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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Center

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INTERANNUAL VARIABILITY OF TEMPERATURE IN THE UPPER LAYER OF THE NORTH PACIFIC EASTERN BOUNDARY REGION, 1971-1987.

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ABSTRACT

A diagnostic study of large-scale interannual variability of surface and subsurface temperature along the eastern boundary region of the North Pacific Ocean is presented. The study involves analysis of archived surface marine weather reports and subsurface temperature profiles for the period from January 1971 to August 1987. Anomalous temperature conditions and events are compared between coastal and offshore regions. Effects of the major El Niño events of 1972-73, 1982-83, and the weaker 1976-77 and 1986-87 El Niño events are discussed.

Monthly temperature anomalies are coherent in time and space over large portions of the study region, indicating the importance of large-scale ocean-atmosphere processes. In general, the 1971-76 period was anomalously cool over much of the region, excluding the 1972-73 El Niño event. In subsequent years, surface waters were warmer than average over much of the middle and high latitude regions, especially in the offshore areas during fall and winter.

Positive temperature anomalies extended farther north in the coastal region than in the offshore region during the El Niño events, while magnitudes of the positive anomalies were greatest in the subsurface layers. Negative anomalies predominated during the early part of the time series (1971-76), from the surface to at least 100m.

INTRODUCTION

Large-scale interannual variations of surface and subsurface temperature are examined for coastal and offshore areas in the North Pacific eastern boundary region from the equator to 60°N for the 17-year period, 1971 to 1987. The principal boundary current in this region is the California Current which is characterized by equatorward surface flow, coastal upwelling, and high biological productivity (McLain et al. 1985). Other boundary currents in the region are the Alaska Current north of 50°N, and the North Equatorial Current and the Equatorial Countercurrent at the southern end of the region. Warm events have occurred in 1932, 1940-41, 1957-58, 1972-73, and 1982-83 (Quinn et al. 1987). During these periods the surface layer warms and thickens and biological productivity is reduced (McLain et al. 1985).

This analysis expands and updates two previous studies of interannual variability in the California Current. McLain et al. (1985) analyzed interannual changes of surface temperature in the four major eastern boundary current systems: California, Peru, Canary, and Benguela. Norton et al. (1985) analyzed surface and subsurface temperature changes in the California Current during 1971 to 1983, with particular emphasis on the El Niño of 1982-83. The present analysis focuses on the California Current System with coverage updated to 1987 and expanded to include an offshore region of surface and subsurface temperatures.

DATA SOURCES AND METHODS

Temperature data were extracted from two sources. Sea surface temperature (SST) observations were obtained from an archive of surface marine weather reports received in real-time by Fleet Numerical Oceanography Center (FNOC). The SST observations have been averaged each month by NOAA for 1° squares of longitude and latitude since March 1971. Subsurface temperature profiles were extracted from the FNOC Master Oceanographic Observations Data Set (MOODS), a combined file of bathythermograph, bottle cast, and salinity-temperature-depth (STD) cast profiles. The MOODS file contains data received in real-time as well as delayed mode. The most recent merge of real-time and delayed mode data to update MOODS was in 1983. Profile data since then are those relatively few observations reported in real-time. The SST observations are generally more abundant than the subsurface profiles (Table 1) and are most abundant along shipping lanes. Subsurface profile measurements are more accurate than SST observations which are primarily from ships' injection temperatures (Norton et al. 1985).

The coastal and offshore regions were defined by selecting 20 areal boxes, each spanning 3° of latitude. The longitudinal extent of each box varies with location along the coast (Figure 1), and was determined on the basis of data availability and coastline trend. The extent of the study area ranges from the coast to about seven hundred kilometers offshore. The coastal and offshore regions overlap at the two northernmost boxes.

Monthly means of SST were computed for each 3° box by averaging the 1° monthly submeans. A mean was computed if at least one 1° submean was available. In regions of sparse data, the uneven distribution of data may have caused spurious 3° means. Subsurface temperature values were interpolated from each profile at depths of 100m and 200m and averaged by month for each 3° box. The resulting arrays were nearly complete at the surface but only 60 to 80% complete at depth. The arrays of temperature at the surface and 100m are presented in Appendix A for the coastal data series.

The anomalies of temperature at the surface and subsurface were computed for each 3° box by subtracting the 17-year long-term monthly means from the individual monthly means. Due to the incomplete data coverage, gaps in anomaly arrays had to be filled before they could be contoured and plotted. The gaps were filled by interpolating in time (month) and space (box) using slightly different schemes for the surface and subsurface. At the surface where data coverage was nearly complete and strong gradients of temperature occur with distance along the coast, the gaps were filled by interpolating in time with a weighted mean of values up to 3 months forward and backward in time. The weighting factor used was arbitrarily chosen and decayed rapidly in time. At depth, where the data coverage was sparser and the coastal gradients weaker, a 5x5 matrix interpolation scheme was used to include more data values (Brainard and McLain 1987). The weighting factor used at depth decayed inversely with the square of the distance in the array. The interpolated arrays were rather noisy, particularly those at depth. To smooth the arrays, a 3x3 median filter was used to eliminate spurious values and then a 3x3 linear smoother was applied (McLain et al. 1985).

		SST		100M		200M	
		Offshore	Coastal	Offshore	Coastal	Offshore	Coastal
LAT	BOX						
57-60°	20	1,767	1,767	6,014	6,014	3,162	3,162
54-57°	19	10,669	12,732	1,277	2,869	893	1,800
51-54°	18	34,692	9,821	2,103	1,320	1,556	772
48-51°	17	11,355	22,048	4,751	5,232	3,247	3,221
45-48°	16	9,654	76,029	5,829	5,928	4,086	3,359
42-45°	15	9,329	24,996	6,964	6,368	5,173	4,289
39-42°	14	5,807	128,130	3,438	3,790	2,570	2,943
36-39°	13	15,504	129,769	6,852	8,810	5,604	6,716
33-36°	12	11,101	159,540	6,685	20,711	4,368	14,513
30-33°	11	24,415	13,069	22,404	43,849	15,932	32,328
27-30°	10	3,093	10,507	4,545	4,056	3,140	2,726
24-27°	9	7,122	13,720	2,699	3,902	1,623	2,349
21-24°	8	7,518	13,759	1,533	2,970	937	1,871
18-21°	7	2,156	21,453	1,018	2,752	685	1,894
15-18°	6	3,249	26,520	858	3,380	674	2,303
12-15°	5	19,053	11,431	3,158	1,262	2,373	937
9-12°	4	8,445	12,165	1,637	1,630	1,132	1,200
6-9°	3	5,818	18,100	1,494	2,940	930	2,226
3-6°	2	3,489	2,026	1,473	628	1,072	428
0-3°	1	2,585	1,801	1,209	485	931	324
TOTALS		196,821	709,383	85,941	128,896	60,088	89,361

Table 1.
Total number of temperature observations from surface weather reports and subsurface profiles for boxes in the offshore and coastal series, 1971-1987. Box 19 overlaps between coastal and offshore series while box 20 is the same for both series.

ANNUAL CYCLES OF TEMPERATURE

The long term mean monthly surface and subsurface temperature plots along the coast and offshore (Figure 2) portray the annual cycle over the period from January 1971 to August 1987. Closely packed isotherms in the surface temperature plots between 18° and 30°N represent a seasonally migrating frontal zone between temperate waters to the north, where seasonal heating and cooling are strong; and equatorial waters to the south, where seasonal fluctuations are weak. A pinching of the 12° and 14°C isotherms from June through September along the coast between 39° and 42°N represents cold water upwelled to the surface, reducing the effects of seasonal warming. At 100m and 200m, the subtropical frontal gradient is weaker than at the surface, but it is still evident between 21° and 30°N. Seasonal temperature variability at all latitudes becomes less apparent at 100m and below.

COMPARISON OF COASTAL AND OFFSHORE TEMPERATURE ANOMALIES

In both offshore and coastal regions, monthly temperature anomalies show similar patterns at all depth levels (Figures 3, 4, and 5). The series begins with a cool period from January 1971 to June 1976 followed by a warmer period from 1977 to 1987. During the 1972-73 El Niño event, positive temperature anomalies were most apparent in the tropical latitudes, and extended northward to 33°N. Evidence of this warming event is seen at all depth levels and is most coherent in the coastal series. The 1976 El Niño appears as a less important event. Low latitude warming appears at the 100m depth level while surface warming is most apparent in the middle and high latitudes.

The 1982-83 El Niño was characterized by anomalously high temperatures throughout the region and weakened from south to north, possibly indicating energy transfer by both equatorial Kelvin wave activity (lower latitudes) and atmospheric teleconnection (higher latitudes). Mid-latitude warming at the surface is most apparent in the coastal series where the strength of the 1982-83 El Niño remains strong from the equator through 48°N. In general, positive anomalies during El Niño events show greater spatial continuity and northward extent in the coastal series than in the offshore series.

In 1986-87, positive surface temperature anomalies appeared in the tropics and high latitudes in both coastal and offshore series (Figure 3). The warming observed in the equatorial regions (Hayes et al. 1987) in 1986-87 is expressed by positive SST anomalies (0.5°C) extending from the equator to about 9°N. Both series show positive anomalies in the higher latitudes commencing in September 1986 and lasting until May 1987. Mid-latitude positive anomalies are apparent in the offshore series at 100m.

Extensive sea surface warming unassociated with tropical warming events occurred in the winters of 1976-77, 1979-80, and 1980-81. These events were associated with anomalous development of the North Pacific Low (NPL) atmospheric pressure system (Douglas et al. 1982, Norton et al. 1985).

COMPARISON OF SURFACE AND SUBSURFACE TEMPERATURE ANOMALIES

Good agreement, in terms of the patterns of extreme events, exists between the temperature anomalies at the surface and at depth. This was found even though the data were from the two different sources: weather observations and subsurface profiles. Agreement was best at low latitudes.

Temperature anomalies at 100m illustrate the extreme nature of the 1982-1983 El Niño (Figure 4). Both coastal and offshore plots show positive temperature anomalies exceeding 2.5° C in tropical and mid-latitudes. The 1972-73 and the 1976-77 El Niño events are also noted as relatively strong signals at this depth.

Anomalous warming during 1986-87 is apparent at 100m in the middle and high latitudes of the offshore series (Figure 4). This broad band of positive anomaly from 24° to 57°N commenced in May 1987 and persisted through the end of the time series, in August 1987. The extensive areal coverage of this warming indicates the anomalous heat content at this level in the middle and high latitudes. This warming was one of the largest positive anomalies of the offshore series, exclusive of the extreme 1982-83 El Niño event. Continuation of the 1986-87 El Niño past August 1987 has been documented (Kerr 1988), with expression of the event finally ending by late fall 1987.

Temperatures at 200m normally remain relatively constant from year to year. The 1972-73 and 1982-83 El Niño events are the only anomalous events observed at 200m in both the coastal and offshore anomaly series, reflecting the extreme intensity of both events (Figure 5).

CHRONOLOGICAL SUMMARY OF SURFACE AND SUBSURFACE TEMPERATURE TRENDS

1971-1976:

The 1971-76 period was characterized by anomalously cool temperatures both in coastal and offshore regions over a broad area (equator to 60°N) for most of the period. The cooler temperatures were more pronounced in the coastal series, but were also expressed offshore. Negative anomalies remained extensive from the surface to 100m.

The 1972-73 El Niño occurred during this anomalously cool period and was an exceptionally strong pulse, transforming a uniformly cooler region into a large area of anomalous warming over a short period of time. Evidence of this El Niño was apparent at all depth levels (surface, 100m, and 200m), with the pulse becoming less apparent at depth. Both coastal and offshore regions show similarities in the time, duration and extent of the 1972 El Niño. However at 100m, the initial offshore warming pulse occurred 3 months later and was less extensive than the initial warming in the coastal plot. A similar occurrence was seen during the 1976 El Niño. The intensity of the 1972 El Niño at 100m was similar to the magnitude expressed at the surface.

The 1976 El Niño was a less significant event with positive anomalies appearing in the middle and high latitude surface layers. At 100m depth, the warming pulse became apparent in the low latitude coastal region. Offshore, the pulse became apparent 3 months later and was less extensive. This dampening in the offshore region may be related to sparse data coverage and the filtering procedure used in the anomaly computations.

1977-1984:

The period from 1977 to 1982 was characterized by anomalously warm temperatures in the middle to high latitudes. Positive anomalies appeared to be surface related features and were weak or nonexistent at 100m. Anomalously cool regions were expressed in the low to mid-latitudes at 100m over the same time period.

The extreme 1982-83 El Niño event was evident from the surface to 200m in both coastal and offshore regions. At 200m the signal was much stronger in the coastal region and appeared to precede the offshore event by two months. Middle to high latitude positive anomalies were apparent from the surface to 200m concurrently with this El Niño, indicating the region-wide nature of this event. At 100m the El Niño showed similar magnitude and areal extent in both coastal and offshore series. In the tropics the event was stronger at 100m than at the surface. A large component of this extreme warming event is visible in the middle and high latitudes from the surface to 100m.

1984-1987:

From 1984-87 the region was characterized by less anomalous temperatures, although the general trend seems to indicate a continuation of the anomalously warm period which began in 1977. In 1986-87, positive anomalies in the middle and high latitudes become apparent in both surface plots during summer (Figure 3). A tropical warming pulse commenced offshore in November 1986 and continued to the end of the series (August 1987). However, in the coastal series, the tropical warming was less extensive spatially and temporally during 1986-87. This tropical warming is an expression of the 1986-87 El Niño which shows greater magnitude and extent in the equatorial and southern hemisphere coastal regions during 1986-87 (Hayes et al. 1987). Anomalous warming events during this time period are more apparent in the SST time series in the higher latitudes. However, at 100m, the offshore plot shows a broad area of warming in the mid-latitudes during this same time period.

CONNECTIONS BETWEEN TROPICAL AND HIGHER LATITUDE WARMING EVENTS

El Niño years in the mid-latitudes (20-45°N) coincide with El Niño years along the equator because of energy transfer from the tropics to higher latitudes by both oceanic and atmospheric processes. Each process has received considerable attention in the literature (McCreary 1976, Picaut 1985, Rasmusson and Wallace 1983, Wallace and Gutzler 1981).

As the trade winds relax or reverse over the equatorial Pacific, a downwelling disturbance is formed which propagates eastward toward South America with characteristics of an equatorially trapped Kelvin wave (Halpern et al. 1983, Cane 1983). When the eastern boundary is reached, poleward propagating, coastal Kelvin waves are formed. These Kelvin waves, if sufficiently energetic, bring downwelling perturbations northward. As the Kelvin wave propagates northward, it loses energy to westward propagating Rossby waves, which radiate westward at speeds less than a tenth the speed of coastal Kelvin waves (Mysak 1986). This may account for the 2-4 month lag in the appearance of offshore El Niño signals (Figures 3 and 4).

As the Kelvin wave propagates eastward along the equator, it is accompanied by anomalously high sea surface temperatures. The warm water transfers increased energy to the atmosphere which appears to set up a quasi-stationary tropospheric wave pattern as it propagates northward in great circle arcs (Wallace and Gutzler 1981, Horel and Wallace 1981). In this way, extensive tropical SST anomalies can be teleconnected to higher latitudes through the atmosphere, altering wind forcing throughout the Eastern North Pacific (Bjerknes 1969, Quiroz 1983, Pan and Oort 1983).

