



Université du Québec
Institut national de la recherche scientifique
Eau, Terre et Environnement

DISTRIBUTION OF TEMPERATURE AND SALINITY
IN NORTHERN BAFFIN BAY DURING THE
INTERNATIONAL NORTH WATER PROGRAM
(AUGUST 1997, APRIL TO JULY 1998, AND SEPTEMBER 1999)

by

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ABSTRACT

This report presents the CTP (Conductivity, Temperature and Pressure) and ADCP (Acoustic Doppler Current Profiler) data obtained in Northern Baffin Bay during the International North Water Polynya (NOW) program, between August 1997 and October 1999. Temperature and salinity data are presented as West-East and South-North sections (color contours), while the 1997-1998 ADCP data from the first 100 m of the water column are presented as stick diagrams.

RÉSUMÉ

Ce rapport présente les données de CTP (conductivité, température et pression) et d'ADCP (Acoustic Doppler Current Profiler) recueillies entre août 1997 et octobre 1999 lors des campagnes d'échantillonnage dans le nord de la mer de Baffin, dans le cadre du projet international NOW (Étude de la polynie des eaux du nord). Les données de CTP sont présentées sous forme de sections (contours en couleurs) ouest-est et sud-nord. Les données d'ADCP pour les premiers 100 m sous la surface sont présentées sous forme de diagrammes en bâtonnets.

TABLE OF CONTENTS

Abstract / Résumé.....	iii
Table of Contents.....	iv
List of Figures.....	v
List of Tables.....	v
List of Appendices.....	vi
Foreword : the NOW Research Network	x
Introduction.....	1
NOW field work.....	2
Data processing.....	3
CTP Data.....	3
Mooring Data.....	4
Discussion.....	6
Acknowledgements.....	8
References.....	8
Appendices.....	15

LIST OF FIGURES

Figure 1.	Map of Northern Baffin Bay, showing the seven sections, the 1997-1998 moorings and the bathymetry.....	9
Figure 2.	Theoretical location of the NOW stations for the six legs. The location of the three South-North Lines are also shown	10
Figure 3.	High resolution sampling along section 6 (September 1999).....	11

LIST OF TABLES

Table 1.	Summary of moored instrument location, depth and data recovery for 1997-98 of the North Water Project (from Melling, 1999).....	12
Table 2.	Summary of the CTD sampling between 1997 and 1999.....	13
Table 3 .	Falmouth ICTD sensor specifications.....	13
Table 4 .	List of the casts used for each section.....	14

LIST OF APPENDICES

Appendix I : CTP casts location, sampling time, water depth and corresponding station (or mooring) numbers	
I.1 Leg 0.....	16
I.2 Leg 1.....	17
I.3 Leg 2.....	20
I.4 Leg 3.....	23
I.5 Leg 4.....	27
I.6 Leg 5.....	29
Appendix II : Maps showing the casts positions for each leg	
II.1 Leg 0.....	33
II.2 Leg 1.....	34
II.3 Leg 2.....	35
II.4 Leg 3.....	36
II.5 Leg 4.....	37
II.6 Leg 5.....	38
Appendix III : Salinity and potential temperature sections; Leg0, August 1997	
III.1 Section 1.....	40
III.2 Section 2.....	41
III.3 Section 3.....	42
III.4 Section 5.....	43
Appendix IV : Salinity and potential temperature sections; Leg1, April 1998	
IV.1 Section 0.....	45
IV.2 Section 1.....	46
IV.3 Section 2.....	47
IV.4 Section 3.....	48
IV.5 Section 4.....	49

IV.6	Section 5.....	50
------	----------------	----

Appendix V : Salinity and potential temperature sections; Leg 2, May 1998

V.1	Section 0.....	52
V.2	Section 1.....	53
V.3	Section 2.....	54
V.4	Section 3.....	55
V.5	Section 4.....	56
V.6	Section 5.....	57

Appendix VI : Salinity and potential temperature sections; Leg 3, June 1998

VI.1	Section 0.....	59
VI.2	Section 1.....	60
VI.3	Section 2.....	61
VI.4	Section 3.....	62
VI.5	Section 4.....	63
VI.6	Section 5.....	64
VI.7	Section 6.....	65

Appendix VII : Salinity and potential temperature sections; Leg 4, July 1998

VII.1	Section 1.....	67
VII.2	Section 4.....	68
VII.3	Section 5.....	69

Appendix VIII : Salinity and potential temperature sections; Leg 5, September

1999

VIII.1	Section 1.....	71
VIII.2	Section 2.....	72
VIII.3	Section 4.....	73
VIII.4	Section 5.....	74
VIII.5	Section 6.....	75

Appendix IX : Longitudinal Sections (Lines)

IX.1	Leg 0, Line W (Western transect).....	77
IX.2	Leg 0, Line E (Eastern transect).....	78
IX.3	Leg 1, Line W (Western transect).....	79
IX.4	Leg 1, Line M (Middle transect).....	80
IX.5	Leg 1, Line E (Eastern transect).....	81
IX.6	Leg 2, Line W (Western transect).....	82
IX.7	Leg 2, Line M (Middle transect).....	83
IX.8	Leg 2, Line E (Eastern transect).....	84
IX.9	Leg 3, Line W (Western transect).....	85
IX.10	Leg 3, Line M (Middle transect).....	86
IX.11	Leg 3, Line E (Eastern transect).....	87
IX.12	Leg 4, Line E (Eastern transect).....	88
IX.13	Leg 5, Line W (Western transect).....	89
IX.14	Leg 5, Line M (Middle transect).....	90
IX.15	Leg 5, Line E (Eastern transect).....	91

Appendix X : Low-frequency ADCP Data : Mooring N2

X.1	September 1997.....	93
X.2	October 1997.....	94
X.3	November 1997.....	95
X.4	December 1997.....	96
X.5	January 1998.....	97
X.6	February 1998.....	98
X.7	March 1998.....	99
X.8	April 1998.....	100
X.9	May 1998.....	101
X.10	June 1998.....	102

Appendix X1 : Low-frequency ADCP Data : Mooring S1

XI.1	September 1997.....	104
XI.2	October 1997.....	105
XI.3	November 1997.....	106
XI.4	December 1997.....	107
XI.5	January 1998.....	108
XI.6	February 1998.....	109
XI.7	March 1998.....	110
XI.8	April 1998.....	111
XI.9	May 1998.....	112
XI.10	June 1998.....	113

Appendix XII : Low-frequency ADCP Data : Mooring S2

XII.1	September 1997.....	115
XII.2	October 1997.....	116
XII.3	November 1997.....	117
XII.4	December 1997.....	118
XII.5	January 1998.....	119
XII.6	February 1998.....	120
XII.7	March 1998.....	121
XII.8	April 1998.....	122
XII.9	May 1998.....	123
XII.10	June 1998.....	124

FOREWORD : THE NOW NETWORK

The NOW research program was funded by Fisheries and Oceans Canada, Environment Canada and the National Sciences and Engineering Research Council of Canada under the Research Network Program. The NOW Network (1997-2001) was led by Prof. Louis Fortier of Laval University (Québec City), with the purpose of conducting the *International North Water Polynya Study (NOW)*, as part of the *International Arctic Polynya Program (IAPP)* of the *Arctic Ocean Science Board (AOSB)*. In addition and most importantly, the Network has maintained old and developed new national and international collaborations in Arctic marine science. Canadian leadership of an international Research Network focused on an integrated high-latitude study has substantially improved the stature of Canada in the study and stewardship of northern marine waters.

INTRODUCTION

Polynyas are regions of much reduced sea ice or open water in high latitude areas that are normally covered by sea ice. The North Water (NOW), which is located at the northern end of Baffin Bay and the southern part of Smith Sound (Fig. 1), is a recurring polynya. Although the boundaries of the North Water vary interannually, we define the polynya to be bounded by the coasts of Ellesmere Island and Greenland between latitudes 76° and 79° N.

There are few published studies of field data from the NOW. Muench (1971) published the most comprehensive review of the physical oceanography of Northern Baffin Bay and the North Water polynya. He used the available historical data up to 1971 to describe the water masses, circulation and transports in the region. Addison (1987) analyzed over 130 CTD profiles from a 1986 cruise in Northern Baffin Bay and Nares Strait. Finally, a brief sampling program (Lewis et al. 1996) was conducted in the NOW polynya during May 1991. Fourteen stations were occupied (between $76^{\circ}20'$ - $77^{\circ}20'$ N). During this 48 h cruise, the first set of springtime physical and biological oceanographic data ever collected in the NOW were obtained. Bacle (2000) and Melling et al. (2001) analyzed the hydrographic and current meter mooring data, respectively, from the NOW 1997-1998 field experiment. Two journal special issues have now been published: volume 29, no 3, in *Atmosphere-Ocean* (2001) and volume 49, no 22-23, in *Deep-Sea Research II* (2002)

The objective of this report is to provide the NOW community with a synthesis of the enormous number, close to 600, of hydrographic CTP (Conductivity, Temperature and Pressure) profiles obtained between 1997 and 1999. We also present the (complex demodulated) near-surface (15 to 120 m) velocity from the three ADCP (Acoustic Doppler Current Profiler) moored in 1997-1998.

THE NOW FIELD PROGRAM : 1997-1999

The NOW data set consists of two years of moored data (temperature, salinity and currents) and three years of rosette sampling of biological, chemical and physical parameters. Current meters, thermistor chains and sediment traps were moored in August 1997: the location of the moorings is shown in Fig. 1 and a summary of the recovered data (from Melling, 1999) is presented in Table 1. The instruments were recovered in July 1998 and moored again until August 1999. The 1998-1999 data is still being processed.

Northern Baffin Bay and Southern Nares Strait were closed with a set of seven (7) sections (see fig. 1). A set of 84 “theoretical” stations, 10 km apart, was determined: their location is shown in Fig. 2. The region was visited six times between August 1997 and October 1999. The six visits or legs will be designated as Leg 0 to Leg 5 (see Table 2). Leg 0 (August 1997) was dedicated the mooring deployment and only 18 stations were visited. Leg 4 (July 1998) was also dedicated to mooring recuperation and re-deployment: only 12 stations were visited. Legs 1 (April 1998), 2 (May 1998), 3 (June 1998) and 5 (September 1999) lasted a month each, approximately. The objective of those four legs was to sample as many stations as possible within this time frame. The number of stations visited depended only on the ice cover and the meteorological conditions.

Up to five rosette casts were needed at some stations, the number of casts depending on the biologists / chemists water demands. A few (ca 25) *ad hoc* stations were added on the way. A summary of all the CTP casts available in the NOW data base is presented in Appendix I. The actual position of each cast is shown in Appendix II, where we included maps showing the spatial coverage for each of the six legs.

DATA PROCESSING

CTP Data

Hydrographic profiles were acquired during the International North Water Project using instruments provided by the Department of Fisheries and Oceans through the Institute of Ocean Sciences. Falmouth Scientific Inc (FSI ICTD) was the manufacturer of the CTD probe and the data acquisition and recording system. Electro-optical sensors for the measurement of light transmission (Sea Tech Inc, now Wet Labs) and chlorophyll fluorescence (same supplier) were mounted on the frame of the rosette sampler and interfaced to the CTD for data acquisition and recording. The ICTD sensor specifications are given in Table 3.

The quality control process included the usual steps: initial editing, sensor delay adjustment, sensor calibration, comparisons with bottle samples, spike editing and bin averaging (0.5 db). The profiles were then linearly interpolated every decibar (db). Profiles obviously in error or that did not cover 80% of the water column were discarded. Salinity, potential temperature, potential density and Brunt-Väisälä frequency were then computed according to the UNESCO (1985) standards. The resulting profiles were decimated every 5 m.

To reduce the quantity of information to a manageable level, temperature and salinity contours were prepared for each of the seven sections shown in Figure 1. The sections, organized by leg number, are presented in Appendices III to VIII. The number of sections in each leg is given in Table 2. All the available profiles along the same section were used in the interpolation process. The temperature and salinity data were interpolated on a 2 km by 10 m grid with a triangle-based cubic interpolation method and then contoured with Matlab. The origin of each section is the westernmost cast. Canada is therefore on the left

and Greenland on the right. The same color scale (except for Fig. 3) was used for all the zonal sections and meridional lines (see below) presented in this report.

Bacle (2000) discussed the South-North distribution of temperature and salinity in Leg 3 using three South-North lines or transects. The lines are shown in Figure 2. Appendix IX presents the distribution of temperature and salinity along those lines, for each leg. South is on the left and North on the right. The origin is always the southernmost station in each leg.

Moored ADCP Data

A detailed description of the mooring data quality control and processing can be found in Melling (1999). Here, we will briefly describe the ADCP data processing.

Six RD Instruments 300 kHz Workhorse ADCPs (Acoustic Doppler Current Profiler) were moored at approximately 150 m, on top of moorings N1, N2, E2, S1, S2 and S4. One was lost and two malfunctioned. The quality control (see Melling, 1999) of the remaining series show numerous gaps. To close the gaps and extract the low-frequency signal, complex demodulation was preferred over classical filtering.

Complex demodulation offers a more ‘intelligent’ approach to this challenge of determining current variation at low frequency. The intelligence of this approach is embedded in the kinematic model used to represent the variation in current within a short (< 36-hour) analysis window. The model used here to represent the variation of current is a rotating vector that traces out an ellipse over a specified short (< 24-hour) period added to a linearly changing vector that represents the background flow of longer period. Mathematically, with vectors represented by complex numbers, the kinematic model is expressed as:

$$(u + j \cdot v) + (u' + j \cdot v') \cdot t + A^+ e^{j\omega t + \theta^+} + A^- e^{-j\omega t + \theta^-}$$

Here, j is $(-1)^{1/2}$, t is time, (u, v) is the initial velocity, (u', v') is the acceleration, ω is the angular frequency (radians/s) of the oscillatory vector that is the sum of a clockwise rotating vector of amplitude A^+ and phase θ^+ and a counter-clockwise rotating vector of amplitude A^- and phase θ^- . This model is fitted to available data by the method of least squares. The filtering results of the previous section reveal that currents in northern Baffin Bay have a strong semi-diurnal component, a weak diurnal component and slower fluctuations at periods of days. We apply this model over a 30-hour analysis window, within which it is a good representation of reality. Since semi-diurnal tidal components cannot be resolved within such a short window, a single period equal to 12.4 hours has been assumed. The M2 tide (12.42 h) dominates the S2 (12.00 h) and N2 (12.66 h) tides.

Stick diagrams of the lowpass currents in the surface layer at N2, S1 and S2 are presented in Appendices X, XI and XII, respectively.

DISCUSSION

The main features of the circulation that emerge from the literature are the southward flowing cold and fresher Baffin Current, the northward flowing warmer and saltier West Greenland Current and the eastward going Jones and Lancaster Sound net outflows. The complex bathymetry also plays a major role in the circulation. Shallow sills (< 200 m) are found in Kane Basin, Jones Sound and Lancaster Sound, which restrict the inflow of Arctic water at depth. Also, a deep north-south trough (500 to 900 m) is found between Nares Strait and Melville Bay. The general circulation is cyclonic, with the West Greenland Current branching westward at three locations: in Melville Bay (following the 600 m isobath), near the Carey Islands and in Smith Sound. These three main branches later join the Baffin Current.

Our geostrophic calculations (not shown) confirm the general circulation pattern but yields unreasonably large values of geostrophic flow. We believe that these large values are not associated with unreasonable vertical profiles of temperature and salinity or with anomalous T-S correlations. It is possible that large values of shear are a consequence of an aliasing of the underlying hydrographic structure by internal tides. The time required to complete sections is long relative to the semi-diurnal period. Time series of density derived from moored instruments do contain appreciable variance of semi-diurnal period.

The other interesting feature is the location of a front observed at the same location on Section 6 (Appendix VI.7) in June 1998 and September 1999 (Appendix VIII.6). After observing the front in 1998 (fig. 3, upper panel), it was

decided to sample the region between stations 68 and 70 at a higher spatial resolution in 1999. Five additional CTD casts were obtained between the two stations (fig. 3, bottom panel). The front was at the same location and separates the warm West Greenland Current from the cooler water on the Canadian side.

ACKNOWLEDGEMENTS

We would like to thank the Captains and crews of the Canadian Icebreakers Louis St-Laurent and Pierre Radisson for their outstanding collaboration. Thank you also to the students, technicians and scientists who contributed to the rosette sampling, cast after cast after cast. Thank you to Doug Sieberg and Paul Peltola for the moorings.

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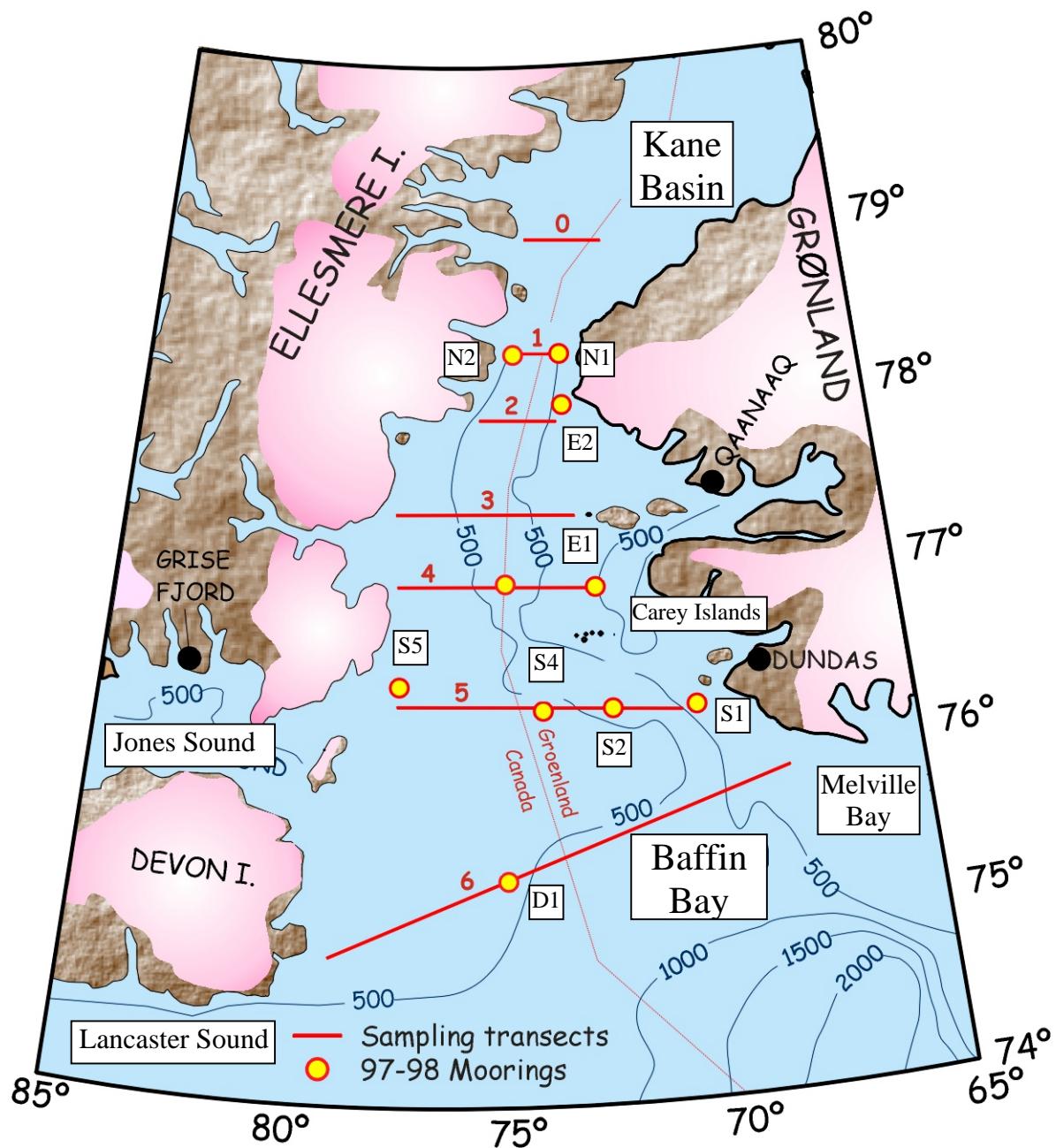


Figure 1. Map of the NOW sampling region, showing the seven sections and the bathymetry. Depth contours are in meters.

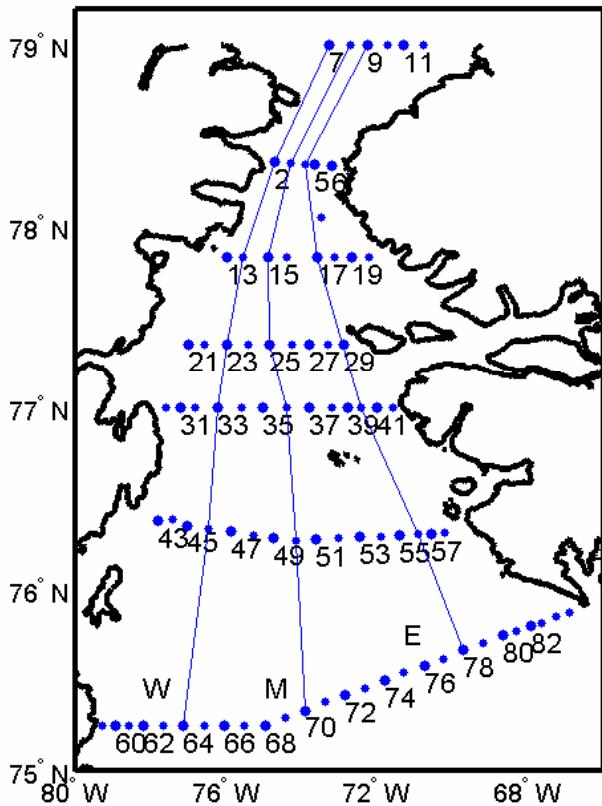


Figure 2. Theoretical location of the NOW stations for the six legs. The three South-North Lines (W, M and E) are also shown.

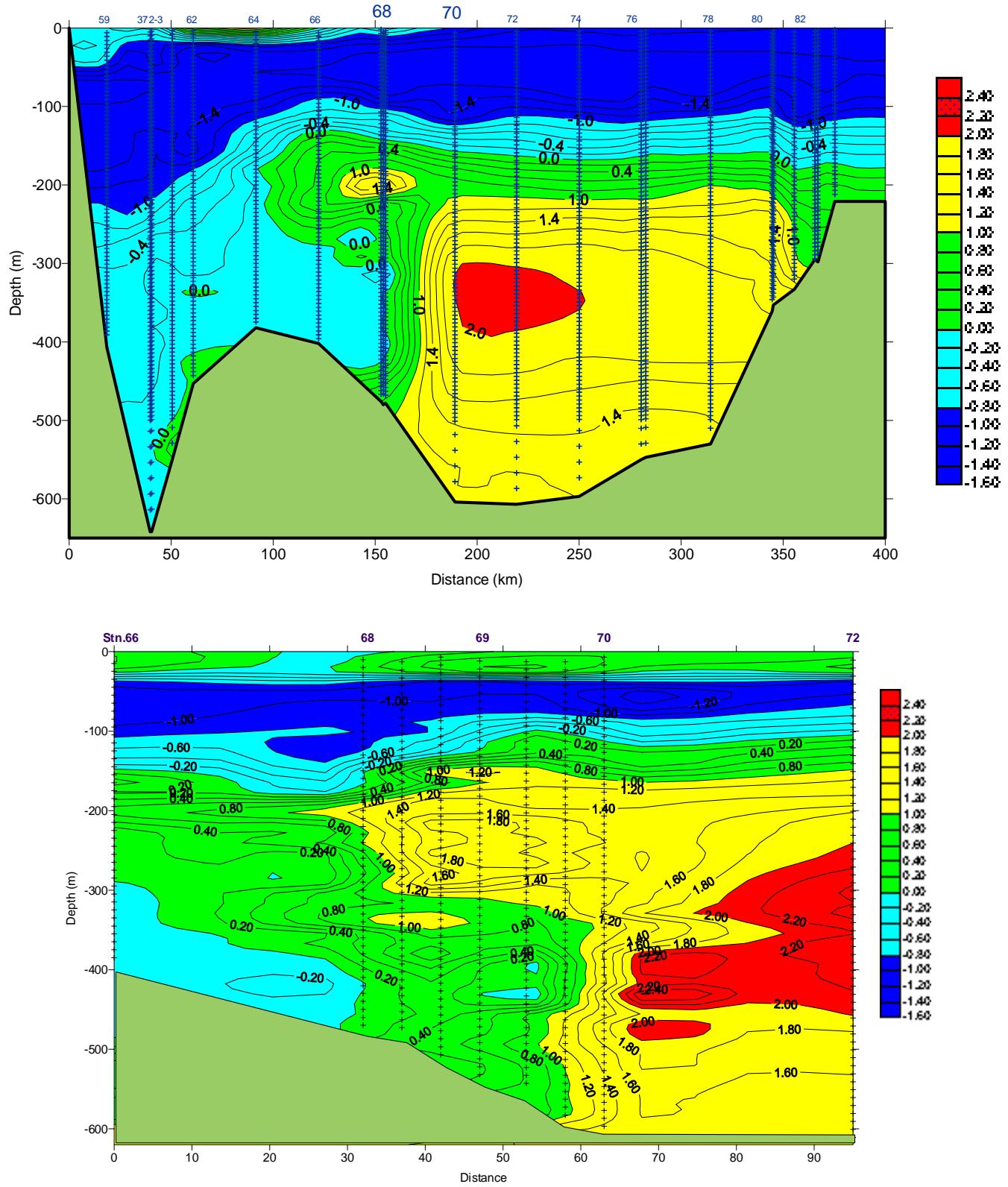


Figure 3. Section 6 from June 1998 (top) and September 1999 (bottom).

Table I. Summary of moored instrument location, depth and data recovery
for 1997-98 of the North Water Project (from Melling, 1999).

Site	North Latitude	West Longitude	H (nT)	Decl (deg)	Depth (m)	Level (m)	Instrument	s/n	Current Speed	Current Direction	Temperature	Salinity	Pressure	Echo	Comment	Start	Stop	
N2	78 21.26	74 42.74	3303	-73.2	484	108 203 284 394 455 478	ADCP BIO Trap RCM7 BIO-Trap RCM7 Release	273 1 10298 2 9179 5270923	15 levels	15 levels	1 level			15 levels	Depth varies by 140 m 9 of 14 cups functioned Rotor/compass malfunctions	1-Sep-97 15-Nov-97 19-Aug-97	13-Jul-98 13-Jul-98 13-Jul-98	
N1	78 20.80	73 38.40	3412	-72.4	560	121 191 321 491 554	SeaCat RCM7 RCM4 RCM7 Release	88 10761 7921 10270 5240917	x	x	1 level	1 level	1 level	Instrument not recovered Instrument not recovered Instrument not recovered	No data recorded			
E2	78 02.47	73 16.29	3496	-71.3	248	87 89 242 243	ADCP SeaCat WLR-7 Release	272 89 1427 17309	x	x	1 level			8 levels	Compass malfunction	1-Dec-97 20-Aug-97	15-Jul-98 25-Jun-98	
E1	76 59.75	72 23.91	3760	-67.9	587	120 300 549 581	ADCP RCM7 RCM4 Release	296 10301 1930 4940882	x	x	x		x	No data recorded			19-Jun-98 19-Jun-98	
S1	76 18.17	70 13.77	4130	-64.8	272	83 259 266	ADCP RCM4 Release	335 7943 4940877	8 levels	8 levels	1 level			8 levels			1-Sep-97	5-Jul-98
S2	76 17.39	71 56.37	3939	-65.8	556	97 198 279 507 525 550	ADCP Technicap RCM7 Technicap RCM4 Release	333 PPS.3/3 10306 PPS.3/3 7911 5270918	10 levels	10 levels	1 level			10 levels	12 cups Compass malfunction 12 cups	1-Sep-97 23-Aug-97 23-Aug-97 23-Aug-97 23-Aug-97 23-Aug-97	20-Jul-98 1-Jul-98 20-Jul-98 1-Jul-98 20-Jul-98	
S4	76 15.82	74 10.09	3686	-67.0	443	104 205 284 393 423 437	ADCP OSU RCM4 OSU RCM4 Release	367 Tracer 15 7914 Tracer 15 7946 5270919	?	?	1 level			11 levels	No compass calibration 14 cups	1-Sep-97 26-Aug-97 25-Aug-97	7-Jul-98 1-Jul-98 7-Jul-98	
S5	76 22.59	77 24.03	3287	-69.1	365	138 206 257 315 340 359	SeaCat RCM7 Technicap Technicap RCM4 Release	87 10302 PPS.3/3 PPS3 7920 5270925	1 level	1 level	1 level	1 level	1 level	1 level	12 cups 6 cups Compass malfunction	21-Aug-97 21-Aug-97 21-Aug-97 21-Aug-97 21-Aug-97 21-Aug-97	7-Jul-98 7-Jul-98 1-Jul-98 18-May-98 7-Jul-98	
D1	75 15.30	74 59.13	3764	-64.5	477	250 297 361 406 469 471	Parflux RCM7 RCM7 Parflux Release Release	McLean 12213 12214 McLean	1 level 1 level	1 level 1 level	1 level	1 level	1 level		21 cups 21 cups	27-Aug-97 26-Aug-97 26-Aug-97 27-Aug-97	1-Jul-98 6-Jun-98 1-Jul-98 1-Jul-98	

Table 2. Summary of the CTD sampling between 1997 and 1999.

Year	Leg number	Date		Number of CTD casts	Number of stations	Number of W-E sections
		Begins	Ends			
1997	Leg 0	August 18	August 26	18	18	4
1998	Leg 1	April 4	May 5	121	50	6
	Leg 2	May 7	May 31	120	54	6
	Leg 3	June 4	June 27	128	67	7
	Leg 4	June 30	July 21	52	12	3
1999	Leg 5	August 27	October 5	103	70	5

Table 3 . Falmouth ICTD sensor specifications

Sensor	Range	Accuracy
Pressure	0 to 7000 db	0.03%
Conductivity	1 to 65 $\mu\text{S cm}^{-1}$	0.003
Temperature	-2° to 32°C	0.003
Salinity	derived from P, T and C	ca 0.008 PSU

Table 4 . Lists of the casts used for each section.

SECTION	CAST NUMBERS
L0 S1	50-51
L0 S2	52-58-59
L0 S3	57-60-61-62
L0 S5	53-55-56-63
L1 S0	9-10-11-12-13-14-15-16-17-18
L1 S1	4-5-19-20-21-22-23-24-25-26-27-28-29-30
L1 S2	31-32-33-34-35-36-37-38-39-87-88-89-90-91-92-93-94
L1 S3	40-41-42-43-44-45-46-47-48-49-50-95-96-97-98-99-101-102-103-104-105
L1 S4	51-52-53-54-55-56-57-58-59-60-61-106-107-108-109-110-111-112-123-124-125-126-127-128-129-130-131-132-133-134-135
L1 S5	3-62-63-64-65-66-67-68-69-70-71-72-73-78-79-80-81-82-83-84-85-86-113-114-115-116-117-118-136-137-138-139-140-141-142
L2 S0	158-159-160-161-162-163-164
L2 S1	153-165-166-167-168-169-170
L2 S2	171-172-173-174-175-176-177-178-179-180-181-182-183-184-185
L2 S3	186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201
L2 S4	202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-250-251-252-253-254-255-256
L2 S5	149-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249
L3 S0	281-282-283-284-285-286-287
L3 S1	273-274-275-276-277-278-279-280
L3 S2	289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304
L3 S3	305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320
L3 S4	321-322-323-324-325-326-327-328-329-333-334-335-336-337-338-339-340-341-342-343
L3 S5	266-267-268-269-270-271-272-332-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370
L3 S6	264-265-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393
L4 S1	412-413-414-415-416-417-418-419-420-421-422-423
L4 S4	429-430-431-432-433-434-435-436-437-438
L4 S5	399-400-401-402-403-404-405-406-407-408-409-410-411-439-440-441-442-443-444-445-446
L5 S1	22-23-34-35-36-37-38-39-40
L5 S2	75-76-77-78-79-80-81-82-83
L5 S4	16-17-24-25-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74
L5 S5	10-11-12-13-14-15-26-27-28-29-30-31-32-33-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58
L5 S6	1-2-3-4-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101

Appendix I : CTD casts location, sampling time, water depth
and corresponding station or mooring numbers (C.H. stands
for Cape Hershey).

Warning : station numbers in leg 0 DO NOT correspond the station numbers of the other five (5) legs.

Cast Number	Station / mooring	Start Date UTC	Start Time UTC	Start Latitude (N)	Start Longitude (W)	Sounder depth (m)
			LEG 0*			
50	L2 / N2	19-08-97	0319	78°21.47	74°42.37	510
51	L5 / N1	19-08-97	1930	78°20.53	73°40.77	656
52	E2	20-08-97	0504	78°02.74	73°17.94	267
53	L44 / S5	21-08-97	1412	76°22.72	77°24.30	371
54	L40 / E1	21-08-97	0018	76°59.76	72°24.33	581
55	L58 / S1	22-08-97	1235	76°18.34	70°13.78	280
56	L54 / S2	22-08-97	2028	76°17.46	71°56.17	575
57	L22	23-08-97	1206	77°21.82	73°37.40	295
58	L24	23-08-97	1918	78°00.17	73°53.36	515
59	L25	23-08-97	2342	77°59.87	75°0.73	515
60	L28	24-08-97	1123	77°21.15	76°22.18	392
61	L29	24-08-97	1644	77°21.53	74°59.85	642
62	L22-2	24-08-97	2203	77°21.58	73°36.37	296
63	L50 / S4	25-08-97	1559	76°15.90	74°10.17	447
64	L68 / D1	25-08-97	2133	75°14.94	74°59.83	500
65	L10	26-08-97	1214	75°53.06	75°43.11	374
66	L11	26-08-97	1711	75°43.00	77°10.00	260
67	L12	26-08-97	2340	75°30.95	78°34.95	561

* Station numbers in leg 0 DO NOT correspond the station numbers of the other five (5) legs.

Cast Number	Station / mooring	Start Date UTC	Start Time UTC	Start Latitude (N)	Start Longitude (W)	Sounder depth (m)
			LEG 1			
3	A49	4-4-98	2303	76°17.192	074°47.455	478
4	A2	9-4-98	2105	78°21.696	074°42.657	290
5	A2	10-4-98	0040	78°20.338	074°45.320	450
8	C.H.	11-4-98	0824	78°35.977	074°20.641	189
9	A7	11-4-98	1228	78°59.344	073°16.611	250
10	A7	11-4-98	1502	78°59.818	073°15.042	252
11	A8	11-4-98	1734	78°59.997	072°45.364	287
12	A9	11-4-98	2134	79°00.564	072°16.481	260
13	A9	11-4-98	2316	79°00.200	072°16.140	240
14	A7	12-4-98	0812	79°00.557	073°11.331	240
15	A7	12-4-98	1121	78°59.976	073°18.281	249
16	A7	12-4-98	1345	78°59.897	073°16.220	249
17	A7	12-4-98	1815	79°00.098	073°12.342	250
18	A89	13-4-98	0015	78°58.088	071°10.142	397
19	A4	13-4-98	0419	78°20.679	074°18.000	604
20	A4	13-4-98	0700	78°21.551	073°51.815	520
21	A3	13-4-98	1012	78°20.438	074°19.620	470
22	A2	13-4-98	1136	78°21.896	074°41.310	539
23	A2	13-4-98	1402	78°21.437	074°40.420	624
24	A2	13-4-98	1719	78°22.041	074°43.764	205
25	A2	13-4-98	1945	78°21.232	074°40.439	635
26	A2	13-4-98	2310	78°22.267	074°42.438	330
28	A2	14-4-98	0957	78°21.588	074°39.853	631
29	A2	14-4-98	1154	78°21.968	074°39.568	627
31	A14	15-4-98	1851	77°48.992	075°28.930	610
32	A14	15-4-98	2052	77°50.000	075°25.000	630
33	A15	16-4-98	0210	77°50.135	074°55.515	689
35	A16	16-4-98	0849	77°50.068	074°26.775	730
36	A16	16-4-98	1148	77°48.658	074°23.694	644
37	A16	16-4-98	1643	77°49.992	074°23.597	690
38	A16	16-4-98	1948	77°50.837	074°47.368	670
39	A16	16-4-98	2335	77°49.623	074°22.422	650
40	A25	17-4-98	0427	77°21.539	074°49.106	669
41	A25	17-4-98	0723	77°22.197	074°55.065	662
42	A24	17-4-98	1017	77°20.461	075°26.383	595
43	A23	17-4-98	1211	77°20.580	075°58.783	538
44	A23	17-4-98	1426	77°21.054	076°00.464	540

45	A22	17-4-98	2112	77°20.525	076°28.909	428
47	A22	18-4-98	0135	77°20.497	076°28.849	425
48	A22	18-4-98	0316	77°20.497	076°28.849	427
49	A22	18-4-98	0649	77°20.523	076°28.935	429
51	A34	18-4-98	1849	77°00.903	075°39.715	520
52	A33	18-4-98	2027	76°59.670	076°12.569	204
53	A33	18-4-98	2224	76°59.000	076°13.696	199
54	A32	19-4-98	0117	77°00.281	076°49.276	164
56	A35	19-4-98	1009	76°59.008	075°02.572	547
57	A35	19-4-98	1454	77°00.187	075°01.799	557
58	A35	19-4-98	1808	76°59.838	075°01.245	554
59	A31	19-4-98	2158	77°00.390	077°00.384	287
60	A31	19-4-98	2341	76°59.321	077°10.339	310
61	A30	20-4-98	0204	77°01.116	077°31.856	197
62	A44	20-4-98	0711	76°23.655	077°24.188	330
63	A45	20-4-98	1026	76°20.558	077°01.256	298
64	A45	20-4-98	1250	76°19.471	077°01.926	297
65	A46	20-4-98	1521	76°20.216	076°27.822	163
66	A47	20-4-98	1801	76°19.643	075°53.083	295
67	A47	20-4-98	2009	76°19.100	075°53.488	325
68	A48	20-4-98	2237	76°17.759	075°18.064	394
70	A44	21-4-98	1020	76°22.947	077°23.148	358
71	A44	21-4-98	1533	76°22.822	077°24.364	373
73	A44	21-4-98	1831	76°21.434	077°24.542	400
74	A92	22-4-98	0118	76°03.068	077°21.442	378
75	A93	22-4-98	0518	76°02.872	076°19.605	282
76	A94	22-4-98	0919	76°02.765	075°23.142	342
77	A95	22-4-98	1330	76°03.176	074°19.810	405
78	A49	22-4-98	2310	76°20.150	074°41.951	469
79	A49	23-4-98	0050	76°20.151	074°41.951	473
80	A49	23-4-98	0219	76°20.179	074°42.734	474
83	A49	23-4-98	1001	76°19.224	074°40.304	464
85	A49	23-4-98	1328	76°19.117	074°41.199	466
86	A49	24-4-98	1752	76°14.587	074°34.454	446
87	A14	26-4-98	0306	77°49.895	075°28.948	594
88	A14	26-4-98	0602	77°49.912	075°28.873	592
89	A15	26-4-98	0846	77°50.702	074°53.254	705
90	A16	26-4-98	1108	77°49.549	074°26.839	710
91	A16	26-4-98	1336	77°49.365	074°26.553	710
92	A17	26-4-98	1605	77°50.126	073°35.090	265
93	A18	26-4-98	1845	77°50.381	073°04.406	161
94	A18	26-4-98	2025	77°51.016	073°02.341	158
95	A27	27-4-98	0256	77°22.998	073°50.023	344
96	A27	27-4-98	0540	77°20.694	073°47.259	360

97	A27	27-4-98	0808	77°20.963	073°46.778	338
99	A27	27-4-98	1137	77°23.484	073°53.141	362
101	A26	27-4-98	1835	77°20.342	074°19.462	718
102	A25	27-4-98	2016	77°20.054	074°52.831	676
103	A25	27-4-98	2255	77°18.948	074°57.214	661
104	A24	28-4-98	0129	77°21.510	075°24.837	590
105	A23	28-4-98	0304	77°21.014	075°56.677	543
106	A30	28-4-98	1646	77°01.257	077°32.088	204
107	A35	28-4-98	2341	76°58.151	075°04.386	545
108	A35	29-4-98	0137	76°58.195	075°04.254	544
109	A34	29-4-98	0359	77°00.400	075°37.657	510
110	A33	29-4-98	0626	77°00.309	076°13.444	213
111	A32	29-4-98	0920	76°58.714	076°48.312	184
112	A31	30-4-98	2356	76°59.498	077°09.241	304
113	A45	30-4-98	0944	76°20.482	077°04.021	295
114	A46	30-4-98	1206	76°19.960	076°30.928	168
115	A47	30-4-98	1809	76°19.790	075°52.374	324
116	A48	30-4-98	2127	76°18.326	075°17.076	399
117	A49	01-4-98	0045	76°16.594	074°39.801	455
119	A96	01-5-98	0756	76°26.801	074°47.333	524
120	A97	01-5-98	1002	76°39.191	074°59.042	447
121	A97	01-5-98	1233	76°37.435	074°59.061	472
122	A98	01-5-98	1642	76°48.606	075°00.106	475
123	A35	01-5-98	2020	76°58.971	075°03.748	547
124	A35	01-5-98	2327	76°56.634	075°05.665	547
126	A36	02-5-98	0352	77°00.621	074°21.767	583
127	A37	02-5-98	0655	77°00.398	074°46.131	313
128	A38	02-5-98	1001	76°59.897	074°13.099	325
129	A38	02-5-98	1144	76°59.730	073°13.521	307
130	A39	02-5-98	1317	76°59.808	072°49.357	382
131	A40	02-5-98	1756	76°59.361	072°30.642	495
132	A40	02-5-98	2150	76°58.851	072°30.055	510
133	A40	02-5-98	2333	76°58.147	072°29.326	510
134	A40	03-5-98	0208	76°57.294	072°28.304	520
136	A54	03-5-98	2318	76°18.927	071°50.768	600
137	A54	04-5-98	0415	76°20.113	071°54.849	600
139	A53	04-5-98	0741	76°18.016	072°22.574	549
140	A52	04-5-98	0917	76°18.212	073°06.330	620
141	A51	04-5-98	1230	76°15.733	073°36.128	500
142	A50	04-5-98	1415	76°16.981	074°07.863	452

Cast Number	Station / mooring	Start Date UTC	Start Time UTC	Start Latitude (N)	Start Longitude (W)	Sounder depth (m)
			LEG 2			
143	B100	7-5-98	1242	76°37.953	077°00.591	227
144	B100	7-5-98	1433	76°37.805	077°00.473	226
145	B102	7-5-98	1955	76°36.039	076°29.283	112
146	B102	7-5-98	2332	76°36.161	076°29.565	112
147	B102	8-5-98	0104	76°36.099	076°29.993	109
148	B102	8-5-98	0312	76°35.782	076°30.866	107
149	B104	8-5-98	0812	76°23.077	076°42.721	200
150	B103	8-5-98	1014	76°27.651	075°35.892	313
151	B101	8-5-98	1321	76°45.102	075°49.316	361
152	B2	9-5-98	0204	78°23.716	074°42.391	408
153	B2	9-5-98	0914	78°20.167	074°50.542	273
154	B2	9-5-98	1839	78°17.592	074°51.840	610
155	B2	9-5-98	2151	78°15.512	074°53.943	600
156	B2	10-5-98	0217	78°16.595	074°50.244	600
158	B9	11-5-98	1638	78°59.589	072°19.352	246
159	B9	11-5-98	1940	78°58.066	072°24.661	259
160	B8	11-5-98	2103	78°59.727	072°44.106	292
161	B7	11-5-98	2215	78°59.711	073°17.168	247
162	B7	12-5-98	0205	79°00.096	073°16.885	252
163	B7	12-5-98	0341	78°59.440	073°19.964	251
164	B7	12-5-98	1121	78°59.652	073°17.060	250
165	B2	12-5-98	2351	78°18.643	074°44.087	600?
166	B2	13-5-98	0412	78°20.609	074°42.029	600
167	B3	13-5-98	0552	78°20.322	074°17.351	500
168	B4	13-5-98	0725	78°20.554	073°56.578	610
169	B4	13-5-98	0909	78°19.562	074°00.515	603
170	B4	13-5-98	1522	78°20.114	073°59.589	587
171	B13	13-5-98	2250	77°49.761	076°01.145	600
172	B14	14-5-98	0033	77°49.490	075°26.924	614
173	B14	14-5-98	0241	77°49.377	075°28.096	604
174	B14	14-5-98	0409	77°49.361	075°29.946	593
175	B14	14-5-98	0639	77°48.172	075°38.028	517
176	B14	14-5-98	1023	77°49.458	075°33.388	536
177	B15	14-5-98	2358	77°49.374	074°48.278	697
178	B18	15-5-98	0344	77°49.914	073°09.014	172
179	B18	15-5-98	0456	77°49.998	073°07.791	166
180	B18	15-5-98	0632	77°49.984	073°09.502	166

181	B18	15-5-98	0815	77°50.009	073°09.239	173
182	B18	15-5-98	1355	77°49.982	073°09.568	164
183	B17	15-5-98	1807	77°49.658	073°36.713	273
184	B16	15-5-98	2029	77°49.357	074°24.394	667
185	B16	15-5-98	2345	77°49.653	074°25.520	703
186	B24	16-5-98	0309	77°21.462	075°23.999	590
187	B25	16-5-98	0640	77°20.592	074°50.309	678
188	B27	16-5-98	2313	77°20.938	073°46.535	~400
189	B27	17-5-98	0038	77°20.601	073°47.046	~400
190	B27	17-5-98	0214	77°20.472	073°47.520	~400
191	B27	17-5-98	0359	77°21.123	073°48.429	350
192	B27	17-5-98	0818	77°20.884	073°49.286	~400
193	B26	17-5-98	1245	77°20.962	074°16.793	714?
194	B25	17-5-98	1649	77°21.199	074°51.406	676
195	B24	17-5-98	1840	77°21.036	075°27.393	591
196	B23	17-5-98	2213	77°20.366	076°01.022	543
197	B23	18-5-98	0025	77°20.795	075°57.709	538
198	B22	18-5-98	0342	77°23.317	076°15.694	419
199	B22	18-5-98	0603	77°24.290	076°13.732	438
200	B22	18-5-98	1024	77°25.806	076°10.992	461
201	B22	18-5-98	1401	77°26.182	076°07.980	479
202	B34	19-5-98	2217	76°59.938	075°33.228	517
203	B34	20-5-98	0218	76°56.716	075°28.005	508
204	B34	20-5-98	0355	76°55.516	075°28.910	500
205	B34	20-5-98	0558	76°55.384	075°28.884	494
206	B34	20-5-98	0956	76°54.505	075°30.974	494
207	B31	23-5-98	0022	77°02.024	077°02.905	288
208	B31	23-5-98	0209	77°00.996	076°59.068	175
209	B31	23-5-98	0334	77°02.042	077°02.634	295
210	B31	23-5-98	0552	77°01.588	077°01.346	236
211	B31	23-5-98	0918	77°01.951	076°57.135	177
212	B31	23-5-98	1112	77°03.385	076°55.993	195
213	B40	24-5-98	1652	76°59.914	072°24.490	591
214	B40	24-5-98	2048	76°59.669	072°25.873	561
215	B40	24-5-98	2217	76°59.958	072°25.303	575
216	B40	25-5-98	0054	77°00.377	072°26.559	540
217	B40	25-5-98	0218	77°00.279	072°26.079	548
218	B40	25-5-98	0537	77°00.526	072°26.676	535
219	B39	25-5-98	0936	77°00.249	072°48.041	412
220	B38	25-5-98	1102	77°00.120	073°12.260	336
221	B38	25-5-98	1251	76°59.996	073°10.170	336
222	B37	25-5-98	1540	76°59.099	073°43.033	291
223	B36	25-5-98	1731	76°59.179	074°24.978	574
224	B54	26-5-98	0125	76°18.562	071°59.100	582

