

**ORGANIZATION OF PERSISTENT UPWELLING STRUCTURES  
HYDROGRAPHIC OBSERVATIONS, 5 APRIL-10 MAY 1983**

**VOLUME 2: MAPS AND VERTICAL SECTIONS**

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## INTRODUCTION

The area near Point Arguello has long been recognized as a location of strong upwelling. A tongue of biologically active waters was observed in the earliest studies of this region (Sverdrup and Allen, 1939). More recently, satellite estimates of chlorophyll by the Coastal Zone Color Scanner (CZCS) on Nimbus-7 have shown the presence of this tongue emanating from Point Arguello in nearly all images off southern California (e.g., Smith and Baker, 1982; Atkinson et al., 1986). This feature is apparently not unique to the Point Arguello region. Similar structures are evident from CZCS and infra-red images near other major points and capes along the west coast of North America (e.g., Abbott and Zion, 1985). Along the central and southern California coast, the tongue off Point Arguello is the largest in spatial extent and the most persistent. The Organization of Persistent Upwelling Structures (OPUS) program was developed with the goal of understanding the relationship between the circulation and planktonic processes in this upwelling region extending southward from Point Arguello.

After a small OPUS pilot study in spring 1981 (see Brink et al., 1984, for a summary) a modest program, OPUS-83 (see Atkinson et al., 1986), was funded by the National Science Foundation with the specific objectives of 1) characterizing the physical and biological oceanographic setting in the region within roughly 40 km of Point Arguello; 2) examining the dynamical features of upwelling in this region; 3) obtaining design information for a possible major future OPUS field effort; and 4) achieving some preliminary understanding of the ecosystem dynamics in this region. The field work for OPUS-83 was completed in April and May 1983. This particular time period was selected in order to observe the physical and biological variability during the first few days after the seasonal transition from weak to strong upwelling, the so-called "spring transition" (e.g., Huyer et al., 1979; Brink et al., 1984; Strub et al., 1987; Lentz, 1987). Fortuitously, the OPUS-83 field study was also conducted during a very unusual warming event in the California Current (Simpson, 1983). The sea surface temperatures observed along the California coast during winter and spring of 1983 were the highest recorded since 1958-59. This 1983 warming was related to the major El Nino occurrence in the tropical Pacific Ocean.

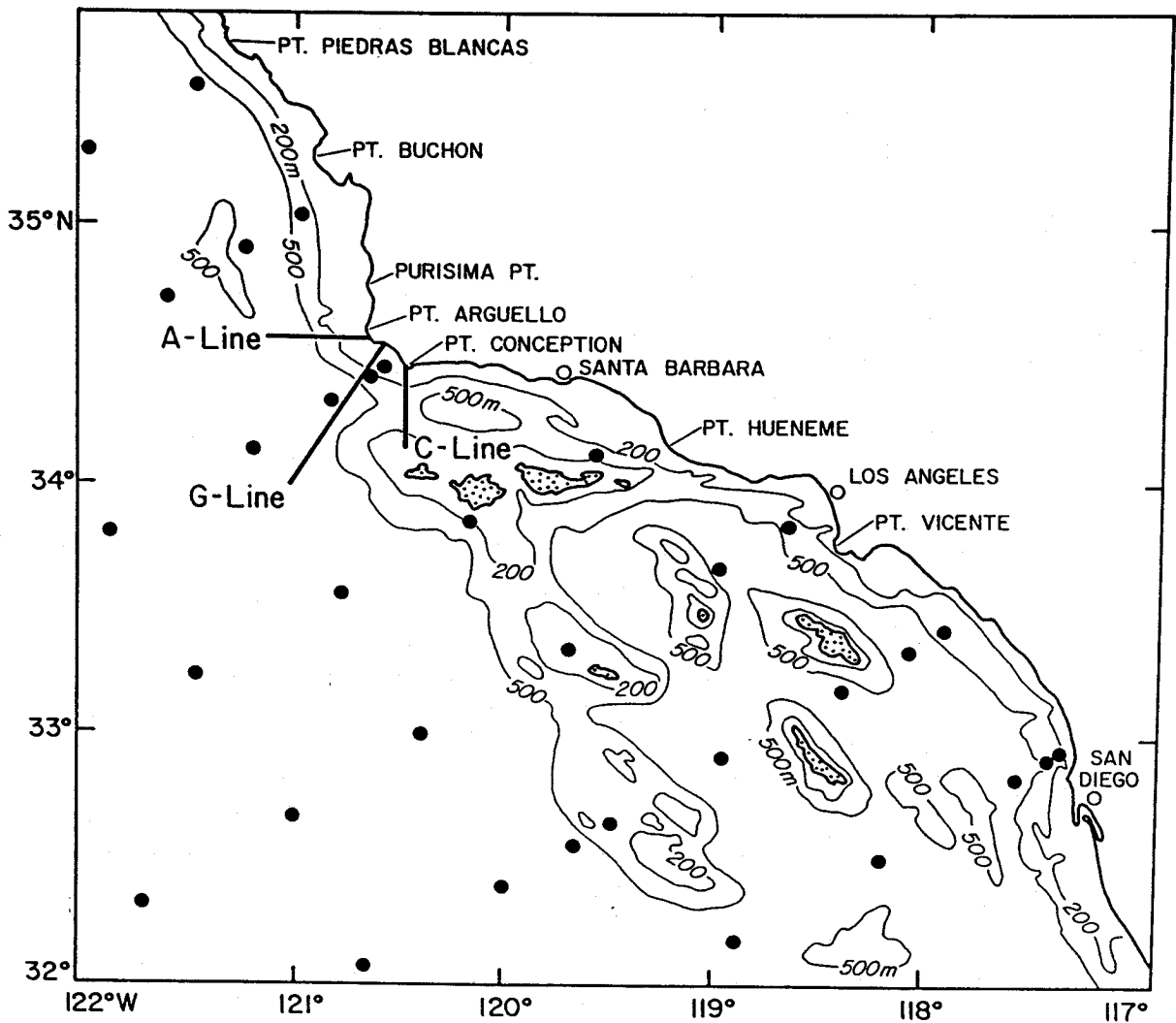
OPUS-83 was an interdisciplinary program which included physical, chemical and biological measurements repeated at regular intervals on a fixed sampling grid. The hydrographic observations (CTD and XBT) are summarized in two data reports. This report is Volume 2 which contains vertical sections and horizontal maps at selected depths of temperature, salinity and  $\sigma_t$ . Volume 1 contains a detailed background and summary of the OPUS program and vertical profiles of temperature, salinity and  $\sigma_t$ . The text from the sampling, data calibration and processing, and data presentation sections of Volume 1 are included here for easy reference.

## SAMPLING STRATEGY

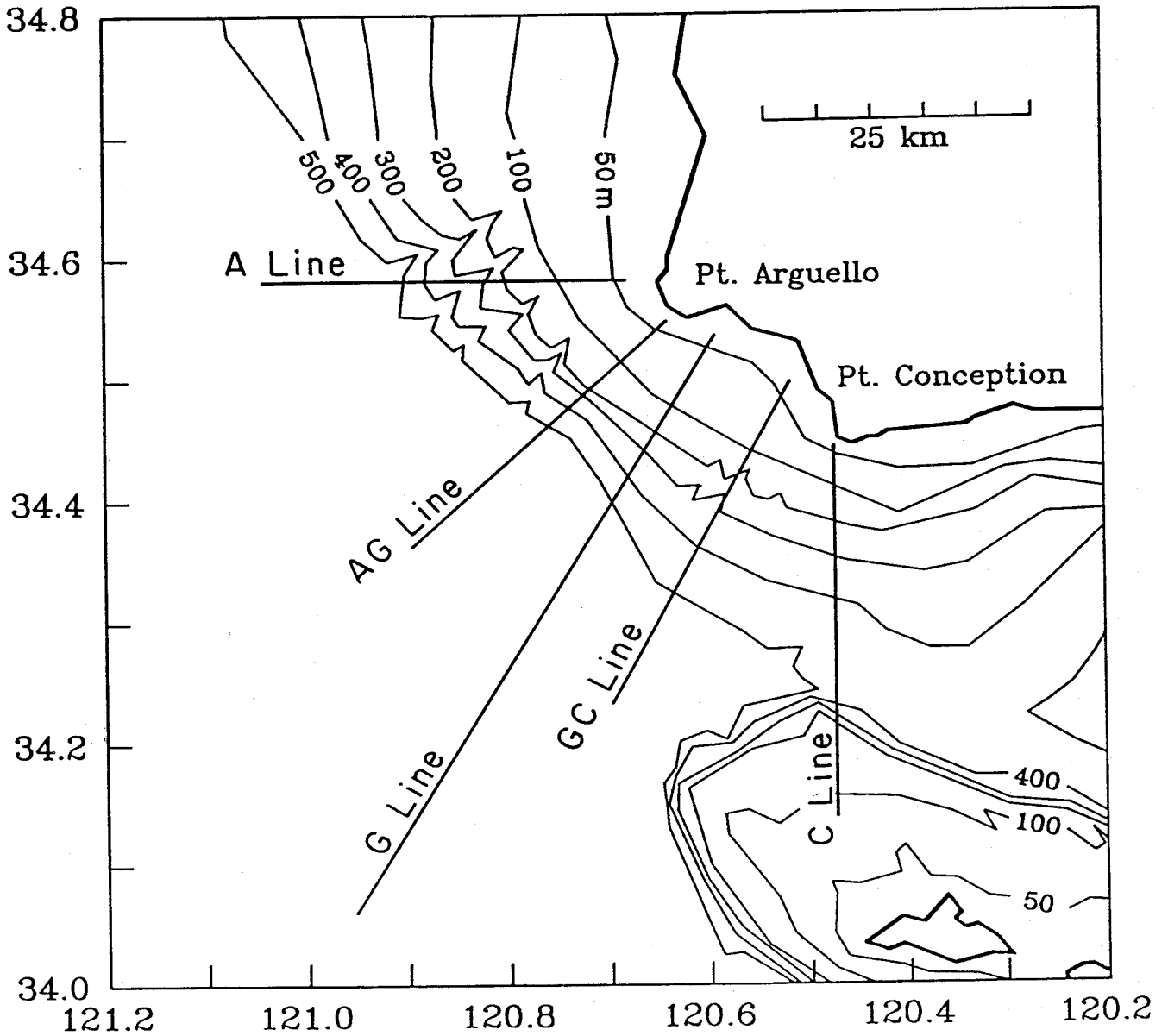
In order to answer the questions summarized in the previous section, horizontal and vertical distributions of the physical and biological variables must be resolved synoptically on appropriate spatial and temporal scales. These scales were estimated from the 1981 OPUS pilot experiment (Brink et al., 1984) to be 4-6 km cross-shelf, 20 km alongshelf, with a temporal scale of 3-5 days. The OPUS-83 field program was designed and carried out with these objectives and spatial scales in mind.

Hydrographic section were occupied repeatedly to provide data to resolve the temporal evolution of distributions in several vertical planes. The locations of these sections were chosen to account for areas of input or export of waters by advection and to provide a map covering the area of intense upwelling. Along each section, stations were located 3.2 km apart. The offshore extent of the sections was chosen to strike a compromise between large spatial coverage and rapid (near-synoptic) sampling of the survey area. The OPUS-83 hydrographic sampling program was based primarily on the A, G and C lines shown in Figs. 1 and 2. The A line runs approximately 35 km offshore directly west of Point Arguello. The C line runs approximately 30 km across the western end of the Santa Barbara Channel directly south of Point Conception. These two lines mark the boundaries of the intensive OPUS study region. The G line bisects the OPUS region and runs approximately 50 km offshore in a southwestward direction from the source of the upwelling "plume" frequently observed between Points Arguello and Conception.

The OPUS region was surveyed in three legs over the 36-day period from 5 April to 10 May 1983. A log of the ship operations is given in Table 1. Sampling was based on a 6-day repeat cycle consisting of the following (times in parentheses correspond to approximate number of hours to complete):



**FIG. 1** Map of OPUS and surrounding region with 200 m and 500 m bottom contours. Dots indicate locations of CalCOFI grid points and the OPUS A-, G- and C-lines are labelled.



**FIG. 2.** Detail map of the OPUS survey region. Bathymetry contours are in meters. Locations of the A-, AG-, G-, GC- and C-lines are shown on the map. CTD profiler were collected at approximately 3.2 km spacing along the A-, G- and C-lines. XBT profiles were collected at approximately 3.2 km spacing along all five lines.

1. CTD section along G line (approx. 18 hrs.)
2. XBT and sea surface temperature (SST) map of entire OPUS region (approx. 24 hrs.)
3. CTD section along A line (approx. 12 hrs.)
4. CTD section along G line (approx. 18 hrs.)
5. CTD section along C line (approx. 12 hrs.)
6. XBT and sea surface temperature map of entire OPUS region (approx. 24 hrs.)
7. Deployment of drifters and/or occasional XBT or CTD sampling of region to the north or east of the OPUS area (approx. 36 hrs.)

This 6-day repeat cycle was closely maintained throughout the 36-day field program with some modification during the final week due to poor weather.

The CTD profiles along A, G and C lines were made to the bottom or 500 m (whichever was shallower) in all cases. The casts included discrete samples of oxygen, nutrients and phytoplankton at standard depths. The XBT and SST mapping was conducted along five lines oriented in a "spoke pattern" with hub centered between Points Arguello and Concepcion (Fig. 2). Three of these lines coincided with the A, G and C base lines of the CTD surveys and the other two (the AG and GC lines) bisected the regions between the three base lines. XBT profiles during mapping were measured to a depth of 200 m. Generally, a CTD measurement was made at the nearest inshore station on each line during the XBT surveys (see Table 1).

In summary, totals of 446 XBT profiles and 308 CTD profiles were measured in OPUS-83. CTD sections were made approximately every three days along G line (12 transects) and approximately every six days along A and C lines (6 and 5 transects, respectively). XBT and ship-based SST maps of the OPUS area were made approximately every three days. The A, AG, G and GC lines were sampled by XBTs nine times each and C line was sampled ten times by XBTs. Thus, temperature along the three base lines (A, G and C) was sampled to at least 200 m depth approximately every 1.5 days by either CTD or XBT. There were totals of ten complete XBT maps and five complete CTD maps of the OPUS survey region.

Table 1. Log of XBT and CTD profiles during the three legs of OPUS-83.

LEG 1

Dates (1983) & Times (GMT)		Transect Type, Name & Number	Station Names	Sequential Station Numbers	Map Type & Number	Comments
Start	Stop					
4/5 0625-	4/6 0235	CTD G-1	G1-G17	1-17		
4/6 0912			G1	18		
4/6 1138-	4/6 1246	XBT A-1	A1-A6	19-24	XBT Map 1	CTD @ A1
4/6 1330-	4/6 1517	XBT AG-1	AG1-AG7	25-31	XBT Map 1	CTD @ AG1
4/6 1555-	4/6 1800	XBT G-1	G1-G9	32-40	XBT Map 1	CTD @ G1
4/6 1845-	4/6 2102	XBT GC-1	GC1-GC8	41-48	XBT Map 1	CTD @ GC1
4/6 2206-	4/6 2405	XBT C-1	C1-C8	49-57	XBT Map 1	CTD @ C1 CTD & XBT @ C8
4/7 0205-	4/7 1135	CTD A-1	A1-A10	58-67	CTD Map 1	
4/7 1505-	4/8 1533	CTD G-2	G1-G18	68-85	CTD Map 1	
4/8 2055-	4/9 0510	CTD C-1	C1-C8	86-93	CTD Map 1	
4/9 1220-	4/9 1438	XBT C-2	C1-C8	94-101	XBT Map 2	CTD @ C1
4/9 1526-	4/9 1736	XBT GC-2	GC1-GC8	102-109	XBT Map 2	CTD @ GC1
4/9 1813-	4/9 2139	XBT G-2	G1-G11	110-125	XBT Map 2	CTD @ G1, 5 XBTs between G8, G9
4/9 2210-	4/10 0031	XBT AG-2	AG1-AG8	126-133	XBT Map 2	CTD @ AG1
4/10 0211-	4/10 0430	XBT A-2	A1-A8	134-141	XBT Map 2	CTD @ A1
4/11 0421-	4/11 2102	CTD G-3	G1-G12	142-153		
4/12 0127-	4/12 0312	XBT A-3	A1-A8	154-161	XBT Map 3	CTD @ A1
4/12 0349-	4/12 0616	XBT AG-3	AG1-AG8	162-169	XBT Map 3	CTD @ AG1 XBT @ AG4 failed
4/12 0710-	4/12 1004	XBT G-3	G1-G12	170-181	XBT Map 3	CTD @ G1
4/12 1042-	4/12 1251	XBT GC-3	GC1-GC10	182-191	XBT Map 3	CTD @ GC1
4/12 1432-	4/12 1653	XBT C-3	C1-C10	192-201	XBT Map 3	CTD @ C1
4/12 1852-	4/13 0224	CTD A-2	A1-A8	202-209	CTD Map 2	
4/13 0546-	4/13 1950	CTD G-4	G1-G12	210-221	CTD Map 2	
4/14 0010-	4/14 1024	CTD C-2	C1-C10	222-231	CTD Map 2	
4/14 2311-	4/15 0050	XBT A-4	A1-A8	232-239	XBT Map 4	CTD @ A1
4/15 0125-	4/15 0312	XBT AG-4	AG1-AG8	240-247	XBT Map 4	CTD @ AG1
4/15 0424-	4/15 0721	XBT G-4	G1-G12	248-259	XBT Map 4	CTD @ G1 XBT @ G2 failed 1 XBT between G9 & G10
4/15 0807-	4/15 1012	XBT GC-4	GC1-GC10	260-269	XBT Map 4	CTD @ GC1
4/15 1140-	4/15 1344	XBT C-4	C1-C10	270-279	XBT Map 4	CTD @ C1



Table 1. (continued)

LEG 2

Dates (1983) & Times (GMT)		Transect Type, Name & Number	Station Names	Sequential Station Numbers	Map Type & Number	Comments
Start	Stop					
4/18	1732-4/19	CTD G-5	G1-G12	280-291		
4/19	1420-4/19	XBT U-1	U1-U14	292-305	XBT Map 5	CTDs @ U1, U14 (same as C9, A8)
4/19	2003-4/20	XBT V-1	V1-V13	306-318	XBT Map 5	CTDs @ V1, V13 (same as C7, A7)
4/20	0224		C6	319	XBT Map 5	
4/20	0247-4/20	XBT W-1	W1-W11	320-330	XBT Map 5	CTDs @ W1, W11 (same as C5, A5)
4/20	0836		A4	331	XBT Map 5	
4/20	0856-4/20	XBT X-1	X1-X10	332-341	XBT Map 5	CTDs @ X1, X10 (same as C3, A3)
4/20	1224-4/20		C2, C1, GC1 G1, AG1, A1	342-347	XBT Map 5	all CTDs except C2
4/20	2344-4/20	CTD A-3	A1-A8	348-355	CTD Map 3	
4/21	0948-4/22	CTD G-6	G1-G12	356-367	CTD Map 3	
4/22	0659-4/22	CTD C-3	C1-C10	368-377	CTD Map 3	
4/22	2101-4/22	XBT C-5	C1-C10	378-387	XBT Map 6	CTD @ C1
4/23	0019-4/23	XBT GC-5	GC1-GC10	388-397	XBT Map 6	CTD @ GC1 XBT @ GC2 failed
4/23	0300-4/23	XBT G-5	G1-G12	398-409	XBT Map 6	CTD @ G1
4/23	0627-4/23	XBT AG-5	AG1-AG8	410-417	XBT Map 6	CTD @ AG1
4/23	1013-4/23	XBT A-5	A1-A8	418-425	XBT Map 6	CTD @ A1 XBT @ A5 failed
4/23	1513-4/23	CTD P-1	P1-P8	426-433	XBT Map 6	All CTDs
4/24	0219-4/24	CTD G-7	G1-G12	434-445		
4/25	0127-4/25	XBT C-6	C1-C10	446-455	XBT Map 7	CTD @ C1
4/25	0411-4/25	XBT GC-6	GC1-GC10	456-465	XBT Map 7	CTD @ GC1
4/25	0702-4/25	XBT G-6	G1-G12	466-477	XBT Map 7	CTD @ G1
4/25	1007-4/25	XBT AG-6	AG1-AG8	478-485	XBT Map 7	CTD @ AG1
4/25	1320-4/25	XBT A-6	A1-A8	486-493	XBT Map 7	CTD @ A1
4/25	2108-4/26	CTD A-4	A1-A8	494-501	CTD Map 4	
4/26	0823-4/26	CTD G-8	G1-G12	502-513	CTD Map 4	
4/27	0150-4/27	CTD C-4	C1-C10	514-523	CTD Map 4	
4/28	0721-4/28	XBT A-7	A1-A8	524-531	XBT Map 8	CTD @ C1
4/28	1022-4/28	XBT AG-7	AG1-AG8	532-539	XBT Map 8	CTD @ AG1
4/28	1227-4/28	XBT G-7	G1-G12	540-551	XBT Map 8	CTD @ G1
4/28	1549-4/28	XBT GC-7	GC1-GC10	552-561	XBT Map 8	CTD @ GC1 XBT @ GC3 failed
4/28	1817-4/28	XBT C-7	C1-C10	562-571	XBT Map 8	CTD @ C1

Table 1. (continued)

LEG 3

Dates (1983) & Times (GMT)		Transect Type, Name & Number	Station Names	Sequential Station Numbers	Map Type & Number	Comments
Start	Stop					
5/2 1510-	5/3 0501	CTD G-9	G1-G12	572-583		
5/3 0935-	5/3 1123	XBT A-8	A1-A8	584-591	XBT Map 9	CTD @ A1
5/3 1246-	5/3 1421	XBT AG-8	AG1-AG8	592-599	XBT Map 9	All XBTs
5/3 1439-	5/3 1714	XBT G-8	G1-G12	600-611	XBT Map 9	All XBTs XBT @ G3 failed
5/3 1758-	5/3 2004	XBT GC-8	GC1-GC10	612-620	XBT Map 9	All XBTs
5/3 2037-	5/3 2230	XBT C-8	C1-C10	621-630	XBT Map 9	All XBTs
5/4 0054-	5/4 0952	CTD A-5	A1-A8	631-638	CTD Map 5	
5/4 1931-	5/5 0816	CTD G-10	G1-G12	639-650	CTD Map 5	
5/5 1422-	5/5 2343	CTD C-5	C1-C10	651-660	CTD Map 5	
5/6 0426-	5/6 1240	CTD P-2	P1-P10	661-670		XBT @ P10 XBT @ P9 failed
5/6 1646-	5/6 1833	XBT A-9	A1-A8	671-678	XBT Map 10	All XBTs
5/6 1952-	5/6 2132	XBT AG-9	AG1-AG8	679-686	XBT Map 10	All XBTs
5/6 2151-	5/7 0039	XBT G-9	G1-G12	687-698	XBT Map 10	All XBTs
5/7 0130-	5/7 0355	XBT GC-9	GC1-GC10	699-708	XBT Map 10	All XBTs
5/7 0429-	5/7 0620	XBT C-9	C1-C10	709-718	XBT Map 10	All XBTs
5/7 1934-	5/8 0235	CTD A-6	A1-A8	719-726		
5/8 0607-	5/8 1425	CTD G-11	G1-G7	727-734		Station 730 failed Line discontinued due to heavy seas
5/9 1533-	5/9 1709	CTD G-12	G1-G3	735-737		Line discontinued due to heavy seas
5/9 1845-	5/9 2034	XBT C-10	C1-C10	738-747		All XBTs
5/10 0212-	5/10 0417	XBT H-1	H1-H10	748-758		XBT @ H10 failed
5/10 1412-	5/10 1646	CTD G-13	G1-G4	759-762		XBT @ G4 Line discontinued due to heavy seas

## SAMPLING METHODS

### CTD Casts

CTD casts were taken at each hydrographic station on the A, G, and C lines during the CTD transects and at the inner stations of the A, AG, G, GC, and C lines during XBT mapping runs. The depth of the cast extended to 500 m or the bottom, whichever was shallower. Sample casts taken to 700 m indicated that deep casts would extend the station time much longer than that deemed acceptable for a quasi-synoptic section and not lead to a significantly improved understanding of the circulation in the region around Point Arguello.

Continuous vertical temperature, conductivity and pressure data were obtained with a Neil Brown Mark V CTD. Data acquisition was controlled by an interactive HP-9825T micro-computer interfaced with a printer, plotter, video display terminal, and dual floppy disk drives. All data from both down and up casts were stored on disk. Temperature versus depth was plotted real-time and salinity versus depth was plotted immediately after the cast. The printer and video display terminal enabled the controller to monitor temperature, salinity, and depth values at any point in the cast. The Neil Brown CTD sampled approximately 5 points per second. During a typical cast the unit was lowered at 30 m/min in the upper 200 m and at 50 m/min between 200-500 m and was raised at 50 m/min during the upcast. Downcast data were processed as described in the next section to obtain vertical profiles of temperature and salinity. Upcast data were recorded for backup purposes.

Discrete samples of dissolved oxygen, nutrients, chlorophyll, and phytoplankton were taken at standard depths using rosette-mounted 1.7 liter Niskin bottles. Samples were collected during the upcast of the CTD. Bottle salinities and temperature were obtained for calibration purposes whenever possible. Dissolved oxygen and nutrient samples were processed by Dr. B. Jones at the University of Southern California.

## **XBT Casts**

During mapping, XBT probes (T-10 probes to 200 m) were launched at each CTD hydrographic station on the A, G and C lines and at 3.2 km increments on the AG and GC lines. These locations were reoccupied during all maps except Map 5. Map 5 was run with sections parallel to the coast but included as many of the standard stations as possible. The objective of this mapping run was to evaluate the effectiveness of a more uniform sampling grid. This sampling pattern required approximately a 50% increase in survey time over the A, AG, G, GC and C line pattern and was not used in any of the later surveys.

On Leg 1, 5 April-15 April, XBT data were read from the Sippican XBT chart recorder immediately after the cast and recorded on paper. Later they were merged with station header information on the same HP-9825T system used for the CTD. The operator recorded the depth at which each 0.5°C change occurred and enough data to duplicate any other features such as inversions or mixed layers. The data from the chart that were recorded on paper and the values entered in computer files were compared to assure that data transfer was accurate. On Legs 2 and 3, the XBT recorder was linked directly to the HP-9825T. Voltages (proportional to temperature) and time (proportional to depth) were recorded real-time. The algorithm provided in the Sippican manual was used to compute temperature and depth values. Each XBT profile was plotted after the cast; the operator then had the option of deleting extraneous values to create a new "cleaned up" file. Typically, the depths of each 0.1°C change and inflection points were retained. The shortened data file was plotted overlaying the initial data plot and visually checked for errors.

## **DATA CALIBRATION AND PROCESSING**

### **CTD Data**

The Neil Brown Mark V CTD was calibrated by Neil Brown Instrument Systems, Inc. before the first leg and immediately following the third leg. The post-cruise tests showed that all deviations from the initial calibration prior to the cruise were well within specifications. Bottle salinities were taken within well-mixed layers, mostly at depth, but also at surface and intermediate layers. The suitability of the layer for a calibration sample was judged by the CTD operator using the printout of data during the four minute reversing

thermometer soak and at stops for Niskin bottle sampling. Salinities and reversing thermometer temperatures were used to check for drift of temperature and salinity during the cruise. No drift or deviations were detected, consequently no corrections were applied to the Neil Brown CTD data.

The raw CTD downcast data were averaged over 1 m depth intervals. In most cases this averaging eliminated any "spikes" in the data which could occur when passing through strong vertical temperature gradients. These spikes are introduced in the salinity calculation because the response time of the CTD thermistor is slower than that of the conductivity probe. Any spikes which remained after the 1 m depth averaging were smoothed by manual editing of the data. In calculating the 1 m depth averages, the first step was a "depth-latch". This step sorted the downcast data to eliminate measurements made during upward excursions of the CTD related to ship motion. The data were then averaged, for example, between 0.5 and 1.5 m to produce the 1 m value.

### **XBT Data**

The XBT temperature and depth profiles were obtained using the digitizing procedure described in the previous section. Because of chart and probe response times, the temperatures shallower than 3 m are unreliable. Thus, 3 m is generally the first value recorded in the XBT data sets. The data were plotted (temperature versus depth) and compared with the chart profile and data recorded on paper. Any discrepancies were resolved and the data corrected. XBT temperatures at 3 m were compared with bucket temperatures throughout the cruise as a first-order calibration check. No major differences were noted.

## **DATA PRESENTATION**

The OPUS-83 hydrographic data are summarized in two volumes. Volume 1 contains a listing of all XBT and CTD station locations and times and plots of temperature, salinity and  $\sigma_t$  profiles. Volume 2 contains a listing of all XBT and CTD station locations (same as Volume 1), temperature, salinity and  $\sigma_t$  sections, and temperature, salinity and  $\sigma_t$  maps. All contouring in the vertical sections and maps was done objectively using an automatic contouring routine based on Laplacian interpolation. The contour plots included in these reports were not smoothed in any way. We give here a few brief comments on each of the data products.

## Volume 1

1. Listing of XBT and CTD stations. For each OPUS-83 CTD and XBT station, relevant information about the station, time, and location is given in tabular form. This information includes sequential cast number, OPUS line and station number, data type (XBT or CTD), sequential XBT or CTD transect number for the particular OPUS line (if applicable), sequential XBT or CTD map number (if applicable), date and time (GMT), latitude, longitude, water depth and maximum sample depth of the profile.

2. XBT temperature profiles. Profiles are presented for all of the 446 XBT casts during the OPUS-83 field program. The XBT profiles are grouped six stations per page. A table of the profiles included is given at the beginning of this section of the report. Included in the table for cross reference is the OPUS-83 sequential cast number of each profile, the corresponding OPUS line and station number, XBT transect number for the particular line (if applicable), and XBT map number (if applicable). This information, along with the date and time of the profile, is also included in the title for each plot. Because of the large number of XBT profiles, data listings are not included.

3. CTD temperature, salinity and  $\sigma_t$  profiles. Profiles are presented for all of the 308 CTD casts during the OPUS-83 field program. The CTD profiles are grouped two stations per page, with temperature, salinity and  $\sigma_t$  shown for each station. A table of the profiles included is given at the beginning of this section of the report. Included in the table for cross reference is the OPUS-83 sequential cast number of each profile, the corresponding line and station number, CTD transect number for the particular line (if applicable), and the CTD map number (if applicable). This information, along with the date and time of the profile, is also included in the title for each set of temperature, salinity and  $\sigma_t$  profiles. Because of the large number of CTD profiles, data listings are not included.

## Volume 2

1. Listing of XBT and CTD stations. This is the same listing included in Volume 1 of the OPUS-83 hydrographic data reports.

2. XBT temperature sections. Vertical sections of temperature measured by XBTs along each transect of the A, AG, G, GC, C, and H lines are presented for depths from the sea surface to 500 m. A table of the plots included is given at the beginning of this section

of the report. The date of the transect, consecutive XBT transect number (if applicable), and XBT map number (if applicable) are included in the title for each temperature plot. For easy reference, a map of the station locations in the transect is included in the lower left corner of each plot. In all sections, the contour interval is  $0.5^{\circ}\text{C}$ .

The plots are ordered by line number, with each transect of a given OPUS line shown sequentially. Note that the XBT profiles extended only to a depth of 200 m so the deeper half of each XBT section is blank. The full 500 m depth range was included to allow cross comparison with CTD sections which extended to the full 500 m depth.

3. CTD temperature, salinity and  $\sigma_t$  sections. Vertical sections of temperature, salinity, and  $\sigma_t$  measured by CTDs along each transect of the A, G, C, and P lines are presented for depths from the sea surface to 500 m. A table of the plots included is given at the beginning of this section of the report. The date of the transect, consecutive CTD transect number (if applicable), and CTD map number (if applicable) are included in the title for each temperature, salinity and  $\sigma_t$  plot. For easy reference, a map of the station locations in the transect is included in the lower left corner of each plot. The contour intervals used are  $0.5^{\circ}\text{C}$  for temperature,  $0.1\text{‰}$  for salinity and 0.2 for  $\sigma_t$ .

The plots are ordered by line number and then by consecutive transect number. Thus, temperature, salinity and  $\sigma_t$  for a particular transect of a particular OPUS line are shown sequentially. These are followed by temperature, salinity and  $\sigma_t$  sections for the next consecutive transect of the particular OPUS line.

4. XBT temperature maps. Maps of temperature are presented at depths of 10 m, 25 m, 50 m, 75 m, 100 m, 150 m, and 200 m for each of the ten OPUS-83 XBT maps. Plots at deeper depths are not possible since the XBTs sampled only to 200 m depth. A table of the plots included is given at the beginning of this section of the report. This is followed by a table of the XBT (and in some cases CTD) casts included in each map. The date of the map and consecutive XBT map number are included on each plot. For depths from 10 m to 100 m a contour interval of  $0.2^{\circ}\text{C}$  is used. In the 150 m and 200 m maps, where horizontal temperature gradients are weaker, intermediate contours are included as dashed lines.

The plots are ordered by map number with temperature maps at all depths for a given map number shown sequentially. Each set of temperature maps for a specific XBT map

number is preceded by a map showing the station locations (with sequential cast number labelled) overlaid on a bathymetry map of the OPUS region. This map is plotted on the same scale as the temperature maps and can thus be copied and overlaid on the temperature maps to provide a measure of the reliability of features seen in the maps (i.e., the distance separating the features from observations). It should be noted that the OPUS-83 five line "spoke-like" sampling pattern used in the XBT maps introduces larger errors in the offshore region (where stations are separated by larger distances alongshore) than in the nearshore region.

5. CTD temperature, salinity and  $\sigma_t$  maps. Maps of temperature, salinity, and  $\sigma_t$  are presented at the same depths as the XBT maps (10 m, 25 m, 50 m, 75 m, 100 m, 150 m, and 200 m) and at 250 m and 300 m for each of the five OPUS-83 CTD maps. A table of the plots included is given at the beginning of this section of the report. This is followed by a table of the CTD casts included in each map. The date of the map and consecutive CTD map number are included on each plot. For maps from 10 m to 100 m, the contour intervals used are 0.2°C for temperature, 0.06 ‰ for salinity, and 0.06 for  $\sigma_t$ . For deeper maps, where horizontal gradients are weaker, intermediate contours are shown as dashed lines.

The plots are ordered by map number and then by depth. Thus, temperature, salinity and  $\sigma_t$  maps for a particular depth and particular CTD map number are shown sequentially. These are followed by maps of temperature, salinity and  $\sigma_t$  for the next deeper depth of the particular CTD map number. Each set of temperature, salinity and  $\sigma_t$  maps for a specific CTD map number is preceded by a map showing the station locations (with sequential cast number labelled) overlaid on a bathymetry map of the OPUS region. This map is plotted on the same scale as the temperature, salinity, and  $\sigma_t$  maps and can thus be copied and overlaid on the CTD maps to provide a measure of the reliability of features seen in the maps (i.e., the distance separating the features from observations). It is important to emphasize that the OPUS-83 three line "spoke-like" sampling pattern used in the CTD maps introduces potentially large errors in the offshore regions. This radial sampling pattern is too coarse to pinpoint accurately the axis of upwelling structures emanating from the Point Arguello/Point Conception region. In fact, if a narrow jet-like feature was present between the A and G or between the G and C lines, it might not be apparent at all in the CTD maps.



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**LISTING OF XBT AND CTD STATIONS**

Seq No	Data Sta Type	XBT/CTD Transect	XBT/CTD Map	Yr	Mo	Dy	Time GMT	Lat N	Lon W	Bot z	Bot Obs	
1	G1	ctd	CTD G-1	83	4	5	630	34.530	120.590	48	44	
2	G2	ctd	CTD G-1	83	4	5	730	34.508	120.607	73	67	
3	G3	xbt	CTD G-1	83	4	5	948	34.487	120.648	100	100	
4	G4	ctd	CTD G-1	83	4	5	1048	34.447	120.650	238	232	
5	G5	ctd	CTD G-1	83	4	5	1154	34.423	120.675	406	402	
6	G6	ctd	CTD G-1	83	4	5	1318	34.395	120.697	497	492	
7	G7	ctd	CTD G-1	83	4	5	1454	34.367	120.717	585	578	
8	G8	ctd	CTD G-1	83	4	5	1712	34.333	120.733	632	618	
9	G9	ctd	CTD G-1	83	4	5	1848	34.290	120.752	667	654	
10	G10	ctd	CTD G-1	83	4	5	2012	34.292	120.788	709	497	
11	G11	ctd	CTD G-1	83	4	5	2112	34.255	120.807	750	494	
12	G12	ctd	CTD G-1	83	4	5	2206	34.228	120.827	786	504	
13	G13	ctd	CTD G-1	83	4	5	2254	34.198	120.817	805	499	
14	G14	ctd	CTD G-1	83	4	5	2354	34.173	120.868	864	502	
15	G15	ctd	CTD G-1	83	4	6	48	34.145	120.893	975	503	
16	G16	ctd	CTD G-1	83	4	6	148	34.117	120.915	850	503	
17	G17	ctd	CTD G-1	83	4	6	230	34.088	120.937	1180	501	
18	G1	ctd		83	4	6	912	34.532	120.593	37	35	
19	A6	xbt	XBT A-1	XBT 1	83	4	6	1136	34.580	120.877	389	200
20	A5	xbt	XBT A-1	XBT 1	83	4	6	1142	34.580	120.842	231	200
21	A4	xbt	XBT A-1	XBT 1	83	4	6	1200	34.580	120.800	143	143
22	A3	xbt	XBT A-1	XBT 1	83	4	6	1212	34.580	120.760	95	95
23	A2	xbt	XBT A-1	XBT 1	83	4	6	1224	34.580	120.722	73	73
24	A1	ctd	XBT A-1	XBT 1	83	4	6	1242	34.580	120.682	39	38
25	AG1	ctd	XBT AG-1	XBT 1	83	4	6	1330	34.543	120.643	35	34
26	AG2	xbt	XBT AG-1	XBT 1	83	4	6	1354	34.522	120.675	78	78
27	AG3	xbt	XBT AG-1	XBT 1	83	4	6	1406	34.498	120.705	109	109
28	AG4	xbt	XBT AG-1	XBT 1	83	4	6	1418	34.477	120.735	307	200
29	AG5	xbt	XBT AG-1	XBT 1	83	4	6	1442	34.455	120.763	485	200
30	AG6	xbt	XBT AG-1	XBT 1	83	4	6	1454	34.433	120.797	593	200
31	AG7	xbt	XBT AG-1	XBT 1	83	4	6	1512	34.398	120.843	797	200
32	G9	xbt	XBT G-1	XBT 1	83	4	6	1554	34.312	120.763	683	200
33	G8	xbt	XBT G-1	XBT 1	83	4	6	1612	34.338	120.747	625	200
34	G7	xbt	XBT G-1	XBT 1	83	4	6	1624	34.367	120.718	543	200
35	G6	xbt	XBT G-1	XBT 1	83	4	6	1636	34.395	120.697	451	200
36	G5	xbt	XBT G-1	XBT 1	83	4	6	1654	34.423	120.675	338	200
37	G4	xbt	XBT G-1	XBT 1	83	4	6	1706	34.452	120.652	119	119
38	G3	xbt	XBT G-1	XBT 1	83	4	6	1718	34.467	120.612	93	93
39	G2	xbt	XBT G-1	XBT 1	83	4	6	1730	34.507	120.608	68	68
40	G1	ctd	XBT G-1	XBT 1	83	4	6	1800	34.530	120.590	36	33
41	GC1	ctd	XBT GC-1	XBT 1	83	4	6	1842	34.495	120.518	36	32
42	GC2	xbt	XBT GC-1	XBT 1	83	4	6	1930	34.468	120.538	58	58
43	GC3	xbt	XBT GC-1	XBT 1	83	4	6	1942	34.438	120.558	95	95
44	GC4	xbt	XBT GC-1	XBT 1	83	4	6	2000	34.410	120.577	246	200
45	GC5	xbt	XBT GC-1	XBT 1	83	4	6	2012	34.380	120.598	320	200
46	GC6	xbt	XBT GC-1	XBT 1	83	4	6	2036	34.350	120.617	421	200
47	GC7	xbt	XBT GC-1	XBT 1	83	4	6	2048	34.318	120.638	475	200
48	GC8	xbt	XBT GC-1	XBT 1	83	4	6	2100	34.290	120.657	549	200
49	C8	xbt	XBT C-1	XBT 1	83	4	6	2206	34.208	120.470	158	158
50	C8	ctd	XBT C-1	XBT 1	83	4	6	2212	34.207	120.468	155	148
51	C7	xbt	XBT C-1	XBT 1	83	4	6	2248	34.242	120.470	457	200
52	C6	xbt	XBT C-1	XBT 1	83	4	6	2306	34.275	120.470	421	200
53	C5	xbt	XBT C-1	XBT 1	83	4	6	2318	34.308	120.470	388	200
54	C4	xbt	XBT C-1	XBT 1	83	4	6	2330	34.342	120.470	320	111
55	C3	xbt	XBT C-1	XBT 1	83	4	6	2342	34.373	120.470	182	182
56	C2	xbt	XBT C-1	XBT 1	83	4	6	2354	34.410	120.470	82	82
57	C1	ctd	XBT C-1	XBT 1	83	4	6	2400	34.440	120.470	27	22
58	A1	ctd	CTD A-1	CTD 1	83	4	7	200	34.580	120.683	33	31
59	A2	ctd	CTD A-1	CTD 1	83	4	7	242	34.580	120.725	68	66
60	A3	ctd	CTD A-1	CTD 1	83	4	7	400	34.580	120.772	97	95
61	A4	ctd	CTD A-1	CTD 1	83	4	7	406	34.580	120.803	137	131
62	A5	ctd	CTD A-1	CTD 1	83	4	7	506	34.578	120.843	370	256
63	A6	ctd	CTD A-1	CTD 1	83	4	7	630	34.575	120.882	389	372

64	A7 ctd	CTD A-1	CTD 1	83	4	8	736	34.578	120.920	557	474
65	A8 ctd	CTD A-1	CTD 1	83	4	7	906	34.583	120.953	567	503
66	A9 ctd	CTD A-1	CTD 1	83	4	7	1018	34.577	121.005	650	506
67	A10 ctd	CTD A-1	CTD 1	83	4	7	1130	34.580	121.033	732	502
68	G1 ctd	CTD G-2	CTD 1	83	4	7	1500	34.530	120.588	37	35
69	G2 ctd	CTD G-2	CTD 1	83	4	7	1542	34.507	120.608	62	58
70	G3 ctd	CTD G-2	CTD 1	83	4	7	1706	34.485	120.648	91	87
71	G4 ctd	CTD G-2	CTD 1	83	4	7	1830	34.452	120.653	159	149
72	G5 ctd	CTD G-2	CTD 1	83	4	7	1936	34.423	120.677	341	334
73	G6 ctd	CTD G-2	CTD 1	83	4	7	2036	34.395	120.697	470	457
74	G7 ctd	CTD G-2	CTD 1	83	4	7	2142	34.367	120.718	552	503
75	G8 ctd	CTD G-2	CTD 1	83	4	7	2306	34.333	120.735	640	501
76	G9 ctd	CTD G-2	CTD 1	83	4	8	24	34.312	120.763	689	503
77	G10 ctd	CTD G-2	CTD 1	83	4	8	218	34.280	120.785	721	502
78	G11 ctd	CTD G-2	CTD 1	83	4	8	542	34.238	120.803	750	501
79	G12 ctd	CTD G-2	CTD 1	83	4	8	706	34.227	120.825	786	502
80	G13 ctd	CTD G-2	CTD 1	83	4	8	848	34.198	120.852	801	502
81	G14 ctd	CTD G-2	CTD 1	83	4	8	1000	34.173	120.850	869	499
82	G15 ctd	CTD G-2	CTD 1	83	4	8	1118	34.143	120.895	914	495
83	G16 ctd	CTD G-2	CTD 1	83	4	8	1230	34.113	120.902	896	500
84	G17 ctd	CTD G-2	CTD 1	83	4	8	1354	34.087	120.938	1198	499
85	G18 ctd	CTD G-2	CTD 1	83	4	8	1530	34.060	120.938	1815	502
86	C1 ctd	CTD C-1	CTD 1	83	4	8	2054	34.440	120.470	30	25
87	C2 ctd	CTD C-1	CTD 1	83	4	8	2124	34.407	120.470	97	89
88	C3 ctd	CTD C-1	CTD 1	83	4	8	2224	34.373	120.470	212	187
89	C4 ctd	CTD C-1	CTD 1	83	4	8	2312	34.342	120.470	311	307
90	C5 ctd	CTD C-1	CTD 1	83	4	9	48	34.308	120.470	400	387
91	C6 ctd	CTD C-1	CTD 1	83	4	9	206	34.275	120.470	451	358
92	C7 ctd	CTD C-1	CTD 1	83	4	9	330	34.242	120.470	466	448
93	C8 ctd	CTD C-1	CTD 1	83	4	9	506	34.208	120.467	201	172
94	C8 xbt	XBT C-2	XBT 2	83	4	9	1218	34.208	120.470	157	157
95	C7 xbt	XBT C-2	XBT 2	83	4	9	1248	34.258	120.470	462	200
96	C6 xbt	XBT C-2	XBT 2	83	4	9	1300	34.275	120.470	433	200
97	C5 xbt	XBT C-2	XBT 2	83	4	9	1318	34.308	120.470	399	200
98	C4 xbt	XBT C-2	XBT 2	83	4	9	1336	34.342	120.470	320	200
99	C3 xbt	XBT C-2	XBT 2	83	4	9	1400	34.373	120.470	229	200
100	C2 xbt	XBT C-2	XBT 2	83	4	9	1406	34.410	120.470	156	156
101	C1 ctd	XBT C-2	XBT 2	83	4	9	1436	34.440	120.470	58	52
102	GC1 ctd	XBT GC-2	XBT 2	83	4	9	1524	34.495	120.520	38	36
103	GC2 xbt	XBT GC-2	XBT 2	83	4	9	1548	34.468	120.538	68	68
104	GC3 xbt	XBT GC-2	XBT 2	83	4	9	1606	34.438	120.558	102	102
105	GC4 xbt	XBT GC-2	XBT 2	83	4	9	1618	34.410	120.577	200	200
106	GC5 xbt	XBT GC-2	XBT 2	83	4	9	1636	34.380	120.598	329	200
107	GC6 xbt	XBT GC-2	XBT 2	83	4	9	1648	34.350	120.617	407	200
108	GC7 xbt	XBT GC-2	XBT 2	83	4	9	1706	34.318	120.638	470	200
109	GC8 xbt	XBT GC-2	XBT 2	83	4	9	1736	34.290	120.697	548	200
110	G9 xbt	XBT G-2	XBT 2	83	4	9	1812	34.320	120.755	713	200
111	G10 xbt	XBT G-2	XBT 2	83	4	9	1842	34.283	120.780	694	200
112	G11 xbt	XBT G-2	XBT 2	83	4	9	1900	34.257	120.807	749	200
113	G8A xbt		XBT 2	83	4	9	1918	34.270	120.787	713	200
114	G8B xbt		XBT 2	83	4	9	1918	34.272	120.783	713	200
115	G8C xbt		XBT 2	83	4	9	1924	34.273	120.775	713	200
116	G8D xbt		XBT 2	83	4	9	1942	34.302	120.753	713	200
117	G8E xbt		XBT 2	83	4	9	1948	34.318	120.742	713	200
118	G8 xbt	XBT G-2	XBT 2	83	4	9	2000	34.340	120.733	621	200
119	G7 xbt	XBT G-2	XBT 2	83	4	9	2018	34.370	120.742	548	200
120	G6 xbt	XBT G-2	XBT 2	83	4	9	2036	34.393	120.697	466	200
121	G5 xbt	XBT G-2	XBT 2	83	4	9	2048	34.422	120.675	329	200
122	G4 xbt	XBT G-2	XBT 2	83	4	9	2100	34.450	120.653	163	163
123	G3 xbt	XBT G-2	XBT 2	83	4	9	2112	34.487	120.647	97	97
124	G2 xbt	XBT G-2	XBT 2	83	4	9	2130	34.507	120.605	71	71
125	G1 ctd	XBT G-2	XBT 2	83	4	9	2136	34.530	120.590	36	31
126	AG1 ctd	XBT AG-2	XBT 2	83	4	9	2206	34.543	120.643	38	35
127	AG2 xbt	XBT AG-2	XBT 2	83	4	9	2248	34.522	120.675	88	88
128	AG3 xbt	XBT AG-2	XBT 2	83	4	9	2300	34.502	120.702	133	133
129	AG4 xbt	XBT AG-2	XBT 2	83	4	9	2318	34.478	120.733	366	200

130	AG5	xbt	XBT AG-2	XBT 2	83	4	9	2330	34.457	120.763	528	200
131	AG6	xbt	XBT AG-2	XBT 2	83	4	9	2336	34.432	120.793	593	200
132	AG7	xbt	XBT AG-2	XBT 2	83	4	9	2400	34.398	120.843	796	200
133	AG8	xbt	XBT AG-2	XBT 2	83	4	10	30	34.353	120.885	850	200
134	A8	xbt	XBT A-2	XBT 2	83	4	10	206	34.580	120.960	651	200
135	A7	xbt	XBT A-2	XBT 2	83	4	10	236	34.580	120.920	563	200
136	A6	xbt	XBT A-2	XBT 2	83	4	10	248	34.580	120.880	366	200
137	A5	xbt	XBT A-2	XBT 2	83	4	10	300	34.580	120.842	382	200
138	A4	xbt	XBT A-2	XBT 2	83	4	10	324	34.580	120.800	151	151
139	A3	xbt	XBT A-2	XBT 2	83	4	10	342	34.580	120.760	102	102
140	A2	xbt	XBT A-2	XBT 2	83	4	10	400	34.580	120.722	72	72
141	A1	ctd	XBT A-2	XBT 2	83	4	10	430	34.580	120.682	36	32
142	G1	ctd	CTD G-3		83	4	11	418	34.530	120.595	36	31
143	G2	ctd	CTD G-3		83	4	11	500	34.507	120.608	73	63
144	G3	ctd	CTD G-3		83	4	11	548	34.487	120.635	91	82
145	G4	ctd	CTD G-3		83	4	11	848	34.467	120.648	192	191
146	G5	ctd	CTD G-3		83	4	11	948	34.422	120.672	406	405
147	G6	ctd	CTD G-3		83	4	11	1112	34.383	120.697	494	479
148	G7	ctd	CTD G-3		83	4	11	1242	34.367	120.717	549	503
149	G8	ctd	CTD G-3		83	4	11	1412	34.338	120.740	664	501
150	G9	ctd	CTD G-3		83	4	11	1536	34.312	120.763	691	498
151	G10	ctd	CTD G-3		83	4	11	1812	34.285	120.788	722	474
152	G11	ctd	CTD G-3		83	4	11	1942	34.253	120.807	749	500
153	G12	ctd	CTD G-3		83	4	11	2100	34.228	120.827	777	497
154	A8	xbt	XBT A-3	XBT 3	83	4	12	124	34.580	120.960	609	200
155	A7	xbt	XBT A-3	XBT 3	83	4	12	148	34.580	120.920	548	200
156	A6	xbt	XBT A-3	XBT 3	83	4	12	200	34.580	120.880	362	200
157	A5	xbt	XBT A-3	XBT 3	83	4	12	212	34.580	120.842	377	200
158	A4	xbt	XBT A-3	XBT 3	83	4	12	230	34.580	120.800	142	142
159	A3	xbt	XBT A-3	XBT 3	83	4	12	242	34.580	120.760	93	25
160	A2	xbt	XBT A-3	XBT 3	83	4	12	254	34.580	120.722	81	81
161	A1	ctd	XBT A-3	XBT 3	83	4	12	312	34.580	120.682	38	37
162	AG1	ctd	XBT AG-3	XBT 3	83	4	12	348	34.543	120.643	46	41
163	AG2	xbt	XBT AG-3	XBT 3	83	4	12	430	34.517	120.675	92	92
164	AG3	xbt	XBT AG-3	XBT 3	83	4	12	442	34.498	120.697	135	135
166	AG5	xbt	XBT AG-3	XBT 3	83	4	12	506	34.455	120.762	475	200
167	AG6	xbt	XBT AG-3	XBT 3	83	4	12	524	34.432	120.795	585	200
168	AG7	xbt	XBT AG-3	XBT 3	83	4	12	542	34.395	120.845	771	200
169	AG8	xbt	XBT AG-3	XBT 3	83	4	12	612	34.362	120.890	897	200
170	G12	xbt	XBT G-3	XBT 3	83	4	12	706	34.225	120.827	795	200
171	G11	xbt	XBT G-3	XBT 3	83	4	12	730	34.253	120.807	769	200
172	G10	xbt	XBT G-3	XBT 3	83	4	12	742	34.282	120.785	694	200
173	G9	xbt	XBT G-3	XBT 3	83	4	12	800	34.312	120.753	658	200
174	G8	xbt	XBT G-3	XBT 3	83	4	12	812	34.338	120.738	603	200
175	G7	xbt	XBT G-3	XBT 3	83	4	12	824	34.367	120.722	548	200
176	G6	xbt	XBT G-3	XBT 3	83	4	12	836	34.395	120.698	475	200
177	G5	xbt	XBT G-3	XBT 3	83	4	12	854	34.423	120.675	366	200
178	G4	xbt	XBT G-3	XBT 3	83	4	12	906	34.452	120.652	225	200
179	G3	xbt	XBT G-3	XBT 3	83	4	12	924	34.493	120.647	93	93
180	G2	xbt	XBT G-3	XBT 3	83	4	12	942	34.507	120.608	72	72
181	G1	ctd	XBT G-3	XBT 3	83	4	12	1000	34.530	120.590	36	33
182	GC1	ctd	XBT GC-3	XBT 3	83	4	12	1042	34.495	120.520	36	31
183	GC2	xbt	XBT GC-3	XBT 3	83	4	12	1106	34.467	120.538	67	67
184	GC3	xbt	XBT GC-3	XBT 3	83	4	12	1118	34.438	120.558	113	113
185	GC4	xbt	XBT GC-3	XBT 3	83	4	12	1130	34.407	120.582	298	200
186	GC5	xbt	XBT GC-3	XBT 3	83	4	12	1142	34.383	120.600	375	200
187	GC6	xbt	XBT GC-3	XBT 3	83	4	12	1154	34.350	120.617	485	200
188	GC7	xbt	XBT GC-3	XBT 3	83	4	12	1206	34.318	120.638	472	200
189	GC8	xbt	XBT GC-3	XBT 3	83	4	12	1218	34.290	120.657	530	200
190	GC9	xbt	XBT GC-3	XBT 3	83	4	12	1236	34.262	120.675	593	200
191	GC0	xbt	XBT GC-3	XBT 3	83	4	12	1248	34.233	120.693	638	200
192	C10	xbt	XBT C-3	XBT 3	83	4	12	1430	34.142	120.470	85	85
193	C9	xbt	XBT C-3	XBT 3	83	4	12	1454	34.175	120.470	130	130
194	C8	xbt	XBT C-3	XBT 3	83	4	12	1506	34.208	120.470	208	200
195	C7	xbt	XBT C-3	XBT 3	83	4	12	1524	34.242	120.470	459	78
196	C6	xbt	XBT C-3	XBT 3	83	4	12	1542	34.275	120.470	424	200

197	C5	xbt	XBT C-3	XBT 3	83	4	12	1554	34.308	120.470	387	200
198	C4	xbt	XBT C-3	XBT 3	83	4	12	1612	34.342	120.470	296	200
199	C3	xbt	XBT C-3	XBT 3	83	4	12	1624	34.373	120.470	210	200
200	C2	xbt	XBT C-3	XBT 3	83	4	12	1636	34.410	120.470	95	95
201	C1	ctd	XBT C-3	XBT 3	83	4	12	1648	34.440	120.470	69	57
202	A1	ctd	CTD A-2	CTD 2	83	4	12	1848	34.580	120.682	47	42
203	A2	ctd	CTD A-2	CTD 2	83	4	12	1930	34.572	120.722	76	71
204	A3	ctd	CTD A-2	CTD 2	83	4	12	2018	34.580	120.760	105	99
205	A4	ctd	CTD A-2	CTD 2	83	4	12	2106	34.577	120.797	175	174
206	A5	ctd	CTD A-2	CTD 2	83	4	12	2218	34.580	120.850	370	303
207	A6	ctd	CTD A-2	CTD 2	83	4	12	2330	34.580	120.880	411	398
208	A7	ctd	CTD A-2	CTD 2	83	4	13	54	34.582	120.917	494	470
209	A8	ctd	CTD A-2	CTD 2	83	4	13	224	34.580	120.960	572	502
210	G1	ctd	CTD G-4	CTD 2	83	4	13	542	34.525	120.585	51	44
211	G2	ctd	CTD G-4	CTD 2	83	4	13	618	34.508	120.608	73	67
212	G3	ctd	CTD G-4	CTD 2	83	4	13	706	34.487	120.633	91	81
213	G4	ctd	CTD G-4	CTD 2	83	4	13	812	34.450	120.655	274	266
214	G5	ctd	CTD G-4	CTD 2	83	4	13	912	34.420	120.677	393	391
215	G6	ctd	CTD G-4	CTD 2	83	4	13	1036	34.395	120.697	516	501
216	G7	ctd	CTD G-4	CTD 2	83	4	13	1154	34.367	120.718	612	501
217	G8	ctd	CTD G-4	CTD 2	83	4	13	1330	34.338	120.740	657	485
218	G9	ctd	CTD G-4	CTD 2	83	4	13	1500	34.312	120.763	691	501
219	G10	ctd	CTD G-4	CTD 2	83	4	13	1630	34.282	120.788	727	491
220	G11	ctd	CTD G-4	CTD 2	83	4	13	1818	34.255	120.807	749	504
221	G12	ctd	CTD G-4	CTD 2	83	4	13	1948	34.225	120.827	786	501
222	C1	ctd	CTD C-2	CTD 2	83	4	14	6	34.440	120.470	59	51
223	C2	ctd	CTD C-2	CTD 2	83	4	14	42	34.410	120.470	87	82
224	C3	ctd	CTD C-2	CTD 2	83	4	14	136	34.373	120.470	245	230
225	C4	ctd	CTD C-2	CTD 2	83	4	14	230	34.342	120.470	305	287
226	C5	ctd	CTD C-2	CTD 2	83	4	14	342	34.308	120.470	408	371
227	C6	ctd	CTD C-2	CTD 2	83	4	14	506	34.275	120.473	457	403
228	C7	ctd	CTD C-2	CTD 2	83	4	14	730	34.242	120.470	466	403
229	C8	ctd	CTD C-2	CTD 2	83	4	14	806	34.208	120.470	150	133
230	C9	ctd	CTD C-2	CTD 2	83	4	14	912	34.175	120.470	115	107
231	C10	ctd	CTD C-2	CTD 2	83	4	14	1024	34.142	120.470	88	80
232	A8	xbt	XBT A-4	XBT 4	83	4	14	2306	34.580	120.960	540	200
233	A7	xbt	XBT A-4	XBT 4	83	4	14	2324	34.582	120.917	603	200
234	A6	xbt	XBT A-4	XBT 4	83	4	14	2330	34.580	120.880	402	200
235	A5	xbt	XBT A-4	XBT 4	83	4	14	2342	34.580	120.842	347	200
236	A4	xbt	XBT A-4	XBT 4	83	4	15	6	34.567	120.800	163	163
237	A3	xbt	XBT A-4	XBT 4	83	4	15	18	34.570	120.760	108	108
238	A2	xbt	XBT A-4	XBT 4	83	4	15	36	34.580	120.725	73	73
239	A1	ctd	XBT A-4	XBT 4	83	4	15	48	34.580	120.682	40	36
240	AG1	ctd	XBT AG-4	XBT 4	83	4	15	124	34.543	120.643	35	33
241	AG2	xbt	XBT AG-4	XBT 4	83	4	15	154	34.522	120.675	100	100
242	AG3	xbt	XBT AG-4	XBT 4	83	4	15	206	34.498	120.705	192	192
243	AG4	xbt	XBT AG-4	XBT 4	83	4	15	218	34.477	120.735	390	200
244	AG5	xbt	XBT AG-4	XBT 4	83	4	15	230	34.455	120.763	501	200
245	AG6	xbt	XBT AG-4	XBT 4	83	4	15	248	34.433	120.797	593	200
246	AG7	xbt	XBT AG-4	XBT 4	83	4	15	300	34.412	120.827	684	200
247	AG8	xbt	XBT AG-4	XBT 4	83	4	15	312	34.390	120.857	713	191
248	G12	xbt	XBT G-4	XBT 4	83	4	15	424	34.225	120.825	786	200
249	G11	xbt	XBT G-4	XBT 4	83	4	15	436	34.260	120.805	749	200
250	G10	xbt	XBT G-4	XBT 4	83	4	15	454	34.285	120.785	694	200
251	G0B	xbt	XBT G-4	XBT 4	83	4	15	500	34.298	120.772	694	200
252	G9	xbt	XBT G-4	XBT 4	83	4	15	506	34.312	120.762	694	200
253	G8	xbt	XBT G-4	XBT 4	83	4	15	524	34.337	120.738	621	200
254	G7	xbt	XBT G-4	XBT 4	83	4	15	536	34.363	120.718	552	200
255	G6	xbt	XBT G-4	XBT 4	83	4	15	554	34.392	120.697	466	200
256	G5	xbt	XBT G-4	XBT 4	83	4	15	612	34.422	120.672	343	200
257	G4	xbt	XBT G-4	XBT 4	83	4	15	630	34.442	120.652	206	200
258	G3	xbt	XBT G-4	XBT 4	83	4	15	648	34.473	120.643	100	100
259	G1	ctd	XBT G-4	XBT 4	83	4	15	718	34.528	120.575	43	39
260	GC1	ctd	XBT GC-4	XBT 4	83	4	15	806	34.495	120.520	36	31
261	GC2	xbt	XBT GC-4	XBT 4	83	4	15	830	34.465	120.538	72	72
262	GC3	xbt	XBT GC-4	XBT 4	83	4	15	842	34.438	120.560	116	116

263	GC4 xbt	XBT GC-4	XBT 4	83	4	15	854	34.412	120.577	268	200
264	GC5 xbt	XBT GC-4	XBT 4	83	4	15	906	34.382	120.598	357	200
265	GC6 xbt	XBT GC-4	XBT 4	83	4	15	918	34.352	120.617	457	200
266	GC7 xbt	XBT GC-4	XBT 4	83	4	15	936	34.317	120.640	517	200
267	GC8 xbt	XBT GC-4	XBT 4	83	4	15	948	34.290	120.657	558	200
268	GC9 xbt	XBT GC-4	XBT 4	83	4	15	1000	34.260	120.677	609	200
269	GC0 xbt	XBT GC-4	XBT 4	83	4	15	1012	34.230	120.695	642	200
270	C10 xbt	XBT C-4	XBT 4	83	4	15	1136	34.142	120.468	92	92
271	C9 xbt	XBT C-4	XBT 4	83	4	15	1154	34.178	120.460	122	122
272	C8 xbt	XBT C-4	XBT 4	83	4	15	1206	34.210	120.475	168	168
273	C7 xbt	XBT C-4	XBT 4	83	4	15	1224	34.238	120.475	446	200
274	C6 xbt	XBT C-4	XBT 4	83	4	15	1236	34.272	120.475	428	200
275	C5 xbt	XBT C-4	XBT 4	83	4	15	1254	34.308	120.475	379	200
276	C4 xbt	XBT C-4	XBT 4	83	4	15	1300	34.342	120.475	290	200
277	C3 xbt	XBT C-4	XBT 4	83	4	15	1312	34.375	120.470	229	200
278	C2 xbt	XBT C-4	XBT 4	83	4	15	1330	34.410	120.470	95	95
279	C1 ctd	XBT C-4	XBT 4	83	4	15	1342	34.440	120.470	42	39
280	G1 ctd	CTD G-5		83	4	18	1730	34.530	120.590	40	37
281	G2 ctd	CTD G-5		83	4	18	1806	34.500	120.603	65	59
282	G3 ctd	CTD G-5		83	4	18	1948	34.482	120.653	93	89
283	G4 ctd	CTD G-5		83	4	18	2054	34.462	120.658	276	275
284	G5 ctd	CTD G-5		83	4	18	2206	34.420	120.677	388	387
285	G6 ctd	CTD G-5		83	4	18	2336	34.402	120.698	485	457
286	G7 ctd	CTD G-5		83	4	19	100	34.365	120.718	550	480
287	G8 ctd	CTD G-5		83	4	19	330	34.338	120.740	633	504
288	G9 ctd	CTD G-5		83	4	19	454	34.310	120.763	691	485
289	G10 ctd	CTD G-5		83	4	19	642	34.282	120.783	722	480
290	G11 ctd	CTD G-5		83	4	19	806	34.257	120.807	713	502
291	G12 ctd	CTD G-5		83	4	19	1006	34.228	120.827	786	503
292	U1 ctd	XBT U-1	XBT 5	83	4	19	1418	34.175	120.470	121	107
293	U2 xbt	XBT U-1	XBT 5	83	4	19	1518	34.200	120.540	178	178
294	U3 xbt	XBT U-1	XBT 5	83	4	19	1548	34.228	120.603	563	200
295	U4 xbt	XBT U-1	XBT 5	83	4	19	1612	34.258	120.678	612	200
296	U5 xbt	XBT U-1	XBT 5	83	4	19	1636	34.258	120.735	667	200
297	U6 xbt	XBT U-1	XBT 5	83	4	19	1654	34.285	120.787	716	200
298	U7 xbt	XBT U-1	XBT 5	83	4	19	1712	34.323	120.807	731	200
299	U8 xbt	XBT U-1	XBT 5	83	4	19	1724	34.365	120.833	731	200
300	U9 xbt	XBT U-1	XBT 5	83	4	19	1742	34.395	120.852	768	200
301	U10 xbt	XBT U-1	XBT 5	83	4	19	1754	34.423	120.868	709	200
302	U11 xbt	XBT U-1	XBT 5	83	4	19	1806	34.452	120.887	683	200
303	U12 xbt	XBT U-1	XBT 5	83	4	19	1830	34.485	120.912	676	200
304	U13 xbt	XBT U-1	XBT 5	83	4	19	1848	34.515	120.933	680	200
305	U14 ctd	XBT U-1	XBT 5	83	4	19	1924	34.578	120.957	585	203
306	V13 ctd	XBT V-1	XBT 5	83	4	19	2000	34.580	120.920	508	203
307	V12 xbt	XBT V-1	XBT 5	83	4	19	2048	34.548	120.892	549	200
308	V11 xbt	XBT V-1	XBT 5	83	4	19	2112	34.503	120.865	567	200
309	V10 xbt	XBT V-1	XBT 5	83	4	19	2136	34.463	120.842	582	200
310	V9 xbt	XBT V-1	XBT 5	83	4	19	2300	34.425	120.807	613	200
311	V8 xbt	XBT V-1	XBT 5	83	4	19	2318	34.395	120.783	631	200
312	V7 xbt	XBT V-1	XBT 5	83	4	19	2336	34.368	120.763	622	200
313	V6 xbt	XBT V-1	XBT 5	83	4	19	2354	34.335	120.728	626	200
314	V5 xbt	XBT V-1	XBT 5	83	4	20	18	34.327	120.688	543	200
315	V4 xbt	XBT V-1	XBT 5	83	4	20	42	34.307	120.647	492	200
316	V3 xbt	XBT V-1	XBT 5	83	4	20	106	34.287	120.592	471	200
317	V2 xbt	XBT V-1	XBT 5	83	4	20	130	34.262	120.522	512	200
318	V1 ctd	XBT V-1	XBT 5	83	4	20	154	34.242	120.468	459	196
319	C6 xbt		XBT 5	83	4	20	224	34.277	120.468	424	200
320	W1 ctd	XBT W-1	XBT 5	83	4	20	242	34.312	120.468	375	204
321	W2 xbt	XBT W-1	XBT 5	83	4	20	318	34.328	120.517	373	200
322	W3 xbt	XBT W-1	XBT 5	83	4	20	342	34.345	120.562	373	200
323	W4 xbt	XBT W-1	XBT 5	83	4	20	400	34.363	120.608	375	200
324	W5 xbt	XBT W-1	XBT 5	83	4	20	418	34.378	120.652	402	200
325	W6 xbt	XBT W-1	XBT 5	83	4	20	442	34.388	120.685	453	200
326	W7 xbt	XBT W-1	XBT 5	83	4	20	542	34.432	120.723	457	200
327	W8 xbt	XBT W-1	XBT 5	83	4	20	600	34.465	120.752	424	200
328	W9 xbt	XBT W-1	XBT 5	83	4	20	618	34.507	120.782	320	200

329	W10	xbt	XBT W-1	XBT 5	83	4	20	636	34.542	120.810	329	200
330	W11	ctd	XBT W-1	XBT 5	83	4	20	754	34.567	120.845	329	203
331	A4	xbt		XBT 5	83	4	20	836	34.582	120.797	139	139
332	X10	ctd	XBT X-1	XBT 5	83	4	20	854	34.580	120.762	95	89
333	X9	xbt	XBT X-1	XBT 5	83	4	20	936	34.527	120.722	103	103
334	X8	xbt	XBT X-1	XBT 5	83	4	20	948	34.495	120.703	119	119
335	X7	xbt	XBT X-1	XBT 5	83	4	20	1006	34.463	120.685	220	200
336	X6	xbt	XBT X-1	XBT 5	83	4	20	1024	34.428	120.658	283	200
337	X5	xbt	XBT X-1	XBT 5	83	4	20	1036	34.425	120.617	182	182
338	X4	xbt	XBT X-1	XBT 5	83	4	20	1054	34.410	120.575	274	200
339	X3	xbt	XBT X-1	XBT 5	83	4	20	1106	34.390	120.542	200	200
340	X2	xbt	XBT X-1	XBT 5	83	4	20	1124	34.373	120.510	232	200
341	X1	ctd	XBT X-1	XBT 5	83	4	20	1148	34.368	120.472	216	198
342	C2	xbt		XBT 5	83	4	20	1224	34.403	120.483	94	94
343	C1	ctd		XBT 5	83	4	20	1242	34.432	120.477	48	45
344	GC1	ctd		XBT 5	83	4	20	1318	34.488	120.528	38	36
345	G1	ctd		XBT 5	83	4	20	1412	34.527	120.602	31	30
346	AG1	ctd		XBT 5	83	4	20	1530	34.537	120.653	37	35
347	A1	ctd		XBT 5	83	4	20	1600	34.573	120.693	46	43
348	A1	ctd	CTD A-3	CTD 3	83	4	20	2342	34.583	120.688	38	34
349	A2	ctd	CTD A-3	CTD 3	83	4	21	18	34.580	120.725	68	63
350	A3	ctd	CTD A-3	CTD 3	83	4	21	106	34.585	120.765	95	90
351	A4	ctd	CTD A-3	CTD 3	83	4	21	148	34.580	120.805	163	151
352	A5	ctd	CTD A-3	CTD 3	83	4	21	242	34.580	120.842	371	345
353	A6	ctd	CTD A-3	CTD 3	83	4	21	400	34.580	120.887	386	373
354	A7	ctd	CTD A-3	CTD 3	83	4	21	512	34.578	120.923	512	473
355	A8	ctd	CTD A-3	CTD 3	83	4	21	624	34.577	120.962	594	499
356	G1	ctd	CTD G-6	CTD 3	83	4	21	948	34.525	120.595	31	27
357	G2	ctd	CTD G-6	CTD 3	83	4	21	1018	34.497	120.617	68	65
358	G3	ctd	CTD G-6	CTD 3	83	4	21	1212	34.482	120.663	95	86
359	G4	ctd	CTD G-6	CTD 3	83	4	21	1312	34.447	120.657	220	208
360	G5	ctd	CTD G-6	CTD 3	83	4	21	1406	34.422	120.675	355	341
361	G6	ctd	CTD G-6	CTD 3	83	4	21	1506	34.398	120.713	477	452
362	G7	ctd	CTD G-6	CTD 3	83	4	21	1636	34.365	120.722	554	490
363	G8	ctd	CTD G-6	CTD 3	83	4	21	1848	34.337	120.743	640	498
364	G9	ctd	CTD G-6	CTD 3	83	4	21	2018	34.313	120.768	695	502
365	G10	ctd	CTD G-6	CTD 3	83	4	21	2200	34.283	120.788	717	504
366	G11	ctd	CTD G-6	CTD 3	83	4	21	2324	34.257	120.808	750	502
367	G12	ctd	CTD G-6	CTD 3	83	4	22	36	34.227	120.830	785	755
368	C1	ctd	CTD C-3	CTD 3	83	4	22	654	34.425	120.477	64	52
369	C2	ctd	CTD C-3	CTD 3	83	4	22	730	34.400	120.482	97	89
370	C3	ctd	CTD C-3	CTD 3	83	4	22	824	34.362	120.473	232	222
371	C4	ctd	CTD C-3	CTD 3	83	4	22	942	34.327	120.465	333	315
372	C5	ctd	CTD C-3	CTD 3	83	4	22	1042	34.298	120.487	406	389
373	C6	ctd	CTD C-3	CTD 3	83	4	22	1154	34.263	120.487	448	442
374	C7	ctd	CTD C-3	CTD 3	83	4	22	1306	34.240	120.468	459	431
375	C8	ctd	CTD C-3	CTD 3	83	4	22	1418	34.208	120.470	196	190
376	C9	ctd	CTD C-3	CTD 3	83	4	22	1530	34.175	120.470	123	115
377	C10	ctd	CTD C-3	CTD 3	83	4	22	1618	34.140	120.472	91	75
378	C10	xbt	XBT C-5	XBT 6	83	4	22	2100	34.132	120.478	93	93
379	C9	xbt	XBT C-5	XBT 6	83	4	22	2112	34.167	120.475	121	121
380	C8	xbt	XBT C-5	XBT 6	83	4	22	2124	34.200	120.473	165	165
381	C7	xbt	XBT C-5	XBT 6	83	4	22	2142	34.243	120.473	457	200
382	C6	xbt	XBT C-5	XBT 6	83	4	22	2154	34.268	120.475	433	200
383	C5	xbt	XBT C-5	XBT 6	83	4	22	2206	34.302	120.477	397	200
384	C4	xbt	XBT C-5	XBT 6	83	4	22	2224	34.335	120.478	316	200
385	C3	xbt	XBT C-5	XBT 6	83	4	22	2236	34.365	120.480	229	200
386	C2	xbt	XBT C-5	XBT 6	83	4	22	2248	34.403	120.480	97	97
387	C1	ctd	XBT C-5	XBT 6	83	4	22	2306	34.433	120.477	33	31
388	GC1	ctd	XBT GC-5	XBT 6	83	4	23	18	34.487	120.532	37	35
390	GC3	xbt	XBT GC-5	XBT 6	83	4	23	48	34.440	120.563	101	101
391	GC4	xbt	XBT GC-5	XBT 6	83	4	23	100	34.408	120.588	209	164
392	GC5	xbt	XBT GC-5	XBT 6	83	4	23	112	34.380	120.608	342	200
393	GC6	xbt	XBT GC-5	XBT 6	83	4	23	124	34.345	120.633	435	200
394	GC7	xbt	XBT GC-5	XBT 6	83	4	23	136	34.317	120.645	481	200
395	GC8	xbt	XBT GC-5	XBT 6	83	4	23	148	34.287	120.658	538	200



396	GC9	xbt	XBT GC-5	XBT 6	83	4	23	200	34.260	120.677	598	200
397	GC0	xbt	XBT GC-5	XBT 6	83	4	23	212	34.232	120.693	642	200
398	G12	xbt	XBT G-5	XBT 6	83	4	23	300	34.228	120.830	785	200
399	G11	xbt	XBT G-5	XBT 6	83	4	23	312	34.265	120.798	748	200
400	G10	xbt	XBT G-5	XBT 6	83	4	23	324	34.290	120.782	731	200
401	G9	xbt	XBT G-5	XBT 6	83	4	23	348	34.317	120.768	694	200
402	G8	xbt	XBT G-5	XBT 6	83	4	23	406	34.342	120.742	625	200
403	G7	xbt	XBT G-5	XBT 6	83	4	23	412	34.365	120.717	548	200
404	G6	xbt	XBT G-5	XBT 6	83	4	23	430	34.393	120.692	457	200
405	G5	xbt	XBT G-5	XBT 6	83	4	23	442	34.423	120.672	329	200
406	G4	xbt	XBT G-5	XBT 6	83	4	23	454	34.452	120.655	162	162
407	G3	xbt	XBT G-5	XBT 6	83	4	23	512	34.483	120.643	95	95
408	G2	xbt	XBT G-5	XBT 6	83	4	23	524	34.497	120.620	75	75
409	G1	ctd	XBT G-5	XBT 6	83	4	23	548	34.522	120.588	37	33
410	AG1	ctd	XBT AG-5	XBT 6	83	4	23	624	34.530	120.638	37	32
411	AG2	xbt	XBT AG-5	XBT 6	83	4	23	724	34.517	120.692	88	88
412	AG3	xbt	XBT AG-5	XBT 6	83	4	23	742	34.492	120.737	196	196
413	AG4	xbt	XBT AG-5	XBT 6	83	4	23	754	34.462	120.753	350	200
414	AG5	xbt	XBT AG-5	XBT 6	83	4	23	806	34.443	120.770	549	200
415	AG6	xbt	XBT AG-5	XBT 6	83	4	23	818	34.425	120.800	594	200
416	AG7	xbt	XBT AG-5	XBT 6	83	4	23	830	34.405	120.832	686	200
417	AG8	xbt	XBT AG-5	XBT 6	83	4	23	842	34.380	120.865	759	200
418	A8	xbt	XBT A-5	XBT 6	83	4	23	1012	34.580	120.968	585	200
419	A7	xbt	XBT A-5	XBT 6	83	4	23	1024	34.583	120.928	589	200
420	A6	xbt	XBT A-5	XBT 6	83	4	23	1036	34.587	120.883	369	200
422	A4	xbt	XBT A-5	XBT 6	83	4	23	1100	34.585	120.807	157	157
423	A3	xbt	XBT A-5	XBT 6	83	4	23	1118	34.577	120.758	100	100
424	A2	xbt	XBT A-5	XBT 6	83	4	23	1130	34.577	120.725	74	74
425	A1	ctd	XBT A-5	XBT 6	83	4	23	1142	34.577	120.690	40	37
426	P8	ctd	CTD P-1		83	4	23	1512	34.745	120.950	331	199
427	P7	ctd	CTD P-1		83	4	23	1536	34.750	120.908	232	201
428	P6	ctd	CTD P-1		83	4	23	1612	34.752	120.865	166	150
429	P5	ctd	CTD P-1		83	4	23	1636	34.757	120.827	113	102
430	P4	ctd	CTD P-1		83	4	23	1706	34.760	120.787	91	85
431	P3	ctd	CTD P-1		83	4	23	1724	34.755	120.750	75	70
432	P2	ctd	CTD P-1		83	4	23	1742	34.742	120.712	57	50
433	P1	ctd	CTD P-1		83	4	23	1800	34.743	120.675	40	35
434	G1	ctd	CTD G-7		83	4	24	218	34.527	120.602	33	32
435	G2	ctd	CTD G-7		83	4	24	254	34.510	120.610	66	59
436	G3	ctd	CTD G-7		83	4	24	424	34.492	120.642	91	86
437	G4	ctd	CTD G-7		83	4	24	536	34.422	120.660	293	281
438	G5	ctd	CTD G-7		83	4	24	636	34.405	120.687	421	396
439	G6	ctd	CTD G-7		83	4	24	812	34.383	120.700	490	484
440	G7	ctd	CTD G-7		83	4	24	930	34.358	120.732	576	501
441	G8	ctd	CTD G-7		83	4	24	1200	34.330	120.747	664	503
442	G9	ctd	CTD G-7		83	4	24	1324	34.307	120.773	700	502
443	G10	ctd	CTD G-7		83	4	24	1554	34.288	120.787	711	500
444	G11	ctd	CTD G-7		83	4	24	1712	34.258	120.810	750	504
445	G12	ctd	CTD G-7		83	4	24	1824	34.225	120.830	786	499
446	C10	xbt	XBT C-6	XBT 7	83	4	25	124	34.142	120.472	94	94
447	C9	xbt	XBT C-6	XBT 7	83	4	25	136	34.175	120.468	127	127
448	C8	xbt	XBT C-6	XBT 7	83	4	25	154	34.212	120.468	234	200
449	C7	xbt	XBT C-6	XBT 7	83	4	25	206	34.242	120.468	457	200
450	C6	xbt	XBT C-6	XBT 7	83	4	25	218	34.278	120.467	419	200
451	C5	xbt	XBT C-6	XBT 7	83	4	25	230	34.313	120.467	382	200
452	C4	xbt	XBT C-6	XBT 7	83	4	25	248	34.345	120.470	282	200
453	C3	xbt	XBT C-6	XBT 7	83	4	25	300	34.375	120.472	178	178
454	C2	xbt	XBT C-6	XBT 7	83	4	25	312	34.403	120.475	91	91
455	C1	ctd	XBT C-6	XBT 7	83	4	25	330	34.435	120.487	40	37
456	GC1	ctd	XBT GC-6	XBT 7	83	4	25	406	34.487	120.530	42	37
457	GC2	xbt	XBT GC-6	XBT 7	83	4	25	424	34.465	120.540	68	68
458	GC3	xbt	XBT GC-6	XBT 7	83	4	25	436	34.438	120.557	98	98
459	GC4	xbt	XBT GC-6	XBT 7	83	4	25	454	34.408	120.583	219	200
460	GC5	xbt	XBT GC-6	XBT 7	83	4	25	506	34.382	120.603	352	200
461	GC6	xbt	XBT GC-6	XBT 7	83	4	25	524	34.347	120.630	424	200
462	GC7	xbt	XBT GC-6	XBT 7	83	4	25	536	34.307	120.642	486	200

463	GC8	xbt	XBT	GC-6	XBT	7	83	4	25	554	34.282	120.658	544	201
464	GC9	xbt	XBT	GC-6	XBT	7	83	4	25	600	34.258	120.678	588	200
465	GC0	xbt	XBT	GC-6	XBT	7	83	4	25	612	34.232	120.697	643	200
466	G12	xbt	XBT	G-6	XBT	7	83	4	25	700	34.230	120.832	786	200
467	G11	xbt	XBT	G-6	XBT	7	83	4	25	712	34.257	120.807	758	200
468	G10	xbt	XBT	G-6	XBT	7	83	4	25	724	34.285	120.783	694	200
469	G9	xbt	XBT	G-6	XBT	7	83	4	25	736	34.315	120.760	694	200
470	G6	xbt	XBT	G-6	XBT	7	83	4	25	754	34.343	120.733	612	200
471	G7	xbt	XBT	G-6	XBT	7	83	4	25	800	34.365	120.713	548	75
472	G6	xbt	XBT	G-6	XBT	7	83	4	25	818	34.392	120.697	475	200
473	G5	xbt	XBT	G-6	XBT	7	83	4	25	824	34.417	120.680	384	200
474	G4	xbt	XBT	G-6	XBT	7	83	4	25	836	34.443	120.663	237	200
475	G3	xbt	XBT	G-6	XBT	7	83	4	25	854	34.480	120.655	100	100
476	G2	xbt	XBT	G-6	XBT	7	83	4	25	912	34.498	120.610	68	68
477	G1	ctd	XBT	G-6	XBT	7	83	4	25	924	34.523	120.593	35	32
478	AG1	ctd	XBT	AG-6	XBT	7	83	4	25	1006	34.528	120.625	40	36
479	AG2	xbt	XBT	AG-6	XBT	7	83	4	25	1036	34.508	120.678	89	89
480	AG3	xbt	XBT	AG-6	XBT	7	83	4	25	1048	34.488	120.710	137	137
481	AG4	xbt	XBT	AG-6	XBT	7	83	4	25	1100	34.470	120.742	373	200
482	AG5	xbt	XBT	AG-6	XBT	7	83	4	25	1112	34.452	120.772	512	200
483	AG6	xbt	XBT	AG-6	XBT	7	83	4	25	1124	34.430	120.807	603	200
484	AG7	xbt	XBT	AG-6	XBT	7	83	4	25	1142	34.405	120.835	750	200
485	AG8	xbt	XBT	AG-6	XBT	7	83	4	25	1148	34.387	120.862	850	200
486	A8	xbt	XBT	A-6	XBT	7	83	4	25	1318	34.585	120.965	582	200
487	A7	xbt	XBT	A-6	XBT	7	83	4	25	1336	34.588	120.913	485	200
488	A6	xbt	XBT	A-6	XBT	7	83	4	25	1354	34.580	120.875	360	200
489	A5	xbt	XBT	A-6	XBT	7	83	4	25	1406	34.580	120.835	369	200
490	A4	xbt	XBT	A-6	XBT	7	83	4	25	1418	34.580	120.793	137	137
491	A3	xbt	XBT	A-6	XBT	7	83	4	25	1448	34.588	120.760	91	91
492	A2	xbt	XBT	A-6	XBT	7	83	4	25	1506	34.578	120.710	67	67
493	A1	ctd	XBT	A-6	XBT	7	83	4	25	1518	34.582	120.687	38	37
494	A1	ctd	CTD	A-4	CTD	4	83	4	25	2106	34.572	120.692	42	37
495	A2	ctd	CTD	A-4	CTD	4	83	4	25	2136	34.572	120.732	77	73
496	A3	ctd	CTD	A-4	CTD	4	83	4	25	2242	34.567	120.767	165	157
497	A4	ctd	CTD	A-4	CTD	4	83	4	25	2336	34.572	120.808	177	170
498	A5	ctd	CTD	A-4	CTD	4	83	4	26	24	34.582	120.845	320	273
499	A6	ctd	CTD	A-4	CTD	4	83	4	26	148	34.585	120.880	366	351
500	A7	ctd	CTD	A-4	CTD	4	83	4	26	242	34.580	120.925	499	459
501	A8	ctd	CTD	A-4	CTD	4	83	4	26	354	34.573	120.970	622	478
502	G1	ctd	CTD	G-8	CTD	4	83	4	26	818	34.525	120.593	33	30
503	G2	ctd	CTD	G-8	CTD	4	83	4	26	848	34.495	120.615	73	64
504	G3	ctd	CTD	G-8	CTD	4	83	4	26	1012	34.482	120.657	95	89
505	G4	ctd	CTD	G-8	CTD	4	83	4	26	1106	34.442	120.667	252	231
506	G5	ctd	CTD	G-8	CTD	4	83	4	26	1200	34.423	120.675	351	341
507	G6	ctd	CTD	G-8	CTD	4	83	4	26	1312	34.385	120.705	499	480
508	G7	ctd	CTD	G-8	CTD	4	83	4	26	1442	34.367	120.718	554	500
509	G8	ctd	CTD	G-8	CTD	4	83	4	26	1642	34.333	120.743	658	500
510	G9	ctd	CTD	G-8	CTD	4	83	4	26	1748	34.310	120.765	689	501
511	G10	ctd	CTD	G-8	CTD	4	83	4	26	1900	34.273	120.790	732	497
512	G11	ctd	CTD	G-8	CTD	4	83	4	26	2018	34.248	120.810	768	503
513	G12	ctd	CTD	G-8	CTD	4	83	4	26	2142	34.215	120.835	801	504
514	C1	ctd	CTD	C-4	CTD	4	83	4	27	148	34.433	120.482	40	38
515	C2	ctd	CTD	C-4	CTD	4	83	4	27	218	34.402	120.483	95	93
516	C3	ctd	CTD	C-4	CTD	4	83	4	27	342	34.365	120.483	234	223
517	C4	ctd	CTD	C-4	CTD	4	83	4	27	442	34.338	120.475	307	302
518	C5	ctd	CTD	C-4	CTD	4	83	4	27	542	34.307	120.468	388	383
519	C6	ctd	CTD	C-4	CTD	4	83	4	27	700	34.272	120.470	430	403
520	C7	ctd	CTD	C-4	CTD	4	83	4	27	918	34.233	120.473	463	458
521	C8	ctd	CTD	C-4	CTD	4	83	4	27	1042	34.208	120.473	144	135
522	C9	ctd	CTD	C-4	CTD	4	83	4	27	1136	34.163	120.478	113	108
523	C10	ctd	CTD	C-4	CTD	4	83	4	27	1312	34.138	120.470	84	81
524	A1	ctd	XBT	A-7	XBT	8	83	4	28	718	34.573	120.695	44	40
525	A2	xbt	XBT	A-7	XBT	8	83	4	28	742	34.578	120.733	78	78
526	A3	xbt	XBT	A-7	XBT	8	83	4	28	748	34.582	120.765	102	102
527	A4	xbt	XBT	A-7	XBT	8	83	4	28	806	34.585	120.815	195	195
528	A5	xbt	XBT	A-7	XBT	8	83	4	28	818	34.585	120.858	289	200

529	A6 xbt	XBT A-7	XBT 8	83	4	28	830	34.585	120.898	426	200
530	A7 xbt	XBT A-7	XBT 8	83	4	28	836	34.585	120.927	485	200
531	A8 xbt	XBT A-7	XBT 8	83	4	28	848	34.583	120.963	576	200
532	AG8 xbt	XBT AG-7	XBT 8	83	4	28	1018	34.383	120.858	741	200
533	AG7 xbt	XBT AG-7	XBT 8	83	4	28	1036	34.407	120.825	667	200
534	AG6 xbt	XBT AG-7	XBT 8	83	4	28	1042	34.425	120.797	640	200
535	AG5 xbt	XBT AG-7	XBT 8	83	4	28	1100	34.448	120.765	500	200
536	AG4 xbt	XBT AG-7	XBT 8	83	4	28	1112	34.472	120.735	370	200
537	AG3 xbt	XBT AG-7	XBT 8	83	4	28	1124	34.493	120.708	113	113
538	AG2 xbt	XBT AG-7	XBT 8	83	4	28	1136	34.518	120.677	81	81
539	AG1 ctd	XBT AG-7	XBT 8	83	4	28	1154	34.538	120.650	29	28
540	G1 ctd	XBT G-7	XBT 8	83	4	28	1224	34.523	120.598	35	34
541	G2 xbt	XBT G-7	XBT 8	83	4	28	1248	34.503	120.618	66	66
542	G3 xbt	XBT G-7	XBT 8	83	4	28	1306	34.475	120.660	98	98
543	G4 xbt	XBT G-7	XBT 8	83	4	28	1318	34.445	120.657	211	200
544	G5 xbt	XBT G-7	XBT 8	83	4	28	1330	34.418	120.683	349	200
545	G6 xbt	XBT G-7	XBT 8	83	4	28	1342	34.388	120.707	479	200
546	G7 xbt	XBT G-7	XBT 8	83	4	28	1354	34.363	120.723	558	200
547	G8 xbt	XBT G-7	XBT 8	83	4	28	1412	34.333	120.745	644	200
548	G9 xbt	XBT G-7	XBT 8	83	4	28	1424	34.307	120.768	691	200
549	G10 xbt	XBT G-7	XBT 8	83	4	28	1436	34.278	120.790	713	200
550	G11 xbt	XBT G-7	XBT 8	83	4	28	1448	34.250	120.812	757	200
551	G12 xbt	XBT G-7	XBT 8	83	4	28	1506	34.223	120.830	783	200
552	GC0 xbt	XBT GC-7	XBT 8	83	4	28	1548	34.230	120.685	633	201
553	GC9 xbt	XBT GC-7	XBT 8	83	4	28	1600	34.265	120.667	585	208
554	GC8 xbt	XBT GC-7	XBT 8	83	4	28	1612	34.297	120.653	515	200
555	GC7 xbt	XBT GC-7	XBT 8	83	4	28	1624	34.330	120.635	460	200
556	GC6 xbt	XBT GC-7	XBT 8	83	4	28	1636	34.358	120.615	424	200
557	GC5 xbt	XBT GC-7	XBT 8	83	4	28	1648	34.383	120.598	316	200
558	GC4 xbt	XBT GC-7	XBT 8	83	4	28	1700	34.408	120.583	219	200
560	GC2 xbt	XBT GC-7	XBT 8	83	4	28	1724	34.462	120.545	68	68
561	GC1 ctd	XBT GC-7	XBT 8	83	4	28	1742	34.488	120.525	37	36
562	C1 ctd	XBT C-7	XBT 8	83	4	28	1812	34.442	120.508	53	49
563	C2 xbt	XBT C-7	XBT 8	83	4	28	1836	34.412	120.513	101	101
564	C3 xbt	XBT C-7	XBT 8	83	4	28	1848	34.377	120.500	215	200
565	C4 xbt	XBT C-7	XBT 8	83	4	28	1900	34.347	120.485	292	200
566	C5 xbt	XBT C-7	XBT 8	83	4	28	1924	34.300	120.487	402	201
567	C6 xbt	XBT C-7	XBT 8	83	4	28	1936	34.270	120.483	448	200
568	C7 xbt	XBT C-7	XBT 8	83	4	28	1954	34.220	120.487	292	200
569	C8 xbt	XBT C-7	XBT 8	83	4	28	2006	34.195	120.488	143	143
570	C9 xbt	XBT C-7	XBT 8	83	4	28	2018	34.165	120.490	121	121
571	C10 xbt	XBT C-7	XBT 8	83	4	28	2030	34.128	120.478	89	89
572	G1 ctd	CTD G-9		83	5	2	1506	34.530	120.597	35	31
573	G2 ctd	CTD G-9		83	5	2	1554	34.500	120.630	73	67
574	G3 ctd	CTD G-9		83	5	2	1736	34.477	120.662	97	82
575	G4 ctd	CTD G-9		83	5	2	1930	34.437	120.665	262	253
576	G5 ctd	CTD G-9		83	5	2	2042	34.408	120.690	421	399
577	G6 ctd	CTD G-9		83	5	2	2136	34.387	120.693	475	453
578	G7 ctd	CTD G-9		83	5	2	2306	34.358	120.723	578	502
579	G8 ctd	CTD G-9		83	5	3	18	34.340	120.747	640	500
580	G9 ctd	CTD G-9		83	5	3	130	34.310	120.765	691	498
581	G10 ctd	CTD G-9		83	5	3	236	34.278	120.790	732	471
582	G11 ctd	CTD G-9		83	5	3	348	34.255	120.808	768	494
583	G12 ctd	CTD G-9		83	5	3	500	34.225	120.830	786	494
584	A1 ctd	XBT A-8	XBT 9	83	5	3	930	34.573	120.685	37	32
585	A2 xbt	XBT A-8	XBT 9	83	5	3	1000	34.570	120.735	80	80
586	A3 xbt	XBT A-8	XBT 9	83	5	3	1012	34.570	120.772	113	113
587	A4 xbt	XBT A-8	XBT 9	83	5	3	1024	34.572	120.810	183	183
588	A5 xbt	XBT A-8	XBT 9	83	5	3	1042	34.573	120.848	396	200
589	A6 xbt	XBT A-8	XBT 9	83	5	3	1054	34.577	120.888	393	196
590	A7 xbt	XBT A-8	XBT 9	83	5	3	1106	34.580	120.930	593	200
591	A8 xbt	XBT A-8	XBT 9	83	5	3	1118	34.580	120.968	596	200
592	AG8 xbt	XBT AG-8	XBT 9	83	5	3	1242	34.387	120.855	731	200
593	AG7 xbt	XBT AG-8	XBT 9	83	5	3	1300	34.408	120.827	658	200
594	AG6 xbt	XBT AG-8	XBT 9	83	5	3	1312	34.438	120.790	567	200
595	AG5 xbt	XBT AG-8	XBT 9	83	5	3	1324	34.455	120.763	446	200

596	AG4	xbt	XBT AG-8	XBT 9	83	5	3	1342	34.478	120.732	256	200
597	AG3	xbt	XBT AG-8	XBT 9	83	5	3	1354	34.498	120.703	107	107
598	AG2	xbt	XBT AG-8	XBT 9	83	5	3	1406	34.513	120.680	80	41
599	AG1	xbt	XBT AG-8	XBT 9	83	5	3	1418	34.533	120.647	43	43
600	G1	xbt	XBT G-8	XBT 9	83	5	3	1436	34.520	120.592	37	37
601	G2	xbt	XBT G-8	XBT 9	83	5	3	1448	34.503	120.617	67	62
603	G4	xbt	XBT G-8	XBT 9	83	5	3	1524	34.447	120.652	175	175
604	G5	xbt	XBT G-8	XBT 9	83	5	3	1536	34.422	120.677	351	200
605	G6	xbt	XBT G-8	XBT 9	83	5	3	1548	34.390	120.700	468	200
606	G7	xbt	XBT G-8	XBT 9	83	5	3	1606	34.358	120.727	548	200
607	G8	xbt	XBT G-8	XBT 9	83	5	3	1618	34.335	120.745	628	200
608	G9	xbt	XBT G-8	XBT 9	83	5	3	1630	34.308	120.768	694	201
609	G10	xbt	XBT G-8	XBT 9	83	5	3	1648	34.277	120.793	731	200
610	G11	xbt	XBT G-8	XBT 9	83	5	3	1700	34.253	120.810	764	200
611	G12	xbt	XBT G-8	XBT 9	83	5	3	1712	34.225	120.825	786	200
612	GC0	xbt	XBT GC-8	XBT 9	83	5	3	1754	34.223	120.695	649	200
613	GC9	xbt	XBT GC-8	XBT 9	83	5	3	1812	34.255	120.673	609	200
614	GC8	xbt	XBT GC-8	XBT 9	83	5	3	1824	34.283	120.657	530	200
615	GC7	xbt	XBT GC-8	XBT 9	83	5	3	1842	34.318	120.630	466	200
616	GC6	xbt	XBT GC-8	XBT 9	83	5	3	1854	34.347	120.605	420	200
617	GC4	xbt	XBT GC-8	XBT 9	83	5	3	1924	34.405	120.578	285	200
618	GC3	xbt	XBT GC-8	XBT 9	83	5	3	1936	34.428	120.562	101	101
619	GC2	xbt	XBT GC-8	XBT 9	83	5	3	1948	34.463	120.537	58	58
620	GC1	xbt	XBT GC-8	XBT 9	83	5	3	2000	34.485	120.522	37	37
621	C1	xbt	XBT C-8	XBT 9	83	5	3	2036	34.430	120.473	46	46
622	C2	xbt	XBT C-8	XBT 9	83	5	3	2042	34.403	120.475	91	91
623	C3	xbt	XBT C-8	XBT 9	83	5	3	2100	34.367	120.475	219	200
624	C4	xbt	XBT C-8	XBT 9	83	5	3	2112	34.332	120.477	329	203
625	C5	xbt	XBT C-8	XBT 9	83	5	3	2130	34.293	120.477	407	200
626	C6	xbt	XBT C-8	XBT 9	83	5	3	2136	34.265	120.475	444	200
627	C7	xbt	XBT C-8	XBT 9	83	5	3	2154	34.227	120.475	466	200
628	C8	xbt	XBT C-8	XBT 9	83	5	3	2206	34.195	120.477	135	135
629	C9	xbt	XBT C-8	XBT 9	83	5	3	2218	34.160	120.477	117	117
630	C10	xbt	XBT C-8	XBT 9	83	5	3	2230	34.133	120.478	91	91
631	A1	ctd	CTD A-5	CTD 5	83	5	4	54	34.575	120.682	40	37
632	A2	ctd	CTD A-5	CTD 5	83	5	4	418	34.577	120.722	69	60
633	A3	ctd	CTD A-5	CTD 5	83	5	4	454	34.578	120.763	97	93
634	A4	ctd	CTD A-5	CTD 5	83	5	4	530	34.580	120.803	165	153
635	A5	ctd	CTD A-5	CTD 5	83	5	4	624	34.580	120.845	338	278
636	A6	ctd	CTD A-5	CTD 5	83	5	4	724	34.578	120.887	384	371
637	A7	ctd	CTD A-5	CTD 5	83	5	4	836	34.580	120.925	507	470
638	A8	ctd	CTD A-5	CTD 5	83	5	4	948	34.580	120.963	594	500
639	G1	ctd	CTD G-10	CTD 5	83	5	4	1930	34.520	120.603	42	39
640	G2	ctd	CTD G-10	CTD 5	83	5	4	2024	34.493	120.623	79	72
641	G3	ctd	CTD G-10	CTD 5	83	5	4	2154	34.485	120.652	91	85
642	G4	ctd	CTD G-10	CTD 5	83	5	4	2318	34.438	120.660	238	200
643	G5	ctd	CTD G-10	CTD 5	83	5	5	12	34.420	120.682	371	353
644	G6	ctd	CTD G-10	CTD 5	83	5	5	112	34.393	120.700	475	453
645	G7	ctd	CTD G-10	CTD 5	83	5	5	218	34.365	120.720	549	497
646	G8	ctd	CTD G-10	CTD 5	83	5	5	336	34.337	120.742	567	503
647	G9	ctd	CTD G-10	CTD 5	83	5	5	442	34.307	120.768	695	500
648	G10	ctd	CTD G-10	CTD 5	83	5	5	600	34.273	120.793	731	497
649	G11	ctd	CTD G-10	CTD 5	83	5	5	718	34.258	120.808	750	485
650	G12	ctd	CTD G-10	CTD 5	83	5	5	812	34.222	120.832	792	500
651	C1	ctd	CTD C-5	CTD 5	83	5	5	1418	34.430	120.477	49	41
652	C2	ctd	CTD C-5	CTD 5	83	5	5	1454	34.403	120.480	91	81
653	C3	ctd	CTD C-5	CTD 5	83	5	5	1554	34.363	120.482	234	201
654	C4	ctd	CTD C-5	CTD 5	83	5	5	1636	34.337	120.483	320	293
655	C5	ctd	CTD C-5	CTD 5	83	5	5	1742	34.302	120.480	393	378
656	C6	ctd	CTD C-5	CTD 5	83	5	5	1848	34.267	120.478	439	402
657	C7	ctd	CTD C-5	CTD 5	83	5	5	1954	34.237	120.467	463	428
658	C8	ctd	CTD C-5	CTD 5	83	5	5	2148	34.195	120.472	134	121
659	C9	ctd	CTD C-5	CTD 5	83	5	5	2254	34.165	120.472	119	102
660	C10	ctd	CTD C-5	CTD 5	83	5	5	2342	34.137	120.472	86	72
661	P1	ctd	CTD P-2		83	5	6	424	34.745	120.675	38	32
662	P2	ctd	CTD P-2		83	5	6	506	34.740	120.712	55	46

663	P3 ctd	CTD P-2		83	5	6	554	34.743	120.753	73	66
664	P4 ctd	CTD P-2		83	5	6	648	34.745	120.792	91	82
665	P5 ctd	CTD P-2		83	5	6	730	34.747	120.835	119	100
666	P6 ctd	CTD P-2		83	5	6	830	34.738	120.875	177	150
667	P7 ctd	CTD P-2		83	5	6	924	34.743	120.918	249	237
668	P8 ctd	CTD P-2		83	5	6	1024	34.748	120.948	302	281
670	P10 xbt	CTD P-2		83	5	6	1236	34.750	121.035	460	200
671	A1 xbt	XBT A-9	XBT 10	83	5	6	1642	34.572	120.698	53	53
672	A2 xbt	XBT A-9	XBT 10	83	5	6	1654	34.570	120.728	79	79
673	A3 xbt	XBT A-9	XBT 10	83	5	6	1712	34.570	120.772	148	148
674	A4 xbt	XBT A-9	XBT 10	83	5	6	1730	34.572	120.813	200	200
675	A5 xbt	XBT A-9	XBT 10	83	5	6	1742	34.577	120.852	310	200
676	A6 xbt	XBT A-9	XBT 10	83	5	6	1754	34.578	120.888	426	200
677	A7 xbt	XBT A-9	XBT 10	83	5	6	1812	34.578	120.930	508	200
678	A8 xbt	XBT A-9	XBT 10	83	5	6	1830	34.572	120.967	628	200
679	AG8 xbt	XBT AG-9	XBT 10	83	5	6	1948	34.390	120.857	731	200
680	AG7 xbt	XBT AG-9	XBT 10	83	5	6	2006	34.410	120.823	649	200
681	AG6 xbt	XBT AG-9	XBT 10	83	5	6	2018	34.432	120.800	589	202
682	AG5 xbt	XBT AG-9	XBT 10	83	5	6	2030	34.448	120.768	570	200
683	AG4 xbt	XBT AG-9	XBT 10	83	5	6	2048	34.470	120.738	338	200
684	AG3 xbt	XBT AG-9	XBT 10	83	5	6	2100	34.492	120.708	118	113
685	AG2 xbt	XBT AG-9	XBT 10	83	5	6	2118	34.515	120.678	87	87
686	AG1 xbt	XBT AG-9	XBT 10	83	5	6	2130	34.533	120.655	28	28
687	G1 xbt	XBT G-9	XBT 10	83	5	6	2148	34.525	120.600	33	33
688	G2 xbt	XBT G-9	XBT 10	83	5	6	2206	34.498	120.610	68	68
689	G3 xbt	XBT G-9	XBT 10	83	5	6	2218	34.487	120.637	92	92
690	G4 xbt	XBT G-9	XBT 10	83	5	6	2242	34.435	120.658	299	200
691	G5 xbt	XBT G-9	XBT 10	83	5	6	2254	34.415	120.680	389	200
692	G6 xbt	XBT G-9	XBT 10	83	5	6	2312	34.387	120.705	497	200
693	G7 xbt	XBT G-9	XBT 10	83	5	6	2324	34.360	120.723	580	200
694	G8 xbt	XBT G-9	XBT 10	83	5	6	2336	34.335	120.740	640	200
695	G9 xbt	XBT G-9	XBT 10	83	5	6	2354	34.312	120.762	691	200
696	G10 xbt	XBT G-9	XBT 10	83	5	7	6	34.283	120.785	713	200
697	G11 xbt	XBT G-9	XBT 10	83	5	7	24	34.257	120.807	740	200
698	G12 xbt	XBT G-9	XBT 10	83	5	7	36	34.228	120.825	786	200
699	GC0 xbt	XBT GC-9	XBT 10	83	5	7	130	34.233	120.682	636	200
700	GC9 xbt	XBT GC-9	XBT 10	83	5	7	148	34.262	120.673	585	200
701	GC8 xbt	XBT GC-9	XBT 10	83	5	7	200	34.292	120.653	704	200
702	GC7 xbt	XBT GC-9	XBT 10	83	5	7	218	34.322	120.635	462	200
703	GC6 xbt	XBT GC-9	XBT 10	83	5	7	230	34.352	120.615	402	200
704	GC5 xbt	XBT GC-9	XBT 10	83	5	7	248	34.382	120.597	301	200
705	GC4 xbt	XBT GC-9	XBT 10	83	5	7	312	34.428	120.562	111	111
706	GC3 xbt	XBT GC-9	XBT 10	83	5	7	318	34.445	120.555	88	88
707	GC2 xbt	XBT GC-9	XBT 10	83	5	7	342	34.470	120.538	64	64
708	GC1 xbt	XBT GC-9	XBT 10	83	5	7	354	34.488	120.527	39	39
709	C1 xbt	XBT C-9	XBT 10	83	5	7	424	34.420	120.477	78	78
710	C2 xbt	XBT C-9	XBT 10	83	5	7	436	34.398	120.477	99	99
711	C3 xbt	XBT C-9	XBT 10	83	5	7	454	34.363	120.472	224	200
712	C4 xbt	XBT C-9	XBT 10	83	5	7	506	34.328	120.470	325	200
713	C5 xbt	XBT C-9	XBT 10	83	5	7	518	34.297	120.473	411	200
714	C6 xbt	XBT C-9	XBT 10	83	5	7	530	34.267	120.477	439	200
715	C7 xbt	XBT C-9	XBT 10	83	5	7	542	34.235	120.480	466	200
716	C8 xbt	XBT C-9	XBT 10	83	5	7	554	34.203	120.483	140	140
717	C9 xbt	XBT C-9	XBT 10	83	5	7	606	34.172	120.485	125	125
718	C10 xbt	XBT C-9	XBT 10	83	5	7	618	34.142	120.482	88	88
719	A1 ctd	CTD A-6		83	5	7	1930	34.575	120.697	46	44
720	A2 ctd	CTD A-6		83	5	7	2018	34.580	120.747	73	63
721	A3 ctd	CTD A-6		83	5	7	2118	34.583	120.770	119	99
722	A4 ctd	CTD A-6		83	5	7	2212	34.580	120.808	163	149
723	A5 ctd	CTD A-6		83	5	7	2318	34.583	120.853	274	253
724	A6 ctd	CTD A-6		83	5	8	18	34.582	120.880	366	341
725	A7 ctd	CTD A-6		83	5	8	118	34.582	120.923	512	447
726	A8 ctd	CTD A-6		83	5	8	230	34.580	120.962	585	485
727	G1 ctd	CTD G-11		83	5	8	606	34.513	120.597	42	37
728	G2 ctd	CTD G-11		83	5	8	636	34.495	120.607	71	63
729	G3 ctd	CTD G-11		83	5	8	906	34.488	120.665	91	84

731	G4	ctd	CTD	G-11	83	5	8	1024	34.437	120.680	262	233
732	G5	ctd	CTD	G-11	83	5	8	1242	34.413	120.683	397	368
733	G6	ctd	CTD	G-11	83	5	8	1248	34.393	120.697	475	451
734	G7	ctd	CTD	G-11	83	5	8	1424	34.372	120.730	567	501
735	G1	ctd	CTD	G-12	83	5	9	1530	34.522	120.598	38	36
736	G2	ctd	CTD	G-12	83	5	9	1618	34.497	120.618	73	66
737	G3	ctd	CTD	G-12	83	5	9	1706	34.472	120.658	108	95
738	C1	xbt	XBT	C-10	83	5	9	1842	34.425	120.478	74	74
739	C2	xbt	XBT	C-10	83	5	9	1854	34.392	120.480	113	108
740	C3	xbt	XBT	C-10	83	5	9	1906	34.370	120.483	223	200
741	C4	xbt	XBT	C-10	83	5	9	1918	34.335	120.483	329	197
742	C5	xbt	XBT	C-10	83	5	9	1930	34.300	120.482	402	200
743	C6	xbt	XBT	C-10	83	5	9	1942	34.268	120.482	442	200
744	C7	xbt	XBT	C-10	83	5	9	1954	34.223	120.473	466	200
745	C8	xbt	XBT	C-10	83	5	9	2006	34.208	120.472	136	136
746	C9	xbt	XBT	C-10	83	5	9	2018	34.162	120.472	117	117
747	C10	xbt	XBT	C-10	83	5	9	2030	34.130	120.470	86	86
748	H11	xbt	XBT	H-1	83	5	10	212	34.132	120.152	446	200
750	H9	xbt	XBT	H-1	83	5	10	236	34.192	120.155	539	200
751	H8	xbt	XBT	H-1	83	5	10	248	34.225	120.155	594	200
752	H7	xbt	XBT	H-1	83	5	10	306	34.258	120.155	530	200
753	H6	xbt	XBT	H-1	83	5	10	318	34.292	120.155	503	200
754	H5	xbt	XBT	H-1	83	5	10	330	34.328	120.155	482	200
755	H4	xbt	XBT	H-1	83	5	10	342	34.357	120.155	418	200
756	H3	xbt	XBT	H-1	83	5	10	354	34.390	120.157	174	174
757	H2	xbt	XBT	H-1	83	5	10	406	34.415	120.172	80	80
758	H1	xbt	XBT	H-1	83	5	10	412	34.443	120.177	57	57
759	G1	ctd	CTD	G-13	83	5	10	1412	34.523	120.603	38	32
760	G2	ctd	CTD	G-13	83	5	10	1500	34.502	120.628	73	65
761	G3	ctd	CTD	G-13	83	5	10	1530	34.503	120.638	95	86
762	G4	xbt	CTD	G-13	83	5	10	1642	34.437	120.665	265	200

**XBT TEMPERATURE SECTIONS**

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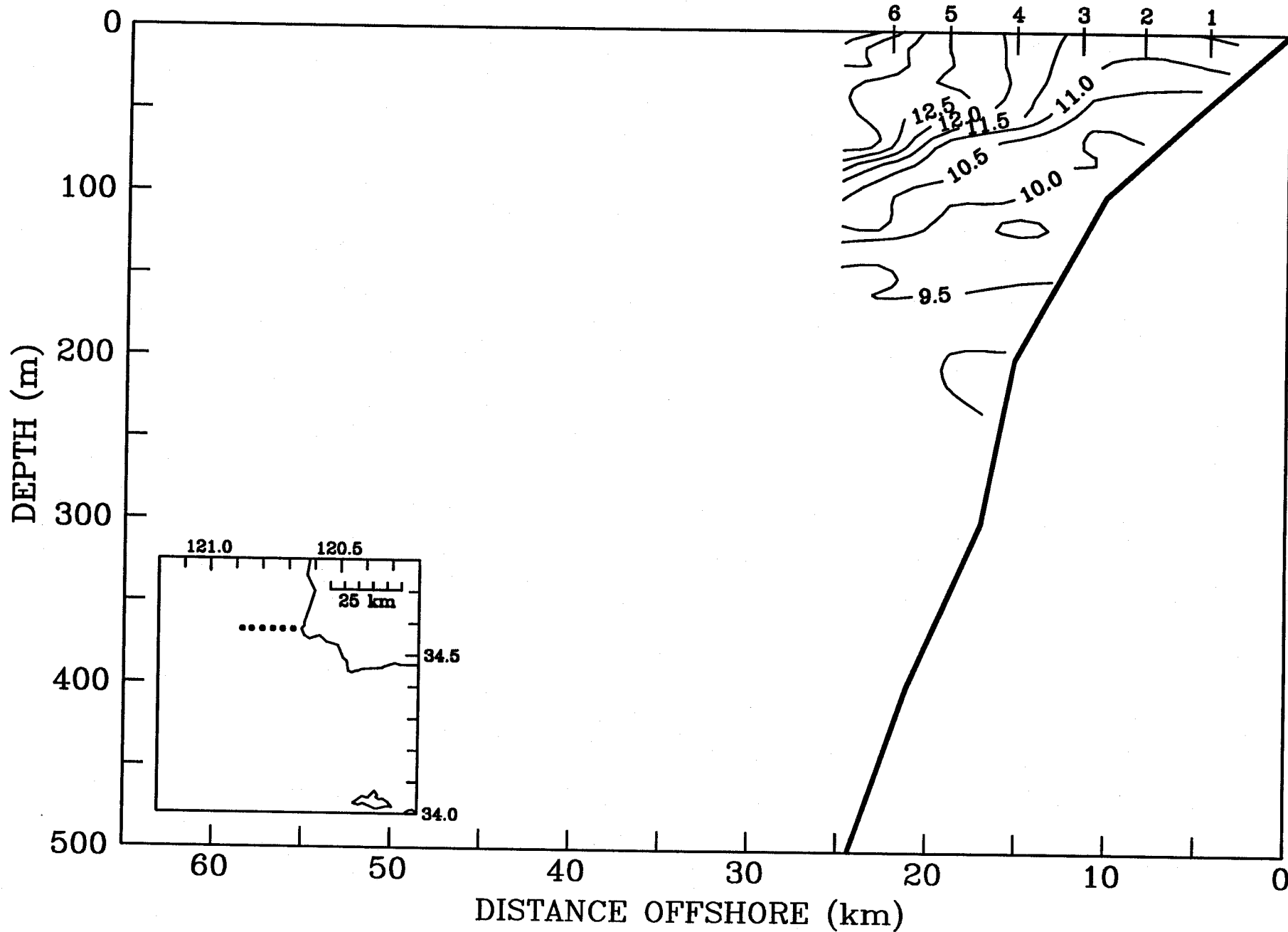
6 April 1983

TEMPERATURE (deg C)

# LINE A

XBT Map 1

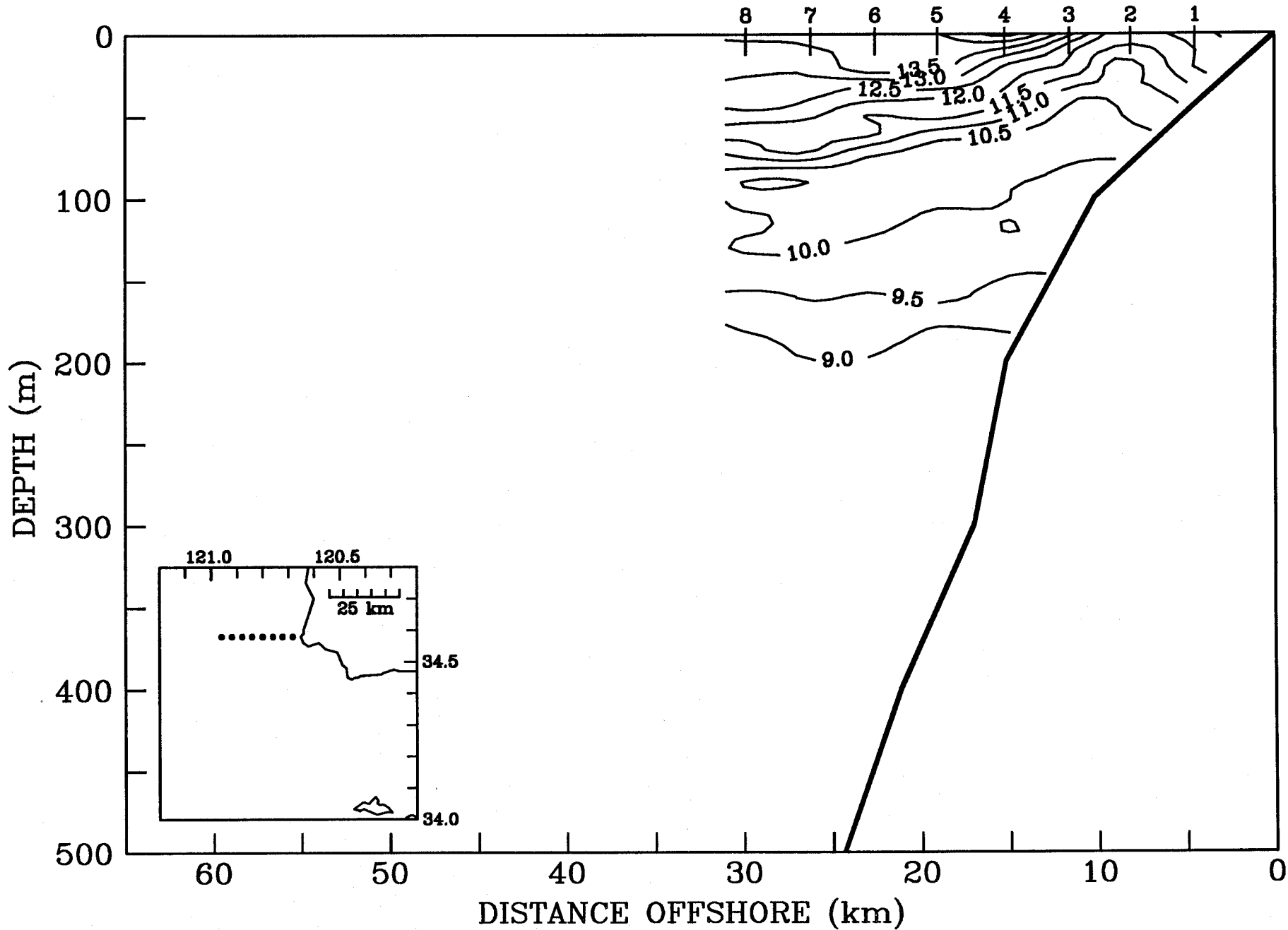
XBT Transect A-1



10 April 1983  
TEMPERATURE (deg C)

# LINE A

XBT Map 2  
XBT Transect A-2



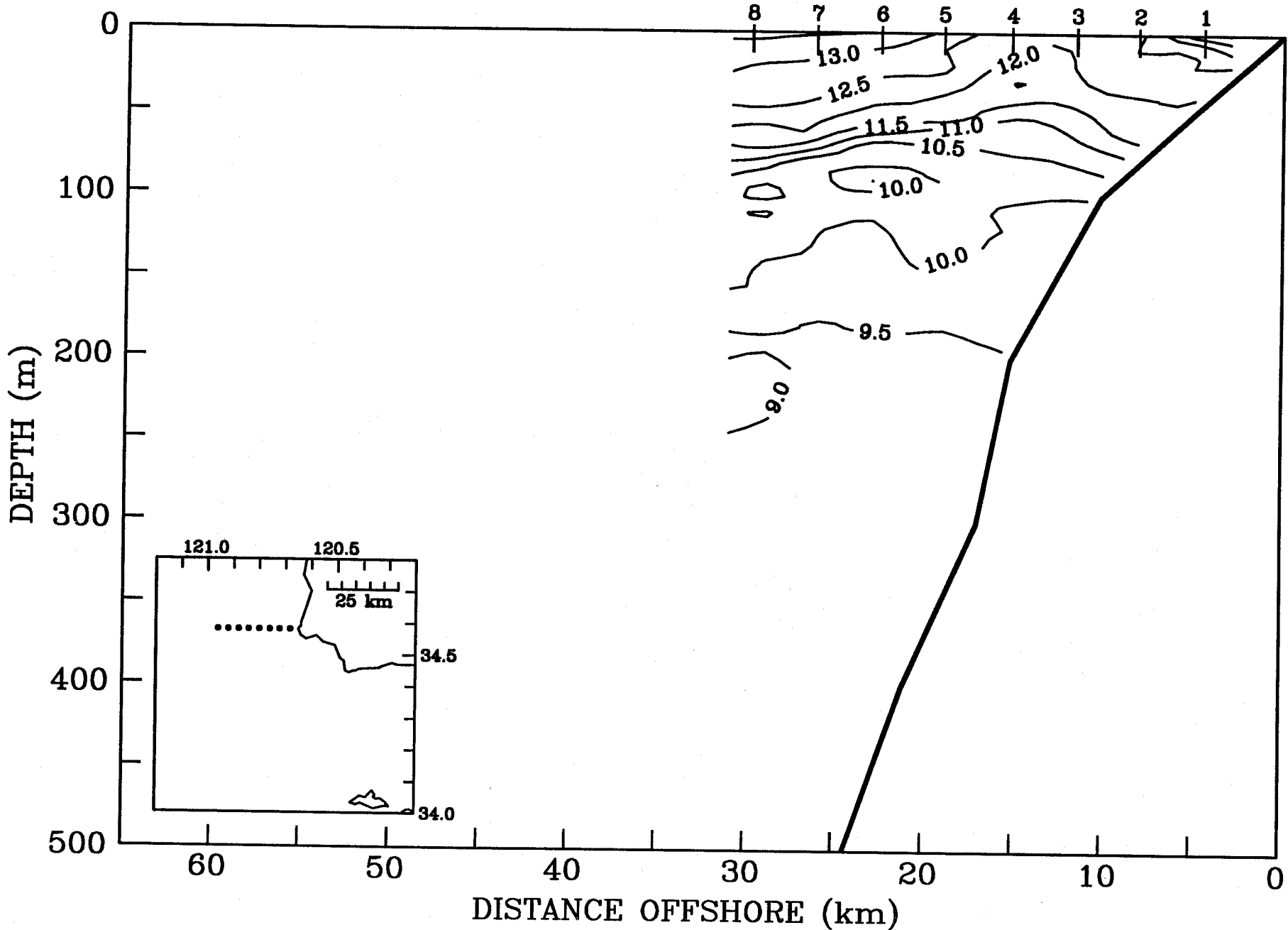
12 April 1983

TEMPERATURE (deg C)

# LINE A

XBT Map 3

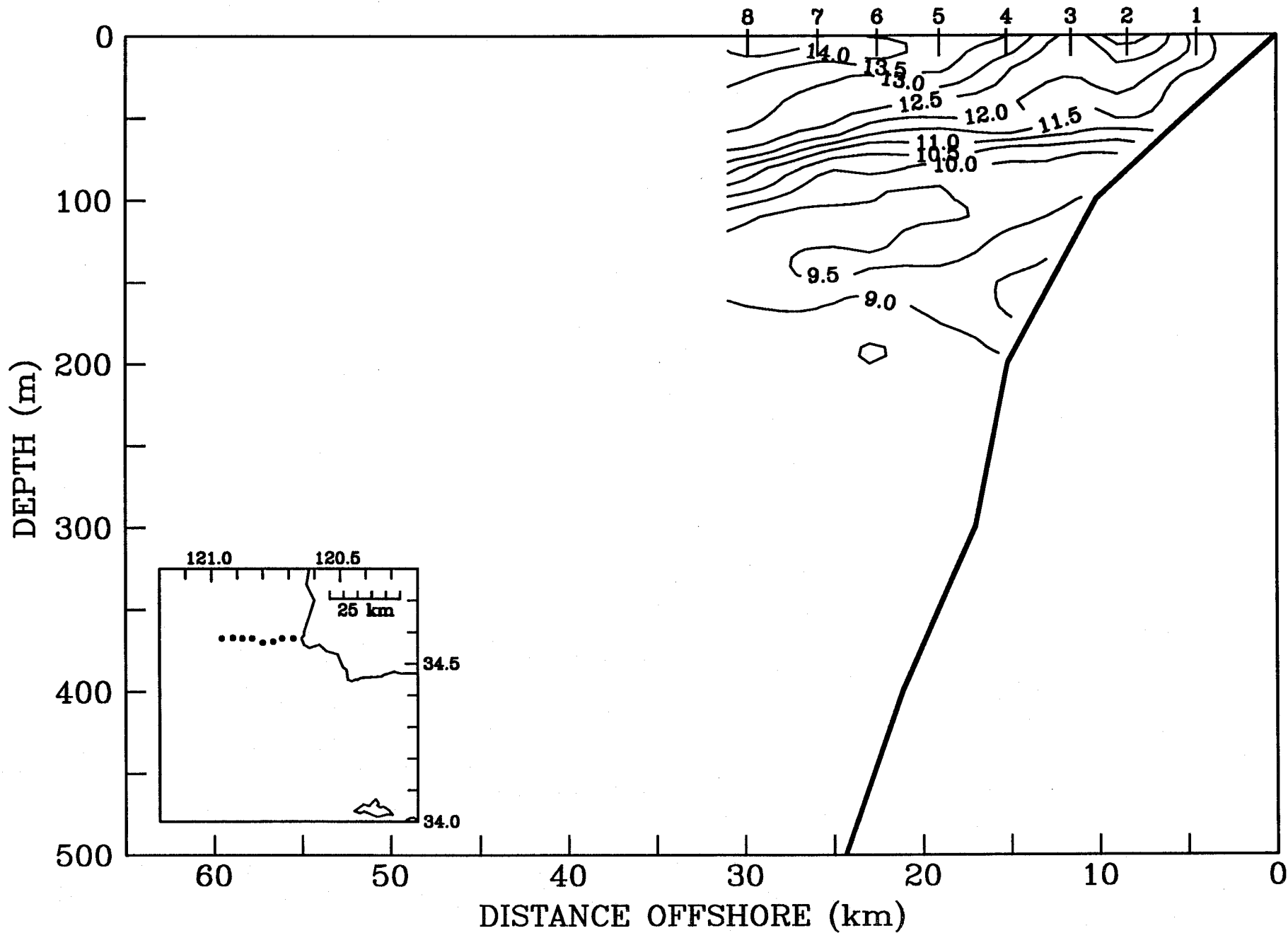
XBT Transect A-3



14 April - 15 April 1983  
TEMPERATURE (deg C)

# LINE A

XBT Map 4  
XBT Transect A-4







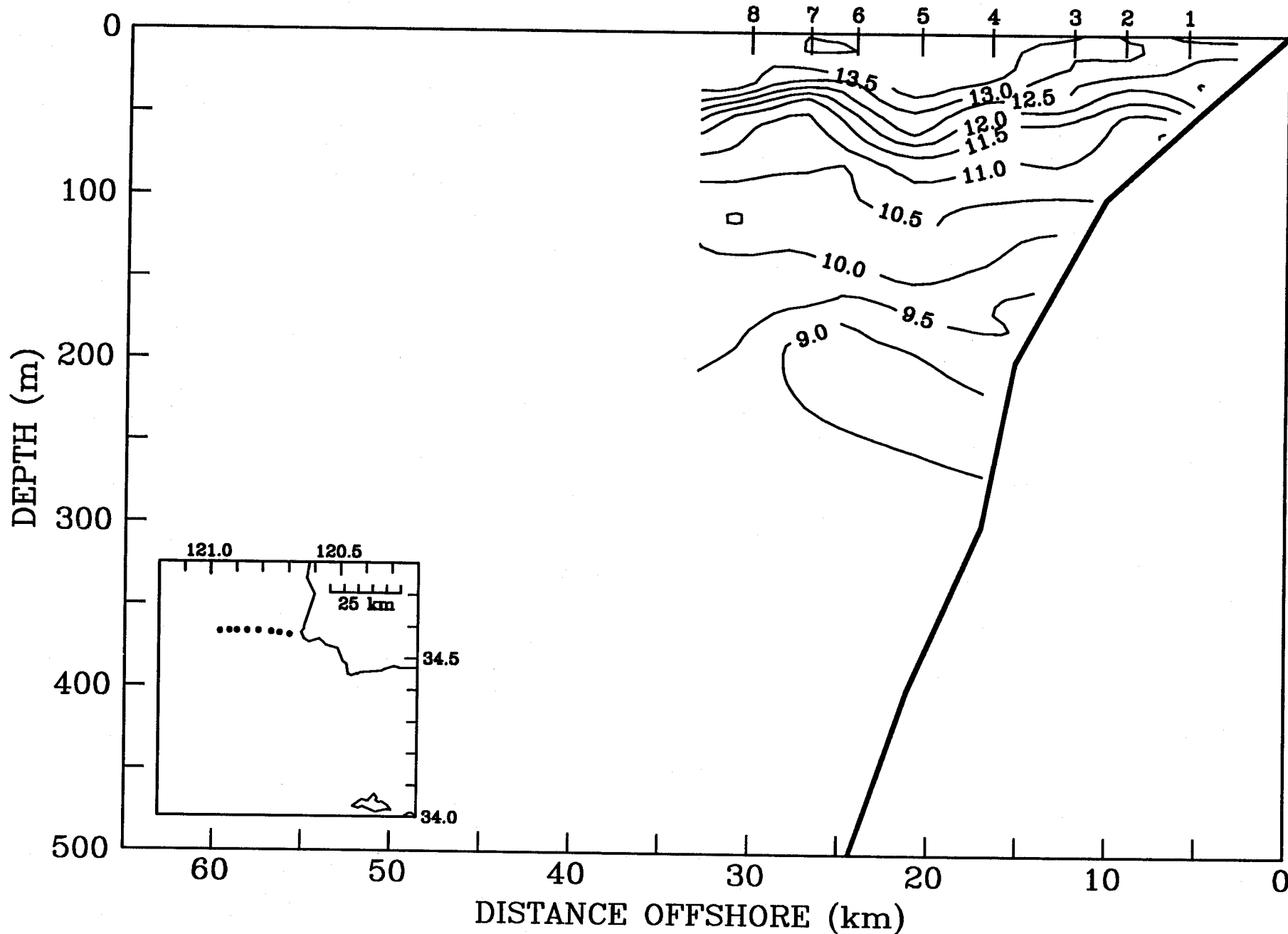
28 April 1983

TEMPERATURE (deg C)

# LINE A

XBT Map 8

XBT Transect A-7





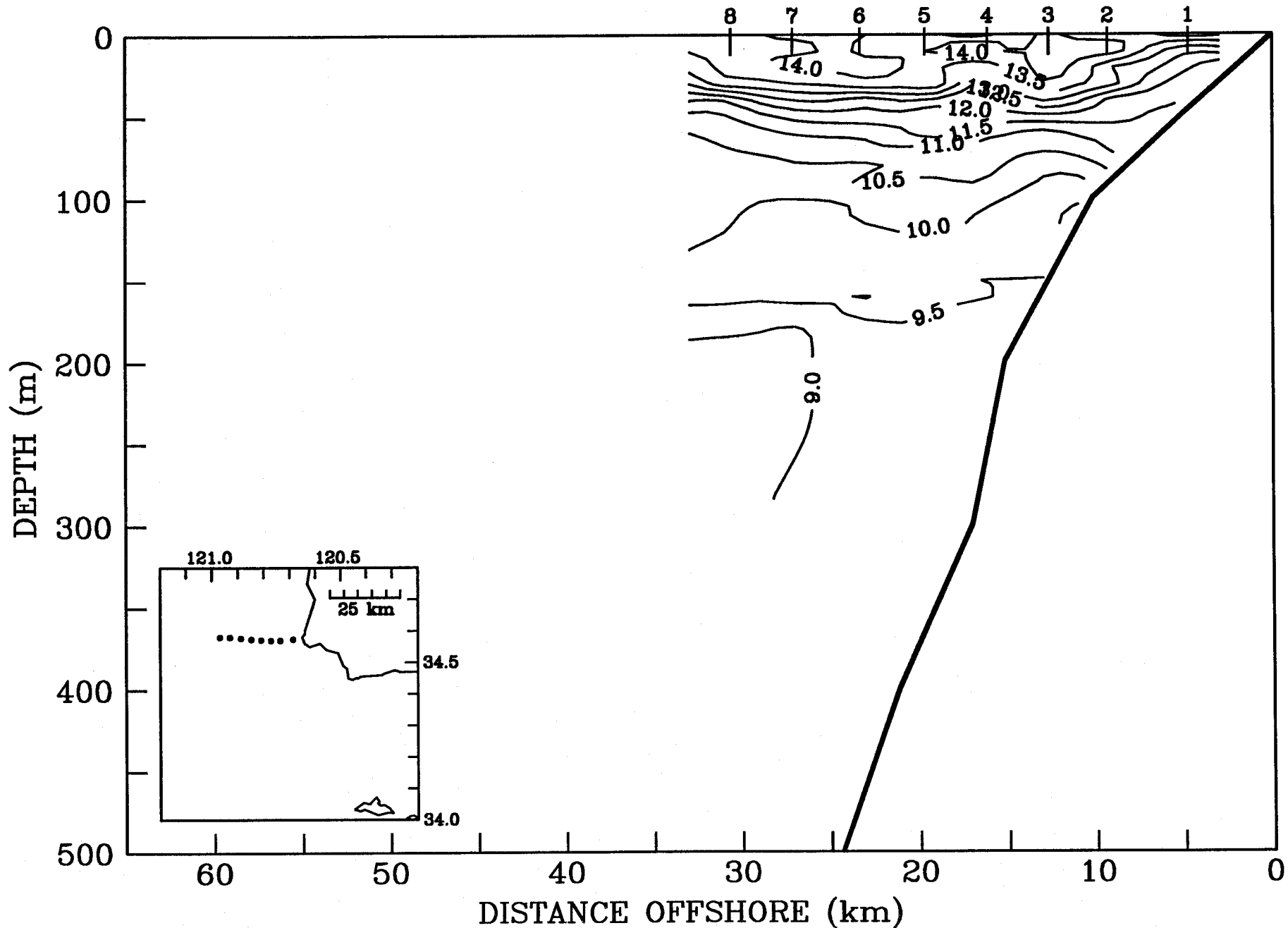
3 May 1983

TEMPERATURE (deg C)

# LINE A

XBT Map 9

XBT Transect A-8



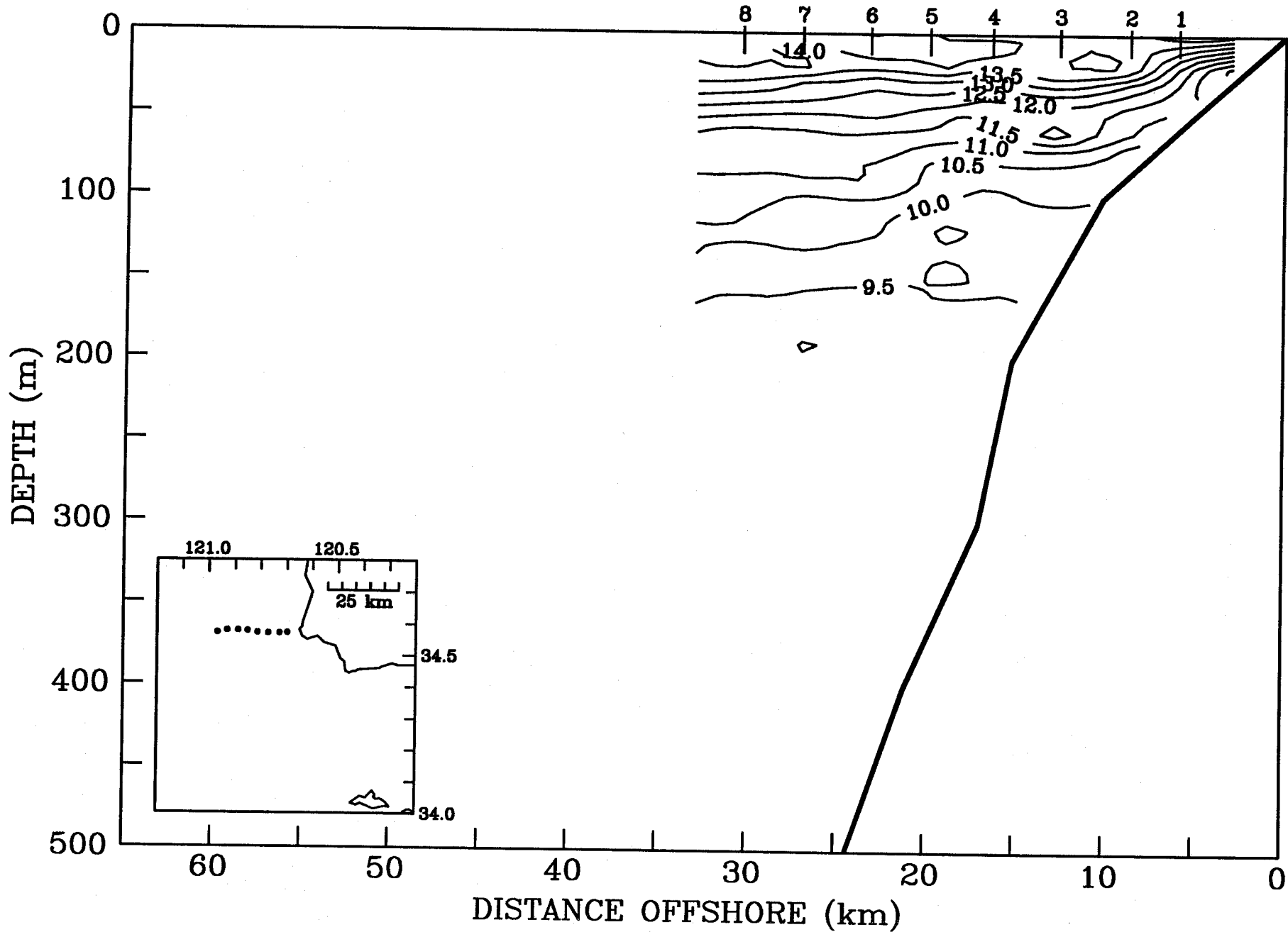
6 May 1983

TEMPERATURE (deg C)

# LINE A

XBT Map 10

XBT Transect A-9

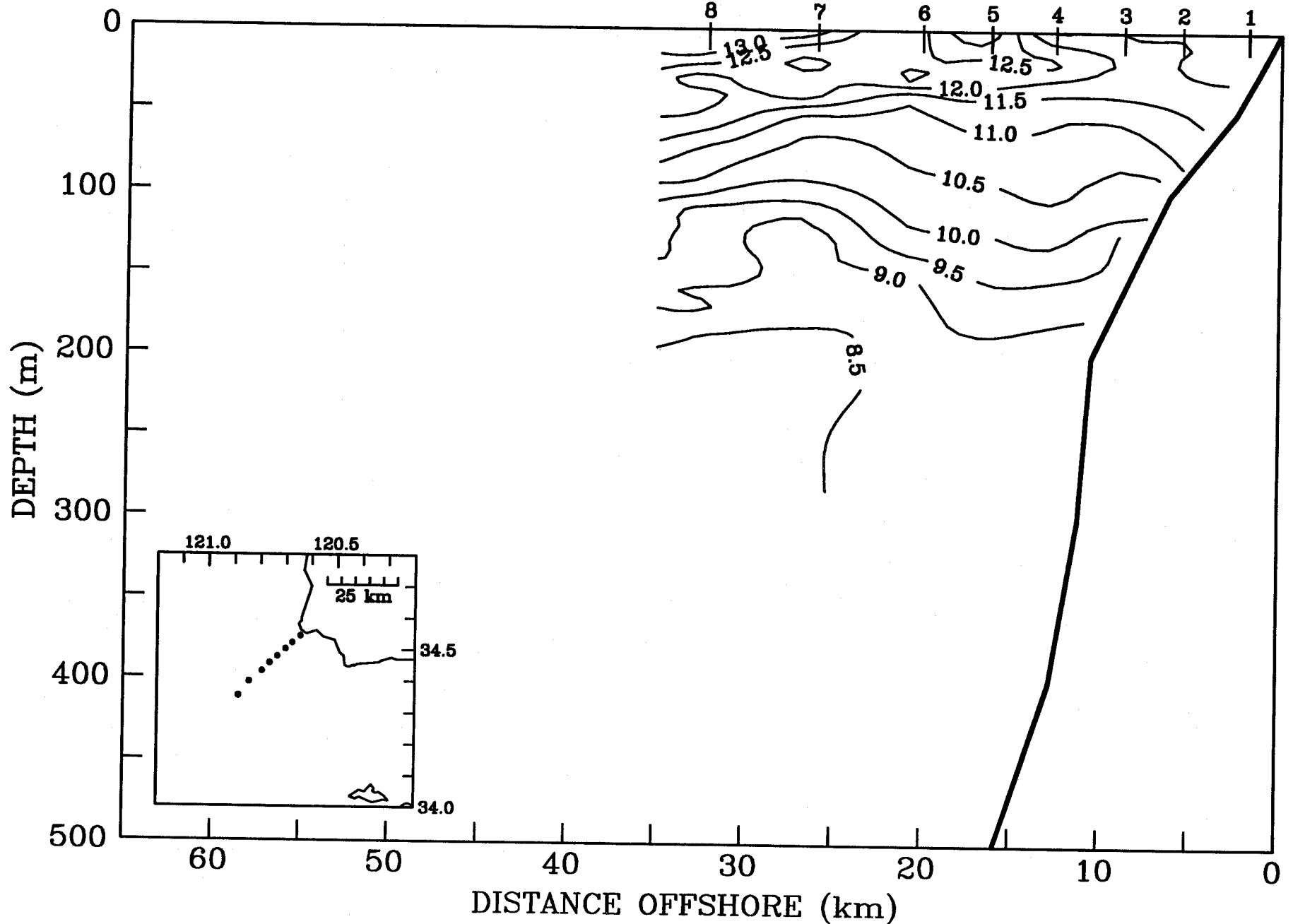




9 April - 10 April 1983  
TEMPERATURE (deg C)

# LINE AG

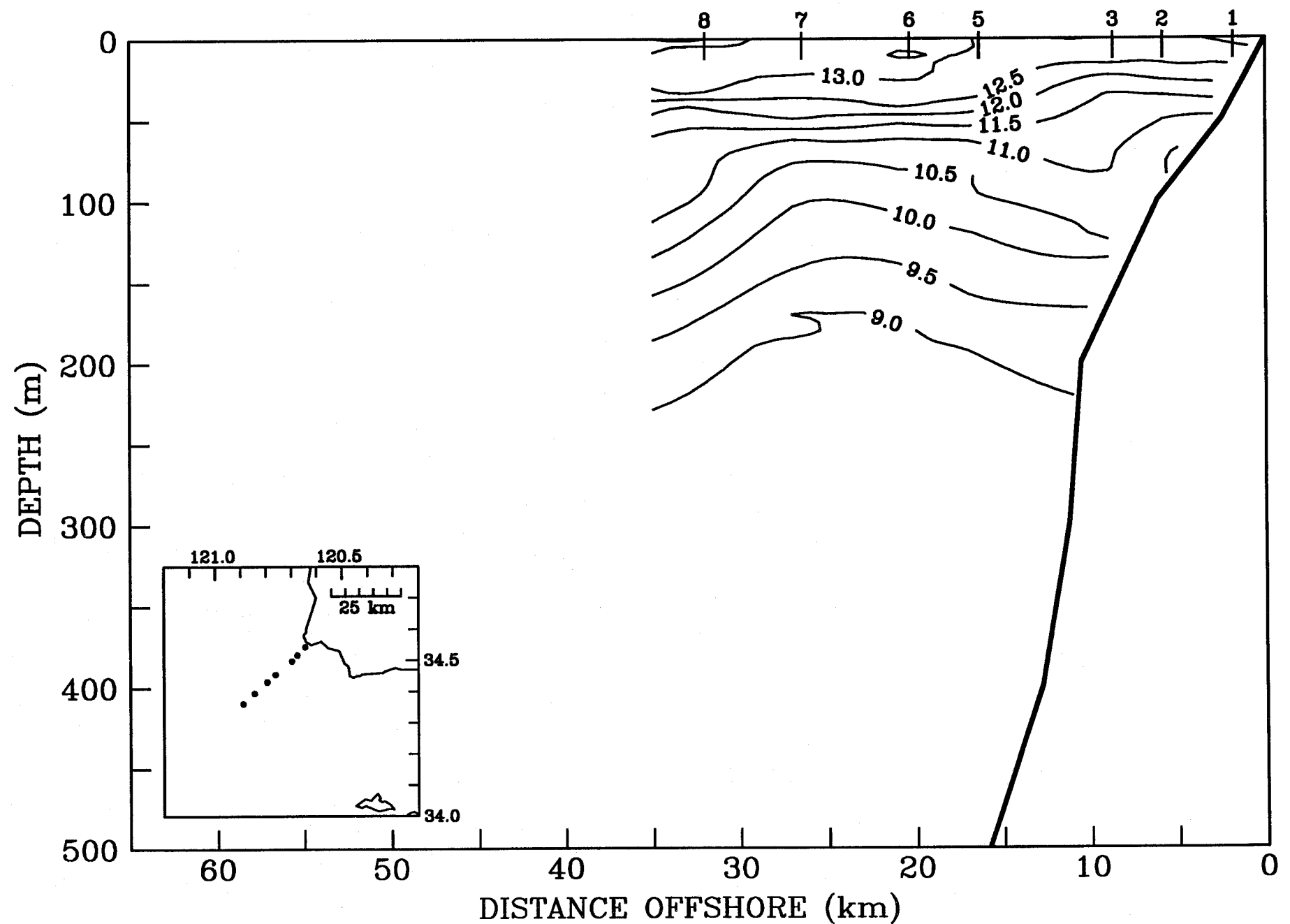
XBT Map 2  
XBT Transect AG-2



12 April 1983  
TEMPERATURE (deg C)

# LINE AG

XBT Map 3  
XBT Transect AG-3



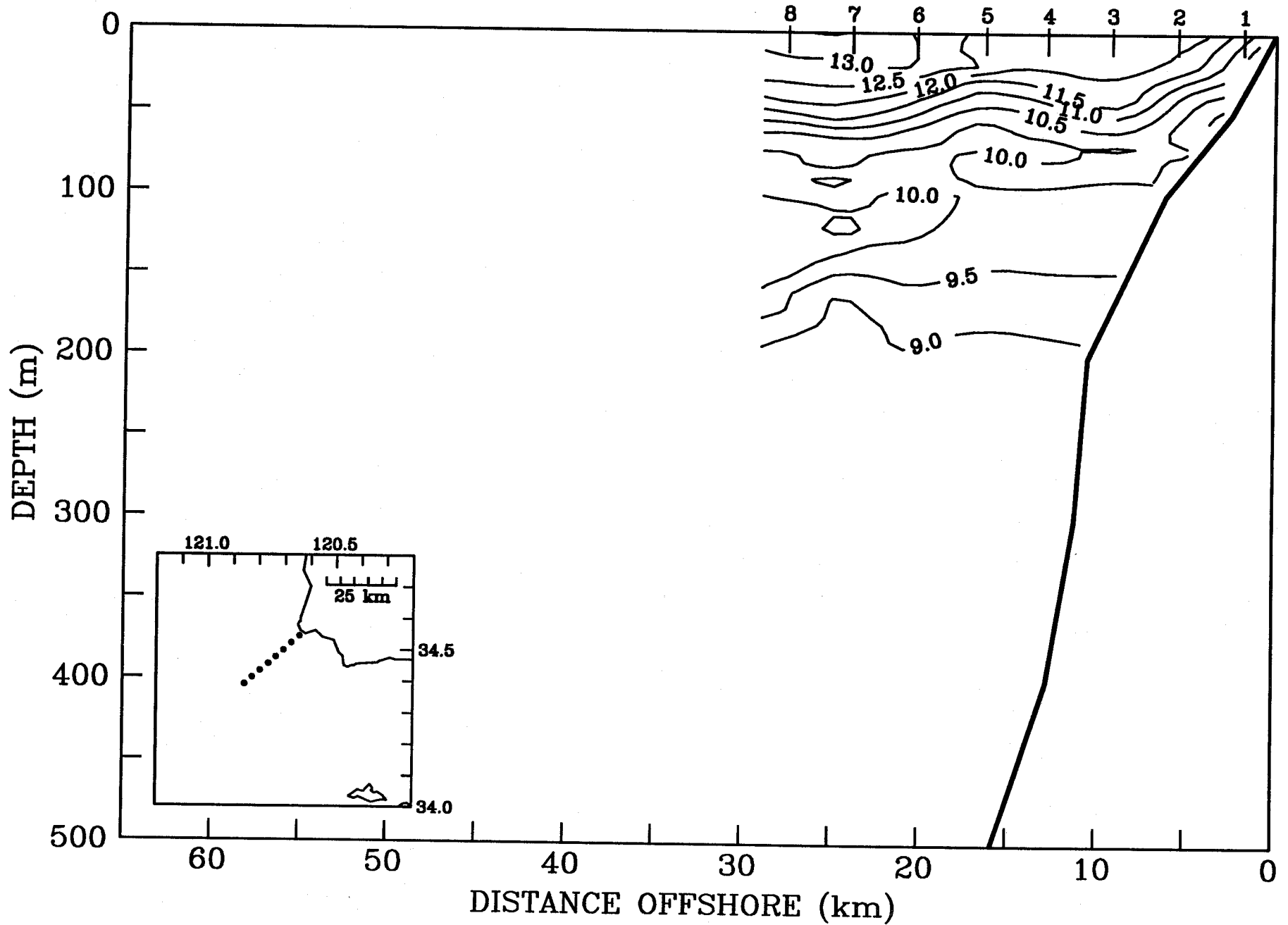
15 April 1983

TEMPERATURE (deg C)

