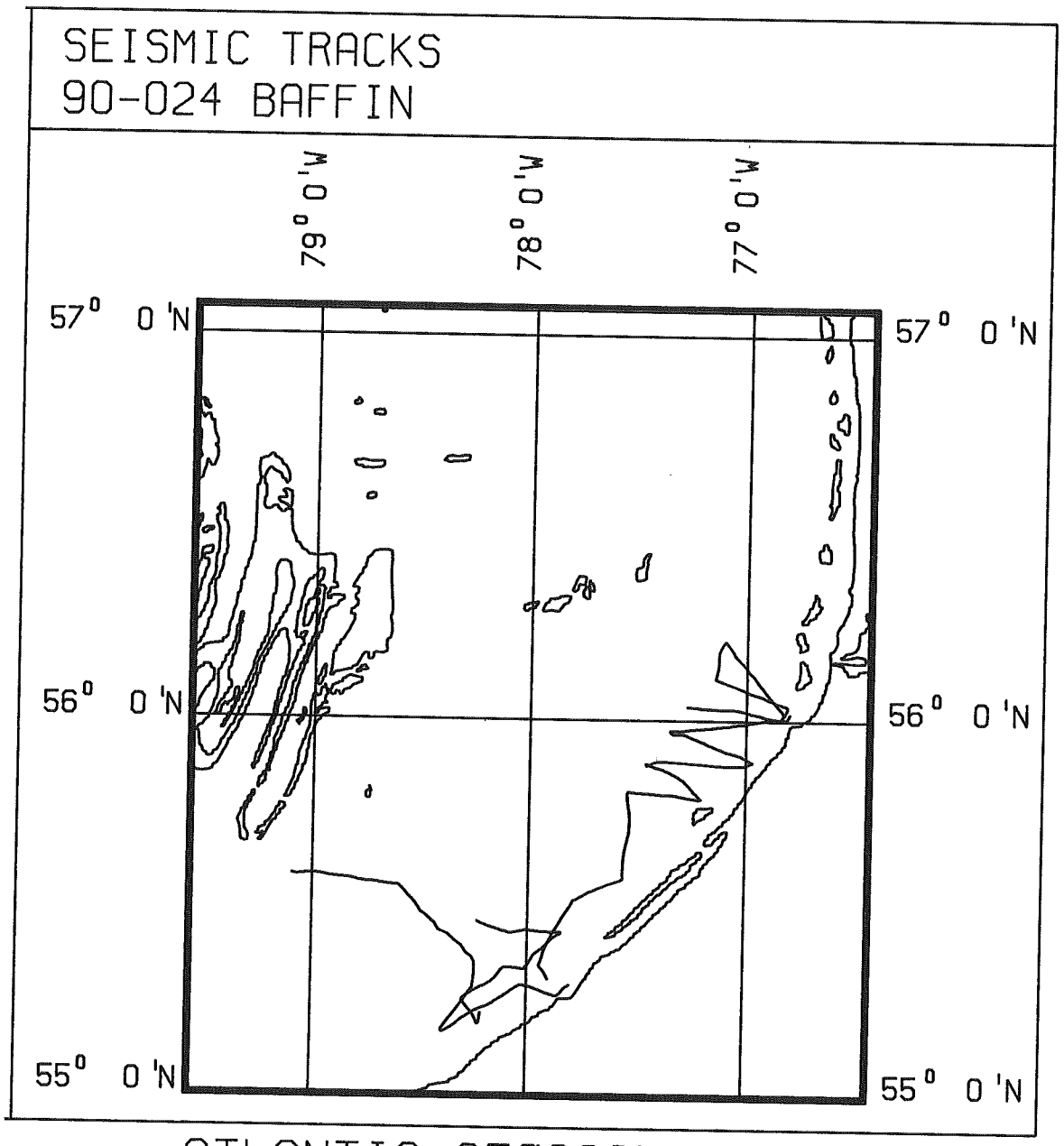

SEISMIC TRACKS
90-024 BAFFIN
79° 0'W
78° 0'W
77° 0'W
57° 0'N
56° 0'N
55° 0'N
ATLANTIC GEOSCIENCE CENTRE

Fig 3

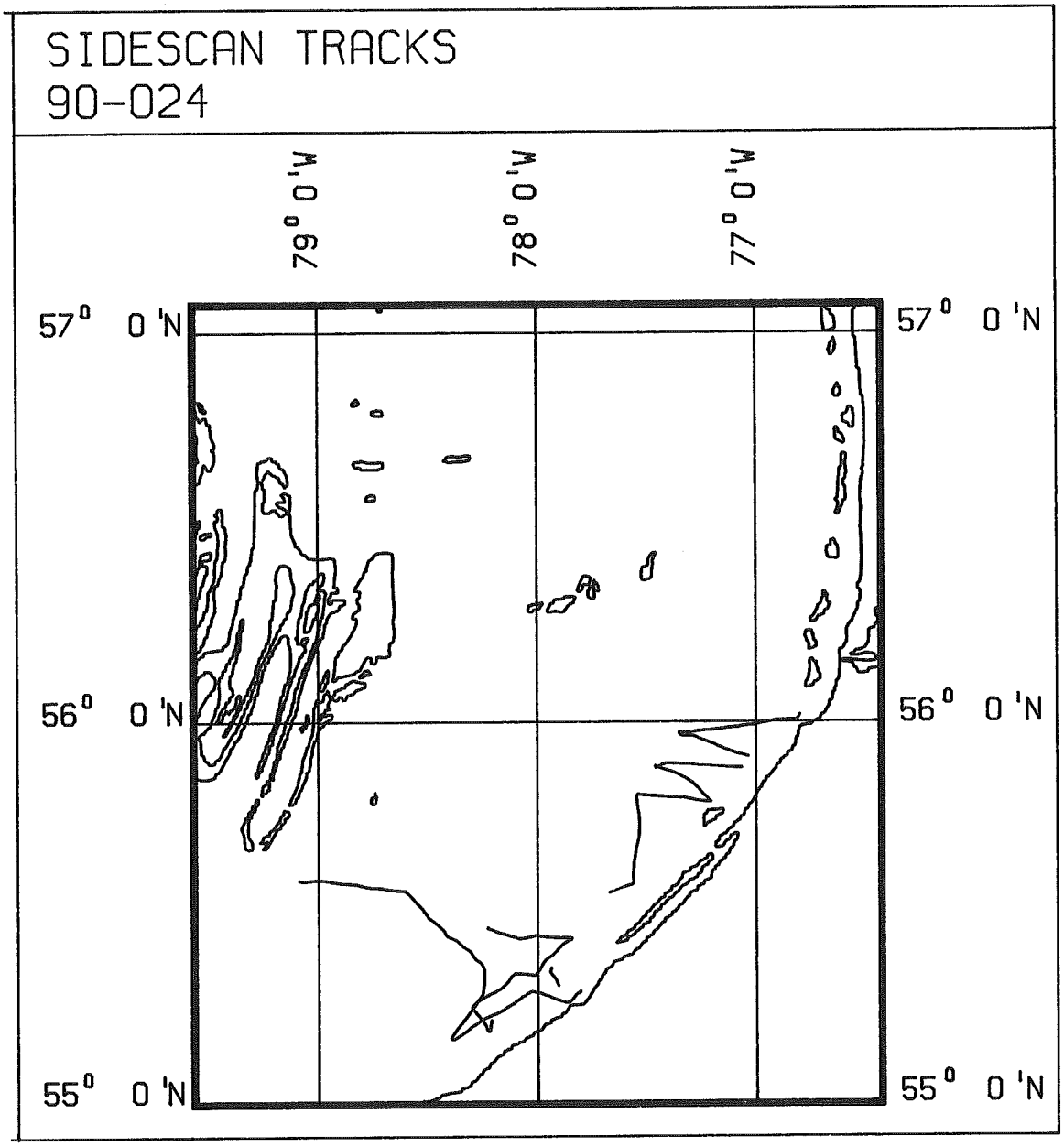

SIDESCAN TRACKS
90-024
79° 0'W
78° 0'W
77° 0'W
57° 0'N
56° 0'N
55° 0'N
ATLANTIC GEOSCIENCE CENTRE

Fig 4

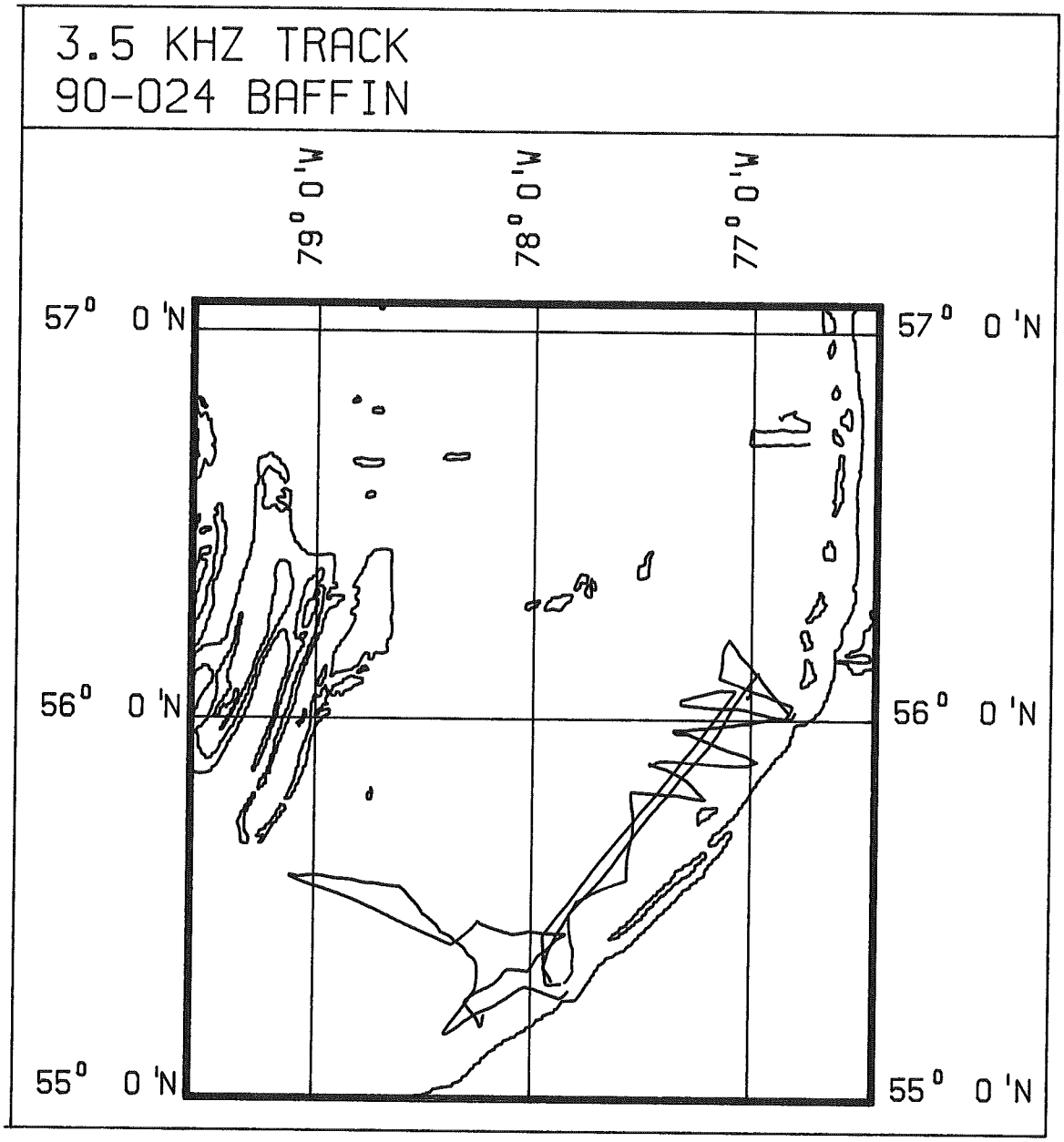

3.5 KHZ TRACK
90-024 BAFFIN
79° 0'W
78° 0'W
77° 0'W
57° 0'N
