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NOAA Technical Report NMFS SSRF-763

Climatology of Surface Heat Fluxes Over the California Current Region

Craig S. Nelson and David M. Husby

February 1983

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

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741. Distribution of gammaridean Amphipoda (Crustacea) in the Middle Atlantic Bight region. By John J. Dickinson, Roland L. Wigley, Richard D. Brodeur, and Susan Brown-Leger. October 1980, vi + 46 p., 26 figs., 52 tables.

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752. Movements of tagged summer flounder, *Paralichthys dentatus*, off southern New England, by F. E. Lux and F. E. Nichy. December 1981, iii + 16 p., 13 figs., 3 tables.

753. Factors influencing ocean catches of salmon, *Oncorhynchus* spp., off Washington and Vancouver Island, by R. A. Low, Jr. and S. B. Mathews. January 1982, iv + 12 p., 6 figs., 7 tables.

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U.S. DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary
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John V. Byrne, Administrator
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William G. Gordon, Assistant Administrator for Fisheries

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Climatology of Surface Heat Fluxes Over the California Current Region

CRAIG S. NELSON and DAVID M. HUSBY[1]

ABSTRACT

Historical surface marine weather observations are used to compute large-scale atmosphere-ocean heat exchange components over the California Current region. Heat exchange components are summarized by 1° square areas and long-term months, and major features of the monthly distributions are described. The accuracy of the derived air-sea interaction variables and methods of computation are discussed.

The region off the west coast of the United States and Baja California is characterized by net annual heat transfer from atmosphere to ocean. Net oceanic heat gain reaches a maximum during summer off Cape Mendocino. Near the coast, surface heat flux is determined by a balance between incoming solar radiation and effective back radiation. In the offshore regions, high cloudiness reduces the magnitude of the short-wave radiative flux, and latent heat flux produces the largest heat loss. The principal seasonal and spatial variations in air-sea heat transfer are a consequence of coastal upwelling which contributes to relatively low cloudiness and high incident solar radiation near the coast, suppression of evaporative heat loss, and reversal of the sensible heat flux. Simplified heat budget calculations demonstrate the importance of advective processes in maintaining the seasonal heat balance in coastal upwelling regions. Nonseasonal fluctuations are evident in time series of heat exchange processes, but low frequency components are not well described by the surface marine data used in this study.

INTRODUCTION

Eastern boundary current regions, such as the area off the west coast of the United States and Baja California, are characterized by high organic production which supports large stocks of commercially important fishes, e.g., Pacific sardine, *Sardinops sagax;* northern anchovy, *Engraulis mordax;* and Pacific mackeral, *Scomber japonicus.* High productivity is favored by vertical and horizontal transfer of nutrients and by a shallow thermocline that typically lies above the compensation depth in these temperate zones. Wind-forced divergence of surface flow is the principal driving mechanism for vertical nutrient exchange near the coast (Wooster and Reid 1963). Thermohaline processes modify the density structure and vertical stability of the upper ocean and partially condition these waters for high primary productivity. Internal readjustment of mass, in response to both thermal and wind forcing processes, may contribute to large-scale changes in circulation offshore and may alter the normal seasonal patterns of alongshore flow near the coast.

Comparative studies of surface circulation and reproductive strategies of pelagic fish stocks in the California Current suggest that nonseasonal fluctuations in atmosphere-ocean exchanges of momentum, heat, and mass lead to wide variations in recruitment to coastal fish stocks of the region (Parrish et al. 1981). Anomalous wind forcing may adversely affect larval survival by inducing loss of epipelagic eggs and larvae through strong seaward surface transport. Recent laboratory and field experiments have also suggested that reproductive success of the northern anchovy is sensitive to dispersion of food strata by wind mixing events during early larval feeding (Lasker 1978). The corollary implies that a precondition for enhanced larval survival may be strong vertical stability in the upper water column and the absence of vigorous mechanical wind mixing at the surface. Because stability is strongly affected by thermohaline processes, analyses of seasonal and nonseasonal atmosphere-ocean heat exchange processes may provide valuable indices to map favorable areas for larval survival.

Effects of climatic variability on stock recruitment have been observed in pelagic species in other eastern boundary currents, the North Sea, and the North Atlantic (Cushing 1975). Climatic change may be in the form of long-term fluctuations or year-to-year differences in the atmospheric forcing of the ocean. An important first step in modeling the fisheries-environment relationships in the California Current region is to determine the normal seasonal and spatial variability of the atmospheric forcing processes from which changes can be measured.

The California Current flows equatorward along the west coast of the United States between a cell of high atmospheric pressure to the west and a continental thermal low located over central California. Seasonal variations in the California Current appear to be related to fluctuations in wind stress and wind stress curl (Munk 1950; Reid et al. 1958; Hickey 1979). Nelson (1977) described the seasonal and spatial variations in wind stress and wind stress curl for the area off the west coast of the United States and Baja California. In addition to the wind-driven component of flow, a complete description of the California Current System must include the effects of atmosphere-ocean exchanges of heat and mass (evaporation – precipitation) on upper ocean circulation.

Summaries of large-scale heat exchange processes over the California Current have been made by Roden (1959) and Clark et al. (1974) based on monthly mean atmospheric properties within 5° latitude-longitude quadrilaterals. Wyrtki (1965) discussed the average annual values of heat exchange over the North Pacific Ocean north of lat. 20°S, computed from 2° square monthly mean atmospheric properties. The climate and heat exchange in a coastal upwelling region adjacent to the Pacific Northwest have been described by Lane (1965), who analyzed 11 yr of surface marine weather observations and computed monthly values of heat exchange components from 1953 to 1962. These summaries described the gross features of the large-scale heat exchange proc-

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esses and characterized the region off the west coast of North America as an area of net annual oceanic heat gain. However, previous studies have not provided sufficient spatial resolution to delineate the critical areas of surface heat flux within the California Current region.

In this report we present the long-term climatological monthly mean distributions of heat exchange across the air-sea interface based on a summarization of historical surface marine weather observations over the California Current region. This study differs from previous work for this area by calculating monthly mean values on a 1° latitude-longitude grid and by computing the heat exchange components from individual surface marine weather reports archived in the National Climatic Center's (NOAA, Environmental Data and Information Service) Tape Data Family-11 (TDF-11). Roden (1974) evaluated the surface radiative and turbulent heat fluxes on a 1° latitude-longitude grid. However, Roden's distributions were derived from monthly mean surface temperature and wind analyses and satellite cloud cover data based on a 5° latitude-longitude grid and interpolated to the finer mesh grid. We used standard bulk aerodynamic formulae, referred to a neutrally stable atmospheric boundary layer (Malkus 1962), to evaluate the evaporative and conductive heat fluxes. A separate analysis was performed to evaluate the dependence of these flux computations on the turbulent exchange coefficients as functions of windspeed and atmospheric stability. The methods are similar to procedures employed by Bunker (1976) and Hastenrath and Lamb (1978) for investigations of surface heat flux in the North Atlantic and in the tropical Atlantic and eastern Pacific Oceans, respectively. The distributions of heat exchange components described in this report will provide basic input data for a future simulation model of large-scale variations in the California Current ecosystem.

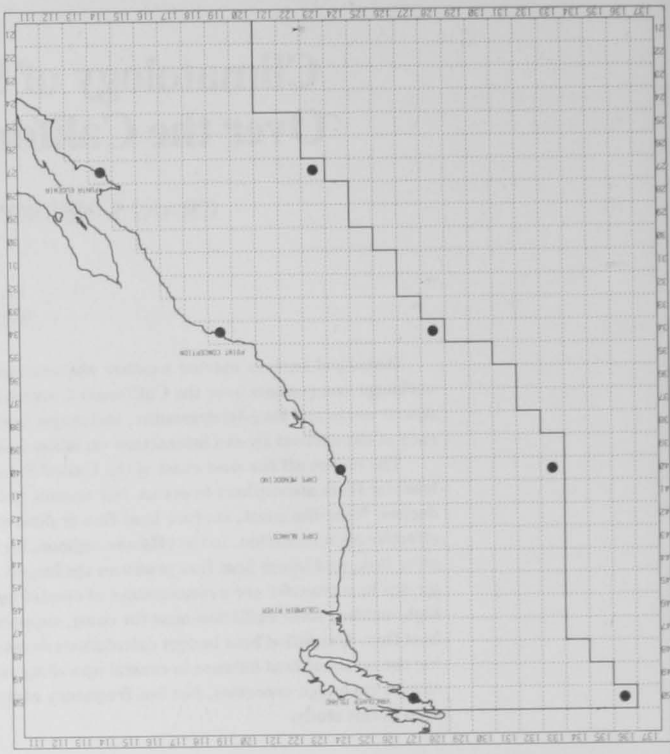


Figure 1.—Chart of the west coast of the United States showing the grid of 1° squares used for summaries of the surface heat fluxes. Large dots indicate squares for which the annual cycles of heat exchange processes are displayed in Figure 19.

PROCESSING OF DATA

Surface marine weather observations archived in the TDF-11 file consist of weather reports from teletype messages, ship logs, published ship observations, ship weather reporting forms, and various punched card decks obtained from foreign meteorological services. The sources of data and periods of coverage are tabulated in the TDF-11 documentation[2] and in Hastenrath and Lamb (1978). Over 1 million reports are within the California Current region and date from the mid-19th century through 1972. Individual reports were compiled by 1° squares within the geographical area outlined in Figure 1. The data grid extends from lat. 21°N to 50°N and parallels the coastline of British Columbia, the western United States, and Baja California. The grid extends 10° of longitude in the offshore direction, a distance ranging from 1,040 km at lat. 21°N to 717 km at lat. 50°N. Each 1° square is centered on a whole degree of latitude and longitude. Approximately 25% of the total available reports contain positions recorded to the nearest whole degree of latitude and longitude. The grid orientation used in this study reduces spatial bias which might be introduced by summarizing the data according to the more conventional Marsden square numbering system.

The observations contained in the TDF-11 reports vary markedly in methods and precision of measurement due to the changes in instrumentation and sampling techniques over the considerable time period covered by the data base. An individual surface weather report was used in the calculation of the heat exchange processes only if it contained all the properties needed to compute the radiative and turbulent heat fluxes. Values for surface pressure, P(mbar), sea surface temperature, T_s(°C); air temperature, T_a(°C); wet-bulb or dewpoint temperature, T_w or T_d(°C); windspeed, U_{10}(kn); and total cloud amount, C(oktas), were extracted from the TDF-11 file and quality controlled with a single pass editor to remove gross errors. Windspeed and cloud amount were converted to units of meters per second and tenths before incorporating these variables in the heat exchange formulae.

A total of 560,210 reports were accepted for the heat exchange calculations. These data amounted to 57% of the available reports. Approximately 38% of the reports were rejected because one or more of the surface meteorological observations were missing. An additional 3-5% of the reports were deleted because of duplicate reports and errors in position or because observed or derived variables could not pass specified climatic checks. An entire report was removed if surface observations exceeded the following extreme value limits: pressure (P) $<$ 945 mbar or $>$ 1,055 mbar; windspeed (U_{10}) $>$ 100 m/s; air temperature (T_a) $<$ -10°C or $>$ 40°C; wet-bulb temperature (T_w) $<$ -5°C or $>$ 40°C; sea temperature (T_s) $<$ -2°C or $>$ 35°C; and air-sea temperature difference (T_a-T_s) $<$ -30°C or $>$ 30°C. Wet-bulb and dewpoint temperatures were constrained to be less than or equal to the air temperature, and a valid estimate for total cloud amount (C), i.e., between 0.0 and 1.0, was required to accept the report. Cloud observations originally encoded as 9 (oktas) in the TDF-11 file indicated that the sky was obscured or cloud amount could not be determined. Consequently, these reports were also rejected. As a result of the editing procedures, the distributions of surface heat fluxes (Appendix I) and tables of monthly mean surface atmospheric properties (Appendix III) presented in this report are based on a common set of weather observations collected during the more restricted period from 1921 to 1972.

[2]National Climatic Center, Tape Data Family 11, NOAA/EDIS/NCC, Asheville, NC 28801.

Empirical Heat Exchange Formulae

The net heat exchange across the sea surface, Q_N, is the sum of the direct and diffuse radiation from sun and sky reduced by cloud cover and sea surface albedo, Q_S, the net long-wave or effective back radiation, Q_B, the latent heat flux, Q_E, and the sensible heat flux, Q_C, as expressed in Equation (1):

$$Q_N = Q_S - Q_B - Q_E - Q_C \,. \qquad (1)$$

Few direct measurements of radiative and turbulent heat fluxes have been made at sea. Observations of short-wave, long-wave, and net long-wave radiation have been analyzed by Tabata (1964), Charnell (1967), Reed and Halpern (1975), Reed (1977), and Simpson and Paulson (1979) for widely separated locations in the eastern and central North Pacific Ocean. Friehe and Schmitt (1976) and Anderson and Smith (1981) have reviewed the few available direct eddy flux measurements of sensible and latent heat. Because direct measurements of air-sea heat transfers are not routinely available over the ocean, the radiative and turbulent heat fluxes are commonly parameterized by empirical equations which incorporate empirically determined coefficients and regularly observed atmospheric properties at the sea surface and at some standard height above the sea surface. All empirically derived heat exchange components discussed in this report are expressed in units of watts per square meter.

Net incoming short-wave radiation from sun and sky, corrected for cloud cover and sea surface albedo, was calculated according to the following equation:

$$Q_S = (1-\alpha)Q_0\,(1-0.62C+0.0019h) \qquad (2)$$

where α is the fraction of incoming radiation reflected from the sea surface, C is the observed total cloud amount in tenths of sky covered, and h is the noon solar altitude in degrees. The direct and diffuse radiation from a cloudless sky, Q_0, was obtained from an harmonic analysis of the values tabulated in the Smithsonian Meteorological Tables (List 1949) for an atmospheric transmission coefficient of 0.7 (Seckel and Beaudry 1973). Reed (1977) determined that estimates of clear-sky insolation computed from the Seckel and Beaudry formula differed from measurements of short-wave radiation under cloudless skies by 4% or less.

The reduction of solar insolation due to the presence of clouds has been estimated by various formulae ranging from linear (Kimball 1928) to cubic functions (Laevastu 1960) of total cloud amount, regardless of cloud type, or by relationships expressing a dependence on both cloud amount and cloud type (Lumb 1964; Seckel and Beaudry 1973). The linear cloud correction formula suggested by Reed (1977) was adopted in this study. The total cloud amount reports in the TDF-11 file represent visual estimates of the fraction of the celestial dome obscured by clouds. Such highly subjective observations frequently contain significant error and may not warrant using higher order cloud correction formulae.

The linear cloud correction in Equation (2) is appropriate for cloud cover ranging from 0.3 to 1.0. The reduction in insolation was neglected for cloud amounts < 0.25 (i.e., 2 oktas), a procedure recommended by Reed (1977), who also indicated that this formula results in a random error of estimate less than $\pm 10\%$ for estimates of monthly mean insolation and $\pm 20\%$ for weekly means. Reed's linear correction is similar to a formula derived by Tabata (1964) which was shown to give excellent agreement with radiation measurements at Ocean Weather Station "PAPA" (OWS-P) at lat. 50°N, where stratus type clouds predominate. Simpson and Paulson (1979) compared observations of incident solar radiation with predictions based on empirical formulae and demonstrated that Lumb's (1964) formula, which requires very reliable hourly observations of cloud amount and cloud type, was superior to Reed's linear correction formula for predictions averaged over 11 d. Predictions based on Reed's formula overestimated the 11-d mean incident solar radiation by 6%. The 11-d mean was 102.5 W/m^2, and the root-mean-square deviation between observations and predictions over the same 11 d, amounted to 16.7 W/m^2. Although cloud type observations are included in surface marine weather reports, we did not consider the additional cloud type information in the TDF-11 file to be sufficiently reliable to incorporate Lumb's more accurate formula in calculations of incident solar radiation.

Net short-wave radiation reaching the sea surface is the difference between incident solar radiation and the radiation reflected from the sea surface. Sea-surface albedo, α, was extracted from tables published by Payne (1972), as a function of atmospheric transmittance and mean daily solar altitude. Transmittance values were calculated by reducing the clear-sky atmospheric transmission coefficient of 0.7 used in this report by the linear cloud correction factor adopted from Reed (1977). In our calculations, albedo ranged from 0.04 in low latitudes during summer under cloudless skies to between 0.20 and 0.30 in higher latitudes during winter.