# LINE AG

XBT Map 4

XBT Transect AG-4



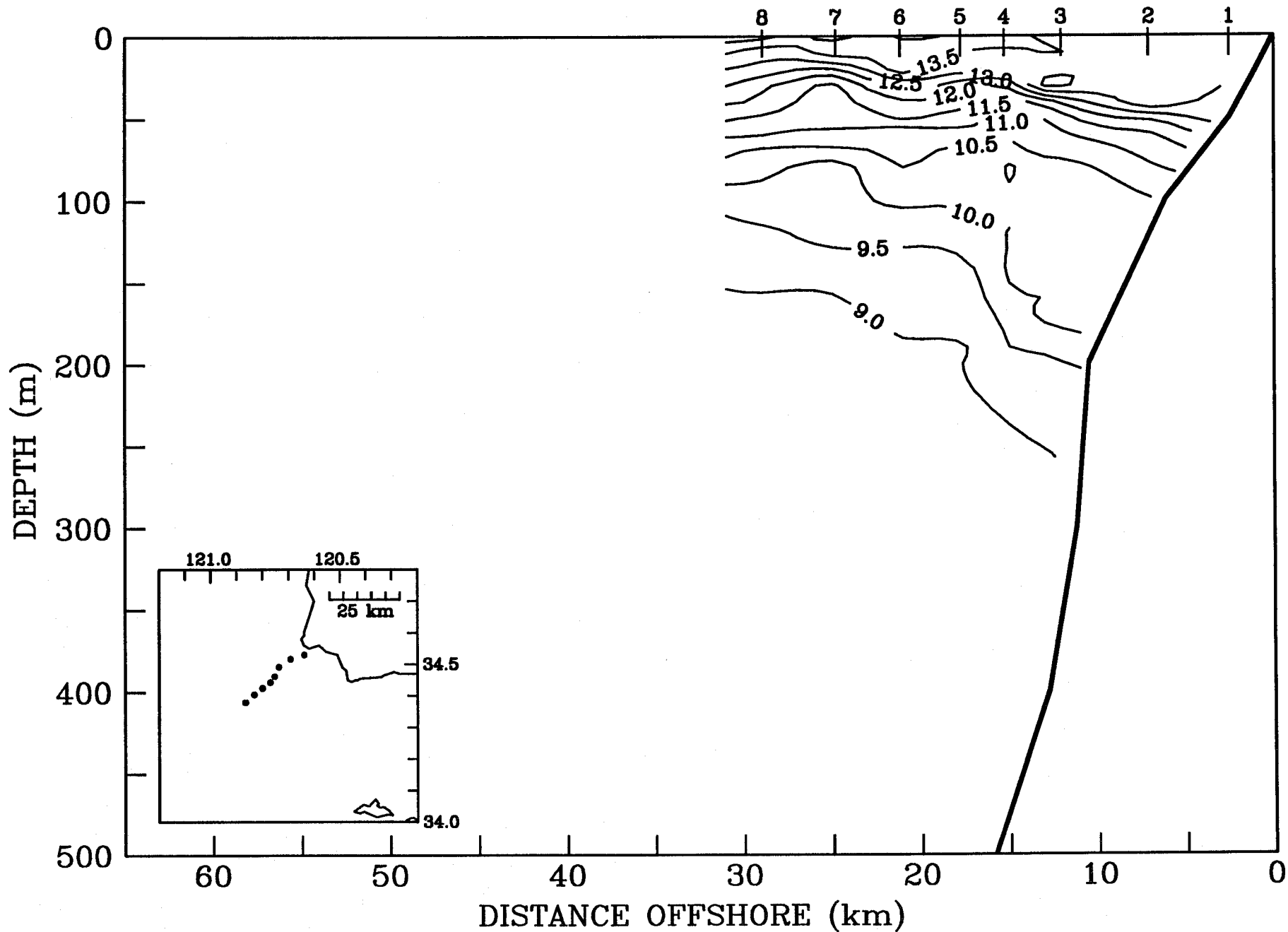
23 April 1983

TEMPERATURE (deg C)

# LINE AG

XBT Map 6

XBT Transect AG-5



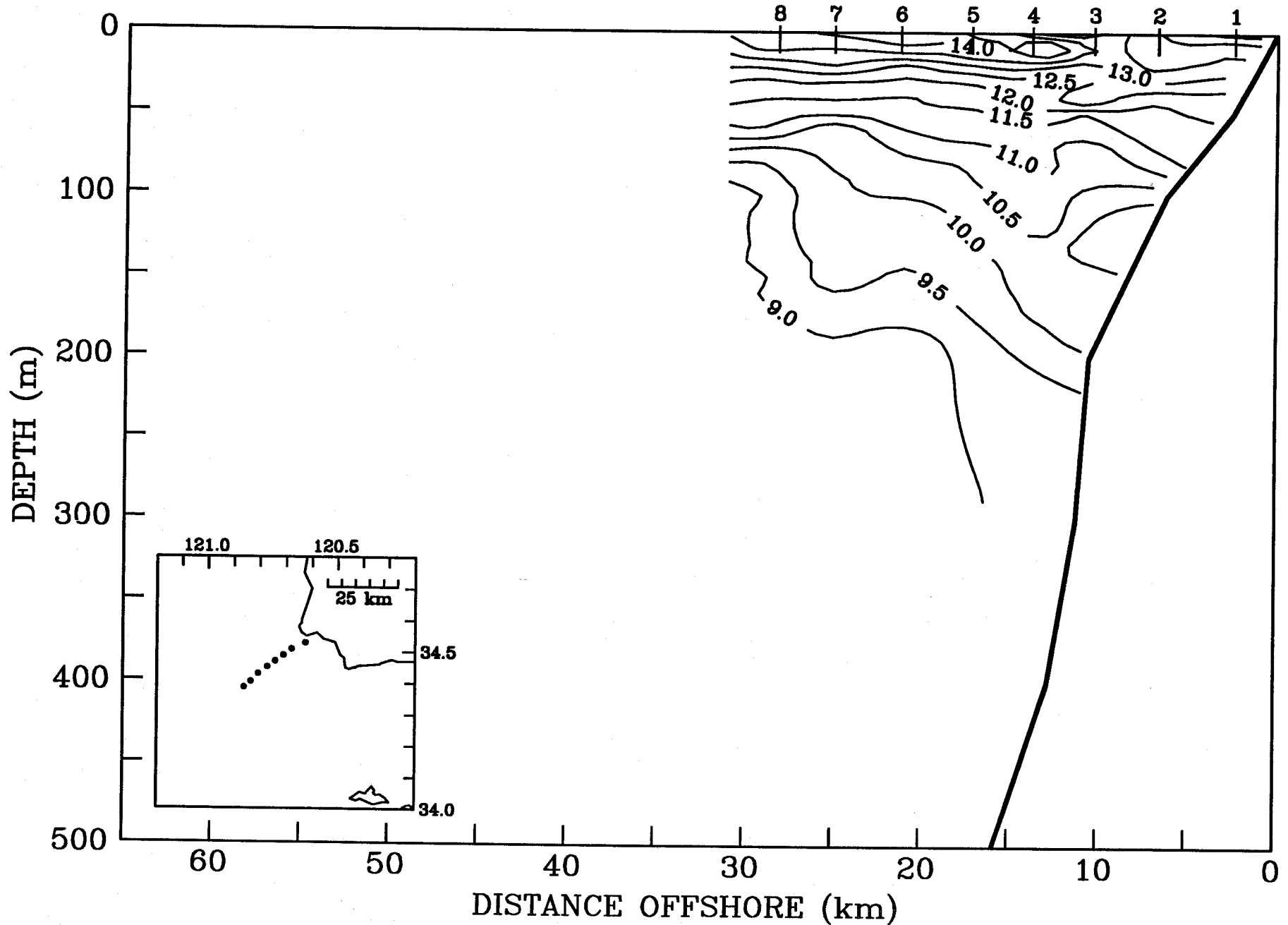
25 April 1983

TEMPERATURE (deg C)

# LINE AG

XBT Map 7

XBT Transect AG-6





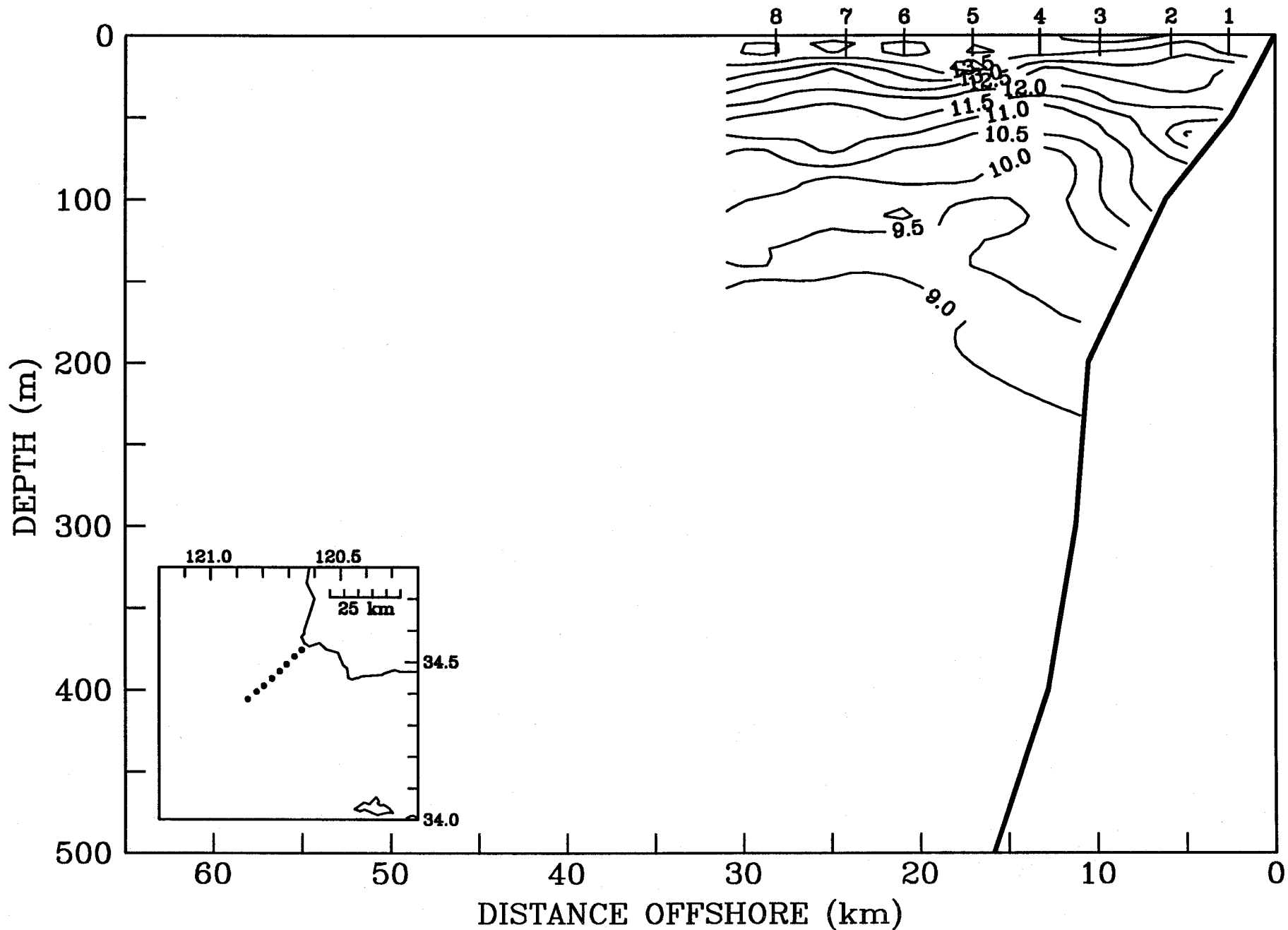
28 April 1983

TEMPERATURE (deg C)

# LINE AG

XBT Map 8

XBT Transect AG-7



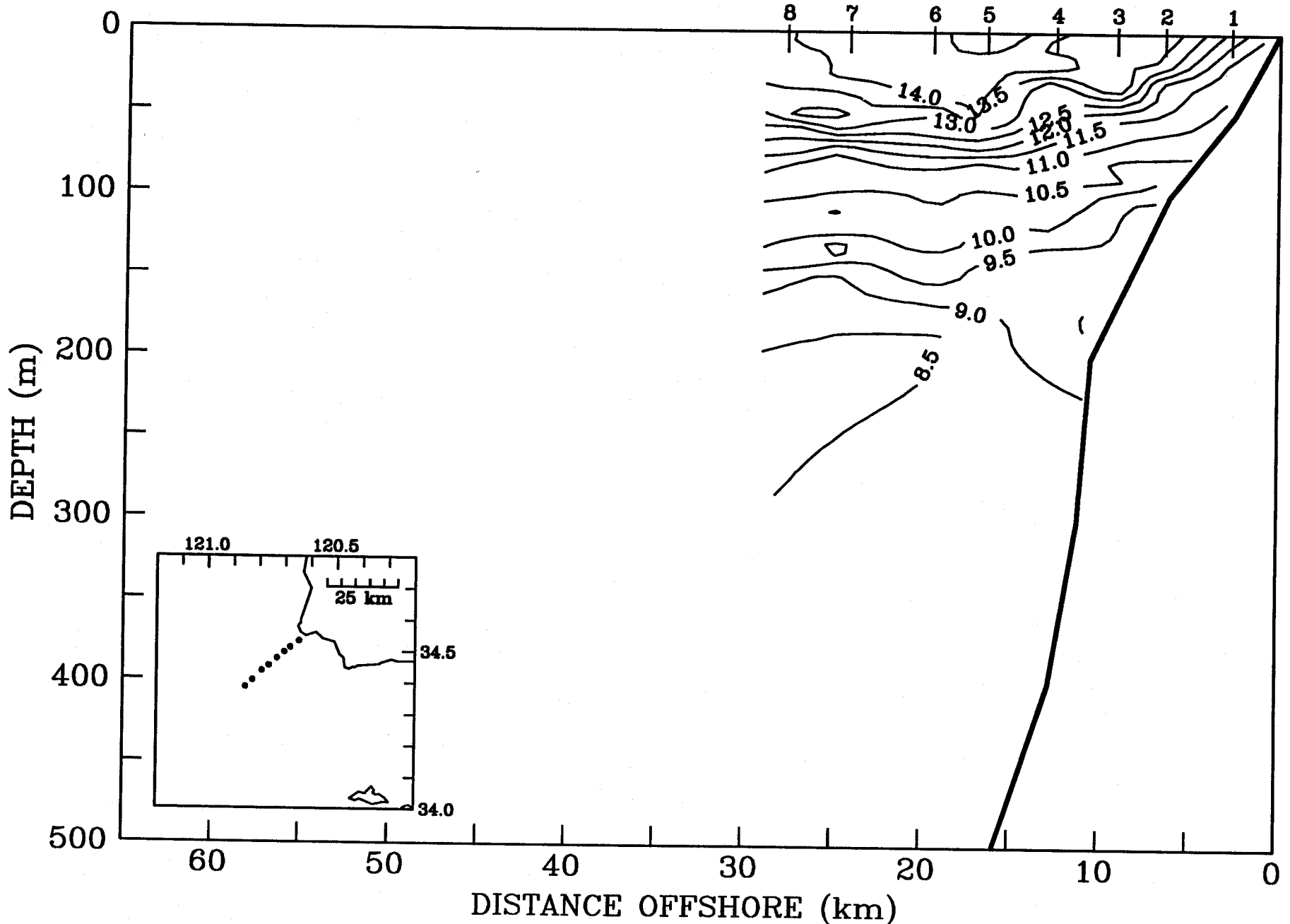
3 May 1983

TEMPERATURE (deg C)

# LINE AG

XBT Map 9

XBT Transect AG-8



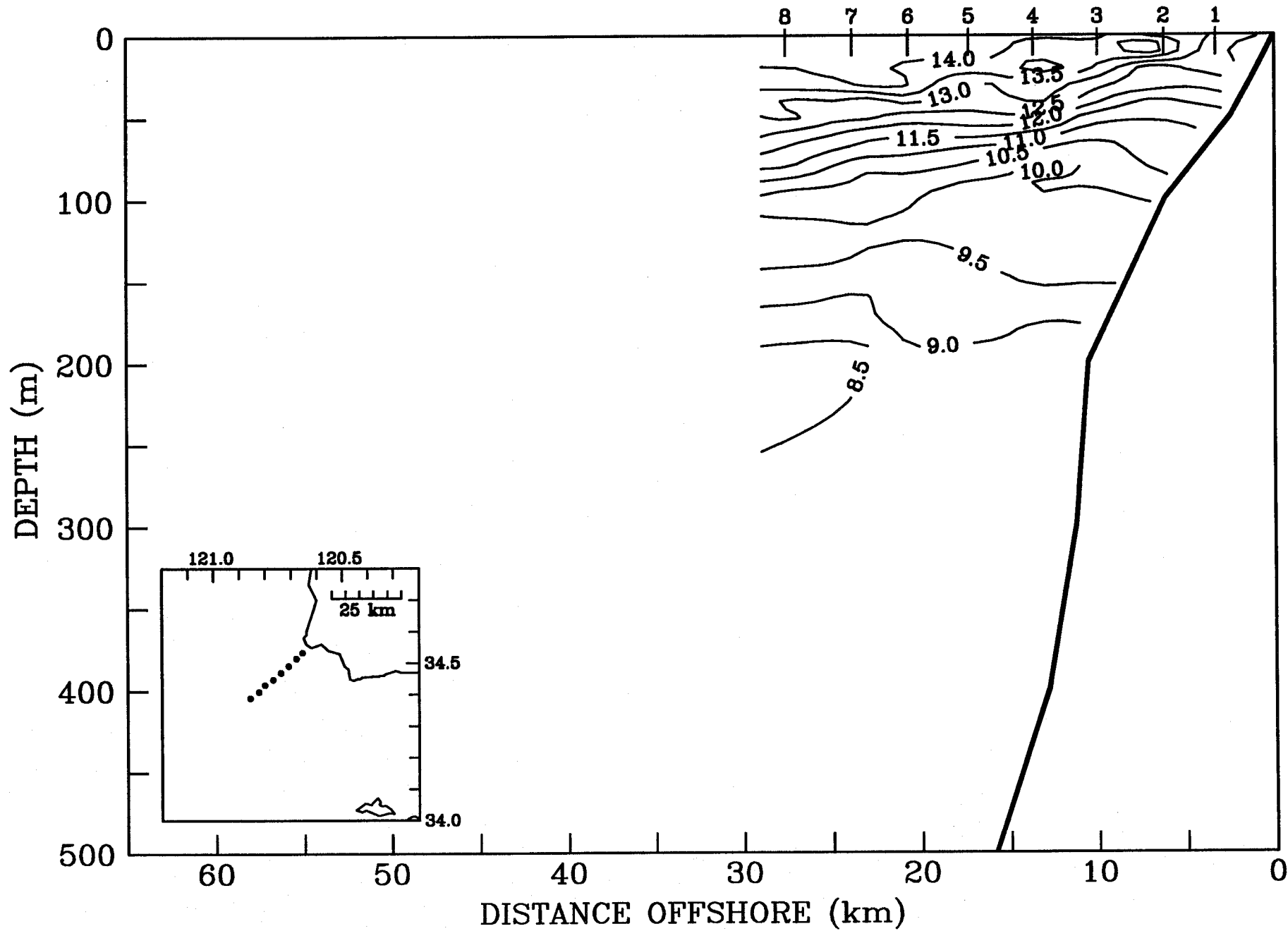
6 May 1983

TEMPERATURE (deg C)

# LINE AG

XBT Map 10

XBT Transect AG-9



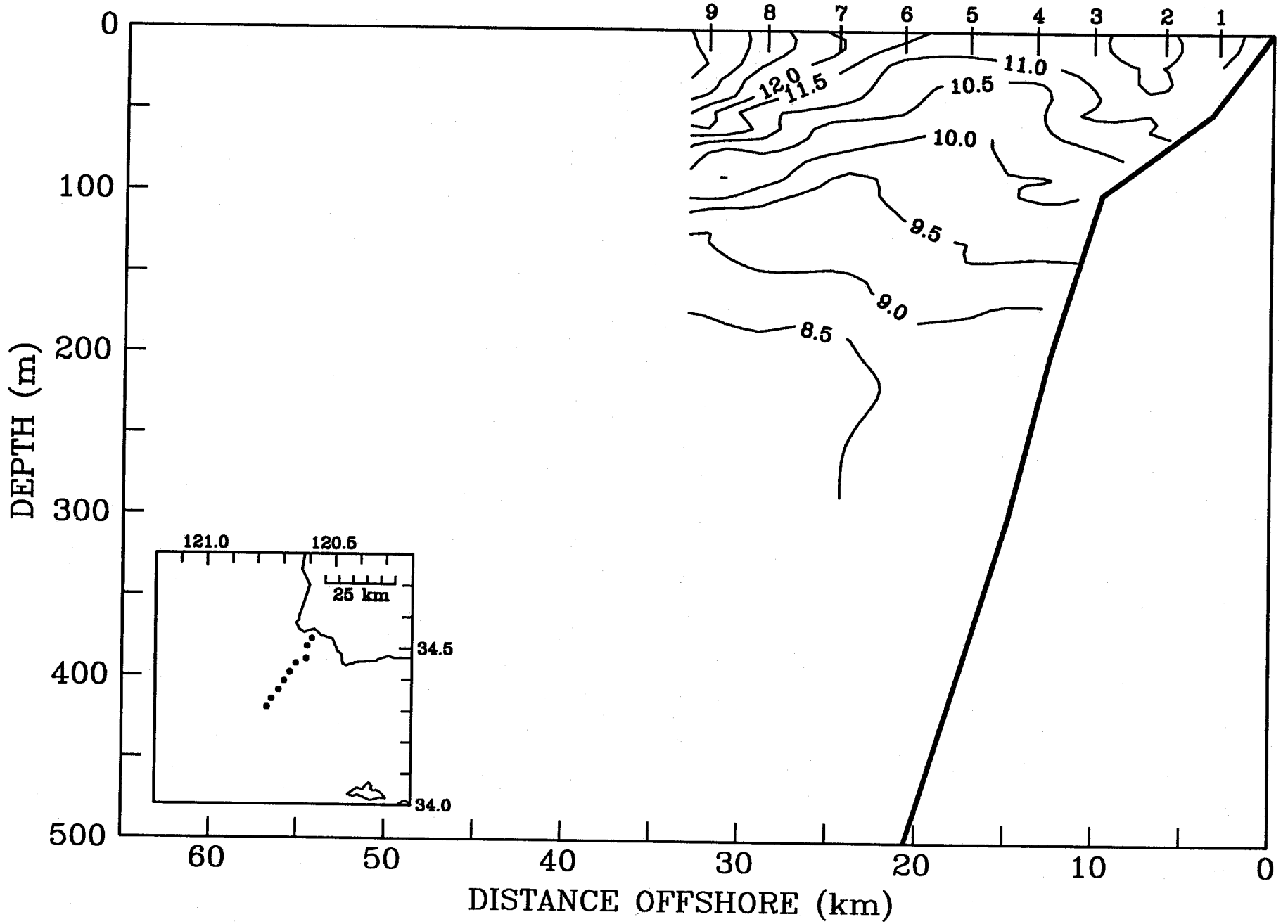
6 April 1983

TEMPERATURE (deg C)

# LINE G

XBT Map 1

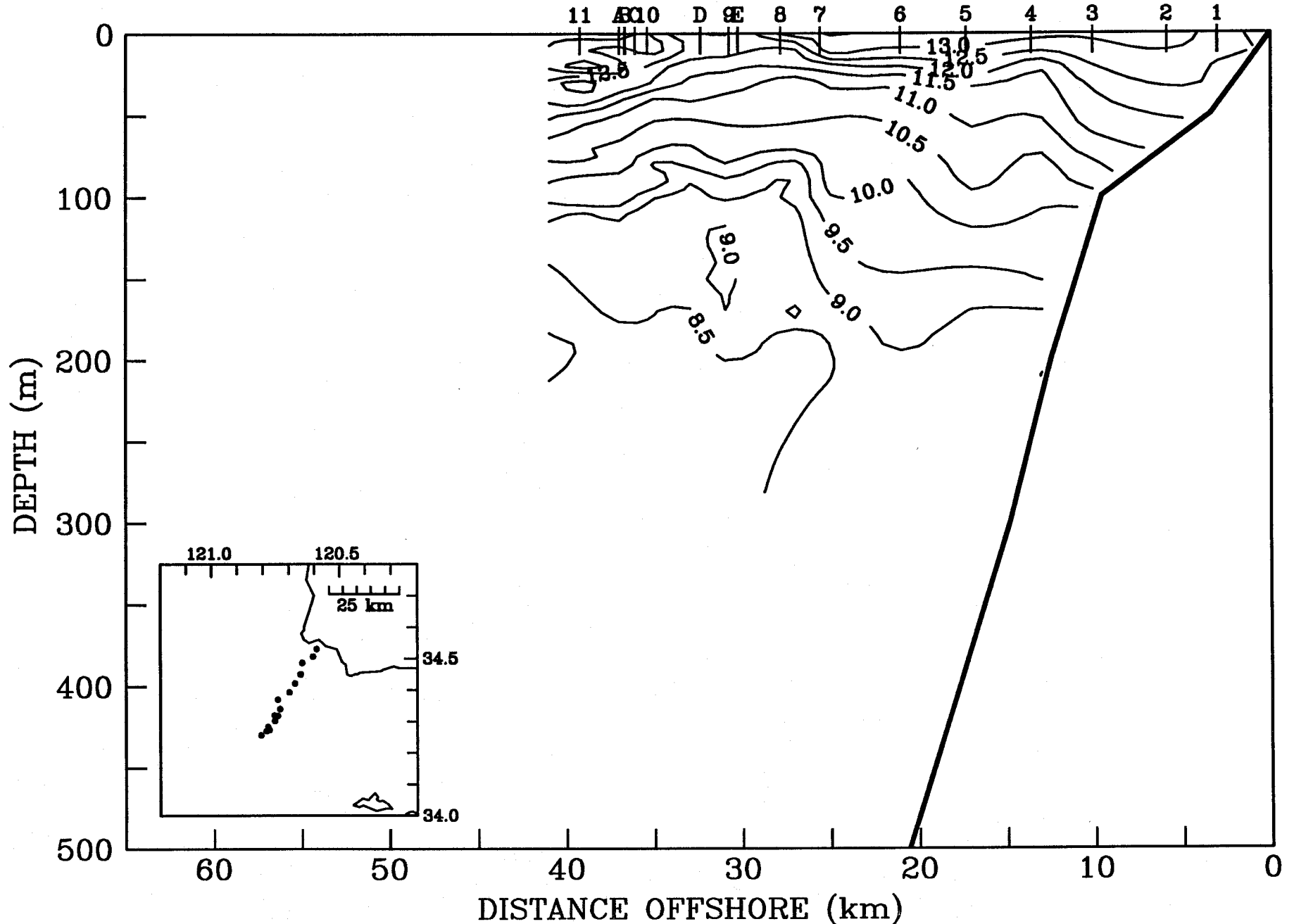
XBT Transect G-1



9 April 1983  
TEMPERATURE (deg C)

# LINE G

XBT Map 2  
XBT Transect G-2



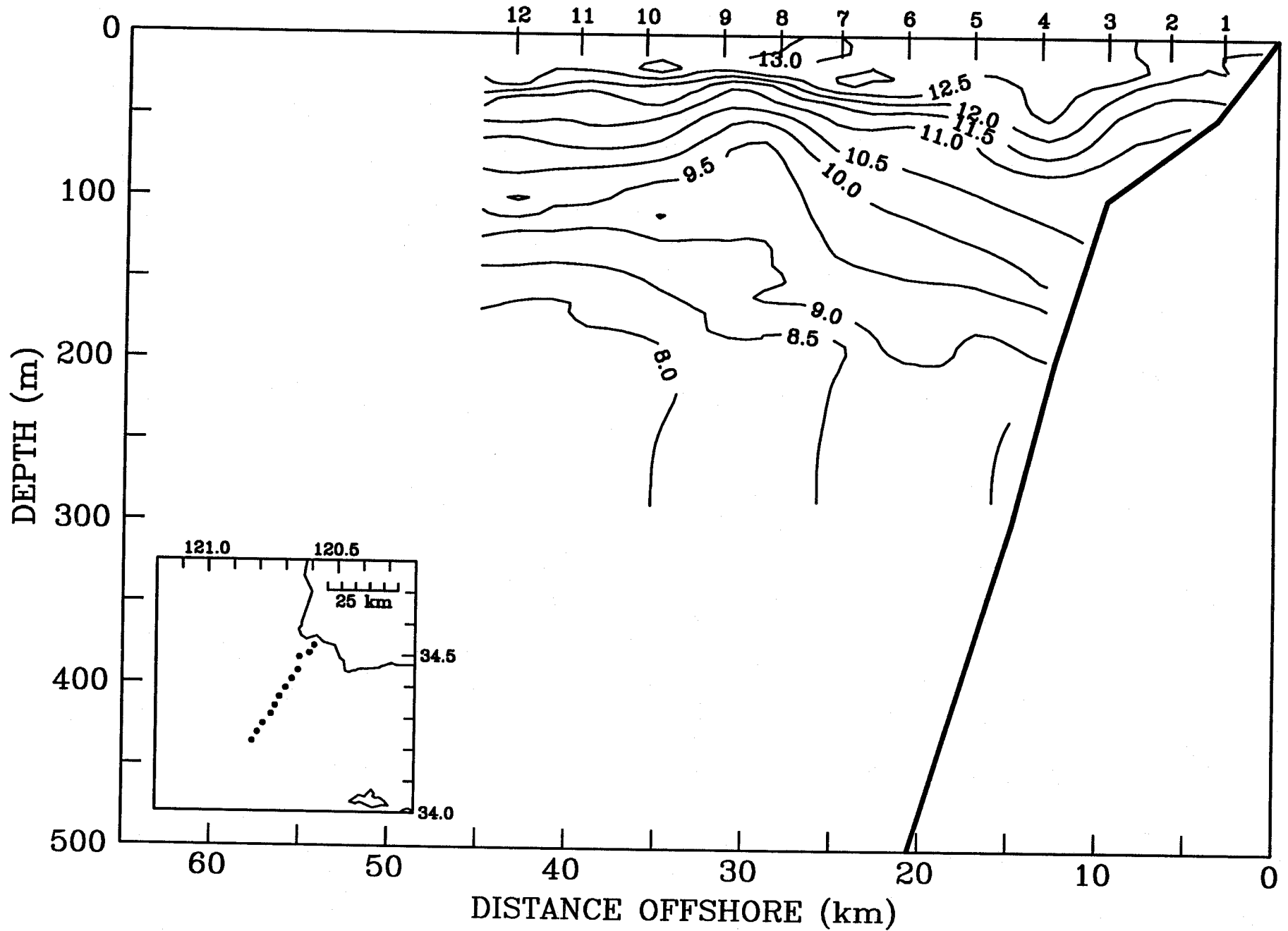
12 April 1983

TEMPERATURE (deg C)

# LINE G

XBT Map 3

XBT Transect G-3



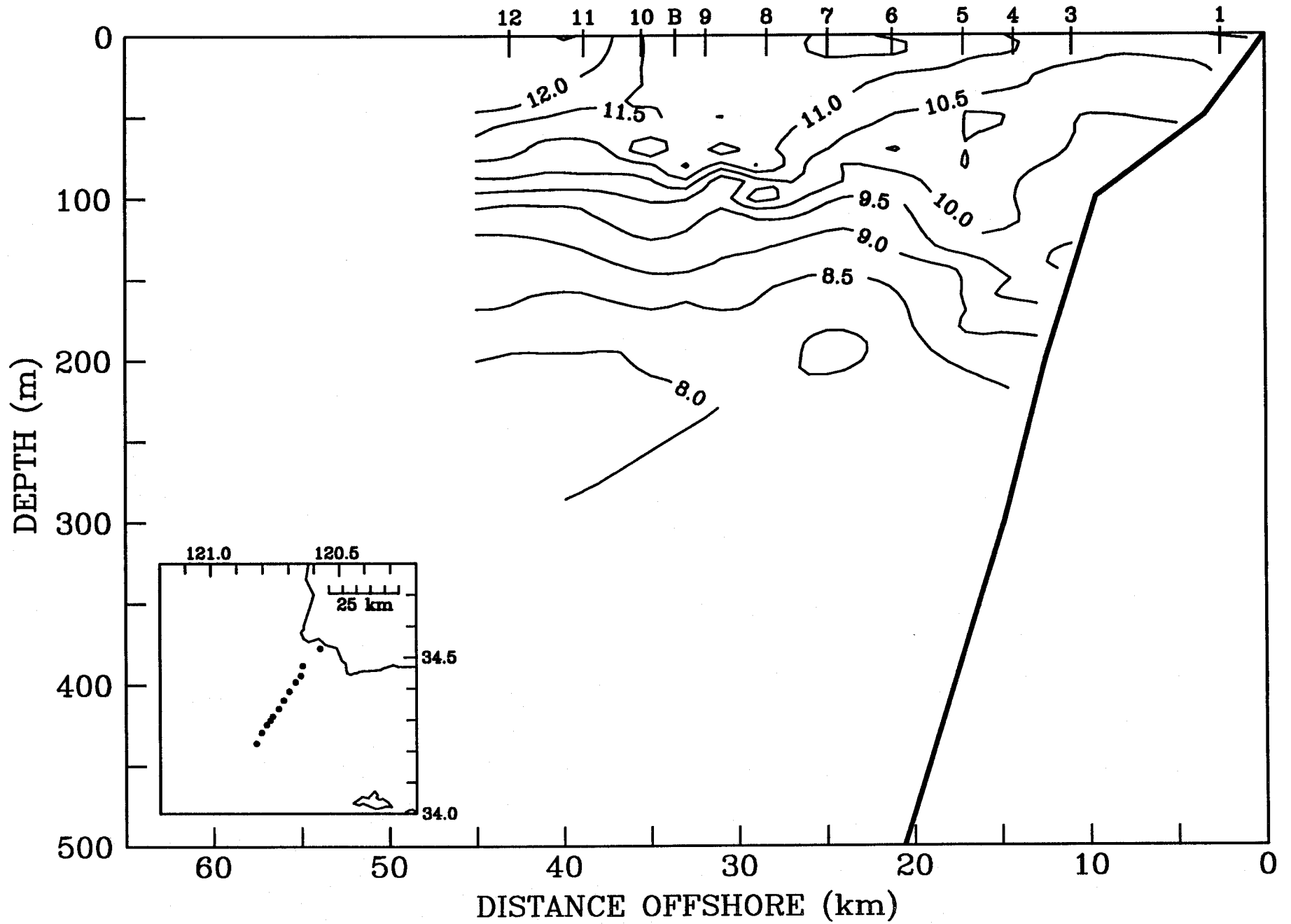
15 April 1983

TEMPERATURE (deg C)

# LINE G

XBT Map 4

XBT Transect G-4



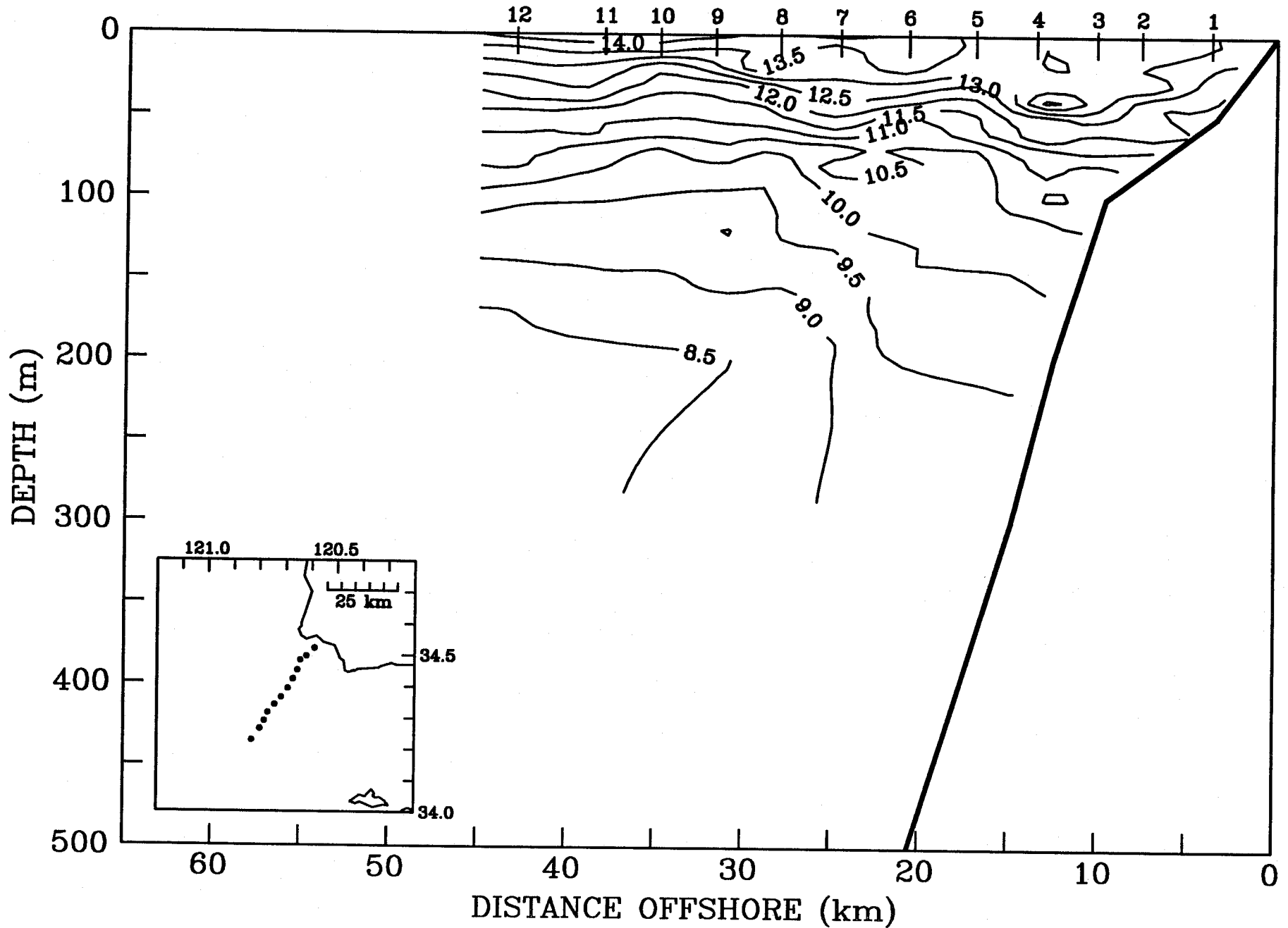
23 April 1983

TEMPERATURE (deg C)

# LINE G

XBT Map 6

XBT Transect G-5





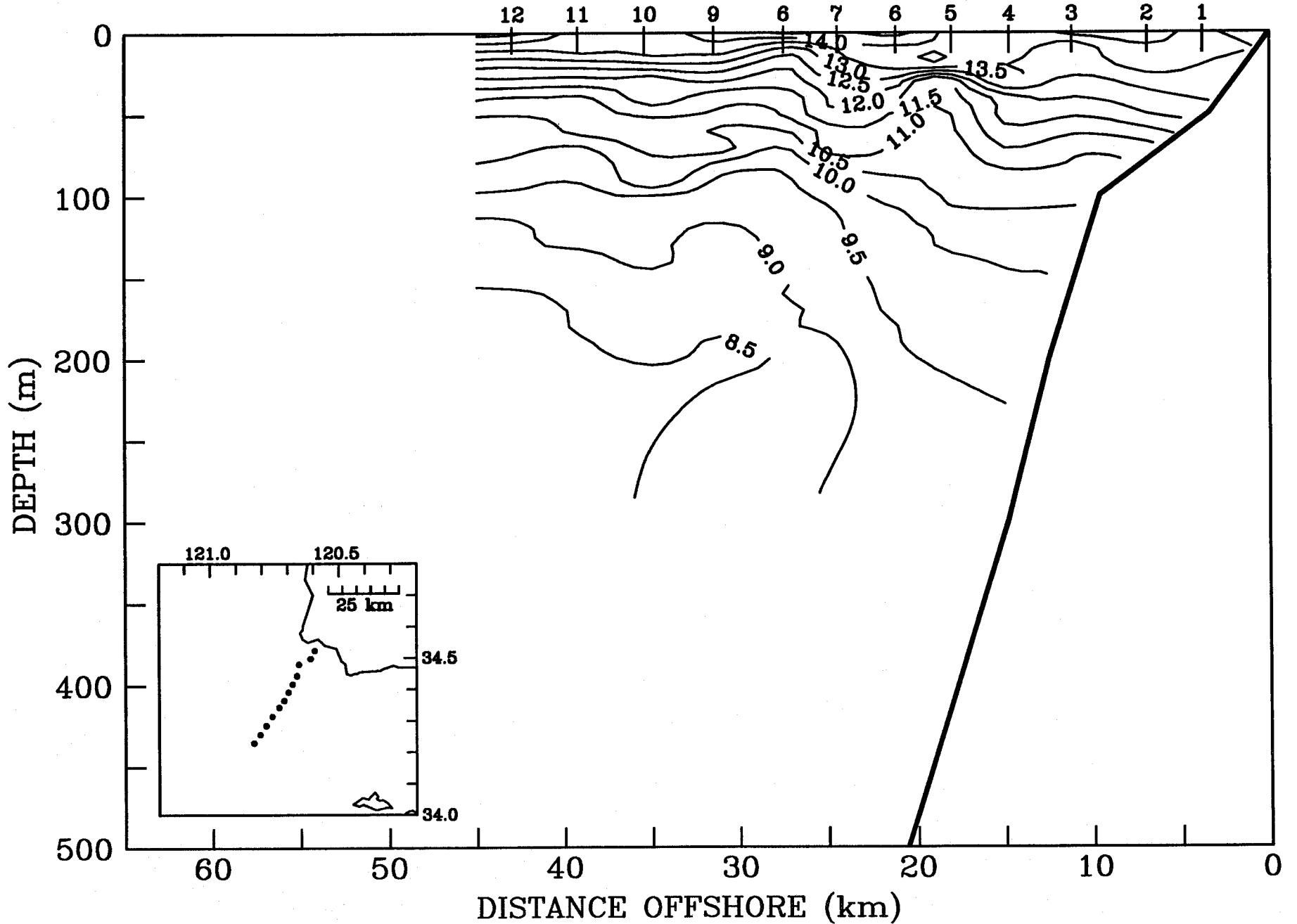
25 April 1983

TEMPERATURE (deg C)

# LINE G

XBT Map 7

XBT Transect G-6





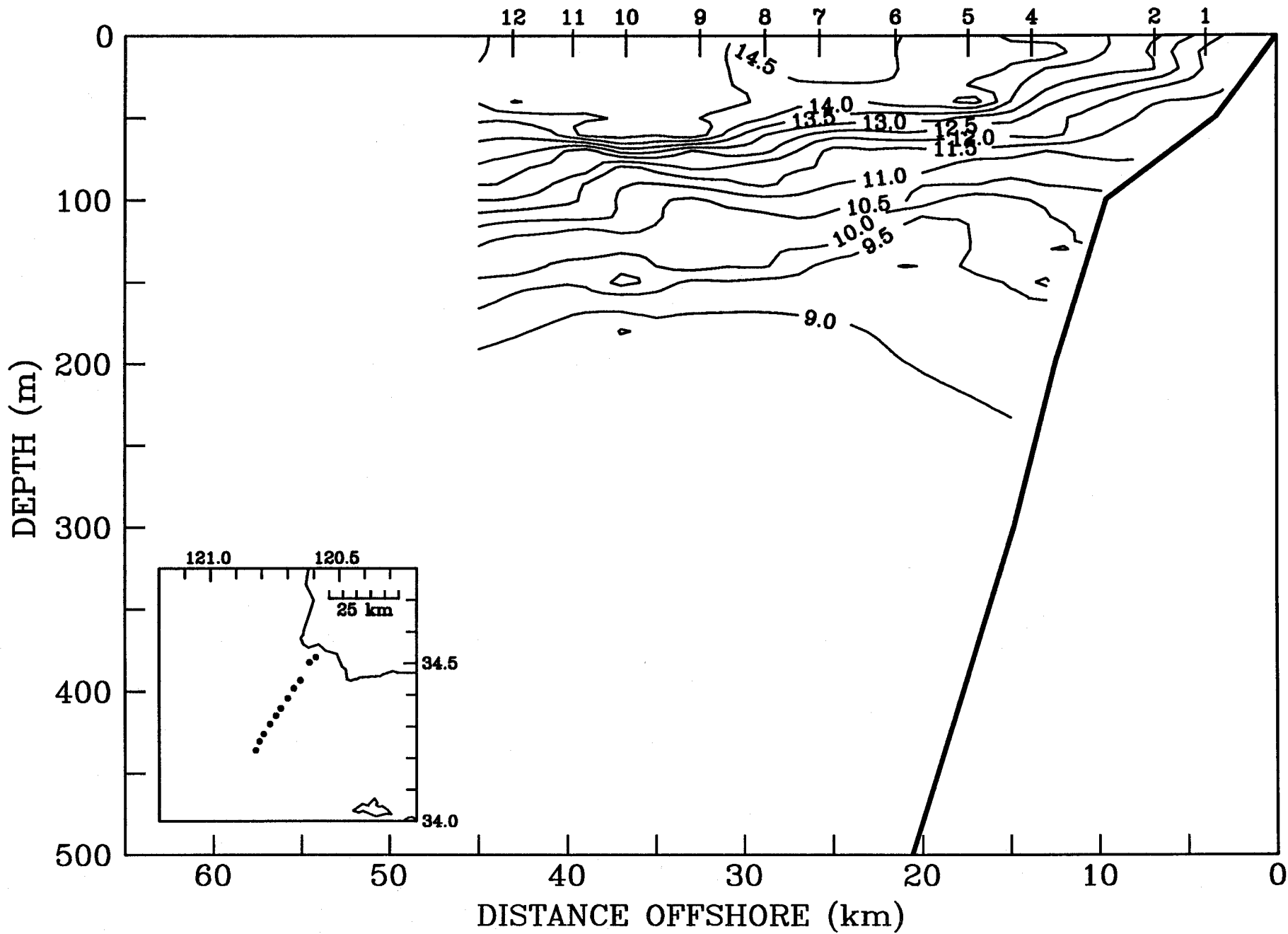
3 May 1983

TEMPERATURE (deg C)

# LINE G

XBT Map 9

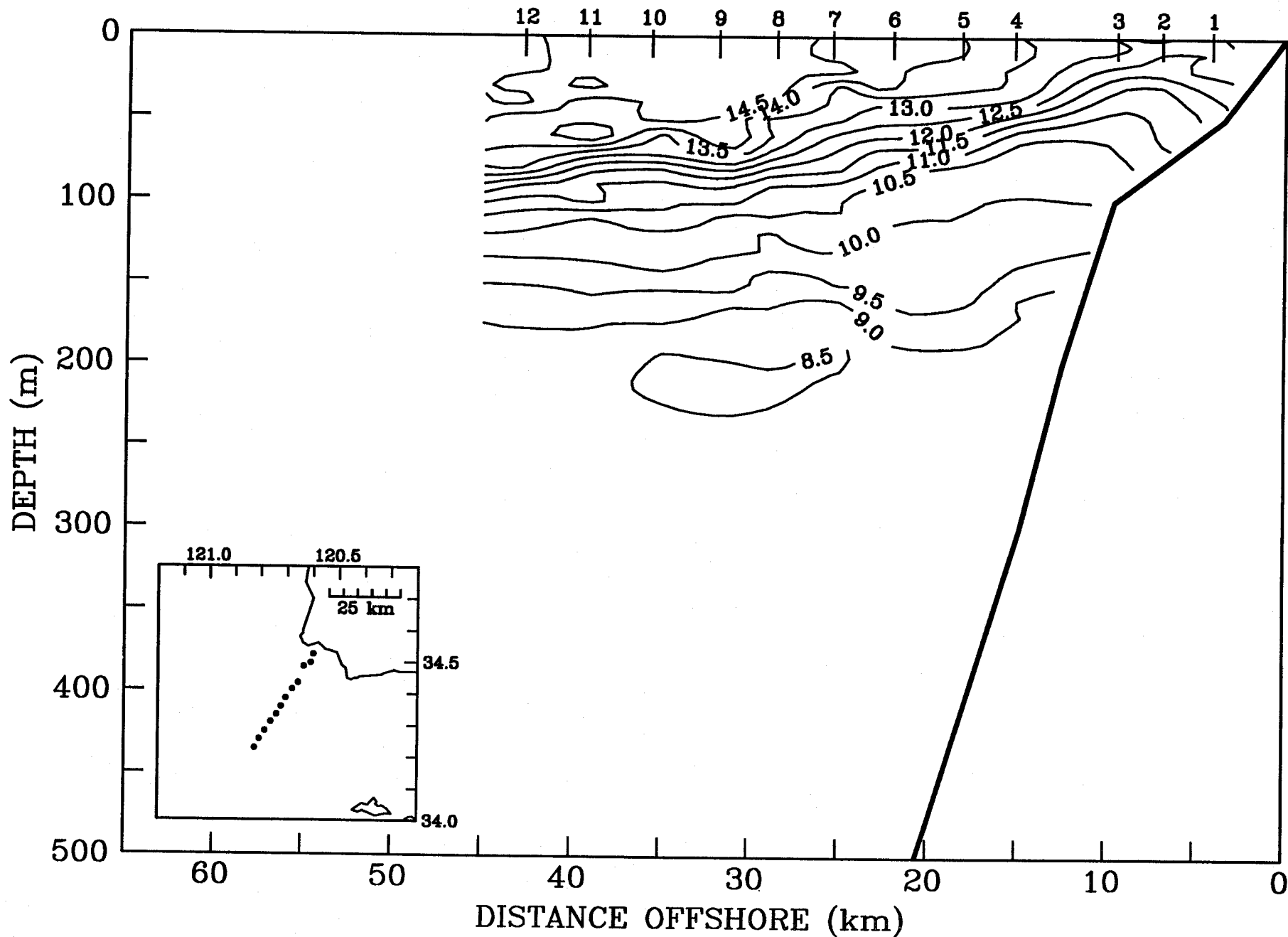
XBT Transect G-8



6 May - 7 May 1983  
TEMPERATURE (deg C)

# LINE G

XBT Map 10  
XBT Transect G-9



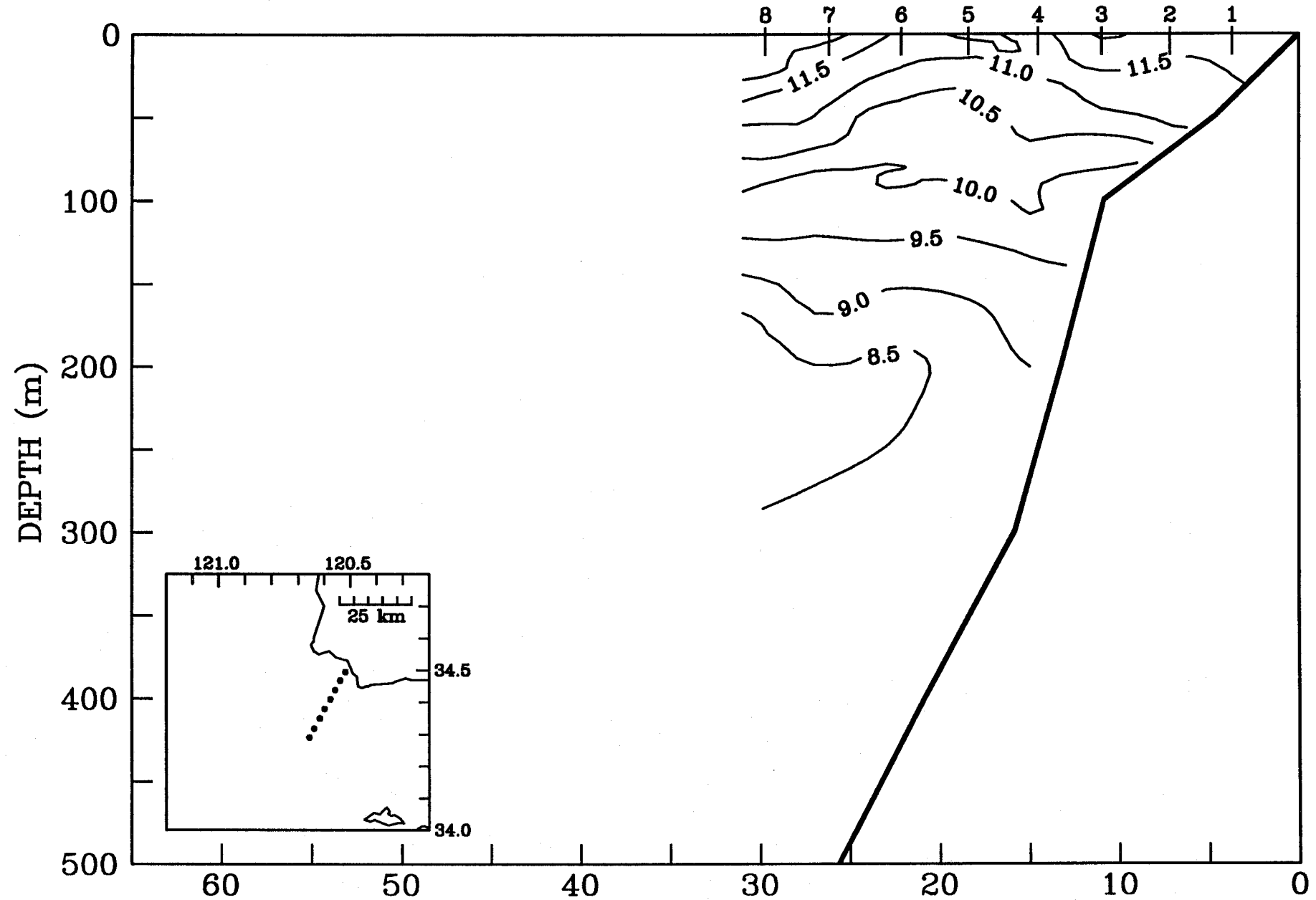
6 April 1983

TEMPERATURE (deg C)

# LINE GC

XBT Map 1

XBT Transect GC-1



DISTANCE OFFSHORE (km)

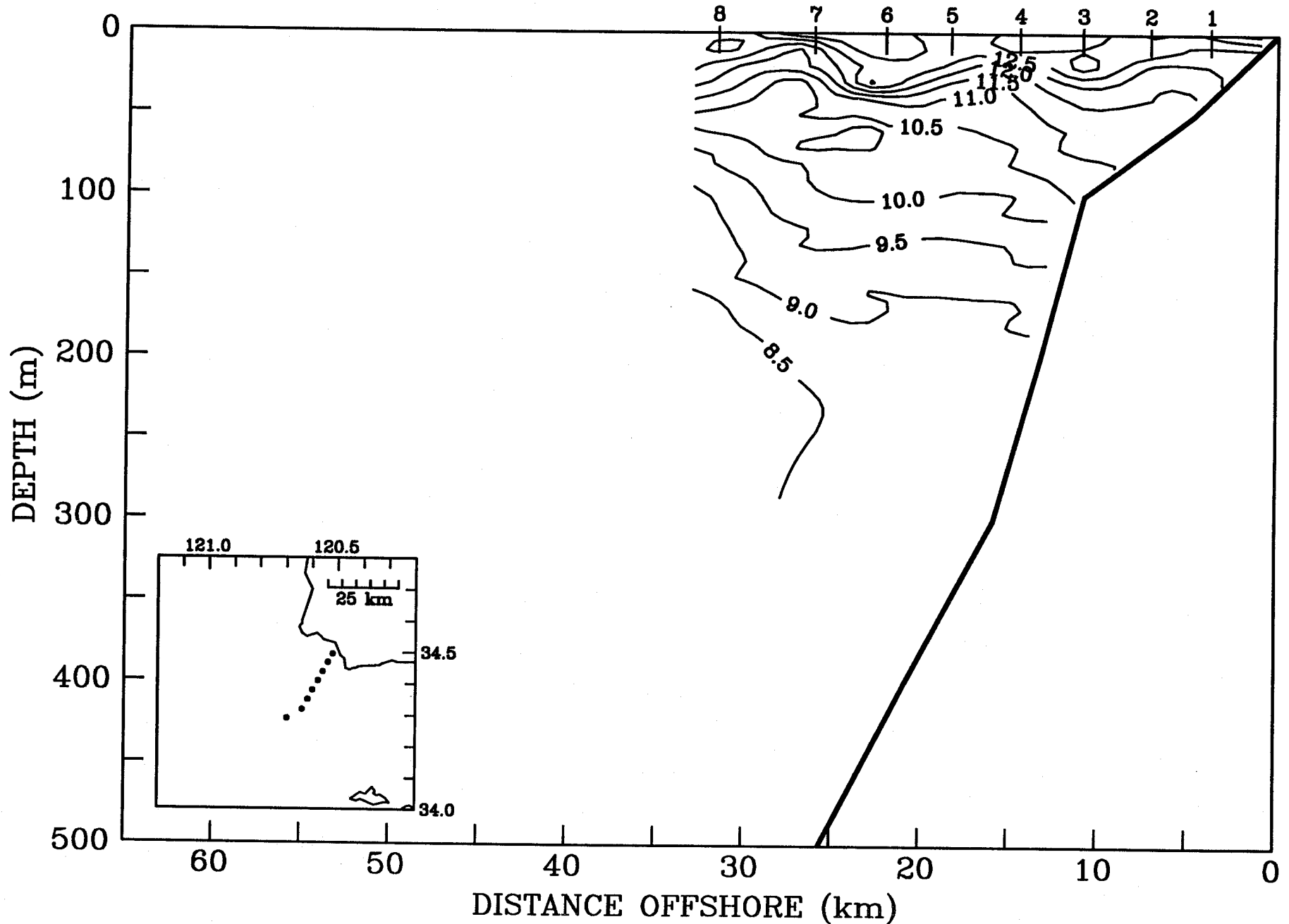
9 April 1983

TEMPERATURE (deg C)

# LINE GC

XBT Map 2

XBT Transect GC-2





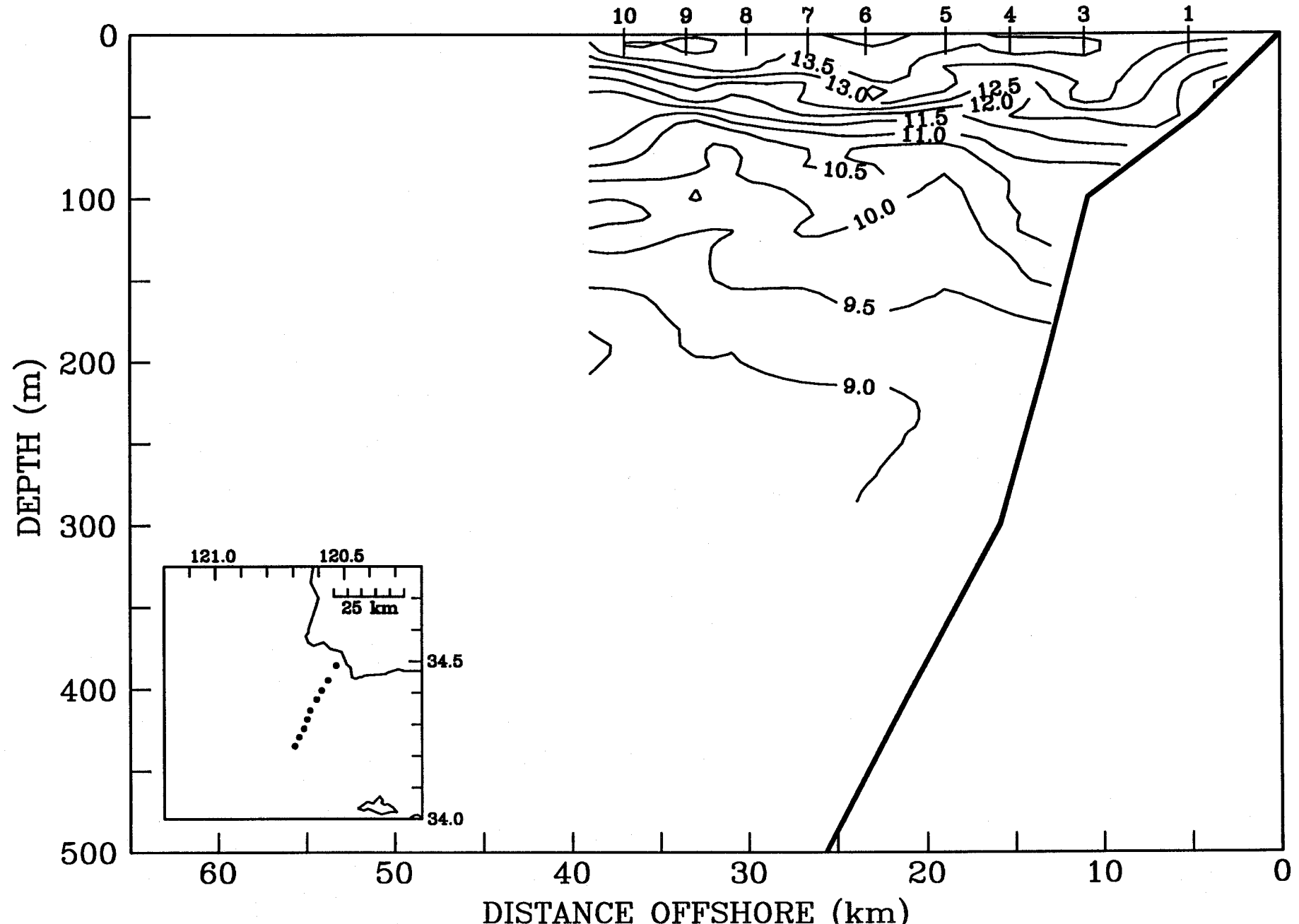




23 April 1983  
TEMPERATURE (deg C)

# LINE GC

XBT Map 6  
XBT Transect GC-5



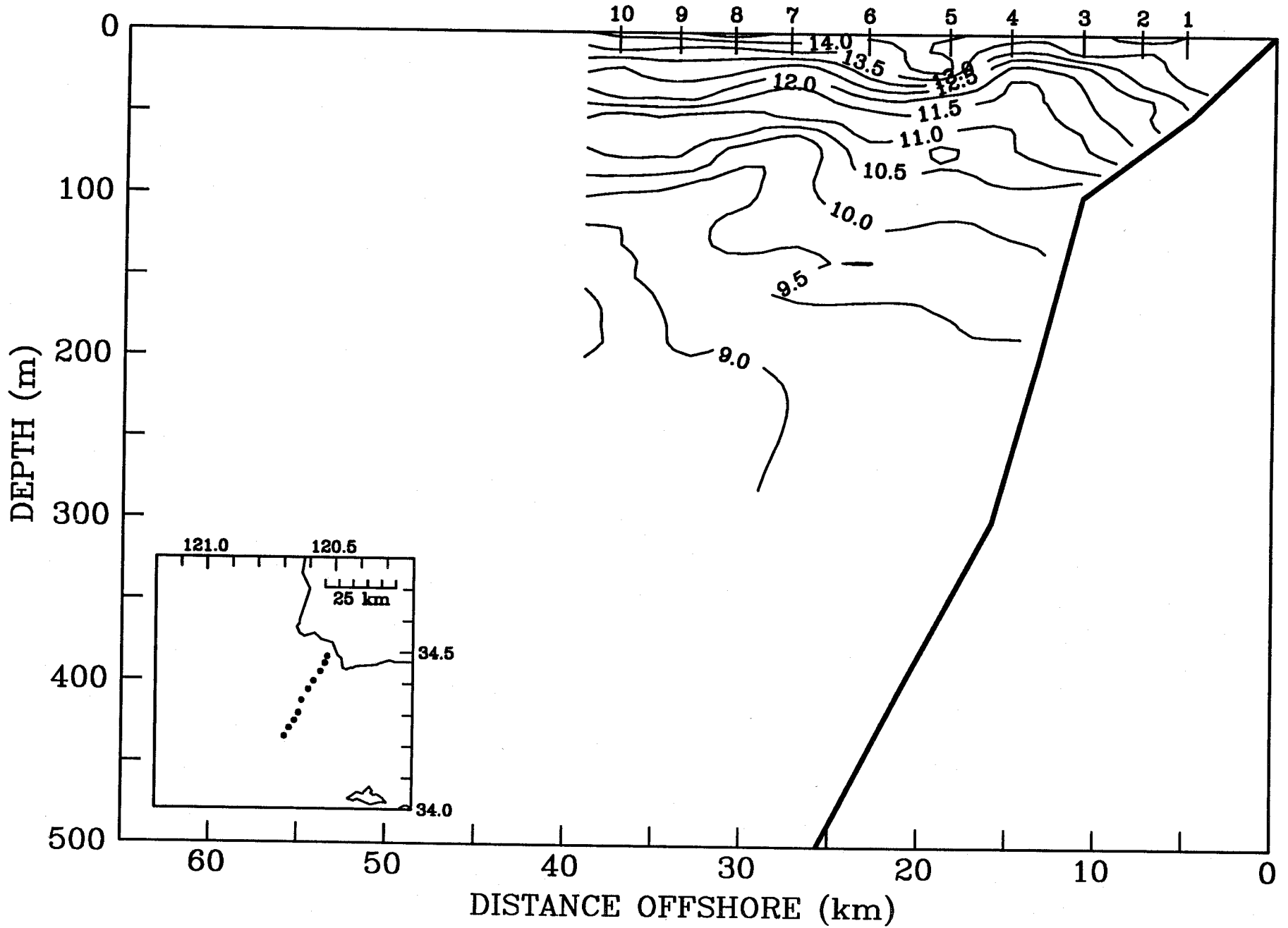
25 April 1983

TEMPERATURE (deg C)

# LINE GC

XBT Map 7

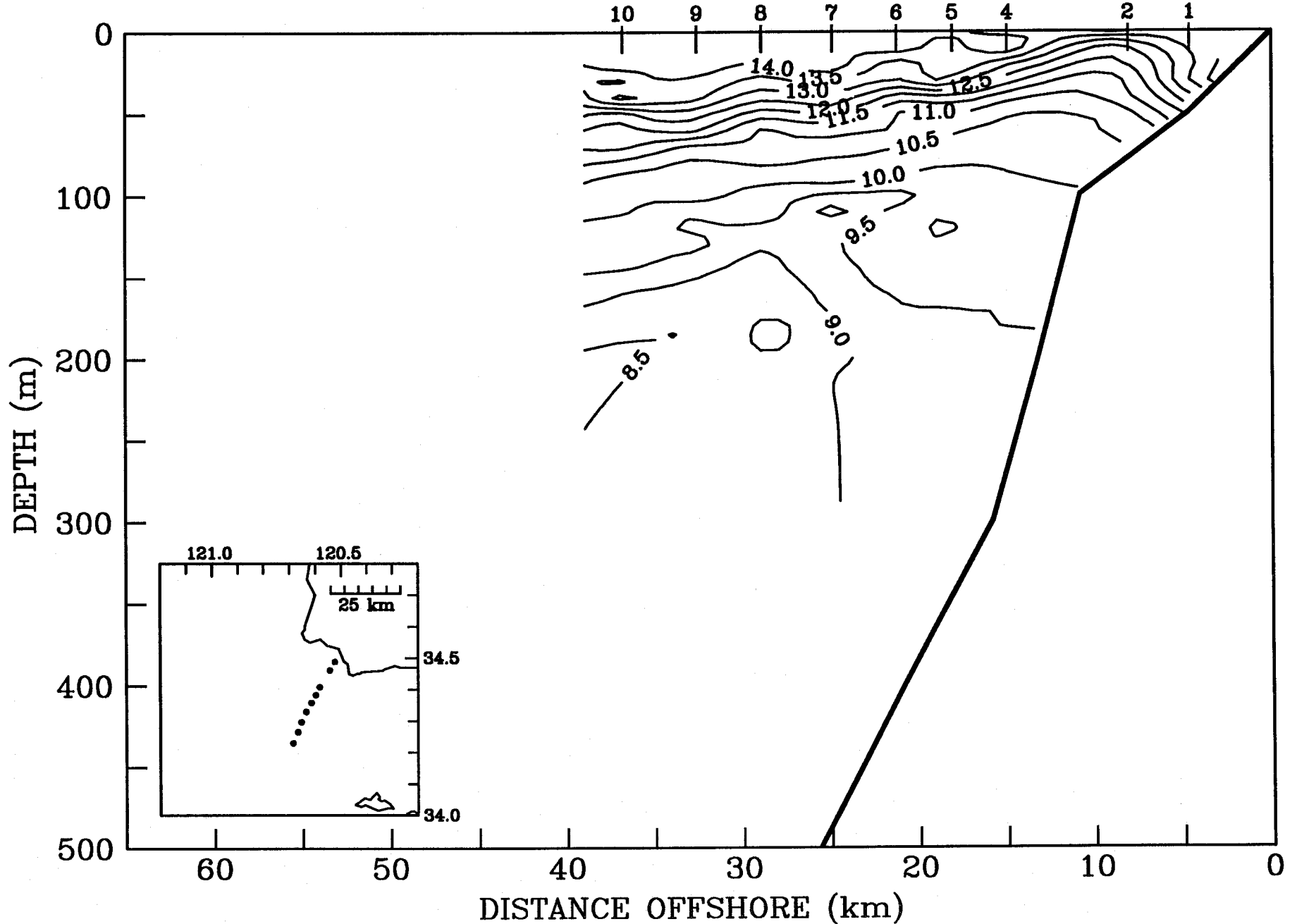
XBT Transect GC-6



28 April 1983  
TEMPERATURE (deg C)

# LINE GC

XBT Map 8  
XBT Transect GC-7



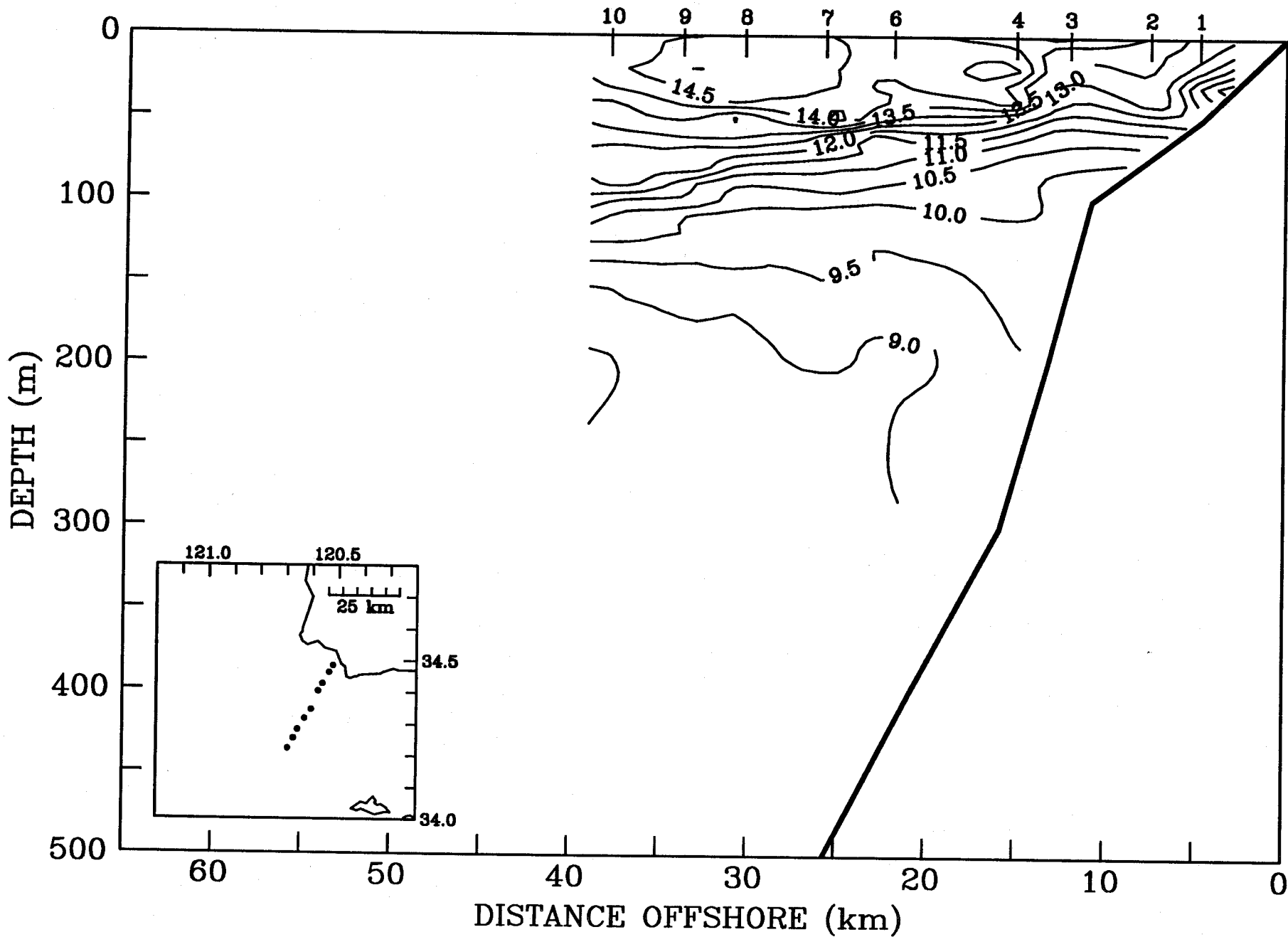
3 May 1983

TEMPERATURE (deg C)

LINE GC

XBT Map 9

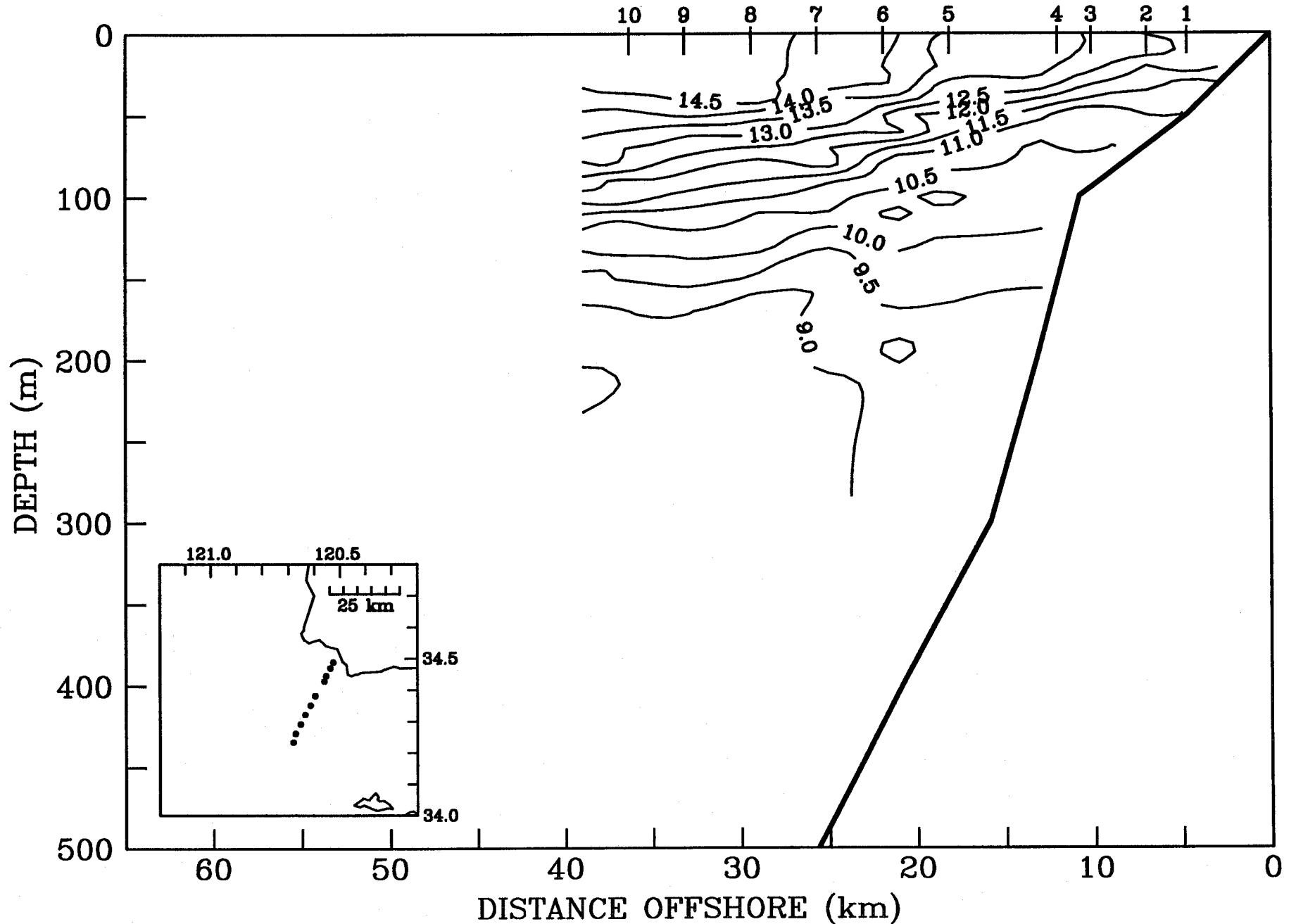
XBT Transect GC-8



7 May 1983  
TEMPERATURE (deg C)

# LINE GC

XBT Map 10  
XBT Transect GC-9



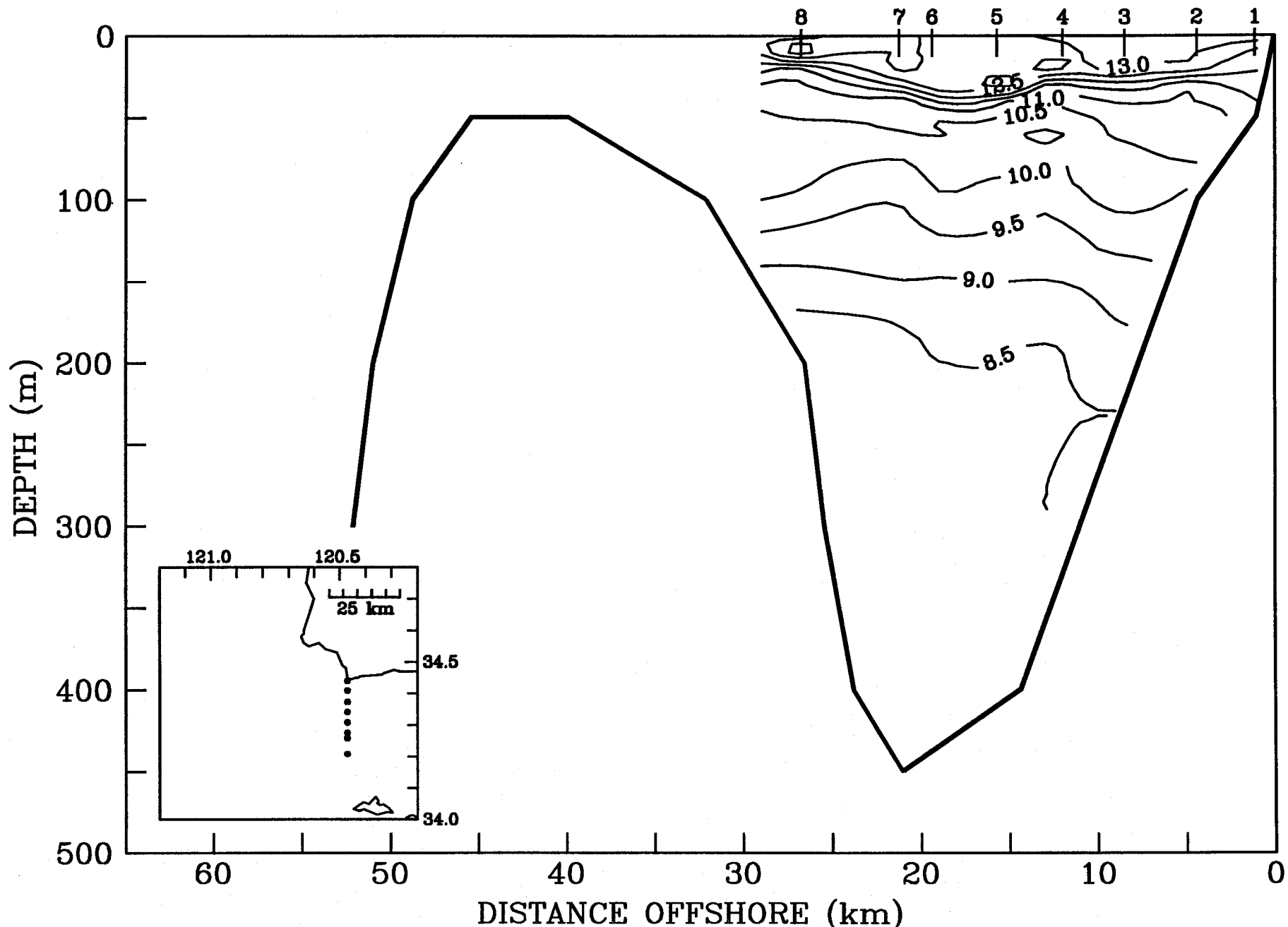


9 April 1983

TEMPERATURE (deg C)

# LINE C

XBT Map 2  
XBT Transect C-2



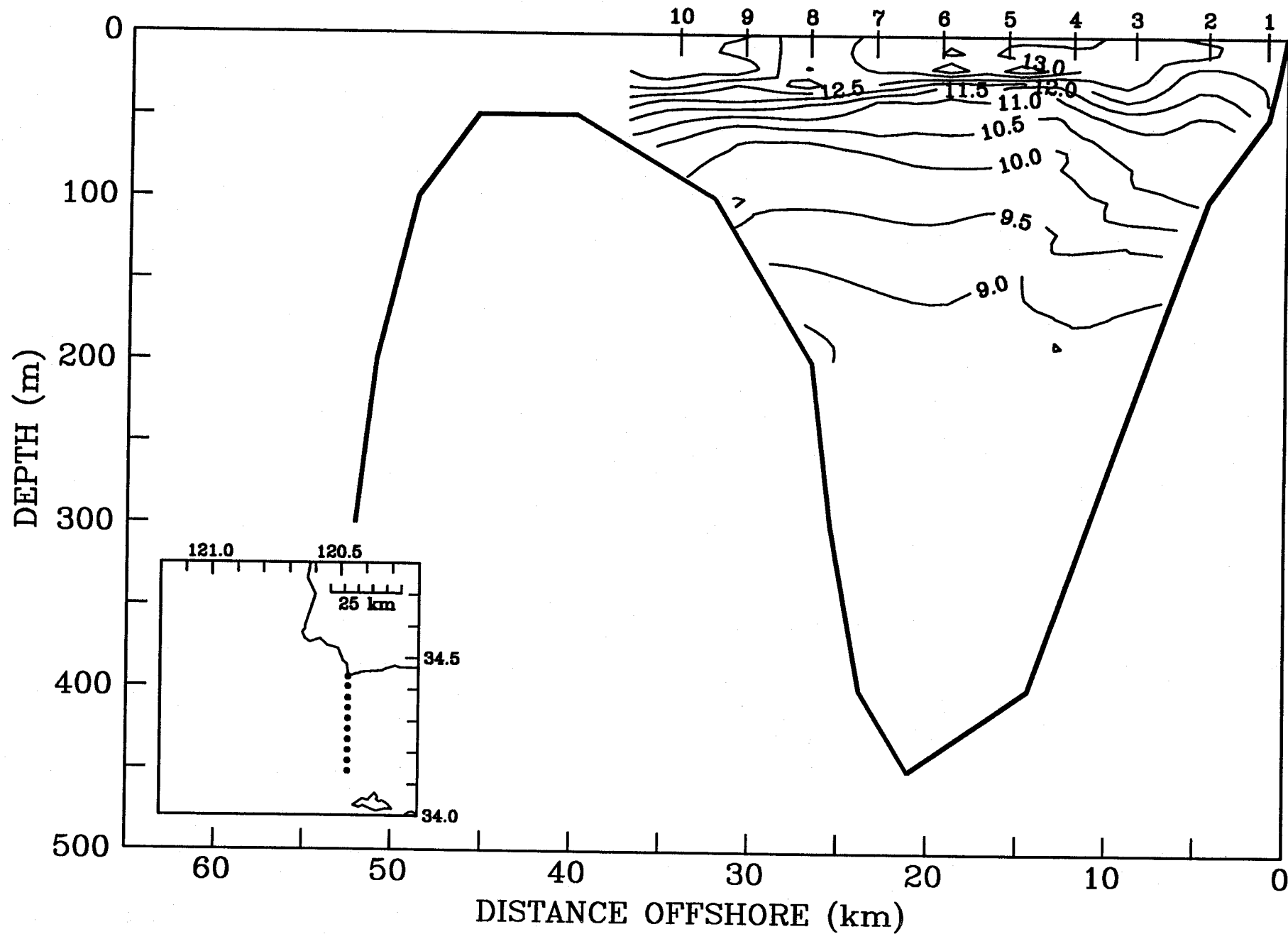
12 April 1983

TEMPERATURE (deg C)

# LINE C

XBT Map 3

XBT Transect C-3



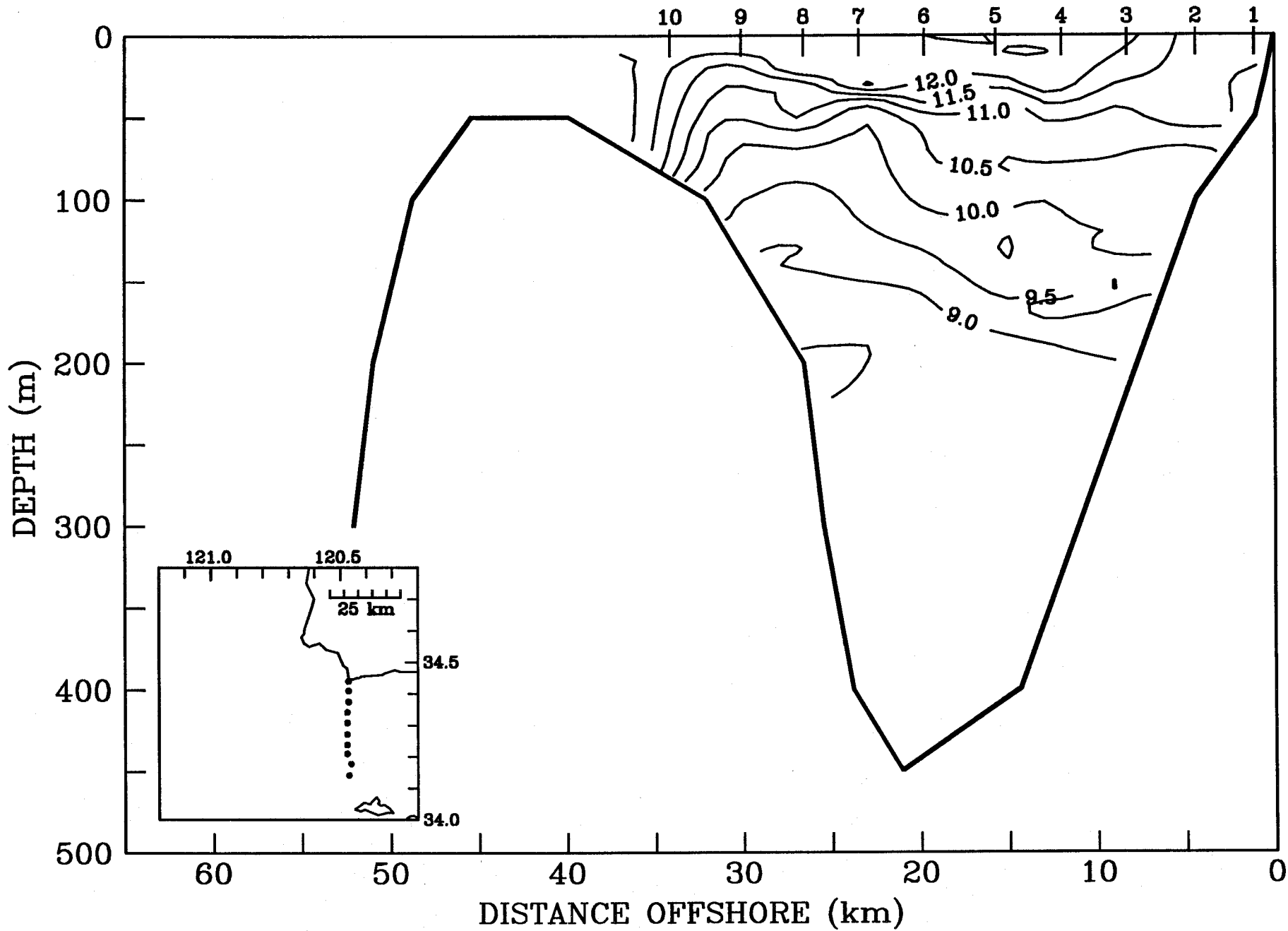


15 April 1983

TEMPERATURE (deg C)

# LINE C

XBT Map 4  
XBT Transect C-4







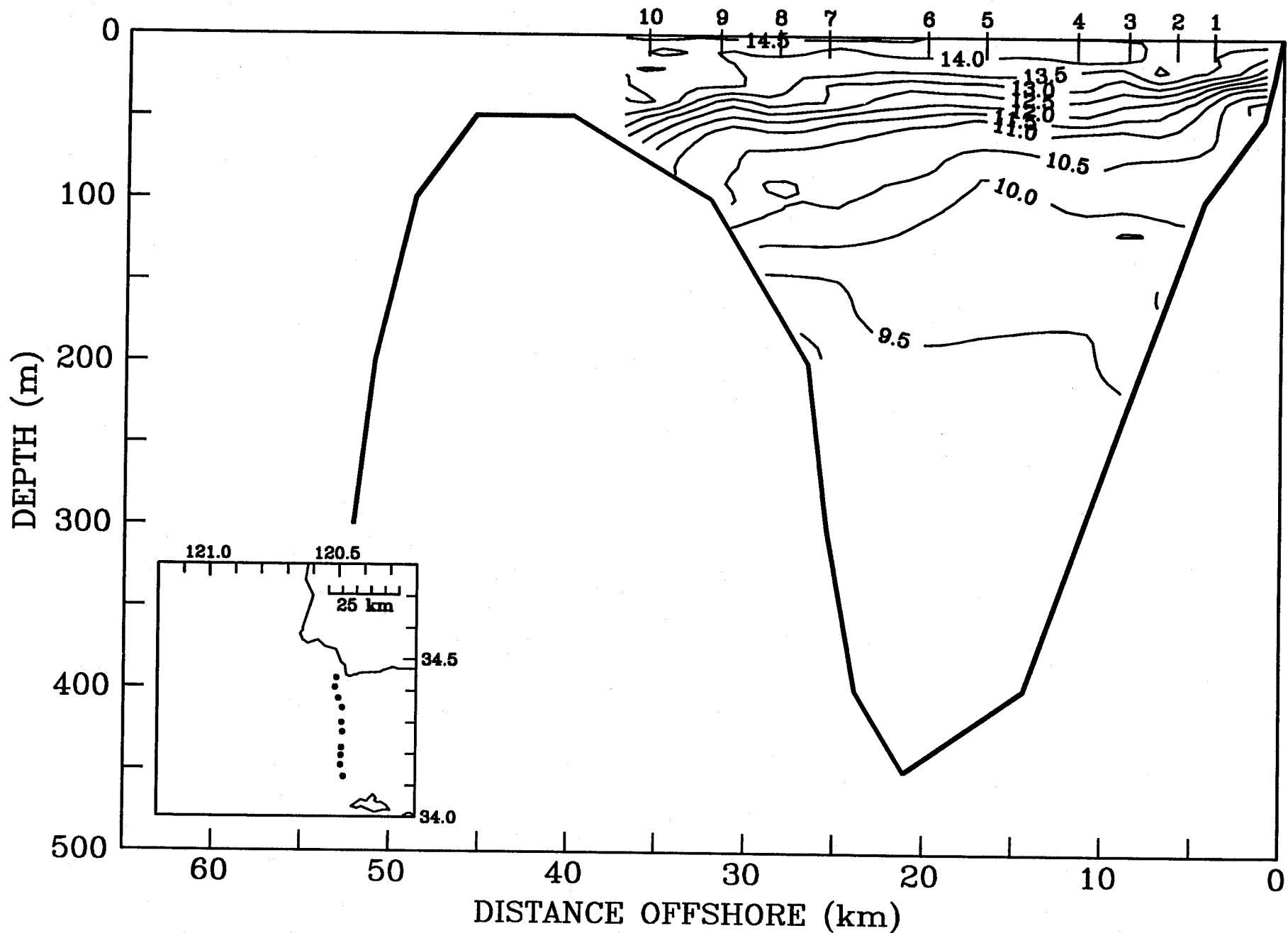
28 April 1983

TEMPERATURE (deg C)

# LINE C

XBT Map 8

XBT Transect C-7



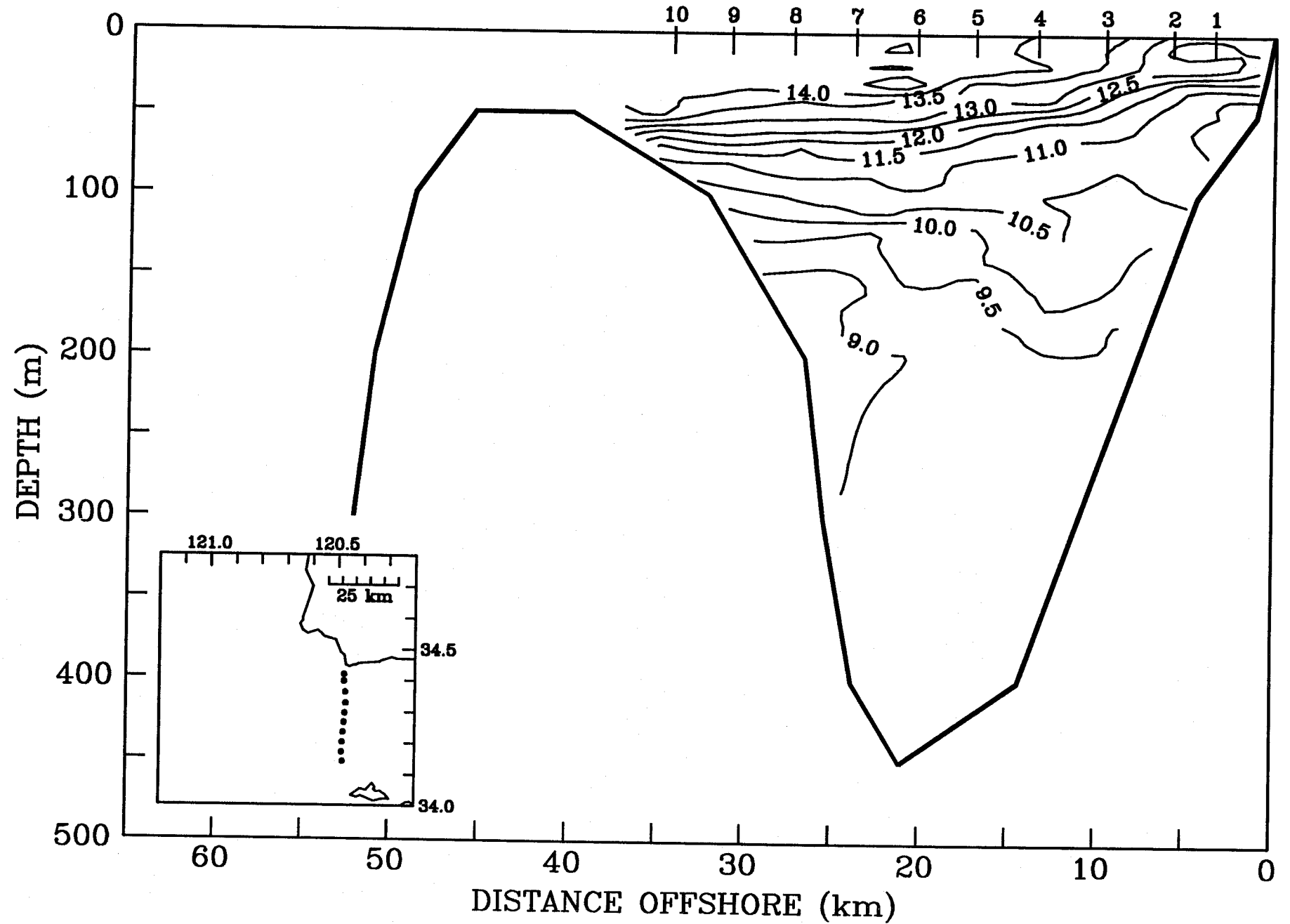


7 May 1983

TEMPERATURE (deg C)

# LINE C

XBT Map 10  
XBT Transect C-9

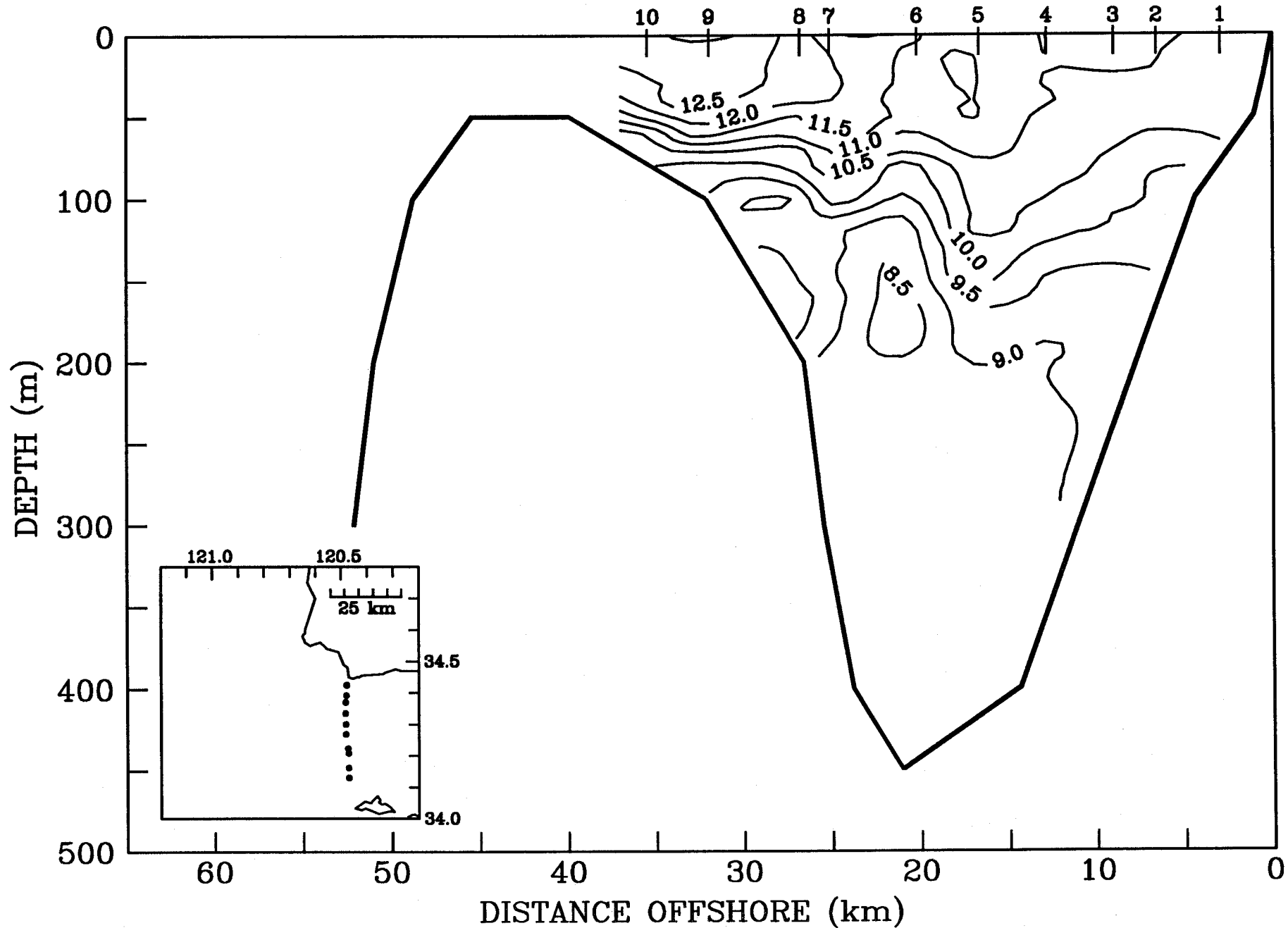


9 May 1983

TEMPERATURE (deg C)

# LINE C

XBT Transect C-10

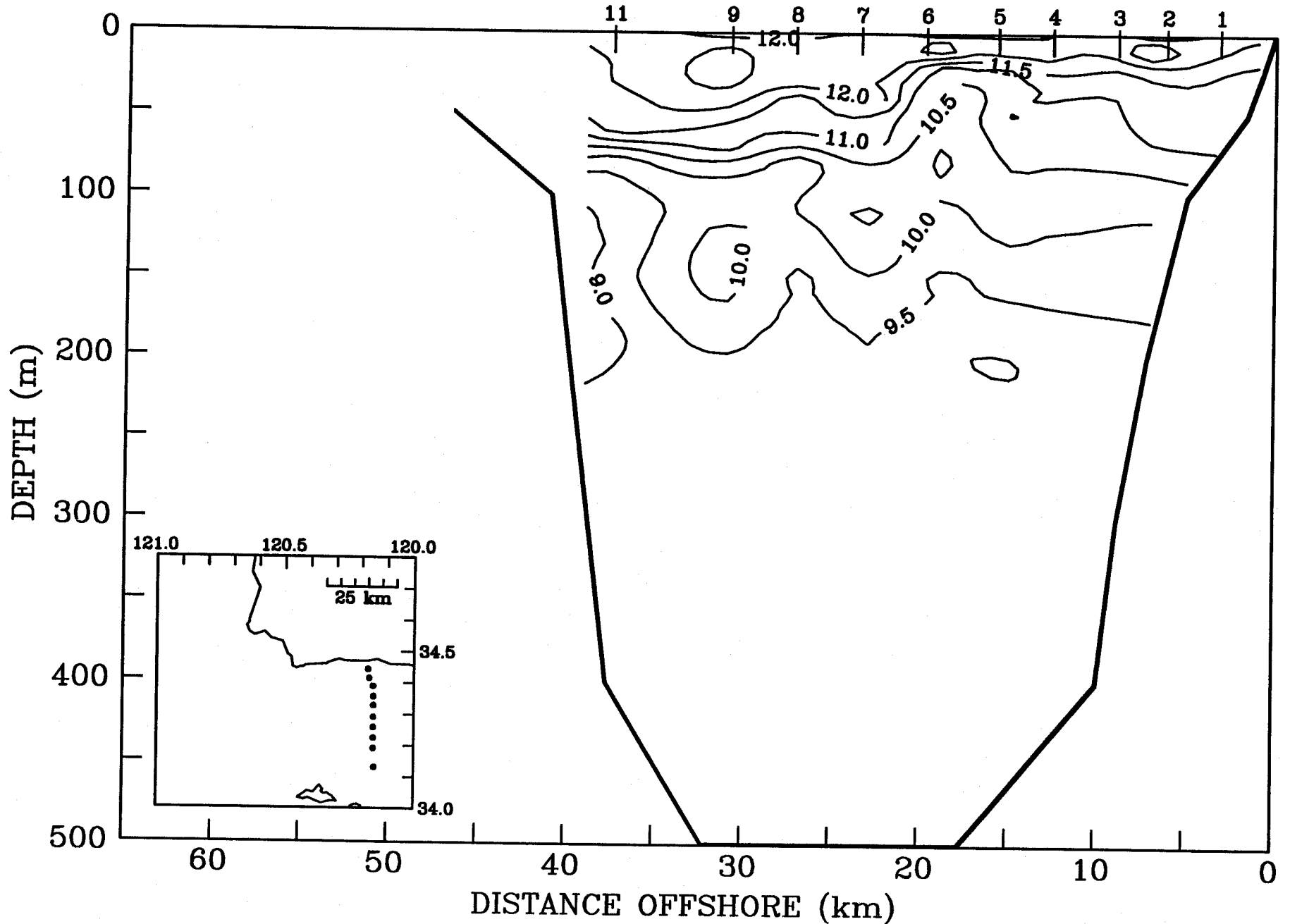


10 May 1983

TEMPERATURE (deg C)

LINE H

XBT Transect H-1





**CTD TEMPERATURE, SALINITY AND SIGMA-T SECTIONS**

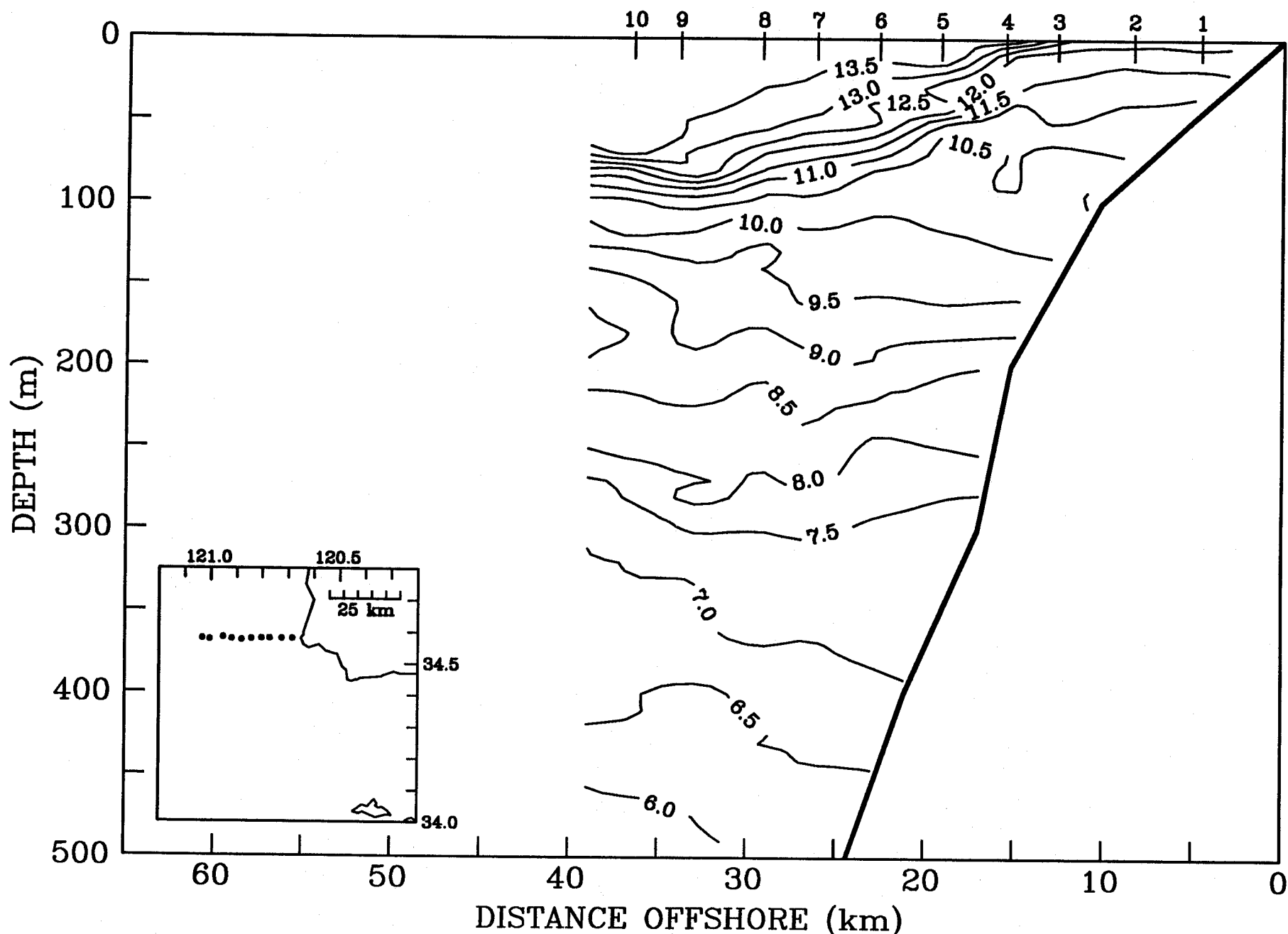
Page 4-1	CTD Line A	Transect 1	Temperature
Page 4-2	CTD Line A	Transect 1	Salinity
Page 4-3	CTD Line A	Transect 1	Sigma-t
Page 4-4	CTD Line A	Transect 2	Temperature
Page 4-5	CTD Line A	Transect 2	Salinity
Page 4-6	CTD Line A	Transect 2	Sigma-t
Page 4-7	CTD Line A	Transect 3	Temperature
Page 4-8	CTD Line A	Transect 3	Salinity
Page 4-9	CTD Line A	Transect 3	Sigma-t
Page 4-10	CTD Line A	Transect 4	Temperature
Page 4-11	CTD Line A	Transect 4	Salinity
Page 4-12	CTD Line A	Transect 4	Sigma-t
Page 4-13	CTD Line A	Transect 5	Temperature
Page 4-14	CTD Line A	Transect 5	Salinity
Page 4-15	CTD Line A	Transect 5	Sigma-t
Page 4-16	CTD Line A	Transect 6	Temperature
Page 4-17	CTD Line A	Transect 6	Salinity
Page 4-18	CTD Line A	Transect 6	Sigma-t
Page 4-19	CTD Line G	Transect 1	Temperature
Page 4-20	CTD Line G	Transect 1	Salinity
Page 4-21	CTD Line G	Transect 1	Sigma-t
Page 4-22	CTD Line G	Transect 2	Temperature
Page 4-23	CTD Line G	Transect 2	Salinity
Page 4-24	CTD Line G	Transect 2	Sigma-t
Page 4-25	CTD Line G	Transect 3	Temperature
Page 4-26	CTD Line G	Transect 3	Salinity
Page 4-27	CTD Line G	Transect 3	Sigma-t
Page 4-28	CTD Line G	Transect 4	Temperature
Page 4-29	CTD Line G	Transect 4	Salinity
Page 4-30	CTD Line G	Transect 4	Sigma-t
Page 4-31	CTD Line G	Transect 5	Temperature
Page 4-32	CTD Line G	Transect 5	Salinity
Page 4-33	CTD Line G	Transect 5	Sigma-t
Page 4-34	CTD Line G	Transect 6	Temperature
Page 4-35	CTD Line G	Transect 6	Salinity
Page 4-36	CTD Line G	Transect 6	Sigma-t
Page 4-37	CTD Line G	Transect 7	Temperature
Page 4-38	CTD Line G	Transect 7	Salinity
Page 4-39	CTD Line G	Transect 7	Sigma-t
Page 4-40	CTD Line G	Transect 8	Temperature
Page 4-41	CTD Line G	Transect 8	Salinity
Page 4-42	CTD Line G	Transect 8	Sigma-t

Page 4-43	CTD Line G	Transect 9	Temperature
Page 4-44	CTD Line G	Transect 9	Salinity
Page 4-45	CTD Line G	Transect 9	Sigma-t
Page 4-46	CTD Line G	Transect 10	Temperature
Page 4-47	CTD Line G	Transect 10	Salinity
Page 4-48	CTD Line G	Transect 10	Sigma-t
Page 4-49	CTD Line G	Transect 11	Temperature
Page 4-50	CTD Line G	Transect 11	Salinity
Page 4-51	CTD Line G	Transect 11	Sigma-t
Page 4-52	CTD Line G	Transect 12	Temperature
Page 4-53	CTD Line G	Transect 12	Salinity
Page 4-54	CTD Line G	Transect 12	Sigma-t
Page 4-55	CTD Line G	Transect 13	Temperature
Page 4-56	CTD Line G	Transect 13	Salinity
Page 4-57	CTD Line G	Transect 13	Sigma-t
Page 4-58	CTD Line C	Transect 1	Temperature
Page 4-59	CTD Line C	Transect 1	Salinity
Page 4-60	CTD Line C	Transect 1	Sigma-t
Page 4-61	CTD Line C	Transect 2	Temperature
Page 4-62	CTD Line C	Transect 2	Salinity
Page 4-63	CTD Line C	Transect 2	Sigma-t
Page 4-64	CTD Line C	Transect 3	Temperature
Page 4-65	CTD Line C	Transect 3	Salinity
Page 4-66	CTD Line C	Transect 3	Sigma-t
Page 4-67	CTD Line C	Transect 4	Temperature
Page 4-68	CTD Line C	Transect 4	Salinity
Page 4-69	CTD Line C	Transect 4	Sigma-t
Page 4-70	CTD Line C	Transect 5	Temperature
Page 4-71	CTD Line C	Transect 5	Salinity
Page 4-72	CTD Line C	Transect 5	Sigma-t
Page 4-73	CTD Line P	Transect 1	Temperature
Page 4-74	CTD Line P	Transect 1	Salinity
Page 4-75	CTD Line P	Transect 1	Sigma-t
Page 4-76	CTD Line P	Transect 2	Temperature
Page 4-77	CTD Line P	Transect 2	Salinity
Page 4-78	CTD Line P	Transect 2	Sigma-t

7 April - 8 April 1983  
TEMPERATURE (deg C)

# LINE A

CTD Map 1  
CTD Transect A-1



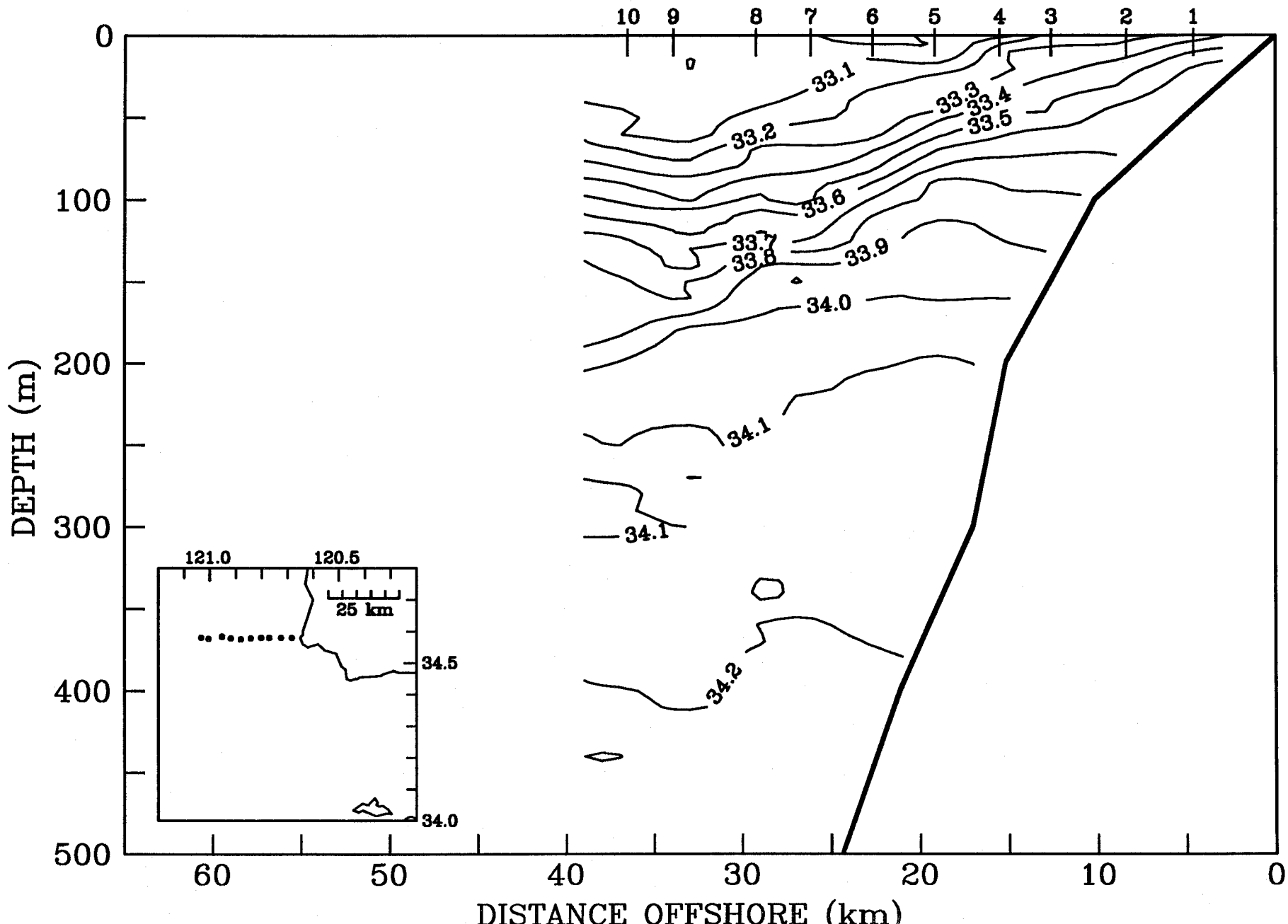
7 April - 8 April 1983

SALINITY (ppt)

# LINE A

CTD Map 1

CTD Transect A-1

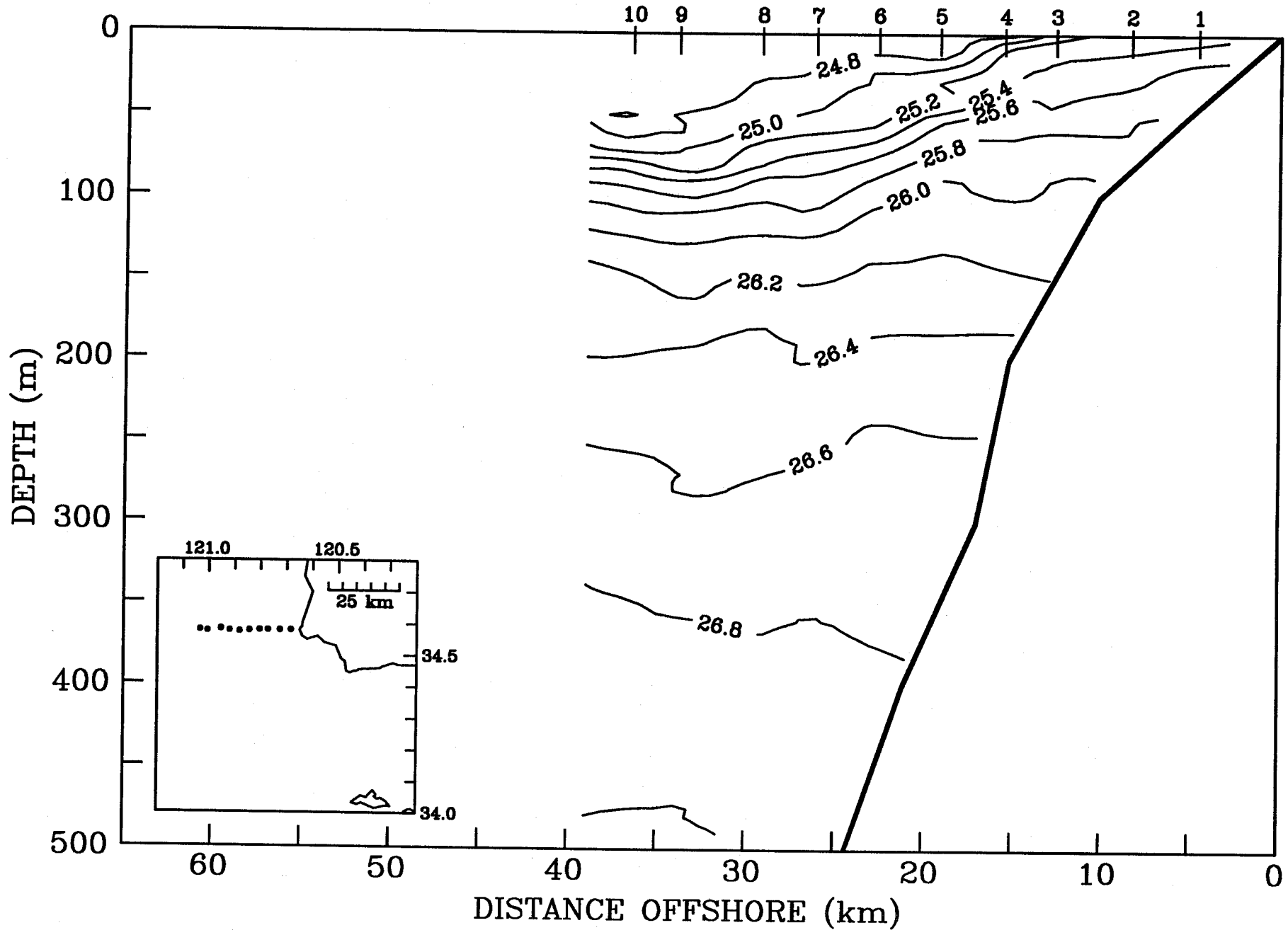


7 April - 8 April 1983

SIGMA-T

# LINE A

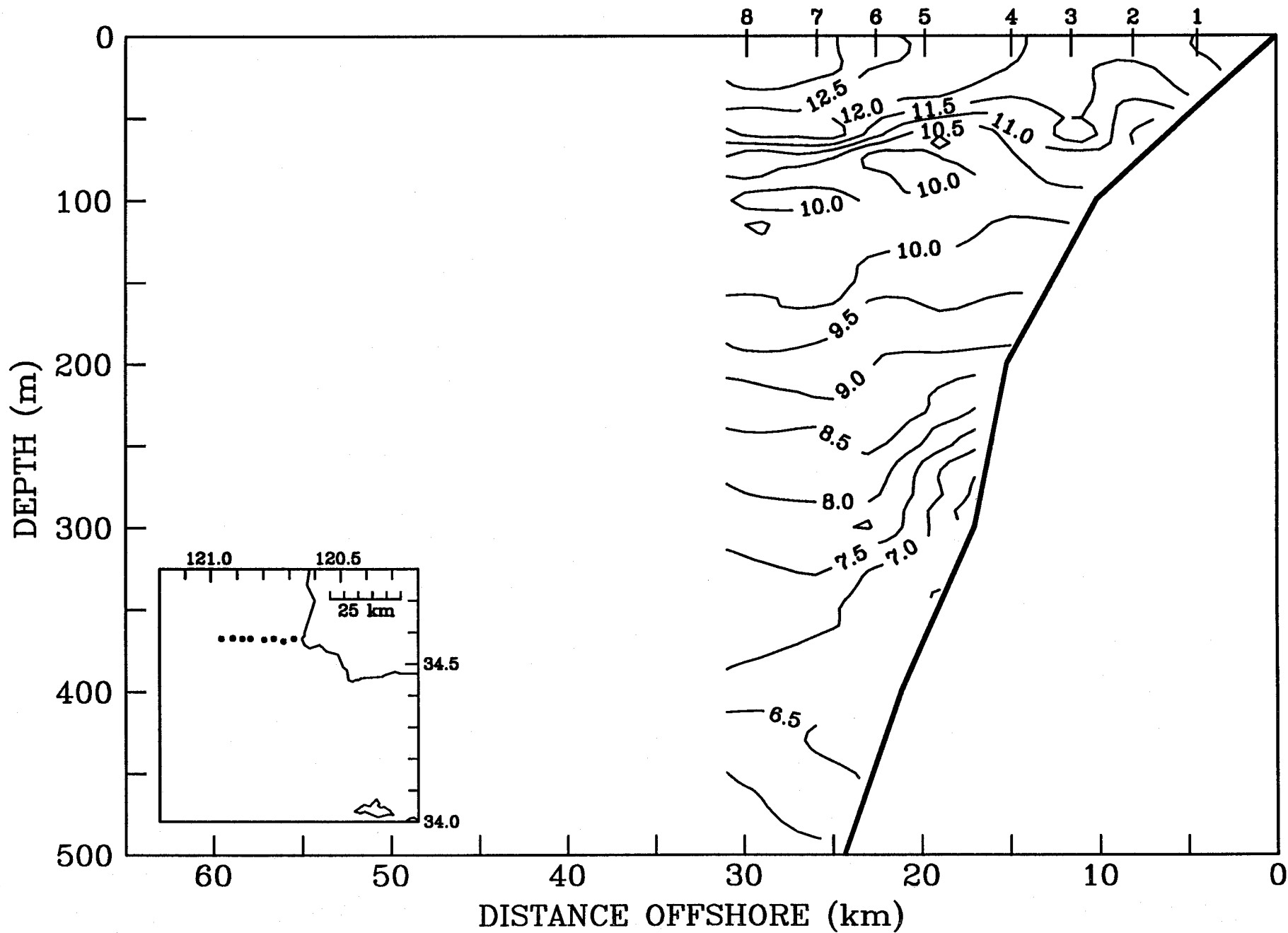
CTD Map 1  
CTD Transect A-1



12 April - 13 April 1983  
TEMPERATURE (deg C)

# LINE A

CTD Map 2  
CTD Transect A-2



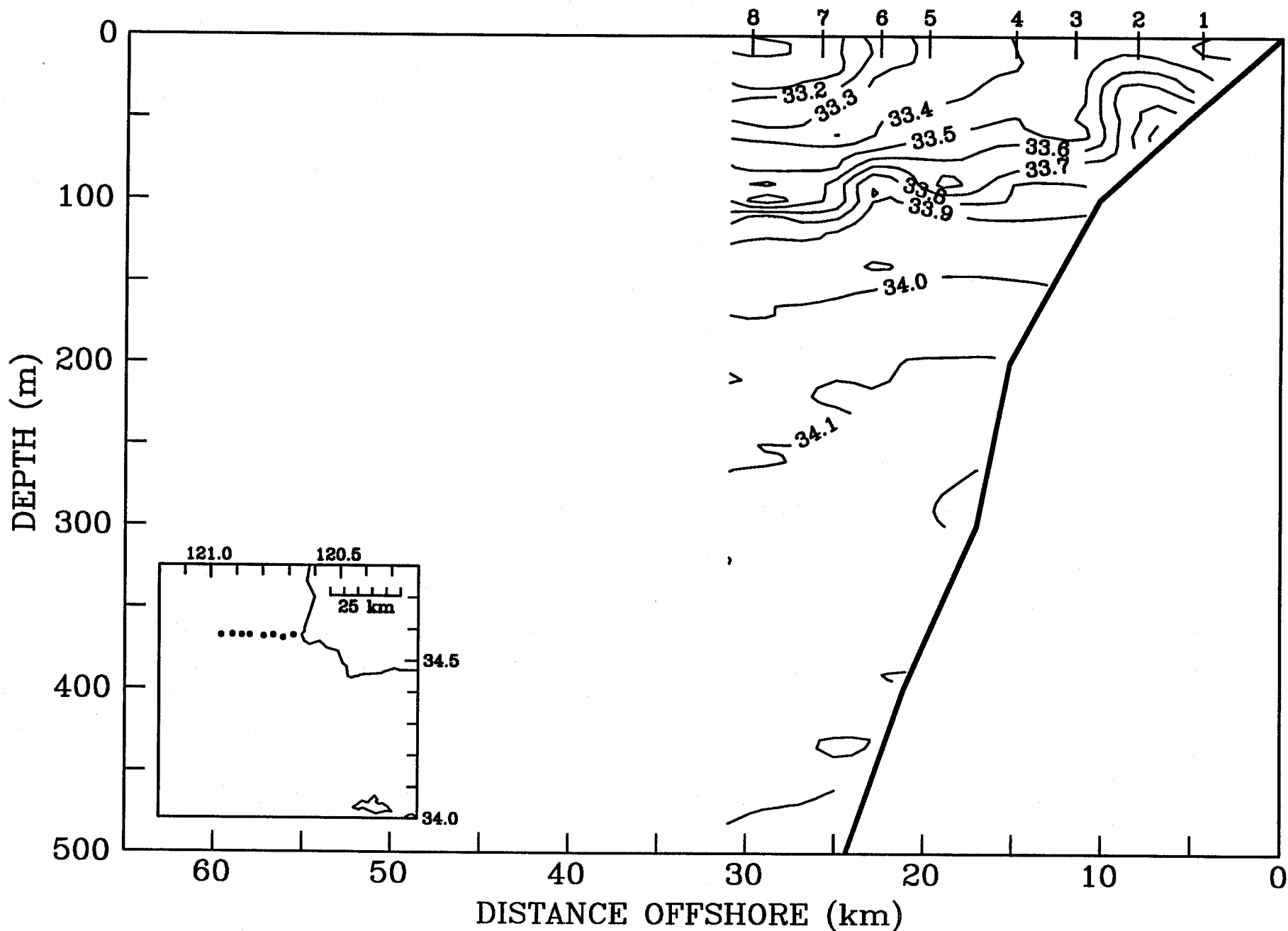
12 April - 13 April 1983

SALINITY (ppt)