225	B54	26-5-98	0311	76°17.720	071°54.711	586
226	B54	26-5-98	0538	76°17.449	071°53.257	586
227	B54	26-5-98	1006	76°16.049	071°51.873	565
228	B54	26-5-98	1346	76°16.831	071°51.754	576
229	B54	26-5-98	1528	76°16.711	071°50.619	579
230	B53	26-5-98	1910	76°17.124	072°27.714	560
231	B52	26-5-98	2043	76°16.810	073°01.562	562
232	B52	26-5-98	2257	76°16.898	073°02.800	563
233	B51	27-5-98	0105	76°16.116	073°35.695	512
234	B50	27-5-98	0300	76°15.032	074°10.291	457
235	B50	27-5-98	0729	76°15.032	074°10.068	759
236	B49	27-5-98	2015	76°16.719	074°46.977	481
237	B49	27-5-98	2158	76°16.860	074°45.670	472
238	B48	27-5-98	2332	76°17.675	075°20.079	387
239	B47	28-5-98	0114	76°18.999	075°58.320	331
240	B47	28-5-98	0450	76°18.656	075°56.004	351
241	B46	28-5-98	0719	76°19.279	076°33.421	201
242	B44	28-5-98	0931	76°22.467	077°20.729	364
243	B44	28-5-98	1617	76°22.745	077°15.711	339
244	B44	28-5-98	1841	76°21.517	077°10.073	316
245	B44	28-5-98	2008	76°20.947	077°06.627	309
246	B44	28-5-98	2226	76°20.321	077°07.608	335
247	B44	29-5-98	0027	76°19.200	077°08.940	387
248	B44	29-5-98	0207	76°20.233	077°10.878	378
249	B45	29-5-98	0358	76°20.694	077°02.322	296
250	B30	29-5-98	0821	77°00.666	077°27.116	172
251	B31	29-5-98	0931	76°59.860	077°11.098	277
252	B32	29-5-98	1211	77°00.034	076°47.750	189
253	B33	29-5-98	1734	76°59.550	076°11.077	207
254	B33	29-5-98	1928	76°58.732	076°09.920	220
255	B34	29-5-98	2100	76°59.905	075°34.070	513
256	B35	29-5-98	2218	76°59.604	075°03.381	550
257	B105	30-5-98	0313	77°31.032	076°14.046	485
258	B106	30-5-98	0644	77°40.487	075°50.321	684
259	B107	30-5-98	1127	78°06.074	075°06.324	619
260	C.H.	30-5-98	2318	78°30.828	074°10.608	368
261	B108	31-5-98	1523	75°26.168	076°00.894	397
262	B109	31-5-98	1825	75°17.737	075°58.033	404
263	B110	31-5-98	2215	75°10.439	075°54.353	421

Cast Number	Station / mooring	Start Date UTC	Start Time UTC	Start Latitude (N)	Start Longitude (W)	Sounder depth (m)
			LEG 3			
264	C68	4-6-98	1620	75°12.718	074°57.403	487
265	C68	4-6-98	1849	75°12.512	074°56.841	493
266	C54	5-6-98	0554	76°17.230	071°54.485	578
267	C54	5-6-98	0836	76°18.685	071°55.919	591
268	C49	5-6-98	1915	76°17.049	074°45.391	474
269	C49	5-6-98	2221	76°17.386	074°46.301	473
270	C49	6-6-98	0212	76°16.586	074°45.320	475
271	C49	6-6-98	0332	76°17.134	074°45.763	472
272	C49	6-6-98	1004	76°17.257	074°43.230	460
273	C2	7-6-98	0836	78°20.779	074°44.576	410
274	C2	7-6-98	1535	78°20.516	074°41.265	612
275	C2	7-6-98	2031	78°19.984	074°39.375	610
276	C2	8-6-98	0040	78°21.965	074°37.135	581
277	C2	8-6-98	0349	78°20.733	074°41.094	614
278	C3	8-6-98	1157	78°21.028	074°19.967	497
279	C4	8-6-98	1311	78°20.950	073°54.314	568
280	C4	8-6-98	1527	78°20.709	073°51.449	541
281	C9	8-6-98	2139	78°59.785	072°17.143	251
282	C9	9-6-98	0011	79°01.417	072°12.453	211
283	C8	9-6-98	0152	79°00.042	072°43.899	288
284	C7	9-6-98	0310	79°00.177	073°20.606	253
285	C7	9-6-98	0443	78°59.650	073°21.282	253
286	C7	9-6-98	0621	79°00.159	073°17.506	247
287	C7	9-6-98	0909	79°00.634	073°14.322	240
288	CP	9-6-98	1753	78°35.106	074°25.520	225
289	C14	10-6-98	0538	77°50.196	075°33.017	542
291	C14	10-6-98	0815	77°49.885	075°33.114	536
292	C14	10-6-98	1122	77°49.680	075°33.936	524
293	C14	10-6-98	1246	77°49.723	075°32.946	542
294	C13	10-6-98	1855	77°49.844	076°01.273	562
295	C15	11-6-98	0111	77°49.645	074°54.251	690
296	C15A	11-6-98	0230	77°49.931	074°36.362	705
297	C16	11-6-98	0418	77°50.248	074°24.637	708
298	C16	11-6-98	0827	77°49.386	074°24.806	680
299	C17	11-6-98	1159	77°50.031	073°37.111	284
300	C18	11-6-98	1334	77°49.841	073°08.682	190
301	C18	11-6-98	1448	77°50.126	073°09.065	171

302	C18	11-6-98	1858	77°49.423	073°08.566	174
303	C18	11-6-98	2311	77°50.050	073°06.497	170
304	C18	12-6-98	0015	77°50.662	073°09.934	179
305	C25	12-6-98	0646	77°20.735	074°55.459	665
306	C25	12-6-98	1011	77°21.377	074°48.651	674
307	C26	12-6-98	1323	77°20.966	074°15.992	728
308	C27	12-6-98	1528	77°20.998	073°47.366	346
309	C27	12-6-98	1743	77°20.967	073°47.623	345
310	C27	12-6-98	2201	77°20.817	073°48.615	362
311	C27	13-6-98	0226	77°20.978	073°47.844	350
312	C27	13-6-98	0337	77°21.100	073°47.998	348
313	C24	13-6-98	0716	77°20.877	075°25.153	592
314	C23	13-6-98	0859	77°20.960	076°00.110	537
315	C23	13-6-98	1110	77°21.774	075°52.164	555
316	C21	13-6-98	1648	77°20.263	076°56.379	433
317	C22	13-6-98	2331	77°20.583	076°34.611	401
318	C22	14-6-98	0102	77°21.093	076°34.054	357
319	C22	14-6-98	0449	77°21.080	076°35.157	344
320	C22	14-6-98	0638	77°20.950	076°33.665	387
321	C30	14-6-98	1215	77°00.198	077°27.098	164
322	C31	14-6-98	1343	77°00.285	077°12.904	239
323	C32	14-6-98	1737	77°00.414	076°48.687	166
324	C33	14-6-98	2057	77°00.358	076°12.833	209
325	C33	14-6-98	2240	76°58.908	076°13.764	199
326	C34	15-6-98	0024	77°00.411	075°36.568	514
328	C31	15-6-98	2015	76°58.141	077°18.216	330
329	C35	16-6-98	1002	76°59.831	075°02.701	559
330	C101	16-6-98	2030	76°44.861	076°10.491	107
331	C102	17-6-98	0025	76°35.607	076°32.998	112
332	C104	17-6-98	0518	76°23.333	076°43.387	201
333	C36	18-6-98	1803	77°00.863	074°25.145	610
334	C36	18-6-98	2032	76°59.453	074°23.315	582
335	C37	18-6-98	2228	77°00.511	073°47.562	320
336	C40	19-6-98	0135	77°00.062	072°25.472	567
337	C40	19-6-98	0330	77°00.604	072°23.375	519
338	C40	19-6-98	0448	77°00.004	072°25.053	570
339	C40	19-6-98	0628	77°00.024	072°26.350	559
340	C40	19-6-98	1022	77°00.607	072°27.029	535
341	C39	19-6-98	1949	77°00.263	072°47.663	413
342	C38	19-6-98	2355	76°59.962	073°17.039	293
343	C38	20-6-98	0119	76°59.810	073°12.968	327
344	C51	20-6-98	0843	76°16.410	073°37.484	507
345	C52	20-6-98	1052	76°17.069	073°03.220	568
346	C52	20-6-98	1350	76°17.052	073°03.313	568

347	C53	20-6-98	1731	76°17.361	072°27.361	562
348	C54	21-6-98	0148	76°20.174	071°49.762	630
349	C54	21-6-98	0610	76°19.667	071°54.138	616
350	C54	21-6-98	1830	76°18.127	071°56.504	580
351	C55	22-6-98	0412	76°17.936	071°24.714	650
352	C56	22-6-98	0545	76°18.356	070°54.513	655
353	C53	22-6-98	1313	76°16.978	072°31.736	467
354	C50	22-6-98	1755	76°16.240	074°07.936	450
355	C50	22-6-98	1933	76°16.309	074°07.599	446
356	C50	22-6-98	2347	76°16.308	074°13.706	450
357	C50	23-6-98	0222	76°15.707	074°13.271	457
358	C50	23-6-98	0341	76°15.895	074°11.521	456
359	C49	23-6-98	0746	76°17.876	074°41.886	461
360	C48	23-6-98	1155	76°18.570	075°20.880	390
361	C46	23-6-98	1352	76°19.882	076°28.165	171
362	C47	23-6-98	1517	76°19.245	075°49.034	346
363	C47	23-6-98	1826	76°19.655	075°54.435	323
364	C45	23-6-98	2038	76°20.186	077°00.188	295
365	C44	24-6-98	0105	76°22.843	077°25.113	385
366	C44	24-6-98	0235	76°22.856	077°25.521	395
367	C44	24-6-98	0356	76°22.289	077°26.459	399
368	C44	24-6-98	0548	76°22.490	077°25.651	400
369	C44	24-6-98	1011	76°22.113	077°24.740	394
370	C43	24-6-98	1742	76°23.622	077°45.005	266
371	C59	25-6-98	0409	75°15.371	079°15.715	407
372	C60	25-6-98	0530	75°15.416	078°55.009	642
373	C60	25-6-98	0756	75°15.158	078°56.001	642
374	C61	25-6-98	1045	75°14.730	078°34.639	550
375	C62	25-6-98	1226	75°15.016	078°12.775	453
376	C64	25-6-98	1730	75°14.567	077°09.372	383
377	C64	25-6-98	1940	75°14.136	077°09.565	382
378	C66	25-6-98	2209	75°15.439	076°04.638	402
379	C68	26-6-98	0019	75°15.479	074°59.658	476
380	C68	26-6-98	0426	75°14.921	075°00.356	480
381	C68	26-6-98	0552	75°15.060	075°02.655	478
382	C70	26-6-98	1017	75°20.519	073°53.565	604
383	C72	26-6-98	1418	75°26.248	072°53.150	607
384	C74	26-6-98	2125	75°30.133	071°48.823	597
385	C76	27-6-98	0132	75°35.271	070°46.538	550
386	C76	27-6-98	0347	75°36.158	070°50.174	547
387	C78	27-6-98	0709	75°39.819	069°42.783	530
388	C80	27-6-98	0955	75°44.770	068°39.898	361
389	C80	27-6-98	1155	75°44.588	068°38.689	353
390	C81	27-6-98	1441	75°46.349	068°17.381	333

391	C82	27-6-98	1706	75°48.208	067°56.476	295
392	C82	27-6-98	2050	75°47.512	067°58.002	298
393	C83	27-6-98	2214	75°48.683	067°40.402	221

Cast Number	Station / mooring	Start Date UTC	Start Time UTC	Start Latitude (N)	Start Longitude (W)	Sounder depth (m)
			LEG 4			
394	D68 / D1	30-6-98	1803	75°15.236	075°00.650	477
395	D68 / D1	1-7-98	0015	75°14.915	075°00.783	478
396	D68 / D1	1-7-98	0302	75°15.309	074°59.510	477
397	D68 / D1	1-7-98	1225	75°14.589	074°56.634	481
398	D68 / D1	1-7-98	2314	75°14.025	074°57.717	486
399	D50 / S4	3-7-98	0152	76°16.697	074°11.315	453
400	D50 / S4	4-7-98	0006	76°16.462	074°09.227	450
401	D50 / S4	4-7-98	0242	76°17.075	074°09.056	456
402	D50 / S4	4-7-98	1306	76°16.518	074°13.604	448
403	D58 / S1	5-7-98	0233	76°18.978	070°13.393	265
404	D58 / S1	5-7-98	0429	76°18.984	070°13.689	264
405	D58 / S1	5-7-98	0809	76°18.961	070°14.421	255
406	D58 / S1	5-7-98	2233	76°19.356	070°12.357	221
407	D50 / S4	6-7-98	0454	76°16.827	074°09.668	450
408	D44 / S5	7-7-98	0658	76°22.137	077°23.476	370
409	D44 / S5	8-7-98	0206	76°21.344	077°25.932	395
410	D44 / S5	8-7-98	0401	76°20.001	077°22.619	402
411	D44 / S5	9-7-98	0646	76°23.549	077°25.517	368
412	D44 / S5	9-7-98	0804	76°22.955	077°24.515	368
413	D5 / N1	10-7-98	1458	78°20.812	073°37.921	581
414	D5 / N1	11-7-98	0025	78°21.005	073°38.595	565
415	D5 / N1	11-7-98	0309	78°20.749	073°38.933	598
416	D5 / N1	11-7-98	0806	78°20.902	073°39.828	555
417	D3 / N3	11-7-98	1638	78°21.107	074°26.214	530
418	D2 / N2	12-7-98	0207	78°21.499	074°40.610	632
419	D2 / N2	13-7-98	0014	78°22.788	074°35.011	550
420	D2 / N2	13-7-98	0310	78°22.392	074°42.789	313
421	D2 / N2	13-7-98	0906	78°21.678	074°41.170	560
422	D2 / N2	13-7-98	2306	78°21.004	074°43.178	450
423	D2 / N2	14-7-98	1102	78°21.660	074°41.109	559
424	E2	15-7-98	0009	78°01.406	073°14.255	204
425	E2	15-7-98	1546	78°03.168	073°32.419	372
426	E2	16-7-98	0013	78°02.351	073°20.020	276
427	E2	16-7-98	0308	78°03.422	073°18.894	258
428	E2	16-7-98	0551	77°54.372	073°42.735	376
429	D40 / E1	16-7-98	1715	77°00.949	072°31.547	499
430	D40 / E1	17-7-98	0035	77°00.385	072°41.995	454

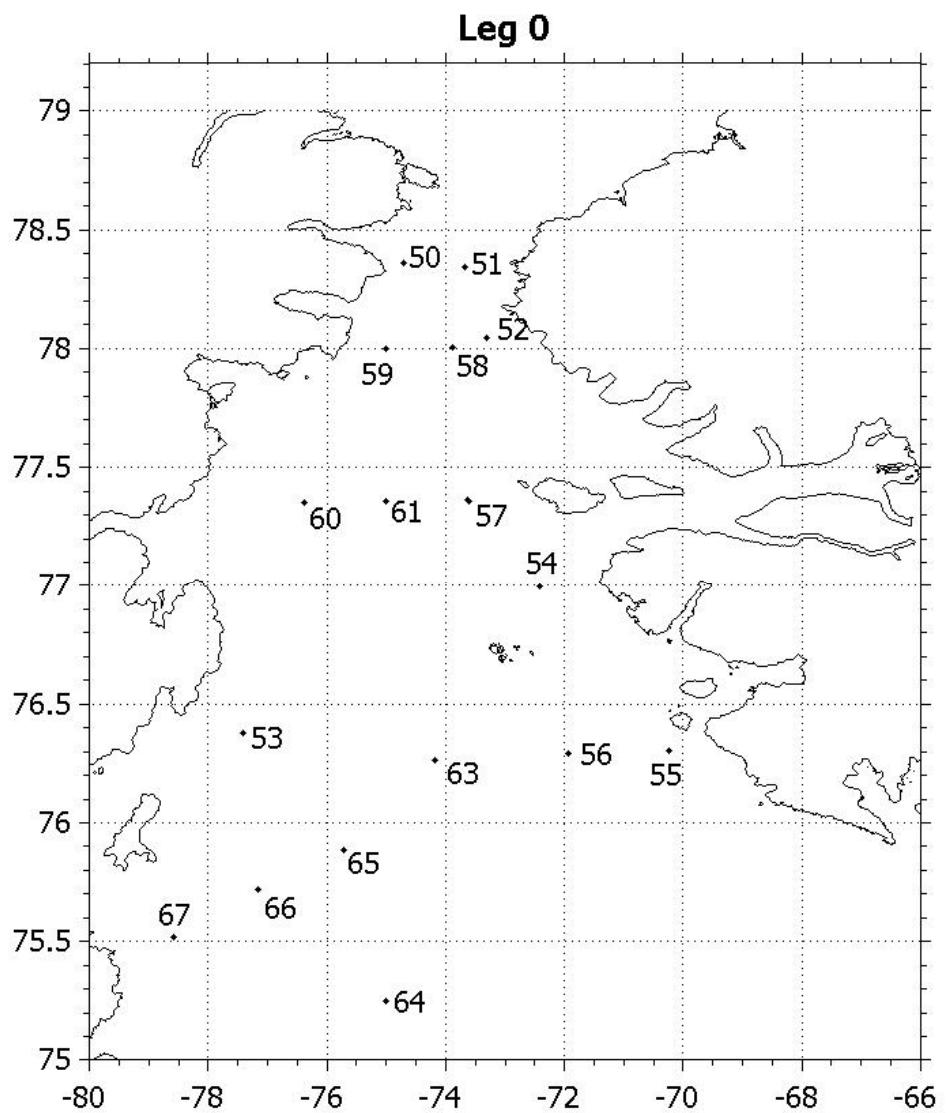
431	D40 / E1	17-7-98	0300	77°00.090	072°44.878	428
432	D40 / E1	17-7-98	0804	77°02.243	072°44.389	478
433	D40 / E1	17-7-98	2037	77°07.246	073°07.138	392
434	D2	18-7-98	0019	76°59.772	074°59.548	562
435	D2	18-7-98	0911	77°00.267	074°59.119	565
436	D2	19-7-98	0031	76°59.793	075°00.315	559
437	D2	19-7-98	0301	77°00.357	074°59.717	569
438	D2	19-7-98	0456	76°57.826	074°49.775	555
439	D54 / S2	20-7-98	0016	76°17.620	071°54.651	582
440	D54 / S2	20-7-98	0606	76°17.012	071°59.555	563
441	D54 / S2	20-7-98	1130	76°17.975	071°52.702	586
442	D54 / S2	20-7-98	1407	76°17.348	071°54.714	579
443	D54 / S2	20-7-98	2348	76°17.444	071°55.020	582
444	D54 / S2	21-7-98	0325	76°17.344	071°52.853	578
445	D54 / S2	21-7-98	0527	76°16.621	071°50.218	577
446	D54 / S2	21-7-98	0732	76°09.650	071°40.838	540

Cast Number	Station / mooring	Start Date UTC	Start Time UTC	Start Latitude (N)	Start Longitude (W)	Sounder depth (m)
			LEG 5			
1	F65	27-8-99	0325	75°14.6	076°21.9	388
2	F66	27-8-99	0426	75°15.26	076°03.319	412
3	F67	27-8-99	0526	75°16.062	075°45.041	430
4	F67-1	27-8-99	0624	75°16.745	075°26.763	439
5	F67-2	27-8-99	0719	75°17.689	075°08.920	441
6	F68 / D1	27-8-99	0825	75°15.3	074°51.9	472
7	F68 / D1	27-8-99	1200	75°16.2	075°08.5	461
8	F68-1	28-8-99	0302	75°18.6	074°50.1	493
9	F69	28-8-99	0435	75°19.46	074°31.645	523
10	F50 / S4	28-8-99	2045	76°15.8	074°16.4	465
11	F50 / S4	29-8-99	0947	76°17.2	074°12.3	459
12	F50 / S4	29-8-99	1050	76°17.5	074°18.9	462
13	F50 / S4	29-8-99	1430	76°16.42	074°22.75	464
14	F44 / S5	30-8-99	0700	76°24.445	077°26.315	347
15	F44 / S4	30-8-99	1135	76°24.48	077°25.72	337
16	F2 / N2	01-9-99	0922	76°57.57	074°59.14	550
17	F2 / N2	01-9-99	1345	76°57.50	074°58.8	542
18	E2	02-9-99	2105	78°02.48	073°19.23	269
19	E2	03-9-99	0605	78°02.64	073°18.72	287
20	E2	03-9-99	0820	78°02.63	073°19.75	294
21	E2	03-9-99	0845	78°02.54	073°21.30	294
22	F3 / N3	04-9-99	1010	78°20.93	074°20.57	503
23	F3 / N3	04-9-99	1205	78°18.25	074°27.31	561
24	F40 / E1	06-9-99	0604	76°59.625	072°27.306	546
25	F40 / E1	06-9-99	0840	76°59.93	072°26.89	558
26	F54 / S2	07-9-99	0815	76°17.54	071°54.46	590
27	F54 / S2	07-9-99	1016	76°17.33	071°54.66	589
28	F54 / S2	07-9-99	2023	76°17.47	071°54.94	592
29	F58 / S1	08-9-99	0705	76°18.312	070°13.444	290
30	F58 / S1	08-9-99	0915	76°18.32	070°14.2	288
31	F50 / S4	09-9-99	2115	76°16.27	074°10.72	457
32	F50 / S4	10-9-99	0705	76°16.13	074°09.33	454
33	F50 / S4	10-9-99	1005	76°15.40	074°08.90	457
34	F2 / N2	11-9-99	0715	78°20.976	074°42.700	528
35	F2 / N2	11-9-99	1010	78°21.94	074°42.51	458
36	F3 / N3	12-9-99	1707	78°19.197	074°30.096	579
37	F4	12-9-99	2317	78°22.42	073°49.22	576

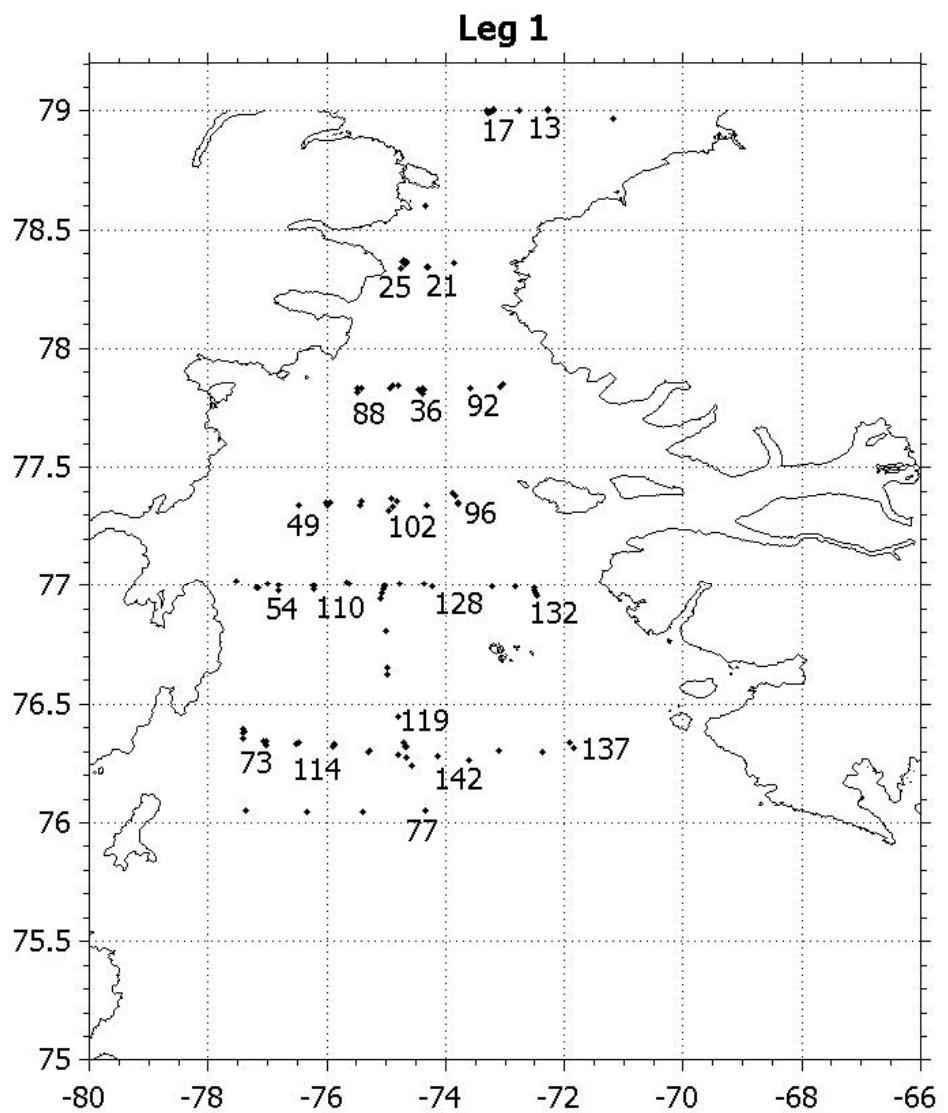
38	F5	13-9-99	0305	78°20.86	073°43.20	569
39	F6	13-9-99	0705	78°20.182	073°20.316	467
40	F6	13-9-99	0910	78°19.52	073°23.48	560
41	F43	17-9-99	1515	76°22.33	077°49.10	210
42	F44	17-9-99	2205	76°24.77	077°49.71	380
43	F45	18-9-99	1005	76°21.12	077°02.98	304
44	F45	18-9-99	1045	76°21.12	077°02.87	304
45	F45	18-9-99	1225	76°20.94	077°05.55	314
46	F46	18-9-99	1455	76°18.40	076°34.26	215
47	F47	18-09-99	1740	76°18.794	075°54.855	342
48	F48	18-09-99	2130	76°16.97	075°02.04	446
49	F50	19-09-99	0104	76°16.809	074°23.22	465
50	F51	19-09-99	0305	76°16.30	073°37.32	512
51	F52	19-09-99	0700	76°16.884	073°02.416	570
52	F53	19-09-99	0900	76°17.16	072°27.72	570
53	F54	19-09-99	1105	76°17.52	071°55.46	589
54	F54	19-09-99	1345	76°17.41	071°55.78	585
55	F55	19-09-99	2136	76°17.84	071°24.94	670
56	F56	19-09-99	2311	76°18.21	070°54.64	662
57	F57	20-09-99	0255	76°18.41	070°33.89	204
58	F58	20-09-99	0610	76°18.139	070°13.80	287
59	F42	20-09-99	1742	77°00.93	071°37.836	985
60	F41	20-09-99	2046	77°00.09	072°00.42	1050
61	F40	21-09-99	0600	76°59.057	072°28.205	539
62	F40	21-09-99	0725	76°58.602	072°28.494	542
63	F40	21-09-99	0930	76°58.52	072°28.17	548
64	F39	21-09-99	1240	76°59.98	072°47.99	413
65	F38	21-09-99	1405	77°00.12	073°12.87	343
66	F37	21-09-99	2348	77°00.19	073°48.39	335
67	F36	22-09-99	0315	76°59.08	074°27.81	583
68	F35	22-09-99	0810	76°58.66	075°03.46	552
69	F34	22-09-99	1035	77°00.11	075°40.02	513
70	F33	22-09-99	1420	77°00.30	076°09.80	227
71	F32	22-09-99	1729	77°00.356	076°45.754	197
72	F32	22-09-99	1949	77°00.007	076°46.293	203
73	F31	23-09-99	0830	77°00.23	077°10.69	283
74	F31	23-09-99	1132	77°00.66	077°13.27	230
75	F18	24-09-99	1158	77°50.02	073°09.26	180
76	F18	24-09-99	1410	77°48.76	073°09.18	178
77	F19	24-09-99	2226	77°50.11	072°41.17	75
78	F20	25-09-99	0350	77°50.09	072°14.99	40
79	F17	25-09-99	0705	77°50.473	073°34.887	277
80	F16	25-09-99	0925	77°50.48	074°15.09	625
81	F15	25-09-99	1405	77°48.53	074°54.17	705

82	F14	25-09-99	1931	77°48.137	075°29.912	609
83	F14	26-09-99	0104	77°47.48	075°21.25	645
84	F62	29-09-99	2033	75°14.98	078°13.23	458
85	F64	30-09-99	0024	75°15.31	077°07.76	395
86	F66	30-09-99	0935	75°14.97	076°03.62	405
87	F66	30-09-99	1139	75°14.78	076°03.67	404
88	F68	30-09-99	1428	75°15.33	074°59.13	486
89	F68-1	30-09-99	1515	75°15.98	074°48.45	494
90	F68-2	30-09-99	1617	75°17.141	074°36.714	525
91	F69	30-09-99	1719	75°17.832	074°26.322	550
92	F69-1	30-09-99	1810	75°18.608	074°14.796	576
93	F69-2	30-09-99	1903	75°19.373	074°04.533	600
94	F70	30-09-99	1957	75°20.090	073°54.00	609
95	F72	01-10-99	0002	75°25.03	072°51.71	635
96	F74	01-10-99	0202	75°29.96	071°49.31	608
97	F76	01-10-99	1120	75°34.87	070°45.87	552
98	F76	01-10-99	1300	75°35.27	070°47.48	560
99	F78	01-10-99	1530	75°39.90	069°42.78	534
100	F80	01-10-99	1732	75°44.9	068°42.1	383
101	F82	01-10-99	1934	75°48.161	067°57.182	307
102	F201	02-10-99	1910	72°37.827	075°47.500	570
103	F202	03-10-99	1740	72°07.941	067°11.667	2365
104	F203	05-10-99	0020	67°19.89	061°29.51	183
105	F204	05-10-99	1410	64°09.96	062°54.980	138

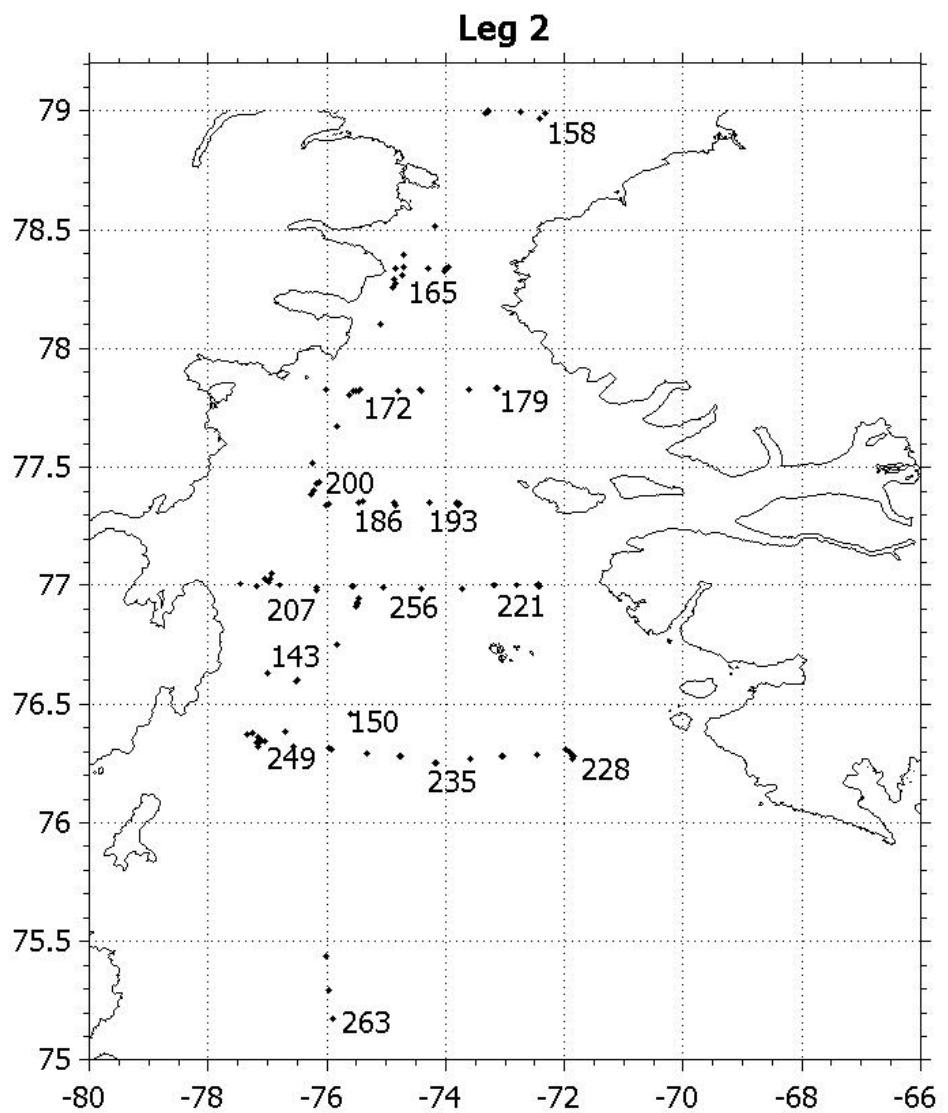
Appendix II : Maps showing the casts position for each leg



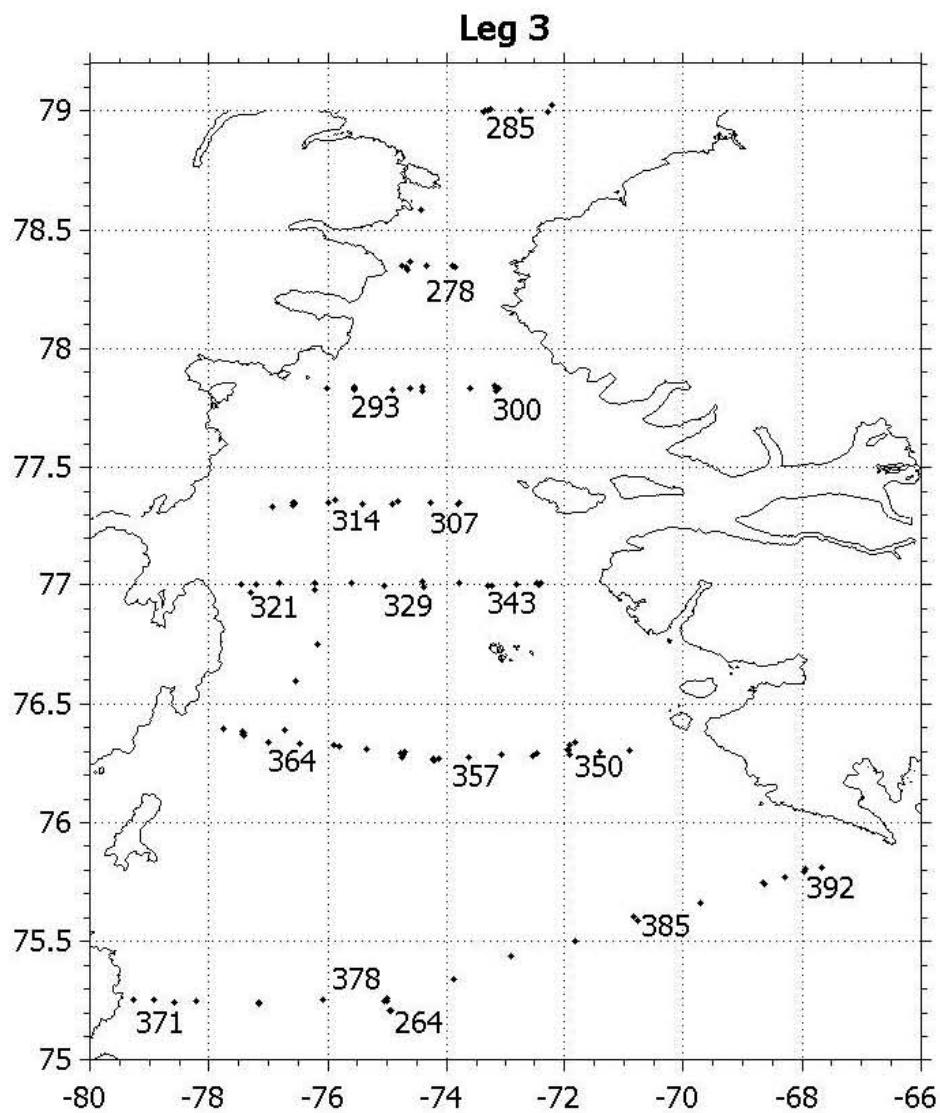
Appendix II.1 : Casts positions for Leg 0 (August 1997).



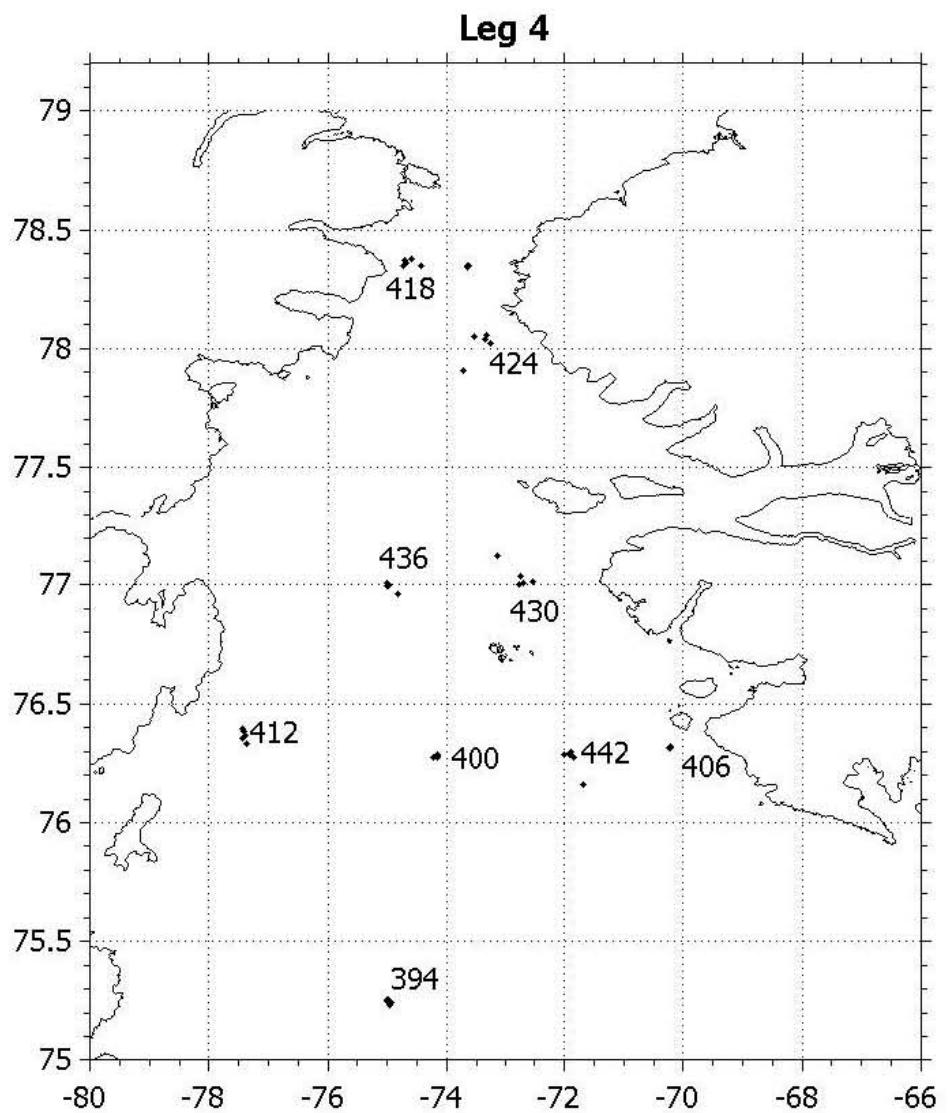
Appendix II.2 : Casts positions for Leg 1 (April 1998).



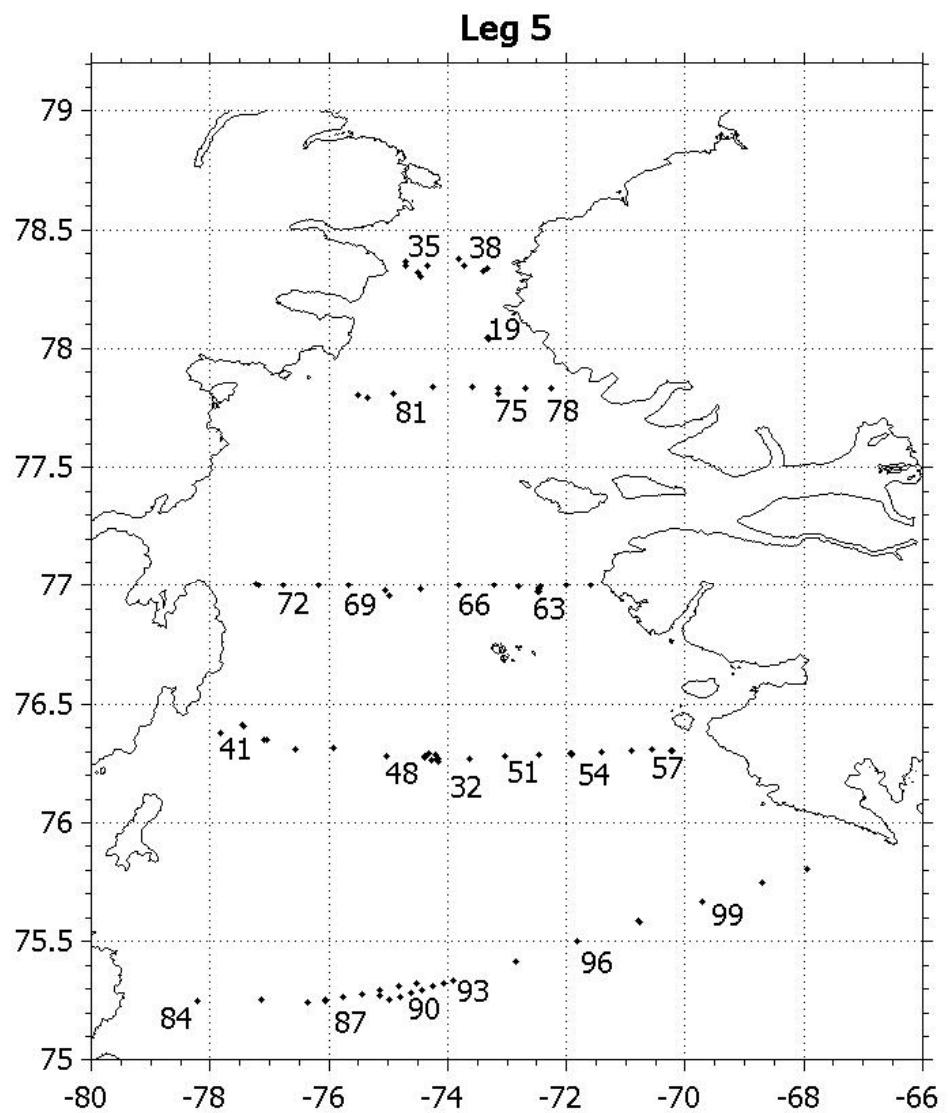
Appendix II.3 : Casts positions for Leg 2 (May 1998).



Appendix II.4 : Casts positions for Leg 3 (June 1998).



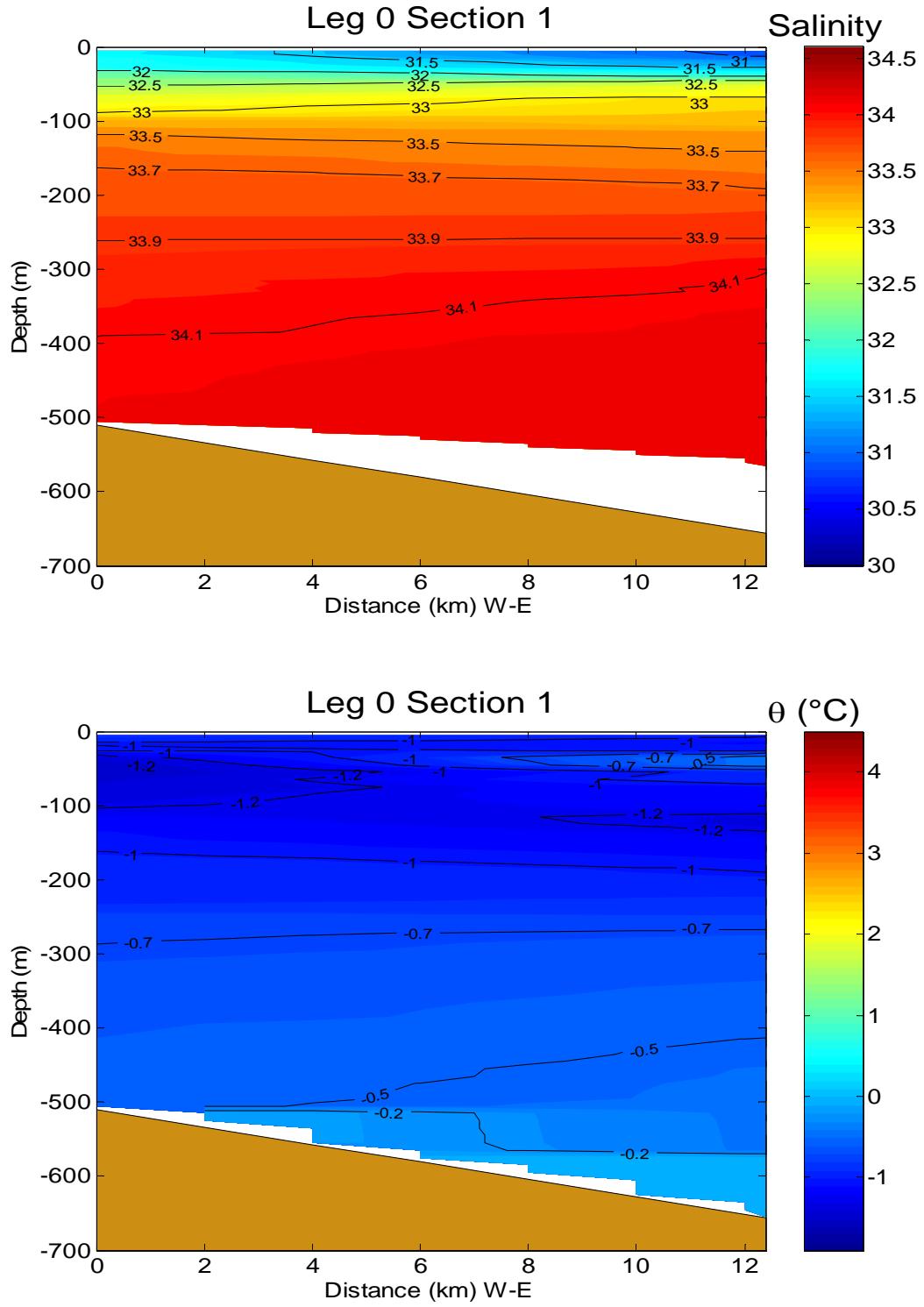
Appendix II.5 : Casts positions for Leg 4 (July 1998).