56° 0'N
55° 0'N
ATLANTIC GEOSCIENCE CENTRE

Fig 5

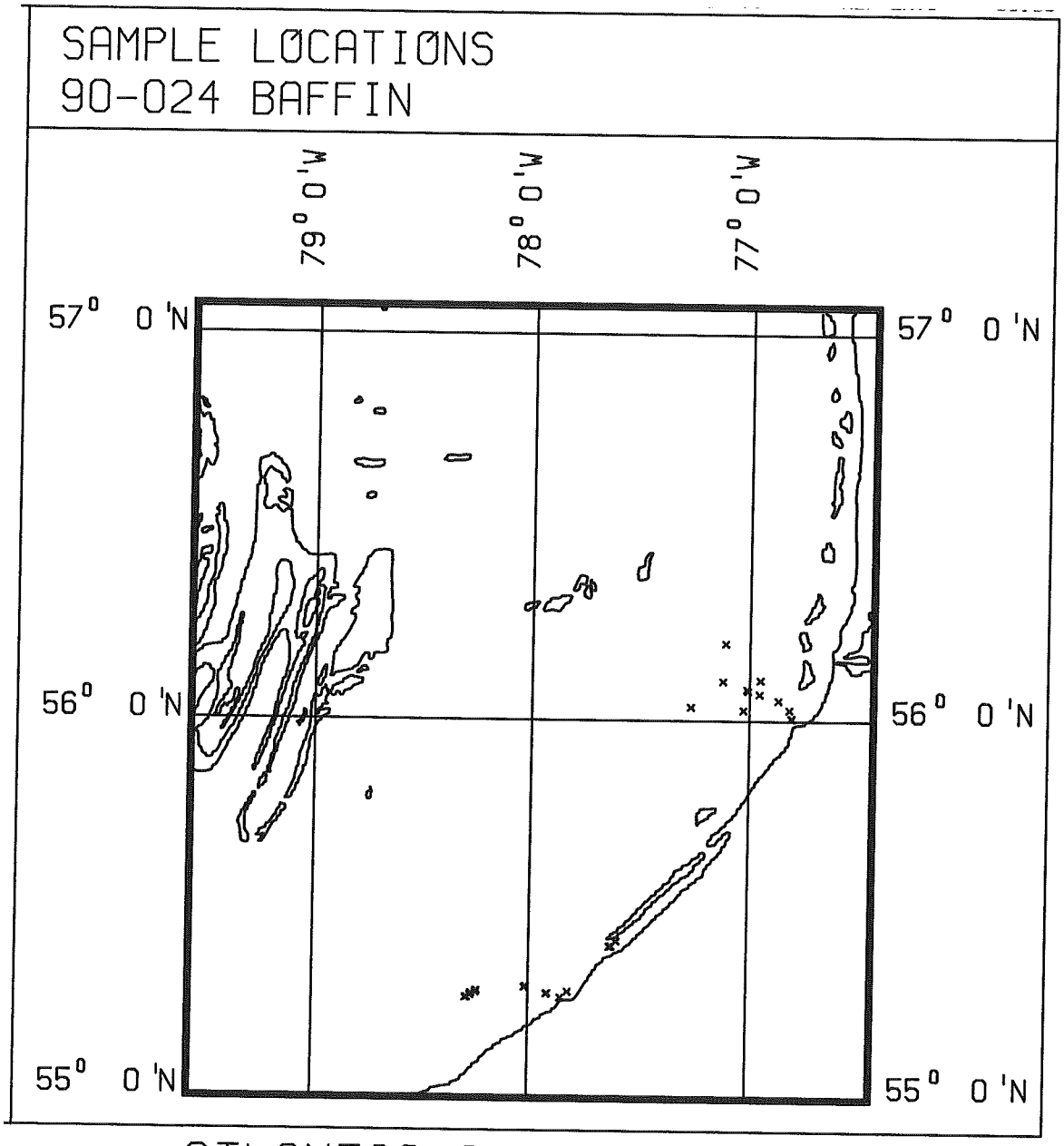

SAMPLE LOCATIONS
90-024 BAFFIN
79° 0'W
78° 0'W
77° 0'W
57° 0'N
56° 0'N
55° 0'N
ATLANTIC GEOSCIENCE CENTRE

Fig 6

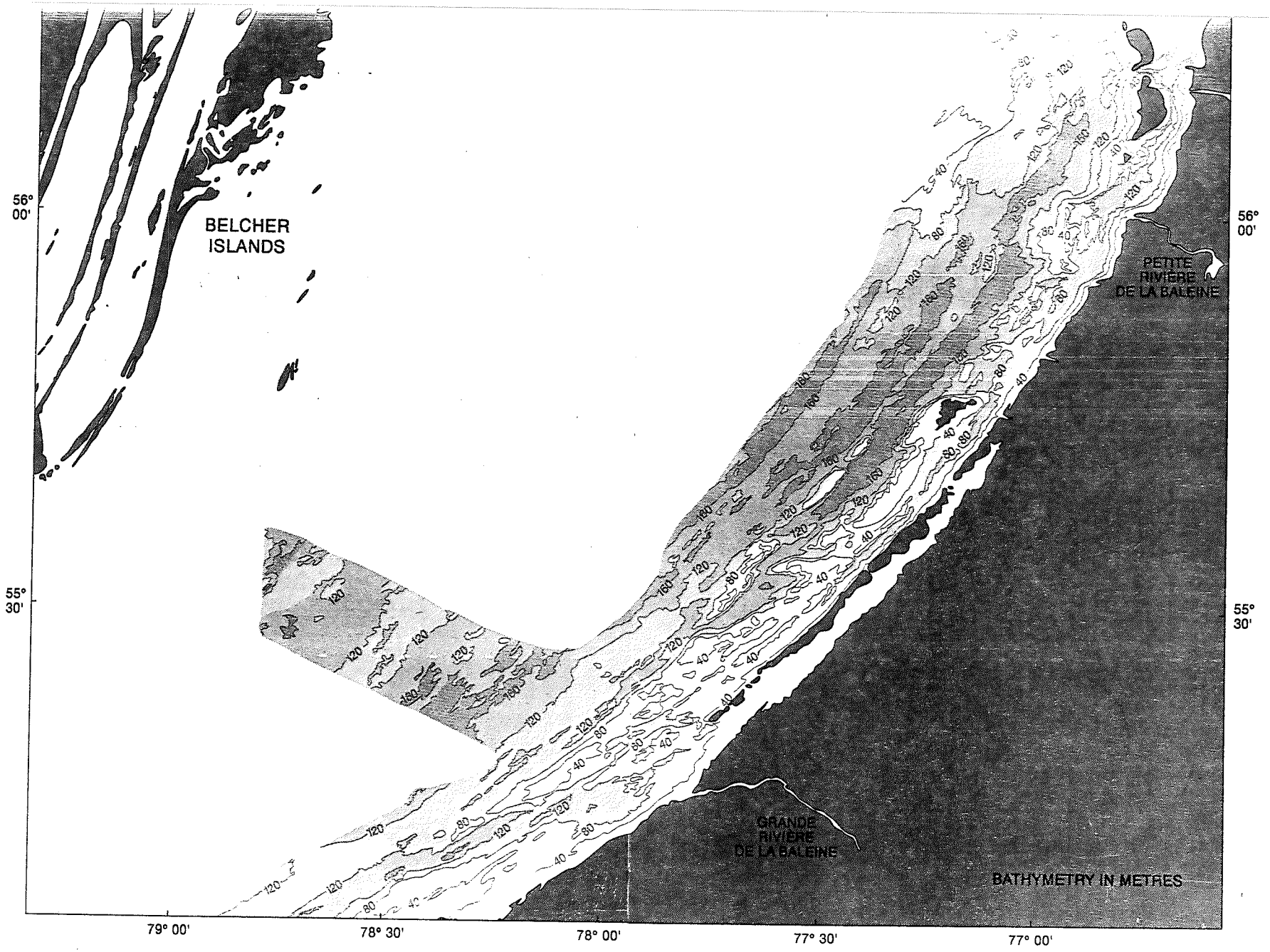

BELCHER
ISLANDS
PETITE
RIVIÈRE
DE LA BALEINE
GRANDE
RIVIÈRE
DE LA BALEINE
BATHYMETRY IN METRES
56°
00'
55°
30'
79° 00'
78° 30'
78° 00'
77° 30'
77° 00'