# LINE A

CTD Map 2

CTD Transect A-2





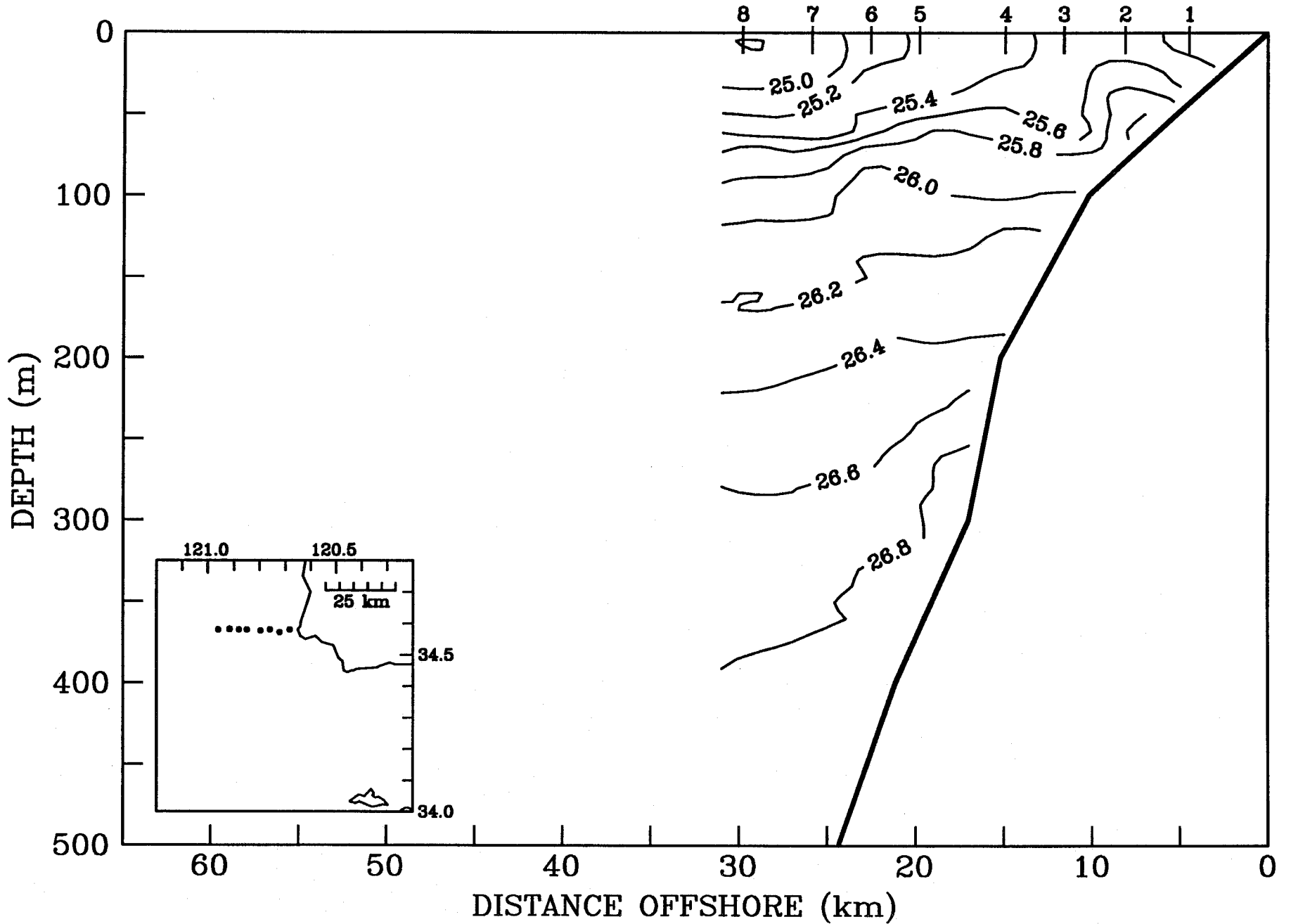
12 April - 13 April 1983

SIGMA-T

# LINE A

CTD Map 2

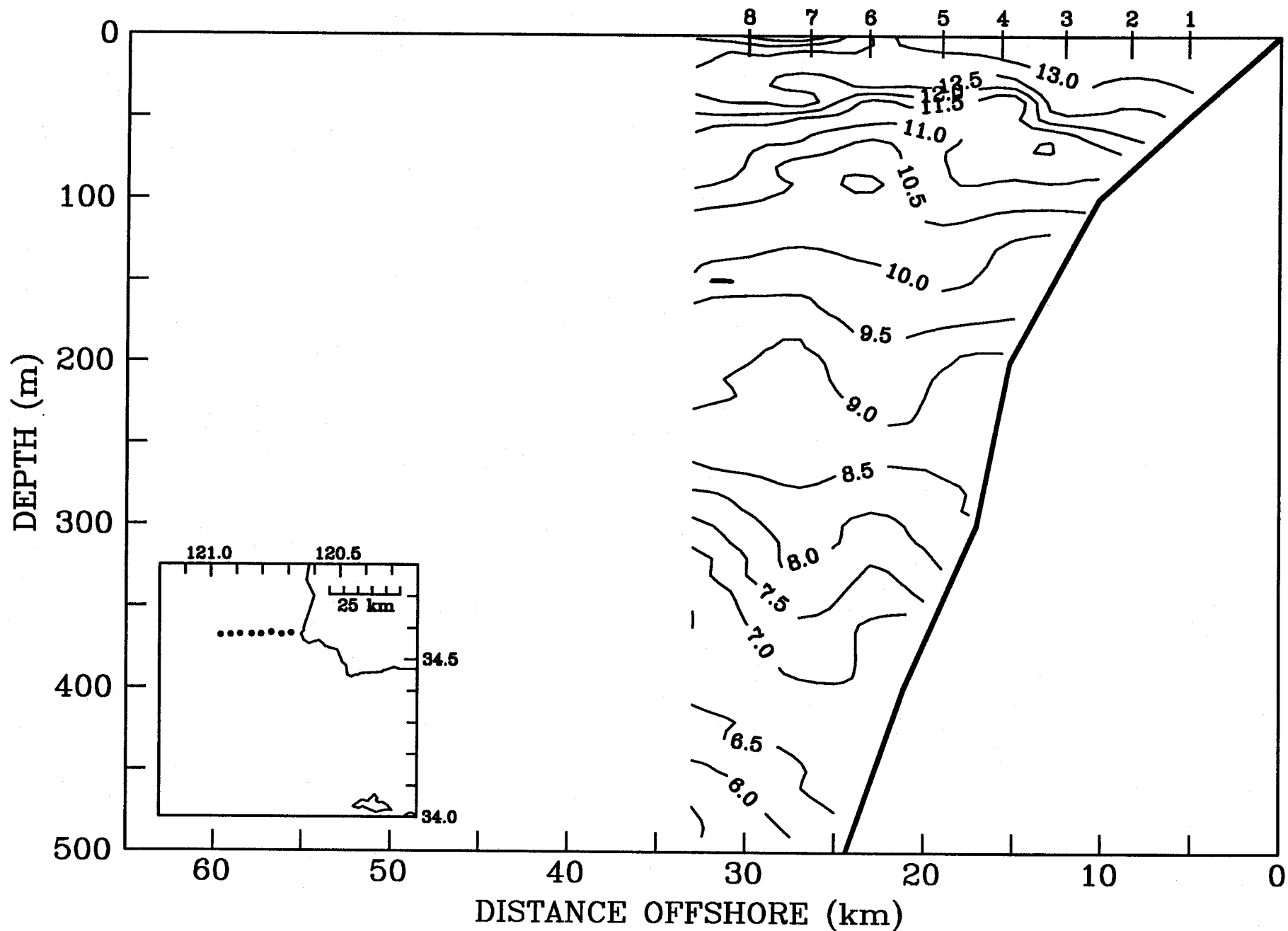
CTD Transect A-2



20 April - 21 April 1983  
TEMPERATURE (deg C)

# LINE A

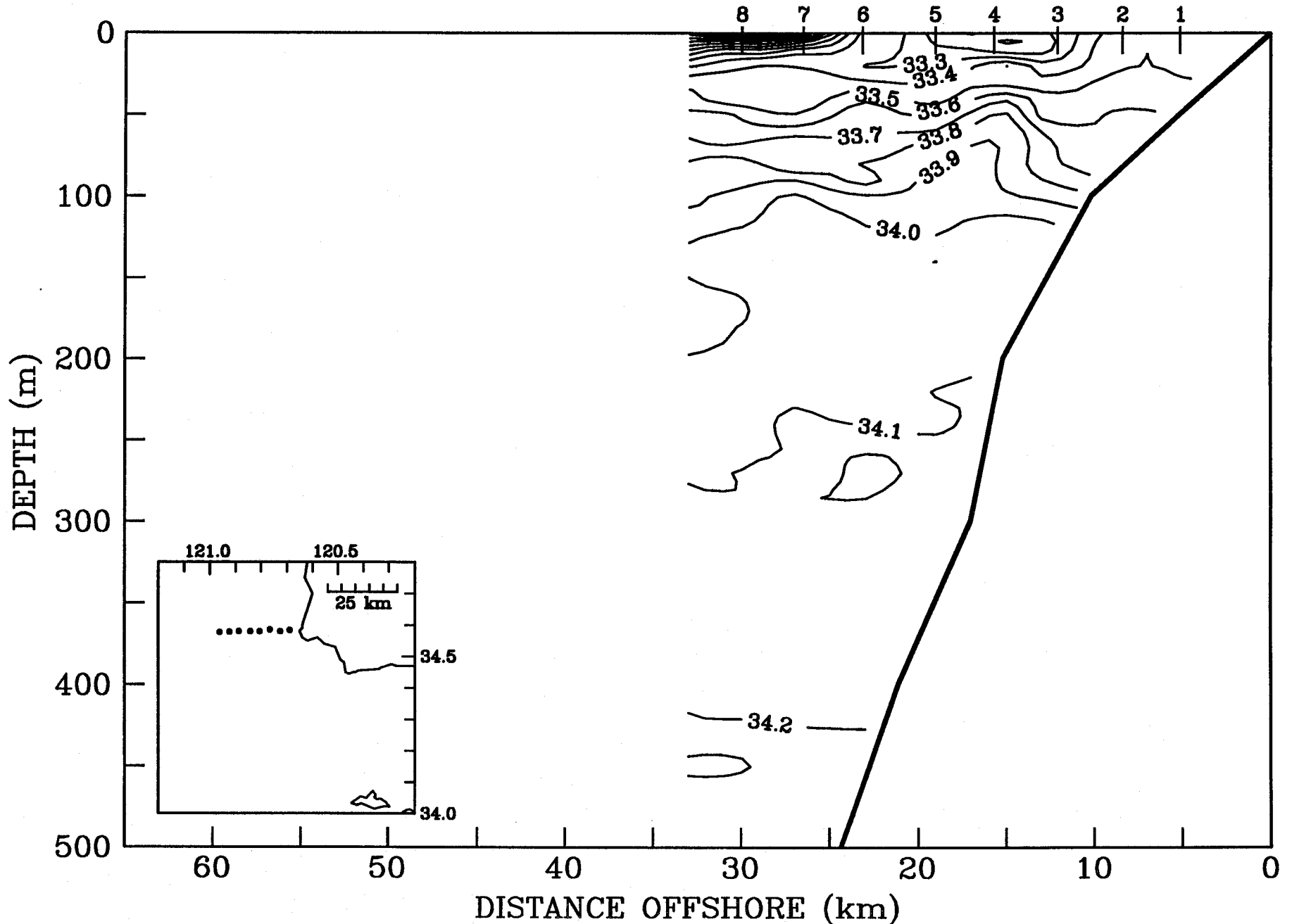
CTD Map 3  
CTD Transect A-3



20 April - 21 April 1983  
SALINITY (ppt)

# LINE A

CTD Map 3  
CTD Transect A-3



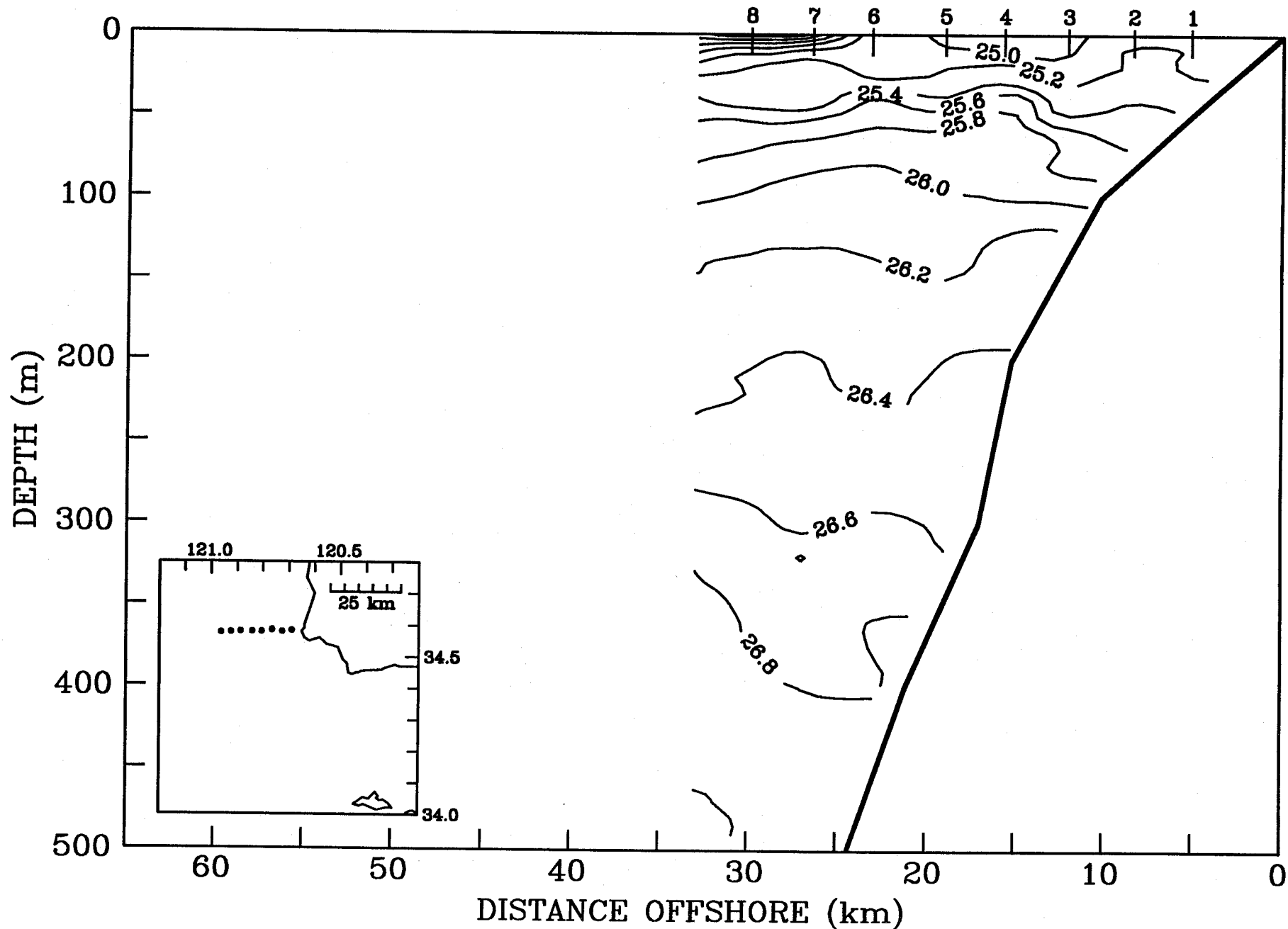
20 April - 21 April 1983

SIGMA-T

# LINE A

CTD Map 3

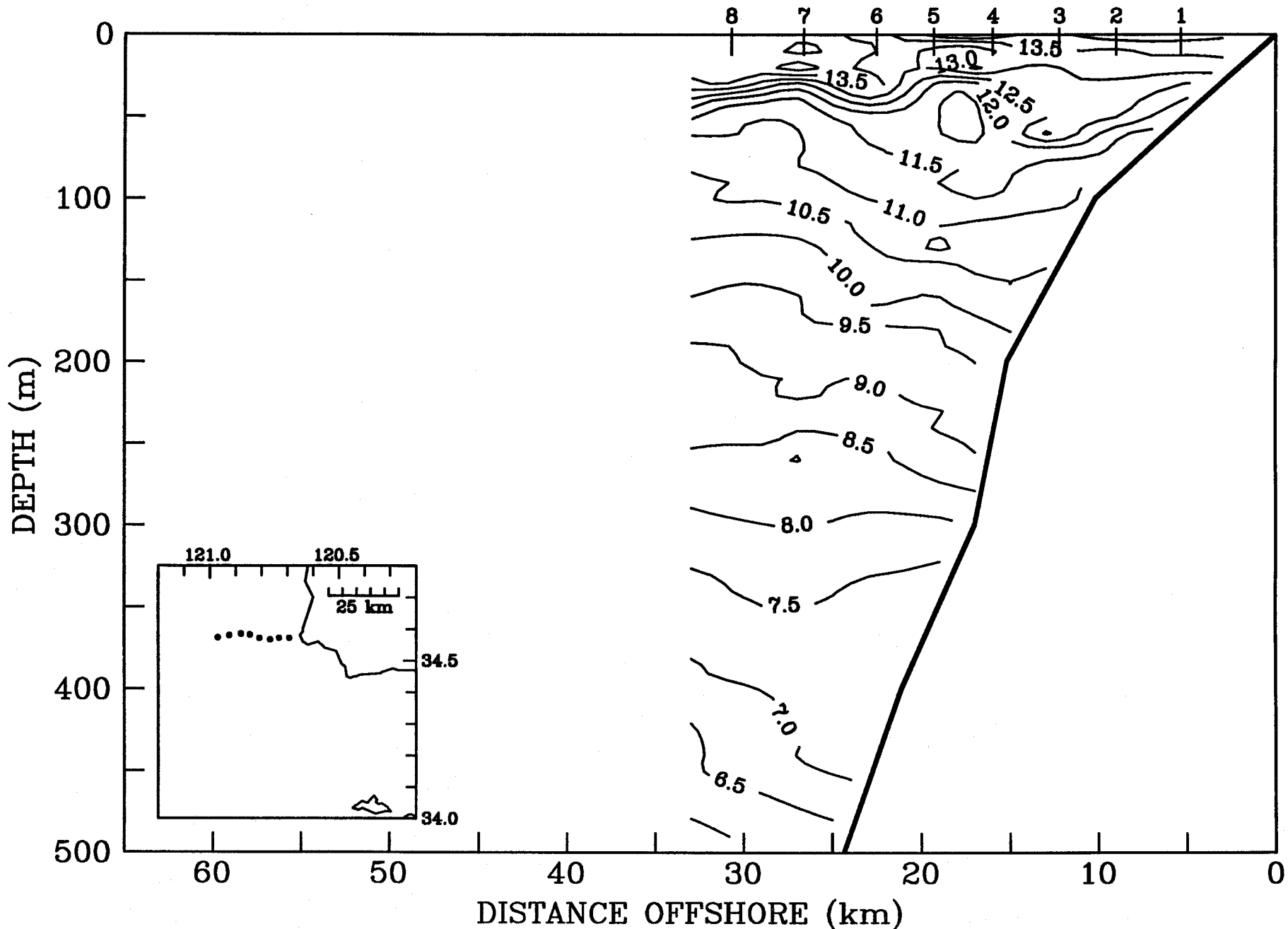
CTD Transect A-3



25 April - 26 April 1983  
TEMPERATURE (deg C)

# LINE A

CTD Map 4  
CTD Transect A-4





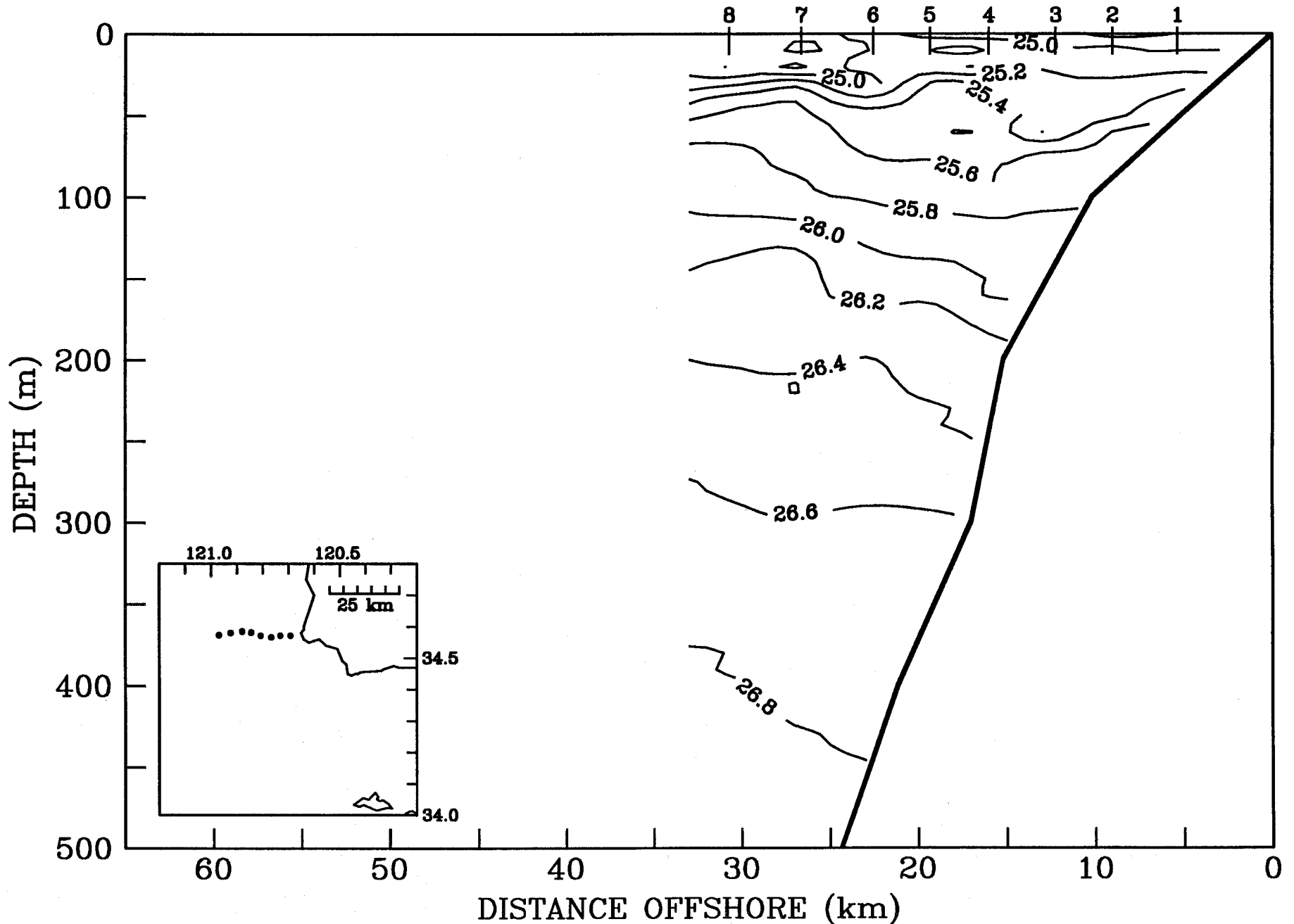
25 April - 26 April 1983

SIGMA-T

# LINE A

CTD Map 4

CTD Transect A-4



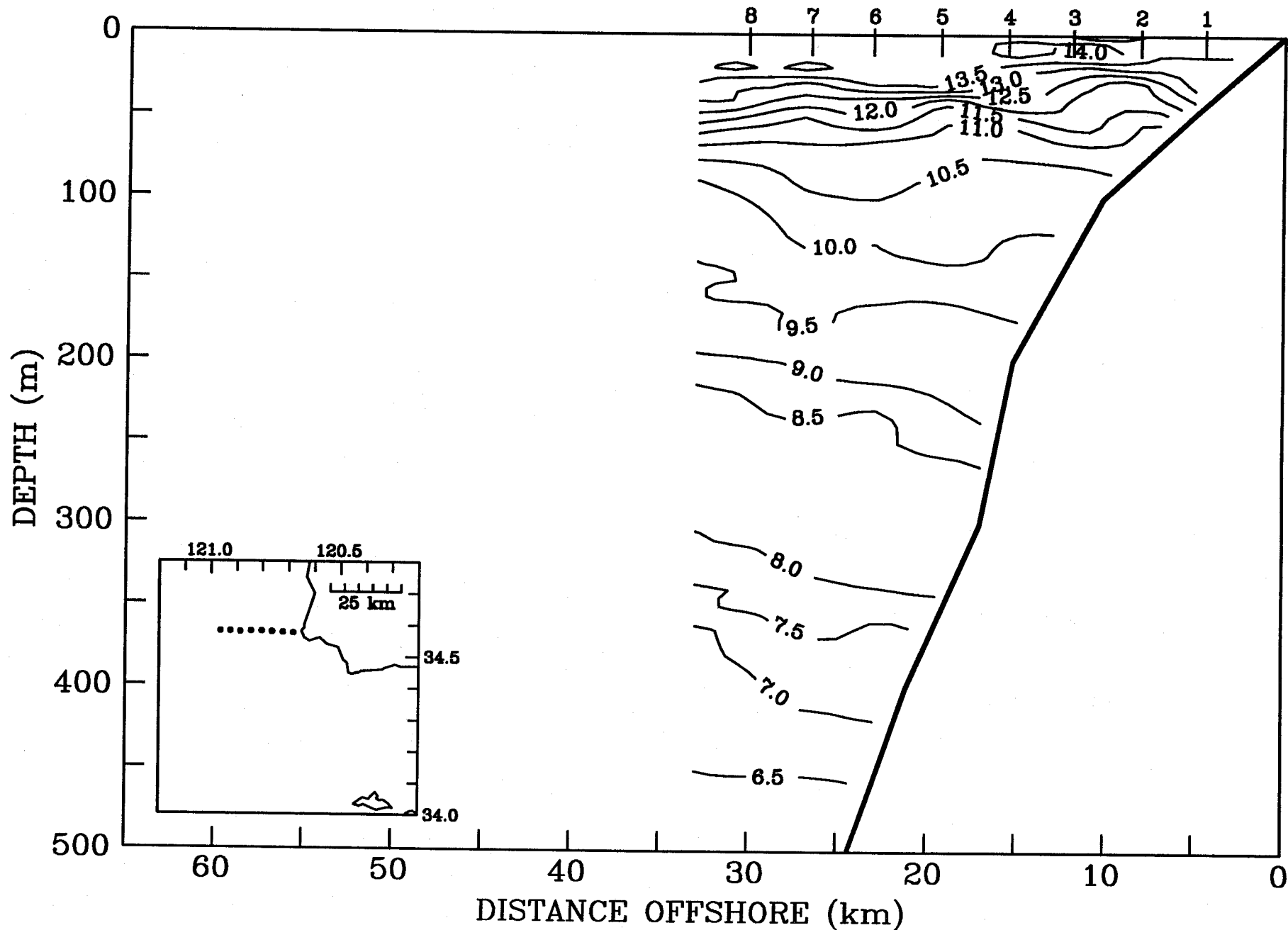
4 May 1983

TEMPERATURE (deg C)

# LINE A

CTD Map 5

CTD Transect A-5





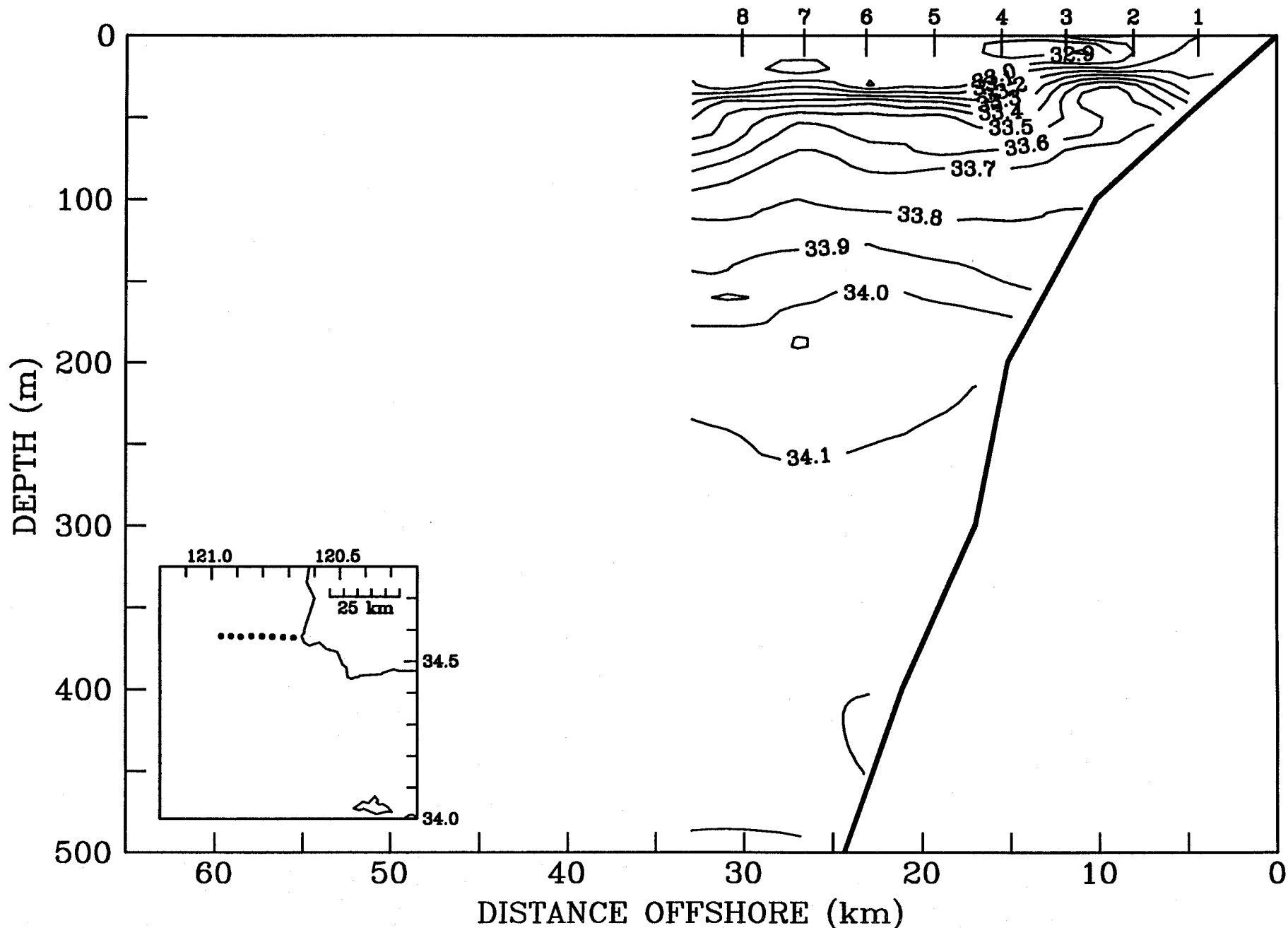
4 May 1983

SALINITY (ppt)

# LINE A

CTD Map 5

CTD Transect A-5



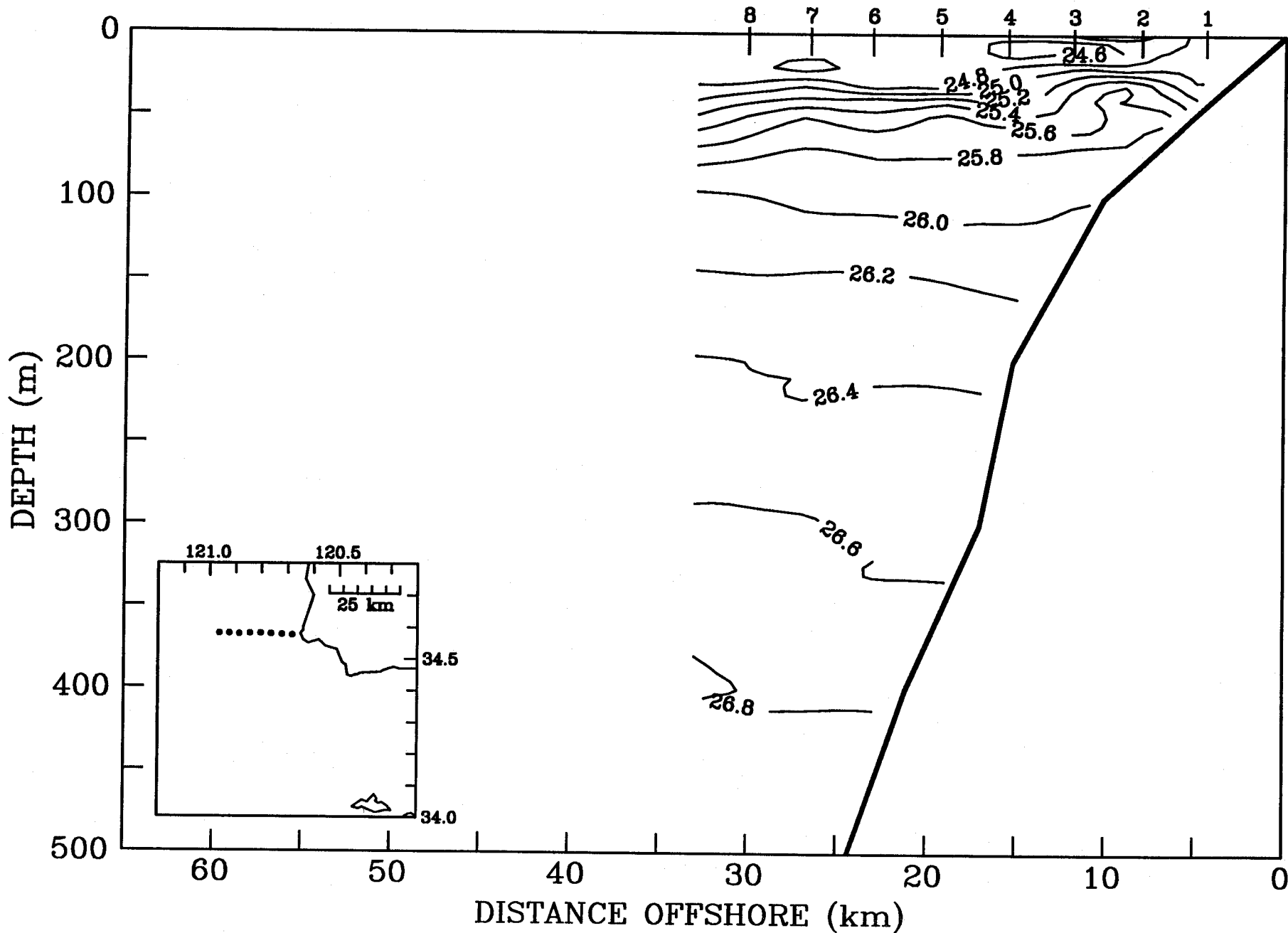
4 May 1983

SIGMA-T

# LINE A

CTD Map 5

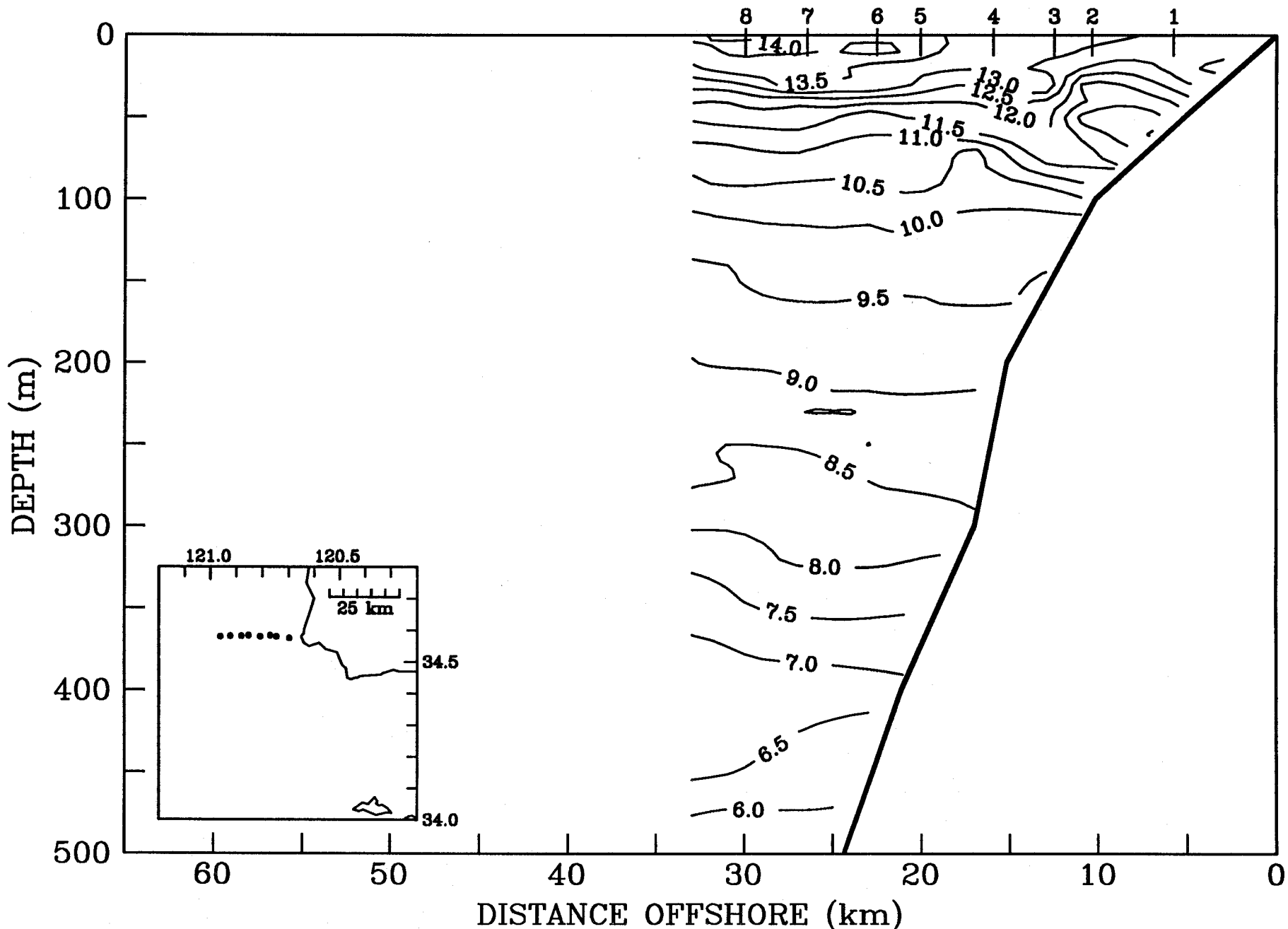
CTD Transect A-5



7 May - 8 May 1983  
TEMPERATURE (deg C)

# LINE A

CTD Transect A-6



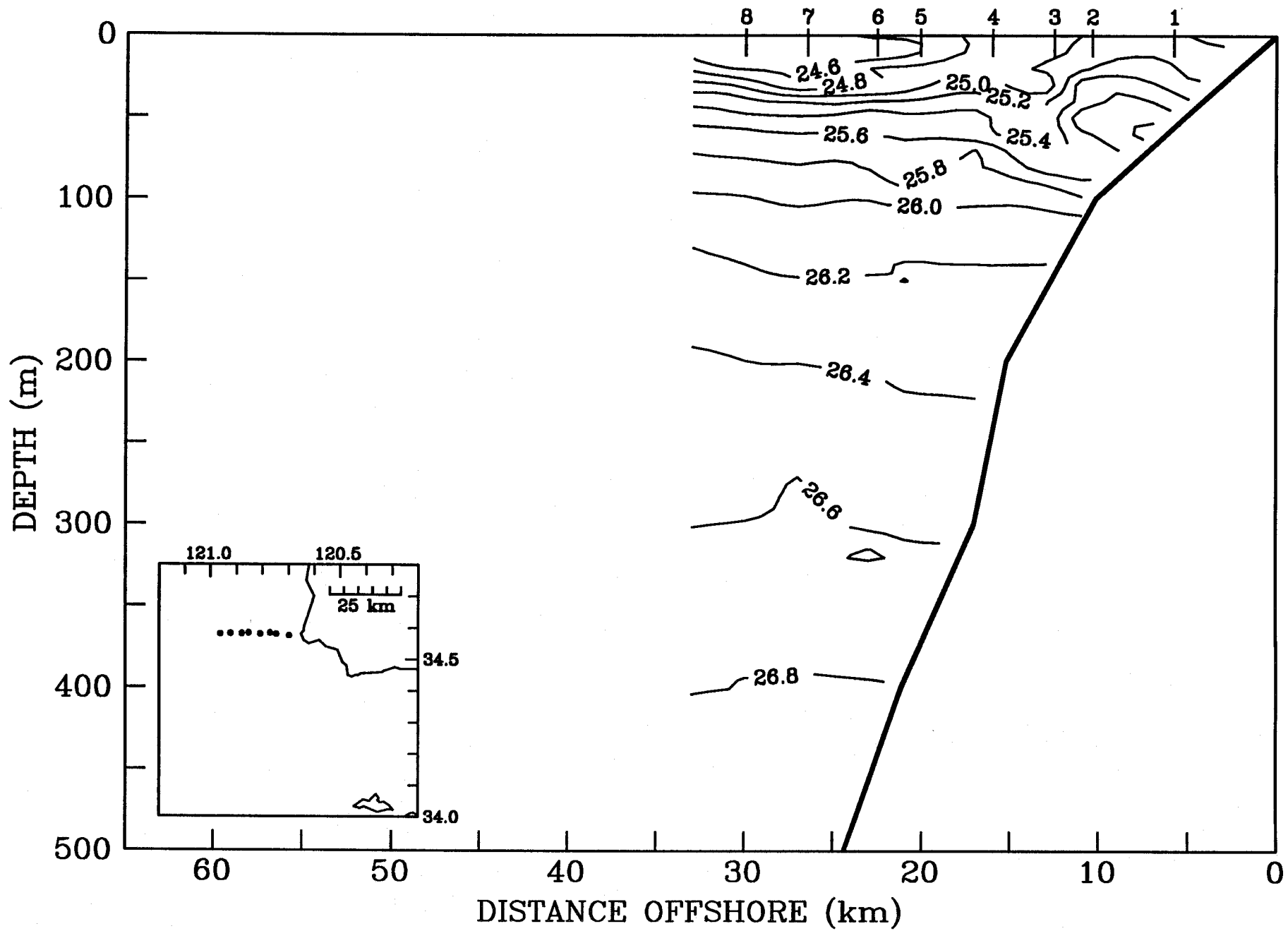


7 May - 8 May 1983

SIGMA-T

# LINE A

CTD Transect A-6

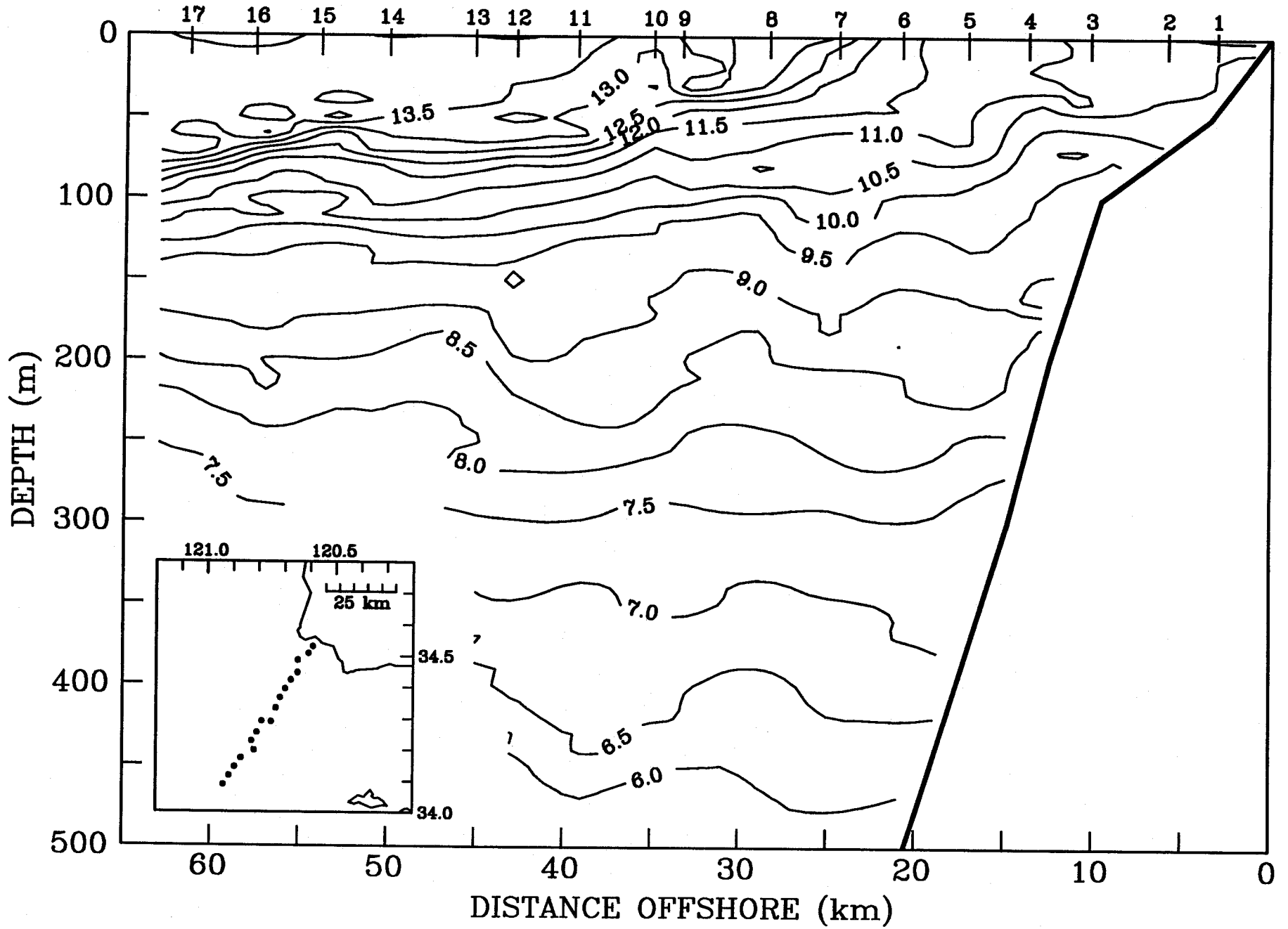


5 April - 6 April 1983

TEMPERATURE (deg C)

LINE G

CTD Transect G-1

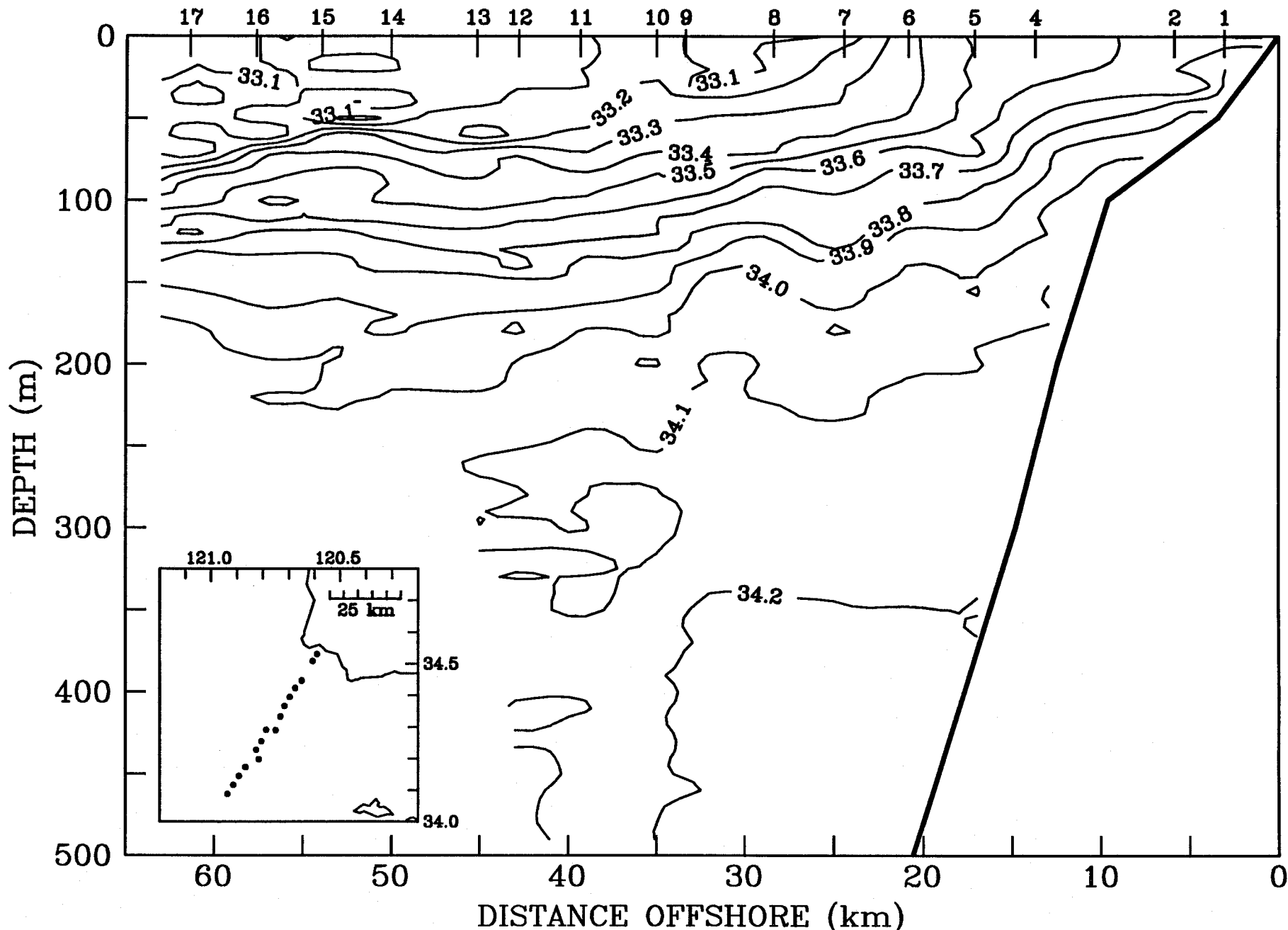


5 April - 6 April 1983

SALINITY (ppt)

# LINE G

CTD Transect G-1

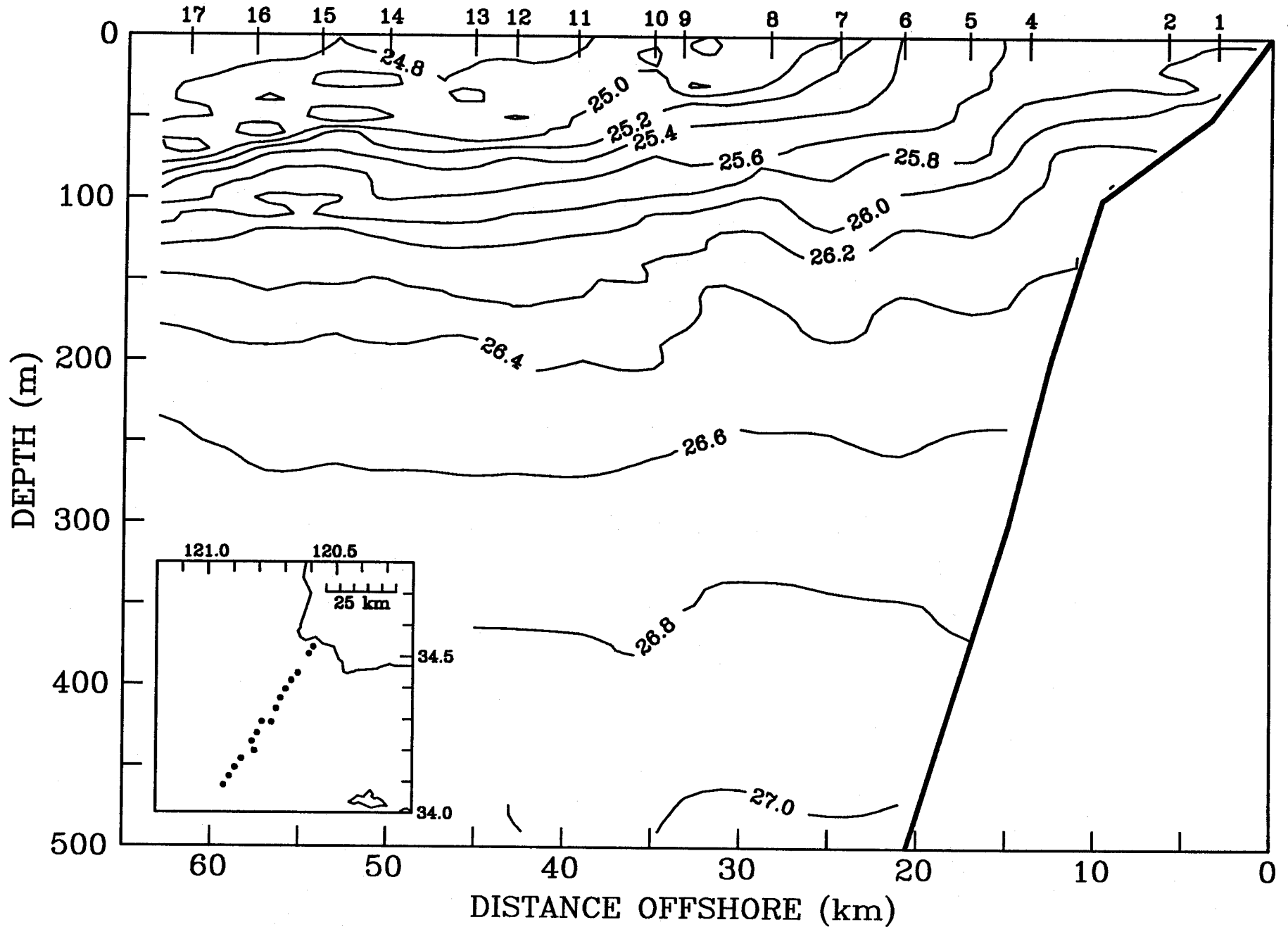


5 April - 6 April 1983

SIGMA-T

# LINE G

CTD Transect G-1





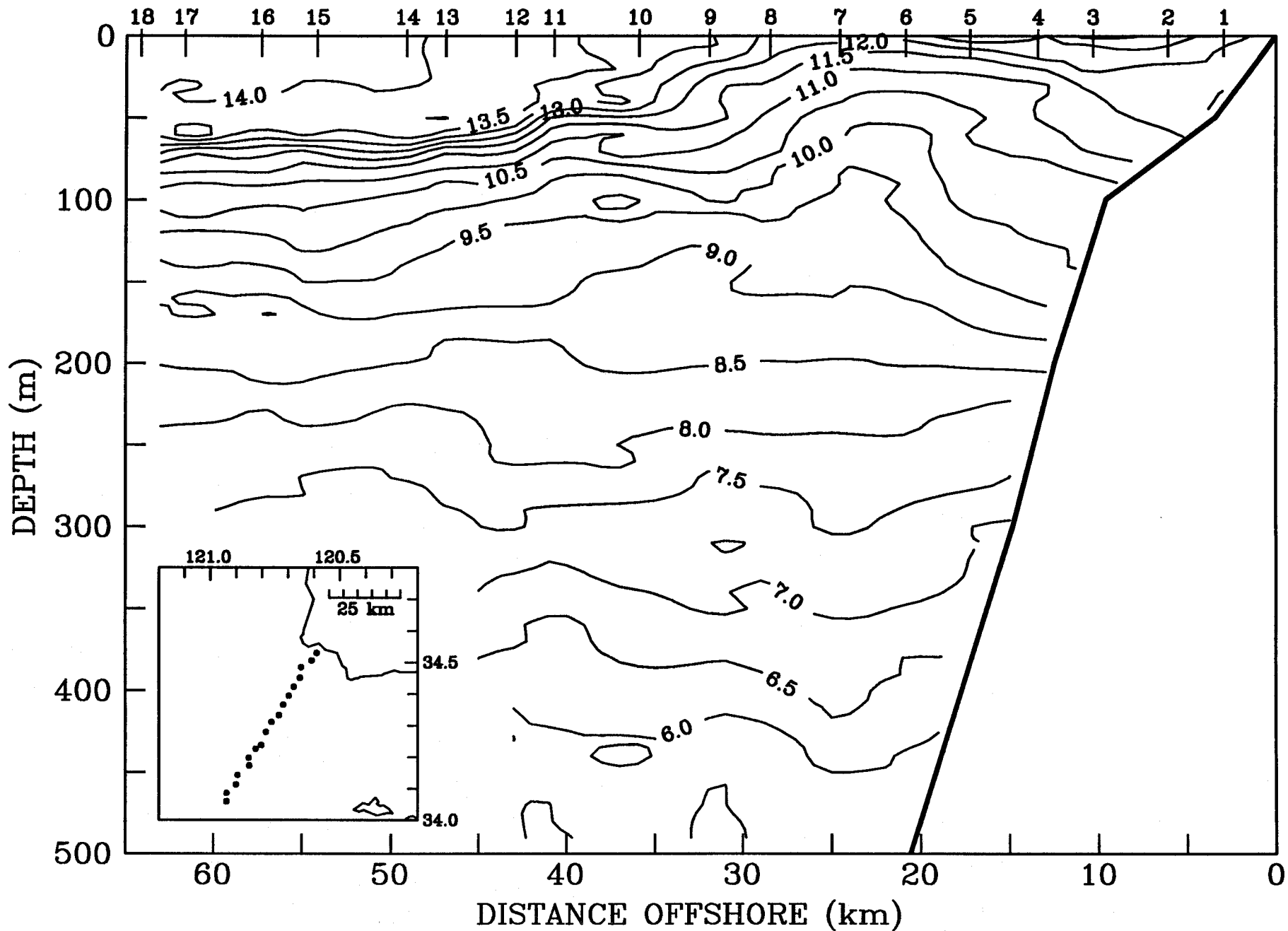
7 April - 8 April 1983

TEMPERATURE (deg C)

# LINE G

CTD Map 1

CTD Transect G-2





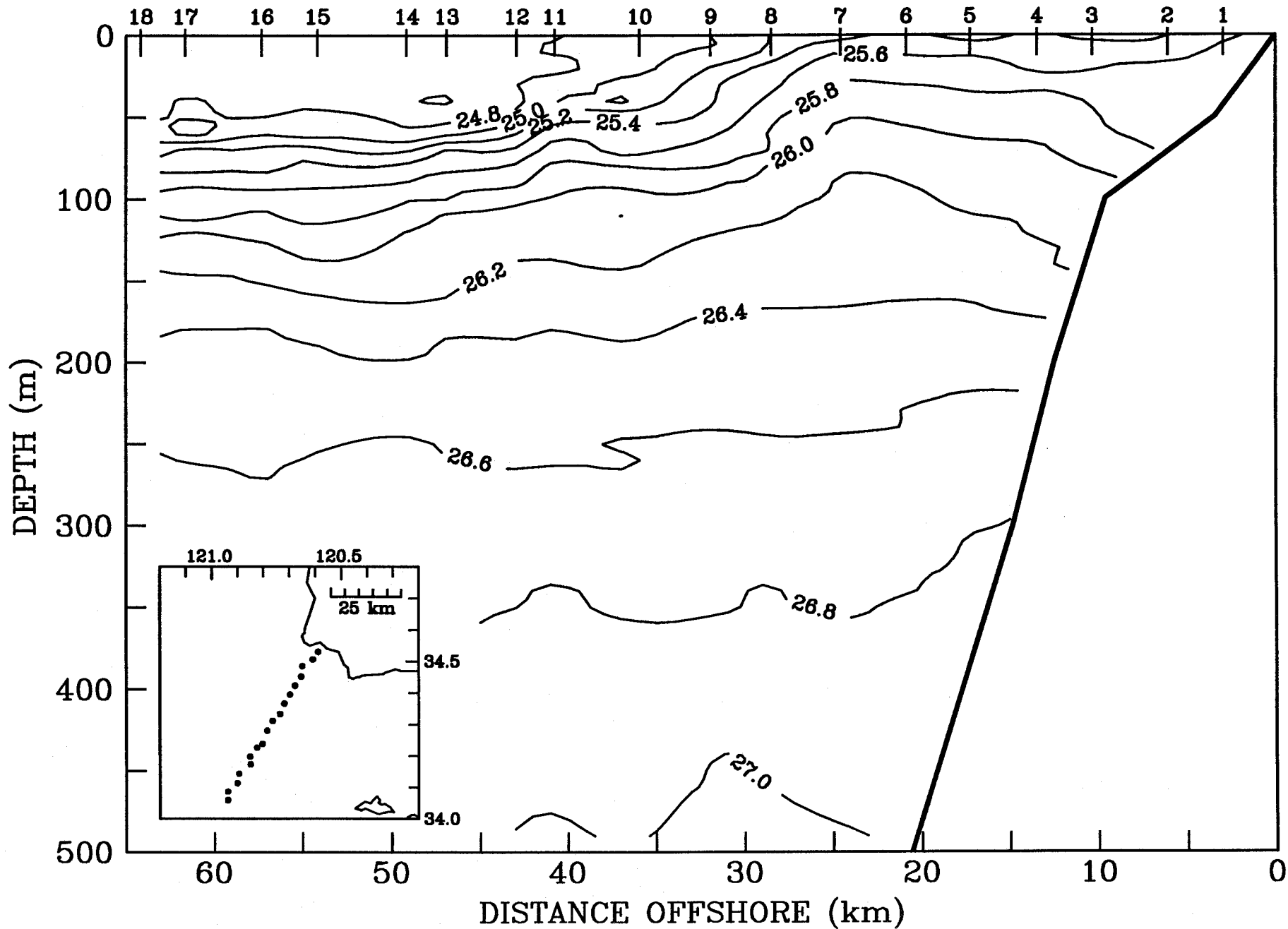
7 April - 8 April 1983

SIGMA-T

# LINE G

CTD Map 1

CTD Transect G-2

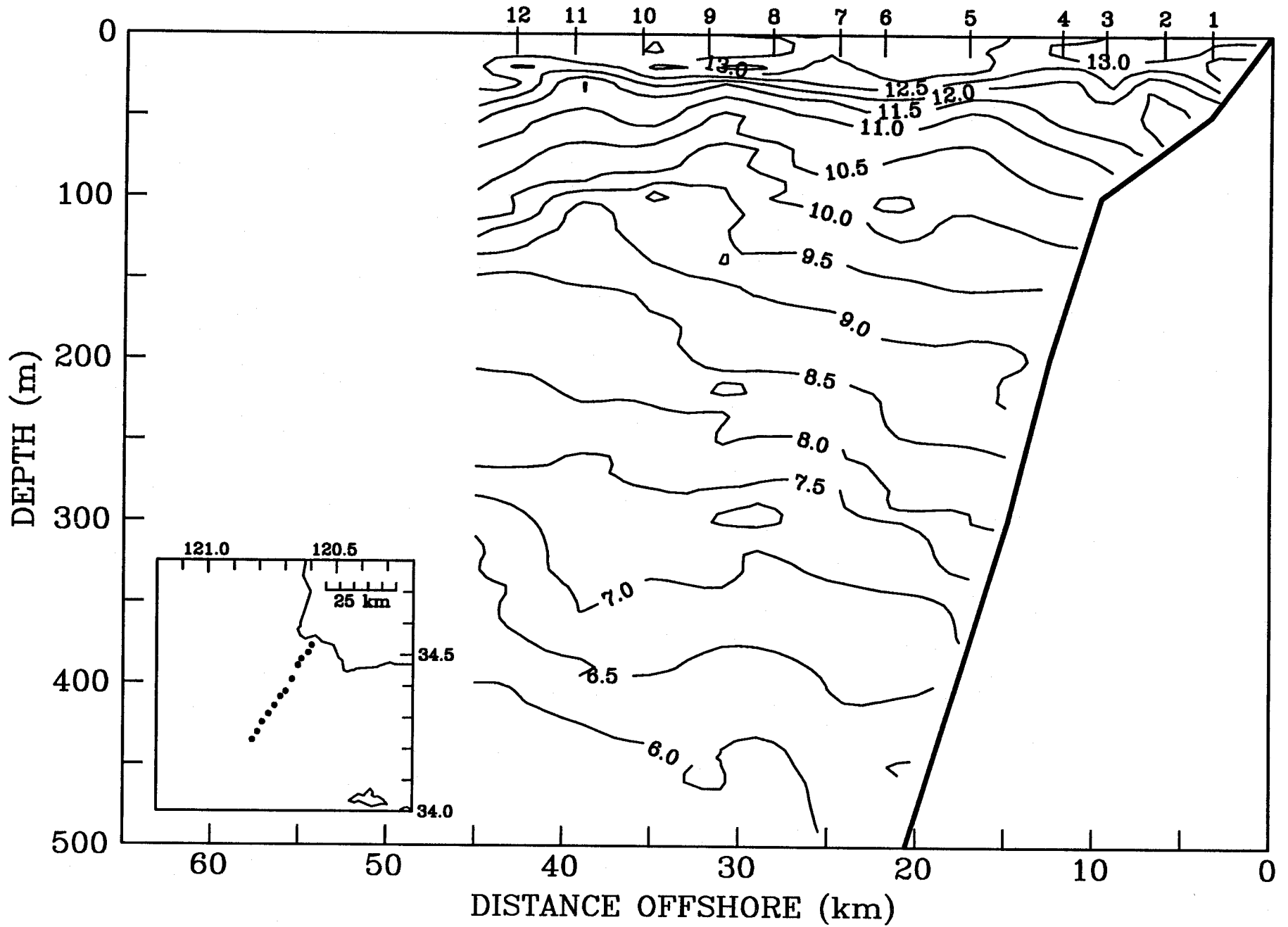


11 April 1983

TEMPERATURE (deg C)

LINE G

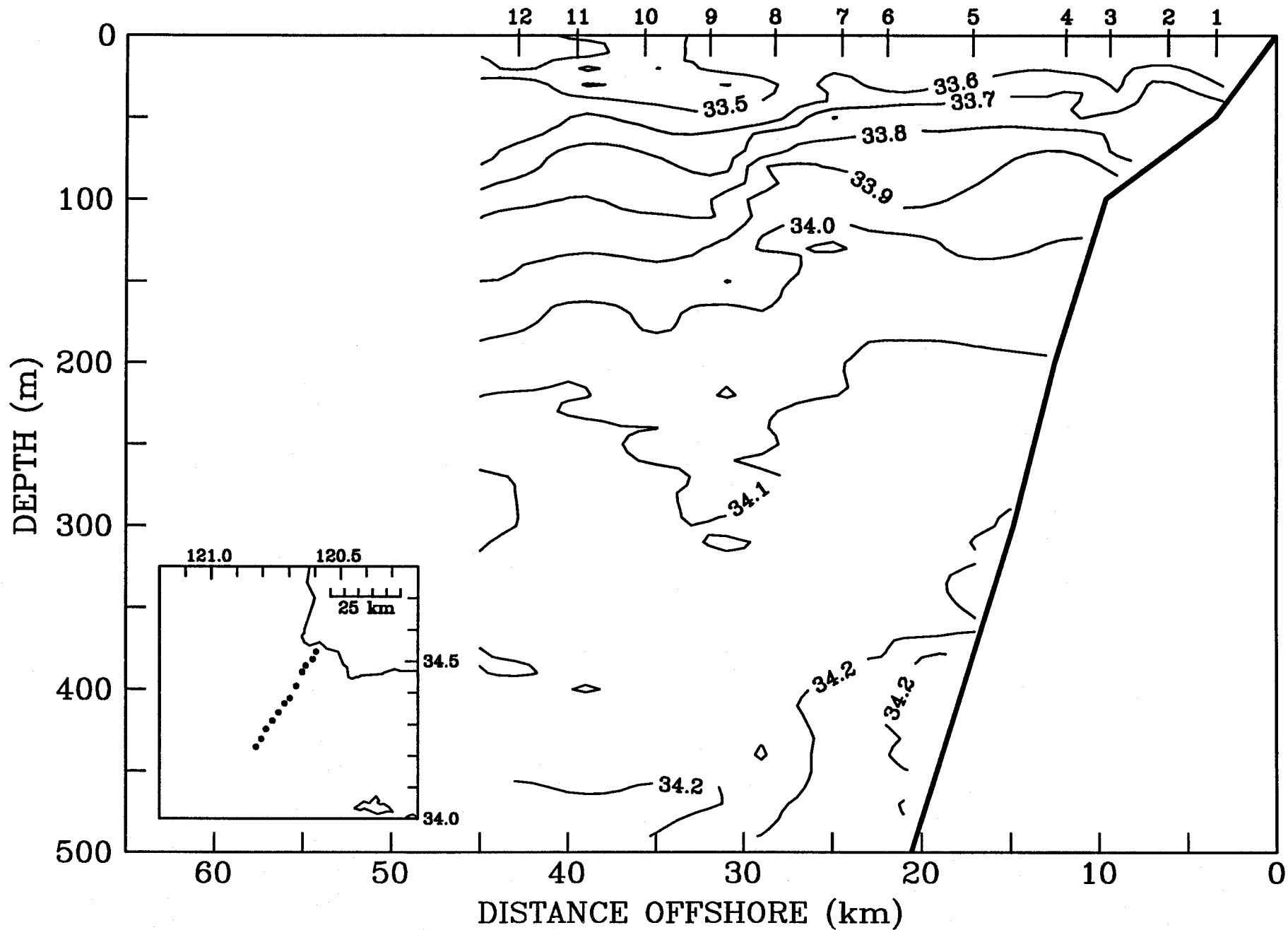
CTD Transect G-3



11 April 1983  
SALINITY (ppt)

# LINE G

CTD Transect G-3

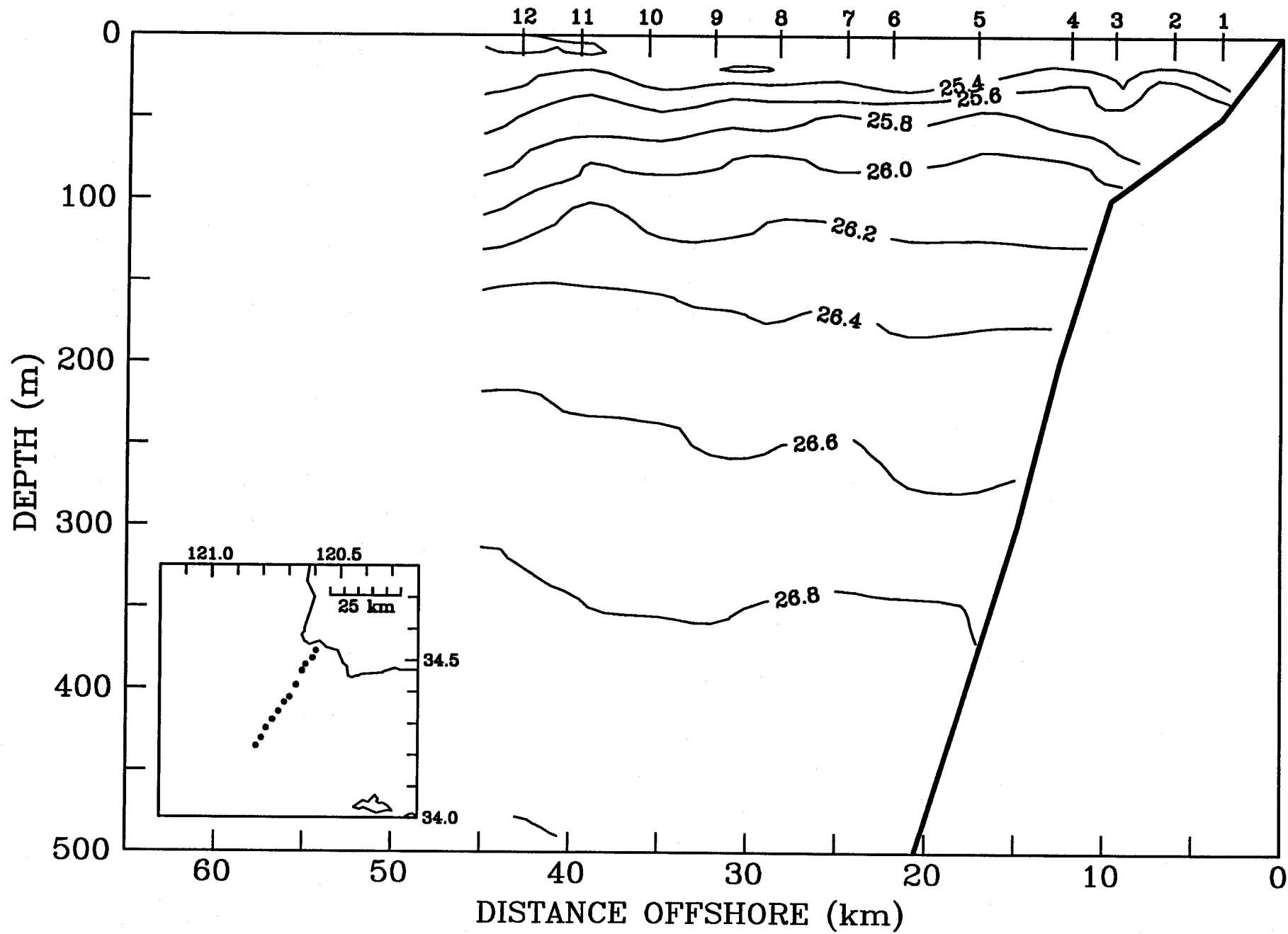


11 April 1983

SIGMA-T

# LINE G

CTD Transect G-3



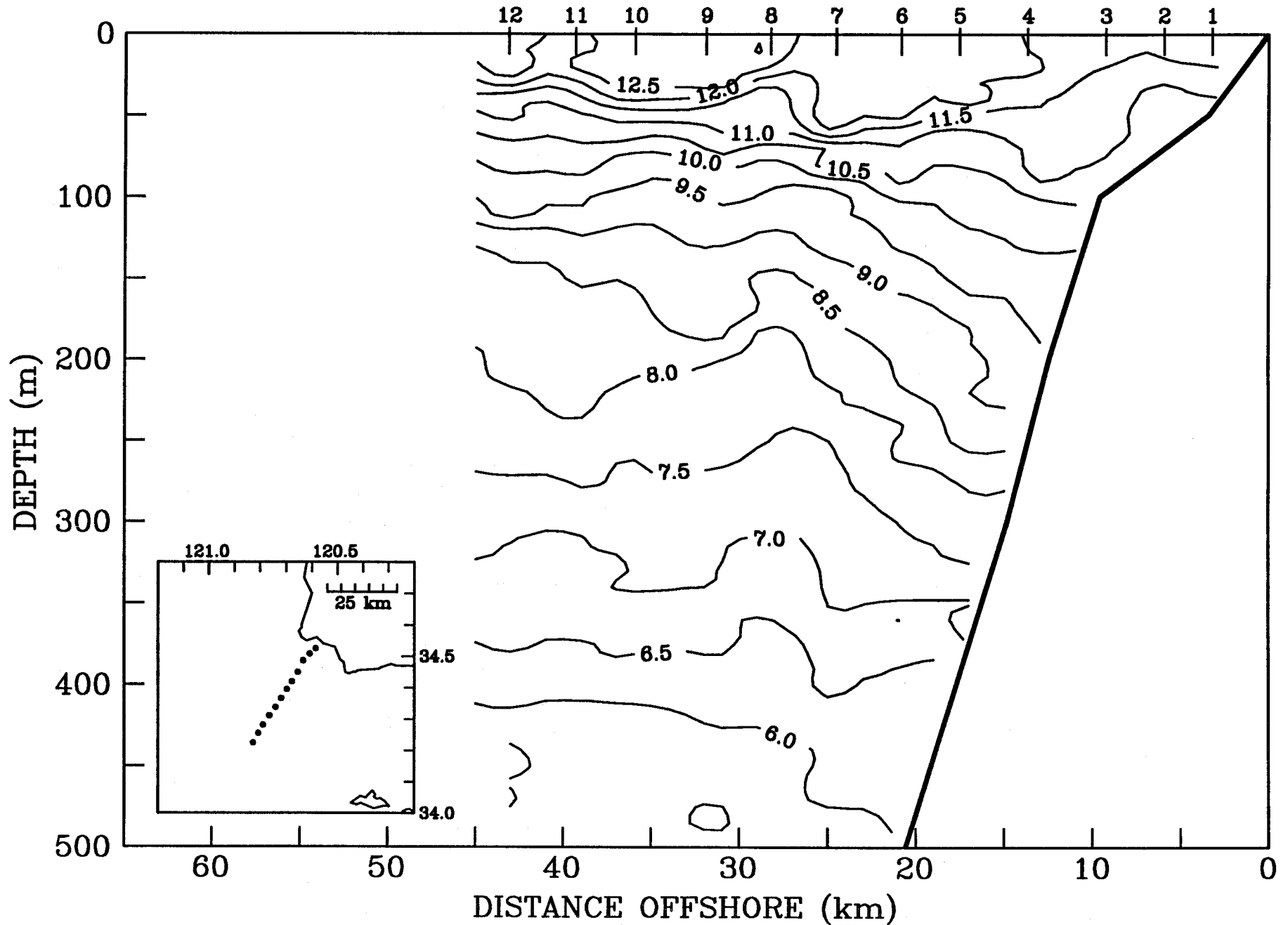
13 April 1983

TEMPERATURE (deg C)

# LINE G

CTD Map 2

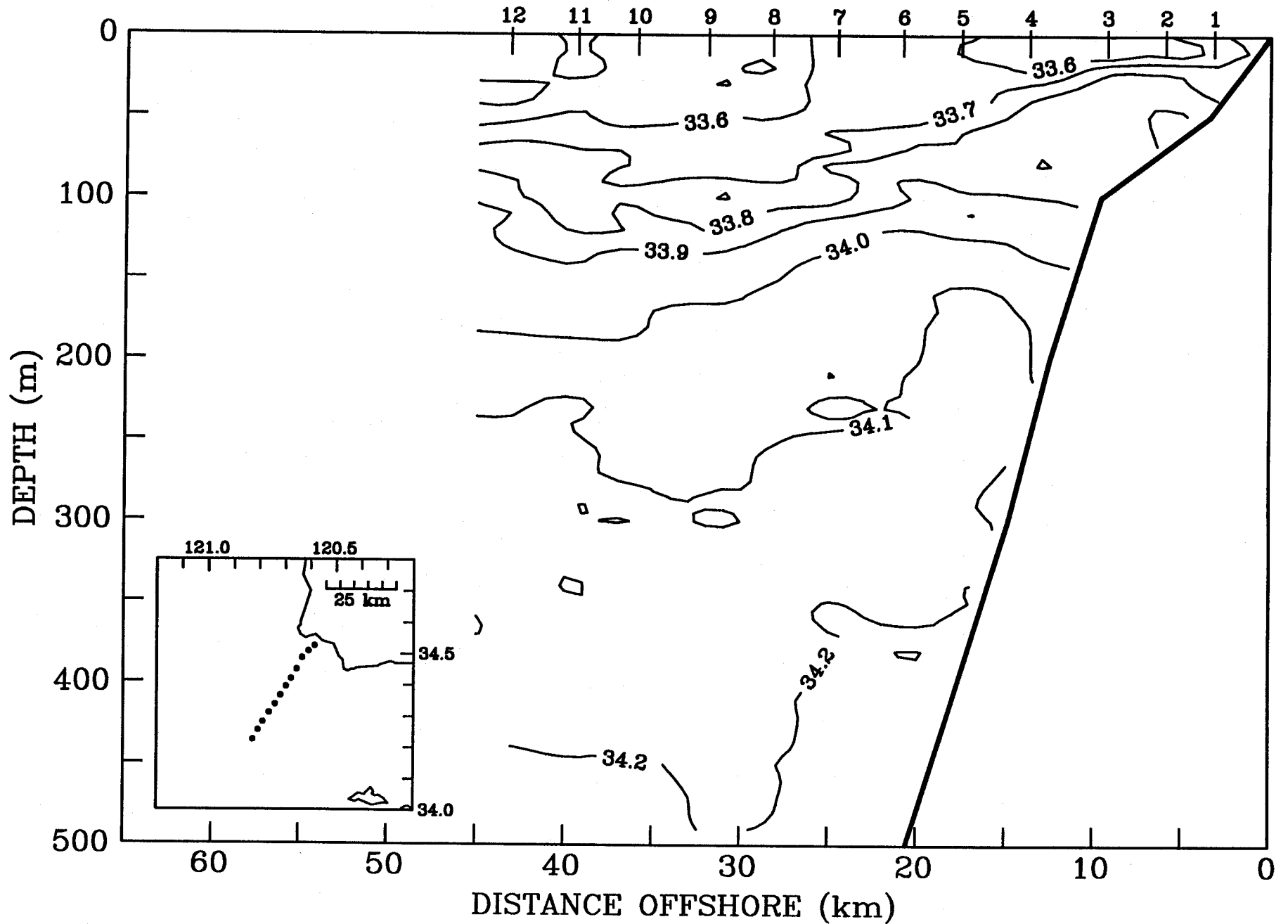
CTD Transect G-4



13 April 1983  
SALINITY (ppt)

# LINE G

CTD Map 2  
CTD Transect G-4





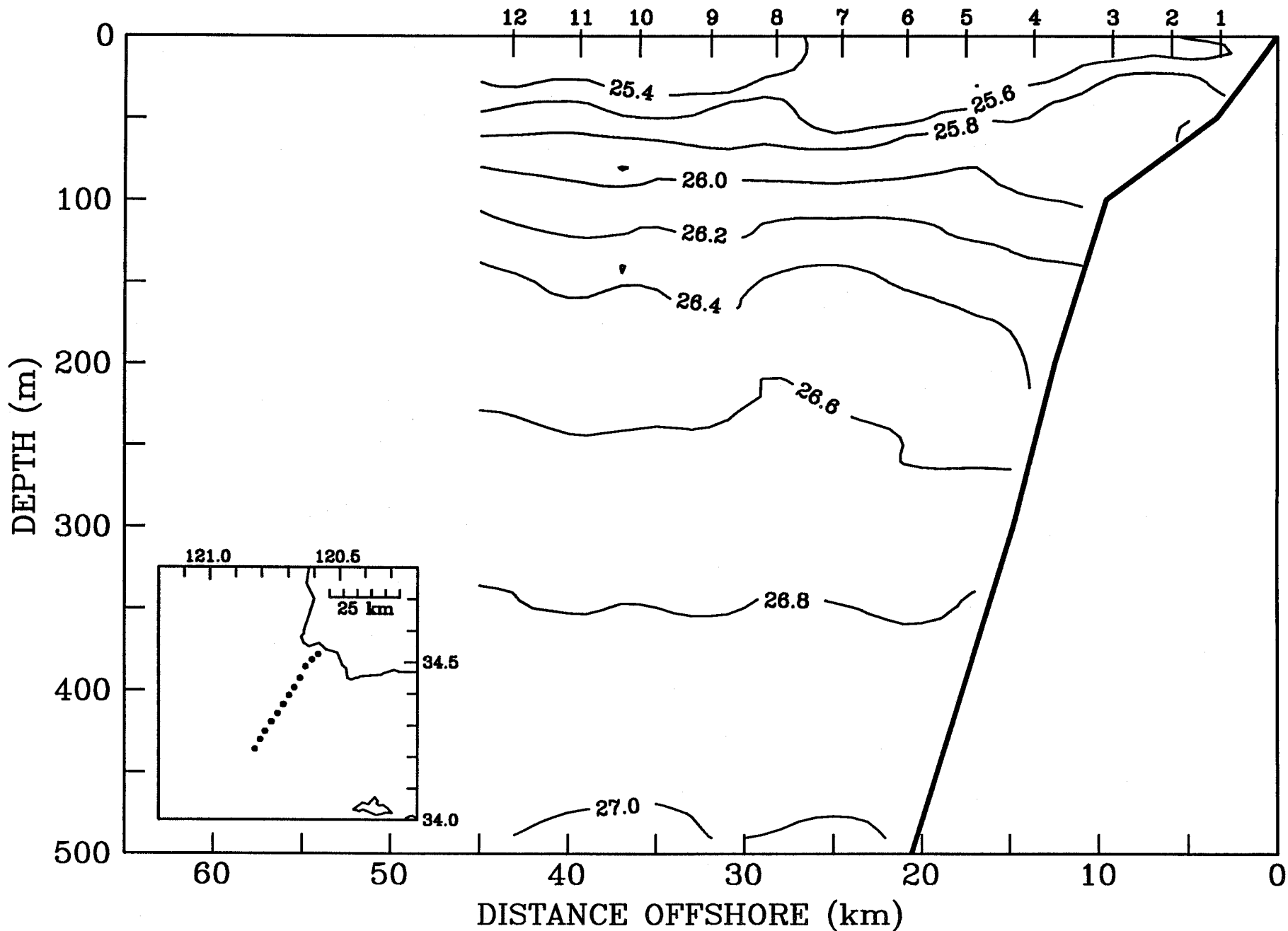
13 April 1983

SIGMA-T

# LINE G

CTD Map 2

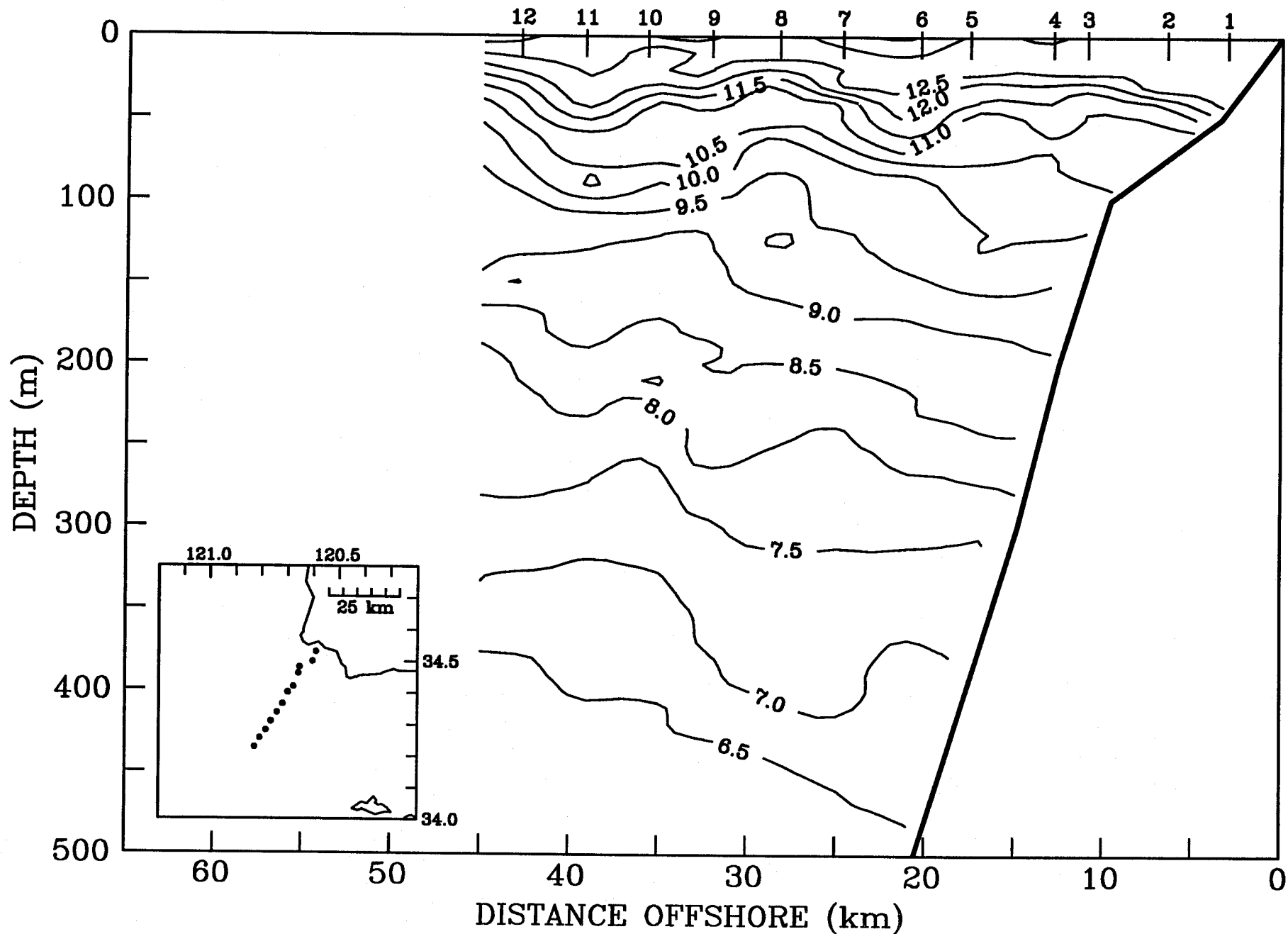
CTD Transect G-4



18 April - 19 April 1983  
TEMPERATURE (deg C)

# LINE G

CTD Transect G-5

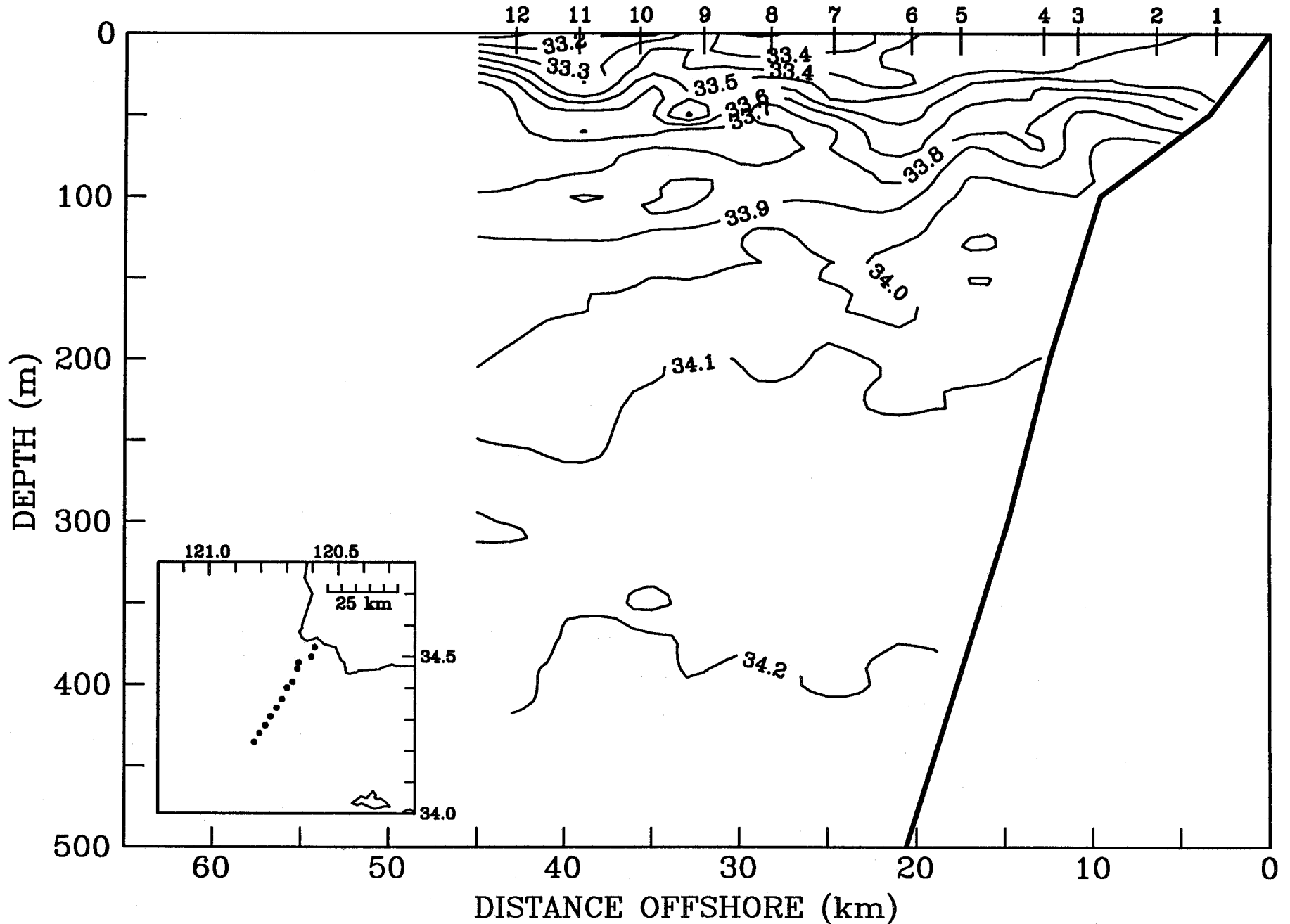


18 April - 19 April 1983

SALINITY (ppt)

# LINE G

CTD Transect G-5





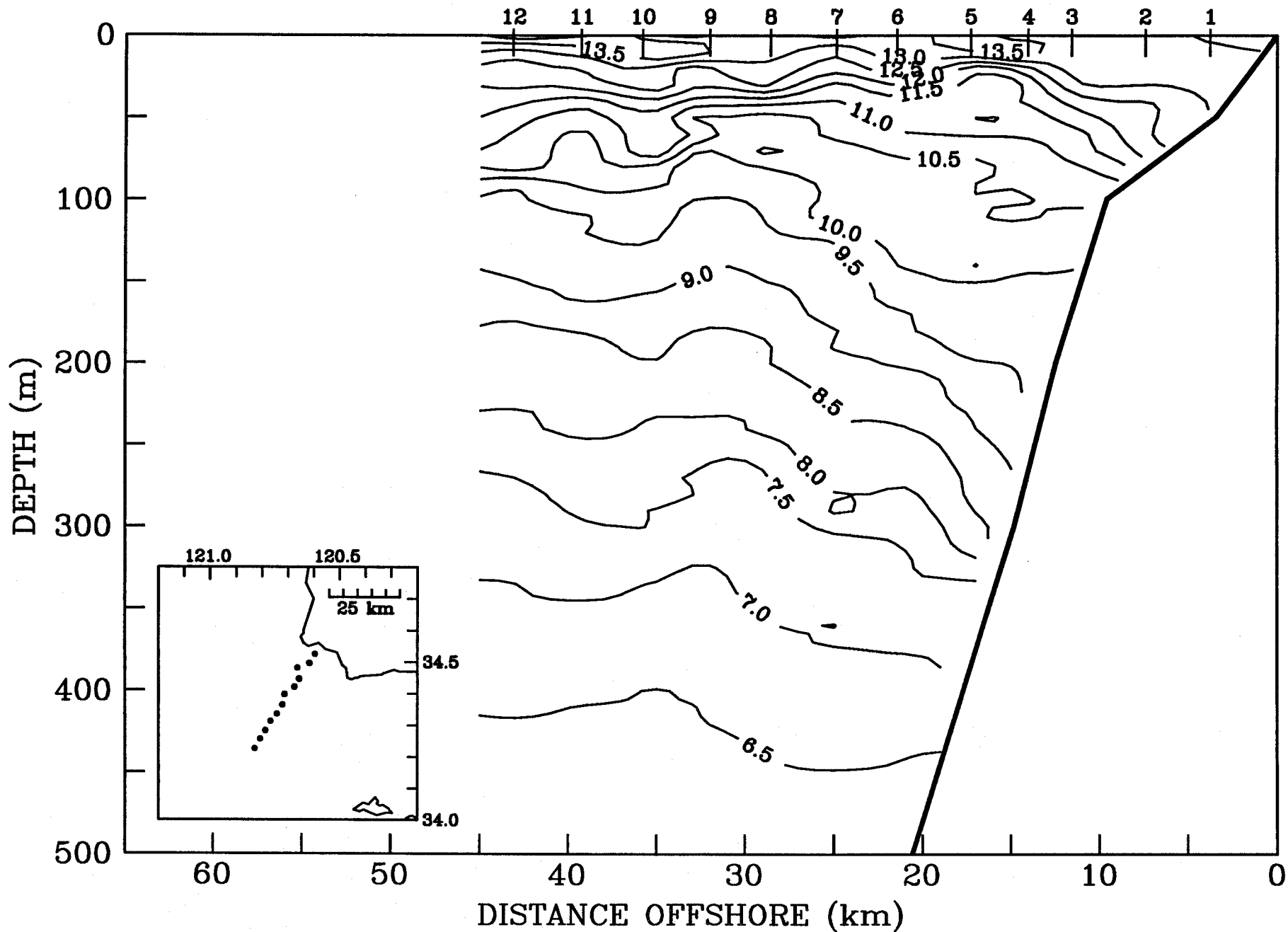
21 April - 22 April 1983

TEMPERATURE (deg C)

# LINE G

CTD Map 3

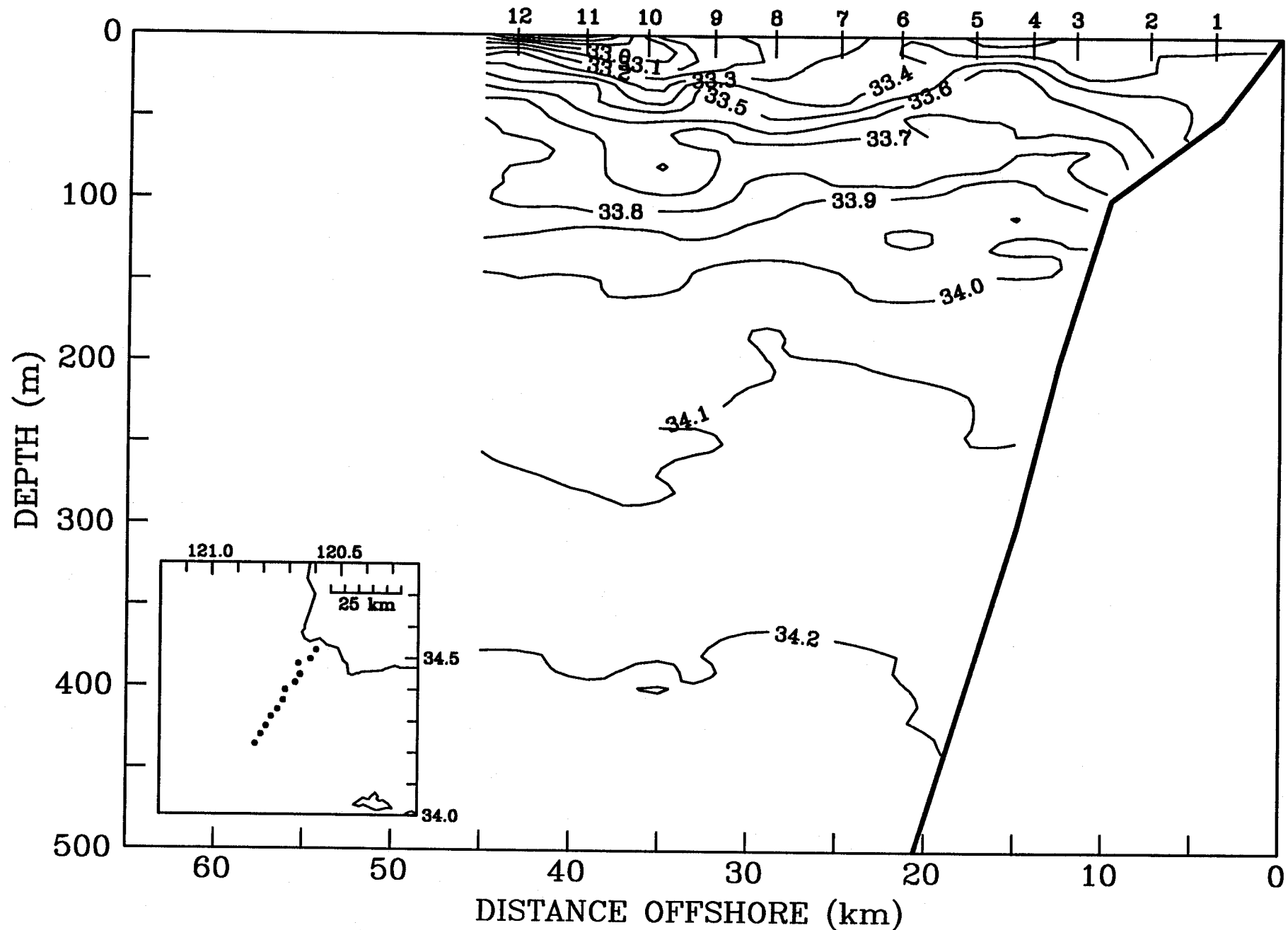
CTD Transect G-6



21 April - 22 April 1983  
SALINITY (ppt)

# LINE G

CTD Map 3  
CTD Transect G-6



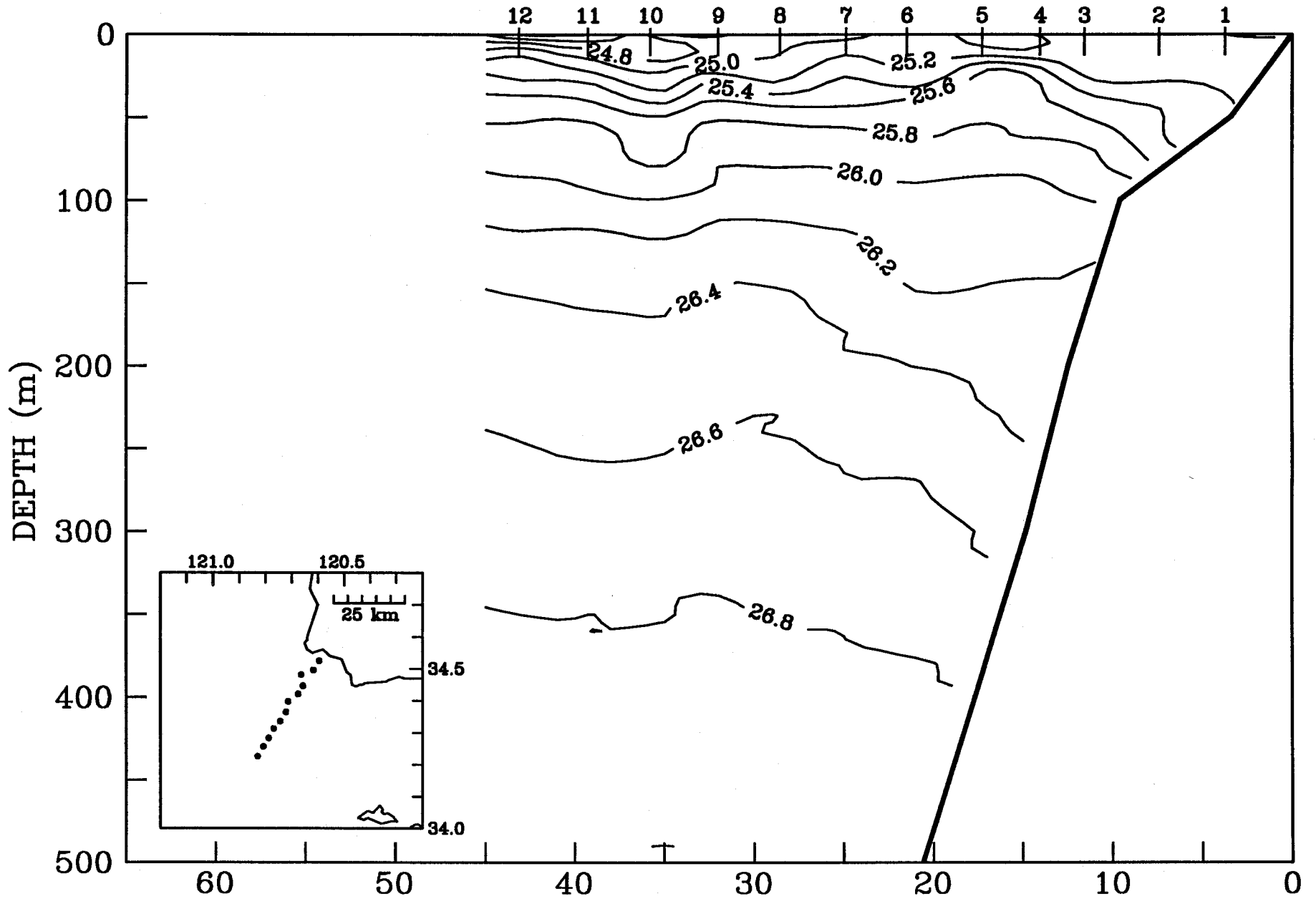
21 April - 22 April 1983

SIGMA-T

# LINE G

CTD Map 3

CTD Transect G-6



DISTANCE OFFSHORE (km)

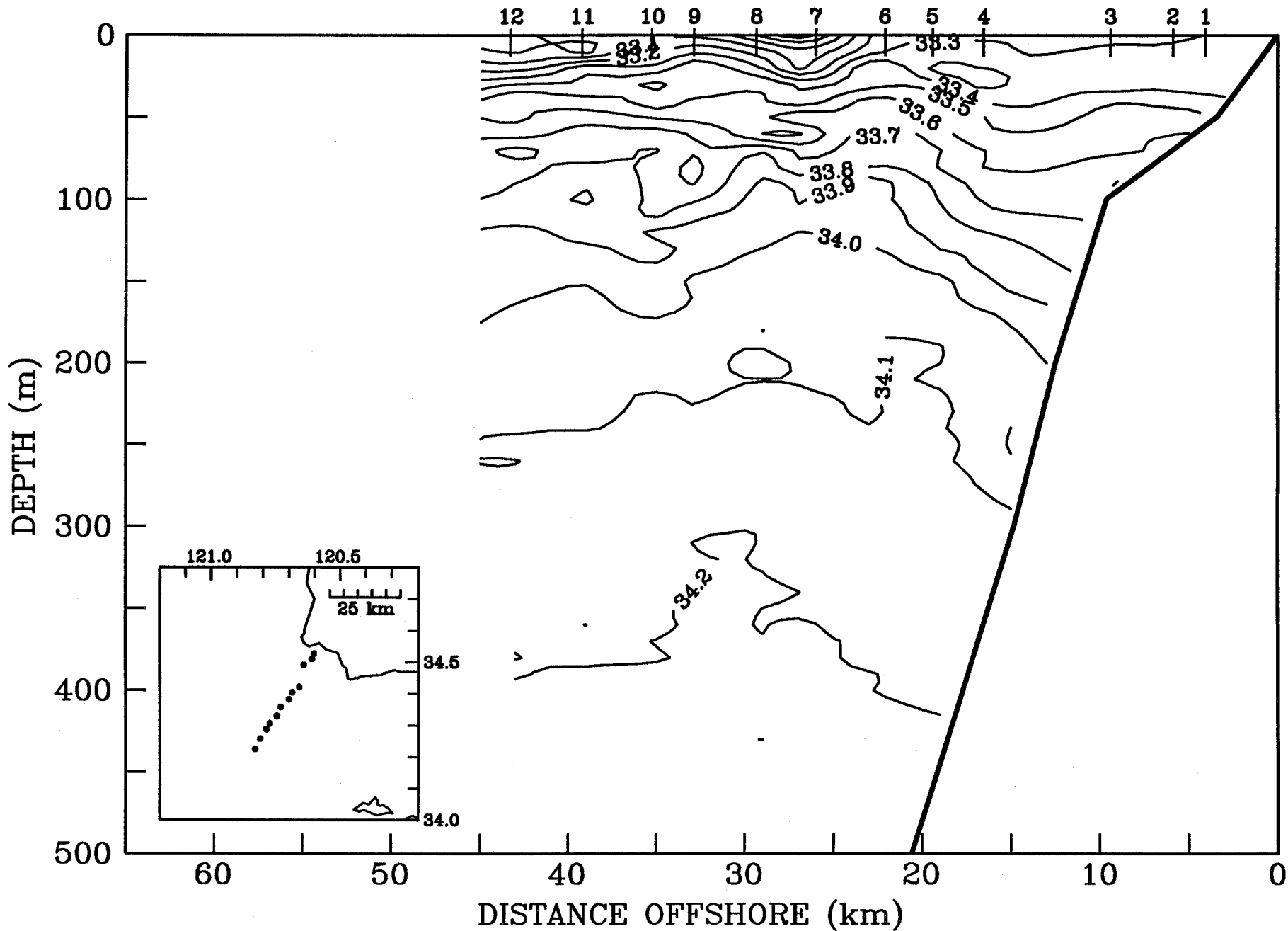




24 April 1983  
SALINITY (ppt)

# LINE G

CTD Transect G-7

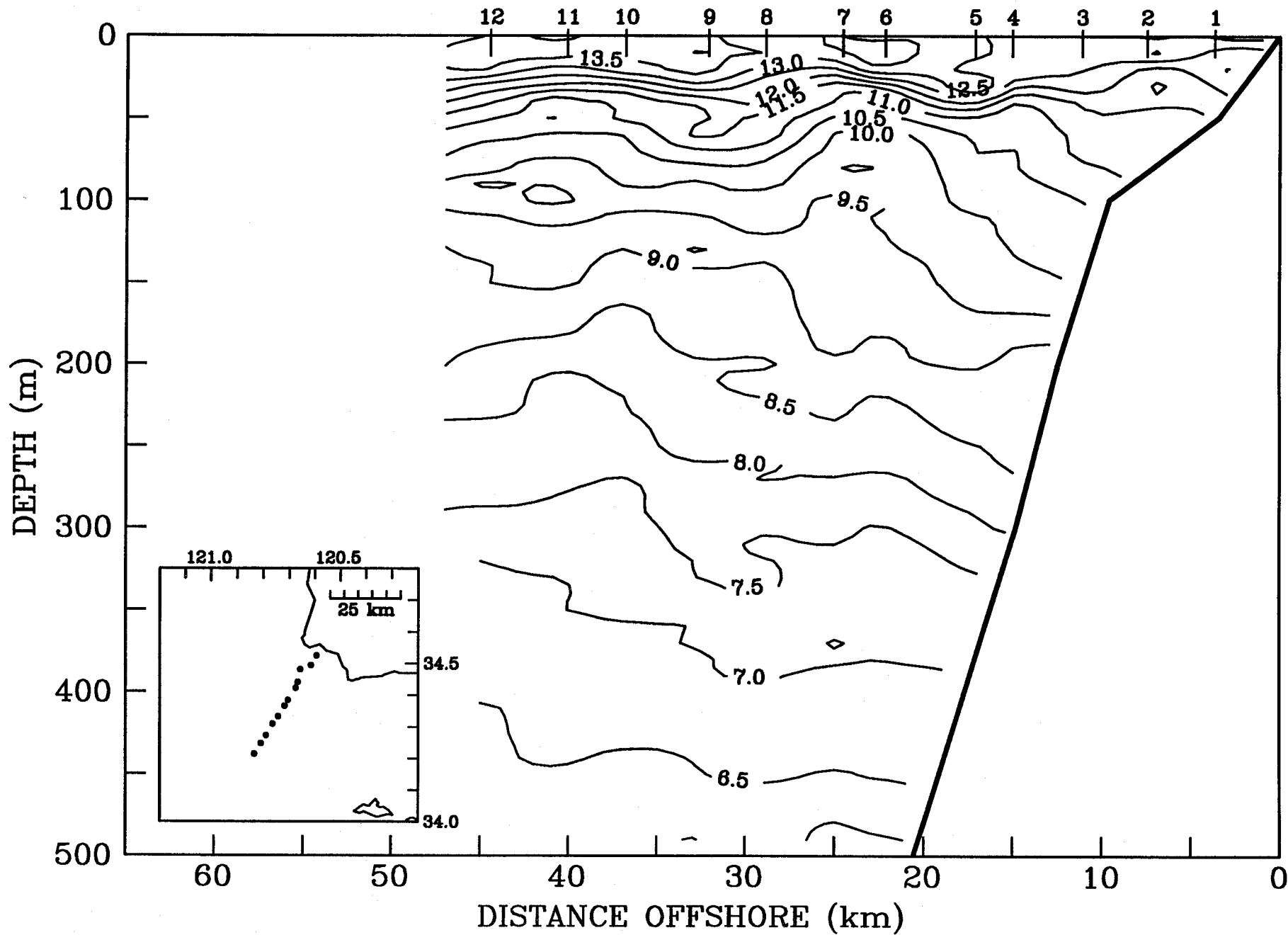




26 April 1983  
TEMPERATURE (deg C)

# LINE G

CTD Map 4  
CTD Transect G-8





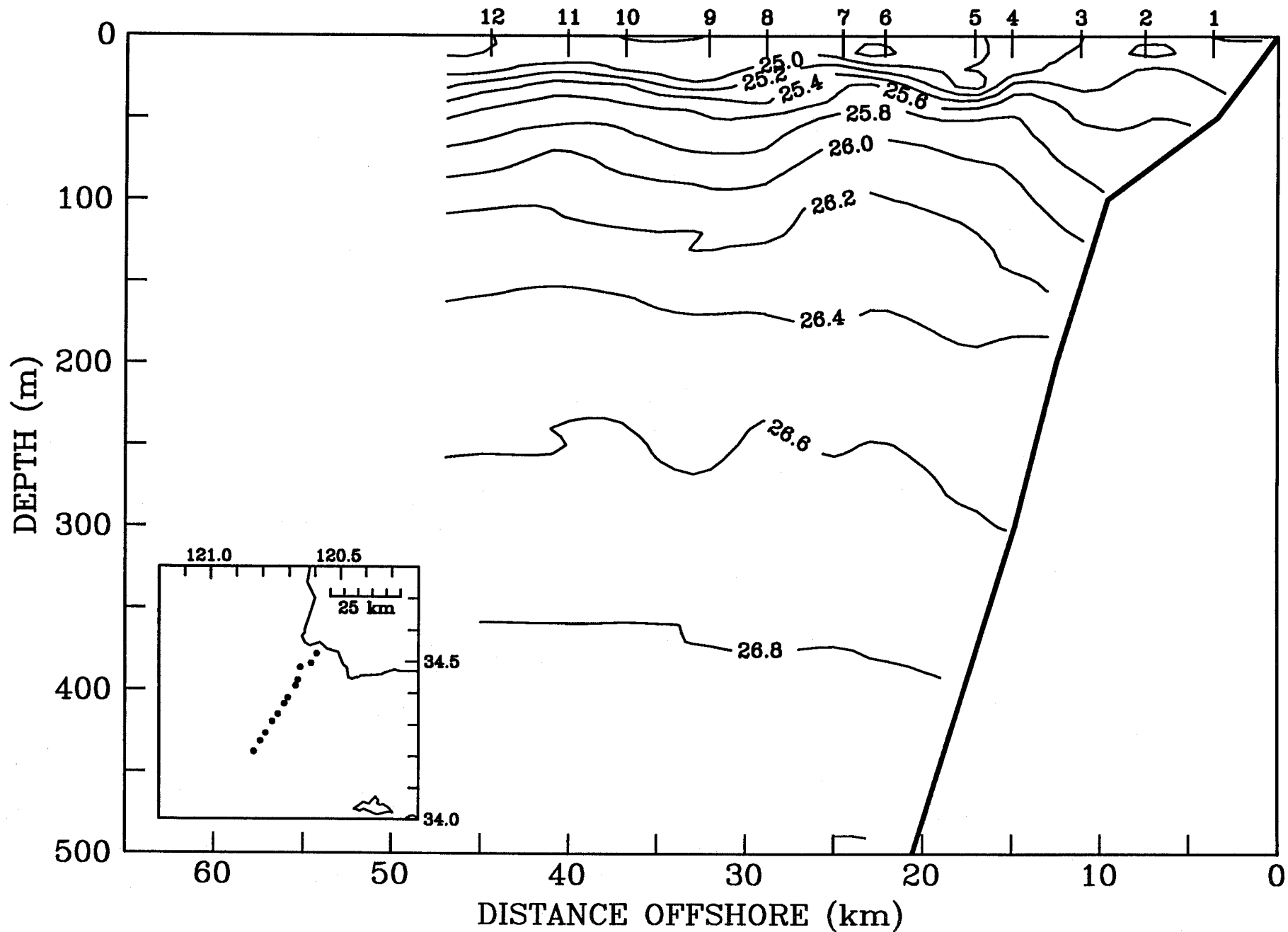
26 April 1983

SIGMA-T

# LINE G

CTD Map 4

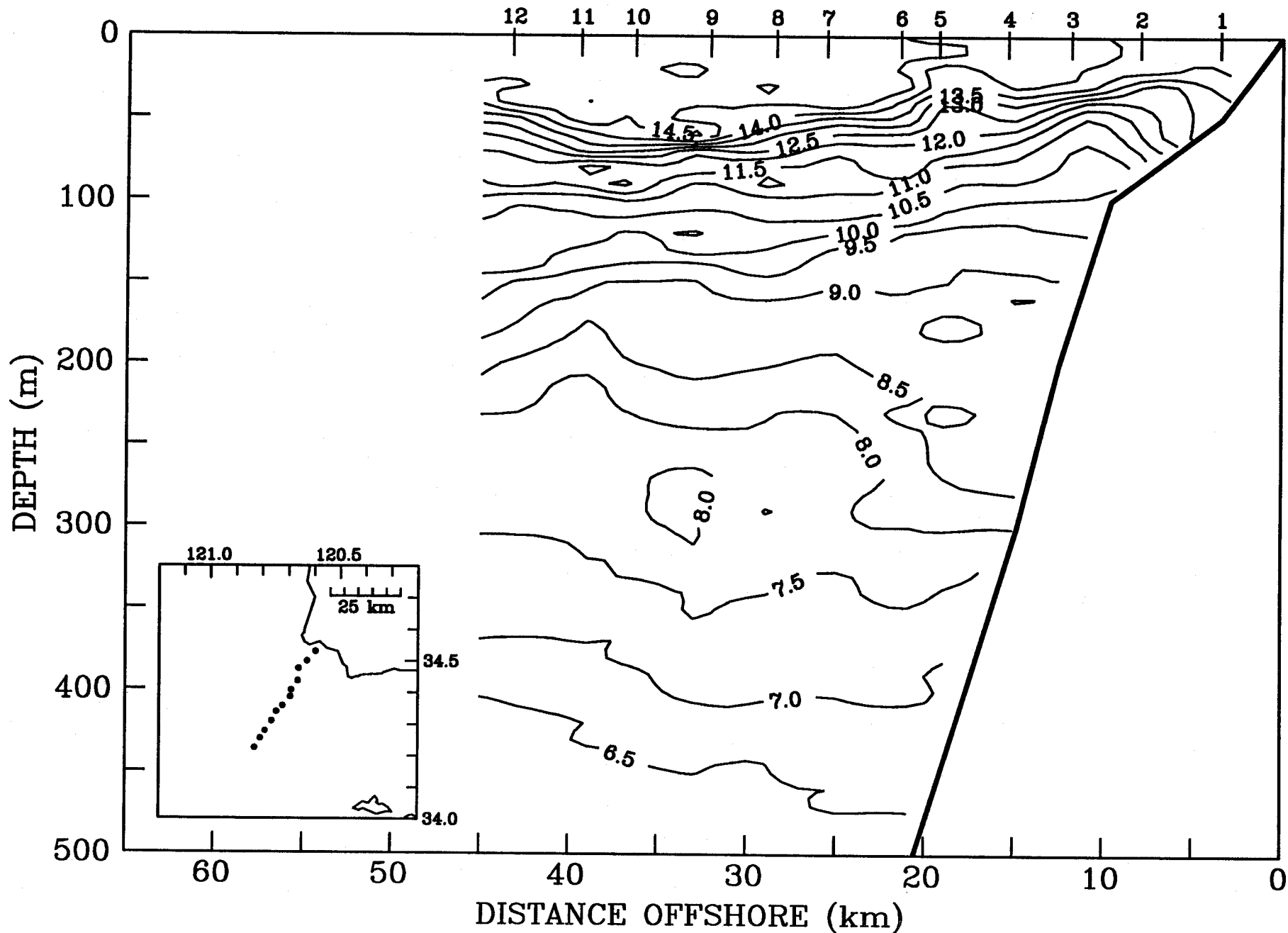
CTD Transect G-8



2 May - 3 May 1983  
TEMPERATURE (deg C)

# LINE G

CTD Transect G-9

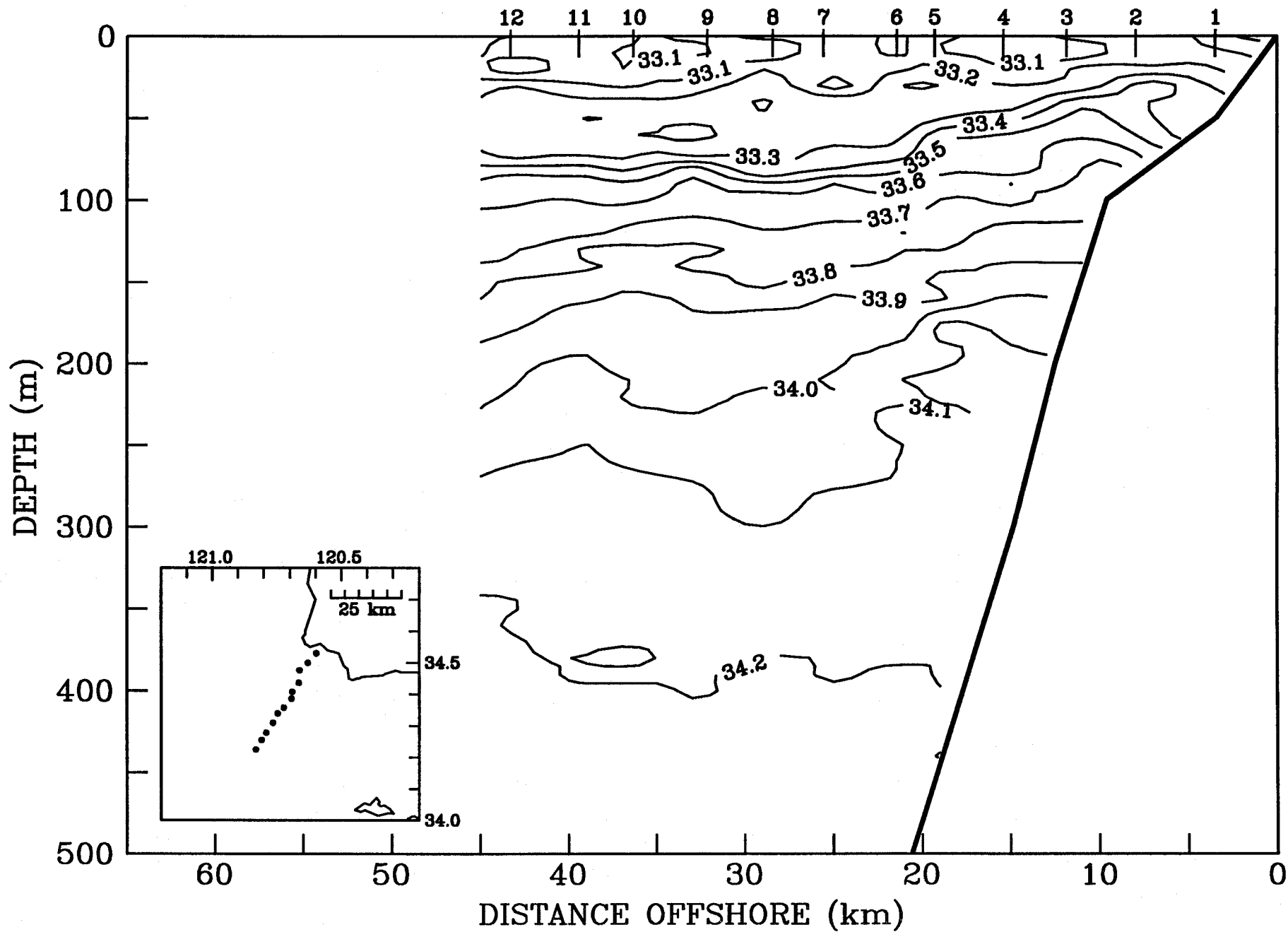


2 May - 3 May 1983

SALINITY (ppt)

# LINE G

CTD Transect G-9

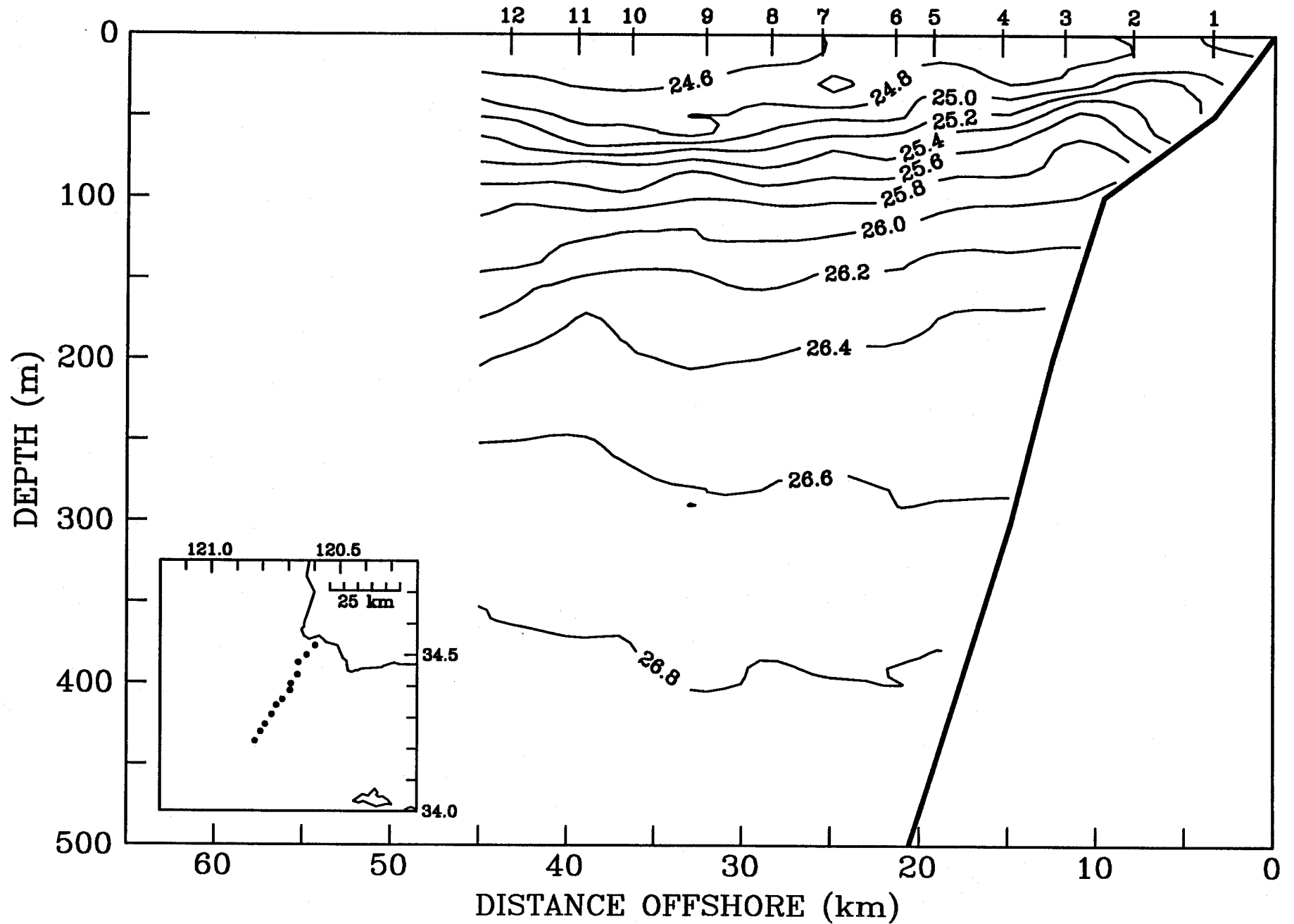


2 May - 3 May 1983

SIGMA-T

# LINE G

CTD Transect G-9

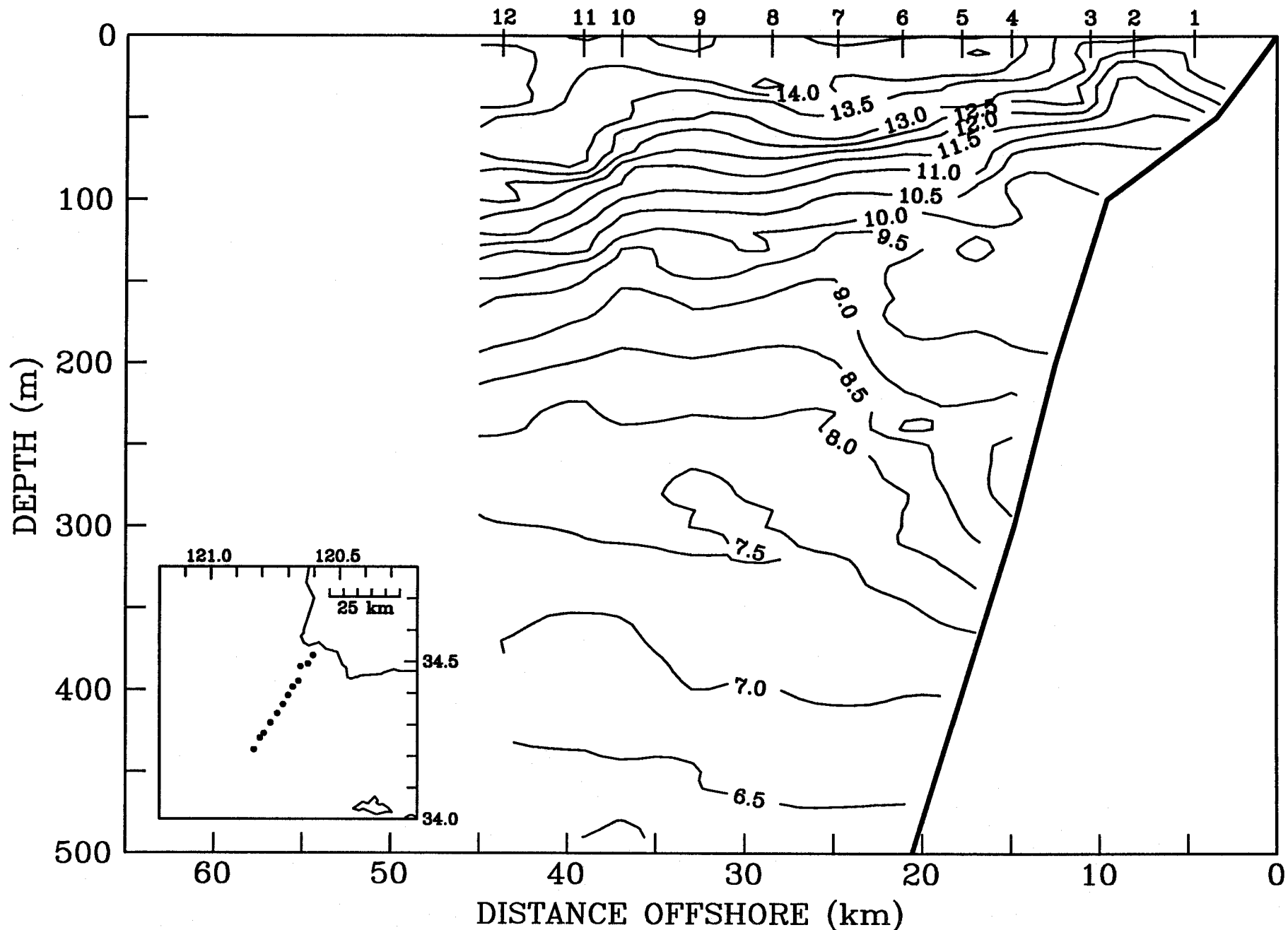




4 May - 5 May 1983  
TEMPERATURE (deg C)

# LINE G

CTD Map 5  
CTD Transect G-10



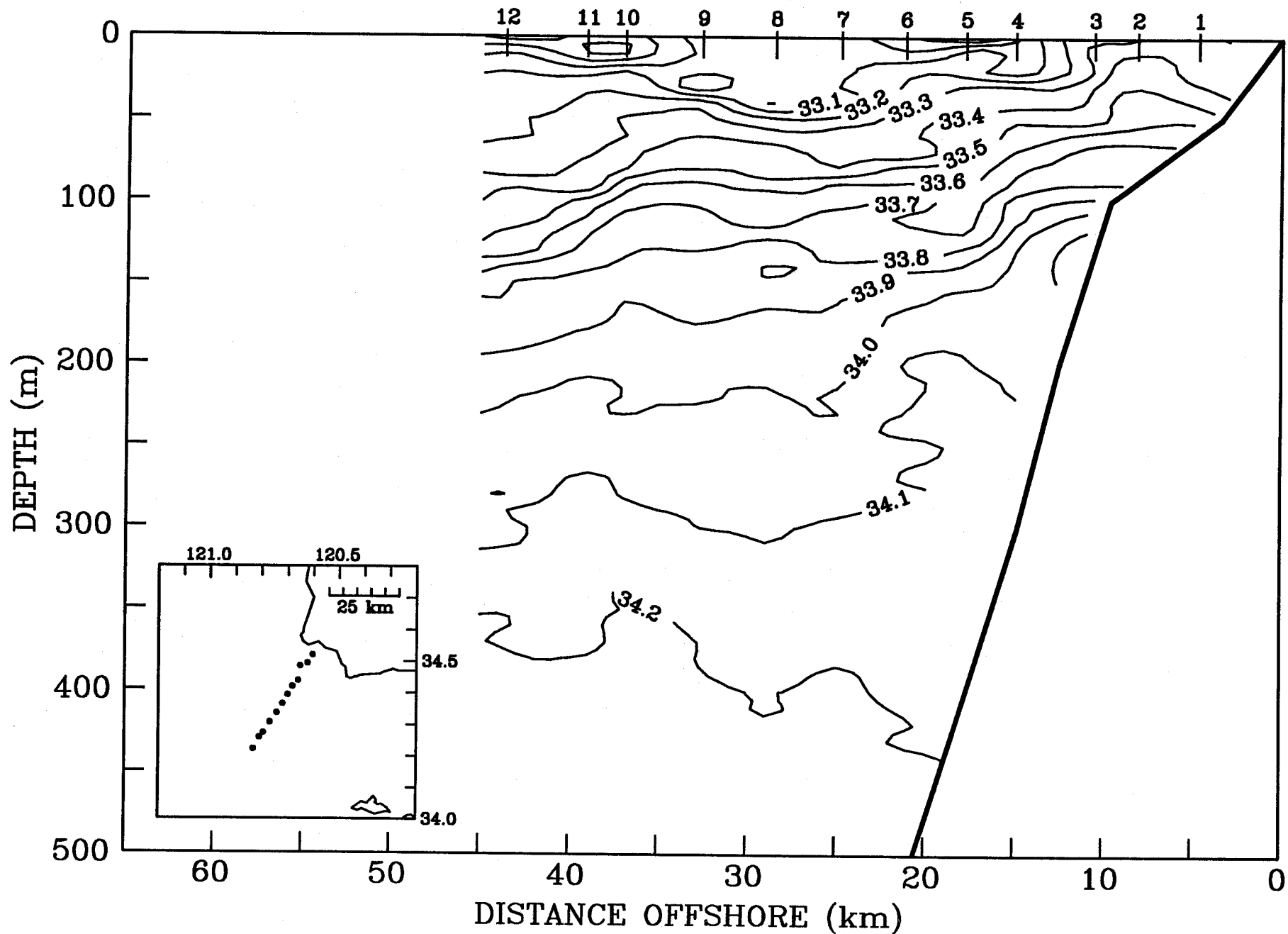
4 May - 5 May 1983

SALINITY (ppt)

# LINE G

CTD Map 5

CTD Transect G-10



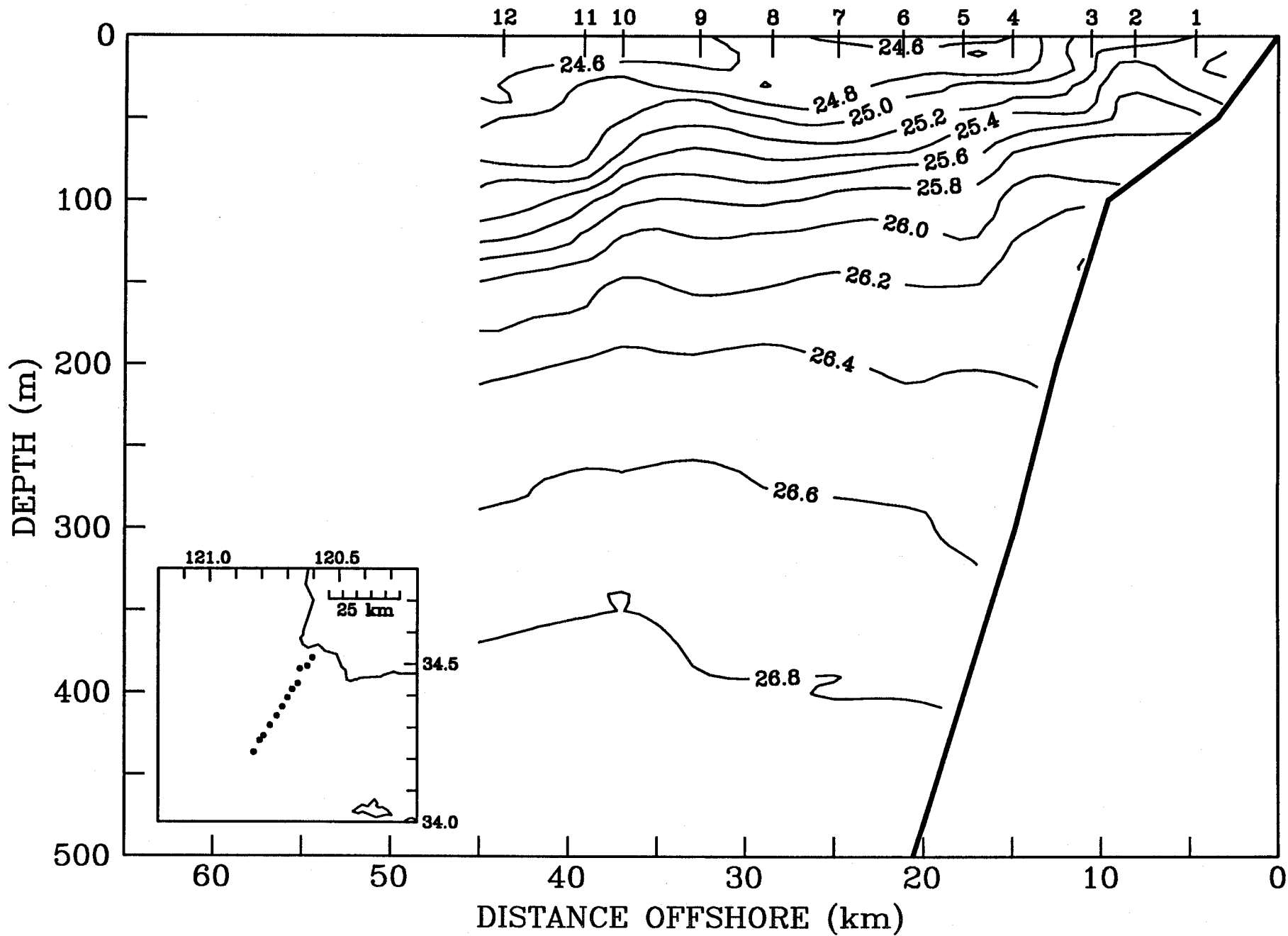
4 May - 5 May 1983

SIGMA-T

# LINE G

CTD Map 5

CTD Transect G-10



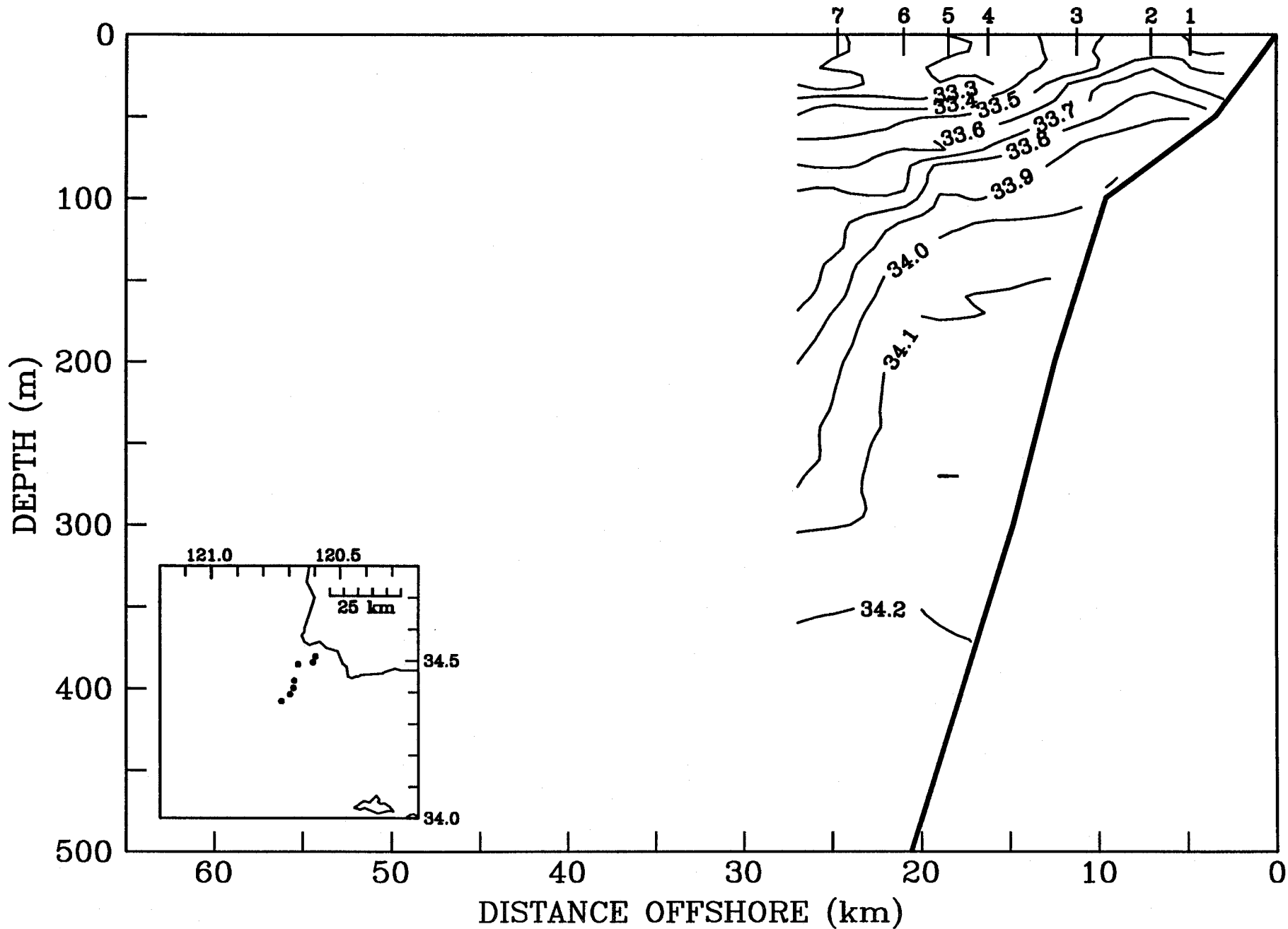


8 May 1983

SALINITY (ppt)

# LINE G

CTD Transect G-11

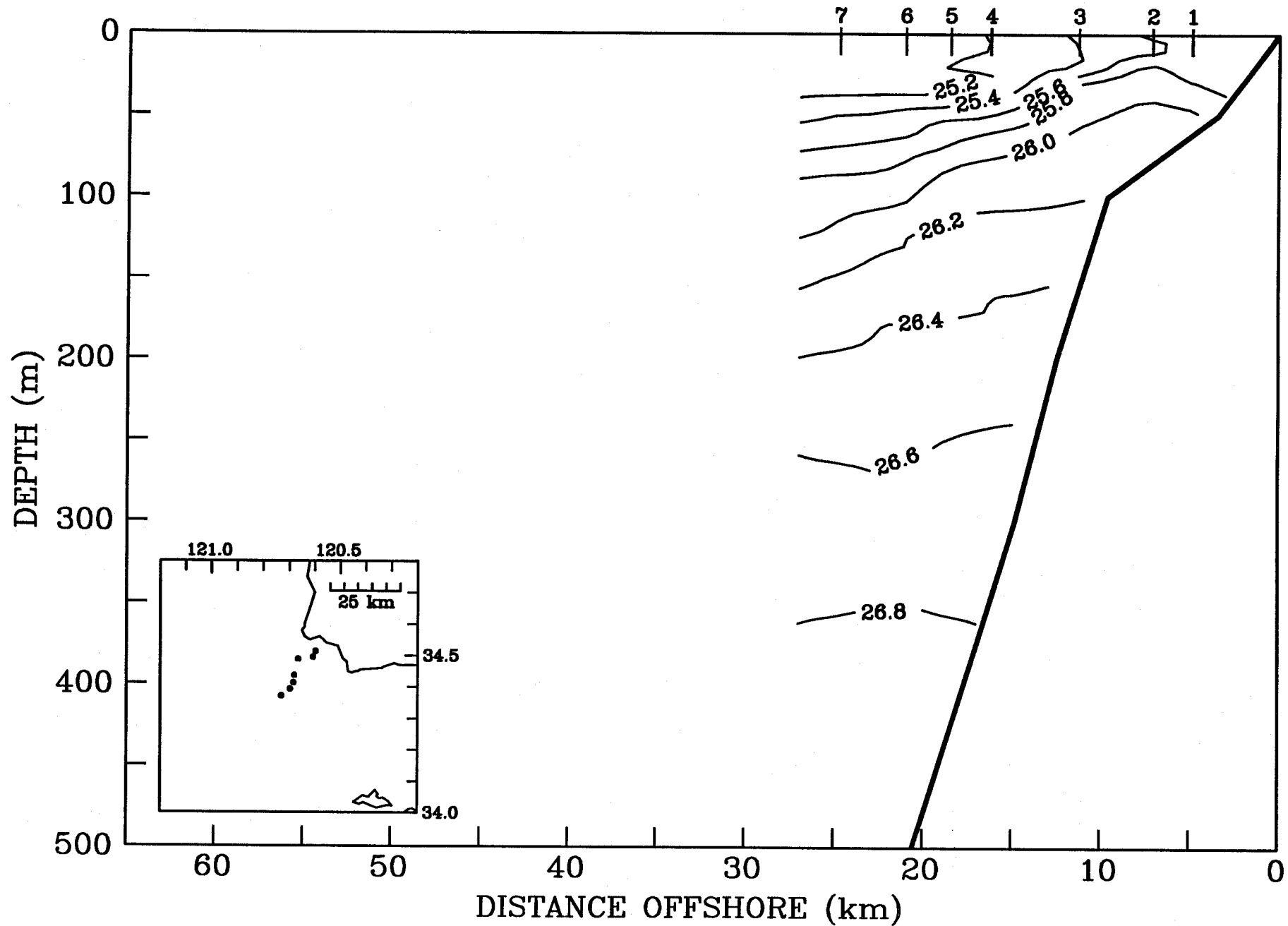


8 May 1983

SIGMA-T

# LINE G

CTD Transect G-11

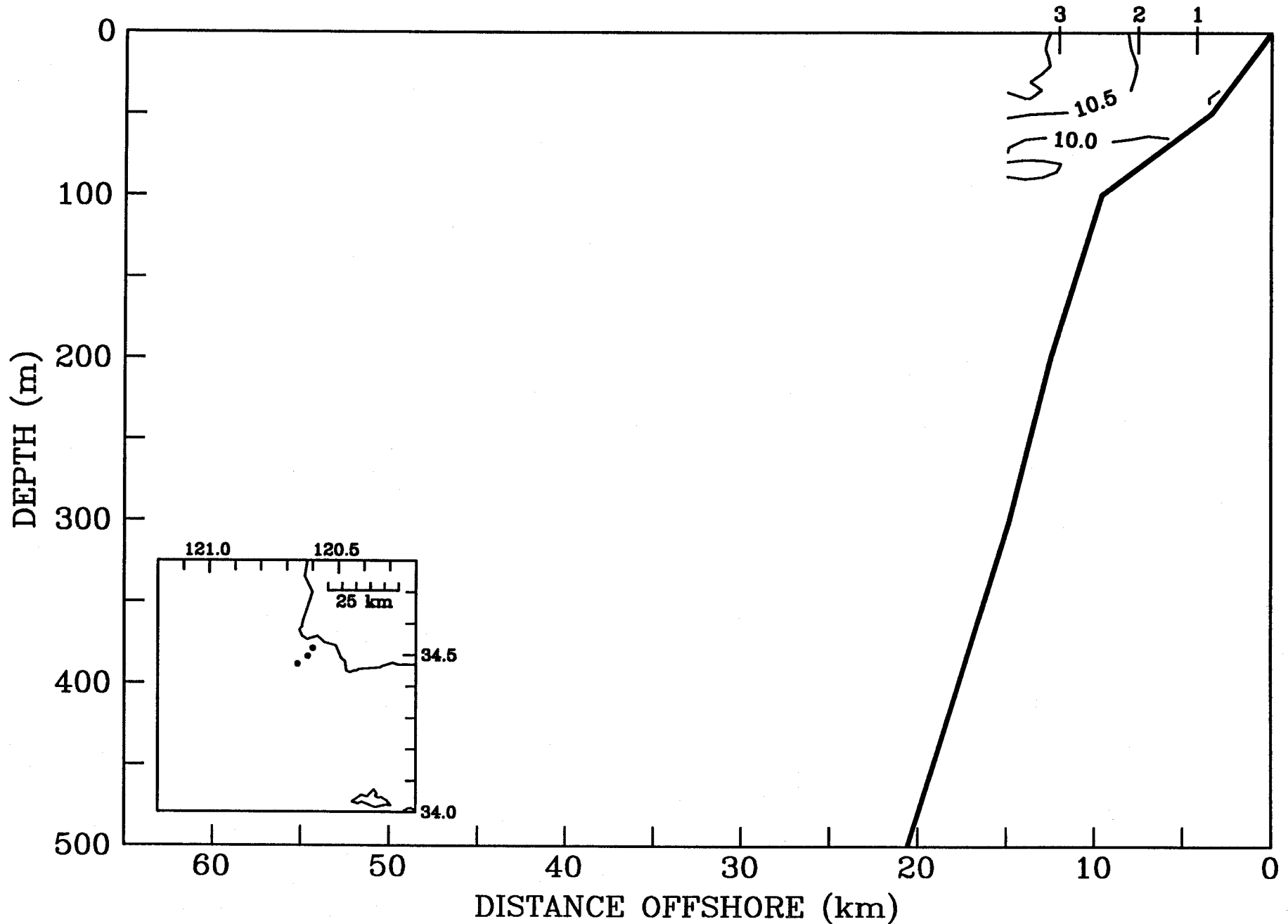


9 May 1983

TEMPERATURE (deg C)

# LINE G

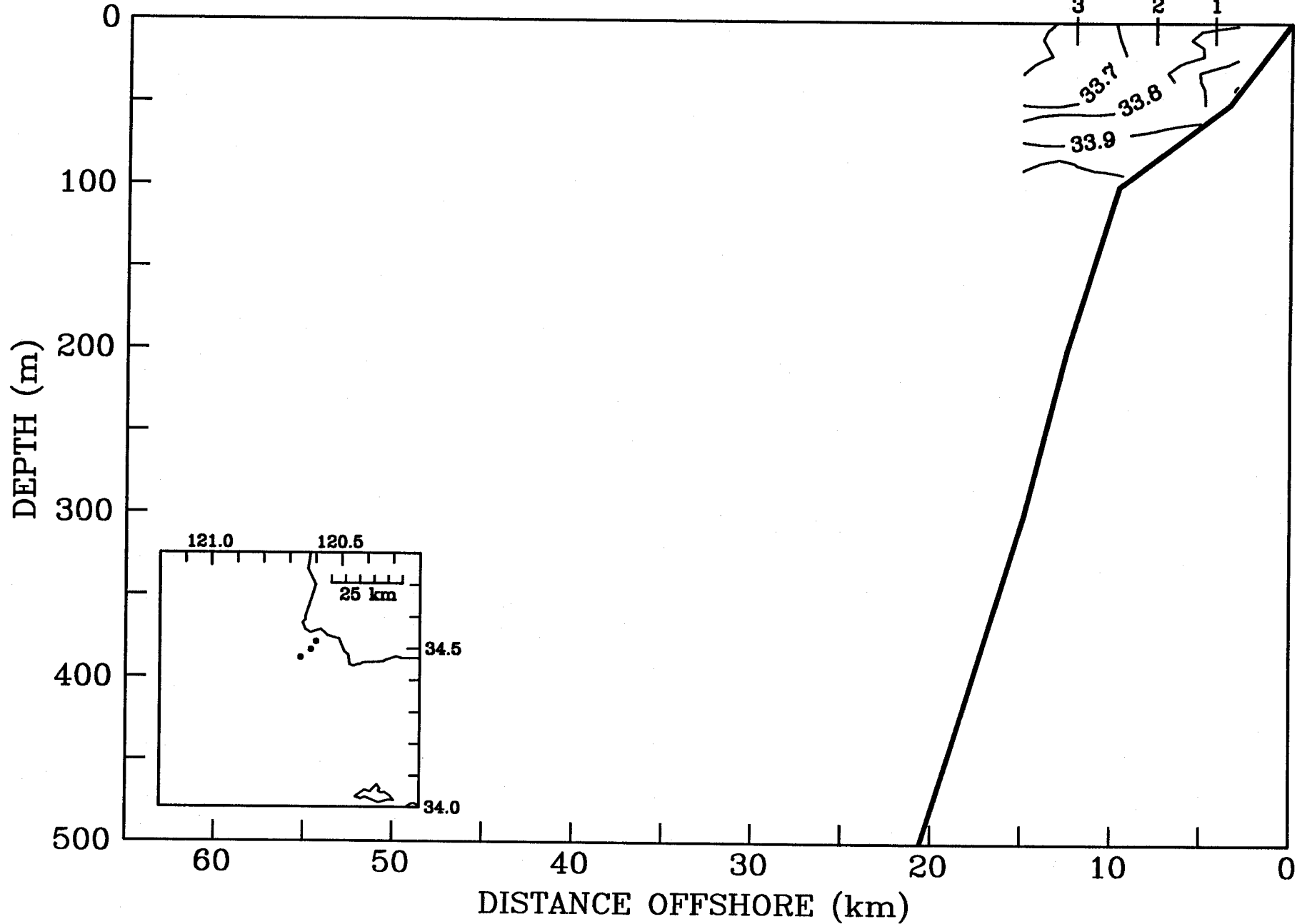
CTD Transect G-12



9 May 1983  
SALINITY (ppt)

# LINE G

CTD Transect G-12



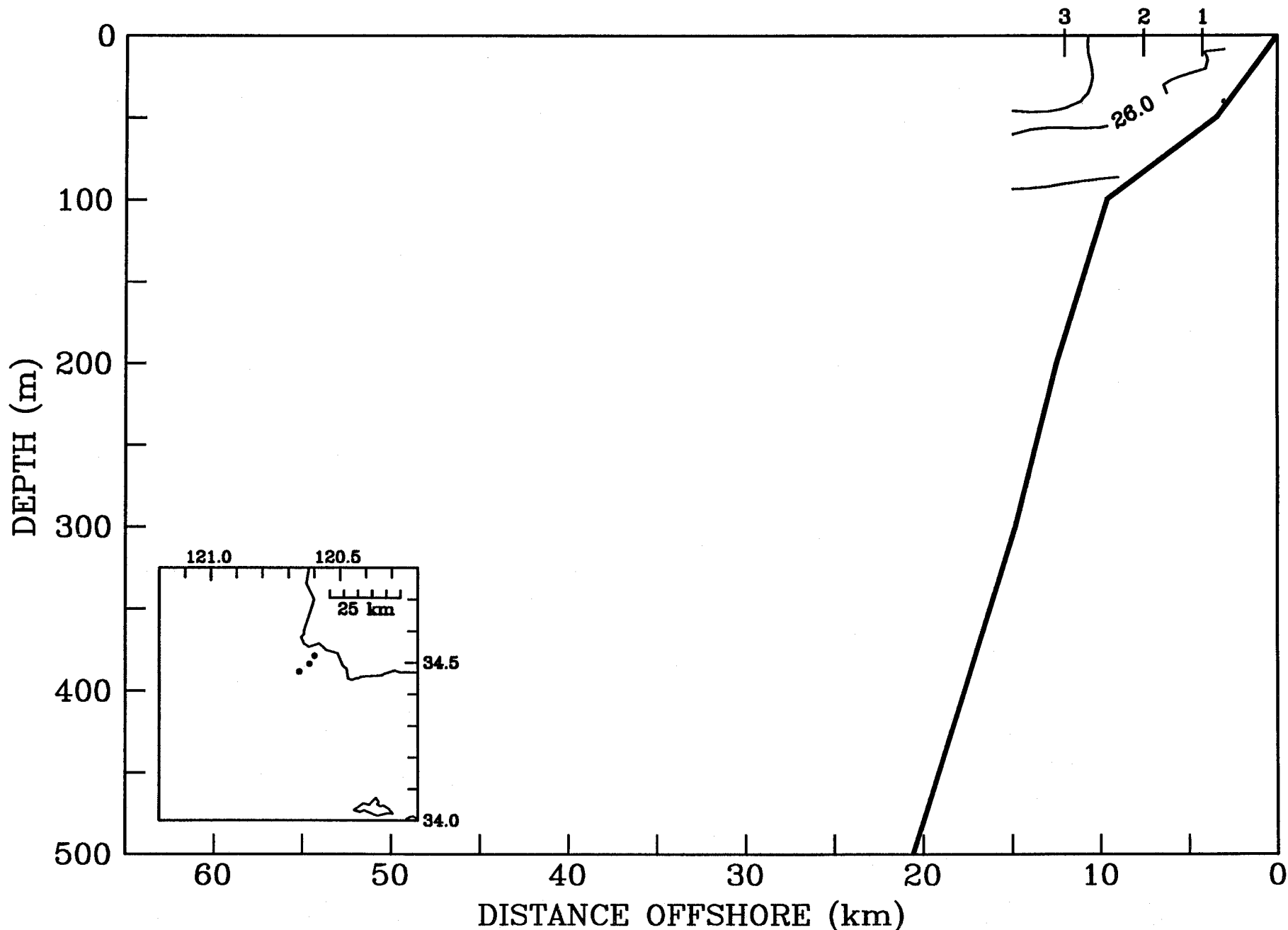


9 May 1983

SIGMA-T

# LINE G

CTD Transect G-12

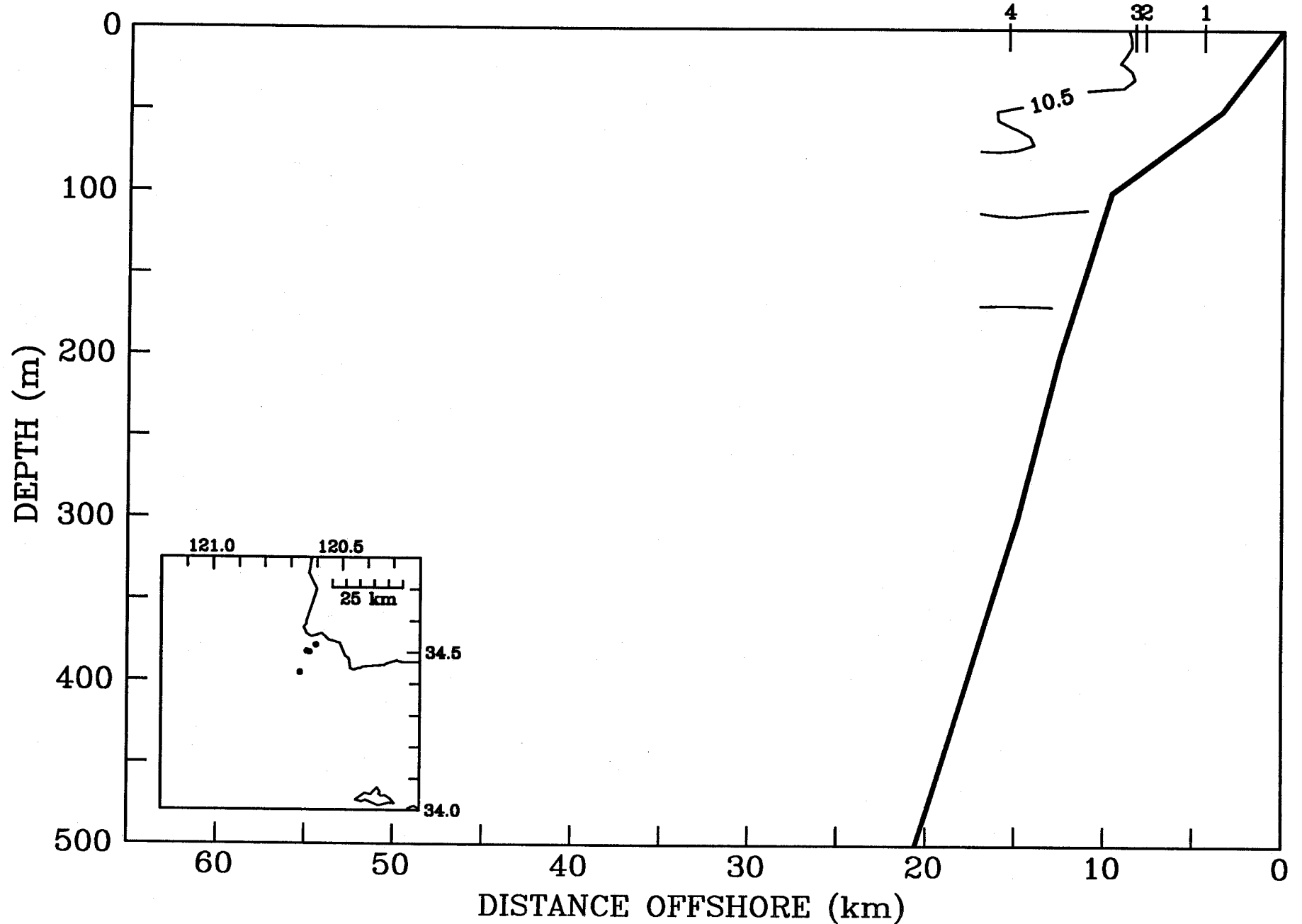


10 May 1983

TEMPERATURE (deg C)