Horel and Wallace (1981) have pointed out positive correlations between the NPL atmospheric pressure system and tropical El Niño activity which they attribute to atmospheric teleconnection. However, Douglas et al. (1982) point out that intensified NPL activity can occur without tropical El Niño activity as it did in the winters of 1979-80 and 1980-81. The effects of the intensified NPL during these winters may have caused lobes of positive temperature anomaly which extend from high latitudes (Figure 3). Evidence that these anomalies are atmospherically forced may be indicated by the attenuation of response at depth (Figures 4 and 5). Conversely, the intense tropical El Niño of 1972-73 occurred without a fully distinctive and consistent NPL intensification. The fact that the 1972-73 El Niño appears as a lobe extending from the tropics (Figures 3 and 4) with near equal intensity at the surface and at 100m suggests that it was an oceanic event. In these three cases (1972-73, 1979-80, and 1980-81), the observations of temperature anomaly presented here are consistent with the conclusions of Douglas et al. (1982). During the 1982-83 El Niño, elevated sea temperatures were found throughout the latitudinal range of this study. This suggests a combination of strong atmospheric forcing at high latitudes and oceanic forcing from lower latitudes.

CONCLUSIONS

The coastal and offshore time series presented for SST, 100m, and 200m provide temperature anomaly patterns within the eastern boundary region from 1971-1987. Construction of the time series allows comparison of monthly mean temperature anomalies for the 3° boxes, and interpretation of the regional and global influences producing the anomalies. The series can be visually divided into three distinct regimes: a cool period 1971-1976, an anomalously warm period 1977-1984, and a relatively quiet period from 1984 to 1987.

The previous study (McLain et al. 1985) provides details of the processes affecting interannual variability in SST for a coastal time series of the North Pacific from 1971 to 1984. In the present analysis we focus exclusively on the eastern boundary region; update the series to August 1987, and include time series for temperatures at depths of 100 and 200m, as well as the addition of an offshore series for all three depth levels. Dominance of the series by the major El Niño events of 1972-73 and 1982-83 and the lesser El Niño events of 1976 and 1986-87 suggest the occurrence of quasi-periodic episodes of warm and cool water anomalies as pointed out by Graham et al. (1988). They suggest these quasi-periodic episodes can be viewed as phases of a self-sustaining cycle, rather than the more traditional view of El Niños as discrete warming events occurring over a mean background state. The past record of warming events in the California Current does not indicate regular periodicity; however, the more recent events presented in the time series suggest major El Niño events have occurred once per decade, with minor El Niño events occurring 4-5 years after a major event. Documentation of temperature variations have improved over earlier periods of the 1940's through the 1960's due to increased coastal shipping, improvement in observational techniques and equipment, and more efficient transmittal and archival of data.

Relationships between the offshore and coastal expression of anomalies during El Niño events show differences in propagation patterns and magnitude. The El Niño event of 1986-87 shows more anomalous warming offshore than along the coast, and greatest surface expression is in the tropics. Positive anomalies show expression over a large expanse of the middle and high latitude regions at 100m. However, the 1982-83 El Niño event continues as the most significant anomalous period of the time series.

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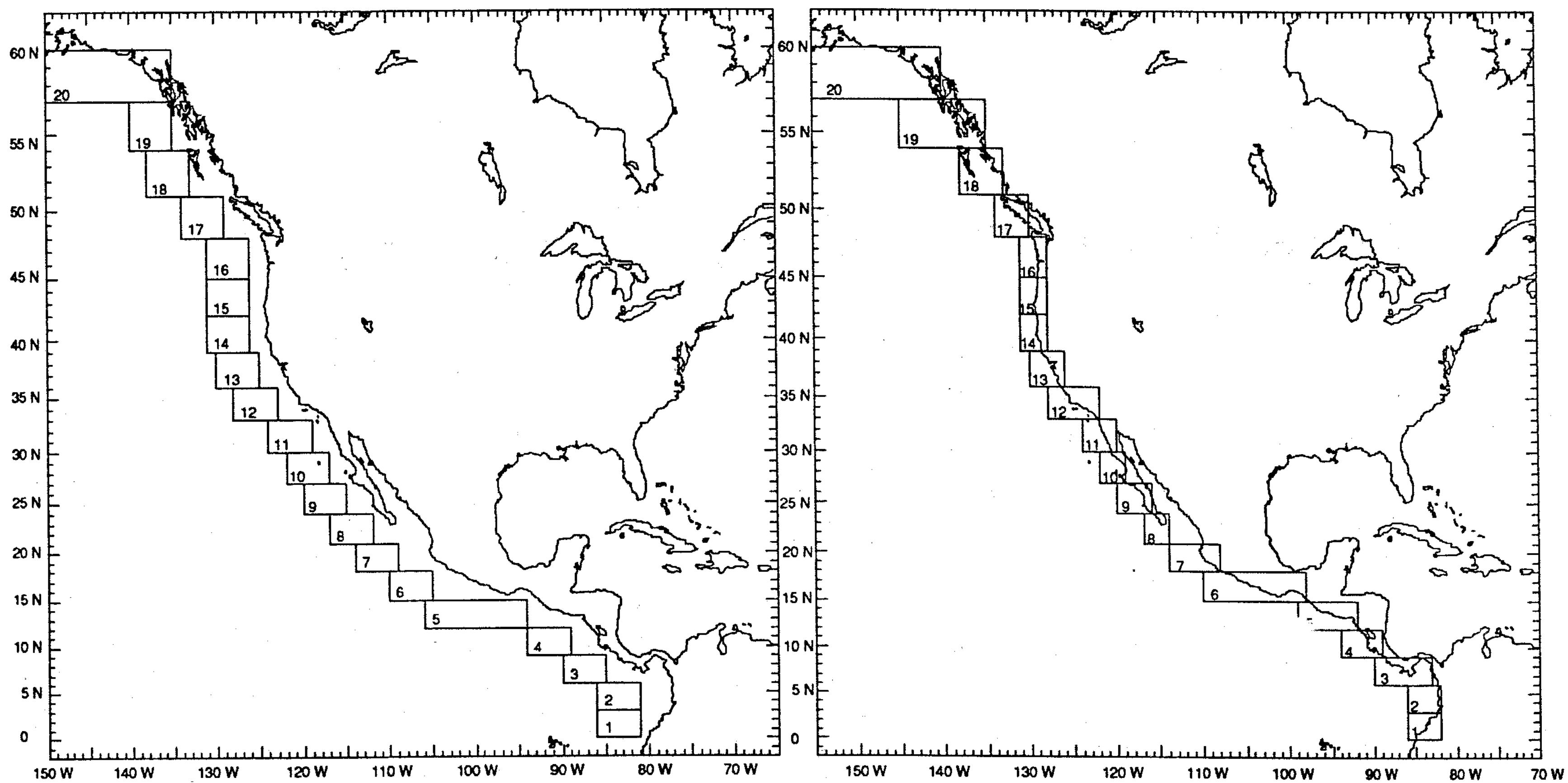

FIGURE 1. OFFSHORE AND COASTAL BOXES WHERE MONTHLY MEAN SEA SURFACE AND SUBSURFACE TEMPERATURES WERE COMPUTED DURING THE PERIOD 1971-1987. BOXES 19 AND 20 OVERLAP BETWEEN SERIES DUE TO LIMITED DATA IN THE HIGHER LATITUDES.

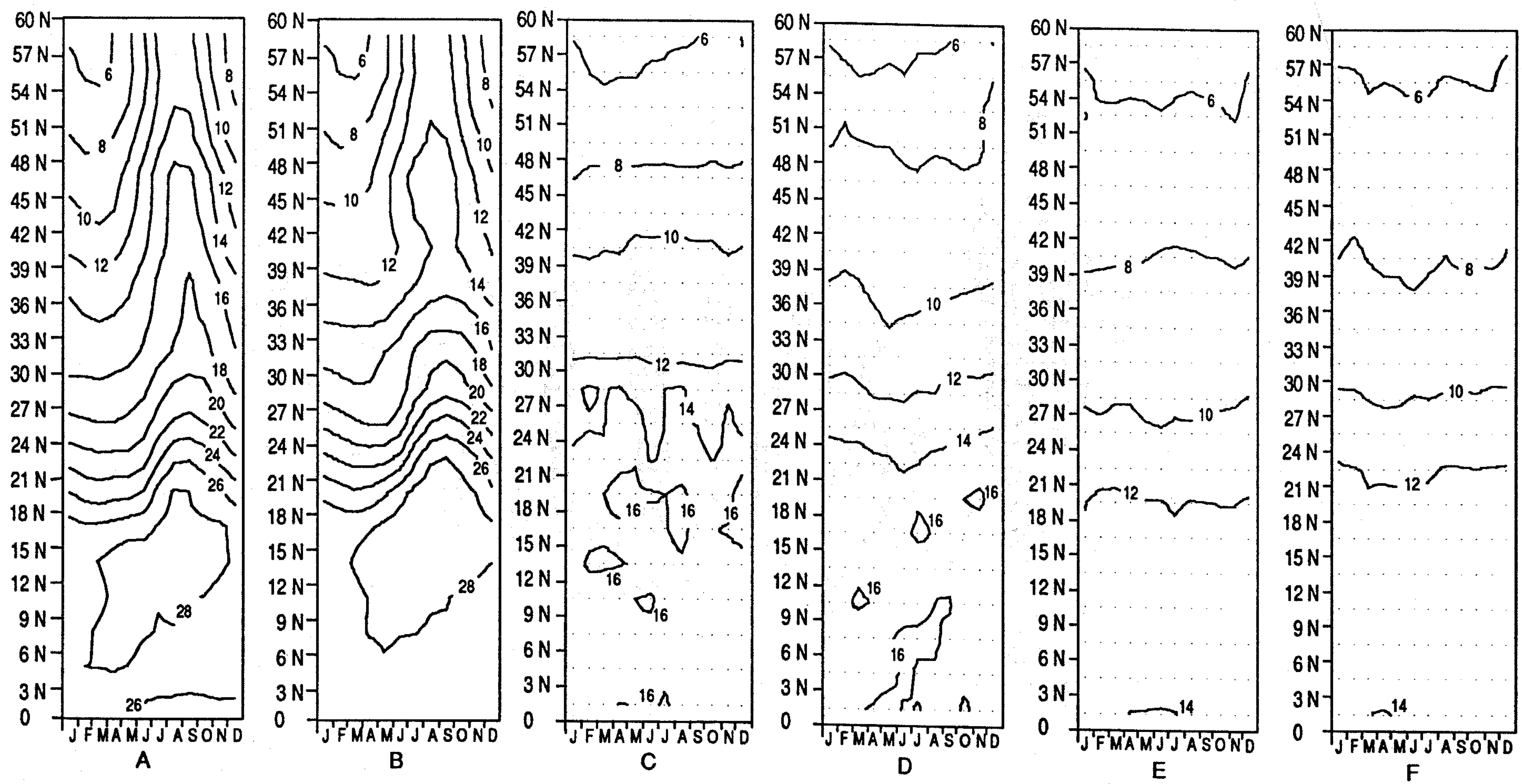

FIGURE 2. ANNUAL CYCLE OF LONG TERM MONTHLY MEAN TEMPERATURES ALONG THE EASTERN BOUNDARY OF THE NORTH PACIFIC IN DEGREES CELSIUS FOR THE 20 BOXES IN EACH SERIES: (A) OFFSHORE SST, (B) COASTAL SST, (C) OFFSHORE AT 100M, (D) COASTAL AT 100M, (E) OFFSHORE AT 200M, (F) COASTAL AT 200M.

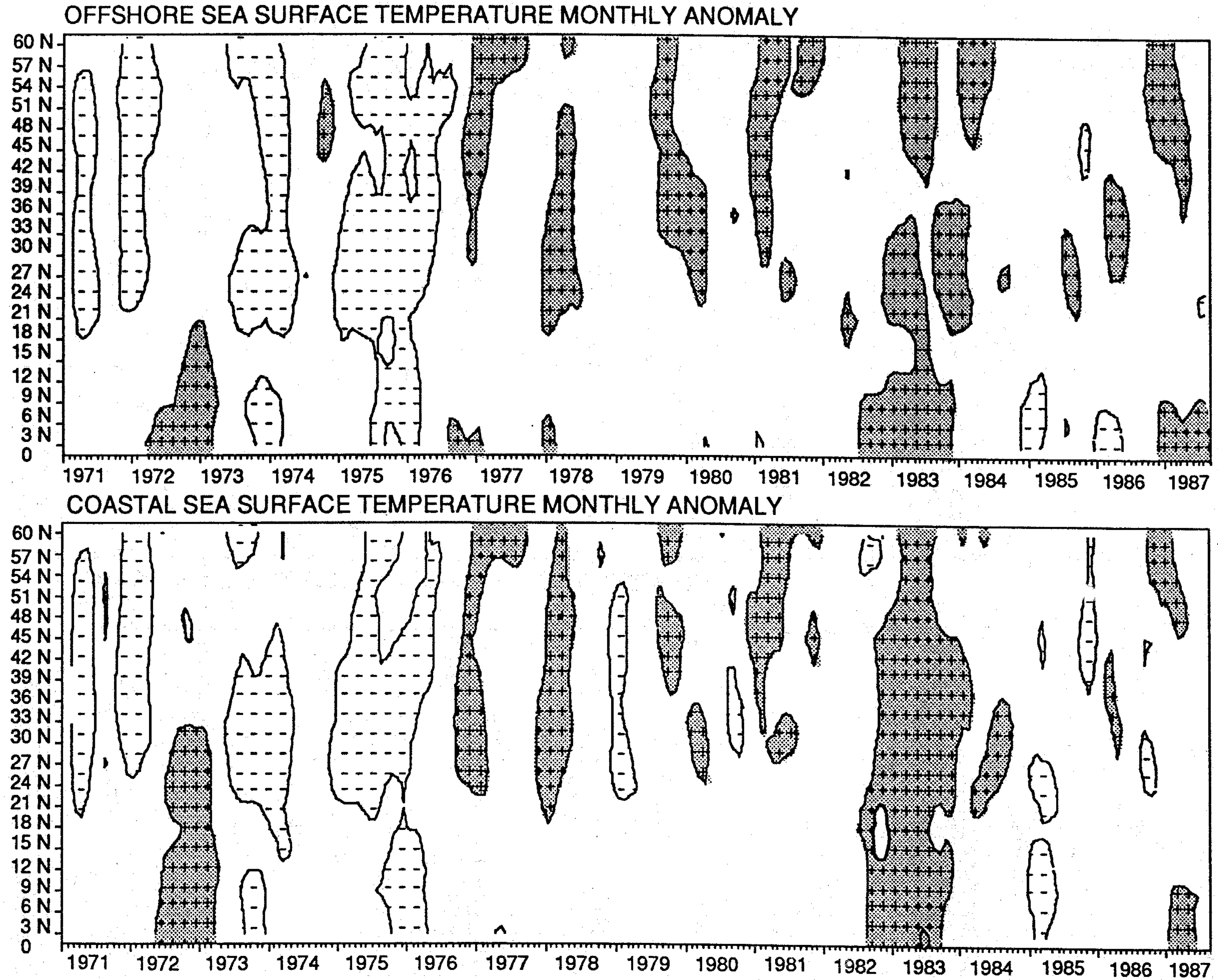

FIGURE 3. ANOMALY OF MONTHLY MEAN SEA SURFACE TEMPERATURE ALONG THE EASTERN BOUNDARY OF THE NORTH PACIFIC FOR THE 20 BOXES IN EACH SERIES: OFFSHORE SST (TOP), (B) COASTAL SST (BOTTOM). CONTOUR INTERVALS ARE (+/-) 0.5, AND 1.5 DEGREES CELSIUS. POSITIVE CONTOURS ARE SHADED, DARKEST SHADING INDICATES HIGHEST TEMPERATURE ANOMALIES.