Fig 7

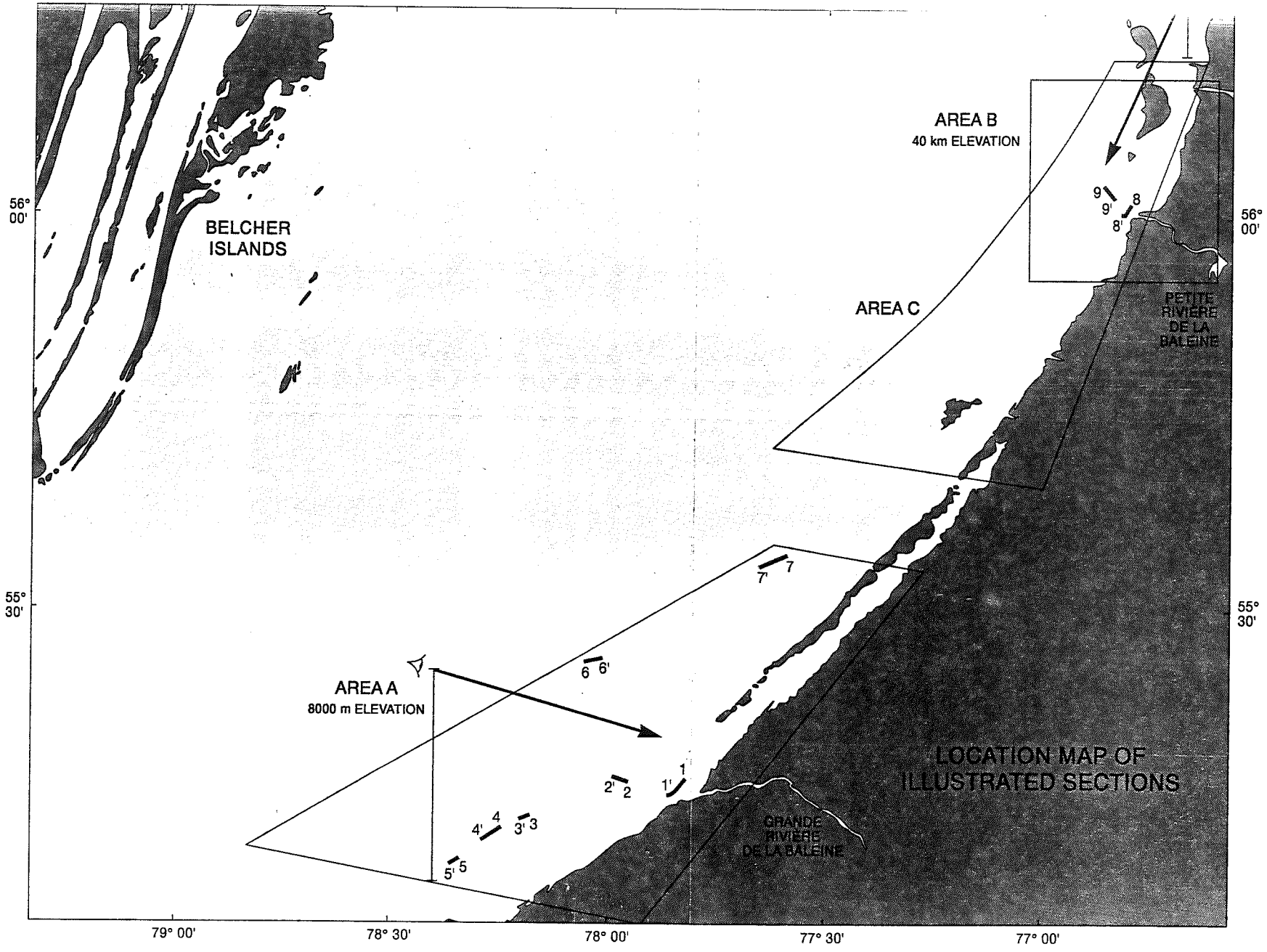
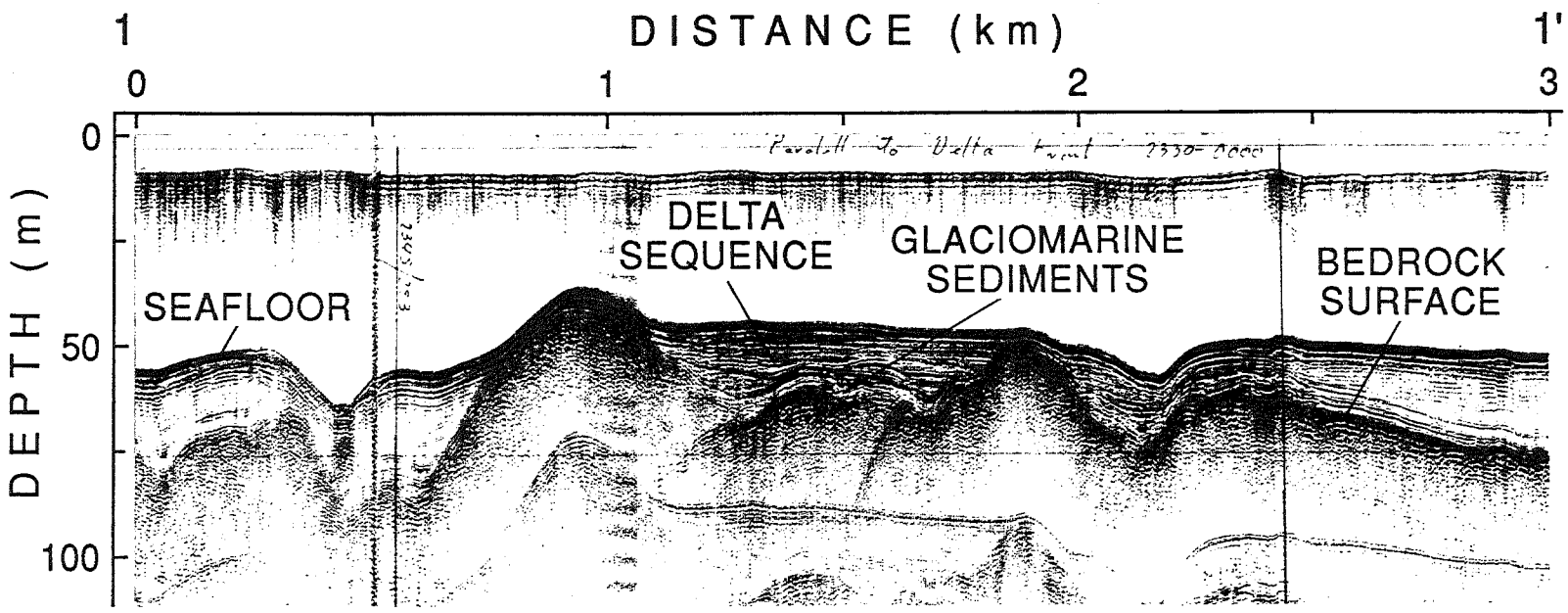
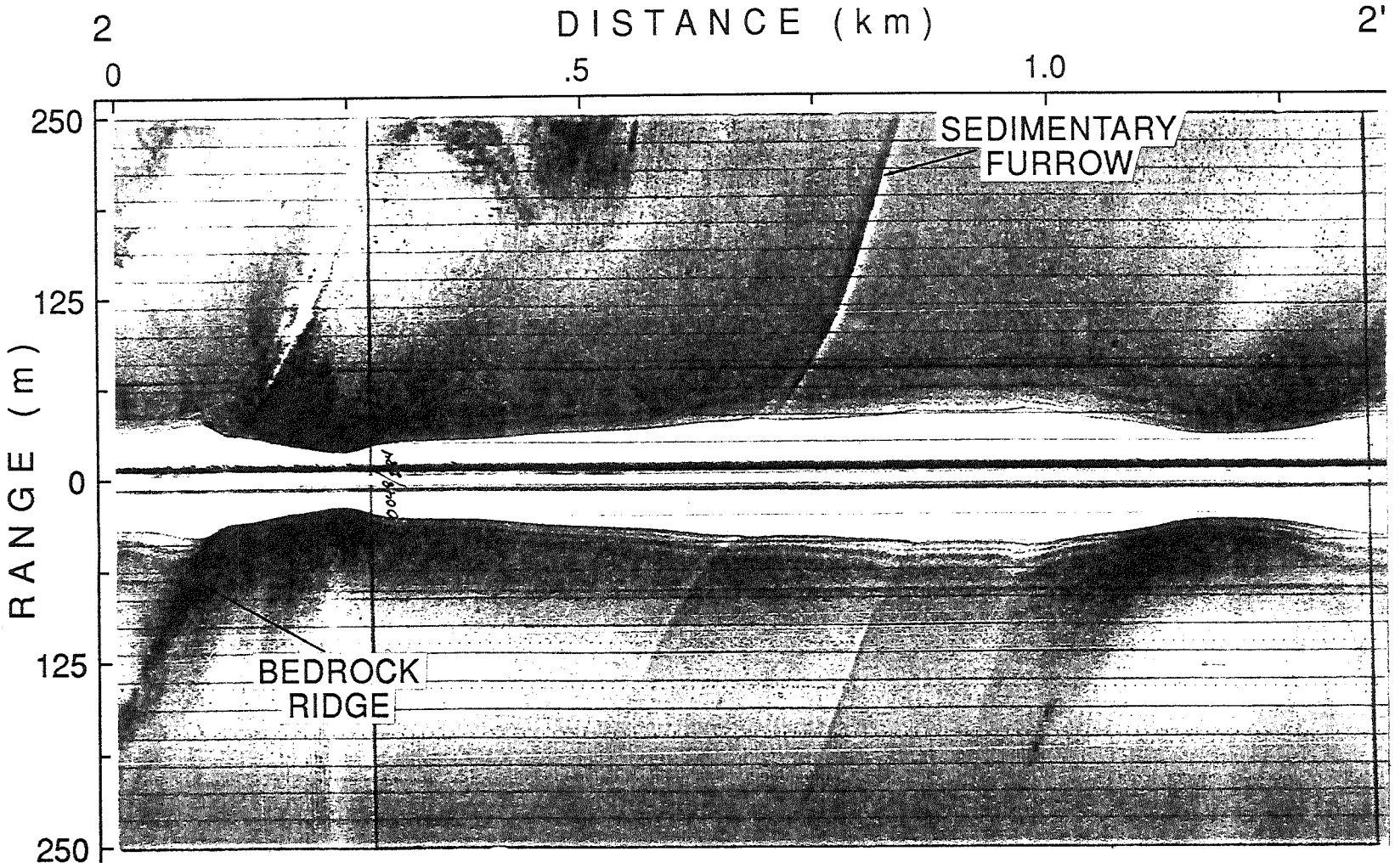