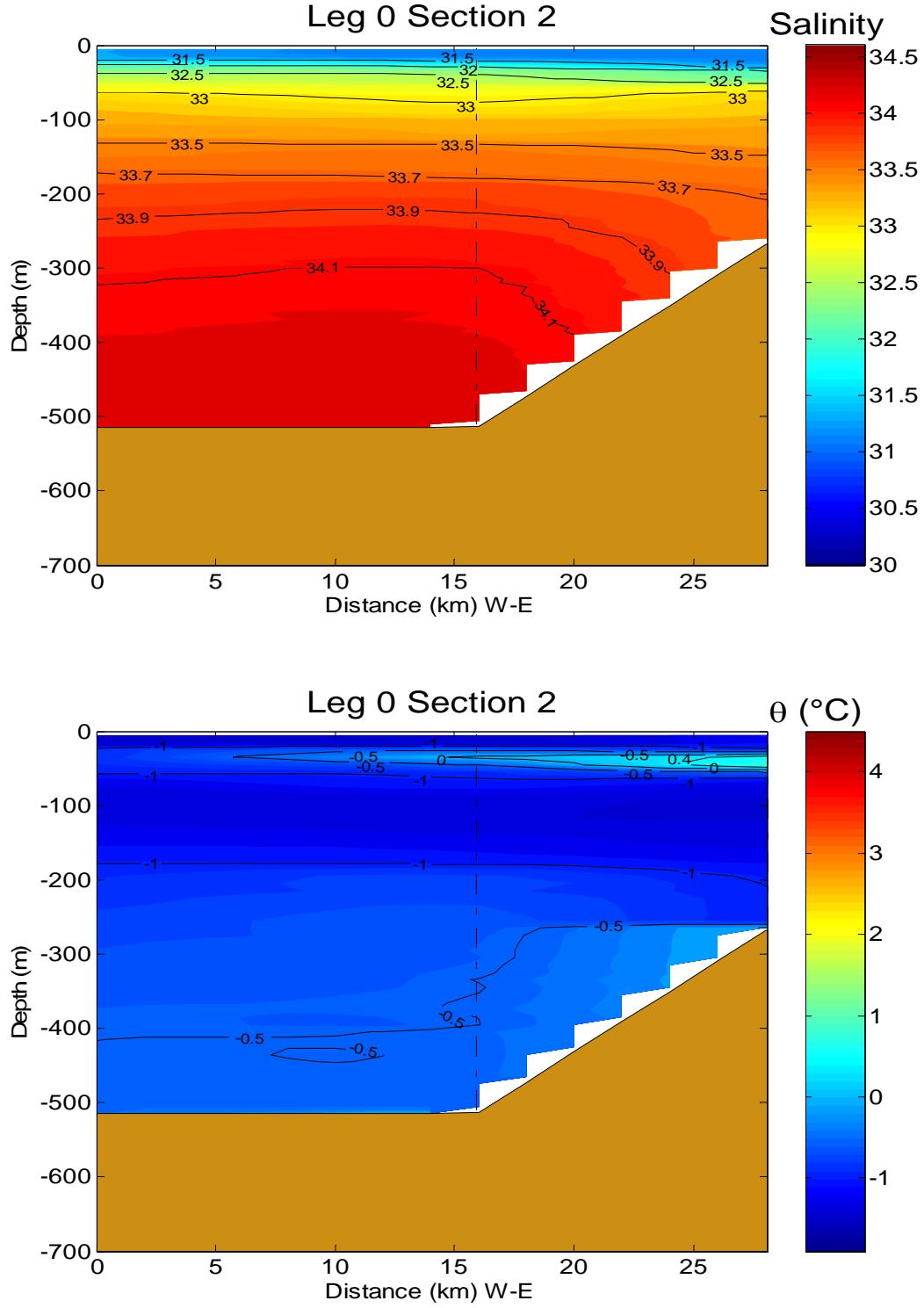
Appendix II.6 : Casts positions for Leg 5 (September 1999).

Appendix III : Salinity and potential temperature sections for Leg 0, August 1997.

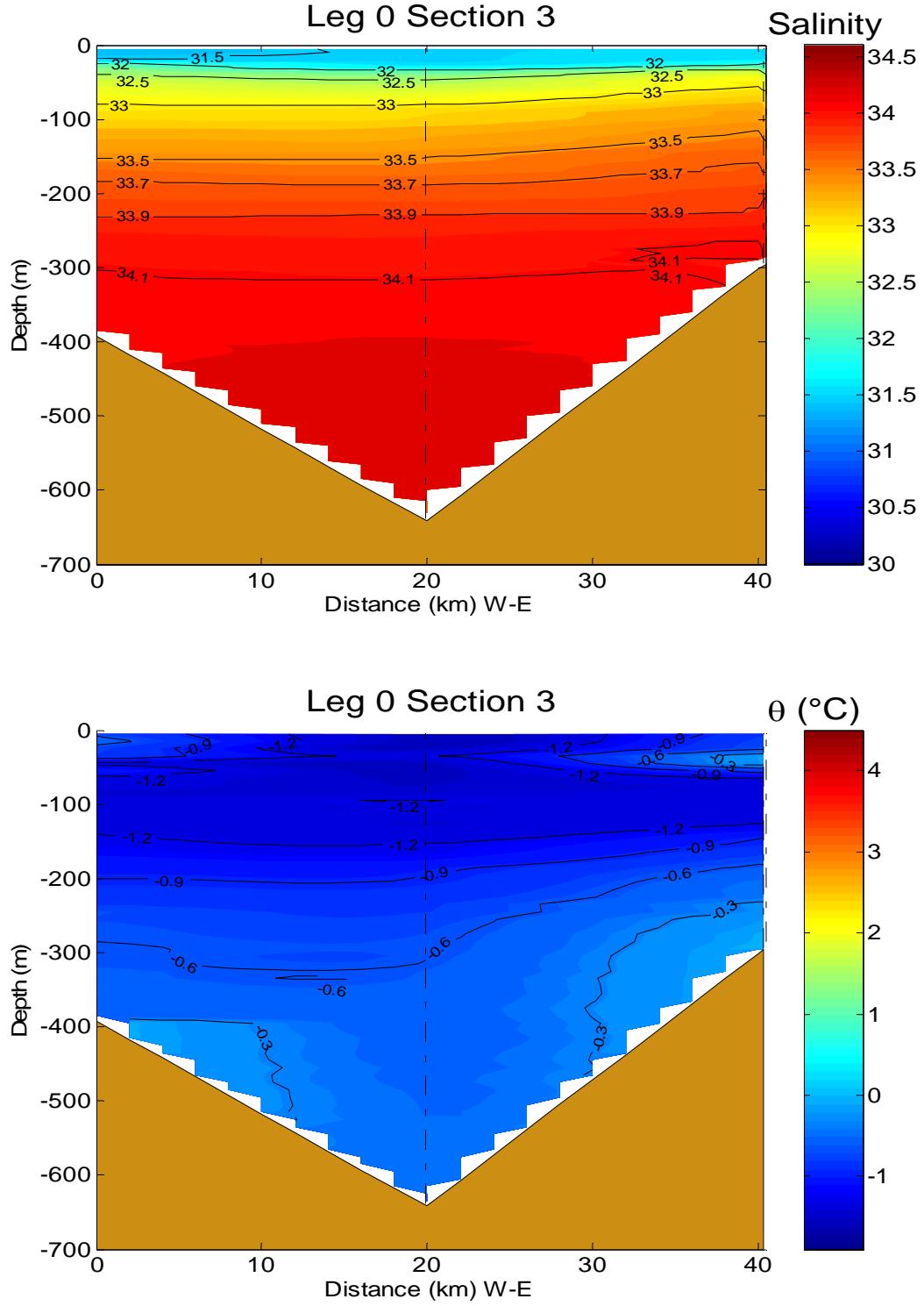
The same color scale is used for all sections. Canada is on the left and
Greenland is on the right.



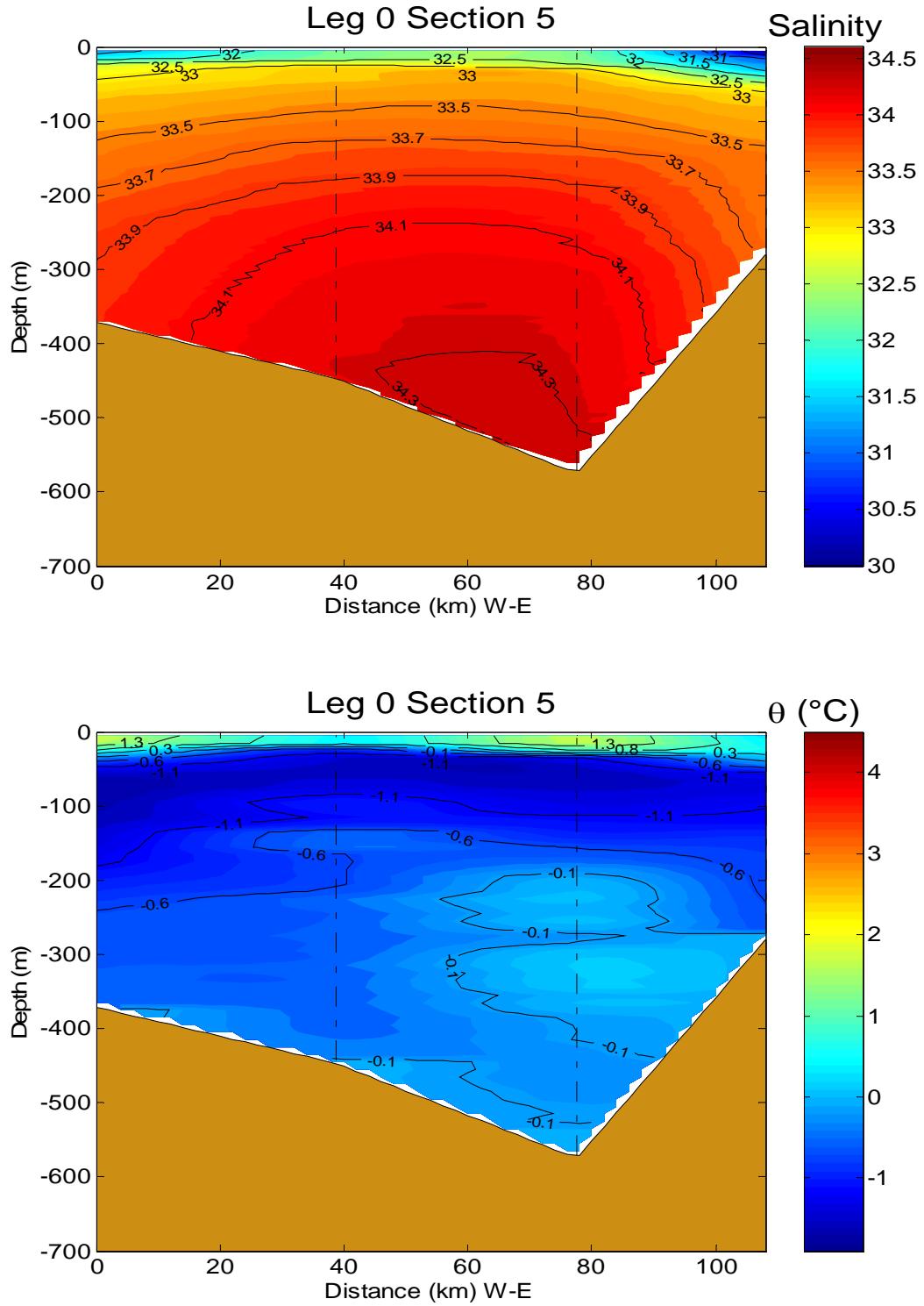
Appendix III.1: Salinity and potential temperature along Section 1 of Leg 0 (August 1997). Canada is on the left and Greenland is on the right.



Appendix III.2 : Salinity and potential temperature along Section 2 of Leg 0 (August 1997). Canada is on the left and Greenland is on the right.



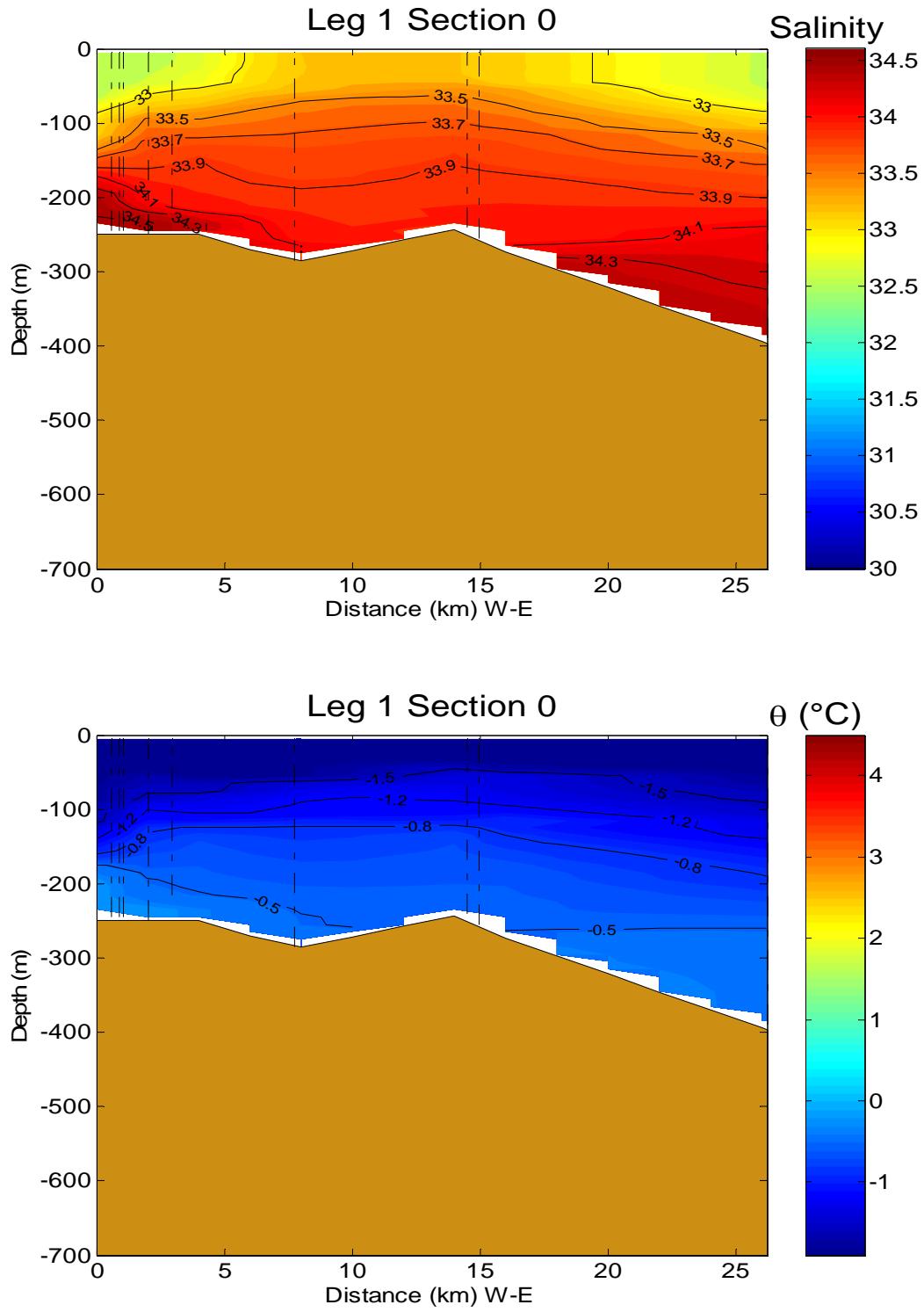
Appendix III.3 : Salinity and potential temperature along Section 3 of Leg 0 (August 1997). Canada is on the left and Greenland is on the right.



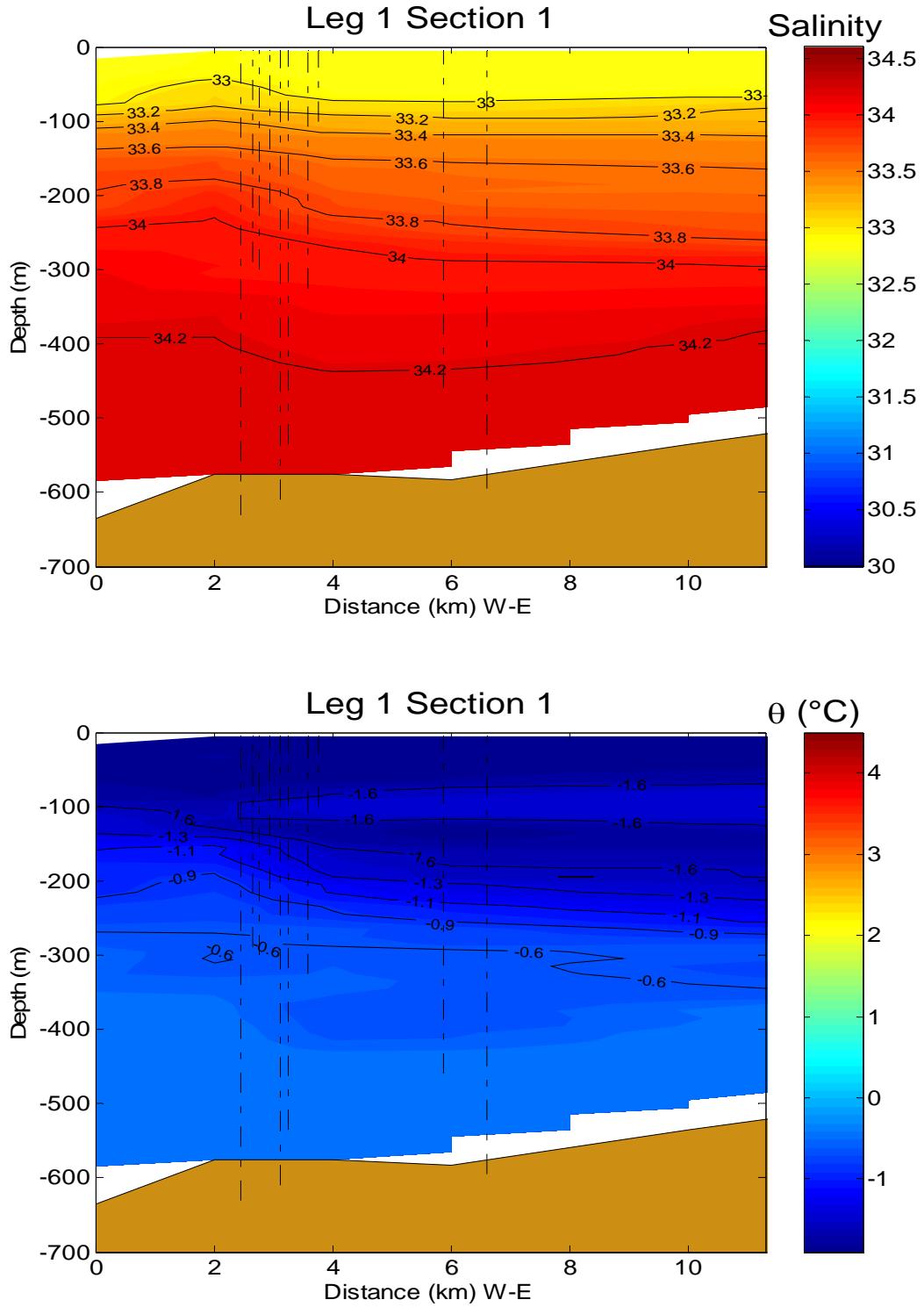
Appendix III.4 : Salinity and potential temperature along Section 5 of Leg 0 (August 1997). Canada is on the left and Greenland is on the right.

Appendix IV : Salinity and potential temperature sections; Leg 1, April 1998

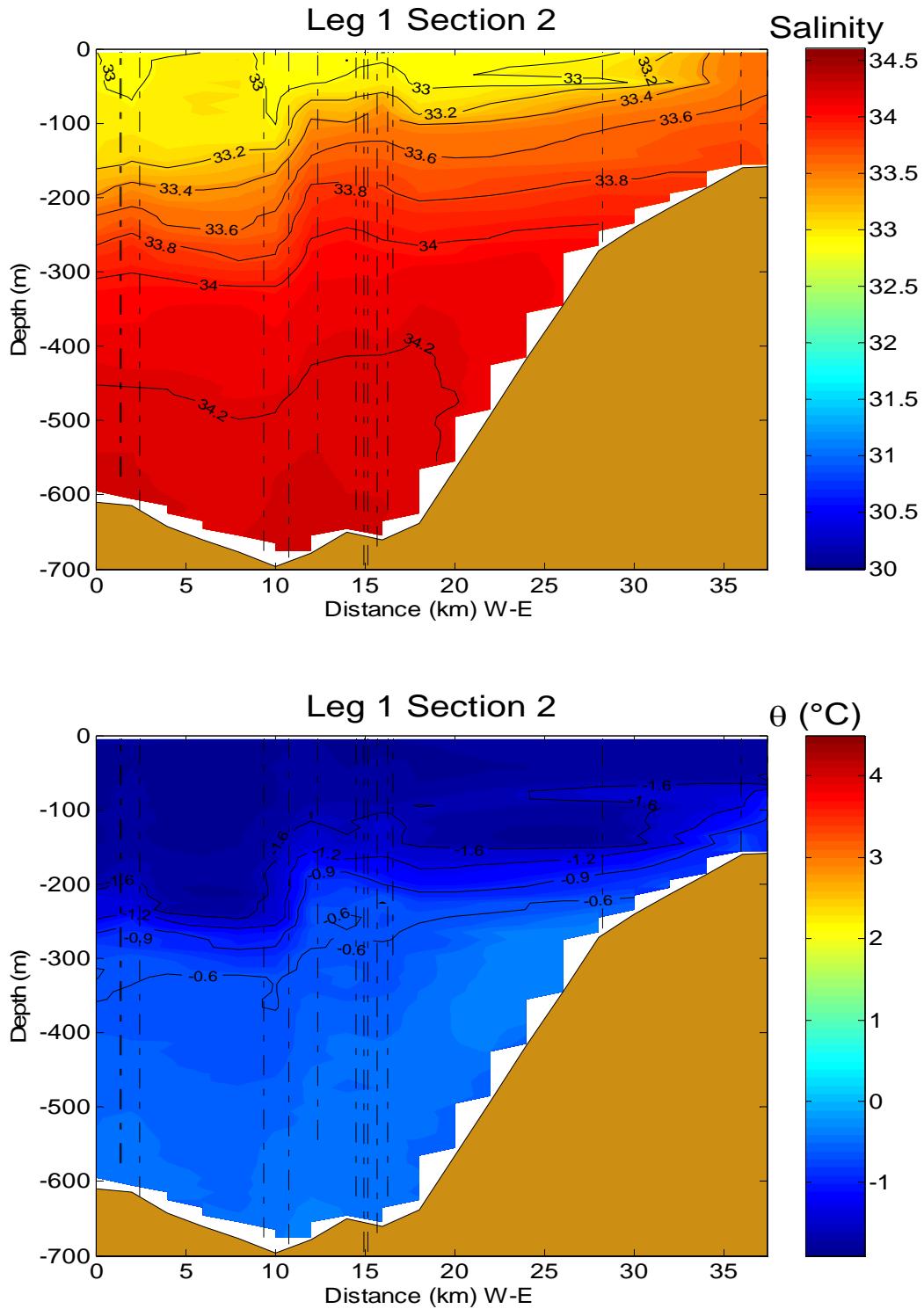
The same color scale is used for all sections. Canada is on the left and
Greenland is on the right



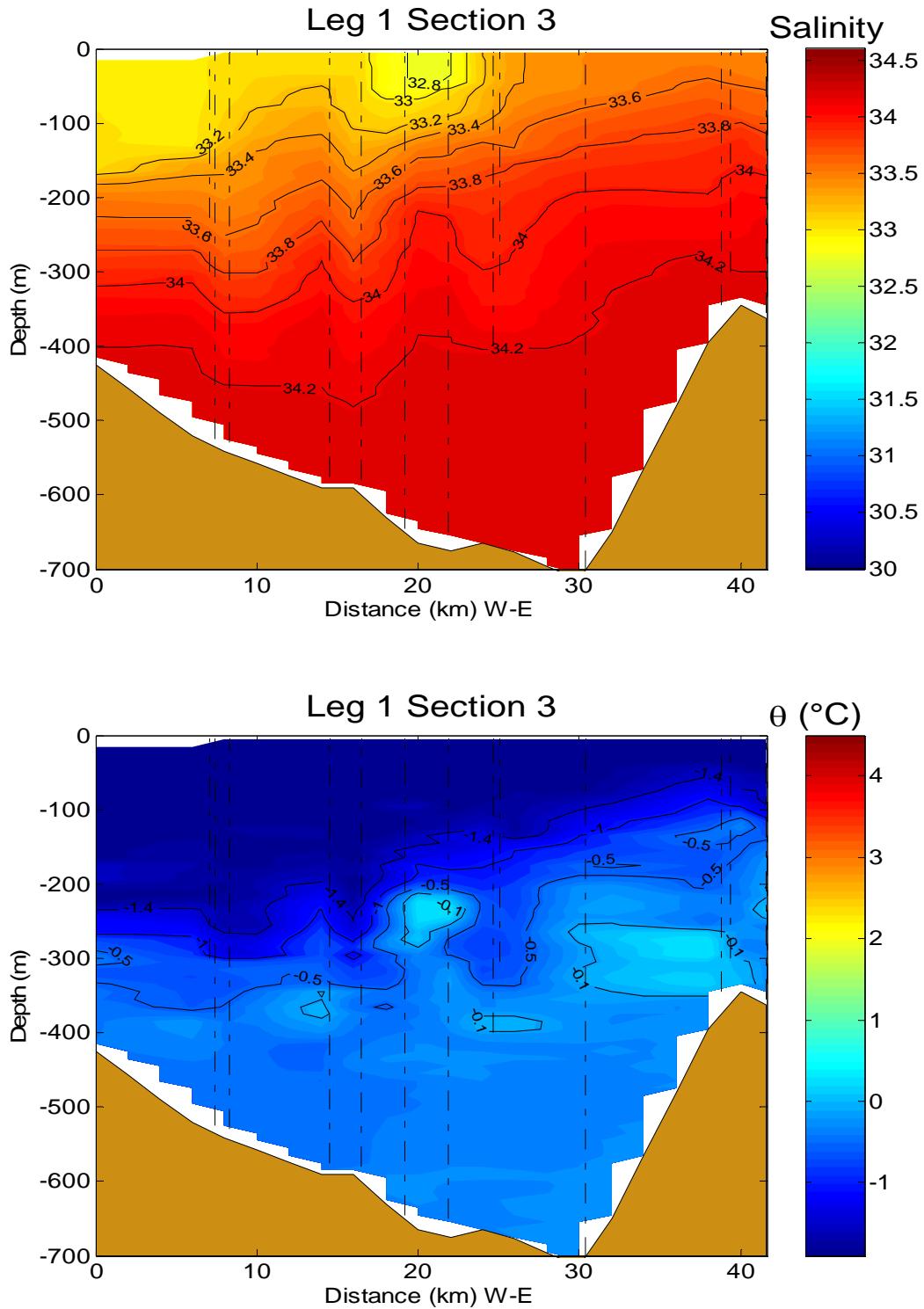
Appendix IV.1 :Salinity and potential temperature along Section 0 of Leg 1 (April 1998). Canada is on the left and Greenland is on the right.



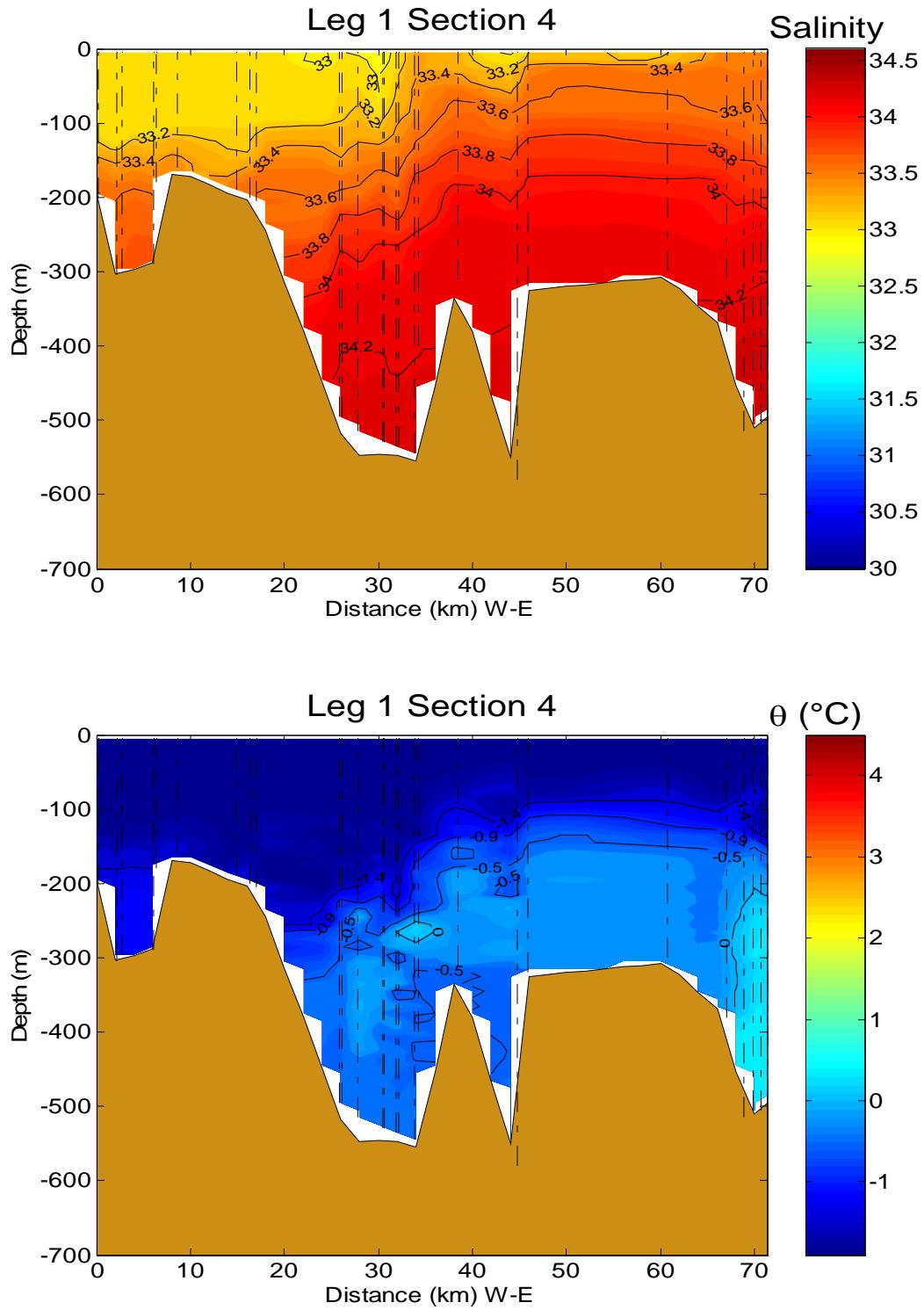
Appendix IV.2 : Salinity and potential temperature along Section 1 of Leg 1 (April 1998). Canada is on the left and Greenland is on the right.



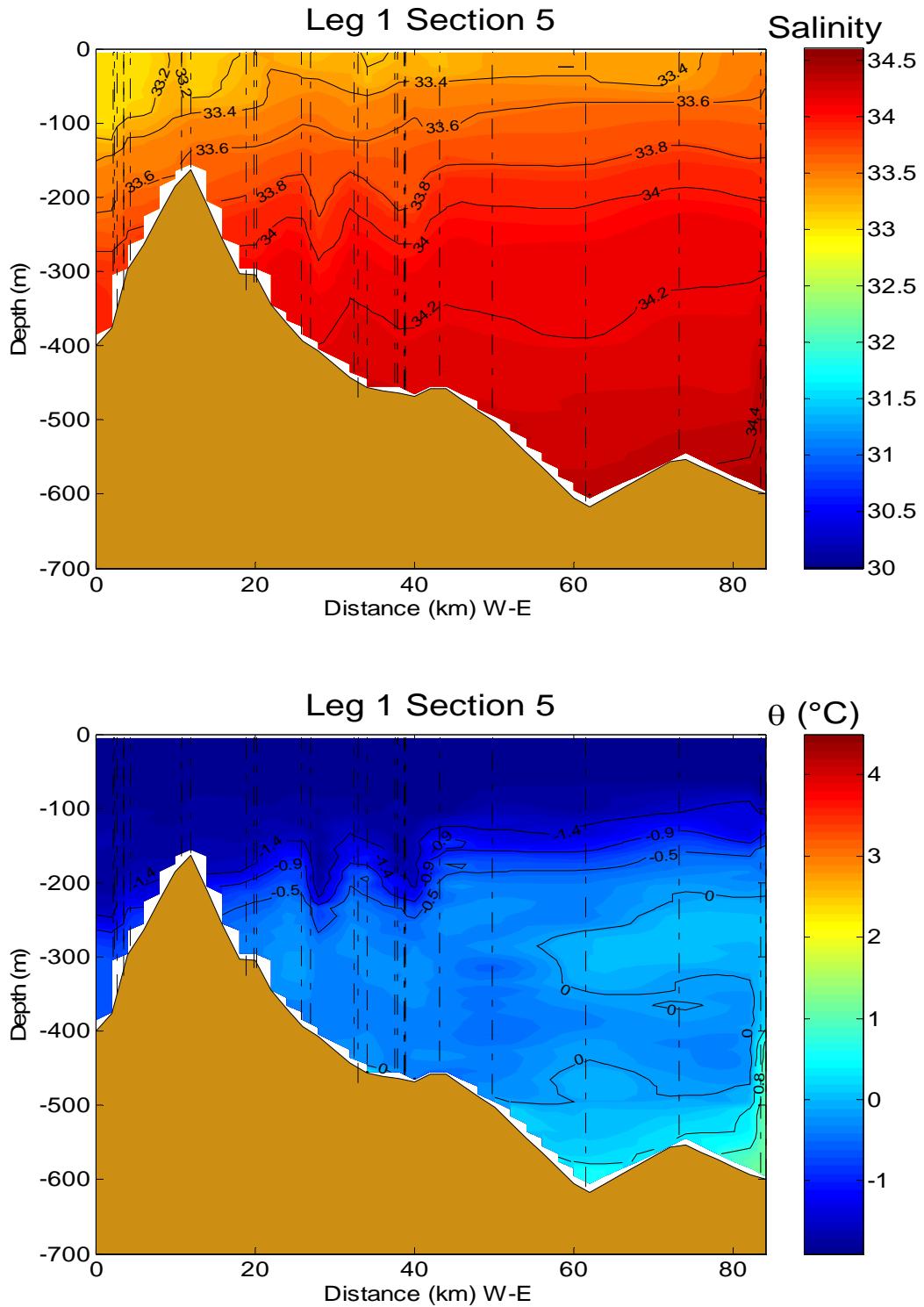
Appendix IV.3 : Salinity and potential temperature along Section 2 of Leg 1 (April 1998). Canada is on the left and Greenland is on the right.



Appendix IV.4 : Salinity and potential temperature along Section 3 of Leg 1 (April 1998). Canada is on the left and Greenland is on the right.

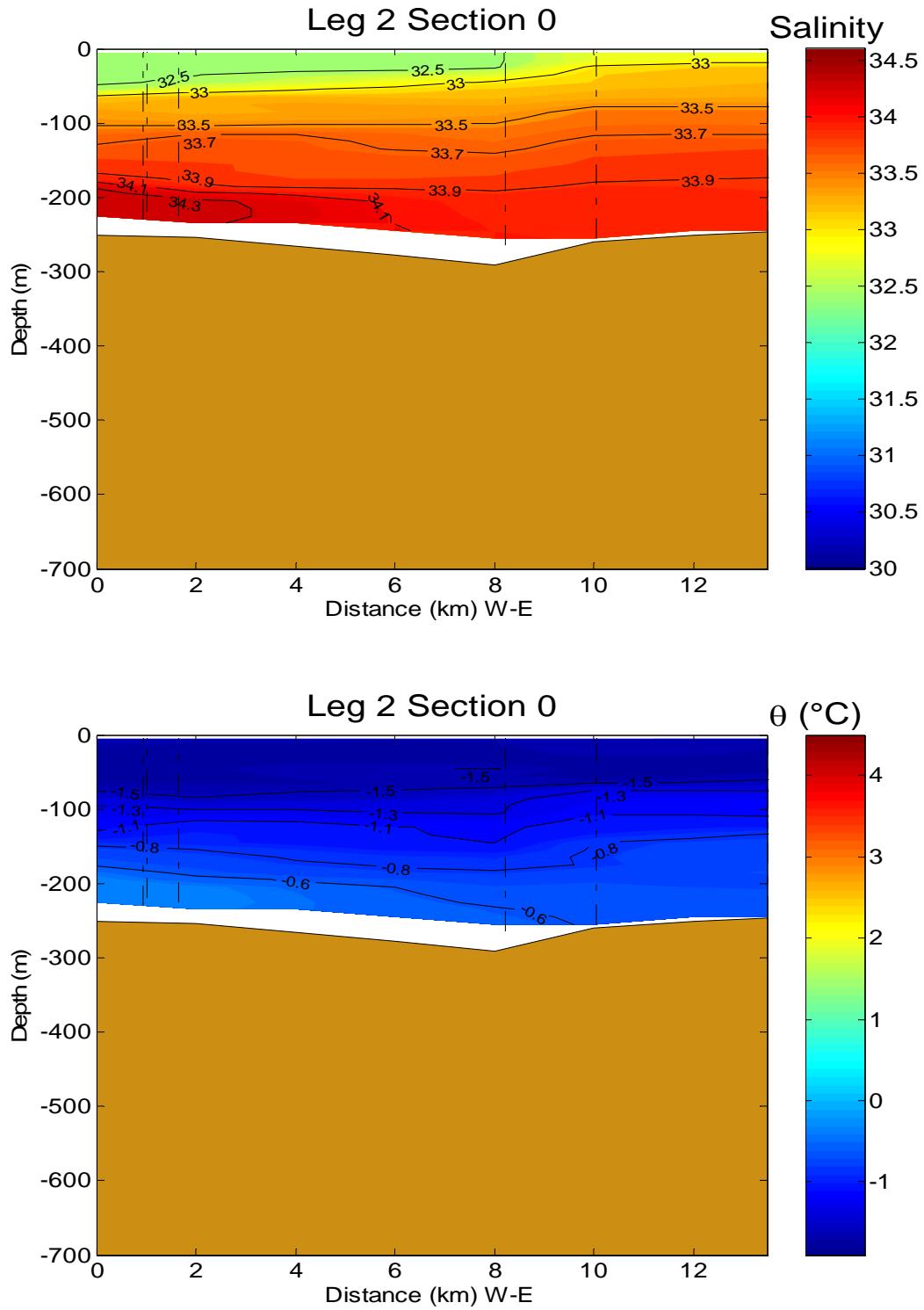


Appendix IV.5 : Salinity and potential temperature along Section 4 of Leg 1 (April 1998). Canada is on the left and Greenland is on the right.

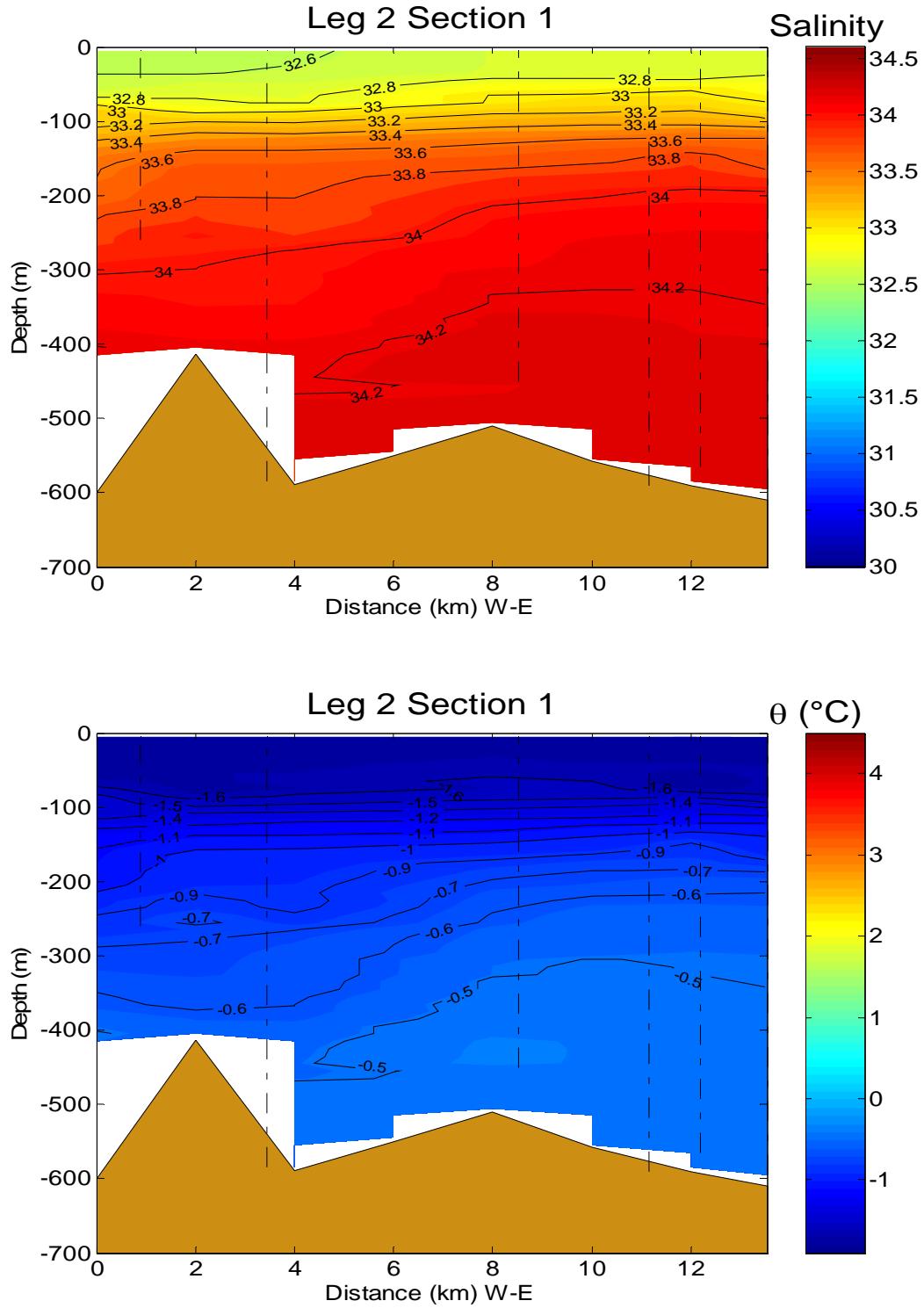


Appendix IV.6 : Salinity and potential temperature along Section 5 of Leg 1 (April 1998). Canada is on the left and Greenland is on the right.

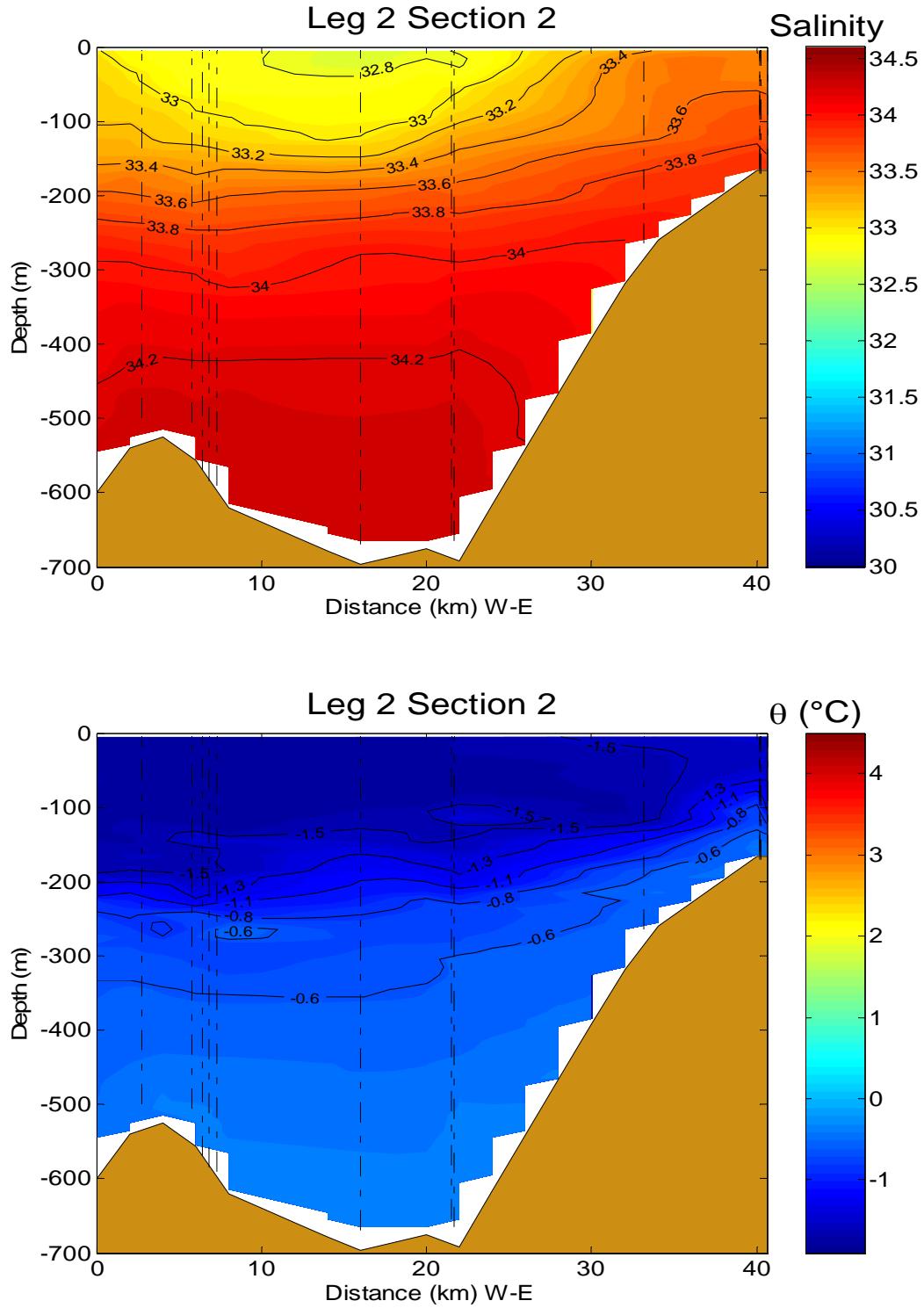
Appendix V: Leg 2, May 1998



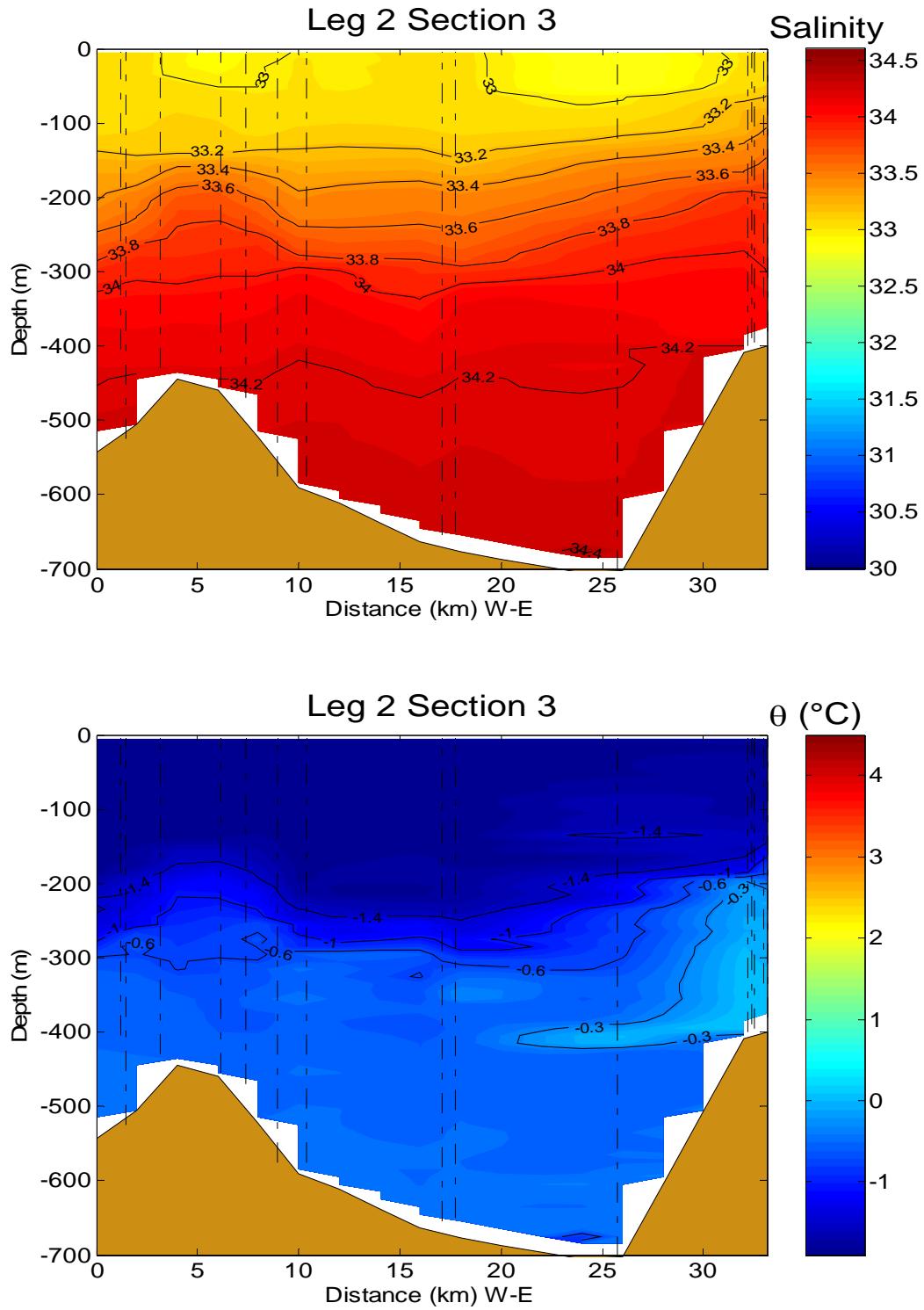
Appendix V.1 : Salinity and potential temperature along Section 0 of Leg 2 (May 1998). Canada is on the left and Greenland is on the right.