# LINE G

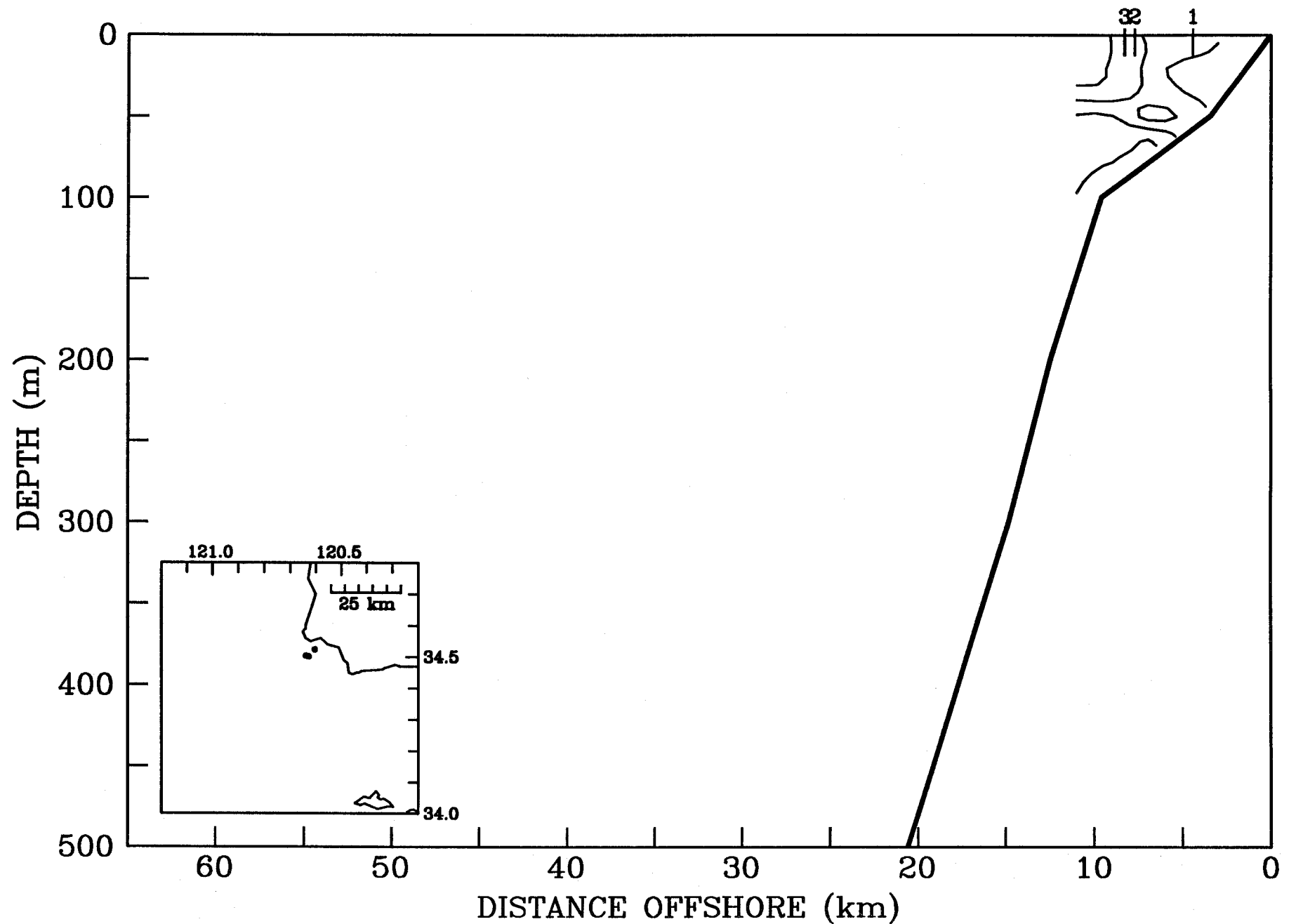
CTD Transect G-13



10 May 1983  
SALINITY (ppt)

# LINE G

CTD Transect G-13

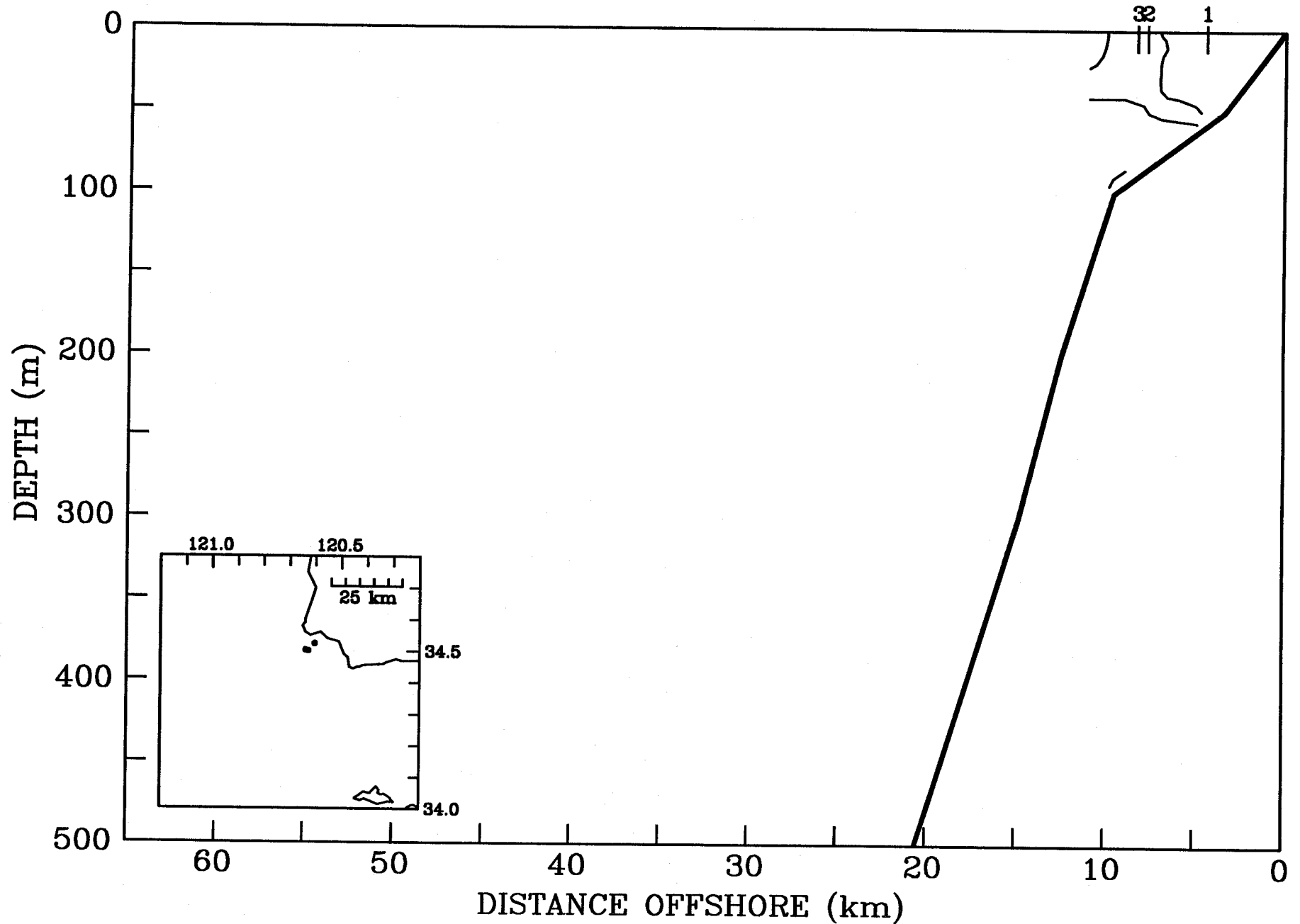


10 May 1983

SIGMA-T

# LINE G

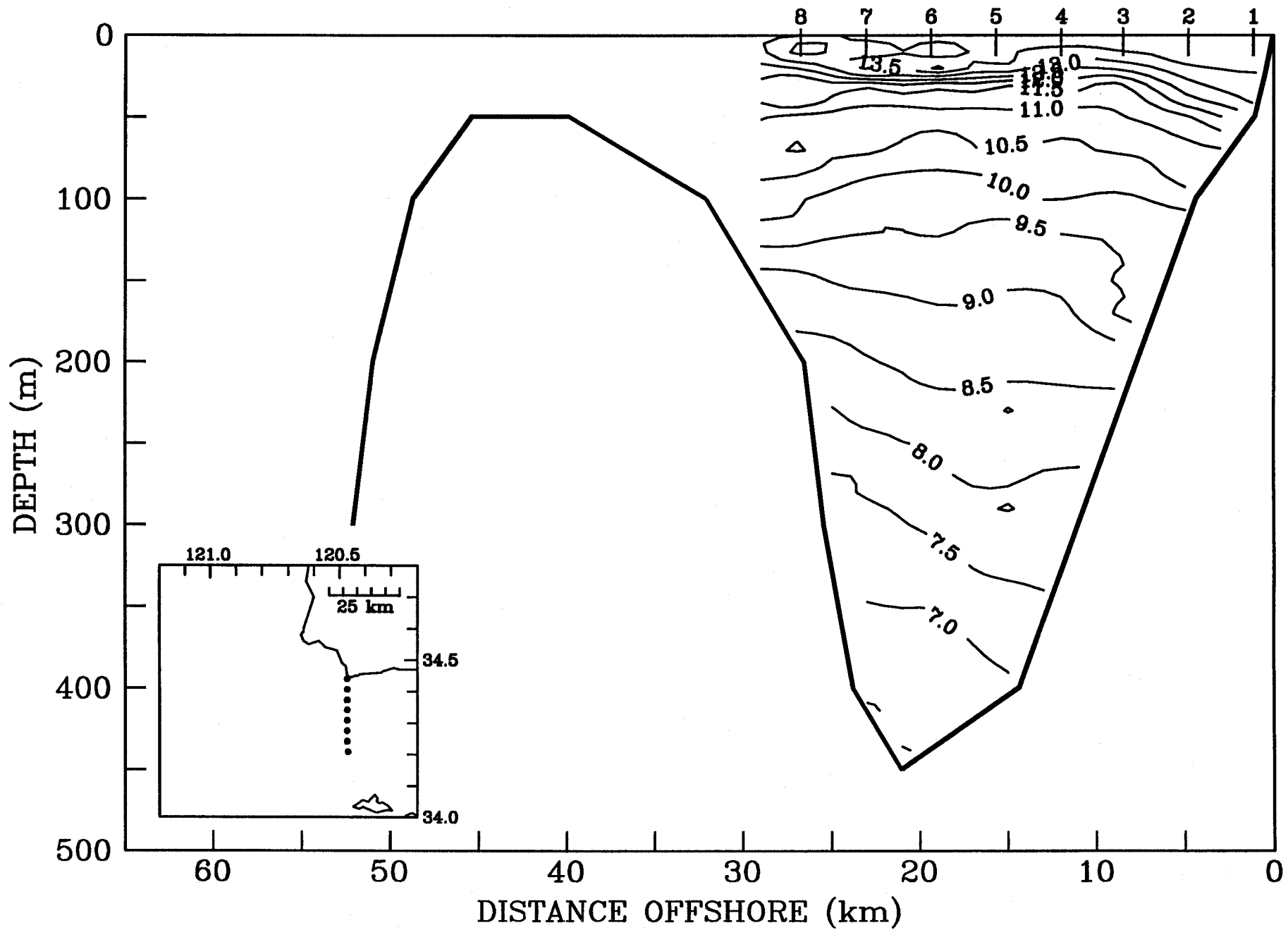
CTD Transect G-13



8 April - 9 April 1983  
TEMPERATURE (deg C)

# LINE C

CTD Map 1  
CTD Transect C-1



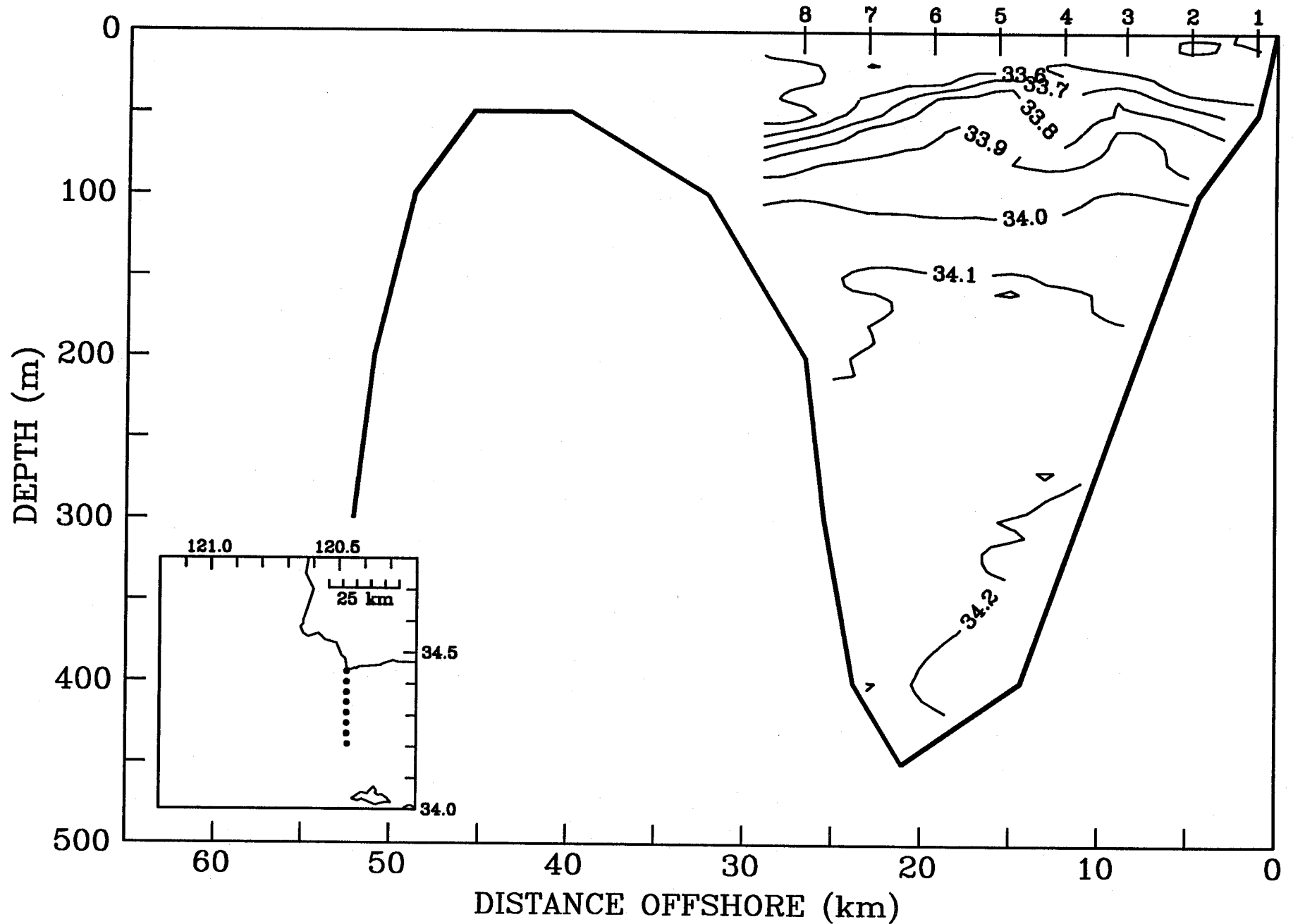
8 April - 9 April 1983

SALINITY (ppt)

# LINE C

CTD Map 1

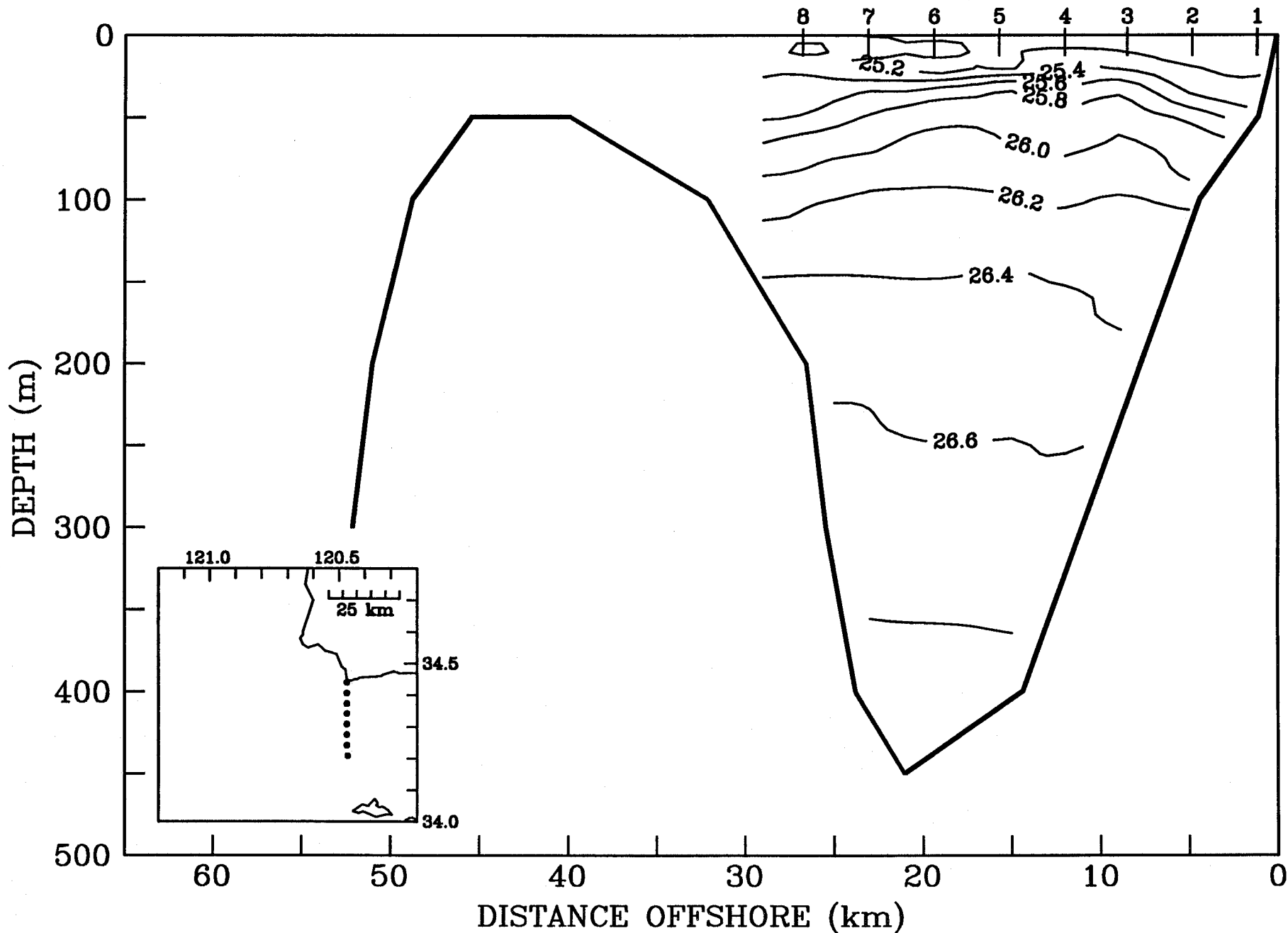
CTD Transect C-1



8 April - 9 April 1983  
SIGMA-T

# LINE C

CTD Map 1  
CTD Transect C-1



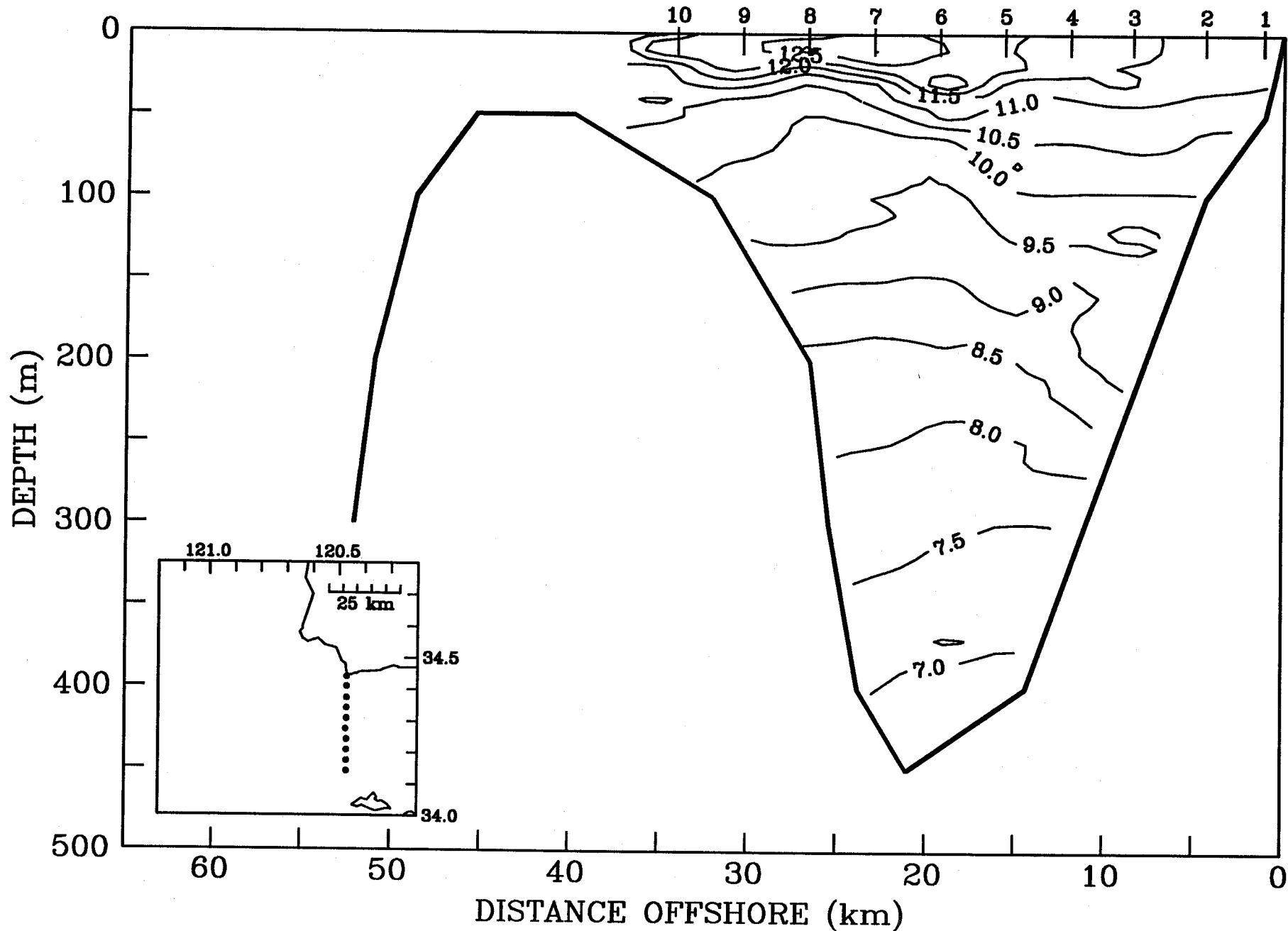
14 April 1983

TEMPERATURE (deg C)

# LINE C

CTD Map 2

CTD Transect C-2

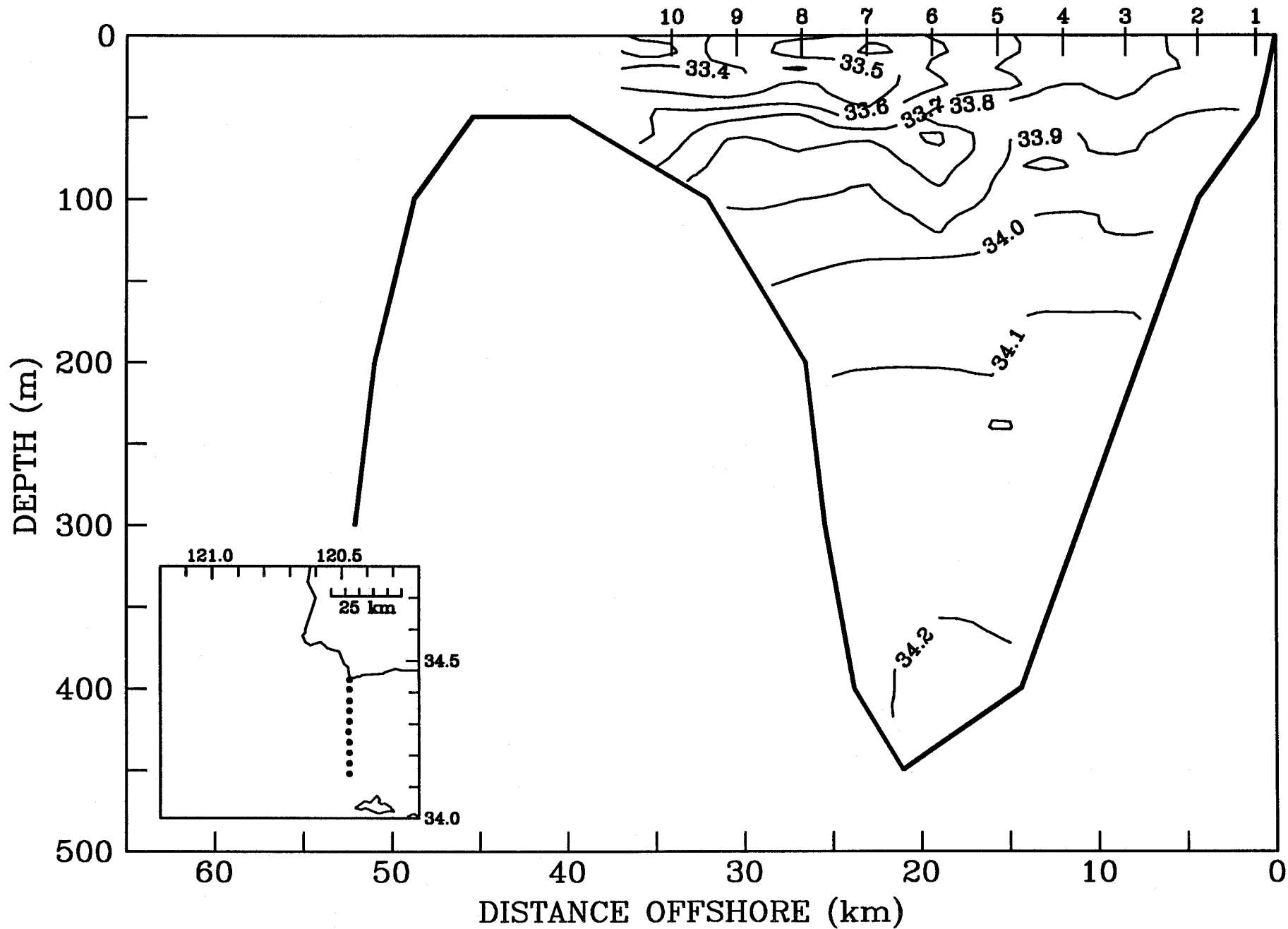




14 April 1983  
SALINITY (ppt)

# LINE C

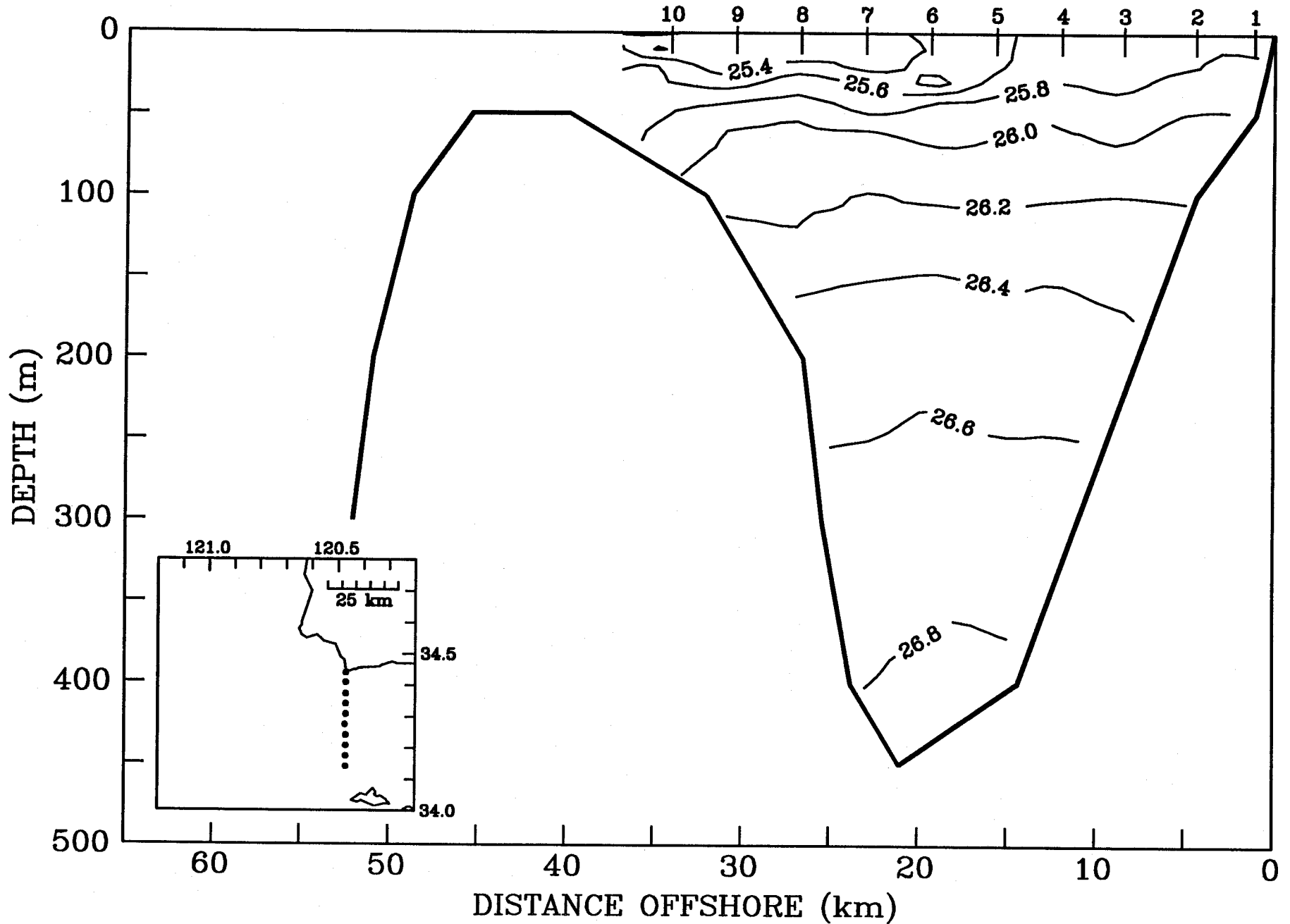
CTD Map 2  
CTD Transect C-2



14 April 1983  
SIGMA-T

# LINE C

CTD Map 2  
CTD Transect C-2



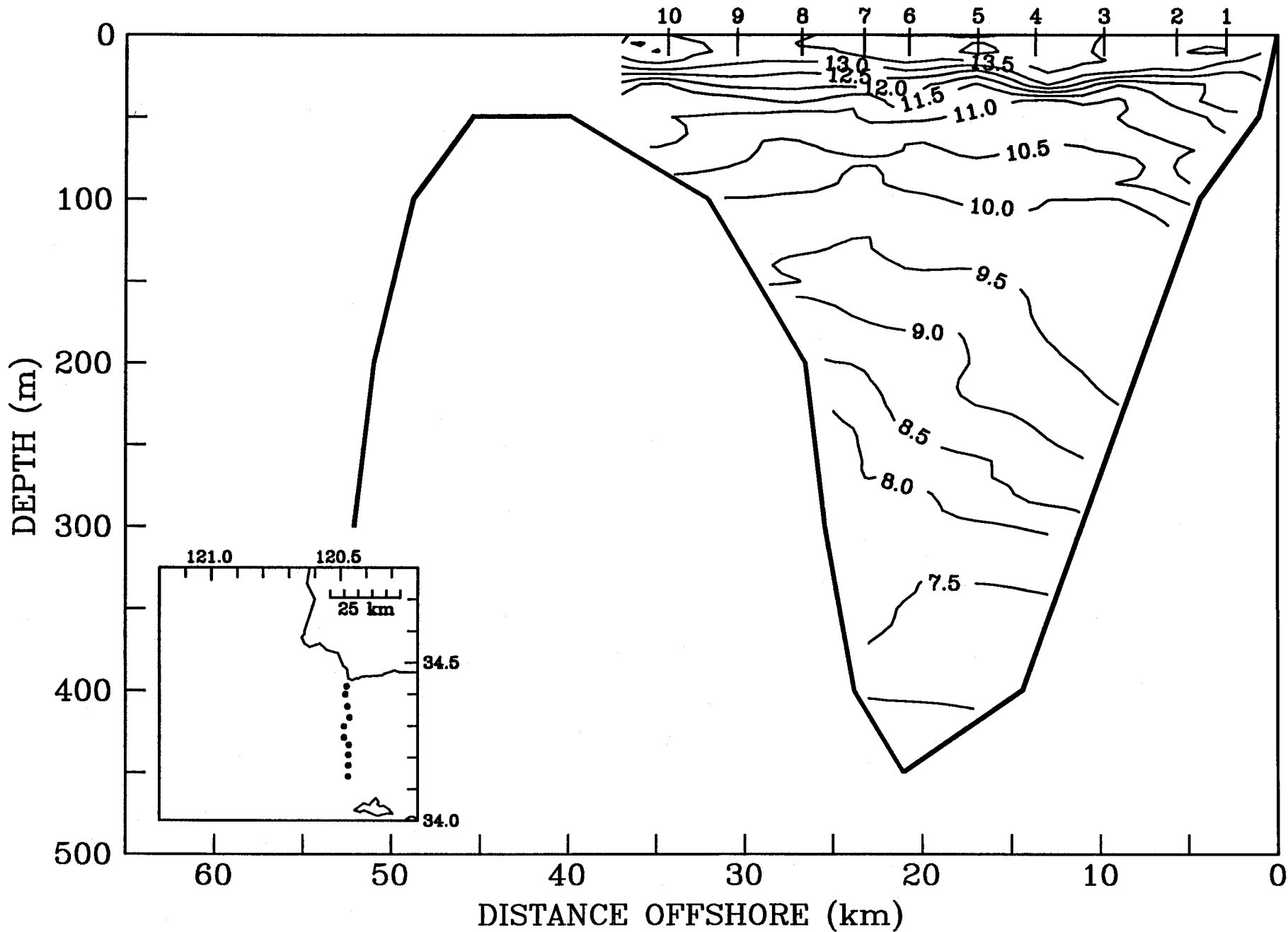
22 April 1983

TEMPERATURE (deg C)

# LINE C

CTD Map 3

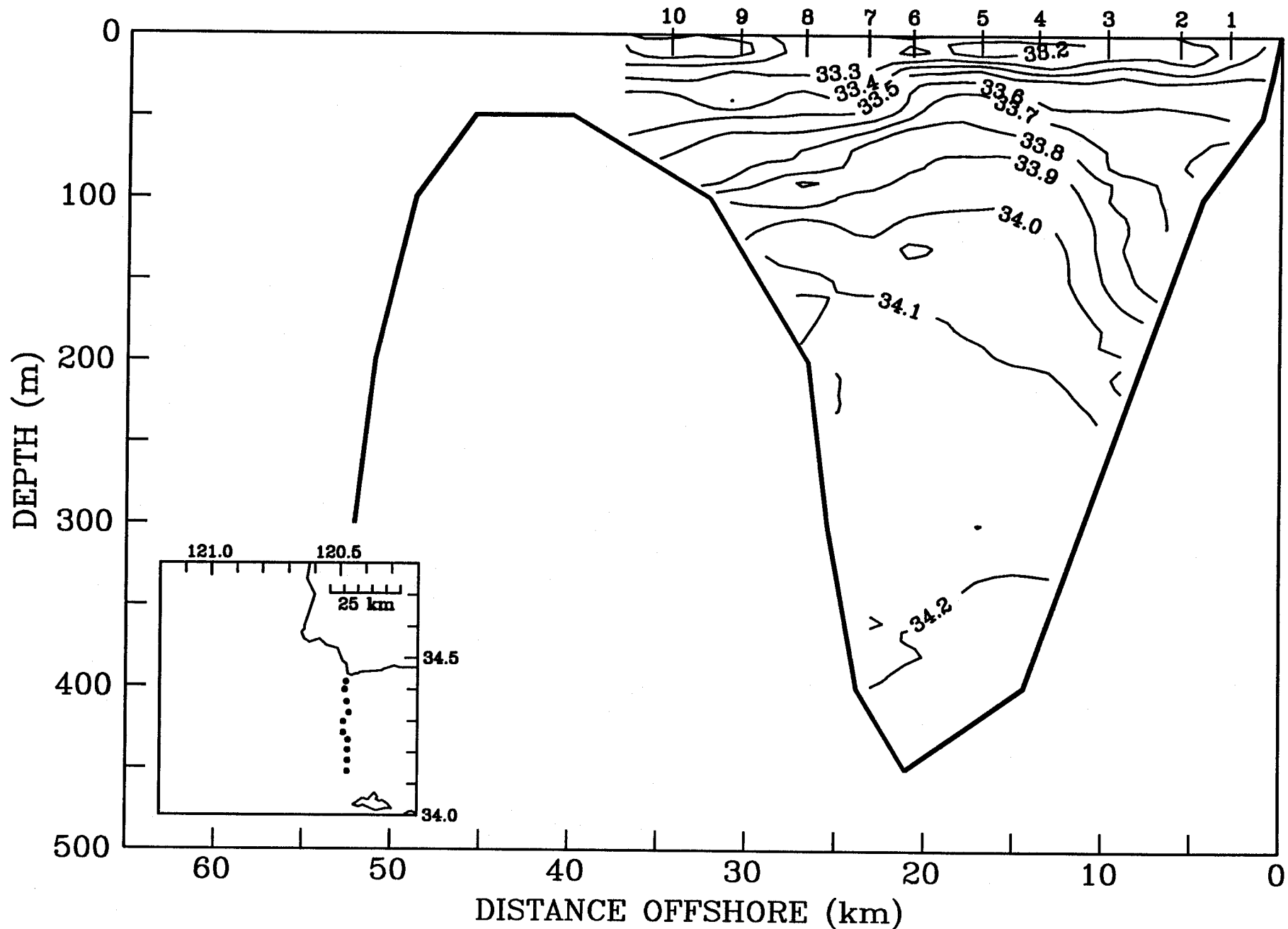
CTD Transect C-3



22 April 1983  
SALINITY (ppt)

# LINE C

CTD Map 3  
CTD Transect C-3



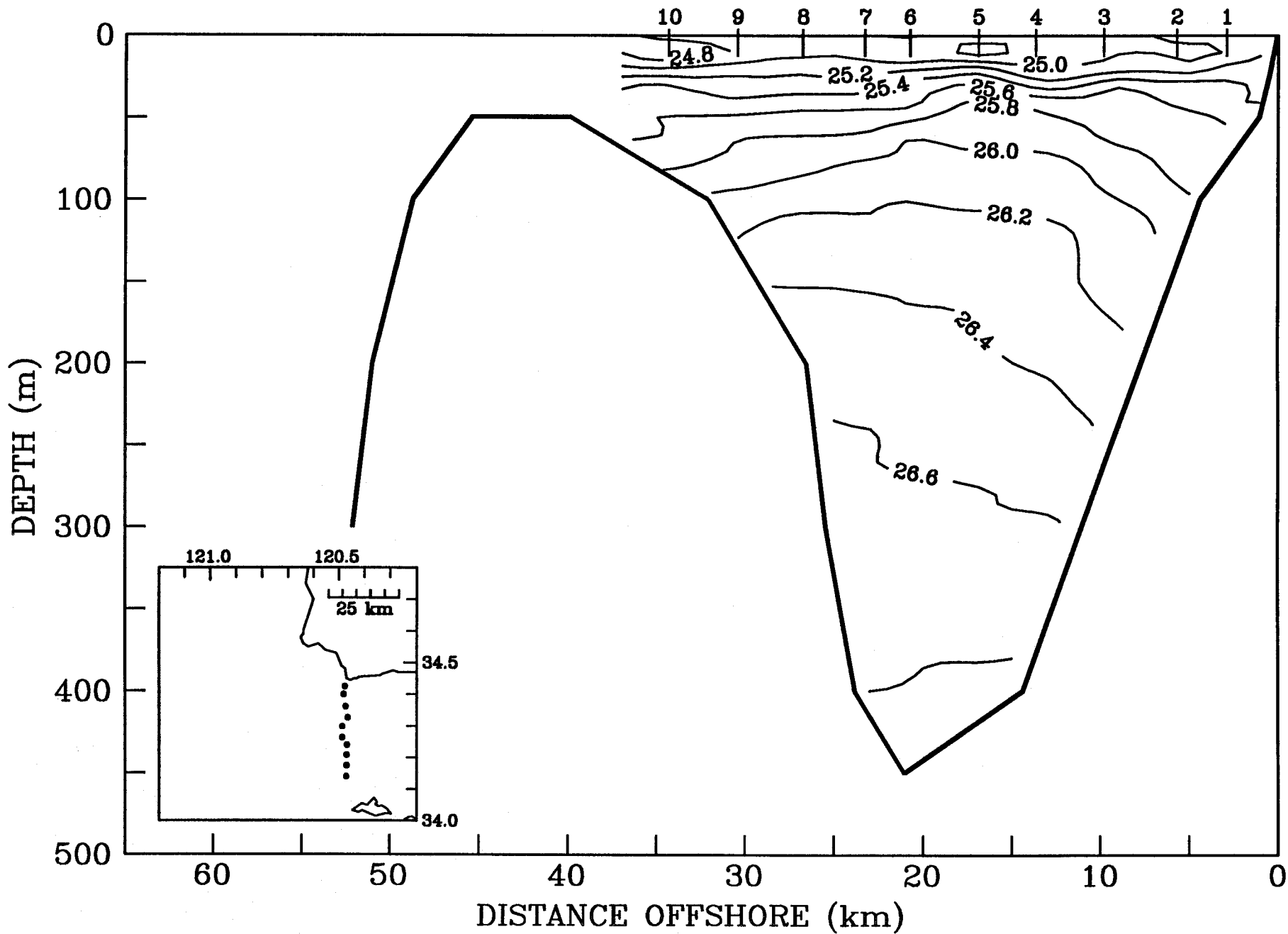
22 April 1983

SIGMA-T

# LINE C

CTD Map 3

CTD Transect C-3



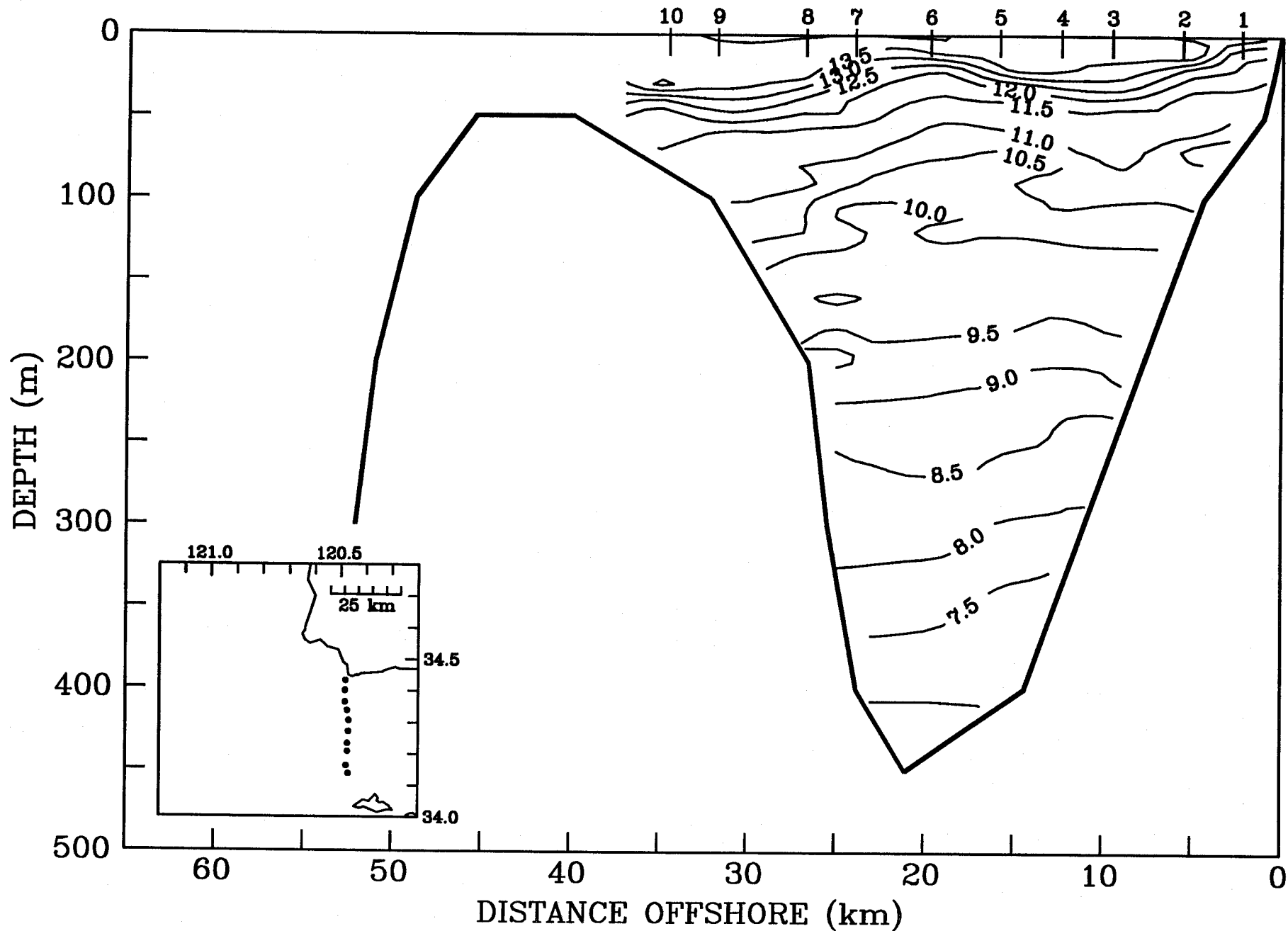
27 April 1983

TEMPERATURE (deg C)

# LINE C

CTD Map 4

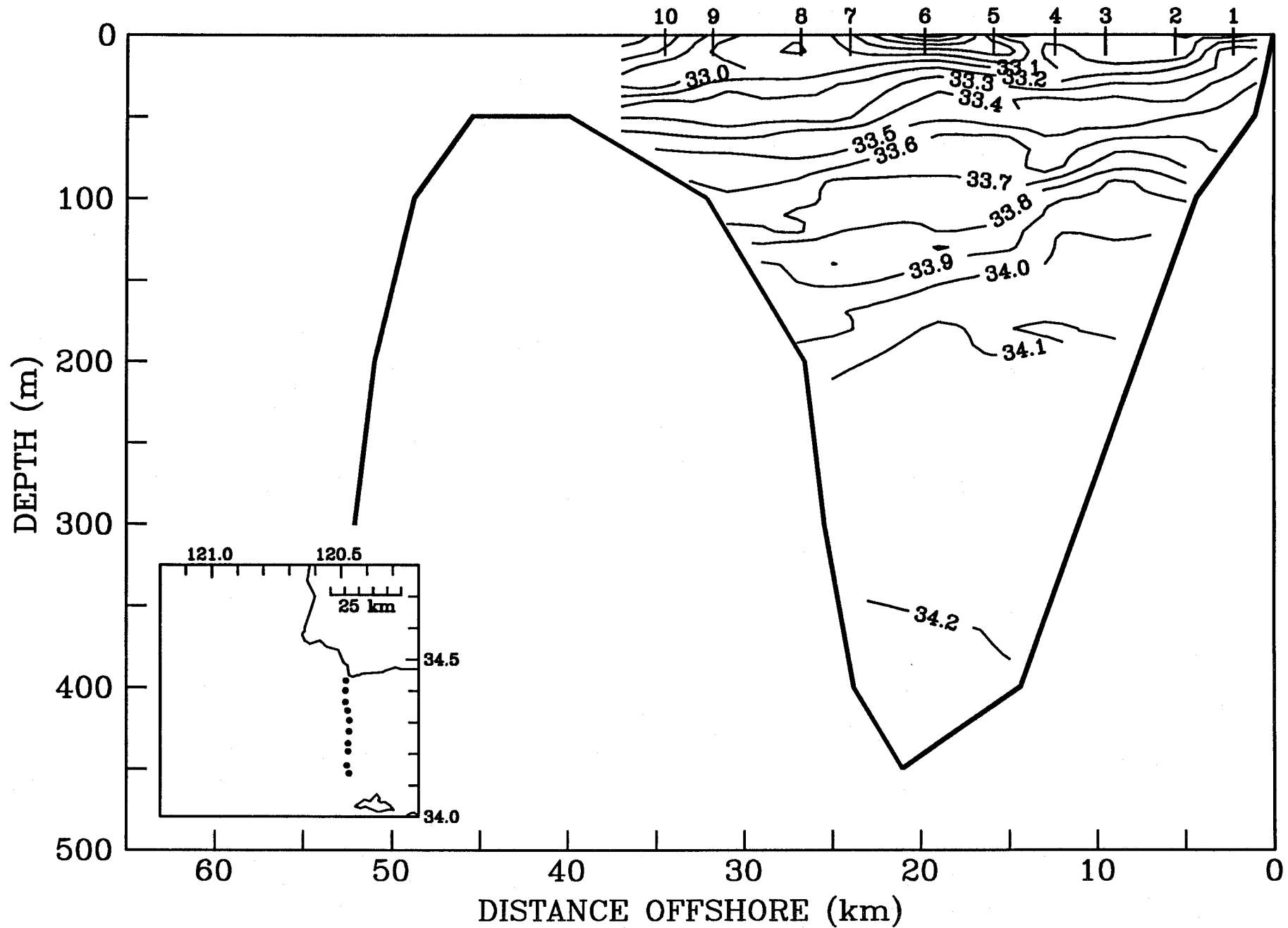
CTD Transect C-4



27 April 1983  
SALINITY (ppt)

# LINE C

CTD Map 4  
CTD Transect C-4



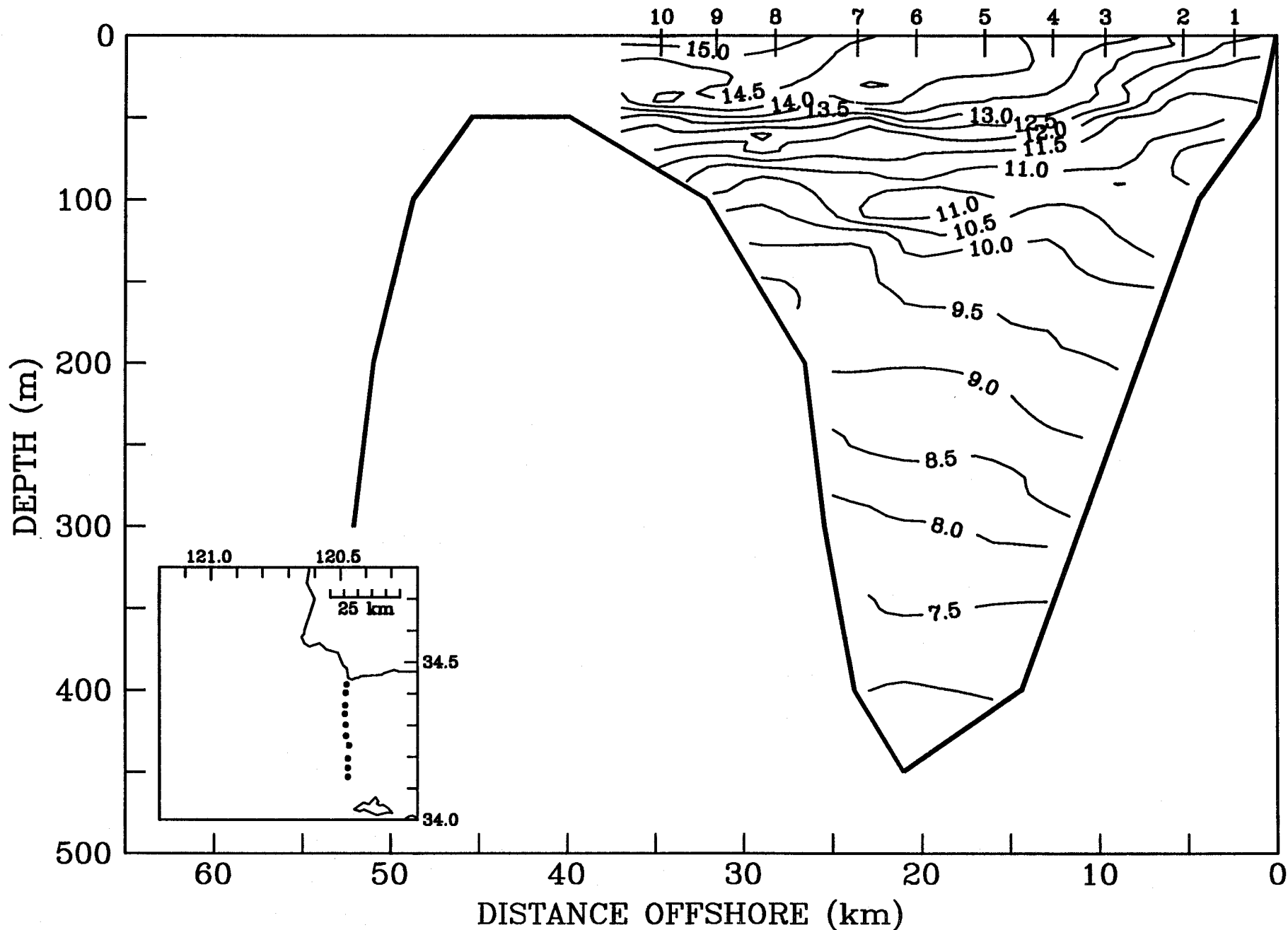




5 May 1983  
TEMPERATURE (deg C)

# LINE C

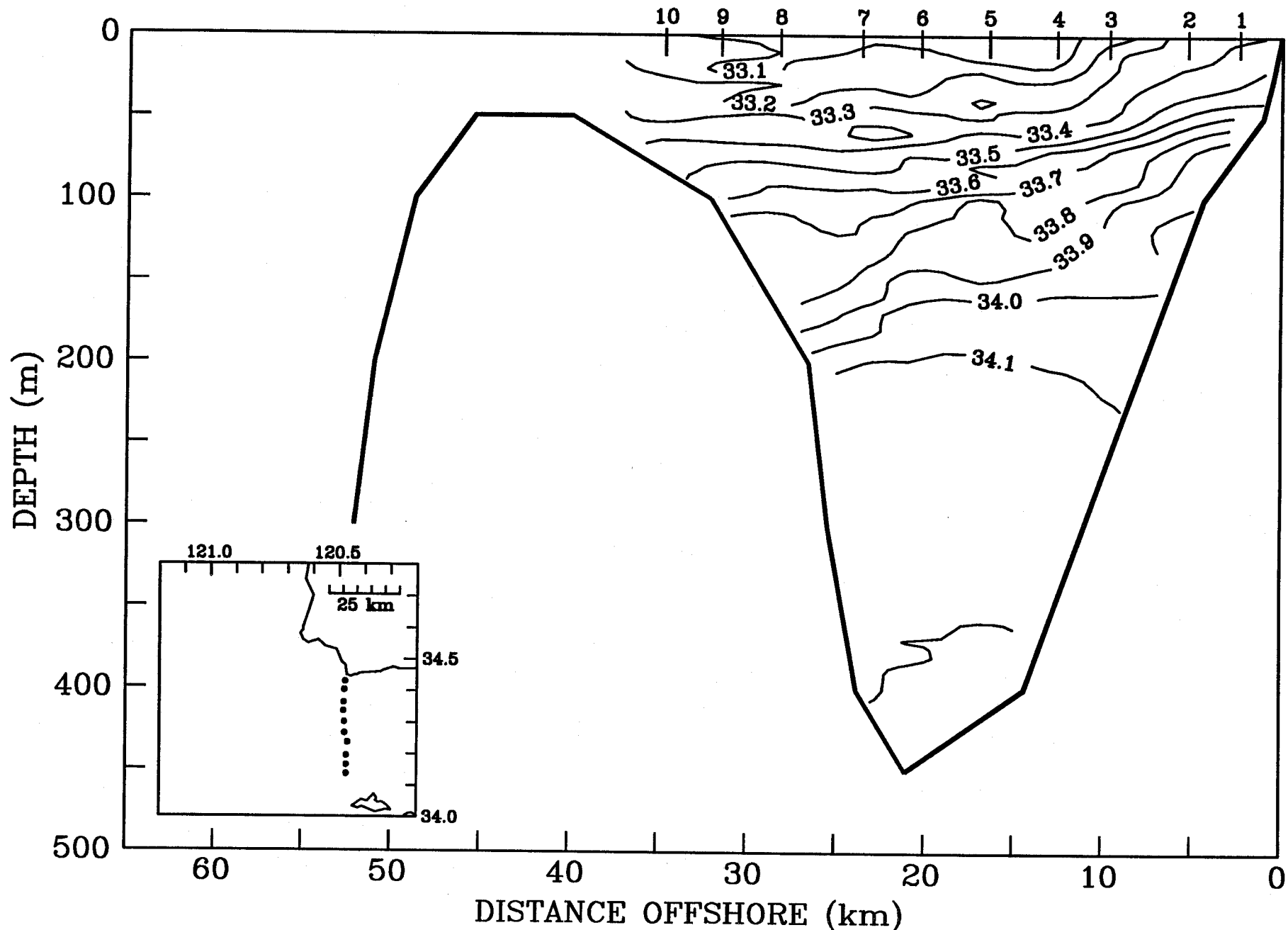
CTD Map 5  
CTD Transect C-5



5 May 1983  
SALINITY (ppt)

# LINE C

CTD Map 5  
CTD Transect C-5



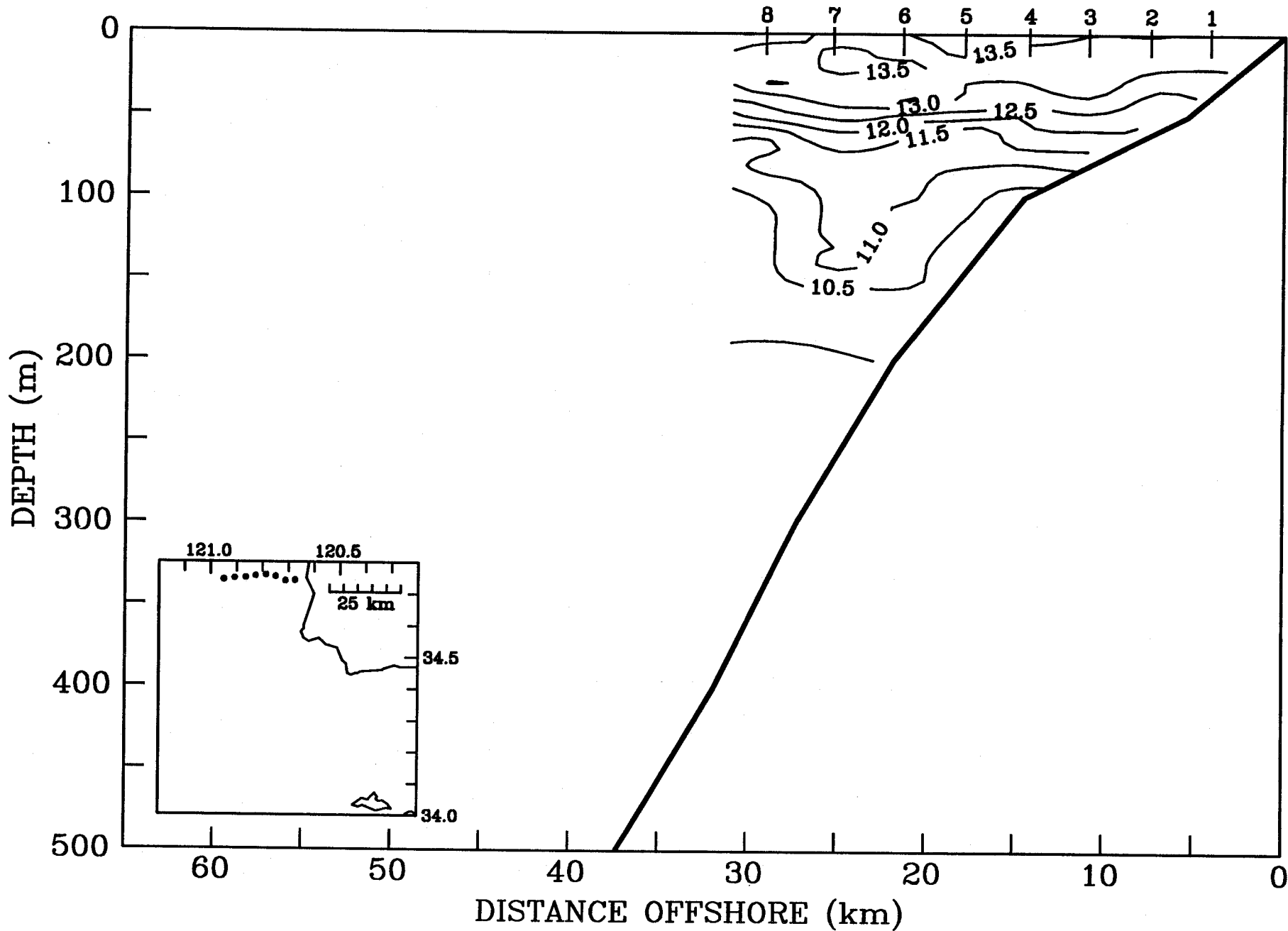


23 April 1983

TEMPERATURE (deg C)

# LINE P

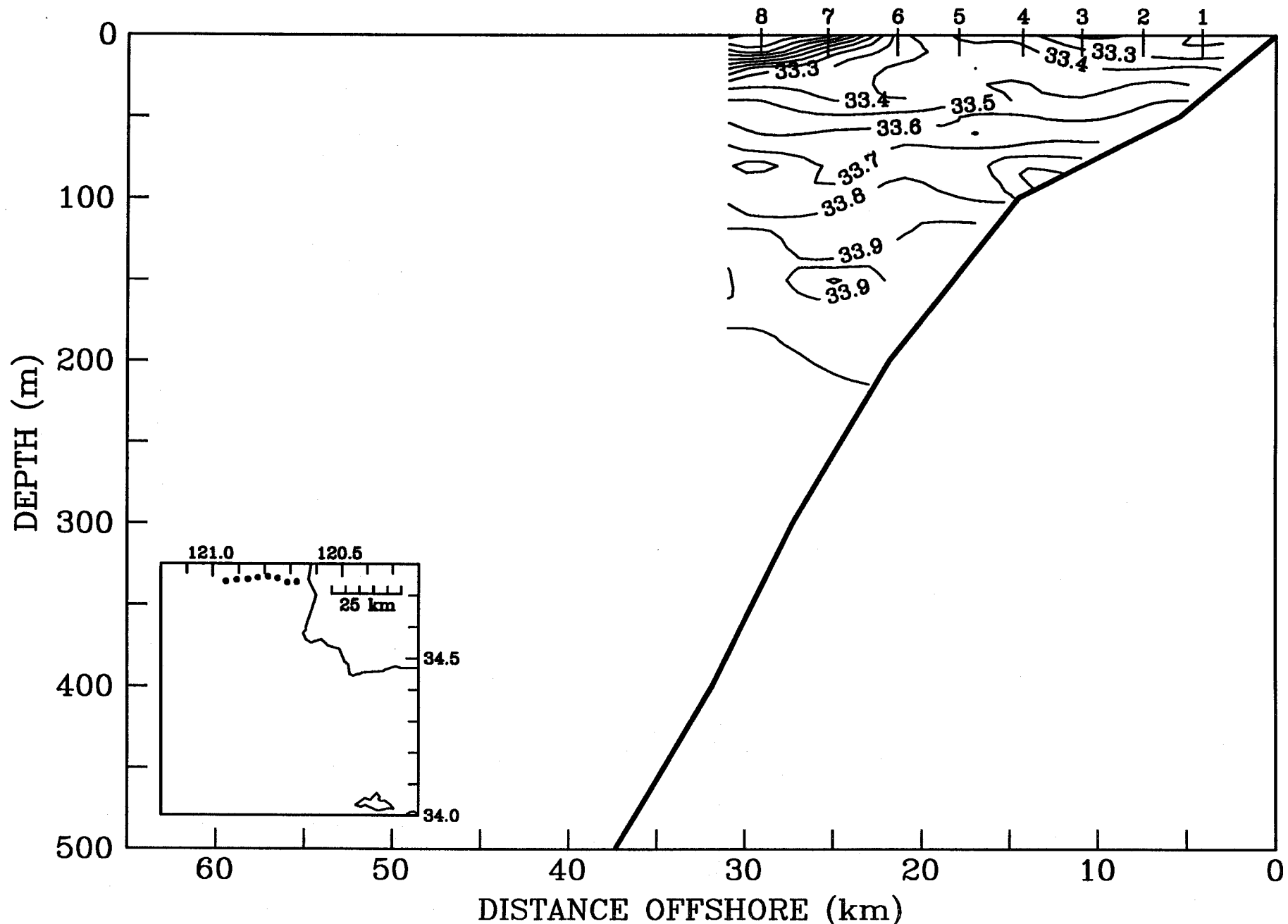
CTD Transect P-1



23 April 1983  
SALINITY (ppt)

# LINE P

CTD Transect P-1

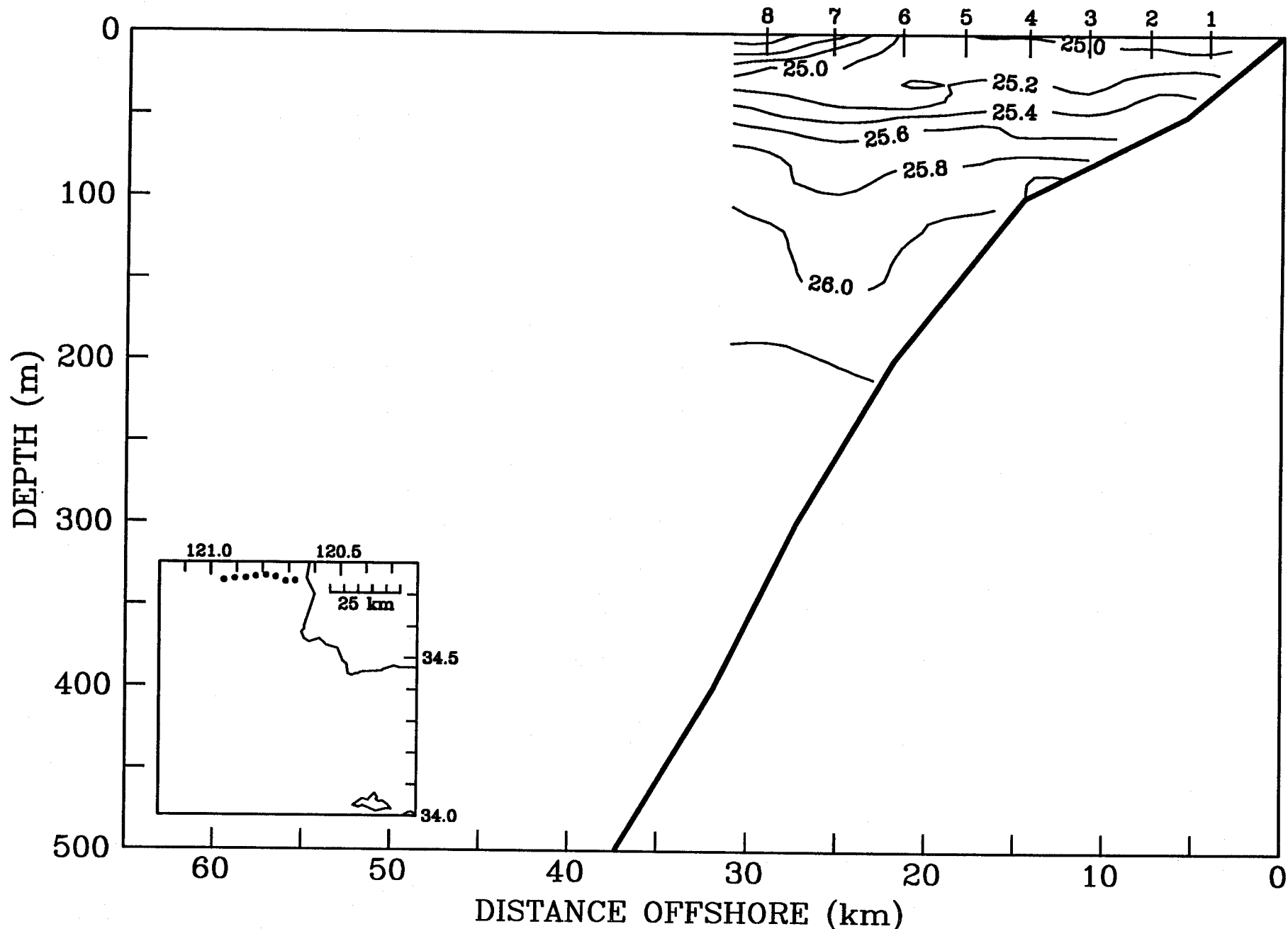


23 April 1983

SIGMA-T

# LINE P

CTD Transect P-1

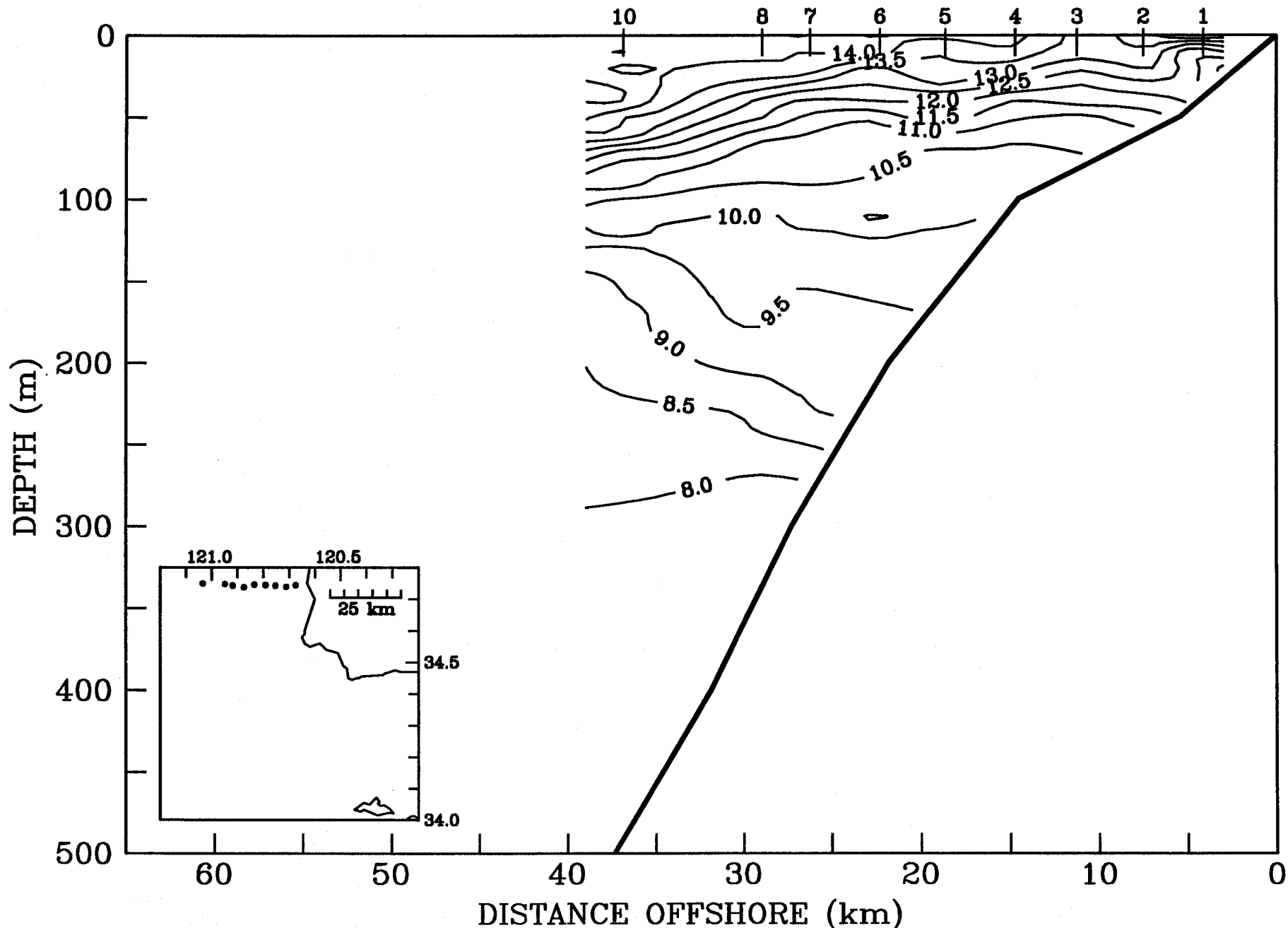


6 May 1983

TEMPERATURE (deg C)

LINE P

CTD Transect P-2

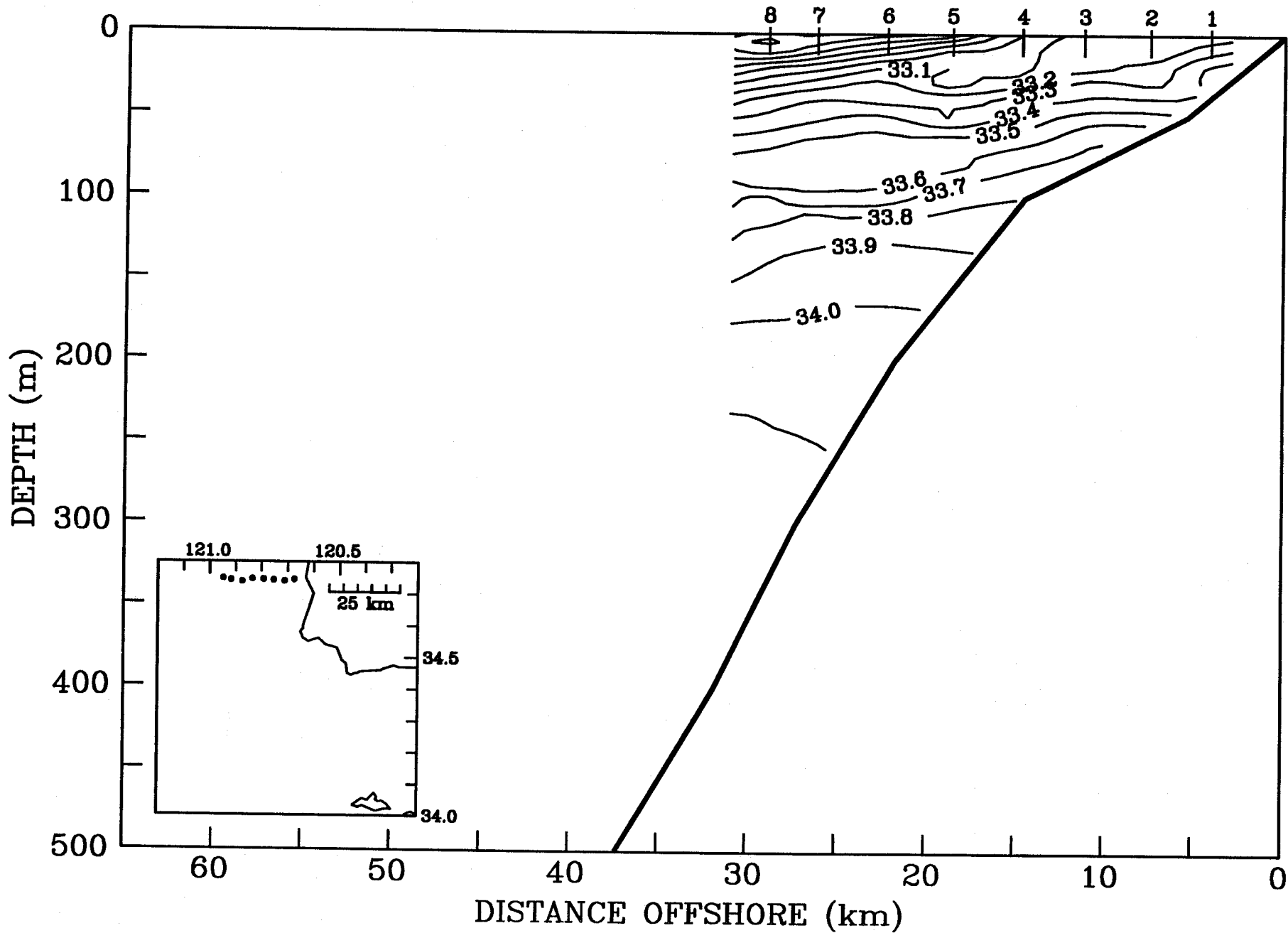


6 May 1983

SALINITY (ppt)

# LINE P

CTD Transect P-2



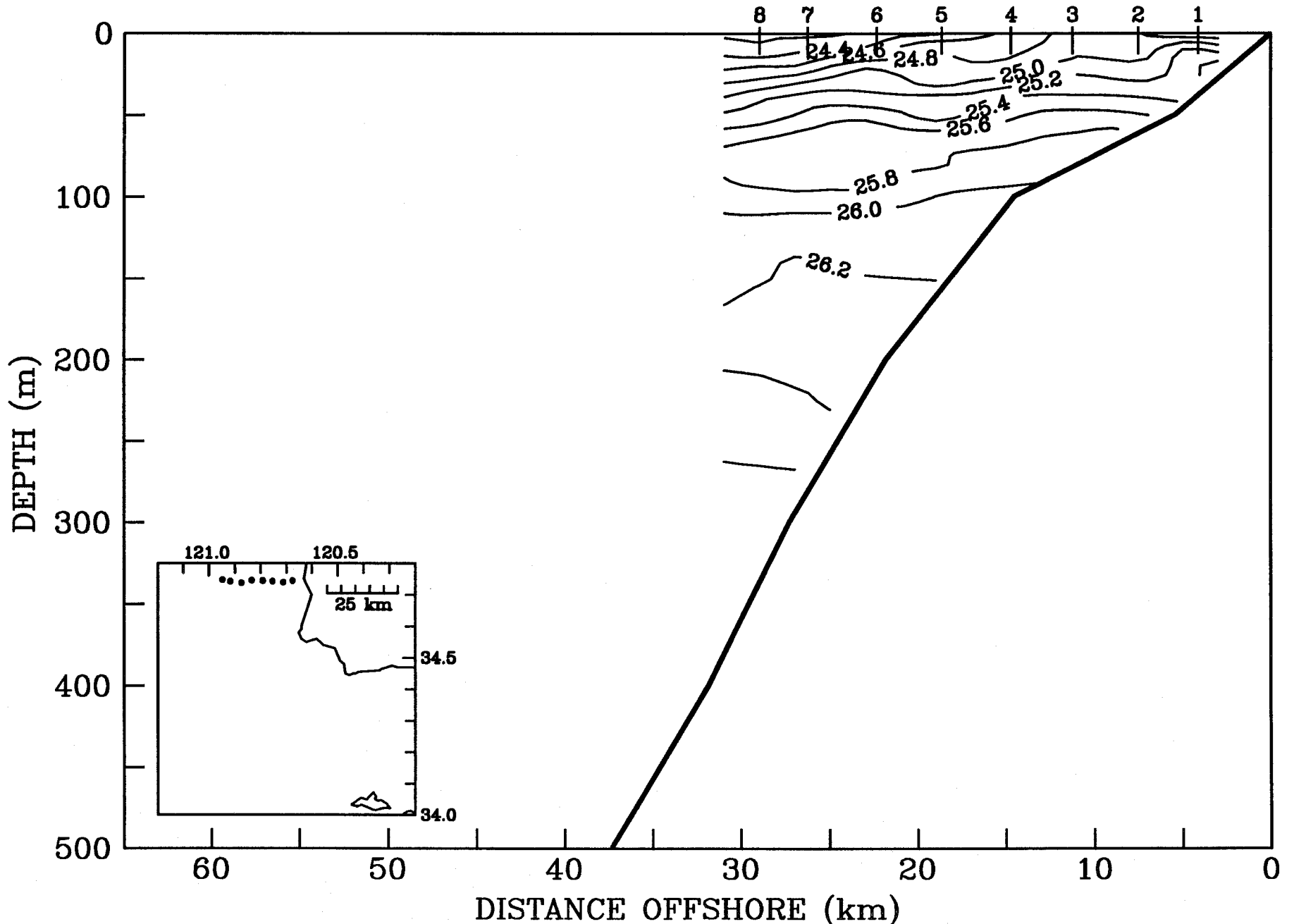


6 May 1983

SIGMA-T

# LINE P

CTD Transect P-2



**XBT TEMPERATURE MAPS**

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Page 5-79	XBT Map 10	150 m Temperature
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OPUS XBT Map 1

Cast	19	OPUS Station	A6	xbt
Cast	20	OPUS Station	A5	xbt
Cast	21	OPUS Station	A4	xbt
Cast	22	OPUS Station	A3	xbt
Cast	23	OPUS Station	A2	xbt
Cast	24	OPUS Station	A1	ctd
Cast	25	OPUS Station	AG1	ctd
Cast	26	OPUS Station	AG2	xbt
Cast	27	OPUS Station	AG3	xbt
Cast	28	OPUS Station	AG4	xbt
Cast	29	OPUS Station	AG5	xbt
Cast	30	OPUS Station	AG6	xbt
Cast	31	OPUS Station	AG7	xbt
Cast	32	OPUS Station	G9	xbt
Cast	33	OPUS Station	G8	xbt
Cast	34	OPUS Station	G7	xbt
Cast	35	OPUS Station	G6	xbt
Cast	36	OPUS Station	G5	xbt
Cast	37	OPUS Station	G4	xbt
Cast	38	OPUS Station	G3	xbt
Cast	39	OPUS Station	G2	xbt
Cast	40	OPUS Station	G1	ctd
Cast	41	OPUS Station	GC1	ctd
Cast	42	OPUS Station	GC2	xbt
Cast	43	OPUS Station	GC3	xbt
Cast	44	OPUS Station	GC4	xbt
Cast	45	OPUS Station	GC5	xbt
Cast	46	OPUS Station	GC6	xbt
Cast	47	OPUS Station	GC7	xbt
Cast	48	OPUS Station	GC8	xbt
Cast	49	OPUS Station	C8	xbt
Cast	50	OPUS Station	C8	ctd
Cast	51	OPUS Station	C7	xbt
Cast	52	OPUS Station	C6	xbt
Cast	53	OPUS Station	C5	xbt
Cast	54	OPUS Station	C4	xbt
Cast	55	OPUS Station	C3	xbt
Cast	56	OPUS Station	C2	xbt
Cast	57	OPUS Station	C1	ctd

OPUS XBT Map 2

Cast	94	OPUS Station	C8	xbt
Cast	95	OPUS Station	C7	xbt
Cast	96	OPUS Station	C6	xbt

Cast	97	OPUS Station	C5	xbt
Cast	98	OPUS Station	C4	xbt
Cast	99	OPUS Station	C3	xbt
Cast	100	OPUS Station	C2	xbt
Cast	101	OPUS Station	C1	ctd
Cast	102	OPUS Station	GC1	ctd
Cast	103	OPUS Station	GC2	xbt
Cast	104	OPUS Station	GC3	xbt
Cast	105	OPUS Station	GC4	xbt
Cast	106	OPUS Station	GC5	xbt
Cast	107	OPUS Station	GC6	xbt
Cast	108	OPUS Station	GC7	xbt
Cast	109	OPUS Station	GC8	xbt
Cast	110	OPUS Station	G9	xbt
Cast	111	OPUS Station	G10	xbt
Cast	112	OPUS Station	G11	xbt
Cast	113	OPUS Station	G8A	xbt
Cast	114	OPUS Station	G8B	xbt
Cast	115	OPUS Station	G8C	xbt
Cast	116	OPUS Station	G8D	xbt
Cast	117	OPUS Station	G8E	xbt
Cast	118	OPUS Station	G8	xbt
Cast	119	OPUS Station	G7	xbt
Cast	120	OPUS Station	G6	xbt
Cast	121	OPUS Station	G5	xbt
Cast	122	OPUS Station	G4	xbt
Cast	123	OPUS Station	G3	xbt
Cast	124	OPUS Station	G2	xbt
Cast	125	OPUS Station	G1	ctd
Cast	126	OPUS Station	AG1	ctd
Cast	127	OPUS Station	AG2	xbt
Cast	128	OPUS Station	AG3	xbt
Cast	129	OPUS Station	AG4	xbt
Cast	130	OPUS Station	AG5	xbt
Cast	131	OPUS Station	AG6	xbt
Cast	132	OPUS Station	AG7	xbt
Cast	133	OPUS Station	AG8	xbt
Cast	134	OPUS Station	A8	xbt
Cast	135	OPUS Station	A7	xbt
Cast	136	OPUS Station	A6	xbt
Cast	137	OPUS Station	A5	xbt
Cast	138	OPUS Station	A4	xbt
Cast	139	OPUS Station	A3	xbt
Cast	140	OPUS Station	A2	xbt

Cast 141 OPUS Station A1 ctd

OPUS XBT Map 3

Cast 154	OPUS Station	A8	xbt
Cast 155	OPUS Station	A7	xbt
Cast 156	OPUS Station	A6	xbt
Cast 157	OPUS Station	A5	xbt
Cast 158	OPUS Station	A4	xbt
Cast 159	OPUS Station	A3	xbt
Cast 160	OPUS Station	A2	xbt
Cast 161	OPUS Station	A1	ctd
Cast 162	OPUS Station	AG1	ctd
Cast 163	OPUS Station	AG2	xbt
Cast 164	OPUS Station	AG3	xbt
Cast 166	OPUS Station	AG5	xbt
Cast 167	OPUS Station	AG6	xbt
Cast 168	OPUS Station	AG7	xbt
Cast 169	OPUS Station	AG8	xbt
Cast 170	OPUS Station	G12	xbt
Cast 171	OPUS Station	G11	xbt
Cast 172	OPUS Station	G10	xbt
Cast 173	OPUS Station	G9	xbt
Cast 174	OPUS Station	G8	xbt
Cast 175	OPUS Station	G7	xbt
Cast 176	OPUS Station	G6	xbt
Cast 177	OPUS Station	G5	xbt
Cast 178	OPUS Station	G4	xbt
Cast 179	OPUS Station	G3	xbt
Cast 180	OPUS Station	G2	xbt
Cast 181	OPUS Station	G1	ctd
Cast 182	OPUS Station	GC1	ctd
Cast 183	OPUS Station	GC2	xbt
Cast 184	OPUS Station	GC3	xbt
Cast 185	OPUS Station	GC4	xbt
Cast 186	OPUS Station	GC5	xbt
Cast 187	OPUS Station	GC6	xbt
Cast 188	OPUS Station	GC7	xbt
Cast 189	OPUS Station	GC8	xbt
Cast 190	OPUS Station	GC9	xbt
Cast 191	OPUS Station	GC0	xbt
Cast 192	OPUS Station	C10	xbt
Cast 193	OPUS Station	C9	xbt
Cast 194	OPUS Station	C8	xbt
Cast 195	OPUS Station	C7	xbt
Cast 196	OPUS Station	C6	xbt

Cast	197	OPUS Station	C5	xbt
Cast	198	OPUS Station	C4	xbt
Cast	199	OPUS Station	C3	xbt
Cast	200	OPUS Station	C2	xbt
Cast	201	OPUS Station	C1	ctd

OPUS XBT Map 4

Cast	232	OPUS Station	A8	xbt
Cast	233	OPUS Station	A7	xbt
Cast	234	OPUS Station	A6	xbt
Cast	235	OPUS Station	A5	xbt
Cast	236	OPUS Station	A4	xbt
Cast	237	OPUS Station	A3	xbt
Cast	238	OPUS Station	A2	xbt
Cast	239	OPUS Station	A1	ctd
Cast	240	OPUS Station	AG1	ctd
Cast	241	OPUS Station	AG2	xbt
Cast	242	OPUS Station	AG3	xbt
Cast	243	OPUS Station	AG4	xbt
Cast	244	OPUS Station	AG5	xbt
Cast	245	OPUS Station	AG6	xbt
Cast	246	OPUS Station	AG7	xbt
Cast	247	OPUS Station	AG8	xbt
Cast	248	OPUS Station	G12	xbt
Cast	249	OPUS Station	G11	xbt
Cast	250	OPUS Station	G10	xbt
Cast	251	OPUS Station	G0B	xbt
Cast	252	OPUS Station	G9	xbt
Cast	253	OPUS Station	G8	xbt
Cast	254	OPUS Station	G7	xbt
Cast	255	OPUS Station	G6	xbt
Cast	256	OPUS Station	G5	xbt
Cast	257	OPUS Station	G4	xbt
Cast	258	OPUS Station	G3	xbt
Cast	259	OPUS Station	G1	ctd
Cast	260	OPUS Station	GC1	ctd
Cast	261	OPUS Station	GC2	xbt
Cast	262	OPUS Station	GC3	xbt
Cast	263	OPUS Station	GC4	xbt
Cast	264	OPUS Station	GC5	xbt
Cast	265	OPUS Station	GC6	xbt
Cast	266	OPUS Station	GC7	xbt
Cast	267	OPUS Station	GC8	xbt
Cast	268	OPUS Station	GC9	xbt
Cast	269	OPUS Station	GC0	xbt



Cast	270	OPUS Station	C10	xbt
Cast	271	OPUS Station	C9	xbt
Cast	272	OPUS Station	C8	xbt
Cast	273	OPUS Station	C7	xbt
Cast	274	OPUS Station	C6	xbt
Cast	275	OPUS Station	C5	xbt
Cast	276	OPUS Station	C4	xbt
Cast	277	OPUS Station	C3	xbt
Cast	278	OPUS Station	C2	xbt
Cast	279	OPUS Station	C1	ctd

OPUS XBT Map 5

Cast	292	OPUS Station	U1	ctd
Cast	293	OPUS Station	U2	xbt
Cast	294	OPUS Station	U3	xbt
Cast	295	OPUS Station	U4	xbt
Cast	296	OPUS Station	U5	xbt
Cast	297	OPUS Station	U6	xbt
Cast	298	OPUS Station	U7	xbt
Cast	299	OPUS Station	U8	xbt
Cast	300	OPUS Station	U9	xbt
Cast	301	OPUS Station	U10	xbt
Cast	302	OPUS Station	U11	xbt
Cast	303	OPUS Station	U12	xbt
Cast	304	OPUS Station	U13	xbt
Cast	305	OPUS Station	U14	ctd
Cast	306	OPUS Station	V13	ctd
Cast	307	OPUS Station	V12	xbt
Cast	308	OPUS Station	V11	xbt
Cast	309	OPUS Station	V10	xbt
Cast	310	OPUS Station	V9	xbt
Cast	311	OPUS Station	V8	xbt
Cast	312	OPUS Station	V7	xbt
Cast	313	OPUS Station	V6	xbt
Cast	314	OPUS Station	V5	xbt
Cast	315	OPUS Station	V4	xbt
Cast	316	OPUS Station	V3	xbt
Cast	317	OPUS Station	V2	xbt
Cast	318	OPUS Station	V1	ctd
Cast	319	OPUS Station	C6	xbt
Cast	320	OPUS Station	W1	ctd
Cast	321	OPUS Station	W2	xbt
Cast	322	OPUS Station	W3	xbt
Cast	323	OPUS Station	W4	xbt
Cast	324	OPUS Station	W5	xbt

Cast	325	OPUS Station	W6	xbt
Cast	326	OPUS Station	W7	xbt
Cast	327	OPUS Station	W8	xbt
Cast	328	OPUS Station	W9	xbt
Cast	329	OPUS Station	W10	xbt
Cast	330	OPUS Station	W11	ctd
Cast	331	OPUS Station	A4	xbt
Cast	332	OPUS Station	X10	ctd
Cast	333	OPUS Station	X9	xbt
Cast	334	OPUS Station	X8	xbt
Cast	335	OPUS Station	X7	xbt
Cast	336	OPUS Station	X6	xbt
Cast	337	OPUS Station	X5	xbt
Cast	338	OPUS Station	X4	xbt
Cast	339	OPUS Station	X3	xbt
Cast	340	OPUS Station	X2	xbt
Cast	341	OPUS Station	X1	ctd
Cast	342	OPUS Station	C2	xbt
Cast	343	OPUS Station	C1	ctd
Cast	344	OPUS Station	GC1	ctd
Cast	345	OPUS Station	G1	ctd
Cast	346	OPUS Station	AG1	ctd
Cast	347	OPUS Station	A1	ctd

OPUS XBT Map 6

Cast	378	OPUS Station	C10	xbt
Cast	379	OPUS Station	C9	xbt
Cast	380	OPUS Station	C8	xbt
Cast	381	OPUS Station	C7	xbt
Cast	382	OPUS Station	C6	xbt
Cast	383	OPUS Station	C5	xbt
Cast	384	OPUS Station	C4	xbt
Cast	385	OPUS Station	C3	xbt
Cast	386	OPUS Station	C2	xbt
Cast	387	OPUS Station	C1	ctd
Cast	388	OPUS Station	GC1	ctd
Cast	390	OPUS Station	GC3	xbt
Cast	391	OPUS Station	GC4	xbt
Cast	392	OPUS Station	GC5	xbt
Cast	393	OPUS Station	GC6	xbt
Cast	394	OPUS Station	GC7	xbt
Cast	395	OPUS Station	GC8	xbt
Cast	396	OPUS Station	GC9	xbt
Cast	397	OPUS Station	GC0	xbt
Cast	398	OPUS Station	G12	xbt

Cast	399	OPUS Station	G11	xbt
Cast	400	OPUS Station	G10	xbt
Cast	401	OPUS Station	G9	xbt
Cast	402	OPUS Station	G8	xbt
Cast	403	OPUS Station	G7	xbt
Cast	404	OPUS Station	G6	xbt
Cast	405	OPUS Station	G5	xbt
Cast	406	OPUS Station	G4	xbt
Cast	407	OPUS Station	G3	xbt
Cast	408	OPUS Station	G2	xbt
Cast	409	OPUS Station	G1	ctd
Cast	410	OPUS Station	AG1	ctd
Cast	411	OPUS Station	AG2	xbt
Cast	412	OPUS Station	AG3	xbt
Cast	413	OPUS Station	AG4	xbt
Cast	414	OPUS Station	AG5	xbt
Cast	415	OPUS Station	AG6	xbt
Cast	416	OPUS Station	AG7	xbt
Cast	417	OPUS Station	AG8	xbt
Cast	418	OPUS Station	A8	xbt
Cast	419	OPUS Station	A7	xbt
Cast	420	OPUS Station	A6	xbt
Cast	422	OPUS Station	A4	xbt
Cast	423	OPUS Station	A3	xbt
Cast	424	OPUS Station	A2	xbt
Cast	425	OPUS Station	A1	ctd

OPUS XBT Map 7

Cast	446	OPUS Station	C10	xbt
Cast	447	OPUS Station	C9	xbt
Cast	448	OPUS Station	C8	xbt
Cast	449	OPUS Station	C7	xbt
Cast	450	OPUS Station	C6	xbt
Cast	451	OPUS Station	C5	xbt
Cast	452	OPUS Station	C4	xbt
Cast	453	OPUS Station	C3	xbt
Cast	454	OPUS Station	C2	xbt
Cast	455	OPUS Station	C1	ctd
Cast	456	OPUS Station	GC1	ctd
Cast	457	OPUS Station	GC2	xbt
Cast	458	OPUS Station	GC3	xbt
Cast	459	OPUS Station	GC4	xbt
Cast	460	OPUS Station	GC5	xbt
Cast	461	OPUS Station	GC6	xbt
Cast	462	OPUS Station	GC7	xbt

Cast	463	OPUS Station	GC8	xbt
Cast	464	OPUS Station	GC9	xbt
Cast	465	OPUS Station	GC0	xbt
Cast	466	OPUS Station	G12	xbt
Cast	467	OPUS Station	G11	xbt
Cast	468	OPUS Station	G10	xbt
Cast	469	OPUS Station	G9	xbt
Cast	470	OPUS Station	G6	xbt
Cast	471	OPUS Station	G7	xbt
Cast	472	OPUS Station	G6	xbt
Cast	473	OPUS Station	G5	xbt
Cast	474	OPUS Station	G4	xbt
Cast	475	OPUS Station	G3	xbt
Cast	476	OPUS Station	G2	xbt
Cast	477	OPUS Station	G1	ctd
Cast	478	OPUS Station	AG1	ctd
Cast	479	OPUS Station	AG2	xbt
Cast	480	OPUS Station	AG3	xbt
Cast	481	OPUS Station	AG4	xbt
Cast	482	OPUS Station	AG5	xbt
Cast	483	OPUS Station	AG6	xbt
Cast	484	OPUS Station	AG7	xbt
Cast	485	OPUS Station	AG8	xbt
Cast	486	OPUS Station	A8	xbt
Cast	487	OPUS Station	A7	xbt
Cast	488	OPUS Station	A6	xbt
Cast	489	OPUS Station	A5	xbt
Cast	490	OPUS Station	A4	xbt
Cast	491	OPUS Station	A3	xbt
Cast	492	OPUS Station	A2	xbt
Cast	493	OPUS Station	A1	ctd

OPUS XBT Map 8

Cast	524	OPUS Station	A1	ctd
Cast	525	OPUS Station	A2	xbt
Cast	526	OPUS Station	A3	xbt
Cast	527	OPUS Station	A4	xbt
Cast	528	OPUS Station	A5	xbt
Cast	529	OPUS Station	A6	xbt
Cast	530	OPUS Station	A7	xbt
Cast	531	OPUS Station	A8	xbt
Cast	532	OPUS Station	AG8	xbt
Cast	533	OPUS Station	AG7	xbt
Cast	534	OPUS Station	AG6	xbt
Cast	535	OPUS Station	AG5	xbt

Cast	536	OPUS Station	AG4	xbt
Cast	537	OPUS Station	AG3	xbt
Cast	538	OPUS Station	AG2	xbt
Cast	539	OPUS Station	AG1	ctd
Cast	540	OPUS Station	G1	ctd
Cast	541	OPUS Station	G2	xbt
Cast	542	OPUS Station	G3	xbt
Cast	543	OPUS Station	G4	xbt
Cast	544	OPUS Station	G5	xbt
Cast	545	OPUS Station	G6	xbt
Cast	546	OPUS Station	G7	xbt
Cast	547	OPUS Station	G8	xbt
Cast	548	OPUS Station	G9	xbt
Cast	549	OPUS Station	G10	xbt
Cast	550	OPUS Station	G11	xbt
Cast	551	OPUS Station	G12	xbt
Cast	552	OPUS Station	GC0	xbt
Cast	553	OPUS Station	GC9	xbt
Cast	554	OPUS Station	GC8	xbt
Cast	555	OPUS Station	GC7	xbt
Cast	556	OPUS Station	GC6	xbt
Cast	557	OPUS Station	GC5	xbt
Cast	558	OPUS Station	GC4	xbt
Cast	560	OPUS Station	GC2	xbt
Cast	561	OPUS Station	GC1	ctd
Cast	562	OPUS Station	C1	ctd
Cast	563	OPUS Station	C2	xbt
Cast	564	OPUS Station	C3	xbt
Cast	565	OPUS Station	C4	xbt
Cast	566	OPUS Station	C5	xbt
Cast	567	OPUS Station	C6	xbt
Cast	568	OPUS Station	C7	xbt
Cast	569	OPUS Station	C8	xbt
Cast	570	OPUS Station	C9	xbt
Cast	571	OPUS Station	C10	xbt

OPUS XBT Map 9

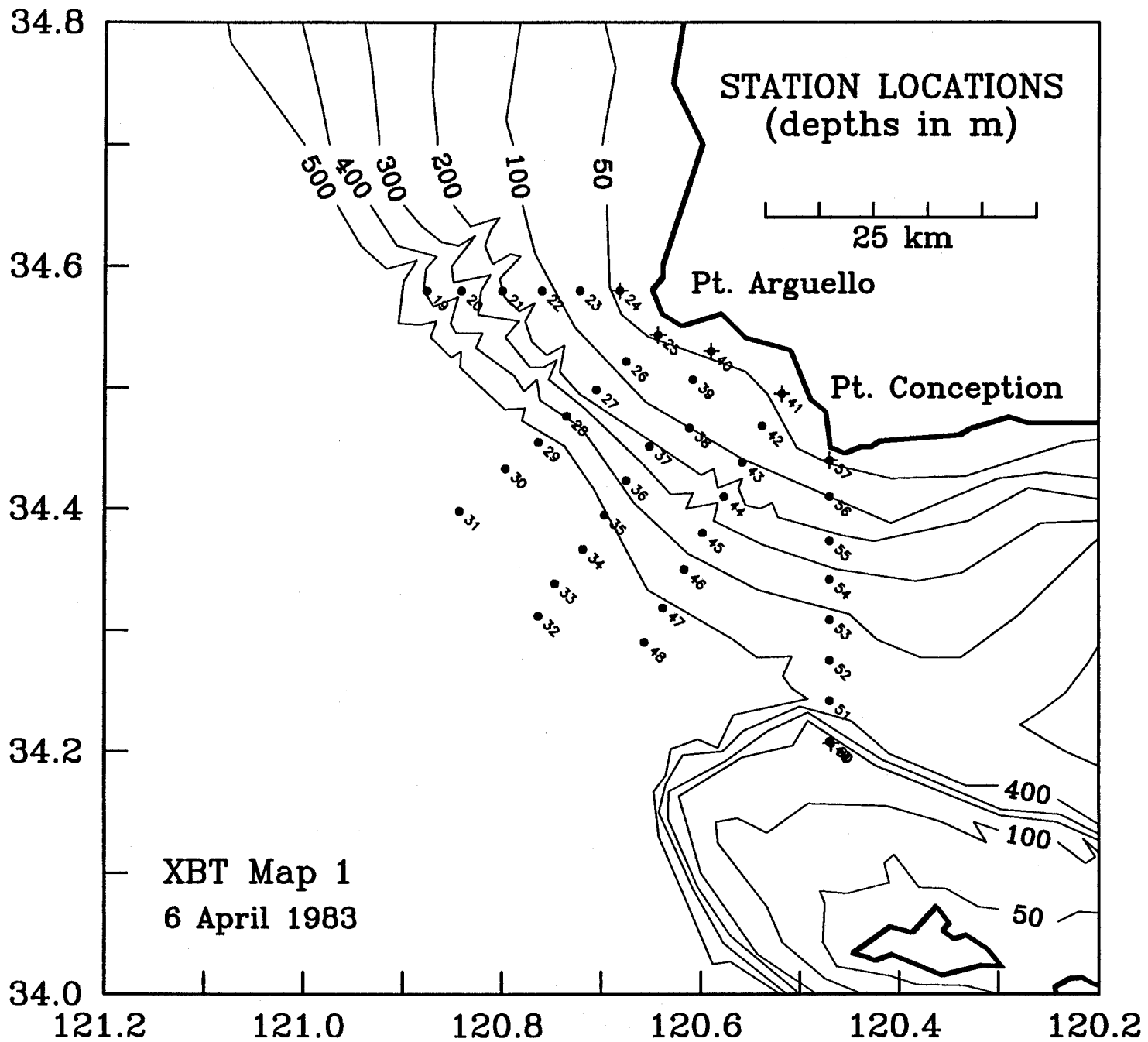
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Cast	585	OPUS Station	A2	xbt
Cast	586	OPUS Station	A3	xbt
Cast	587	OPUS Station	A4	xbt
Cast	588	OPUS Station	A5	xbt
Cast	589	OPUS Station	A6	xbt
Cast	590	OPUS Station	A7	xbt
Cast	591	OPUS Station	A8	xbt

Cast	592	OPUS Station	AG8	xbt
Cast	593	OPUS Station	AG7	xbt
Cast	594	OPUS Station	AG6	xbt
Cast	595	OPUS Station	AG5	xbt
Cast	596	OPUS Station	AG4	xbt
Cast	597	OPUS Station	AG3	xbt
Cast	598	OPUS Station	AG2	xbt
Cast	599	OPUS Station	AG1	xbt
Cast	600	OPUS Station	G1	xbt
Cast	601	OPUS Station	G2	xbt
Cast	603	OPUS Station	G4	xbt
Cast	604	OPUS Station	G5	xbt
Cast	605	OPUS Station	G6	xbt
Cast	606	OPUS Station	G7	xbt
Cast	607	OPUS Station	G8	xbt
Cast	608	OPUS Station	G9	xbt
Cast	609	OPUS Station	G10	xbt
Cast	610	OPUS Station	G11	xbt
Cast	611	OPUS Station	G12	xbt
Cast	612	OPUS Station	GC0	xbt
Cast	613	OPUS Station	GC9	xbt
Cast	614	OPUS Station	GC8	xbt
Cast	615	OPUS Station	GC7	xbt
Cast	616	OPUS Station	GC6	xbt
Cast	617	OPUS Station	GC4	xbt
Cast	618	OPUS Station	GC3	xbt
Cast	619	OPUS Station	GC2	xbt
Cast	620	OPUS Station	GC1	xbt
Cast	621	OPUS Station	C1	xbt
Cast	622	OPUS Station	C2	xbt
Cast	623	OPUS Station	C3	xbt
Cast	624	OPUS Station	C4	xbt
Cast	625	OPUS Station	C5	xbt
Cast	626	OPUS Station	C6	xbt
Cast	627	OPUS Station	C7	xbt
Cast	628	OPUS Station	C8	xbt
Cast	629	OPUS Station	C9	xbt
Cast	630	OPUS Station	C10	xbt

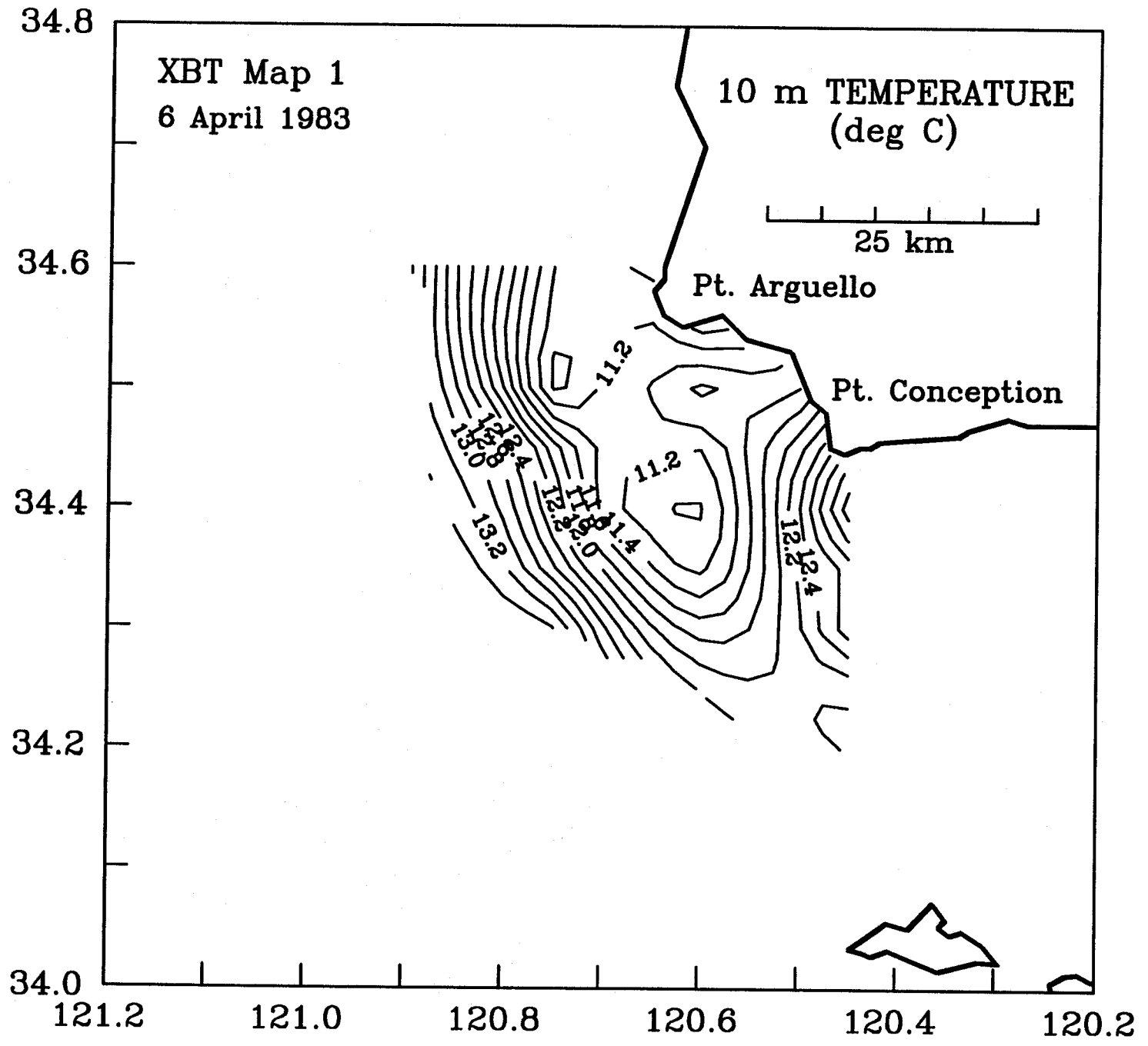
OPUS XBT Map 10

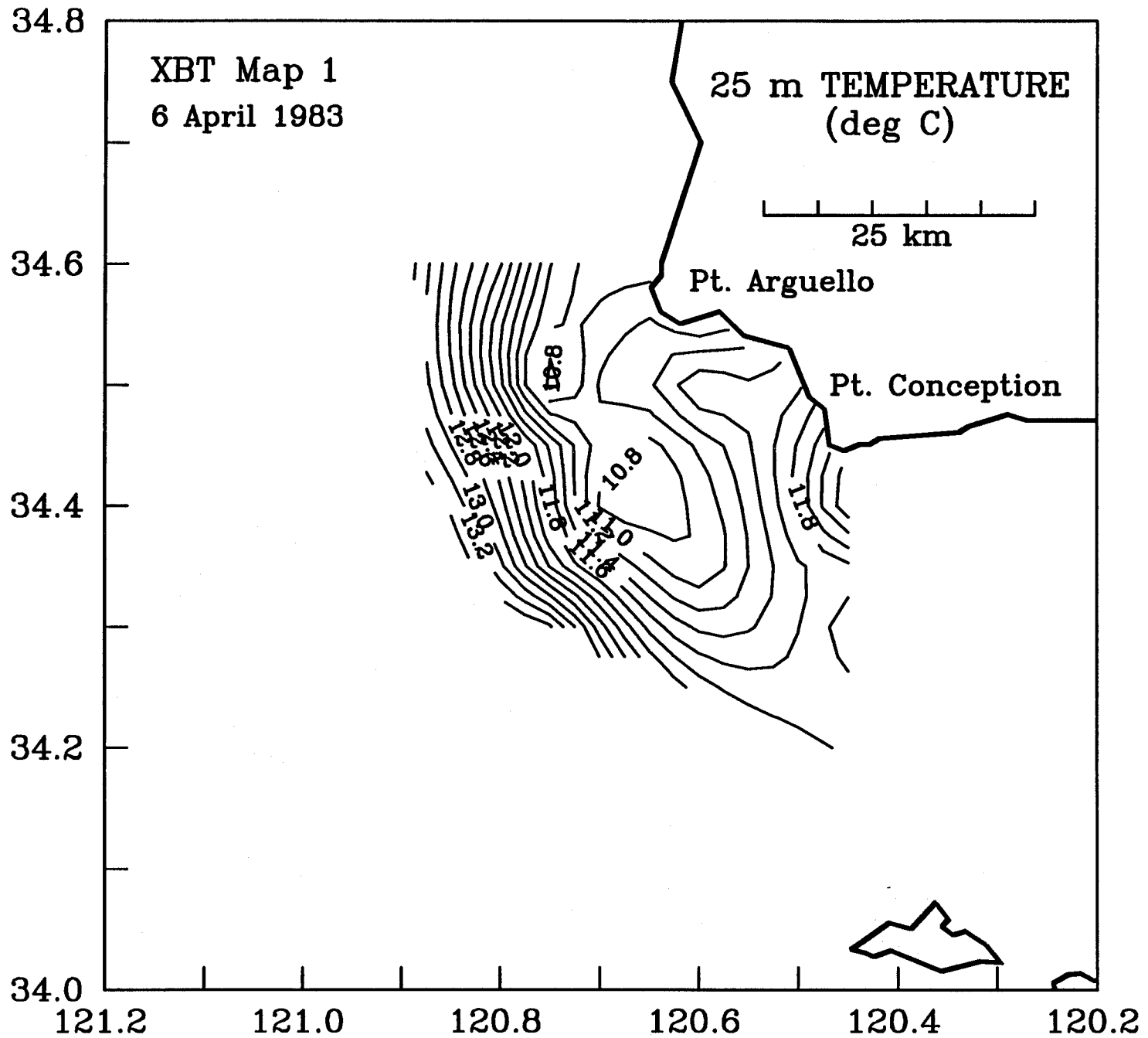
Cast	671	OPUS Station	A1	xbt
Cast	672	OPUS Station	A2	xbt
Cast	673	OPUS Station	A3	xbt
Cast	674	OPUS Station	A4	xbt
Cast	675	OPUS Station	A5	xbt

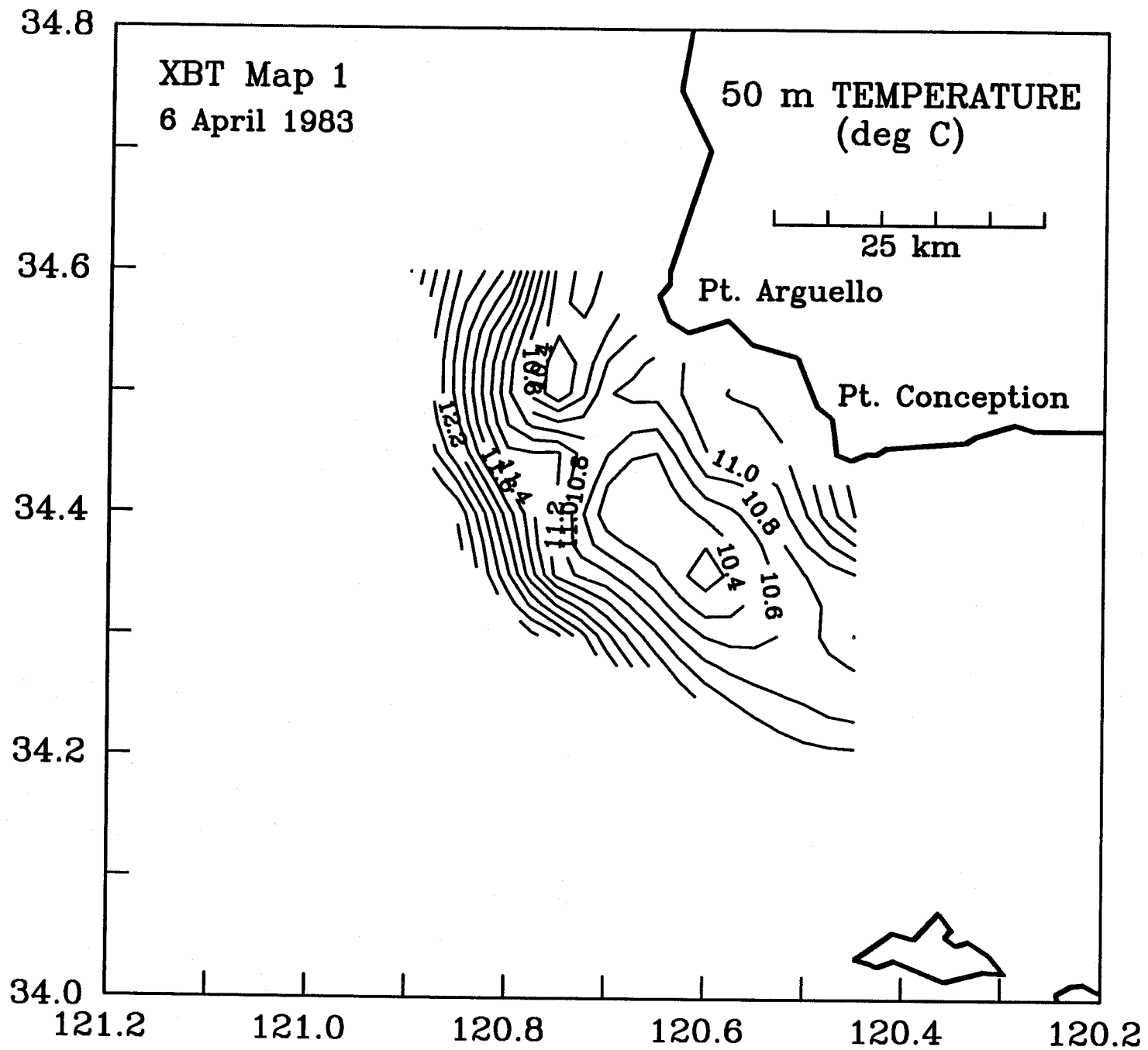
Cast	676	OPUS Station	A6	xbt
Cast	677	OPUS Station	A7	xbt
Cast	678	OPUS Station	A8	xbt
Cast	679	OPUS Station	AG8	xbt
Cast	680	OPUS Station	AG7	xbt
Cast	681	OPUS Station	AG6	xbt
Cast	682	OPUS Station	AG5	xbt
Cast	683	OPUS Station	AG4	xbt
Cast	684	OPUS Station	AG3	xbt
Cast	685	OPUS Station	AG2	xbt
Cast	686	OPUS Station	AG1	xbt
Cast	687	OPUS Station	G1	xbt
Cast	688	OPUS Station	G2	xbt
Cast	689	OPUS Station	G3	xbt
Cast	690	OPUS Station	G4	xbt
Cast	691	OPUS Station	G5	xbt
Cast	692	OPUS Station	G6	xbt
Cast	693	OPUS Station	G7	xbt
Cast	694	OPUS Station	G8	xbt
Cast	695	OPUS Station	G9	xbt
Cast	696	OPUS Station	G10	xbt
Cast	697	OPUS Station	G11	xbt
Cast	698	OPUS Station	G12	xbt
Cast	699	OPUS Station	GC0	xbt
Cast	700	OPUS Station	GC9	xbt
Cast	701	OPUS Station	GC8	xbt
Cast	702	OPUS Station	GC7	xbt
Cast	703	OPUS Station	GC6	xbt
Cast	704	OPUS Station	GC5	xbt
Cast	705	OPUS Station	GC4	xbt
Cast	706	OPUS Station	GC3	xbt
Cast	707	OPUS Station	GC2	xbt
Cast	708	OPUS Station	GC1	xbt
Cast	709	OPUS Station	C1	xbt
Cast	710	OPUS Station	C2	xbt
Cast	711	OPUS Station	C3	xbt
Cast	712	OPUS Station	C4	xbt
Cast	713	OPUS Station	C5	xbt
Cast	714	OPUS Station	C6	xbt
Cast	715	OPUS Station	C7	xbt
Cast	716	OPUS Station	C8	xbt
Cast	717	OPUS Station	C9	xbt
Cast	718	OPUS Station	C10	xbt