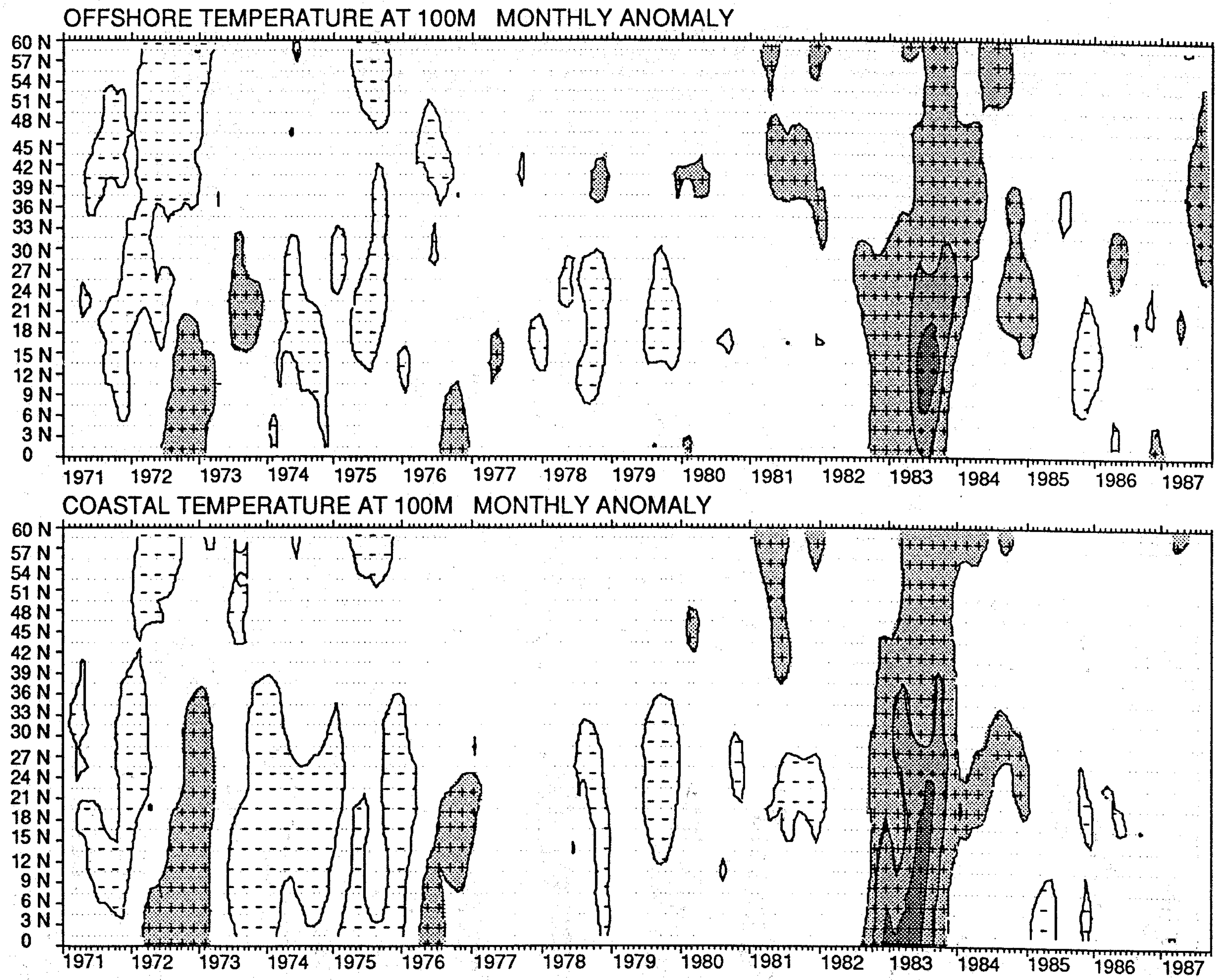

FIGURE 4. ANOMALY OF MONTHLY MEAN TEMPERATURE AT 100M ALONG THE EASTERN BOUNDARY OF THE NORTH PACIFIC FOR THE 20 BOXES IN EACH SERIES: OFFSHORE AT 100M (TOP), (B) COASTAL AT 100M (BOTTOM). CONTOUR INTERVALS ARE (+/-) 0.5, 1.5, AND 2.5 DEGREES CELSIUS. POSITIVE CONTOURS ARE SHADED, DARKEST SHADING INDICATES HIGHEST TEMPERATURE ANOMALIES. HORIZONTAL ROWS OF DOTS INDICATE DATA AVAILABILITY. ABSENT DOTS REPRESENT MISSING MONTHLY VALUES FOR THAT BOX.

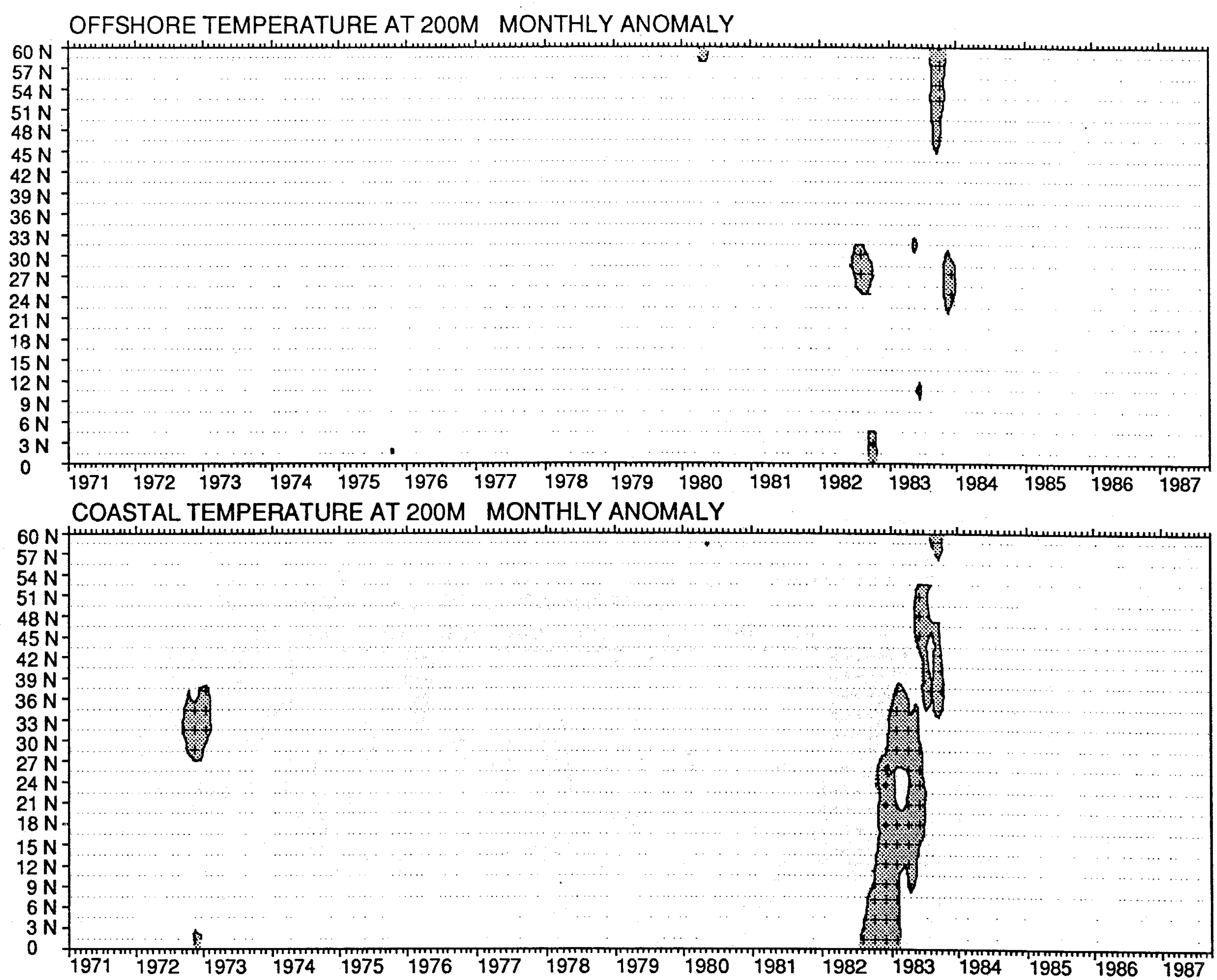

FIGURE 5. ANOMALY OF MONTHLY MEAN TEMPERATURE AT 200M ALONG THE EASTERN BOUNDARY OF THE NORTH PACIFIC FOR THE 20 BOXES IN EACH SERIES: OFFSHORE AT 200M (TOP), (B) COASTAL AT 200M (BOTTOM). CONTOUR INTERVAL IS (+/-) 0.5 DEGREES CELSIUS. POSITIVE CONTOURS ARE SHADED, DARKEST SHADING INDICATES HIGHEST TEMPERATURE ANOMALIES. HORIZONTAL ROWS OF DOTS INDICATE DATA AVAILABILITY. ABSENT DOTS REPRESENT MISSING MONTHLY VALUES FOR THAT BOX.

APPENDIX A

Tabulation of Monthly Mean Temperatures for the Coastal Series at the Surface and 100M

The following four pages display the mean monthly coastal temperatures used in this study. The twenty columns represent the 20 areal boxes from the equator to 60°N. Temperature values are listed in rows chronologically by month from January 1971 to August 1987. Archiving of SST data began in March 1971. Asterisks represent missing data. The first two pages contain SST values and the following two pages contain 100m values. Data from the offshore and 200m series have been omitted. Coastal surface and 100m data are more complete and a better indicator of temperature in the coastal region and upper layers.

Coastal SST Values (°C), January 1971 to August 1987.
Asterisks indicate missing temperature data.