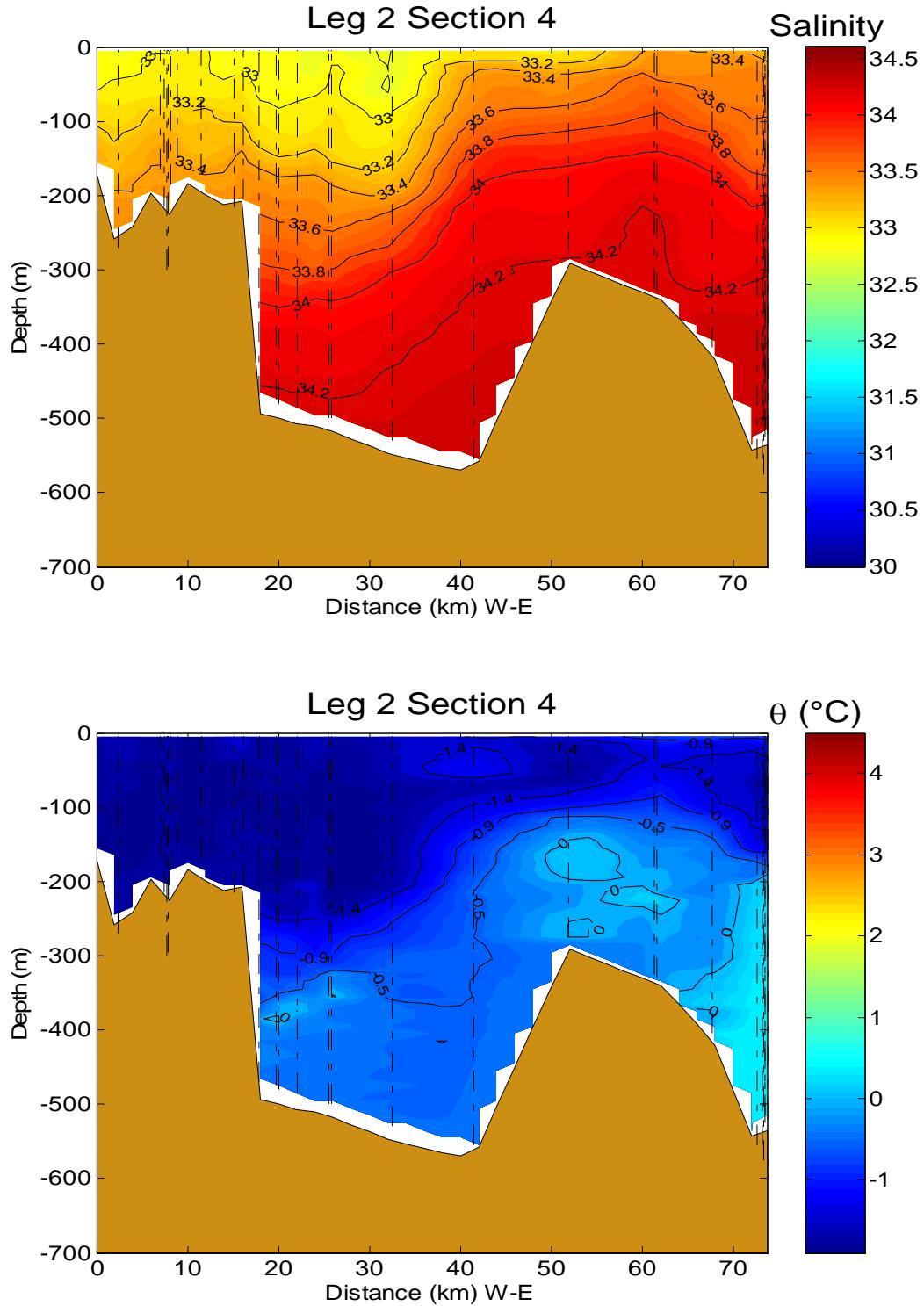
Appendix V.2 : Salinity and potential temperature along Section 1 of Leg 2 (May 1998). Canada is on the left and Greenland is on the right.



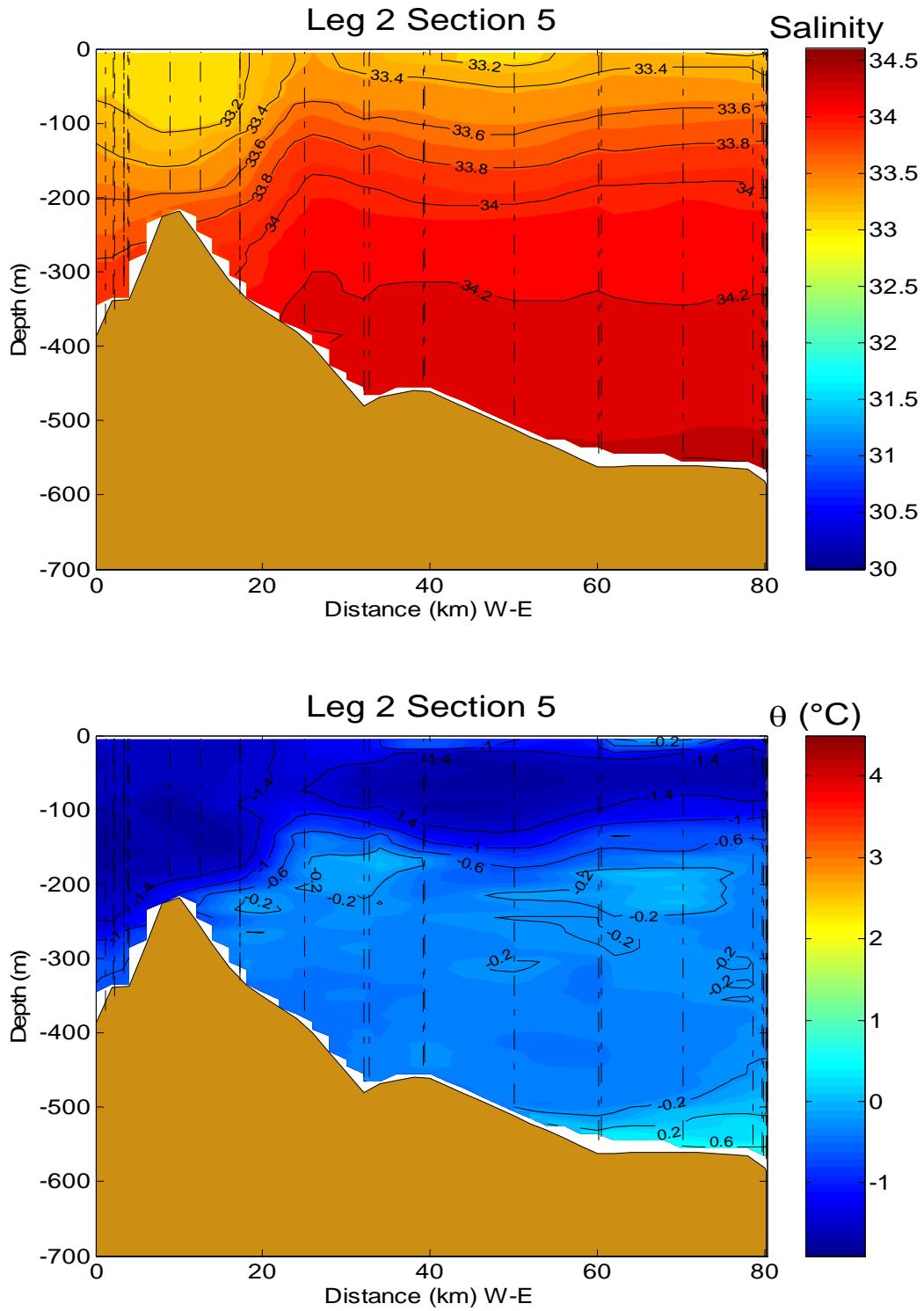
Appendix V.3 : Salinity and potential temperature along Section 2 of Leg 2 (May 1998). Canada is on the left and Greenland is on the right.



Appendix V.4 : Salinity and potential temperature along Section 3 of Leg 2 (May 1998). Canada is on the left and Greenland is on the right.



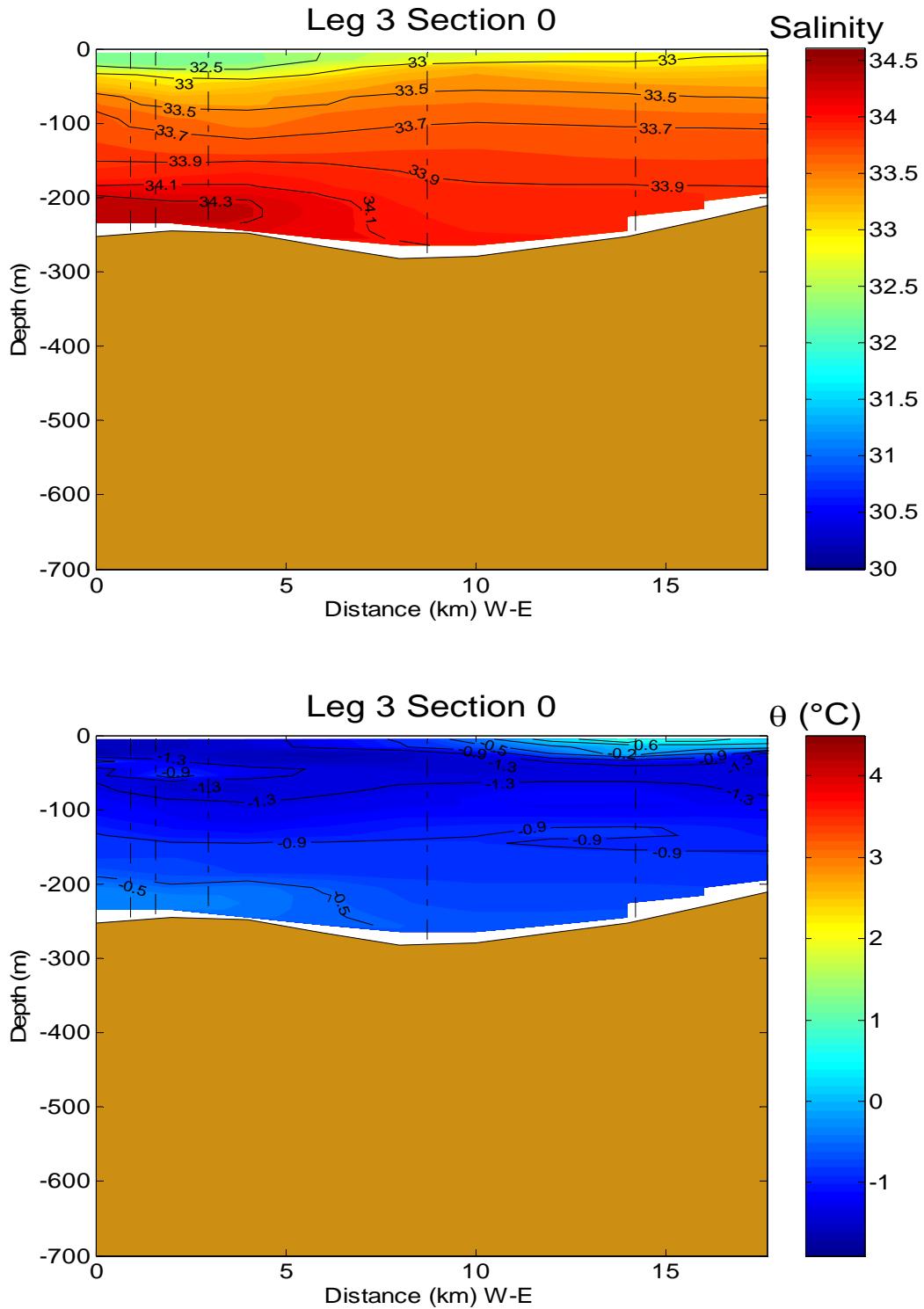
Appendix V.5 : Salinity and potential temperature along Section 4 of Leg 2 (May 1998). Canada is on the left and Greenland is on the right.



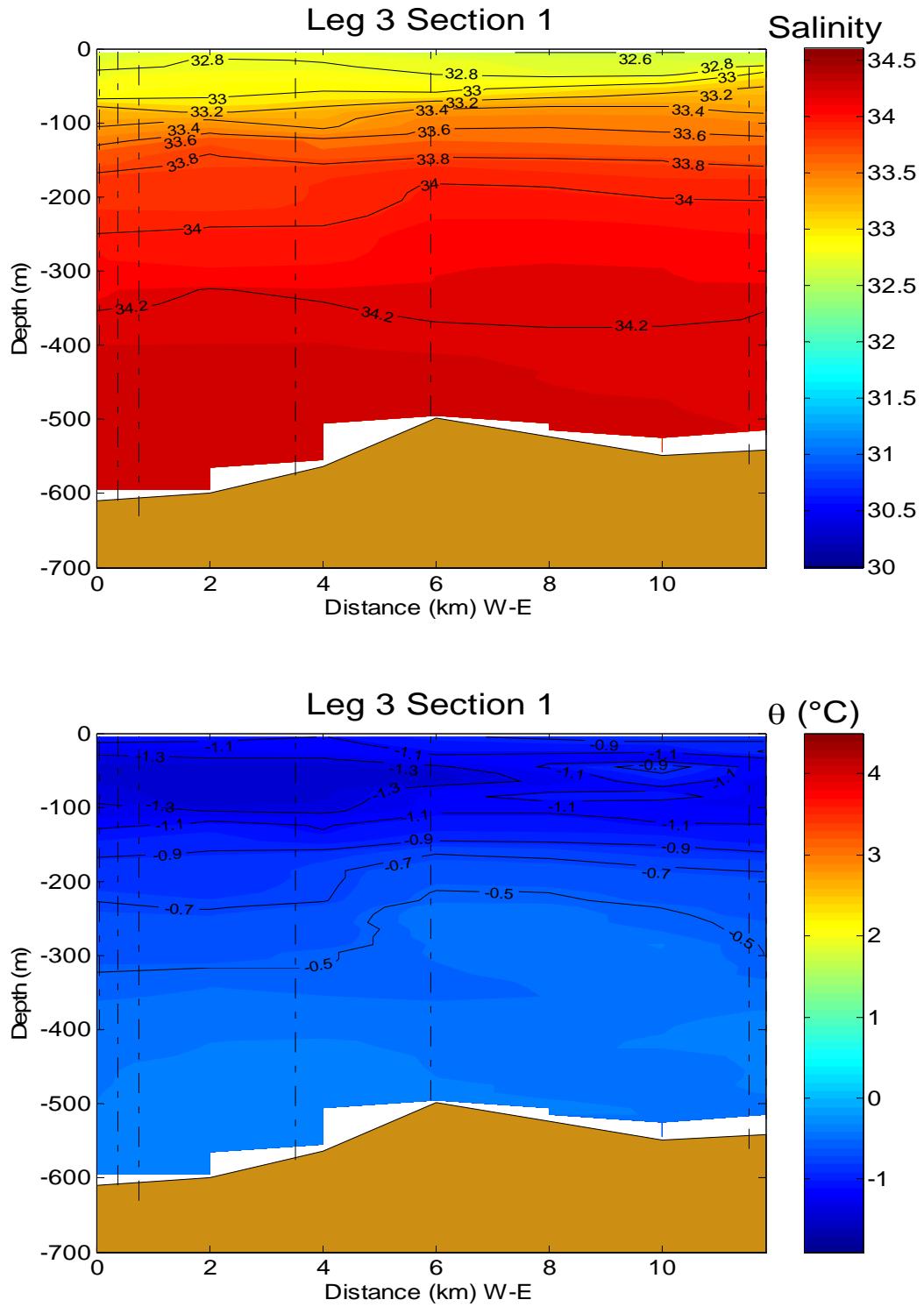
Appendix V.6 :Salinity and potential temperature along Section 5 of Leg 2 (May 1998). Canada is on the left and Greenland is on the right.

Appendix VI : Salinity and potential temperature; Leg 3, June 1998

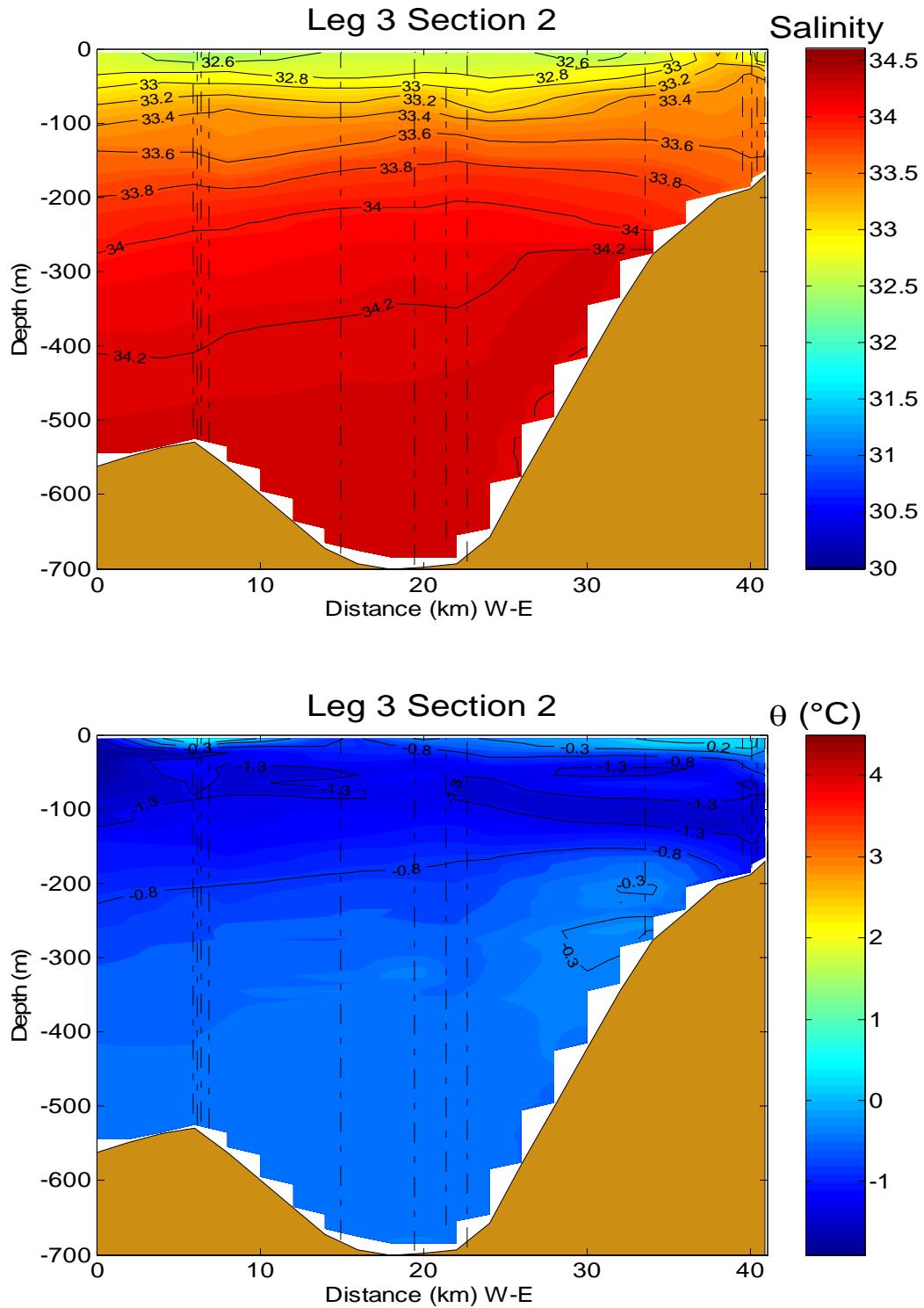
The same color scale is used for all sections. Canada is on the left and
Greenland is on the right



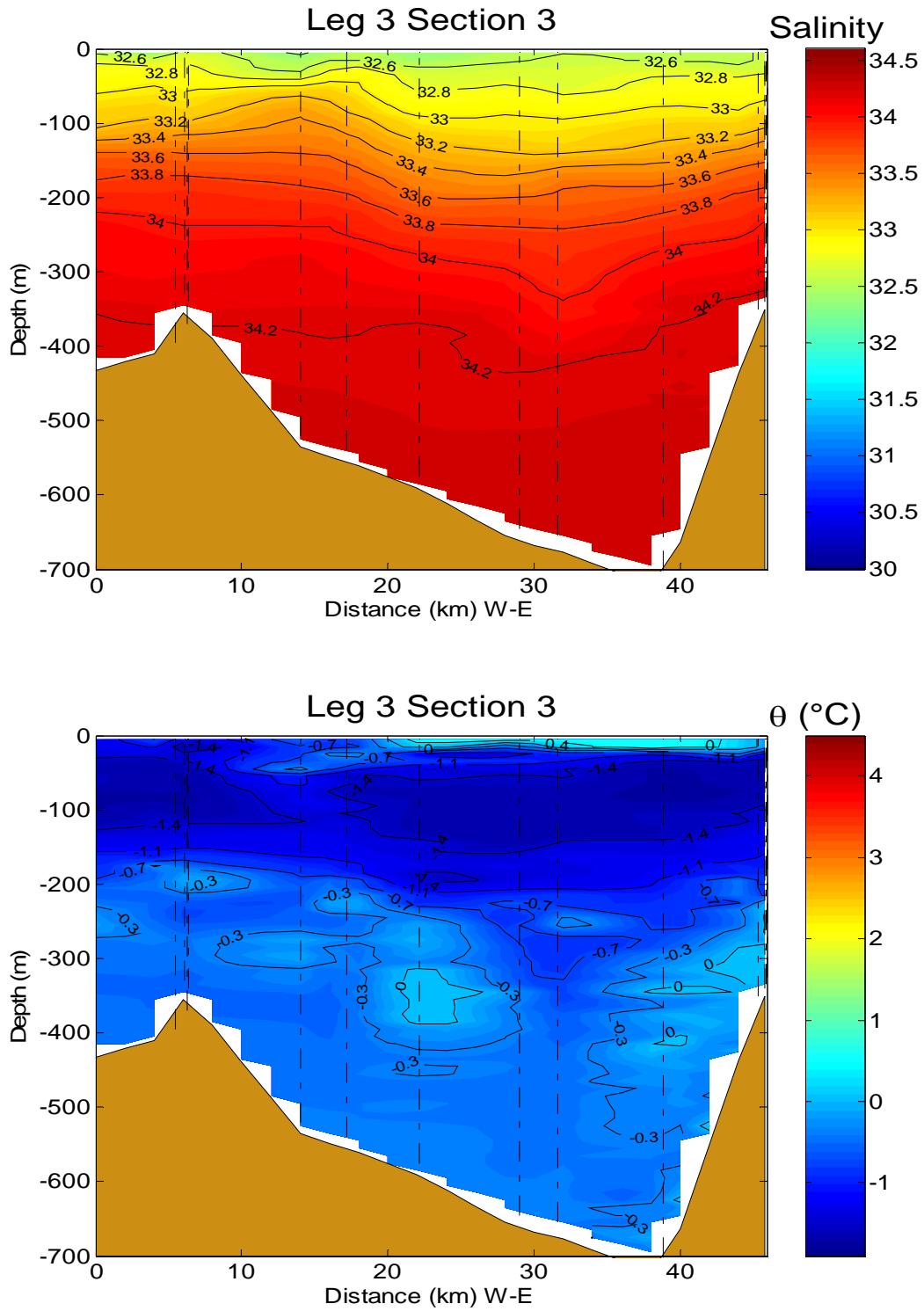
Appendix VI.1 : Salinity and potential temperature along Section 0 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.



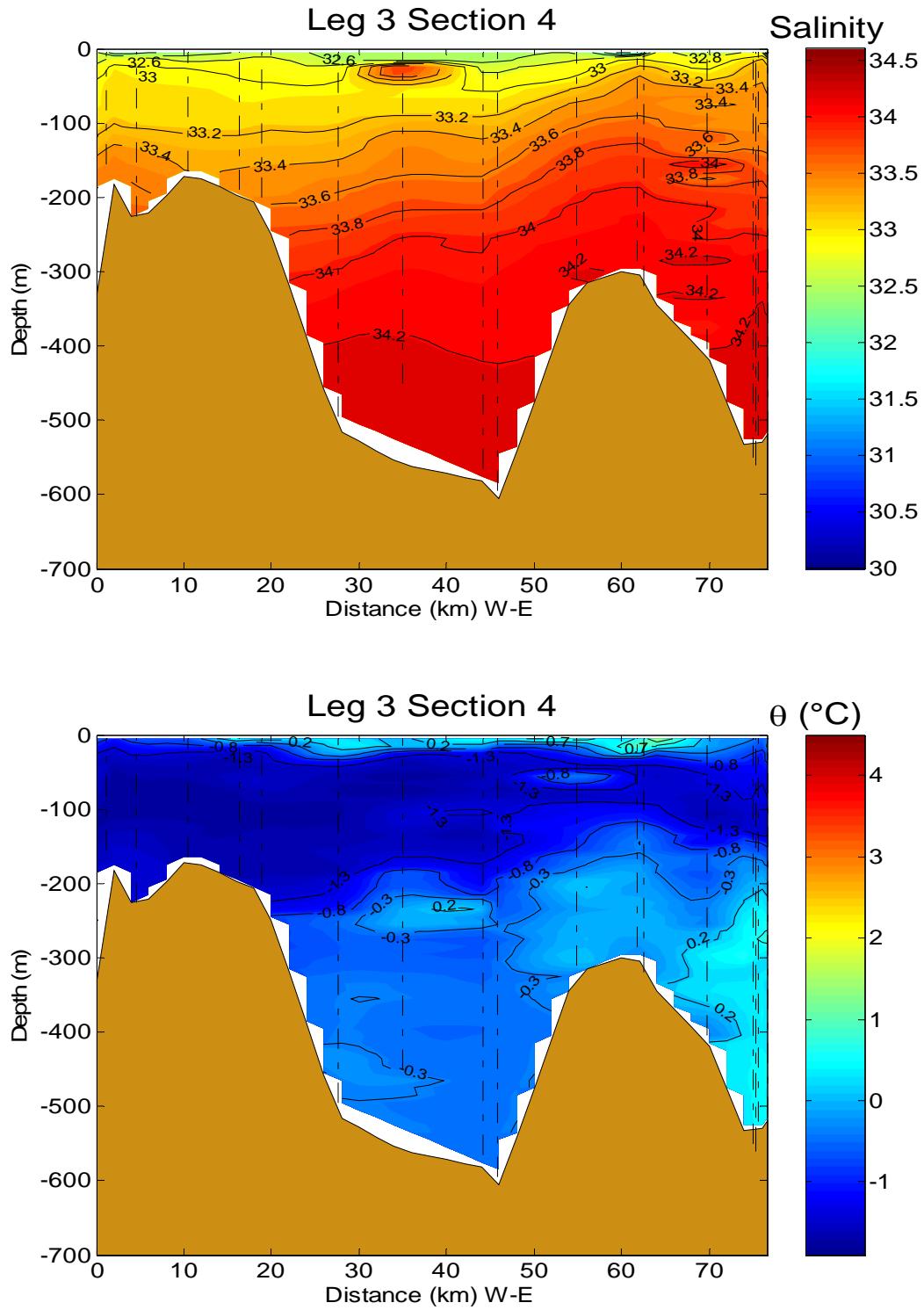
Appendix VI.2 Salinity and potential temperature along Section 1 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.



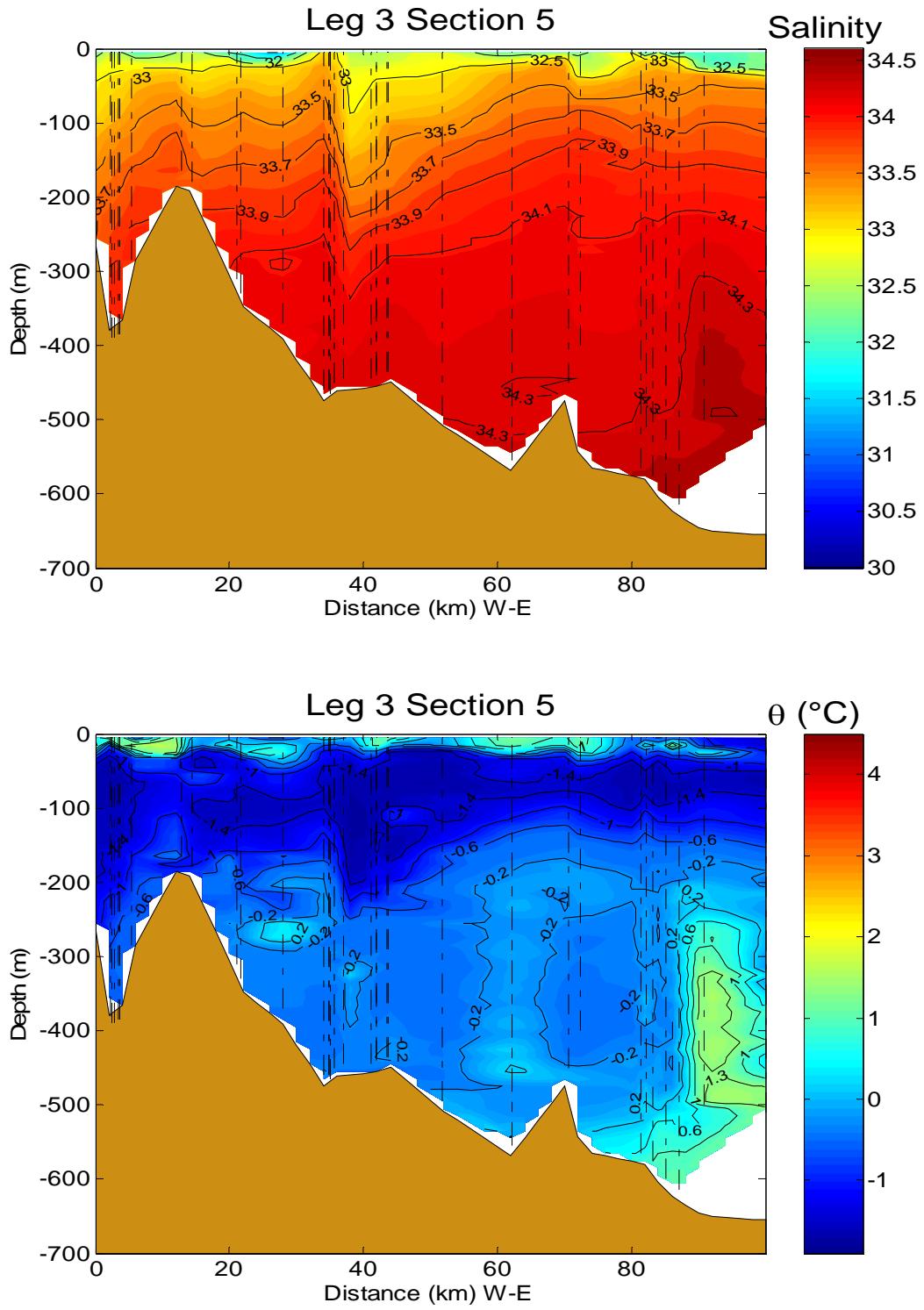
Appendix VI.3 :Salinity and potential temperature along Section 2 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.



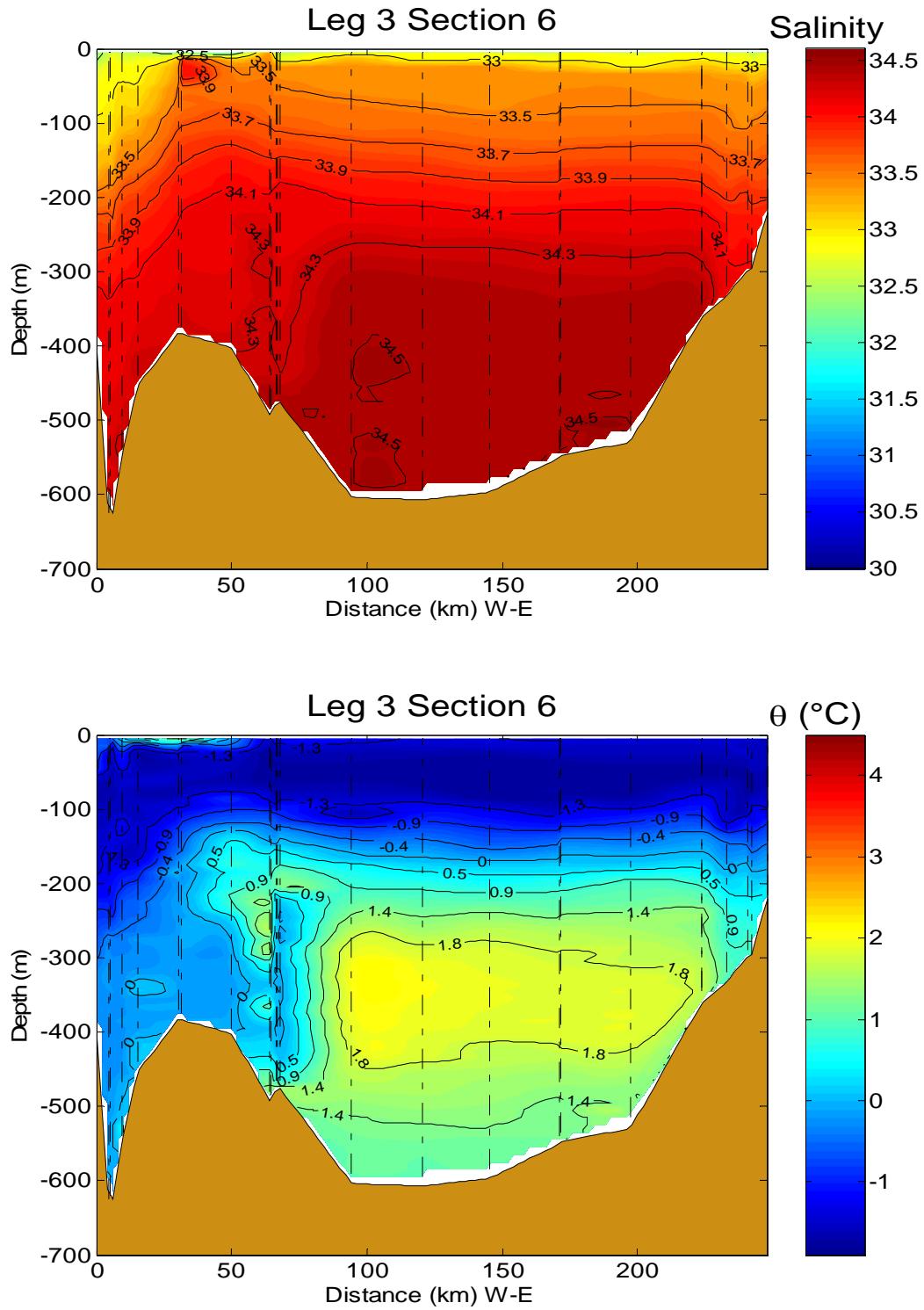
Appendix VI.4 : Salinity and potential temperature along Section 3 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.



Appendix VI.5 : Salinity and potential temperature along Section 4 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.



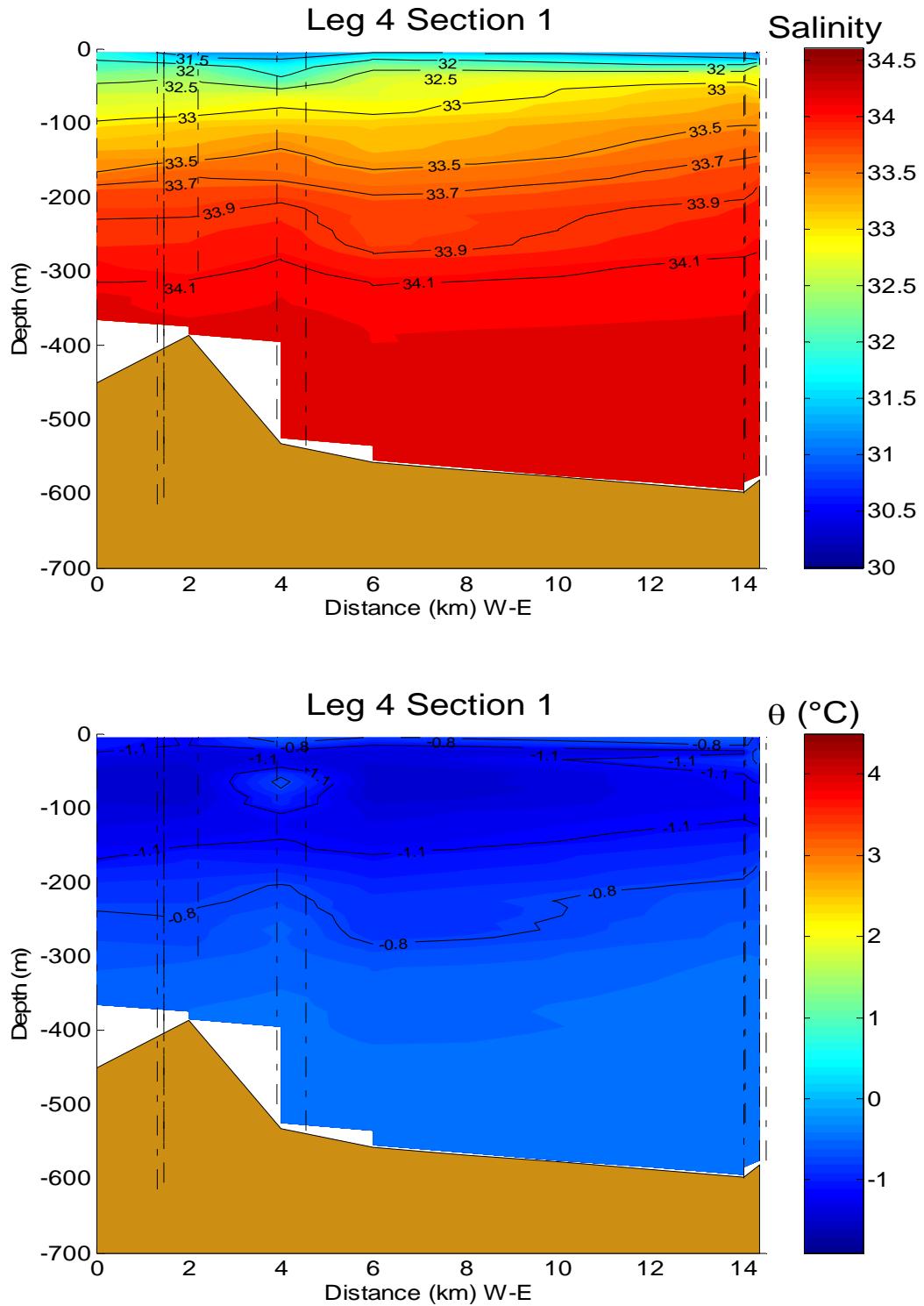
Appendix VI.6 : Salinity and potential temperature along Section 5 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.



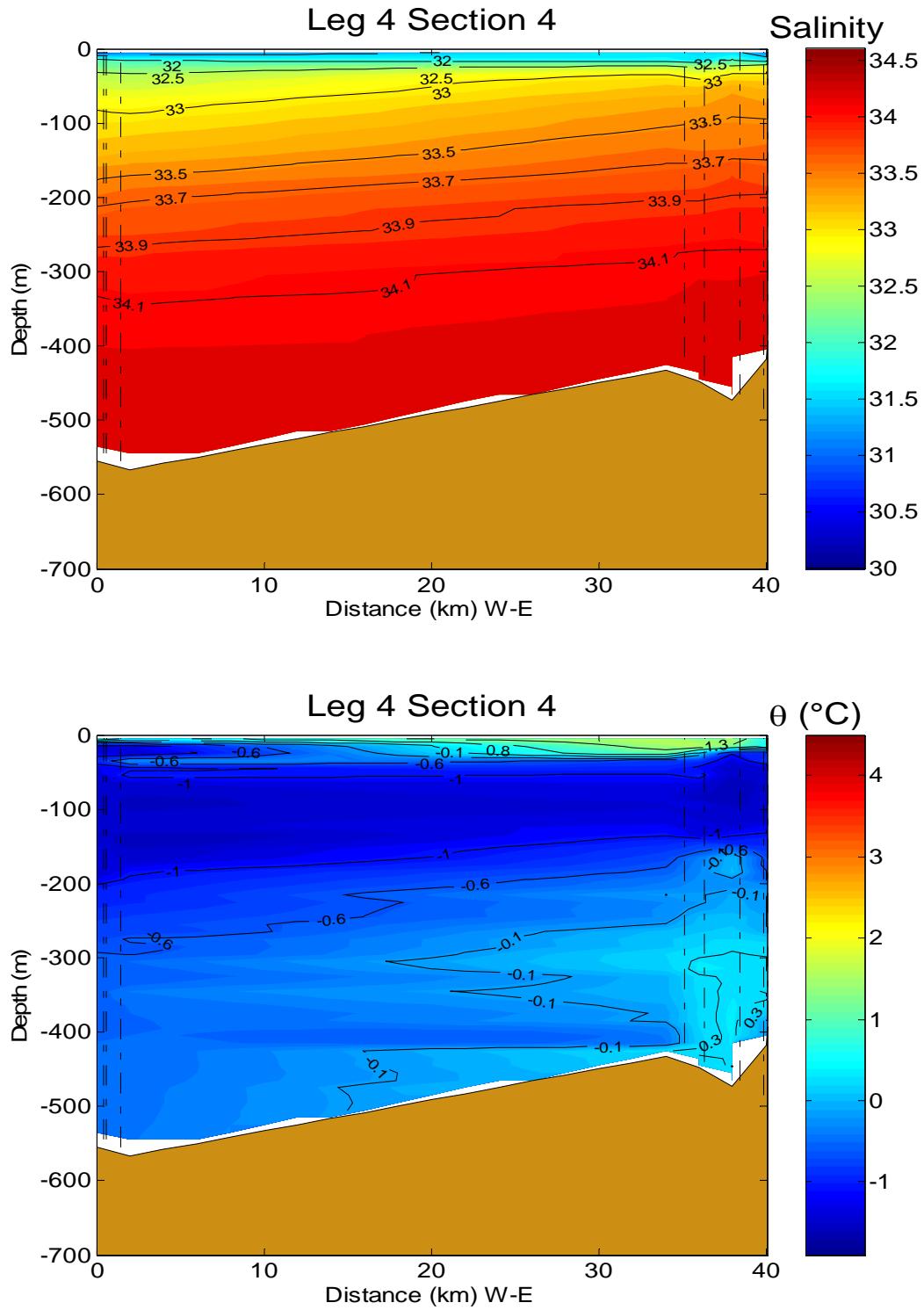
Appendix VI.7 :Salinity and potential temperature along Section 6 of Leg 3 (June 1998). Canada is on the left and Greenland is on the right.

Appendix VII : Salinity and potential temperature; Leg 4, June 1998

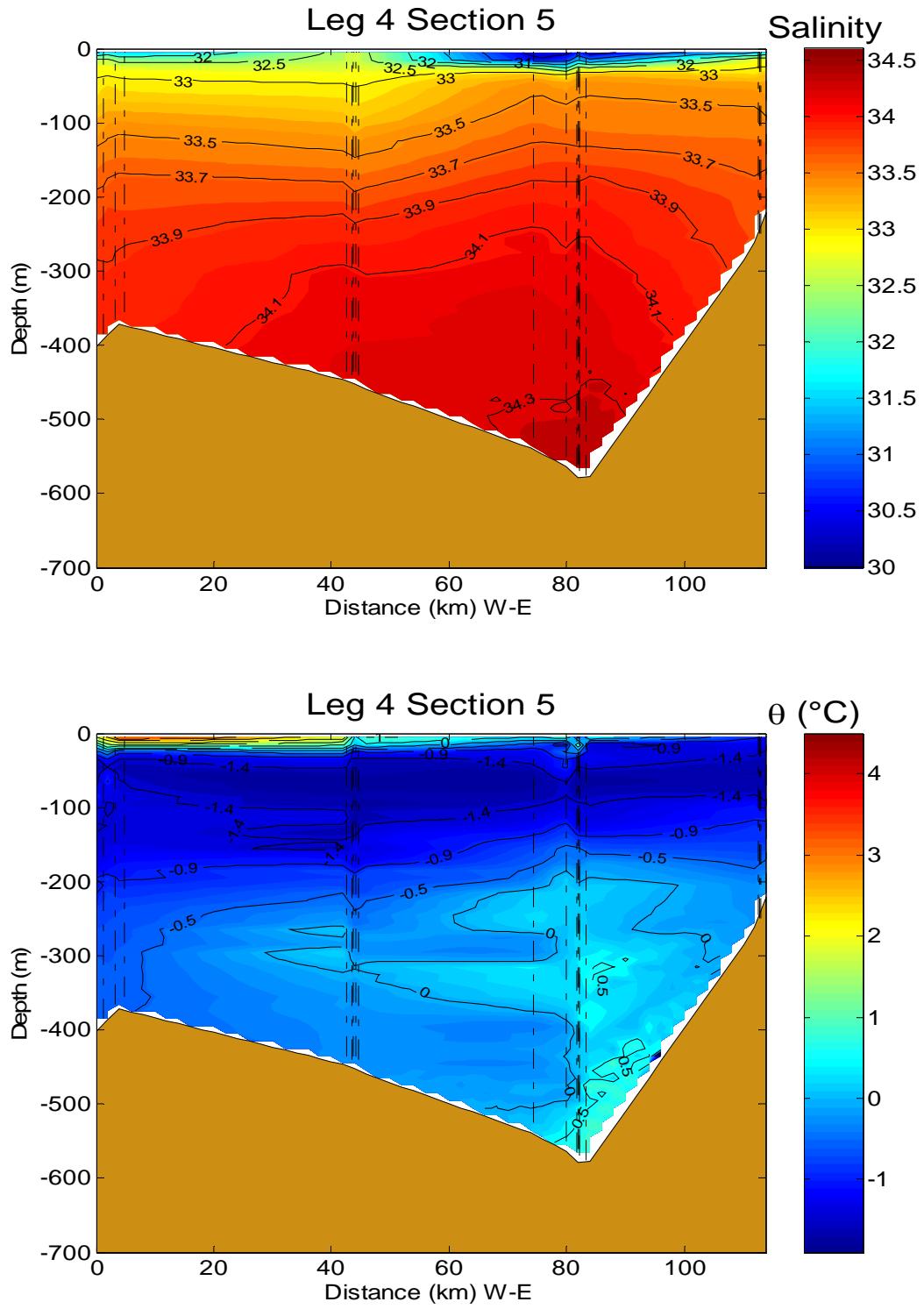
The same color scale is used for all sections. Canada is on the left and
Greenland is on the right



Appendix VII.1 : Salinity and potential temperature along Section 1 of Leg 4 (July 1998). Canada is on the left and Greenland is on the right.