Effective back radiation is the difference between the outgoing long-wave radiation from the sea surface, proportional to the fourth power of the absolute sea surface temperature, and the incoming long-wave radiation from the sky, which depends on the water vapor content of the atmosphere and the type, density, and height of clouds. In this report we have adopted the modified Brunt equation (Brunt 1932) with the empirical constants of Budyko (1956) and the linear cloud correction formula of Reed (1976) to compute the net long-wave radiation:

$$Q_B = 5.50 \times 10^{-8}\,(T_S + 273.16)^4(0.39 - 0.05e_a^{1/2})(1-0.9C). \quad (3)$$

The atmospheric vapor pressure, e_a(mbar), was computed from a formula given by List (1949:366) using the observed surface pressure, P, air temperature, T_a, and wet-bulb temperature, T_w. If any of the required variables were missing, but the dewpoint temperature, T_d, was present in the surface weather report, or if the archived wet bulb temperature was derived from a reported dewpoint temperature, as in TDF-11 Decks 110, 119, 185, 187, 196, and 281, then atmospheric vapor pressure was computed as the saturation vapor pressure at the dewpoint temperature using an integrated form of the Clausius Clapeyron equation (Murray 1967). In fewer than 12% of the reports, atmospheric vapor pressure was computed from the dewpoint temperature.

In previous studies of the large-scale surface heat flux in the eastern and central North Pacific Ocean (Roden 1959; Seckel 1970; Clark et al. 1974), effective back radiation was computed from the Berliand (Budyko 1956) formula which includes a nonlinear cloud factor and an additional term based on the air-sea temperature difference. Reed and Halpern (1975) demonstrated that the Berliand formula produces systematically higher values than those computed from the Brunt equation. Their estimates of net long-wave radiation predicted by Equation (3) were approximately 10 W/m^2 greater than measured daily mean values of 60-65 W/m^2 for two sites off the Oregon coast. Simpson and Paulson (1979) suggested that the formulae of Brunt and Berliand are equally satisfactory and may be used to predict daily values of net long-wave radiation with an absolute accuracy of 20 W/m^2.

The linear cloud factor in Equation (3) is appropriate for low stratocumulus clouds. Reed (1976) proposed an alternate linear correction (1–0.7C) which is more suitable for the higher clouds typical of the tropics. However, we could not discern any significant difference in seasonal cloud cover, by cloud type, which would allow us to use the alternate cloud factor in the lower latitudes of the study region.

The bulk aerodynamic formulae for turbulent fluxes of latent and sensible heat across the air-sea interface in a neutrally stable atmospheric boundary layer (Kraus 1972) can be expressed in the forms:

$$Q_E = \rho_a L C_E (q_0 - q_{10}) U_{10} \tag{4}$$

and

$$Q_C = \rho_a c_p C_H (T_s - T_a) U_{10}. \tag{5}$$

In these equations, ρ_a is the density of air, L is the latent heat of vaporization, c_p is the specific heat of air, C_E and C_H are experimentally determined exchange coefficients for water vapor and sensible heat, q_0 and q_{10} are the specific humidities of the air in contact with the sea surface and at 10 m or deck level, $T_s - T_a$ is the sea-air temperature difference, and U_{10} is the windspeed at 10 m or ship anemometer height. The equations are based on the assumption of a "constant flux" layer in the first few tens of meters above the sea surface, which allows the use of routine ship observations rather than measurements at the wave-perturbed, air-sea interface.

The specific humidities required in Equation (4) are not available in surface marine weather reports, but can be approximated from the relationship between specific humidity, q, and vapor pressure, e, expressed in Equation (6):

$$q \approx \epsilon \frac{e}{P}, \tag{6}$$

where ϵ is a known constant ratio of the molecular weight of moist air to dry air, equal to a value of 0.622. We assumed constant values for density $\rho_a = 1.22$ kg/m³, latent heat of vaporization, $L = 2.45 \times 10^6$ J/kg, and specific heat of air, $c_p = 1.00 \times 10^3$ J/kg per °C, and expressed the empirical exchange coefficients C_E and C_H, referred to the 10 m level, as constants equal to 0.0013 (Kraus 1972; Coantic 1974[3]; Anderson and Smith 1981). Substitution of these values and Equation (6), with $P = 1{,}013.25$ mbar, into Equation (4) yields the following formulae:

$$Q_E = 2.38(0.98 e_w - e_a) U_{10} \tag{7}$$

$$Q_C = 1.59(T_s - T_a) U_{10}. \tag{8}$$

The saturation vapor pressure over pure water at the sea surface temperature, e_w(mbar), was computed from a formula given by Murray (1967) and multiplied by 0.98 to account for the effect of salinity (Miyake 1952).

Long-term monthly mean heat exchange components were computed from all available reports between 1921 and 1972 within each 1° square area. The appropriate average is defined in Equation (9):

$$(\bar{Q}_S, \bar{Q}_B, \bar{Q}_E, \bar{Q}_C, \bar{Q}_N) = \frac{1}{n} \sum_{i=1}^{n} (Q_S, Q_B, Q_E, Q_C, Q_N)_i \tag{9}$$

where n is the total number of reports within a particular 1° square area and month. The values $(Q_S, Q_B, Q_E, Q_C, Q_N)_i$ were evaluated according to Equations (2), (3), (7), (8), and (1), respectively. Each individual report was weighted equally. Therefore, the mean values of the heat exchange components for each long-term month and 1° square are formed from a data set which is independent of all other months and squares.

Monthly mean heat exchange fields are presented in Appendix I and include incident solar radiation corrected for cloud cover and reflection, $\bar{Q}_S$ (Charts 1 to 12); effective back radiation, $\bar{Q}_B$ (Charts 13 to 24); latent heat flux, $\bar{Q}_E$ (Charts 25 to 36); sensible heat flux, $\bar{Q}_C$ (Charts 37 to 48); and net heat exchange across the air-sea interface, $\bar{Q}_N$ (Charts 49 to 60). No attempt has been made to smooth the fields, either by removing data which do not appear to fit the distributions or by applying objective smoothing procedures. The mean heat exchange fields were contoured by computer, and "bull's-eyes" in the contours, even where they may reflect erroneous data, were left in the charts as indications of the general degree of consistency in the composite distributions.

Error Analysis

Errors associated with the computations of large-scale air-sea interaction transfers described in this report reflect 1) nonconformities in the spatial and temporal distributions of the surface marine observations, 2) inadequacies in data quality, and 3) uncertainties in the empirical heat exchange formulae. Random and systematic errors in the marine surface data primarily result from improper instrument calibration and measurement techniques, and inaccuracies introduced by data reduction at sea or in the process of archiving different data sets in the common TDF-11 format. These sources of error may introduce large variance in the monthly distributions of surface heat flux which might otherwise be interpreted as actual seasonal or nonseasonal variability related to geophysical processes.

The spatial distribution of the TDF-11 reports is known to be biased to coastwise and transoceanic shipping lanes between major seaports. Figure 2 shows the distribution of total numbers of observations per 1° square area used in this study for the calculation of heat exchange processes. The actual numbers of observations per month at each grid point are tabulated in Appendix II and shown as auxiliary data in Figures 3 and 4 for the months of July and December, respectively. The highest density of reports exists in a zone along the coast approximately 300 km wide. The largest numbers of reports are in the area of the Southern California Bight. The numbers of observations per 1° square per month ranged from 7 off the coast of Washington in December to more than 2,400 off Los Angeles in March, August, and October. The influence of merchant vessel traffic between San Francisco and Hawaii is evident in a zone approximately 200 km wide extending offshore, with more than 200 observations/mo per 1° square. Approximately 29% of the 1° squares contained fewer than 50 observations/mo, primarily reflecting the sparse distribution of weather reports between lat. 20°N and 30°N at distances > 400 km from the coast of Baja California. Nearly 40% of the long-term composite means were based on between 100 and 500 observations/mo. More than 500 observations/mo were available in 5% of the 1° squares.

Nonuniform distributions in time introduce additional bias in the sample statistics for the composite monthly mean heat exchange processes. Although all acceptable surface marine weather reports between 1921 and 1972 were used in this study, approximately 70 to 80% of the observations were collected after 1950. Therefore, the long-term mean values more properly represent estimates for

[3]Coantic, M. 1974. Formules empiriques d'evaporation. Note de la Convention C.N.E.X.O./I.M.S.T. No. 74/951, 24 p., Xerox.

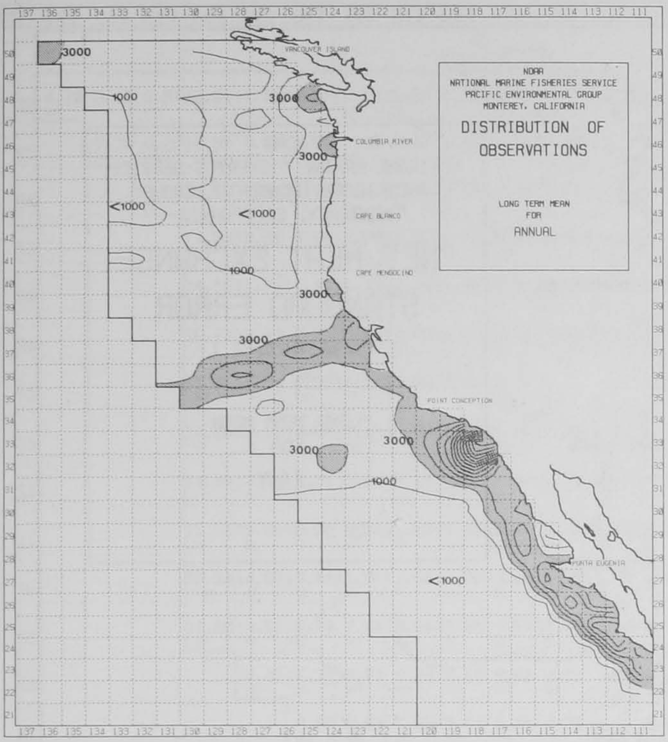


Figure 2.—Distribution of surface meteorological observations per 1° square. The contour interval is 2,000 observations. Values >3,000 are shaded.

the subpopulation extracted from the most recent 23 yr of data (1950–72). Seasonal bias is evident in a general tendency for fewer observations during winter than in summer, particularly in the 1° squares containing <100 observations/mo. The long-term means for June and July, for example, are based on approximately twice the number of observations as the mean values for December and January. However, along the shipping route from San Francisco to Hawaii, the summer means are based on from 10 to 20% fewer observations than the winter values. Within the relatively densely sampled coastal shipping lanes, the observations are approximately uniformly distributed in time, and exhibit only a slight tendency for the summer bias.

Inconsistency in the temporal and spatial sampling of surface atmospheric properties may introduce moderate to severe aliasing in the estimates of long-term monthly mean radiative and turbulent heat fluxes. Certain 1° square areas contained a disproportionately large number of observations per month with respect to the surrounding squares (Fig. 2). For example, the means for the 1° squares located at lat. 40°N, long. 124°W; lat. 46°N, long. 124°W; and lat. 48°N, long. 125°W were primarily based on 3-hourly surface observations collected at the Blunts Reef, Columbia River, and Umatilla Lightship stations from 1970 to 1972. We noted a greater than order of magnitude increase in the numbers of observations per year, from <100 to more than 1,000, at these locations beginning in 1970. According to Quayle[4], the lightship data, which may be of questionable quality, were not normally archived in the TDF-11 file and may have been included as the result of special contractual requests for these observations. Additional regions of dense spatial and temporal sampling at lat. 32°N, long. 124°W and lat. 50°N, long. 136°W exist as a result of the U. S. Navy radar picket ship program from 1960 to 1965. A particular consequence of these station-specific biases will be discussed in considering errors associated with computations of latent heat flux.

Areal averages of track-specific data, such as the TDF-11 reports, may be aliased if regions of relatively large spatial or temporal gradients are undersampled along narrow shipping lanes. It should be noted that this type of bias is not unique to the California Current region, and may be present in the summaries of Bunker (1976) and Hastenrath and Lamb (1978), who also used data from the TDF-11 file for computations of surface heat flux. Weare and Strub (1981) suggested that spatial and temporal biases in surface marine atmospheric data may contribute as much as 10% of the variance in long-term monthly mean flux estimates averaged over 5° squares. By averaging over 1° squares, we expect that the mean deviations resulting from spatial bias within a 1° square should contribute substantially <10% to the long-term variance. Temporal biases in the long-term monthly means caused by nonuniform sampling within a month or by strong diurnal variations in surface atmospheric properties, e.g., cloud cover, should be similar to the estimates calculated by Weare and Strub (1981). These biases may contribute the same order of magnitude variance as errors associated with random or systematic measurement and archiving errors and uncertainties in the bulk formulae.

Calculations of net short-wave radiation, Q_S, reflect uncertainties in the estimates for cloudless sky radiation and sea surface albedo and an inability to accurately parameterize the combined effects of cloud amount, type, height, thickness, and opacity on insolation. We previously discussed the errors in estimating insolation under clear-sky and cloudy conditions based on studies conducted by Reed (1977) and Simpson and Paulson (1979). The uncertainties in Payne's (1972) values for sea surface albedo range from <7% for solar altitudes >25° to 25% for low solar altitudes, and may contribute from <0.5 to 10% of the error in individual estimates of Q_S.

The monthly distributions of insolation discussed in this report are based on values computed from individual reports of total cloud amount. This procedure assumes that a single estimate of cloudiness, regardless of time of day, is representative of the daily mean cloud cover. Synoptic meteorological observations are usually reported at 0000, 0600, 1200, and 1800 Greenwich Mean Time (GMT), which correspond to 1600, 2200, 0400, and 1000 Pacific Standard Time (PST). Even if equal numbers of reports were available from all four synoptic periods, which is certainly not the case, one-half of the estimates of cloud amount would be from nighttime observations. Alternatively, if only daytime estimates of cloud amount were used, as suggested by Tabata (1964), then the number of observations would be reduced by a factor of 2 or more, because in certain 1° squares nighttime observations predominate.

If the distribution of cloud amount during a 24-h period is uniform, then either daytime or nighttime observations may be used to reliably estimate the mean daily cloud amount. However, Tabata (1964) and Weare and Strub (1981) have shown a tendency for daytime estimates of cloud cover to be 0.1 greater than nighttime estimates at OWS-P and for a 5° square near the coast of Baja California. Further difficulties in correcting insolation for cloudiness are caused by the primitive nature of observing and reporting from ships. Because observations of total cloud amount are reported in oktas, or in tenths converted to oktas, random errors of 0.125 (1 okta) in individual estimates of cloud amount can be expected. Reed (1977) also suggested the possibility of up to 0.20 positive bias in visual estimates of cloud cover in comparison with satellite-derived values. An error of 0.125 in the linear cloud factor in Equation (2) would produce errors in short-wave radiation ranging from 8 to 10% for cloud amounts <0.4 to 18% for total overcast. We estimate that the error in the long-term mean radiation

[4]R. G. Quayle, Chief, Applied Climatology Branch, National Climatic Center, NOAA, Asheville, NC 28801, pers. commun. April 1981.