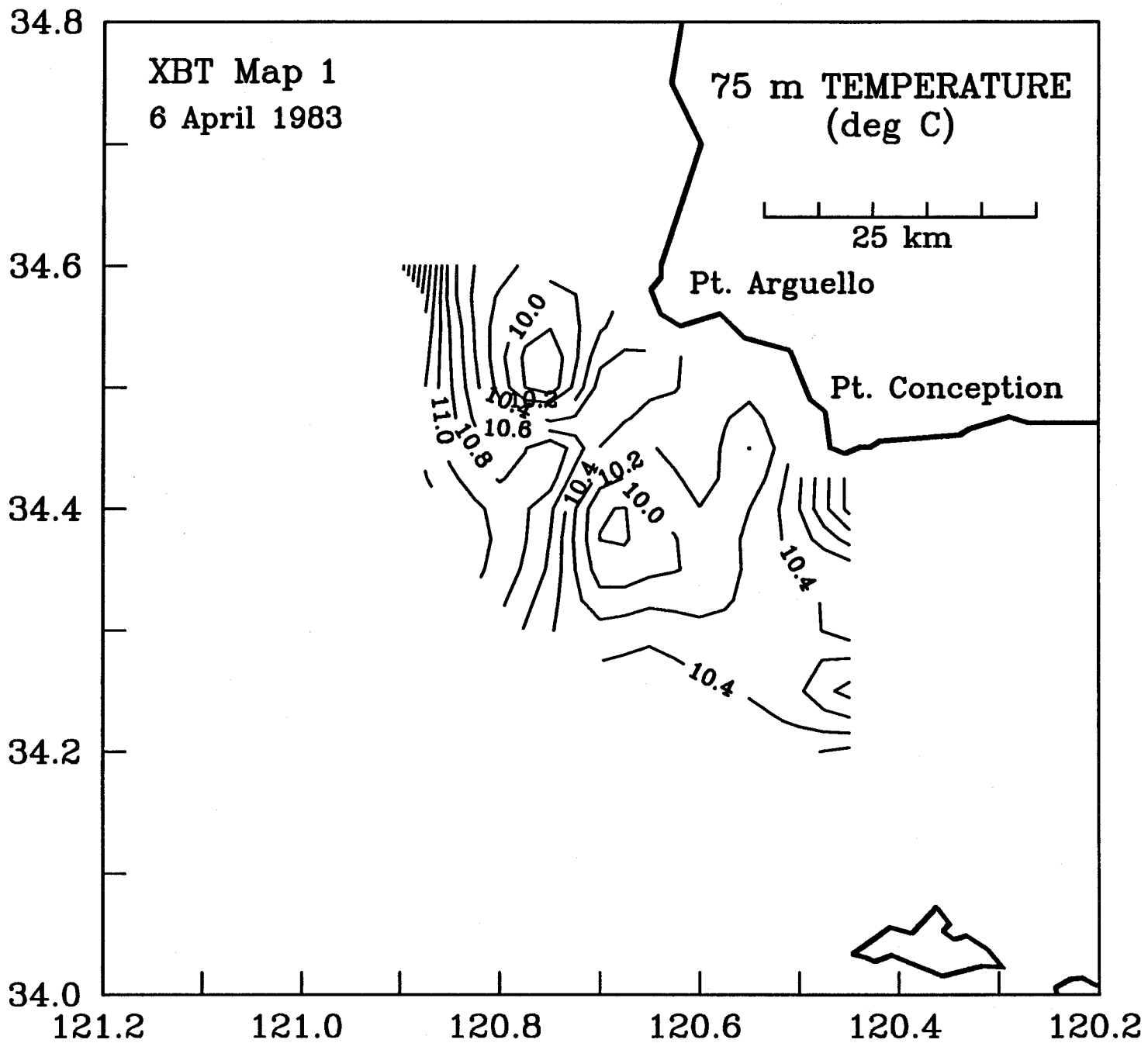


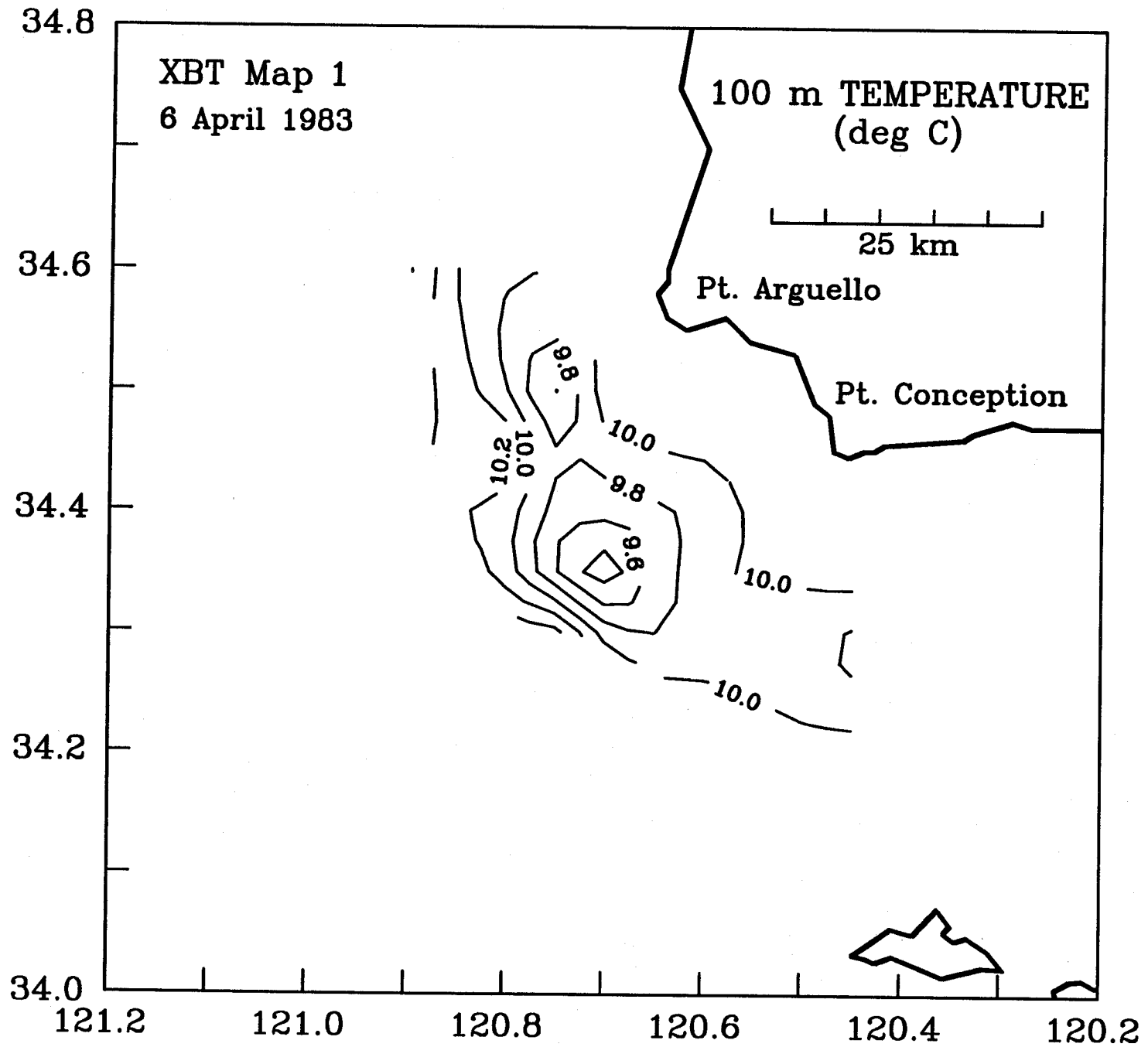


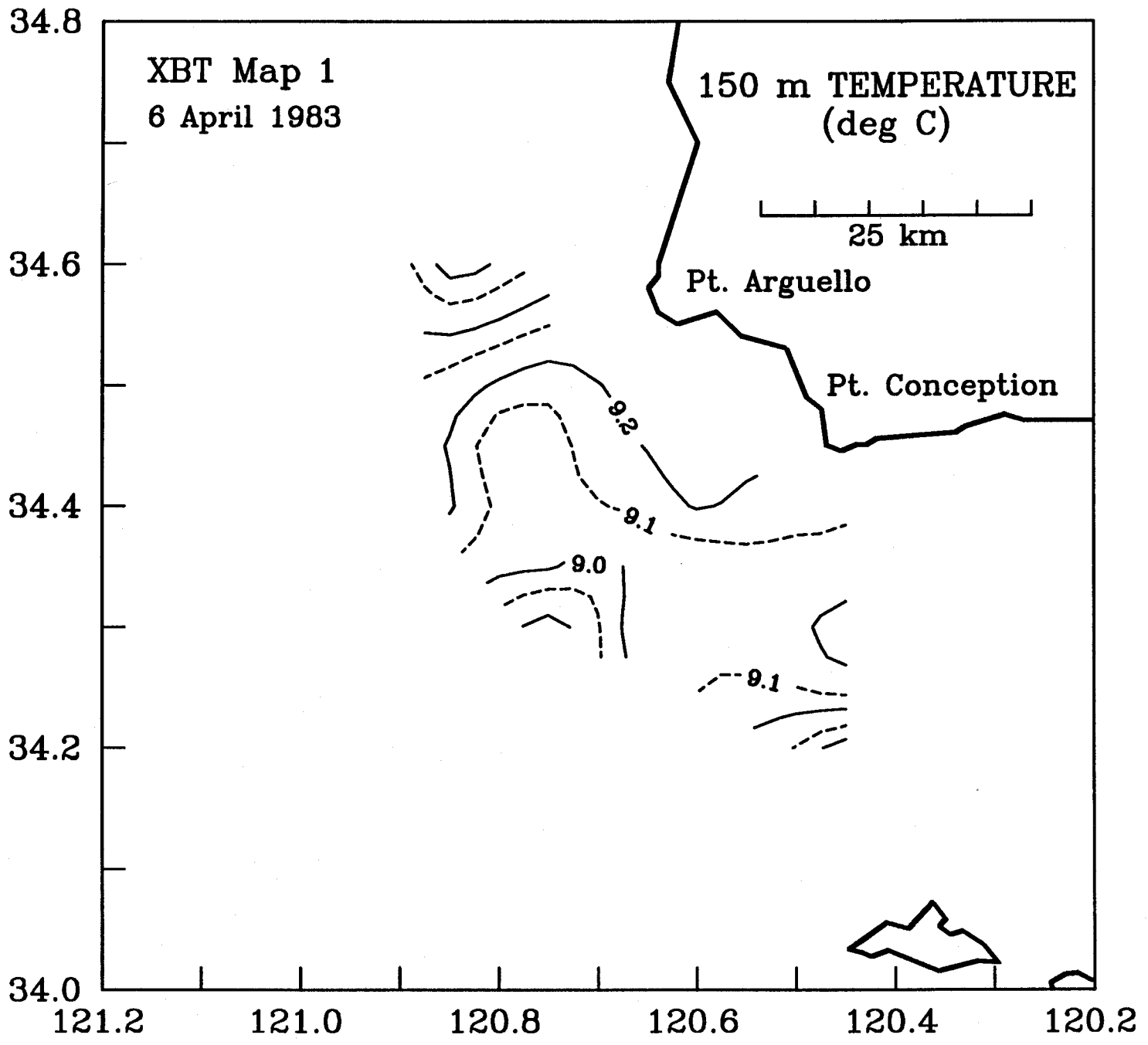


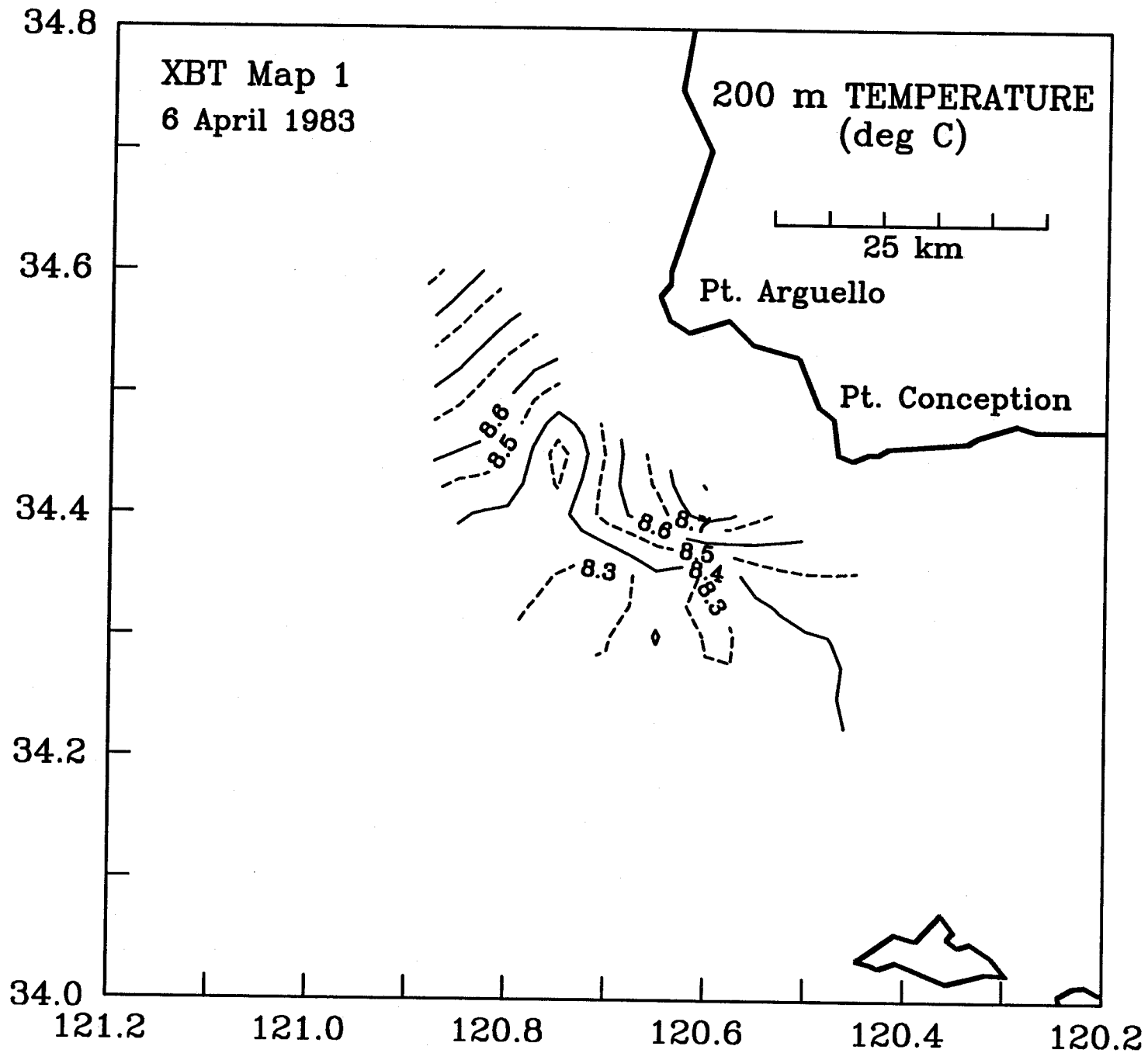


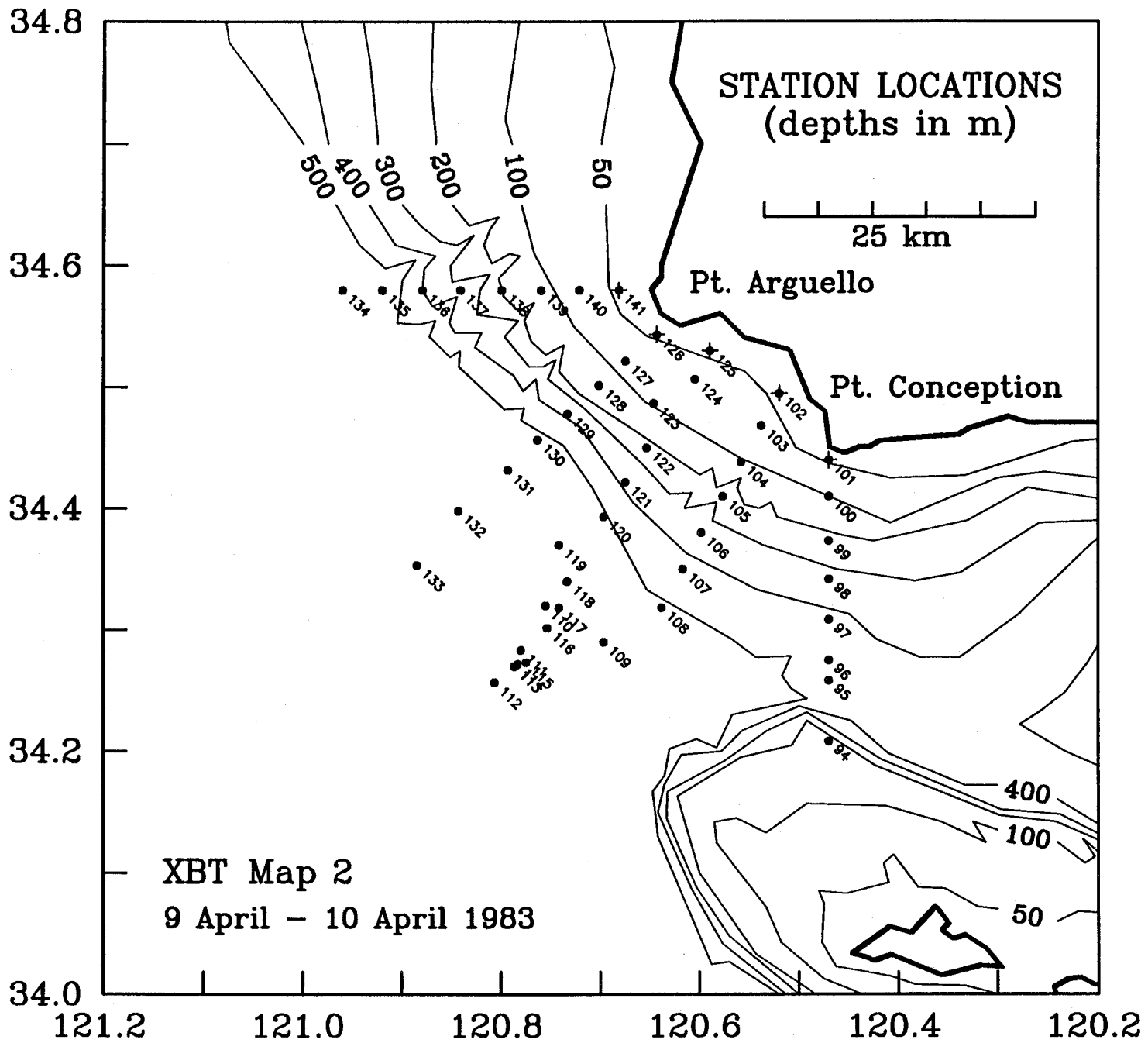




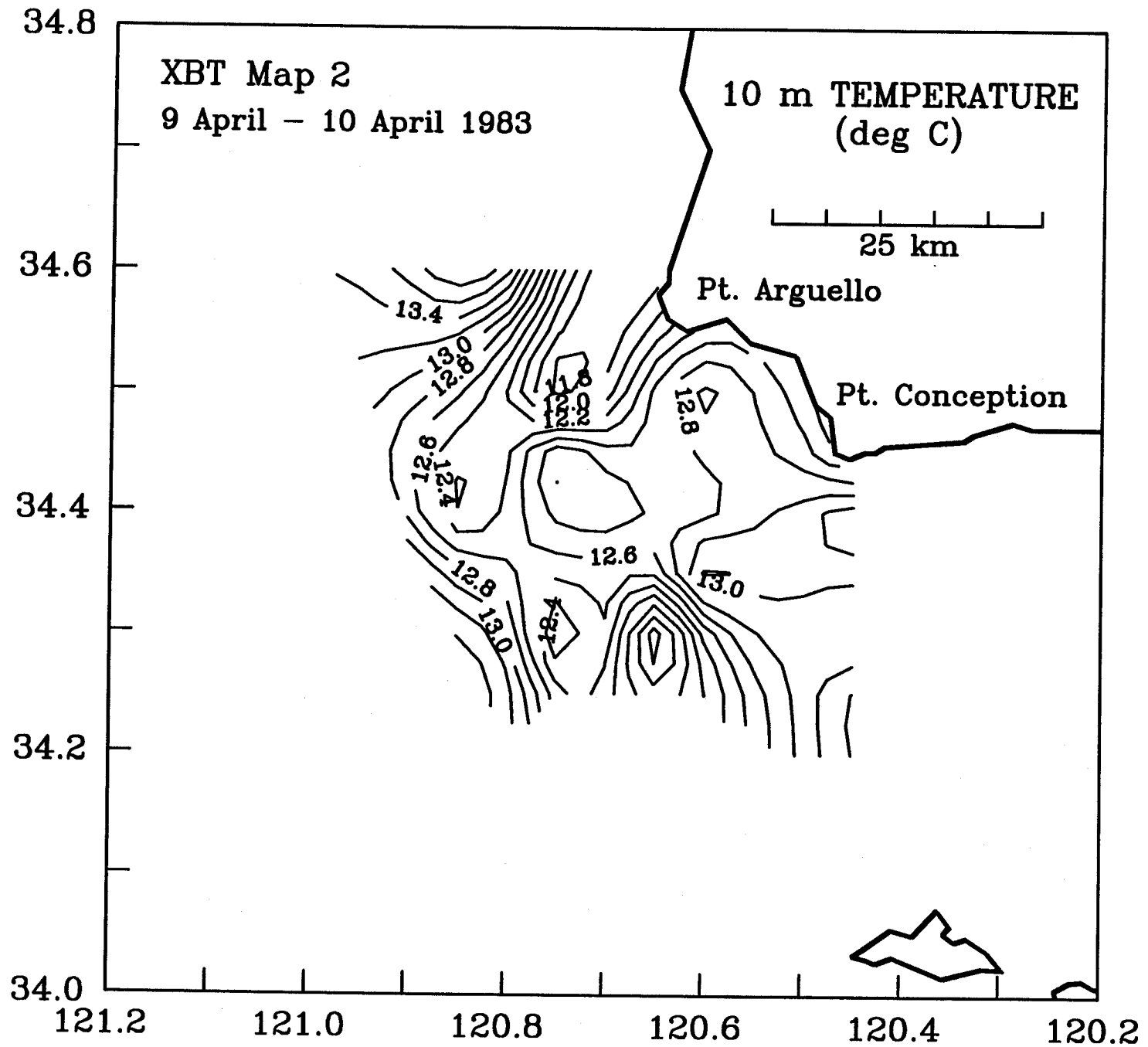


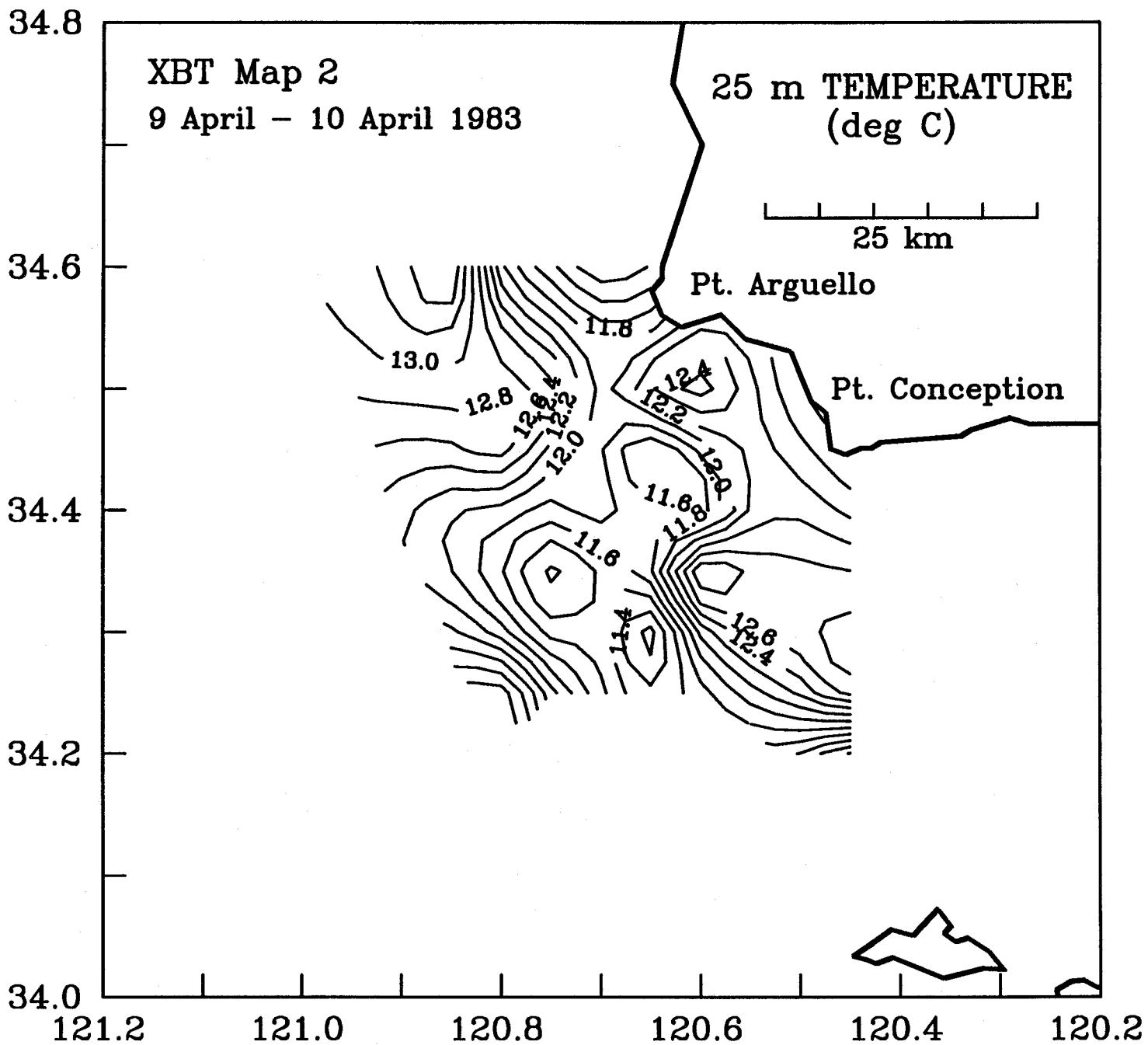


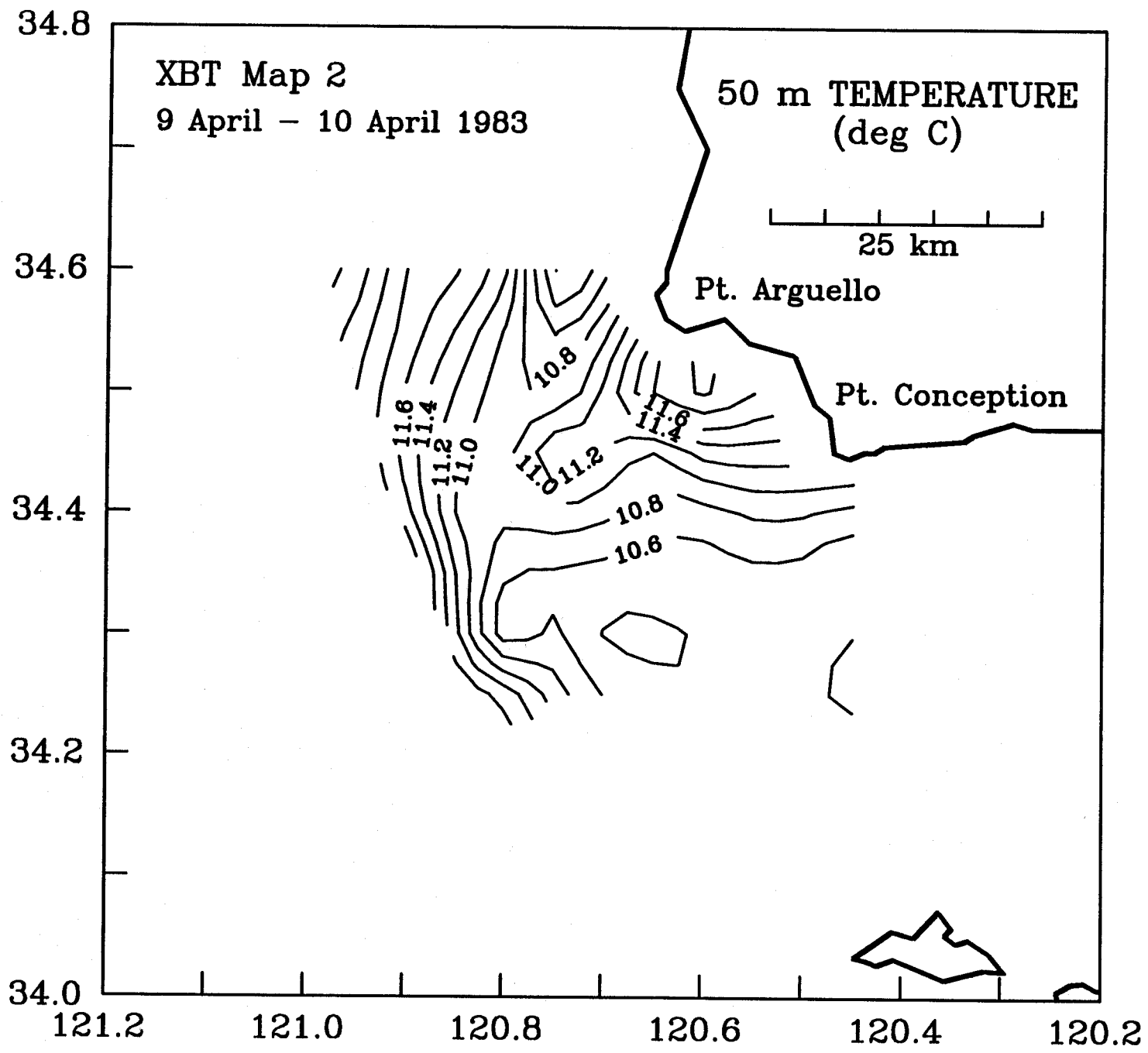


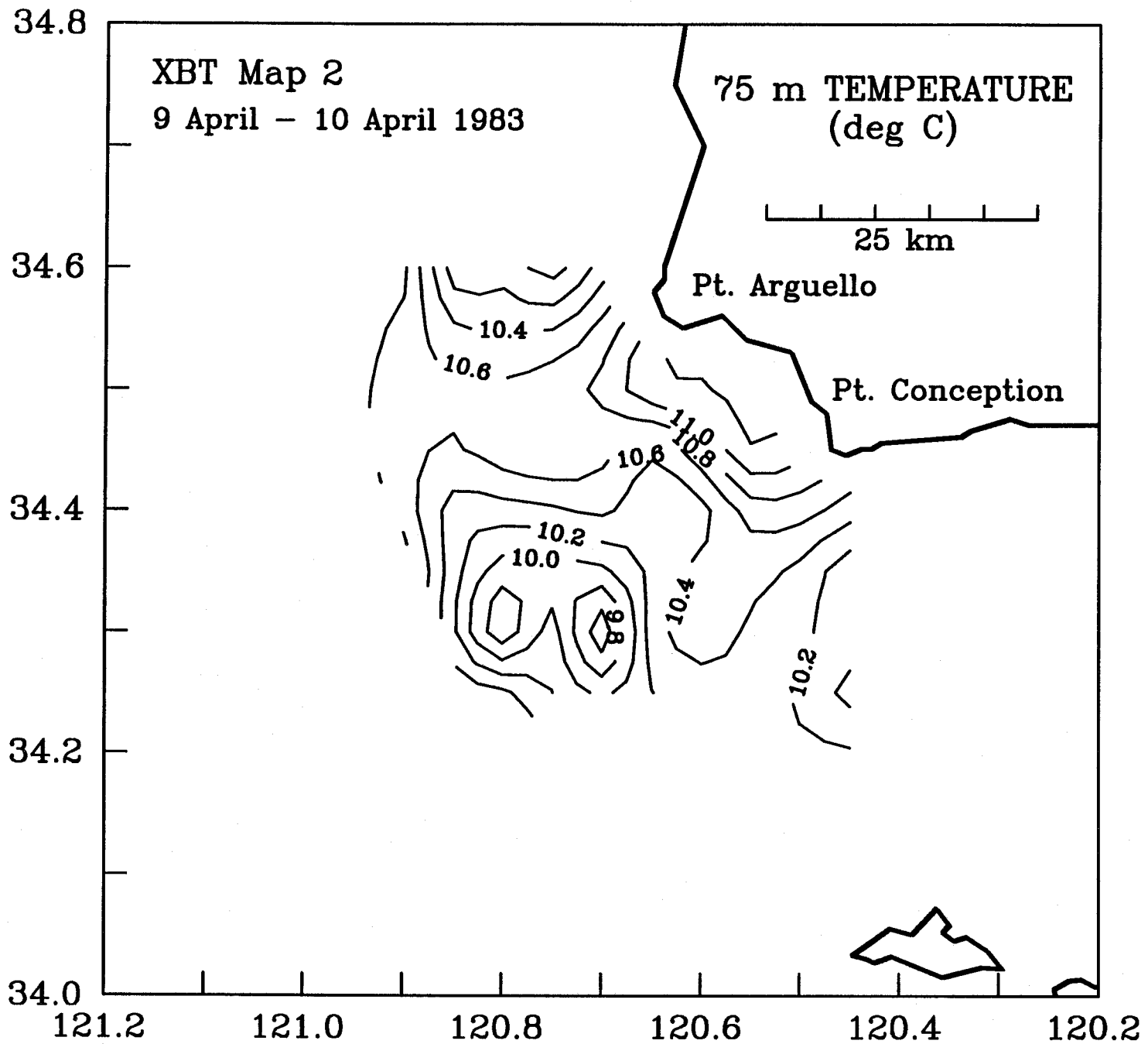


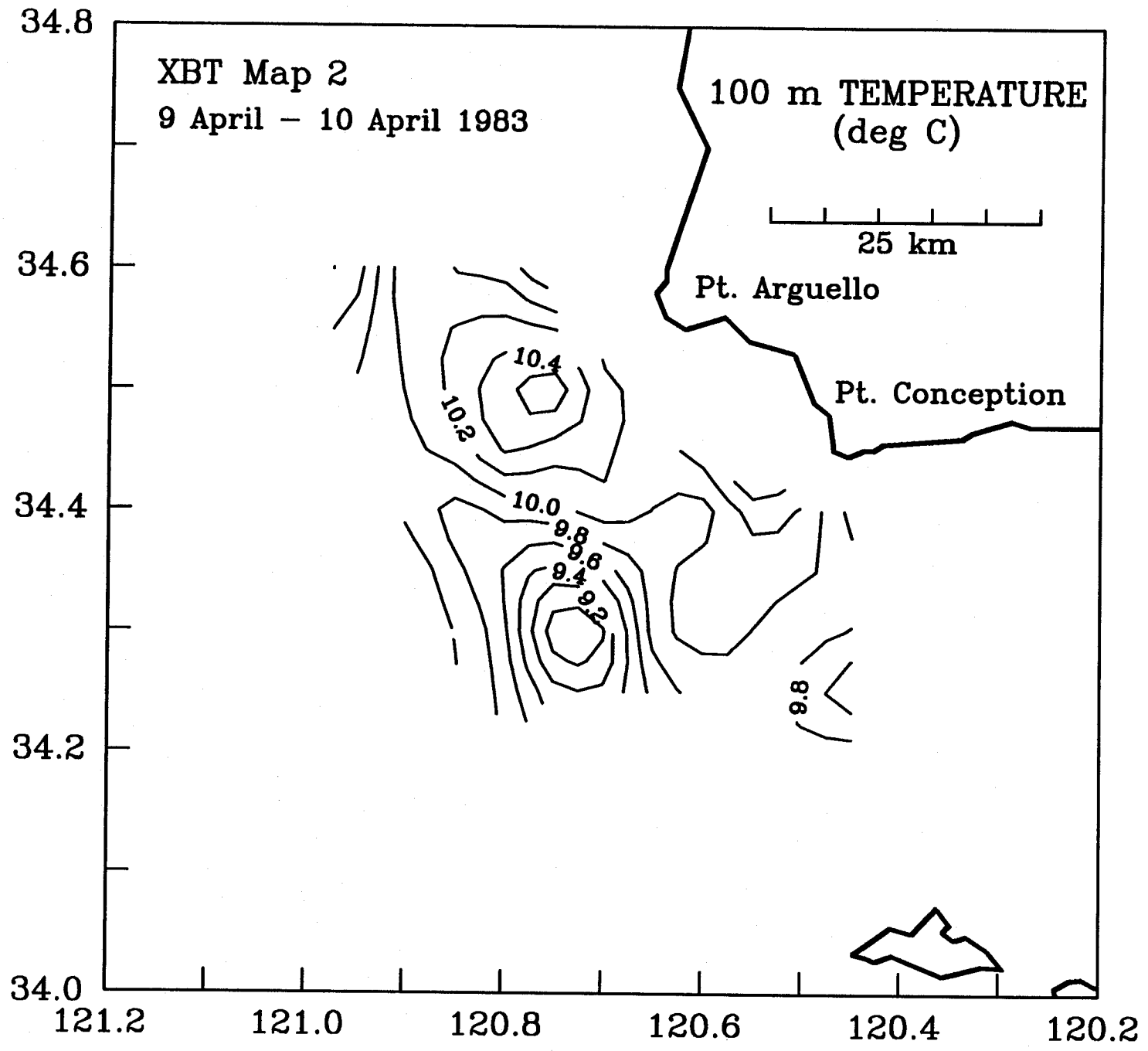


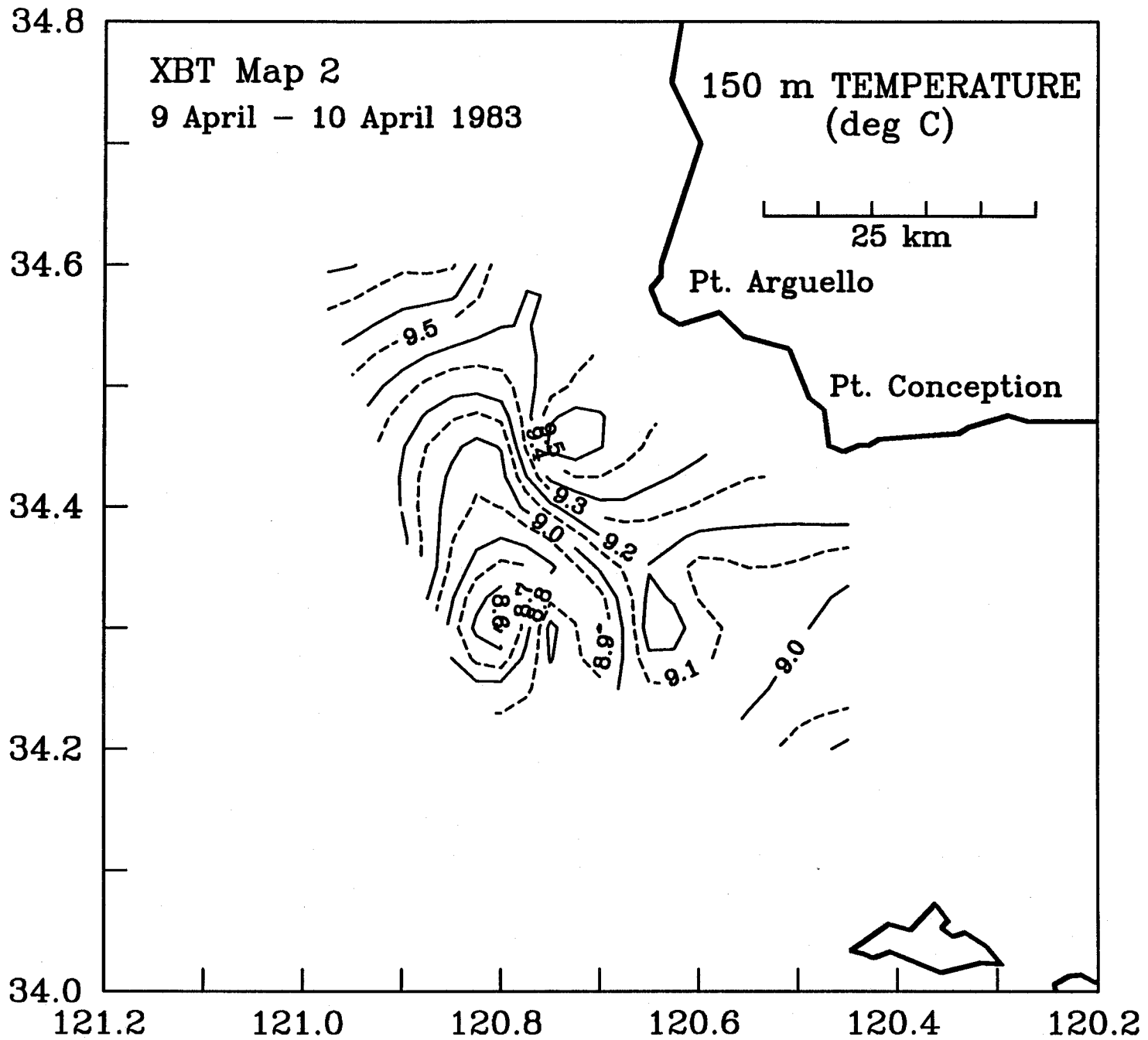


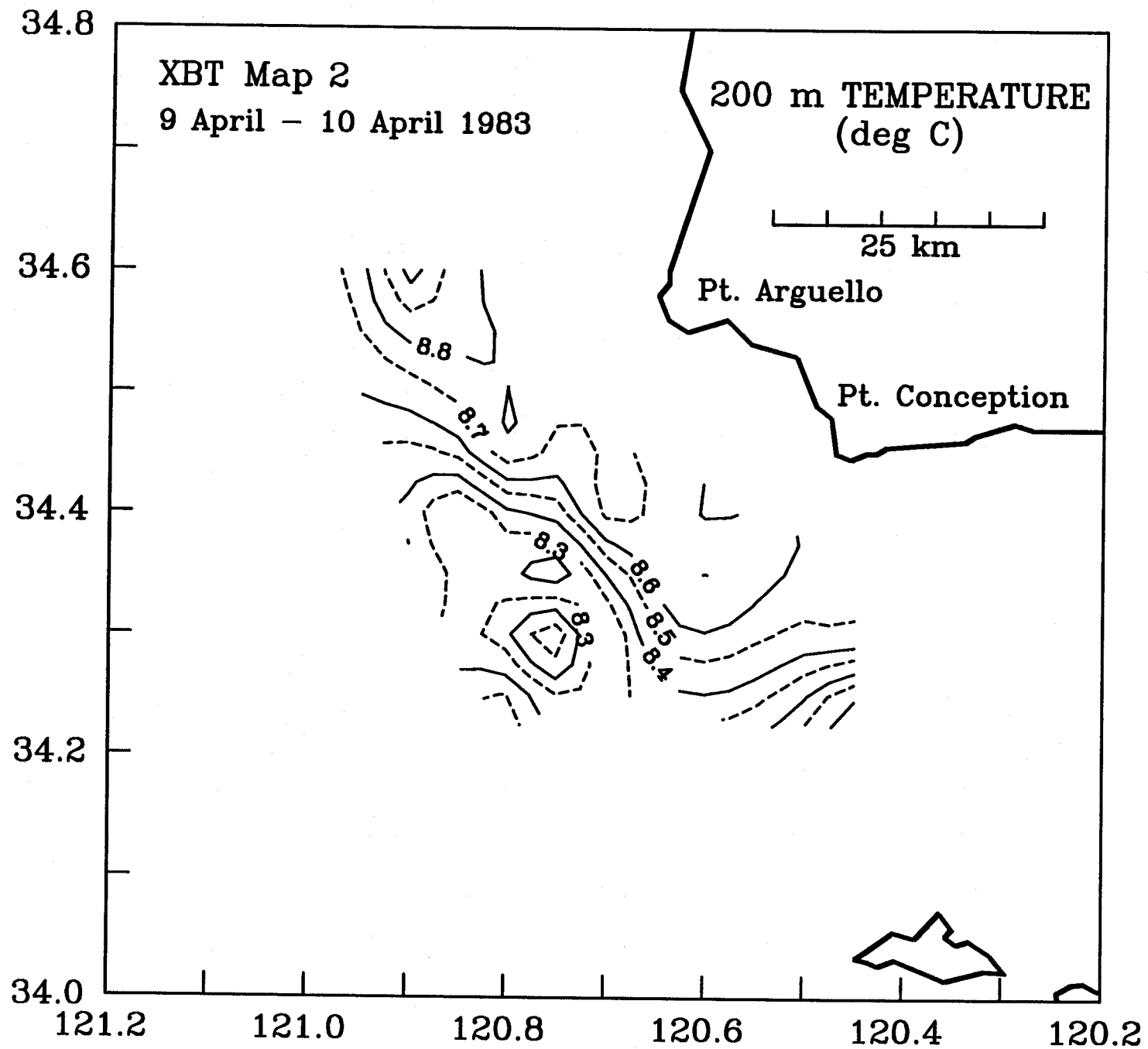


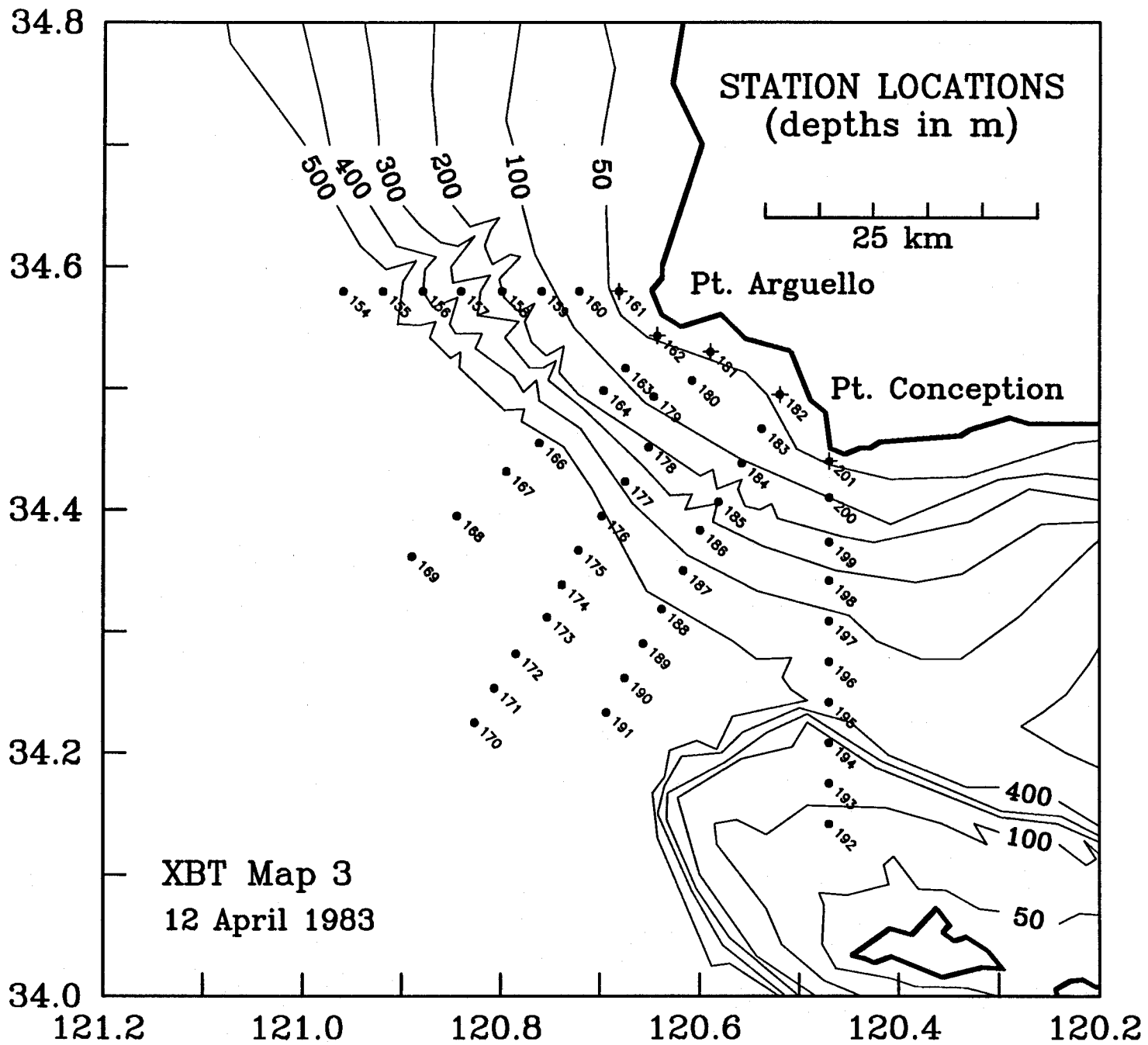




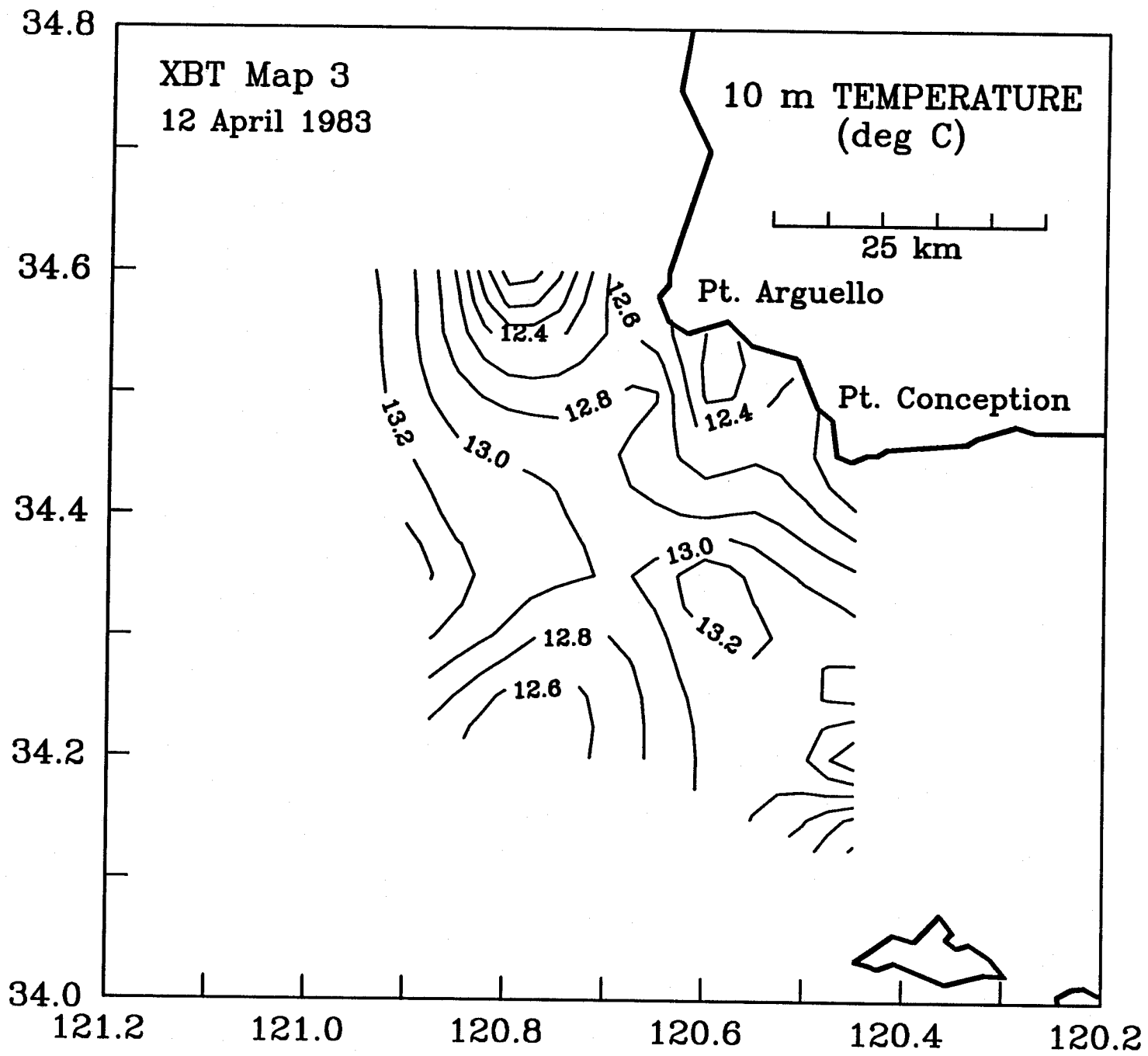


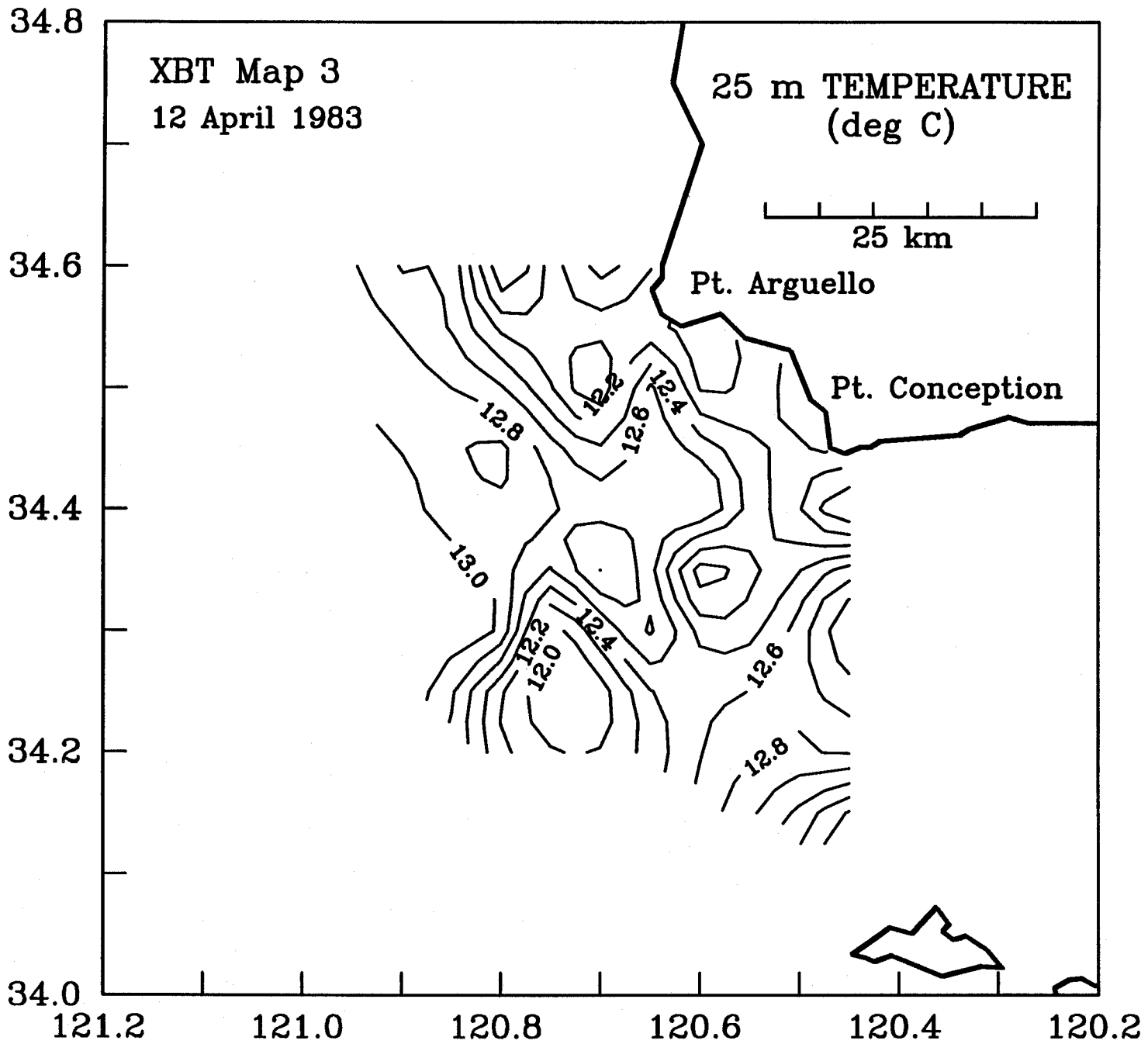


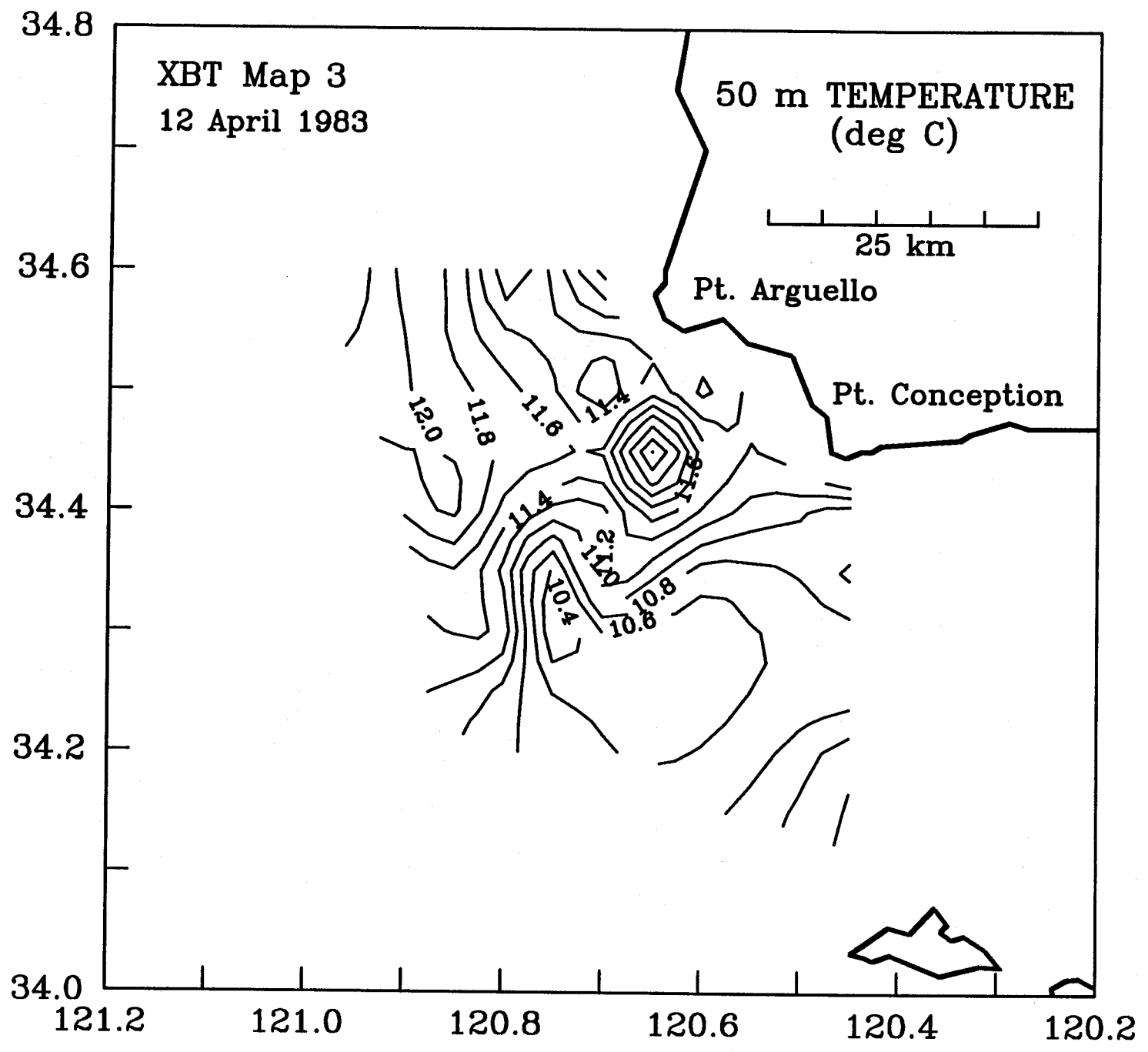


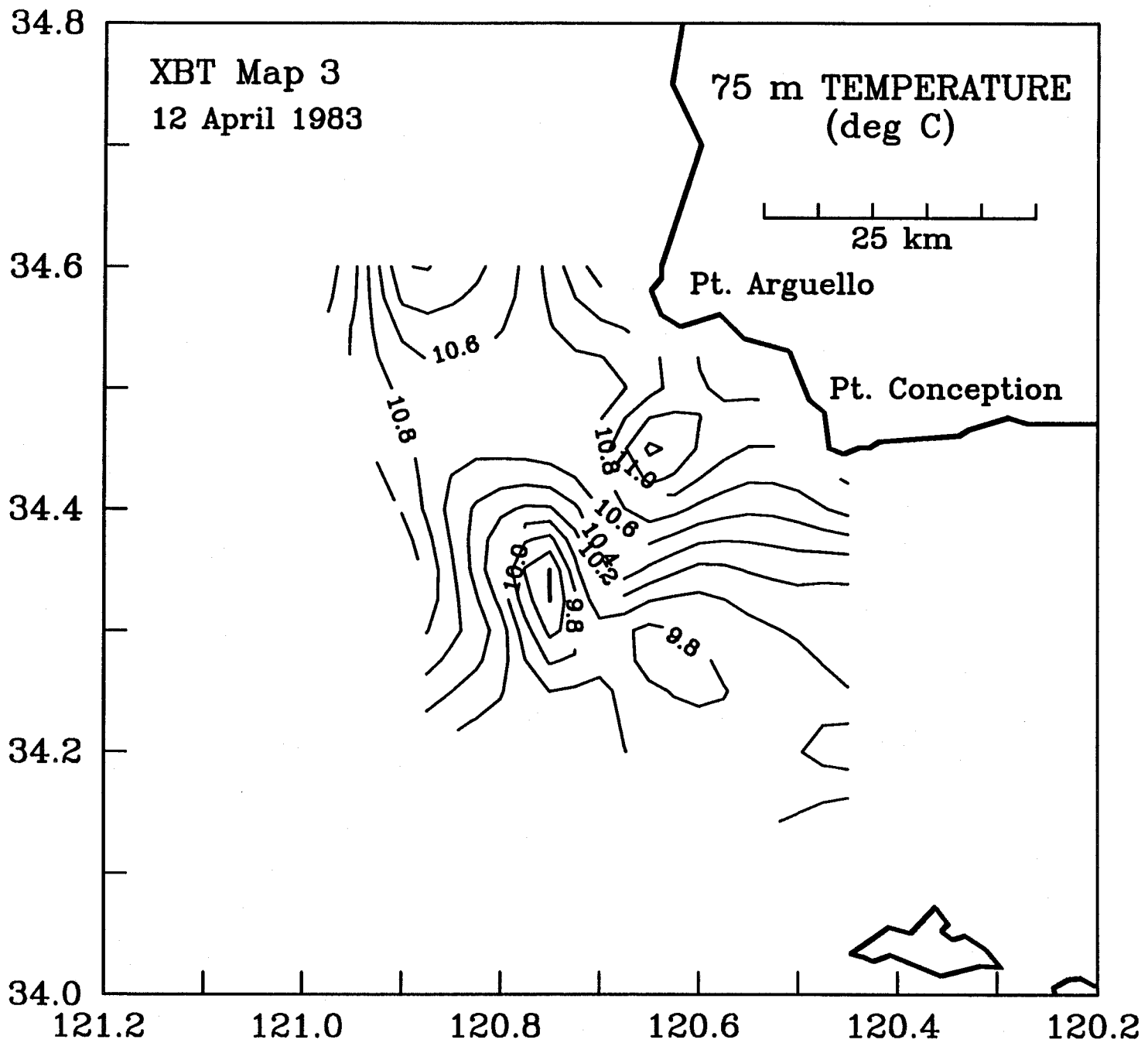


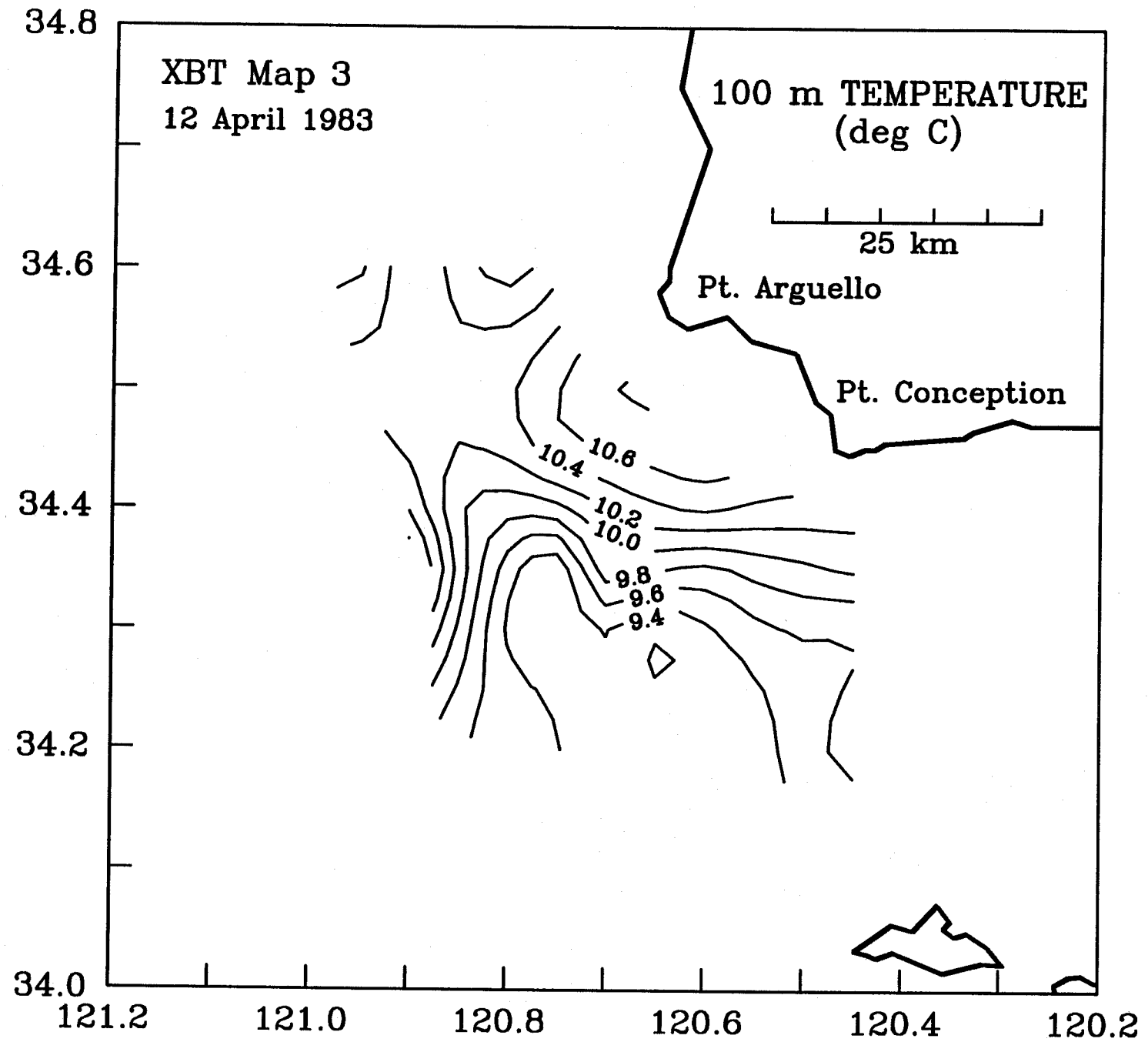


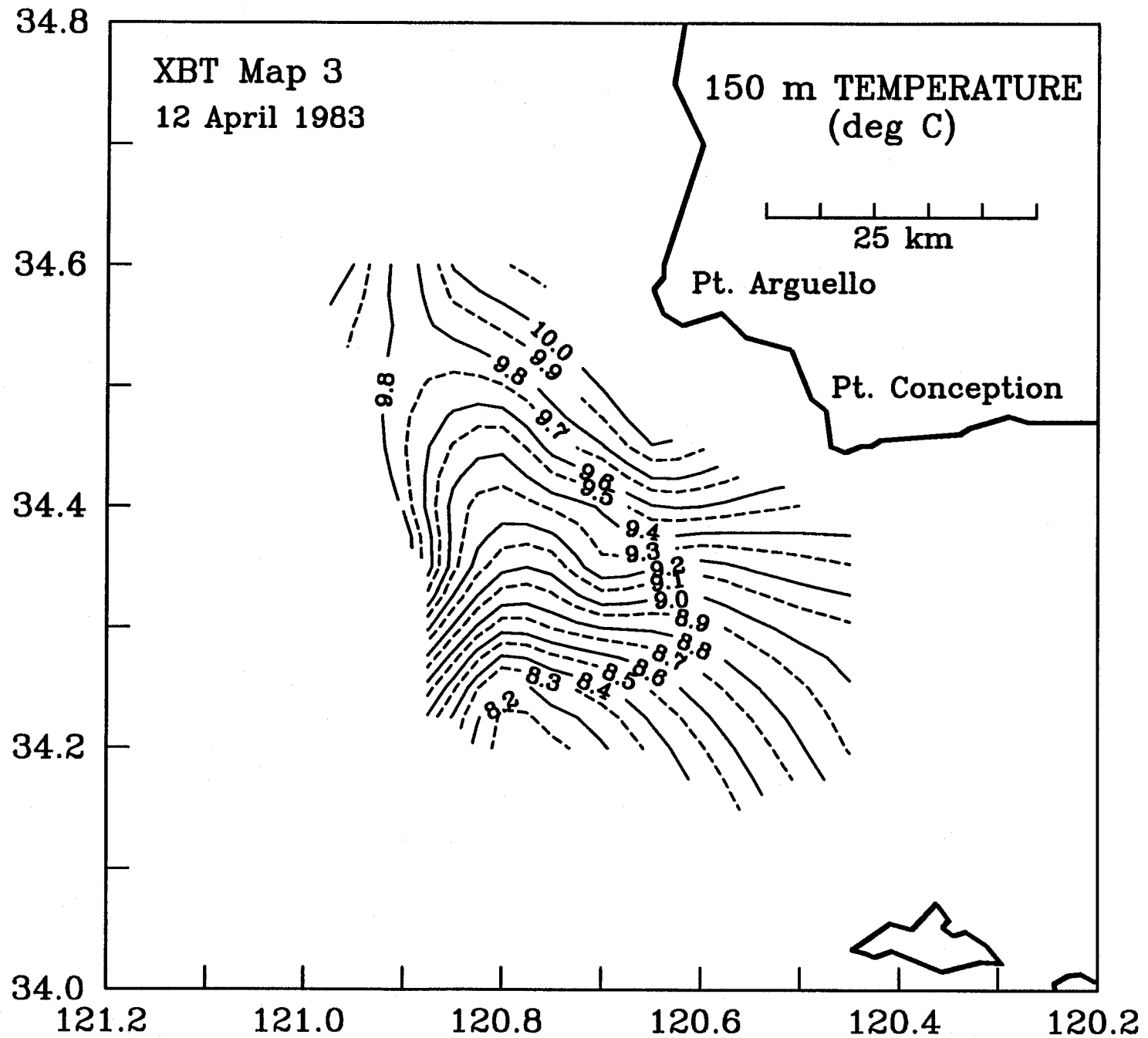


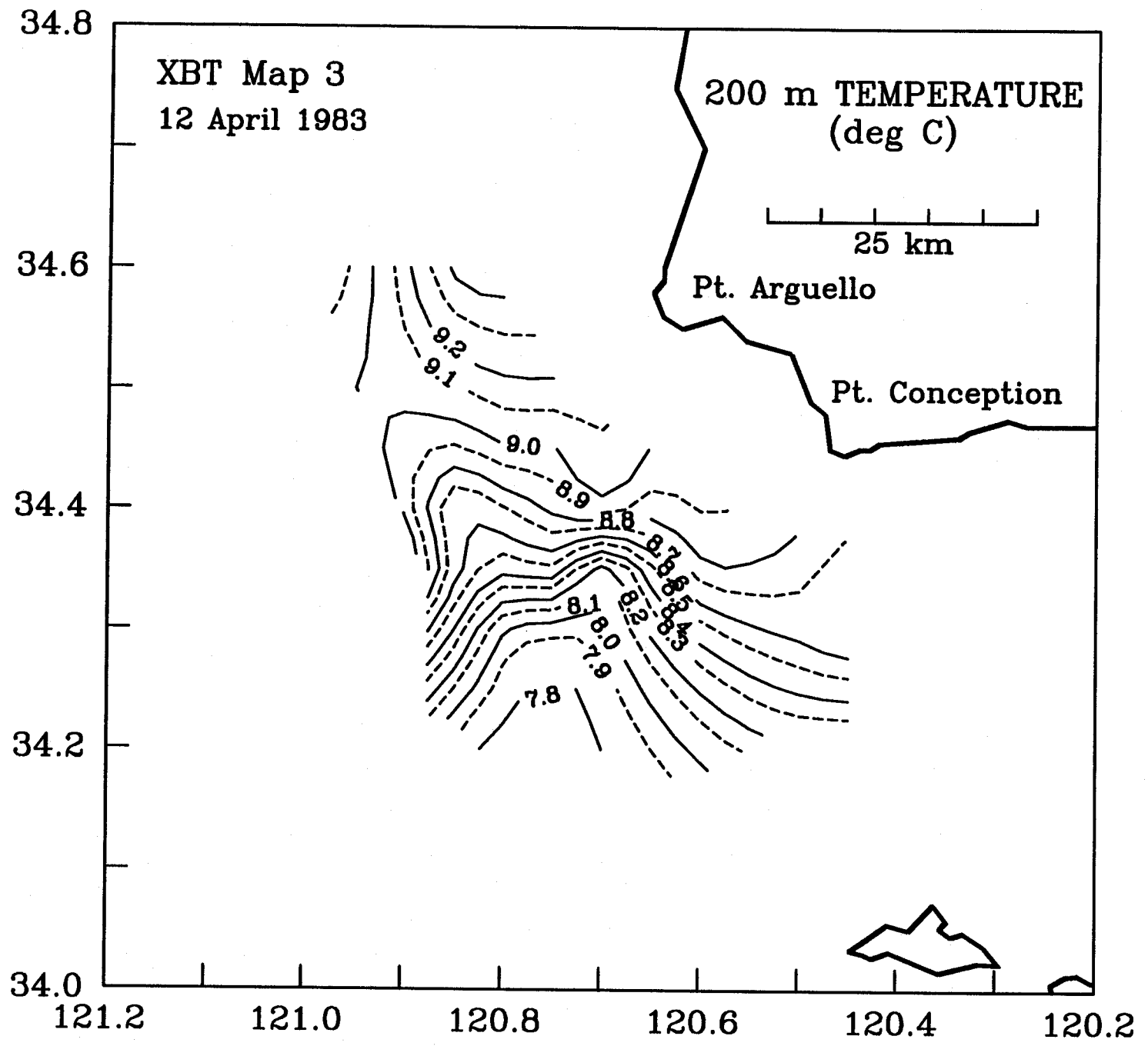


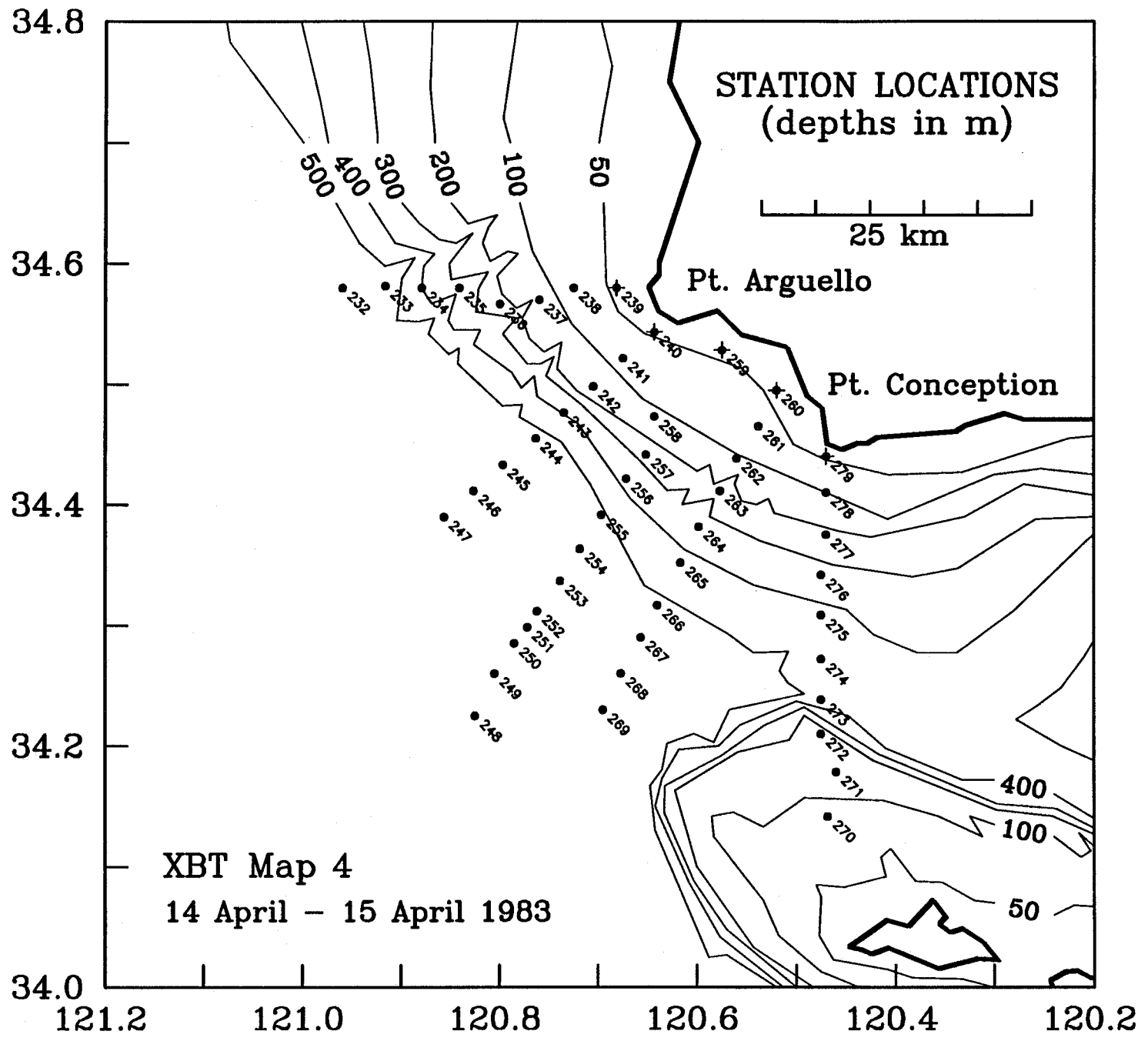




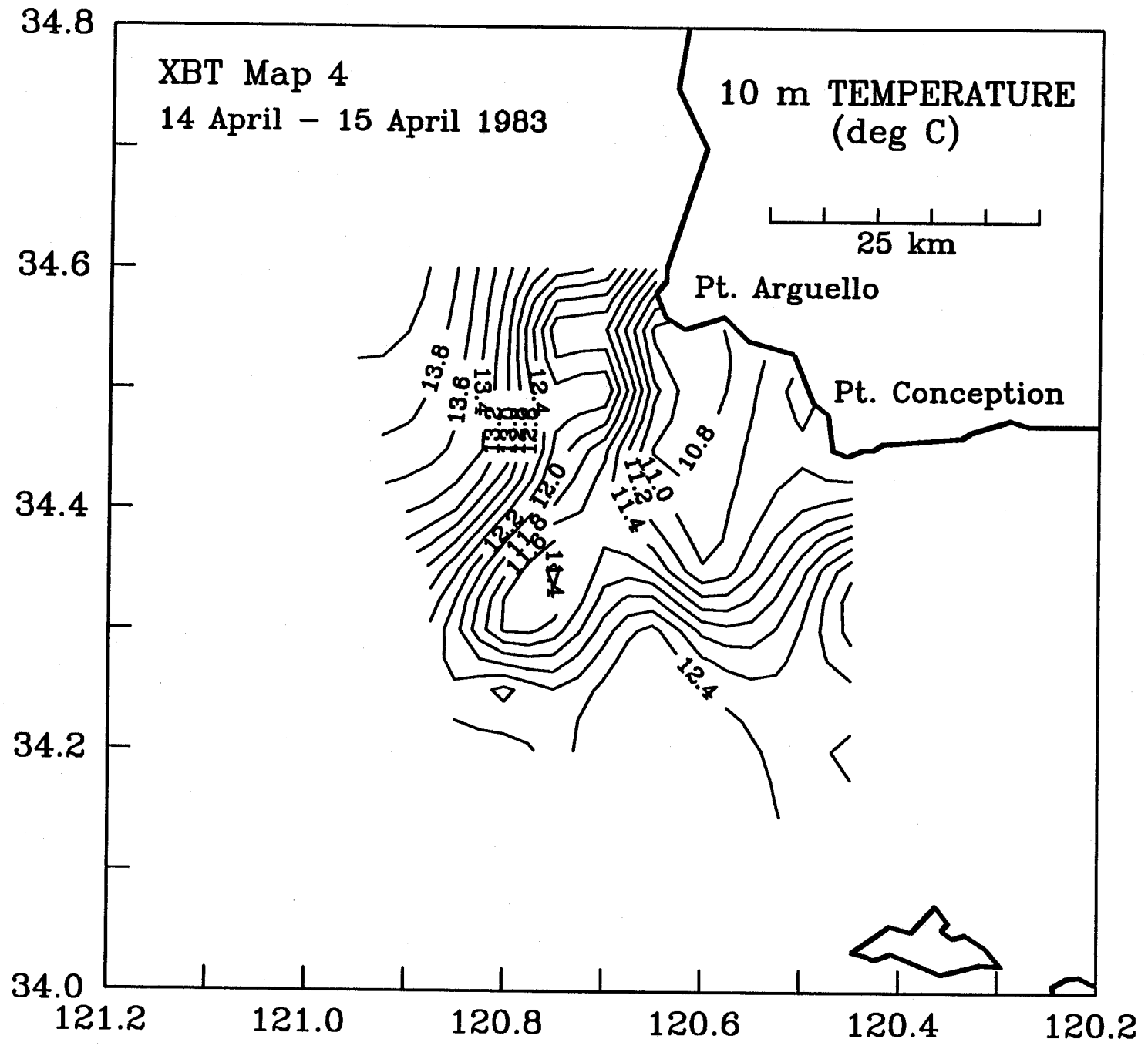


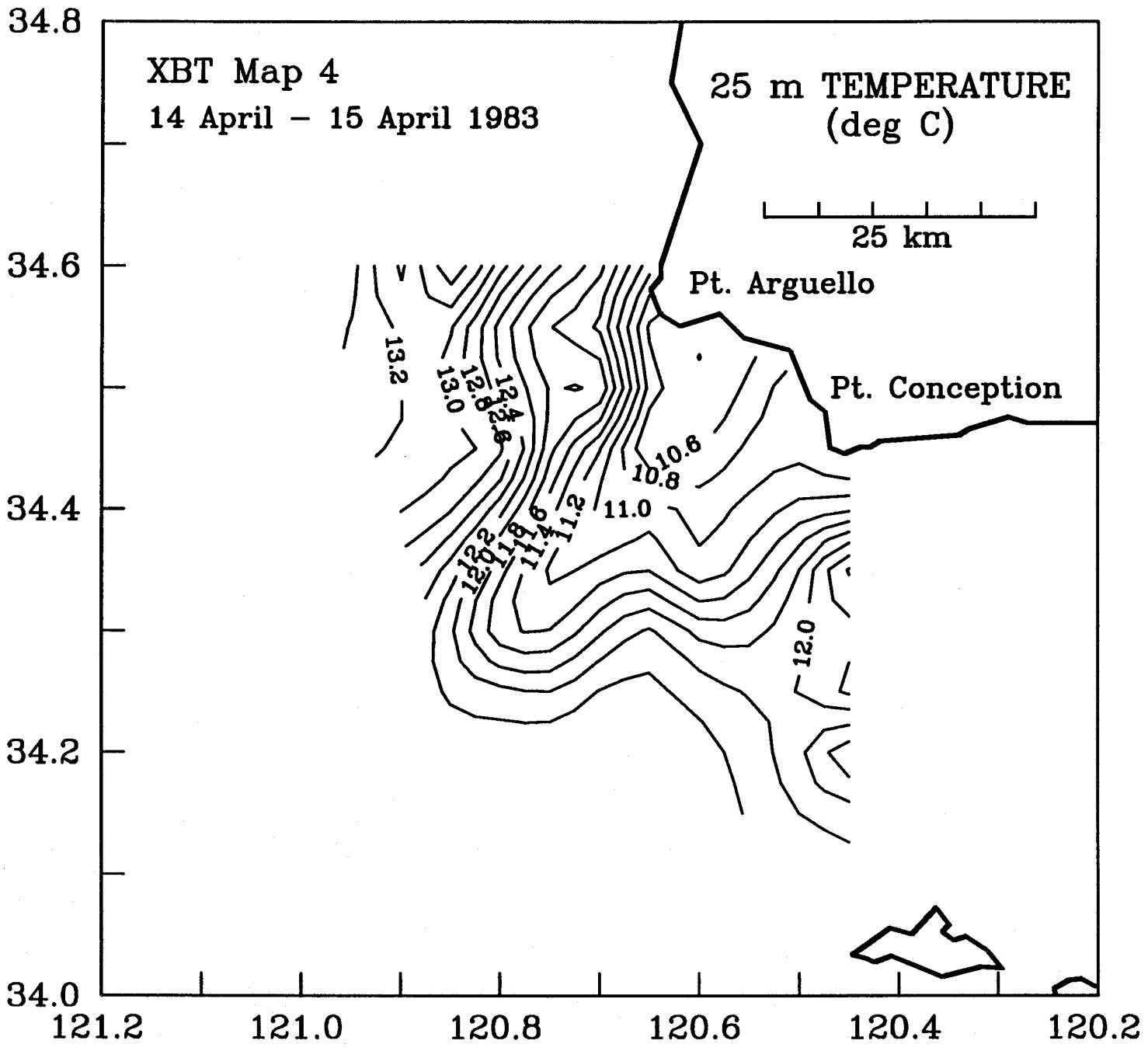


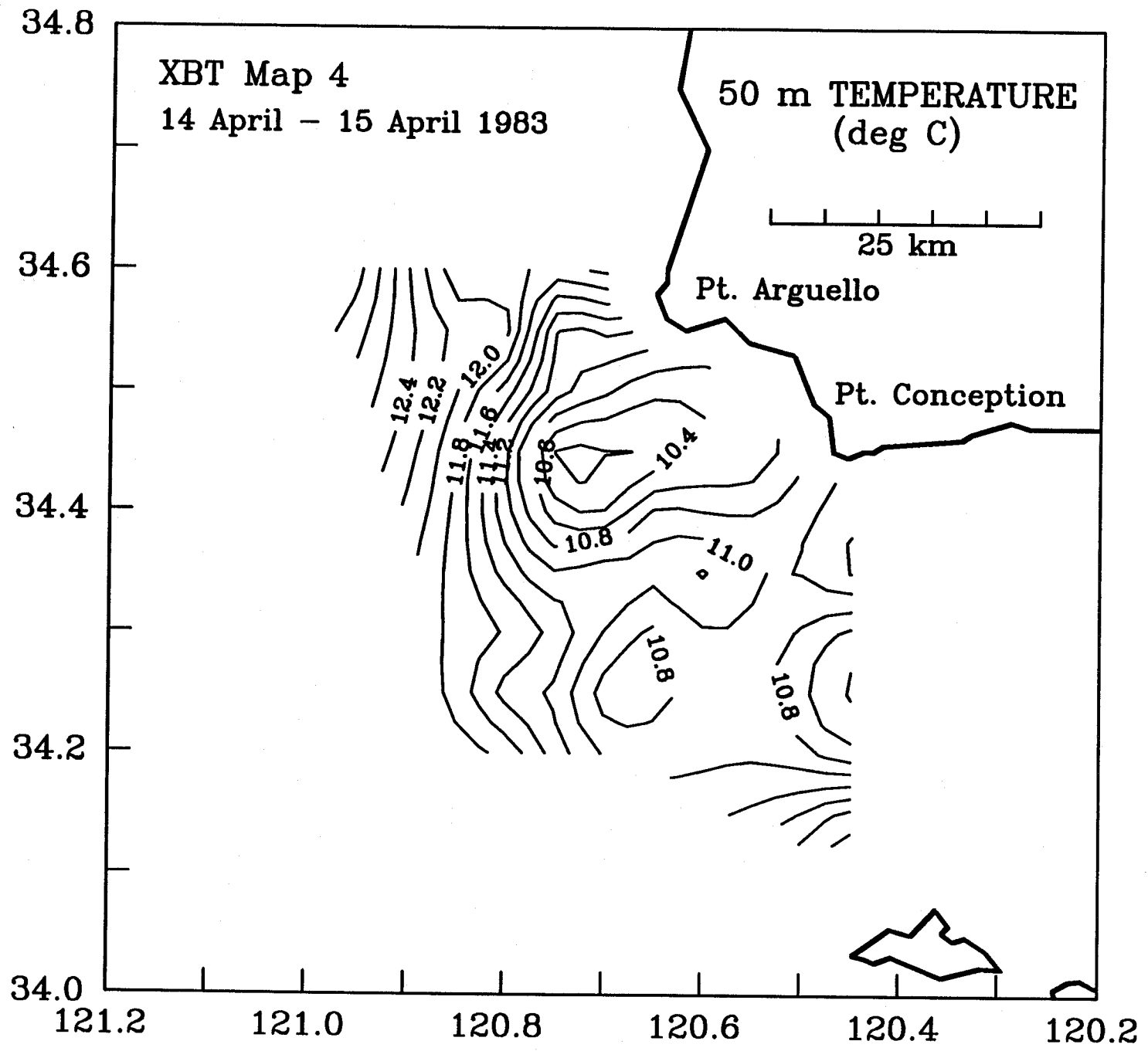


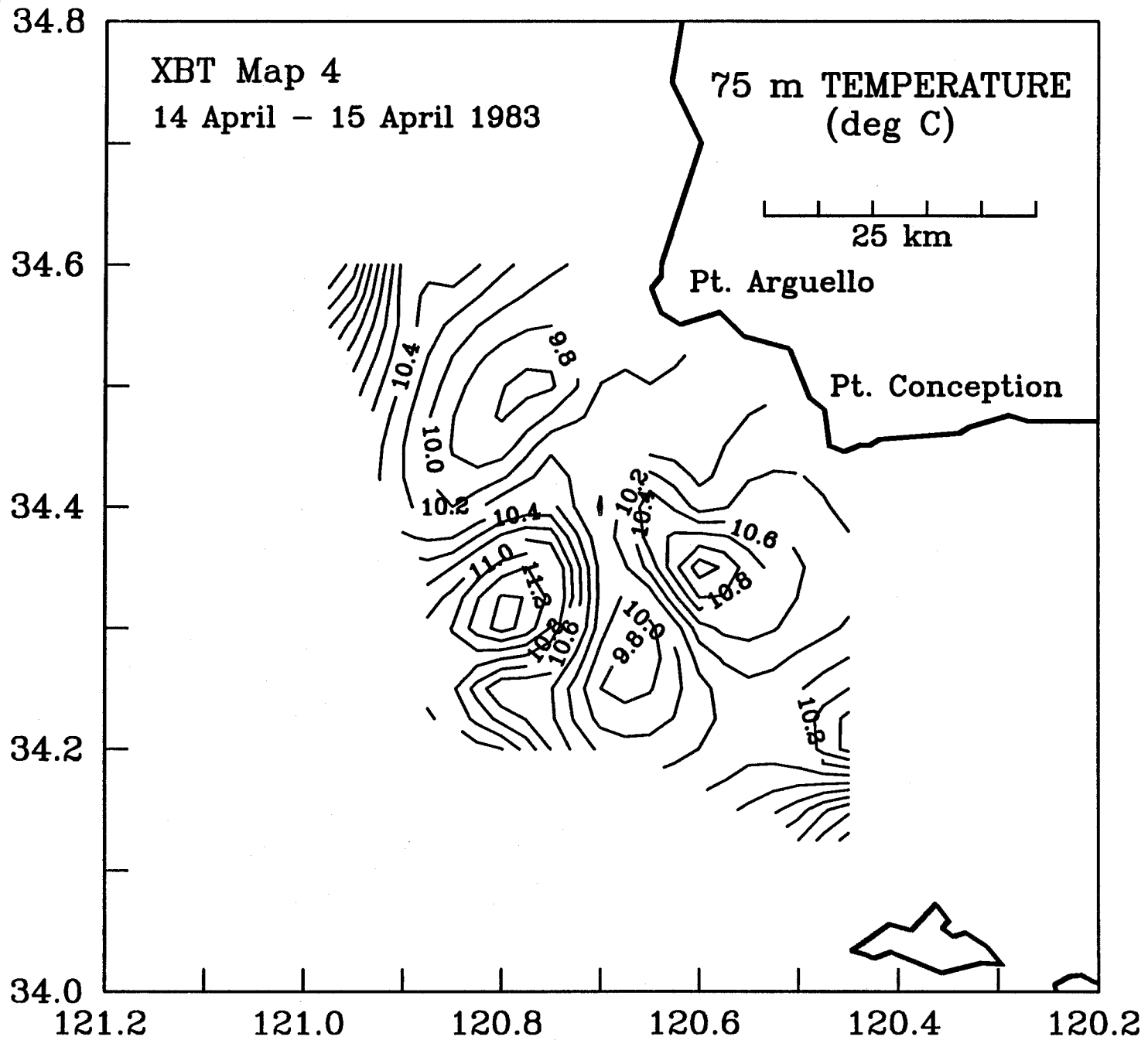


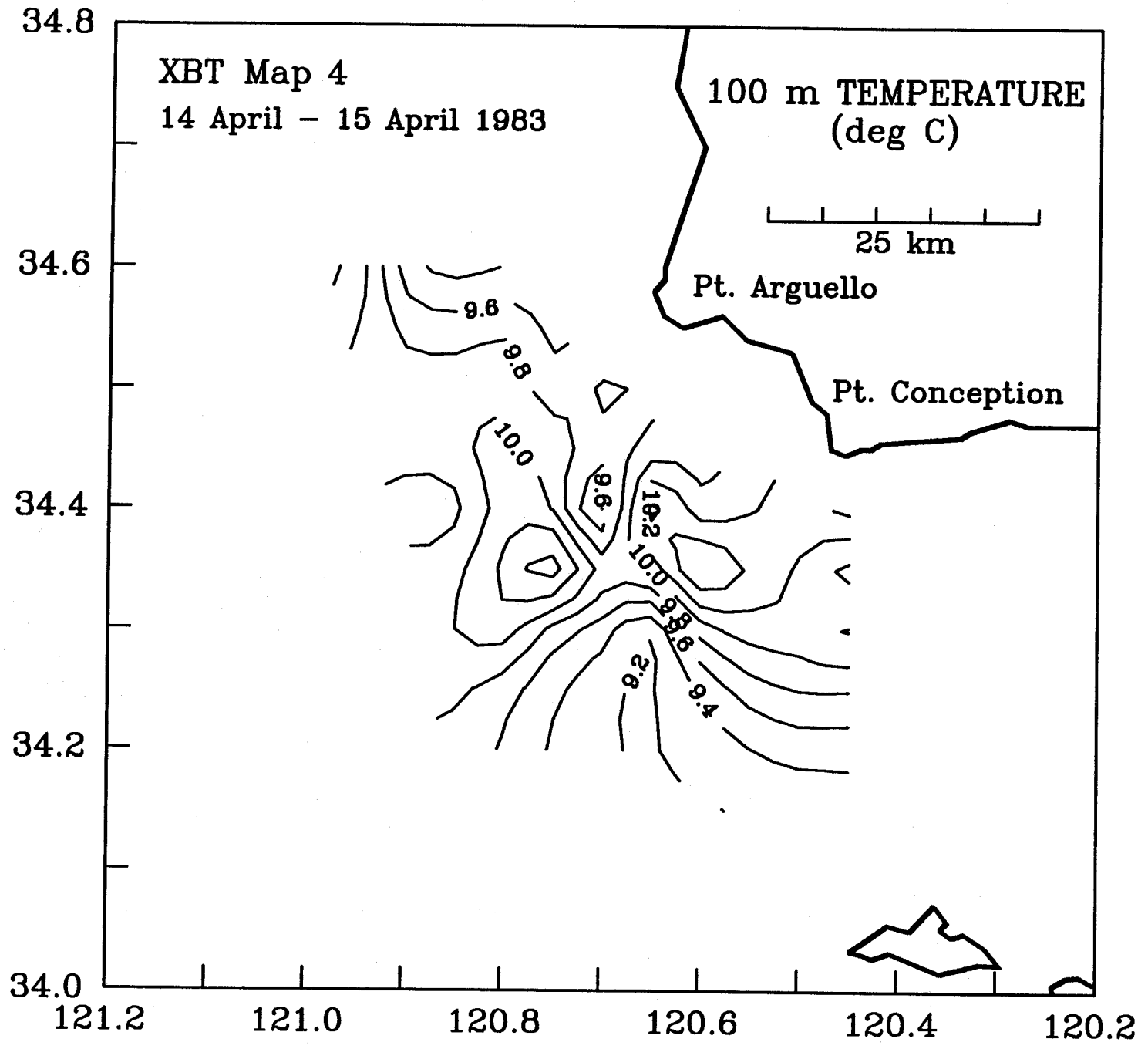


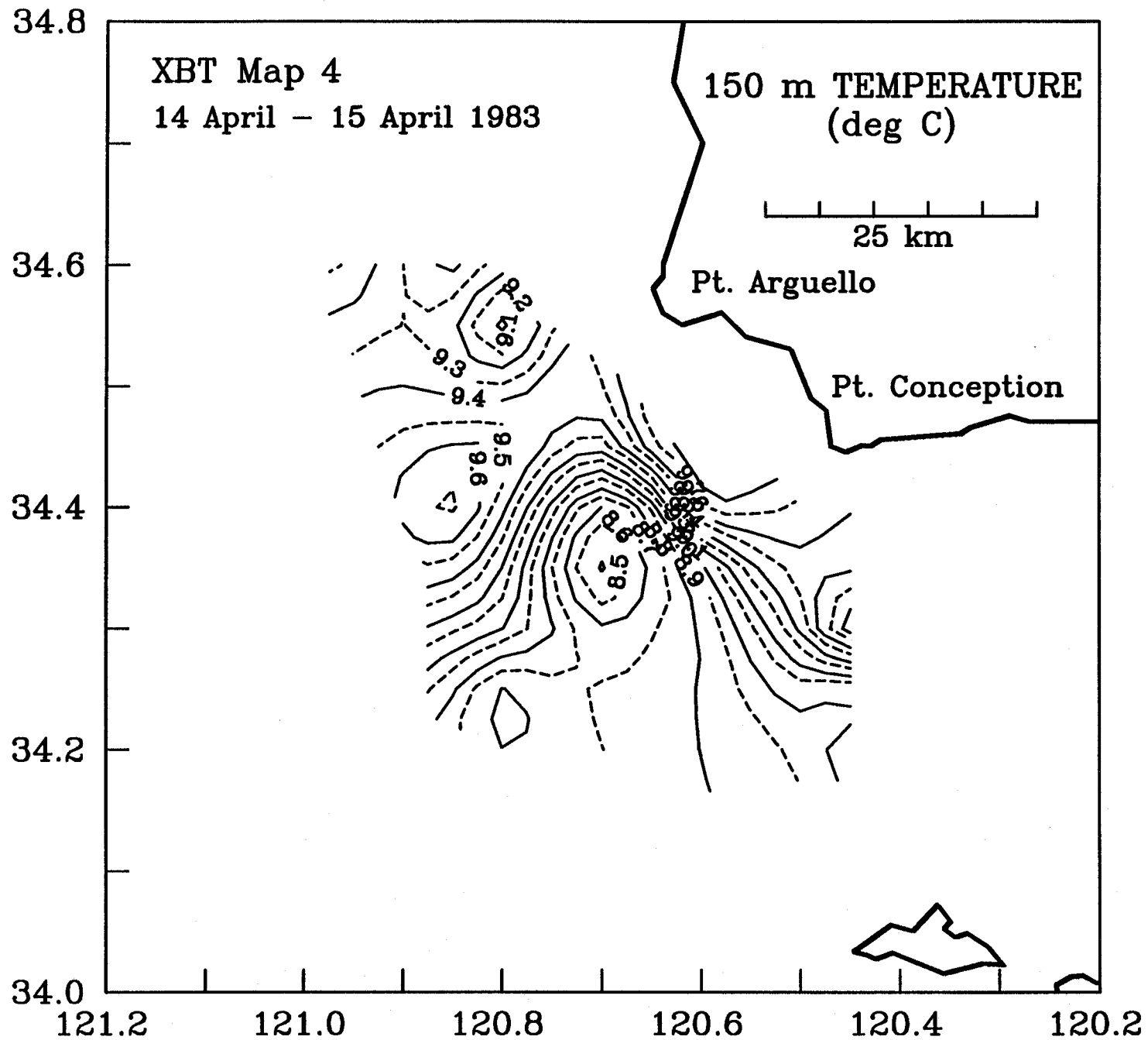


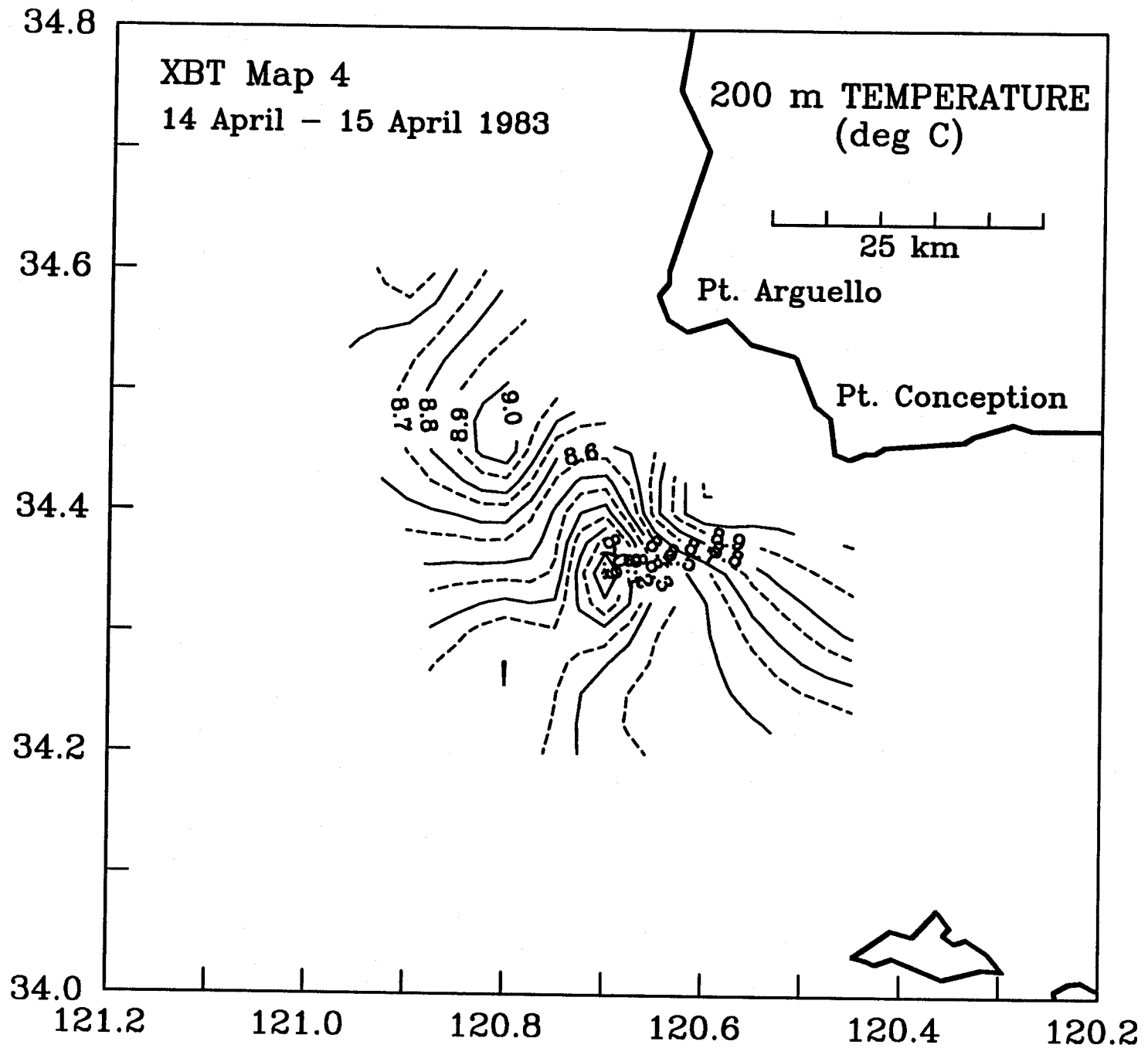


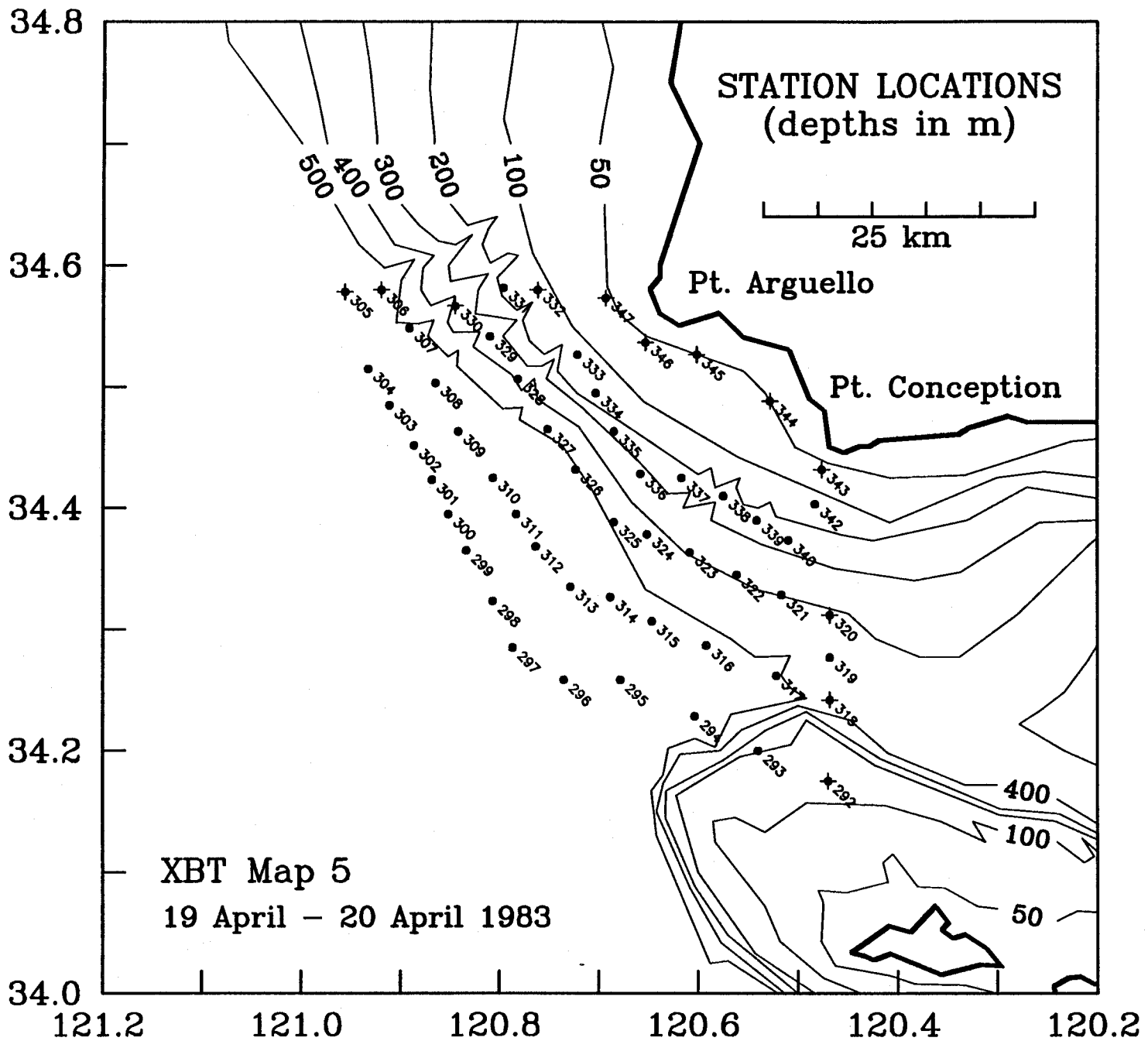




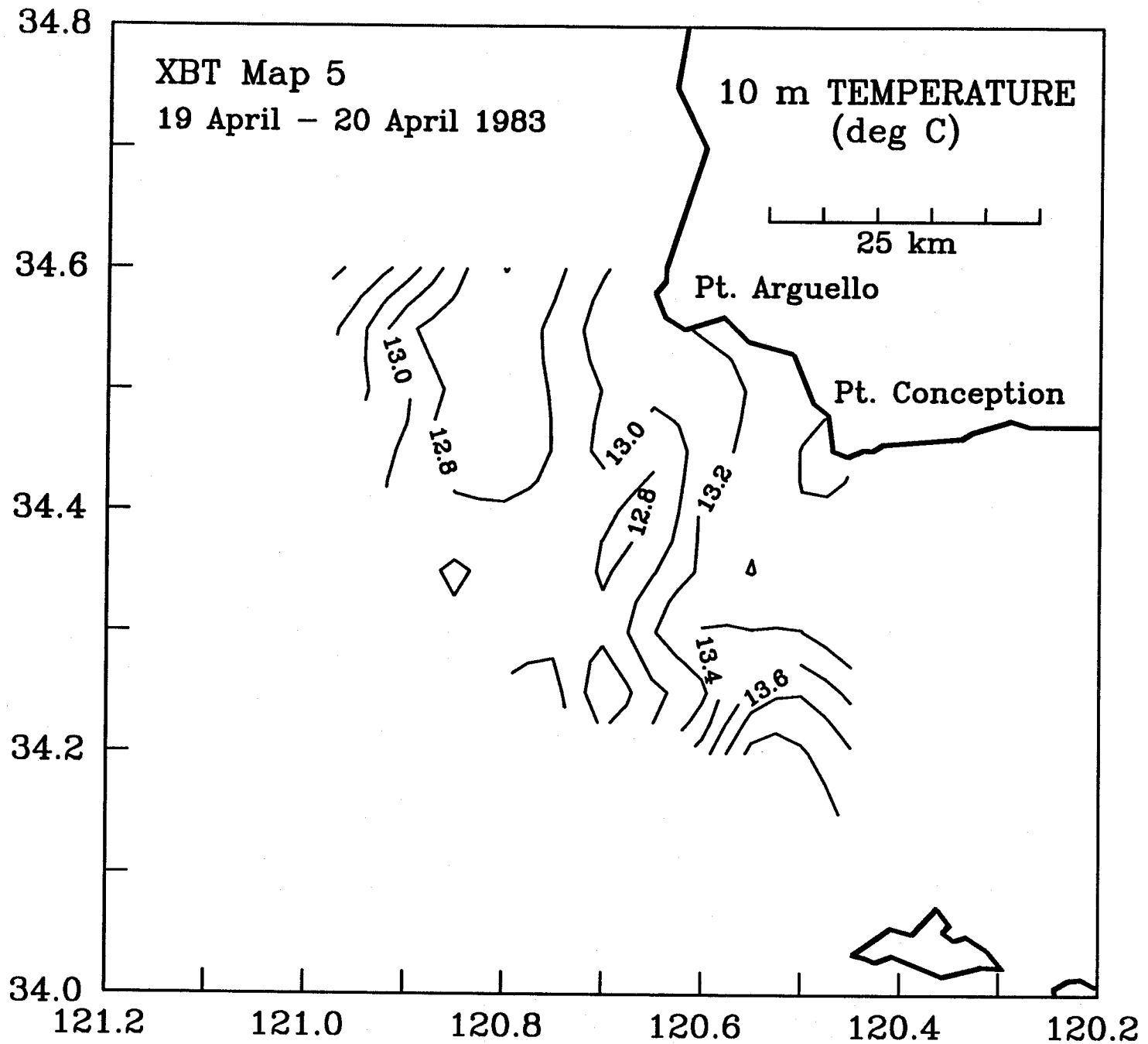


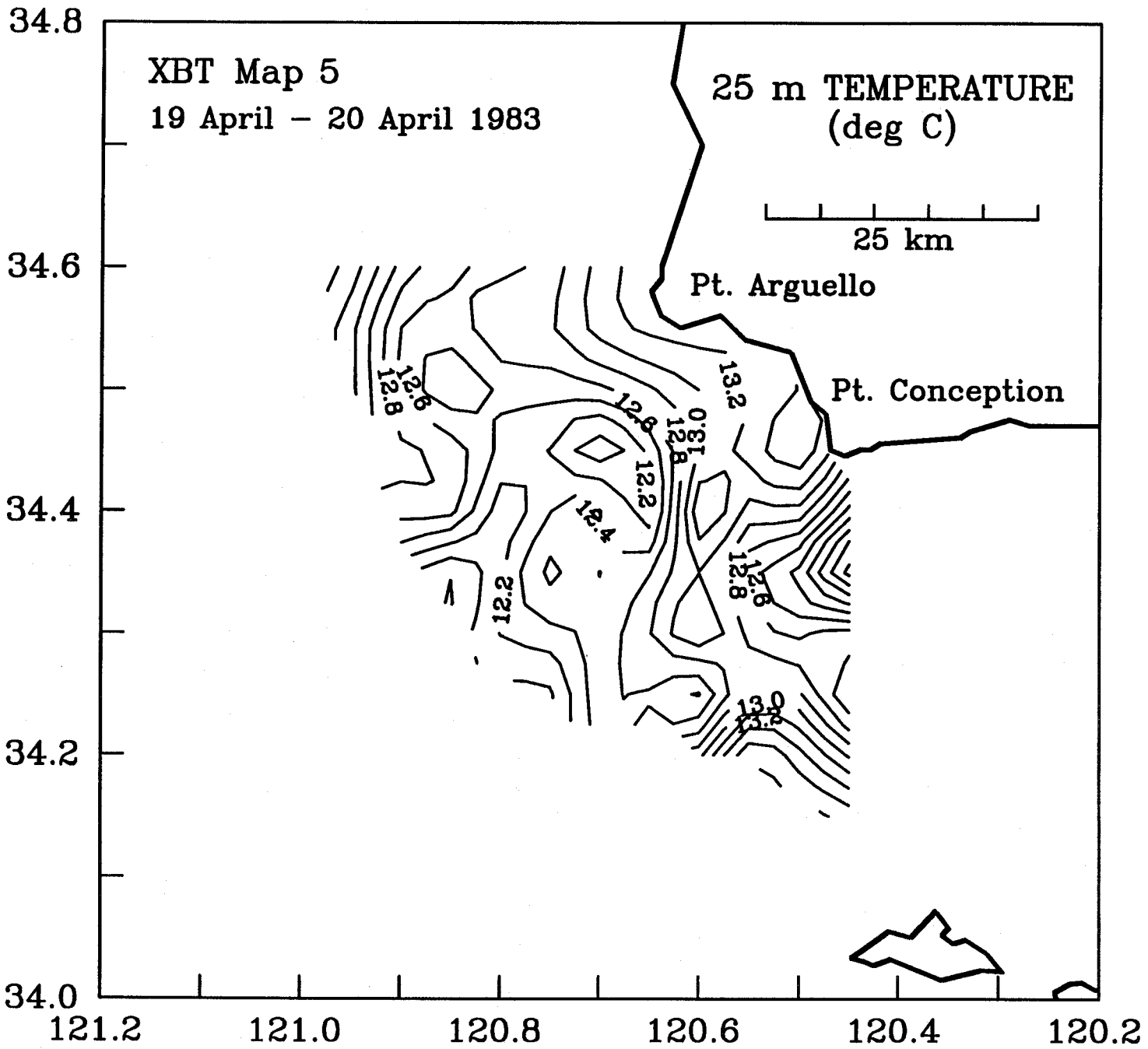


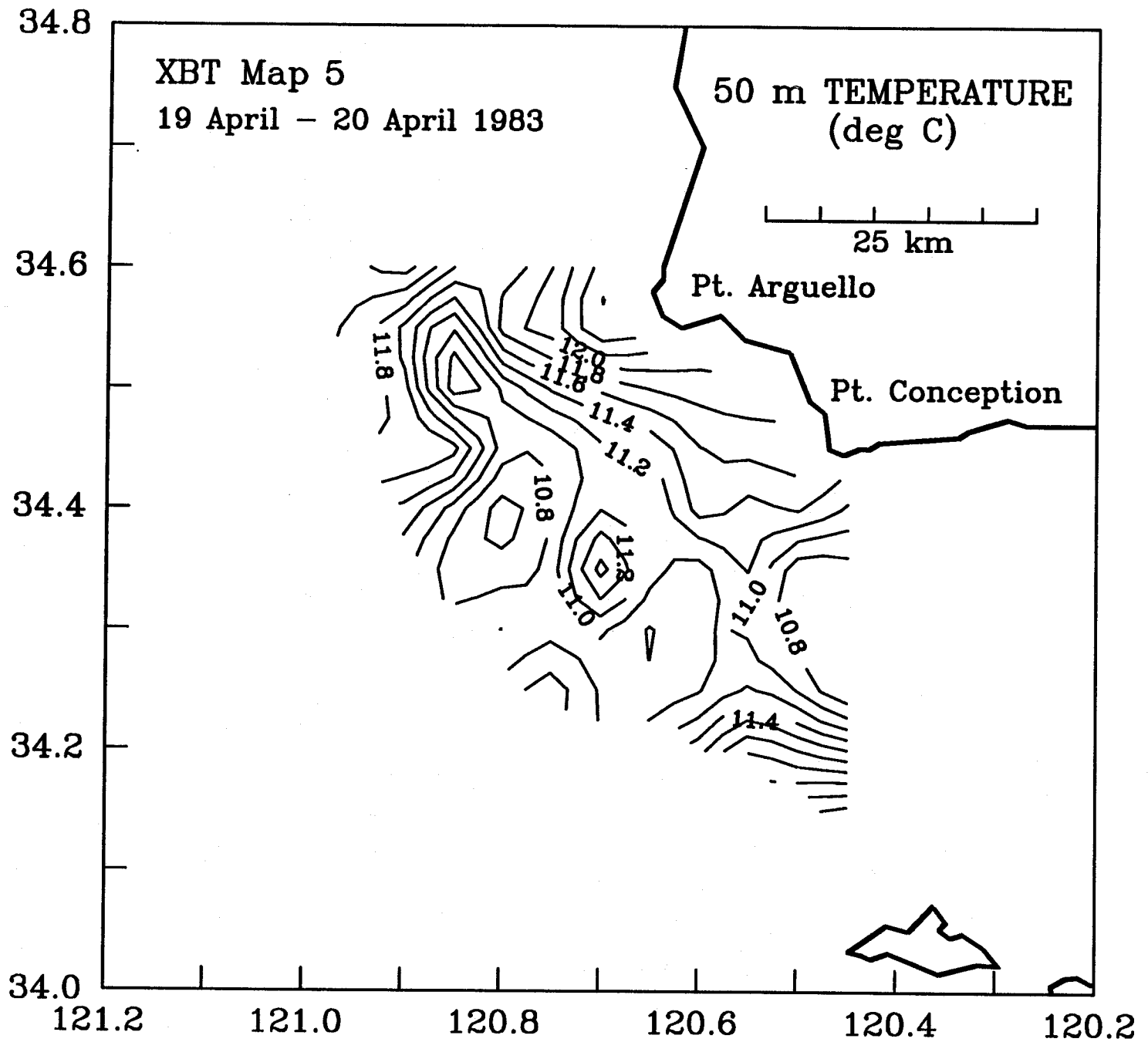


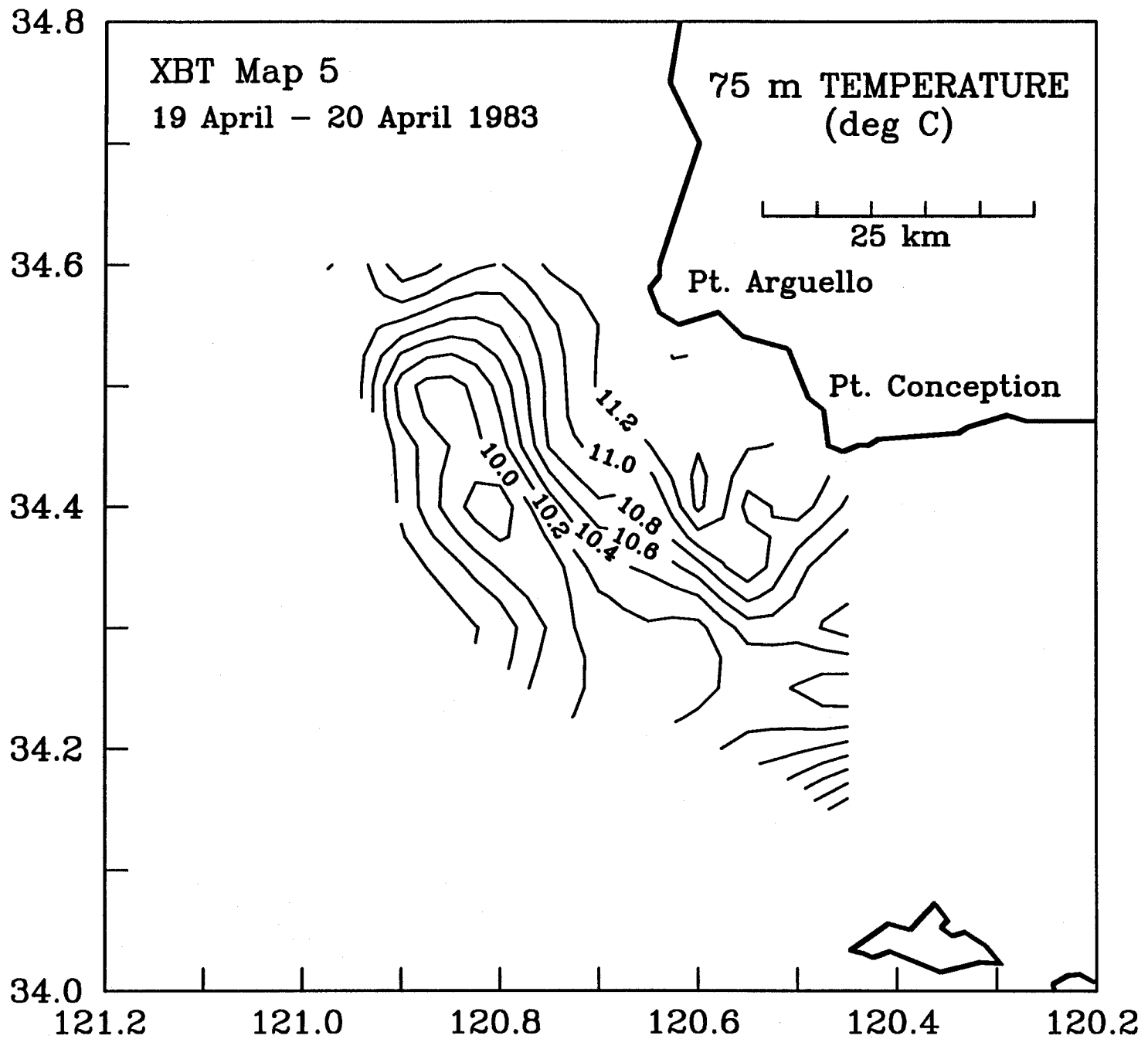


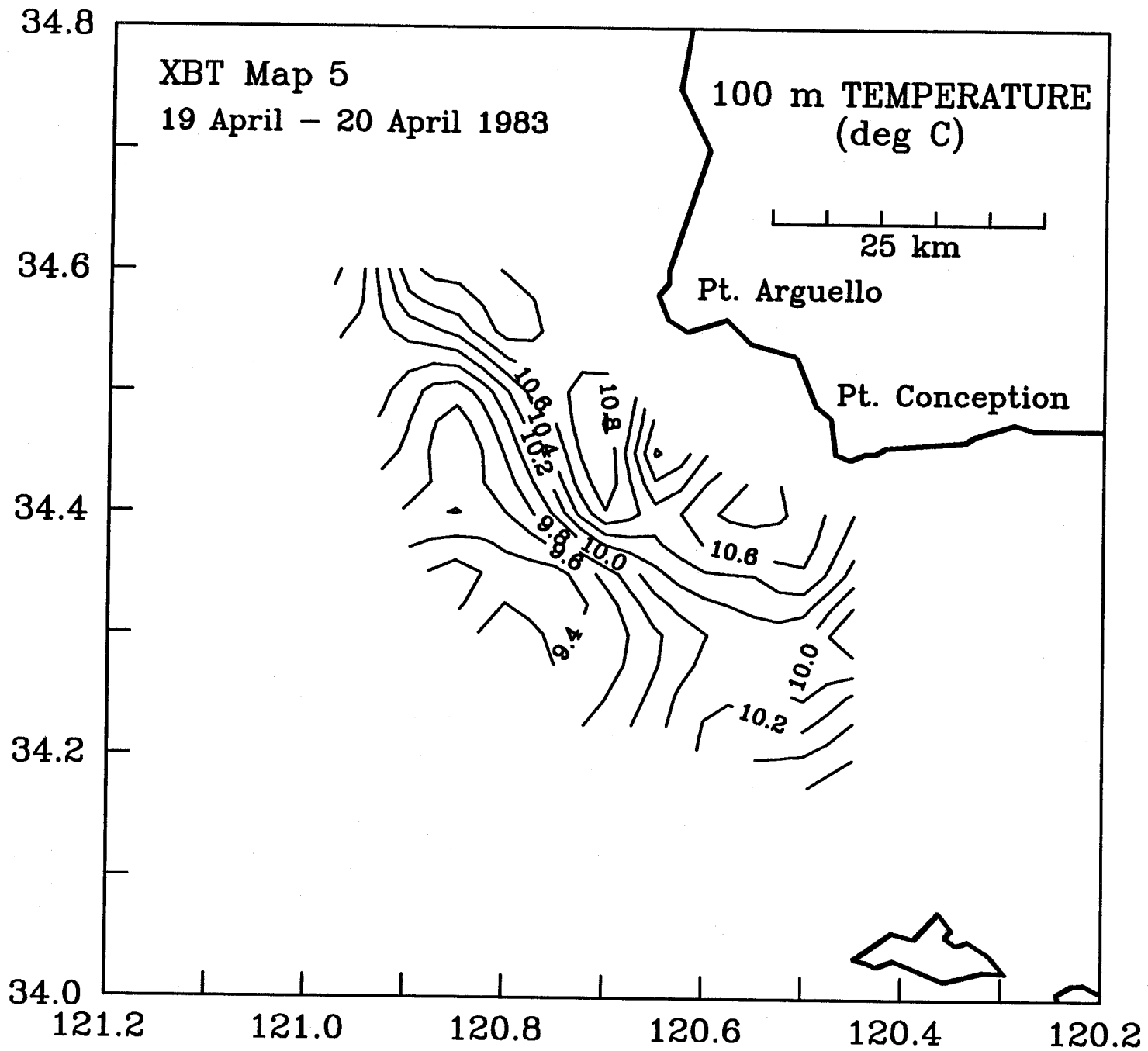


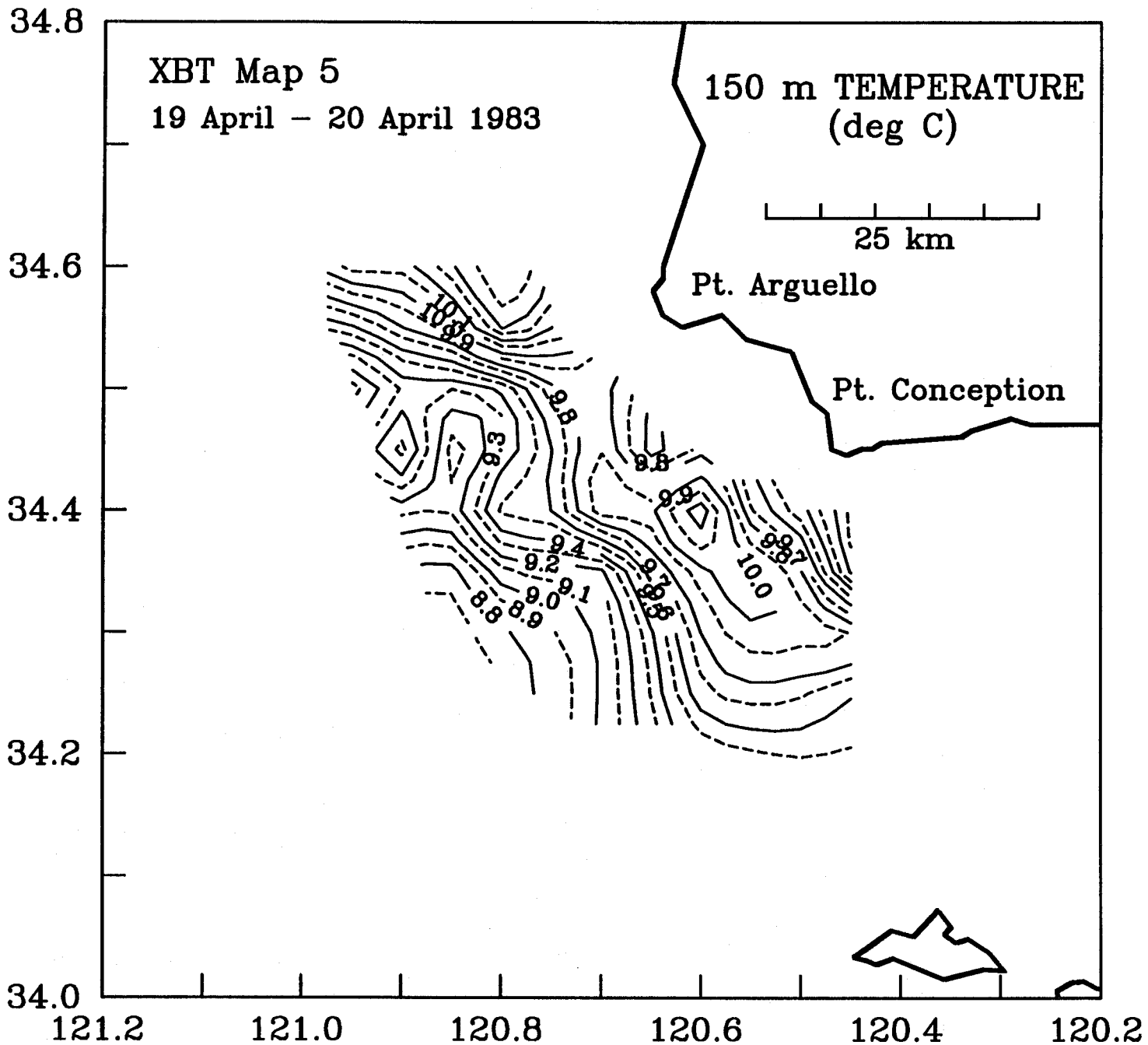


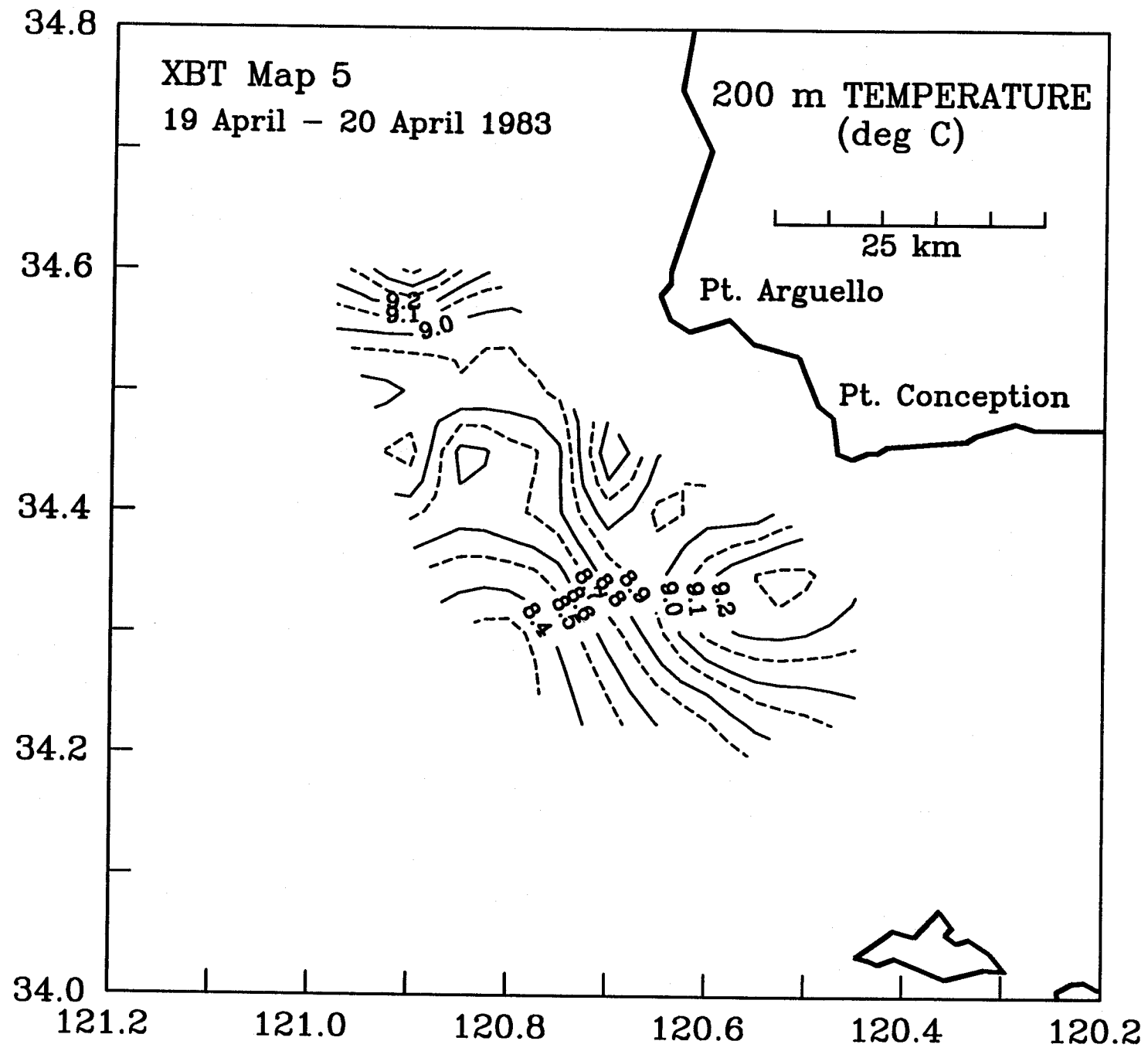


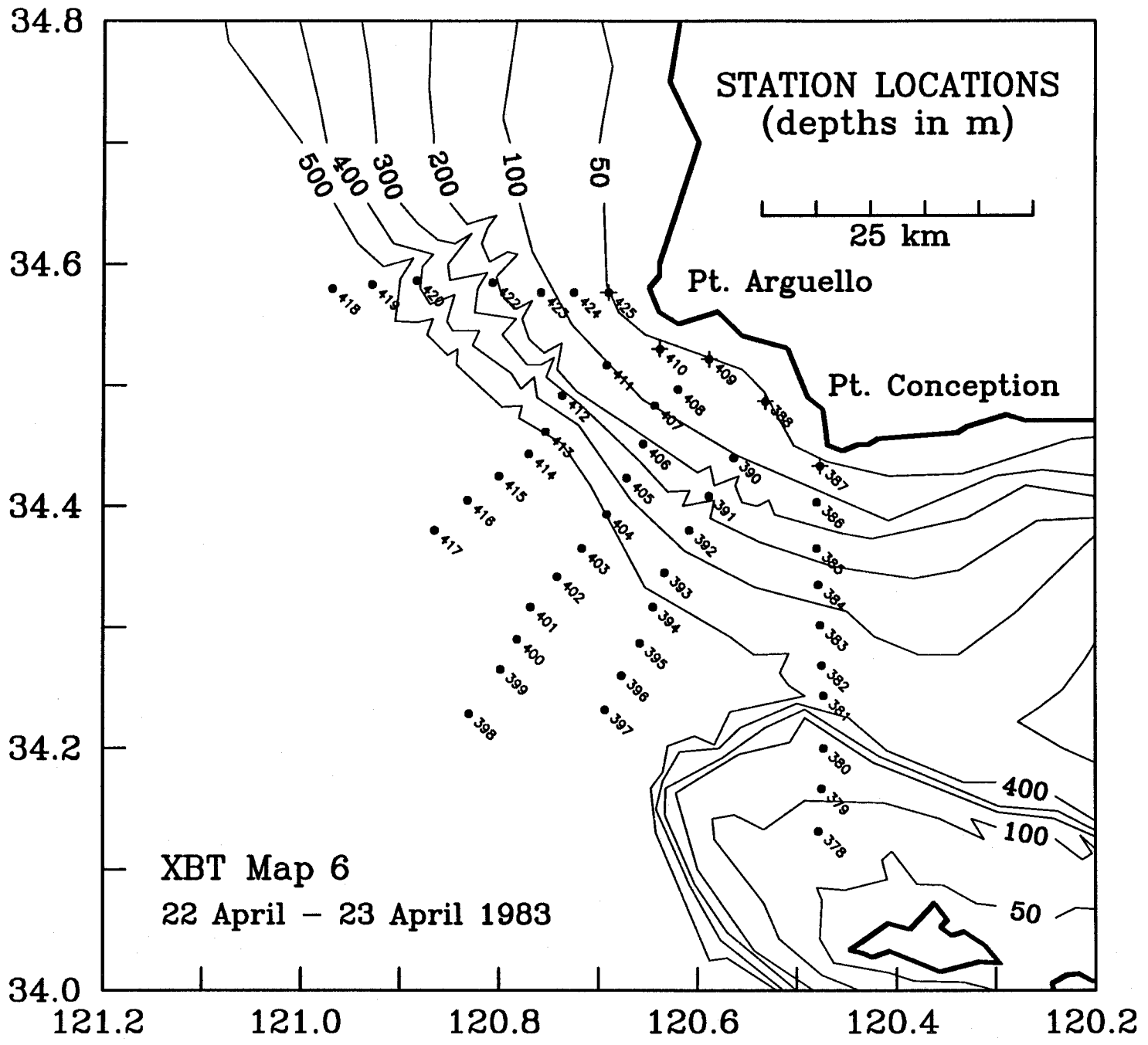




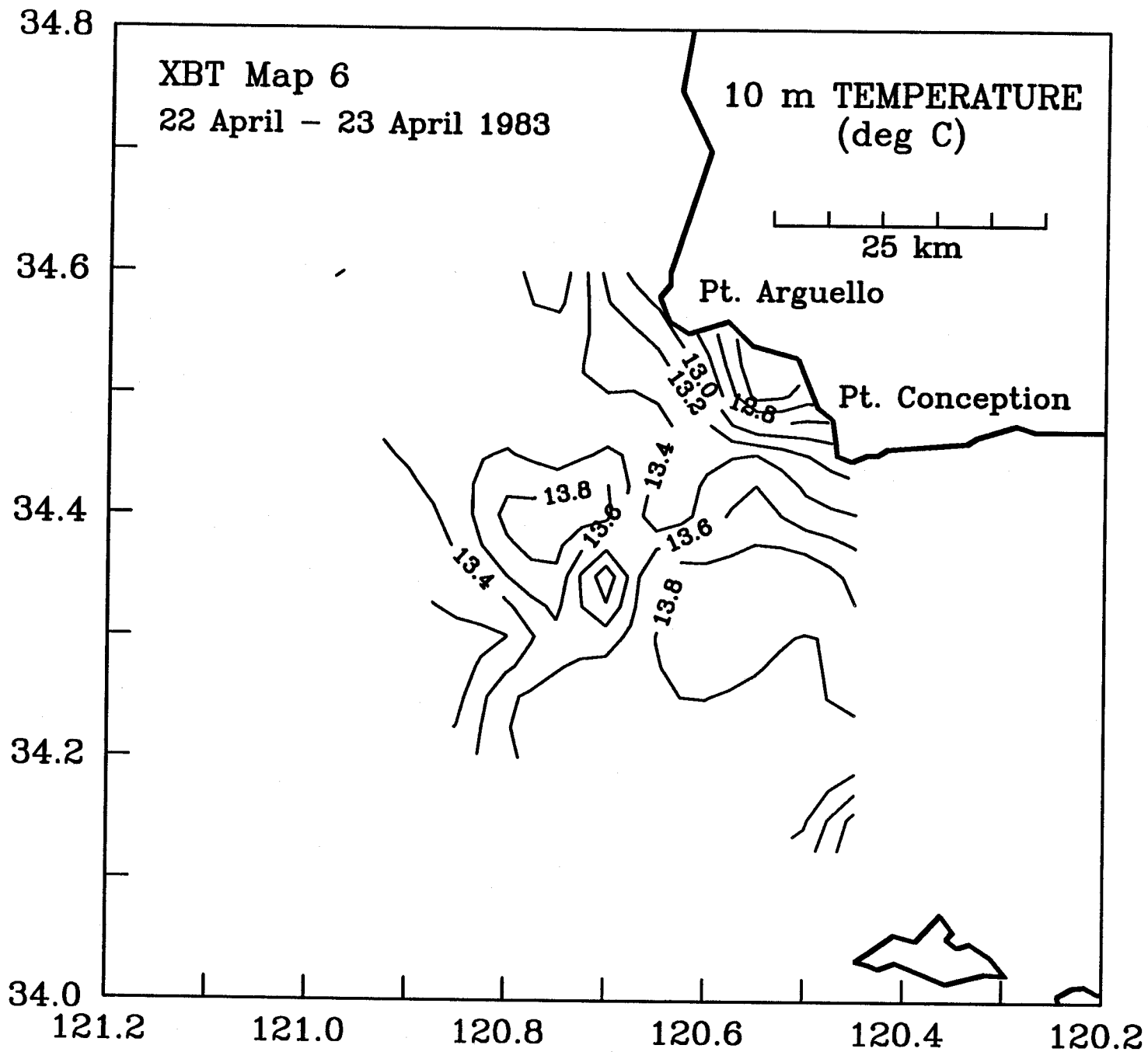




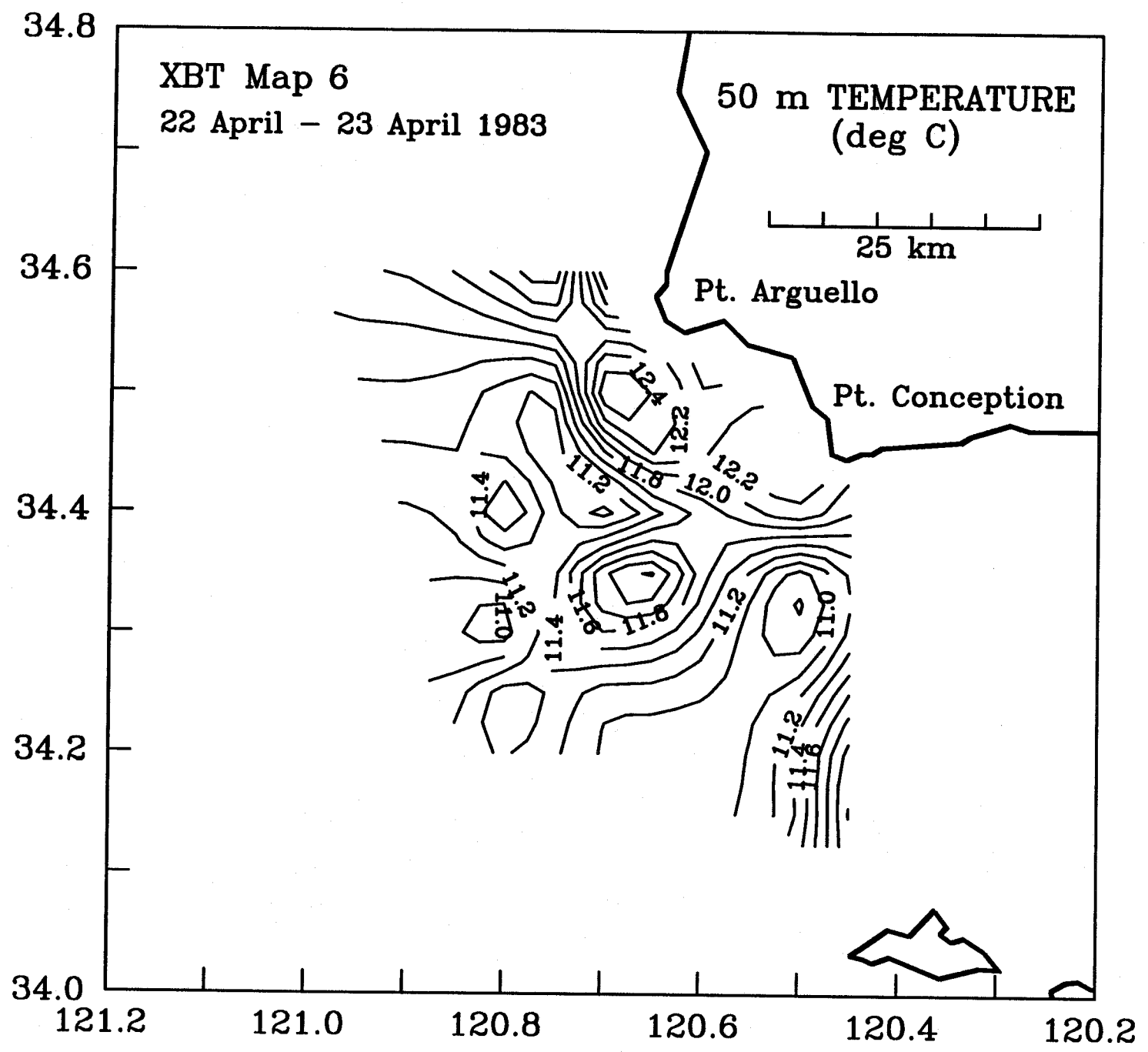


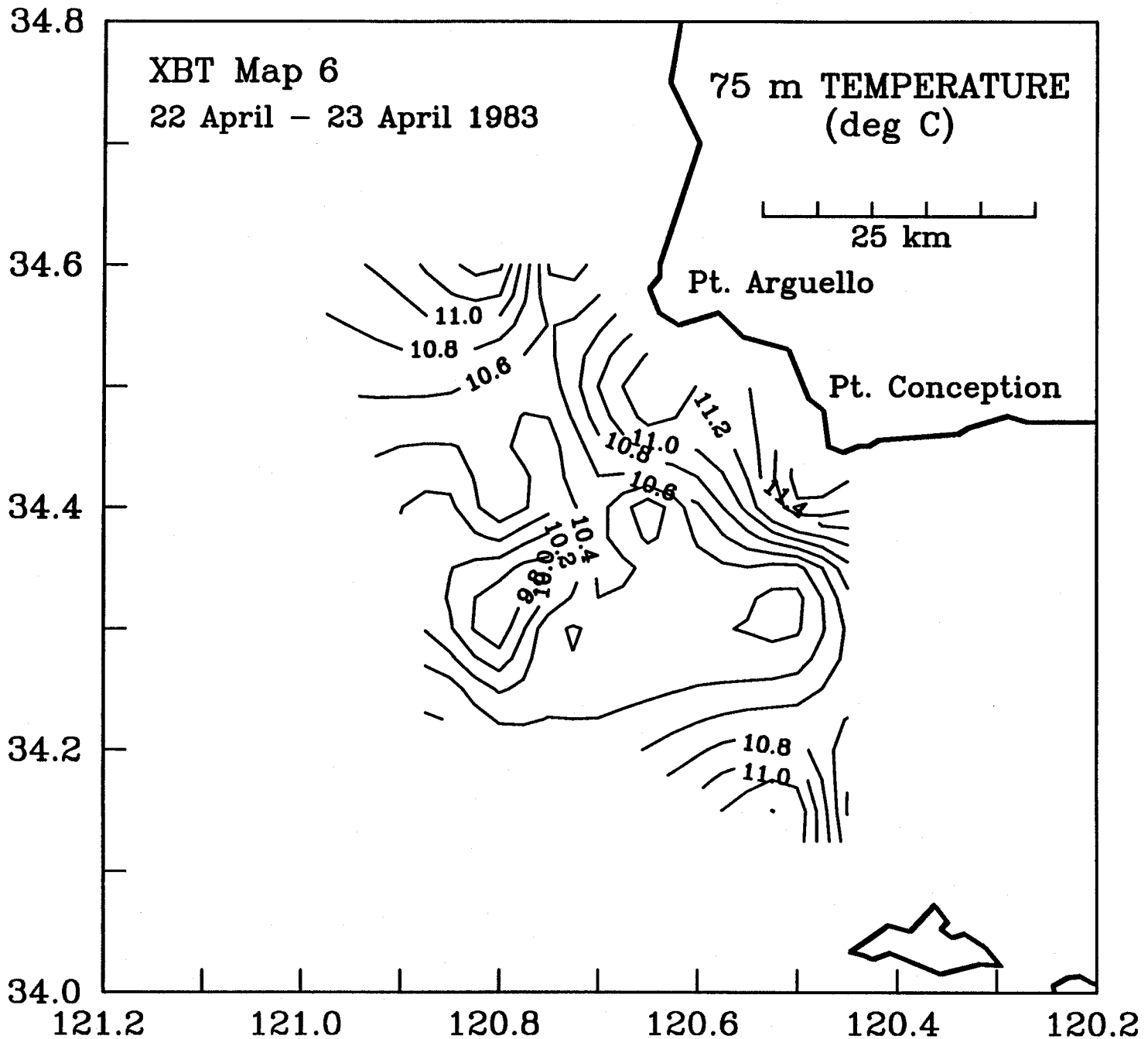


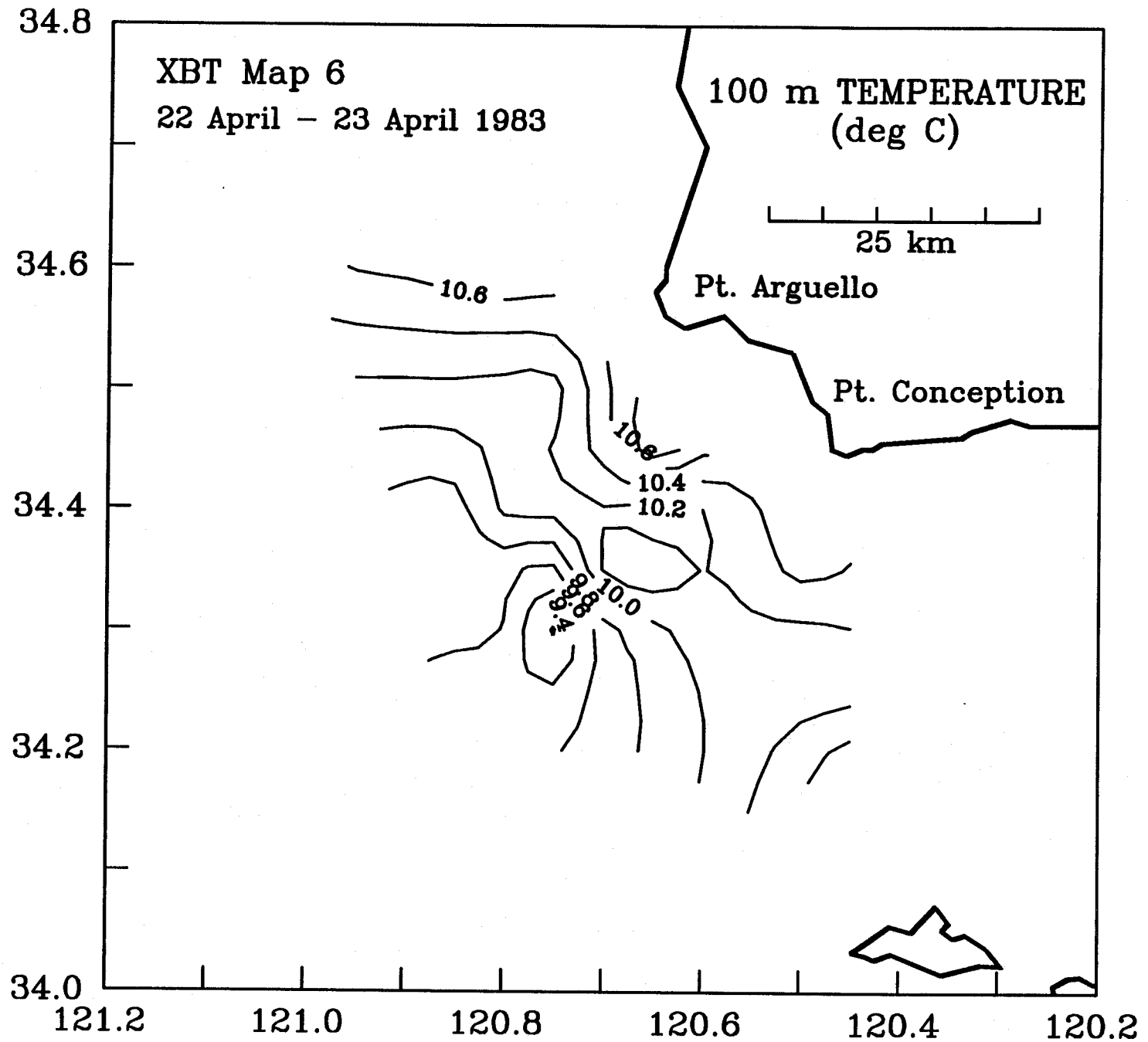


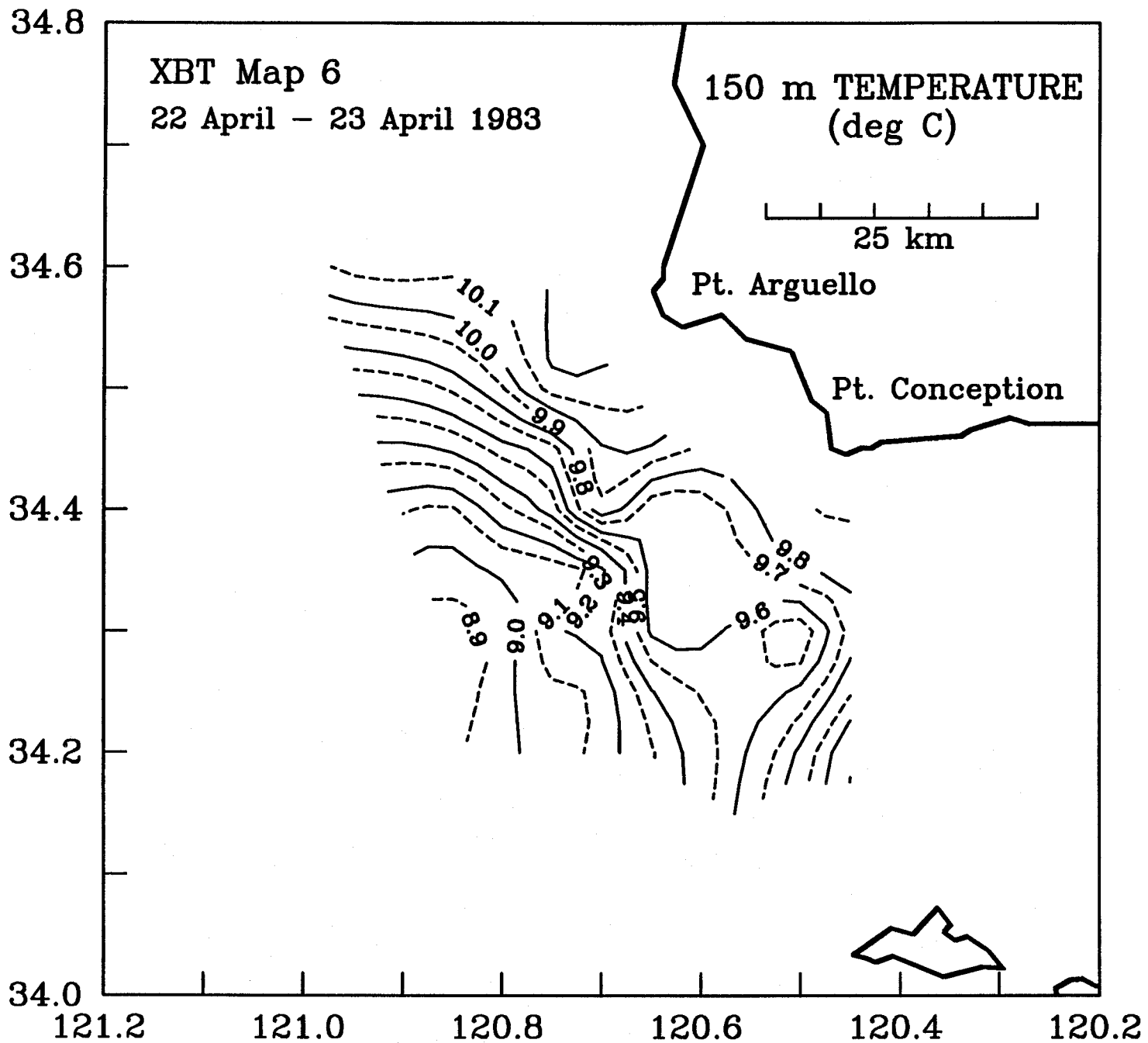


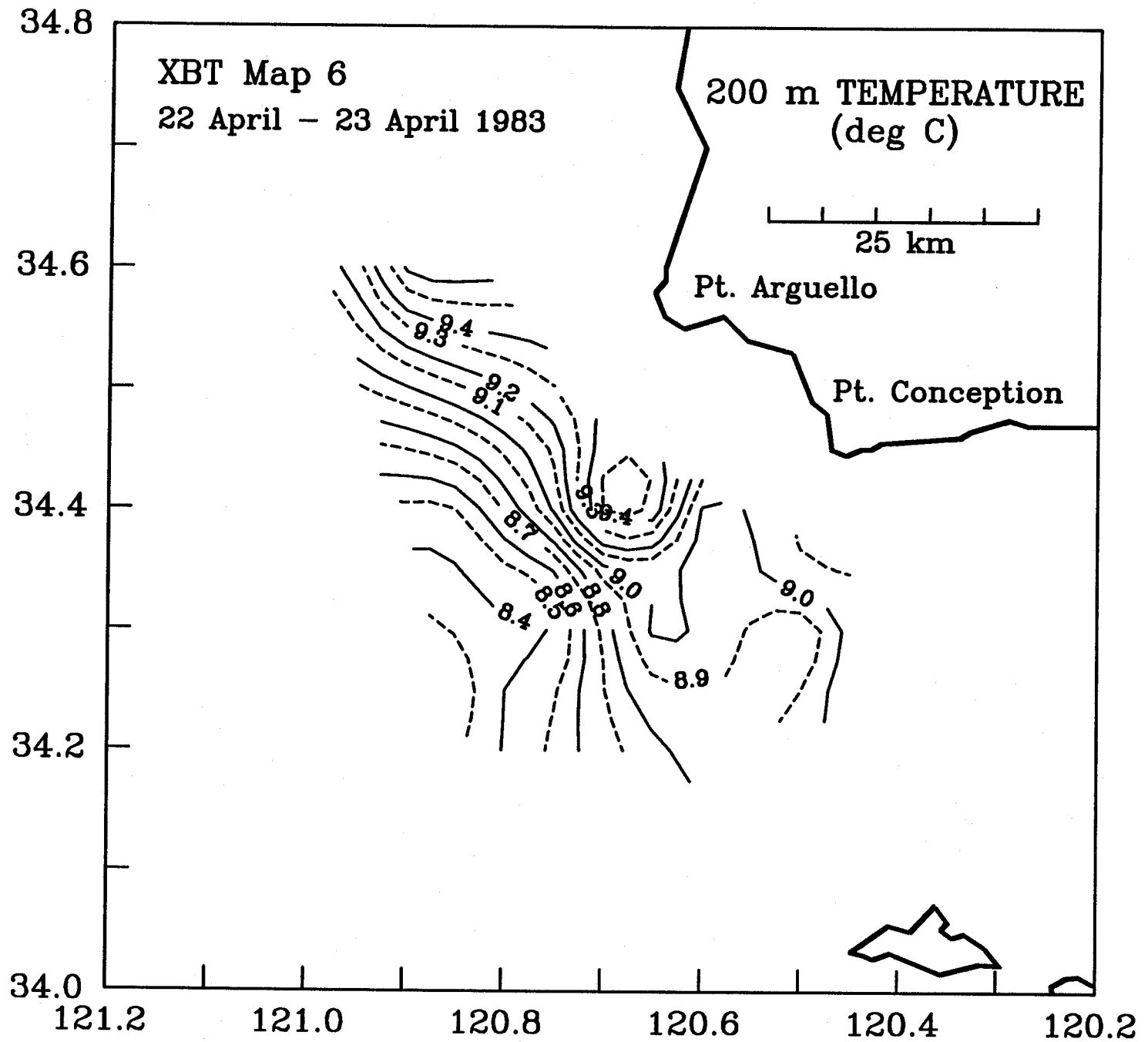


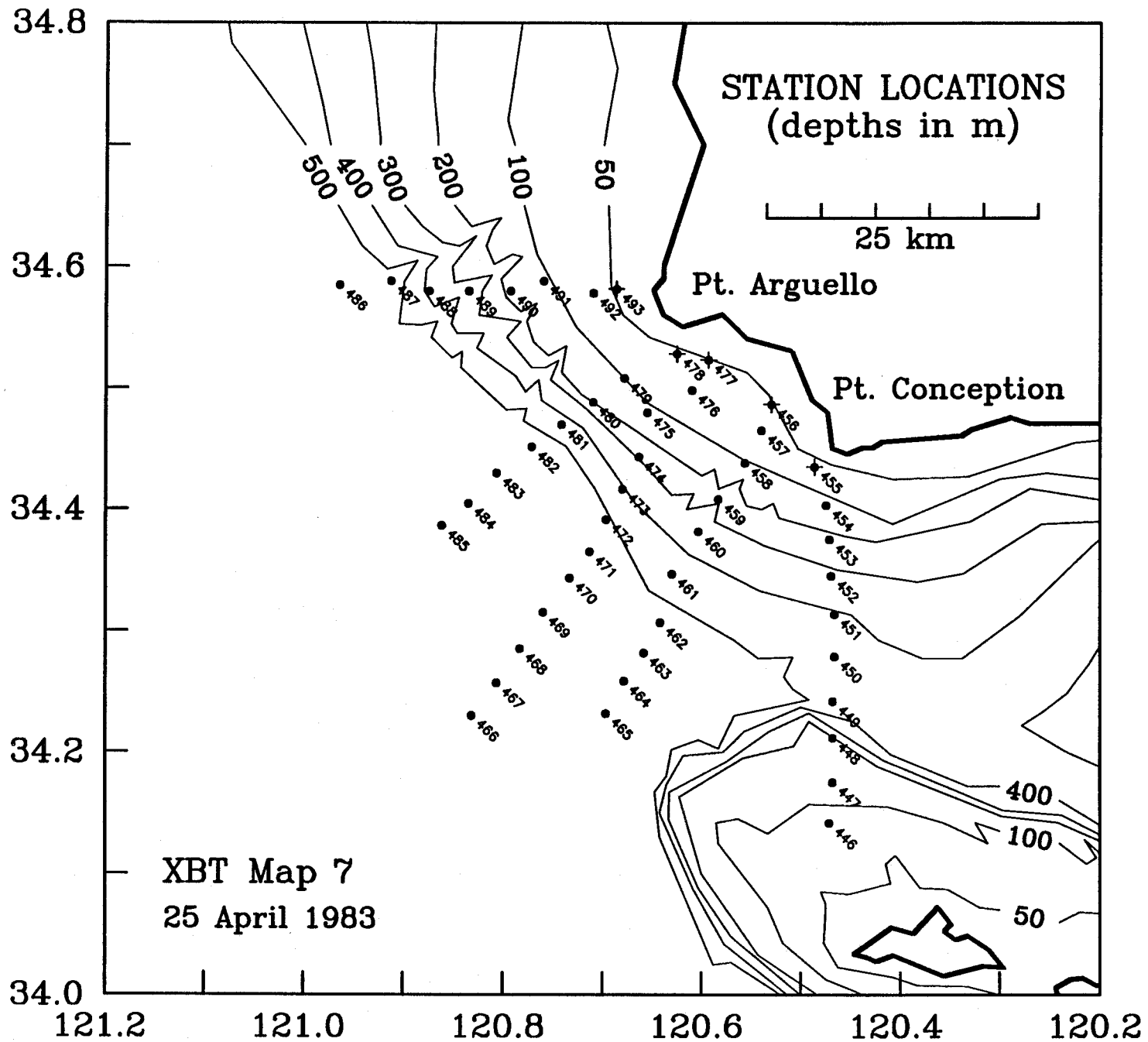




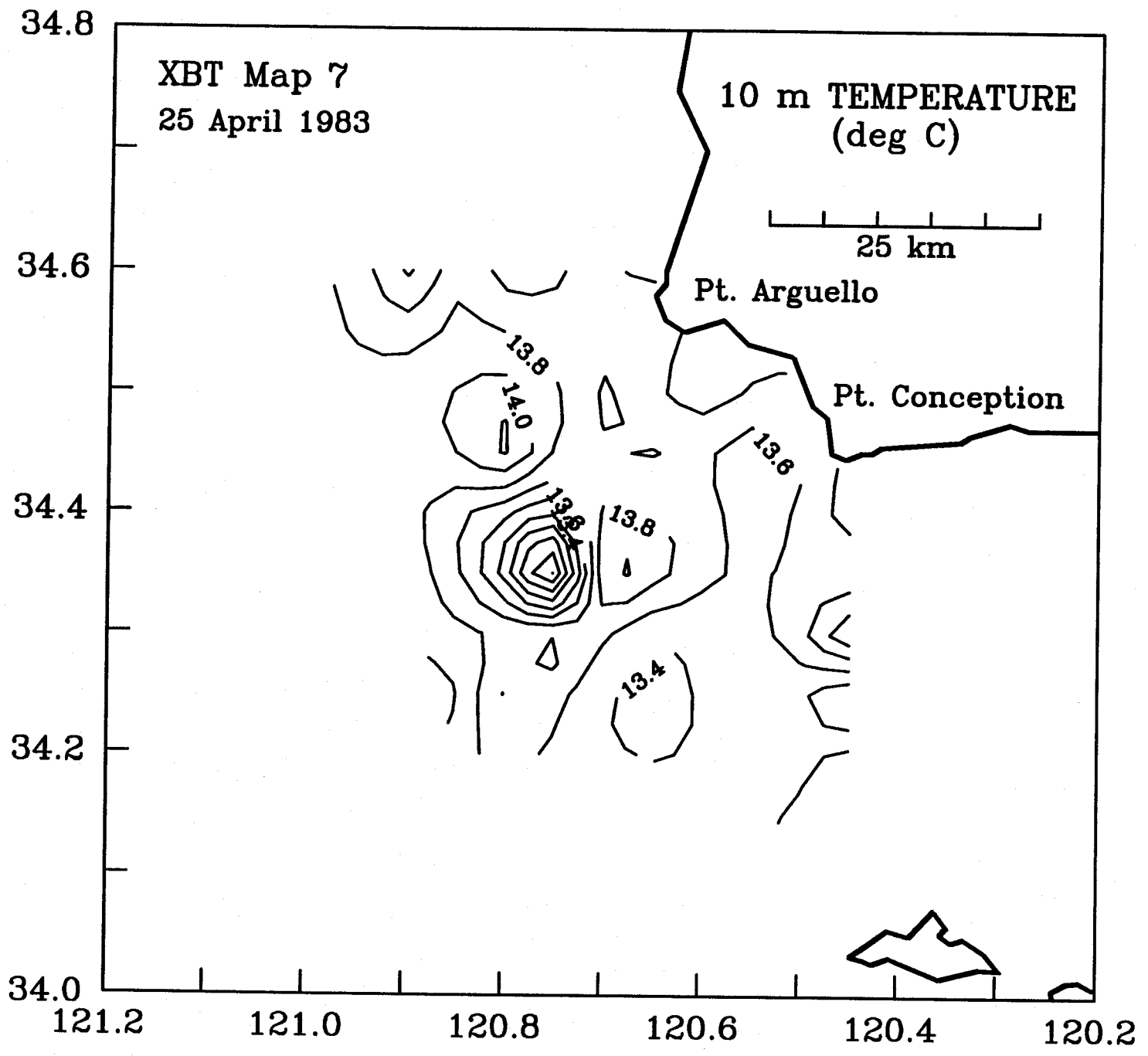


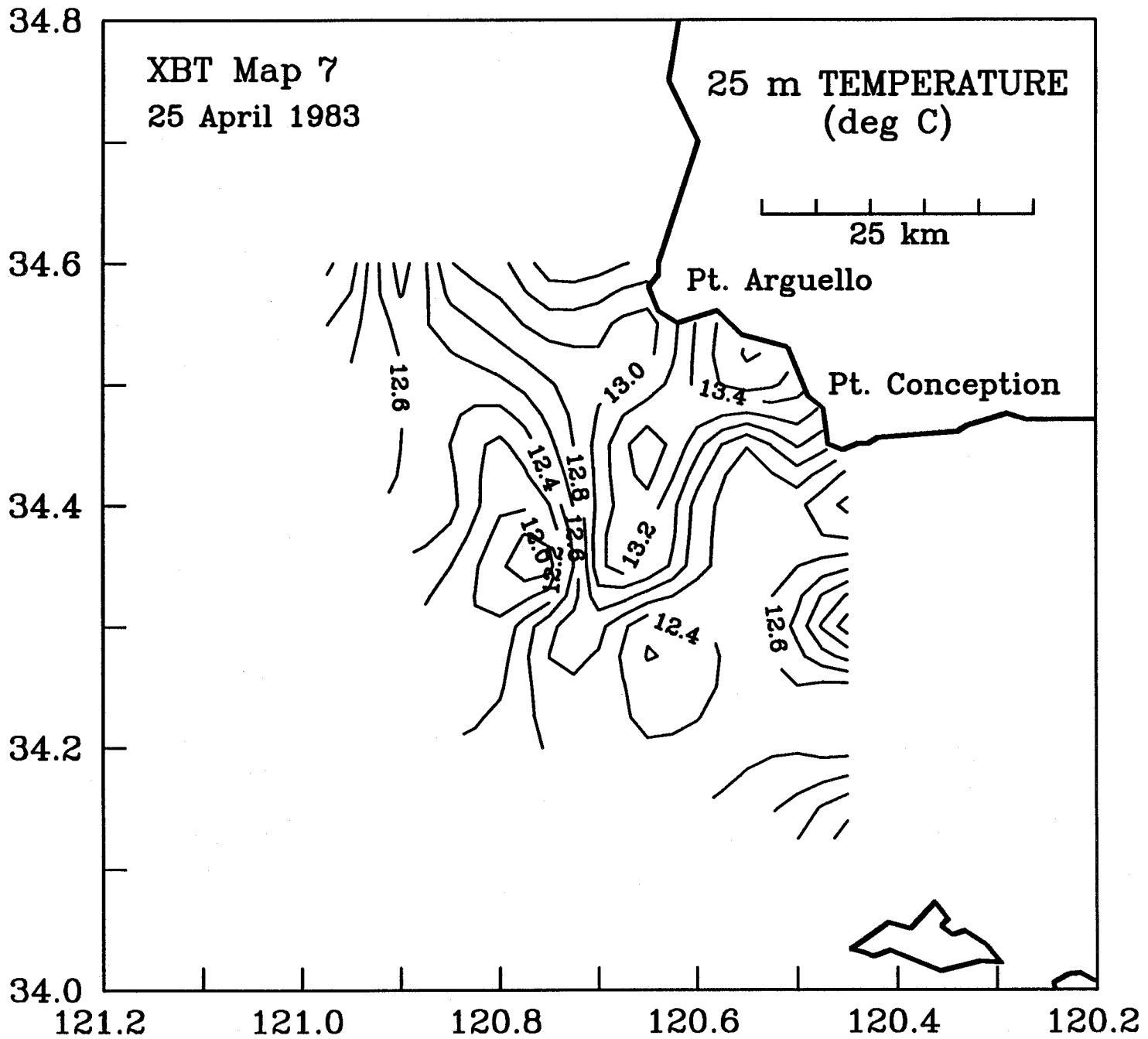


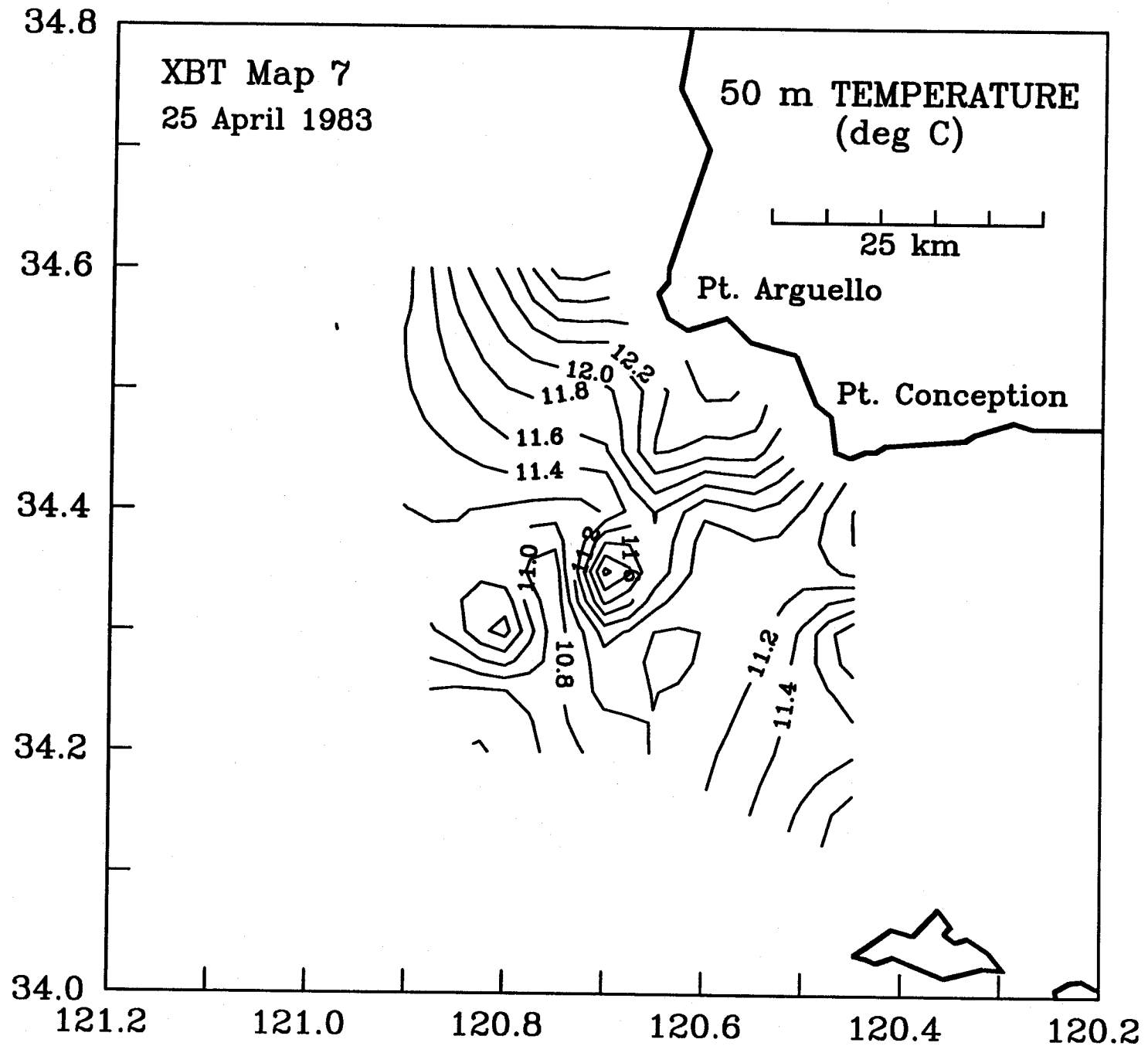


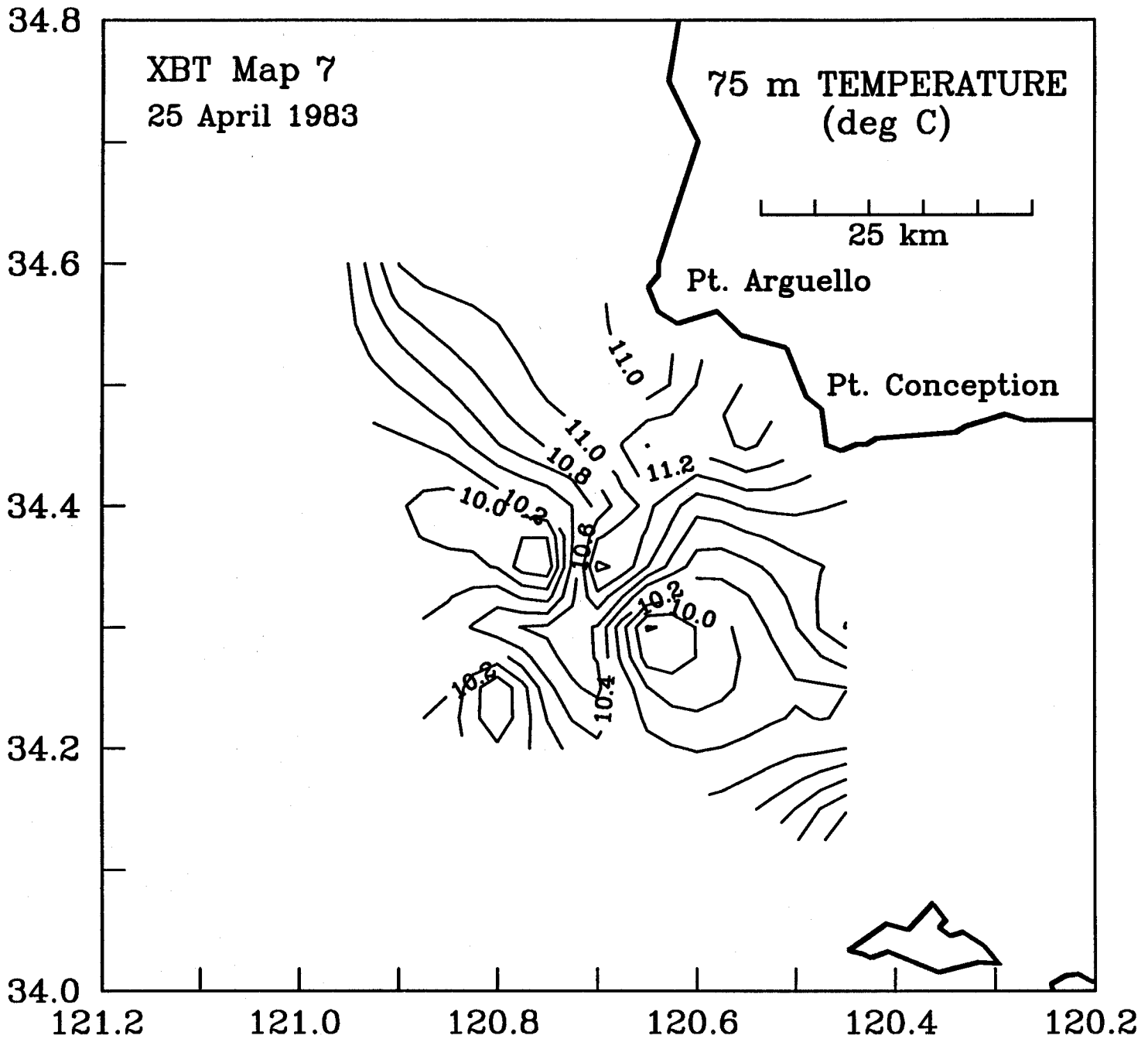


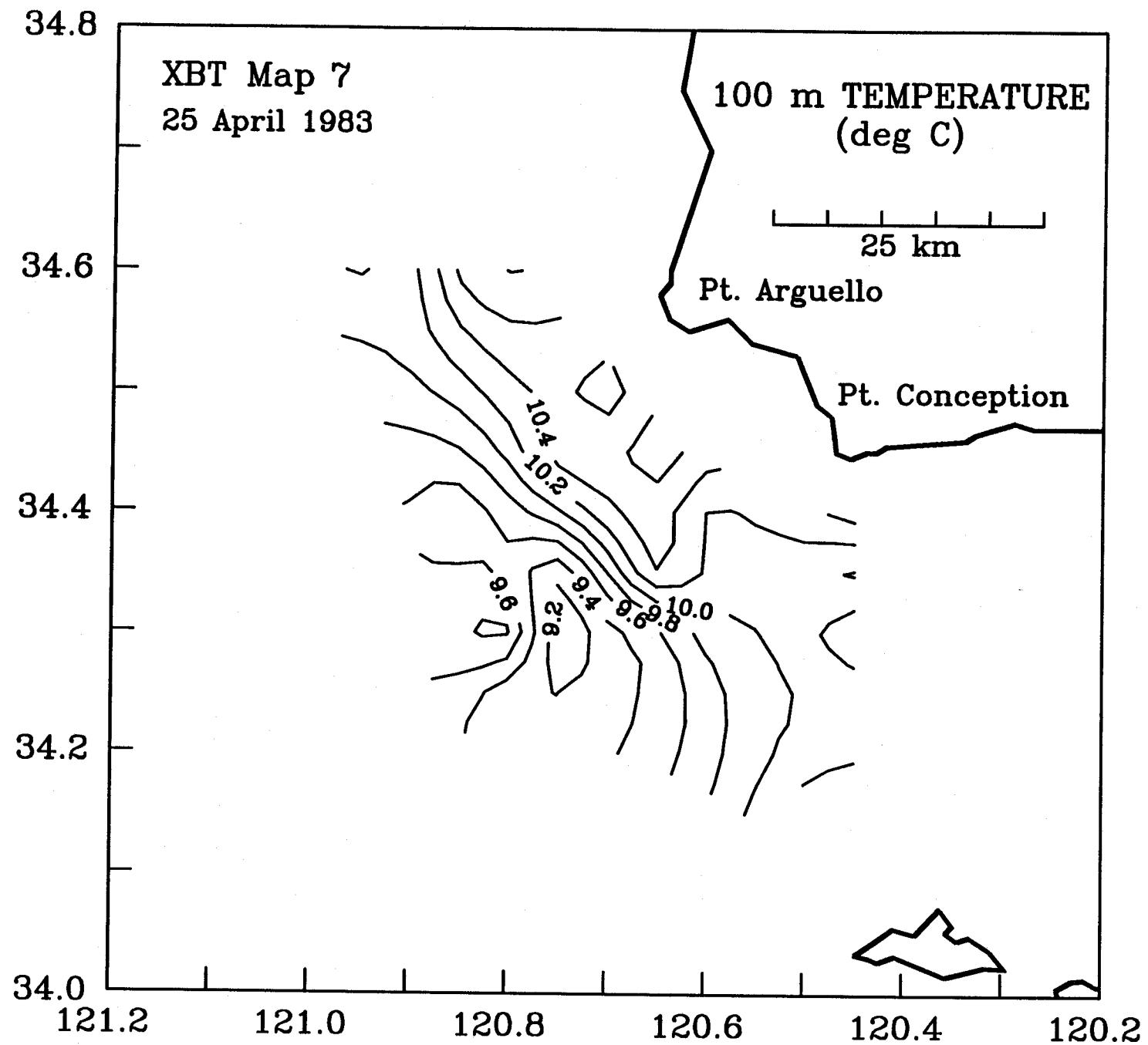


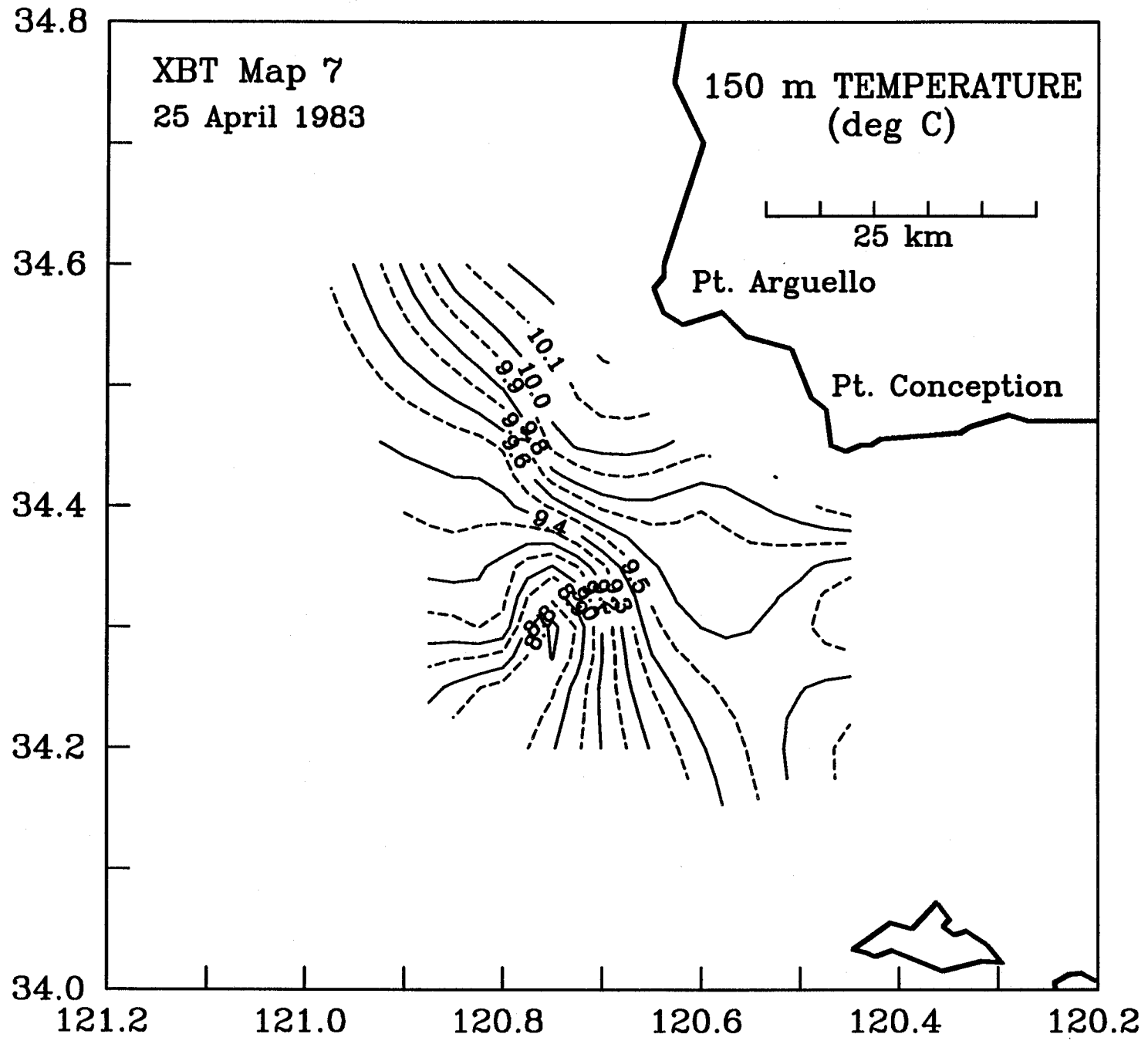


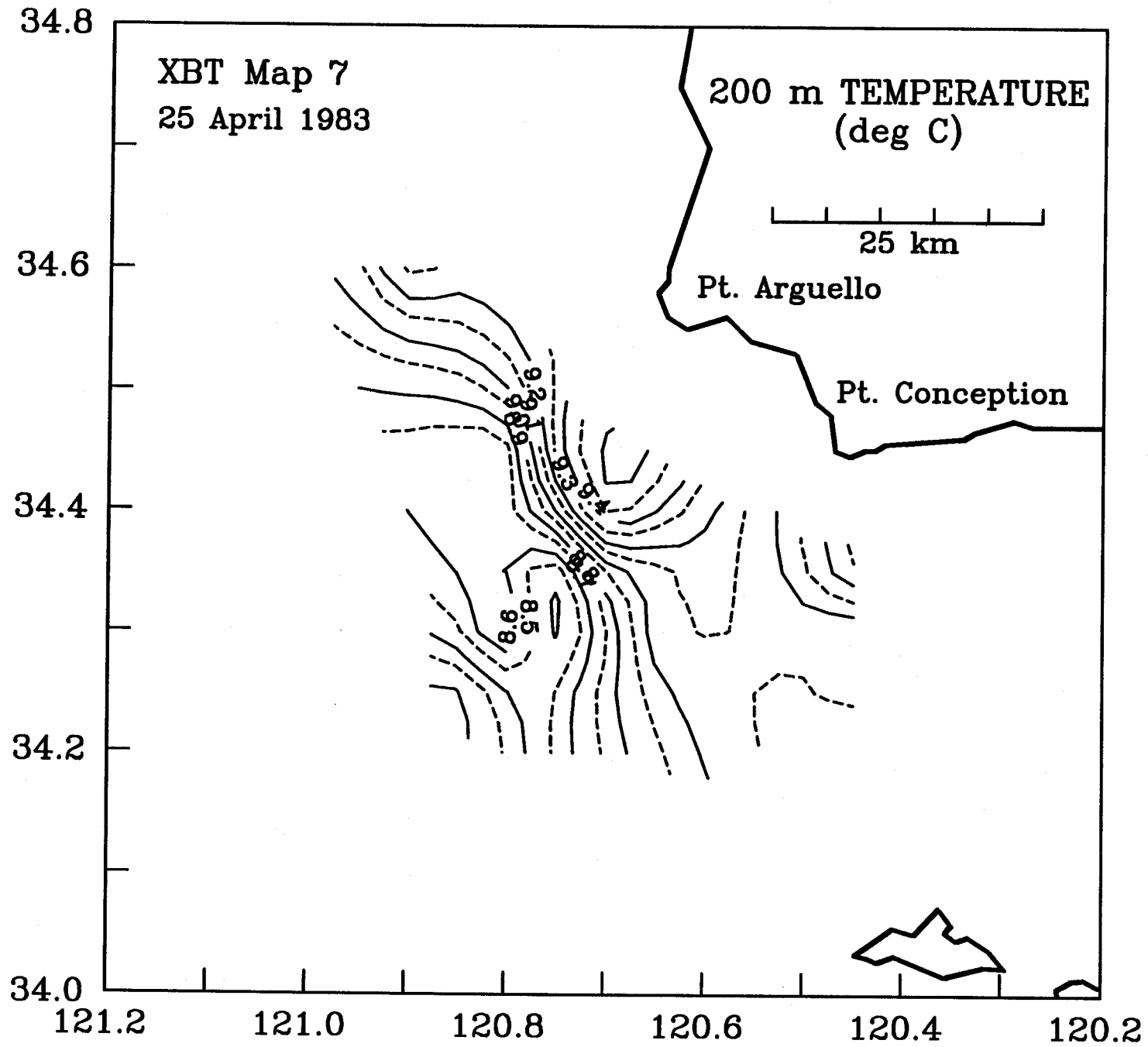


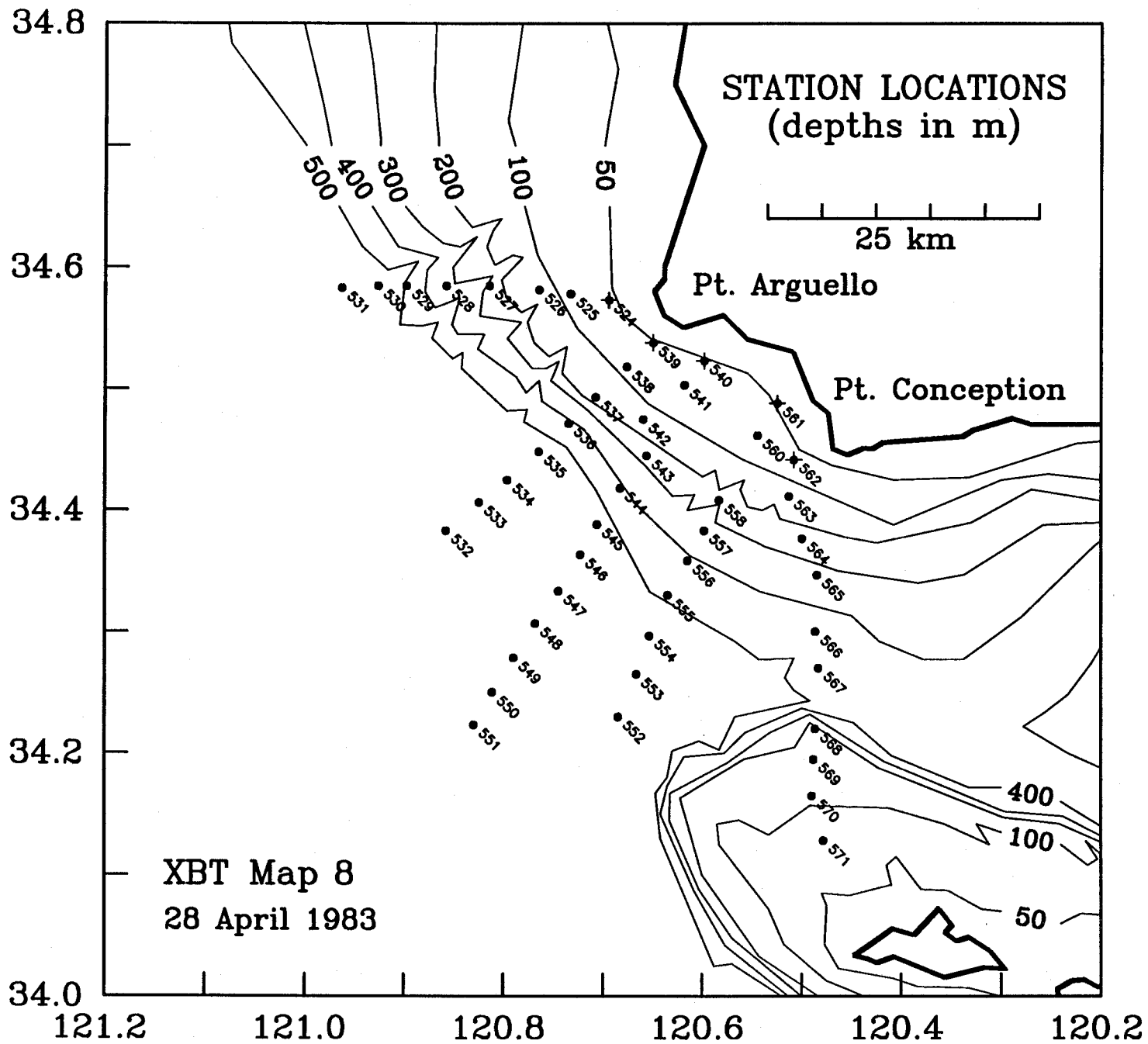




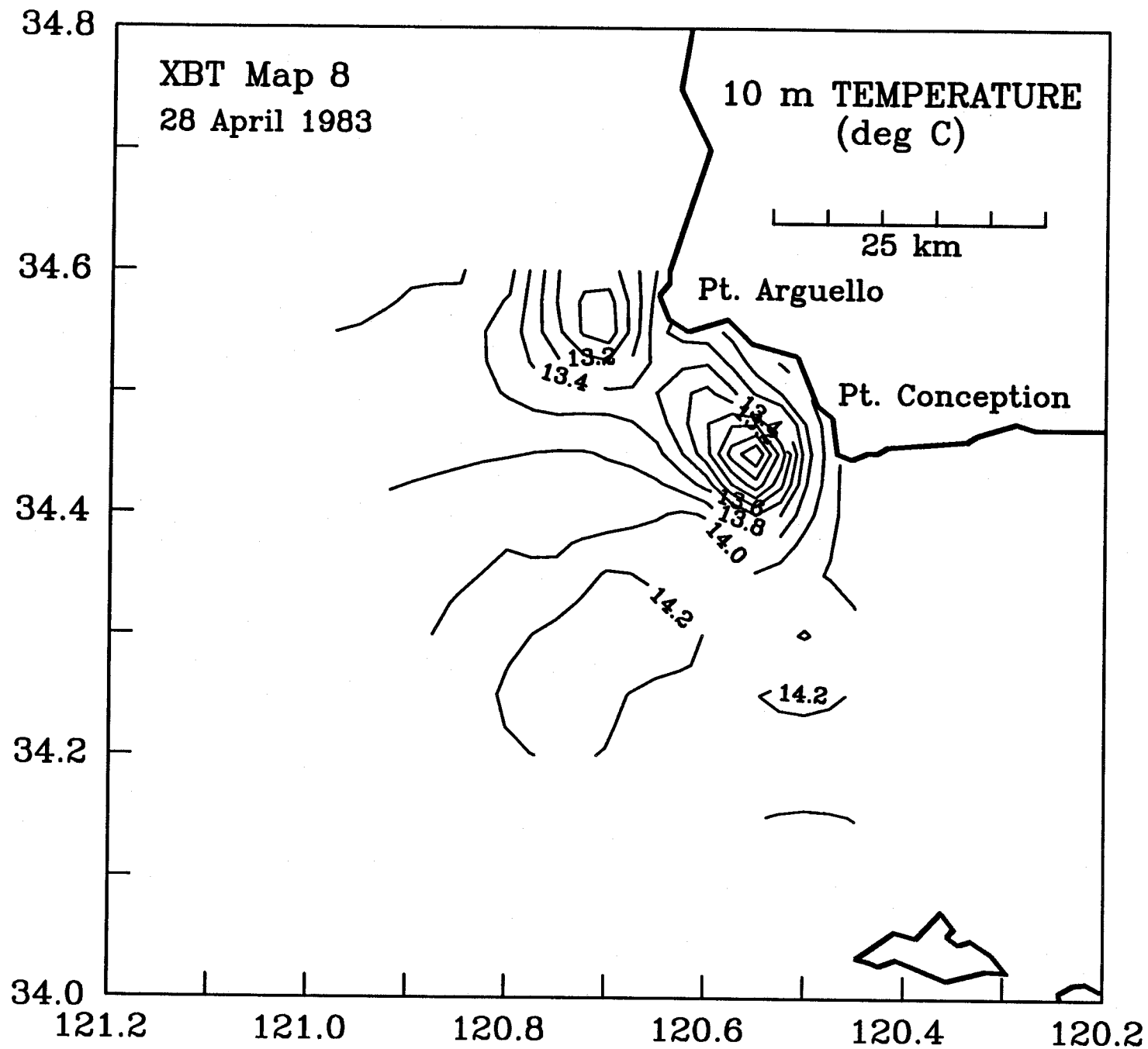


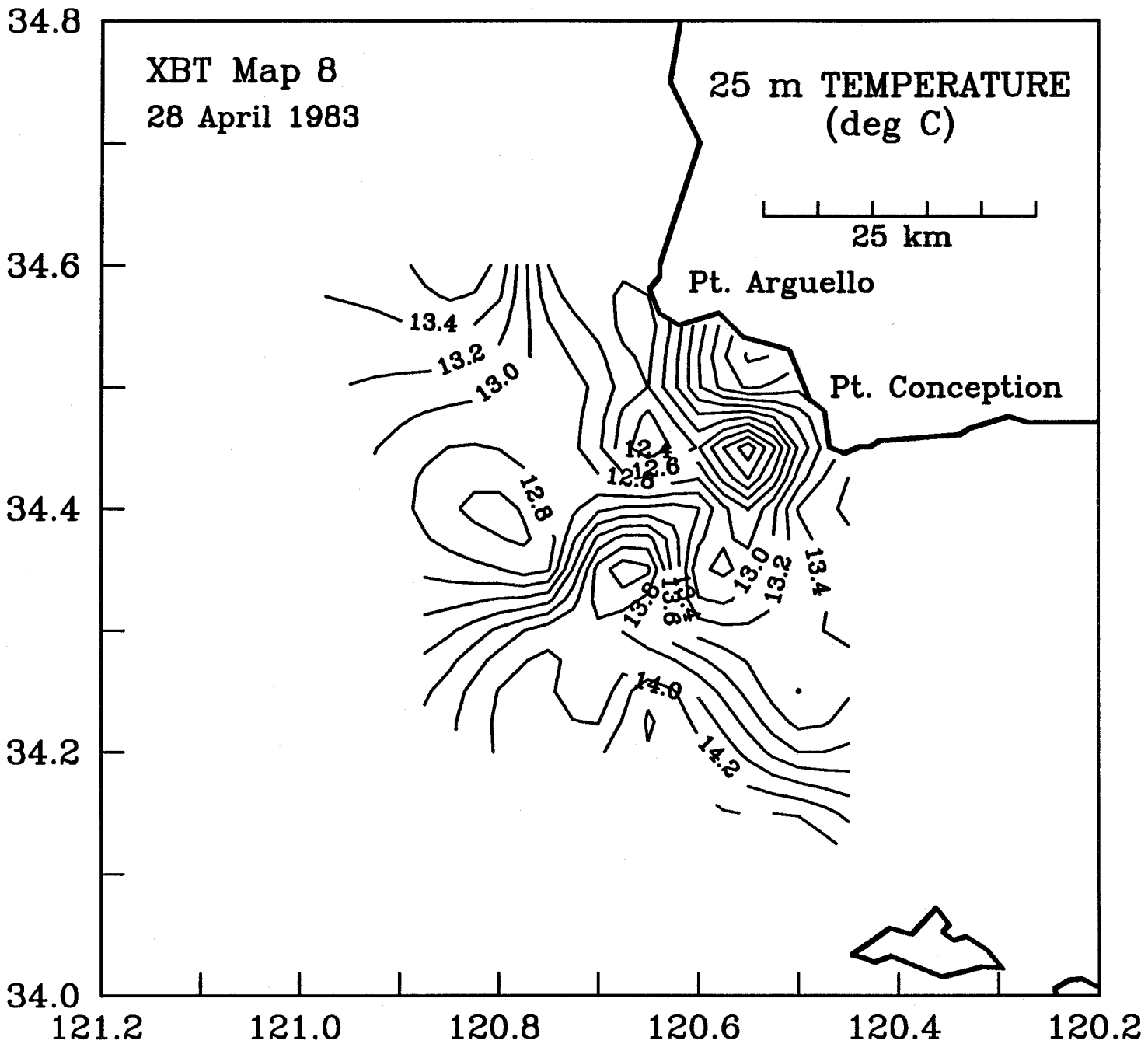


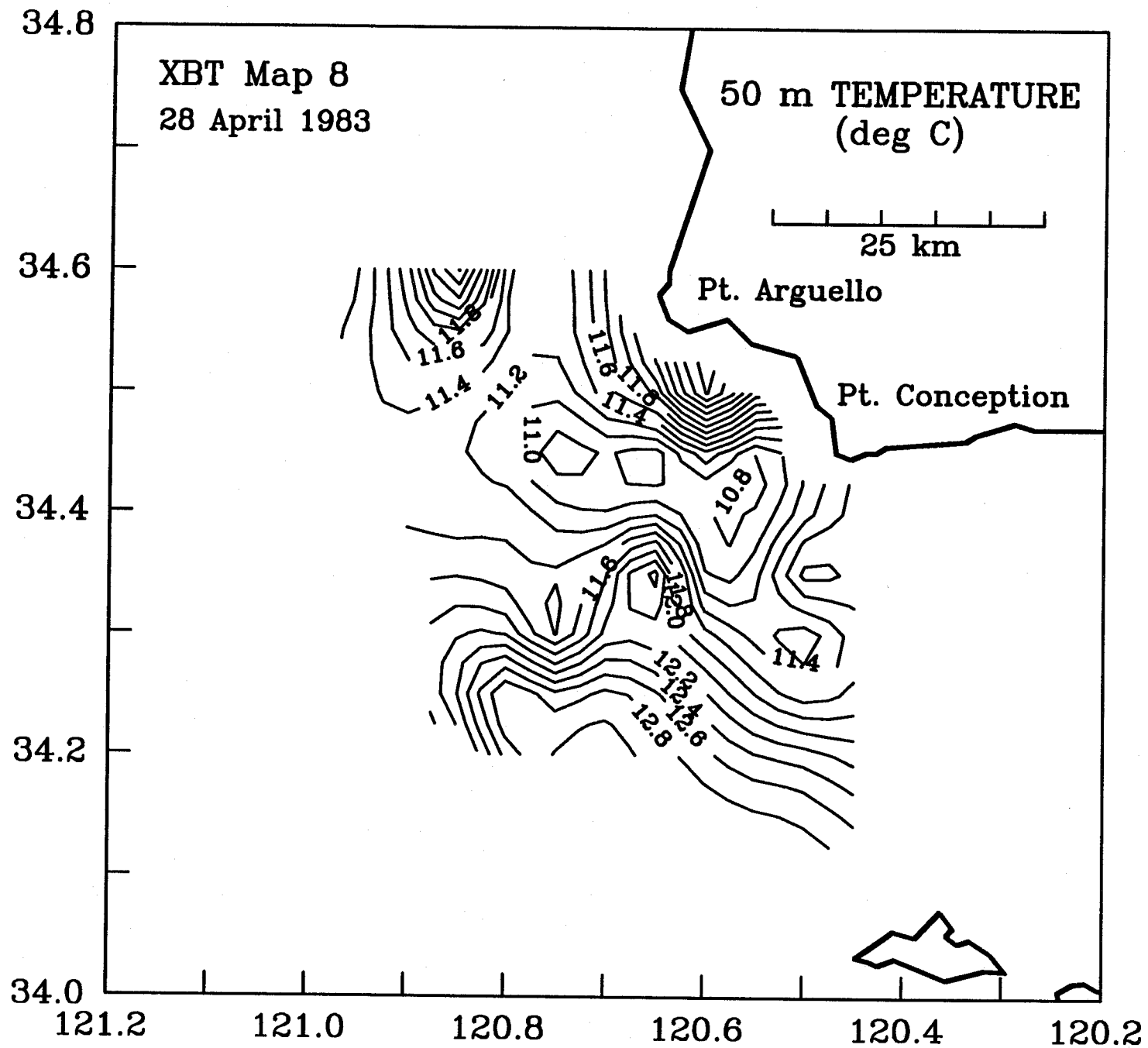


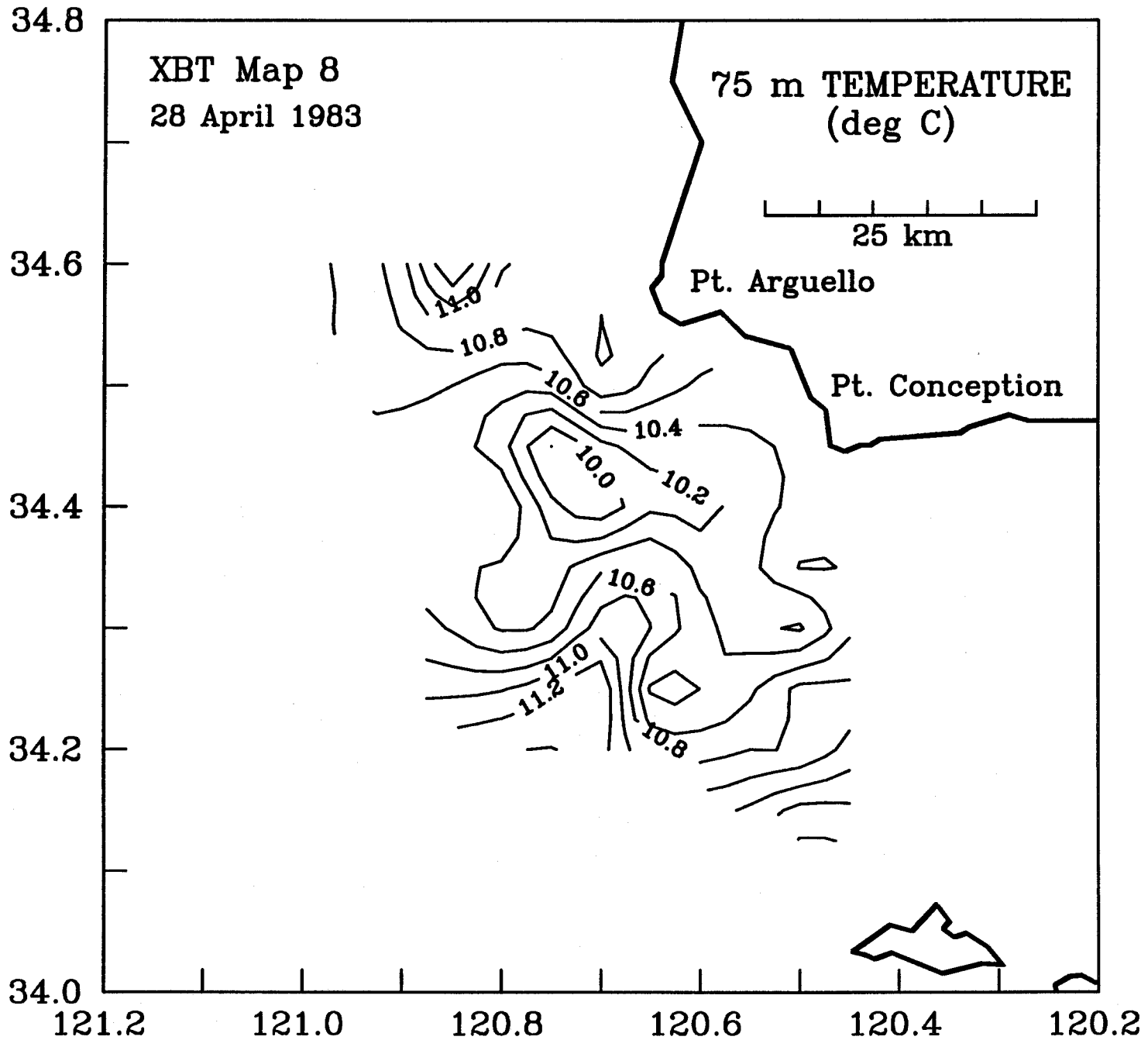


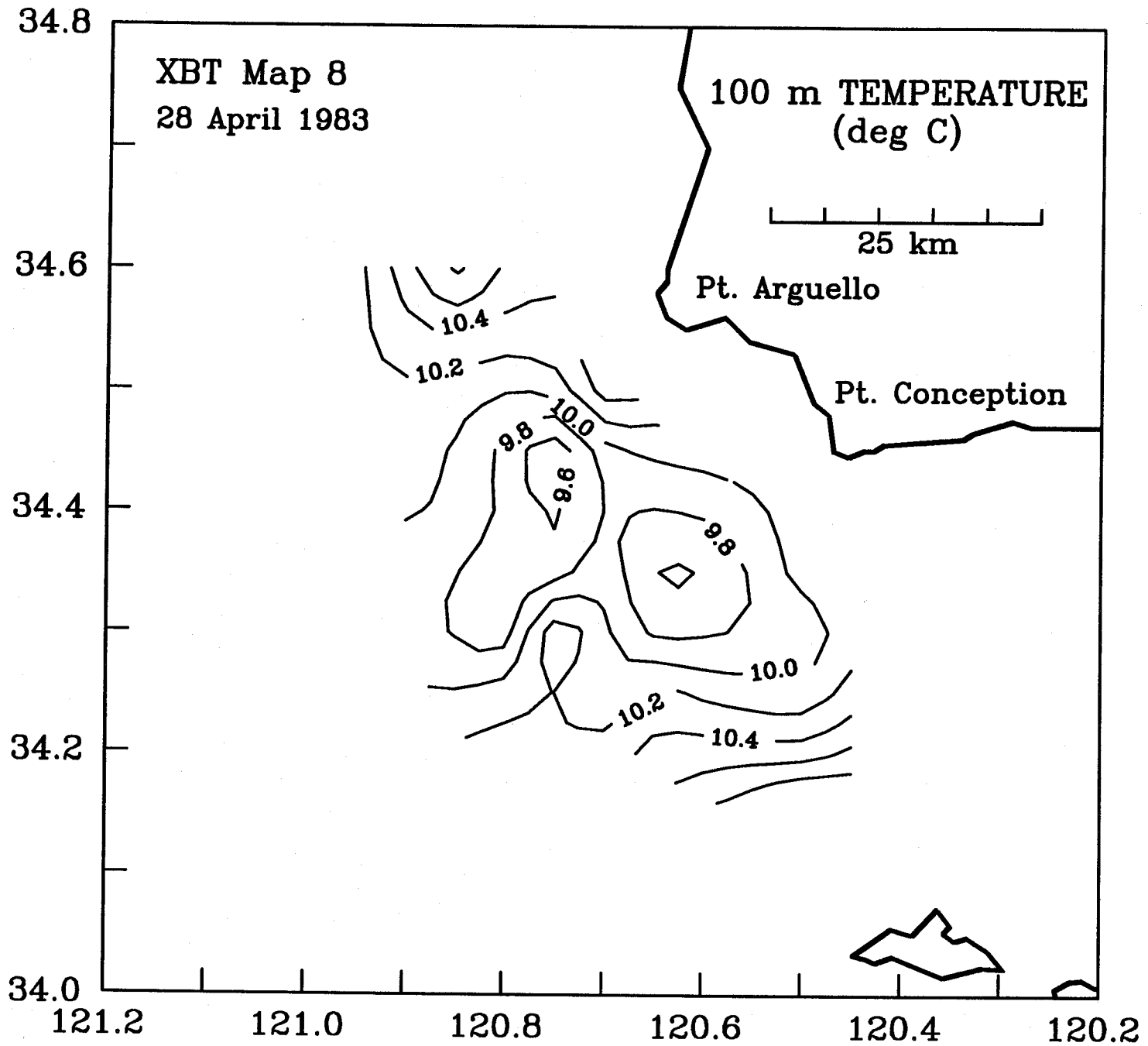


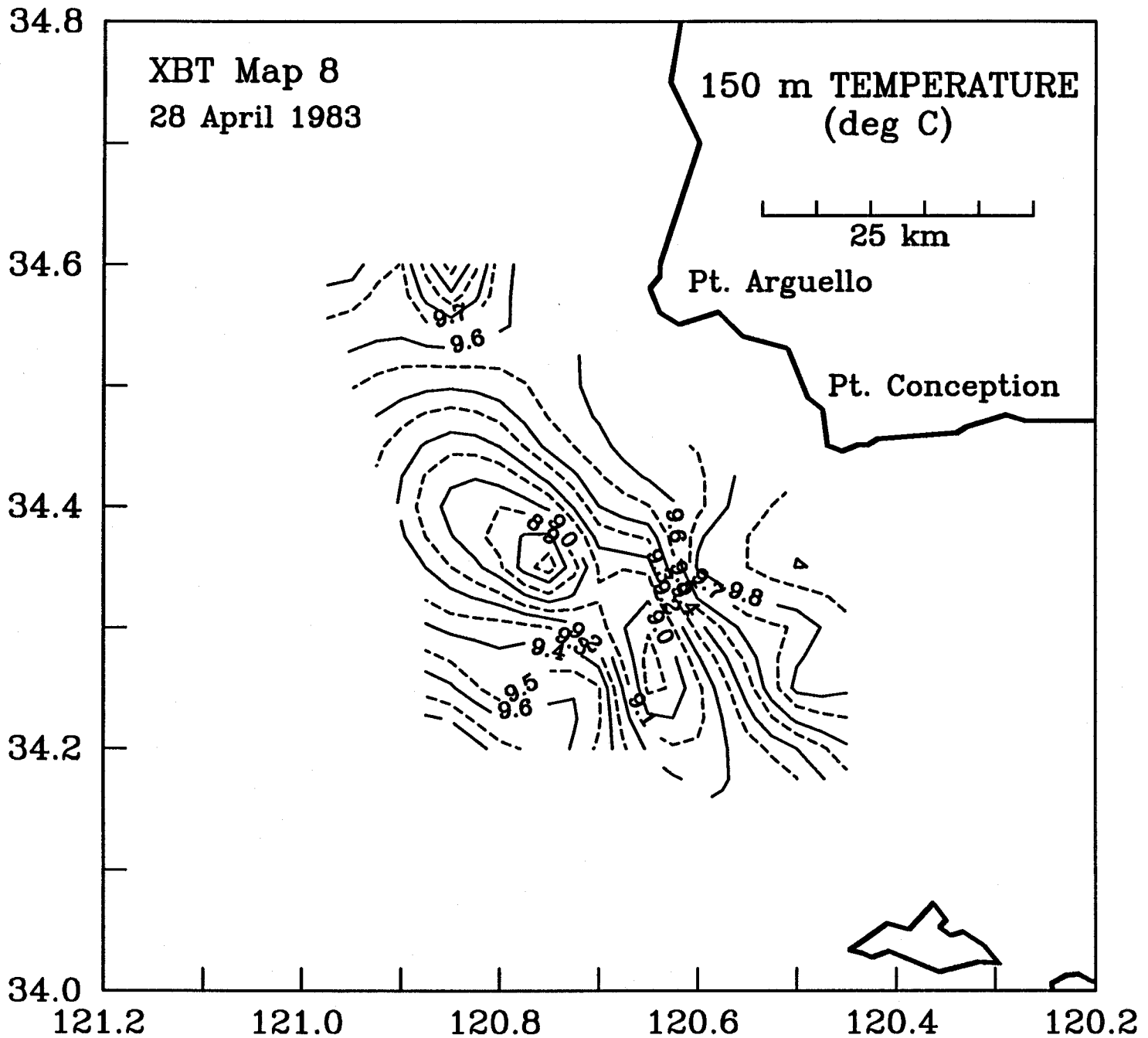


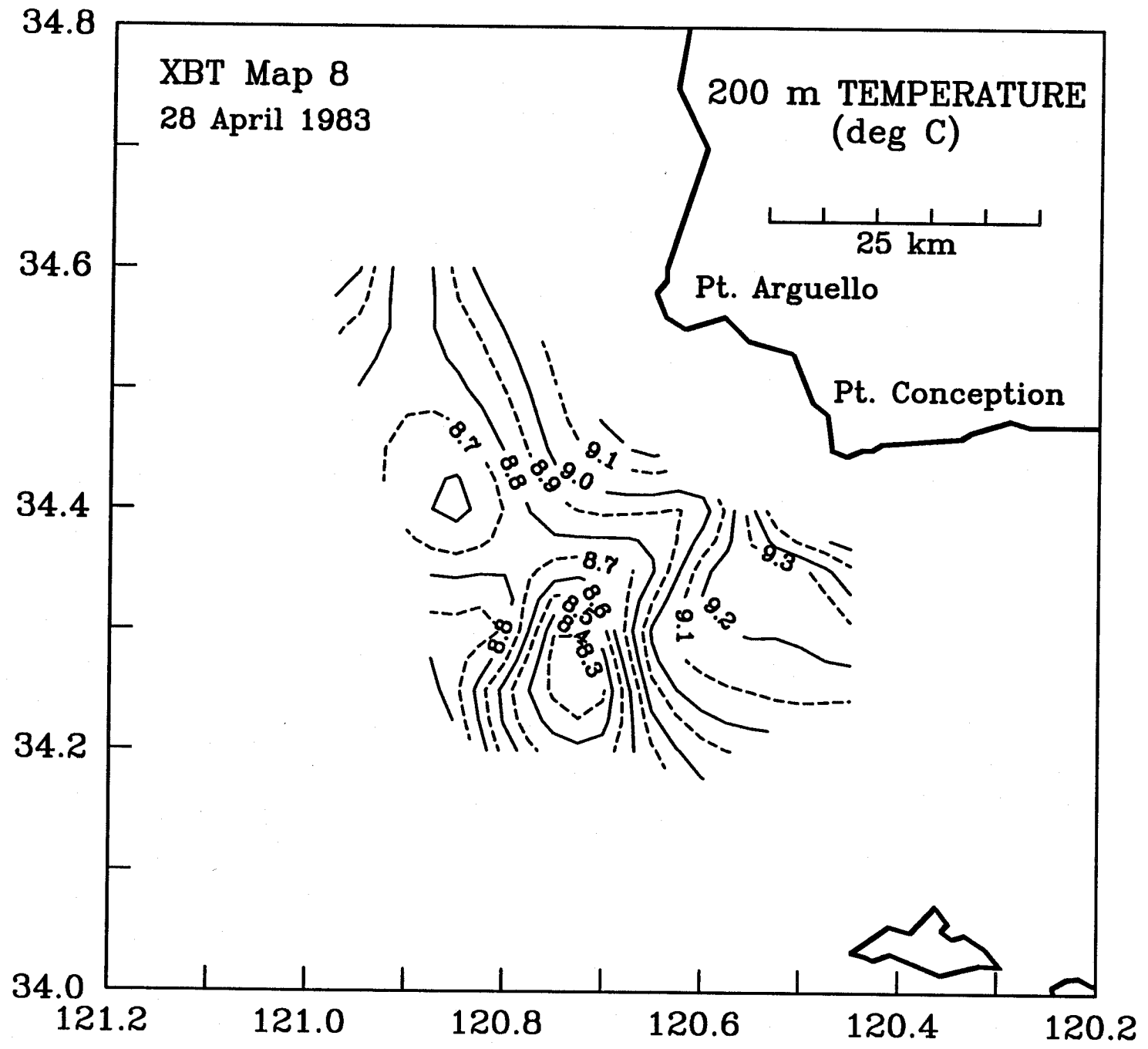


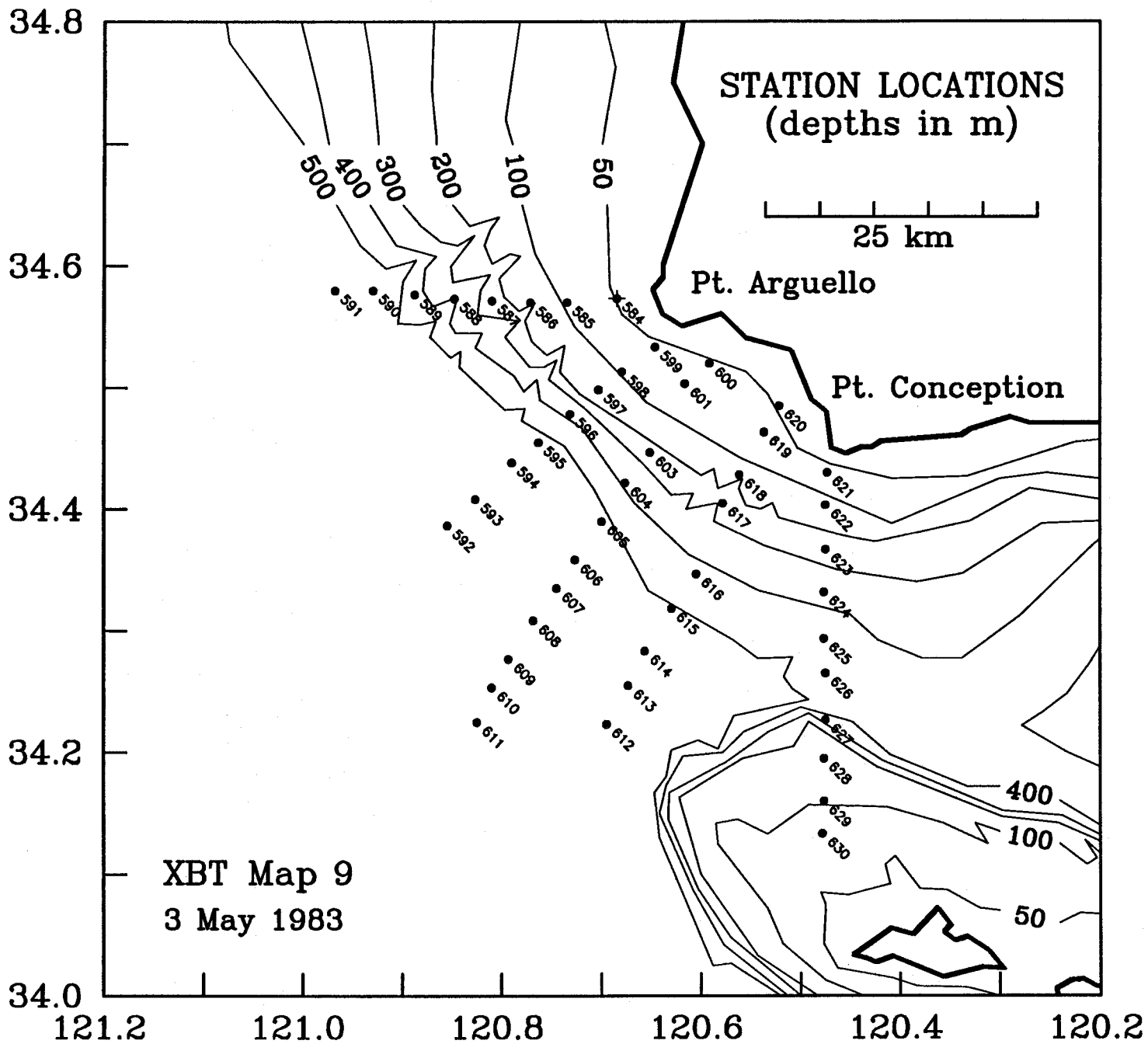




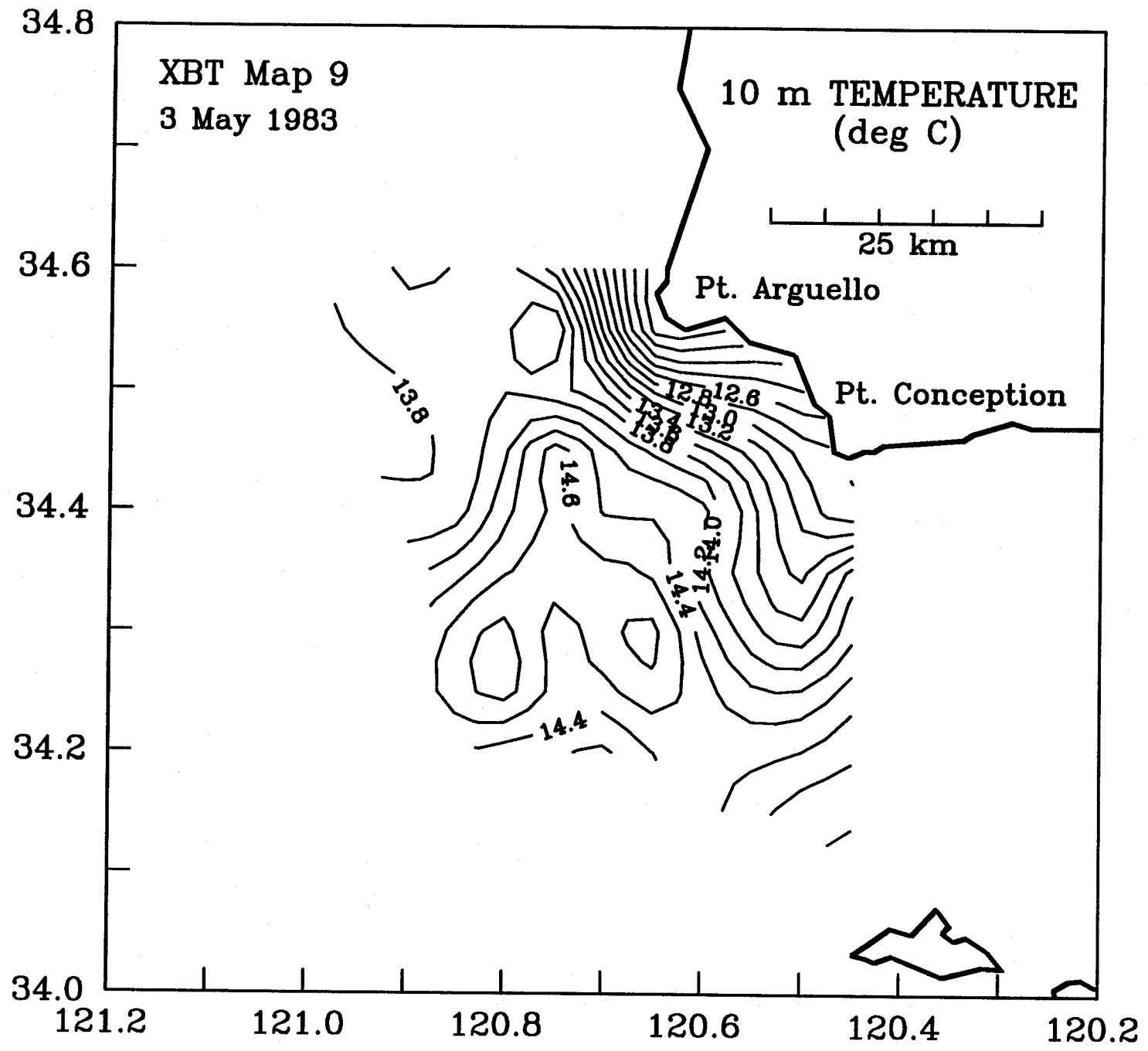


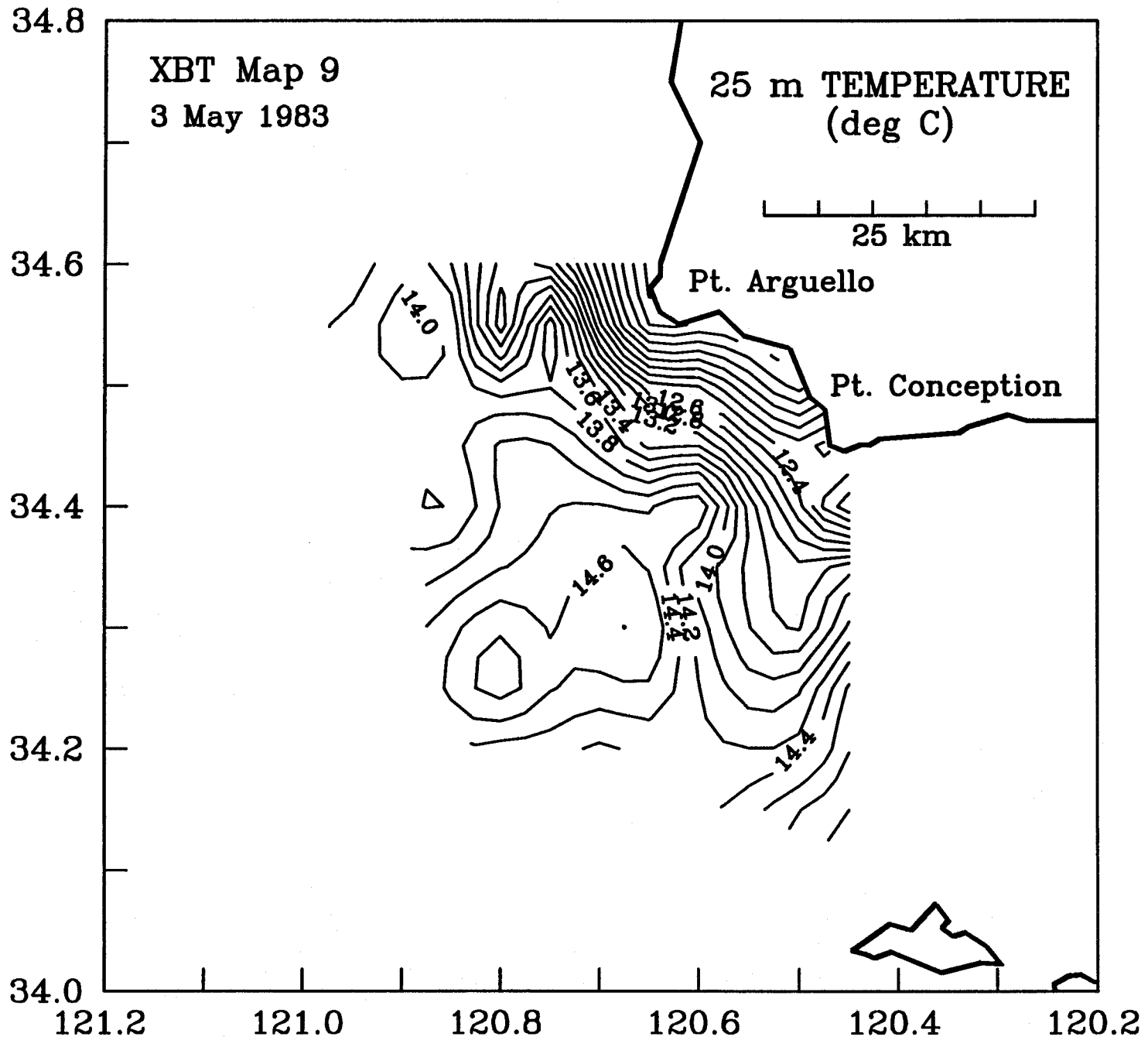


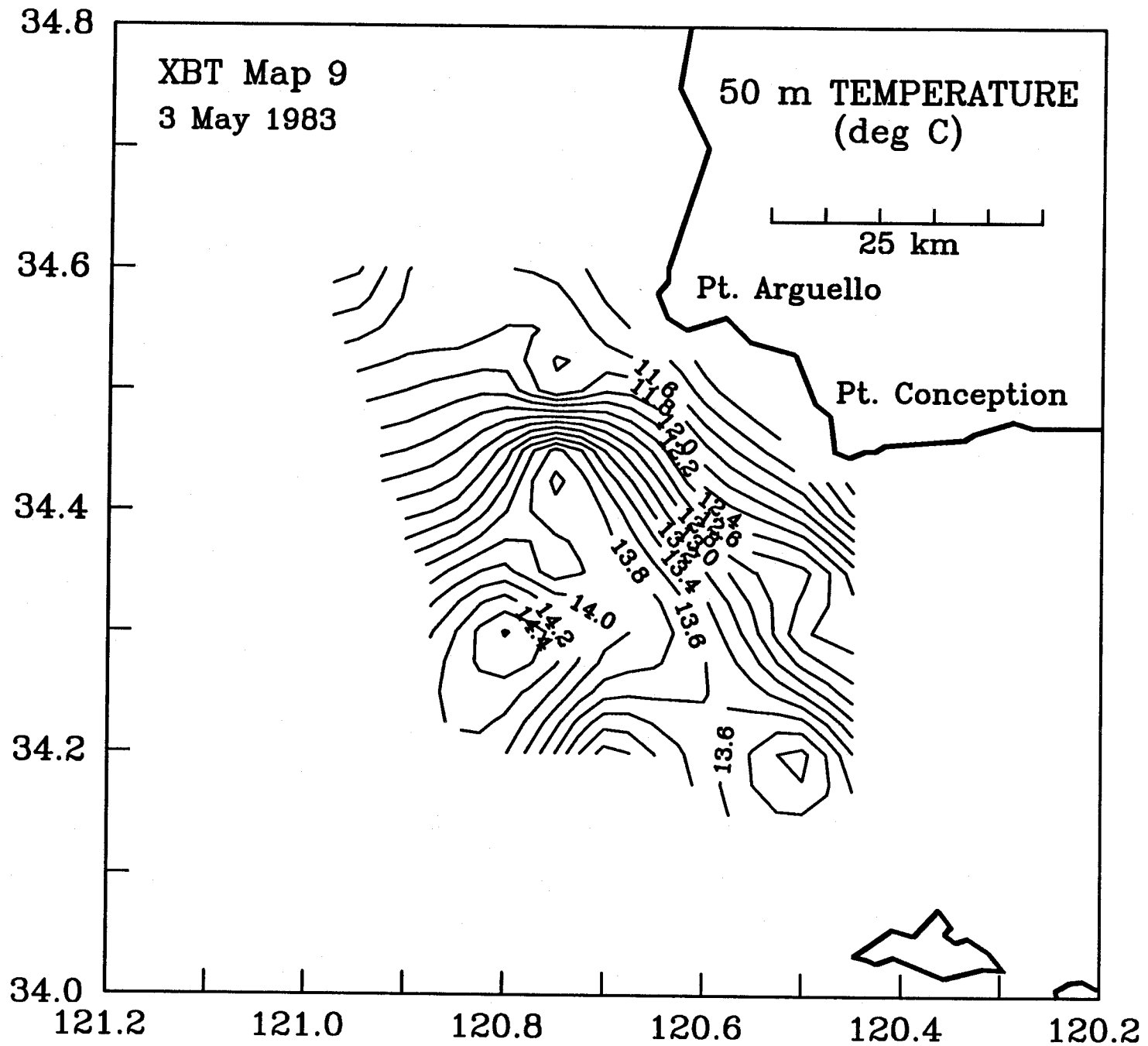


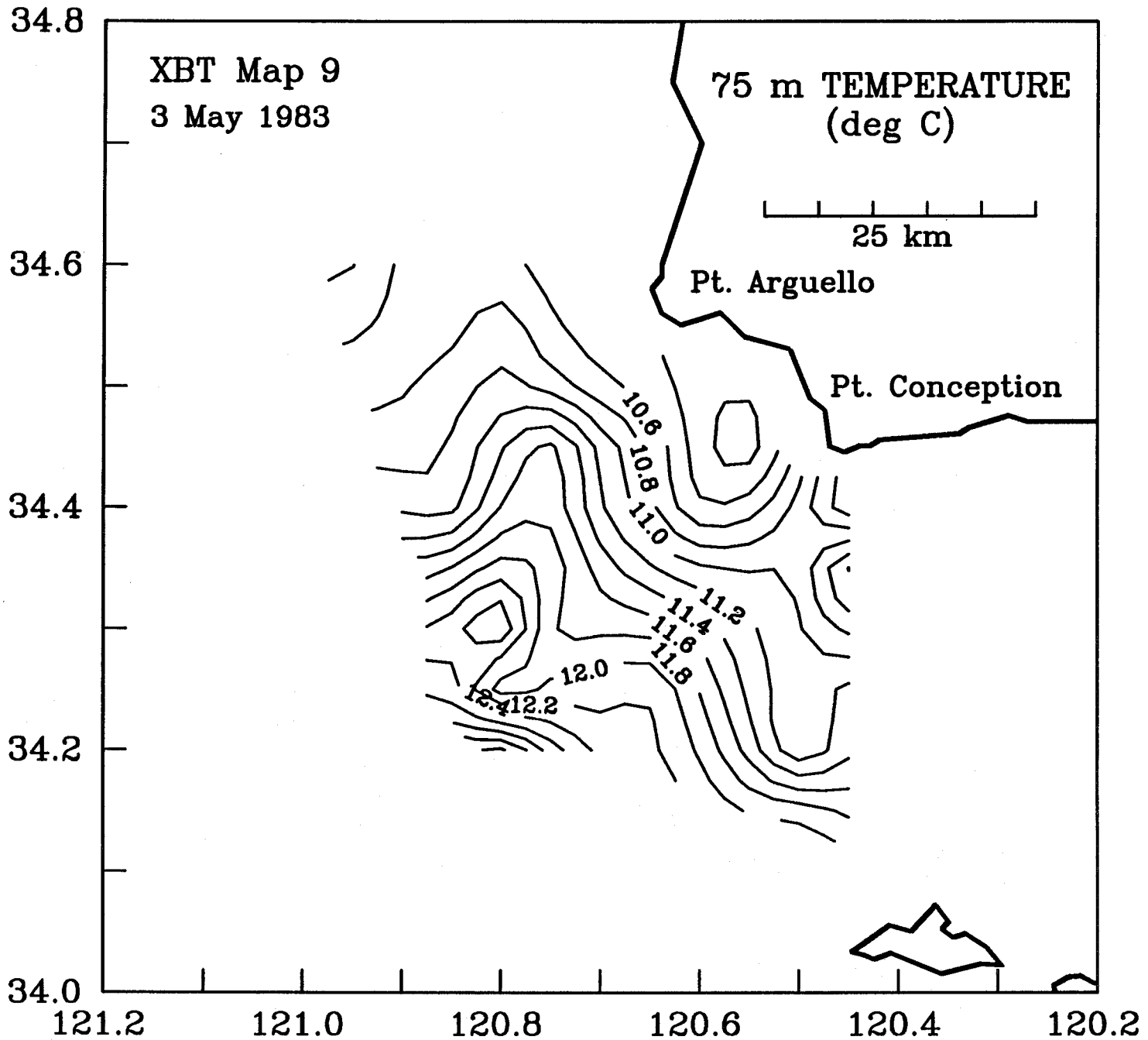


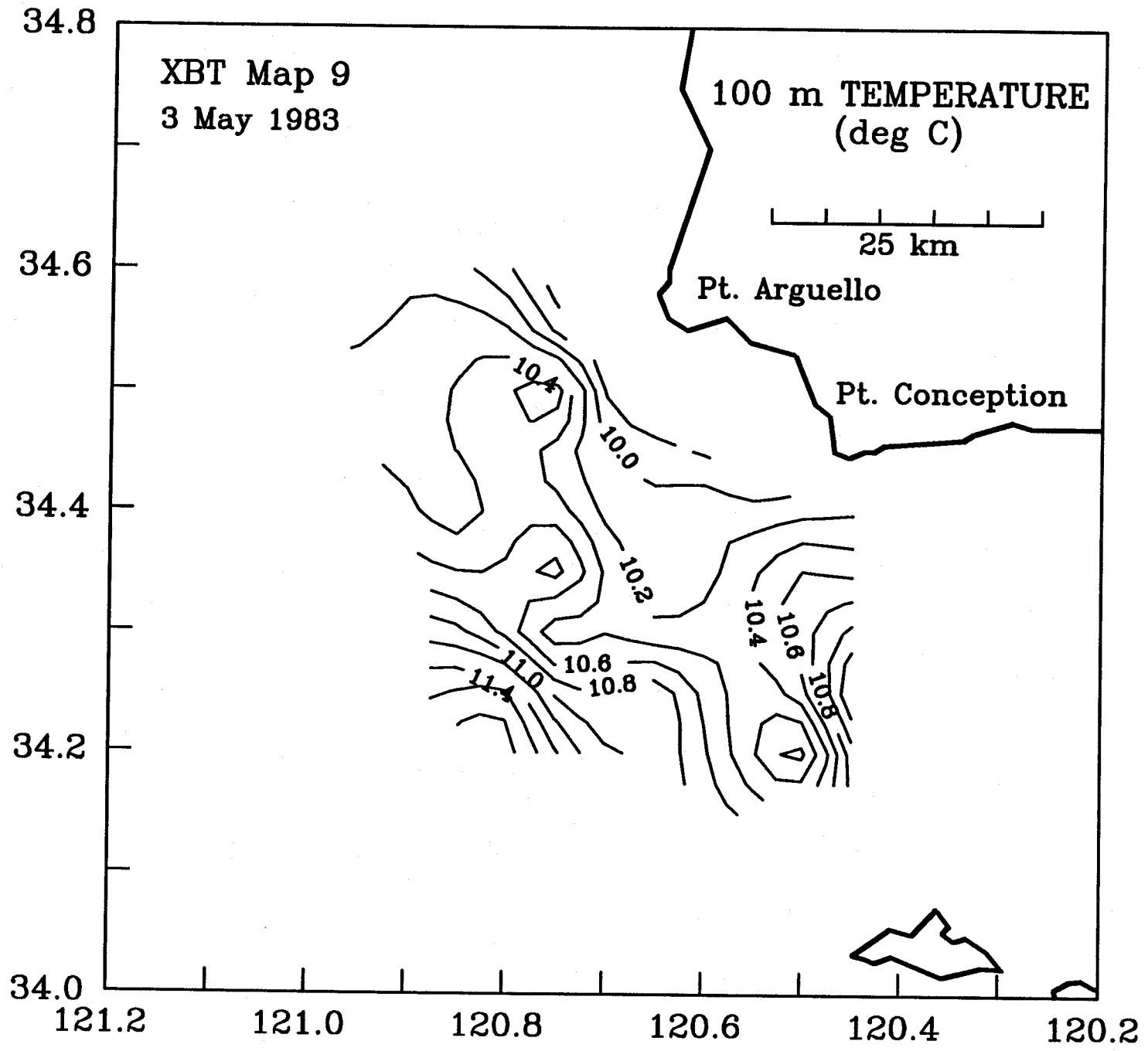


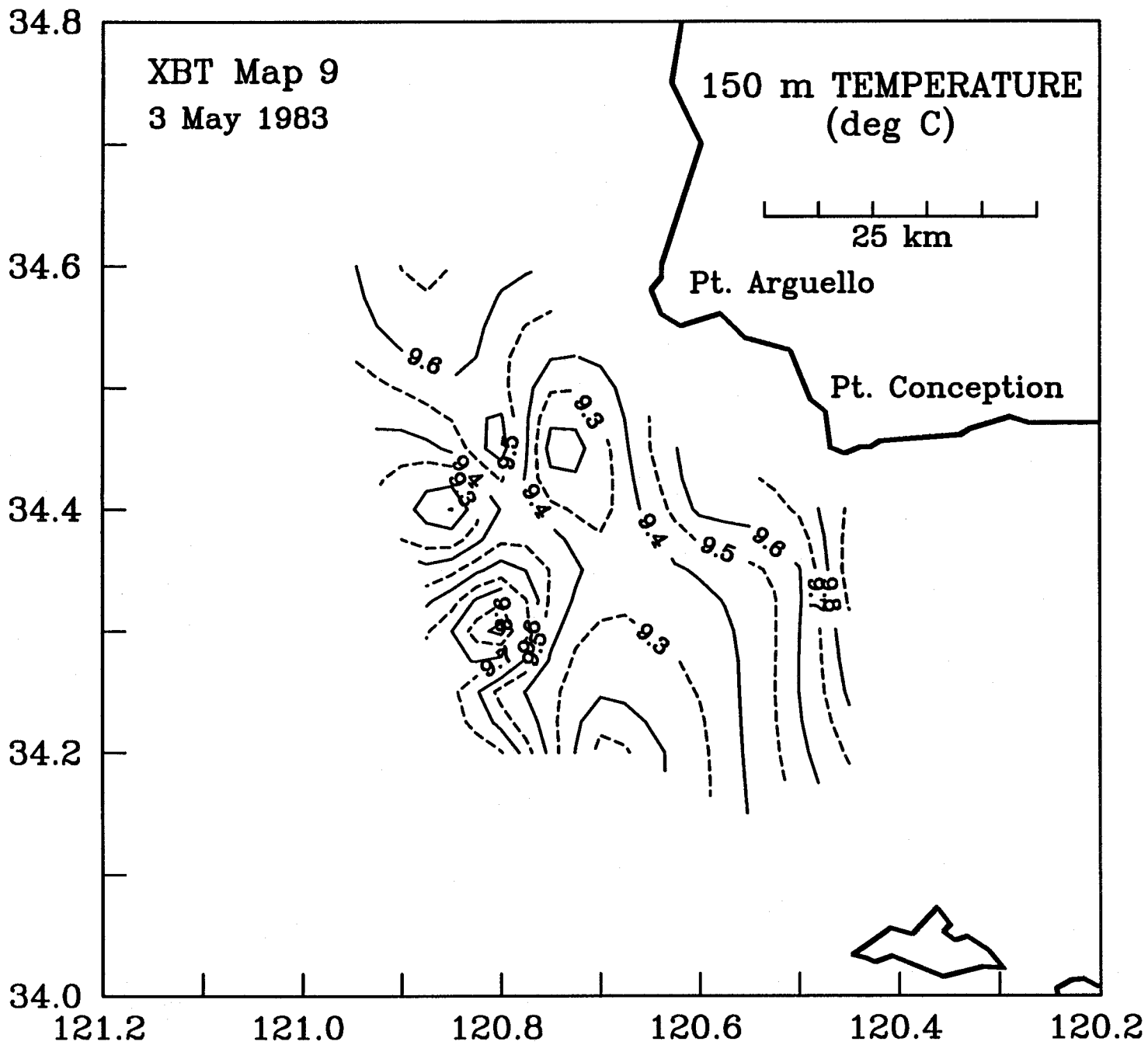


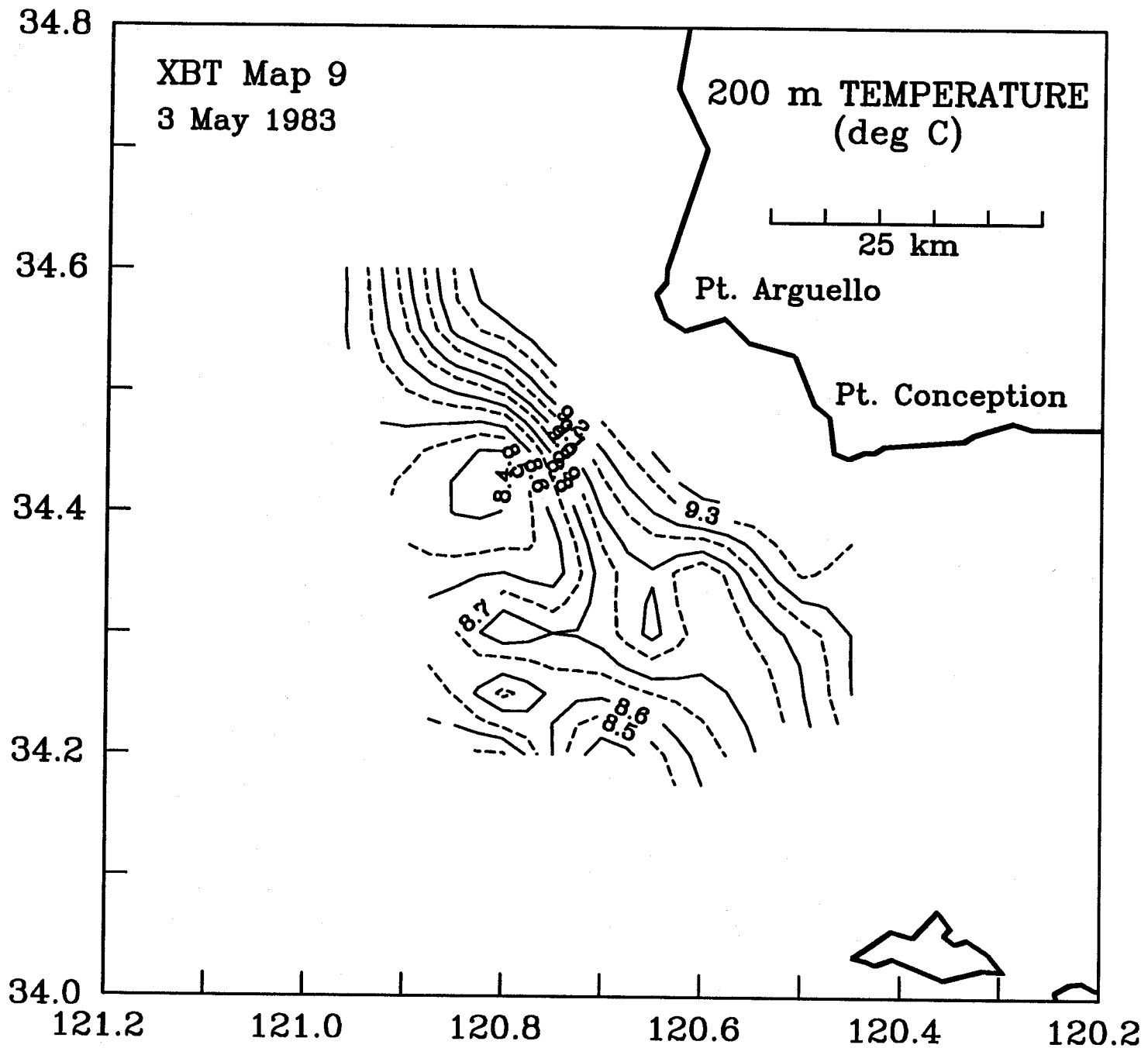


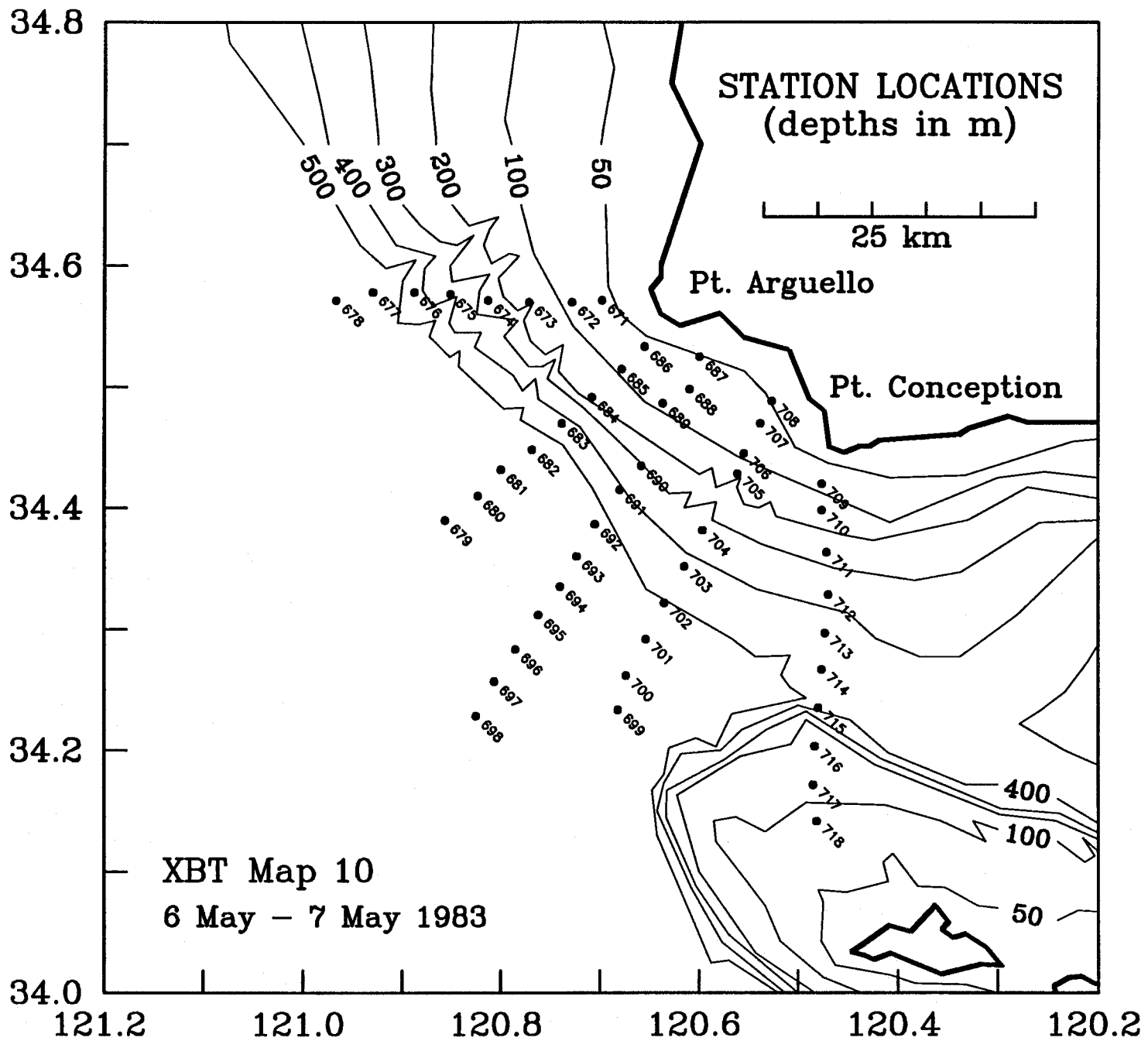




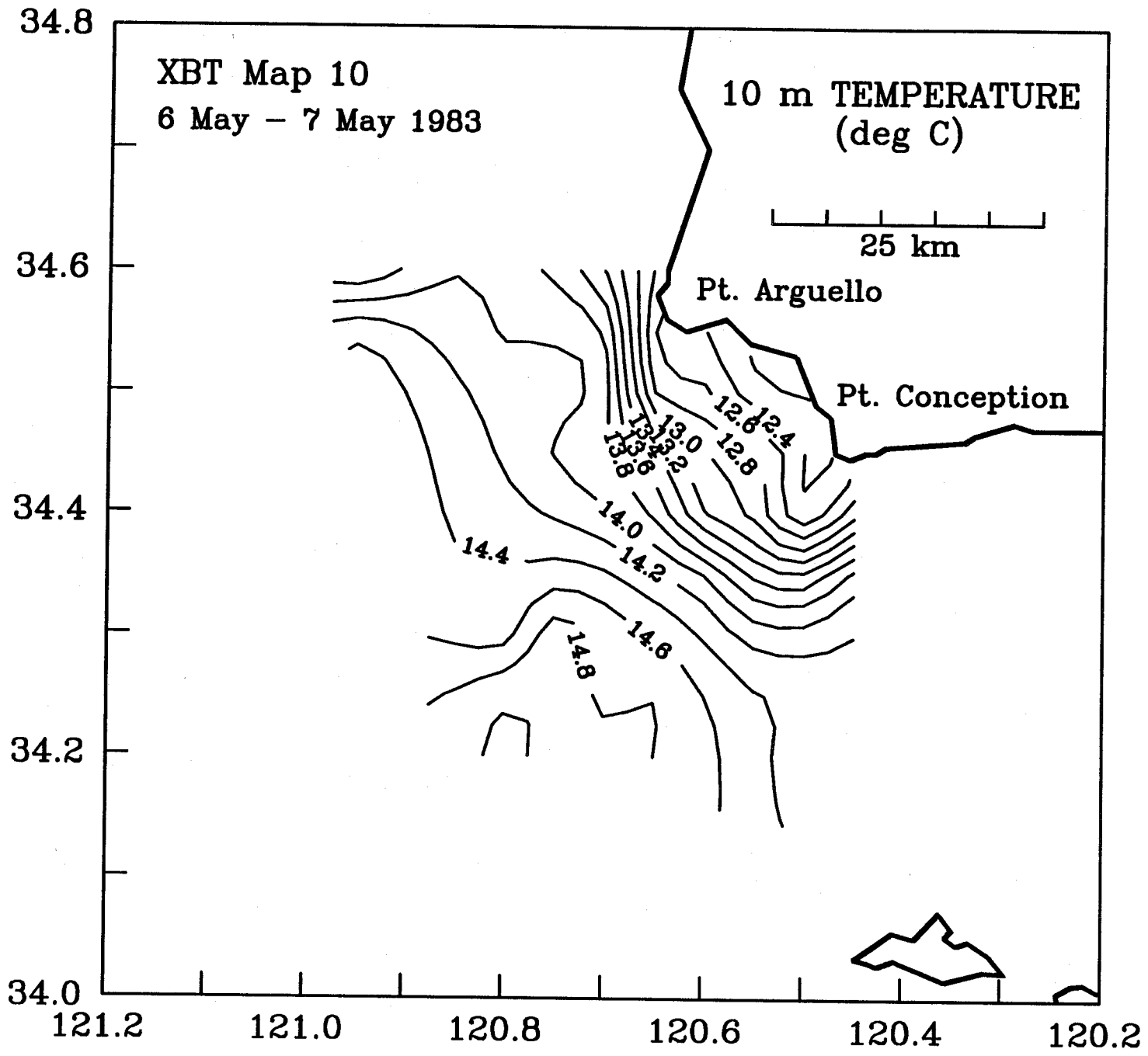


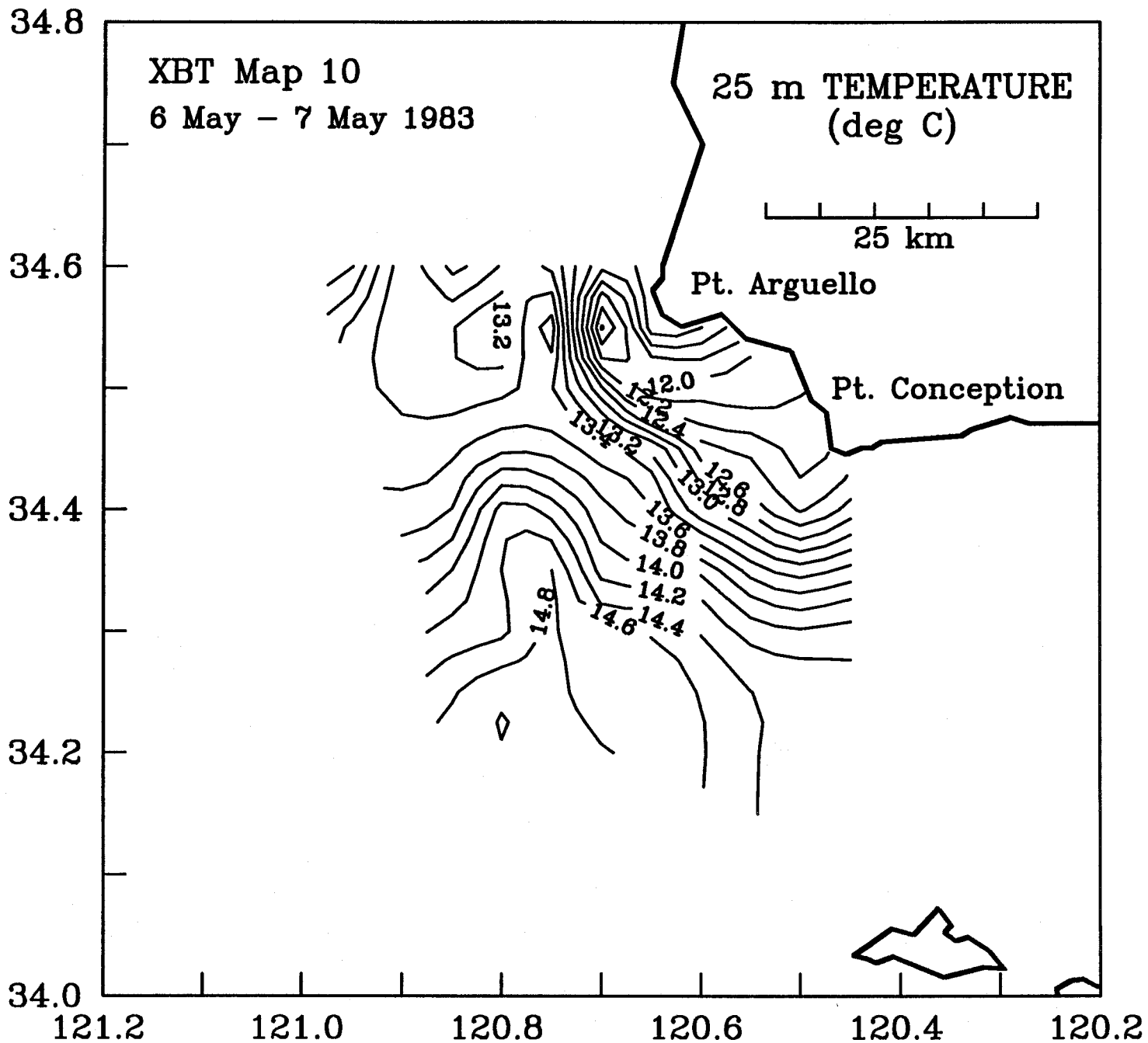


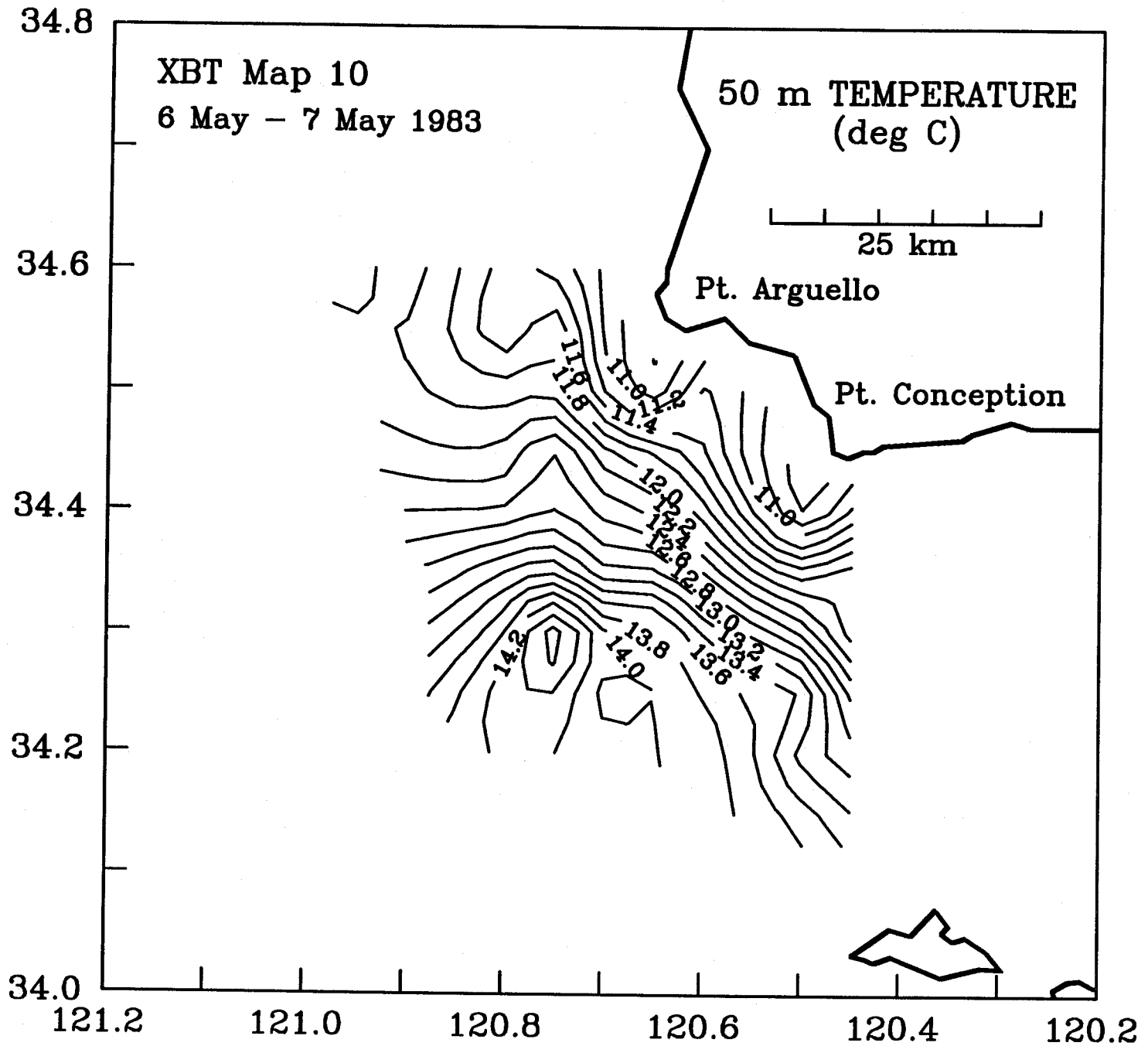


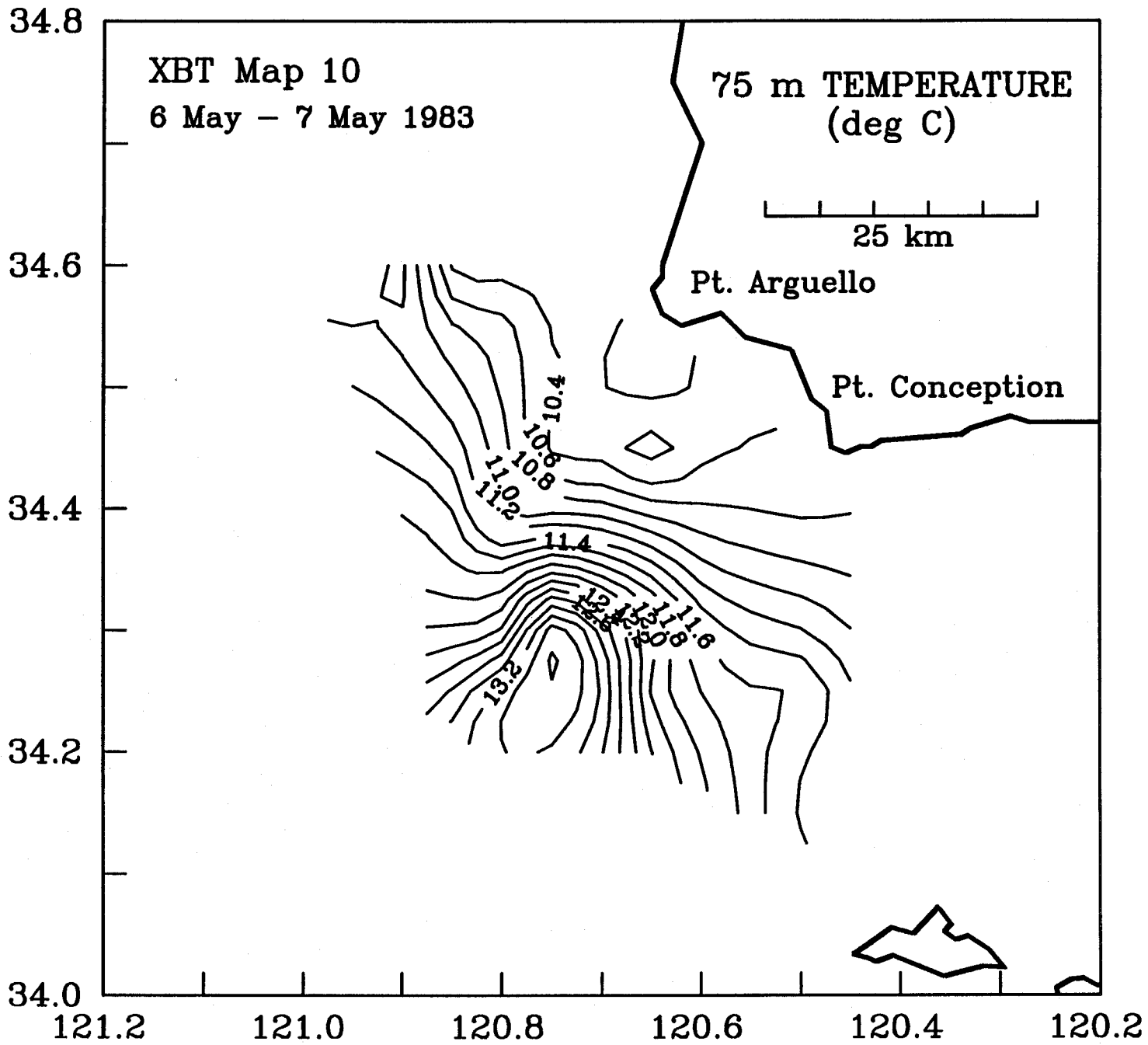


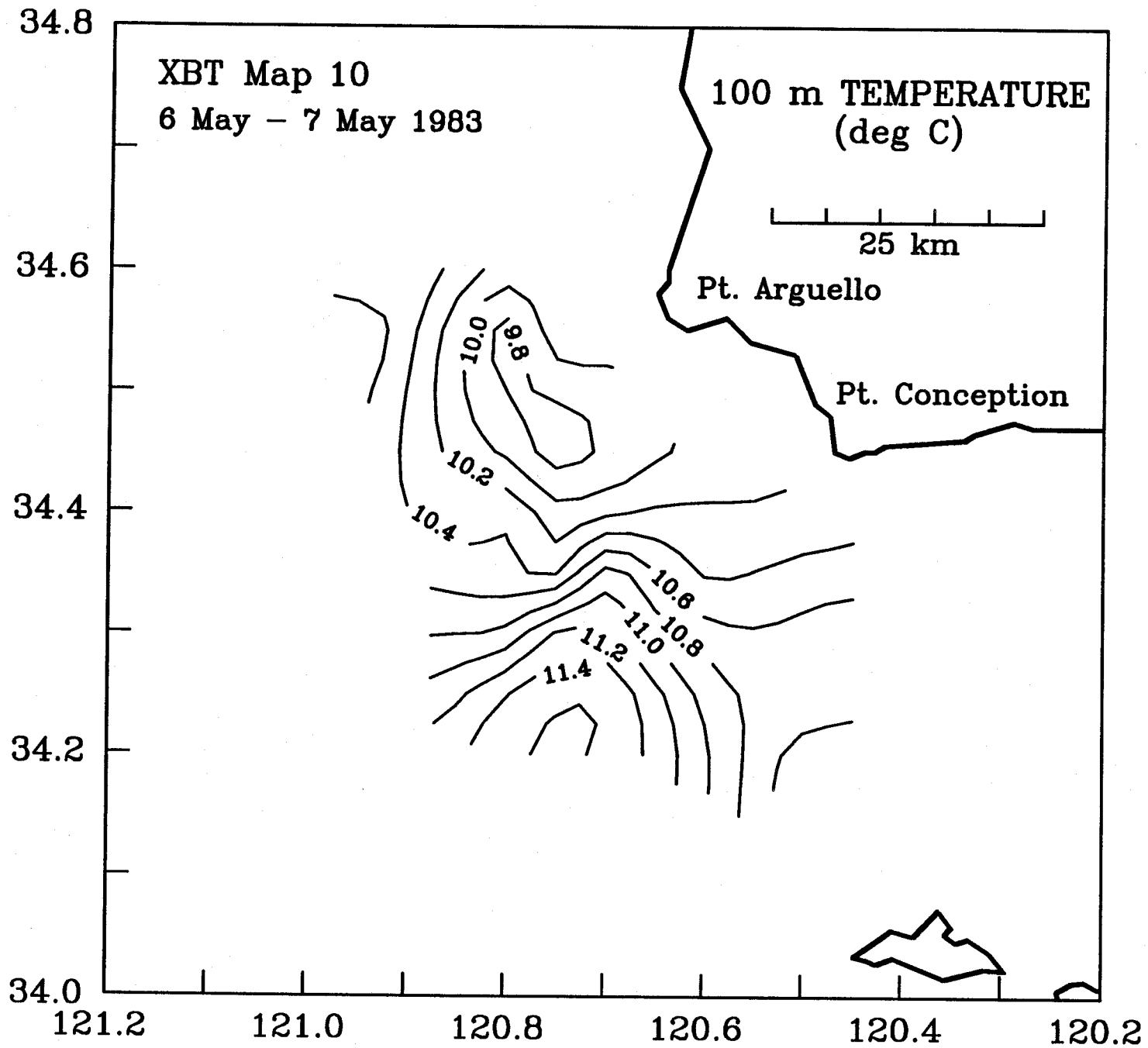


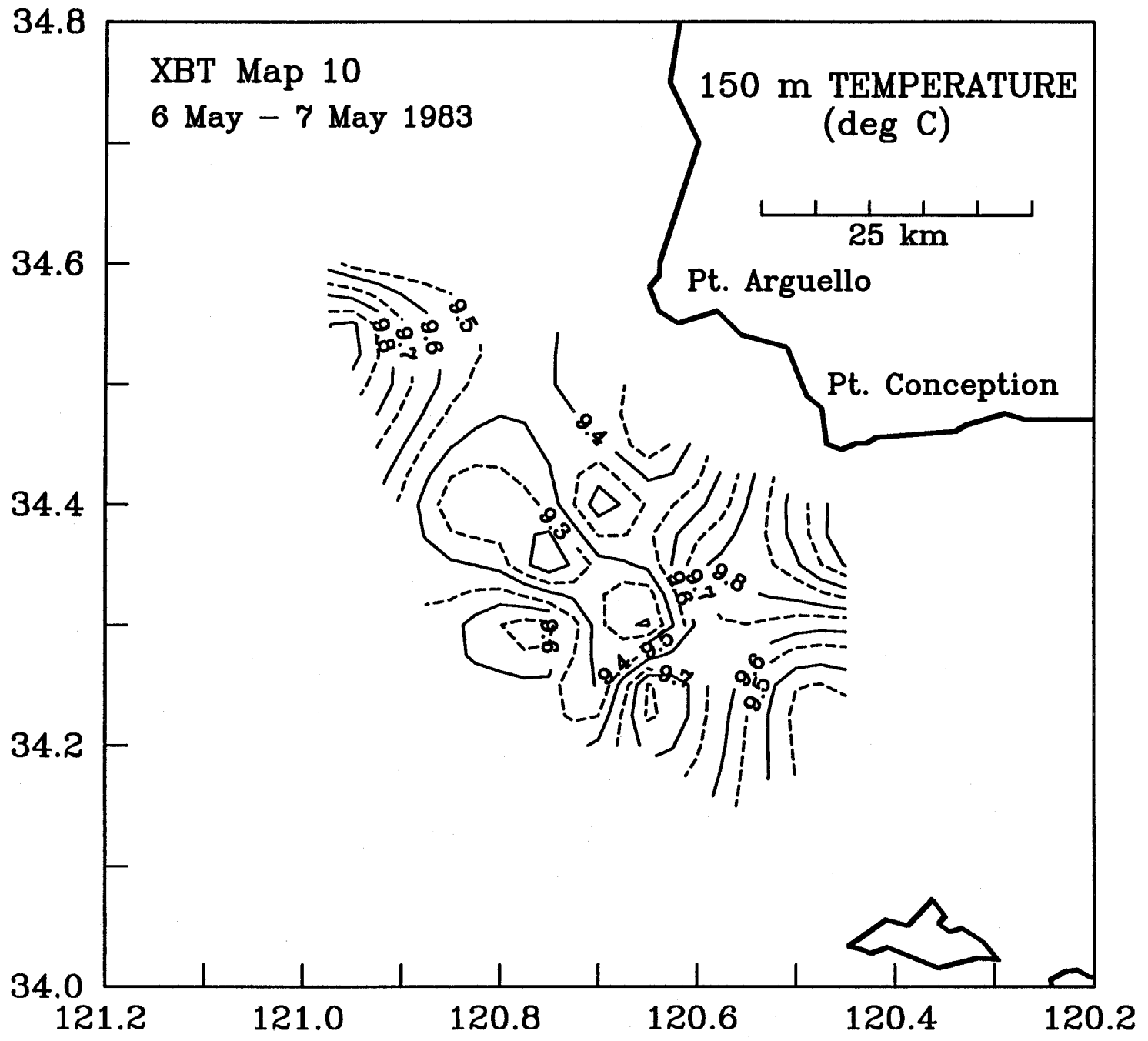


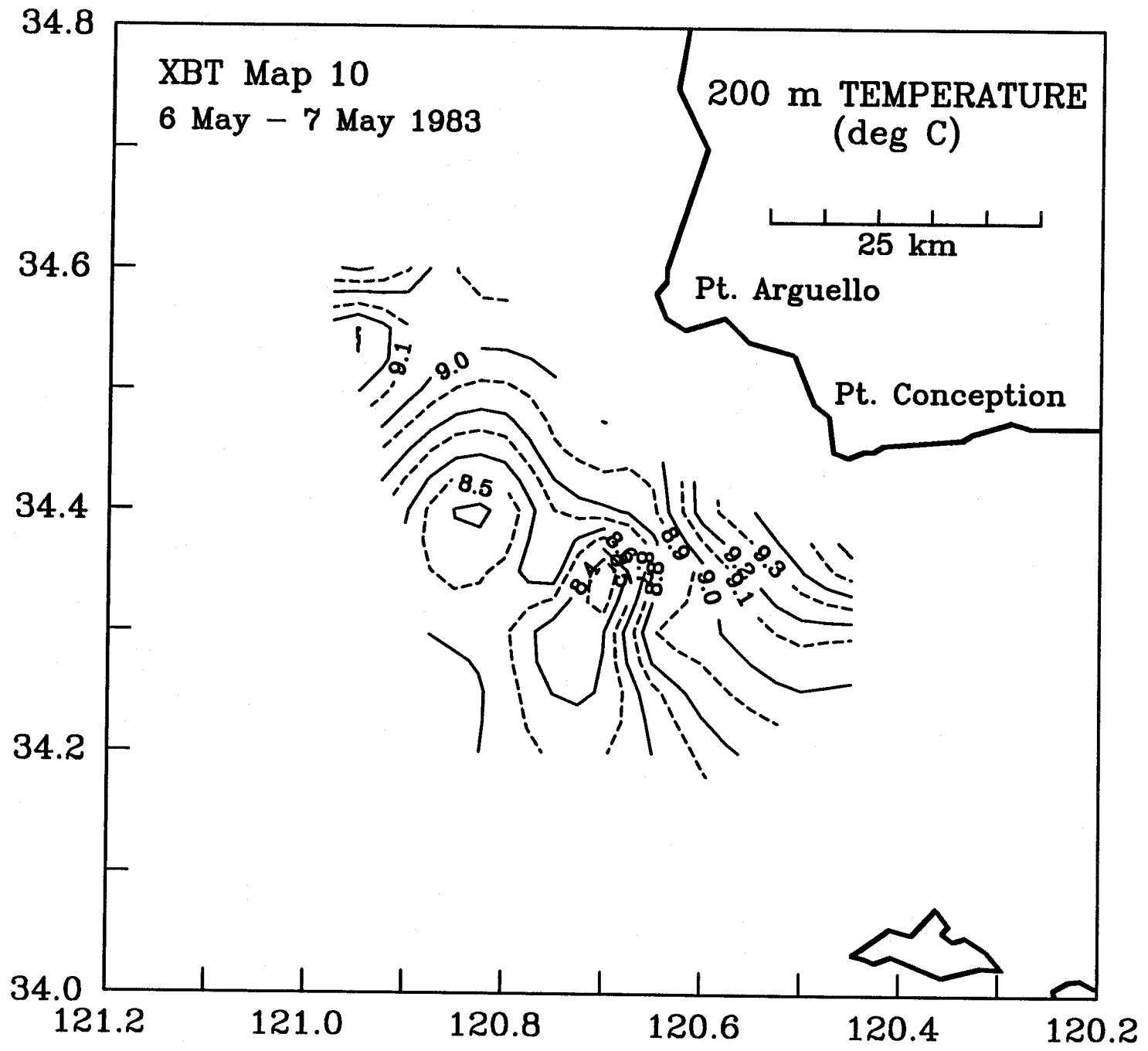












**CTD TEMPERATURE, SALINITY AND SIGMA-T MAPS**



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Page 6-65	CTD Map 3	50 m	Salinity
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Page 6-68	CTD Map 3	75 m	Salinity
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Page 6-72	CTD Map 3	100 m	Sigma-t
Page 6-73	CTD Map 3	150 m	Temperature
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Page 6-92	CTD Map 4	50 m	Temperature
Page 6-93	CTD Map 4	50 m	Salinity
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Page 6-95	CTD Map 4	75 m	Temperature
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Page 6-98	CTD Map 4	100 m	Temperature
Page 6-99	CTD Map 4	100 m	Salinity
Page 6-100	CTD Map 4	100 m	Sigma-t
Page 6-101	CTD Map 4	150 m	Temperature
Page 6-102	CTD Map 4	150 m	Salinity
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Page 6-104	CTD Map 4	200 m	Temperature
Page 6-105	CTD Map 4	200 m	Salinity
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Page 6-107	CTD Map 4	250 m	Temperature
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Page 6-120	CTD Map 5	50 m	Temperature
Page 6-121	CTD Map 5	50 m	Salinity
Page 6-122	CTD Map 5	50 m	Sigma-t
Page 6-123	CTD Map 5	75 m	Temperature
Page 6-124	CTD Map 5	75 m	Salinity
Page 6-125	CTD Map 5	75 m	Sigma-t
Page 6-126	CTD Map 5	100 m	Temperature
Page 6-127	CTD Map 5	100 m	Salinity
Page 6-128	CTD Map 5	100 m	Sigma-t
Page 6-129	CTD Map 5	150 m	Temperature
Page 6-130	CTD Map 5	150 m	Salinity
Page 6-131	CTD Map 5	150 m	Sigma-t
Page 6-132	CTD Map 5	200 m	Temperature
Page 6-133	CTD Map 5	200 m	Salinity
Page 6-134	CTD Map 5	200 m	Sigma-t
Page 6-135	CTD Map 5	250 m	Temperature
Page 6-136	CTD Map 5	250 m	Salinity