AREA B
40 km ELEVATION
AREA C
AREA A
8000 m ELEVATION
BELCHER
ISLANDS
PETITE
RIVIÈRE
DE LA
BALEINE
GRANDE
RIVIÈRE
DE LA BALEINE
LOCATION MAP OF
ILLUSTRATED SECTIONS
56°
00'
55°
30'
79° 00'
78° 30'
78° 00'
77° 30'
77° 00'
1
1'
2
2'
3
3'
4
4'
5
5'
6
6'
7
7'
8
8'
9
9'

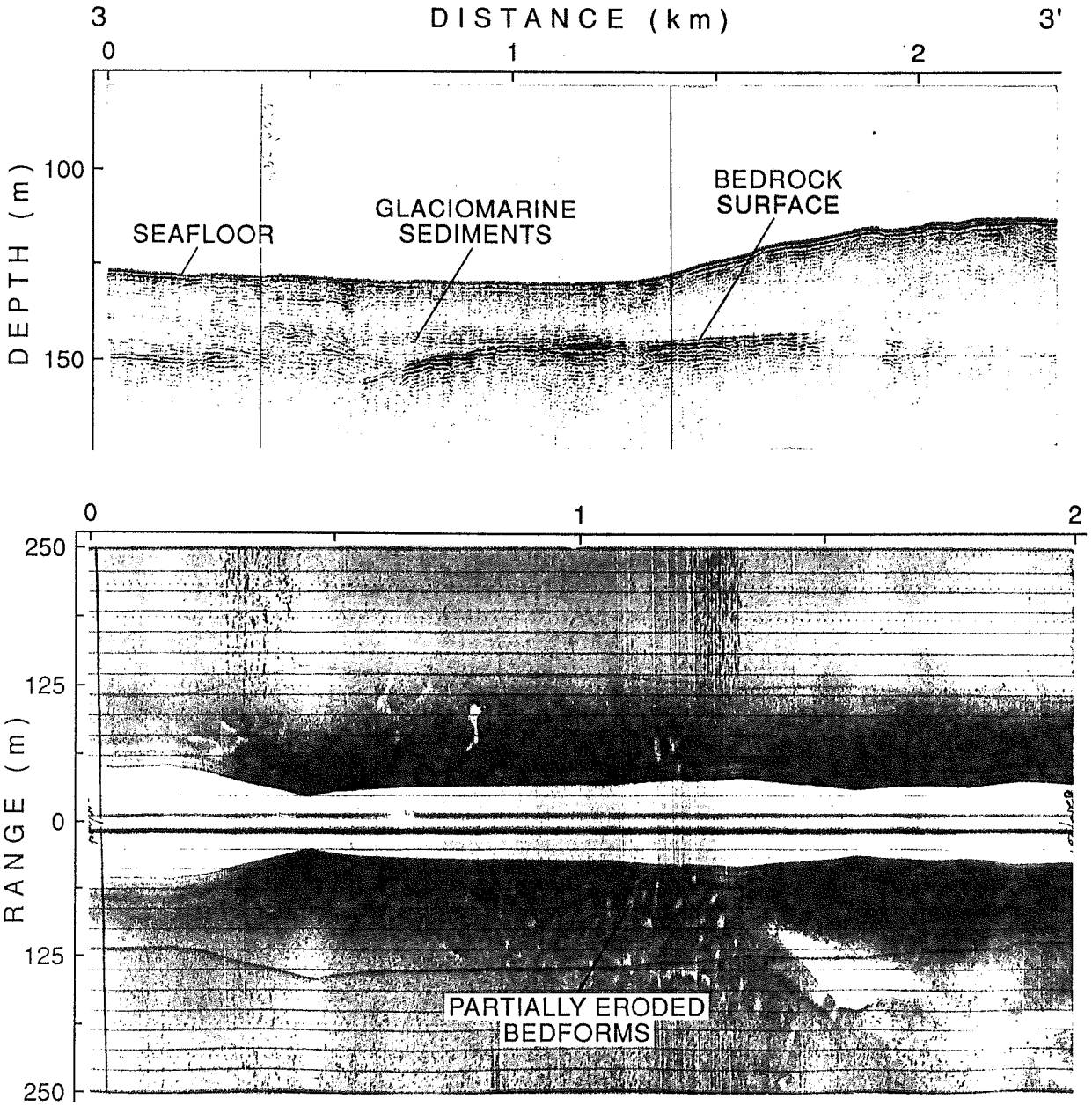
Fig 8



Huntec boomer subbottom profile of undisturbed deltaic sediments seaward of Great Whale River estuary. The relatively thin deltaic sequence is deposited on top of conformably draped glaciomarine sediments.