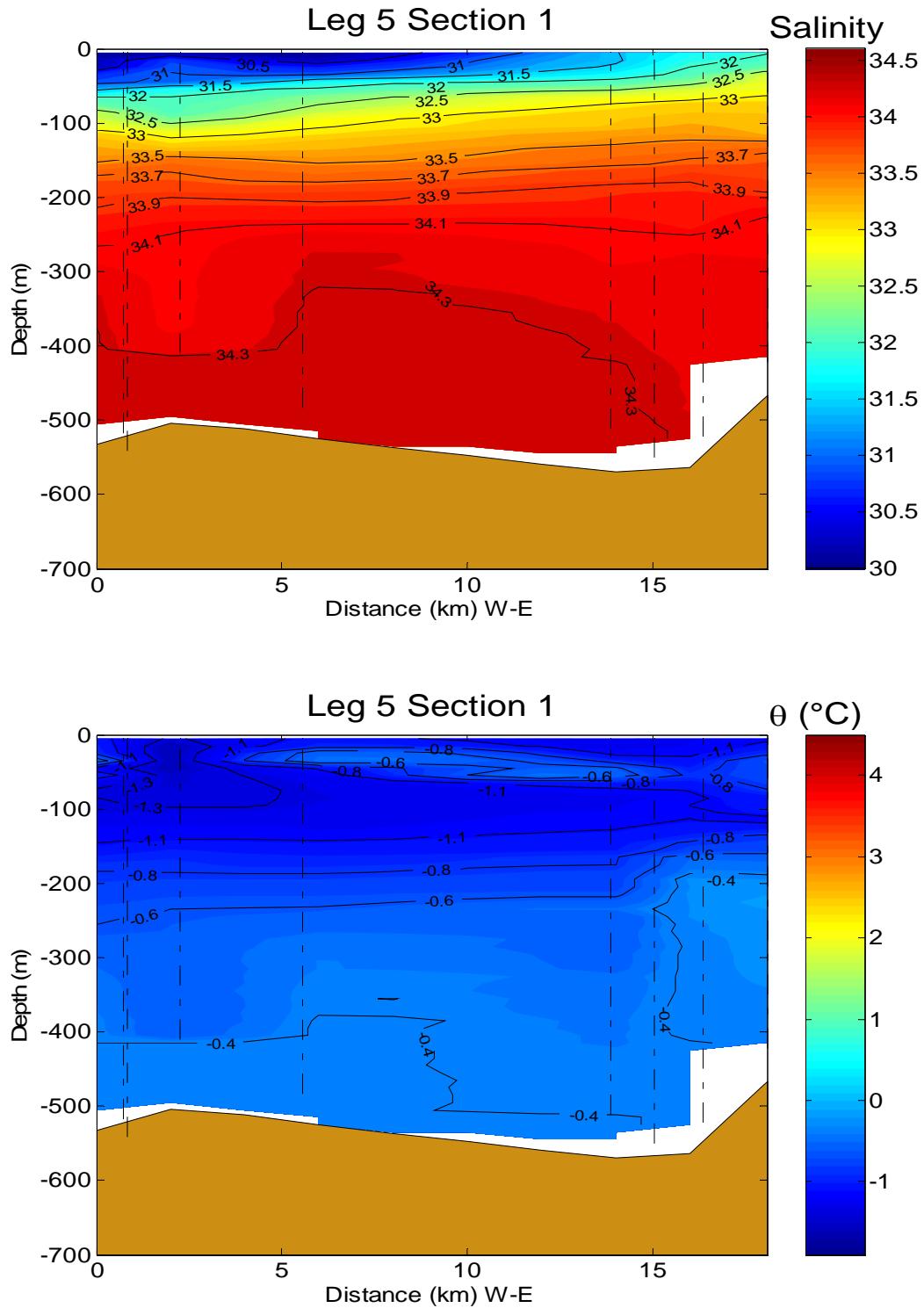
Appendix VII.2 : Salinity and potential temperature along Section 4 of Leg 4 (July 1998). Canada is on the left and Greenland is on the right.



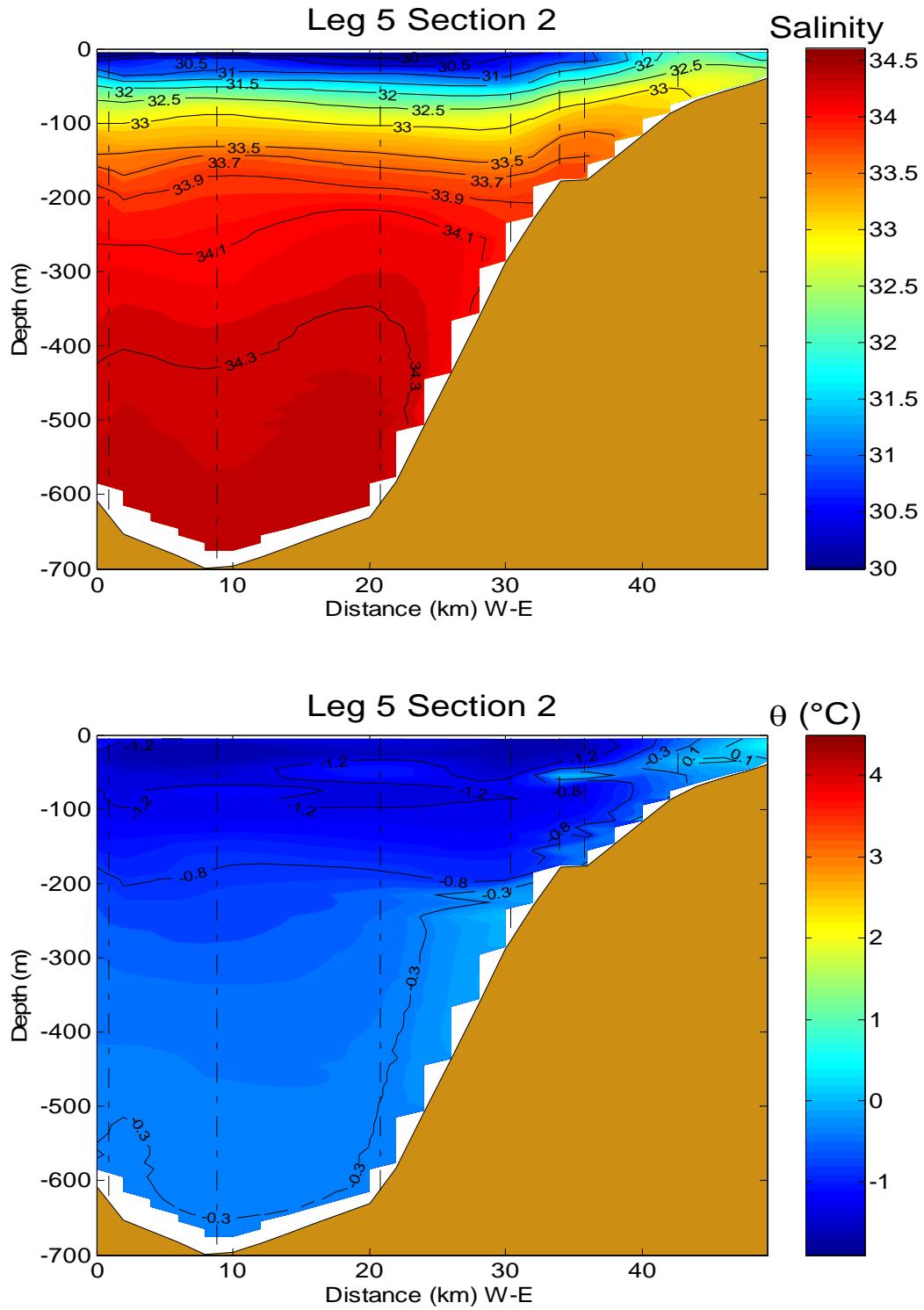
Appendix VII.3 :Salinity and potential temperature along Section 5 of Leg 4 (July 1998). Canada is on the left and Greenland is on the right.

Appendix VIII : Salinity and potential temperature; Leg 5, September 1999

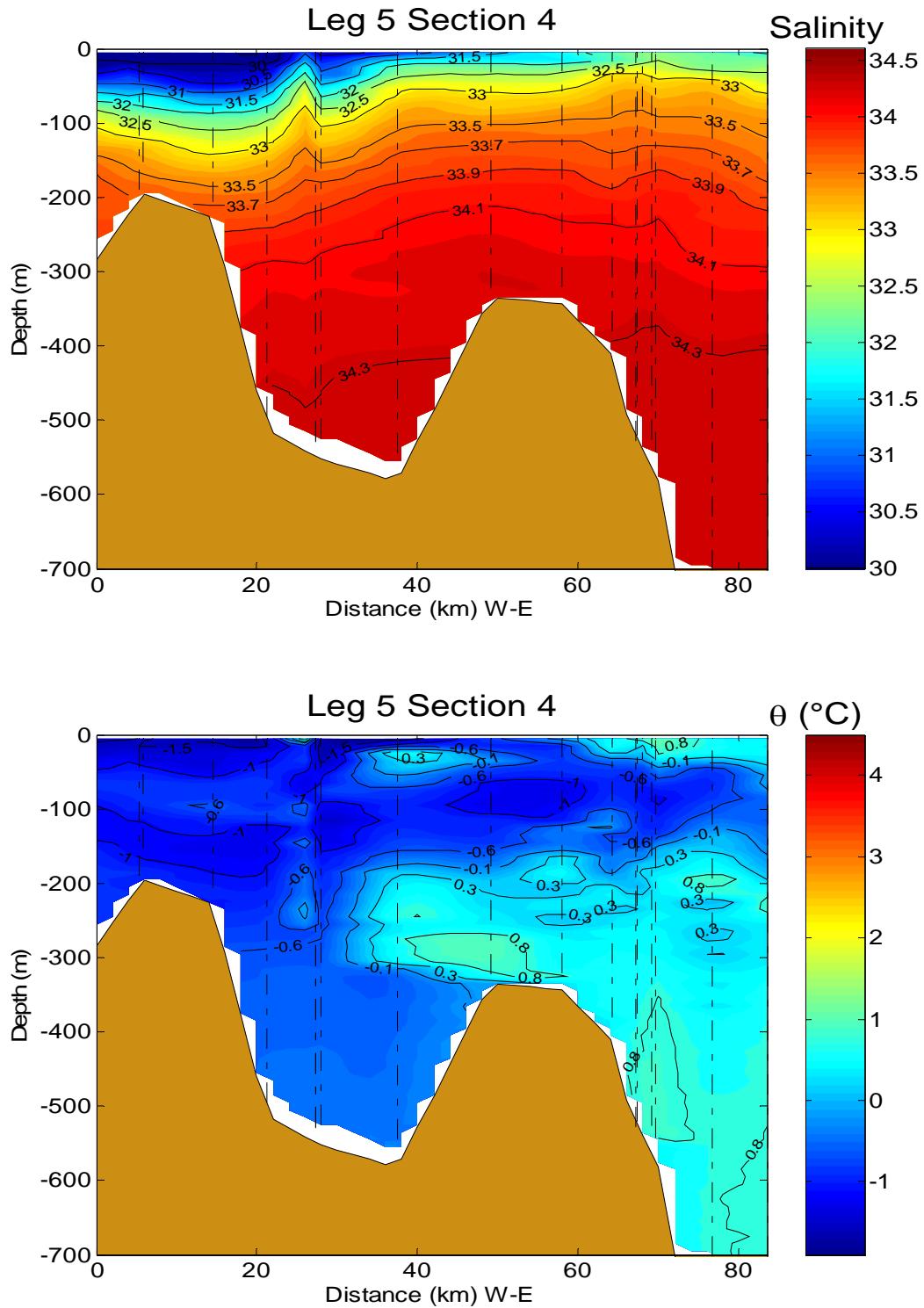
The same color scale is used for all sections. Canada is on the left and
Greenland is on the right



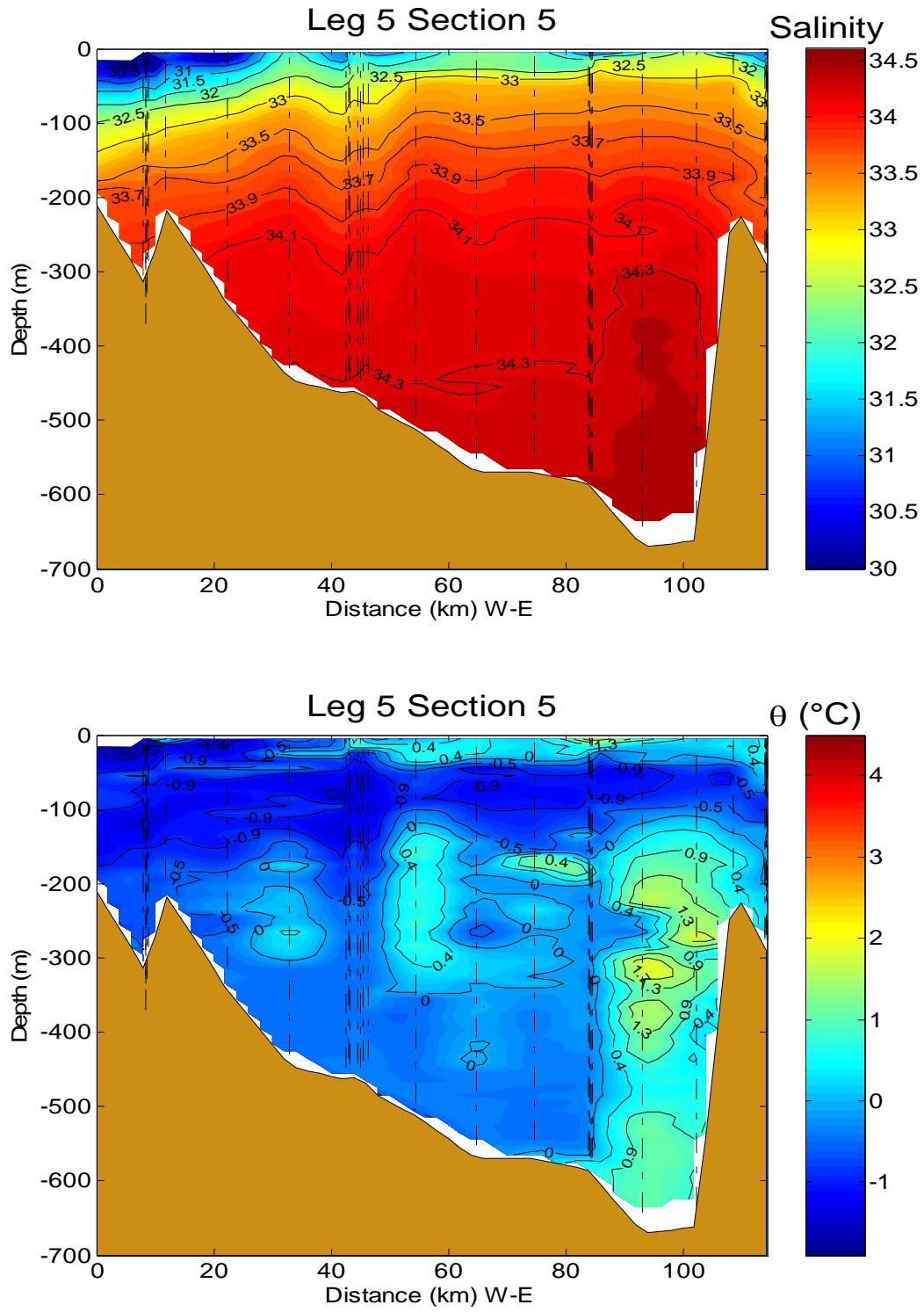
Appendix VIII.1 : Salinity and potential temperature along Section 1 of Leg 5 (September 1999). Canada is on the left and Greenland is on the right.



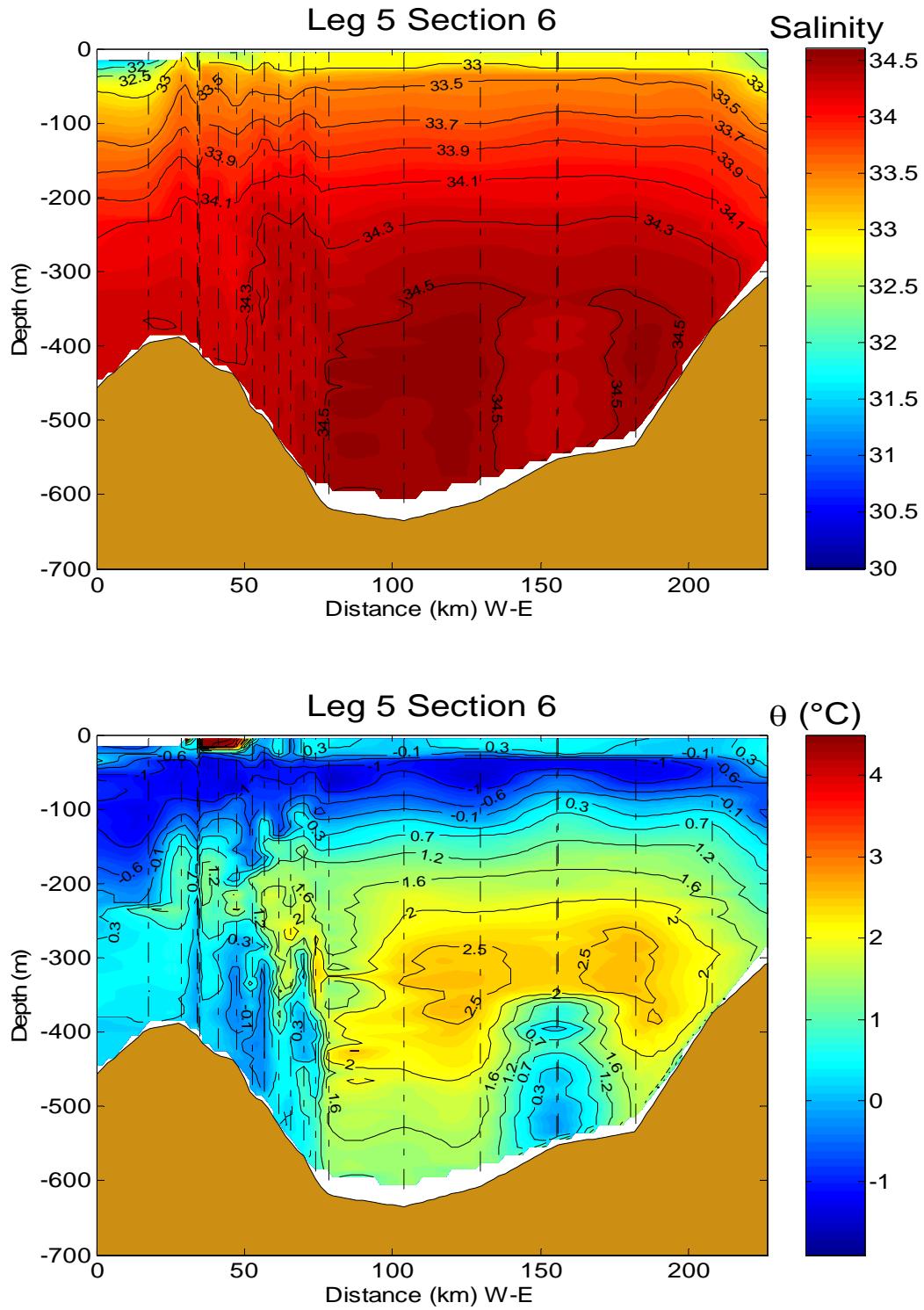
Appendix VIII.2 : Salinity and potential temperature along Section 2 of Leg 5 (September 1999). Canada is on the left and Greenland is on the right.



Appendix VIII.3 : Salinity and potential temperature along Section 4 of Leg 5 (September 1999). Canada is on the left and Greenland is on the right.



Appendix VIII.4 : Salinity and potential temperature along Section 5 of Leg 5 (September 1999). Canada is on the left and Greenland is on the right.



Appendix VIII.5 : Salinity and potential temperature along Section 6 of Leg 5 (September 1999). Canada is on the left and Greenland is on the right.

Appendix IX : Longitudinal Transects (Lines)

Bacle (2000) used stations 78, 56, 40, 17, 4 and 9 for Line E (Eastern transect), stations 70, 50, 36, 25, 15, 3 and 8 for Line M (Middle transect), and stations 64, 46, 33, 23, 14, 2 and 7 for Line W (Western transect). We used the same stations for Leg 3, the only leg discussed in Bacle (2000). Unfortunately, Bacle's stations were not visited every leg. When they were not available, we chose the closest stations. The following were used.

Leg 0 : cast numbers (the station numbers do not correspond to the other legs)

West :	53, 60, 59, 50
Middle :	not enough stations
East :	56, 57, 58, 51

Legs 1 and 2 : station numbers

West :	46, 33, 23, 14, 2, 7
Middle :	50, 36, 25, 15, 3, 8
East :	54, 40, 17, 4, 9

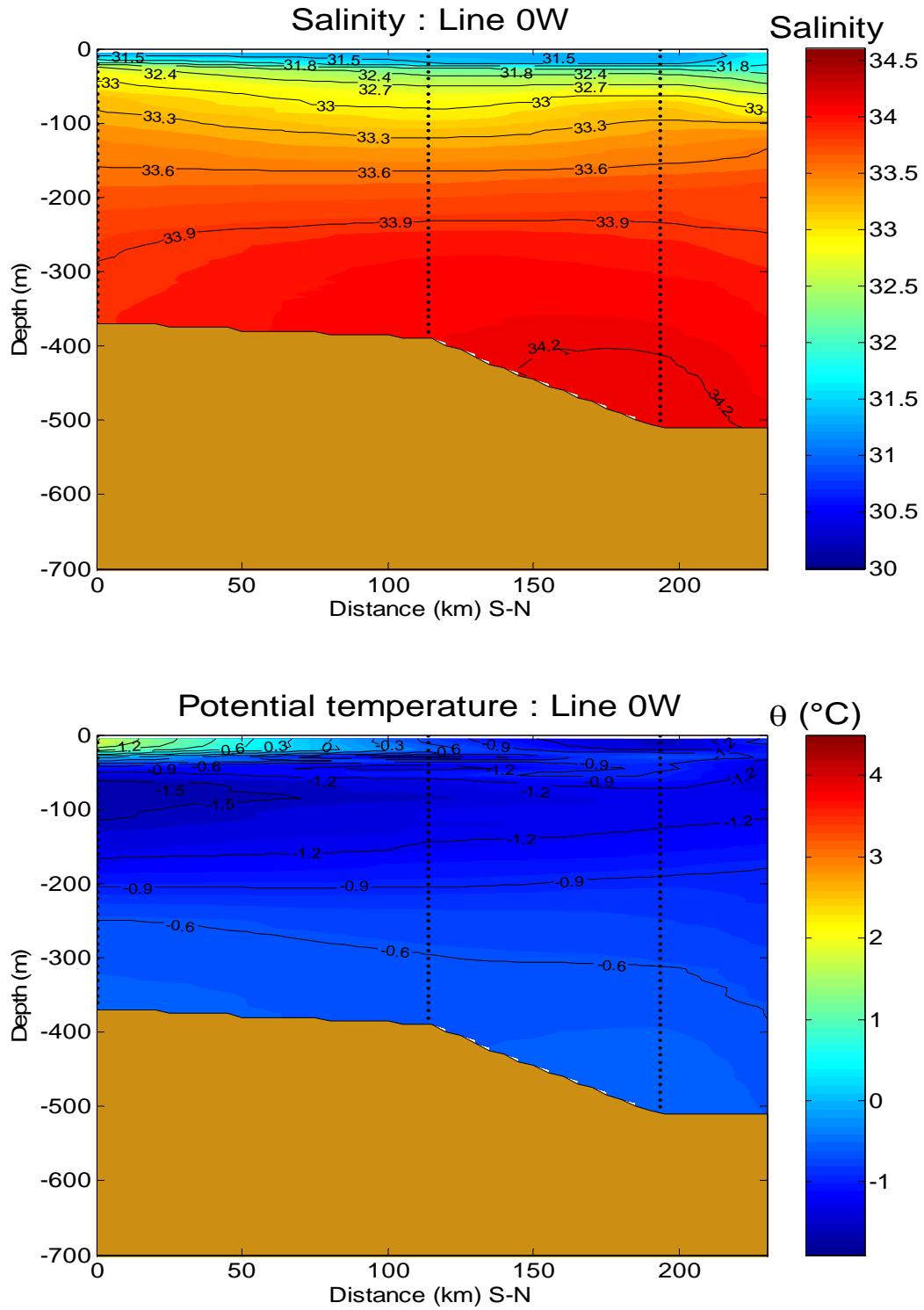
Leg 4 : station numbers

West :	not enough stations
Middle :	not enough stations
East :	54, 40, E2, 5

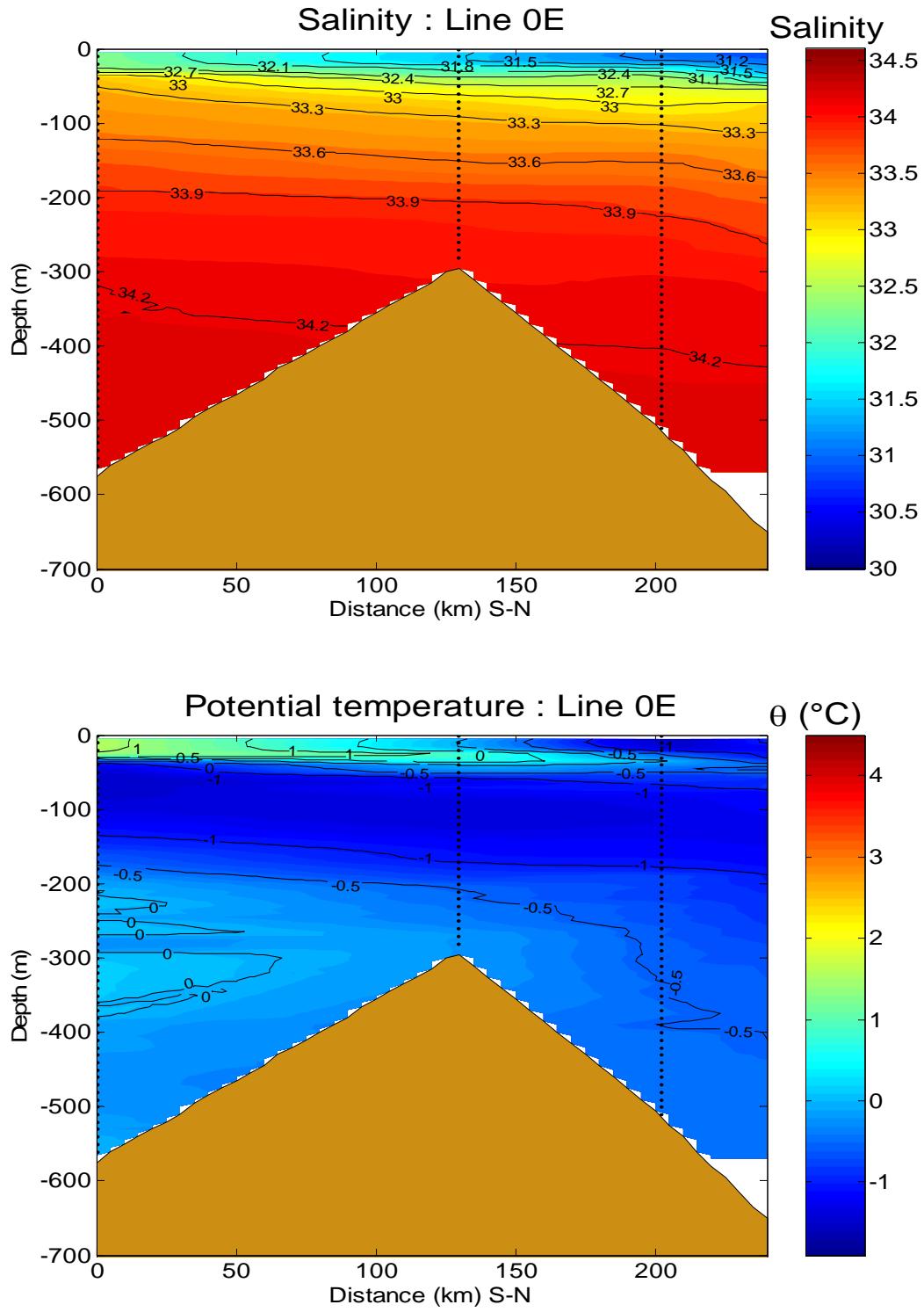
Leg 5 : station numbers

West :	64, 46, 33, 14, 2
Middle :	70, 50, 36, 15, 3
East :	76, 54, 40, 17, 4

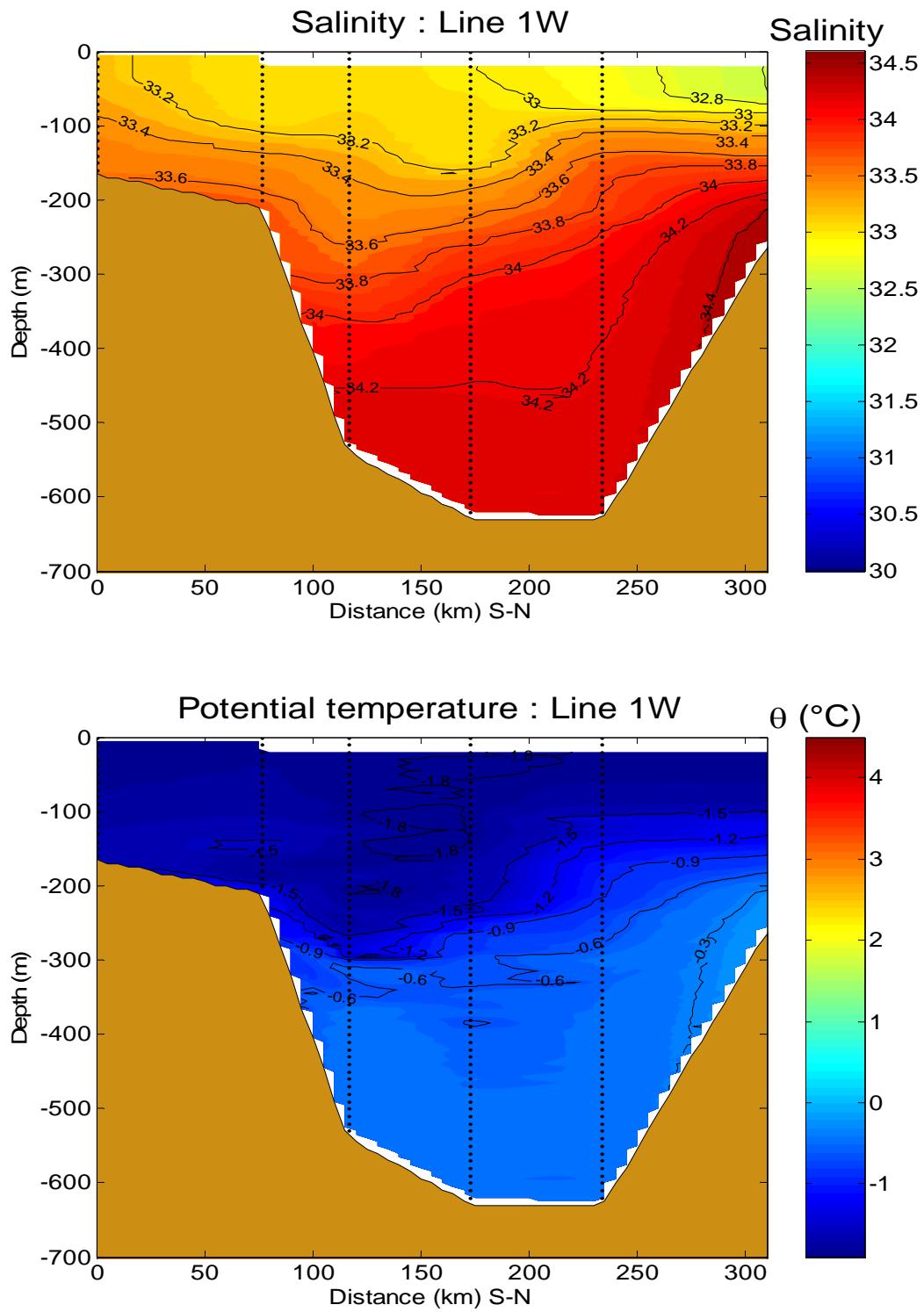
The color code is the same as in the previous appendices. South is on the left and North is on the right.



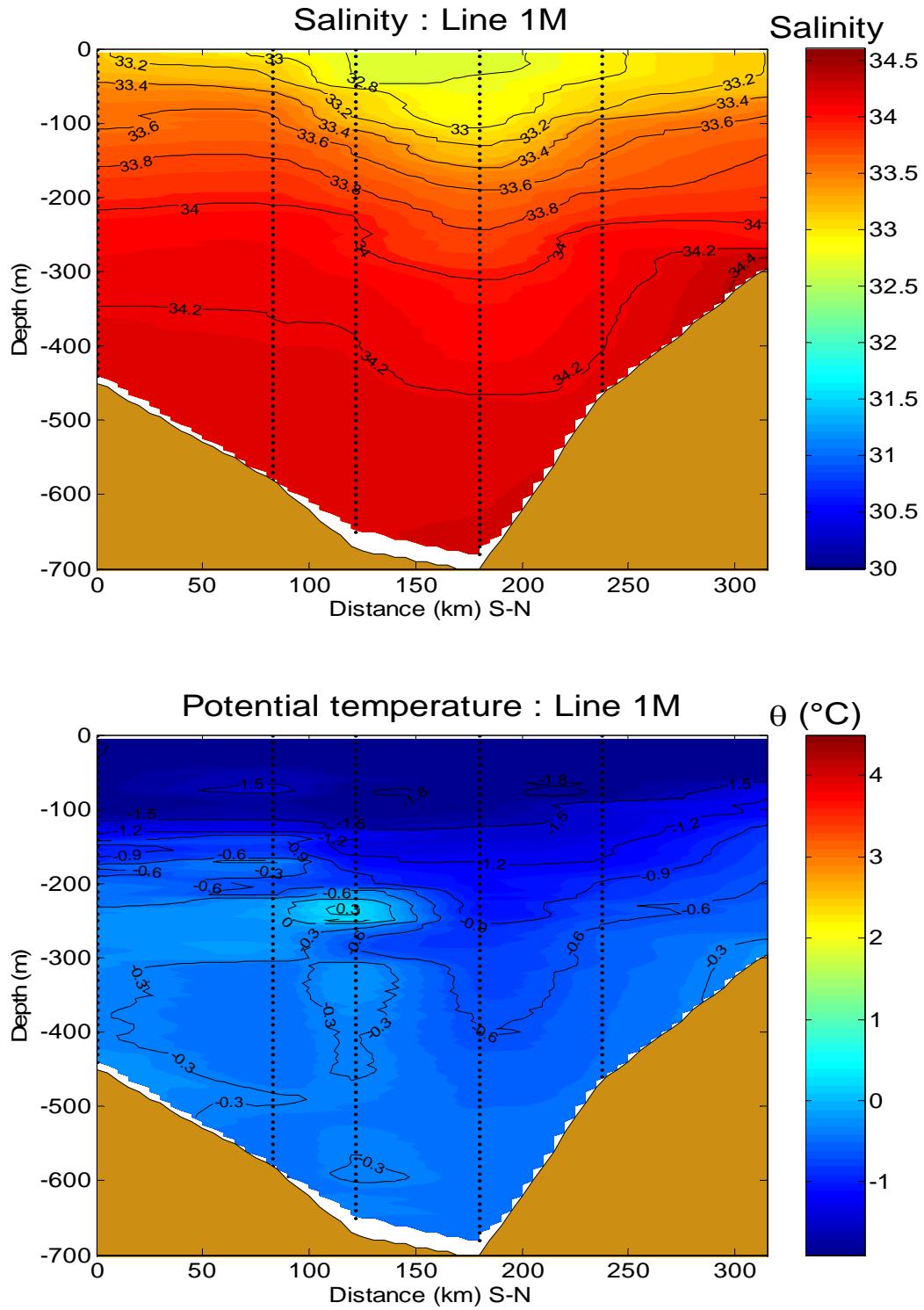
Appendix IX.1 : Salinity and potential temperature along the west Section of Leg 0 (August 1997). South is on the left and North is on the right.



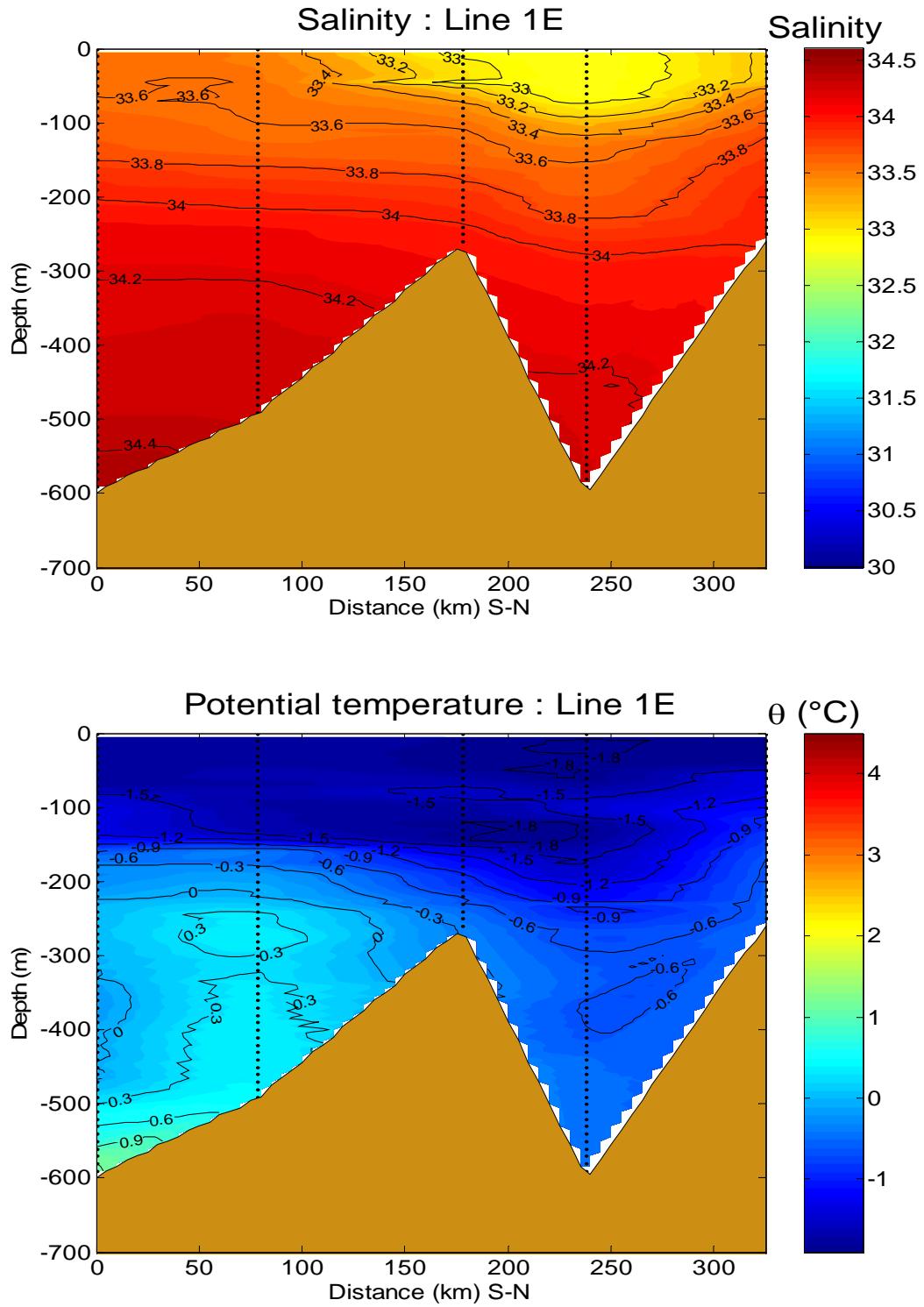
Appendix IX.2 : Salinity and potential temperature along the east Section of Leg 0 (August 1997). South is on the left and North is on the right.



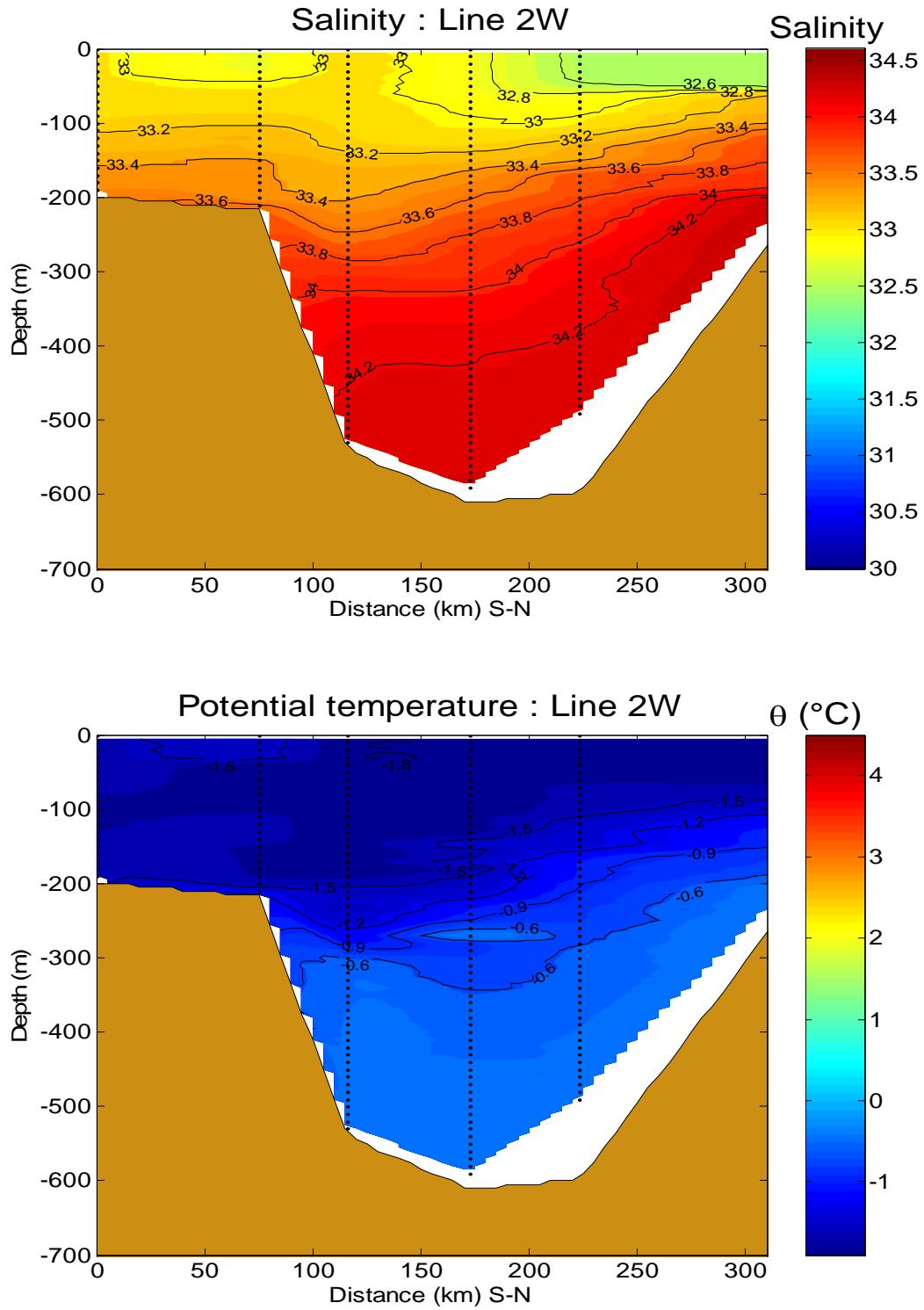
Appendix IX.3 : Salinity and potential temperature along the West Section of Leg 1 (April 1998). South is on the left and North is on the right.



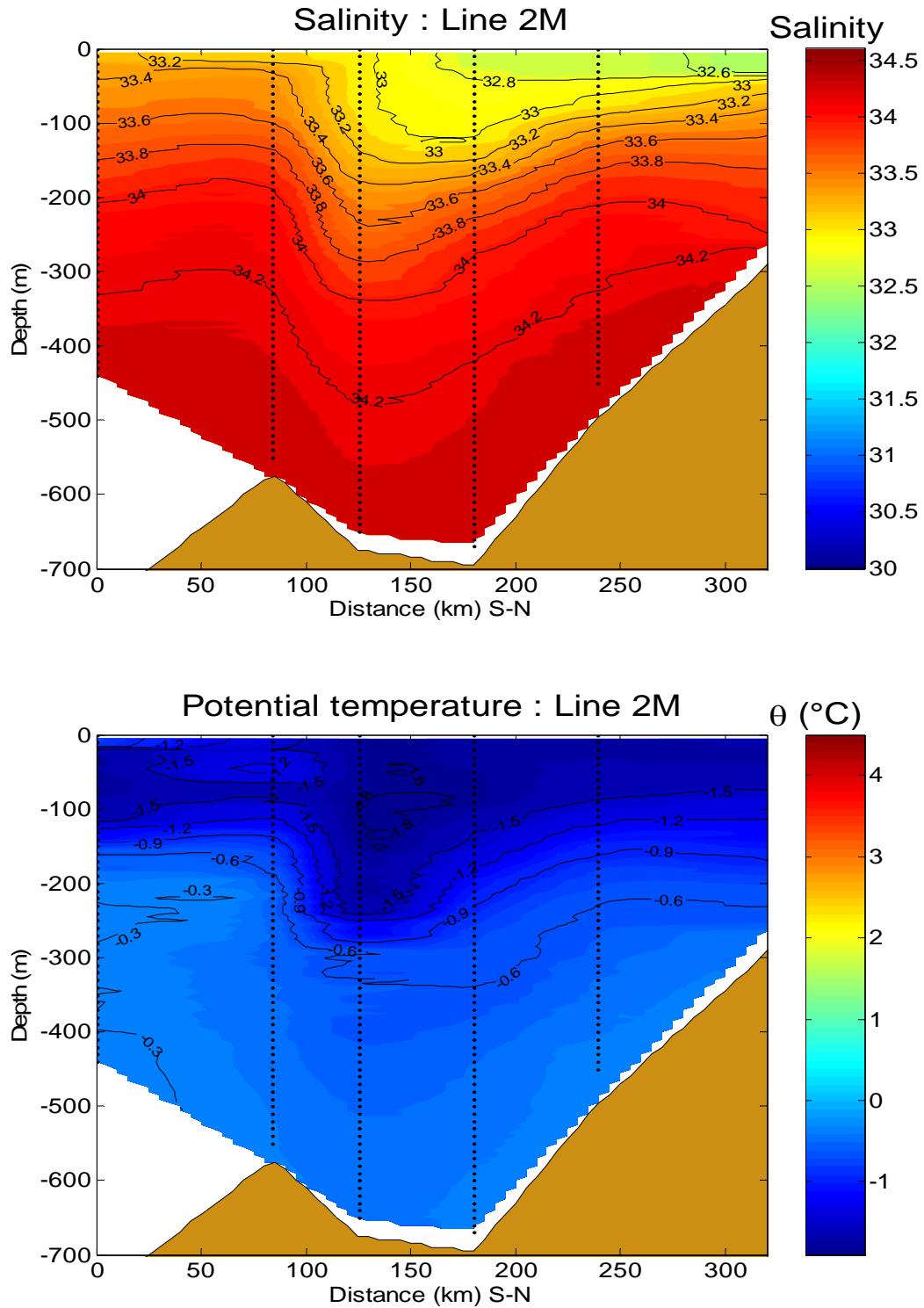
Appendix IX.4 : Salinity and potential temperature along the middle Section of Leg 1 (April 1998). South is on the left and North is on the right.



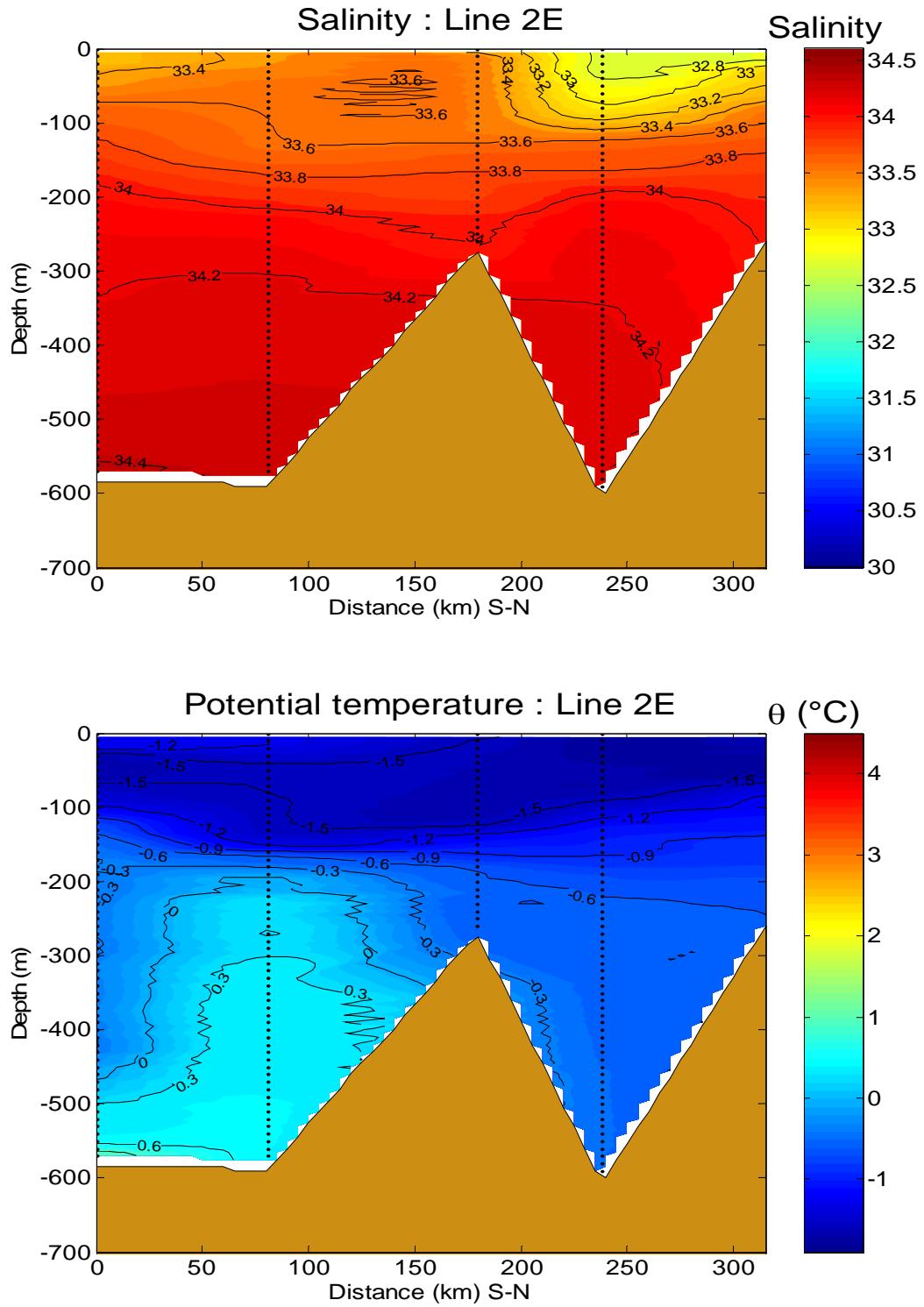
Appendix IX.5 : Salinity and potential temperature along the east Section of Leg 1 (April 1998). South is on the left and North is on the right.