Page 6-137	CTD Map 5	250 m	Sigma-t
Page 6-138	CTD Map 5	300 m	Temperature
Page 6-139	CTD Map 5	300 m	Salinity
Page 6-140	CTD Map 5	300 m	Sigma-t

OPUS CTD Map 1

Cast	58	OPUS Station	A1	ctd
Cast	59	OPUS Station	A2	ctd
Cast	60	OPUS Station	A3	ctd
Cast	61	OPUS Station	A4	ctd
Cast	62	OPUS Station	A5	ctd
Cast	63	OPUS Station	A6	ctd
Cast	64	OPUS Station	A7	ctd
Cast	65	OPUS Station	A8	ctd
Cast	66	OPUS Station	A9	ctd
Cast	67	OPUS Station	A10	ctd
Cast	68	OPUS Station	G1	ctd
Cast	69	OPUS Station	G2	ctd
Cast	70	OPUS Station	G3	ctd
Cast	71	OPUS Station	G4	ctd
Cast	72	OPUS Station	G5	ctd
Cast	73	OPUS Station	G6	ctd
Cast	74	OPUS Station	G7	ctd
Cast	75	OPUS Station	G8	ctd
Cast	76	OPUS Station	G9	ctd
Cast	77	OPUS Station	G10	ctd
Cast	78	OPUS Station	G11	ctd
Cast	79	OPUS Station	G12	ctd
Cast	80	OPUS Station	G13	ctd
Cast	81	OPUS Station	G14	ctd
Cast	82	OPUS Station	G15	ctd
Cast	83	OPUS Station	G16	ctd
Cast	84	OPUS Station	G17	ctd
Cast	85	OPUS Station	G18	ctd
Cast	86	OPUS Station	C1	ctd
Cast	87	OPUS Station	C2	ctd
Cast	88	OPUS Station	C3	ctd
Cast	89	OPUS Station	C4	ctd
Cast	90	OPUS Station	C5	ctd
Cast	91	OPUS Station	C6	ctd
Cast	92	OPUS Station	C7	ctd
Cast	93	OPUS Station	C8	ctd

OPUS CTD Map 2

Cast	202	OPUS Station	A1	ctd
Cast	203	OPUS Station	A2	ctd
Cast	204	OPUS Station	A3	ctd
Cast	205	OPUS Station	A4	ctd
Cast	206	OPUS Station	A5	ctd
Cast	207	OPUS Station	A6	ctd

Cast	208	OPUS Station	A7	ctd
Cast	209	OPUS Station	A8	ctd
Cast	210	OPUS Station	G1	ctd
Cast	211	OPUS Station	G2	ctd
Cast	212	OPUS Station	G3	ctd
Cast	213	OPUS Station	G4	ctd
Cast	214	OPUS Station	G5	ctd
Cast	215	OPUS Station	G6	ctd
Cast	216	OPUS Station	G7	ctd
Cast	217	OPUS Station	G8	ctd
Cast	218	OPUS Station	G9	ctd
Cast	219	OPUS Station	G10	ctd
Cast	220	OPUS Station	G11	ctd
Cast	221	OPUS Station	G12	ctd
Cast	222	OPUS Station	C1	ctd
Cast	223	OPUS Station	C2	ctd
Cast	224	OPUS Station	C3	ctd
Cast	225	OPUS Station	C4	ctd
Cast	226	OPUS Station	C5	ctd
Cast	227	OPUS Station	C6	ctd
Cast	228	OPUS Station	C7	ctd
Cast	229	OPUS Station	C8	ctd
Cast	230	OPUS Station	C9	ctd
Cast	231	OPUS Station	C10	ctd

OPUS CTD Map 3

Cast	348	OPUS Station	A1	ctd
Cast	349	OPUS Station	A2	ctd
Cast	350	OPUS Station	A3	ctd
Cast	351	OPUS Station	A4	ctd
Cast	352	OPUS Station	A5	ctd
Cast	353	OPUS Station	A6	ctd
Cast	354	OPUS Station	A7	ctd
Cast	355	OPUS Station	A8	ctd
Cast	356	OPUS Station	G1	ctd
Cast	357	OPUS Station	G2	ctd
Cast	358	OPUS Station	G3	ctd
Cast	359	OPUS Station	G4	ctd
Cast	360	OPUS Station	G5	ctd
Cast	361	OPUS Station	G6	ctd
Cast	362	OPUS Station	G7	ctd
Cast	363	OPUS Station	G8	ctd
Cast	364	OPUS Station	G9	ctd
Cast	365	OPUS Station	G10	ctd
Cast	366	OPUS Station	G11	ctd

Cast	367	OPUS Station	G12	ctd
Cast	368	OPUS Station	C1	ctd
Cast	369	OPUS Station	C2	ctd
Cast	370	OPUS Station	C3	ctd
Cast	371	OPUS Station	C4	ctd
Cast	372	OPUS Station	C5	ctd
Cast	373	OPUS Station	C6	ctd
Cast	374	OPUS Station	C7	ctd
Cast	375	OPUS Station	C8	ctd
Cast	376	OPUS Station	C9	ctd
Cast	377	OPUS Station	C10	ctd

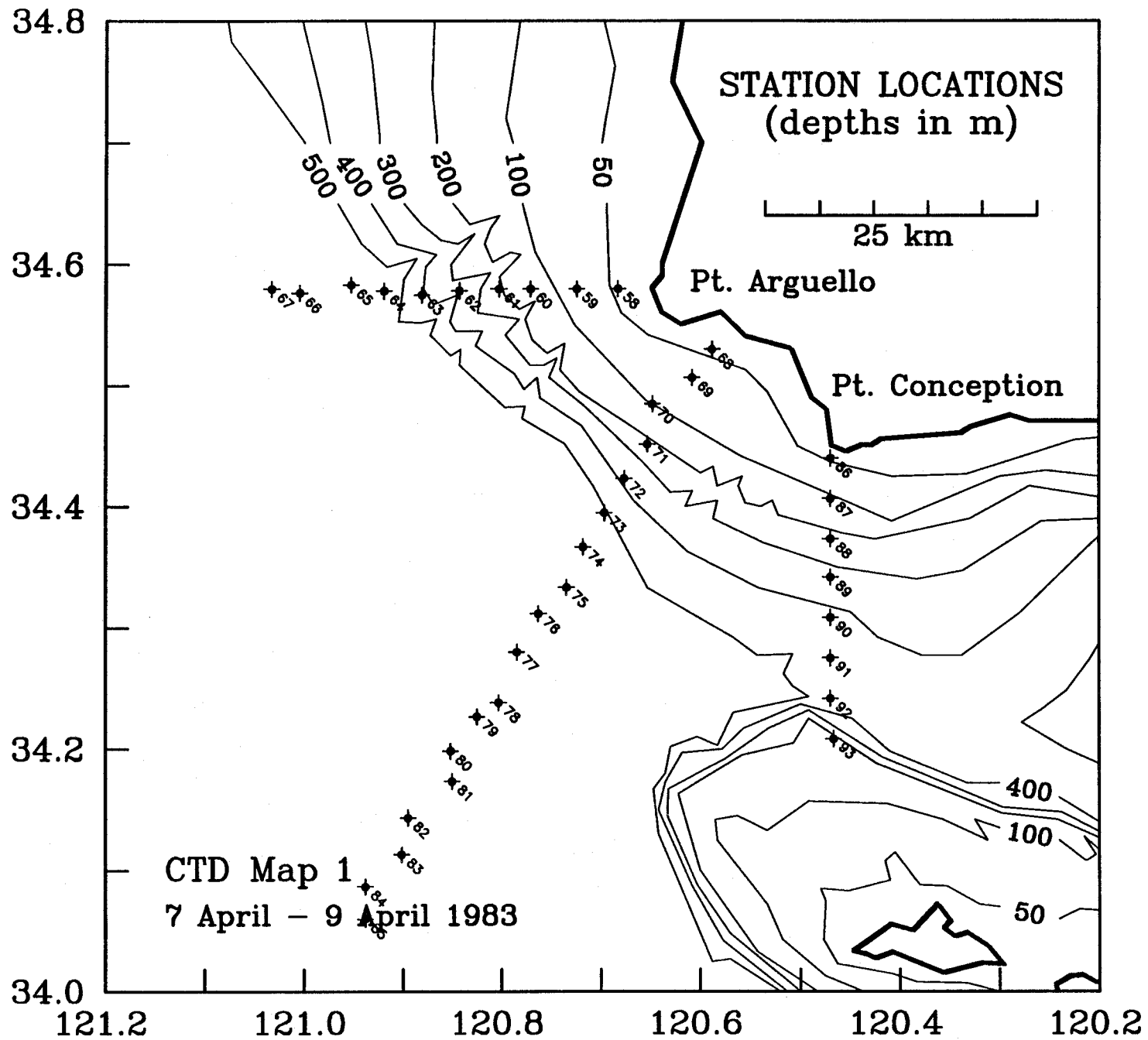
OPUS CTD Map 4

Cast	494	OPUS Station	A1	ctd
Cast	495	OPUS Station	A2	ctd
Cast	496	OPUS Station	A3	ctd
Cast	497	OPUS Station	A4	ctd
Cast	498	OPUS Station	A5	ctd
Cast	499	OPUS Station	A6	ctd
Cast	500	OPUS Station	A7	ctd
Cast	501	OPUS Station	A8	ctd
Cast	502	OPUS Station	G1	ctd
Cast	503	OPUS Station	G2	ctd
Cast	504	OPUS Station	G3	ctd
Cast	505	OPUS Station	G4	ctd
Cast	506	OPUS Station	G5	ctd
Cast	507	OPUS Station	G6	ctd
Cast	508	OPUS Station	G7	ctd
Cast	509	OPUS Station	G8	ctd
Cast	510	OPUS Station	G9	ctd
Cast	511	OPUS Station	G10	ctd
Cast	512	OPUS Station	G11	ctd
Cast	513	OPUS Station	G12	ctd
Cast	514	OPUS Station	C1	ctd
Cast	515	OPUS Station	C2	ctd
Cast	516	OPUS Station	C3	ctd
Cast	517	OPUS Station	C4	ctd
Cast	518	OPUS Station	C5	ctd
Cast	519	OPUS Station	C6	ctd
Cast	520	OPUS Station	C7	ctd
Cast	521	OPUS Station	C8	ctd
Cast	522	OPUS Station	C9	ctd
Cast	523	OPUS Station	C10	ctd

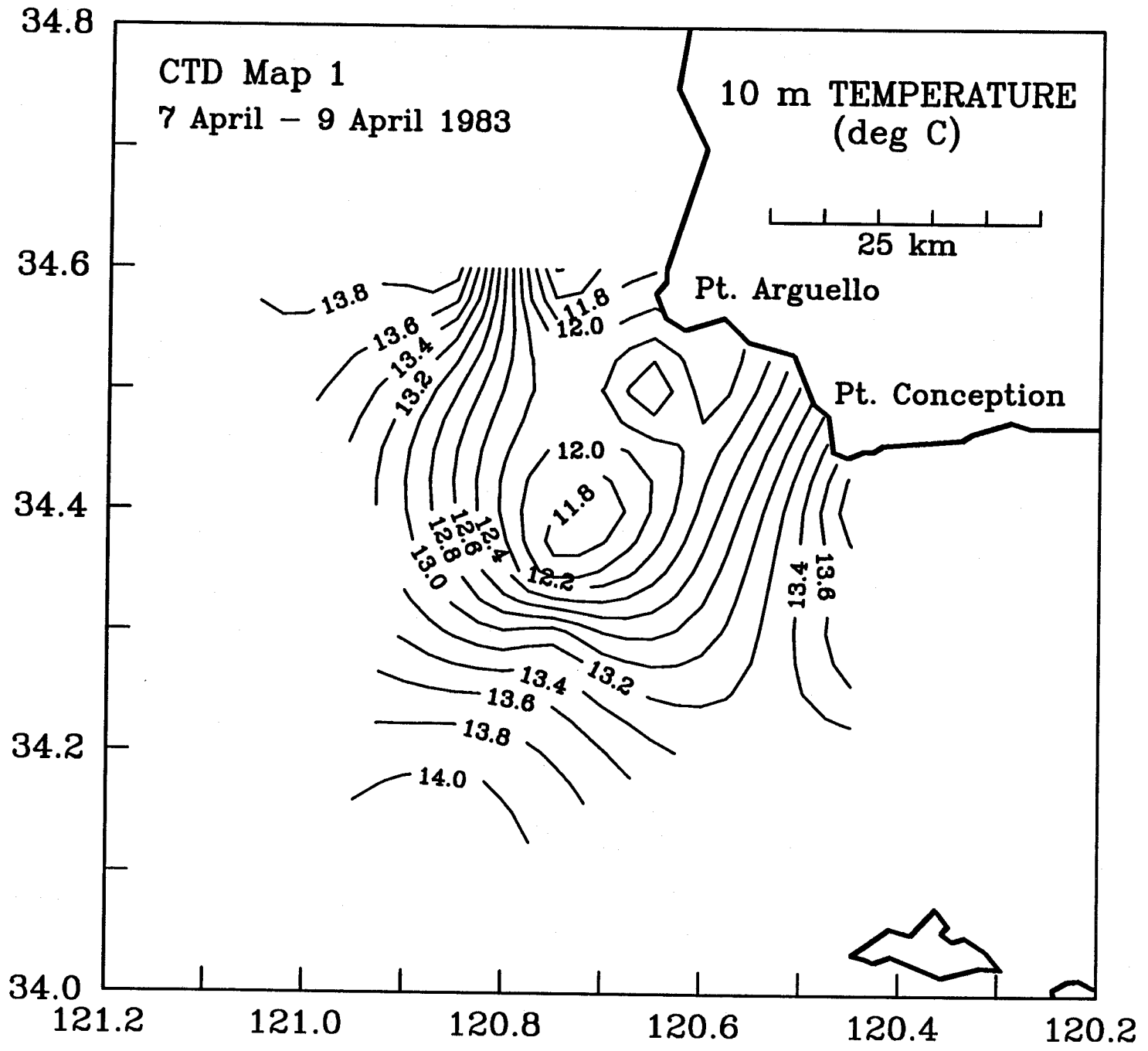
OPUS CTD Map 5

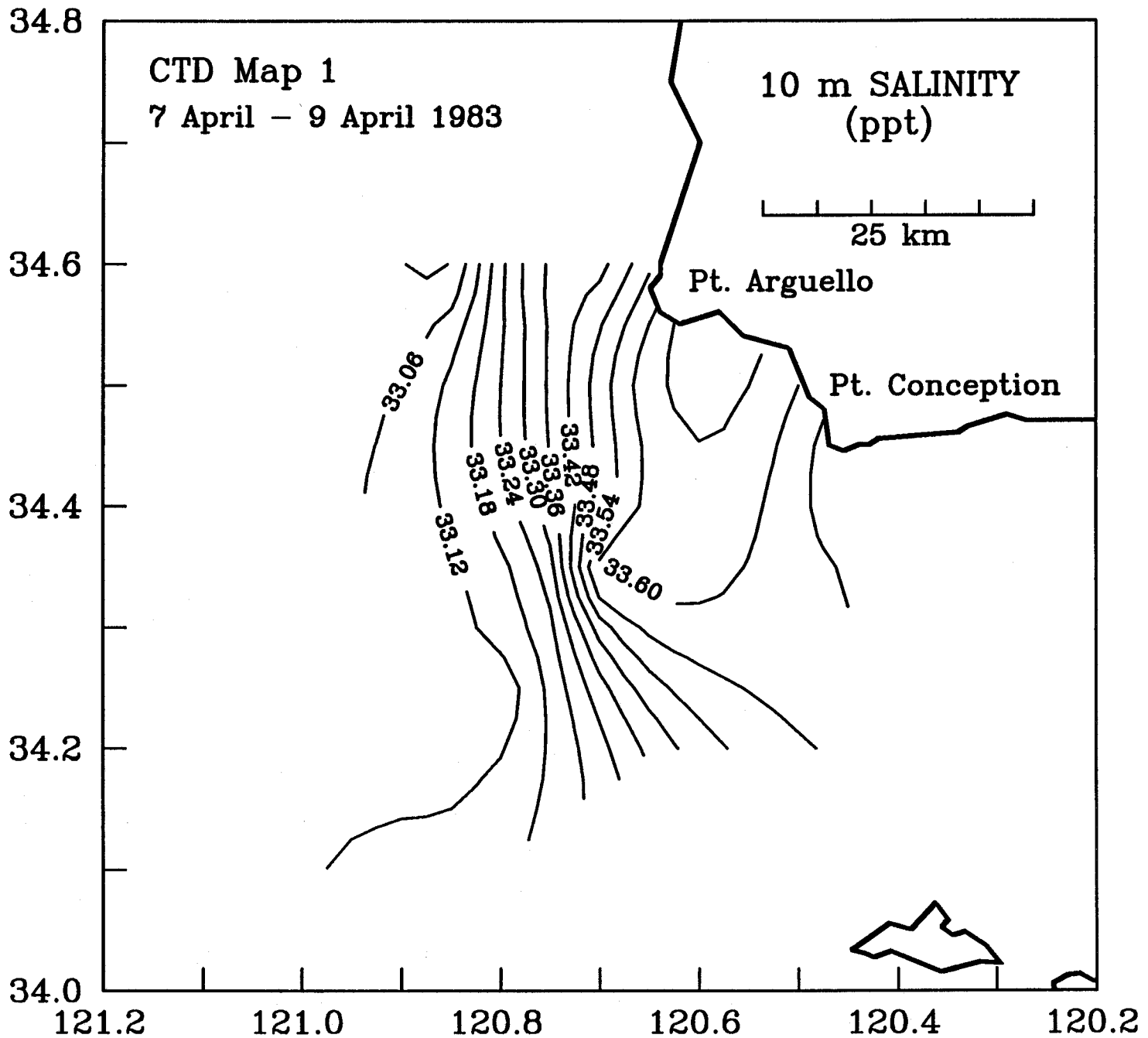
Cast	631	OPUS Station	A1	ctd
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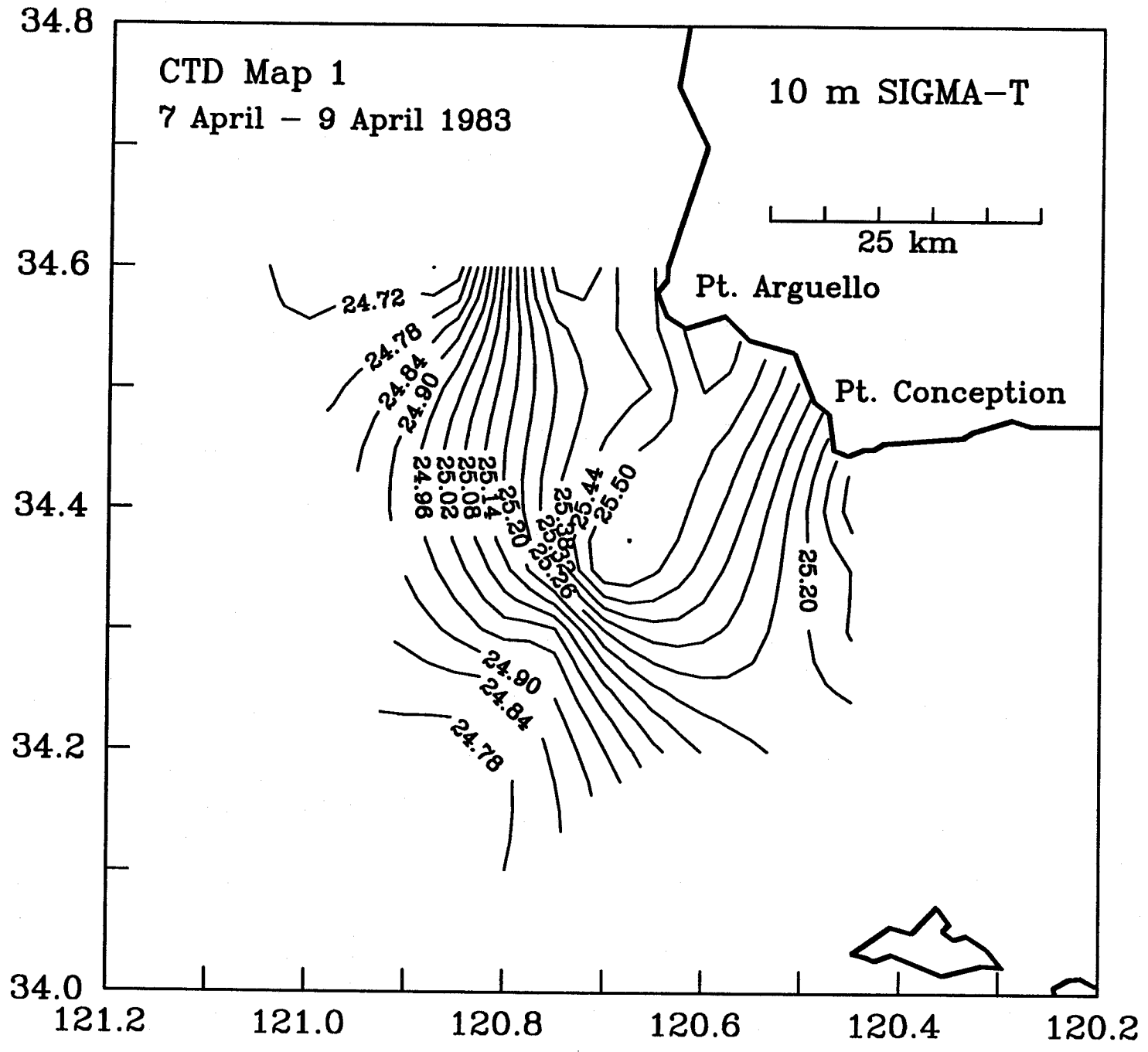
Cast	632	OPUS Station	A2	ctd
Cast	633	OPUS Station	A3	ctd
Cast	634	OPUS Station	A4	ctd
Cast	635	OPUS Station	A5	ctd
Cast	636	OPUS Station	A6	ctd
Cast	637	OPUS Station	A7	ctd
Cast	638	OPUS Station	A8	ctd
Cast	639	OPUS Station	G1	ctd
Cast	640	OPUS Station	G2	ctd
Cast	641	OPUS Station	G3	ctd
Cast	642	OPUS Station	G4	ctd
Cast	643	OPUS Station	G5	ctd
Cast	644	OPUS Station	G6	ctd
Cast	645	OPUS Station	G7	ctd
Cast	646	OPUS Station	G8	ctd
Cast	647	OPUS Station	G9	ctd
Cast	648	OPUS Station	G10	ctd
Cast	649	OPUS Station	G11	ctd
Cast	650	OPUS Station	G12	ctd
Cast	651	OPUS Station	C1	ctd
Cast	652	OPUS Station	C2	ctd
Cast	653	OPUS Station	C3	ctd
Cast	654	OPUS Station	C4	ctd
Cast	655	OPUS Station	C5	ctd
Cast	656	OPUS Station	C6	ctd
Cast	657	OPUS Station	C7	ctd
Cast	658	OPUS Station	C8	ctd
Cast	659	OPUS Station	C9	ctd
Cast	660	OPUS Station	C10	ctd