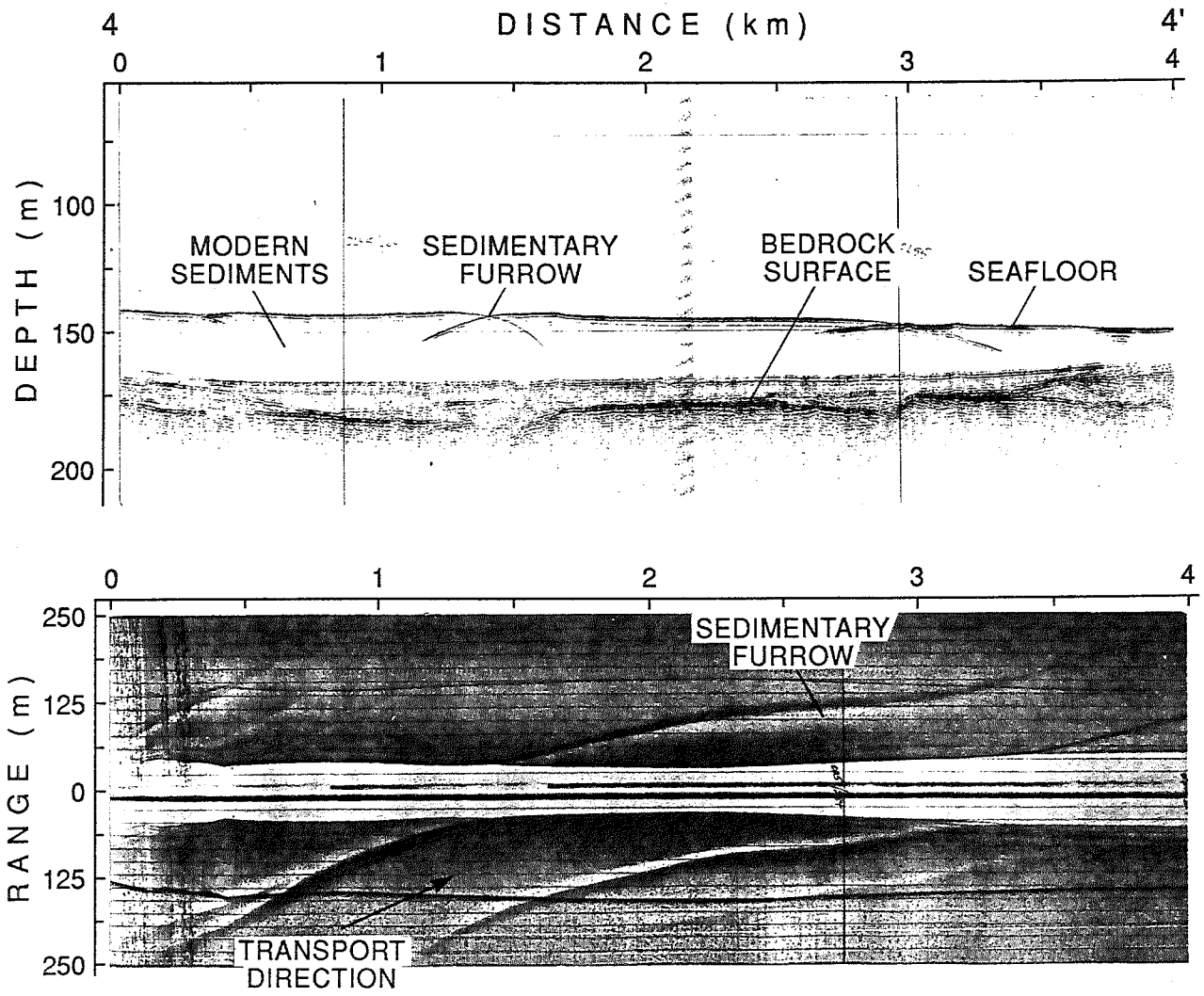


Sidescan sonogram (100 kHz) taken seaward of the Great Whale River delta. Note the outcropping bedrock ridge and current formed sedimentary furrows in the trough which are oriented parallel to the ridge.

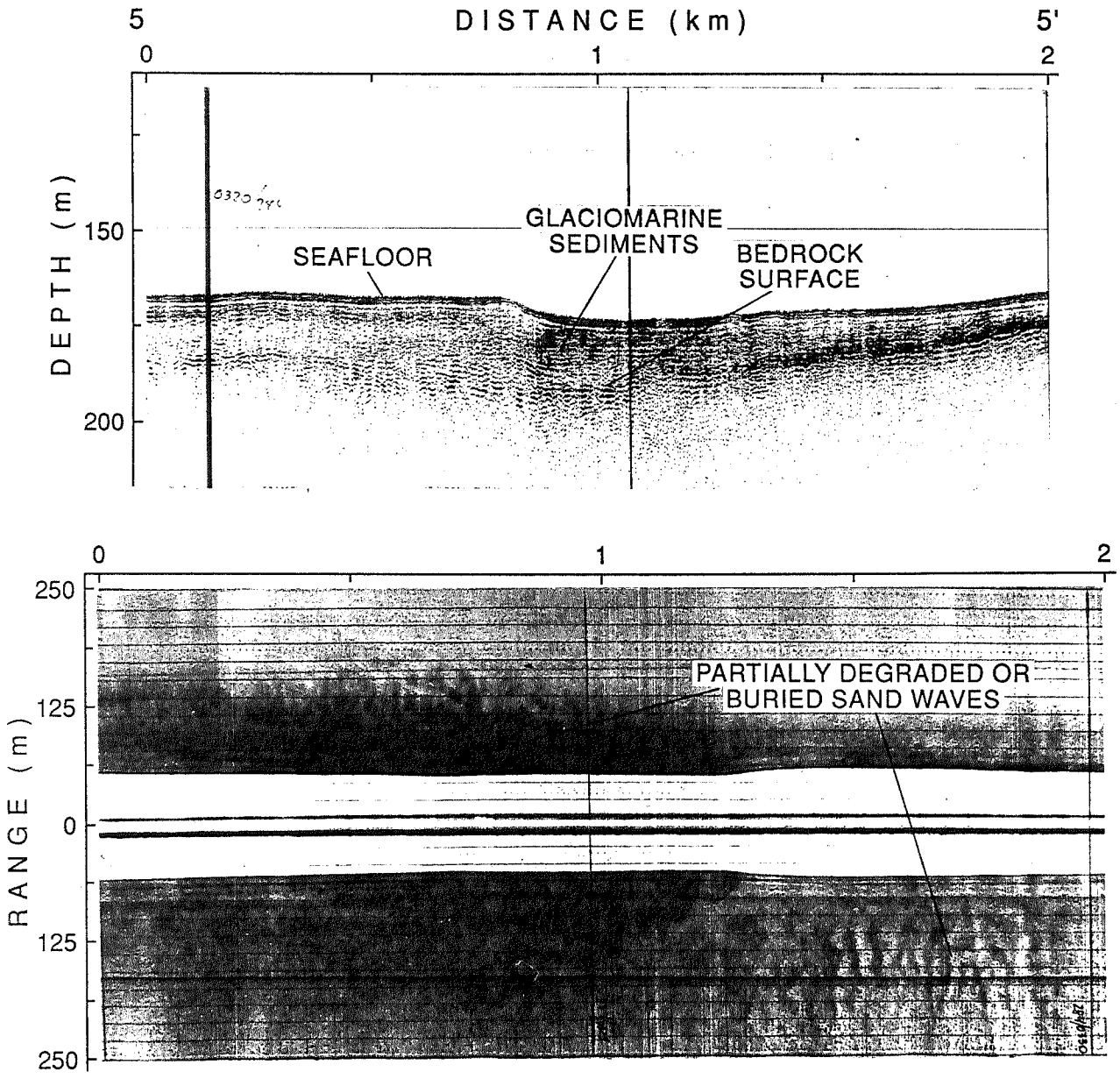


Sidescan sonogram and Huntec boomer profile of partially eroded bedforms. These features indicate a non-depositional to partly erosional setting in the proximity of the Great Whale River delta.