	BOX LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	LATITUDE	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	27-30	30-33	33-36	36-39	39-42	42-45	45-48	48-51	51-54	54-57	57-60
YEAR	MONTH																				
1971.	1.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1971.	2.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1971.	3.	27.65	26.25	27.41	27.05	27.92	26.87	23.46	20.34	17.38	14.34	13.23	12.34	10.68	9.79	8.96	8.11	7.01	6.53	5.54	5.20
1971.	4.	25.00	26.95	27.94	27.67	28.57	27.65	24.59	20.46	16.95	15.39	14.49	12.45	10.76	10.10	9.66	9.04	8.25	6.93	5.62	5.63
1971.	5.	26.90	28.45	28.37	28.69	29.21	27.68	24.74	20.85	16.78	15.63	15.04	12.89	11.67	11.13	11.17	10.60	9.48	7.62	6.83	7.80
1971.	6.	26.25	27.55	27.54	28.09	28.94	28.84	26.93	21.87	19.11	16.10	16.27	14.10	12.25	11.08	12.41	12.37	11.04	10.71	8.94	9.60
1971.	7.	27.80	26.70	27.63	28.23	29.06	29.40	29.18	26.42	21.82	18.98	17.85	15.47	14.07	12.81	13.73	14.72	13.98	13.20	13.60	13.79
1971.	8.	26.85	27.15	27.56	28.09	28.58	29.07	28.36	27.23	24.98	21.90	20.00	17.24	15.16	15.61	16.33	16.24	15.41	14.81	13.29	12.87
1971.	9.	25.93	27.40	27.25	27.56	28.39	28.41	28.19	28.19	26.38	22.62	19.67	17.31	15.31	15.22	15.64	15.38	14.61	14.22	12.37	12.50
1971.	10.	26.12	26.95	26.81	26.84	28.66	28.91	28.10	27.72	24.75	21.11	18.80	16.38	14.22	14.23	13.36	12.70	12.33	11.77	11.03	9.72
1971.	11.	25.96	26.37	27.37	26.92	28.32	28.84	27.67	26.30	22.75	18.61	16.57	14.94	12.45	11.84	10.86	10.37	9.83	8.16	7.98	10.00
1971.	12.	24.88	25.80	27.51	25.75	28.08	28.52	26.26	23.56	20.24	17.02	15.10	13.28	11.82	10.44	10.04	9.42	8.20	7.00	6.41	5.90
1972.	1.	26.63	25.81	27.09	26.79	27.55	27.75	25.65	22.32	18.61	15.18	13.10	12.06	10.65	9.78	9.31	7.97	6.90	5.77	5.68	*****
1972.	2.	27.00	26.81	27.59	26.62	27.15	27.39	24.65	21.61	17.79	15.08	14.00	12.38	10.89	9.98	9.17	8.03	6.97	6.23	4.15	4.75
1972.	3.	26.77	24.77	26.96	27.30	27.06	27.68	24.50	21.50	18.12	15.30	14.30	13.05	11.41	10.56	9.64	8.68	7.38	5.72	4.01	4.90
1972.	4.	26.20	27.92	28.30	28.22	29.40	28.07	25.54	22.18	18.09	15.25	15.12	13.12	11.7[illegible]	10.52	10.36	9.27	8.35	7.12	5.35	6.82
1972.	5.	27.60	28.07	28.74	28.84	29.83	29.51	26.91	21.43	16.64	15.81	16.03	13.53	11.[illegible]	10.81	10.89	11.16	9.38	8.60	7.29	8.80
1972.	6.	27.93	27.95	28.56	29.25	29.55	29.05	27.32	22.77	19.52	17.35	17.22	15.20	13.[illegible]	12.56	13.38	13.12	12.18	11.39	8.98	10.60
1972.	7.	27.67	28.27	28.59	29.05	29.32	29.83	29.06	26.40	21.67	18.33	18.61	16.80	14.27	13.39	14.09	14.65	13.28	12.62	12.05	13.94
1972.	8.	27.09	29.32	28.78	28.83	29.35	29.83	30.33	28.96	25.58	20.76	20.28	17.32	15.06	13.60	14.31	14.99	14.80	14.80	13.93	12.89
1972.	9.	28.07	27.80	28.29	29.17	29.19	29.92	29.07	28.88	25.92	21.27	20.01	17.48	15.72	14.23	14.40	14.13	13.37	12.89	13.06	13.30
1972.	10.	27.44	28.56	28.33	28.76	29.00	29.70	29.28	28.86	25.20	21.31	19.70	17.85	15.46	12.97	13.23	12.54	11.44	11.54	10.06	10.30
1972.	11.	26.03	28.20	28.20	28.42	29.13	29.64	28.49	26.94	23.55	20.43	18.34	16.12	14.37	13.39	12.35	10.69	10.15	8.85	8.79	8.80
1972.	12.	27.50	27.10	28.42	28.01	28.72	29.32	27.74	25.07	22.74	19.84	16.50	14.75	12.54	11.58	10.11	9.29	9.16	7.53	6.77	4.47
1973.	1.	27.41	25.96	28.28	28.07	27.86	28.35	26.40	23.63	20.72	17.93	15.58	13.85	12.07	11.55	10.00	8.99	7.90	6.89	6.23	5.18
1973.	2.	26.92	26.62	27.95	27.97	27.41	27.94	25.65	22.70	19.83	16.74	15.96	14.06	12.25	11.08	10.33	8.92	7.72	6.40	5.63	5.30
1973.	3.	27.27	26.41	28.26	28.62	29.17	27.83	24.51	21.60	18.60	16.38	15.53	13.00	12.56	10.89	10.29	9.19	8.22	7.42	5.15	4.49
1973.	4.	27.48	26.10	28.66	28.84	29.89	27.25	23.93	20.95	17.38	15.40	14.74	12.97	12.11	10.73	10.49	9.73	8.78	7.61	6.34	5.61
1973.	5.	27.10	27.60	28.87	28.68	29.61	28.34	25.78	21.12	17.93	15.95	15.53	13.23	12.34	11.49	12.28	11.68	10.48	8.82	7.36	6.52
1973.	6.	26.90	27.55	27.75	28.34	28.75	29.04	26.72	21.92	18.02	16.57	16.02	14.38	12.69	10.90	12.80	12.72	11.05	10.51	8.24	8.90
1973.	7.	26.70	27.17	27.58	27.41	29.20	29.15	28.43	24.56	20.92	18.35	17.88	15.59	13.23	13.09	13.93	14.49	12.76	12.36	11.74	11.90
1973.	8.	25.87	26.43	27.14	27.74	29.15	29.11	28.83	26.94	22.76	19.43	18.86	16.34	13.83	13.40	14.30	14.58	14.23	13.38	12.54	12.43
1973.	9.	26.87	26.40	27.37	27.41	28.20	29.11	28.31	26.47	24.33	19.00	18.18	16.13	14.40	14.43	14.26	14.33	14.25	13.27	12.14	11.80
1973.	10.	25.50	25.80	26.67	27.11	28.78	29.03	28.41	26.21	22.45	18.96	18.02	16.14	14.49	13.47	13.31	13.47	12.26	10.67	10.36	*****
1973.	11.	26.09	25.36	26.95	26.40	28.73	29.15	27.75	25.34	21.71	18.12	16.98	15.70	13.62	12.01	12.28	11.17	10.06	8.05	7.79	8.50
1973.	12.	24.80	26.28	27.32	26.36	27.22	27.98	25.89	23.50	19.62	14.43	15.22	13.88	12.25	11.72	10.92	10.06	9.31	7.61	6.77	*****
1974.	1.	25.85	26.40	27.13	26.12	27.30	27.40	24.47	21.19	18.07	15.74	13.94	12.40	11.46	10.50	9.31	8.53	7.84	7.13	5.62	5.88
1974.	2.	26.02	26.67	27.45	26.43	27.18	26.93	23.67	20.24	16.97	15.31	14.16	12.39	11.32	9.71	9.83	8.77	7.36	6.83	5.59	3.70
1974.	3.	25.40	26.40	27.30	26.19	27.43	27.25	23.69	20.24	17.27	15.73	14.67	12.70	11.08	9.98	9.74	8.70	7.58	6.24	5.26	4.83
1974.	4.	25.97	27.17	28.20	27.16	28.33	26.97	24.07	21.05	17.01	15.20	15.12	13.74	11.67	10.91	9.91	9.54	8.47	6.97	5.76	5.02
1974.	5.	26.78	27.00	28.17	28.69	29.24	28.38	25.82	21.80	17.52	15.46	15.23	13.11	11.75	11.80	11.48	10.97	10.17	9.15	8.23	5.50
1974.	6.	27.00	26.86	27.87	28.05	28.73	28.73	27.48	23.57	18.65	17.22	16.45	14.42	12.26	12.62	12.15	12.54	11.56	10.87	9.57	10.43
1974.	7.	27.06	26.93	27.64	27.84	28.34	29.05	28.04	25.33	21.96	18.89	18.23	15.48	13.85	13.49	13.68	14.69	13.49	12.77	12.19	13.30
1974.	8.	27.40	27.08	27.88	27.76	28.93	29.84	29.61	27.57	22.59	19.63	19.71	16.49	14.43	14.11	15.00	15.42	14.38	13.68	13.48	13.63
1974.	9.	26.55	27.18	27.60	27.57	28.87	29.27	29.04	28.56	25.25	20.38	19.29	17.11	15.15	14.66	14.74	15.58	14.69	14.31	13.57	12.26
1974.	10.	25.78	26.68	26.95	27.54	28.44	29.01	29.37	27.86	23.77	19.98	18.87	16.66	14.94	12.56	13.69	13.39	12.96	11.14	11.30	10.15
1974.	11.	25.87	27.33	26.96	26.65	28.44	28.61	27.83	25.49	22.12	19.21	17.72	15.72	13.43	12.40	11.87	11.61	11.18	9.51	9.15	8.15
1974.	12.	26.17	26.39	27.47	26.65	27.91	28.39	25.95	23.66	20.30	17.14	15.85	14.37	12.56	11.51	11.23	10.53	9.89	8.50	7.83	7.55
1975.	1.	26.57	26.07	27.54	26.31	27.35	27.28	24.75	21.50	18.59	15.93	14.76	12.58	11.34	10.55	10.02	8.82	8.24	7.07	5.77	5.22
1975.	2.	26.20	26.47	27.80	26.39	27.13	27.36	24.39	20.36	17.96	14.88	14.30	12.73	11.35	10.43	9.62	8.65	7.08	7.08	4.66	4.76
1975.	3.	26.30	26.23	27.81	27.30	28.43	27.47	24.02	20.75	16.99	15.50	14.48	12.97	11.57	10.43	9.82	9.06	7.79	6.63	5.61	4.87
1975.	4.	25.22	27.18	28.26	28.07	29.15	27.97	24.01	20.16	16.16	14.90	14.47	12.97	11.13	10.05	9.75	9.09	8.26	7.84	5.91	5.85