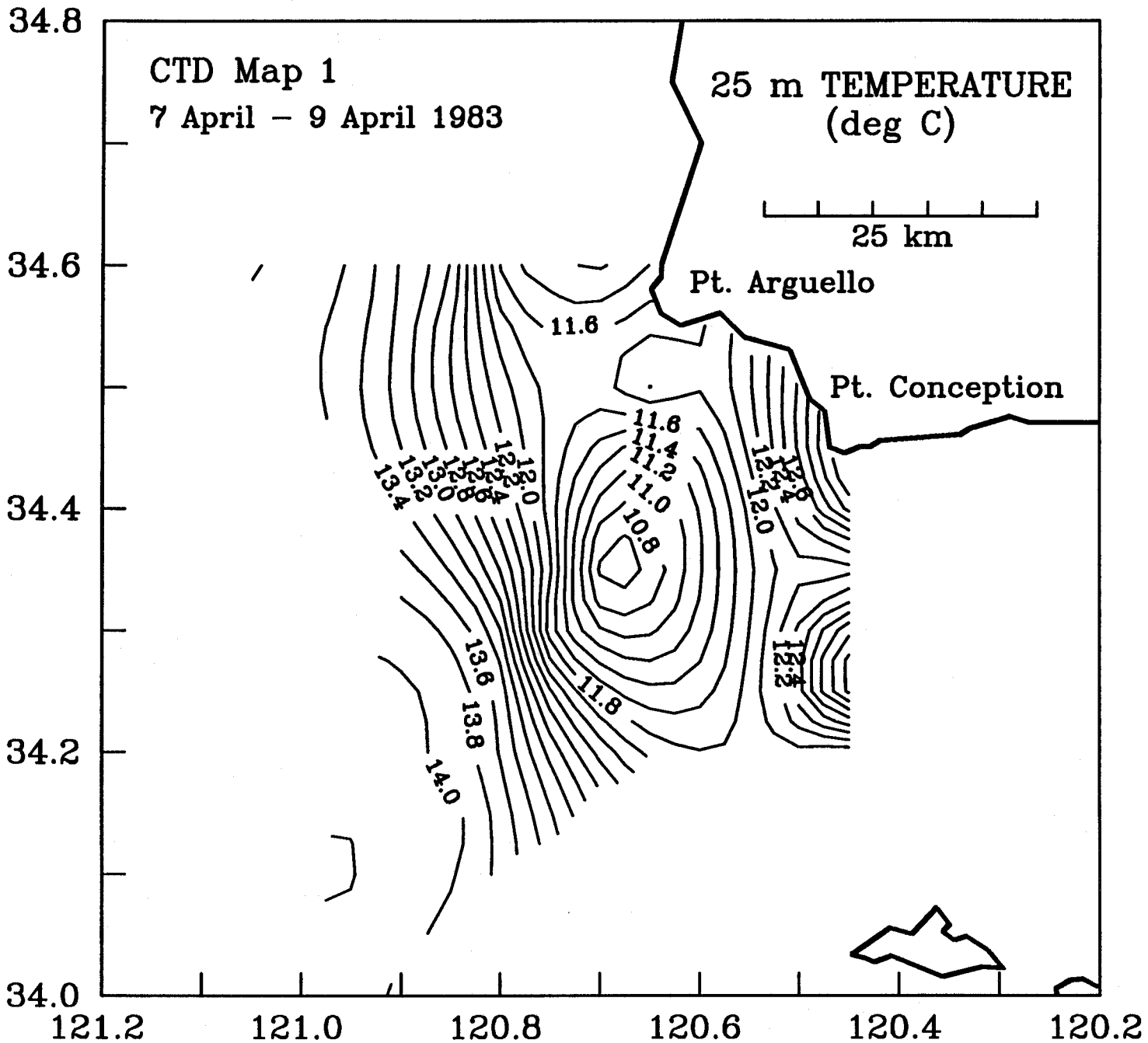


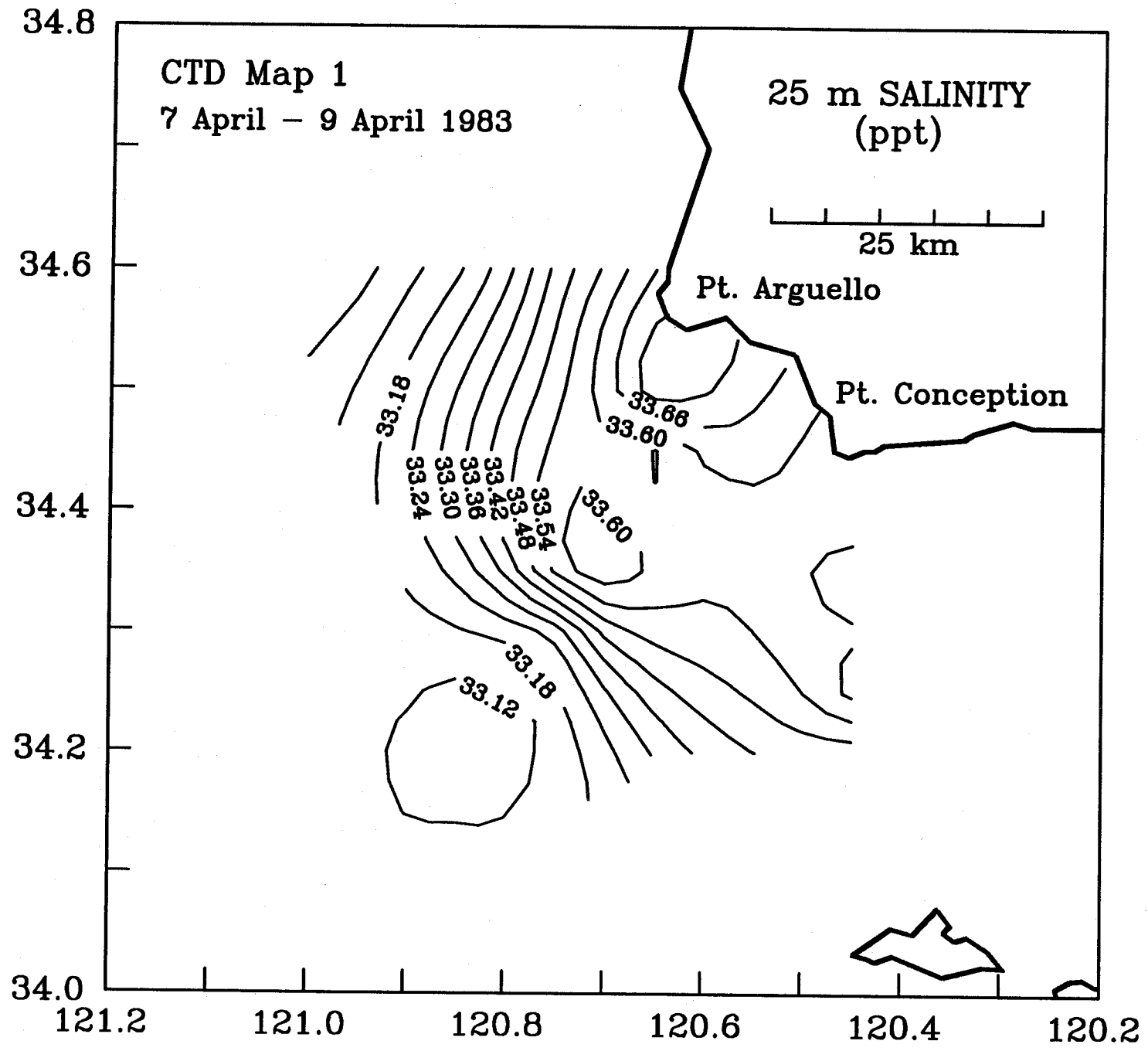


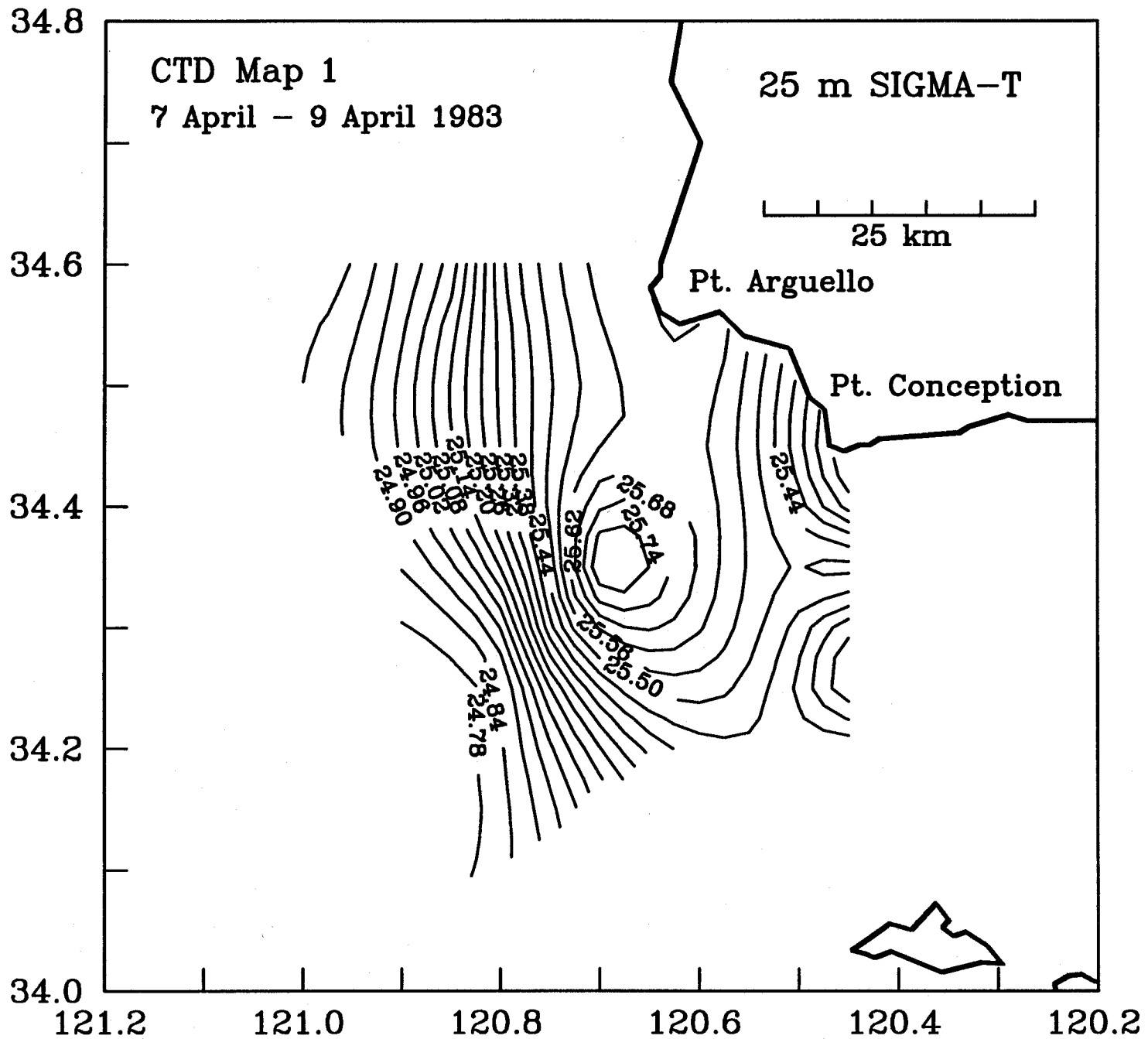




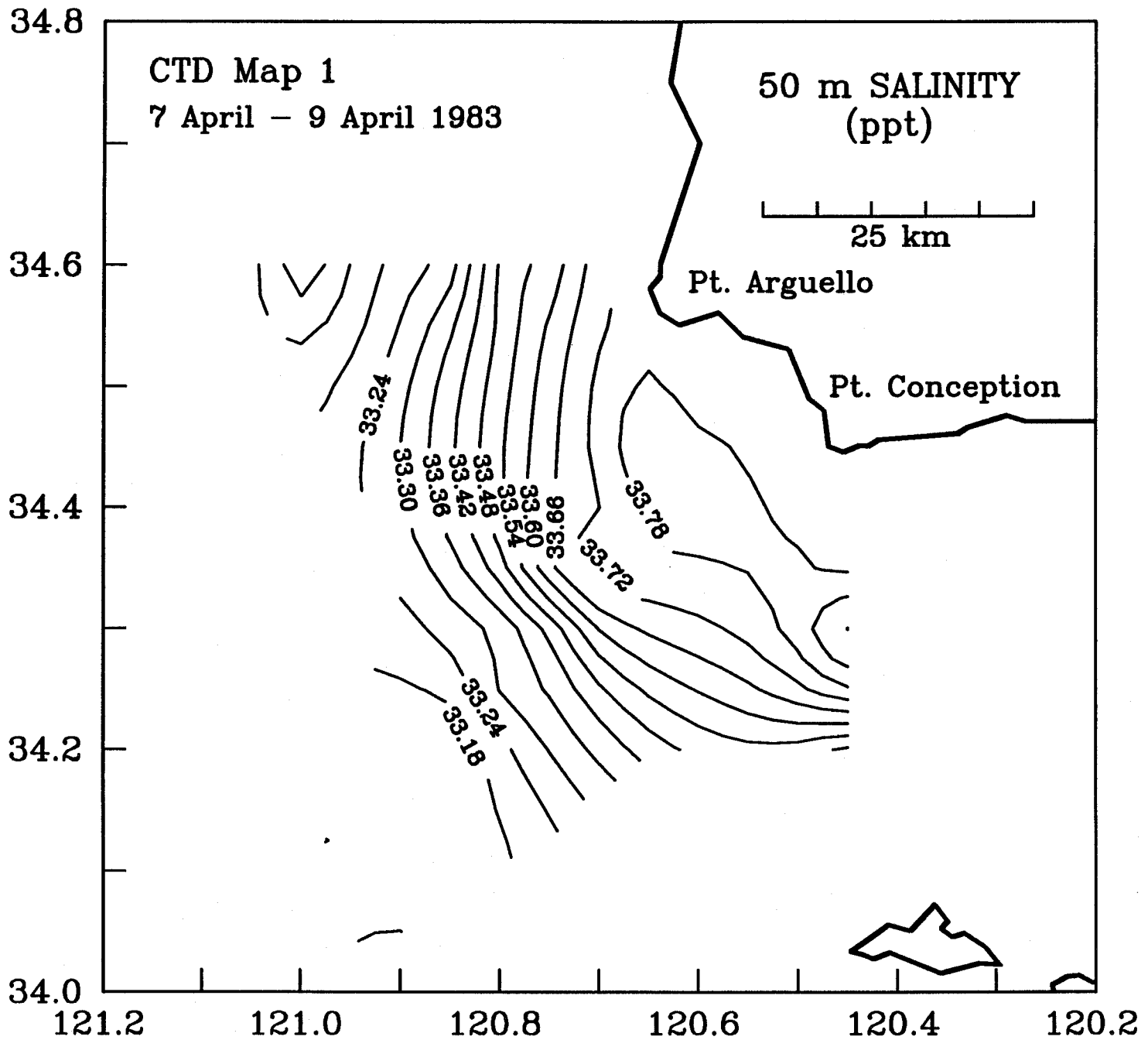




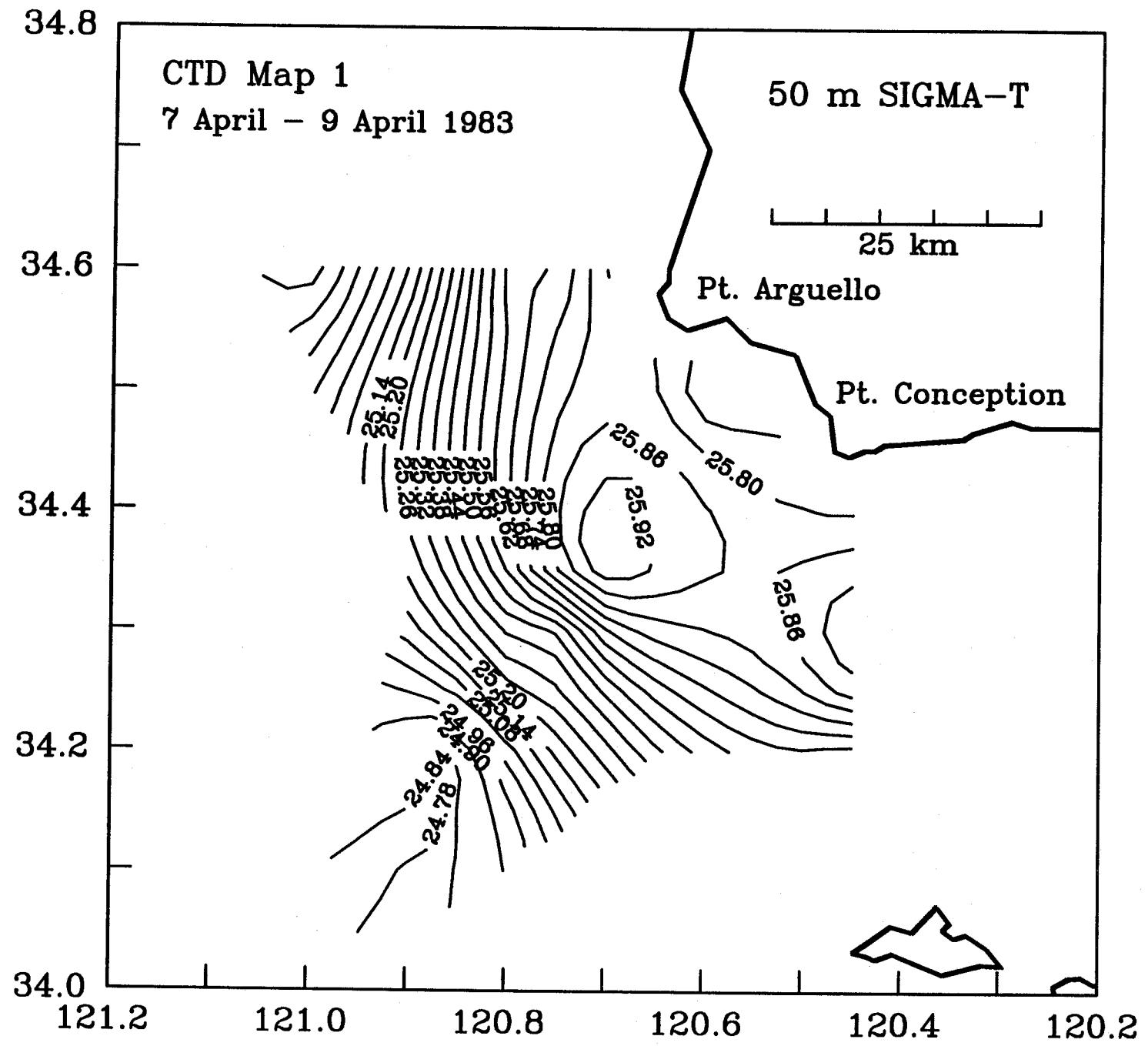


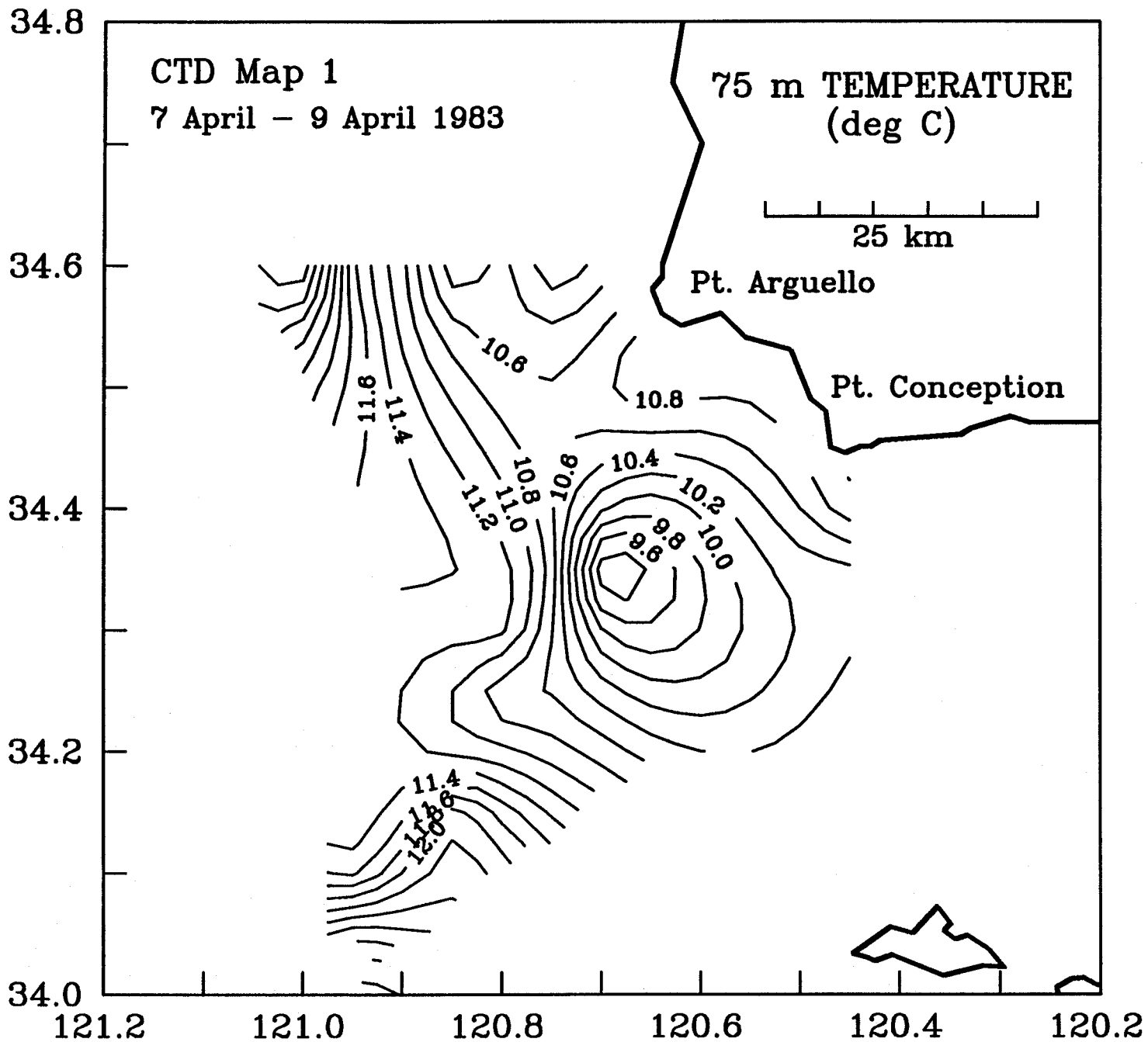


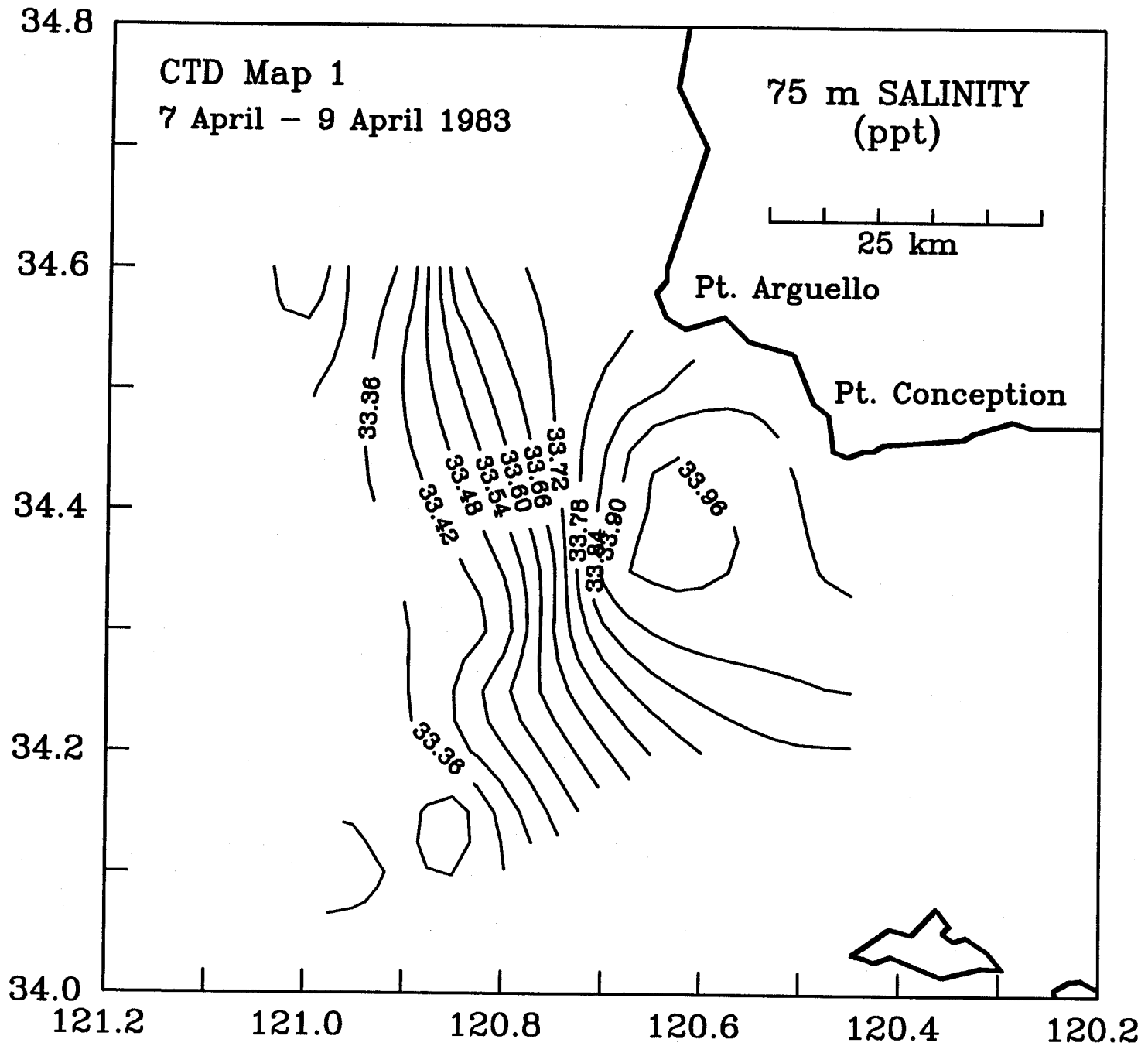


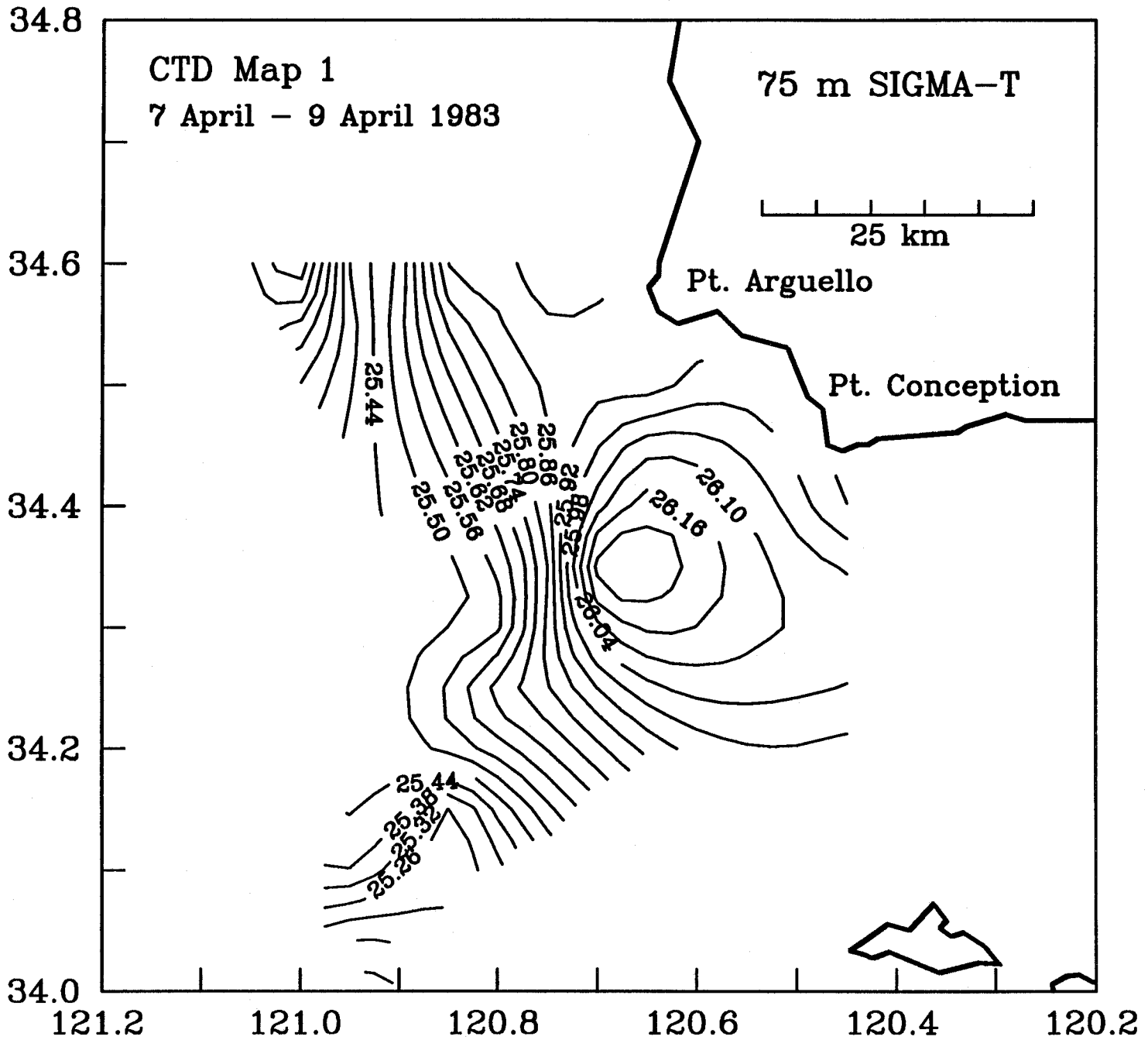


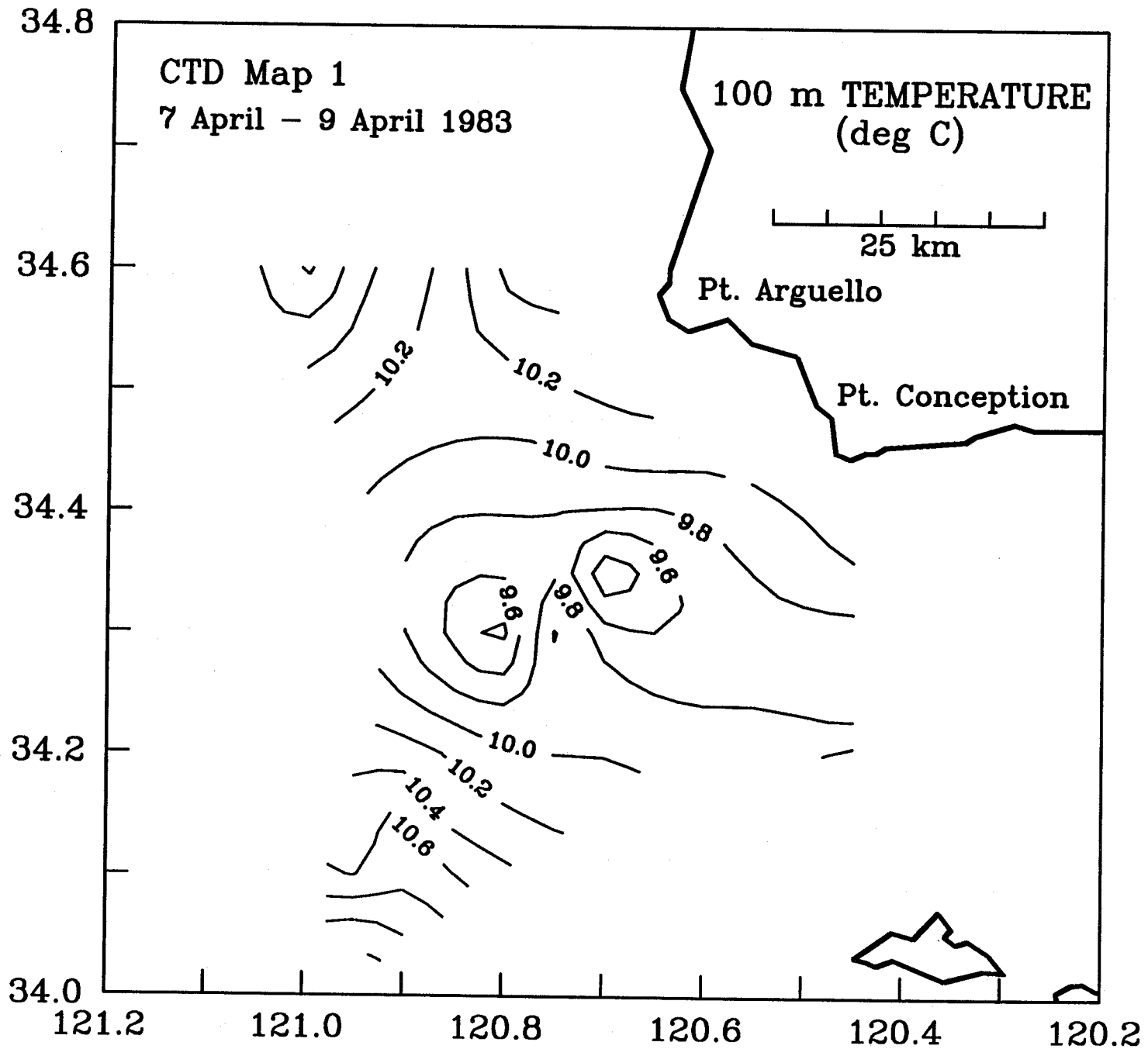


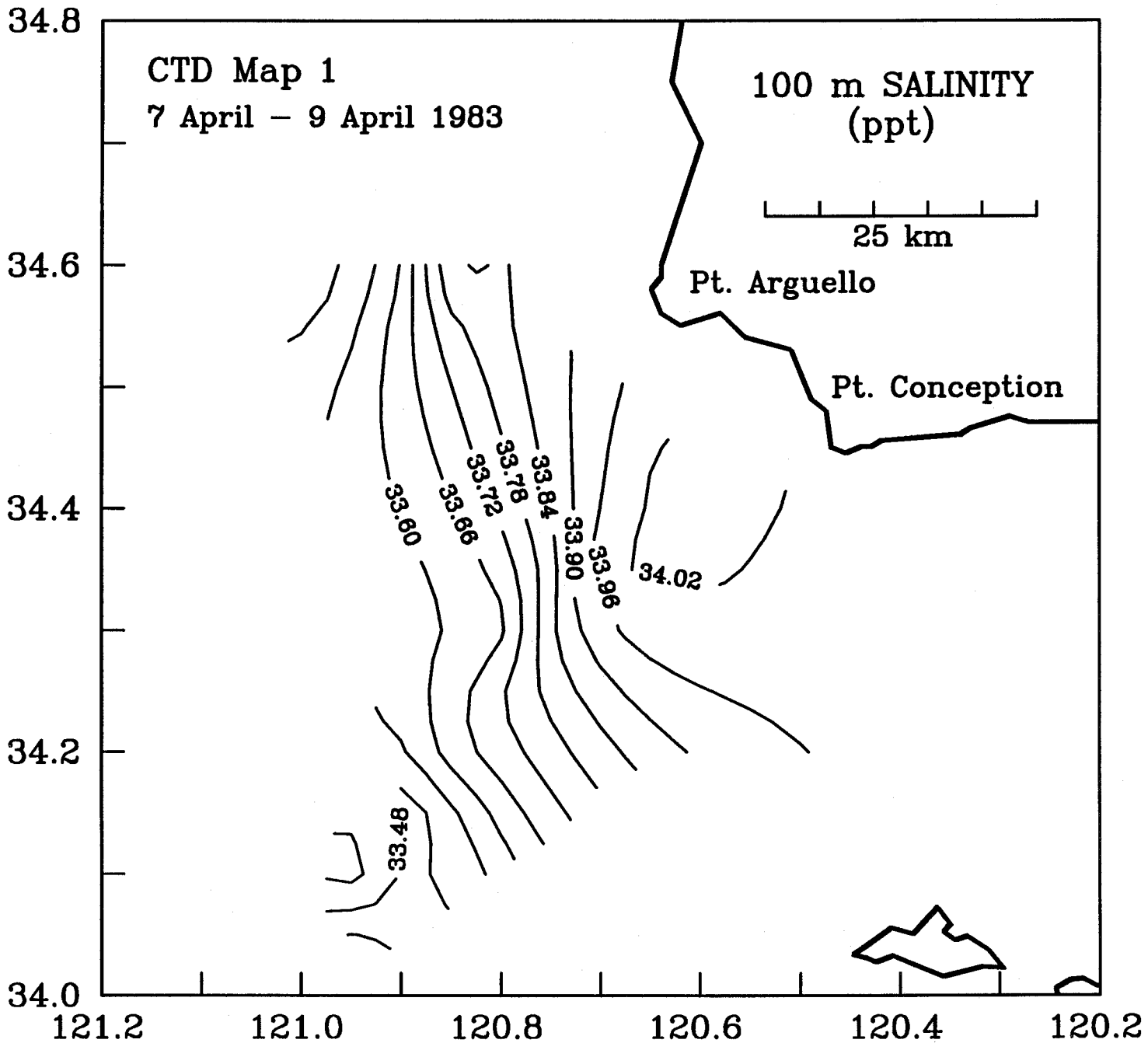


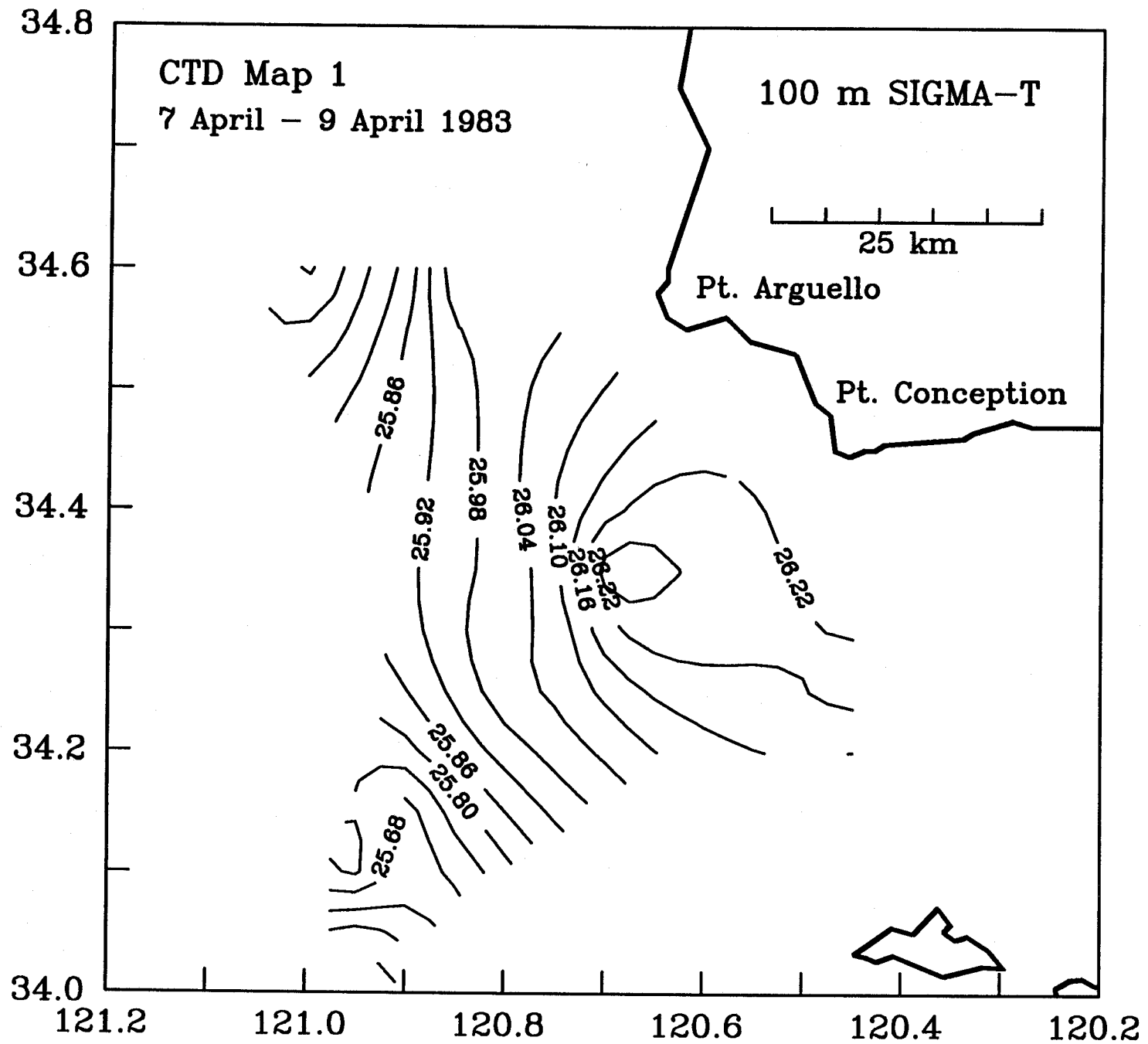


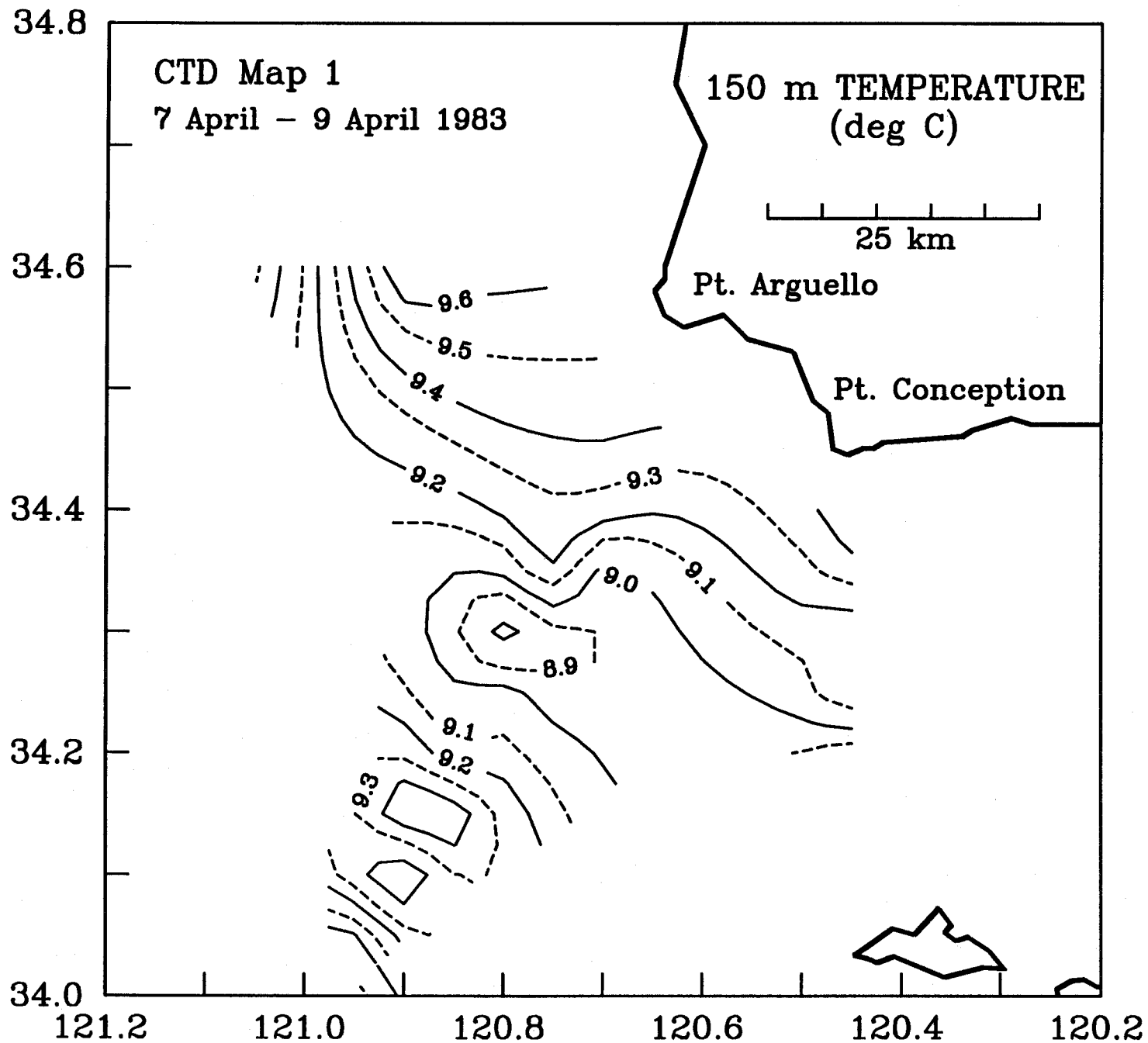




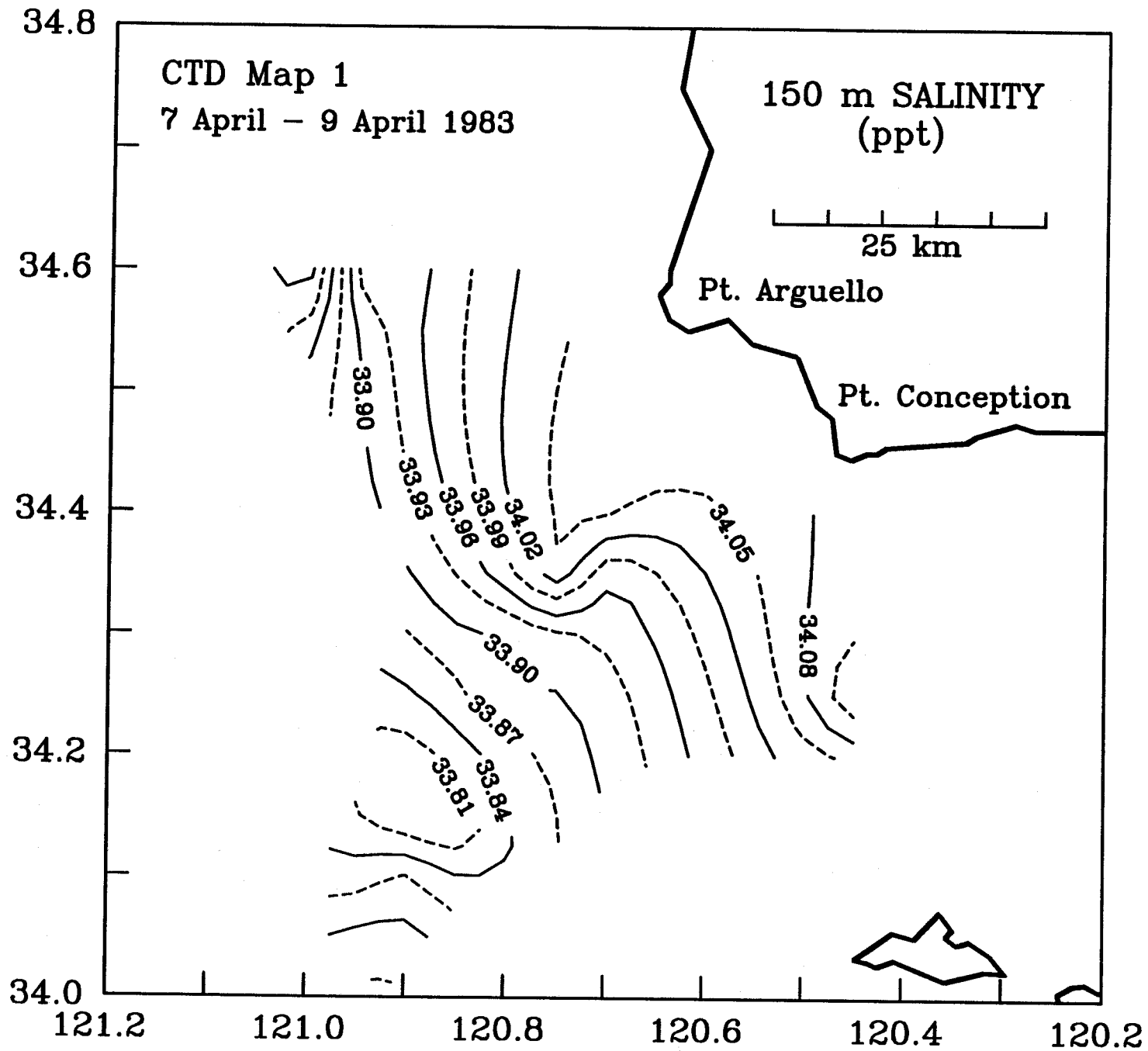


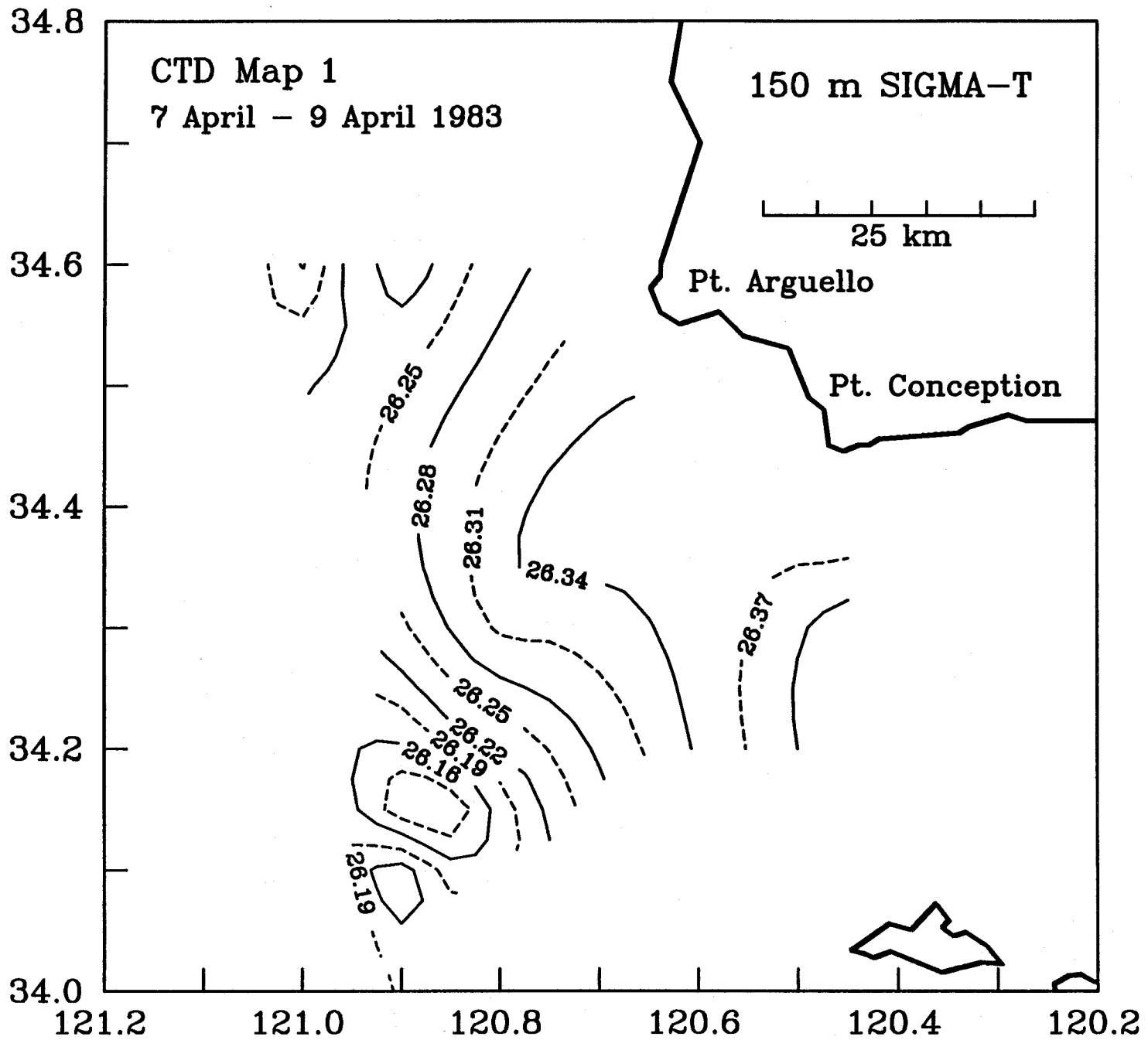


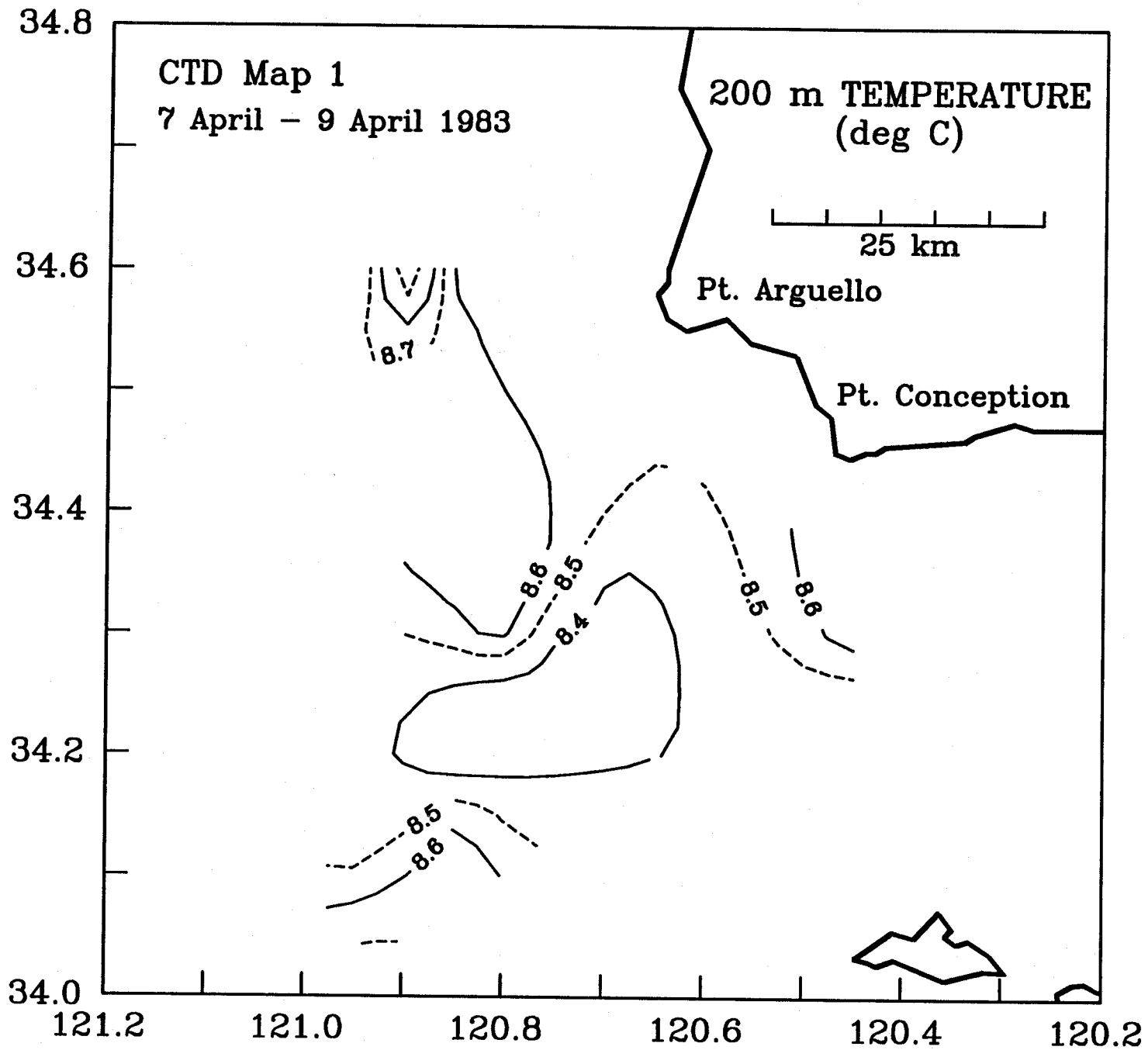


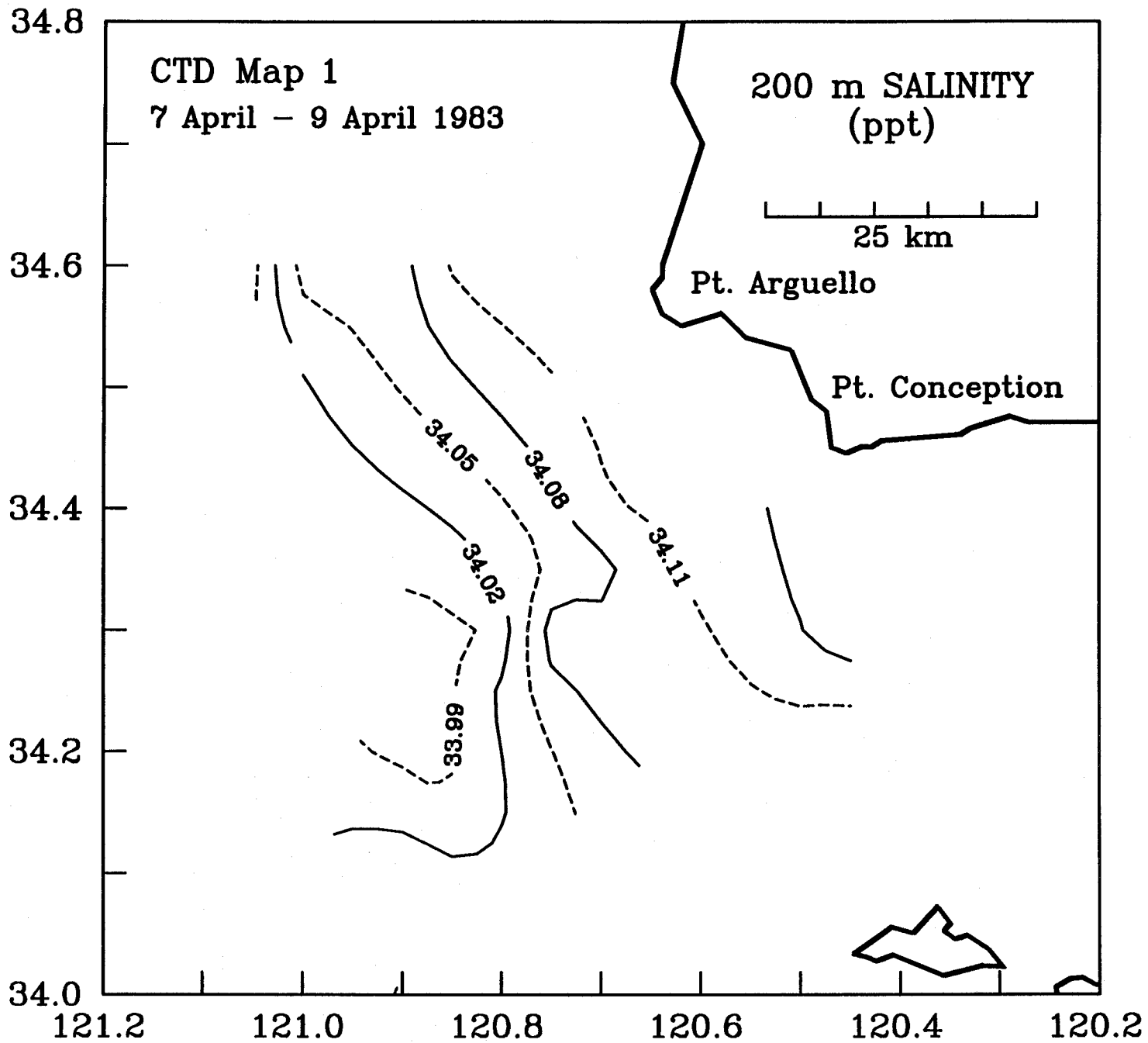


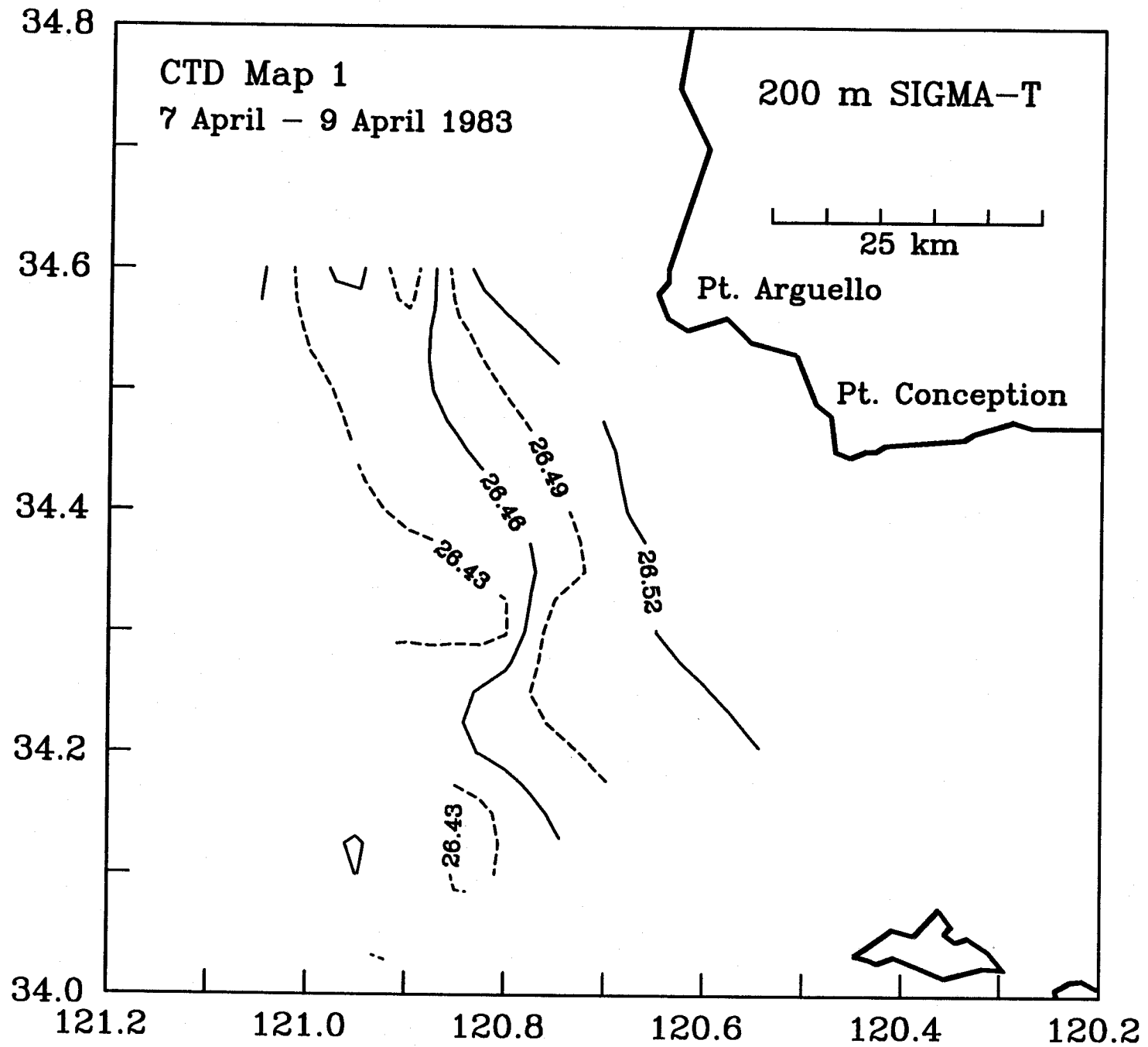


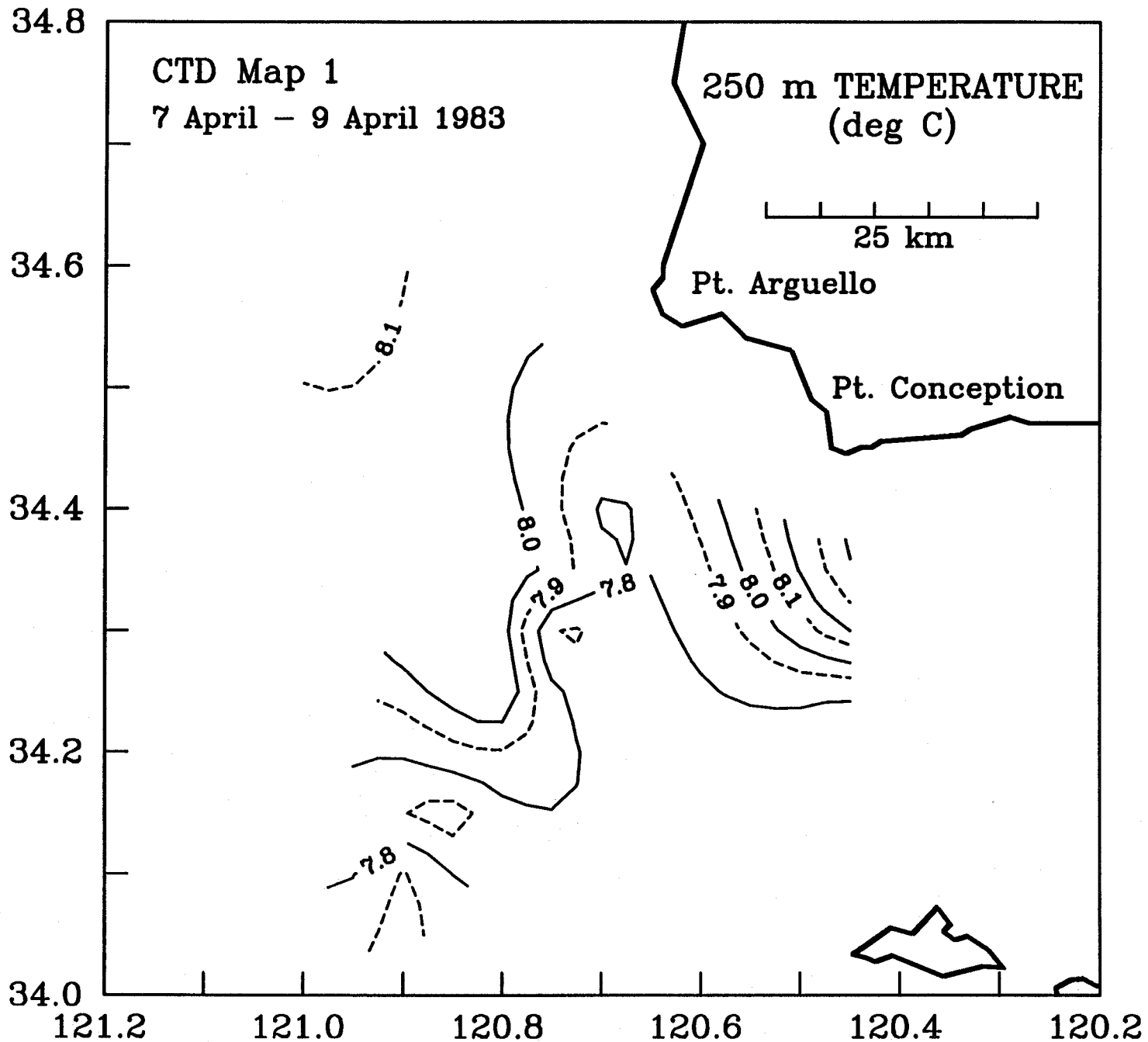


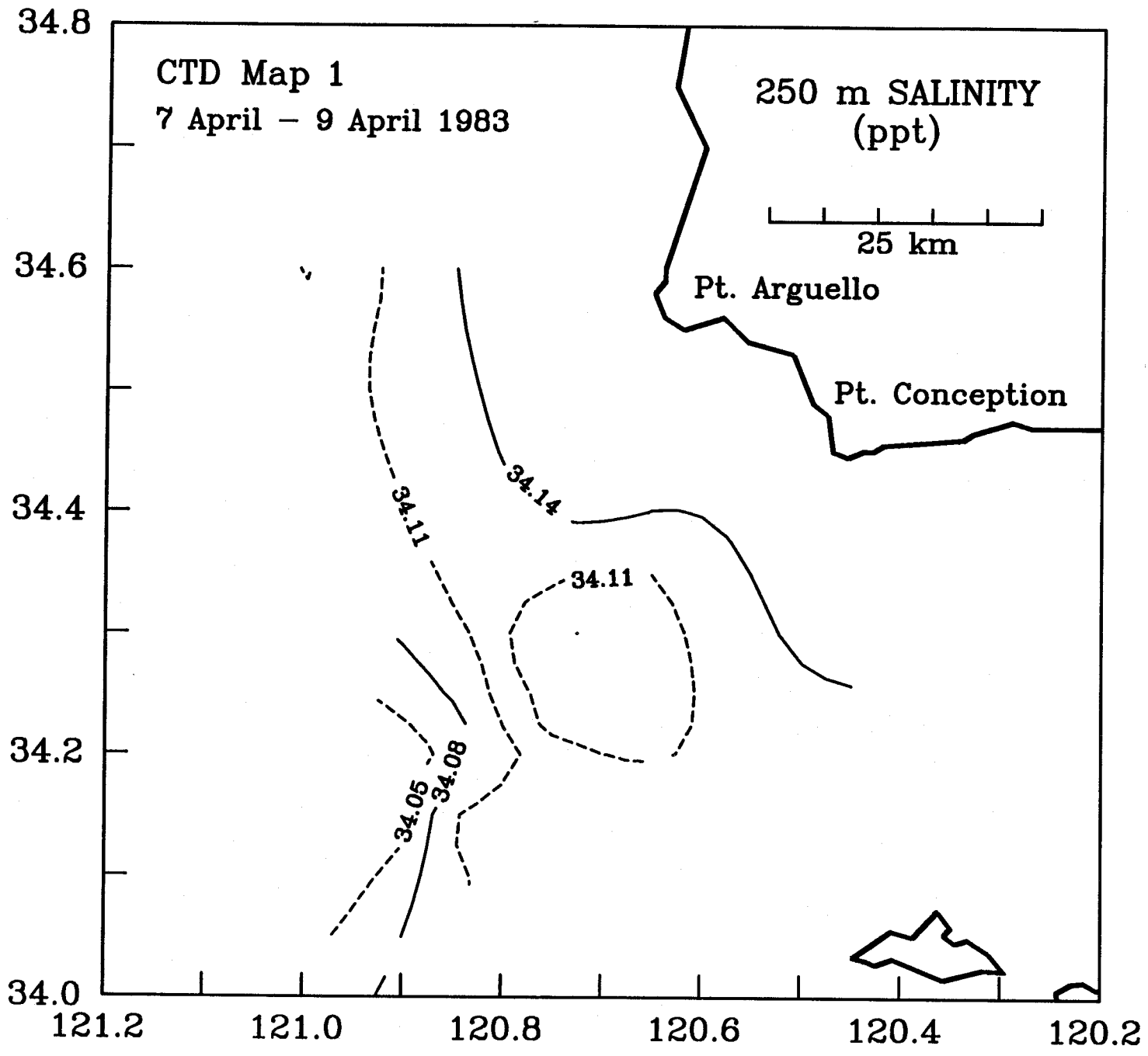


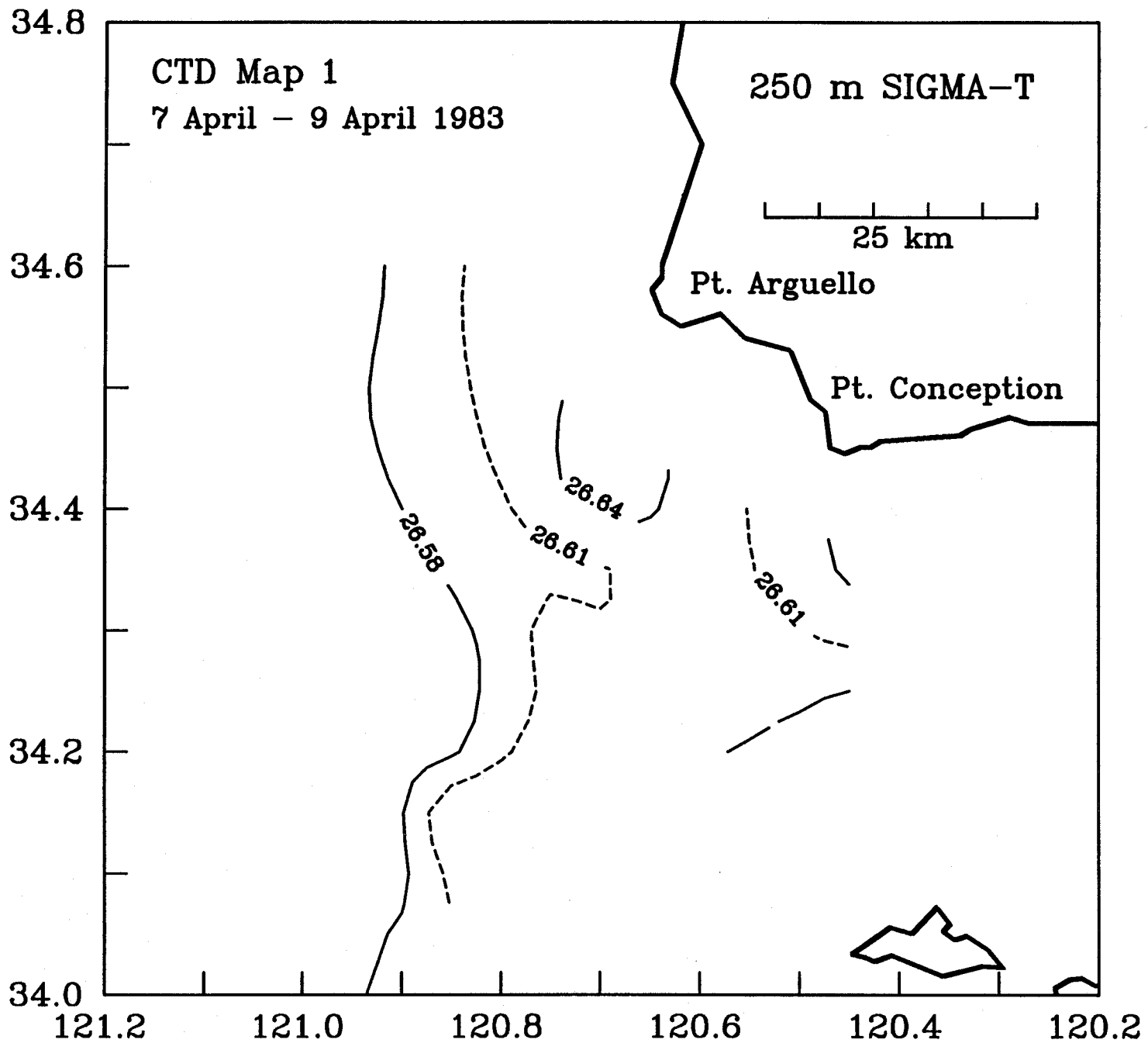




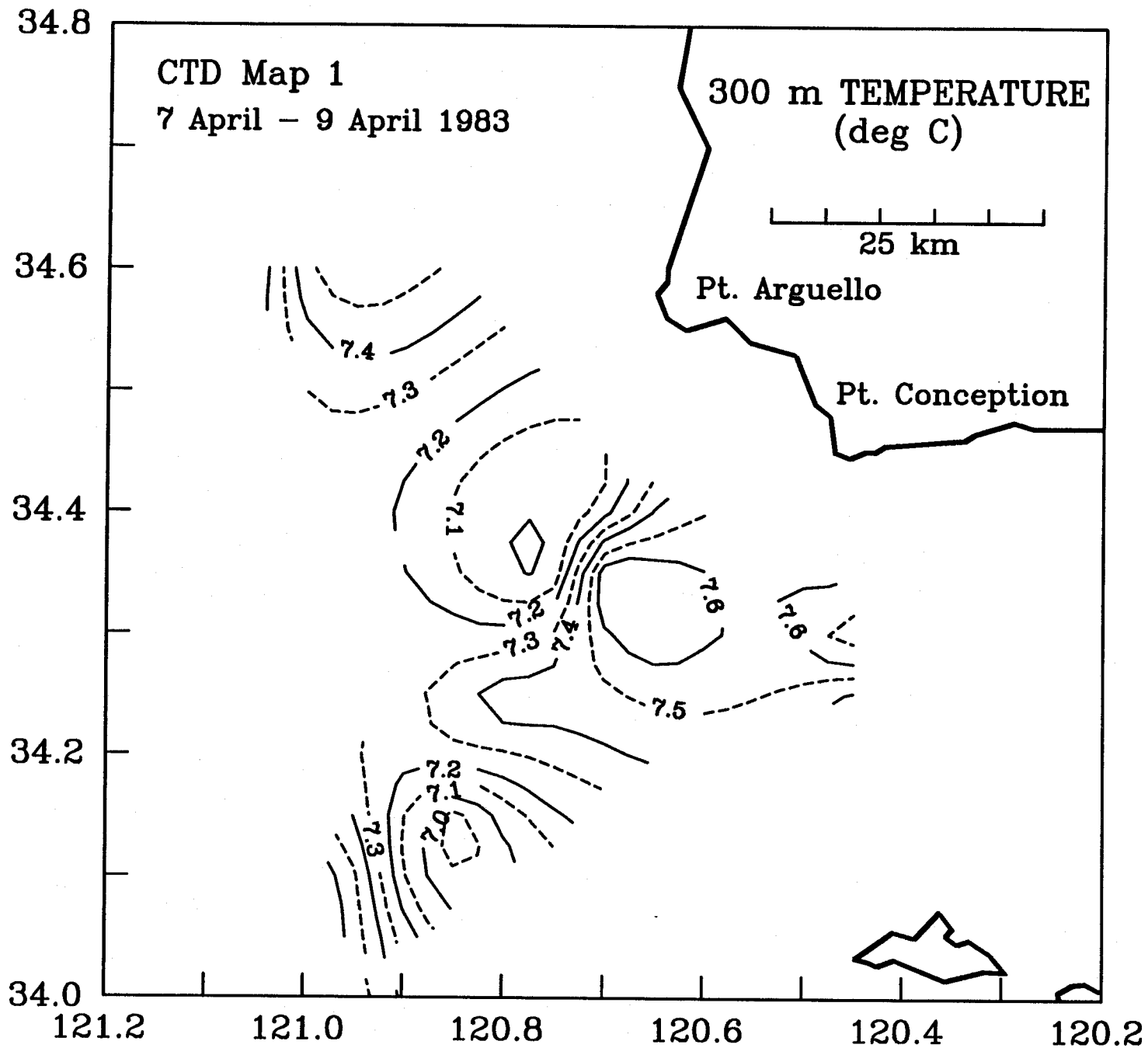


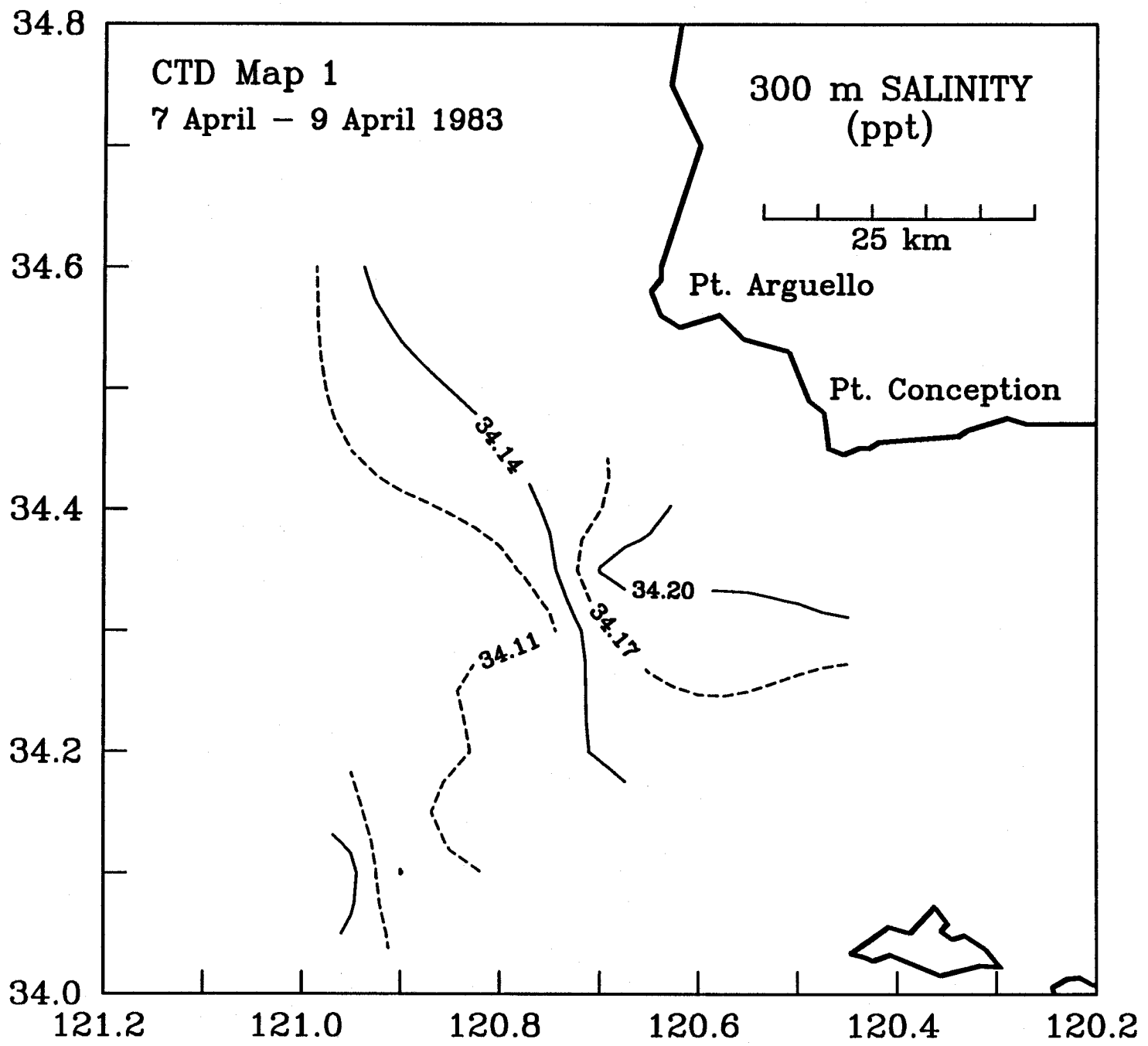


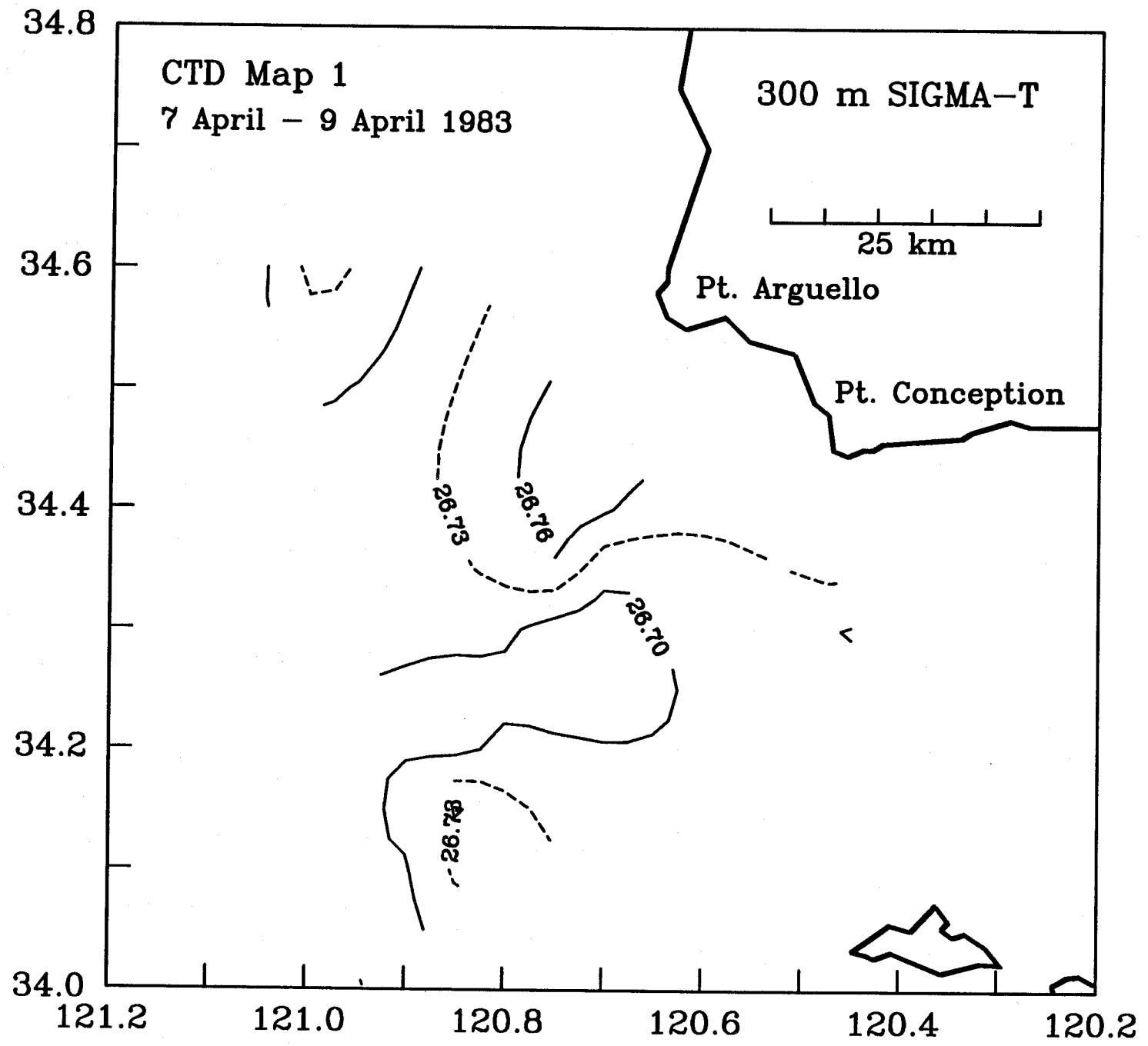


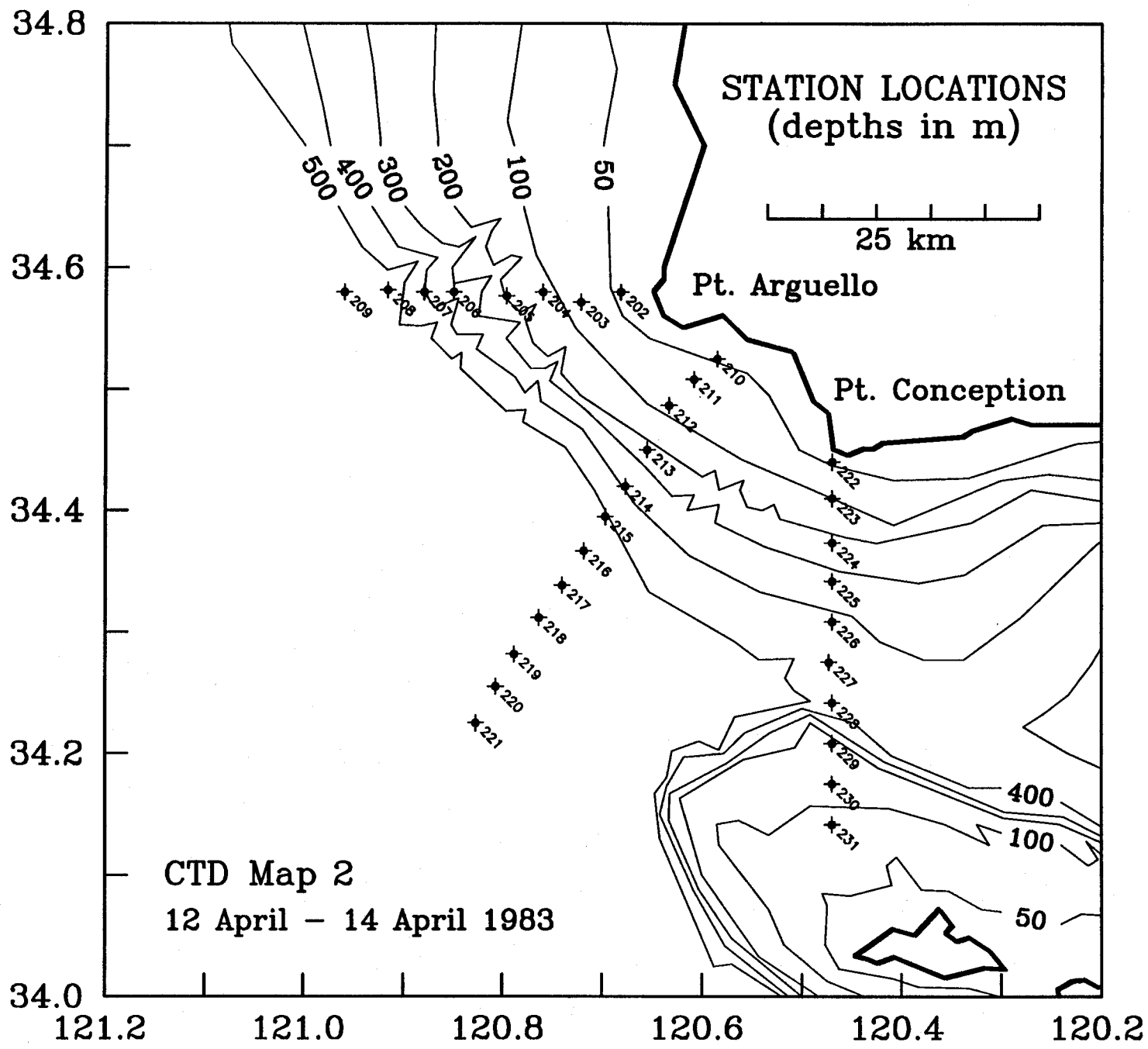


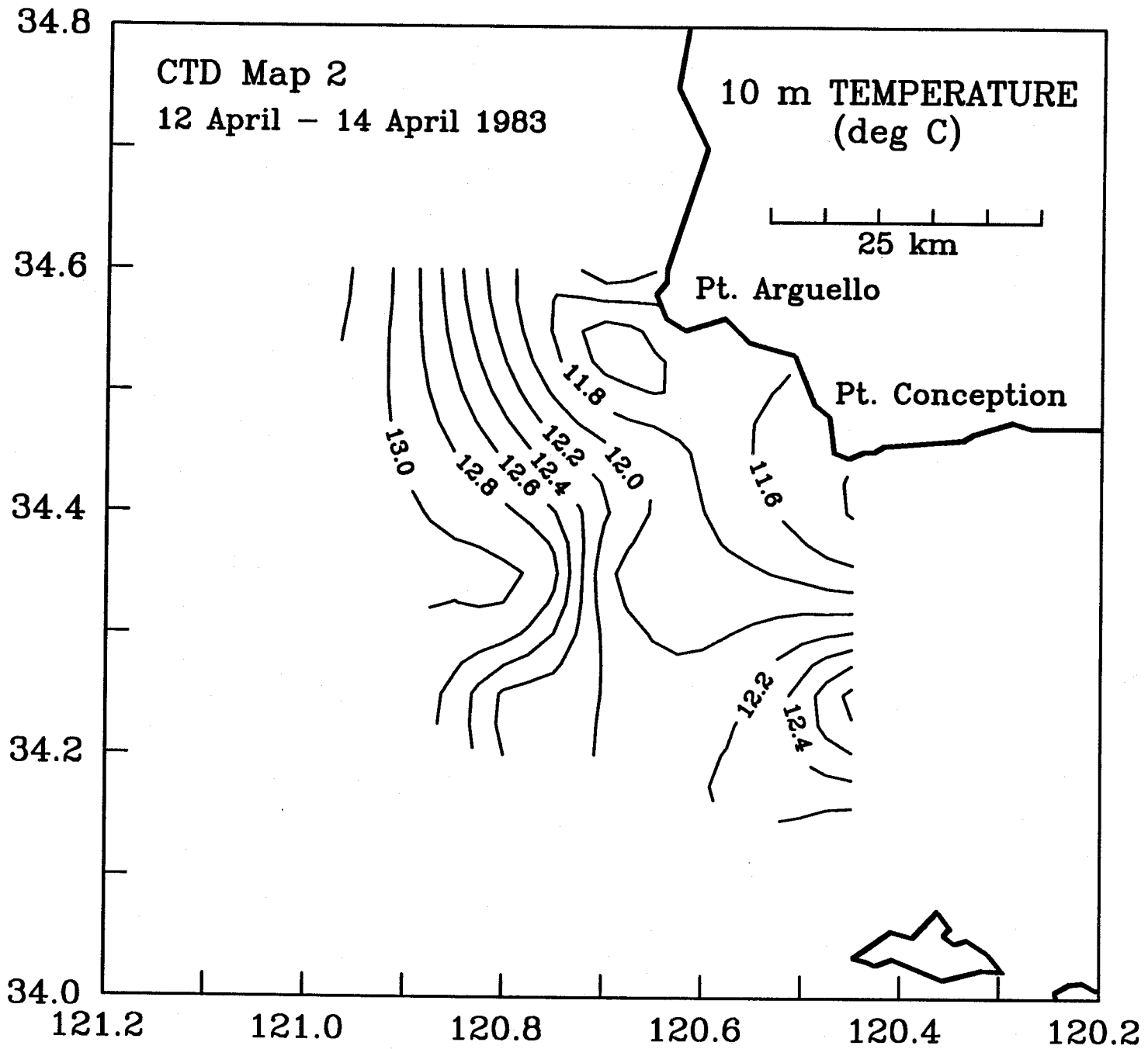


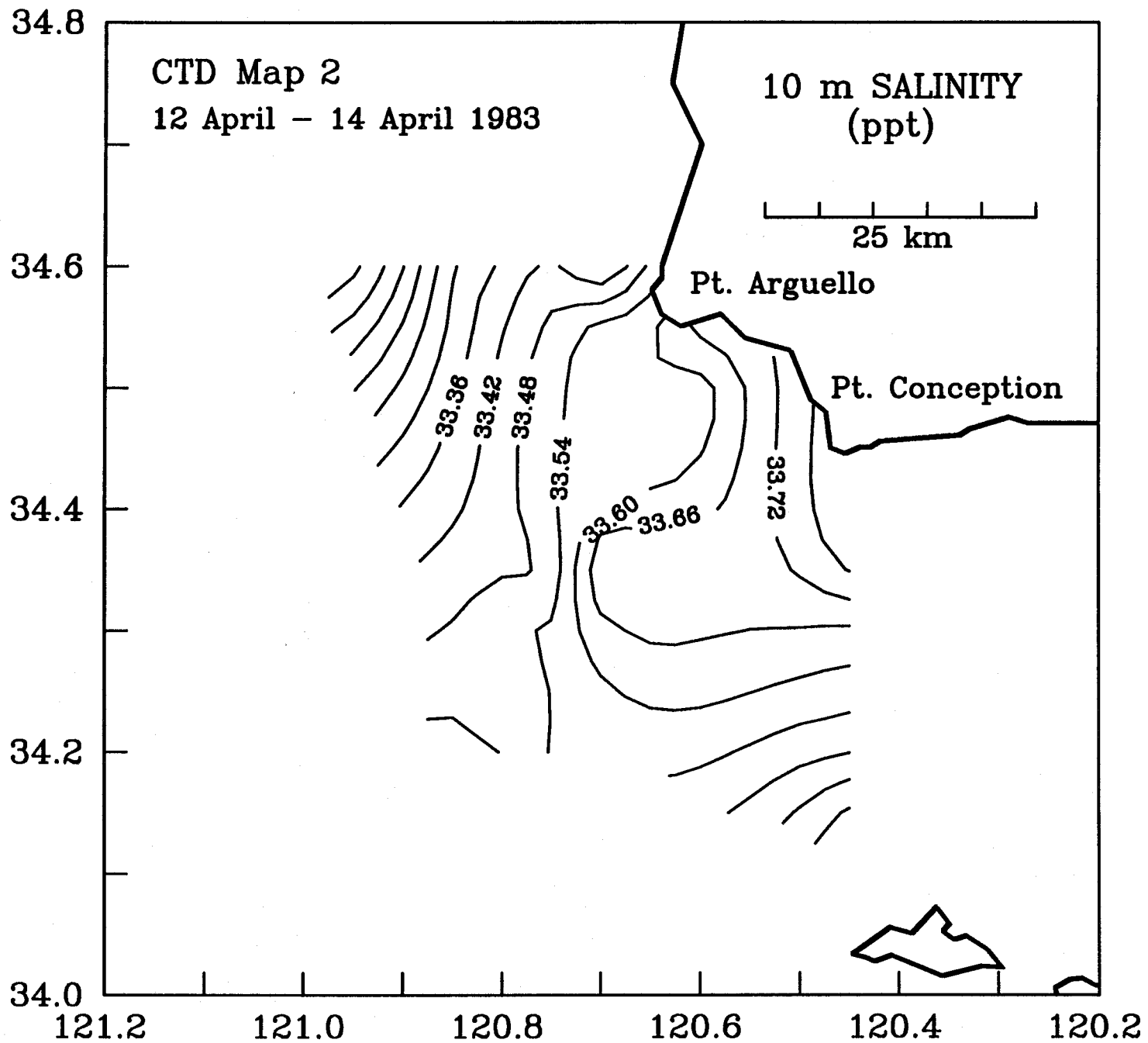


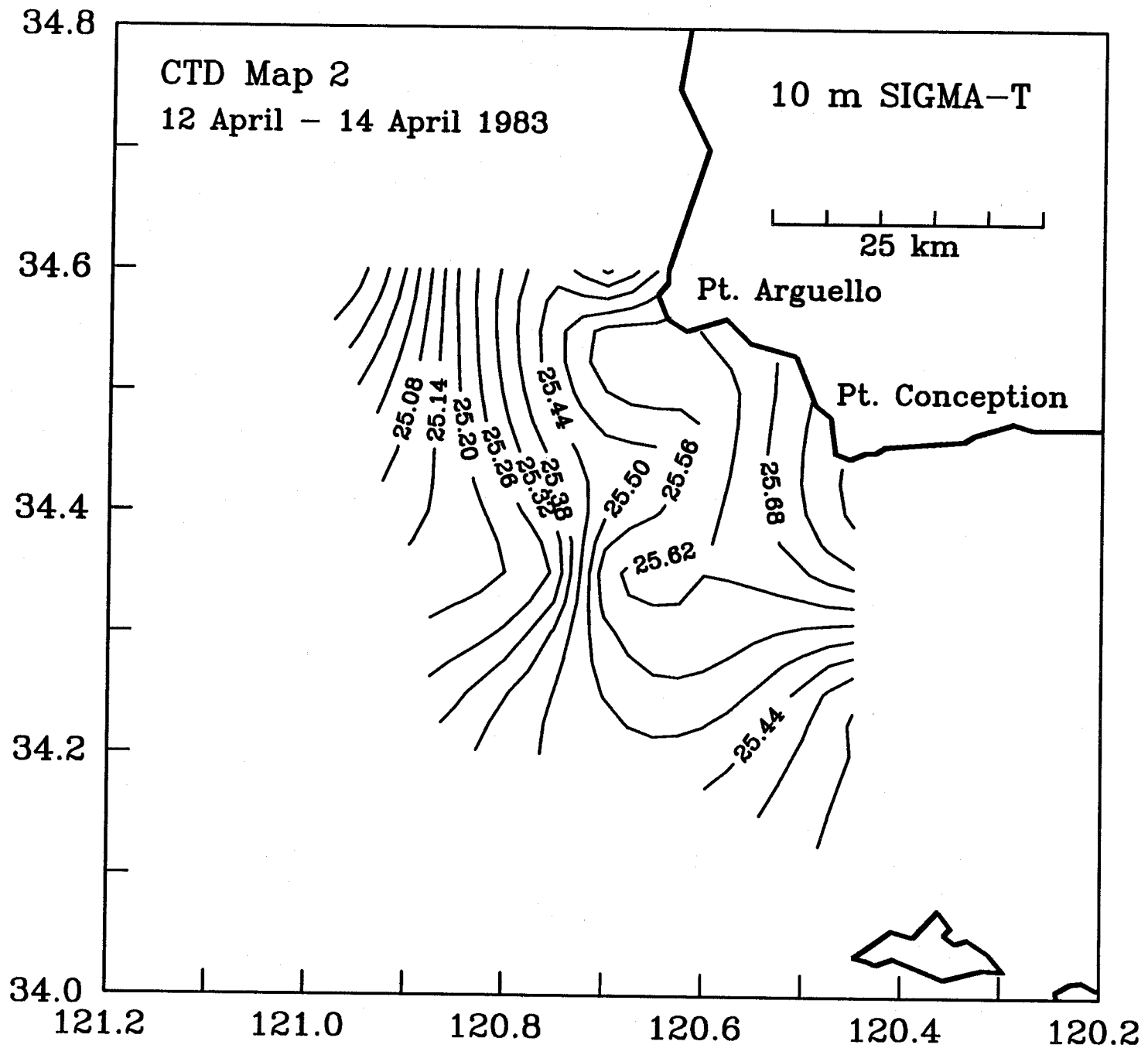


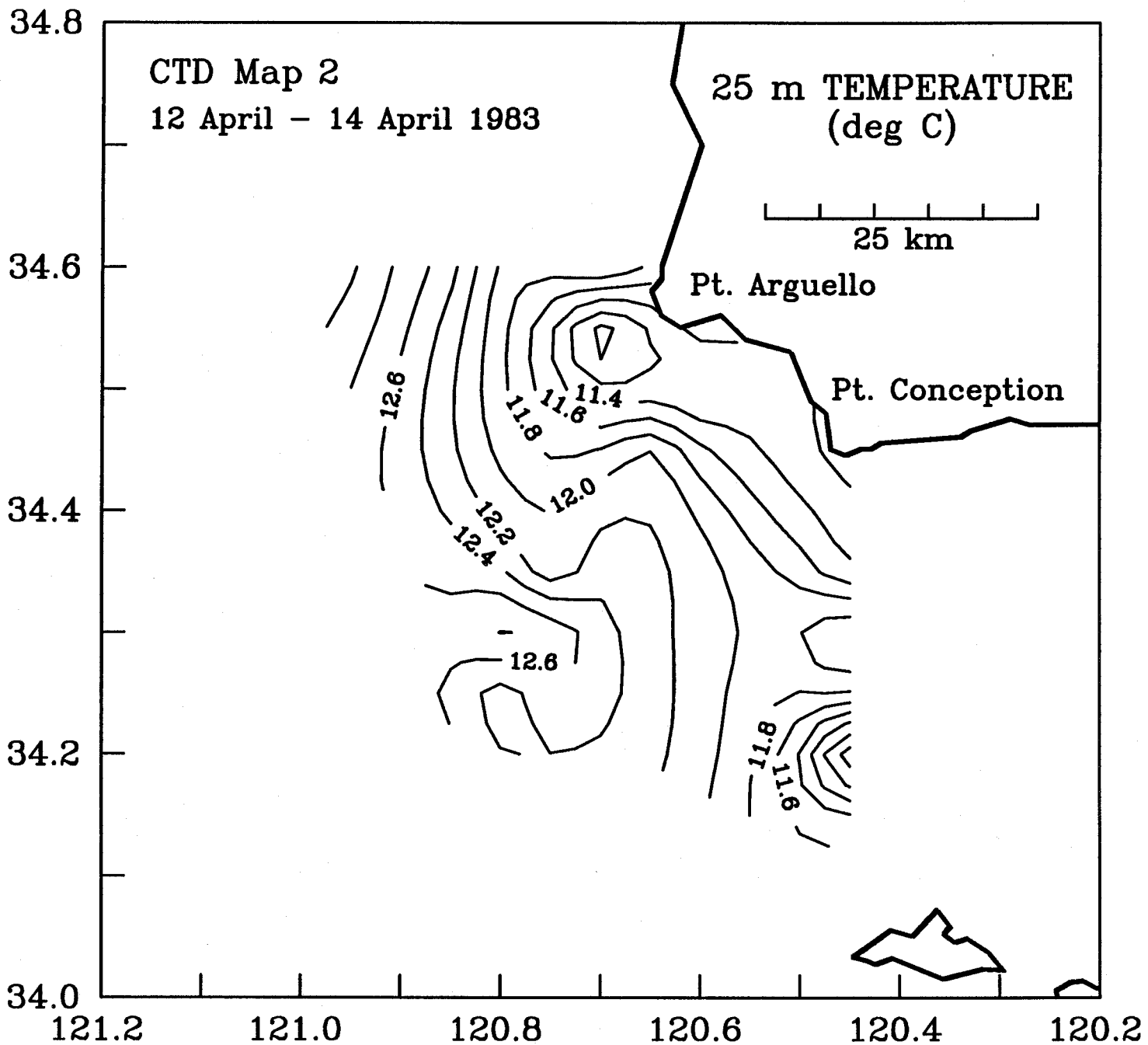




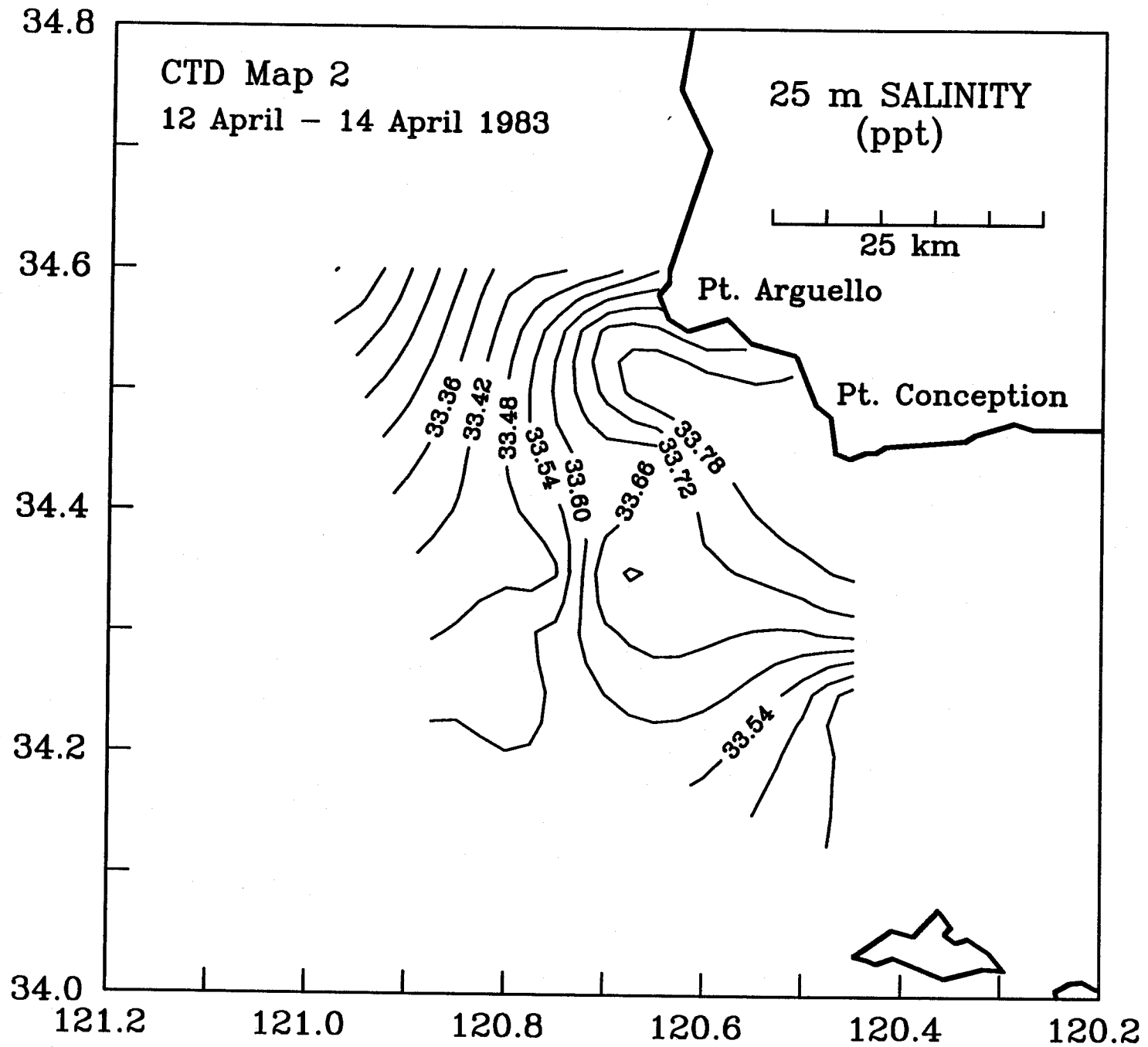


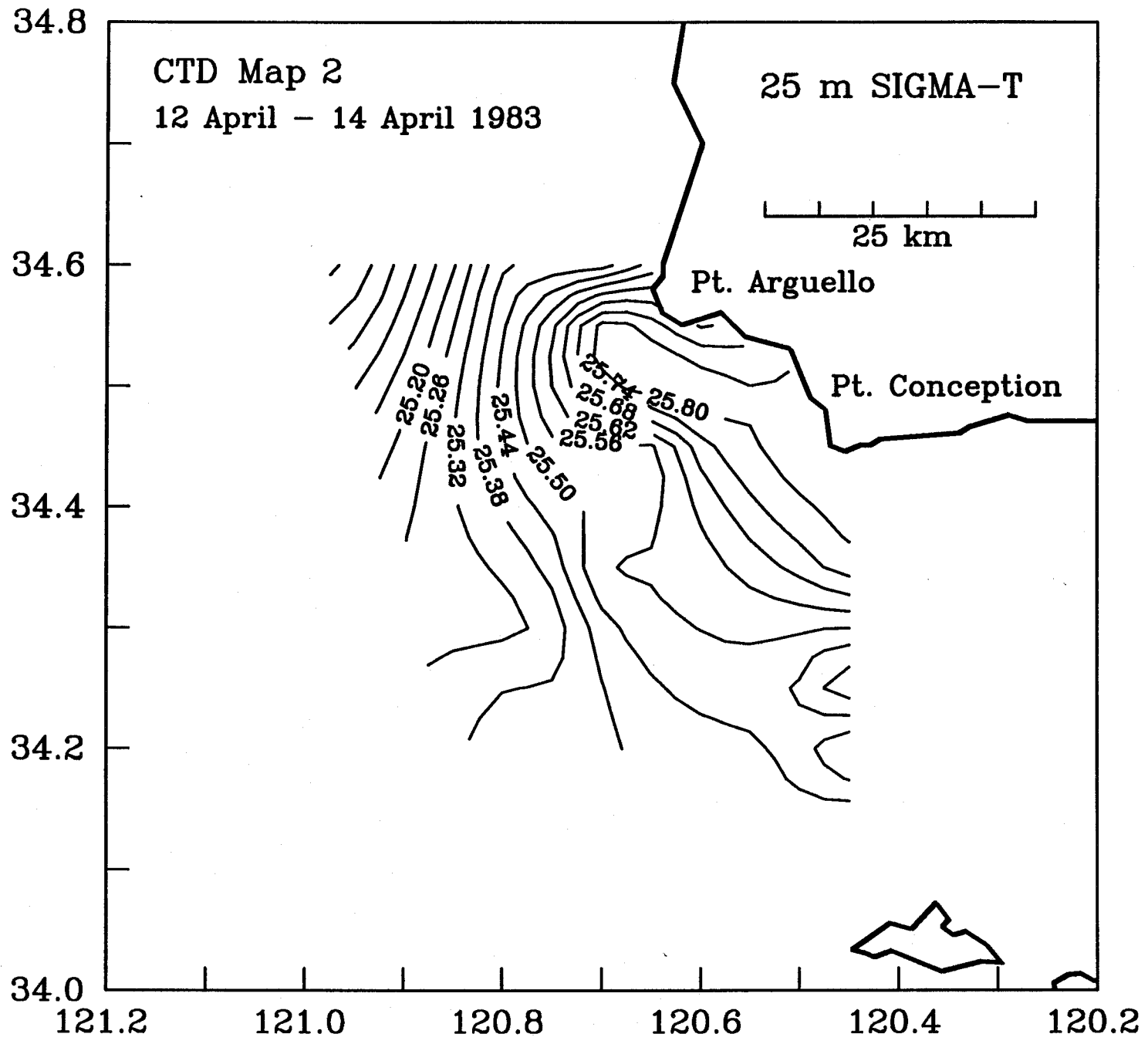


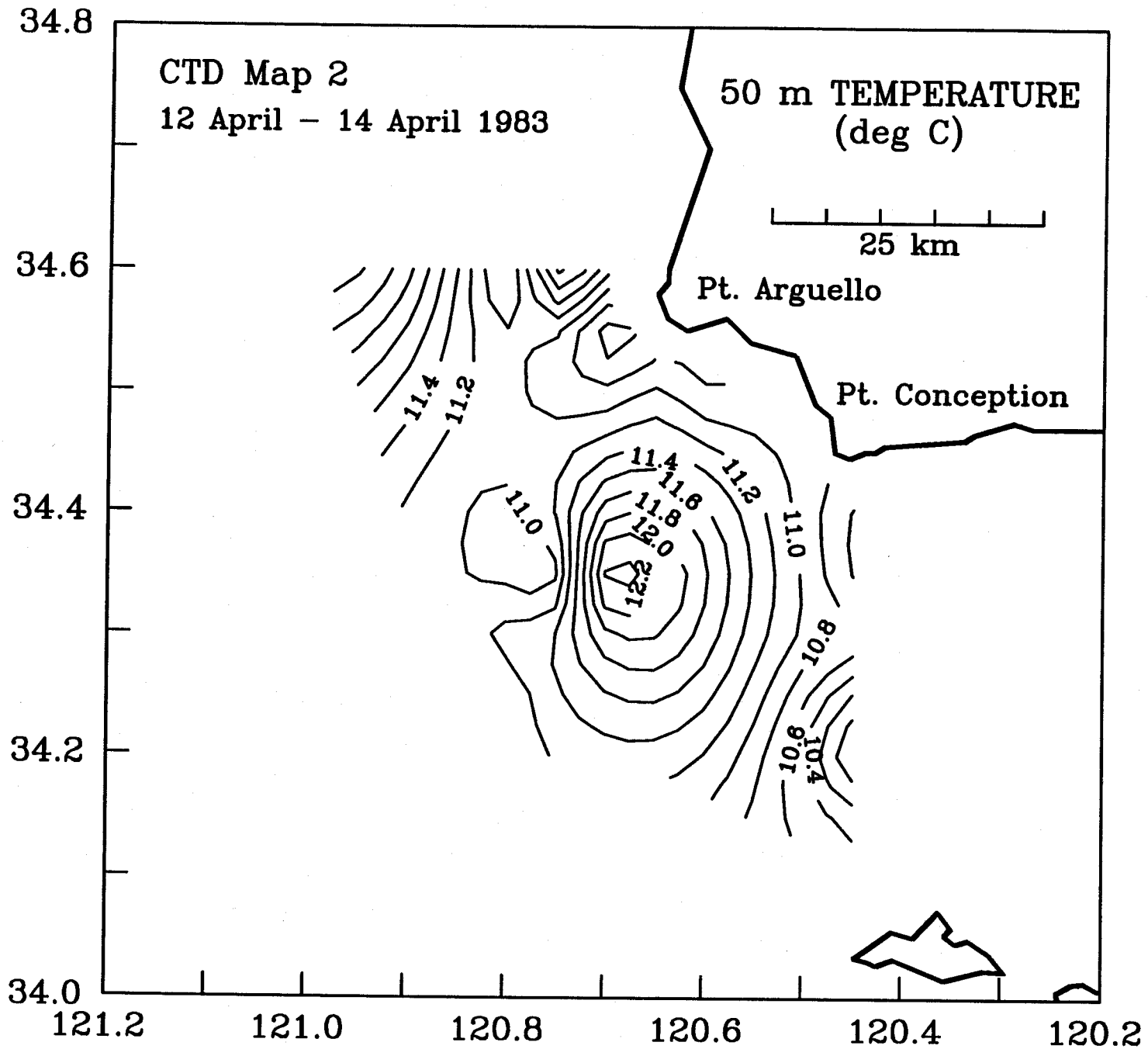


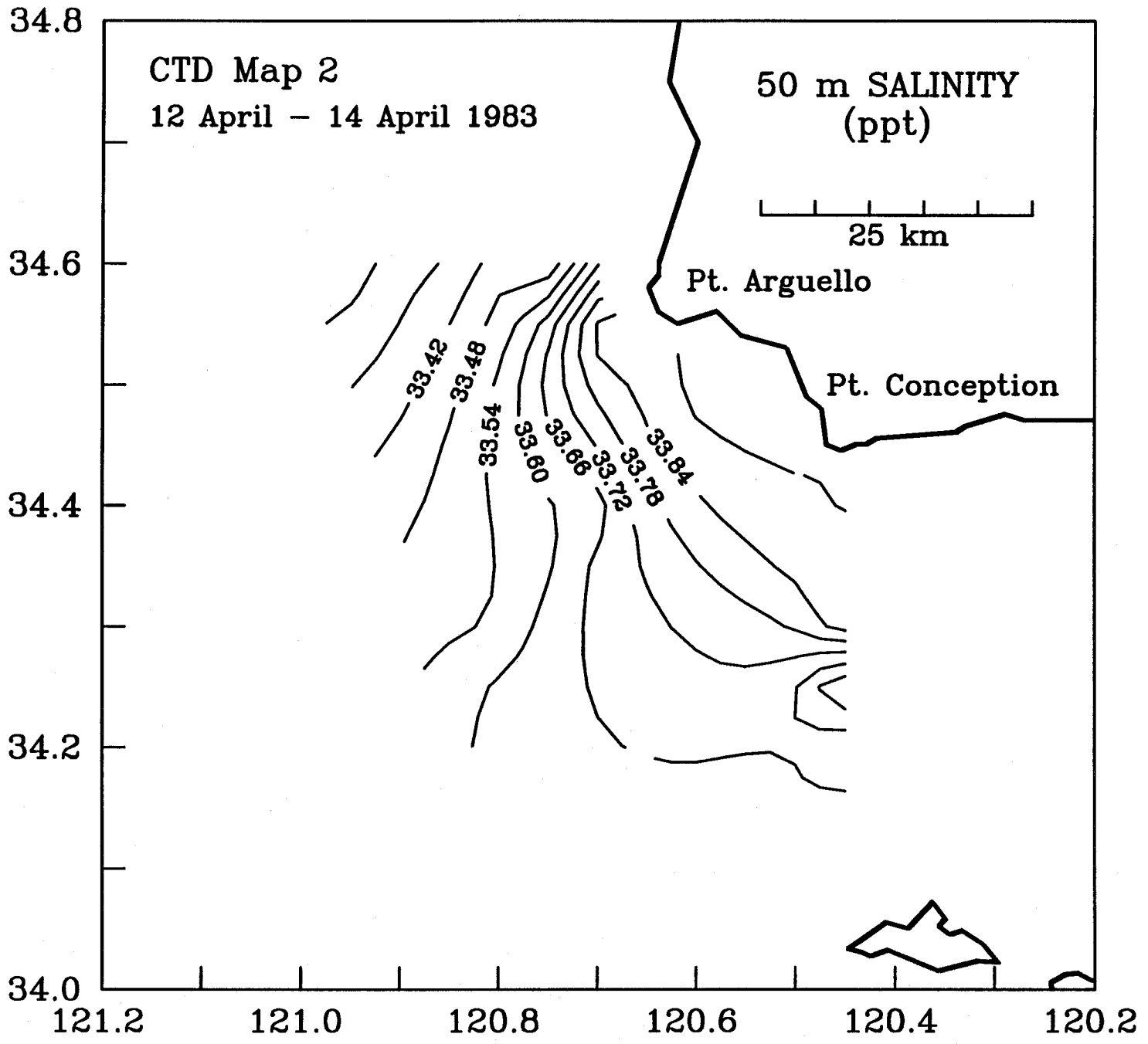


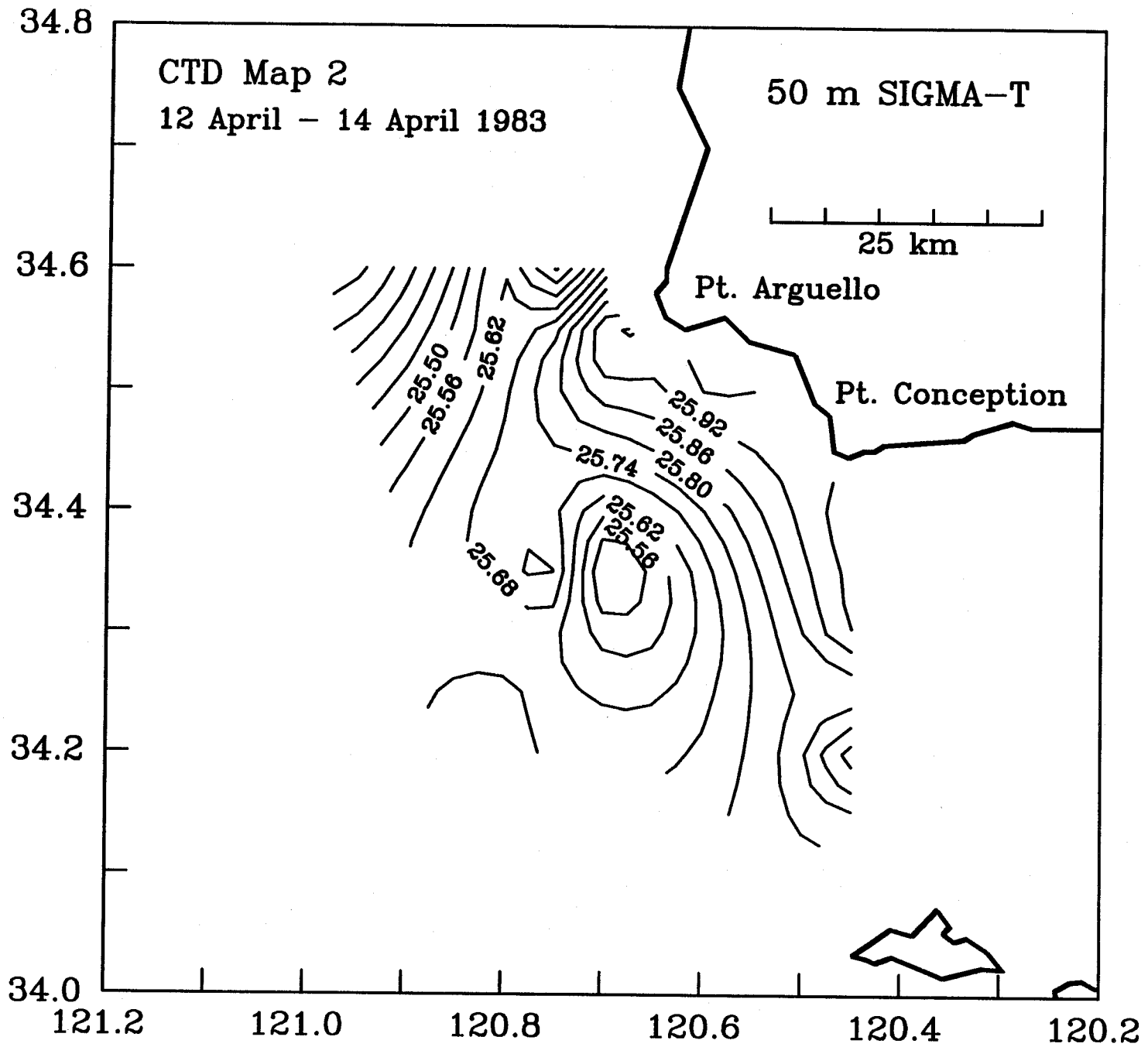


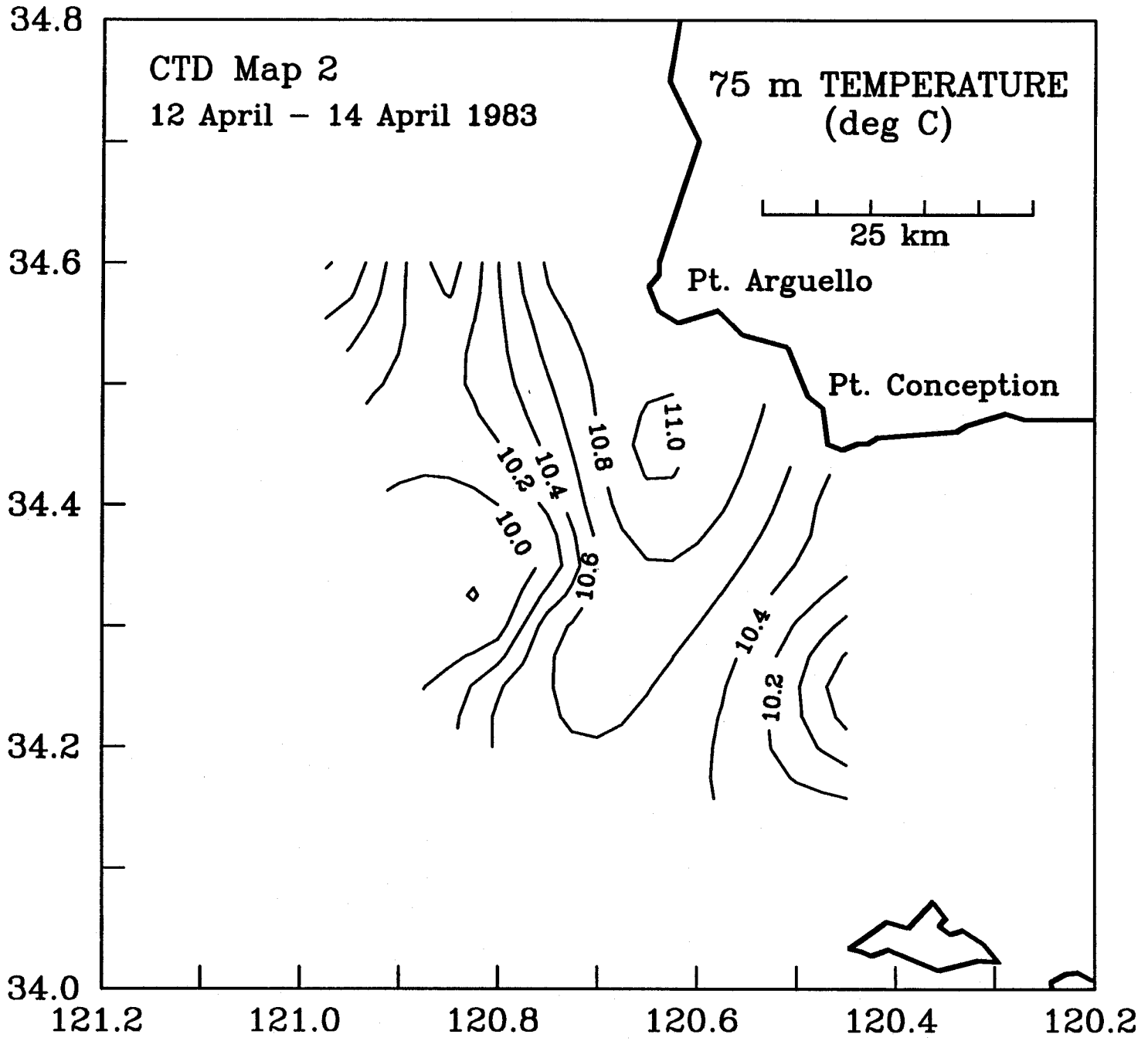


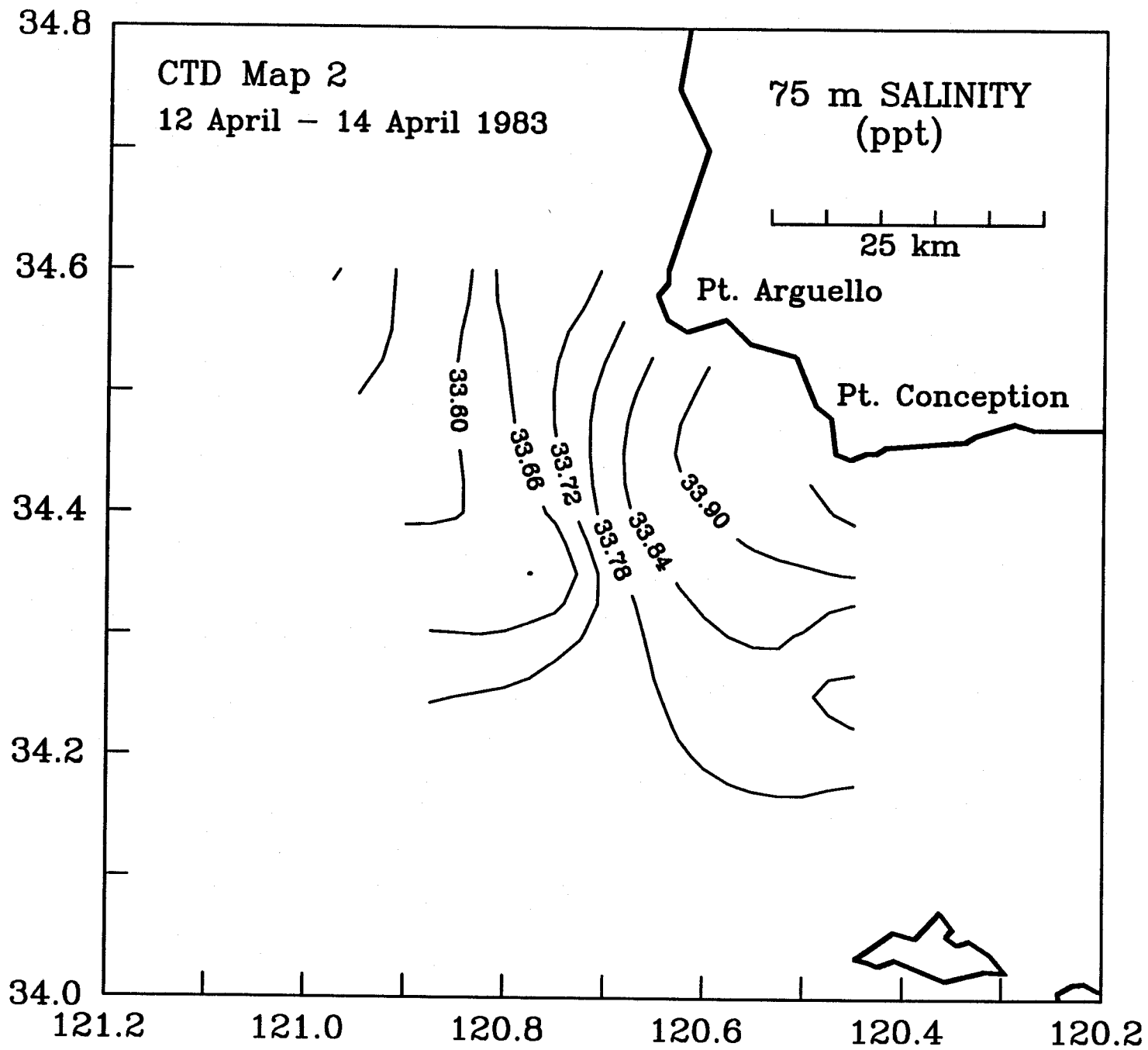


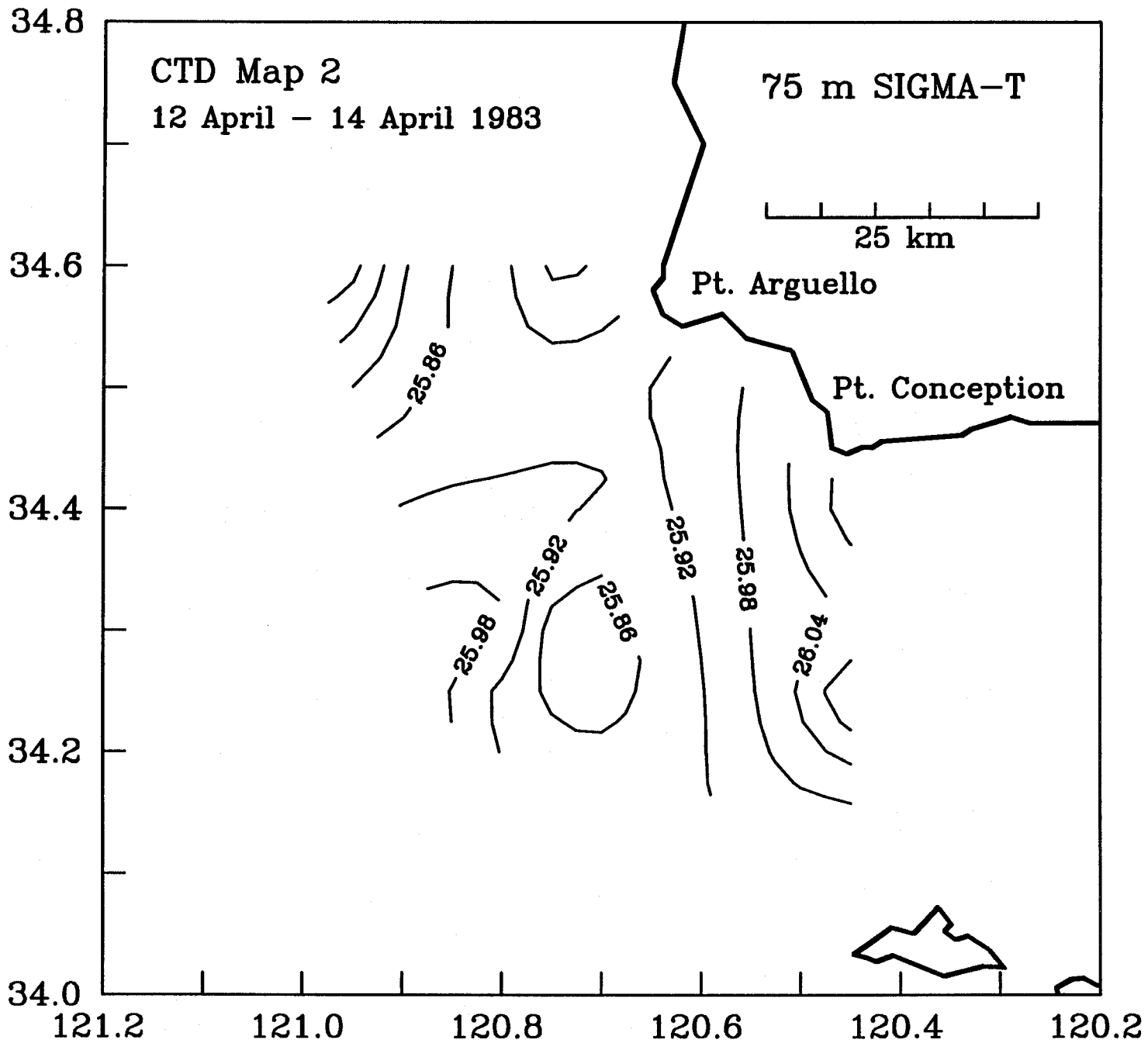




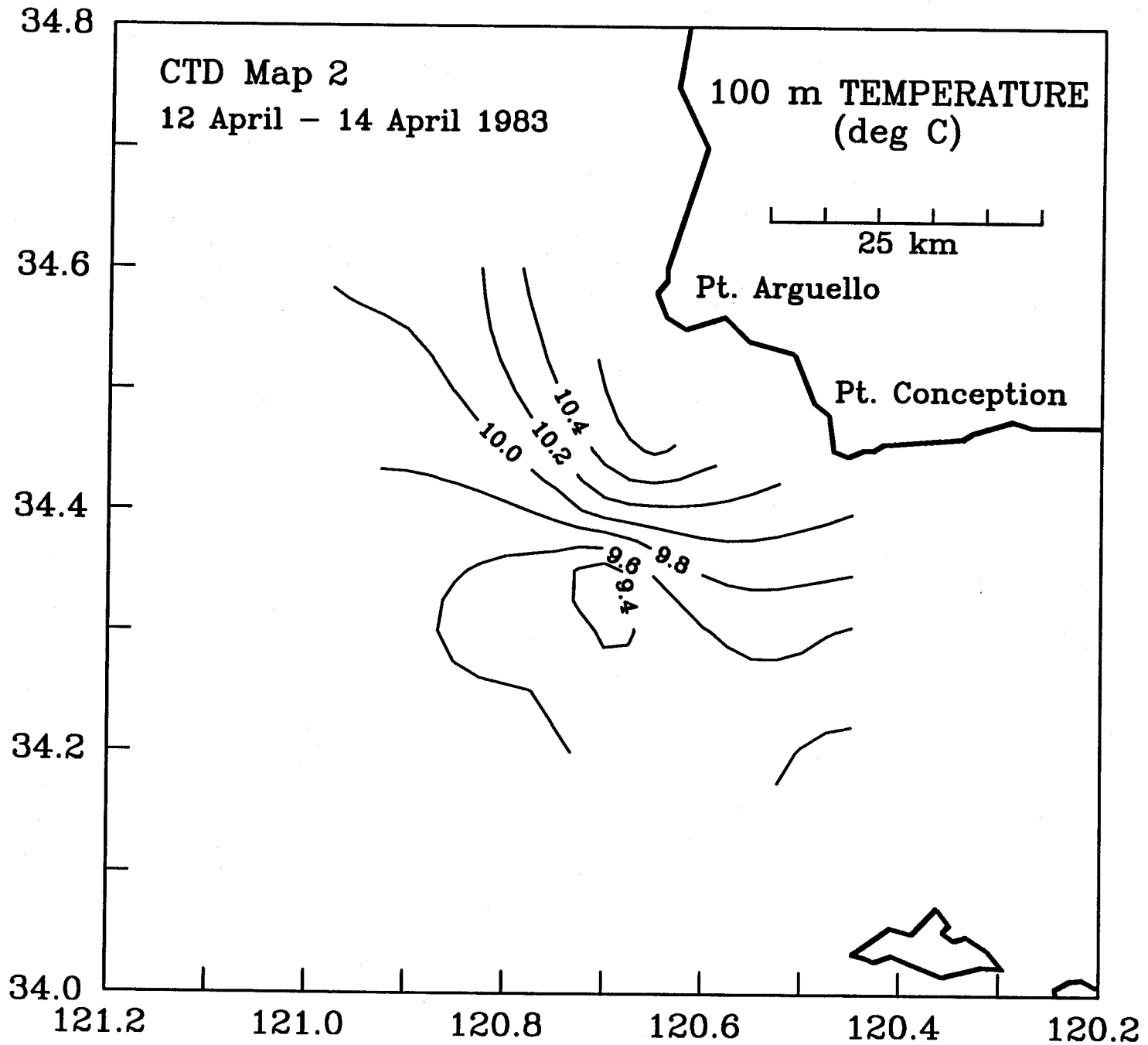


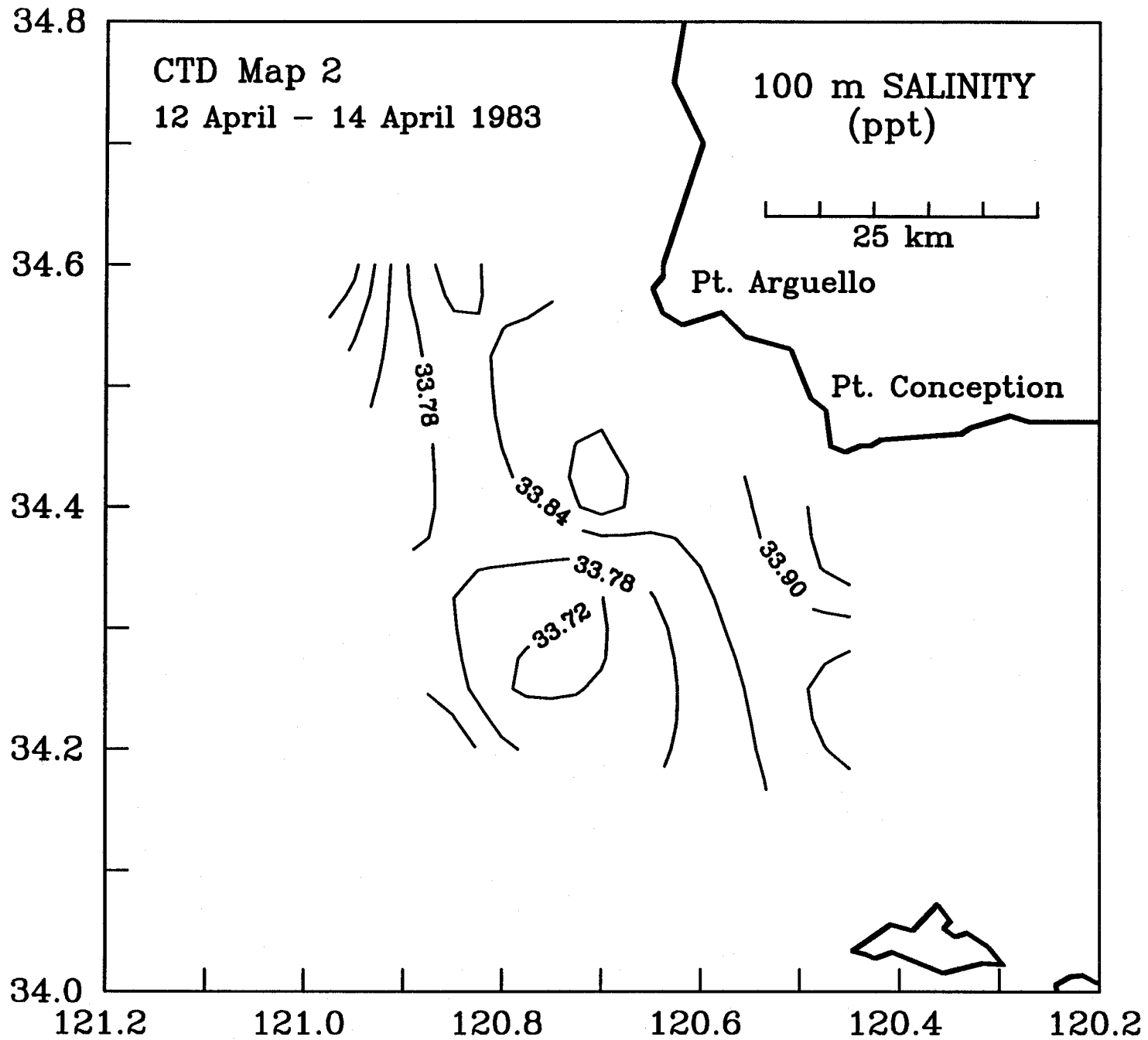


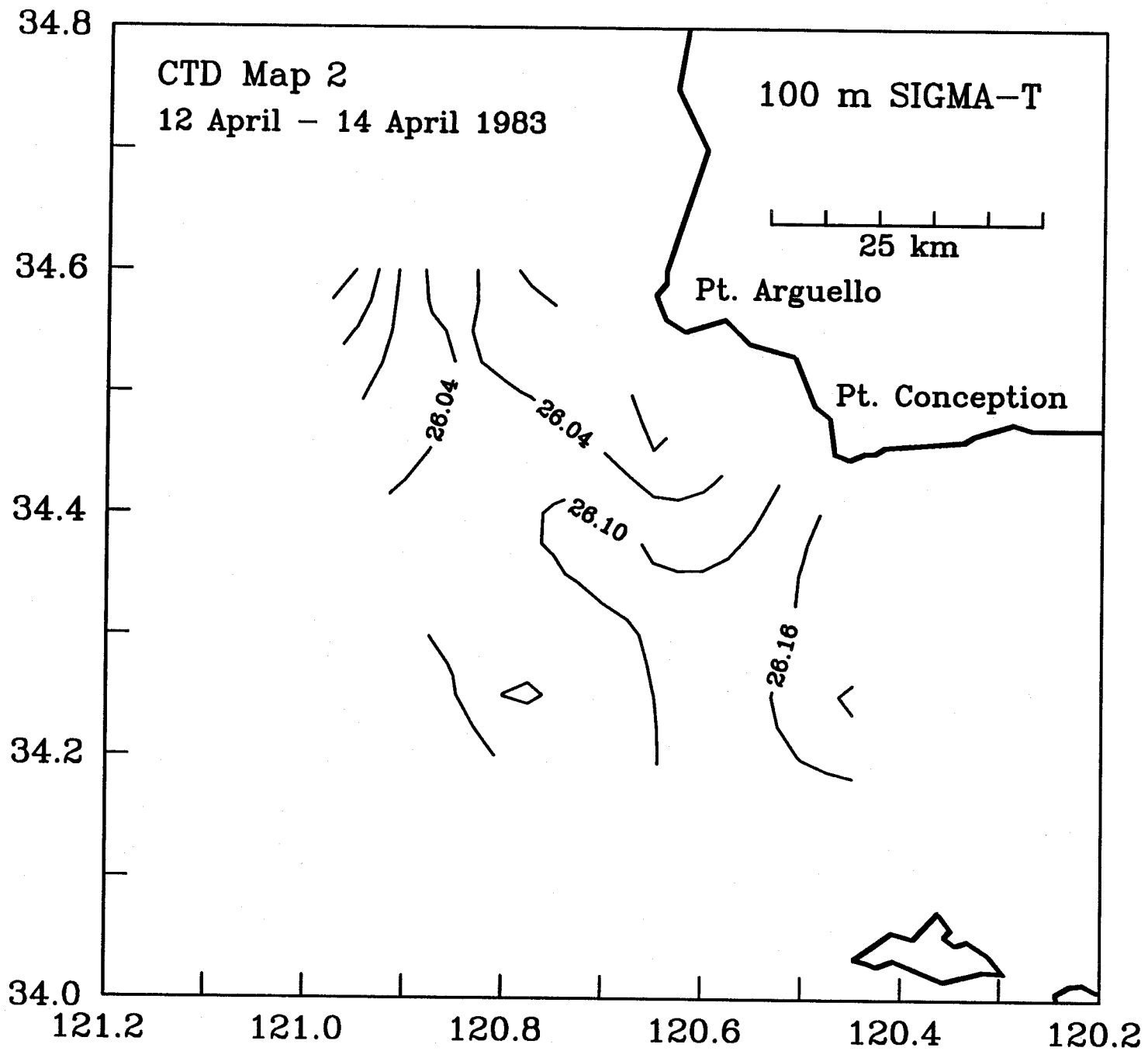




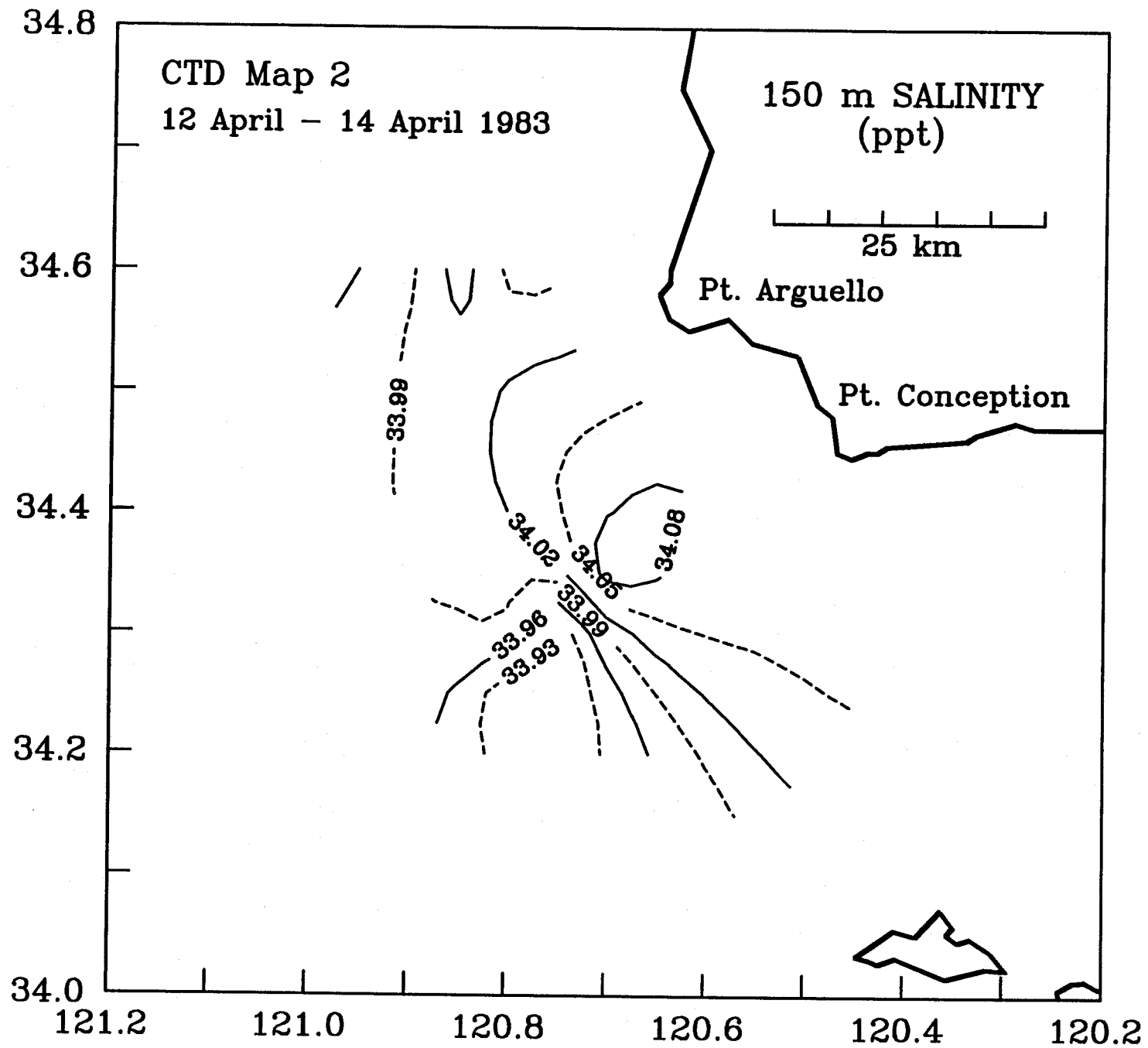


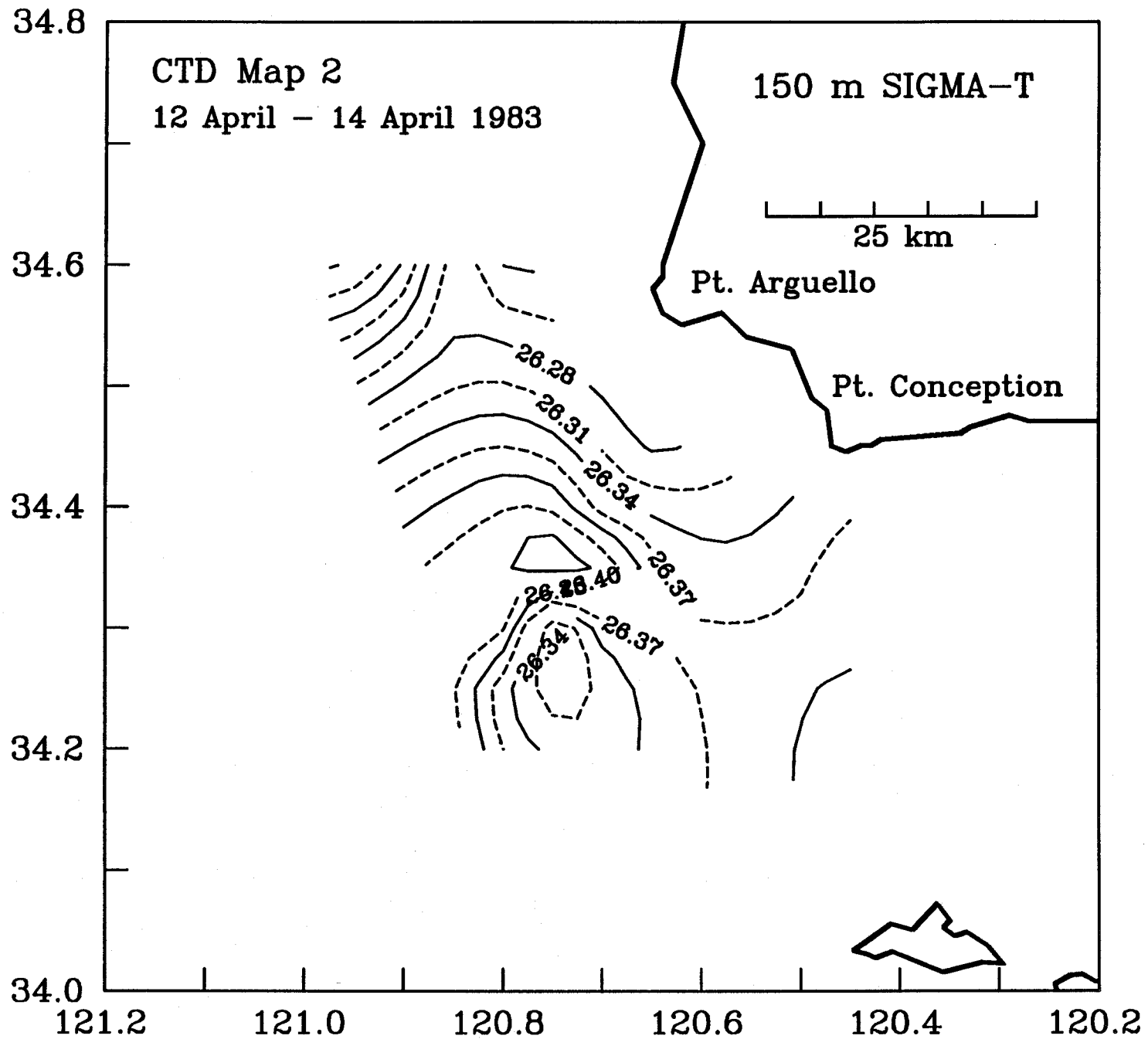




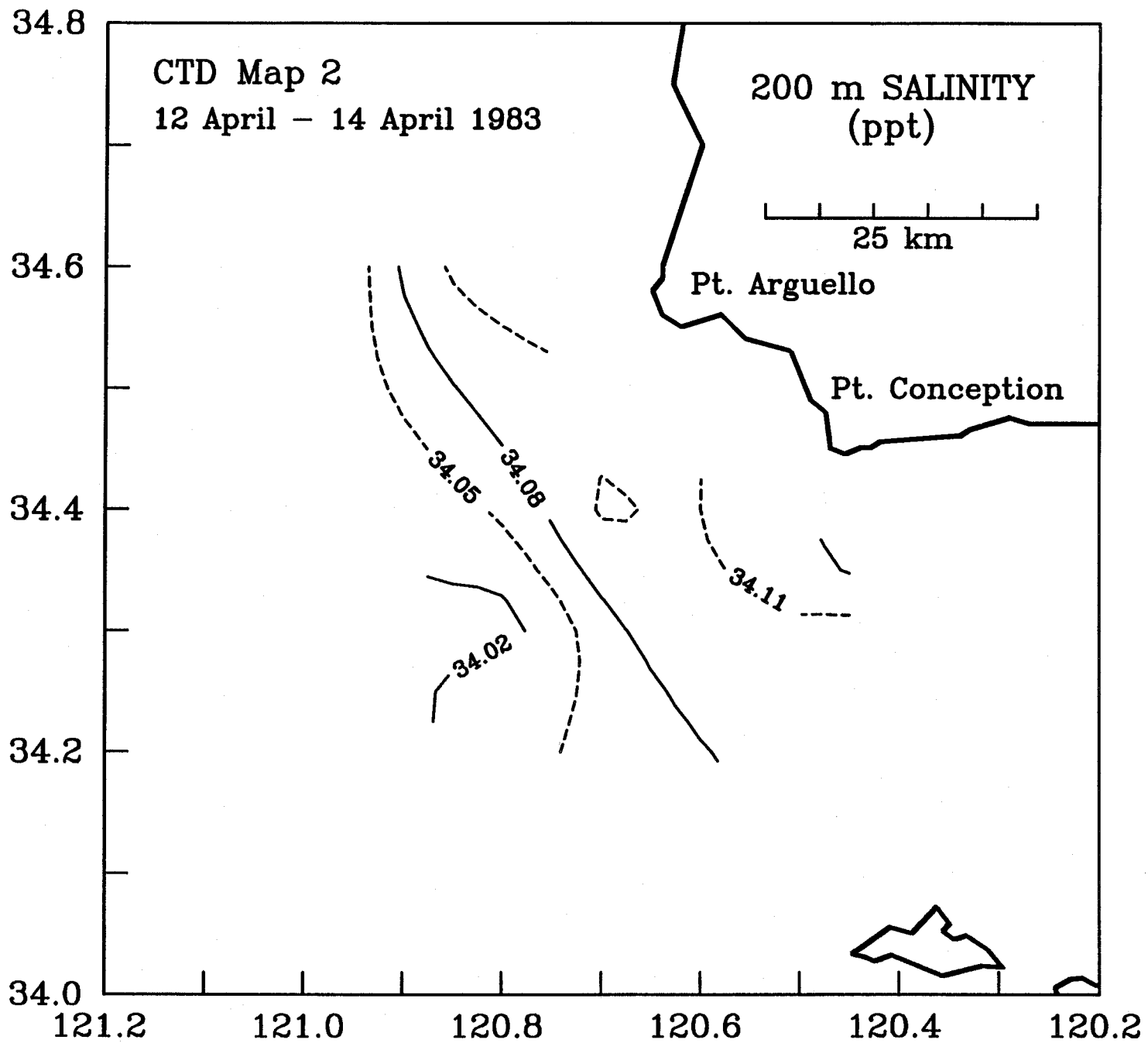




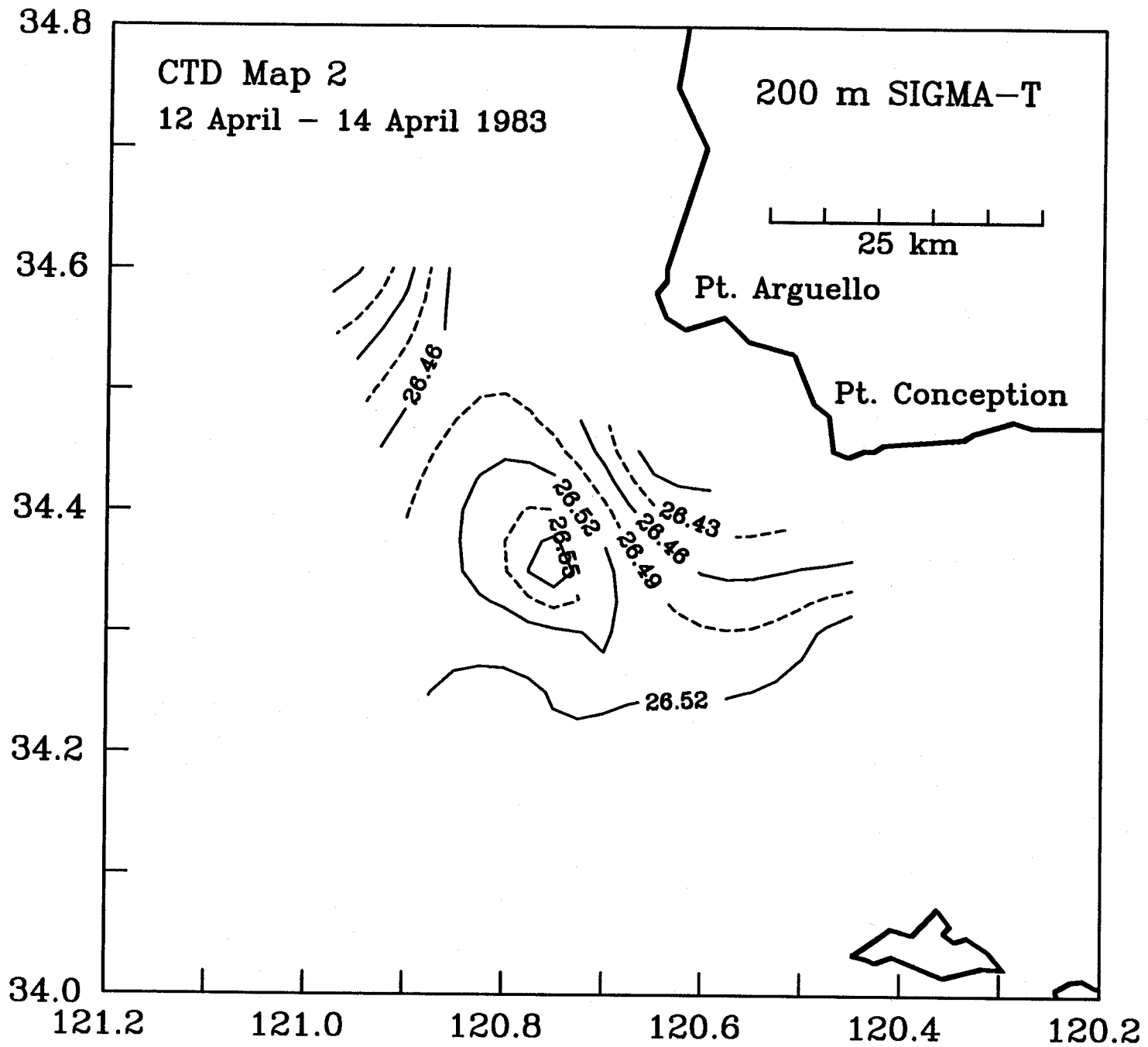