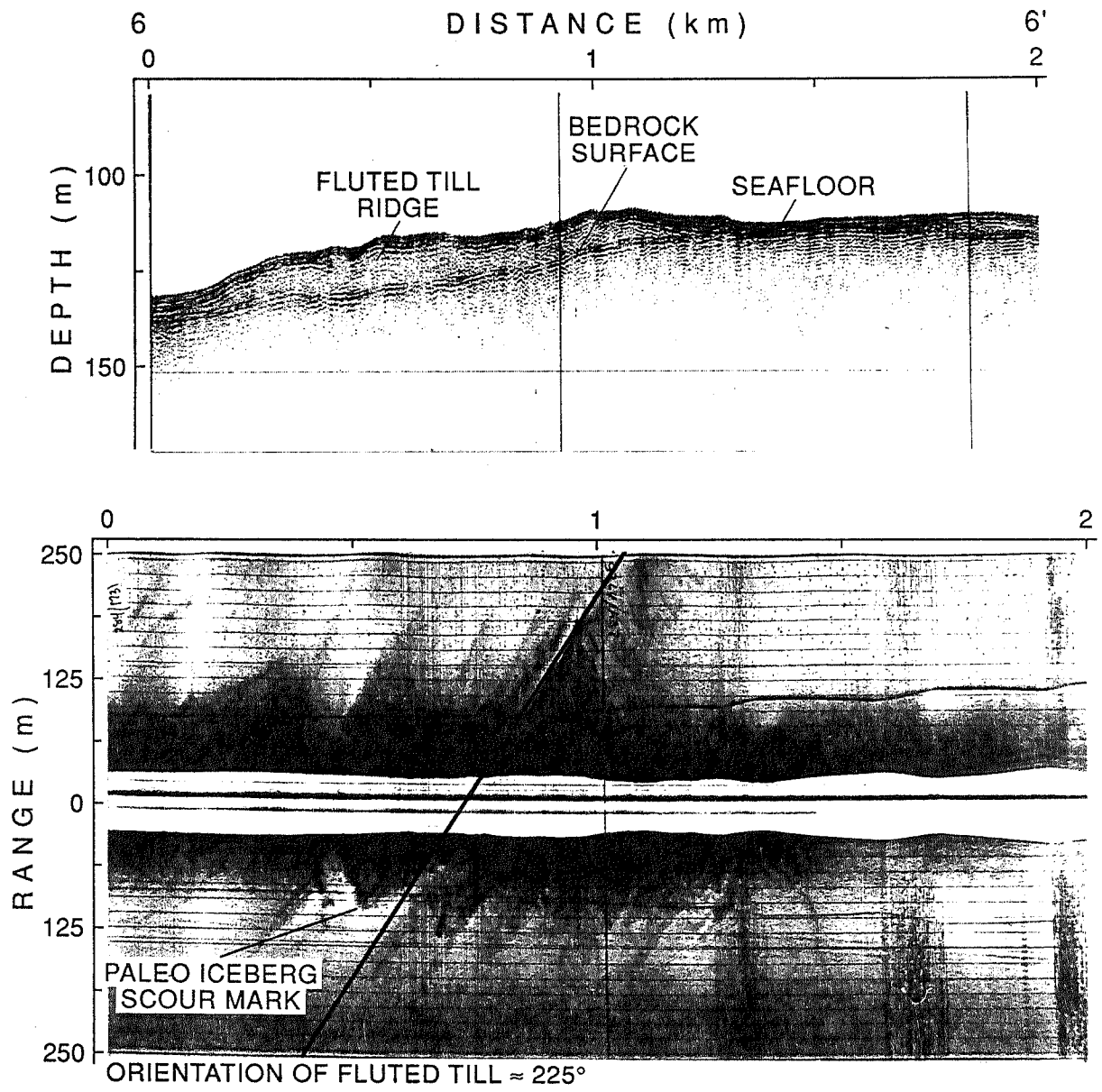
Fig 11



Sidescan sonogram and Huntec boomer profile of sedimentary furrows. These erosional furrows are formed in the modern muddy sediments by localized currents. The arrow indicates the direction of current flow and resultant sediment transport in a southwesterly direction.



Sidescan sonogram and Huntec boomer profile of degraded sandwave field partially buried by modern muds. Presence of the mud veneer may indicate episodic stronger current flows or a recent reduction in current strength.