1975.	5.	26.43	27.48	27.95	27.97	29.49	28.60	25.28	20.15	16.70	15.31	14.62	13.10	11.52	11.01	11.00	10.67	9.60	8.16	7.16	7.05
1975.	6.	26.54	27.17	27.80	28.62	29.64	29.36	26.56	21.98	17.00	15.70	16.04	14.66	12.64	11.34	11.56	12.00	10.60	10.57	8.21	8.84
1975.	7.	26.70	27.01	27.08	27.18	28.63	28.27	27.35	24.34	20.63	17.58	16.80	15.26	13.48	13.01	13.12	14.91	13.29	12.75	11.52	11.17
1975.	8.	26.40	26.67	27.07	27.34	28.98	29.16	28.76	27.32	22.41	19.39	18.85	16.45	13.97	13.53	14.11	14.82	13.86	12.92	12.25	12.61
1975.	9.	25.82	26.93	27.30	28.23	28.61	28.91	28.54	28.13	24.67	19.73	18.78	16.17	14.86	13.84	14.51	14.80	13.65	13.19	12.23	11.42
1975.	10.	26.68	26.61	26.79	26.88	28.14	29.18	28.87	27.34	23.00	19.07	18.65	15.80	13.81	13.85	13.43	12.86	11.76	11.07	10.05	9.60
1975.	11.	25.24	25.95	26.22	25.72	27.87	28.47	27.39	25.52	22.75	18.58	16.94	14.88	12.76	11.86	11.98	10.97	9.90	8.91	8.08	6.14
1975.	12.	25.18	26.04	26.70	25.62	27.31	28.00	26.17	23.45	21.33	16.79	15.20	13.51	11.45	11.10	11.44	10.15	8.90	8.64	6.68	*****
1976.	1.	25.47	25.70	26.90	26.44	26.22	27.29	24.82	21.63	19.21	16.03	14.55	12.63	10.96	10.16	9.93	8.35	7.87	7.25	6.19	5.23
1976.	2.	26.09	25.47	26.71	25.88	26.38	27.26	24.60	21.06	18.83	16.05	14.91	13.12	11.33	10.20	9.57	8.31	7.45	7.38	5.53	6.29
1976.	3.	25.97	25.45	26.79	25.94	27.35	27.08	23.87	20.91	18.03	15.68	15.18	12.88	11.28	9.58	9.15	8.26	7.26	6.58	5.63	4.34
1976.	4.	26.60	27.34	27.66	28.03	28.64	27.72	24.06	20.69	18.15	15.74	15.37	13.22	11.12	10.21	9.87	9.07	7.64	7.32	6.26	5.36
1976.	5.	26.50	28.14	28.11	28.35	29.50	29.04	25.46	21.02	17.72	16.75	15.96	13.71	11.28	10.61	10.90	11.18	9.84	8.41	6.59	6.19
1976.	6.	26.85	27.35	28.32	28.84	28.81	29.09	27.73	23.59	18.47	16.80	16.95	14.35	12.29	12.09	12.12	12.90	11.11	10.02	9.40	9.98
1976.	7.	27.00	27.71	28.50	28.00	28.78	29.35	29.19	25.78	21.93	18.67	18.04	16.46	13.78	13.47	15.01	15.46	13.29	11.90	11.69	11.78
1976.	8.	26.44	27.21	28.25	28.59	28.76	29.90	29.62	28.25	23.37	18.82	19.15	17.46	15.66	14.96	15.31	15.50	13.98	13.23	13.32	14.09
1976.	9.	27.03	27.01	28.09	28.31	29.11	29.73	29.51	28.56	25.39	21.41	20.59	17.09	15.31	14.39	14.57	15.36	14.37	13.10	12.24	13.04
1976.	10.	26.76	27.40	27.71	27.90	28.61	29.08	28.74	27.23	25.53	21.87	20.53	18.21	15.43	13.91	14.29	14.00	12.35	10.77	10.77	10.49
1976.	11.	27.25	27.27	28.15	27.35	28.62	28.66	27.63	26.07	24.39	21.37	19.62	17.73	14.95	13.85	13.48	12.66	11.51	9.36	9.21	8.30
1976.	12.	26.57	26.40	28.32	27.36	28.44	28.49	27.13	24.36	22.43	19.84	18.11	15.81	13.06	12.38	11.47	10.07	10.36	8.67	8.02	6.70
1977.	1.	25.79	25.95	27.70	27.53	27.59	27.95	26.21	23.12	20.04	18.22	15.96	14.88	12.52	11.57	10.28	9.33	9.13	7.95	6.87	6.42
1977.	2.	25.38	25.85	27.52	26.98	27.34	27.46	25.17	22.28	19.47	17.00	16.18	13.80	13.24	11.45	11.05	9.43	8.17	7.67	7.08	7.30
1977.	3.	26.28	25.25	27.23	27.88	28.38	27.89	24.57	22.29	18.74	16.14	15.46	13.59	11.95	11.11	10.66	9.73	8.37	7.22	6.30	6.02
1977.	4.	26.58	26.07	28.17	27.85	29.70	27.86	24.72	21.32	18.09	16.14	15.48	13.45	11.41	10.31	10.34	9.68	8.57	7.43	6.93	5.42
1977.	5.	26.47	27.10	27.89	28.90	29.72	28.96	25.88	21.27	17.74	16.37	15.58	13.78	12.60	11.46	11.89	11.53	10.22	9.56	7.95	9.10
1977.	6.	26.15	27.30	27.89	27.96	28.72	29.15	27.89	22.41	19.62	17.10	16.77	14.36	12.68	12.23	12.59	13.00	11.51	10.93	10.72	11.21
1977.	7.	24.40	27.30	27.90	27.80	29.20	29.86	29.67	25.47	21.42	19.07	17.04	16.11	12.82	12.94	13.23	14.96	13.61	12.58	12.50	13.62
1977.	8.	26.53	26.38	27.48	27.67	29.59	29.56	29.20	27.11	23.81	19.96	19.41	16.75	15.58	14.56	13.19	15.59	14.74	14.19	14.00	14.44
1977.	9.	26.61	26.90	27.85	27.92	29.65	29.88	29.15	27.42	25.07	21.09	19.71	17.41	15.22	14.42	14.14	14.60	14.13	13.40	14.02	13.47
1977.	10.	26.30	26.80	27.90	27.26	28.63	29.27	28.42	27.89	24.34	20.56	19.52	17.44	14.91	13.23	13.74	13.49	12.56	11.50	10.06	10.48
1977.	11.	26.58	26.94	27.55	27.56	29.06	28.93	28.24	26.63	23.26	19.89	18.31	16.32	13.86	12.32	11.88	11.59	10.44	9.29	7.96	8.37
1977.	12.	25.90	27.00	27.66	27.40	28.65	28.35	27.08	25.13	22.52	19.55	17.54	15.40	13.15	12.14	11.18	10.46	8.97	7.73	6.30	5.60
1978.	1.	26.32	26.96	28.04	27.29	28.20	27.86	26.35	23.09	20.47	18.17	16.33	14.94	13.30	12.04	11.33	10.00	8.83	8.26	6.72	5.87
1978.	2.	25.59	25.82	27.60	26.87	27.97	27.58	25.48	22.18	19.24	17.39	15.79	14.37	12.70	11.64	10.79	9.59	8.34	8.01	6.42	6.12
1978.	3.	26.71	26.84	27.02	27.96	28.56	27.56	25.25	21.73	19.30	17.27	16.32	14.42	12.91	11.78	11.07	9.49	8.58	8.19	5.66	8.20
1978.	4.	26.38	26.43	28.08	28.33	29.45	27.85	25.02	20.51	18.04	16.79	16.73	14.16	13.22	11.30	10.91	10.03	9.10	8.54	6.69	6.70
1978.	5.	27.35	27.51	28.07	28.37	29.63	28.38	25.22	21.23	18.64	17.15	16.84	14.06	12.53	11.97	12.28	11.97	10.91	9.47	8.10	7.60
1978.	6.	27.30	27.58	28.06	28.27	29.01	29.16	27.31	22.37	18.26	17.18	17.01	14.67	12.93	12.48	14.23	14.86	12.68	10.79	10.13	10.90
1978.	7.	26.87	26.87	27.50	27.90	29.04	29.22	29.07	25.73	21.23	18.40	17.72	15.28	13.89	13.32	13.70	14.41	13.02	12.76	11.61	12.38
1978.	8.	26.24	27.11	27.74	27.66	28.77	29.25	29.53	27.76	24.25	20.72	19.55	17.20	15.23	13.98	14.48	15.50	14.52	13.92	13.05	13.93
1978.	9.	25.95	27.21	27.28	28.29	28.46	28.74	28.82	27.61	23.46	20.41	19.26	17.30	15.28	14.58	15.48	15.83	14.35	13.80	12.62	13.90
1978.	10.	26.20	26.70	27.74	27.70	28.53	29.17	29.12	27.42	24.53	20.48	19.69	16.63	15.04	14.33	14.04	14.76	12.72	11.93	10.27	11.10
1978.	11.	26.35	26.25	27.63	27.23	29.10	29.32	28.23	26.23	23.22	19.39	17.70	15.97	13.40	12.96	12.06	10.86	10.92	10.33	9.12	*****
1978.	12.	26.03	25.97	27.63	26.91	28.01	28.20	26.04	23.28	20.02	17.22	15.69	13.97	12.01	10.48	9.60	8.96	8.50	8.48	7.20	6.70
1979.	1.	27.08	26.05	27.09	27.15	26.97	27.69	25.42	21.33	18.51	16.32	15.06	13.11	11.89	10.51	9.17	8.09	7.35	7.25	6.94	5.97
1979.	2.	26.72	26.02	27.72	26.83	27.58	27.55	24.43	20.85	17.62	15.44	14.55	12.56	11.15	9.76	8.73	8.41	6.98	6.19	5.42	5.55
1979.	3.	25.99	25.39	27.08	27.51	28.38	27.79	23.85	20.20	17.33	15.95	15.40	13.36	11.93	10.73	10.09	9.18	7.47	6.60	5.30	5.87
1979.	4.	26.24	26.48	28.42	28.29	29.92	28.56	24.14	20.38	17.36	16.11	15.89	13.93	12.50	11.23	10.76	10.14	8.68	7.64	6.66	6.25
1979.	5.	27.28	27.66	28.79	29.07	30.40	28.28	24.94	20.68	18.14	16.31	16.72	13.89	12.34	11.27	12.03	11.78	10.31	9.11	7.24	7.32
1979.	6.	26.98	27.32	28.16	28.04	29.10	28.44	26.66	21.94	19.21	17.76	17.72	15.02	12.50	11.94	12.37	12.95	11.64	10.50	9.79	9.97
1979.	7.	27.53	28.10	28.56	28.39	29.67	29.49	28.24	26.02	22.09	19.37	18.92	15.89	14.07	12.62	15.10	15.97	13.40	13.78	12.23	12.42

Coastal SST Values (°C), January 1971 to August 1987.
Asterisks indicate missing temperature data.