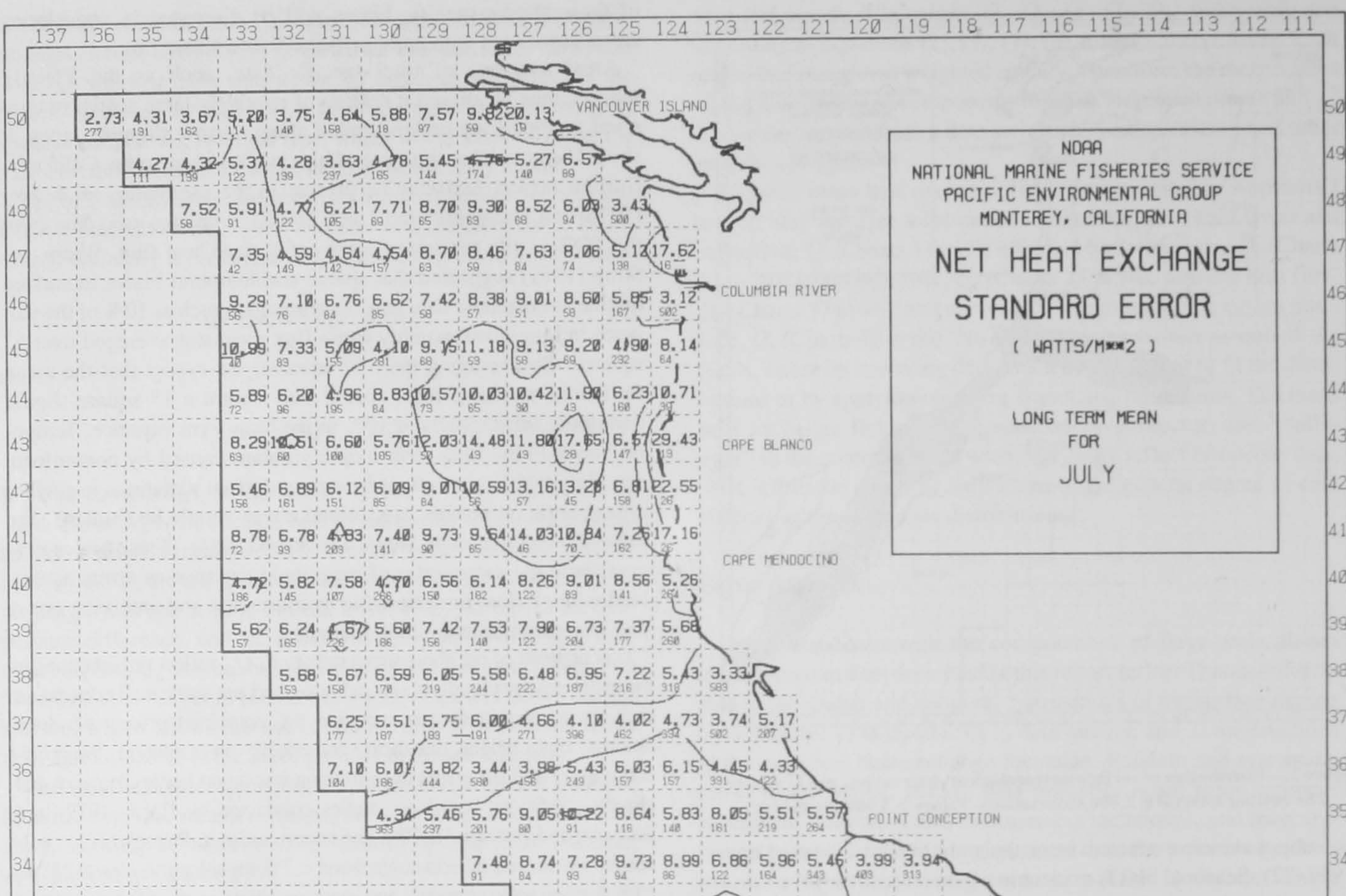
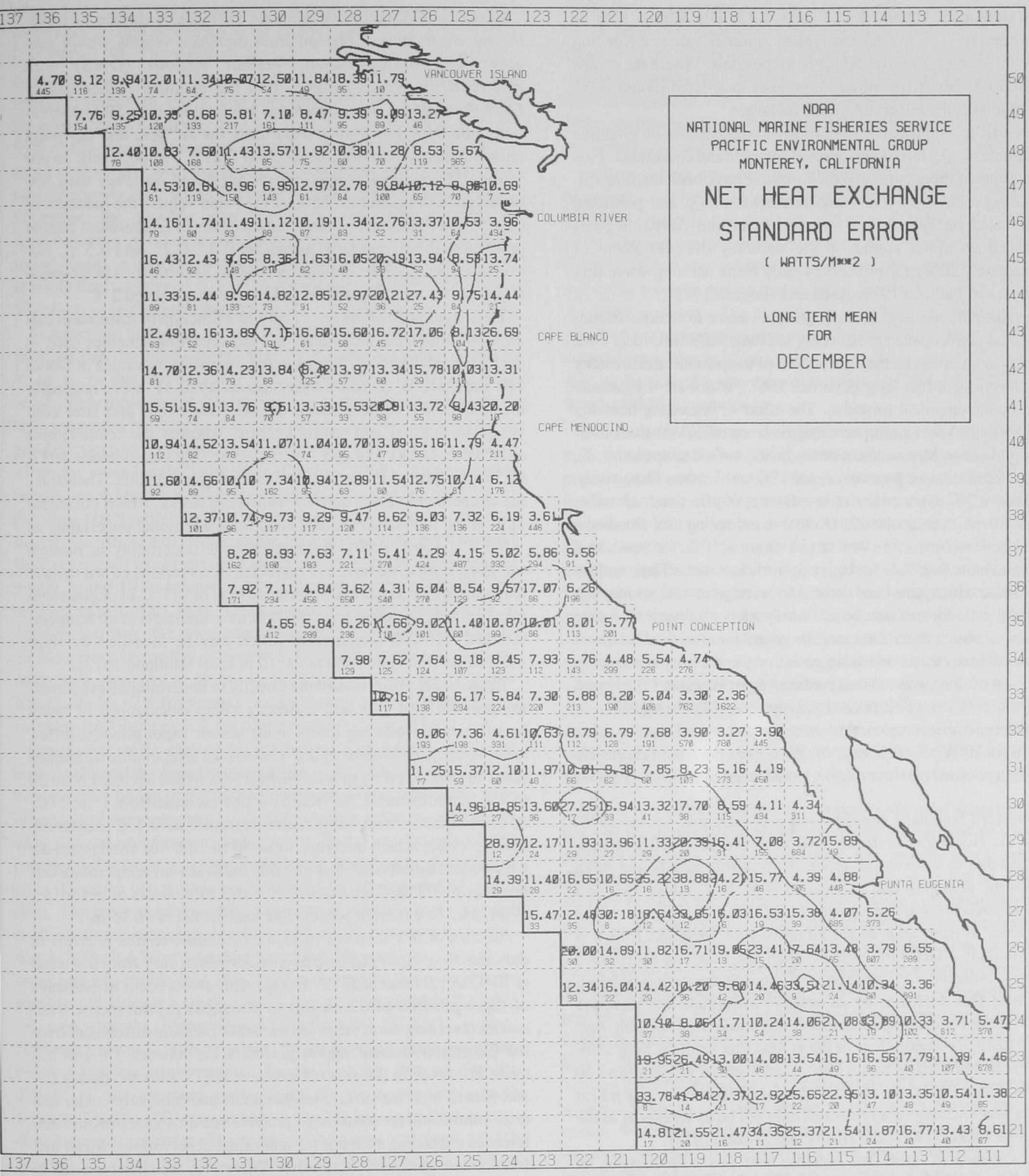


Figure 3.—Standard errors of the means and numbers of observations for July. The standard error of the mean for net heat exchange is plotted in units of W/m² and contoured at intervals of 5.0 W/m². The number of observations used to compute the monthly mean in each 1° square is displayed below the value for the standard error.



gure 4.—Standard errors of the means and numbers of observations for December. The standard error of the mean for net heat exchange is plotted in units of W/m² d contoured at intervals of 10.0 W/m². The number of observations used to compute the monthly mean in each 1° square is displayed below the value for the ndard error.

values shown in Appendix I (Charts 1-12) lies within 10% or approximately ± 25 W/m^2 for typical summer values exceeding 250 W/m^2 in the 1° squares adjacent to the coast. Where the means are based on only a few observations per long-term month (i.e., fewer than 10), the uncertainty may be larger.

Most of the empirical formulae for computations of effective back radiation, Q_B, have been derived for overland conditions. Few verifications of the accuracy of the formulae have been made at sea. Comparisons between direct measurements of Q_B and predicted values based on Equation (3) in midocean and coastal regions established an upper bound on the accuracy of ± 20 W/m^2 or approximately 20% of the observed daily mean net long-wave flux (Simpson and Paulson 1979; Reed and Halpern 1975).

The principal error in estimating Q_B again arises from uncertainties in the cloud correction term. However, net long-wave flux under clear skies may also depend on the distributions of temperature and humidity above the constant flux layer (Charnell 1967), which are not parameterized by the empirical formulae. The effect of neglecting humidity variations in the lower atmosphere may be comparable with that of variable cloud cover. Measurement errors in sea surface temperature, T_s, and near-surface vapor pressure, e_a, of 1°C and 1 mbar, respectively, contribute <3% to uncertainties in estimates of effective back radiation. However, an error of 0.125 (1 okta) in estimating total cloudiness introduces a relative error that ranges from <10% for low cloud amounts to more than 50% for high values of cloudiness. Thus, empirical formulae which have been derived for average conditions may not necessarily hold for estimates based on only a few observations. As the numbers of observations increase, the contribution of random errors will generally decrease, which suggests that the accuracy of the long-term mean net long-wave fluxes predicted from Equation (3) lies well within the 20% bound estimated by Simpson and Paulson (1979). In the California Current region, the loss of heat due to net long-wave flux varies from 20 W/m^2 offshore to 50 W/m^2 near the coast (Charts 13-24). The associated maximum errors would range from ± 4 to ± 10 W/m^2.

In western boundary current regions (Husby and Seckel 1975) and in the North Pacific trade wind zone (Seckel 1970), oceanic heat loss due to evaporative processes typically equals and often exceeds the heat gain due to incident solar flux. Along the west coasts of continents, however, latent heat flux is approximately the same order of magnitude as the effective back radiation, which is approximately a factor of 2 smaller than the incoming short-wave radiation. Near the west coast of the United States during summer, latent heat flux decreases by an order of magnitude and therefore may be more comparable in absolute magnitude with sensible heat flux. Although computations of latent heat flux from the bulk aerodynamic formula may contain large relative errors ranging from 20 to 60% (Clark 1967), the effect of data uncertainties on latent heat and net heat exchange computations may not be as serious as in the studies of Seckel (1970) and Husby and Seckel (1975).

The accuracy of latent and sensible heat flux computations is affected by uncertainties in the magnitudes of the experimentally determined turbulent transfer coefficients, C_E and C_H, and measurement errors in observations of sea, air, and wet-bulb temperatures and windspeed in the constant flux layer. Errors are also introduced if the assumptions which form the bases for the empirical formulae are not properly satisfied. Values of the neutral exchange coefficients referred to the 10 m level, as summarized by Friehe and Schmitt (1976), range from 0.0010 to 0.0016 with typical uncertainties of $\pm 20\%$. Variations in atmospheric stability and the assumption that the transfer coefficients for heat and water vapor are equal and independent of windspeed, increase the uncertainty in the magnitudes of the derived turbulent exchange processes.

Bunker (1976) compared monthly averages of surface meteorological observations obtained from merchant vessels within subareas surrounding ocean weather stations (OWS) with corresponding means formed from the assumed higher quality OWS data. Based on comparisons using more than 500 observations, the 95% probability departures for air, sea, and dewpoint temperatures were 0.15°, 0.12°, and 0.27°C, respectively. In our study, 95% of the 1° square means are based on fewer than 500 observations/mo, and for 55% of the mean values, the numbers of observations are <100. The standard errors of temperature corresponding to these long-term means are 0.3°, 0.2°, and 0.5°C. For averages formed from <10 observations, uncertainties in the mean temperatures typically can be >1°C and may exceed 2°C.

The magnitudes of the errors vary as a function of instrument calibration, observing technique, and the reporting schemes used in the historical data files. For example, temperature values in Decks 110 and 281, U. S. Navy observations 1920-51, were originally recorded to the nearest whole degree Fahrenheit, and later converted to degrees and tenths Celsius; whereas the temperatures archived in Decks 118 and 119, Japanese ship observations 1937-60, were reported to the nearest whole degree Celsius. Therefore, the temperature values derived from these decks, which constitute 18% of the total observations, contain an additional uncertainty of ± 0.5°C (Husby 1980). Because of large uncertainty in random sampling errors, we have not corrected observations of sea surface temperature for a possible systematic bias of 0.7°C in engineroom injection temperatures (Saur 1963) or measurements of air temperature and wet-bulb temperature which may be modified by ship-induced air flow distortion at the 10 m level (Holland 1972).

Temperature errors contribute directly to uncertainties in estimating sensible heat flux and indirectly affect calculations of latent heat flux by introducing errors in the sea-air vapor pressure difference. Average deviations of 0.2°C in sea-air temperature difference result in relative errors in sensible heat flux which decrease from 20 to 4% for temperature differences which increase from 1° to 5°C. A more characteristic temperature departure of 0.5°C introduces relative errors which decrease from 50 to 10% for similar sea-air temperature differences. For monthly mean sea-air temperature differences of 1°C and windspeeds of 6 to 7 m/s, errors of ± 1 to ± 5 W/m^2 may be expected for sensible heat fluxes of 10 W/m^2.

An error of 0.5°C in sea surface temperature results in errors in the saturation vapor pressure over water which vary from 0.4 mbar at 10°C to 1.0 mbar at 25°C. Comparable errors occur in estimates of vapor pressure of the air due to erroneous psychrometric measurements. Long-term mean sea-air vapor pressure differences over the California Current region generally lie between 1.0 and 5.0 mbar. However, in the area off southern Baja California during fall and winter, high sea surface temperatures and relatively colder and drier continental air combine to produce sea-air vapor pressure differences exceeding 15 mbar for individual observations. Mean differences are generally <10 mbar. Therefore, the possible error in computations of latent heat flux may be relatively large. For average deviations of 0.5 mbar, the uncertainty ranges from <4% for large vapor pressure differences to more than 40% at low values. The error associated with monthly mean values of $\bar{Q}_E$ between 50 and 100 W/m^2 would be approximately ± 10 W/m^2.

In Equations (7) and (8), the vertical fluxes of heat and water vapor have been parameterized as a function of the observed windspeed, U_{10}. Nelson (1977) discussed the sources of error in wind reports in the TDF-11 data file and also determined that <12% of the total wind reports consisted of measured, as opposed to estimated, quantities. Approximately 35% of the reports from the California Current region consisted of Beaufort wind force estimates which were converted to equivalent 10 m windspeeds in knots and meters per second according to the international scale of 1946 (see List 1949:119). The standard deviation of the overall error of an estimated windspeed amounts to 0.58*I*, where *I* is the Beaufort interval (Verploegh 1967), and corresponds to ± 0.7 to ± 2.4 m/s for equivalent windspeeds of 0.9 m/s to 30.5 m/s. The remaining 53% of the observations were estimated windspeeds which did not agree numerically with the Beaufort wind force scale but typically were originally reported in 5-kn intervals for windspeeds >20 kn. Therefore, the possible error associated with these estimates is approximately ± 1.3 m/s. An error of 1 m/s in estimating windspeed results in equivalent changes in the rates of evaporation and sensible heat transfer of 10 to 20% for the mean windspeeds of 5 to 10 m/s most commonly observed in the California Current region.

In using the historical surface marine weather reports, we have assumed that the wind observations were taken at a standard height of 10 m, or that the Beaufort force estimates were equivalent to windspeeds measured at this height. For surface winds which have been measured by shipboard anemometers, this assumption can be grossly inaccurate, since known anemometer heights vary from 7 to 37 m, the mean height being 21 m (Cardone 1969). If anemometer heights were known for the vessel reports comprising the 12% of the total observations which were measured as opposed to estimated quantities, a neutrally stable logarithmic wind profile could have been used to correct each observation from the measurement height to the 10 m reference level. Except for the relatively few anemometer heights from military and research vessels listed in Cardone's report, the anemometer heights for reports in the TDF-11 file cannot be readily determined. By assuming that windspeeds have been measured at 10 m, we possibly overestimate the turbulent fluxes by 12% for winds actually measured at 37 m and underestimate the fluxes by 3% for measurements taken at 7 m.