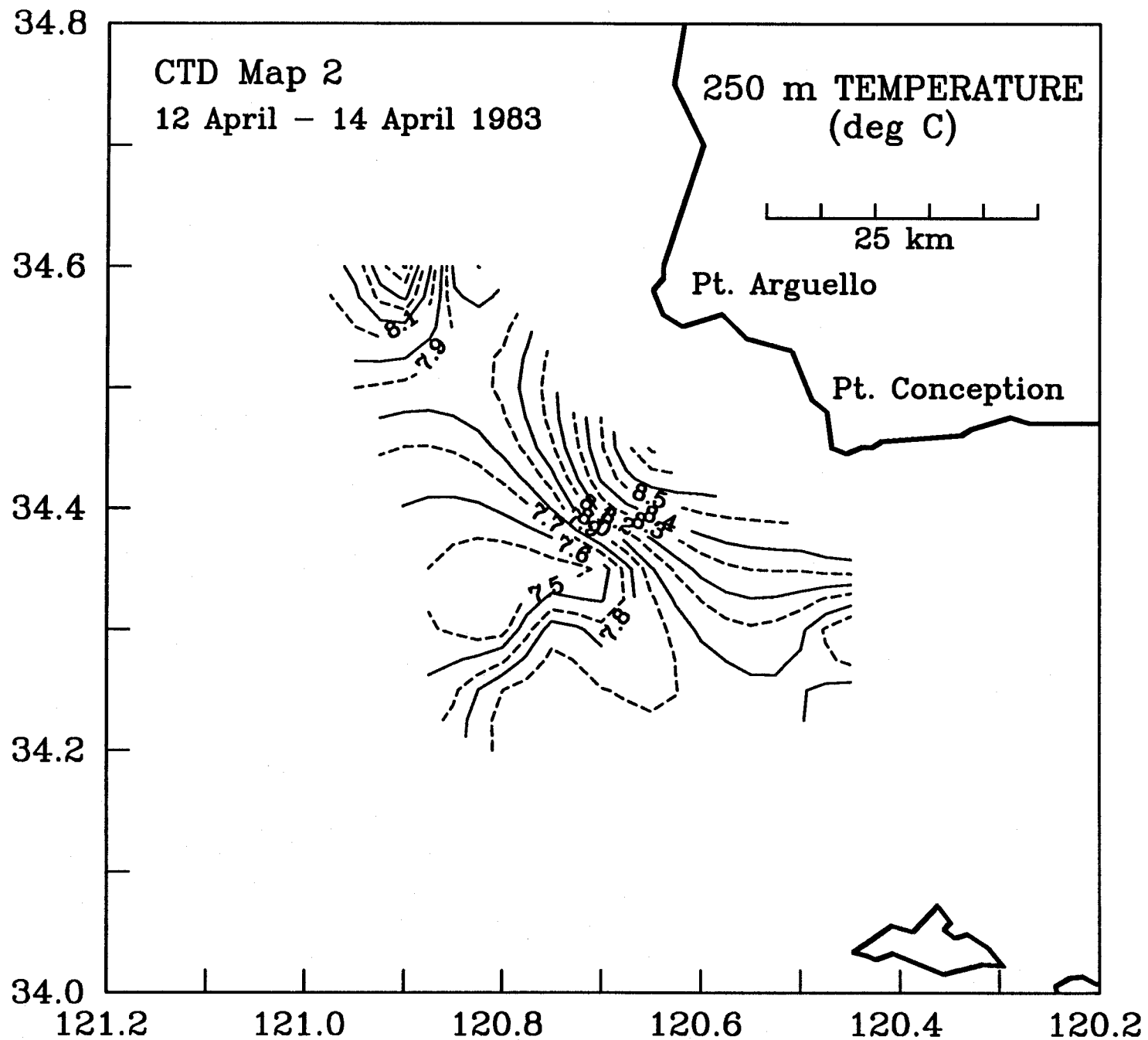


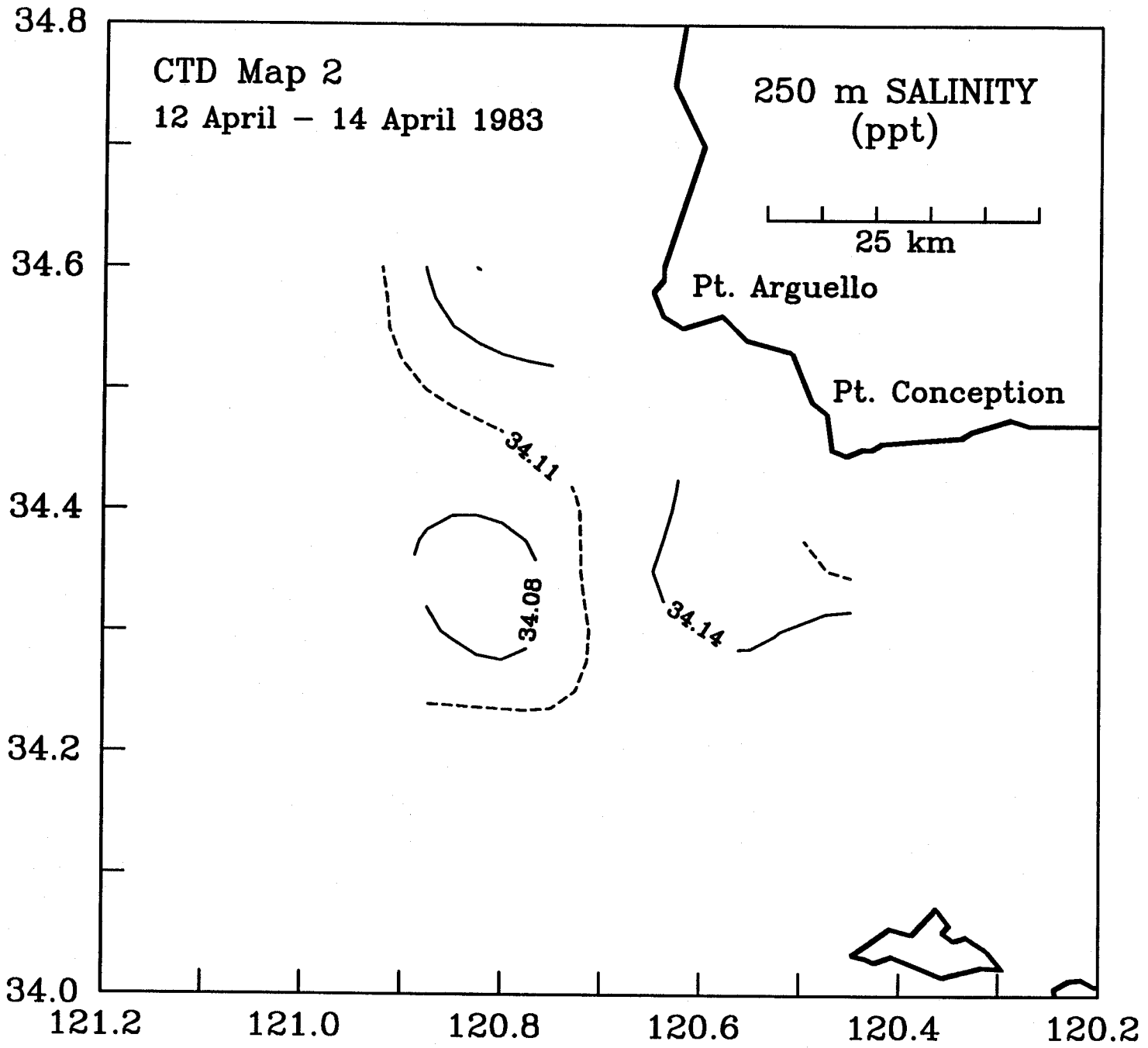


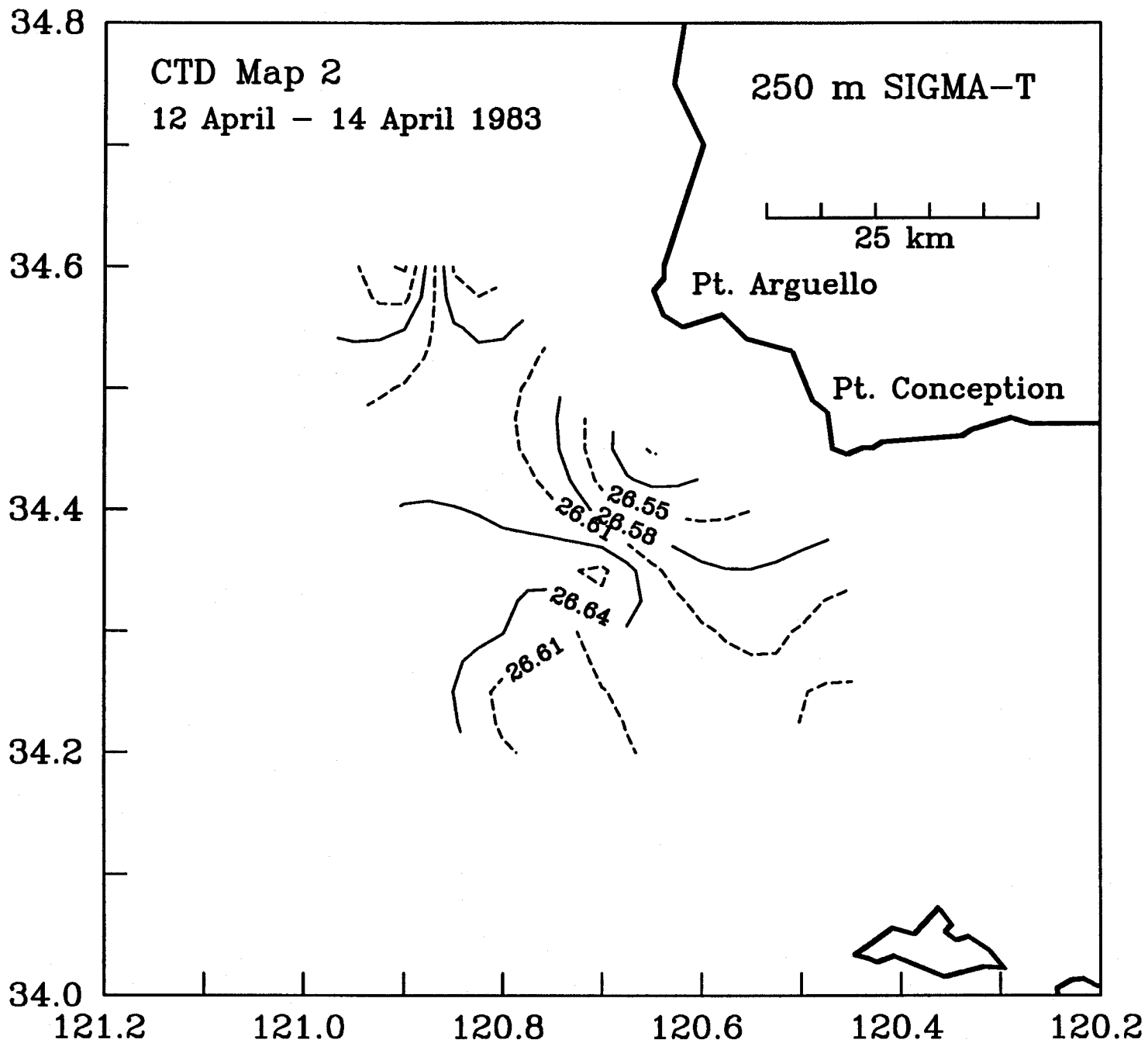


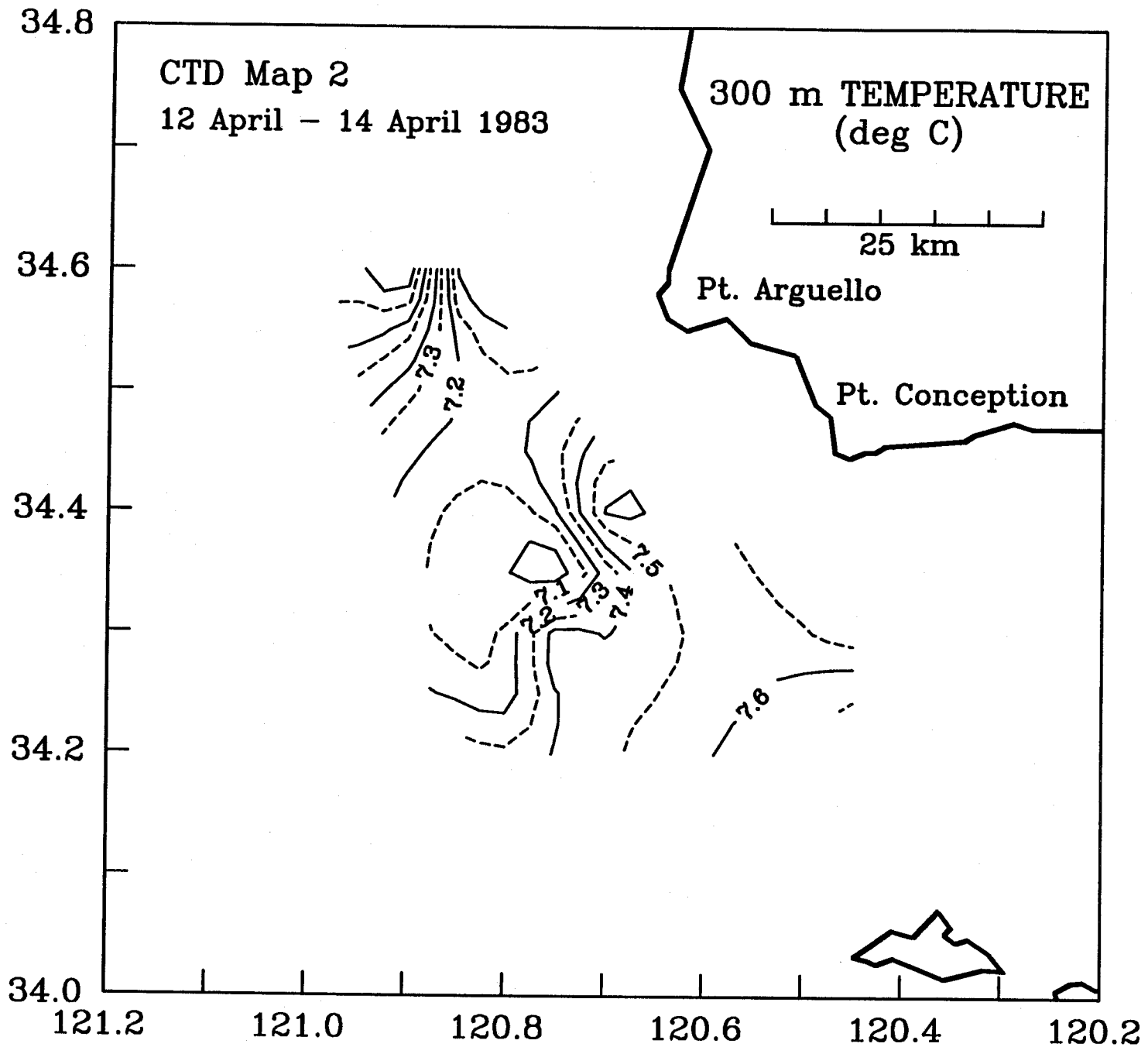


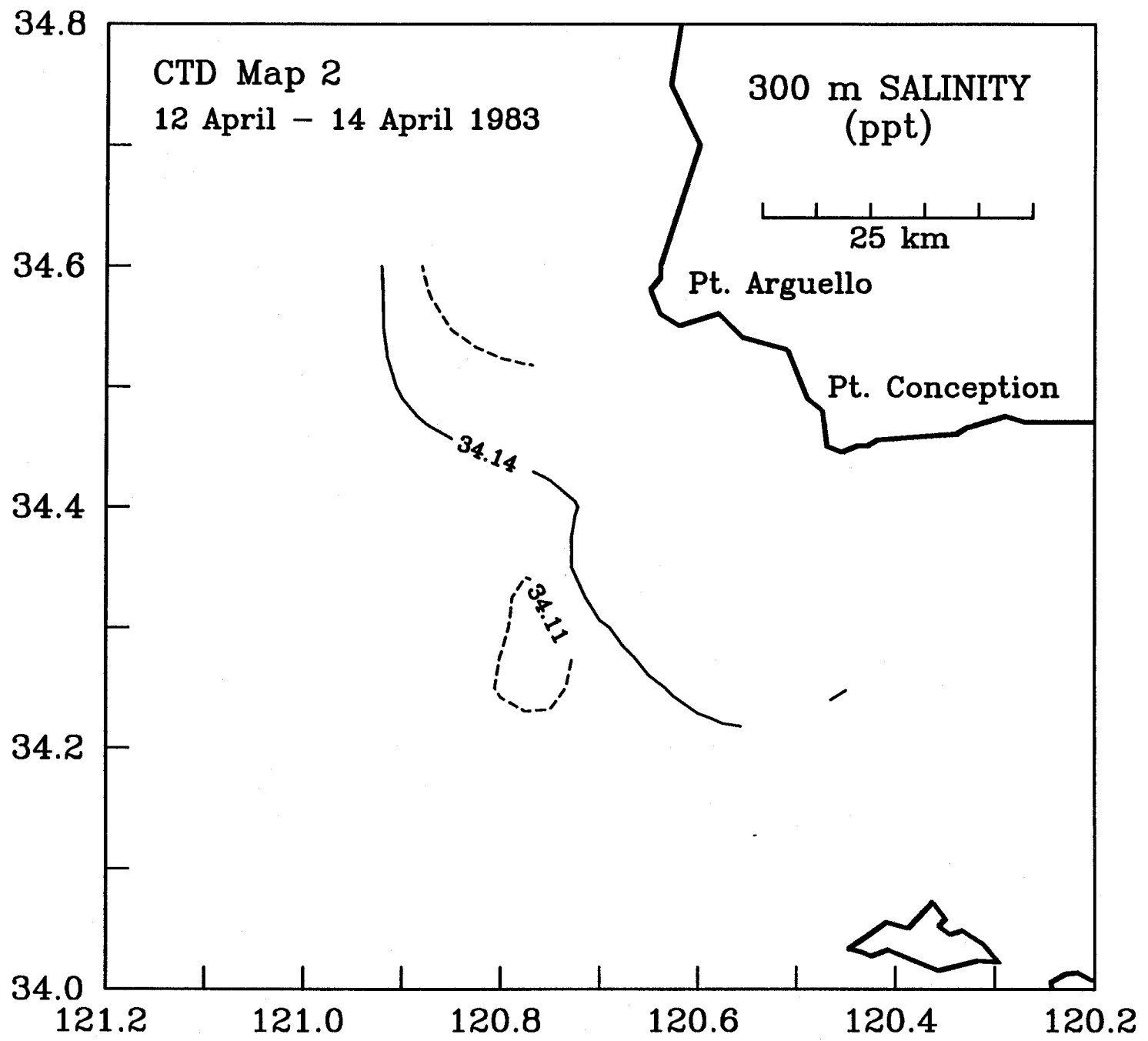


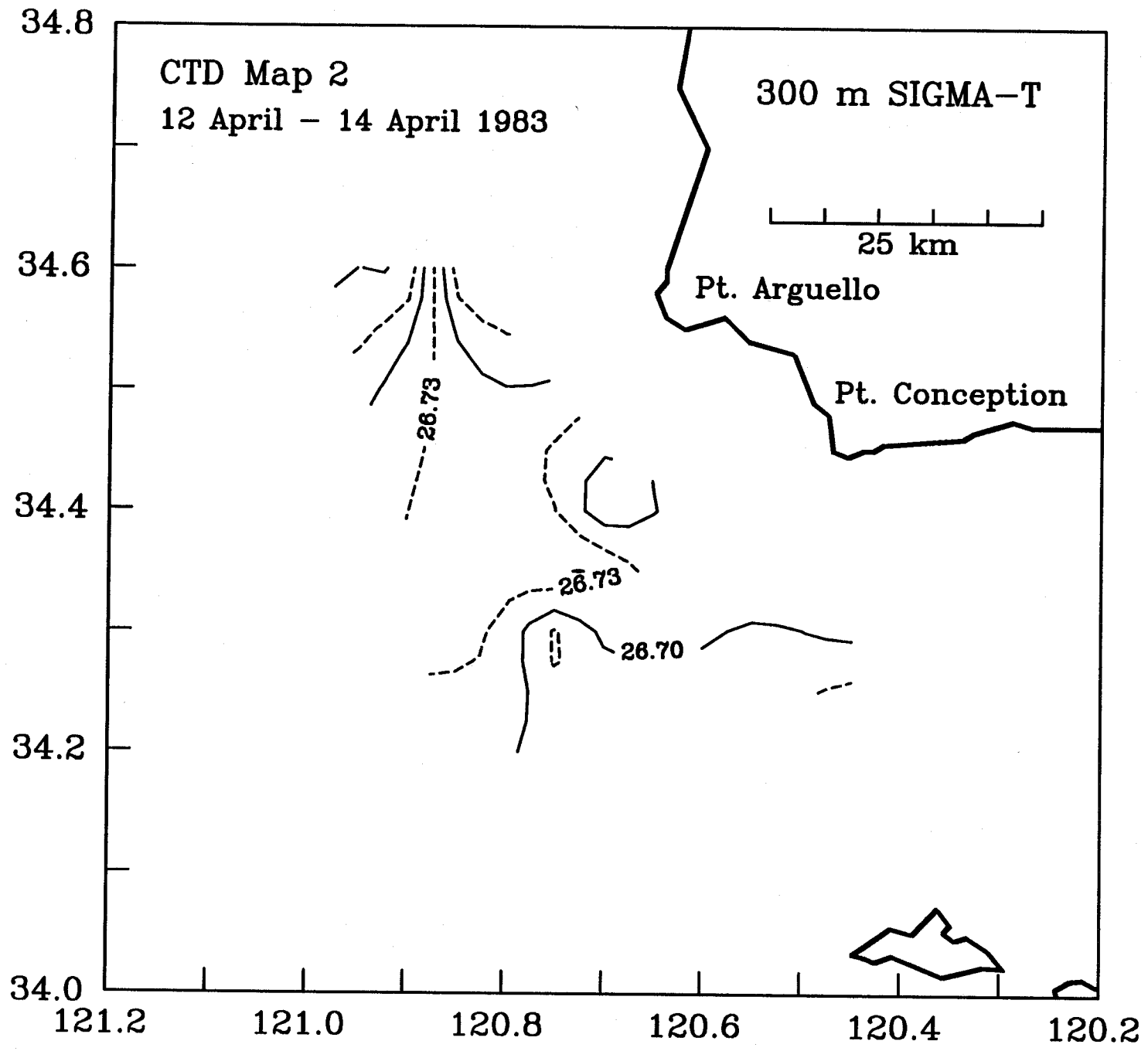


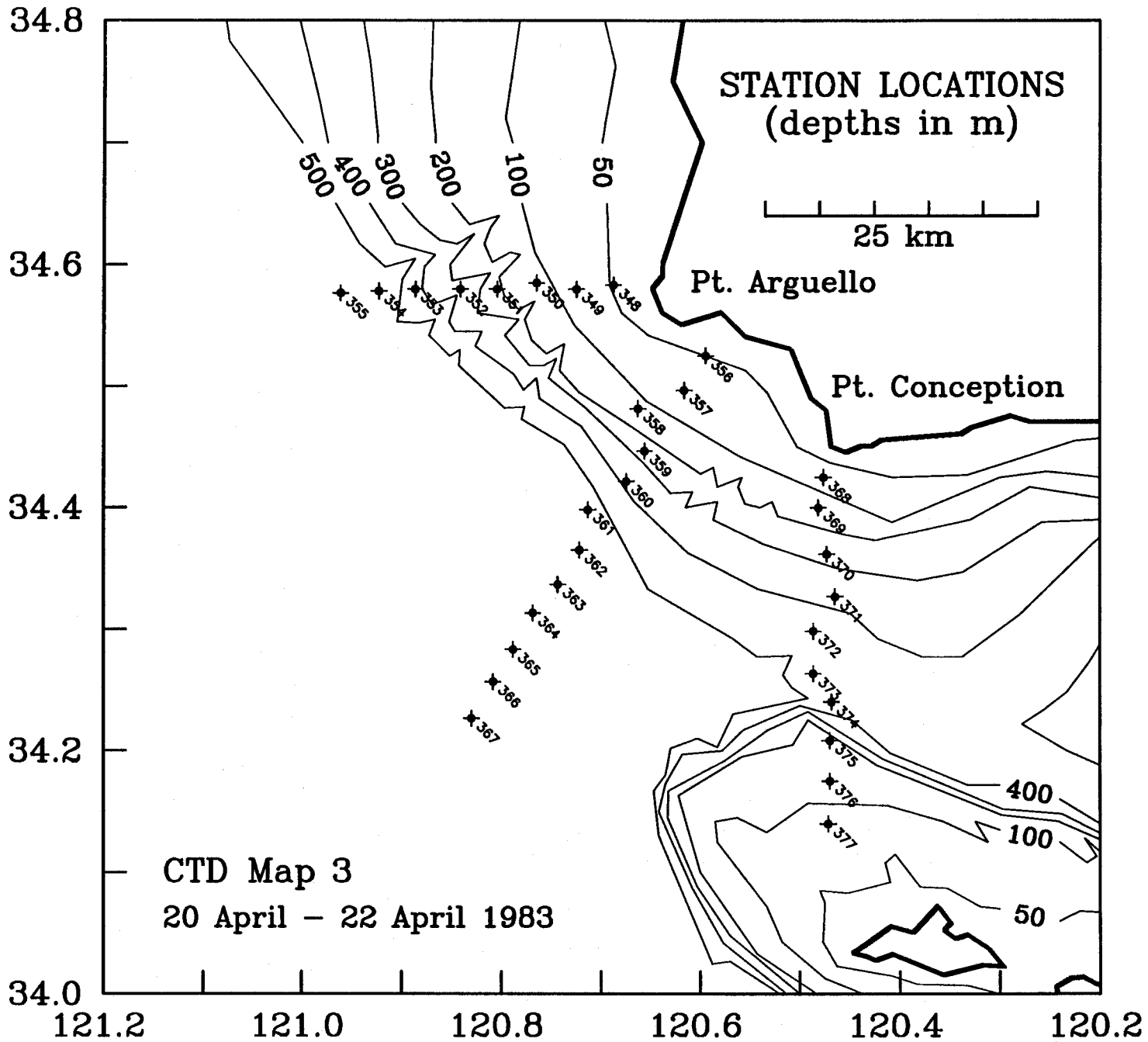




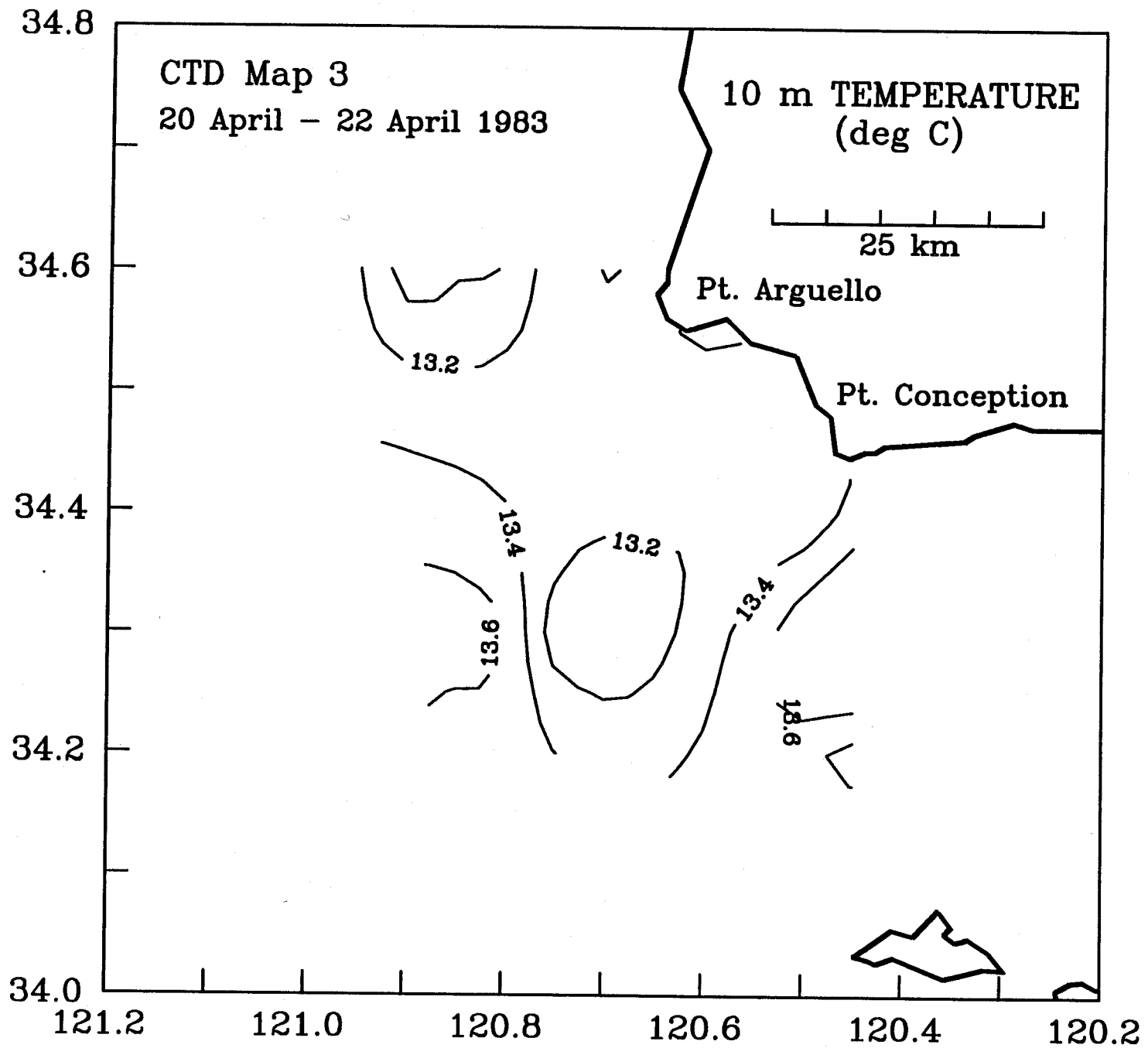


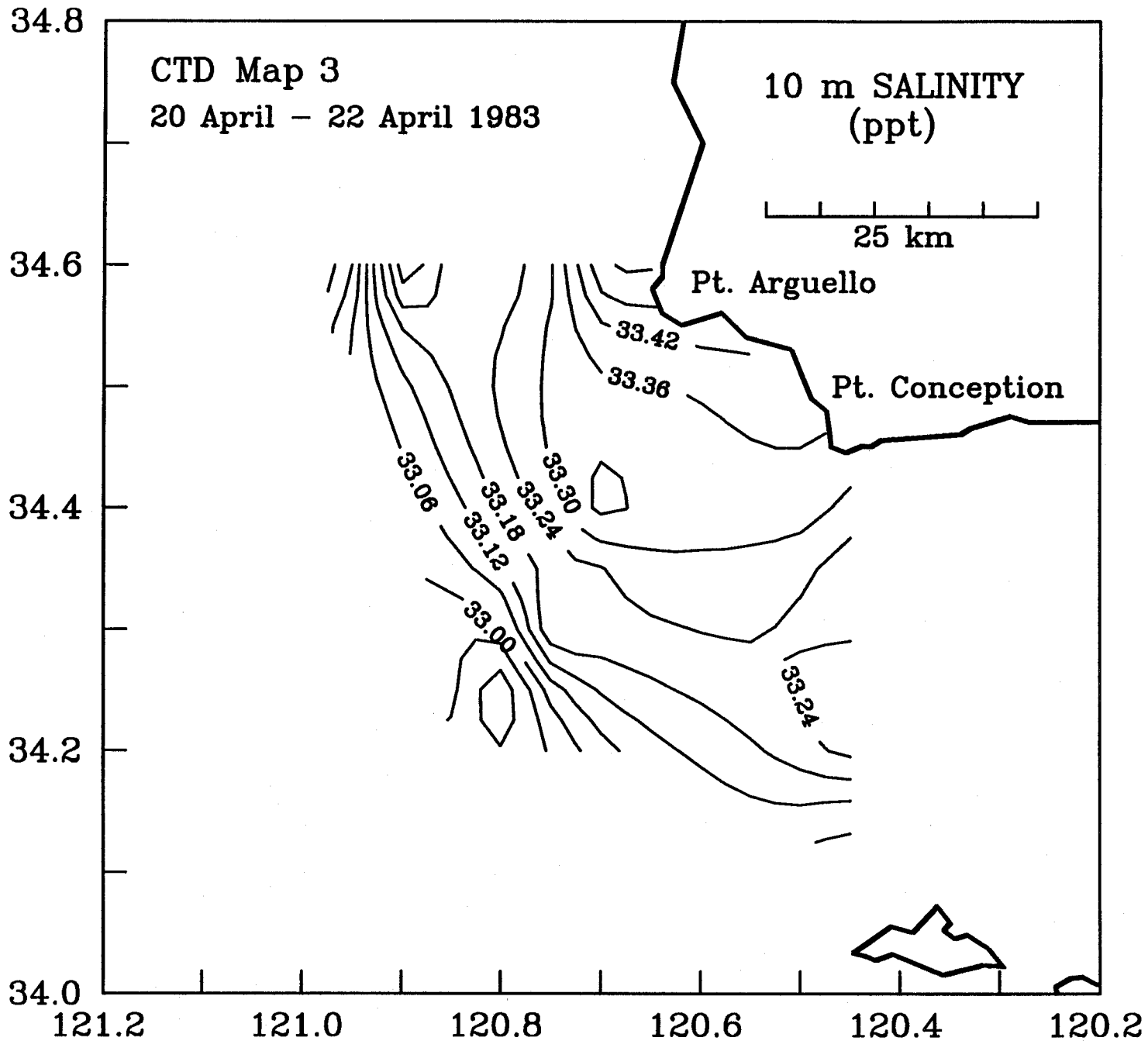


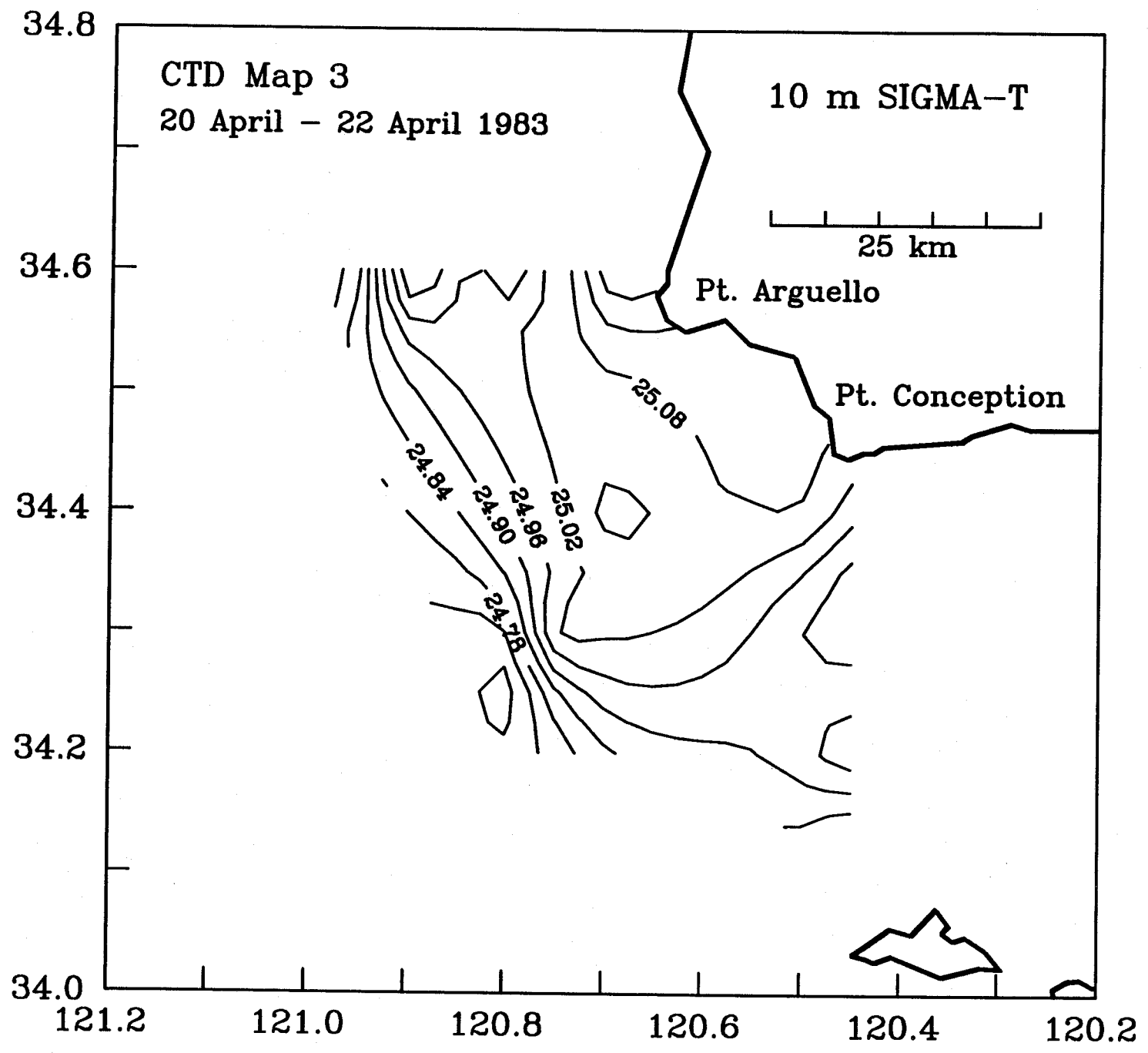


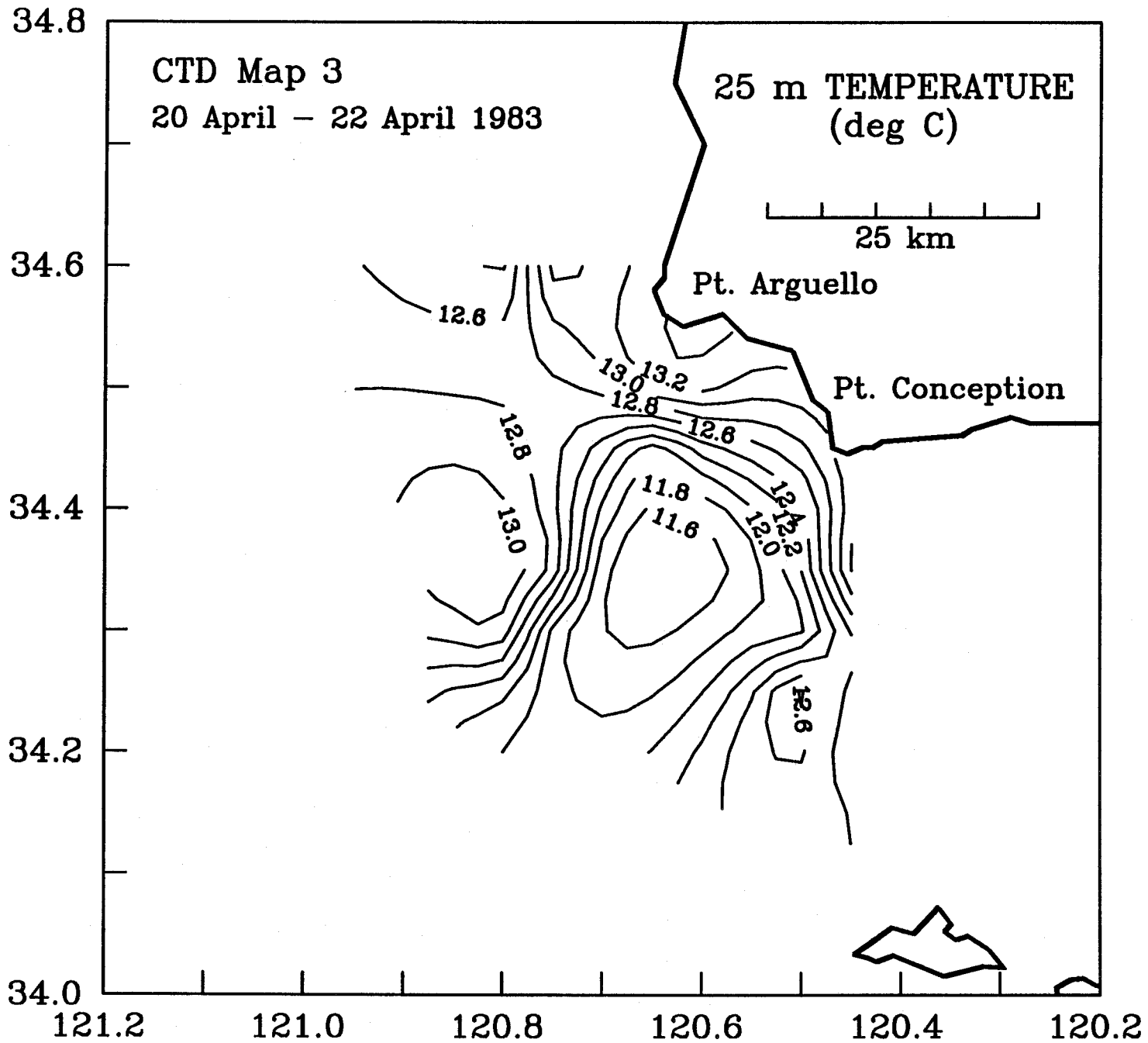


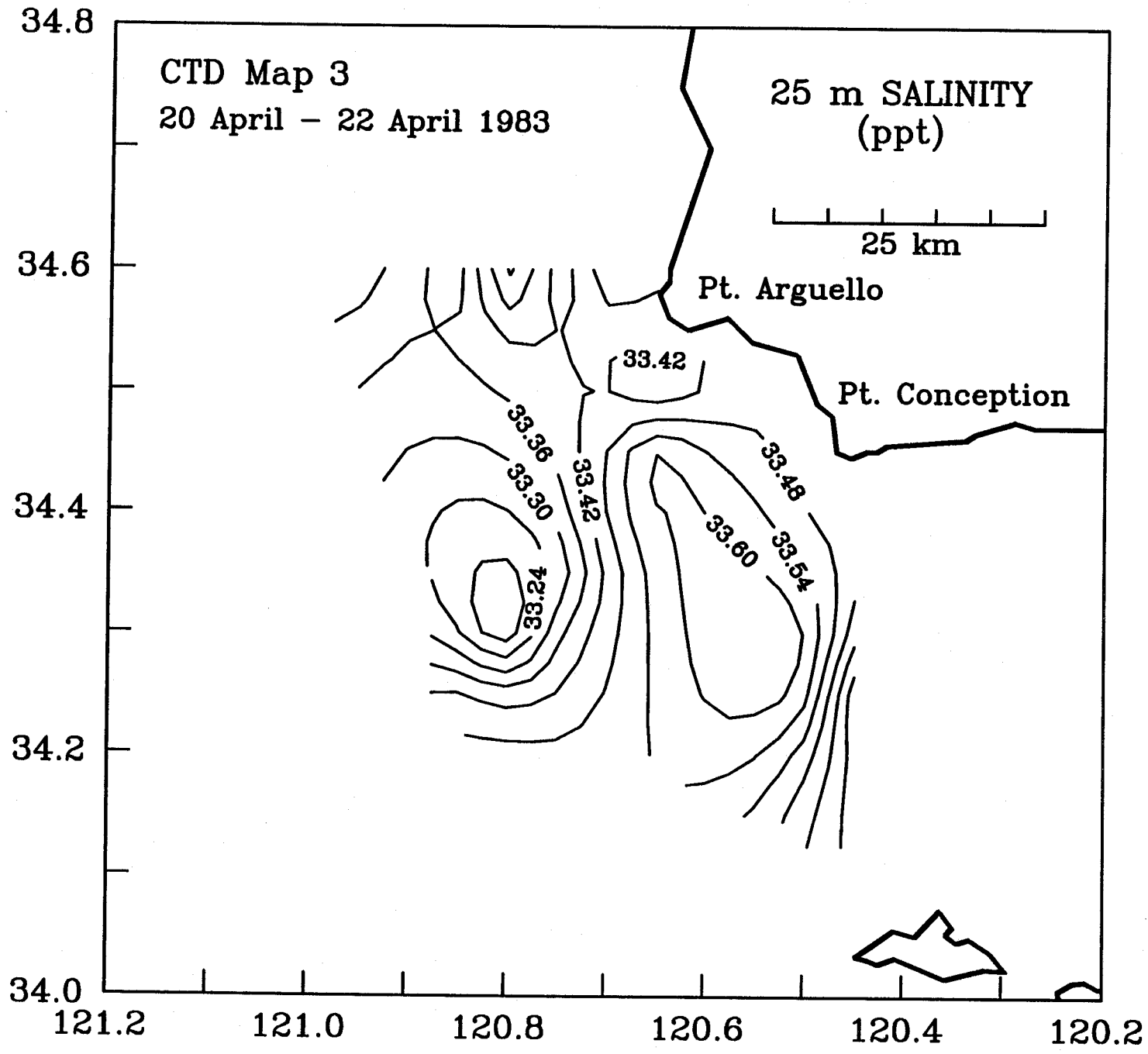


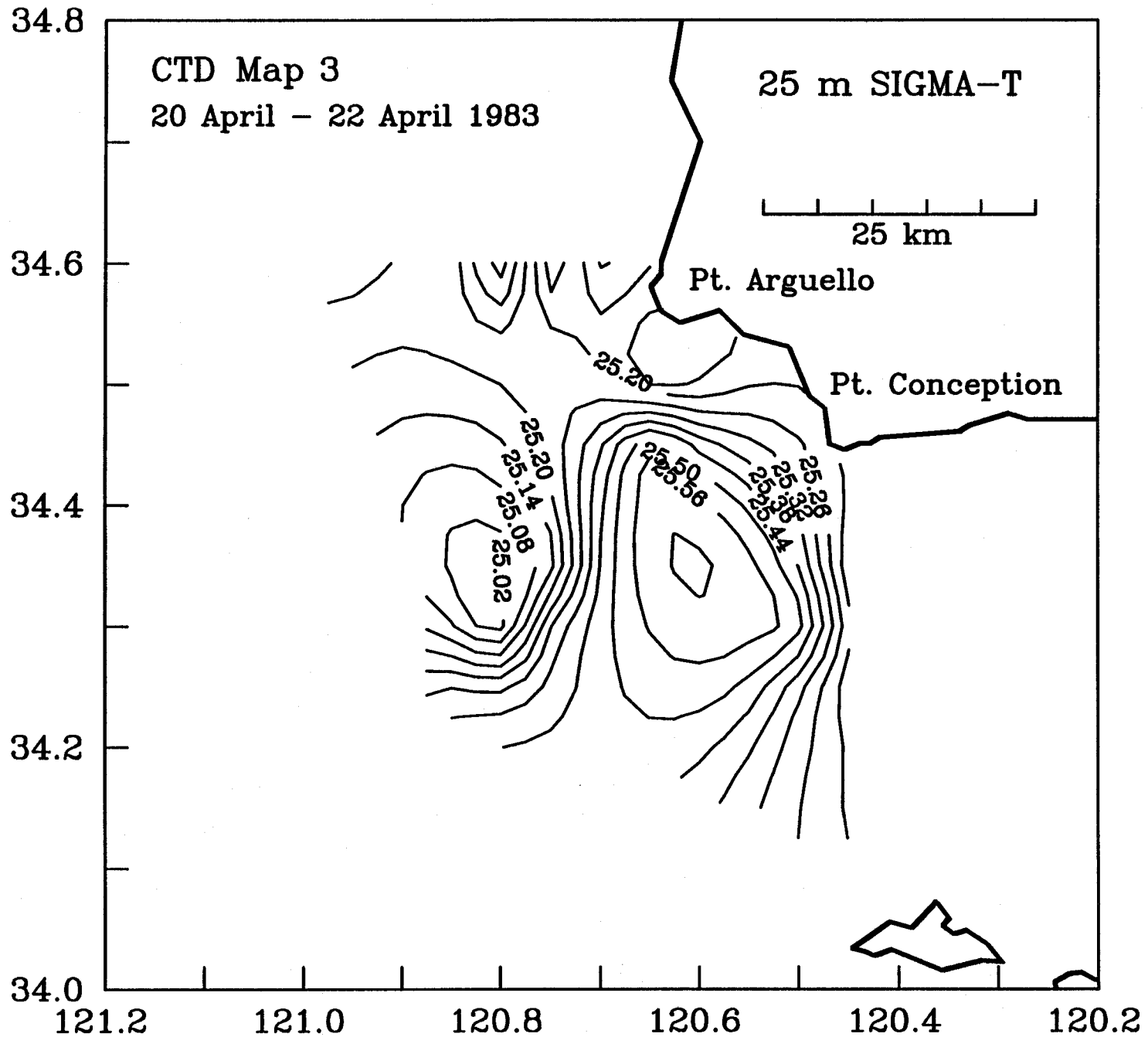


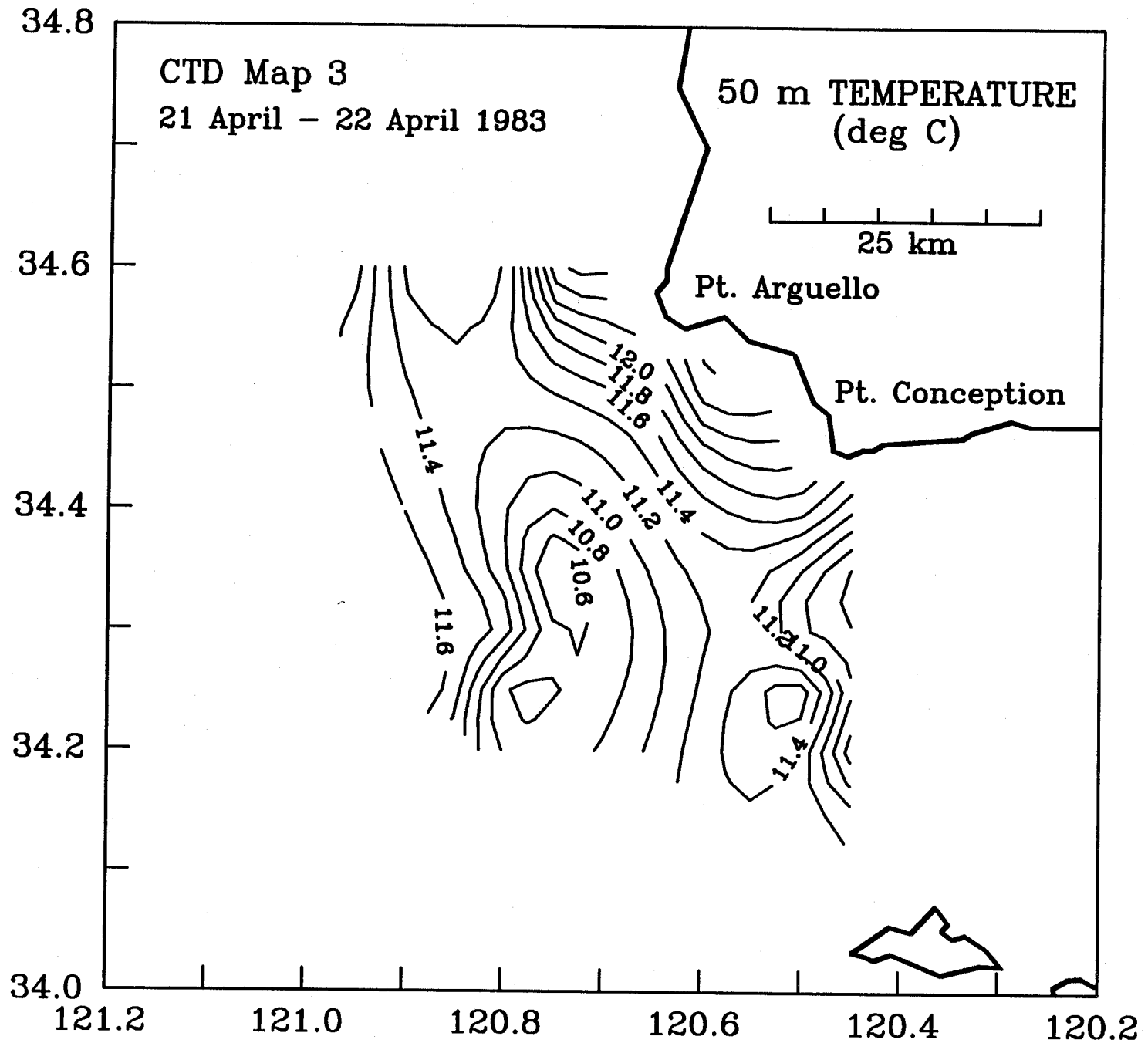


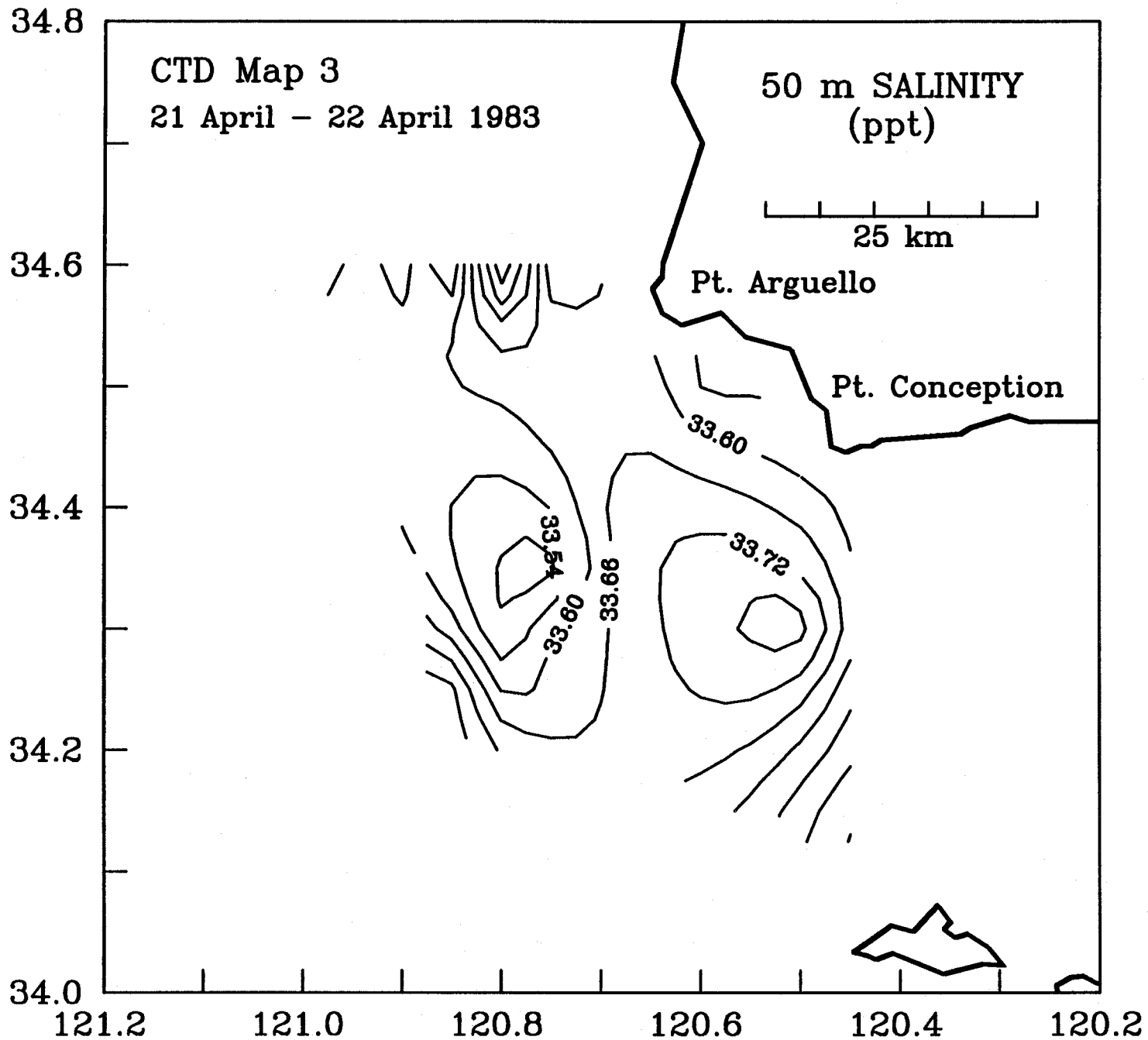




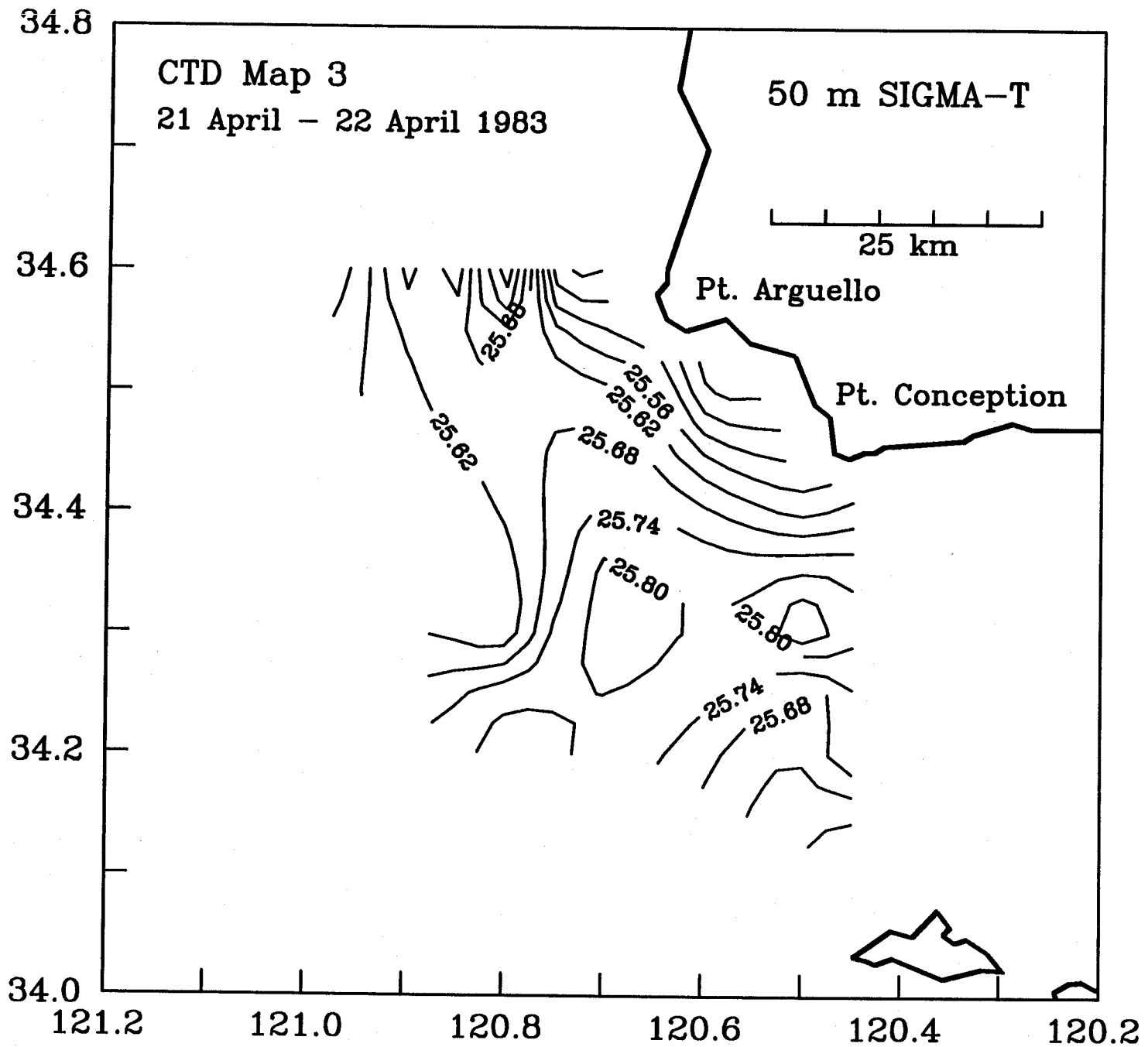


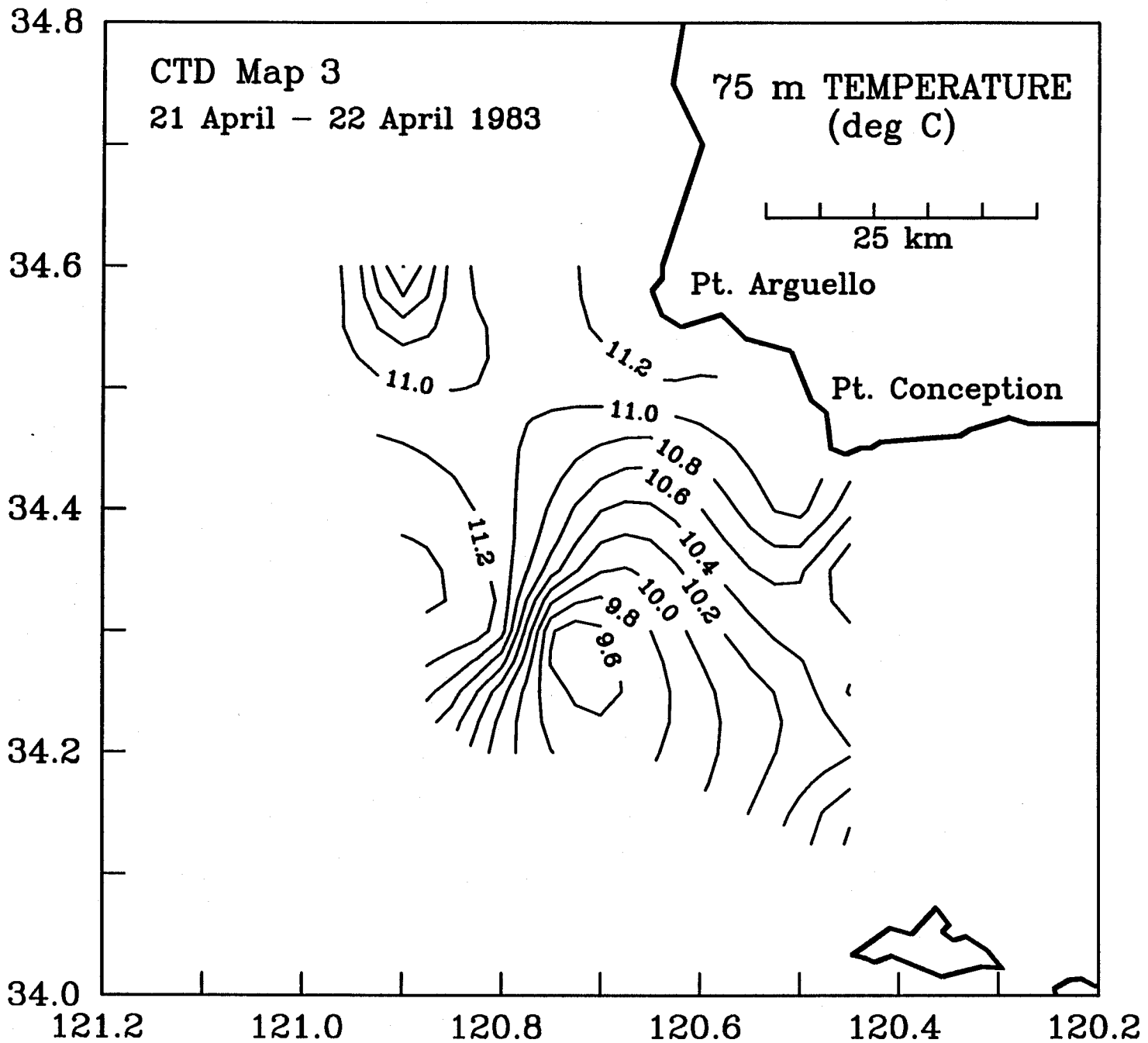


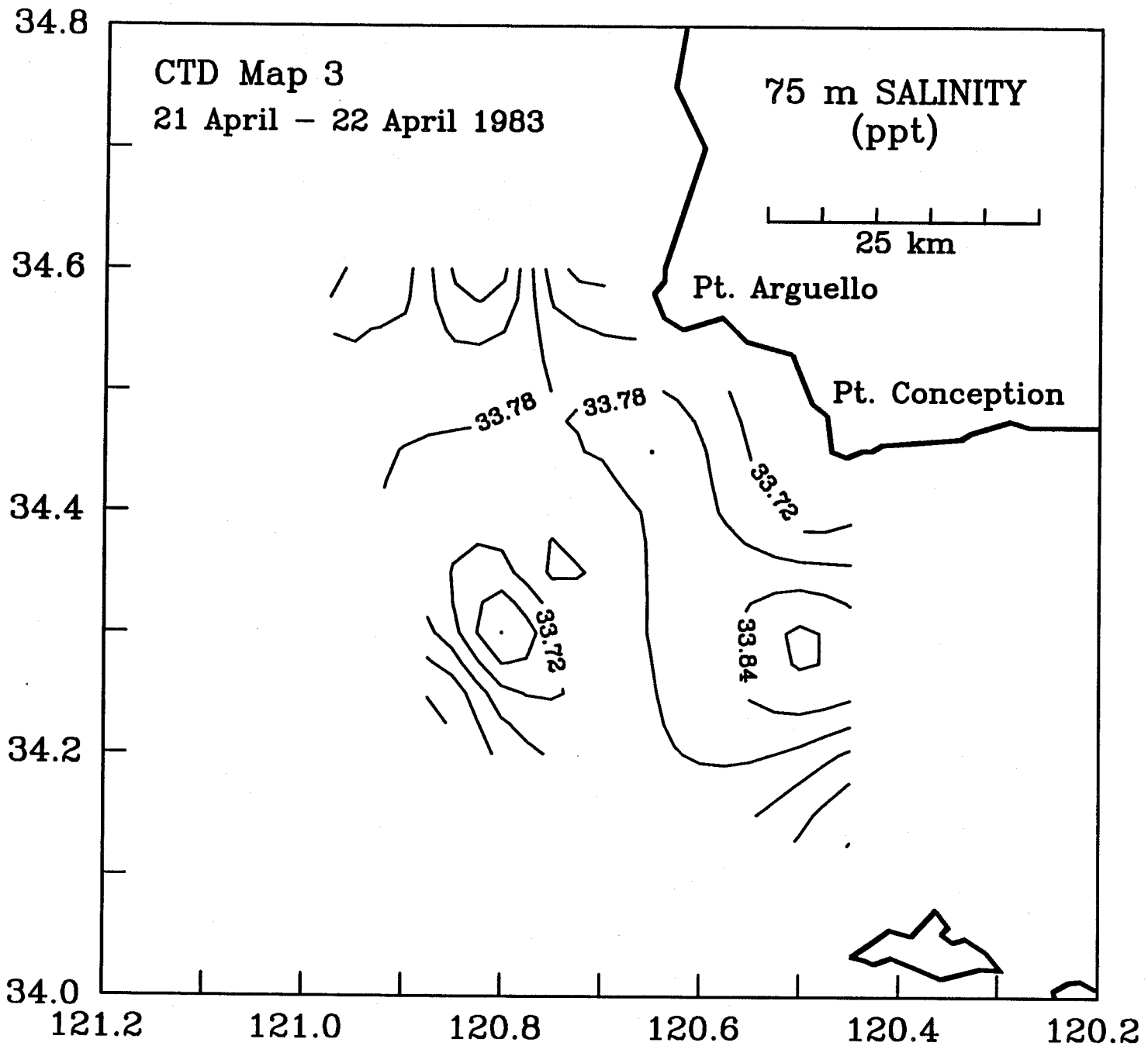


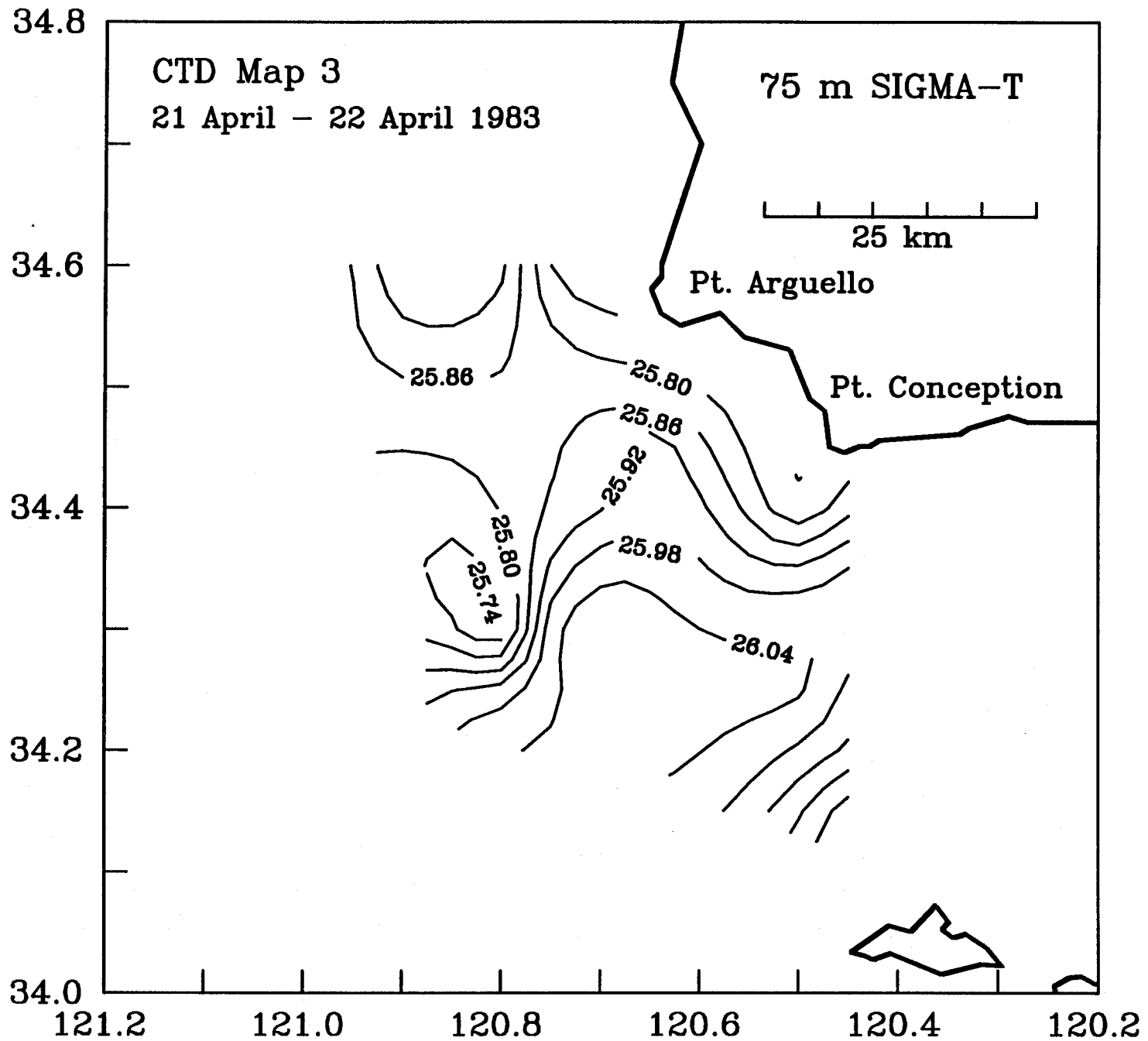


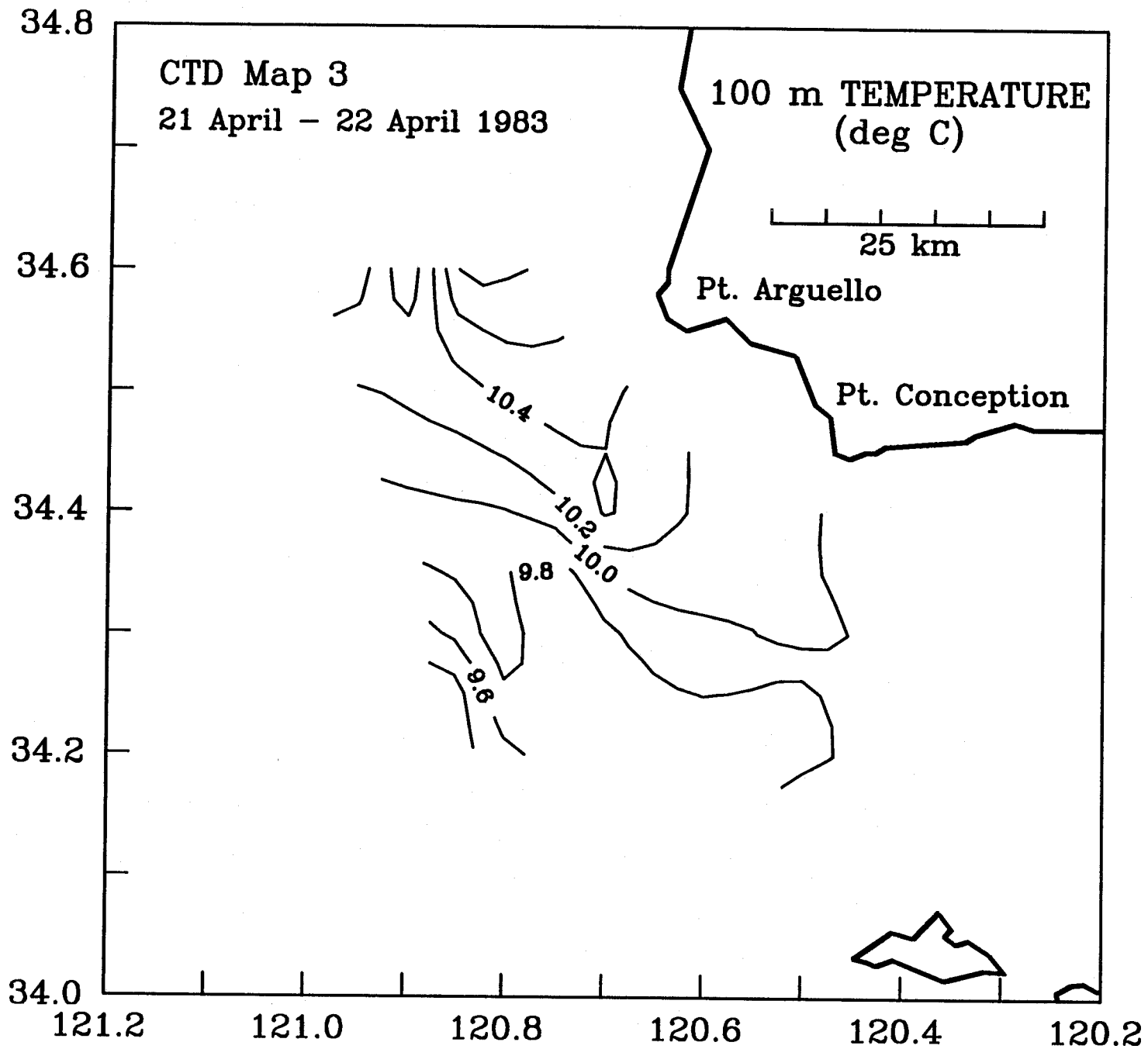


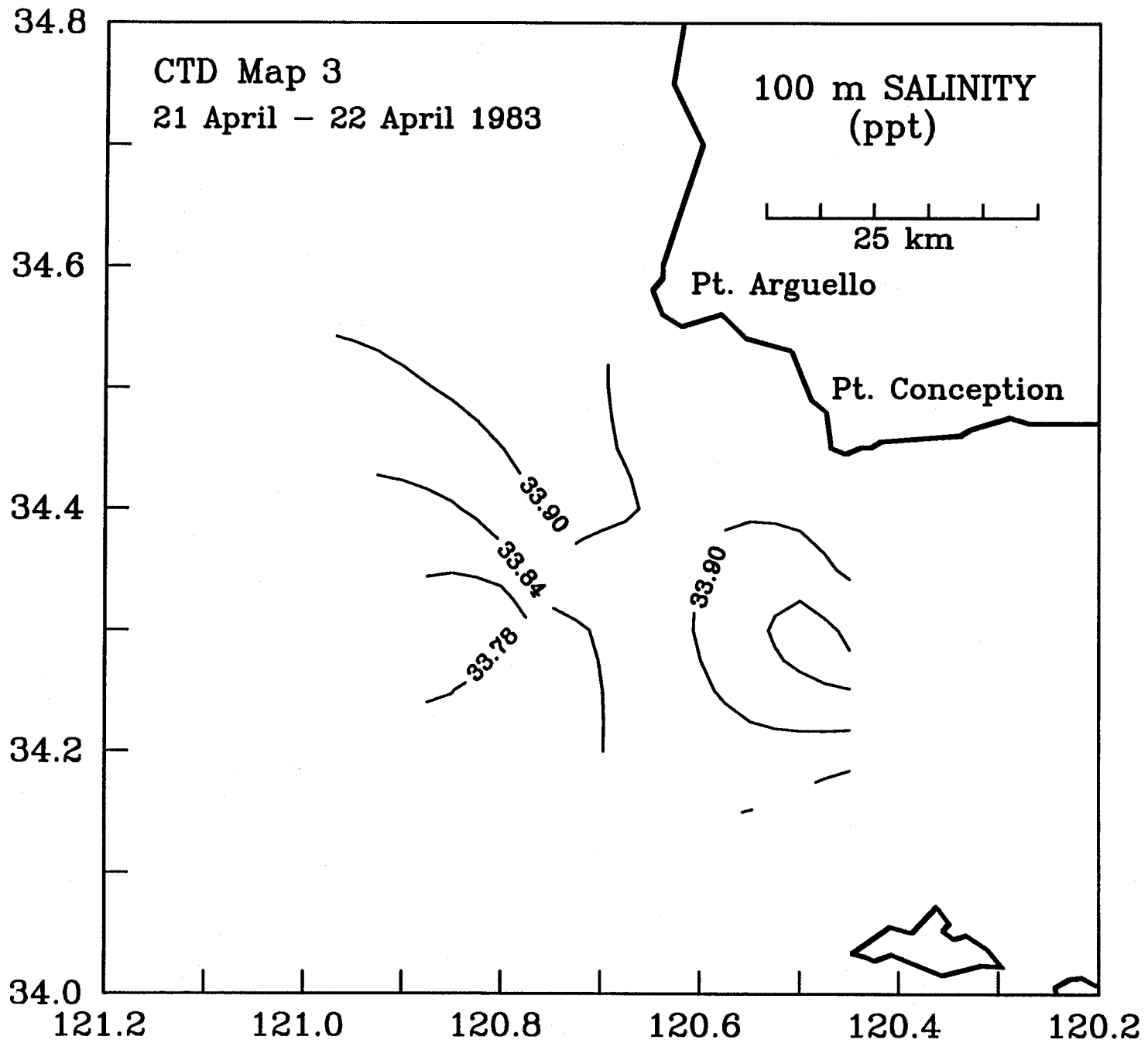


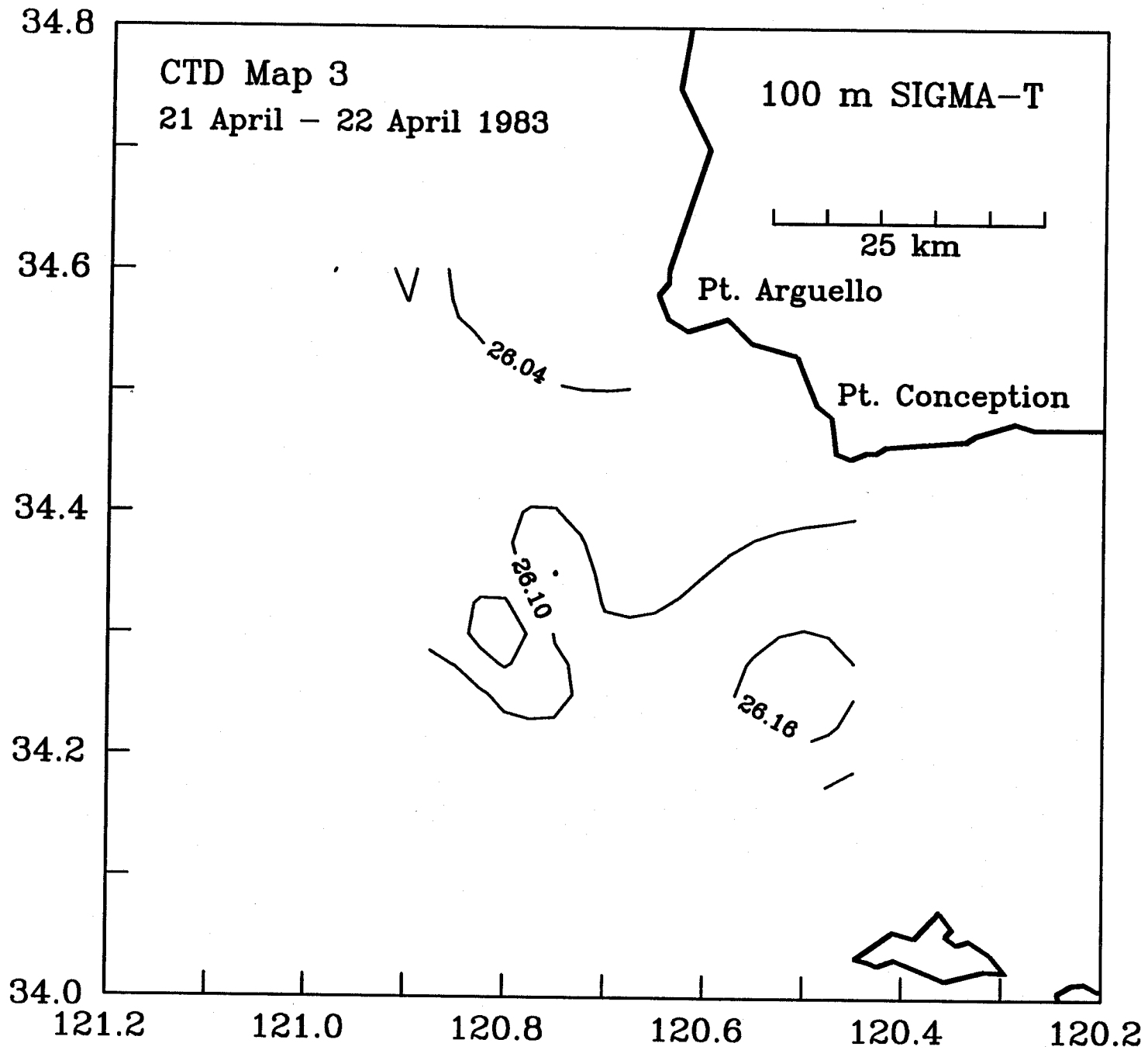


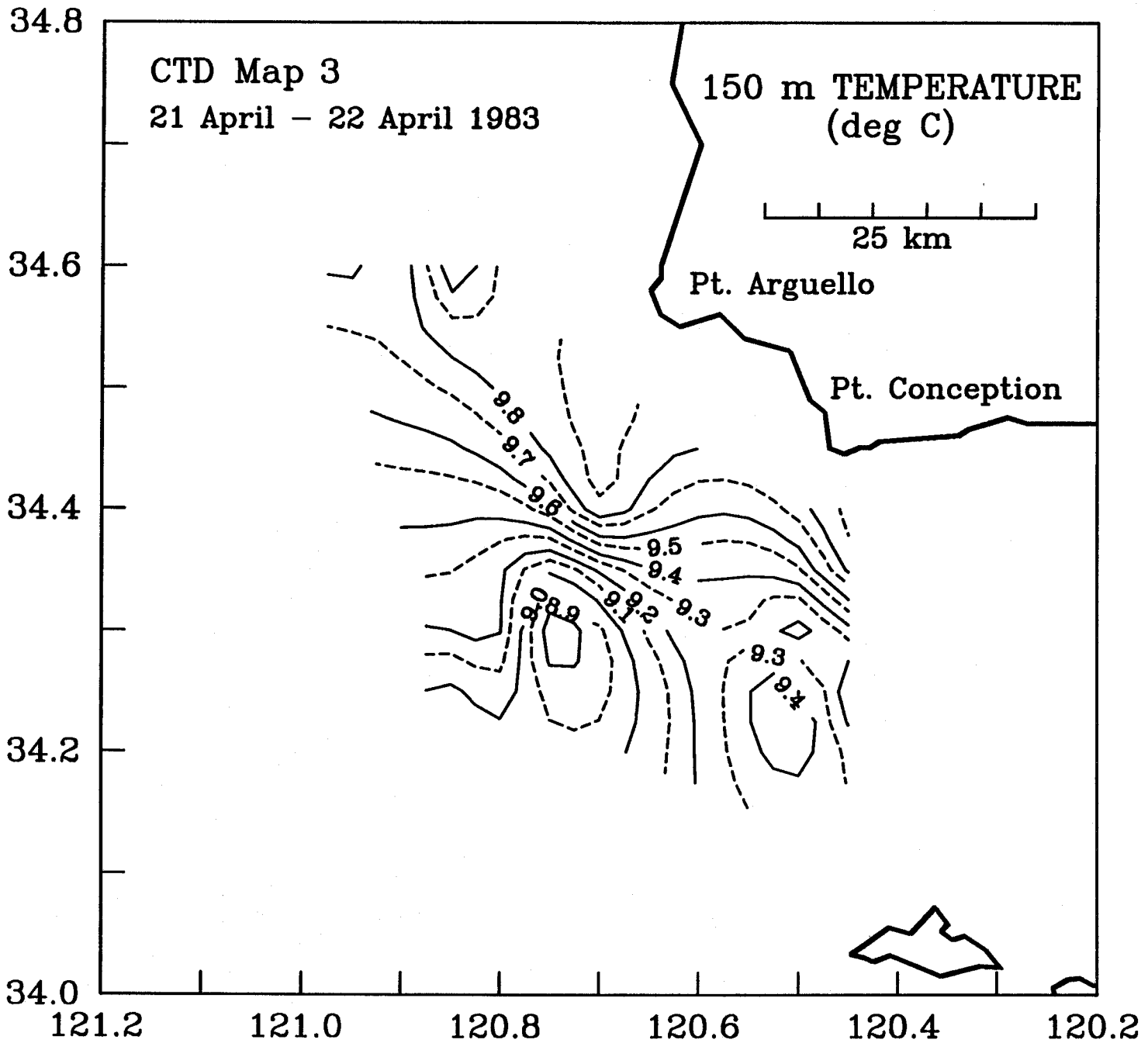




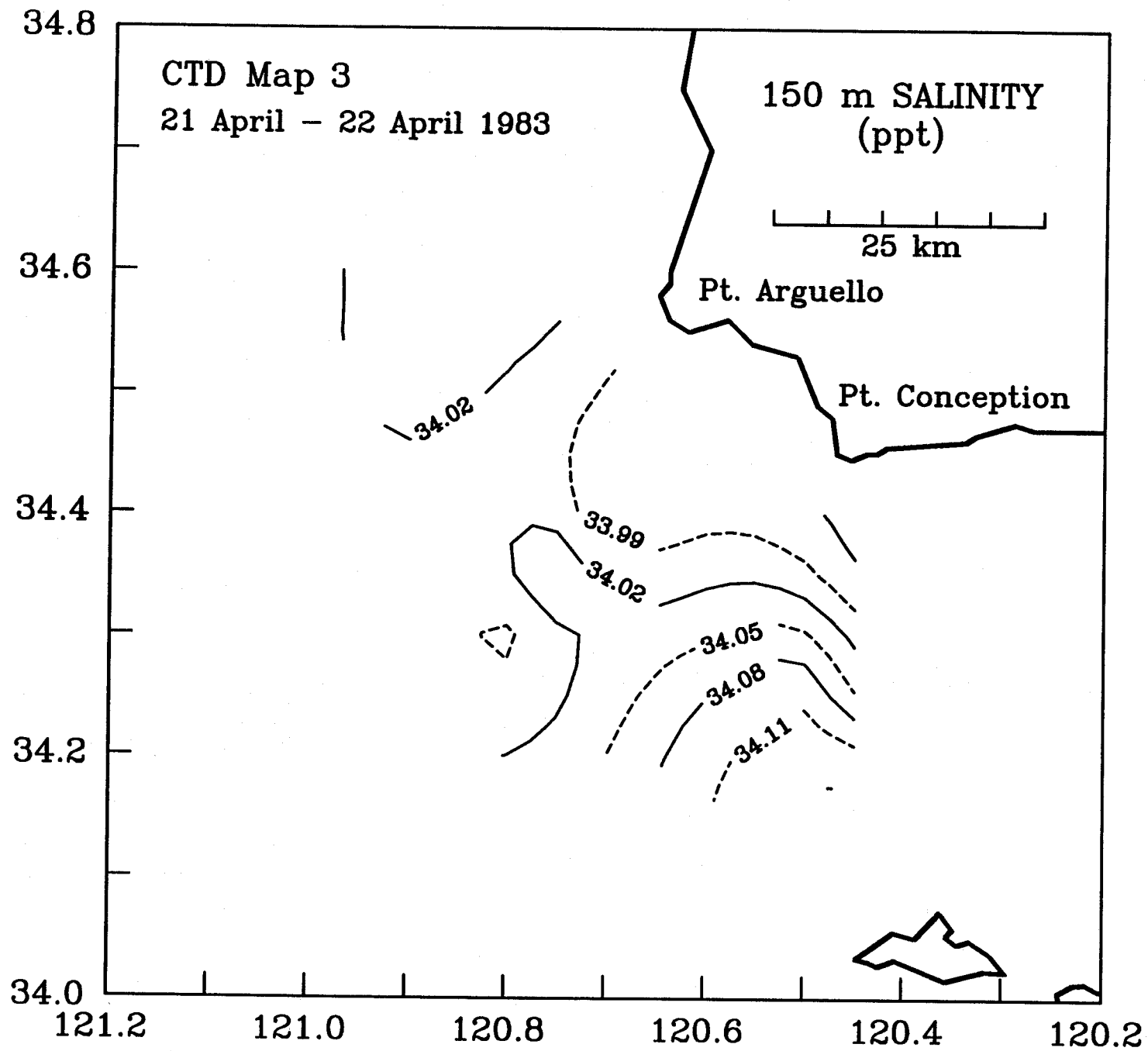


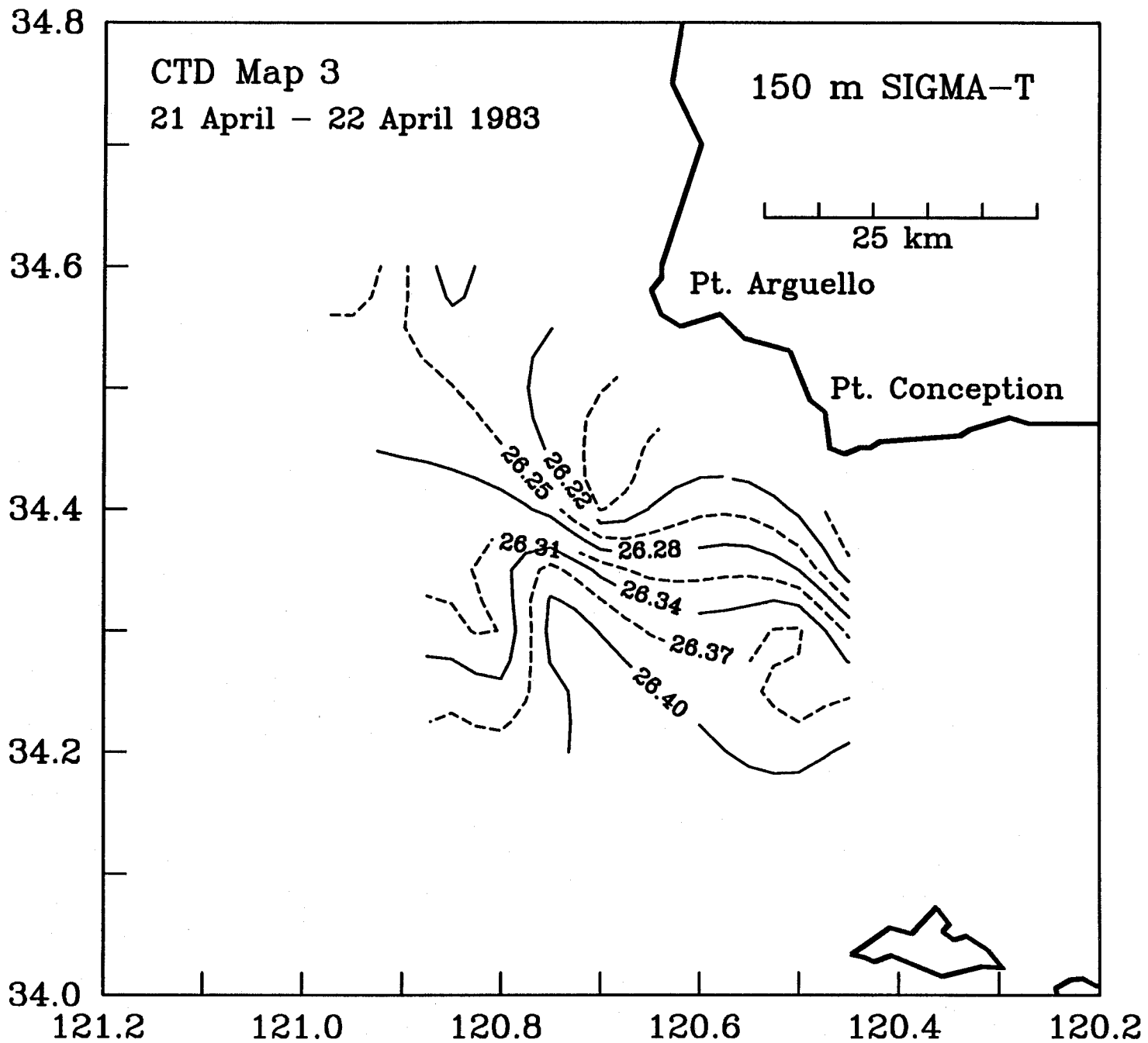


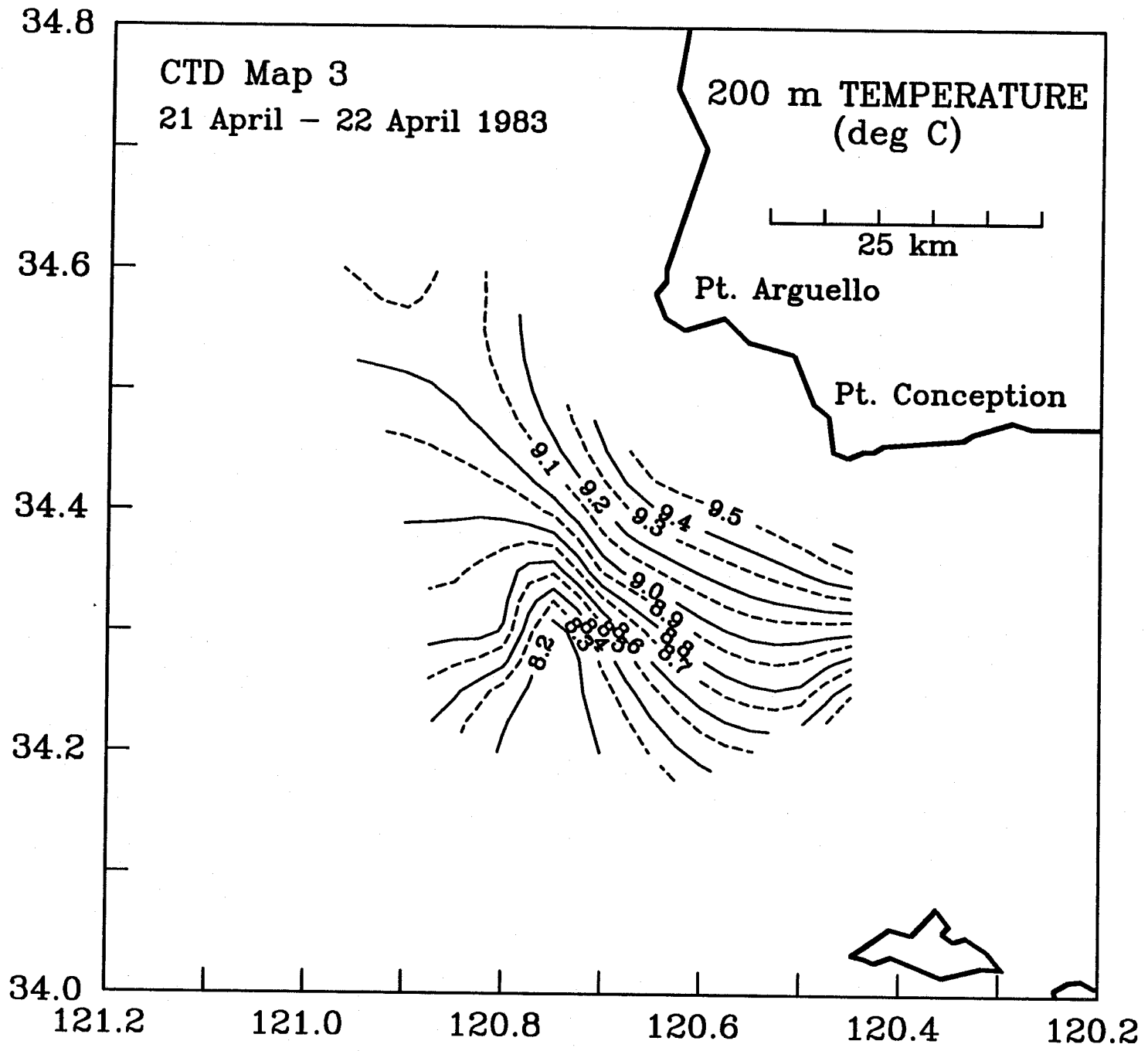


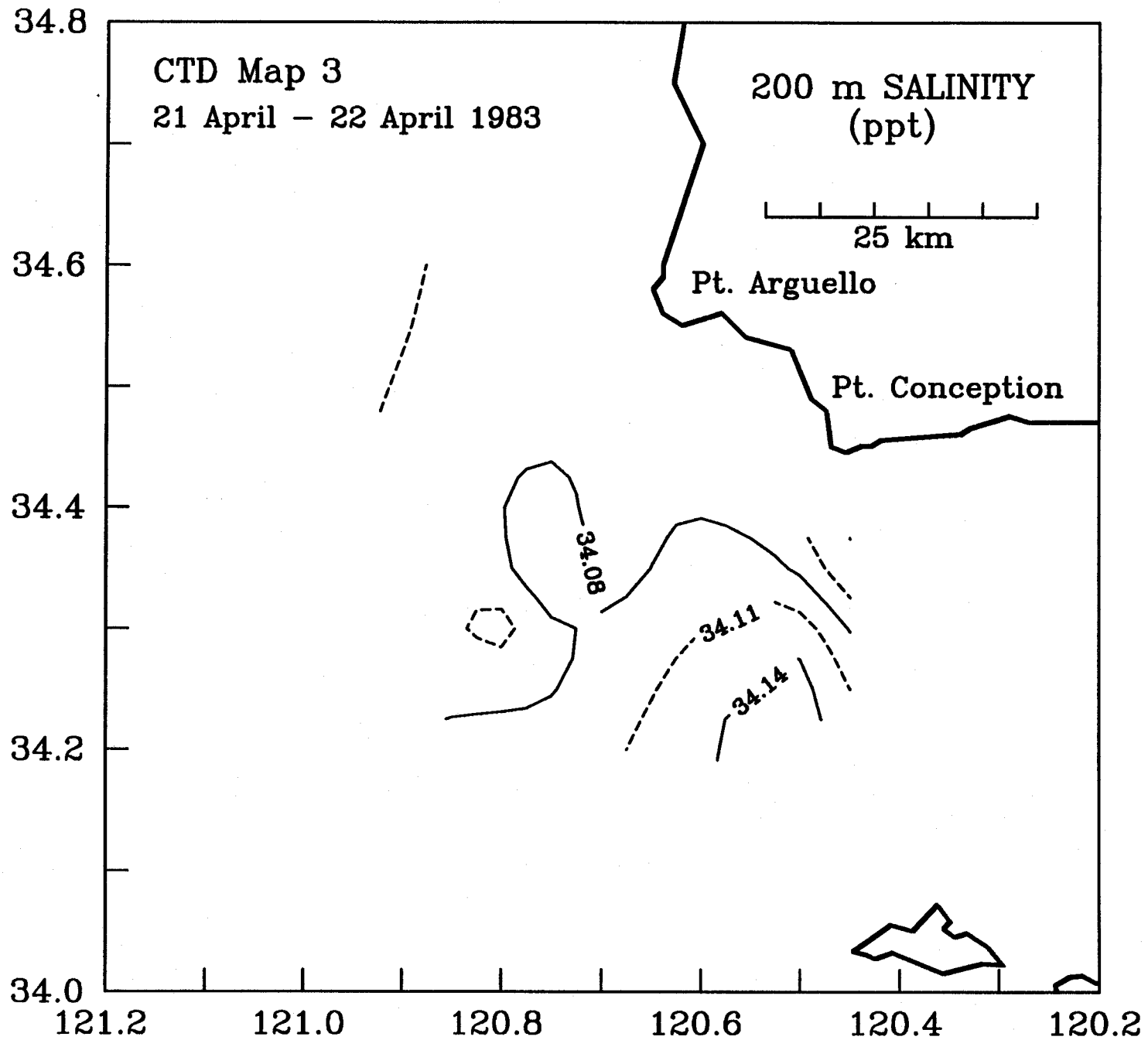


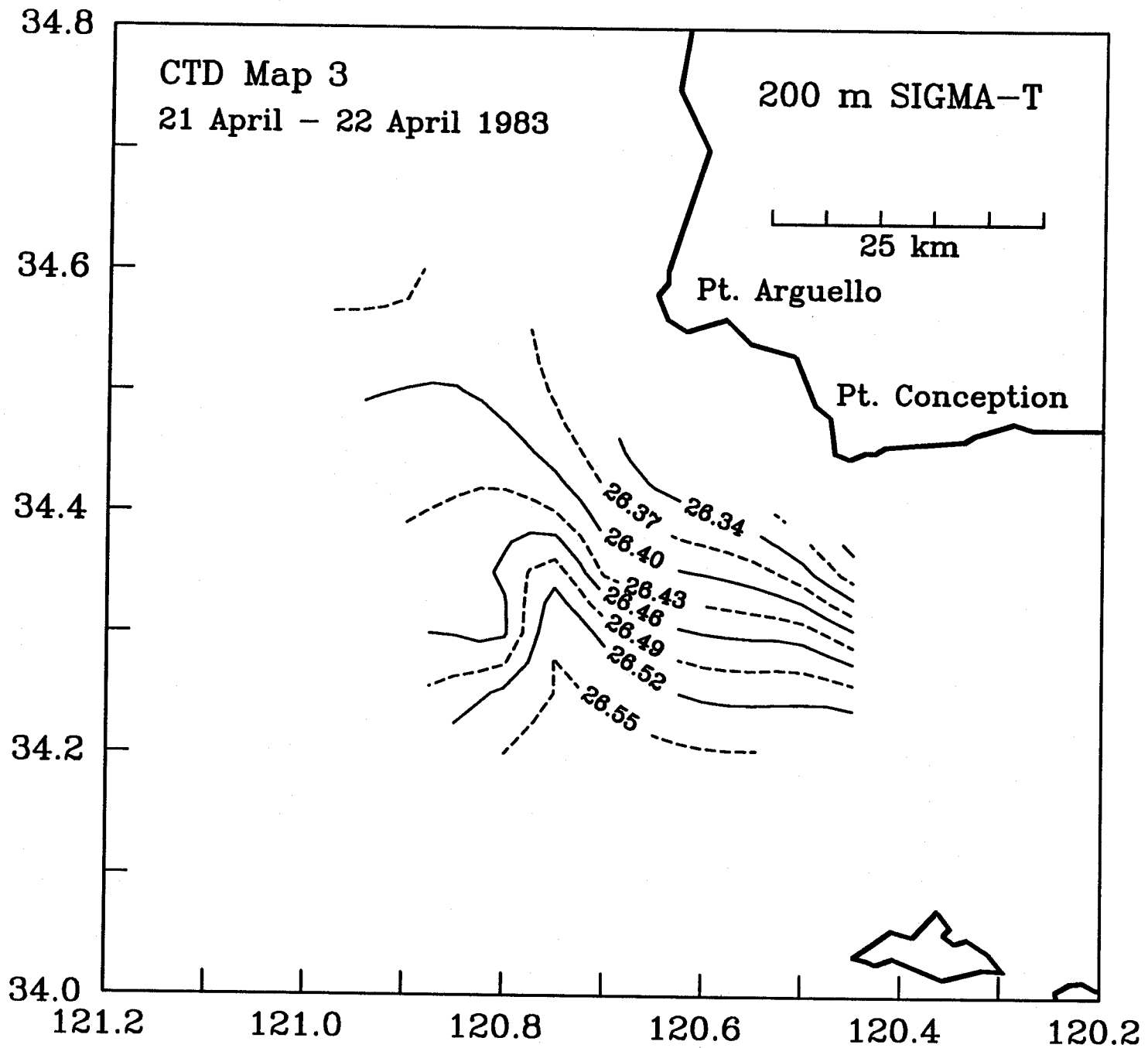


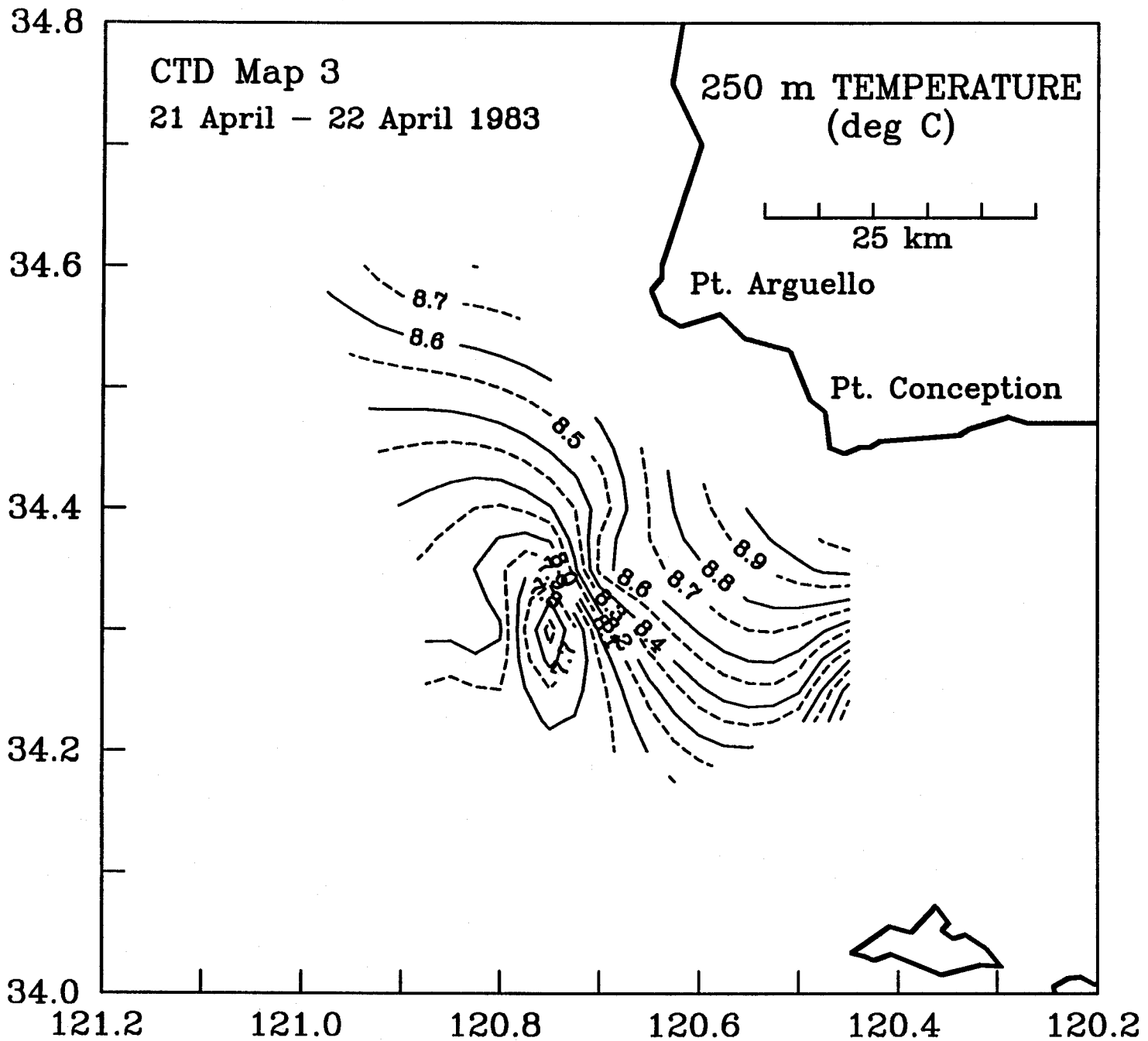


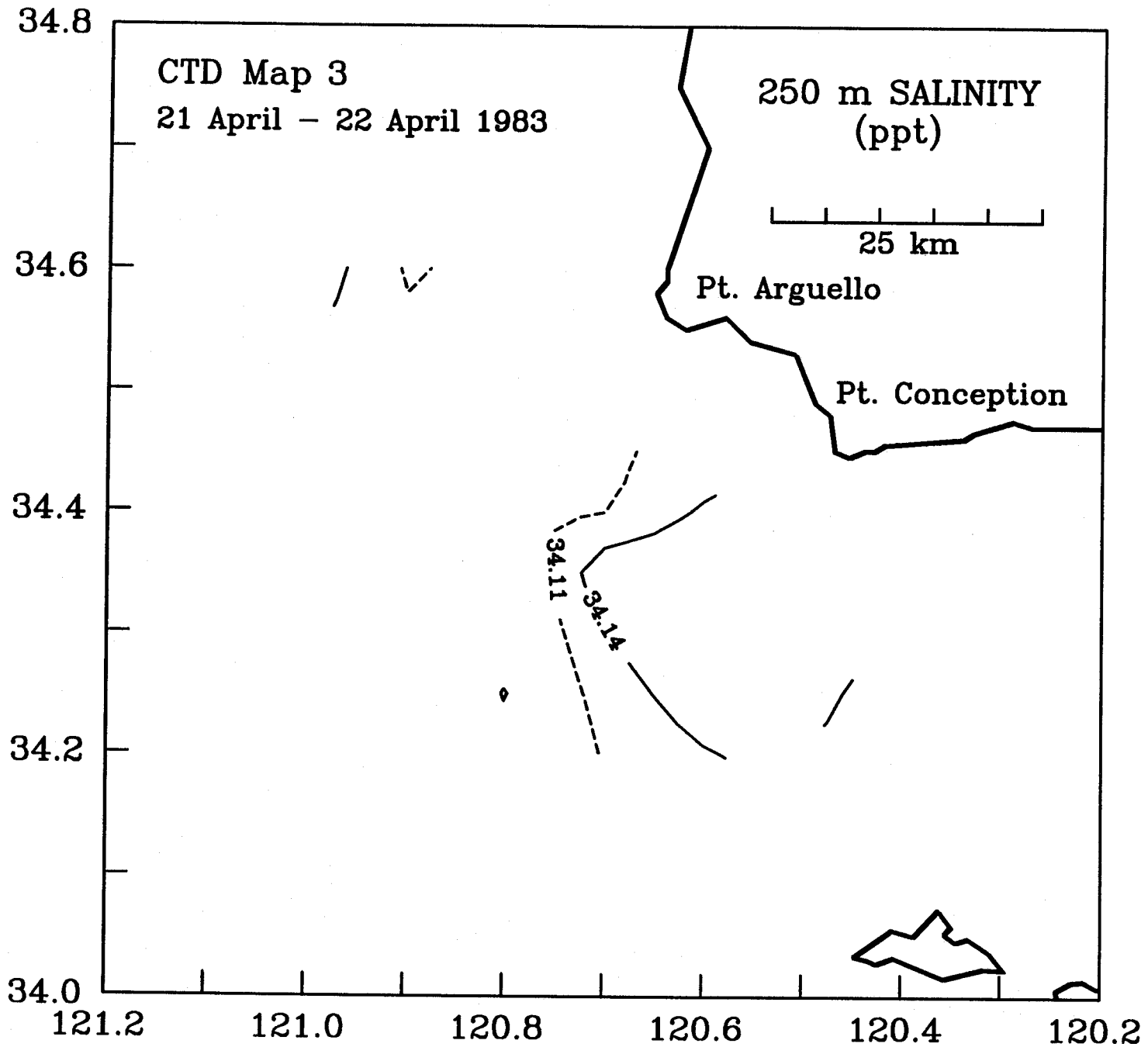


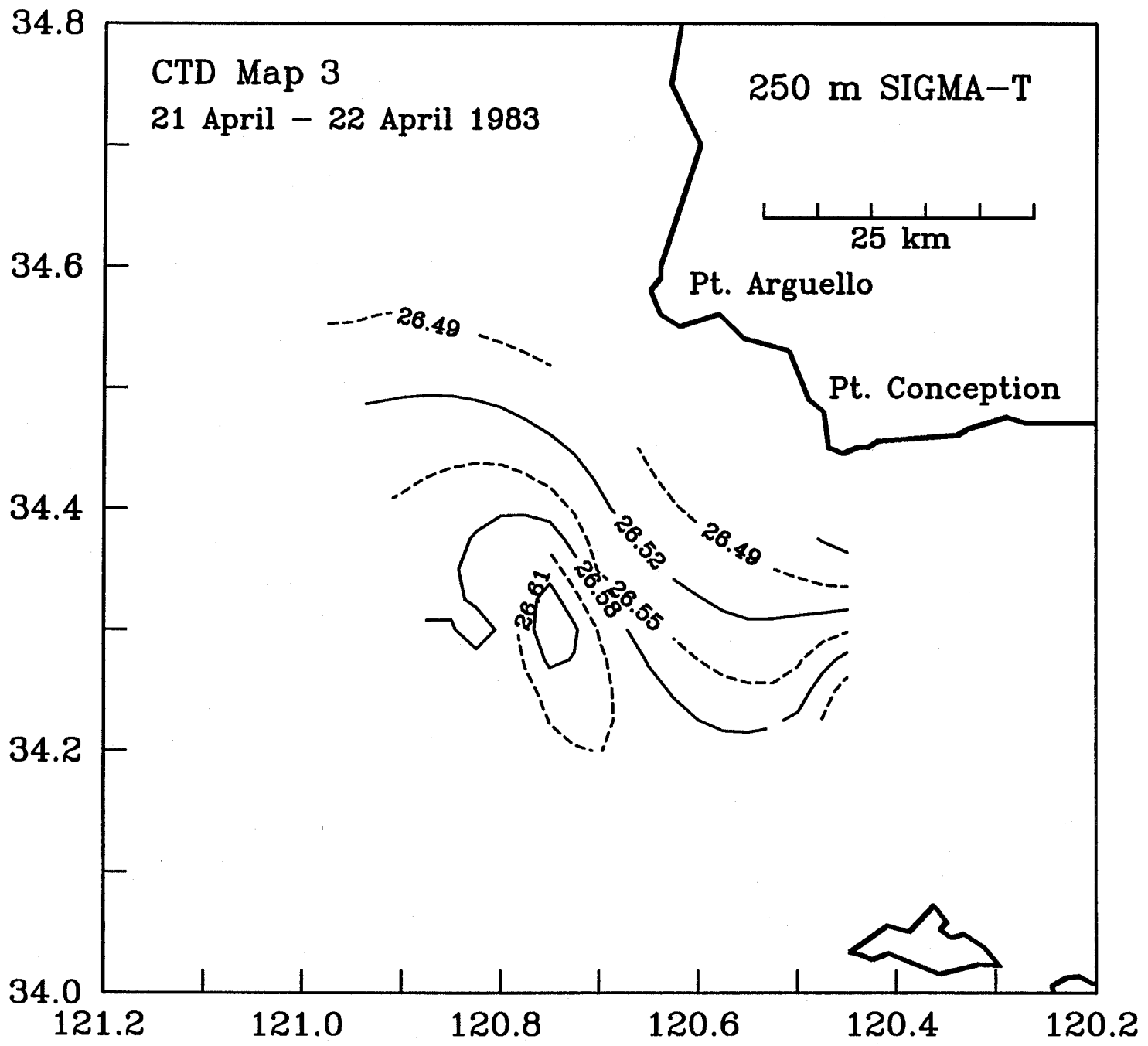




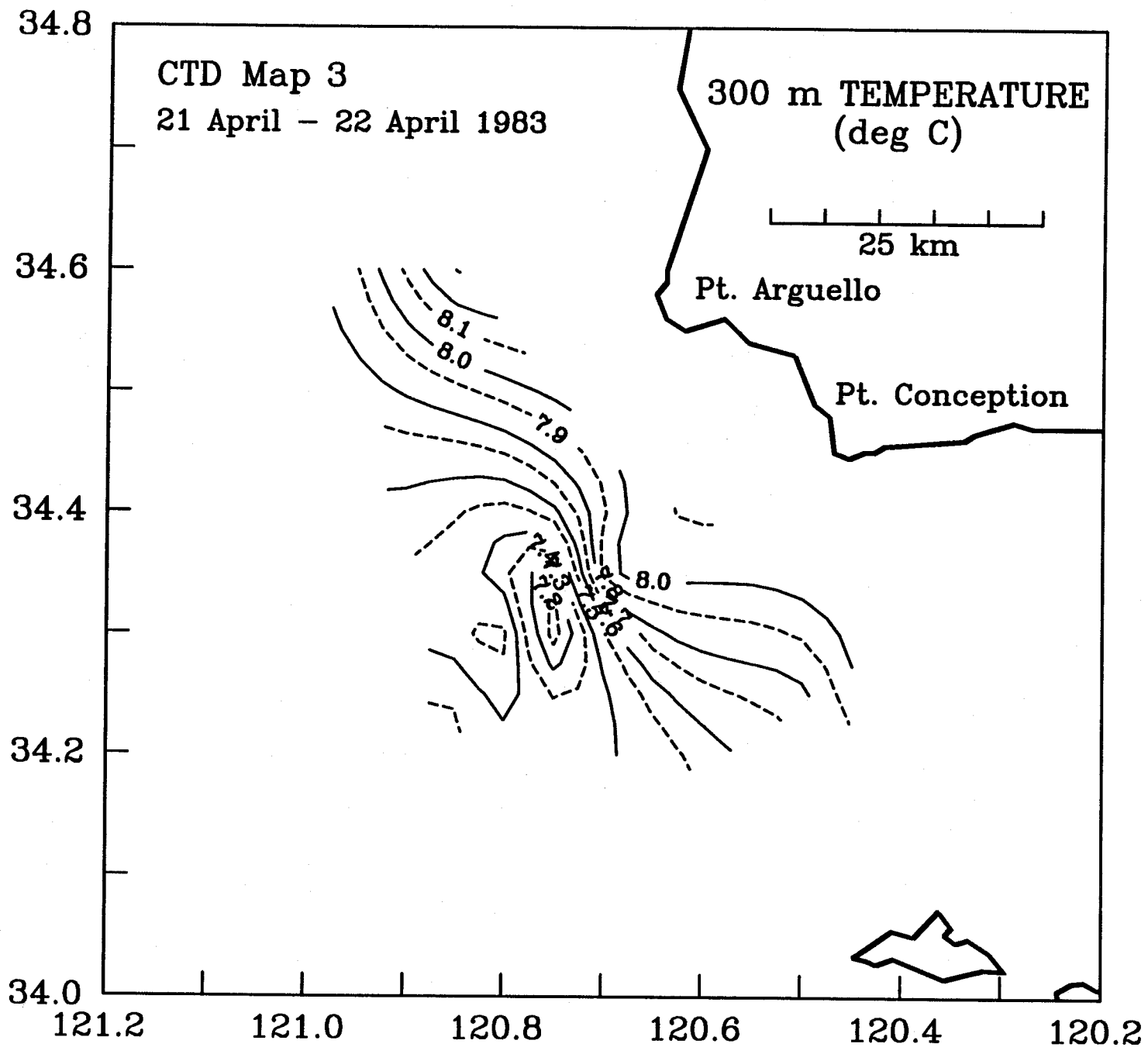


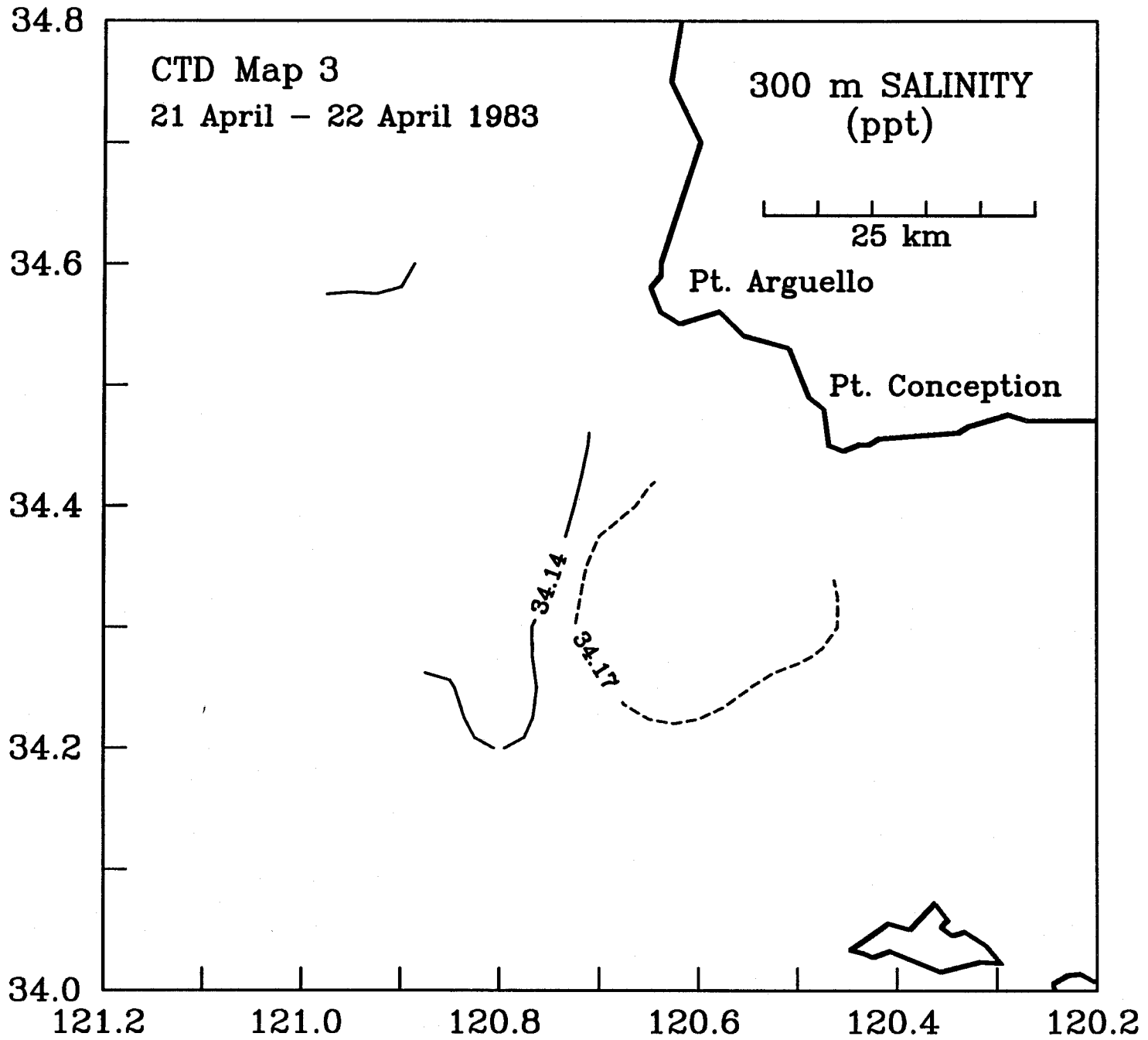


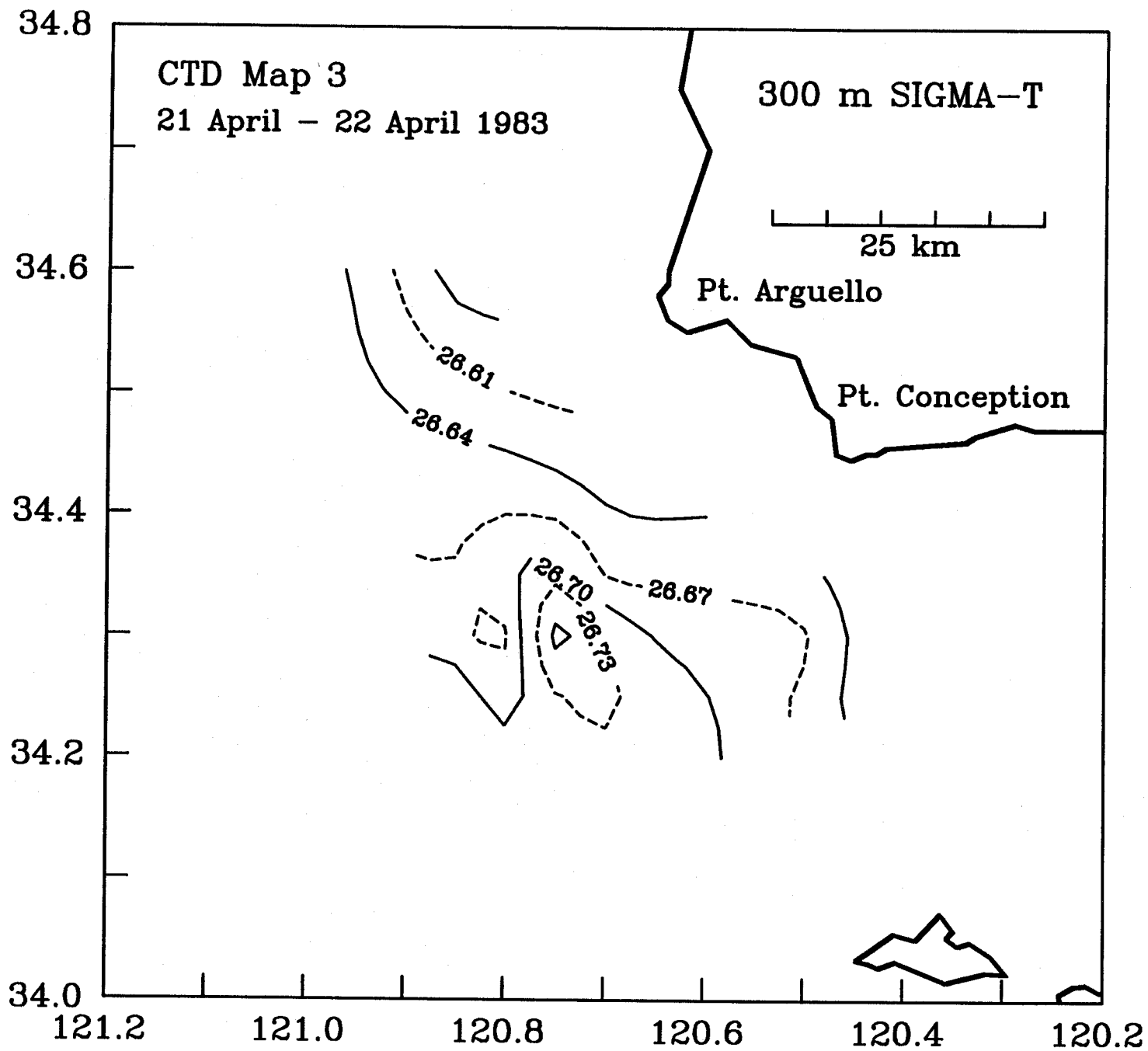




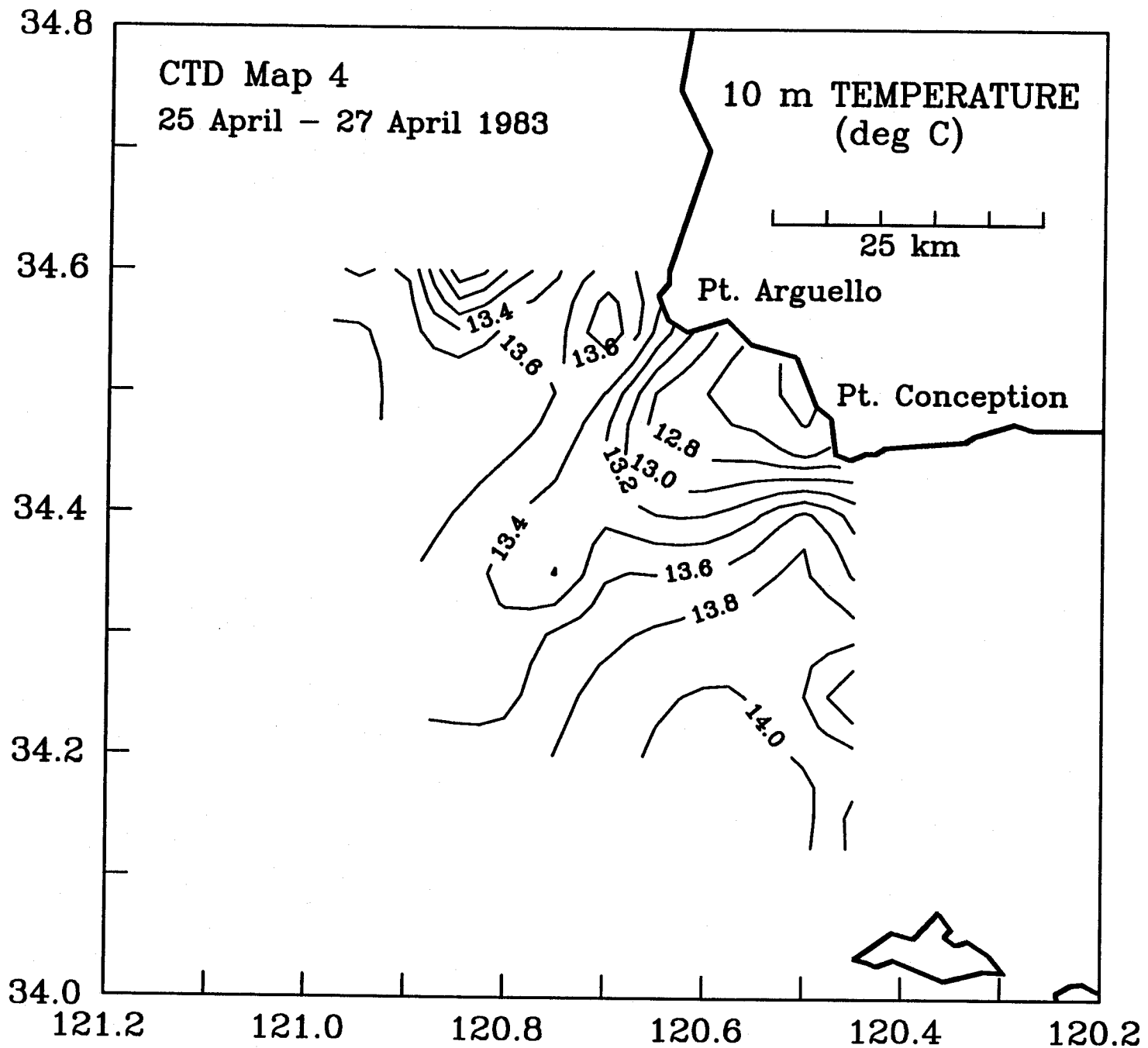


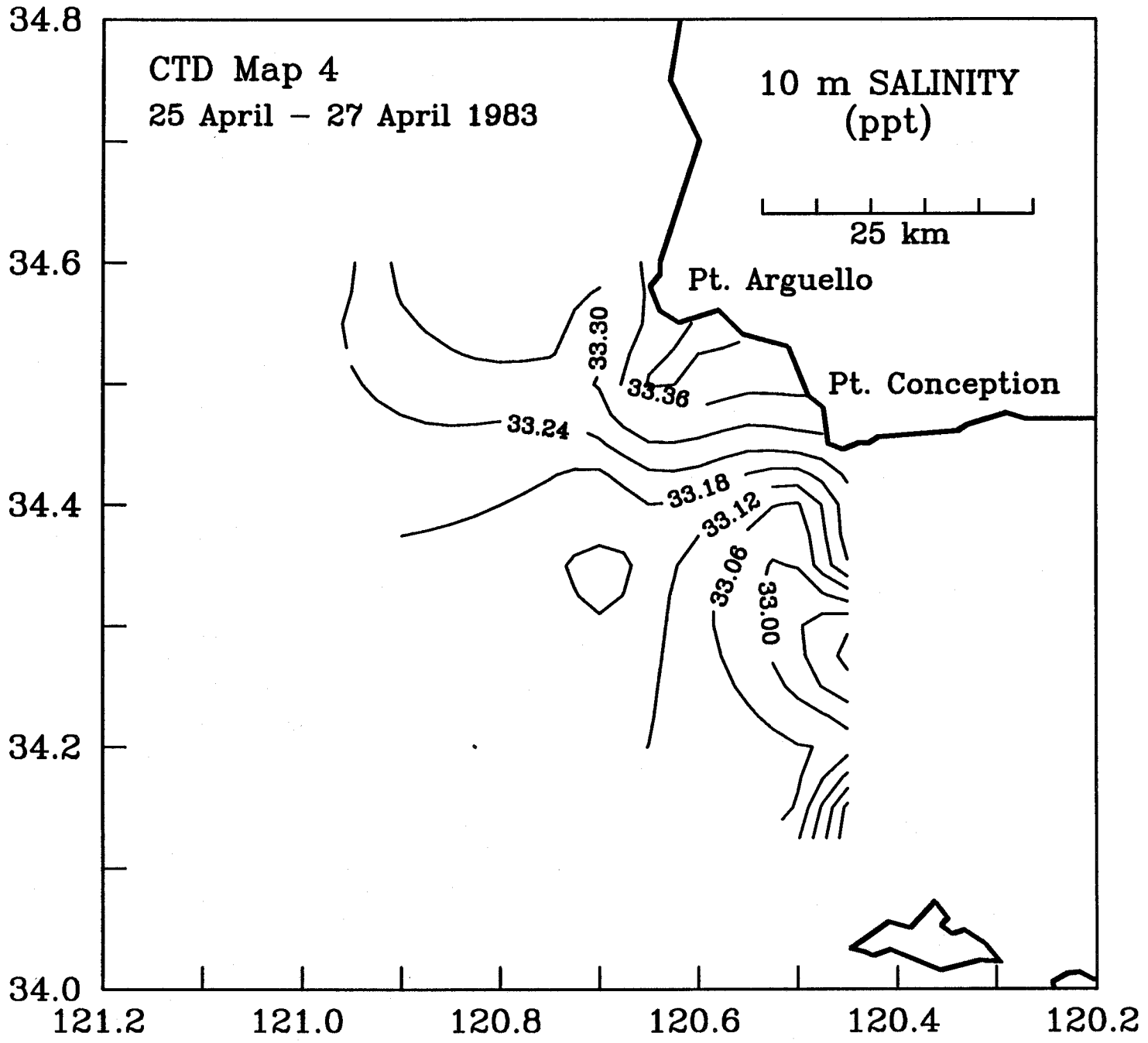








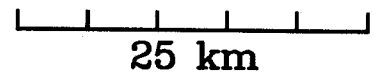




34.8

CTD Map 4  
25 April - 27 April 1983

10 m SIGMA-T



34.6

Pt. Arguello

Pt. Conception

34.4

25.02

24.98

25.20  
25.14  
25.08  
25.02

24.90

24.84

24.78

24.72

34.2

34.0

121.2

121.0

120.8

120.6

120.4

120.2