YEAR	MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		BOX LOCATION																			
		LATITUDE																			
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	27-30	30-33	33-36	36-39	39-42	42-45	45-48	48-51	51-54	54-57	57-60
1979.	8.	26.65	27.37	27.91	28.45	28.97	29.66	29.22	27.86	23.28	20.47	19.02	17.24	14.76	13.76	14.45	15.86	15.40	14.21	13.88	14.17
1979.	9.	26.70	27.03	27.76	28.03	28.38	28.94	28.65	27.20	24.49	20.58	20.57	17.25	15.04	15.31	16.47	16.23	14.75	13.55	12.81	13.63
1979.	10.	26.28	27.46	27.48	28.25	28.48	28.81	28.82	27.79	24.14	20.83	18.81	17.47	15.85	14.59	14.61	14.11	12.14	11.41	11.44	11.23
1979.	11.	26.74	26.59	27.66	27.02	27.74	28.01	27.41	25.91	22.54	19.02	17.09	16.17	14.92	13.84	13.45	12.95	10.43	8.92	9.61	9.32
1979.	12.	26.25	27.69	27.76	26.83	27.78	28.00	26.27	23.71	21.00	18.16	16.61	15.36	13.06	12.14	11.62	10.74	8.92	8.22	7.88	5.97
1980.	1.	26.46	28.00	27.86	27.40	27.19	27.39	25.63	22.19	19.92	17.67	16.08	14.10	12.36	11.52	10.66	10.06	8.18	8.07	6.37	5.33
1980.	2.	26.21	25.99	27.38	26.98	27.25	27.44	25.16	21.71	19.09	17.06	16.10	13.80	12.08	11.03	10.27	9.22	8.29	7.52	6.03	7.40
1980.	3.	26.55	25.96	27.30	27.85	27.99	27.52	25.21	21.78	19.12	17.12	16.35	14.08	12.84	10.54	10.82	10.27	7.93	7.02	5.90	4.70
1980.	4.	26.10	25.99	27.72	27.70	29.57	28.12	24.76	21.26	18.88	17.21	16.33	13.26	12.05	11.24	10.39	10.00	8.63	8.07	6.05	6.62
1980.	5.	27.44	27.53	27.92	28.98	29.97	28.94	25.25	20.55	18.34	16.30	15.84	14.01	12.46	11.11	11.25	12.15	11.03	8.89	7.10	7.87
1980.	6.	27.31	26.60	27.76	28.62	29.15	30.06	27.62	23.04	19.26	16.64	16.74	14.78	13.05	11.68	12.62	12.85	12.29	11.82	10.83	9.77
1980.	7.	25.78	27.71	27.86	28.31	29.20	29.59	28.87	24.97	21.53	18.31	17.68	15.88	14.18	12.89	13.92	15.05	13.30	12.87	12.40	13.50
1980.	8.	26.80	25.57	27.97	27.99	29.71	28.90	28.55	27.28	24.39	21.17	20.23	15.89	13.46	12.52	14.16	14.90	13.38	12.62	12.83	14.75
1980.	9.	26.06	26.08	27.97	28.54	29.32	29.41	29.47	28.66	24.03	20.46	18.92	15.69	14.65	13.98	14.52	15.33	13.08	11.94	12.56	11.10
1980.	10.	26.78	27.21	27.51	27.61	28.41	29.46	29.00	27.30	23.52	20.23	18.63	16.44	14.59	13.48	13.45	12.48	12.01	10.93	10.64	10.17
1980.	11.	25.92	27.57	27.49	27.63	28.76	28.98	27.71	25.85	22.35	18.94	17.23	15.89	13.65	12.99	13.16	12.75	11.16	9.99	8.88	9.03
1980.	12.	26.68	26.58	27.59	26.73	28.09	28.47	26.33	24.28	21.10	18.27	15.67	14.89	12.98	12.67	11.54	10.96	9.42	8.64	7.49	7.71
1981.	1.	25.53	26.65	27.42	26.64	26.75	27.67	25.28	22.65	19.77	17.25	16.38	14.46	13.35	12.15	10.74	9.90	8.72	7.15	6.36	5.75
1981.	2.	25.90	26.26	27.56	26.47	27.37	27.33	24.98	22.00	19.82	17.29	15.60	14.33	12.71	11.44	11.08	10.14	8.17	7.48	6.93	3.65
1981.	3.	26.15	27.44	27.29	27.08	27.98	26.60	23.16	21.42	18.26	16.82	15.68	13.98	12.54	10.77	10.91	10.20	8.70	8.20	6.52	5.95
1981.	4.	26.91	26.44	28.22	27.49	29.31	27.47	24.88	21.27	18.39	16.63	15.88	13.36	11.34	10.77	10.39	10.51	8.84	7.98	7.32	6.99
1981.	5.	26.66	27.01	28.14	28.37	29.43	28.16	25.47	21.53	18.42	17.39	17.07	13.70	11.58	11.94	12.48	11.37	10.74	10.29	8.38	8.39
1981.	6.	26.52	26.88	27.75	28.27	29.03	28.34	26.02	22.02	18.68	18.70	17.75	15.10	12.86	13.02	13.50	14.07	12.33	11.50	11.20	10.13
1981.	7.	26.80	27.16	28.07	28.38	28.95	28.99	28.06	25.71	21.77	19.92	19.24	16.93	13.55	12.01	13.89	14.24	12.62	12.96	12.75	12.80
1981.	8.	25.18	26.95	27.58	27.99	29.01	29.66	28.87	27.32	23.81	21.01	20.51	16.77	14.16	13.79	15.44	16.10	13.86	13.89	14.01	13.84
1981.	9.	26.08	27.27	27.48	27.92	29.11	29.08	28.73	27.67	24.72	22.09	20.19	16.40	14.65	14.56	14.63	15.66	14.40	12.87	13.81	12.15
1981.	10.	25.82	26.76	27.53	27.57	28.96	29.20	28.61	26.87	23.32	20.61	19.10	16.31	14.66	15.48	14.55	14.34	12.23	10.56	10.82	9.76
1981.	11.	25.92	26.46	27.27	27.09	28.52	29.03	28.15	26.04	23.30	19.02	18.26	16.25	14.31	13.54	12.77	12.29	10.87	9.61	9.35	9.30
1981.	12.	25.64	26.92	27.28	27.05	27.99	28.41	27.11	24.49	20.84	19.07	16.13	14.85	13.32	12.53	12.37	10.88	8.95	8.23	7.57	8.07
1982.	1.	26.97	27.15	27.36	26.58	27.94	27.45	25.35	22.31	19.67	16.16	15.47	13.06	12.19	11.44	10.02	9.46	7.83	7.52	6.68	7.00
1982.	2.	26.48	26.75	28.13	27.55	27.98	27.32	24.88	21.69	18.42	17.04	16.13	13.65	12.21	10.71	10.20	9.91	7.22	7.00	5.72	*****
1982.	3.	26.80	26.40	27.99	27.34	28.79	27.60	24.68	21.28	18.52	16.47	15.33	13.74	12.23	11.14	9.71	9.04	7.51	6.80	5.64	*****
1982.	4.	26.87	26.91	27.71	28.46	29.24	28.92	25.91	20.87	18.11	16.13	15.84	13.63	12.69	11.02	10.63	9.94	8.52	7.58	6.04	6.29
1982.	5.	26.61	27.82	28.40	28.26	29.15	29.38	26.51	21.26	17.57	16.75	16.20	14.19	12.26	10.90	11.02	11.15	10.07	8.29	7.05	7.00
1982.	6.	27.46	27.72	28.25	28.72	29.11	29.32	27.89	21.89	17.35	16.63	16.40	14.51	12.72	11.84	11.33	12.53	11.54	11.48	9.72	9.75
1982.	7.	26.06	27.50	28.24	28.53	29.18	29.63	29.23	24.82	21.26	18.33	17.71	15.99	13.76	13.67	14.69	13.92	12.85	12.16	11.13	11.60
1982.	8.	26.12	28.13	28.52	28.75	29.73	30.16	29.99	28.35	23.92	19.62	18.74	16.24	14.71	14.35	14.98	15.91	13.84	13.13	12.80	13.24
1982.	9.	26.90	27.49	28.30	28.57	29.06	30.05	30.06	29.10	25.18	21.60	20.09	17.17	14.70	14.89	15.19	15.80	13.87	12.17	12.36	11.57
1982.	10.	27.54	27.98	28.28	28.28	29.00	28.98	29.01	27.48	25.08	20.77	19.51	17.21	14.74	14.64	14.89	13.09	12.08	10.28	11.08	9.71
1982.	11.	27.88	28.14	28.23	28.19	29.22	29.09	28.41	27.01	23.68	21.14	18.67	17.14	14.81	13.99	12.74	12.53	9.89	8.10	8.33	7.77
1982.	12.	27.22	27.52	28.38	28.05	28.13	28.22	27.32	25.00	21.58	19.15	16.20	15.33	13.58	12.63	12.44	10.99	9.04	7.47	6.73	*****
1983.	1.	27.53	27.28	28.31	28.08	27.77	28.26	26.48	23.85	21.08	18.54	16.31	15.03	13.16	12.47	11.45	10.69	8.52	7.40	6.64	4.26
1983.	2.	27.40	26.71	28.04	28.48	28.41	27.19	25.86	21.62	20.77	16.83	16.29	14.90	13.66	12.05	11.07	10.65	8.45	7.36	6.13	6.37
1983.	3.	27.14	27.00	28.42	28.99	28.81	27.00	24.72	22.19	19.40	17.06	16.32	14.57	13.24	12.22	10.77	10.53	8.65	7.70	6.78	6.00
1983.	4.	27.00	28.35	29.23	29.49	29.68	27.69	24.96	22.06	18.84	16.95	16.24	14.15	12.92	12.12	11.70	11.27	9.69	8.75	7.11	6.70
1983.	5.	29.40	28.70	29.41	29.76	30.04	28.43	26.51	22.70	18.20	16.98	16.55	14.83	13.24	12.05	12.35	12.10	11.14	9.67	8.31	8.27
1983.	6.	29.00	28.55	29.23	30.02	29.69	30.01	27.99	24.62	19.73	17.75	17.59	15.93	13.67	13.17	13.51	14.53	12.88	11.42	11.11	9.57
1983.	7.	28.60	29.12	29.42	29.61	29.30	29.79	29.01	26.87	23.18	19.15	17.99	17.02	14.35	14.37	16.26	15.80	14.15	12.44	12.99	12.47
1983.	8.	27.42	28.38	28.94	29.41	29.13	29.83	29.40	28.36	26.81	21.15	18.94	18.42	16.26	15.72	16.20	15.73	14.78	14.34	14.29	14.40
1983.	9.	26.26	26.62	26.46	28.91	29.54	28.83	28.85	28.53	26.16	21.89	20.72	18.84	16.91	15.14	15.85	15.44	14.20	12.90	12.35	12.67
1983.	10.	26.27	27.59	28.26	28.38	29.17	29.45	28.99	28.40	25.76	22.01	20.77	18.49	16.54	15.06	13.81	13.26	12.02	11.25	11.09	10.23
1983.	11.	26.15	26.80	27.92	28.10	29.48	29.44	28.74	27.48	23.46	21.12	19.36	17.20	14.85	14.39	13.26	12.20	9.78	9.07	8.54	8.57
1983.	12.	26.10	27.32	27.84	27.36	28.59	28.81	26.70	24.68	20.89	18.28	16.47	15.09	13.63	12.40	10.59	10.90	9.23	8.04	7.96	7.48
1984.	1.	26.00	26.14	27.62	27.04	27.64	27.44	25.88	22.42	19.83	16.57	16.39	14.58	13.22	12.01	11.19	9.38	8.11	7.33	6.74	6.26
1984.	2.	26.35	26.77	28.01	26.52	27.92	27.68	25.24	22.79	19.50	16.47	15.97	14.35	12.65	11.28	10.37	9.52	7.88	7.36	6.40	6.86
1984.	3.	26.05	26.01	28.41	27.80	28.23	27.95	25.29	22.50	18.47	16.48	15.96	14.00	12.51	11.69	10.44	9.62	8.25	7.55	6.17	*****
1984.	4.	26.02	26.63	28.37	28.75	29.74	28.11	25.02	21.77	18.00	16.04	15.52	13.79	11.47	10.95	10.52	9.91	8.71	7.65	6.76	6.40
1984.	5.	26.66	28.29	28.39	28.77	29.43	28.77	26.25	22.14	18.23	17.36	16.02	13.88	11.80	11.69	11.92	11.83	10.53	9.42	8.46	8.22
1984.	6.	27.18	27.56	27.63	28.15	28.49	28.81	27.99	23.36	19.79	17.30	17.29	15.35	12.37	11.56	12.31	12.68	11.69	10.65	10.02	11.26
1984.	7.	26.08	27.21	27.49	27.99	29.17	28.76	27.64	26.37	22.78	20.20	19.45	17.52	14.29	12.53	14.11	13.79	12.64	11.99	11.88	12.20
1984.	8.	26.41	27.04	27.36	27.62	28.29	29.10	29.74	28.11	25.38	21.58	20.19	17.66	15.08	13.89	14.55	15.81	14.61	13.34	13.51	13.69
1984.	9.	25.38	26.48	27.32	27.64	28.62	28.65	28.48	27.71	25.06	22.27	20.64	17.80	15.74	13.89	15.16	15.09	13.93	12.64	12.29	11.73
1984.	10.	26.32	26.80	27.49	27.32	28.67	29.08	28.67	26.49	24.07	21.64	19.91	16.99	14.89	13.61	14.07	13.58	11.66	11.46	11.01	10.25
1984.	11.	26.05	27.22	26.93	27.00	28.63	28.81	27.58	25.50	22.37	19.45	18.01	16.06	13.56	13.08	12.81	11.83	10.29	9.21	8.35	9.10
1984.	12.	26.38	26.47	27.41	26.00	27.62	28.09	26.13	23.55	20.09	17.25	15.79	14.71	12.65	11.79	11.12	9.77	9.08	7.22	7.67	*****
1985.	1.	26.03	25.38	27.07	25.94	26.68	27.38	24.76	22.49	19.27	15.81	14.88	13.92	12.05	11.71	10.53	9.52	8.23	6.88	6.55	5.49
1985.	2.	25.47	24.72	27.29	25.67	26.83	27.15	23.74	20.75	18.34	16.03	15.05	13.64	11.89	10.65	9.55	8.22	7.27	7.02	6.29	5.92
1985.	3.	26.53	24.96	26.59	26.22	27.81	27.15	23.90	20.31	17.61	15.30	14.95	12.93	11.04	9.81	9.47	8.32	8.35	6.61	5.99	6.40
1985.	4.	26.20	25.47	27.32	27.23	28.94	27.19	23.53	20.44	17.40	15.74	15.34	13.53	11.47	10.31	9.49	9.31	9.08	6.89	6.23	5.86
1985.	5.	26.41	27.77	27.52	28.05	29.27	27.77	25.26	20.55	16.76	15.90	15.79	14.11	12.02	10.87	11.72	11.55	10.12	8.82	7.41	6.94
1985.	6.	27.49	27.20	27.64	28.28	28.78	28.89	27.52	22.05	18.19	17.25	16.88	15.06	12.82	12.40	13.67	13.81	11.89	10.91	9.08	8.45
1985.	7.	26.67	27.25	27.68	27.60	29.37	28.95	27.78	24.91	21.42	19.65	19.54	16.62	13.97	12.54	13.90	14.91	14.01	13.77	12.12	12.60
1985.	8.	27.33	27.64	27.58	27.24	28.99	29.59	28.88	28.01	23.17	20.74	19.88	17.37	15.17	13.53	14.50	15.89	14.21	13.51	13.04	12.65
1985.	9.	26.00	27.29	27.43	27.79	28.91	29.35	29.42	28.23	24.02	21.24	19.99	17.71	15.62	14.29	14.66	14.15	13.49	13.81	12.88	12.31
1985.	10.	24.42	26.15	27.28	27.58	29.15	29.36	29.01	27.03	24.05	20.88	18.93	17.01	14.61	12.54	12.93	12.83	11.98	11.39	10.81	*****
1985.	11.	26.60	27.27	27.05	26.52	27.80	29.10	27.54	25.91	22.85	19.13	17.43	15.52	13.55	11.30	11.08	10.13	9.86	8.58	7.93	6.70
1985.	12.	26.16	27.22	27.21	26.83	27.96	28.45	25.89	23.78	20.10	17.67	15.78	14.18	13.39	11.12	9.54	9.00	8.33	7.33	6.51	*****
1986.	1.	25.98	26.65	27.15	26.49	27.28	27.76	25.24	22.57	19.24	16.83	15.68	14.41	12.87	11.62	10.19	9.11	8.28	7.71	6.42	6.22
1986.	2.	26.40	25.23	26.79	26.29	27.88	27.72	24.64	21.74	19.15	16.38	15.85	14.23	12.62	11.56	10.41	9.64	7.88	7.10	5.64	5.33
1986.	3.	26.20	25.89	27.53	25.89	27.62	26.74	23.76	20.57	18.63	16.46	15.67	14.54	13.41	12.17	11.12	9.84	8.81	7.41	5.98	5.55
1986.	4.	25.94	26.24	27.88	27.45	28.75	27.76	25.20	21.22	18.37	17.15	16.21	14.12	12.16	10.75	11.20	9.41	9.39	7.94	6.19	5.60
1986.	5.	26.07	27.18	28.46	28.80	29.39	28.37	25.77	21.97	18.31	17.20	16.35	14.29	12.19	11.14	11.98	11.32	10.05	9.03	7.73	7.98
1986.	6.	26.33	27.58	28.01	28.15	28.85	28.42	26.90	21.91	18.26	16.93	16.80	15.88	13.98	12.89	12.66	14.06	12.24	10.51	10.02	8.96
1986.	7.	25.99	26.95	27.90	28.38	28.79	29.11	28.14	25.68	21.52	19.16	18.07	16.46	13.71	13.12	14.77	15.52	13.07	12.77	11.39	12.72
1986.	8.	26.04	27.67	28.37	28.21	29.21	29.59	29.58	27.20	22.83	19.66	19.10	16.37	14.44	12.81	15.10	15.06	13.83	14.38	13.10	13.52
1986.	9.	26.42	27.34	28.09	28.14	28.76	29.52	29.47	27.83	24.10	20.47	18.61	16.88	15.35	13.75	14.22	14.25	13.75	13.36	13.66	*****
1986.	10.	26.51	27.56	27.66	27.19	28.86	28.94	28.10	26.87	23.07	19.01	19.36	17.12	14.66	12.78	13.15	13.13	12.27	11.38	11.78	10.60
1986.	11.	25.85	27.39	27.95	27.61	28.04	29.02	28.13	25.07	21.86	19.35	17.39	16.30	14.09	12.53	12.03	10.87	11.34	9.86	9.45	*****
1986.	12.	25.57	26.68	28.08	27.16	27.54	28.25	26.92	23.58	20.81	18.59	17.28	15.50	13.16	12.29	11.04	10.24	9.79	8.37	7.85	7.60
1987.	1.	26.77	27.58	28.38	26.20	27.28	27.67	24.91	22.02	19.48	16.52	15.72	14.38	12.34	11.27	10.19	9.42	9.40	8.17	7.46	6.32
1987.	2.	27.51	25.94	27.82	27.37	27.81	27.43	24.47	21.32	18.76	15.79	15.29	14.07	12.27	11.49	10.41	9.70	8.59	7.45	6.34	6.46
1987.	3.	28.10	27.46	28.36	28.41	28.34	27.31	24.34	20.99	18.14	15.96	15.39	13.82	12.37	10.86	10.47	9.92	8.87	7.96	5.87	5.00
1987.	4.	27.33	27.93	28.49	28.81	29.12	27.28	24.48	20.71	17.60	16.59	16.31	13.91	12.00	11.20	11.06	10.85	9.77	7.73	6.15	*****
1987.	5.	28.12	27.98	28.69	28.97	29.30	28.21	25.24	21.07	18.09	16.89	16.49	14.87	12.80	12.41	12.08	11.88	10.97	9.22	7.97	7.80
1987.	6.	27.17	28.19	28.63	29.34	29.31	29.72	27.41	21.88	18.61	18.18	17.13	15.15	12.76	12.02	13.59	12.92	11.94	11.09	8.39	9.44
1987.	7.	27.07	27.60	28.81	29.00	29.11	29.48	28.92	25.99	21.58	18.73	17.63	16.60	14.61	13.33	14.51	14.48	13.15	12.95	11.57	12.41
1987.	8.	27.09	26.88	28.24	28.30	29.26	29.45	28.76	27.62	24.18	19.87	19.41	17.84	15.20	13.19	13.37	14.64	13.95	13.56	13.04	14.05