Conclusive verification of the derived rates of sensible and latent heat transfer and the associated accuracies of the bulk formulae has not been possible owing to the lack of extensive direct, over-water measurements of the temperature and moisture fluxes. On the basis of 30 eddy flux measurements of water vapor, Friehe and Schmitt (1976) concluded that latent heat flux is adequately described by the bulk formula (Equation (4)) with an uncertainty of 15 W/m^2 (standard deviation). The more numerous determinations of sensible heat flux also conform to the empirical equation with an uncertainty of approximately 3.8 to 8.4 W/m^2 (standard deviation). However, the direct measurements of sensible heat flux show a dependence on atmospheric stability and indicate a small positive flux of approximately 0.15 W/m^2, even when the value predicted from the term, $(T_s\text{-}T_a)U_{10}$, is zero. Although Laevastu's (1960) equation for the turbulent transfer of sensible heat predicts a nonzero flux for $U_{10} = 0$ m/s (but not for $(T_s\text{-}T_a) = 0°C$), the expected values from the more commonly used formula (Equation (5)) may include a 1 to 2% bias in addition to random measurement errors. The results of Anderson and Smith (1981) generally confirm the bulk formulae with uncertainties of ± 10 to $\pm 25\%$, and demonstrate the applicability of Equation (4) to negative fluxes of water vapor (i.e., condensation).

Equations (7) and (8) are generally used to parameterize the loss of heat from ocean to atmosphere due to evaporative and convective processes. The reverse processes of condensation and sensible heat transfer to the sea are also predicted by the formulae. Negative values of $(T_s\text{-}T_a)$ are commonly measured in eastern boundary current regions during periods when coastal upwelling establishes a stable atmospheric boundary layer. Comparable negative sea-air vapor pressure differences $(e_w\text{-}e_a)$ are not observed as often. Over large regions of the oceans, vapor pressure decreases with height, although the opposite behavior can occur over cold water areas (Roll 1965). Laevastu and Harding (1974) demonstrated a relatively rapid 5-h response of the properties of the surface air to changes in the properties of the sea surface. Therefore, in midlatitude and tropical regions away from coastal boundaries, the maximum atmospheric vapor pressure would be expected to correspond to the saturation vapor pressure at the sea-surface temperature, and evaporation would occur.

During spring and summer, modification of the atmospheric boundary layer by coastal upwelling processes produces stable stratification which is favorable for the formation of advection fog, particularly along the coasts of central and northern California and Oregon. When the contrast between warm, relatively moist air overlying a cooler sea surface is large, fog may persist even when the wind is strong. The resulting downward flux of water vapor transfers latent heat from atmosphere to ocean. A downward flux of moisture may also exist in a stable boundary layer in the absence of fog, as the data of Laevastu and Harding (1974) and Anderson and Smith (1981) demonstrate.

In a study of the heat exhange processes over the North Pacific trade wind zone, Seckel (1970) assumed that negative sea-air vapor pressure differences were due to erroneous observations of sea surface temperature, vapor pressure of the air, or both, and in such situations set the computed latent heat flux equal to 0. Over the California Current region, we found that 10% of the usable surface weather reports resulted in negative fluxes of latent heat. If these values were due to bad observations, then an approximately equal number of positive values should also be affected by poor quality observations, but we had no a priori reason to reject 20% of the data or possibly alias the long-term mean distributions by neglecting the rate of heat change through condensation, as Roden (1959) did in a previous study of the heat balance of the California Current region. However, additional quality control tests were implemented to remove unreasonably large negative and positive fluxes of both latent and sensible heat.

Editing procedures consisted of comparing observed surface properties with the average joint probability density functions of air-sea temperature difference versus windspeed and sea-air vapor pressure difference versus windspeed computed from the entire data set. Pairs of data values which fell outside a 1% bound of the joint probability density estimates were rejected. This method was relatively conservative, and <0.5% of the data was removed. The distributions could have been trimmed more severely. For example, in an earlier version of the flux calculations, we used Seckel's (1970) method and set the latent heat flux equal to zero for negative sea-air vapor pressure differences. Comparisons of the two sets of values showed that the ratio of the difference between the old and new values to the standard error of the mean of the recomputed data was consistently <1.0, except in regions within 200 km of the coast during months when coastal upwelling occurs. We concluded that our results would not be severely distorted by using Equation (8) for computing both positive and negative latent heat fluxes, and might be more representative of actual surface layer conditions near the coast.

Our computations indicate an upward flux of latent heat (Appendix I, Charts 25-36) over the entire California Current region except at lat. 40°N, long. 124°W in May, July, August, and September when the mean fluxes are -0.6, -11.0, -12.1, and -8.7 W/m^2, at lat. 41°N, long. 124°W in July and August (-6.0 and -0.4 W/m^2), and at lat. 43°N, long. 124°W in July (-18.2 W/m^2). Negative (condensation) values may be expected for periods of several hours to a few days; however, it seems unlikely that latent heat transfer from atmosphere to ocean would be characteristic in a long-term monthly mean sense.

Even though we may have correctly predicted the relative effects of condensation, the magnitudes of the computed values may be in error. When latent (and sensible) heat is transferred to the ocean, high stability of the air close to the sea surface greatly inhibits turbulent transfer, perhaps reducing the flux to <10% of the corresponding magnitude for comparable conditions in an unstable boundary layer. To test the effects of such a reduction, we recalculated the values for the 1° squares adjacent to the coast between Cape Mendocino and Cape Blanco and reduced the magnitudes by 90% when the computed latent heat fluxes were negative. The resulting long-term monthly means for the 1° squares and months indicated above remained small, but positive, being <10 W/m² in the mean.

Spatial and temporal biases also may have affected the calculations of latent heat flux. The long-term mean for July in the 1° square off Cape Blanco (lat. 43°N, long. 124°W) was computed from only 13 observations, of which nine values resulted in negative fluxes of latent heat. South of Cape Mendocino, observations from the Blunts Reef Lightship station consistently biased the long-term means by effectively weighting the computed fluxes for 1970 and 1971 by an order of magnitude more than for any other year. By removing the lightship data, the negative values of latent heat flux which appear at this location during summer (Chart 29 and Charts 31-33) could have been removed, and for July the mean value would have changed from -11.0 W/m² (condensation) to +5.5 W/m² (evaporation). Although we recognized that these biases existed, no attempt was made to systematically remove observations from those areas where densely sampled station data were apparent.

There are very few direct measurements of negative fluxes of water vapor (latent heat) and none which support a large reduction in the transfer across the air-sea interface under stable conditions. The data reported by Anderson and Smith (1981) suggested only a 12% and at most a 50% reduction in the transfer process (see their equations (7) and (8)) in a stable as opposed to an unstable boundary layer, for comparable values of moisture flux. Although the magnitudes of latent heat flux remain somewhat in doubt, our computations indicate that heat losses due to evaporation from the sea surface make a relatively unimportant contribution to the oceanic heat budget during summer in regions adjacent to the coast.

The net heat exchange across the sea surface, Q_N, is the difference of large numbers. Therefore, the uncertainty in Q_N may be substantially greater than the errors for the individual exchange processes. For example, during July off Monterey, Calif., the average value of $\bar{Q}_N$ is 197 W/m². Conservative estimates of the errors in $\bar{Q}_S$(10%), $\bar{Q}_B$(10%), $\bar{Q}_E$(15%), and $\bar{Q}_C$(15%) result in a relative error of 17% in the estimate for $\bar{Q}_N$. At the same location in December, the error in $\bar{Q}_N$ increases to 64% for a long-term mean value of -36.7 W/m².

The accuracy of each of the long-term monthly mean heat flux components was independently estimated by computing the standard error of the mean defined by:

$$SE_{\bar{Q}} = SD_Q/\sqrt{n} \tag{10}$$

where $SE_{\bar{Q}}$ is the standard error of the mean for each heat exchange component (i.e., $\bar{Q}_S$, $\bar{Q}_B$, $\bar{Q}_E$, $\bar{Q}_C$, $\bar{Q}_N$), SD_Q is the corresponding sample standard deviation, and n is the number of observations. Large values of n and small values of SD_Q correspond to mean values $\bar{Q}$ which closely approximate the population means. Although the computed standard errors reflect observational noise as well as nonseasonal variability, the distributions of $SE_{\bar{Q}}$ provide an overall view of the reliability of the long-term monthly heat flux estimates.

Standard errors of the means and the numbers of observations in each 1° square area and long-term month are tabulated in Appendix II. The standard errors are largest for $\bar{Q}_E$ and $\bar{Q}_S$ and smallest for $\bar{Q}_C$ and $\bar{Q}_B$. The resulting standard errors of the means for $\bar{Q}_N$,($SE_{\bar{Q}_N}$), range from 1.3 W/m² at lat. 33°N, long. 118°W in September (n=2,259) to 57.6 W/m² at lat. 22°N, long. 120°W in June (n=9). Distributions of minimum and maximum values of $SE_{\bar{Q}}$ generally conform to the pattern of observations shown in Figure 2.

The net heat exchange standard errors and the numbers of observations for July and December, respectively, are mapped in Figures 3 and 4. Minimum values of $SE_{\bar{Q}_N}$ coincide with the coastwise shipping lanes stretching from southern Baja California to Point Conception and with the transoceanic track between San Francisco and Hawaii. In the extreme northwest section of the grid, steady westerly winds and minimum sea-air vapor pressure differences contribute to low values of $SE_{\bar{Q}_N}$ in July (Fig. 3). Within these regions, the 95% probability of departure from the population mean is <10W/m².

High values of $SE_{\bar{Q}_N}$ occur along and offshore from the coast between Cape Mendocino and Cape Blanco (Fig. 3) and in the southwest section of the grid, and are associated with regions of sparse data, although sporadic sampling of intense winter storms may also lead to large values (Fig. 4). Values between 5 and 10 W/m² occur throughout a large portion of the summary area in July. In the offshore regions from lat. 21°N to 31°N and from lat. 40°N to 50°N, 95% probability departures frequently exceed 30 W/m² in December. Typical ratios of the standard error to the mean net heat exchange ($SE_{\bar{Q}_N}/\bar{Q}_N$) range from 0.01 to 0.27 in July, the average ratio being 0.05. In December, large values of $SE_{\bar{Q}_N}$ and small values of $\bar{Q}_N$ result in ratios which vary in absolute magnitude from 0.04 to 34.8, with an average value of 0.71.

In areas outside of the primary shipping lanes, monthly mean distributions of $\bar{Q}_N$ are based on approximately equal numbers of observations per 1° square. If there are no systematic sampling errors, then the relative magnitudes of the computed standard errors of the means should be related to the spatial and temporal variability in $\bar{Q}_N$. Figures 3 and 4 indicate a slight tendency for larger values of $SE_{\bar{Q}_N}$ in the northern section of the grid than in the southern area. The seasonal contrast is more apparent. The greater variability associated with winter surface atmospheric properties contributes to values of $SE_{\bar{Q}_N}$ which are 50 to 100% larger in December (Fig. 4) than in July (Fig. 3), which indicates that a large part of the monthly variance in $\bar{Q}_N$ may be due to actual intramonth fluctuations rather than observational errors.

Limits on the absolute accuracy of the empirically derived heat transfers have not been well established by experimental data. Nevertheless we feel that the general coherence of the values mapped in Appendix I demonstrates that the fields are representative of the expected spatial and seasonal variability over the California Current region. Small-scale features and detail within a single 1° square area which are not supported by similar values in surrounding squares probably reflect observational "noise" and should be viewed with caution. Smoother distributions could have been produced by taking averages over 2° or 5° square areas as Wyrtki (1965) and Roden (1959) have done. However, 1° square resolution was retained to preserve detail in the distributions of the individual heat exchange processes, particularly within 300 km of the coast. The fine spatial resolution may be less meaningful for the offshore regions where the decrease in the number of observations per averaged value increases the uncertainty in the derived quantities.

DEPENDENCE OF HEAT EXCHANGE ESTIMATES ON COMPUTATIONAL METHODS

The procedures followed in this study involved computations of the heat exchange processes for each weather report, which were then averaged to form the long-term monthly mean values. Constant exchange coefficients, C_E and C_H, were used in Equations (4) and (5) to estimate the turbulent fluxes of latent and sensible heat. Different results might have been obtained if the radiative and turbulent fluxes had been calculated from monthly mean atmospheric properties or if the transfer coefficients for the turbulent fluxes had varied with windspeed or atmospheric stability. These aspects are discussed below.

Exchange Processes Computed from Monthly Mean Atmospheric Properties

Previous summaries of large-scale heat exchange processes have used mean monthly values of atmospheric and oceanic properties in the empirical formulae, primarily due to the lack of sufficient data to perform the calculations on shorter time scales. Malkus (1962) has shown that the use of mean monthly values can lead to underestimates of the turbulent heat fluxes. For the sake of comparability, we have assembled long-term monthly mean atmospheric properties (Appendix III) and used these values to recompute the heat exchange components.

Figure 5 shows a scatter diagram of all monthly gridpoint values of net heat exchange computed using mean monthly properties, $Q_N(M)$, versus the mean monthly net heat exchange computed from the individual synoptic weather reports, $Q_N(I)$. The slope of the least-squares regression of $Q_N(M)$ on $Q_N(I)$ is 1.02 and the coefficient of determination (R^2) between the two data sets is 0.99. Because the correlation for this regression may be artificially inflated by the seasonal cycle in both data sets, linear regressions were computed by month for each of the heat exchange components. Table 1 lists the coefficients of determination, significant above the 99% level, and slopes of the regression lines, each of which is based on 300 pairs of observations.

The mean heat transfers computed from the individual surface weather reports show a high degree of correlation with those computed from mean monthly atmospheric and oceanic properties. The highest correlations are found for $\bar{Q}_B$ and $\bar{Q}_S$ ($R^2 > 0.99$). The regressions for $\bar{Q}_C$ show the lowest correlations and the greatest degree of seasonal variability ($0.88 < R^2 < 0.96$).

The slopes of the regression lines provide an estimate of the average differences between values of the radiative and turbulent fluxes computed by the two methods. The largest deviations occur for incident solar radiation. The monthly values, $Q_S(M)$, are from 1 to 18% larger than corresponding estimates, $Q_S(I)$, based on synoptic reports. A similar relationship between $Q_S(M)$ and $Q_S(I)$ has been demonstrated by Seckel (1970) and Husby and Seckel (1975). The correlations for latent and sensible heat exchange show that computations which use monthly mean properties consistently underestimate the turbulent fluxes by 1 to 8% for $\bar{Q}_E$ and 3 to 13% for $\bar{Q}_C$, although in August, September, and October, the $Q_E(M)$ values are approximately 1% larger than $Q_E(I)$.

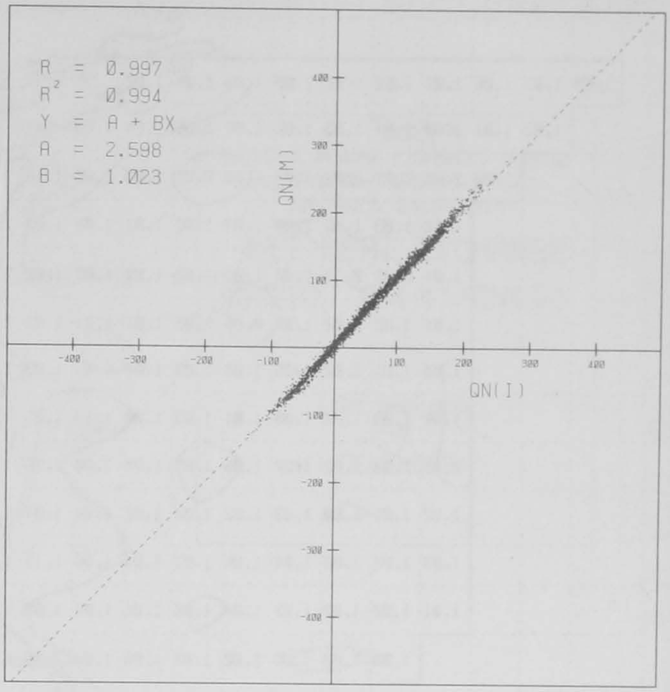


Figure 5.—Linear regression of monthly net heat exchange values computed from mean monthly meteorological properties, $Q_N(M)$, versus monthly net heat exchange computed from individual reports, $Q_N(I)$. Units are W/m². The correlation coefficient is R = 0.997 and the coefficient of determination is R^2 = 0.994. The dashed diagonal line represents the regression equation $Q_N(M) = 2.598 + 1.023\ Q_N(I)$.

These differences are comparable with values of about 7% discussed by Malkus (1962) and are within the uncertainties of the determinations discussed earlier.