Sidescan sonogram and Huntec boomer profile of 10 m thick till ridge with fluted and iceberg scoured surface. Flute orientation is approximately 225°. Similar fluted till outcrops occur throughout the study area and indicate a regional southwesterly ice flow which deposited flow parallel till ridges up to 70 m in thickness.

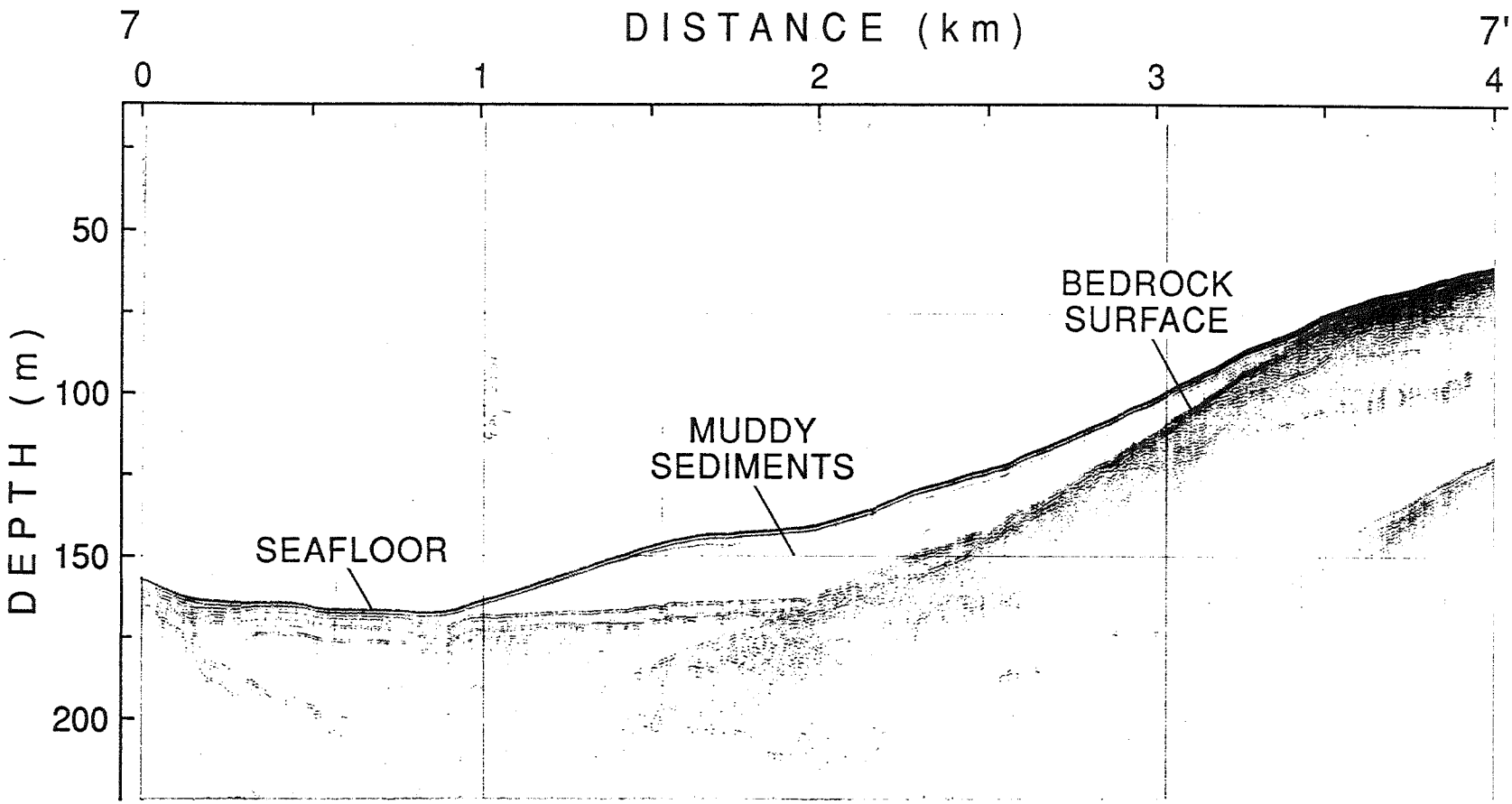
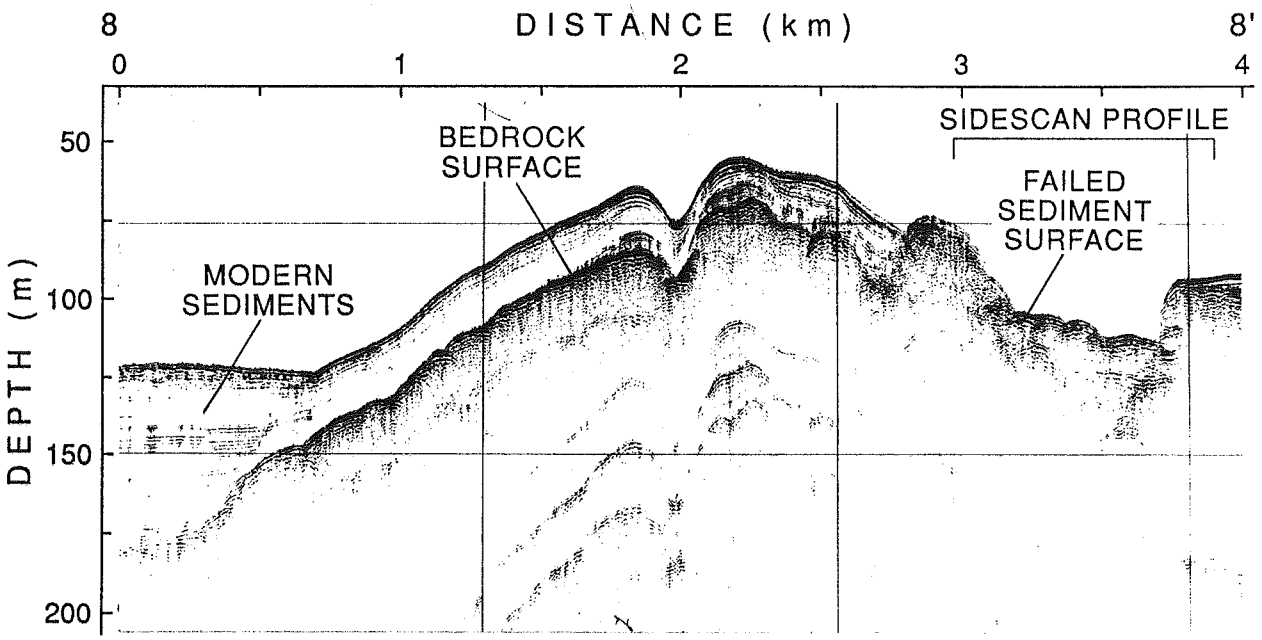
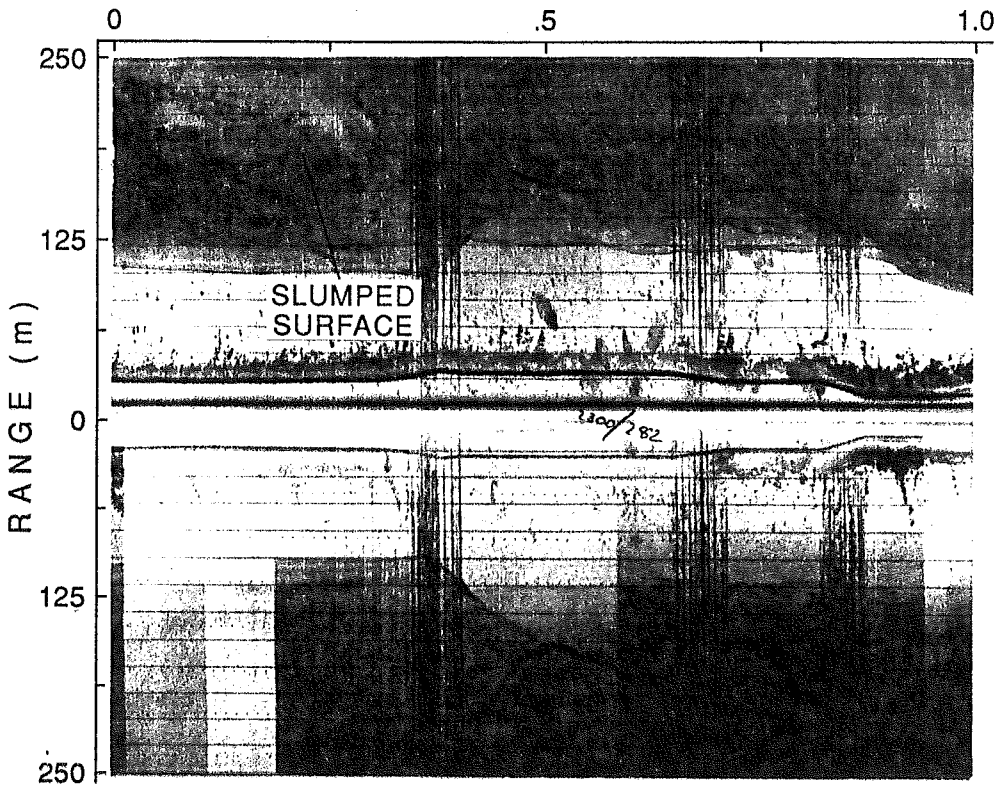