Coastal 100M Values (°C), January 1971 to August 1987.
Asterisks indicate missing temperature data.

		BOX LOCATION																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		LATITUDE																			
		0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	27-30	30-33	33-36	36-39	39-42	42-45	45-48	48-51	51-54	54-57	57-60
YEAR	MONTH																				
71.	1.	14.44	14.49	15.00	14.44	15.11	15.18	14.83	15.46	13.59	12.14	10.89	10.14	9.92	9.34	8.96	8.85	7.91	7.38	6.44	6.22
71.	2.	15.19	14.48	14.31	13.83	13.96	14.77	14.40	14.31	12.92	12.07	10.89	10.42	9.82	9.32	9.09	8.68	7.92	7.71	7.11	5.27
71.	3.	15.58	15.19	14.49	13.69	13.73	14.25	13.87	14.12	13.01	11.83	10.50	10.06	9.51	9.33	8.76	8.86	7.93	7.14	5.89	5.13
71.	4.	15.78	14.63	14.76	14.10	13.82	14.10	13.70	13.72	12.64	11.22	10.17	9.81	9.17	8.76	8.58	8.29	7.63	7.27	5.90	5.18
71.	5.	17.05	15.00	15.19	14.29	14.38	14.90	14.35	14.01	12.49	10.92	9.88	9.57	8.93	8.58	8.56	8.30	7.44	6.81	5.69	4.69
71.	6.	15.63	17.42	14.83	14.10	13.66	14.59	14.69	13.70	12.00	11.09	9.96	9.65	8.92	8.57	8.13	8.02	7.55	6.94	6.27	5.66
71.	7.	16.61	16.03	14.80	14.04	14.34	14.89	15.01	13.45	12.30	11.30	10.24	9.71	9.03	8.68	8.14	8.03	7.30	6.77	6.08	5.58
71.	8.	15.34	15.70	15.60	14.81	15.02	15.14	15.62	14.72	13.05	11.62	10.52	9.97	9.12	8.63	7.81	7.75	7.37	7.05	6.08	5.38
71.	9.	14.42	14.75	15.30	14.42	14.88	15.77	15.85	14.99	13.77	12.12	10.57	10.56	9.38	8.42	8.04	7.84	7.33	7.04	6.45	5.57
71.	10.	14.18	14.91	14.66	13.89	13.92	15.19	14.83	15.49	13.64	11.94	10.83	9.98	9.56	8.94	8.28	7.89	7.54	7.26	7.06	5.99
71.	11.	14.30	14.93	15.15	14.02	14.46	14.91	14.62	14.53	13.19	11.62	10.62	9.99	9.37	8.87	8.26	7.96	7.48	7.99	7.18	6.50
71.	12.	14.07	14.36	15.08	14.53	13.56	14.83	14.37	14.34	13.09	11.92	10.85	10.22	9.53	9.54	8.84	8.54	7.83	8.41	6.86	5.96
72.	1.	*****	*****	*****	13.90	13.79	14.48	13.77	14.93	12.72	11.18	10.62	10.10	9.59	*****	*****	7.76	7.38	*****	*****	*****
72.	2.	16.59	*****	14.62	14.89	14.98	14.64	13.89	14.36	12.90	11.40	10.71	10.32	9.41	8.90	9.16	7.71	7.47	*****	4.08	6.15
72.	3.	*****	*****	15.54	*****	13.70	14.13	13.73	14.24	12.85	11.51	10.56	10.09	9.36	9.34	8.46	8.39	7.56	*****	*****	2.65
72.	4.	*****	*****	16.57	14.45	14.48	14.02	14.21	13.57	12.46	11.69	10.23	10.23	9.33	9.20	8.96	8.07	7.42	7.55	5.82	3.39
72.	5.	17.98	*****	*****	15.28	*****	14.06	16.07	13.82	12.31	11.19	10.13	9.79	9.23	9.15	8.14	7.69	6.93	6.92	5.08	3.71
72.	6.	*****	*****	15.98	*****	*****	14.33	*****	14.11	12.26	14.58	10.18	10.01	9.37	8.88	7.87	8.06	7.30	6.60	3.76	4.33
72.	7.	*****	*****	17.41	16.57	14.61	16.91	15.37	14.49	12.31	11.51	10.21	10.18	9.49	9.52	7.72	7.94	7.08	*****	5.29	5.43
72.	8.	16.70	*****	17.62	14.41	19.99	17.36	17.23	14.50	11.28	11.39	11.23	10.44	9.96	9.29	7.96	8.11	7.47	6.61	5.99	4.32
72.	9.	*****	*****	16.10	*****	*****	18.89	16.75	15.00	13.72	12.31	11.47	10.77	10.42	9.35	8.48	7.87	7.66	7.16	6.35	4.13
72.	10.	*****	*****	16.43	*****	16.25	16.40	16.30	15.42	15.01	13.64	11.78	11.15	10.14	9.32	8.67	8.11	7.61	*****	5.53	5.26
72.	11.	16.48	16.54	16.13	22.95	*****	*****	17.07	16.44	14.42	13.21	11.65	11.26	9.93	9.77	9.77	8.40	8.13	*****	*****	6.52
72.	12.	*****	*****	18.39	*****	*****	17.12	17.71	17.64	16.19	*****	12.20	11.44	9.98	9.70	*****	8.23	7.27	*****	*****	5.61
73.	1.	*****	*****	16.29	15.16	17.10	16.18	15.61	15.53	15.10	13.49	12.20	11.87	10.47	10.39	9.15	9.03	8.06	*****	*****	*****
73.	2.	*****	15.68	16.02	14.96	15.52	15.70	*****	16.06	14.94	13.18	11.85	11.71	10.73	9.96	9.77	9.14	8.08	*****	5.47	3.88
73.	3.	*****	14.83	14.86	13.93	14.69	15.91	14.53	16.12	14.53	13.16	11.71	11.19	10.26	9.72	9.14	9.02	8.15	6.38	*****	3.41
73.	4.	*****	*****	15.07	14.39	14.43	15.11	14.48	15.27	12.41	11.83	10.66	10.11	9.62	9.95	8.45	7.96	7.94	*****	5.93	3.01
73.	5.	*****	15.89	15.12	*****	*****	14.34	*****	14.18	12.08	11.67	10.27	9.78	8.79	9.21	7.73	8.52	7.46	7.01	6.12	4.96
73.	6.	15.97	16.05	15.60	*****	*****	*****	*****	*****	*****	*****	10.35	10.05	9.19	9.03	8.19	7.39	7.12	*****	*****	4.60
73.	7.	*****	*****	14.36	*****	*****	*****	17.69	*****	12.59	12.38	10.70	10.08	9.49	8.67	7.79	7.05	7.58	6.81	7.00	4.97
73.	8.	15.22	15.15	15.13	14.26	14.54	14.13	14.50	14.95	12.42	11.53	10.48	10.32	9.50	8.61	8.12	7.52	7.25	6.59	5.53	6.78
73.	9.	14.23	14.67	14.32	*****	*****	*****	15.24	14.14	14.78	12.17	10.45	10.13	9.50	8.60	8.17	7.90	7.44	5.00	6.80	5.78
73.	10.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	10.33	9.89	9.98	9.53	8.26	7.59	7.29	7.44	5.76	5.60
73.	11.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	10.04	9.90	9.52	8.80	8.40	7.79	7.06	7.29	*****	7.58
73.	12.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	9.81	9.74	10.13	9.43	9.36	9.21	7.75	*****	*****	6.33
74.	1.	*****	*****	14.14	13.72	13.50	14.62	13.97	13.51	12.69	11.33	10.27	9.88	9.74	8.65	8.85	8.71	7.90	8.29	*****	5.06
74.	2.	*****	*****	13.75	13.40	13.78	13.96	13.94	14.18	12.58	11.68	10.22	10.07	9.54	9.65	8.90	8.86	8.55	*****	*****	4.57
74.	3.	*****	*****	13.98	13.53	13.56	13.82	13.93	14.38	12.69	11.78	10.65	10.31	9.93	9.03	8.85	8.40	7.54	6.55	5.69	4.82
74.	4.	16.63	14.23	15.33	13.62	13.63	14.59	13.38	13.24	11.52	12.43	9.94	9.84	9.21	8.57	8.93	8.14	7.67	*****	5.89	4.39
74.	5.	*****	*****	16.66	13.56	13.65	13.59	13.60	12.42	11.45	12.56	9.97	9.87	9.71	9.14	9.24	8.79	7.83	6.96	5.64	4.08
74.	6.	*****	*****	17.73	14.00	13.46	15.72	14.14	12.83	12.18	11.00	10.44	9.71	9.31	9.22	8.62	8.53	9.51	*****	5.53	3.66
74.	7.	*****	*****	15.31	14.50	13.75	14.29	14.39	*****	12.03	12.63	11.38	10.49	9.40	9.28	8.79	8.19	7.60	6.80	5.33	5.10
74.	8.	*****	*****	*****	14.37	15.62	13.59	14.67	13.74	11.67	*****	10.92	10.49	9.96	10.10	9.04	8.31	7.70	7.85	6.84	5.42
74.	9.	14.24	*****	14.76	14.15	14.24	14.32	14.46	*****	*****	19.81	11.21	10.47	9.97	9.18	8.71	8.54	7.74	7.43	6.52	5.61
74.	10.	18.94	*****	14.63	13.39	*****	13.93	14.65	14.10	12.21	12.53	10.97	10.67	9.73	8.58	8.26	8.12	7.38	*****	6.25	6.44
74.	11.	14.50	14.30	15.22	14.22	*****	*****	*****	*****	12.99	*****	11.03	10.67	9.30	8.85	8.80	7.88	7.88	*****	*****	7.80
74.	12.	*****	*****	*****	*****	*****	13.97	14.23	14.55	12.98	12.27	10.77	10.15	9.85	9.22	8.90	8.08	7.71	*****	*****	5.54
75.	1.	*****	*****	*****	*****	14.95	*****	13.94	13.27	13.42	11.88	10.74	10.37	9.51	8.39	8.19	8.09	7.70	7.61	6.51	6.48
75.	2.	*****	*****	14.29	*****	14.23	14.77	14.67	14.35	12.88	12.11	10.54	10.65	9.69	9.40	9.32	8.63	7.84	8.08	5.86	4.88
75.	3.	*****	13.84	14.49	*****	14.04	13.84	13.25	13.78	12.39	12.10	11.41	10.53	9.76	9.29	8.55	8.55	7.86	*****	*****	4.05
75.	4.	*****	*****	14.04	12.95	14.19	14.83	14.29	13.92	13.56	11.67	10.25	9.89	9.01	8.98	8.66	8.36	8.60	*****	5.42	4.75
75.	5.	16.57	14.44	15.13	13.56	13.80	14.37	13.37	*****	*****	10.85	10.02	9.72	9.06	8.69	8.25	7.85	7.46	6.78	5.16	4.37
75.	6.	*****	*****	15.39	*****	*****	13.89	13.90	12.98	14.39	11.83	10.34	10.02	9.32	8.78	8.49	8.24	7.87	7.42	5.12	4.71
75.	7.	*****	*****	*****	*****	14.89	16.58	14.74	13.67	13.37	11.73	9.92	10.08	9.53	9.09	8.10	7.94	7.17	6.59	5.48	5.37
75.	8.	14.96	15.04	16.01	26.28	*****	*****	*****	*****	12.19	*****	10.32	9.70	9.30	9.16	8.46	8.01	8.39	6.78	5.24	5.09
75.	9.	*****	*****	*****	*****	*****	*****	*****	12.86	13.85	11.77	10.86	9.67	9.47	8.59	8.61	7.91	7.36	6.60	5.59	4.96
75.	10.	*****	*****	15.21	14.42	13.72	15.81	15.22	11.50	13.56	12.17	10.80	10.10	9.66	9.28	8.65	7.90	7.48	*****	6.84	5.77
75.	11.	*****	*****	13.62	14.05	*****	14.18	14.55	14.04	11.14	11.91	10.37	9.91	9.35	9.39	8.53	7.92	8.14	7.49	*****	5.32
75.	12.	*****	*****	14.19	13.68	14.17	14.13	14.15	14.54	11.56	12.46	10.56	9.96	9.47	9.28	9.20	7.67	11.67	*****	7.10	5.57
76.	1.	*****	*****	14.68	13.85	13.51	14.83	14.29	14.85	13.35	12.03	10.93	10.57	9.66	9.31	8.28	8.00	8.09	7.03	6.74	5.28
76.	2.	*****	*****	14.61	13.55	*****	*****	*****	*****	12.96	12.23	10.98	10.22	9.72	9.21	8.79	7.82	7.82	*****	*****	4.57
76.	3.	*****	*****	14.54	13.38	14.69	14.05	14.42	13.99	11.92	11.80	10.65	10.30	9.64	9.51	8.99	8.48	7.61	*****	5.57	4.33
76.	4.	*****	*****	*****	*****	14.45	13.86	14.05	13.35	12.82	11.27	10.18	10.44	8.92	8.99	8.13	8.05	7.28	7.30	5.37	4.62
76.	5.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	10.40	10.17	9.81	9.32	9.20	*****	7.98	7.00	5.53	4.79
76.	6.	*****	*****	19.76	16.41	13.85	18.00	15.29	13.52	13.24	12.32	10.23	10.03	8.79	8.89	8.01	7.78	7.21	6.90	5.55	4.97
76.	7.	*****	*****	16.59	14.88	13.23	18.65	16.11	*****	10.49	12.45	10.89	10.11	9.16	8.57	8.42	8.29	7.43	6.96	6.02	5.61
76.	8.	*****	*****	15.68	*****	*****	*****	*****	*****	*****	*****	10.57	10.45	9.66	9.00	7.93	8.22	7.68	7.24	6.38	5.87
76.	9.	*****	*****	15.83	17.98	15.98	17.10	17.33	*****	12.39	11.72	10.85	10.27	9.89	9.49	7.96	7.89	7.78	8.80	6.11	5.87
76.	10.	*****	*****	15.65	*****	*****	17.73	17.82	14.33	12.98	16.54	11.31	10.69	9.94	9.14	8.40	7.87	7.36	8.53	5.69	7.10
76.	11.	*****	*****	16.67	*****	*****	16.35	25.93	*****	*****	*****	11.60	11.62	10.39	9.71	8.63	7.15	*****	7.84	4.23	5.91
76.	12.	*****	*****	*****	*****	*****	*****	*****	*****	*****	13.39	11.72	11.99	10.21	9.13	9.38	8.47	8.00	*****	*****	7.39
77.	1.	*****	*****	14.37	*****	14.31	15.90	15.31	15.35	13.92	13.20	12.10	11.10	10.09	9.36	9.00	8.25	7.97	7.78	7.08	6.18
77.	2.	*****	*****	15.12	14.65	*****	14.78	14.90	15.41	14.23	13.67	11.87	11.71	10.16	10.02	8.98	9.02	7.88	7.91	7.13	*****
77.	3.	*****	*****	14.88	13.22	14.96	15.18	15.44	15.78	13.60	11.69	11.09	10.78	9.76	9.40	9.01	8.52	8.29	7.39	*****	5.78
77.	4.	*****	*****	14.80	14.27	14.37	14.62	15.14	15.01	12.26	12.43	10.78	10.18	9.33	9.47	8.82	7.82	7.35	*****	*****	5.21
77.	5.	*****	*****	15.37	*****	14.49	15.14	14.78	14.83	12.63	11.89	10.18	10.20	9.44	8.56	8.24	8.00	7.46	7.18	6.35	5.19
77.	6.	*****	*****	15.76	15.00	*****	14.78	14.51	15.12	12.40	11.71	10.08	10.00	9.46	8.99	8.68	8.64	7.45	*****	6.29	5.68
77.	7.	*****	*****	17.86	*****	*****	15.84	16.02	13.94	12.47	11.51	10.57	9.95	9.45	9.10	8.55	8.13	7.13	7.11	6.63	5.91
77.	8.	15.99	15.24	14.89	14.70	*****	16.17	15.12	*****	12.46	12.90	10.64	9.98	9.40	8.97	8.27	7.83	7.89	7.03	6.41	5.64
77.	9.	*****	*****	15.08	*****	13.95	15.95	16.07	*****	*****	12.17	11.10	10.50	9.72	8.82	8.32	7.80	7.39	7.83	6.27	6.30
77.	10.	*****	*****	*****	14.21	14.70	15.66	16.15	15.60	12.87	12.55	11.31	10.60	9.83	8.72	8.53	8.03	7.57	*****	9.14	*****
77.	11.	*****	*****	15.85	15.31	*****	15.43	15.53	15.71	13.94	12.85	11.25	10.94	9.94	8.66	8.78	*****	7.72	7.47	6.36	6.49
77.	12.	*****	*****	*****	*****	12.83	16.11	16.09	15.29	13.44	12.16	11.38	10.73	9.79	8.70	8.40	8.20	8.38	*****	*****	5.54
78.	1.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	11.47	10.94	9.53	7.56	*****	10.55	8.06	8.66	7.62	5.60
78.	2.	*****	*****	*****	*****	*****	15.22	14.98	*****	*****	*****	11.29	11.18	10.45	10.98	8.81	9.16	8.21	*****	6.30	4.92
78.	3.	*****	*****	15.52	14.16	14.55	14.54	14.89	15.37	13.46	12.67	11.14	10.73	10.47	9.21	10.18	9.15	8.70	8.15	6.12	4.76
78.	4.	*****	*****	15.64	15.33	*****	14.68	14.51	14.76	12.71	10.92	10.67	10.08	9.57	9.87	9.72	7.69	8.43	8.23	6.39	4.91
78.	5.	*****	*****	15.25	13.73	*****	14.28	15.59	15.28	12.77	10.50	10.19	10.01	9.30	10.89	8.82	8.22	8.17	7.37	*****	5.09
78.	6.	*****	*****	15.65	14.08	14.49	15.04	14.43	12.82	11.98	11.30	9.84	10.26	9.43	9.24	8.40	8.04	7.46	6.75	6.53	5.77
78.	7.	*****	15.91	16.78	15.17	13.54	15.10	14.58	13.69	12.55	11.27	9.82	9.81	9.21	8.89	8.15	8.08	8.87	6.86	6.99	5.61
78.	8.	*****	15.62	15.14	15.38	15.60	16.80	15.35	14.71	12.04	11.37	10.16	9.82	9.47	9.09	8.30	7.86	7.71	7.51	6.72	5.30
78.	9.	*****	*****	15.98	15.61	15.44	15.21	16.31	13.25	12.60	13.10	10.59	10.27	9.88	9.06	8.12	8.31	7.84	8.00	6.55	6.35
78.	10.	*****	*****	14.57	13.71	*****	14.57	15.54	13.93	12.63	11.96	10.69	10.23	9.80	8.92	8.59	8.36	8.06	7.01	7.31	7.47
78.	11.	*****	14.93	14.84	14.69	14.79	14.25	13.85	14.92	14.96	12.13	10.81	10.39	10.00	8.73	8.20	8.03	7.87	*****	7.14	4.94
78.	12.	*****	*****	*****	*****	*****	*****	14.13	17.18	13.77	*****	10.24	10.63	9.80	9.09	*****	*****	7.85	*****	7.71	*****
79.	1.	*****	*****	*****	15.17	*****	14.78	14.31	15.83	13.46	12.11	10.87	11.06	10.30	9.57	8.76	8.18	7.79	*****	*****	5.70
79.	2.	*****	*****	*****	*****	*****	*****	*****	*****	*****	11.87	10.66	10.49	9.50	9.73	8.44	8.67	7.74	8.32	6.18	4.78
79.	3.	*****	*****	*****	*****	*****	14.33	14.46	14.14	12.92	11.82	10.65	10.29	9.80	9.49	9.30	8.54	8.50	*****	5.37	4.21
79.	4.	*****	*****	*****	*****	*****	14.21	*****	14.84	*****	*****	10.14	10.03	9.56	9.53	8.97	8.71	7.72	7.50	5.31	4.61
79.	5.	*****	*****	15.44	*****	14.67	14.28	14.74	14.10	13.62	11.64	9.79	9.74	9.27	9.12	9.11	8.23	8.14	7.20	5.90	4.88
79.	6.	*****	*****	*****	14.18	14.92	*****	14.04	13.86	11.23	10.71	9.86	9.82	9.28	8.52	9.04	8.26	7.37	7.51	6.25	5.29
79.	7.	*****	14.54	15.82	16.49	*****	14.02	14.33	12.73	*****	12.20	9.73	9.89	9.09	9.13	8.77	8.49	8.09	7.23	6.50	5.22

Coastal 100M Values (^{o}C), January 1971 to August 1987.
Asterisks indicate missing temperature data.