Estimates of net heat exchange computed by the two methods are well correlated ($0.95 < R^2 < 0.98$). Slopes > 1.0 indicate that the values based on monthly parameters, $Q_N(M)$, are consistently more positive than the monthly averages of individual estimates, $Q_N(I)$, although this generalization is not valid for all areas in all months. Distributions of the ratio $Q_N(M)/Q_N(I)$ are shown in Figures 6 and 7 for July and December, respectively. In July the values for $Q_N(M)$ are approximately 3% greater than those for $Q_N(I)$, except near the coast of southern Baja California, between Point Conception and Cape Blanco, and off Vancouver Island. The use of long-term monthly mean atmospheric properties results in 5 to 10% higher oceanic heat gain in these regions compared with the monthly means of synoptic estimates. During December, the ocean loses heat over the entire California Current region (Chart 60). Values of $Q_N(M)/Q_N(I) < 1.0$ occur over approxi-

Table 1.—Monthly values of coefficient of determination (R^2) and slope (B) of regression line for linear regressions between heat exchange components ($\bar{Q}_S$, $\bar{Q}_B$, $\bar{Q}_E$, $\bar{Q}_C$, $\bar{Q}_N$) estimated from monthly mean atmospheric properties, $Q(M)$ and those computed from individual reports, $Q(I)$.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Q_S	R^2	0.998	0.997	0.993	0.991	0.991	0.991	0.994	0.989	0.990	0.995	0.998	0.999
	B	1.016	1.028	1.051	1.079	1.164	1.181	1.156	1.096	1.056	1.036	1.021	1.009
Q_B	R^2	.997	.998	.998	.997	.998	.998	.999	.998	.996	.995	.997	.997
	B	1.003	1.000	1.003	1.003	.995	.993	.992	.989	.987	1.010	1.004	.996
Q_E	R^2	.954	.968	.975	.986	.986	.980	.974	.962	.971	.972	.970	.963
	B	.929	.923	.961	.988	.987	.985	.988	1.022	1.007	1.012	.961	.926
Q_C	R^2	.934	.881	.927	.924	.945	.955	.963	.955	.948	.931	.941	.909
	B	.953	.865	.939	.946	.966	.953	.944	.966	.926	.943	.960	.926
Q_N	R^2	.970	.957	.958	.952	.956	.963	.979	.958	.962	.974	.980	.965
	B	1.018	1.029	1.048	1.086	1.049	1.085	1.121	1.091	1.067	1.022	1.025	1.017

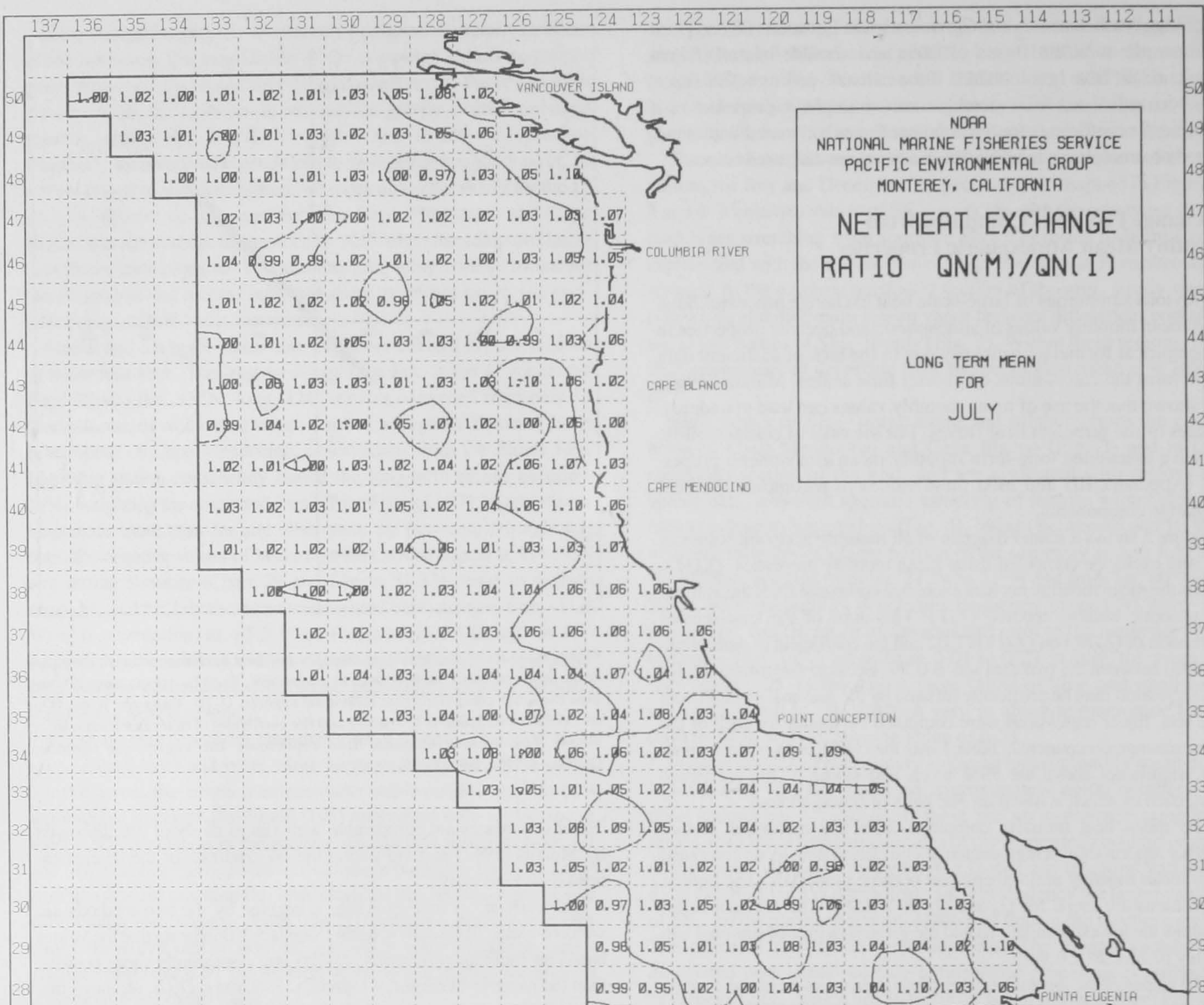


Figure 6.—Spatial comparison of net heat exchange values for July, estimated from mean monthly surface meteorological properties, $Q_N(M)$, versus that computed from individual reports, $Q_N(I)$. The nondimensional ratio $Q_N(M)/Q_N(I)$ is plotted and contoured at intervals of 0.05.

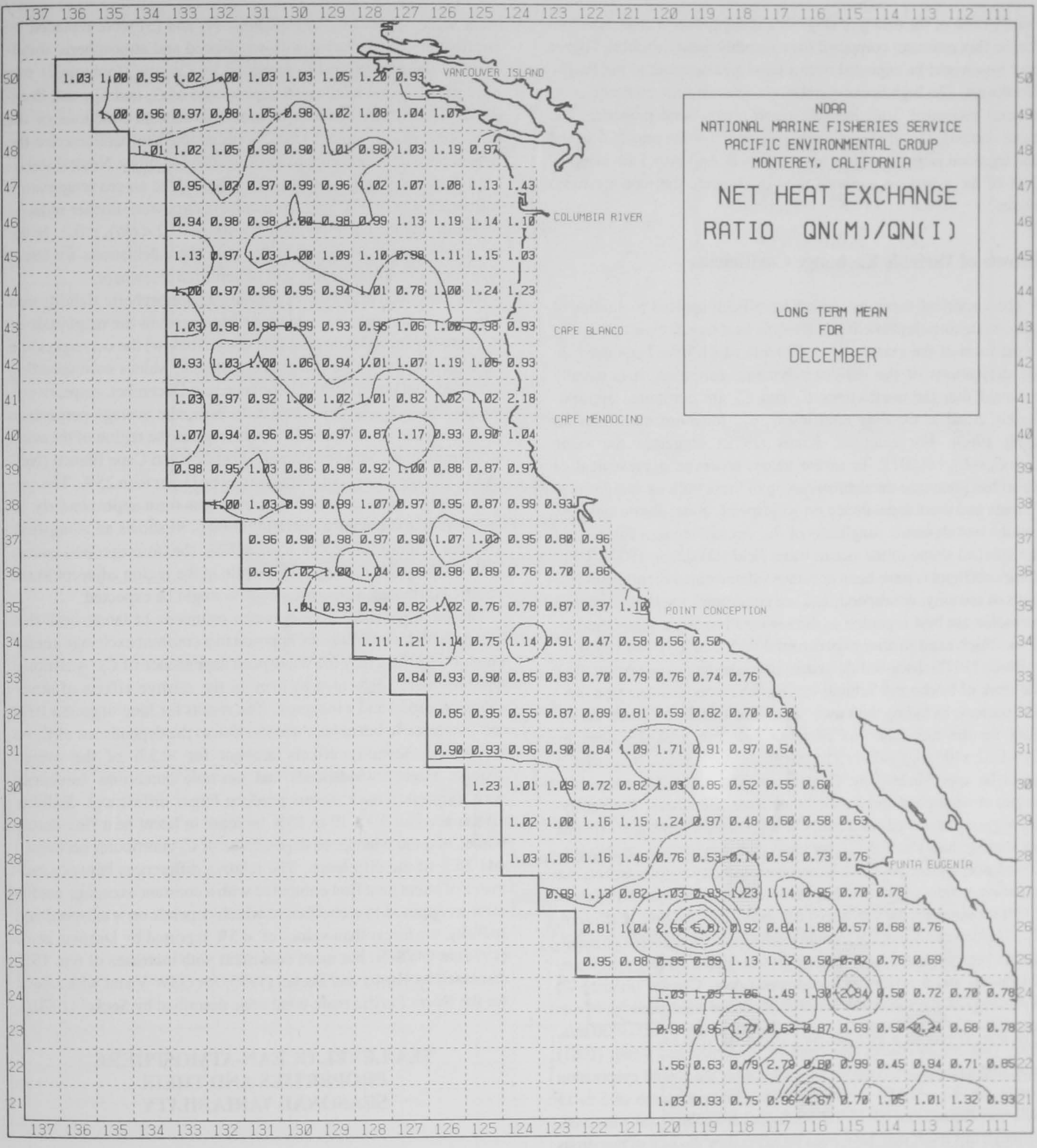


Figure 7.—Spatial comparison of net heat exchange values for December, estimated from mean monthly surface meteorological properties, $Q_N(M)$, versus that computed from individual reports, $Q_N(I)$. The nondimensional ratio $Q_N(M)/Q_N(I)$ is plotted and contoured at intervals of 1.0.

mately 60% of the data grid (Fig. 7) and imply less oceanic heat loss for the flux estimates computed from monthly mean variables. Higher heat loss would be expected over a large area adjacent to the Pacific Northwest. The high linear correlations between heat exchange components estimated from monthly mean atmospheric properties and those computed from synoptic reports imply that the principal spatial and temporal patterns evident in the charts in Appendix I are independent of the averaging methods used to compute the monthly mean fluxes.

Effects of Variable Exchange Coefficients

The empirical formulae which have been applied to studies of large-scale turbulent latent and sensible heat transfer vary primarily in the form of the exchange coefficients which have been used. In the derivations of the bulk aerodynamic formulae, it is usually assumed that the coefficients C_E and C_H are constants, approximately equal to the drag coefficient, C_D, for momentum transfer (Roll 1965). For example, Kraus (1972) suggested the value $C_E = C_H = C_D = 0.0013$. In recent years, however, a great deal of effort has gone into the determination of these bulk exchange coefficients and their dependence on windspeed, atmospheric stability, and the aerodynamic roughness of the sea surface as a function of the spectral shape of the ocean wave field (Davidson 1974). Until these coefficients have been accurately determined for all combinations of stability, windspeed, and sea conditions, the bulk exchange formulae are best regarded as dimensionally correct parameterizations which need further experimental verification (Pond 1975).

Busch (1977) discussed the results of recent research and described the work of Friehe and Schmitt (1976), who compiled data from several sources, including their own, and found that the exchange coefficient for the turbulent flux of latent heat was well described by $C_E = 1.32 \times 10^{-3} \pm 0.07 \times 10^{-3}$. The coefficient for sensible heat transfer could be approximated by $C_H = 1.41 \times 10^{-3} \pm 0.02 \times 10^{-3}$ over wider ranges of windspeed and sea-air temperature differences. Their analyses suggested that the coefficient, C_E, was constant and larger than that for sensible heat transfer, C_H, for equivalent windspeeds, and demonstrated a dependence of C_H on atmospheric stability and windspeed. An extensive review of comparable data for momentum transfer (Garratt 1977) substantiates the windspeed dependence for the drag coefficient, C_D. The dependence of the transfer coefficients on atmospheric stability has been predicted by Deardorff (1968). Based on theoretical considerations and a review of experimental data, Coantic (footnote 3) recommended the values, $C_E = C_H = 1.3 \times 10^{-3}$ for windspeeds < 10 m/s and $C_E = C_H = (1.0 + 0.05U_{10}) \times 10^{-3}$ for the range, $0 < U_{10} < 20$ m/s. Eddy flux measurements discussed by Anderson and Smith (1981) indicated a positive windspeed dependence for the neutral evaporation coefficient, $C_E = (0.55 + 0.083\ U_{10}) \times 10^{-3}$, for windspeeds of 5 to 11 m/s. No dependence of C_E on atmospheric stability was observed, although this result may have been influenced by the lack of numerous direct measurements in stable conditions. The corresponding temperature flux data showed a 40% increase in the coefficient for sensible heat transfer from $C_H = 0.82 \times 10^{-3}$ in a stable boundary layer to $C_H = 1.12 \times 10^{-3}$ for unstable conditions. Because there is large scatter in open ocean determinations of C_E and C_H, lack of agreement among individual observers, and a tendency for uncertainties in the flux estimates introduced by errors in the observed atmospheric properties to be larger than errors caused by variations in the exchange coefficients, we assumed identical and constant values for C_E and C_H in this study.

To investigate the possible effects of variable exchange coefficients on the turbulent transfer processes, the monthly mean fields of latent and sensible heat flux have been recomputed, and the constant values C_E and C_H in Equations (4) and (5) were replaced by coefficients which varied with windspeed and atmospheric stability. The linear relationship proposed by Coantic (footnote 3) was used to define the windspeed dependence of C_E and C_H, and Deardorff's (1968) empirical expressions, which are functions of the bulk Richardson number $(Ri)_B$, were adopted to parameterize the dependence of the exchange coefficients on stability. Neutral stability was assumed when the absolute value of the air-sea temperature difference was $< 1°$C and the available data were further reduced by restricting the calculations to the range $-0.2 < (Ri)_B < 0.1$. In the following discussion we consider only the calculations for latent heat flux. Complete details will be reported elsewhere.

The combined effect of windspeed and atmospheric stability was computed as a percentage increase (decrease) in the magnitude of the monthly mean latent heat flux above (below) the corresponding value computed with a constant coefficient. Values corresponding to the percentage differences for June and December, respectively, are displayed in Figures 8 and 9. In June, the average percentage increase is between 10 and 15%, although in the region of the wind stress maximum between Point Conception and Cape Blanco (Nelson 1977), the computed increase may be larger than 25%. The corresponding evaporative heat loss increases from approximately 45 to 56 W/m^2. The winter distribution (Fig. 9) shows an alongshore gradient. South of Point Conception the average percentage increase is approximately 15%, while in the region adjacent to the Pacific Northwest differences >40% might be expected.

The principal difference between estimates of latent heat flux computed with a variable as opposed to a constant exchange coefficient, C_E, is caused by the windspeed dependence of C_E. Additional analyses were performed to identify the relative effects of atmospheric stability and windspeed. The results for June suggest a 10 to 20% increase in latent heat transfer due to the dependence of C_E on windspeed. Stability effects account for <5% of the overall change. Higher windspeeds and unstable conditions associated with transient winter storms produce larger differences. Stability effects account for a 10 to 15% increase in latent heat flux during winter, and the windspeed dependence of C_E contributes between 5 and 25% of the difference. The relative differences between estimates of latent heat flux computed with a constant exchange coefficient as opposed to a coefficient which depends on windspeed and stability, are larger than values of <5% reported by Dorman et al. (1974) at OWS-N, but more consistent with increases of 6 to 15% discussed by Husby and Seckel (1975) for OSW-V and with results for the North Pacific trade wind zone described by Seckel (1970).