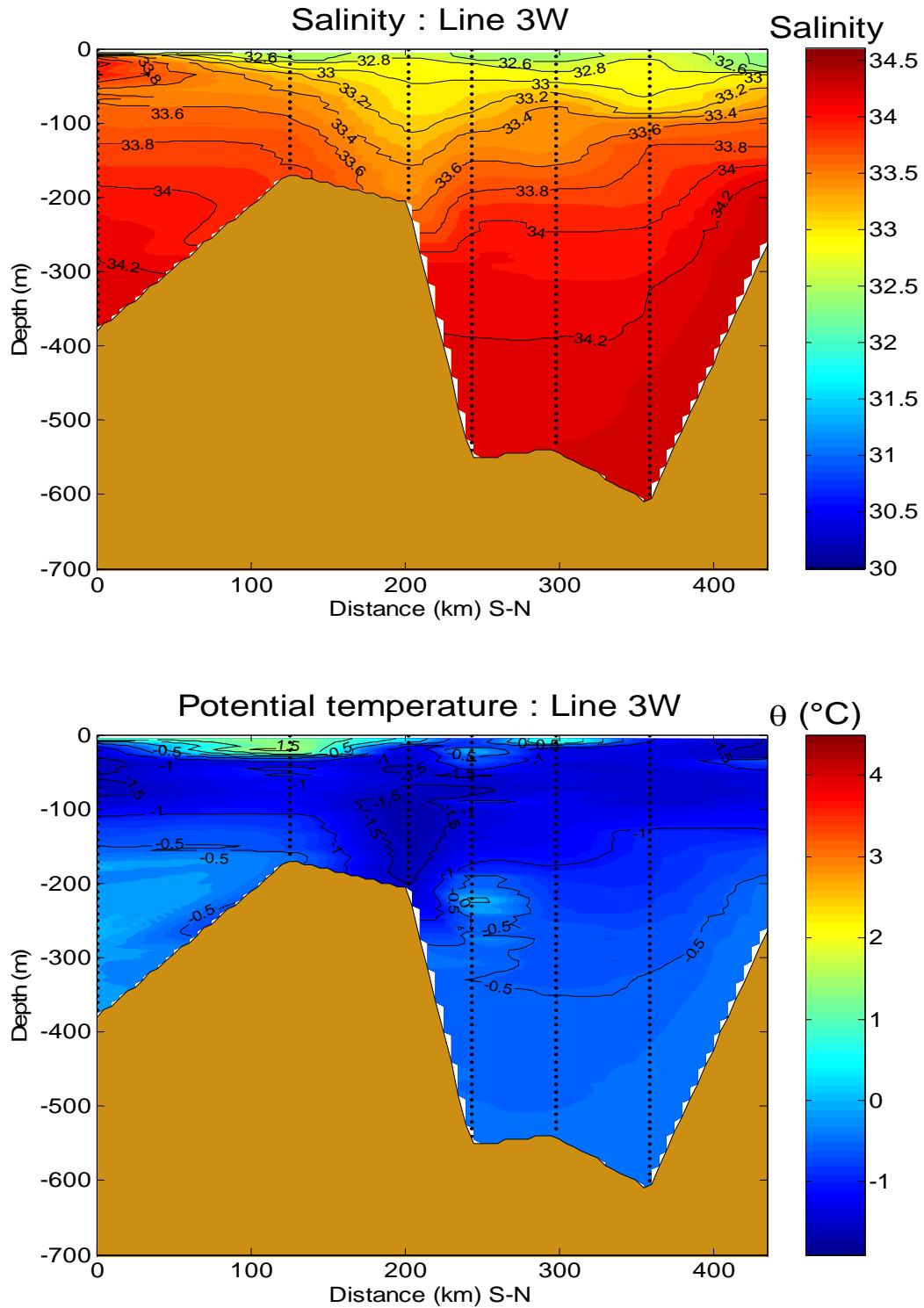
Appendix IX.6 : Salinity and potential temperature along the west Section of Leg 2 (May 1998). South is on the left and North is on the right.



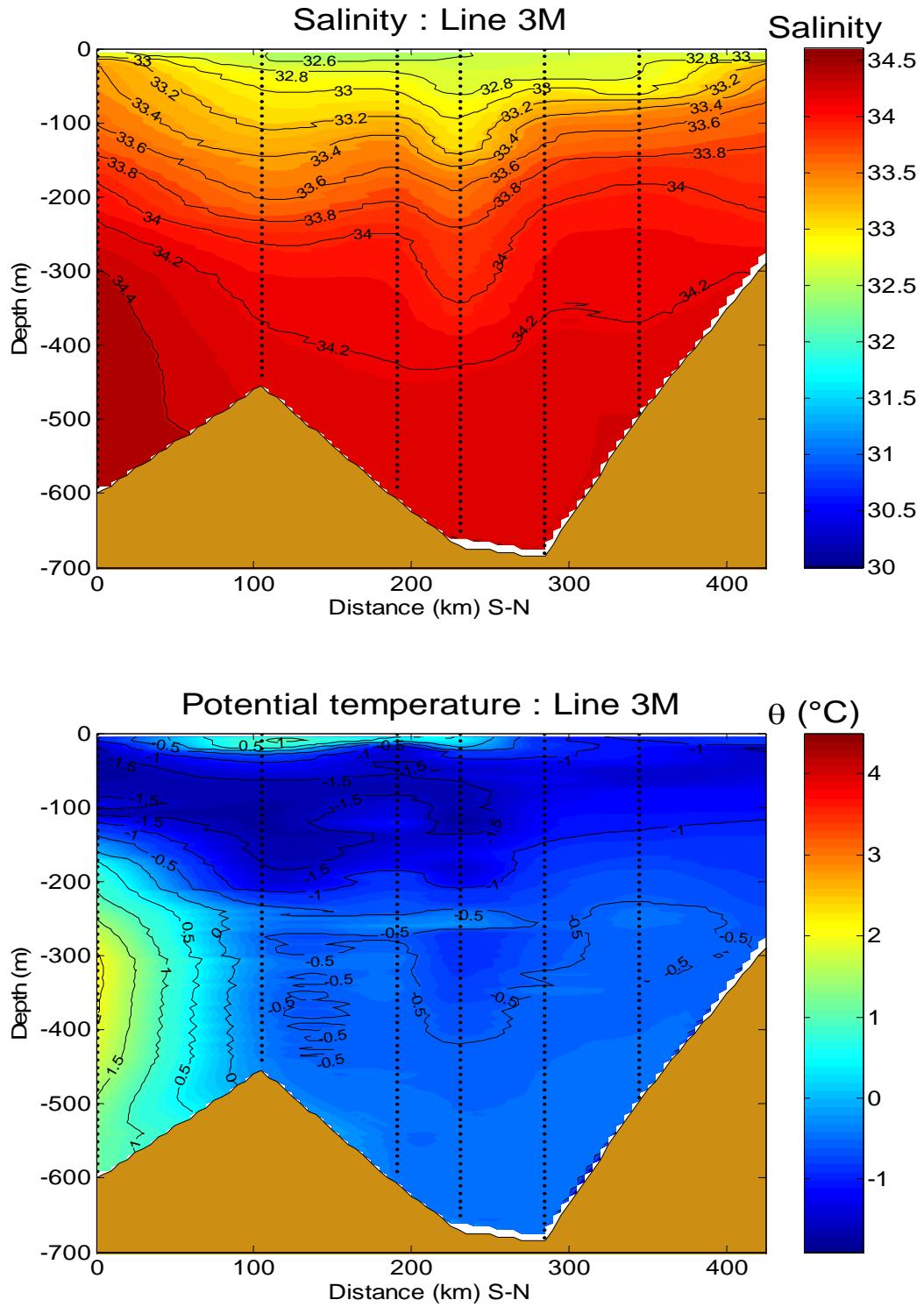
Appendix IX.7 : Salinity and potential temperature along the middle Section of Leg 2 (May 1998). South is on the left and North is on the right.



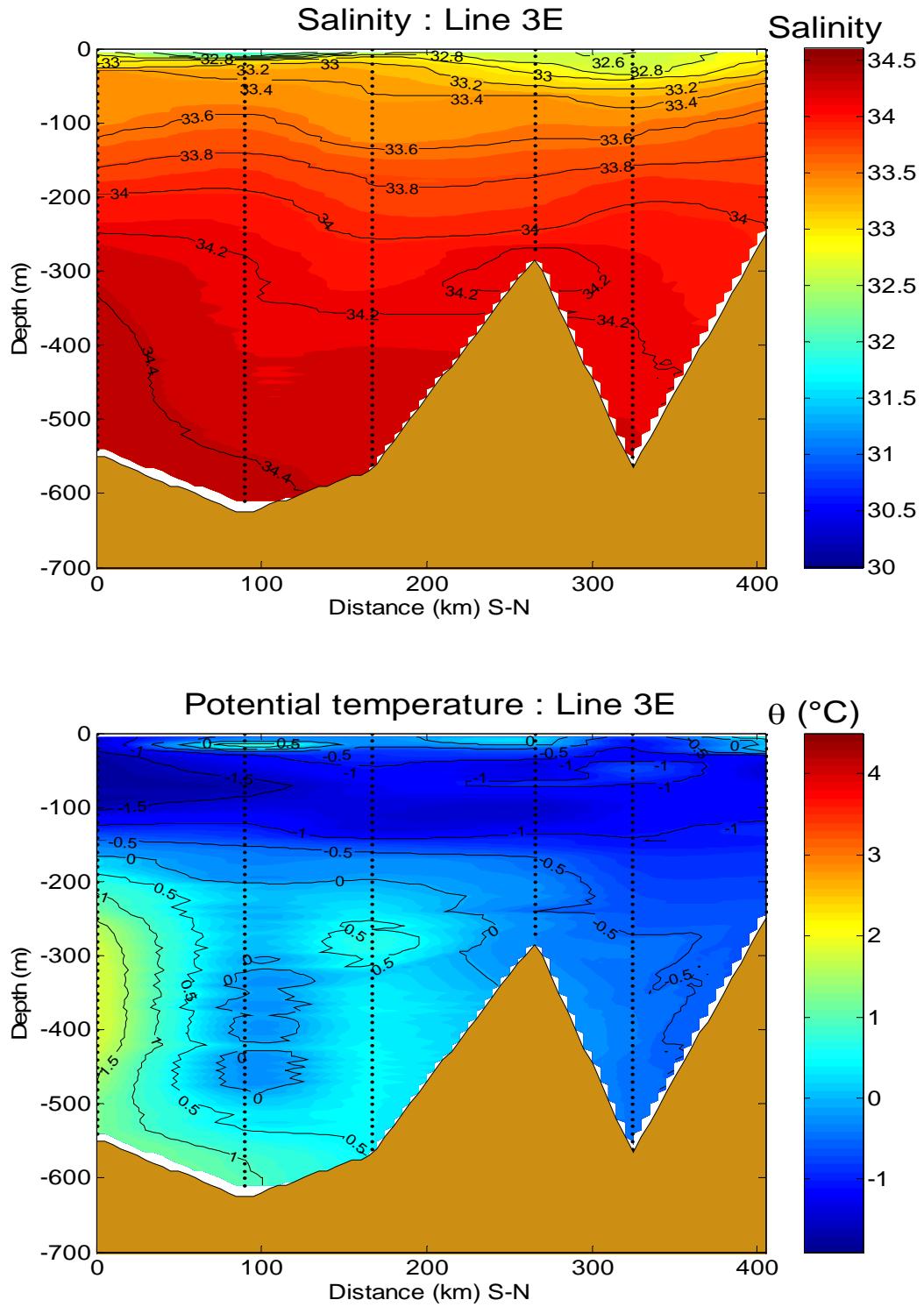
Appendix IX.8 : Salinity and potential temperature along the east Section of Leg 2 (May 1998). South is on the left and North is on the right.



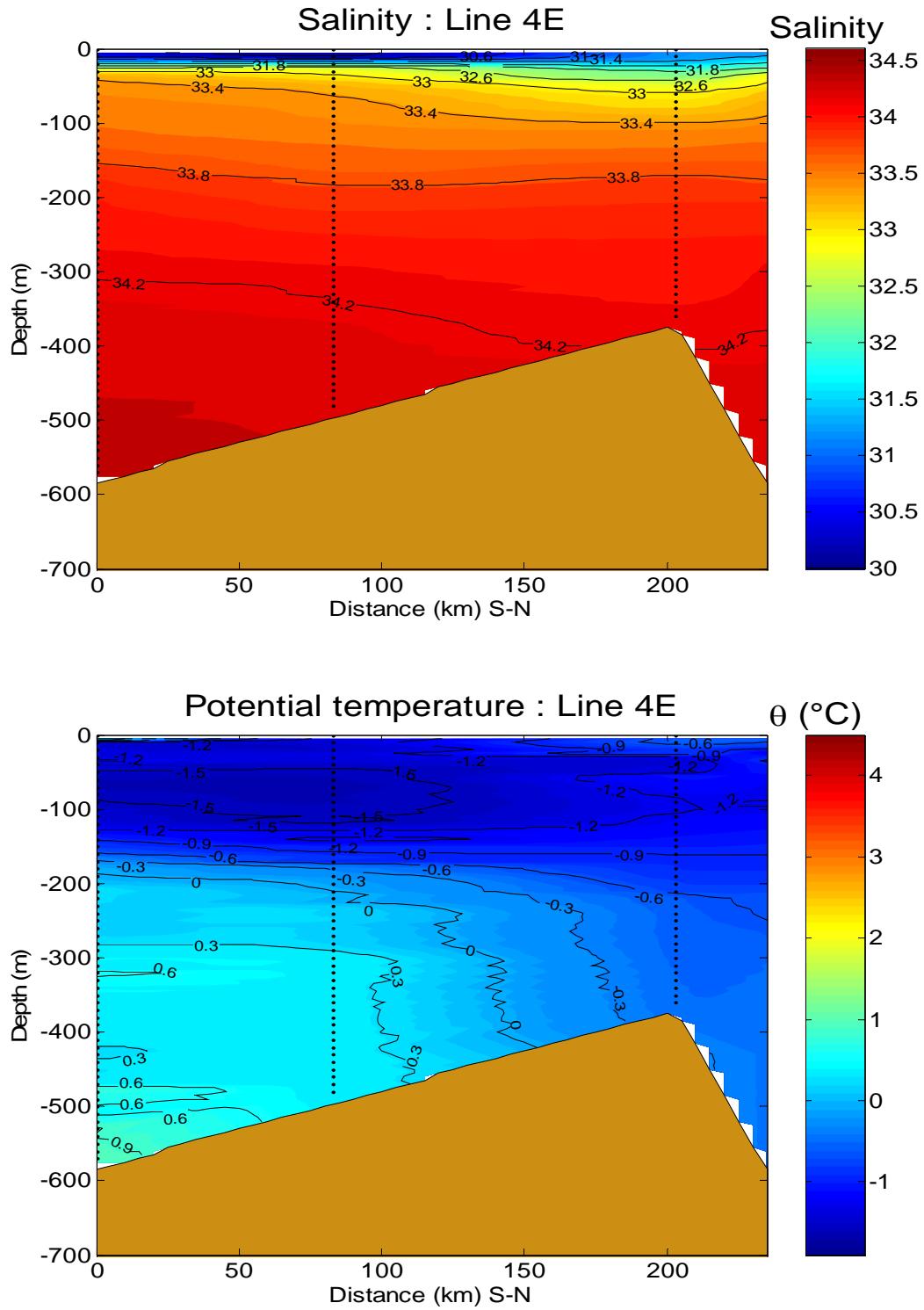
Appendix IX.9 : Salinity and potential temperature along the West Section of Leg 3 (June 1998). South is on the left and North is on the right.



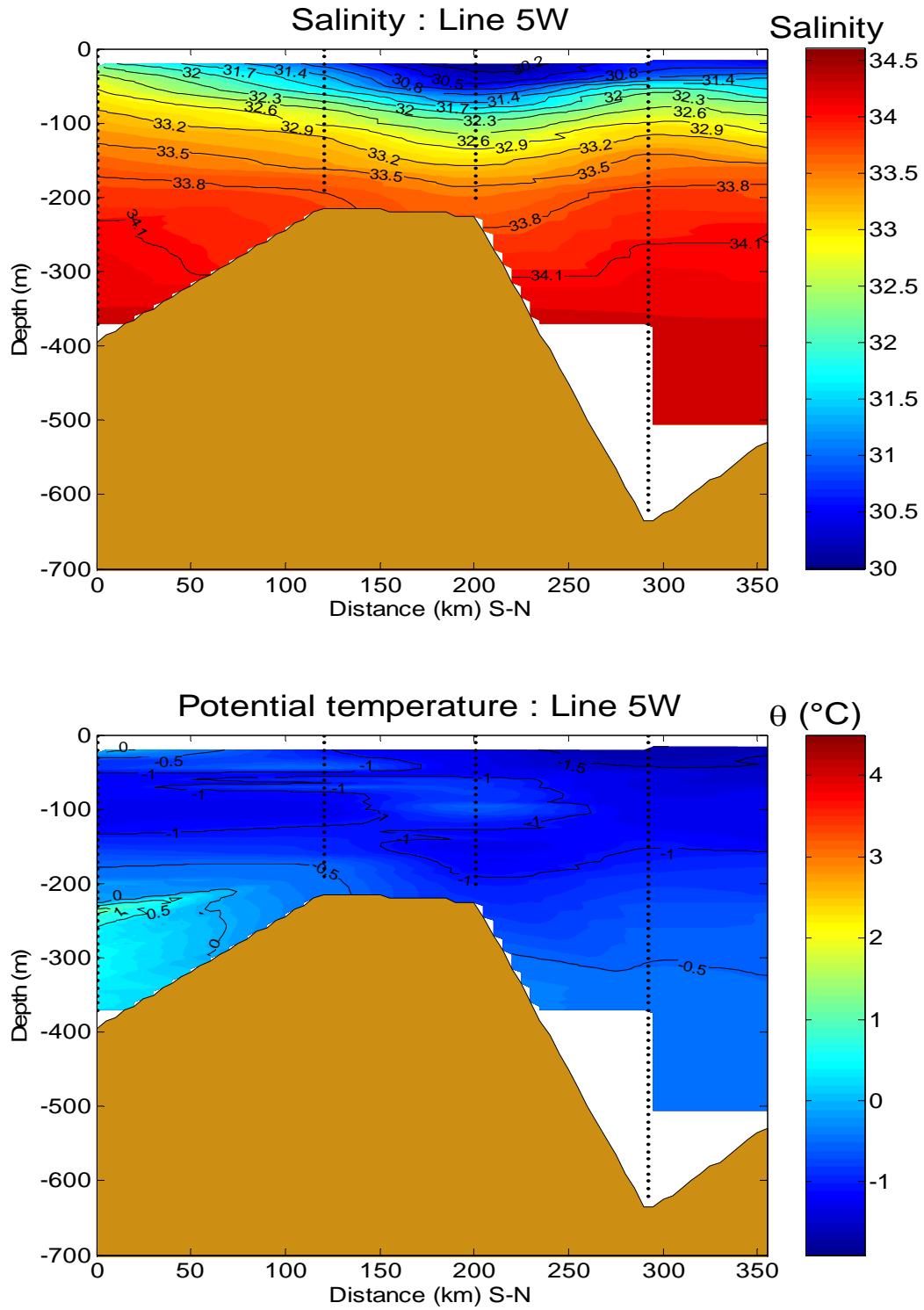
Appendix IX.10 : Salinity and potential temperature along the middle Section of Leg 3 (June 1998). South is on the left and North is on the right.



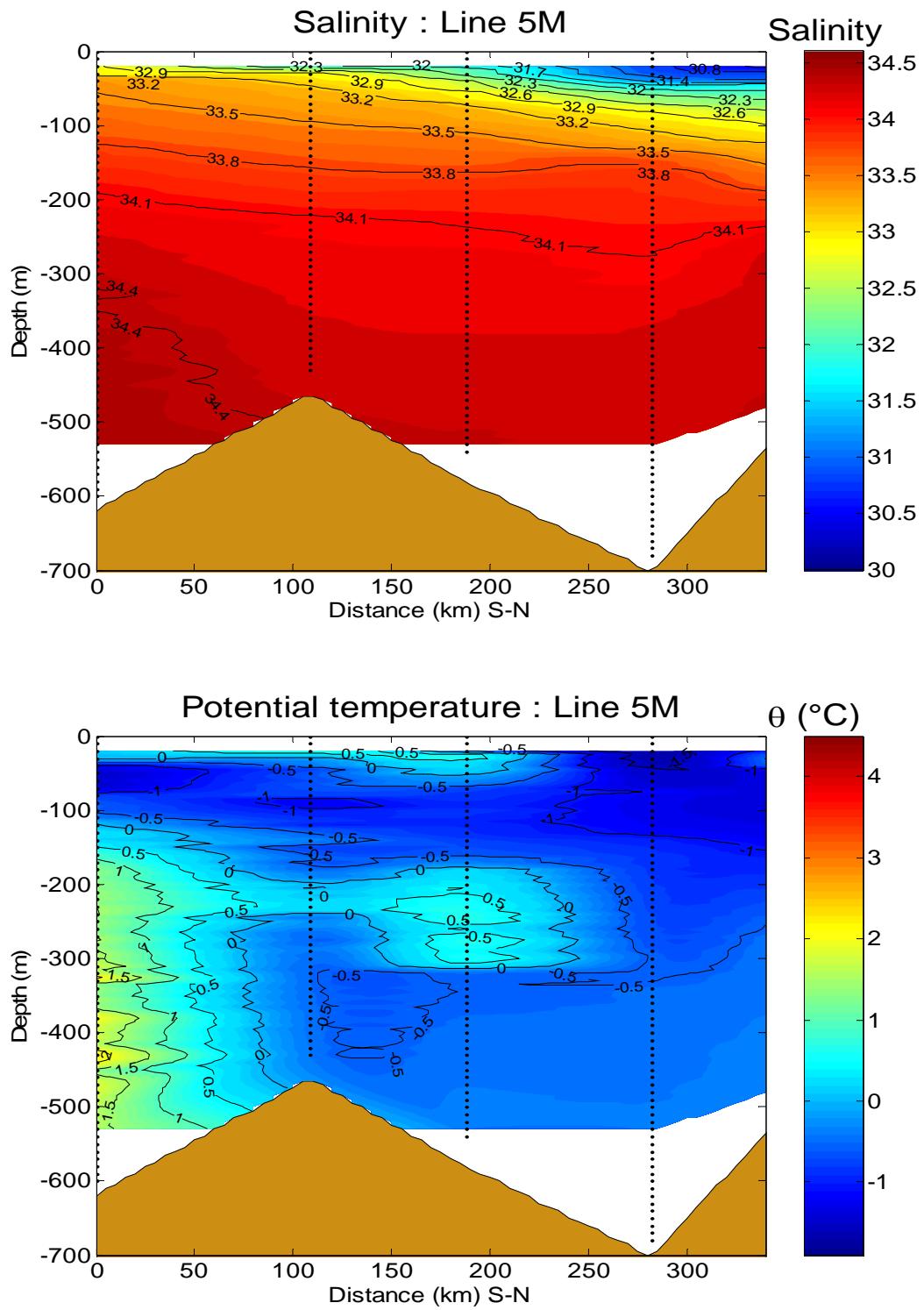
Appendix IX.11 : Salinity and potential temperature along the east Section of Leg 3 (June 1998). South is on the left and North is on the right.



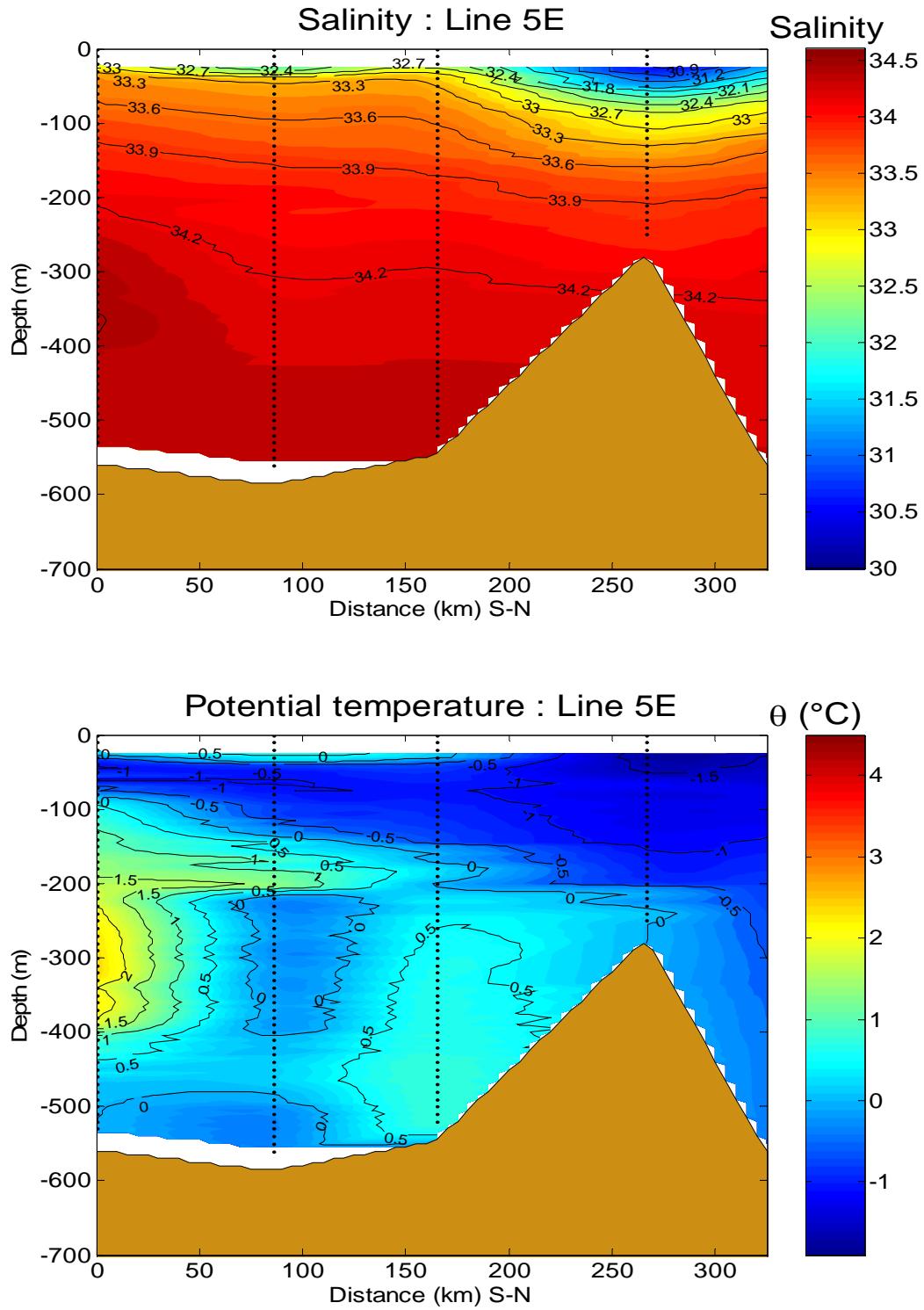
Appendix IX.12 : Salinity and potential temperature along the east Section of Leg 4 (July 1998). South is on the left and North is on the right.



Appendix IX.13 : Salinity and potential temperature along the west Section of Leg 5 (September 1999). South is on the left and North is on the right.



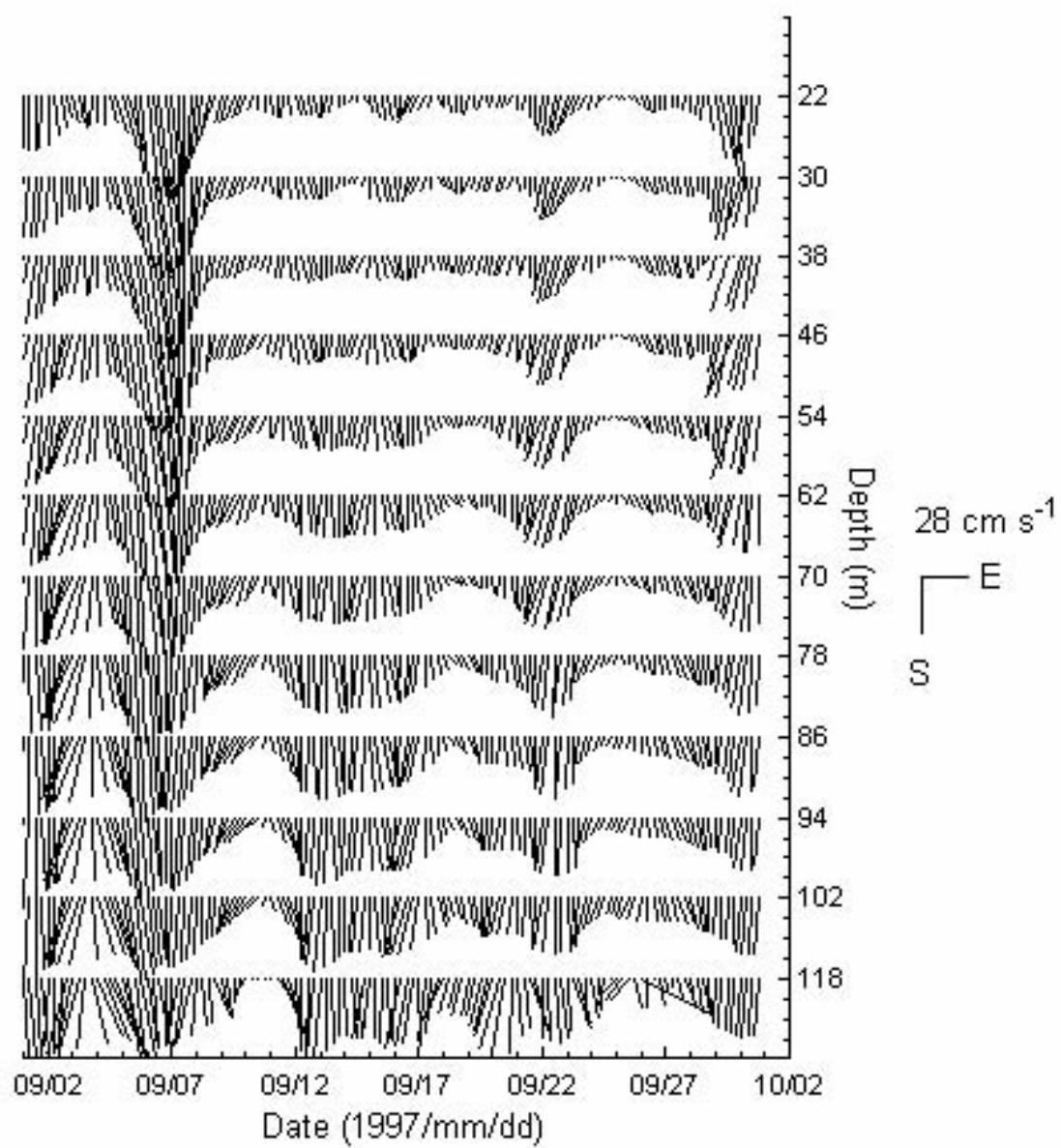
Appendix IX.14 : Salinity and potential temperature along the middle Section of Leg 5 (September 1999). South is on the left and North is on the right.



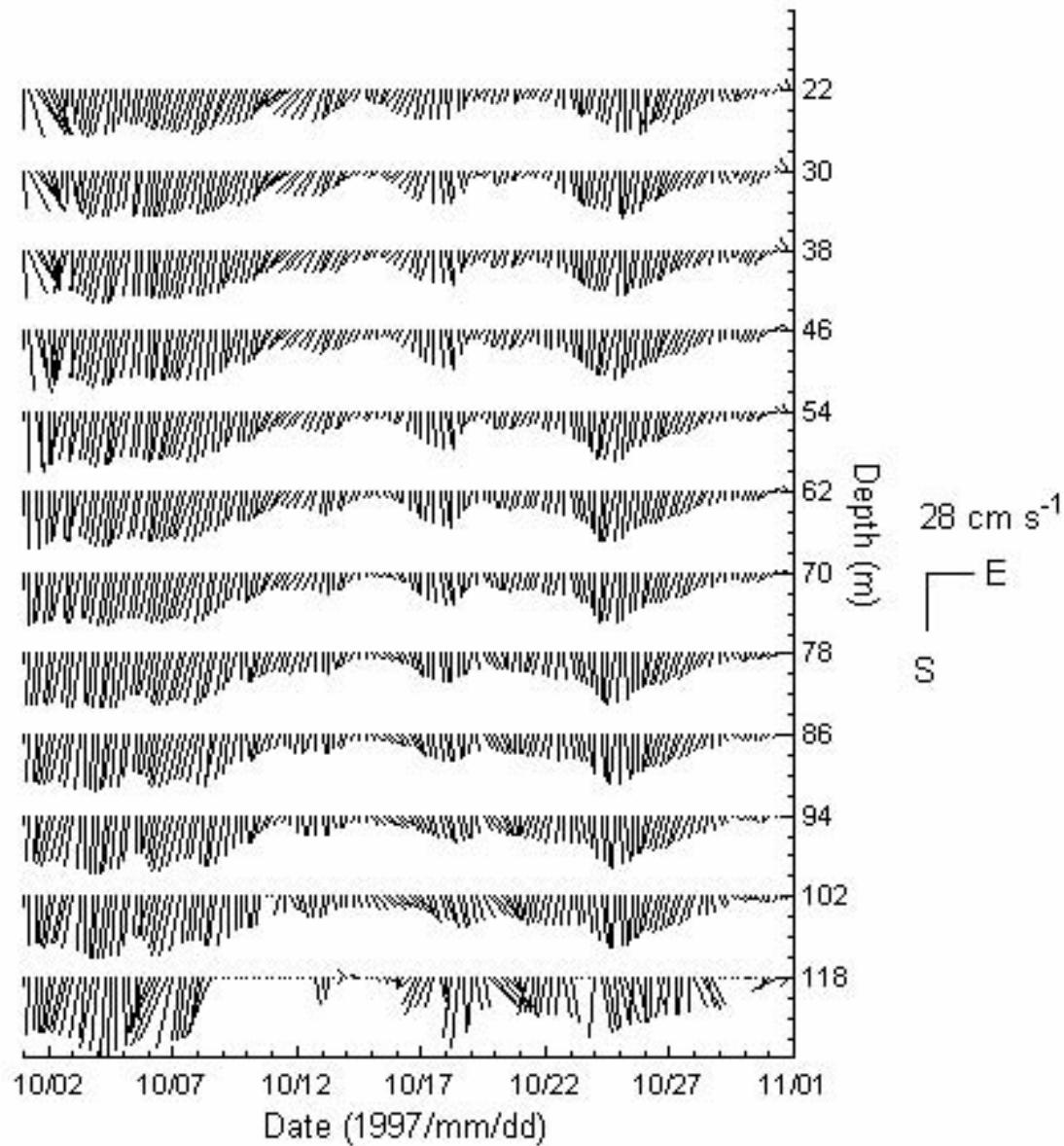
Appendix IX.15 : Salinity and potential temperature along the east Section of Leg 5 (September 1999). South is on the left and North is on the right.

Appendix X . ADCP Data : Mooring N2

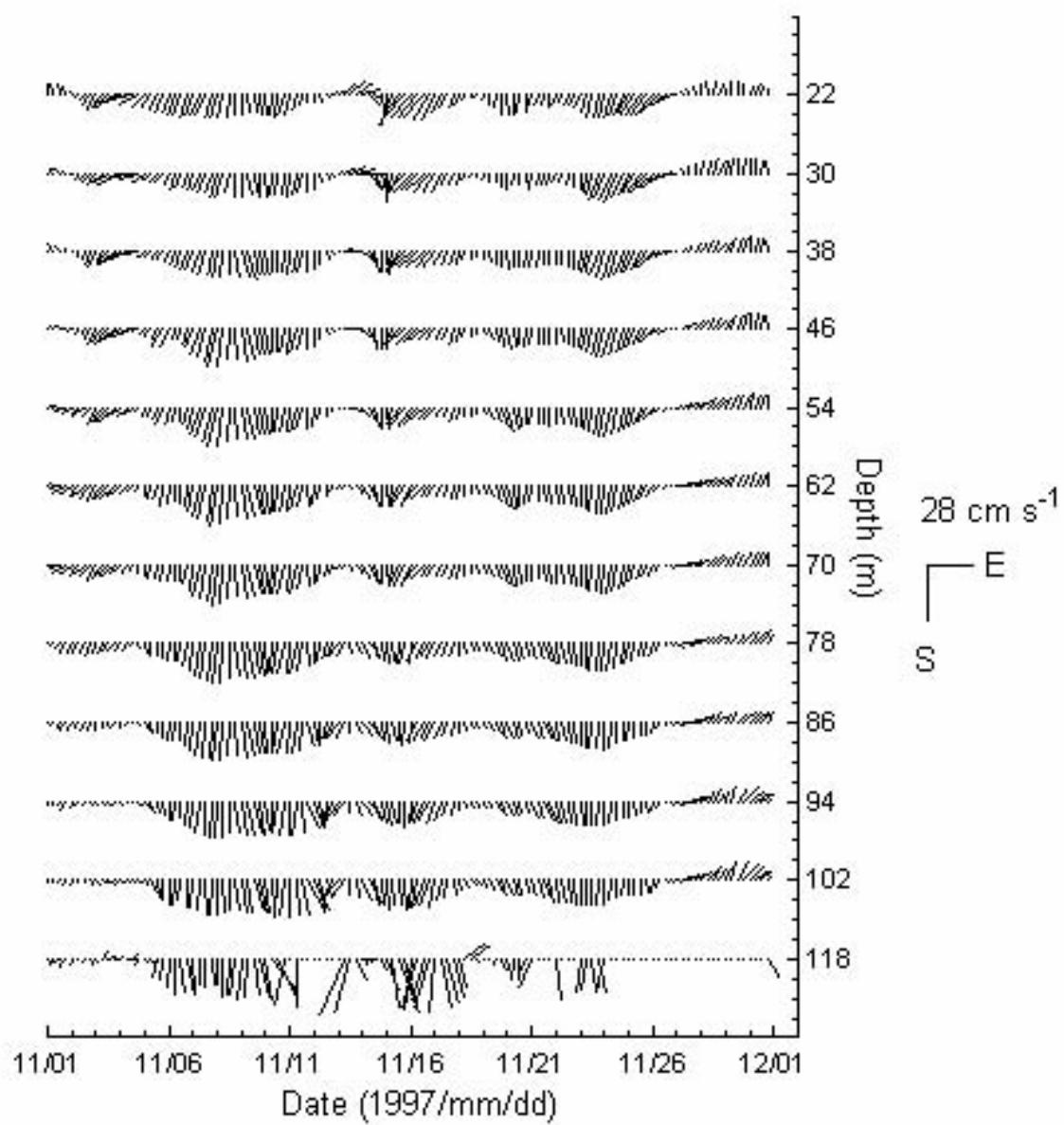
Monthly ADCP velocity stick diagrams every 8 m between 22 m and 118 m at station N2 (see figure 1 for location), between September 1997 and June 1998. Eastward is to the right and the velocity scale is shown on the right of each figure. The same scale is used for all the figures in Appendices X, XI and XII.



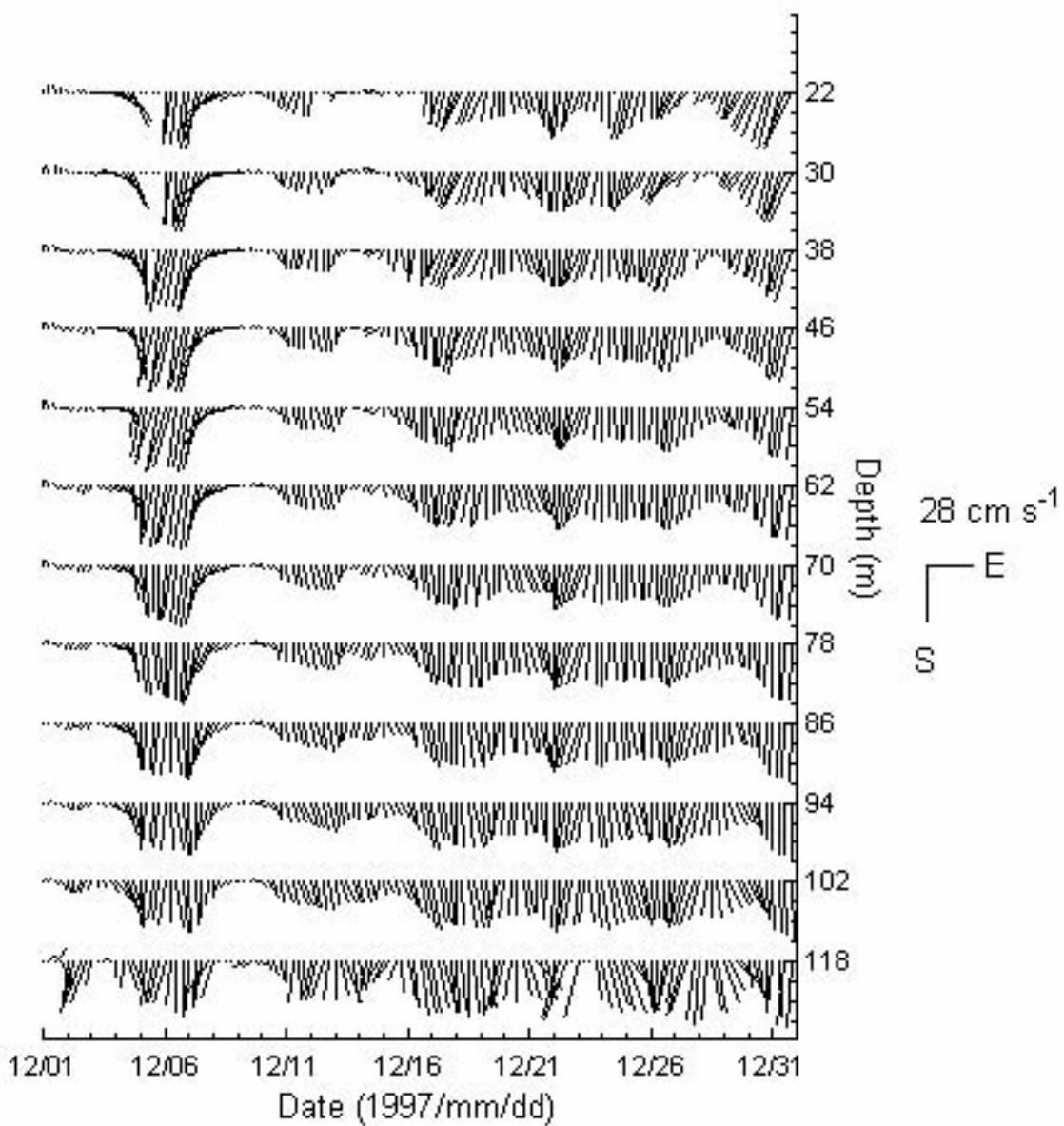
Appendix X.1 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between September 2 and October 10, 1997.



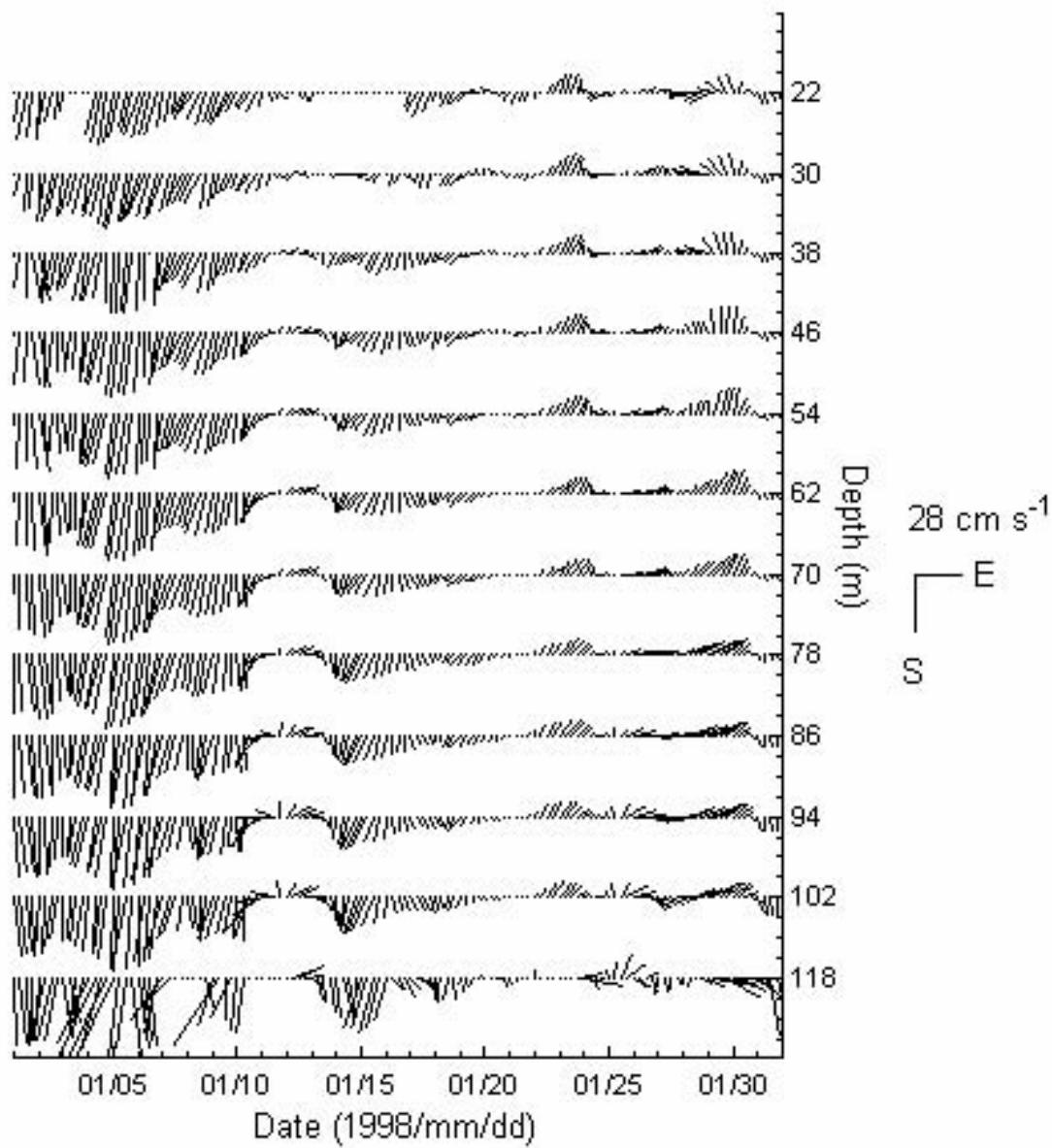
Appendix X.2 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between October 2 and November 1, 1997.