		BOX LOCATION																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		LATITUDE																			
YEAR	MONTH	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	27-30	30-33	33-36	36-39	39-42	42-45	45-48	48-51	51-54	54-57	57-60
79.	8.	*****	*****	14.70	*****	*****	*****	*****	*****	*****	*****	10.04	9.61	9.67	9.07	8.61	8.05	7.65	7.28	7.15	5.28
79.	9.	14.91	*****	15.12	*****	*****	*****	14.22	13.76	11.42	12.13	10.13	9.86	9.60	9.45	8.68	8.33	7.89	7.93	6.45	6.08
79.	10.	*****	16.32	15.18	14.56	*****	14.70	14.82	13.96	12.68	12.51	10.27	9.82	9.26	9.40	8.12	8.46	7.71	7.81	7.66	6.47
79.	11.	15.09	*****	15.19	14.36	12.59	15.01	14.34	14.23	12.12	11.47	10.40	10.15	9.85	9.02	9.24	9.08	7.53	7.48	6.00	6.37
79.	12.	14.77	14.88	16.61	*****	*****	*****	*****	*****	*****	*****	10.44	10.53	10.34	9.66	10.36	8.87	7.71	*****	*****	6.22
80.	1.	*****	15.70	15.26	14.67	13.70	15.25	15.91	15.18	13.60	12.99	11.05	10.46	9.66	9.62	*****	9.94	8.54	*****	*****	*****
80.	2.	*****	*****	15.20	14.94	*****	15.50	14.63	14.04	13.77	12.11	11.63	11.17	10.43	10.36	10.16	*****	8.43	7.77	6.61	4.96
80.	3.	15.98	*****	15.14	*****	14.98	15.29	*****	*****	12.99	12.41	11.49	10.27	10.60	9.80	10.25	*****	9.14	7.98	5.93	5.35
80.	4.	*****	*****	16.52	13.53	16.20	15.62	15.35	14.61	12.79	12.03	10.50	10.30	10.06	10.38	9.70	10.13	7.96	*****	6.48	6.03
80.	5.	*****	*****	*****	*****	*****	13.77	14.52	14.06	*****	11.06	10.43	9.81	9.27	9.56	7.62	9.63	8.13	7.72	7.00	5.70
80.	6.	*****	*****	15.29	*****	*****	15.28	14.94	13.34	13.13	*****	10.20	9.73	9.21	8.73	9.24	8.87	7.76	*****	6.67	5.81
80.	7.	*****	15.23	15.40	14.26	13.97	16.43	15.10	13.38	11.74	11.91	9.84	9.85	9.12	9.01	9.08	8.48	8.69	7.66	6.79	6.19
80.	8.	*****	16.23	23.26	*****	*****	*****	15.05	15.79	12.00	*****	10.36	10.12	9.51	8.78	8.38	8.26	7.36	*****	*****	5.90
80.	9.	*****	*****	14.58	14.44	*****	15.73	16.43	15.04	*****	11.06	10.68	9.97	9.84	9.22	9.02	8.18	7.93	7.08	6.73	5.66
80.	10.	*****	*****	14.86	14.85	14.12	14.28	15.93	14.79	11.67	11.45	10.80	10.24	9.81	8.90	8.61	7.80	8.45	7.39	7.67	6.25
80.	11.	*****	*****	15.84	*****	*****	*****	14.71	14.11	*****	12.14	10.57	10.17	9.36	9.01	9.37	7.92	7.91	*****	8.38	6.75
80.	12.	*****	*****	15.33	13.34	*****	17.21	14.81	14.73	12.78	14.89	10.90	10.28	10.25	9.28	8.88	9.29	*****	*****	9.72	*****
81.	1.	*****	*****	16.37	15.38	14.66	15.57	14.78	15.30	12.98	13.27	11.21	10.82	10.21	9.88	9.70	8.42	8.36	*****	7.14	5.19
81.	2.	*****	*****	14.69	*****	*****	15.06	14.08	14.86	13.21	*****	11.52	10.84	10.86	9.83	*****	9.36	*****	*****	8.11	5.66
81.	3.	*****	14.27	14.90	*****	13.23	14.25	13.35	14.16	13.05	12.91	10.81	10.59	10.36	9.55	8.88	8.74	*****	*****	*****	7.20
81.	4.	*****	*****	14.30	*****	*****	14.07	13.71	13.77	12.82	11.91	10.53	10.05	9.97	9.90	9.26	9.16	8.93	7.65	6.72	6.38
81.	5.	*****	14.57	*****	15.21	*****	14.95	14.76	14.84	14.04	15.31	10.08	10.14	10.16	10.39	10.39	8.89	9.08	*****	7.55	5.86
81.	6.	*****	*****	16.33	15.19	13.85	15.73	14.29	12.87	11.40	11.21	10.37	9.78	9.91	10.28	9.67	9.30	6.83	*****	7.00	6.05
81.	7.	*****	*****	17.38	15.52	14.19	15.81	15.01	13.52	10.85	11.17	10.29	10.33	10.11	9.45	8.84	8.79	5.25	7.89	6.90	6.14
81.	8.	*****	*****	15.52	14.09	14.19	15.81	14.63	13.07	12.72	11.55	10.91	10.67	10.55	10.08	8.44	8.31	8.45	7.64	6.91	6.72
81.	9.	*****	16.32	15.99	14.57	15.98	14.38	15.23	13.94	12.89	11.79	10.85	10.20	9.61	9.87	*****	8.59	8.36	7.07	7.00	6.11
81.	10.	*****	*****	17.39	15.07	15.14	15.82	15.95	15.43	12.99	12.22	10.93	10.85	10.07	9.20	8.55	8.78	7.29	7.75	7.30	6.11
81.	11.	14.21	15.88	15.52	14.71	14.27	14.57	14.97	14.52	13.53	12.36	11.16	10.48	11.05	9.43	8.98	7.63	7.81	*****	*****	7.88
81.	12.	*****	*****	14.58	14.50	14.54	14.50	14.64	14.71	12.72	11.93	11.77	10.76	10.08	9.74	8.95	9.32	*****	*****	*****	*****
82.	1.	*****	14.25	14.72	14.23	14.94	14.51	13.54	15.63	12.53	12.05	11.49	10.88	10.28	9.42	8.70	7.83	*****	*****	*****	*****
82.	2.	*****	*****	14.47	14.34	14.78	14.88	14.32	14.89	13.22	12.90	11.14	10.60	10.02	9.34	8.99	8.59	8.37	7.86	*****	5.29
82.	3.	*****	*****	15.15	13.94	14.79	14.42	13.90	13.80	12.96	11.24	11.13	10.58	10.41	9.13	9.20	8.88	8.27	7.03	*****	*****
82.	4.	*****	*****	14.93	14.40	14.08	14.71	14.81	14.58	12.72	12.75	11.24	10.45	10.10	9.87	8.86	6.80	*****	6.06	5.75	5.08
82.	5.	*****	*****	15.82	14.64	14.32	17.09	14.30	13.46	12.24	11.62	10.87	9.99	9.87	9.09	9.52	9.76	7.82	*****	9.21	5.29
82.	6.	*****	*****	16.56	14.71	13.87	14.66	14.52	13.99	12.56	11.76	10.91	10.22	9.36	8.57	8.85	8.29	7.66	*****	*****	5.85
82.	7.	*****	*****	16.24	15.20	15.64	16.40	15.59	14.39	17.51	13.91	11.19	10.42	8.53	10.24	8.94	8.33	8.14	7.40	6.14	5.58
82.	8.	16.36	16.92	15.91	14.21	14.61	15.42	15.41	14.38	11.85	10.96	11.11	11.04	10.35	12.12	12.42	13.38	7.66	*****	*****	6.26
82.	9.	*****	*****	15.91	15.52	16.95	16.84	16.17	15.24	16.27	13.00	10.92	10.82	9.19	9.47	8.75	8.29	7.81	7.18	6.98	6.15
82.	10.	*****	*****	16.29	15.75	14.01	15.84	15.74	23.25	15.38	13.10	11.16	10.70	9.68	9.27	*****	8.33	7.75	7.39	6.43	5.66
82.	11.	*****	*****	18.59	17.50	15.81	18.15	16.07	16.70	15.50	14.03	12.65	11.38	11.26	10.05	9.80	8.86	8.43	*****	*****	*****
82.	12.	*****	*****	19.14	17.73	19.52	18.04	16.63	17.09	15.83	14.29	12.65	11.89	10.58	10.46	8.87	9.58	8.53	9.57	*****	*****
83.	1.	*****	*****	*****	14.79	*****	18.08	13.82	16.44	14.10	13.05	13.79	11.91	10.54	11.30	9.03	9.01	8.03	*****	6.90	5.89
83.	2.	*****	*****	*****	13.40	15.07	15.95	14.42	15.45	*****	16.49	13.99	13.68	12.43	10.54	*****	8.72	8.03	*****	*****	5.97
83.	3.	*****	*****	15.94	*****	14.93	16.15	14.98	17.05	16.29	14.69	13.34	12.73	11.68	11.75	11.49	10.06	8.29	*****	5.11	6.06
83.	4.	*****	*****	19.27	*****	*****	18.10	16.92	16.08	15.44	13.24	11.96	11.54	11.34	8.51	10.04	9.29	*****	*****	6.74	5.87
83.	5.	*****	*****	20.40	17.20	16.36	19.47	19.12	16.01	14.12	14.31	11.84	10.75	10.72	11.21	10.64	11.21	9.42	*****	8.24	6.04
83.	6.	*****	*****	20.36	17.92	17.60	18.72	19.35	*****	*****	*****	11.37	12.55	10.54	10.33	9.45	8.27	8.13	*****	*****	5.52
83.	7.	*****	16.04	17.32	18.58	18.86	19.69	20.74	17.80	14.03	13.55	11.83	11.42	10.69	9.27	9.16	9.35	8.10	7.32	7.08	6.01
83.	8.	*****	*****	19.72	17.49	18.63	18.42	19.09	17.35	15.16	14.38	12.07	12.22	11.31	10.94	11.63	12.10	9.11	8.75	10.96	6.83
83.	9.	*****	*****	15.96	16.33	16.71	17.77	17.65	18.60	15.93	15.91	12.79	12.35	10.68	10.95	8.87	9.13	9.57	8.62	*****	8.51
83.	10.	*****	*****	17.67	16.05	16.74	16.83	17.69	20.51	17.95	15.02	13.36	12.46	11.47	11.65	10.52	9.05	9.44	*****	7.33	7.35
83.	11.	*****	*****	15.05	14.40	16.42	16.63	16.31	18.31	16.27	14.11	12.31	11.55	10.91	11.09	9.12	8.75	8.36	*****	*****	7.47
83.	12.	*****	15.14	14.38	14.20	17.02	14.34	14.83	16.48	15.84	14.07	11.60	11.42	10.28	10.95	10.13	8.77	8.55	*****	*****	*****
84.	1.	*****	*****	14.20	15.16	15.78	16.20	15.46	16.07	13.53	12.92	11.33	10.90	10.51	10.12	9.23	8.95	7.71	*****	*****	*****
84.	2.	14.65	14.23	14.10	14.35	*****	15.00	*****	14.62	15.61	13.07	11.34	11.00	10.29	9.25	8.80	9.89	8.50	*****	8.07	5.60
84.	3.	*****	*****	14.41	14.01	15.18	15.74	14.61	17.98	13.50	13.13	11.38	10.75	11.11	9.20	*****	*****	*****	7.99	7.70	*****
84.	4.	*****	*****	14.97	13.76	*****	15.52	18.14	16.60	13.01	13.42	10.97	10.48	9.78	9.24	12.16	*****	8.01	*****	*****	*****
84.	5.	*****	*****	15.36	14.28	14.69	14.72	14.55	15.34	14.19	12.21	10.41	10.19	8.80	10.07	8.71	8.76	8.67	*****	6.64	7.03
84.	6.	*****	*****	15.46	15.04	14.08	17.31	14.22	14.49	13.70	12.16	10.94	10.66	9.04	8.39	8.35	8.83	8.55	*****	6.39	6.36
84.	7.	15.59	16.14	15.34	14.87	14.46	15.22	16.48	12.72	13.50	*****	10.98	11.39	9.69	9.55	8.02	7.69	8.16	*****	*****	*****
84.	8.	*****	*****	15.51	15.90	15.76	14.47	14.66	15.98	*****	*****	11.69	10.70	9.28	10.15	8.34	*****	7.87	*****	*****	5.48
84.	9.	*****	*****	15.93	14.94	14.89	14.36	13.93	14.52	*****	13.59	12.30	11.53	9.89	9.82	9.29	9.02	8.41	7.86	7.83	7.86
84.	10.	*****	*****	15.29	15.02	14.37	14.96	15.23	15.56	14.76	12.00	12.11	10.65	9.74	9.64	8.72	8.22	8.03	*****	8.80	6.51
84.	11.	*****	*****	15.14	14.82	14.37	14.81	18.57	19.95	14.26	*****	11.65	10.95	9.91	9.53	8.90	8.67	7.90	*****	6.33	*****
84.	12.	*****	15.13	14.54	13.46	*****	14.80	19.70	18.69	17.21	15.17	11.55	11.41	10.09	10.68	8.90	8.76	*****	*****	*****	4.84
85.	1.	*****	*****	14.16	*****	*****	*****	*****	15.78	14.00	*****	11.02	11.20	10.52	11.25	11.00	8.86	*****	*****	7.42	6.14
85.	2.	*****	*****	14.44	*****	*****	16.50	13.50	15.43	12.99	13.17	11.01	11.20	9.98	9.78	9.04	8.72	*****	*****	*****	*****
85.	3.	*****	*****	13.90	13.71	13.77	15.38	14.13	14.80	14.22	13.04	11.25	9.91	9.25	9.80	8.92	8.94	7.67	7.33	*****	*****
85.	4.	*****	*****	*****	*****	*****	*****	13.61	14.49	13.02	11.44	10.36	10.34	9.40	8.70	8.50	8.40	8.01	*****	*****	5.98
85.	5.	*****	*****	14.32	*****	*****	14.89	14.20	13.23	12.68	10.52	10.84	9.37	8.79	9.21	8.49	8.05	7.93	7.22	6.48	5.93
85.	6.	*****	16.23	14.80	*****	*****	15.78	15.20	14.60	13.47	13.53	9.78	10.21	8.84	8.84	8.50	8.25	*****	*****	6.78	6.34
85.	7.	*****	*****	19.09	*****	*****	19.36	16.48	*****	*****	*****	10.06	9.74	9.39	8.93	7.67	7.94	*****	*****	6.44	8.26
85.	8.	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	10.76	9.77	9.43	8.78	8.23	8.18	7.54	*****	*****	*****
85.	9.	*****	*****	14.72	25.26	14.21	16.43	*****	*****	12.89	11.55	10.91	10.75	9.79	9.31	8.15	8.01	7.74	7.59	6.47	5.53
85.	10.	*****	*****	14.36	*****	*****	14.65	14.95	13.52	*****	12.50	11.02	10.12	10.24	8.81	8.05	8.16	7.61	7.18	6.21	5.89
85.	11.	*****	*****	14.59	14.93	*****	14.74	14.55	14.25	12.73	12.56	13.10	10.31	10.08	8.62	8.51	*****	*****	*****	7.28	*****
85.	12.	*****	*****	14.39	14.00	13.39	14.78	15.95	15.51	13.37	14.20	11.06	10.07	9.73	*****	*****	*****	*****	*****	*****	*****
86.	1.	14.81	14.44	14.41	14.10	14.67	14.42	14.87	14.05	14.52	*****	10.91	10.52	*****	10.72	9.90	9.22	8.00	*****	*****	6.57
86.	2.	*****	*****	*****	13.19	*****	14.80	*****	15.10	12.06	13.00	*****	10.58	*****	*****	*****	*****	*****	*****	*****	*****
86.	3.	*****	*****	*****	*****	13.66	14.46	13.57	13.99	12.38	11.67	10.76	10.46	10.04	9.20	9.49	9.38	*****	*****	*****	*****
86.	4.	*****	*****	*****	*****	*****	18.47	13.98	13.96	13.02	*****	10.68	12.08	9.81	9.95	9.05	8.88	8.37	*****	*****	*****
86.	5.	*****	*****	14.27	13.90	*****	13.24	*****	*****	12.89	*****	10.53	9.49	8.95	*****	8.67	*****	8.11	*****	6.03	4.74
86.	6.	*****	*****	18.57	13.87	13.73	14.35	13.79	13.40	*****	10.85	9.87	9.89	8.91	8.54	8.13	8.59	7.73	6.94	6.86	5.00
86.	7.	*****	*****	15.92	15.27	14.16	15.34	14.70	13.73	12.58	11.73	10.40	9.56	9.97	7.43	8.10	8.45	7.45	*****	*****	*****
86.	8.	*****	*****	15.60	*****	*****	15.47	14.75	*****	14.00	12.00	10.51	10.92	*****	9.04	7.80	8.14	*****	*****	*****	*****
86.	9.	*****	15.54	15.55	14.85	14.34	15.24	15.26	13.90	11.36	*****	10.50	9.41	9.55	*****	8.60	*****	7.49	6.87	7.45	5.51
86.	10.	*****	*****	15.05	13.97	14.12	14.88	19.18	14.35	13.70	*****	10.89	10.25	10.00	9.05	8.81	7.75	7.66	*****	*****	5.77
86.	11.	*****	*****	16.69	13.80	13.80	15.56	16.20	14.30	14.31	12.75	12.19	10.69	9.89	8.85	8.66	8.60	8.05	8.05	6.91	5.93
86.	12.	*****	*****	16.10	14.72	13.46	*****	15.36	16.85	13.75	13.91	11.22	11.21	11.23	10.20	9.50	9.09	*****	*****	*****	5.86
87.	1.	*****	*****	15.20	*****	*****	*****	13.77	15.46	*****	*****	11.74	10.45	10.73	9.01	9.34	9.11	8.07	*****	7.08	5.36
87.	2.	*****	15.00	16.24	15.24	13.97	14.82	14.58	14.86	13.77	12.48	12.24	10.76	10.55	*****	*****	*****	8.83	*****	7.27	5.72
87.	3.	*****	*****	16.38	14.19	14.70	15.68	14.73	15.29	13.91	12.58	11.67	10.91	10.24	9.47	10.50	8.43	8.54	*****	6.50	5.74
87.	4.	*****	*****	15.72	14.43	*****	14.50	15.00	*****	12.22	9.80	10.82	9.91	10.40	10.27	9.29	8.77	8.77	7.72	6.67	*****
87.	5.	*****	*****	*****	14.08	*****	15.34	14.84	14.00	12.61	11.22	10.29	10.24	9.30	8.77	7.99	8.73	8.27	*****	6.87	5.95
87.	6.	*****	*****	*****	*****	*****	15.03	15.30	13.44	11.23	11.69	10.71	10.07	9.40	8.01	9.12	7.93	7.78	*****	5.60	5.98
87.	7.	16.01	16.23	16.42	15.01	17.05	18.02	*****	14.35	11.38	12.29	10.09	11.08	9.43	8.76	8.20	8.00	7.76	8.16	7.33	6.02
87.	8.	*****	*****	15.55	*****	15.12	16.49	17.88	13.97	13.98	12.63	10.96	10.19	9.68	8.91	8.19	8.57	7.64	7.90	6.74	6.03

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