SEA LEVEL OCEAN-ATMOSPHERE PROPERTIES AND THEIR SEASONAL VARIABILITY

The predominant factors influencing the seasonal variations in the air-sea interaction processes of the California Current region are the seasonal movements and changes in intensity of the subtropical high pressure system and the continental low pressure system and variations in the properties of the waters of the California Current. The variations in the atmospheric pressure centers modify the surface wind field and the distribution of cloud cover, and, through the action of the surface wind stress, induce upwelling at the coast during summer. Upwelling has a marked effect on the climate along the west coast of North America (Smith 1968).

Figure 10 shows the average monthly sea level atmospheric pressure distributions over the eastern North Pacific Ocean and the west coast of

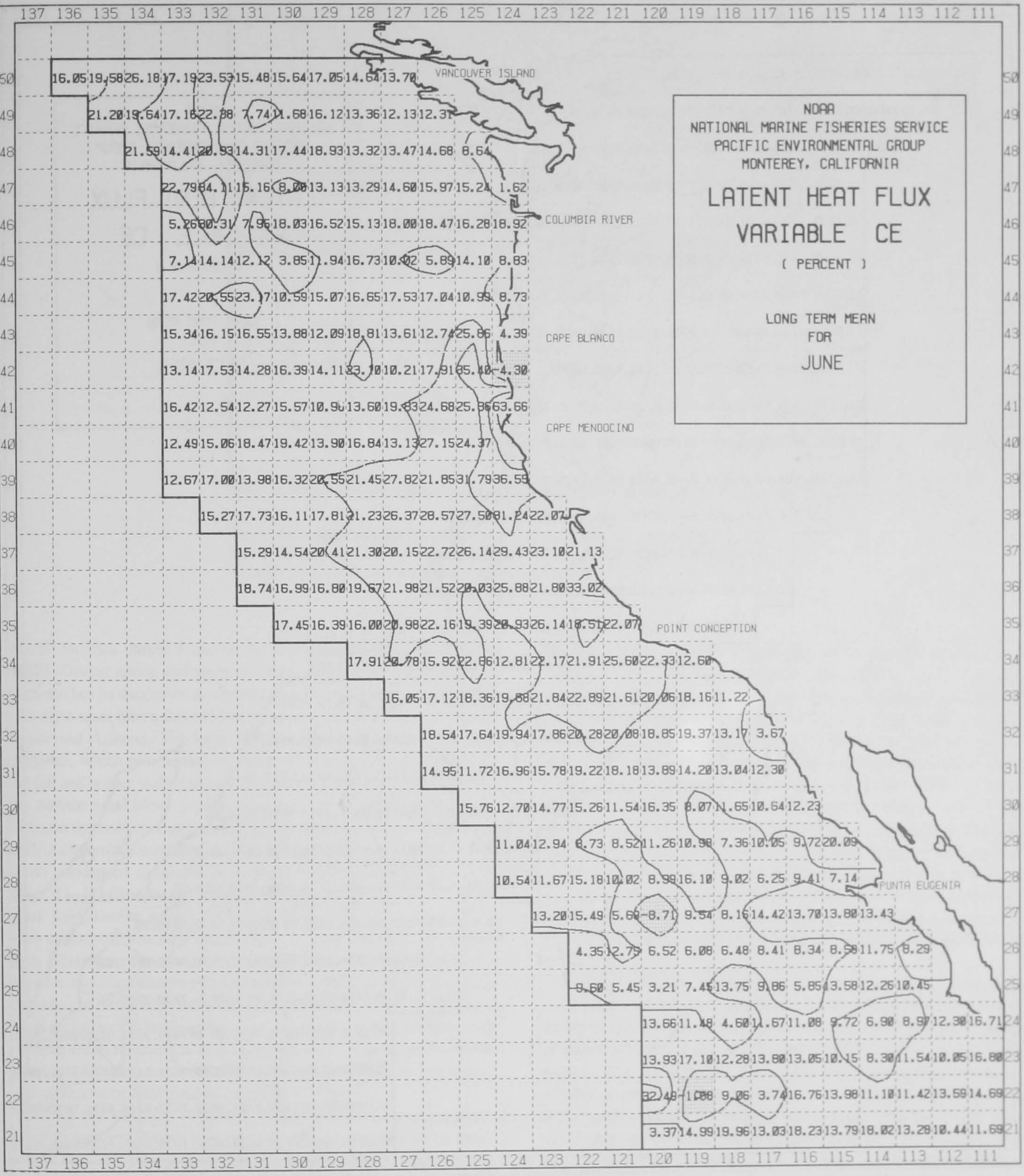


Figure 8.—The effect of a variable exchange coefficient (C_E) on computations of latent heat flux (Q_E) for June. Plotted values are the percentage increase (decrease) in latent heat flux above (below) that computed with a constant exchange coefficient. The contour interval is 10.0. Negative values are shaded.

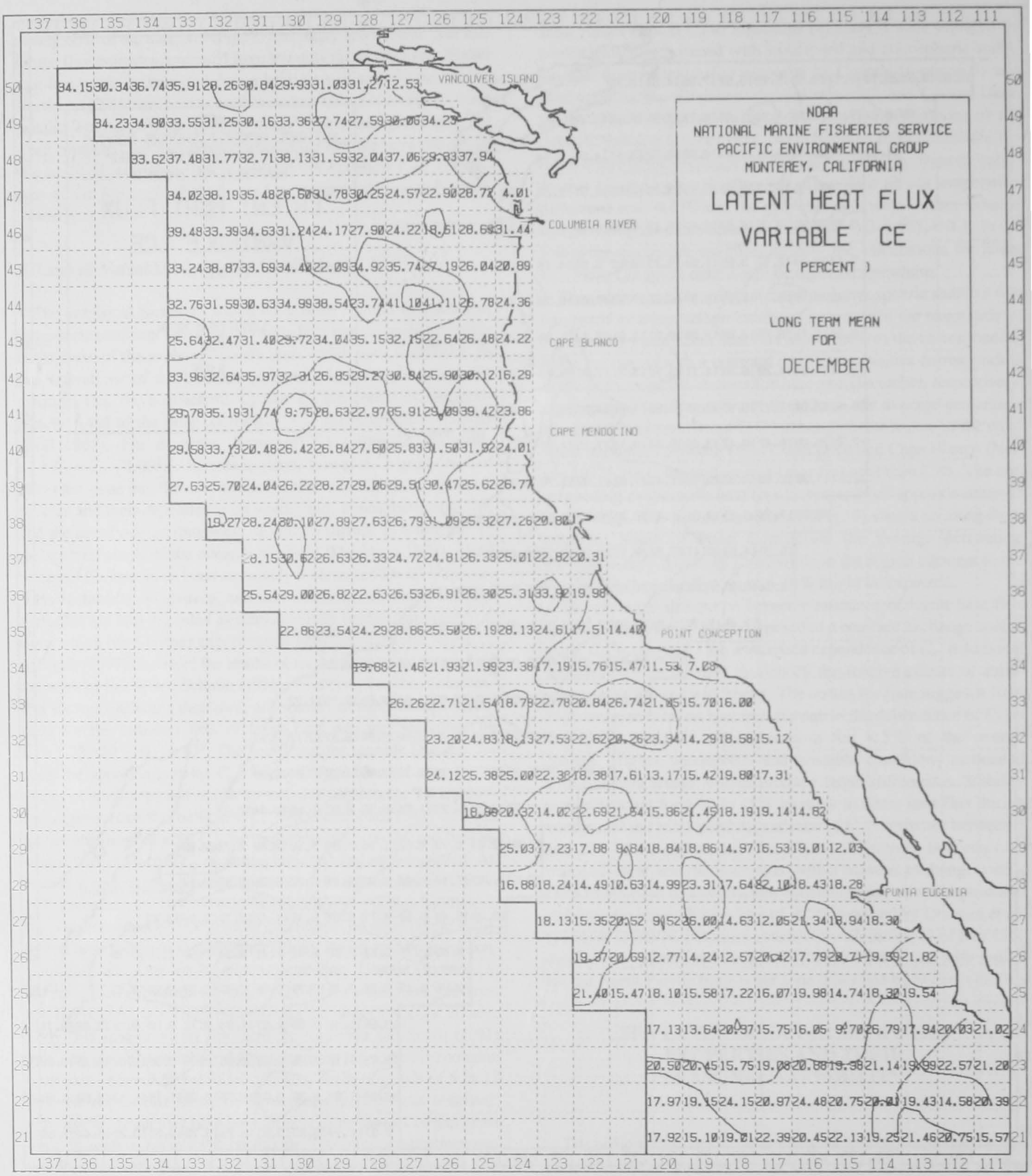


Figure 9.—The effect of a variable exchange coefficient (C_E) on computations of latent heat flux (Q_E) for December. Plotted values are the percentage increase (decrease) in latent heat flux above (below) that computed with a constant exchange coefficient. The contour interval is 10.0.

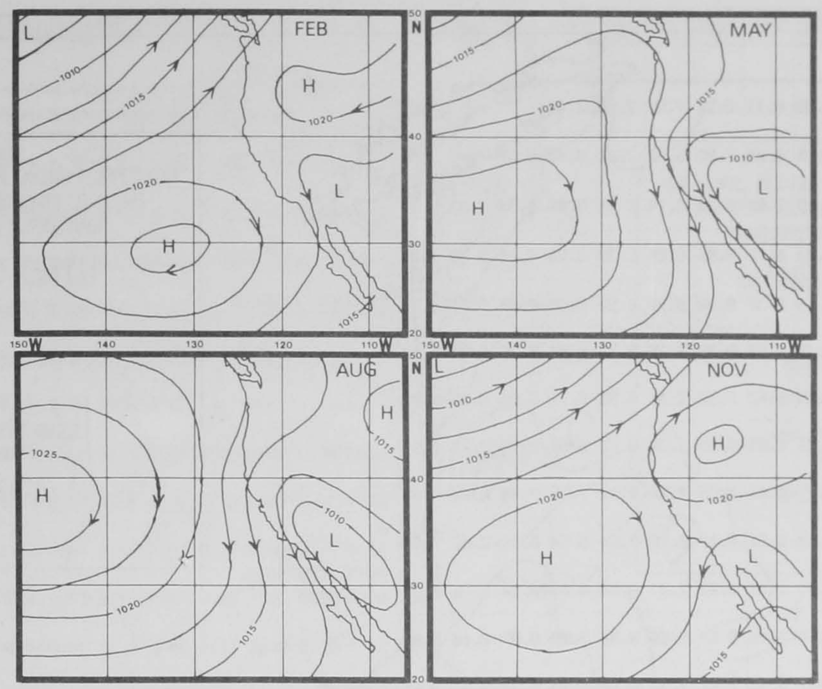


Figure 10.—Mean monthly atmospheric sea level pressure (mbar) over the eastern North Pacific and the west coast of North America during February, May, August, and November. The contour interval is 2.5 mbar (after Reid et al. 1958).

North America during 4 mo of the year (adapted from Reid et al. 1958). During spring and summer (May and August) the subtropical high reaches its maximum northward position and maximum pressure, and at the same time a thermal low pressure system develops over California and Arizona. The large high pressure area shunts migratory cyclones, which pass across the coasts of Washington and Oregon in the fall and winter, well to the north. For winds in geostrophic balance, the surface wind blows parallel to isobars as indicated by the arrow barbs on the isobars. Frictional effects in the planetary boundary layer deflect the surface winds toward low pressure. The composite monthly mean windspeed distributions for June and December, respectively (Figs. 11, 12) illustrate the character of seasonal changes in the surface wind field. During summer (Fig. 11), the region north of lat. 40°N shows relatively low windspeeds of 6 to 7 m/s over almost the entire area. Maximum windspeeds in excess of 9 m/s are found off Cape Mendocino. This offshore maximum is aligned parallel to the coast and maxima can be traced to the south as far as Punta Eugenia, at a distance of about 200 to 300 km from the coast. In contrast, during winter strong onshore winds north of lat. 40°N (Nelson 1977) blow at speeds of 9 to 11 m/s, while the area to the south experiences speeds of 5 to 8 m/s, with a somewhat disorganized pattern (Fig. 12).

During the summer, relatively strong alongshore equatorward winds induce an offshore transport of surface water due to the rotation of the earth acting upon the oceanic response to equatorward wind stress. Conservation of mass requires replacement by convergence in the equatorward surface flow or compensation from below, giving rise to an upwelling of water from intermediate depths along the coast. This upwelling forms a large area of relatively cold water along the coasts of Oregon and California. Figures 13 and 14 show the long-term composite sea surface temperature fields for the months of June and December, respectively, which have been computed from historical surface marine data. The California Current brings relatively cold, freshwater along the west coast of the United States as a branch of the North Pacific Current, which is deflected to the south by the North American continent. In December (Fig. 14) the coldest water is found at the northernmost latitudes, but as the current is deflected to the south the isotherms bend to the south and colder water is found along the coast relative to the water farther offshore. As the water continues south it is warmed by mixing with warmer water offshore and an increase in solar radiation. In June (Fig. 13) cold water is evident at the northerly latitudes, but a large area of cold water (11°-13°C) exists along the coasts of Oregon and northern California. Another region of relatively cool water is found near the coast of Baja California, north of Punta Eugenia. Such conditions persist off Oregon and northern California through September. During the summer, the only possible source for this cold water is from below, because warmer sea surface temperatures occur to the north.

Nelson (1977) described the seasonal variation of the alongshore component of wind stress and discussed the northward progression of the maximum alongshore wind stress from April and May off the coast of Baja California to July and August off Cape Mendocino and Cape Blanco. The movement of this alongshore wind stress maximum, which is an indicator of conditions favorable for upwelling, is the result of the northward shift and strengthening of the subtropical high pressure center and the coincident development of the continental thermal low. An important characteristic of this dome of high pressure is that the atmospheric circulation around the eastern edge of the system is divergent and large-scale subsidence occurs. The combination of the large-scale subsidence of warm air from aloft and the upwelling of cold water along the coast results in the formation of a strong low-level inversion in the marine atmospheric boundary layer. This inversion suppresses deep cloud formation and greatly inhibits precipitation. The effect of the large-scale subsidence is noted in the true desert climate of Baja California, particularly south of Punta Eugenia, and in the almost complete lack of rainfall along the coasts of California and Oregon during summer. Within 10 to 20 km of the coast, upwelling influences the

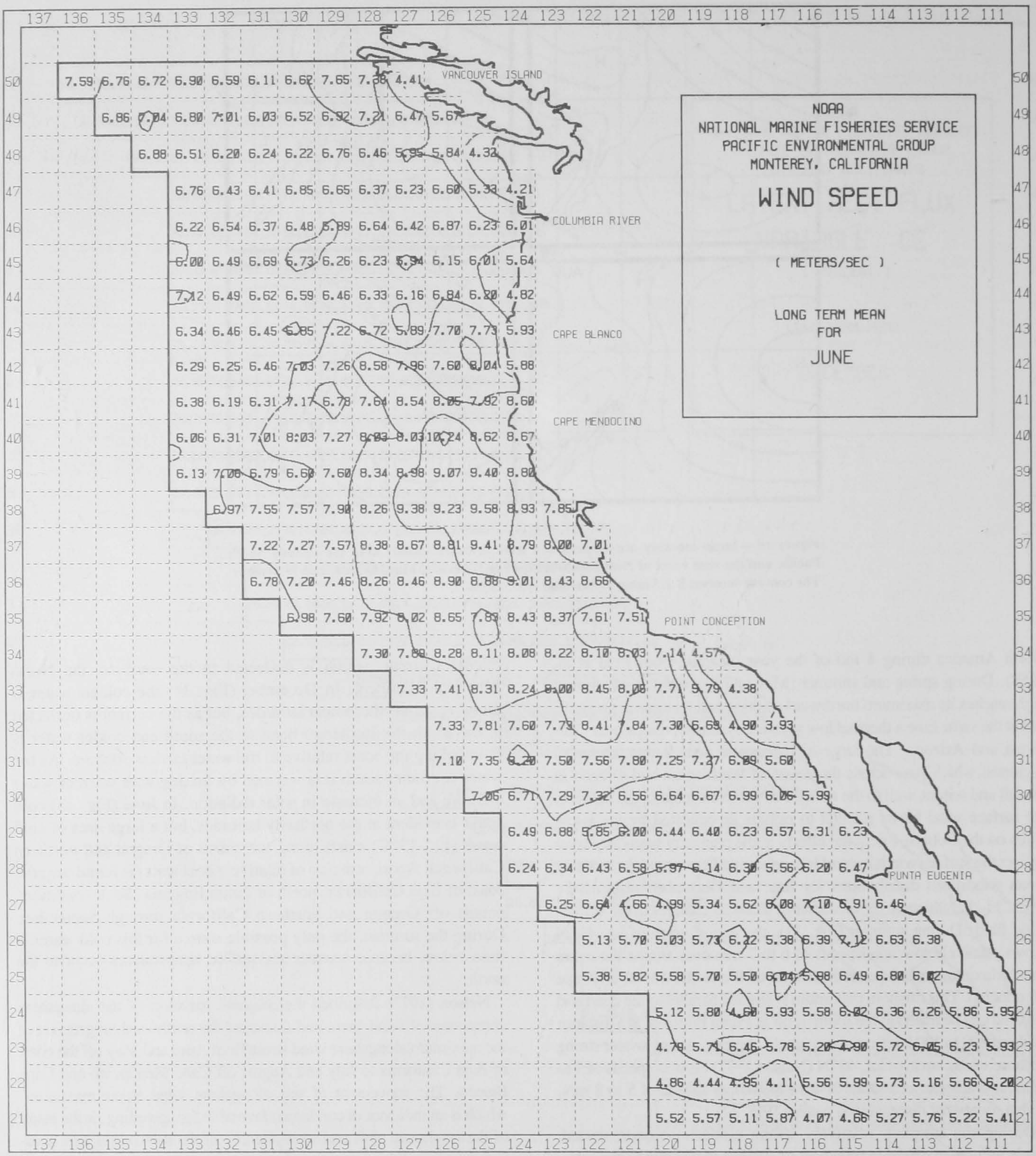


Figure 11.—Long-term composite monthly mean windspeed (m/s) distribution for June. The contour interval is 1.0 m/s.