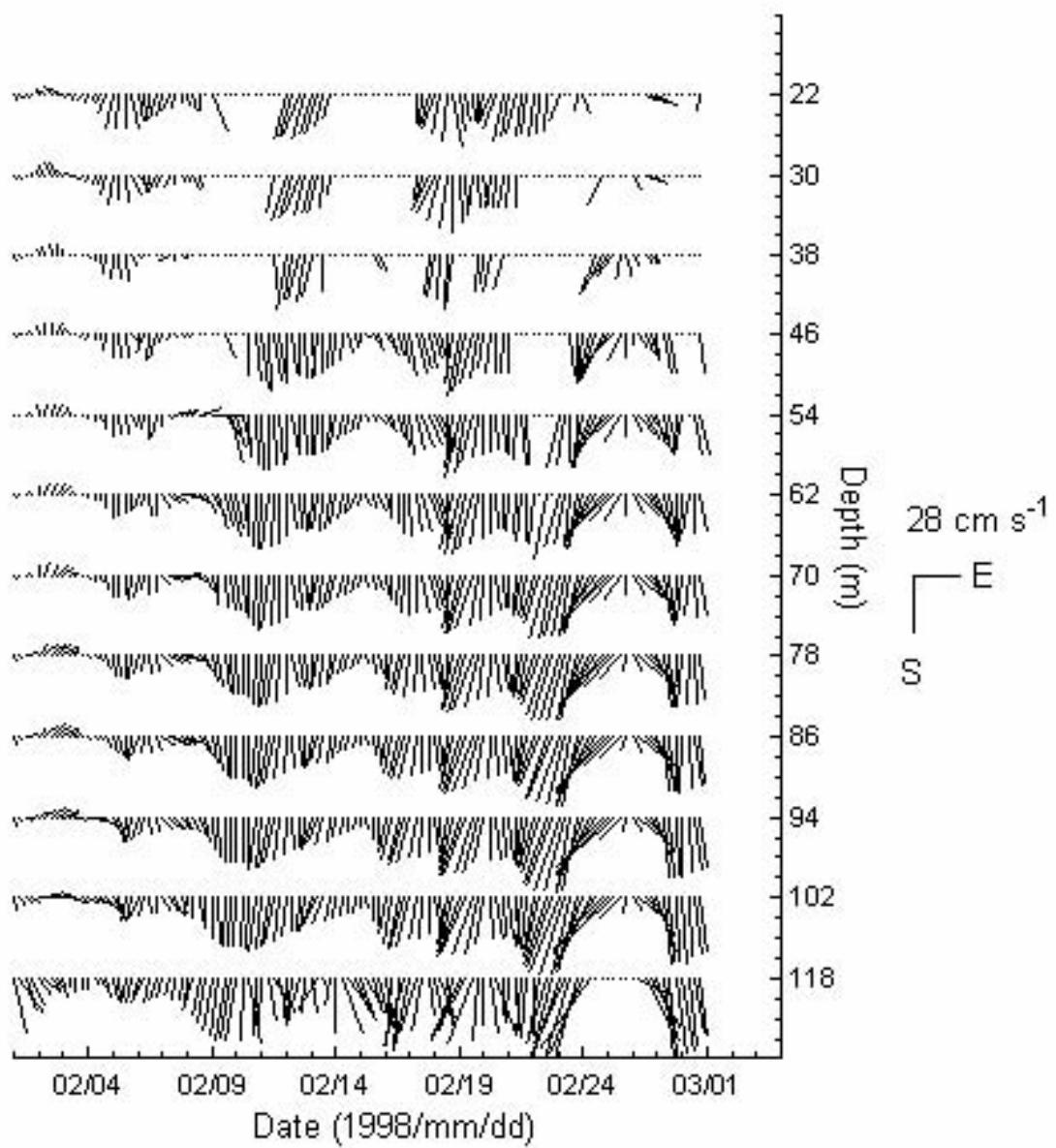
Appendix X.3 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between November 1 and December 1, 1997.



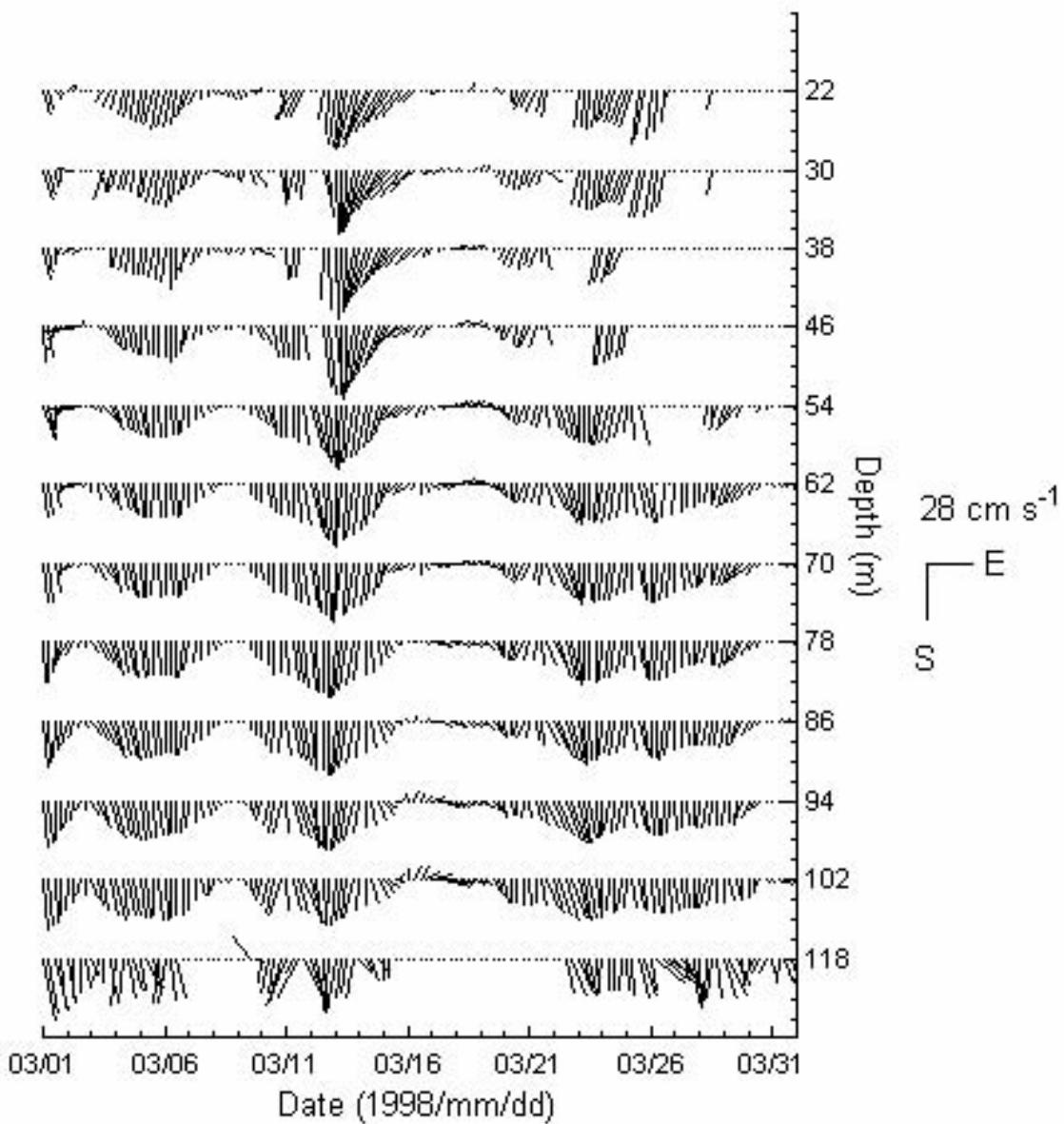
Appendix X.4 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between December 1 and December 31, 1997.



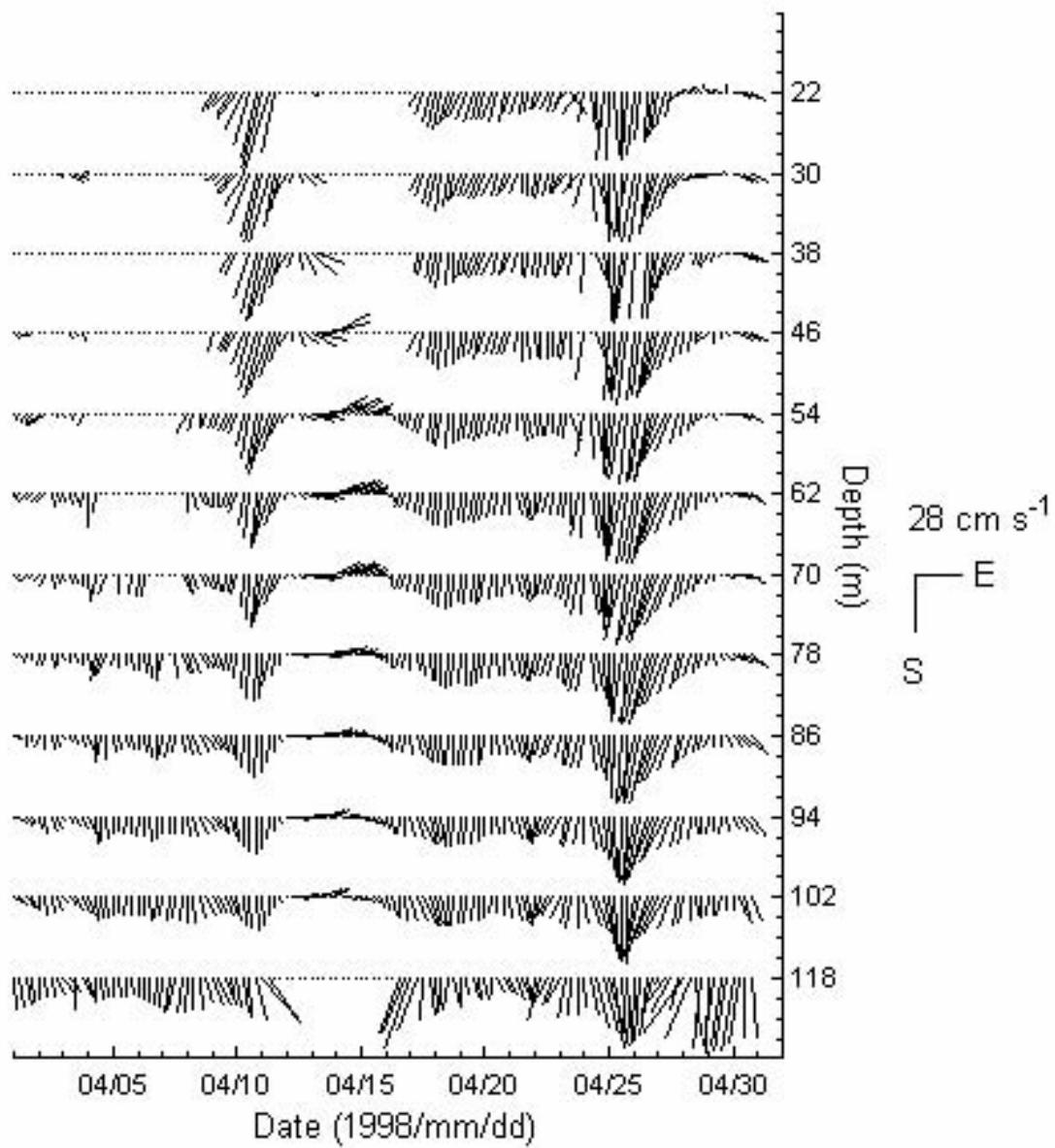
Appendix X.5 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between January 5 and January 30, 1998.



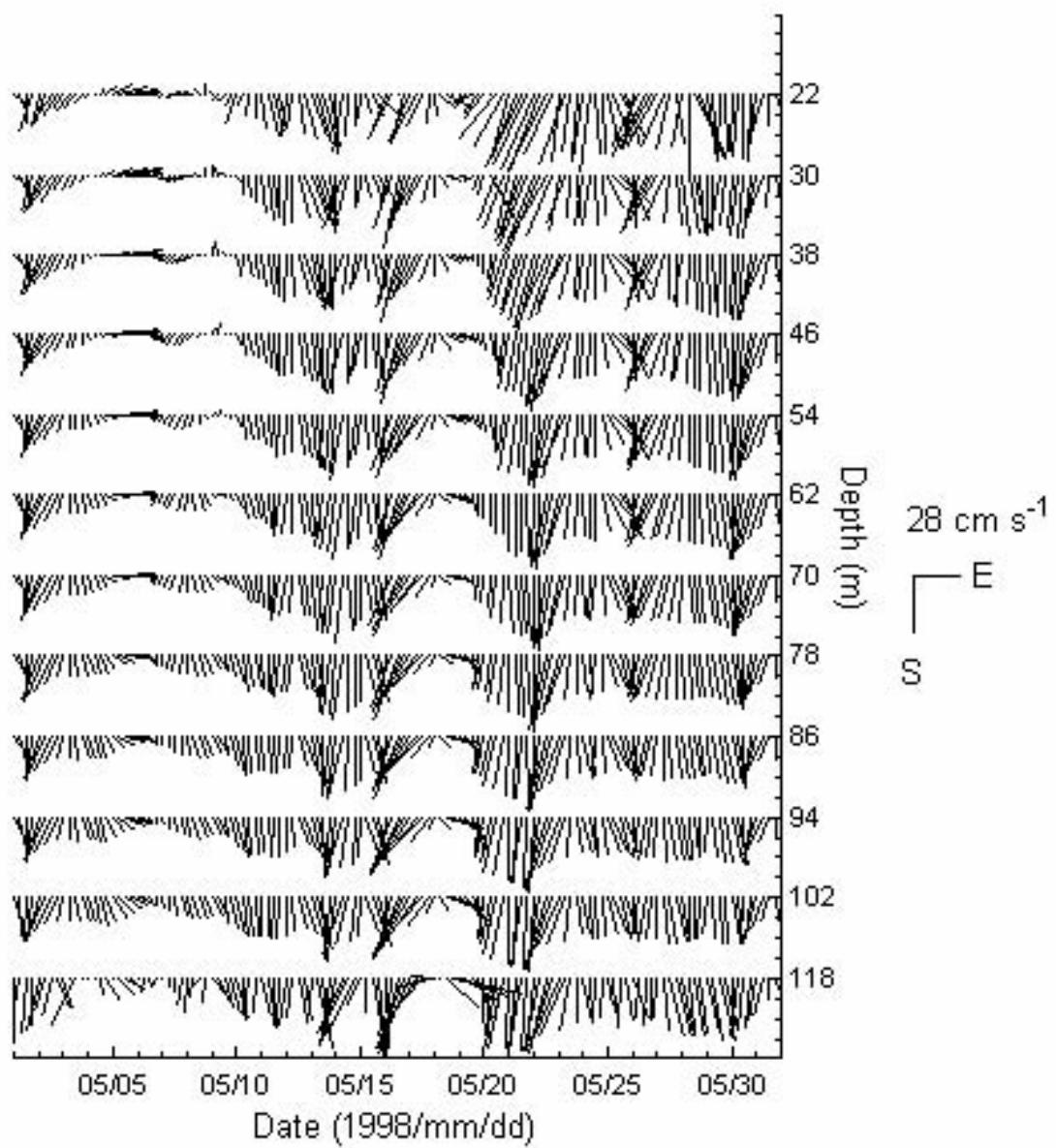
Appendix X.6 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between February 4 and March 1, 1998.



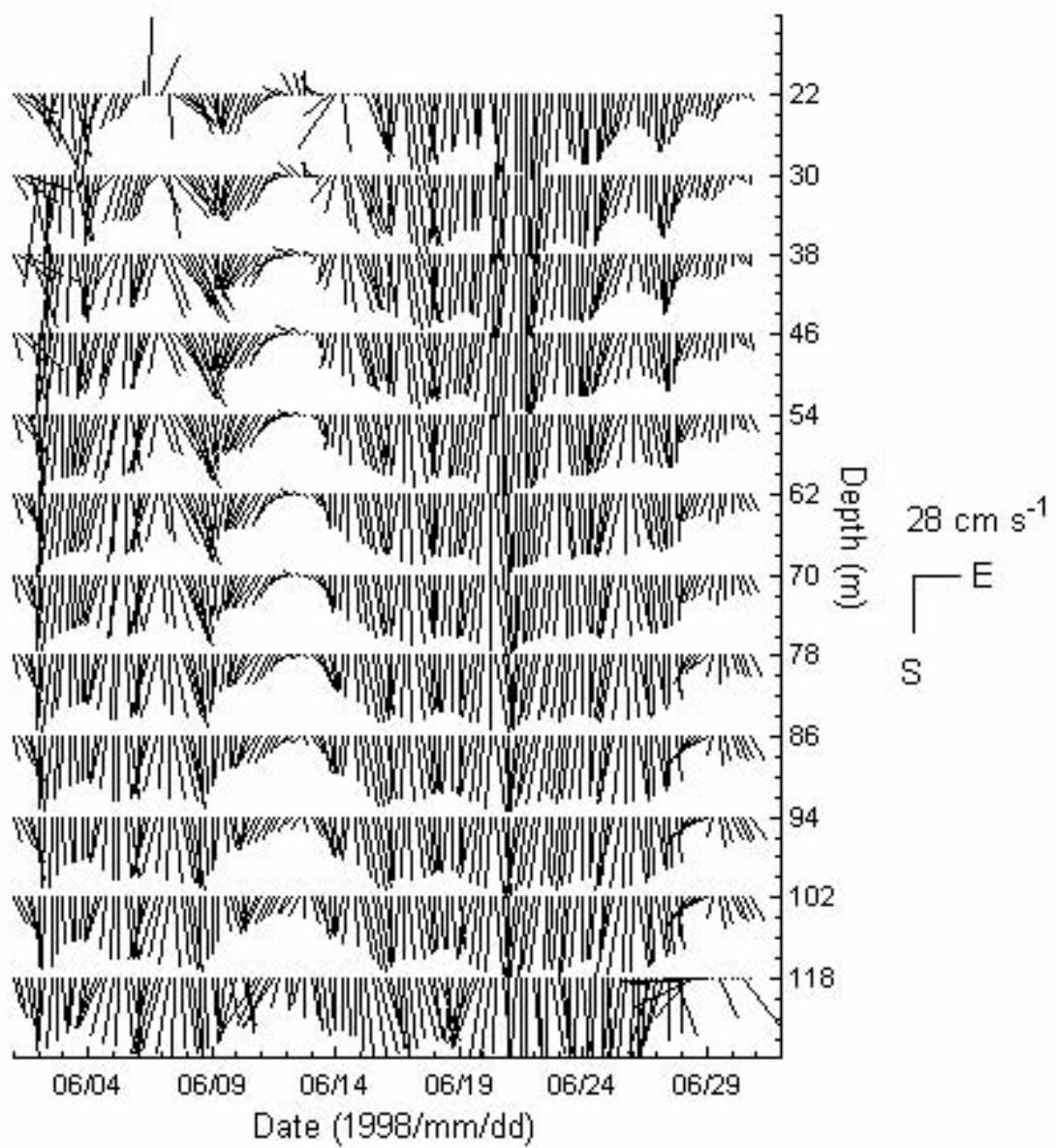
Appendix X.7 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between March 1 and March 31, 1998.



Appendix X.8 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between April 5 and April 30, 1998.



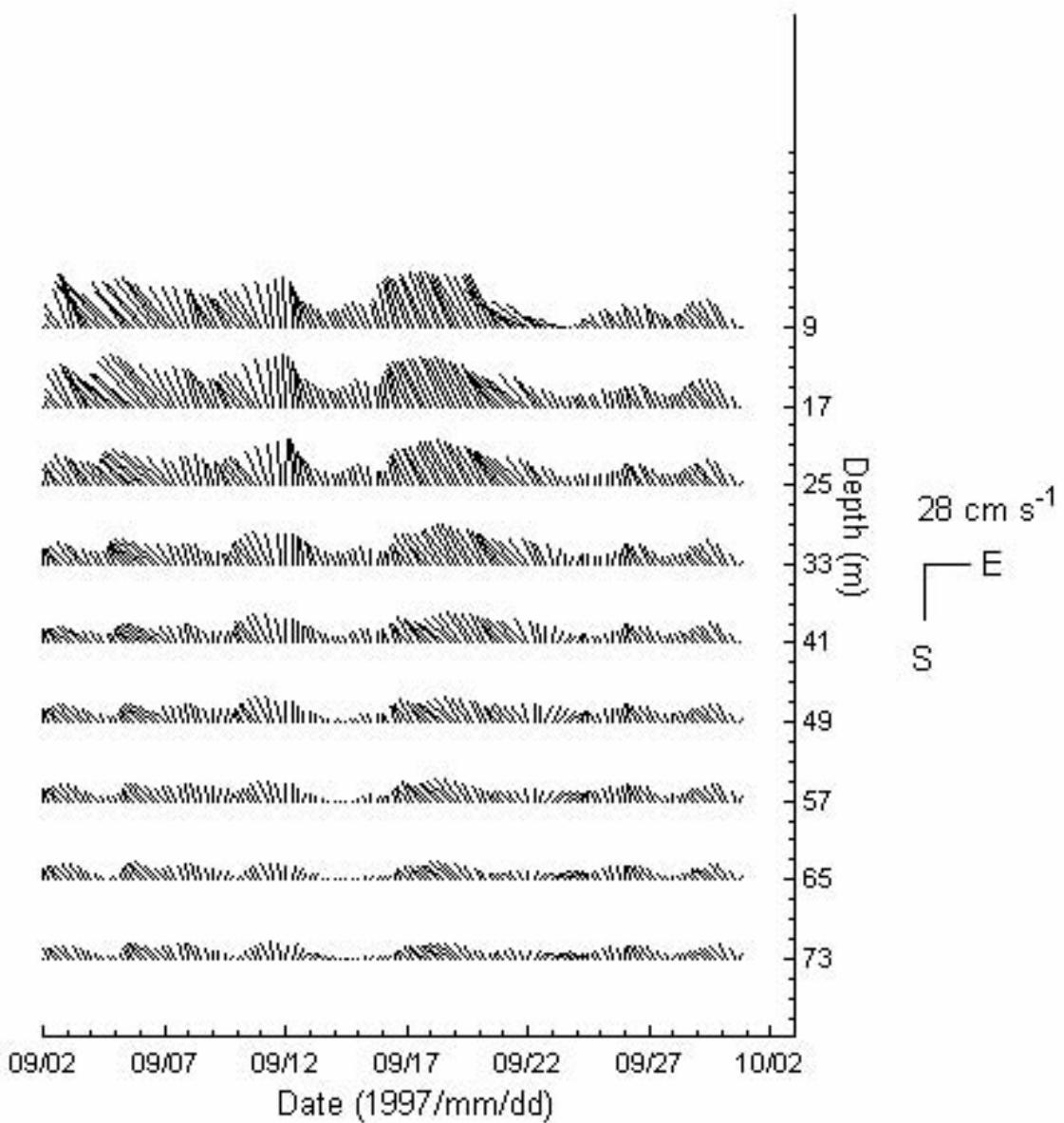
Appendix X.9 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between May 5 and May 30, 1998.



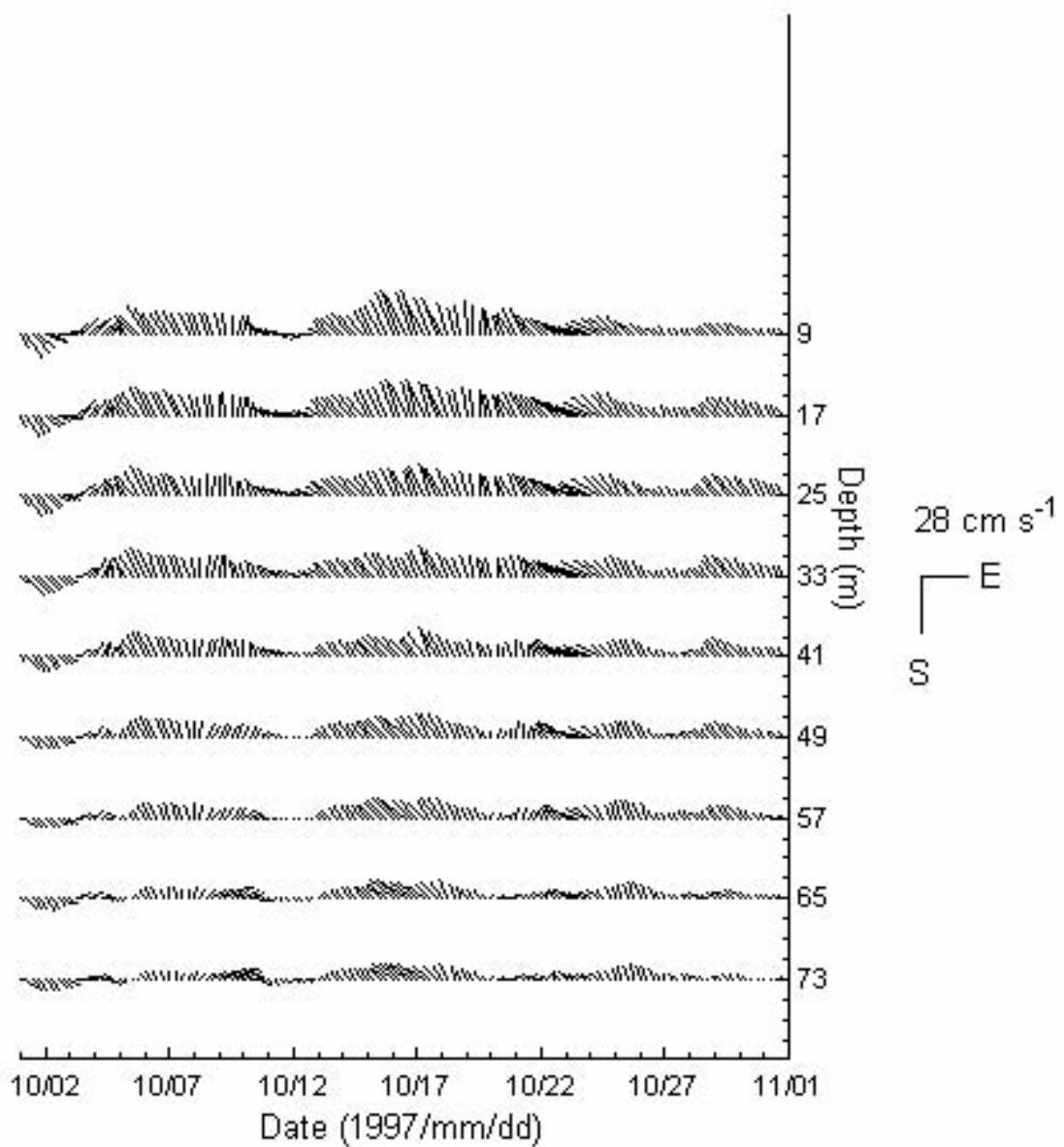
Appendix X.10 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station N2 between June 4 and June 29, 1998.

Appendix XI . ADCP Data : Mooring S1

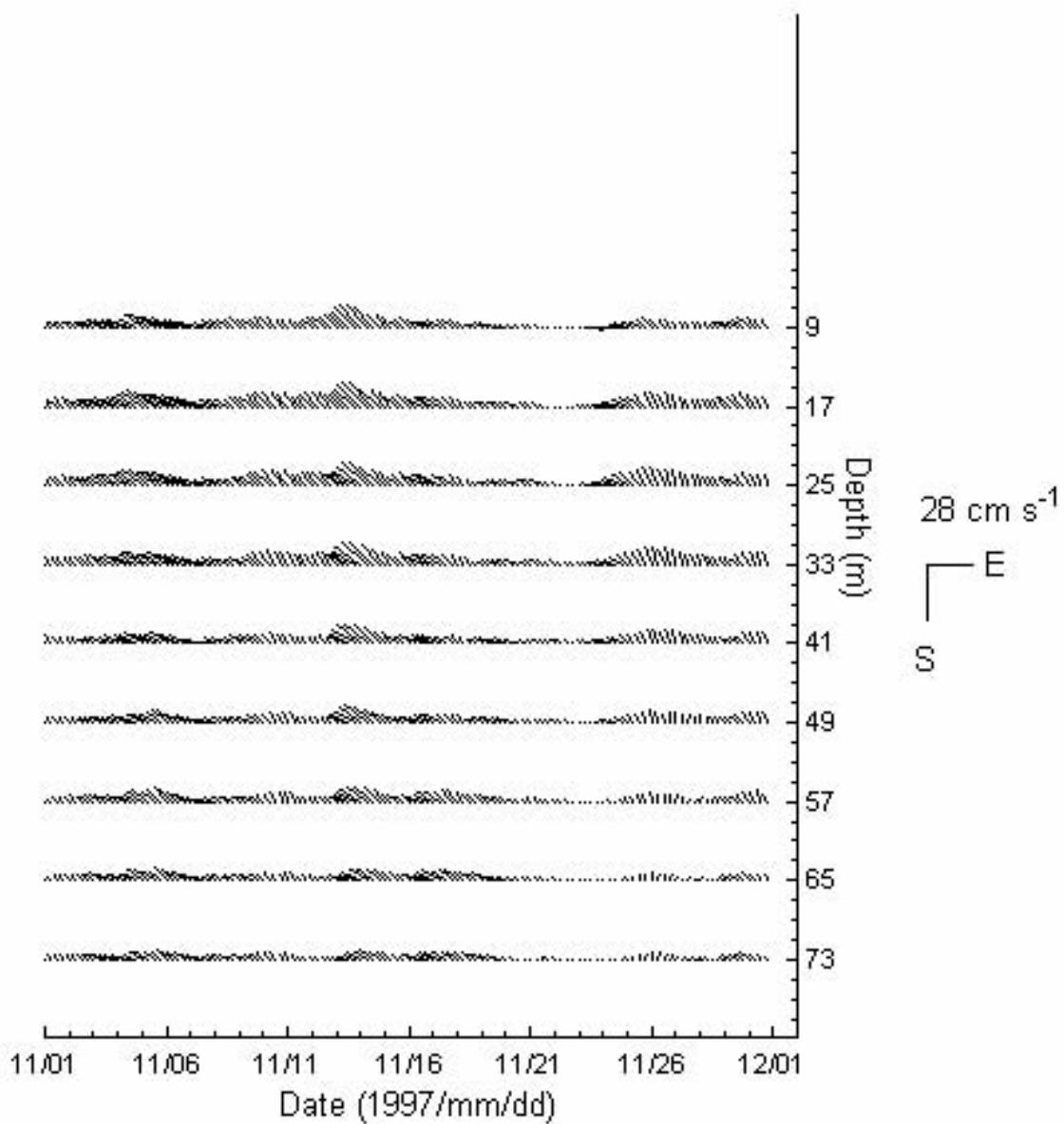
Monthly ADCP velocity stick diagrams every 8 m between 22 m and 118 m at station S1 (see figure 1 for location), between September 1997 and June 1998. Eastward is to the right and the velocity scale is shown on the right of each figure. The same scale is used for all the figures in Appendices X, XI and XII.



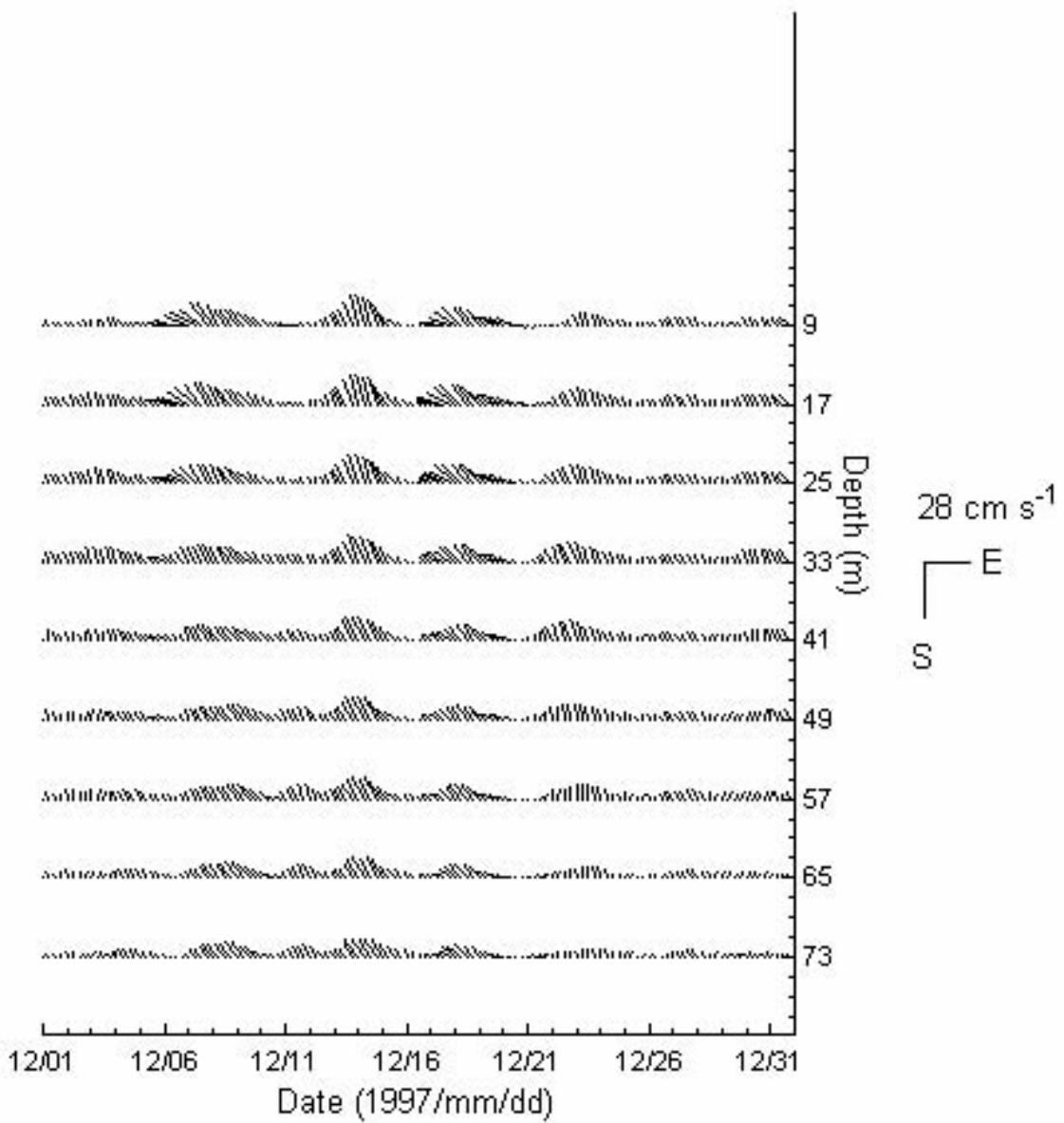
Appendix XI.1 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between September 2 and October 2, 1997.



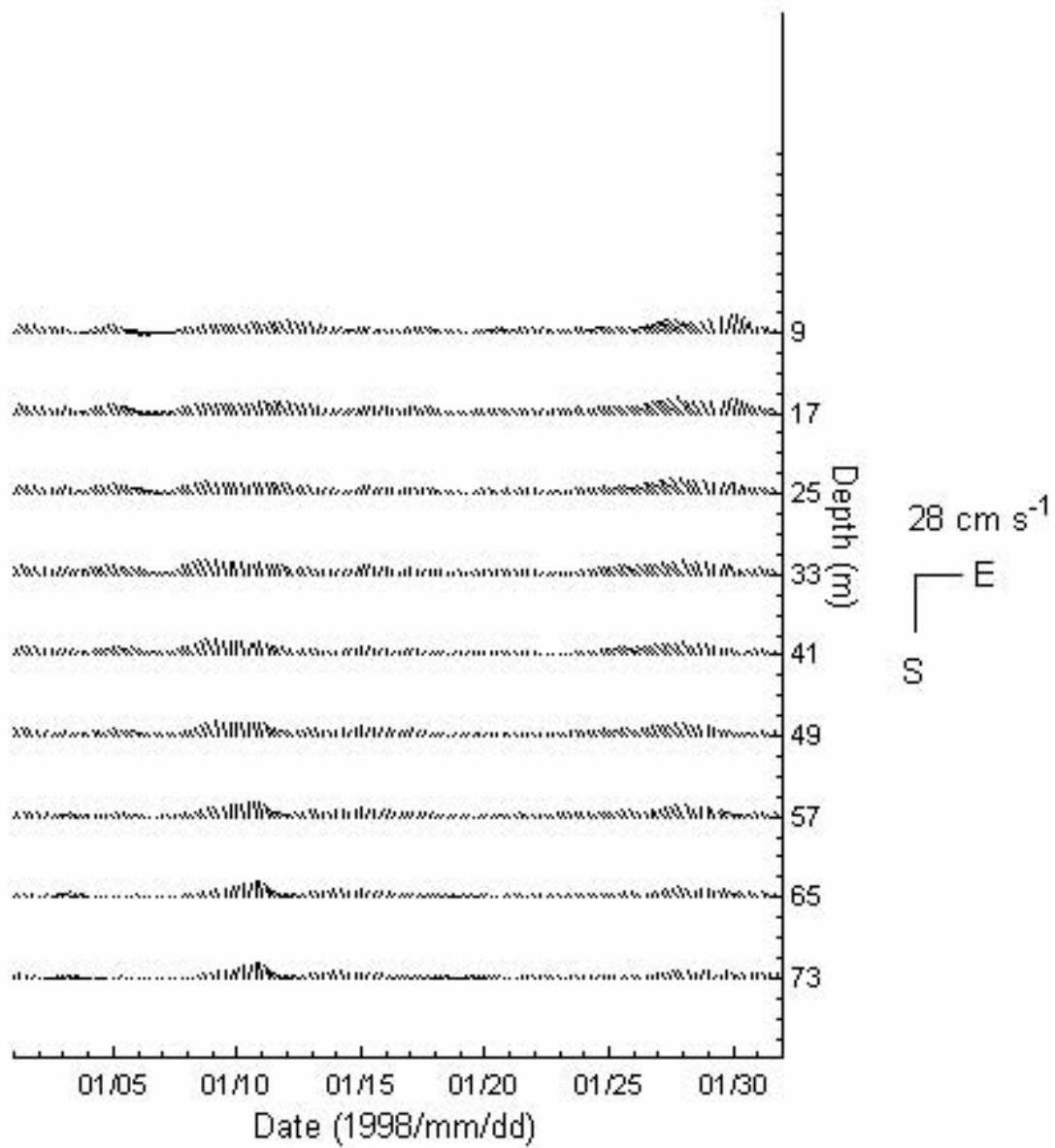
Appendix XI.2 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between October 2 and November 1, 1997.



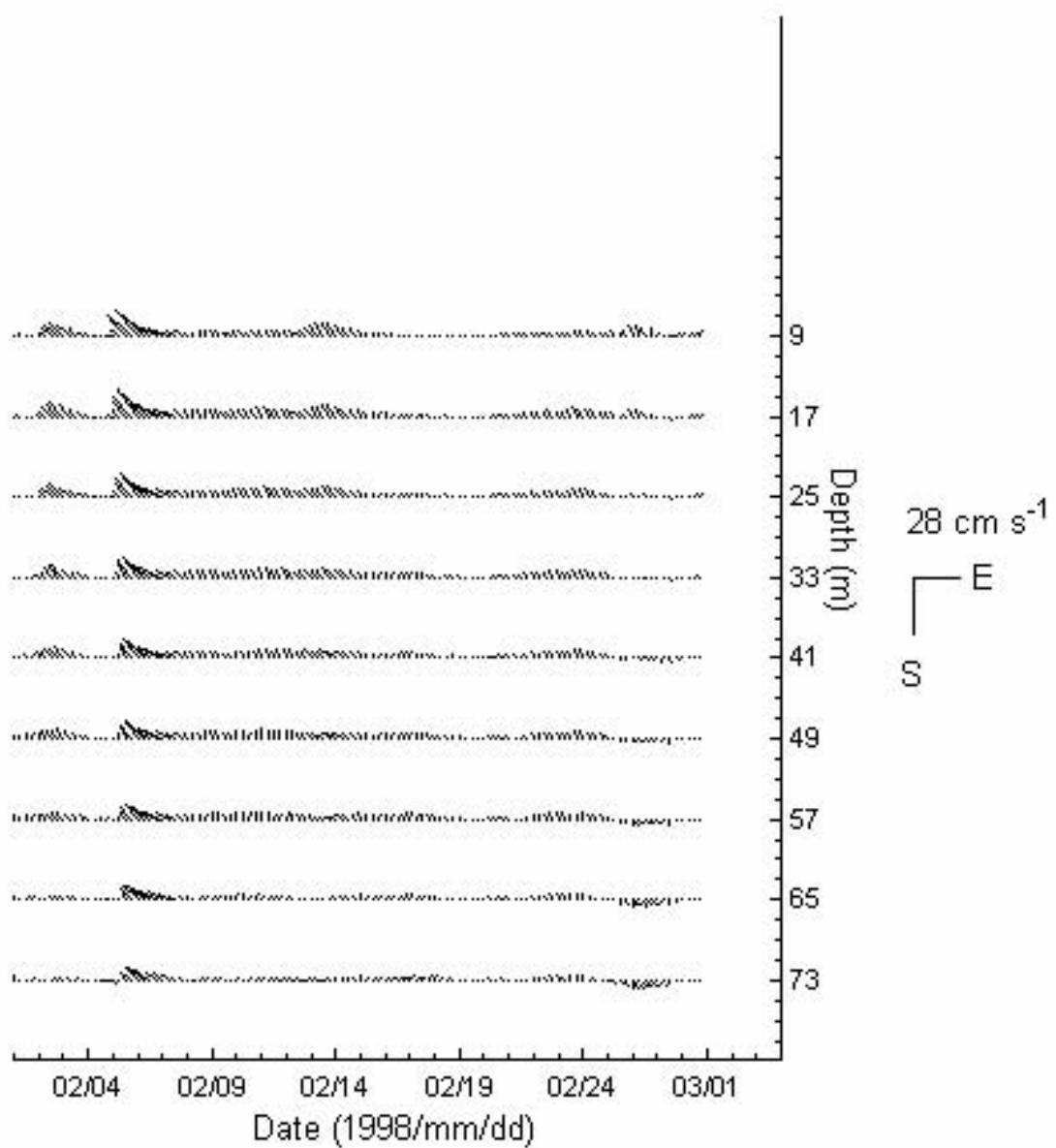
Appendix XI.3 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between November 1 and December 1, 1997.



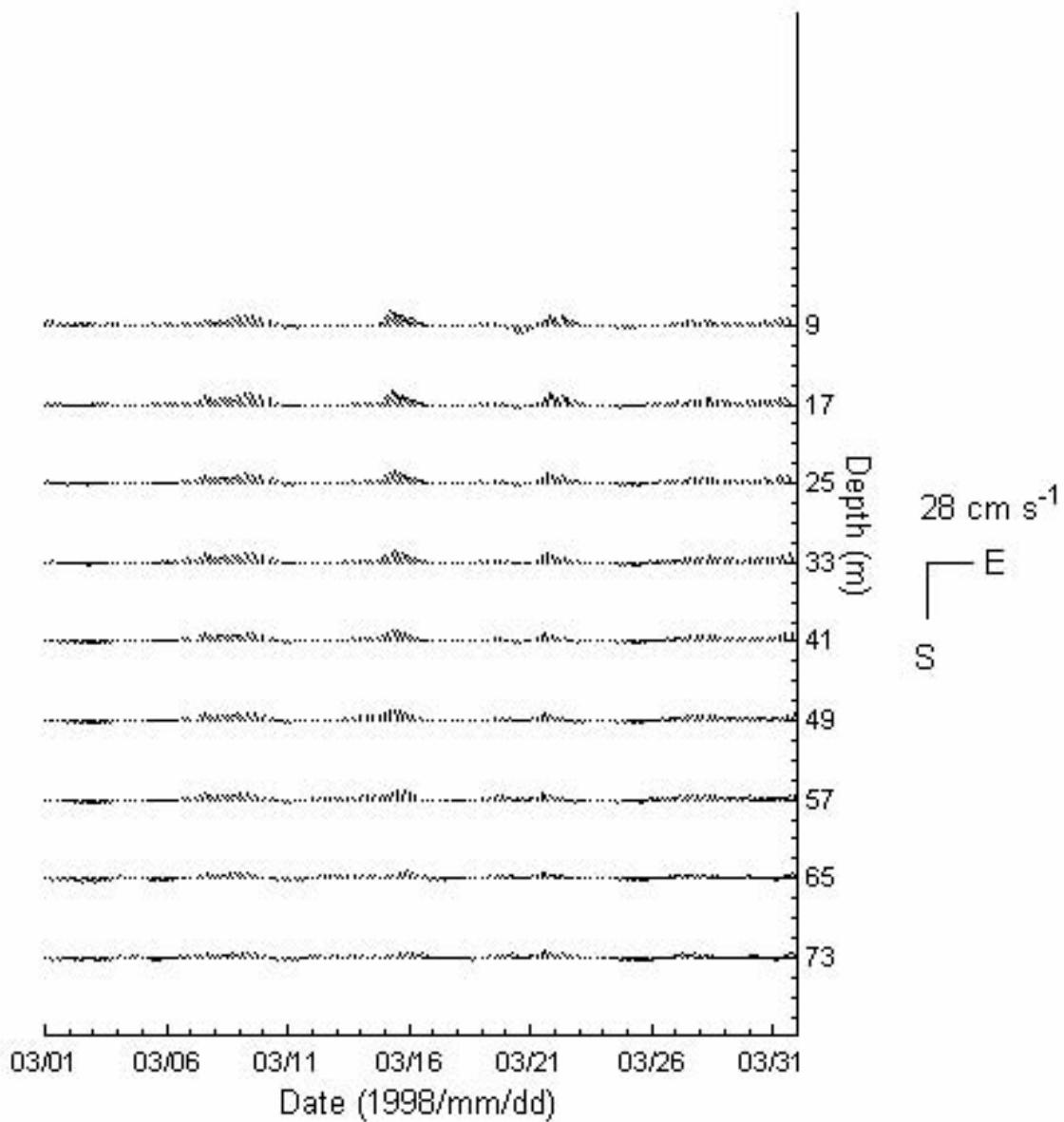
Appendix XI.4 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between December 1 and December 31, 1997.



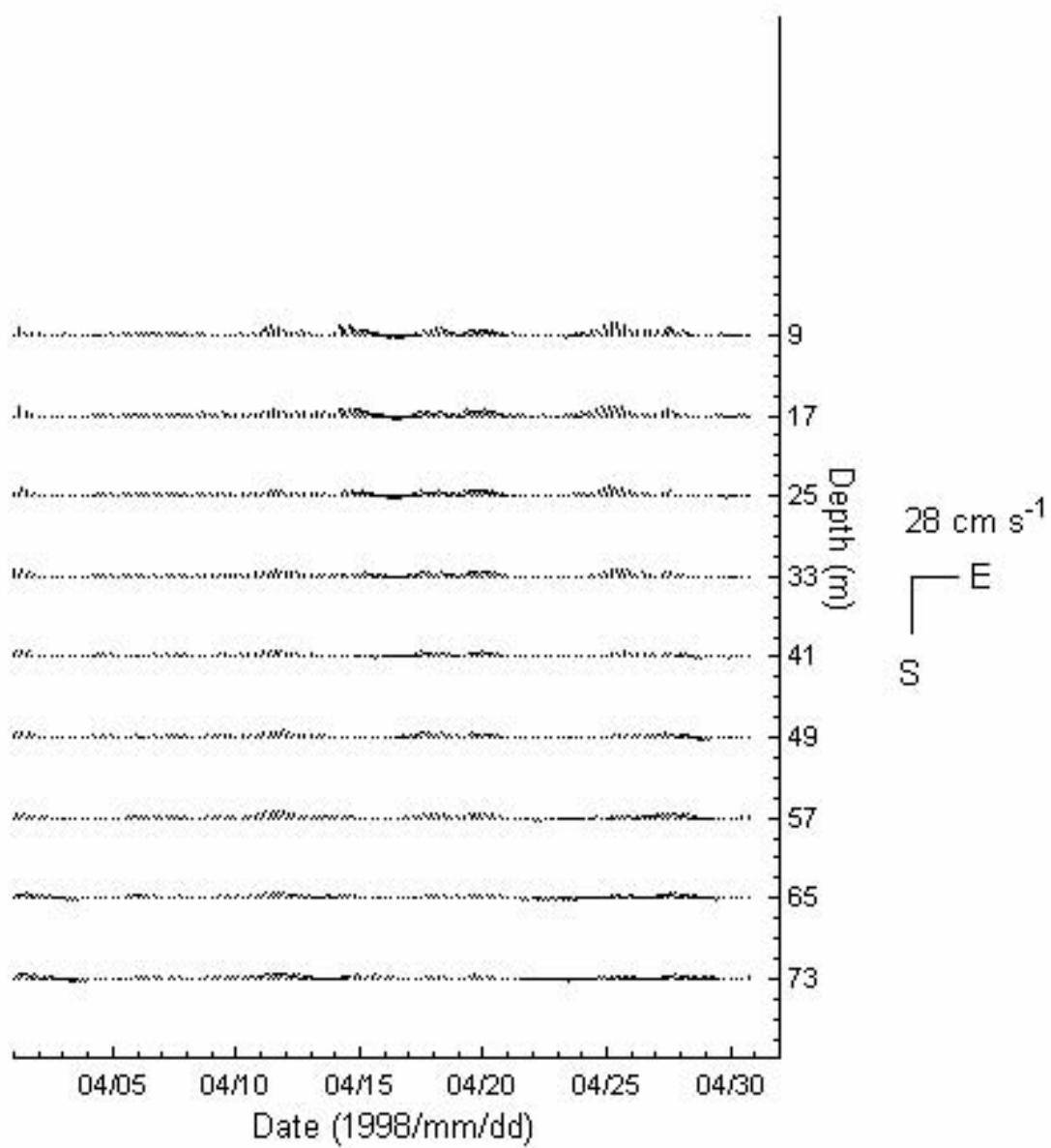
Appendix XI.5 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between January 5 and January 30 1998.