Fig 15

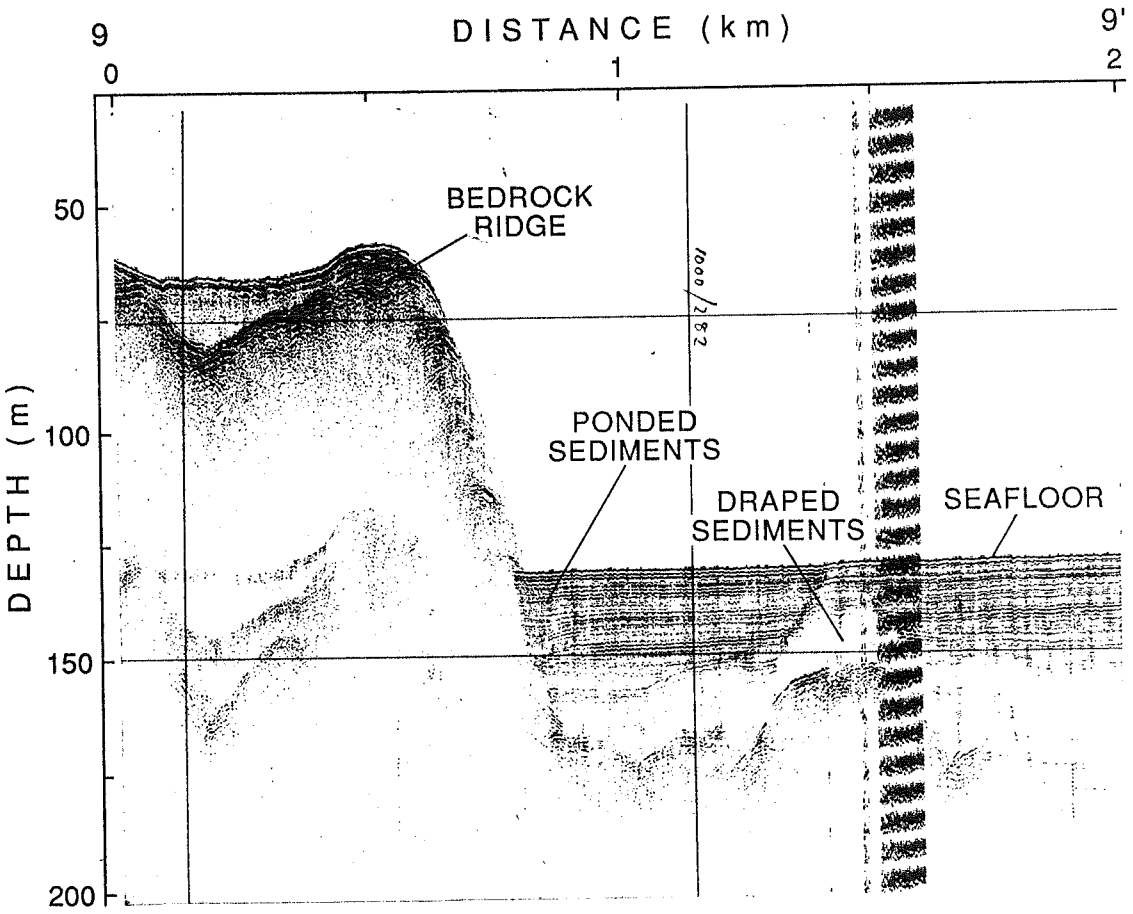
Huntec boomer profile of asymmetric wedge of modern muddy sediment deposited against bedrock ridge. The profile illustrates the irregular depositional pattern of modern sediments within the study area. Note the absence of modern sediments in the deepest area.





Sidecan sonogram and Huntec boomer profile parallel to delta front off Little Whale River. The sidescan profile illustrates an area of sediment failure near the delta front.

Fig 16



Huntec boomer profile of thick sediment sequence deposited in a bedrock low just seaward of Little Whale River. Note the conformable sequence above bedrock which is thought to have been deposited in deeper water (> 400 m) during late glacial times (8000 ybp). The thick ponded sequences are restricted to the Manitounuk and Nastapoka Sounds.

Fig 17