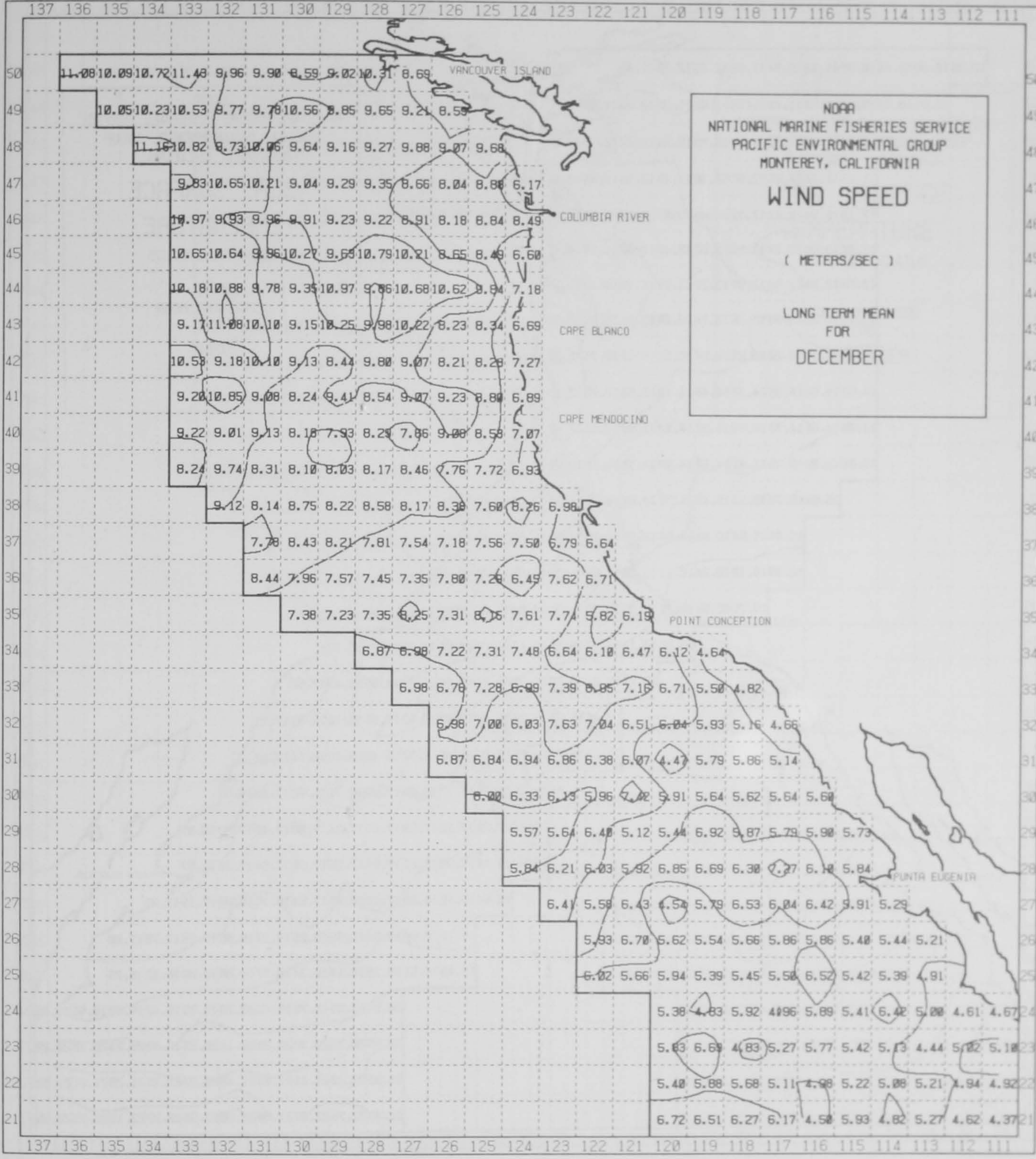


Figure 12.—Long-term composite monthly mean windspeed (m/s) distribution for December. The contour interval is 1.0 m/s.

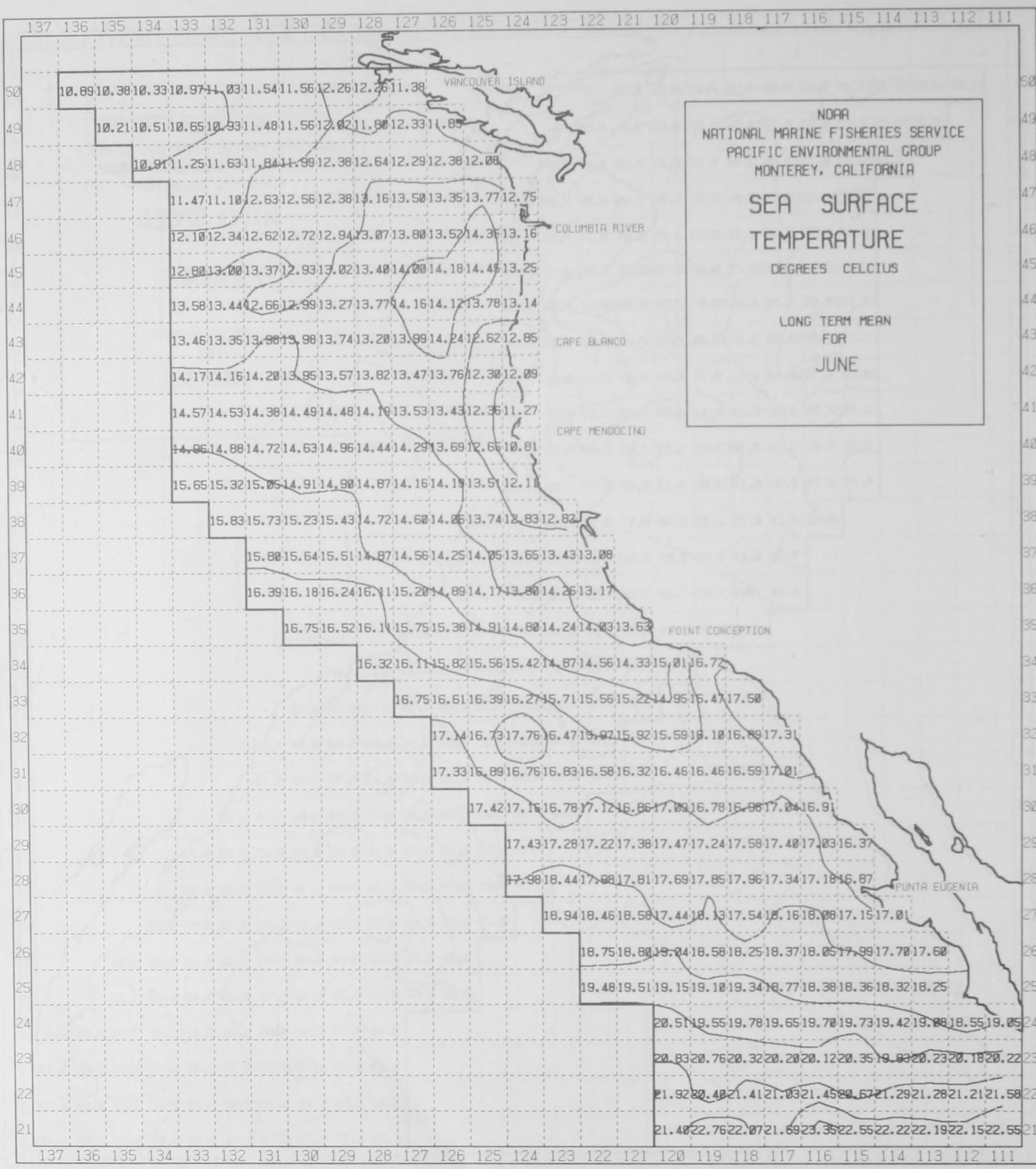


Figure 13.—Long-term composite monthly mean sea surface temperature (°C) distribution for June. The contour interval is 1.0°C.

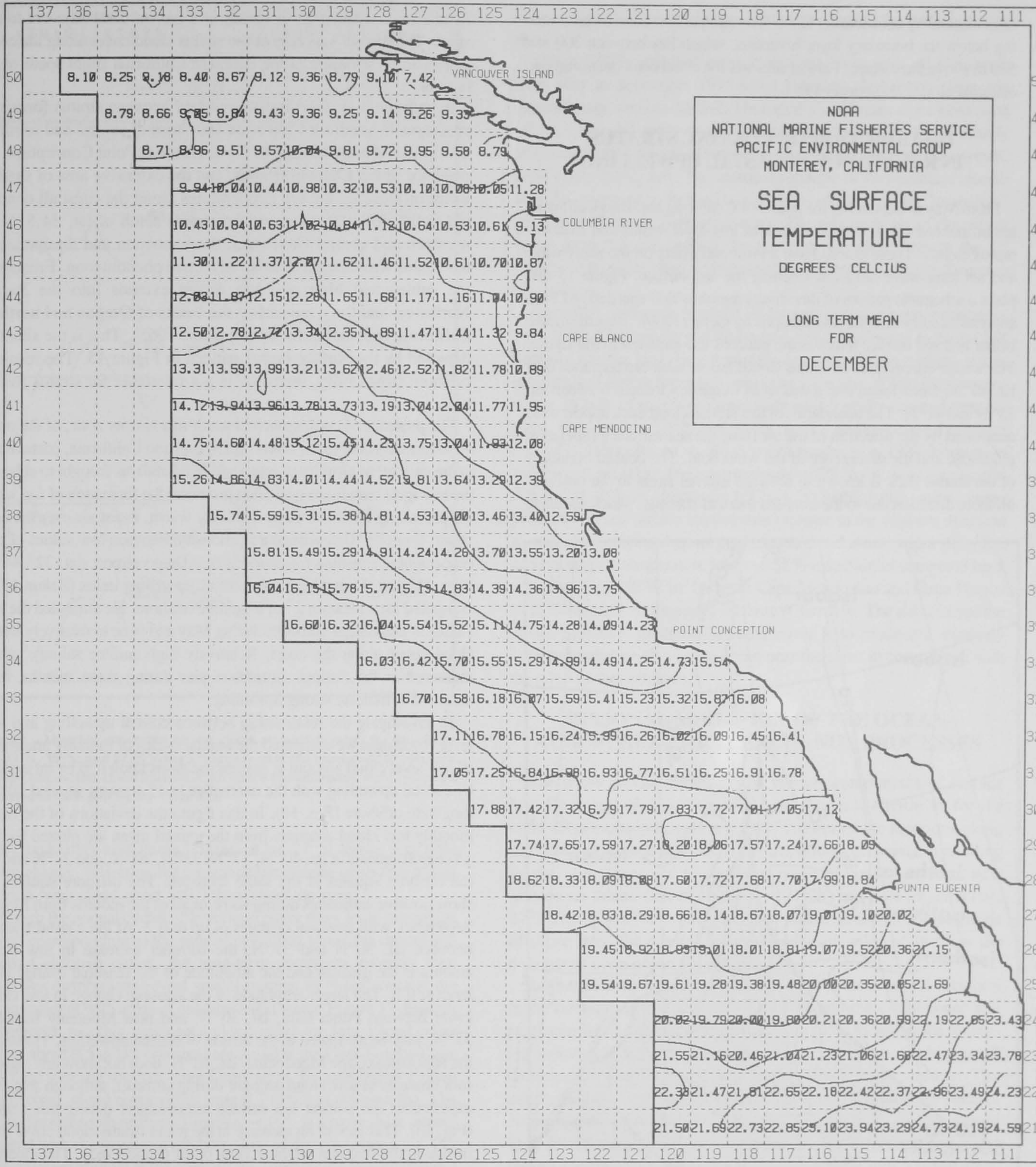


Figure 14.—Long-term composite monthly mean sea surface temperature (°C) distribution for December. The contour interval is 1.0°C.

local climate by contributing to the formation of low stratus clouds and fog below the boundary layer inversion, which lies between 300 and 500 m above the surface. Farther seaward the cloud deck breaks up into cumulus clouds (Neiburger 1960).

DISTRIBUTION OF COASTAL STRATUS IN RELATION TO COASTAL UPWELLING

From May to September the coasts of California and Baja California are influenced by an extensive deck of low-level stratus and stratocumulus clouds. These clouds have a profound effect on the short-wave and net long-wave radiation reaching the sea surface. Figure 15 displays a schematic pattern of this stratus region which was derived from analysis of early satellite photographs by Gerst (1969). Typical surface isobar and sea surface temperature patterns are included in the figure. The wedge-shaped area of stratus clouds has its northern terminus near lat. 40°N; Gerst found that it was most frequently located between lat. 35°N and 41°N. The boundaries of this stratus cloud deck appear to be controlled by the direction of the air flow, the sea surface temperature gradients, and the divergence of the wind field. The coastal boundary of the stratus deck is known to undergo diurnal shifts in the onshore-offshore direction due to the land-sea thermal contrast, which results in

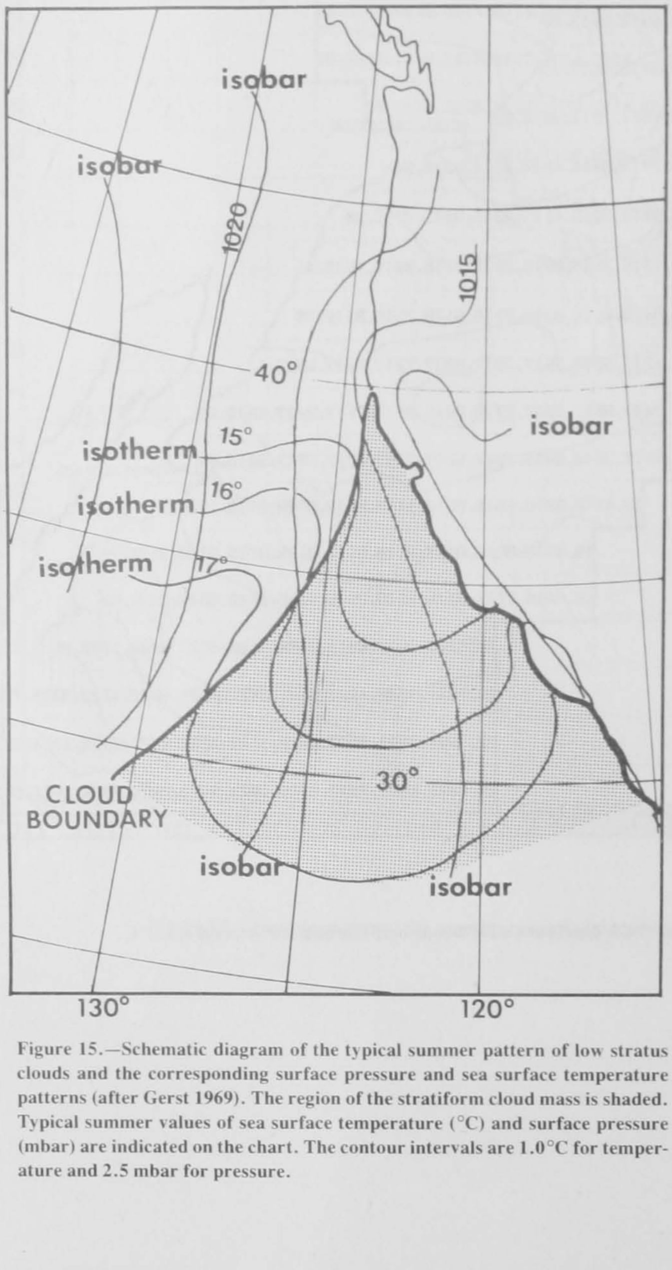


Figure 15.—Schematic diagram of the typical summer pattern of low stratus clouds and the corresponding surface pressure and sea surface temperature patterns (after Gerst 1969). The region of the stratiform cloud mass is shaded. Typical summer values of sea surface temperature (°C) and surface pressure (mbar) are indicated on the chart. The contour intervals are 1.0°C for temperature and 2.5 mbar for pressure.

the afternoon dissipation of clouds in a narrow zone adjacent to the coast.[5] The diurnal variation of the stratus cloud cover along the coast appears to be strongest in the Southern California Bight south of lat. 34.5°N.