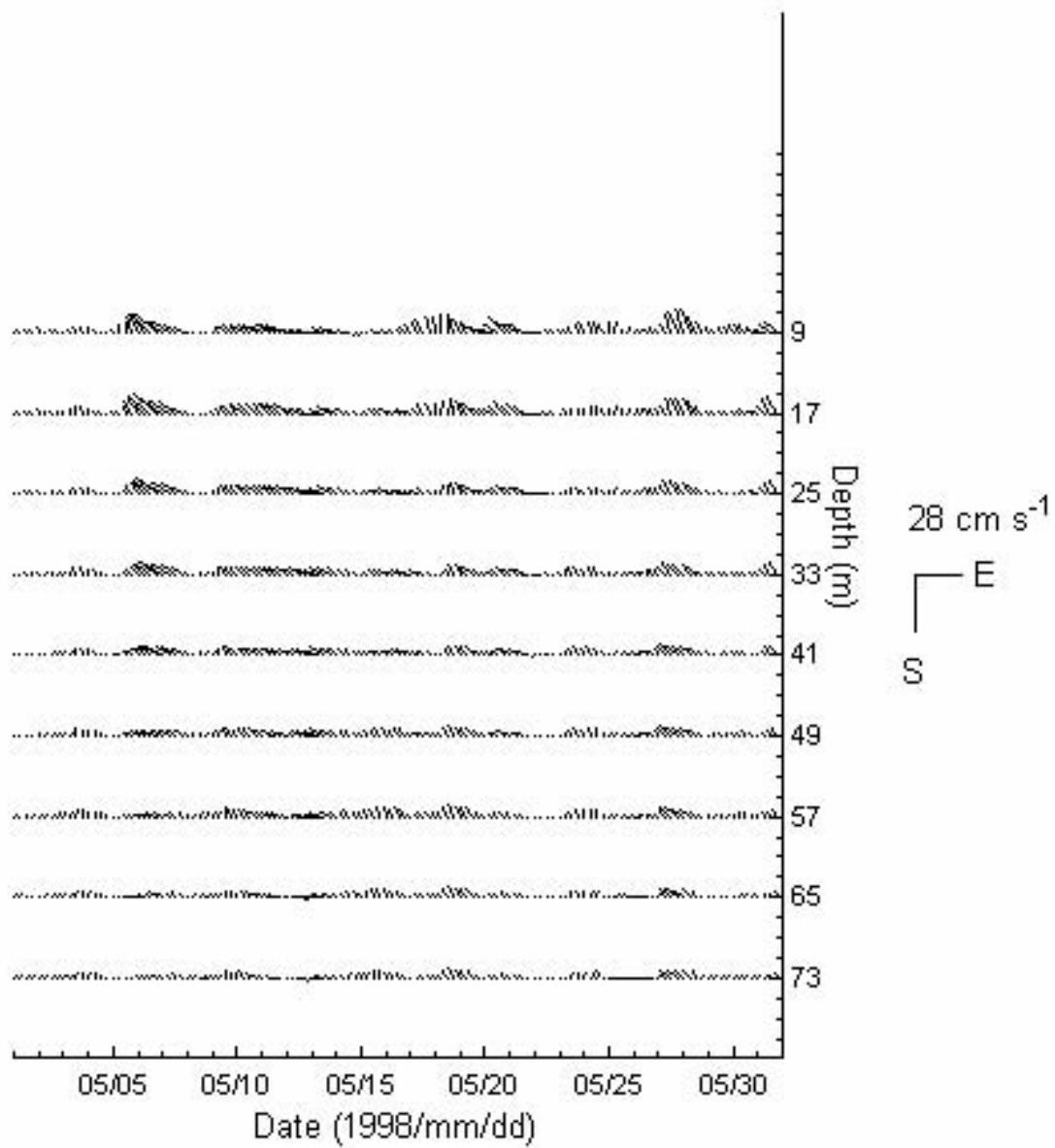
Appendix XI.6 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between February 4 and March 1, 1998.



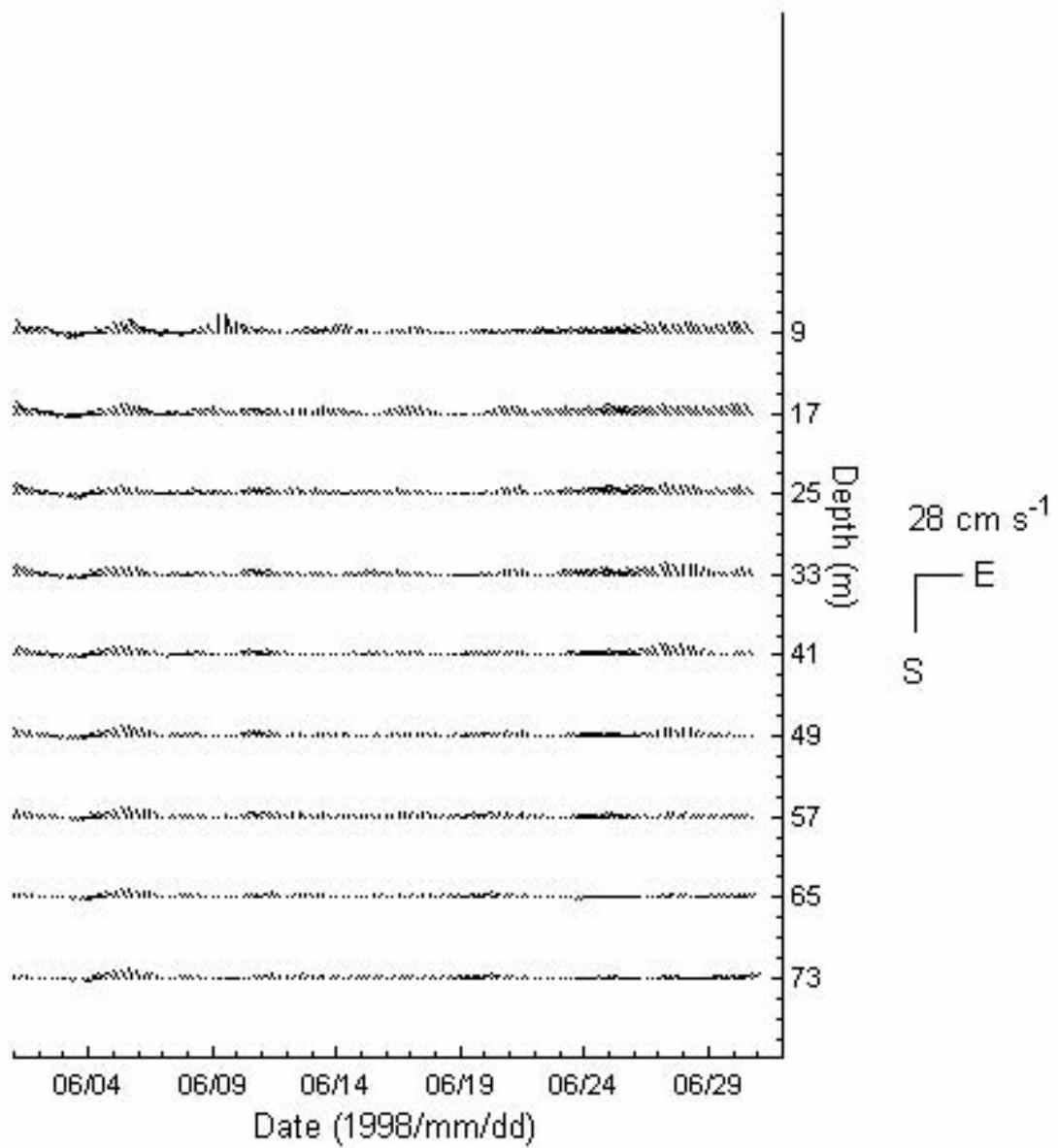
Appendix XI.7 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between March 1 and March 31, 1998.



Appendix XI.8 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between April 5 and April 30, 1998.



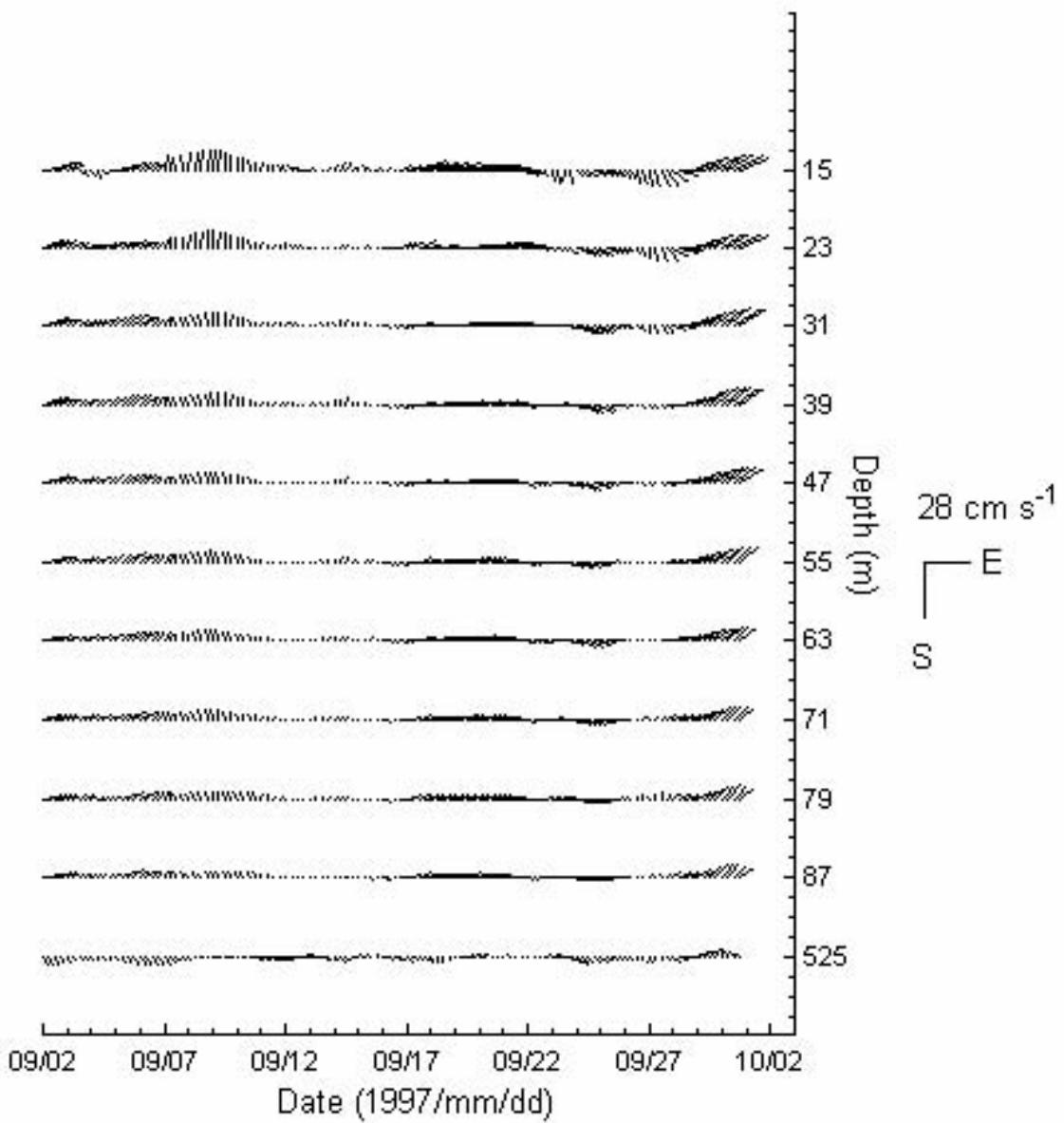
Appendix XI.9 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between May 5 and May 30, 1998.



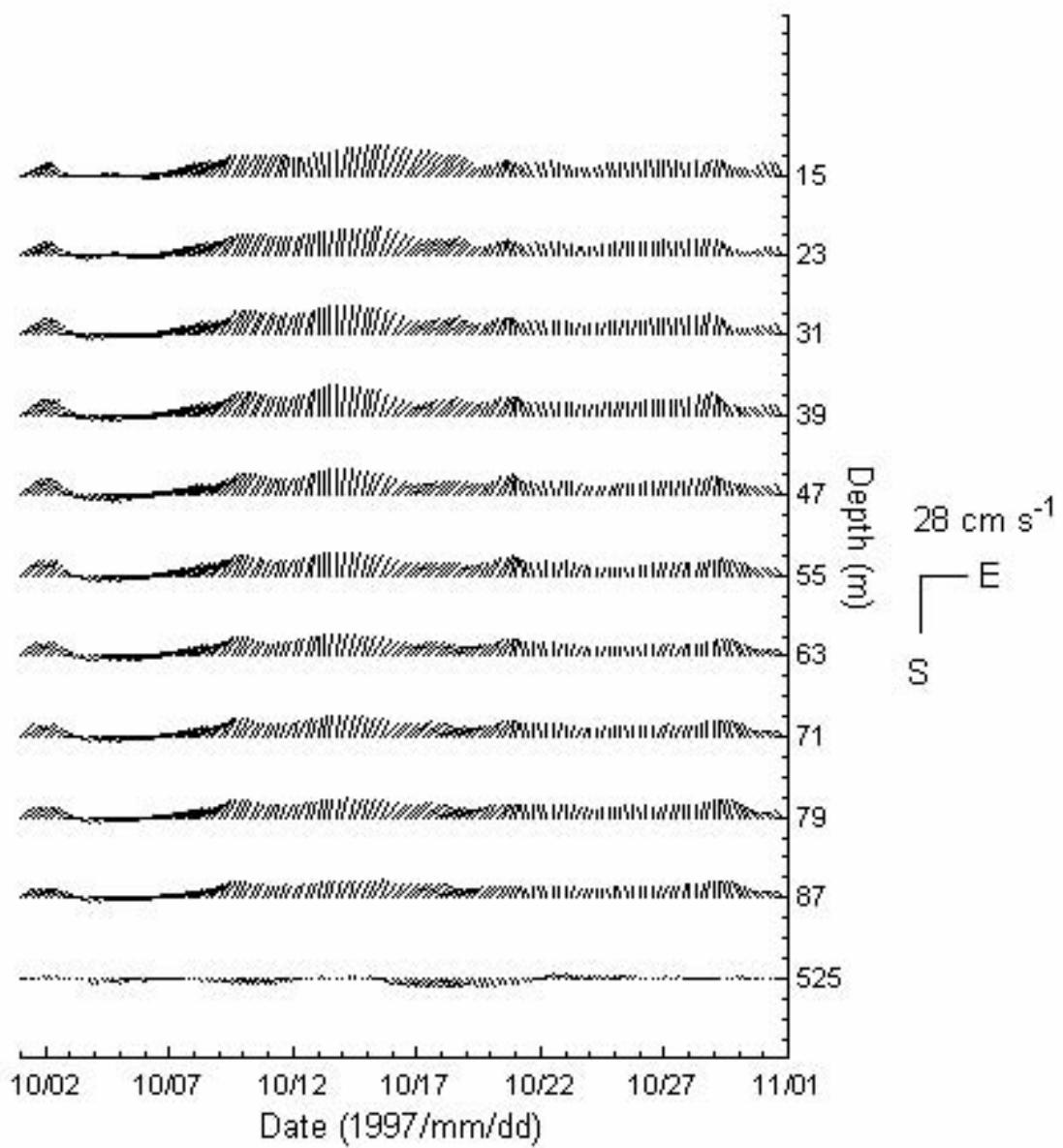
Appendix XI.10 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S1 between June 4 and June 29, 1998.

Appendix XII . ADCP Data : Mooring S2

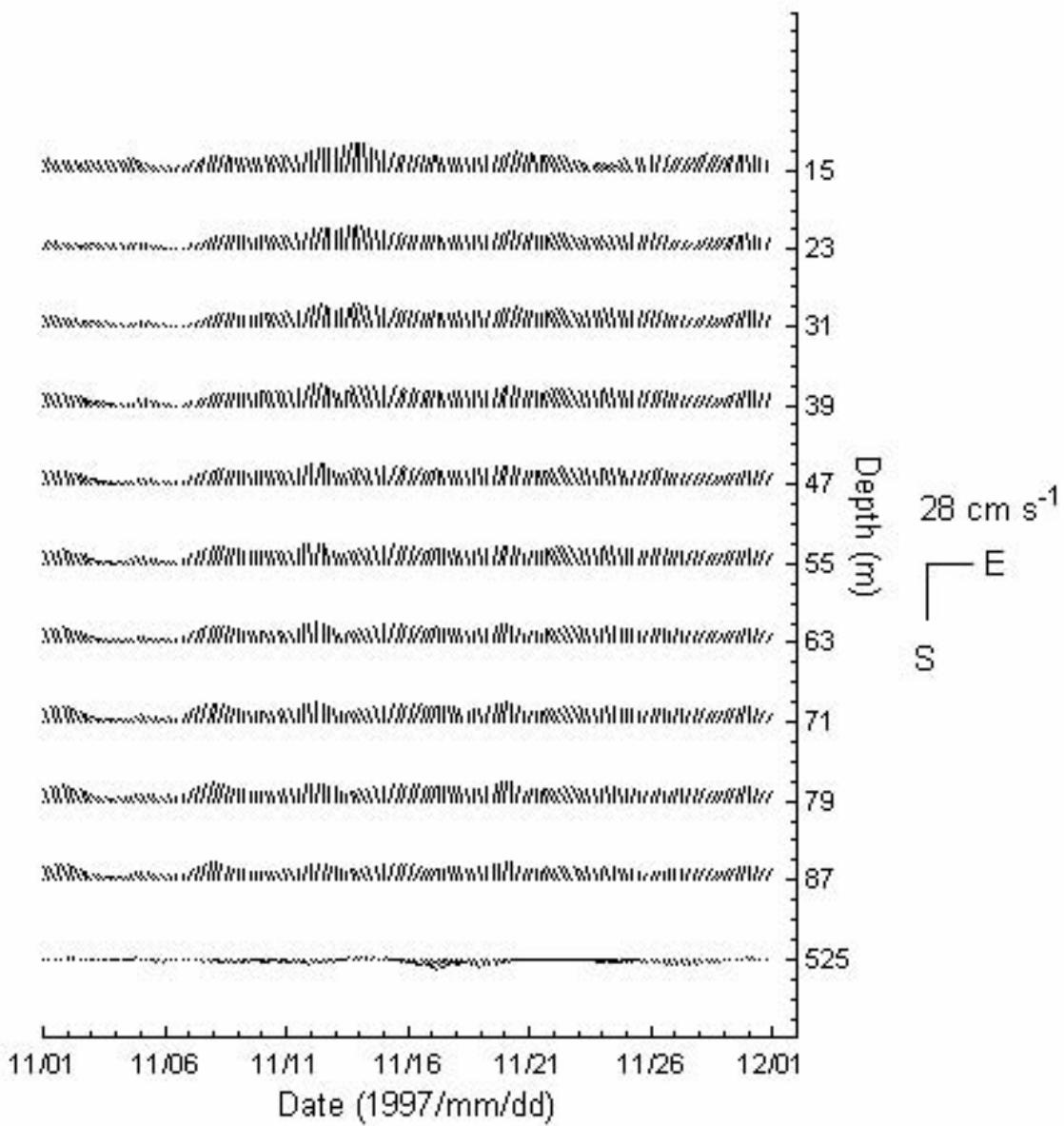
Monthly ADCP velocity stick diagrams every 8 m between 22 m and 118 m at station S2 (see figure 1 for location), between September 1997 and June 1998. Eastward is to the right and the velocity scale is shown on the right of each figure. The same scale is used for all the figures in Appendices X, XI and XII.



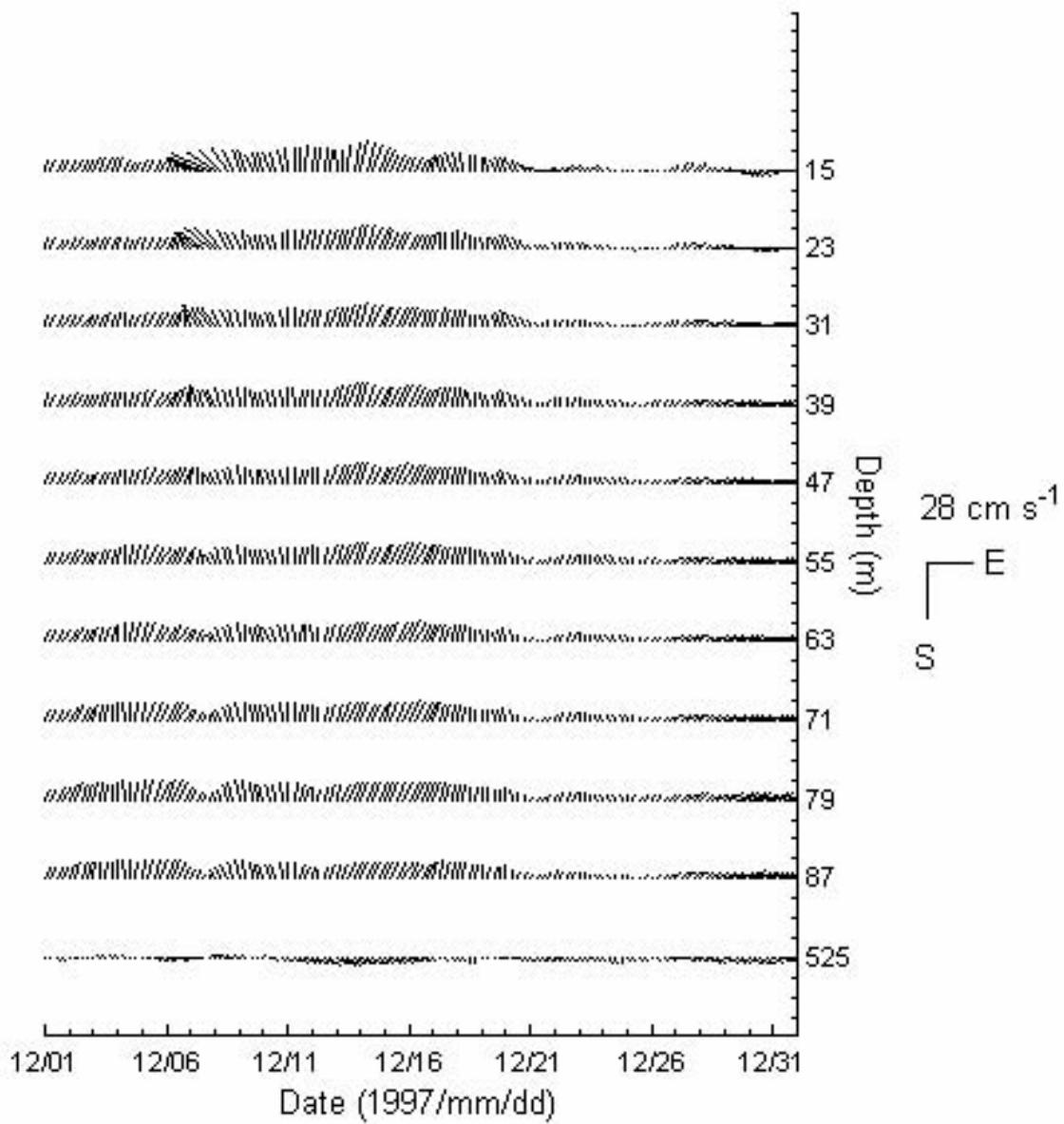
Appendix XII.1 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between September 2 and October 2, 1997.



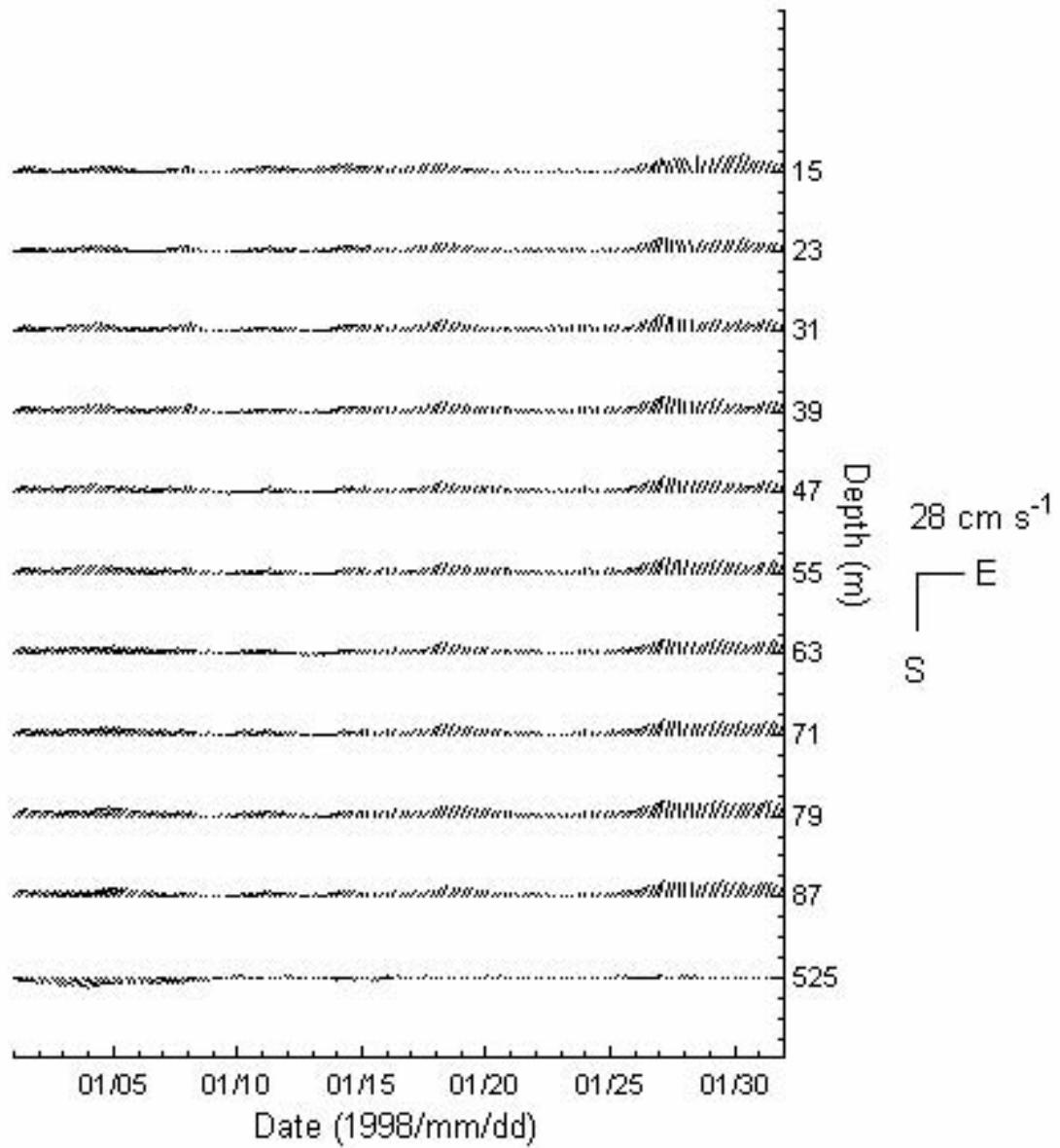
Appendix XII.2 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between October 2 and November 1, 1997.



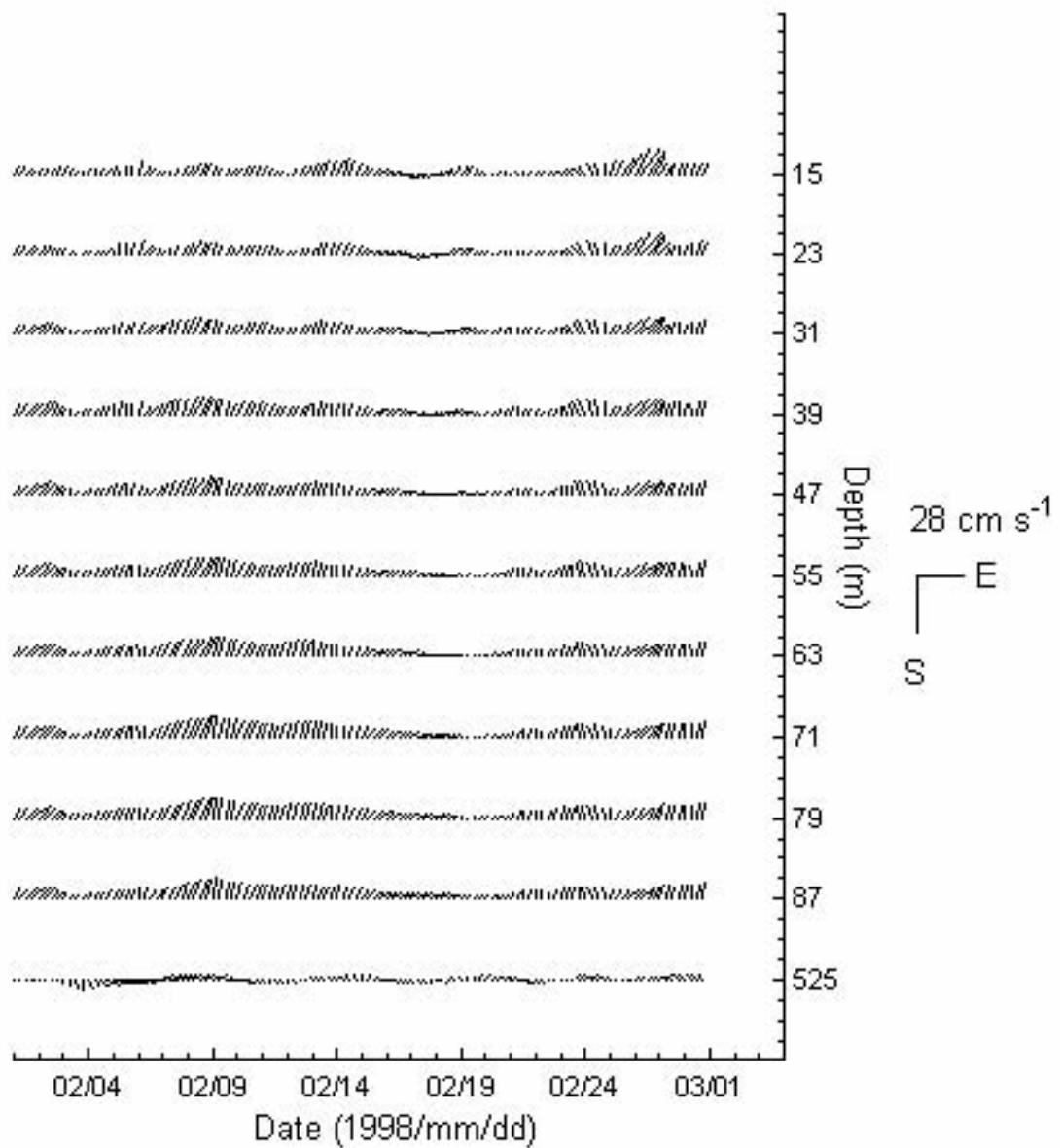
Appendix XII.3 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between November 1 and December 1, 1997.



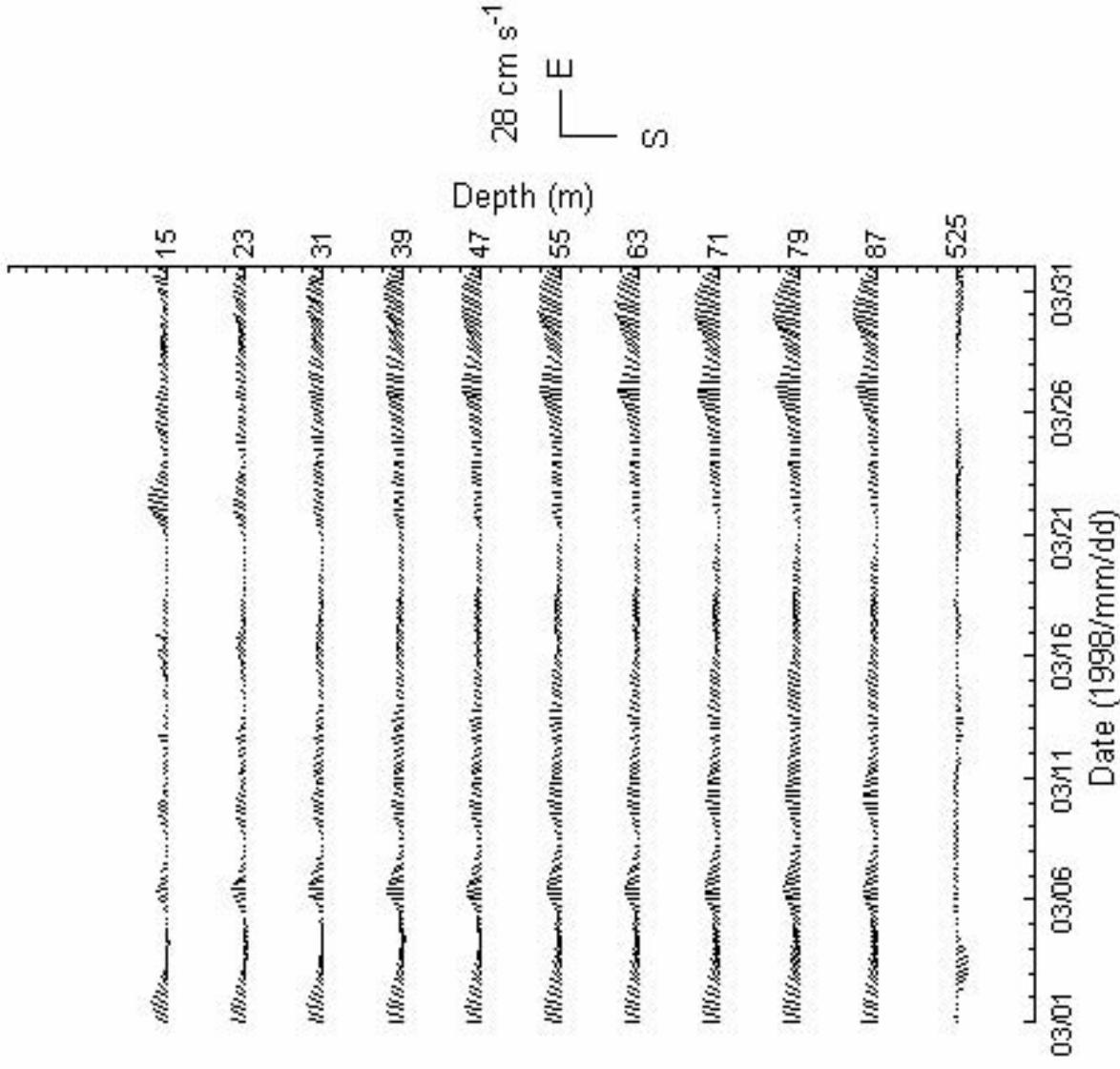
Appendix XII.4 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between December 1 and December 31, 1997.



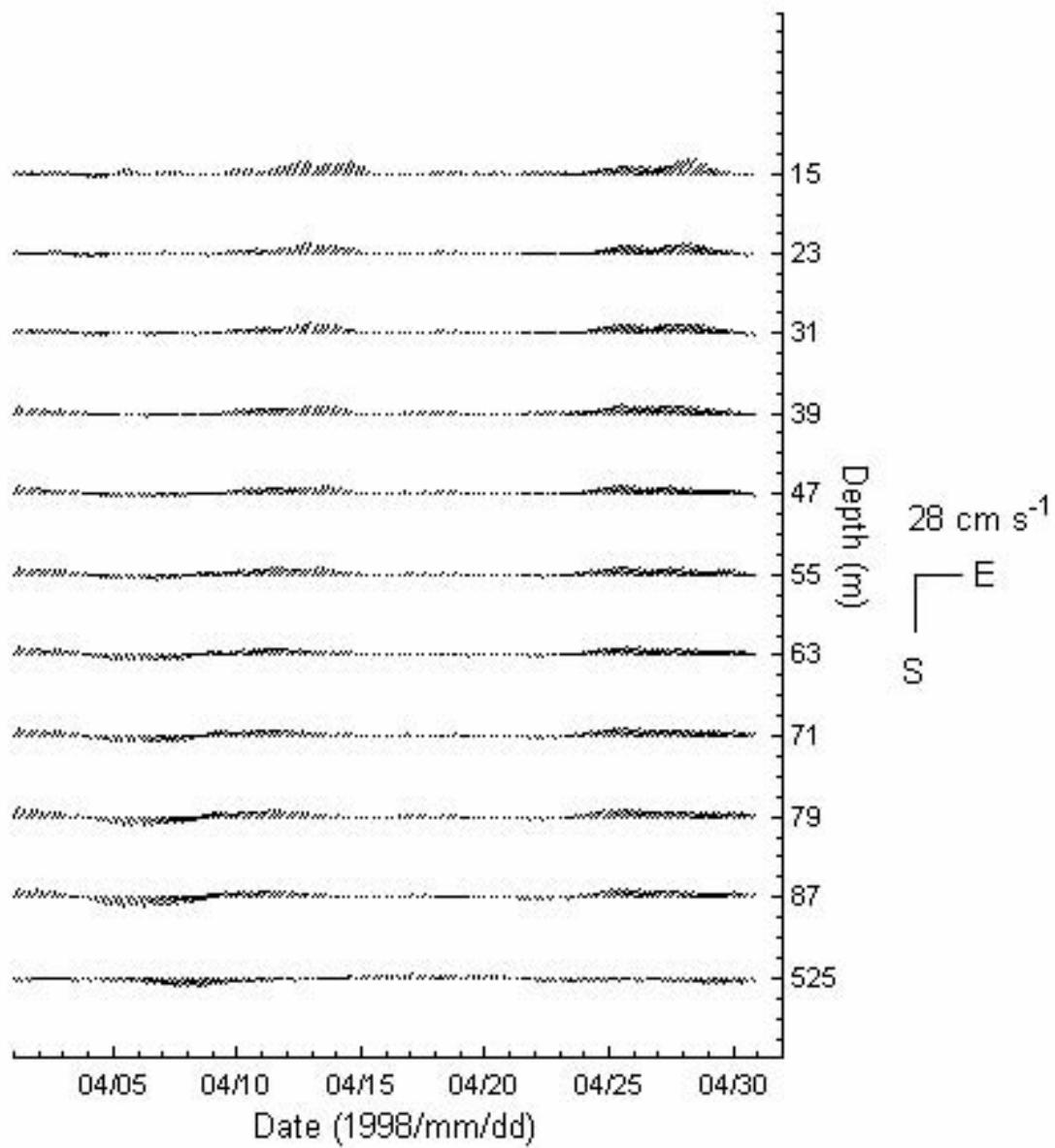
Appendix XII.5 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between January 5 and January 30, 1998.



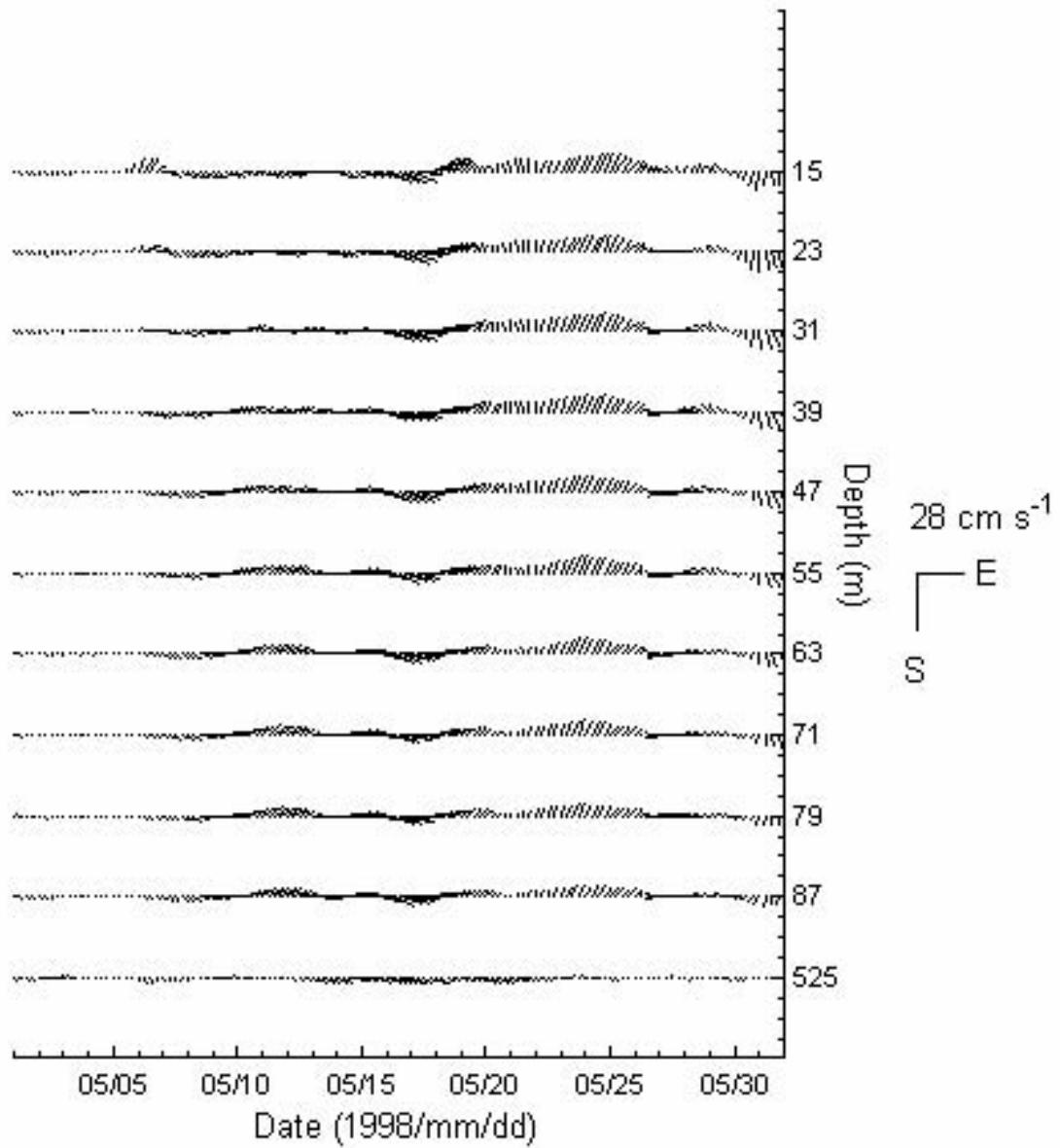
Appendix XII.6 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between February 4 and March 1, 1998.



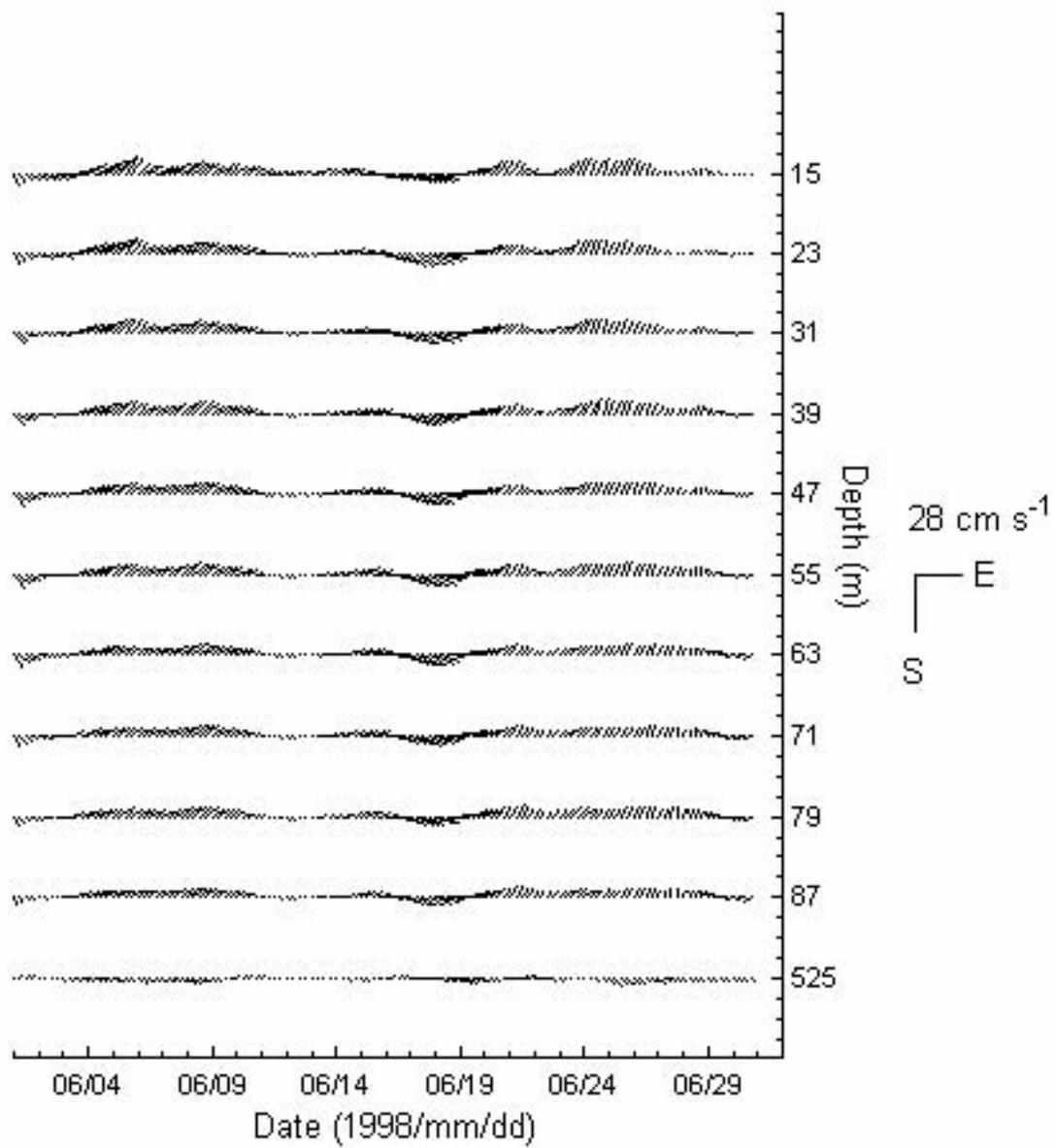
Appendix XII.7 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between March 1 and March 31, 1998.



Appendix XII.8 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between April 5 and April 30, 1998.



Appendix XII.9 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between May 5 and May 30, 1998.



Appendix XII.10 : Stick diagram showing the ADCP velocity every 8 m between 22 m and 118 m at station S2 between June 4 and June 29, 1998.