Neiburger et al. (1945) distinguished between stratus formation processes in southern California and those in central and northern California. Abrupt turning of the coastline at Point Conception, the presence of the Channel Islands, and the extensive area of shallow water influencing the sea temperatures along the coast all contribute to the different nature of the stratus south of lat. 34.5°N. In northern and central California, the formation and dissipation of the stratus was thought to be an advective phenomenon. Frequently the subtropical high pressure center extends into the Pacific Northwest and the winds along the coasts of Oregon and northern California become northeasterly (Lane 1965). This is the situation depicted by the surface isobar pattern in Figure 15. The resulting offshore flow of dry, warm air is not favorable for stratus formation.

The presence of cool, upwelled water in a narrow zone, of the order of 50 km, adjacent to the coasts of Oregon and California, particularly in the vicinity of prominent capes and headlands, is thought to enhance the low level cloudiness and often promotes the formation of fog when the prevailing air flow brings relatively warm, moist air over the cold water. Tont (1975) described a relationship between low values of percent possible sunshine measured at San Diego airport (lat. 32° 44′N, long. 117°10′W) and high values of an upwelling index (Bakun 1973) computed for a location 2° of longitude offshore. He attributed the low values of percentage sunshine during May and June to relatively heavy cloud cover along the coast. Relatively high surface salinity values measured at the Scripps Institution pier during these months were assumed to indicate strong upwelling.

To investigate the relationship between coastal upwelling and low level cloudiness we compared the annual cycles of monthly anomalies of low level cloud amount at several locations known to be influenced by coastal upwelling with the anomalies in 1° squares situated 10° of longitude offshore (Fig. 16). In this figure the deviations of the mean monthly low cloud amounts from the annual mean are plotted for the 1° coastal squares at lat. 40°N, 37°N, 33°N, 30°N, and 27°N and for the offshore squares at the same latitudes. The offshore squares all show positive anomalies during some or all of the months from May to September, with seasonal changes of up to 0.2. At the coastal squares between lat. 30°N and 37°N, the summer increase in low cloud amount is the greatest and the amplitude of the seasonal change is as large as 0.3. The larger amplitude of the seasonal change in low cloud cover between Punta Baja, lat. 30°N, and near Monterey Bay, lat. 37°N, may be attributed to the effects of coastal upwelling. However, the region near Cape Mendocino, lat. 40°N, does not show any significant changes in low cloud amount during summer, although this area experiences the coldest sea surface temperatures during this season (Fig. 13). This lack of an increase in the mean stratus cloud cover may be due to the frequent offshore flow of air (Lane 1965). The monthly statistics of low cloud cover at lat. 40°N showed that approximately 40% of the reports during May through September were coded as clear (i.e., no clouds visible). A large number of clear-sky reports could result from a predominance of reports taken in the afternoon if there were strong diurnal variation in the cloud cover. However, the long-term composite low cloud amounts for the 1° square at lat. 40°N did not show statistically significant differences between the morning (1000 PST) and afternoon (1600 PST) synoptic observation times. The

[5]Lee, T. F. 1979. Diurnal variations of coastal stratus. Pacific Missile Test Center, TP-80-02, Point Mugu, Calif., 51 p.

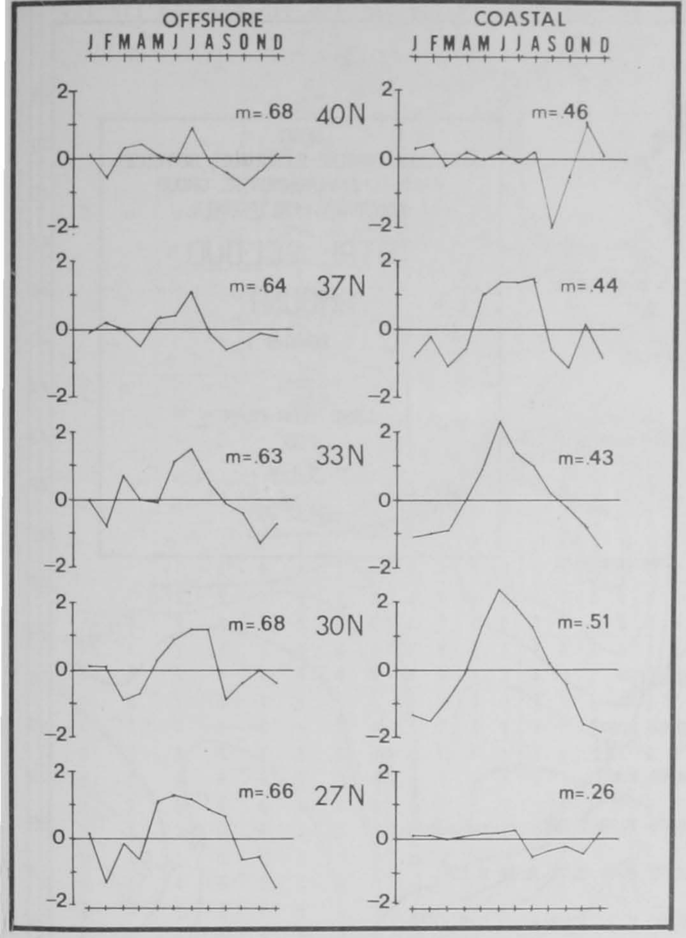


Figure 16.—Monthly anomalies of low cloud amount (tenths) for lat. 40°N, 37°N, 33°N, 30°N, and 27°N in the 1° squares near the coast and 10° offshore. The mean annual low cloud amount from which the anomalies were computed is indicated in each plot by the value (m).

coastal cloud cover near Punta Eugenia at lat. 27°N shows very little seasonal change, reflecting the coastal desert climate of southern Baja California, with cloud cover <0.3 throughout the year.

Although the annual cycles of low cloud cover show local maxima at locations corresponding to the sites of upwelling along the central and southern California coasts, the long-term composite monthly total cloud cover distributions reveal spatial minima in cloud cover at the coast, coincident with areas of cold upwelled water. Figure 17 displays the composite monthly mean total cloud cover for July. Cloud cover values of about 0.5 of sky obscured are found in the Cape Blanco-Cape Mendocino area and south of Point Conception. Beyond 200 to 300 km from the coast, cloud cover varies from 0.7 to 0.8 of sky covered. The low cloud cover south of Punta Eugenia, <0.4, is a permanent feature associated with the persistent offshore flow of dry continental air. The pattern of cloud minima at the coast during summer is substantiated in a number of recent climatological atlases, e.g., U.S. Naval Weather Service Detachment (1977) and U.S. Department of Commerce and U.S. Air Force (1971). Figure 18 displays the composite mean cloud cover over the North Pacific on a 2.5° latitude-longitude grid for July derived from a compilation of satellite images during the period 1965 to 1972.[6] Isopleths are labeled in units equivalent to oktas of sky covered. Values of 3 to 3.5 oktas along the coasts of Oregon and California and off the coast of Baja California are equal to cloud cover of 0.4 to 0.45 of sky covered. These estimates are independent of the surface marine data.

Simon (1977) analyzed mean cloudiness in an area off California from May to September 1975 using 6-hourly photographs from the geostationary satellite SMS-2. He found a minimum cloudiness zone off the coasts of northern and central California, which was closely associated with a region of maximum divergence in the surface winds, particularly during July. The seasonal variation of the minimum cloudiness line appeared to follow the variations of the summer "monsoon" circulation along the California coast. The minimum mean cloudiness values near 0.5 may reflect the tendency for cloudiness in the 1° squares to be either clear or completely overcast, as noted by Simon in his analysis.

A relative minimum in cloud cover and cool sea surface temperatures at the coast during summer increase the short-wave radiation and decrease the net long-wave radiation reaching the sea surface, cause sensible heat flux to the ocean, and reduce the loss of heat from evaporation. In July, cloud cover increases from 0.5 of sky covered near the coast, between lat. 39°N and 44°N, to 0.8 of sky covered offshore (Fig. 17). This change in cloud cover results in a 25% decrease in short-wave radiation, from approximately 275 W/m² near the coast to 205 W/m² offshore (Appendix I, Chart 7). In this same region, vapor pressure and sea surface temperature increase in the offshore direction as well. The observed zonal gradients in cloud cover, vapor pressure, and sea surface temperature lead to a 55% reduction in computed back radiation, from 40 W/m² between Cape Mendocino and Cape Blanco to 18 W/m², 10° of longitude offshore (Chart 19). The net effect of the onshore-offshore gradients in cloud cover is to produce a relatively large net radiative flux to the ocean near the coast in comparison with the areas farther offshore.

SEASONAL VARIATION OF THE OCEAN-ATMOSPHERE HEAT EXCHANGE PROCESSES

The mean annual cycles of the various components of surface heat flux presented in Appendix I are shown in Figure 19 for the eight 1° squares indicated in Figure 1. Four of the locations along the coast were chosen to illustrate the effects of coastal upwelling on the heat fluxes and to show the range of conditions from near Vancouver Island (lat. 50°N, long. 127°W) to Punta Eugenia (lat. 27°N, long. 114°W). The other four locations are 10° of longitude offshore from the coastal squares, and were selected to show the contrast of open ocean conditions.

Radiation from sun and sky is a function of the seasonal variation in the declination and altitude of the sun and the cloud cover at a particular location. In the range from lat. 20°N to 50°N, the incoming radiation from a cloudless sky reaches maximum values at all latitudes in mid-June and minimum values in December. The effects of the larger mean total cloud cover in the offshore squares during nearly all months is evident in the smaller $\bar{Q}_s$ values (curve 1) at the offshore locations, except at lat. 50°N where the coastal square experiences greater cloud cover during winter. During summer (Appendix I, Charts 6-8) the gradient in cloud cover from about 0.8 of sky obscured in the offshore region to about 0.5 at the coast amounts to a 15 to 20% increase in incident solar radiation at the coast. The onshore-offshore difference is even greater at lat. 27°N where the coastal desert climate results in a persistent low mean cloud cover of <0.4. The effects of an alongshore gradient in cloud cover near Punta Eugenia are particularly evident in June and July (Fig. 17; Charts 6, 7). A 30% increase in incident solar radiation is realized, and $\bar{Q}_s$ varies from 220 W/m² north of lat. 29°N to 290 W/m² just south of Punta Eugenia. A relatively constant cloud cover throughout the year is evident in the smooth sinusoidal varia-

[6]Sadler, J. C., L. Oda, and B. J. Kilonsky. 1976. Pacific ocean cloudiness from satellite observations. UHMET 76-01, Dep. Meteorol., Univ. Hawaii, 137 p.

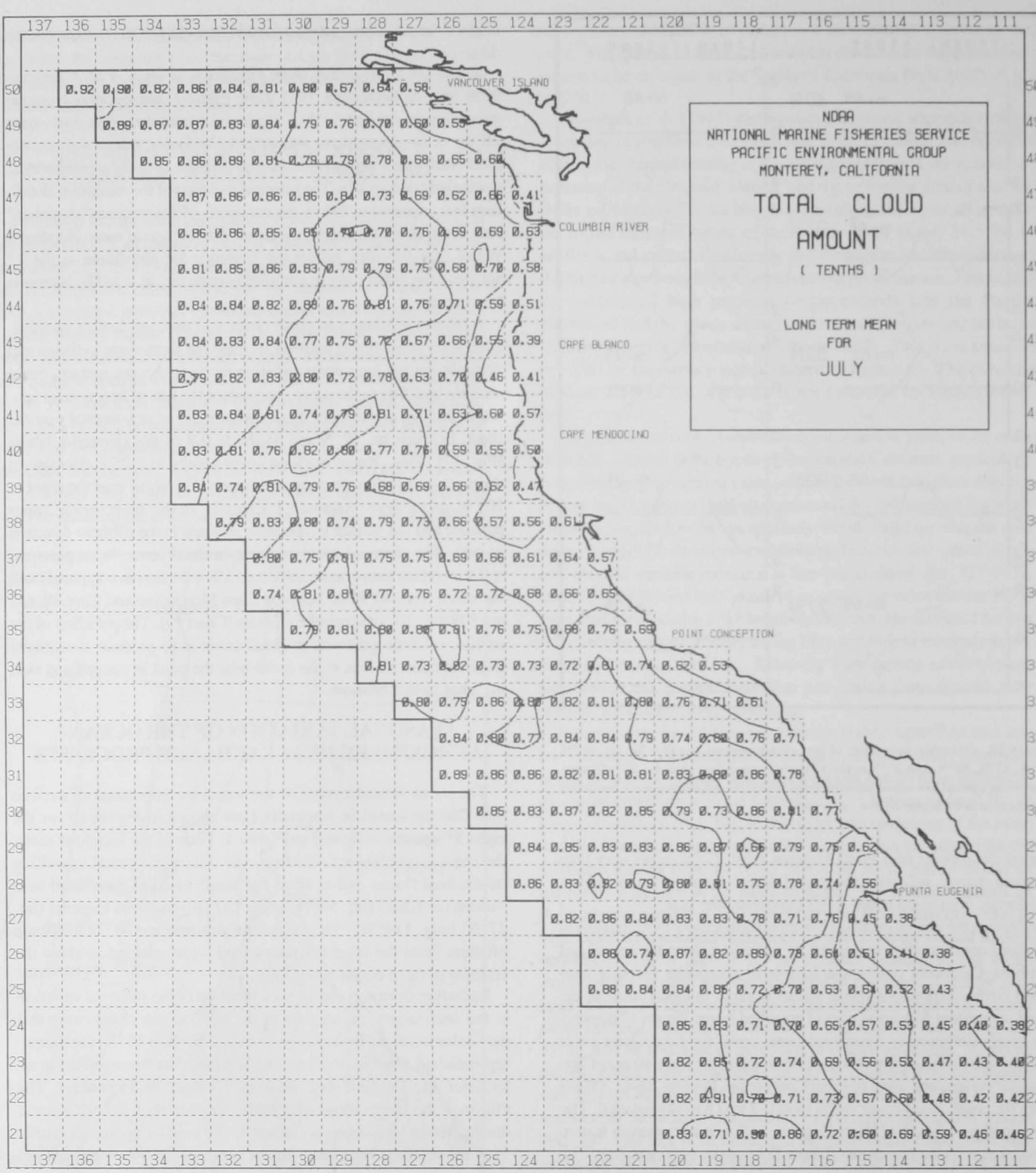


Figure 17.—Long-term composite monthly total cloud amount (tenths) distribution for July. The contour interval is 0.1.

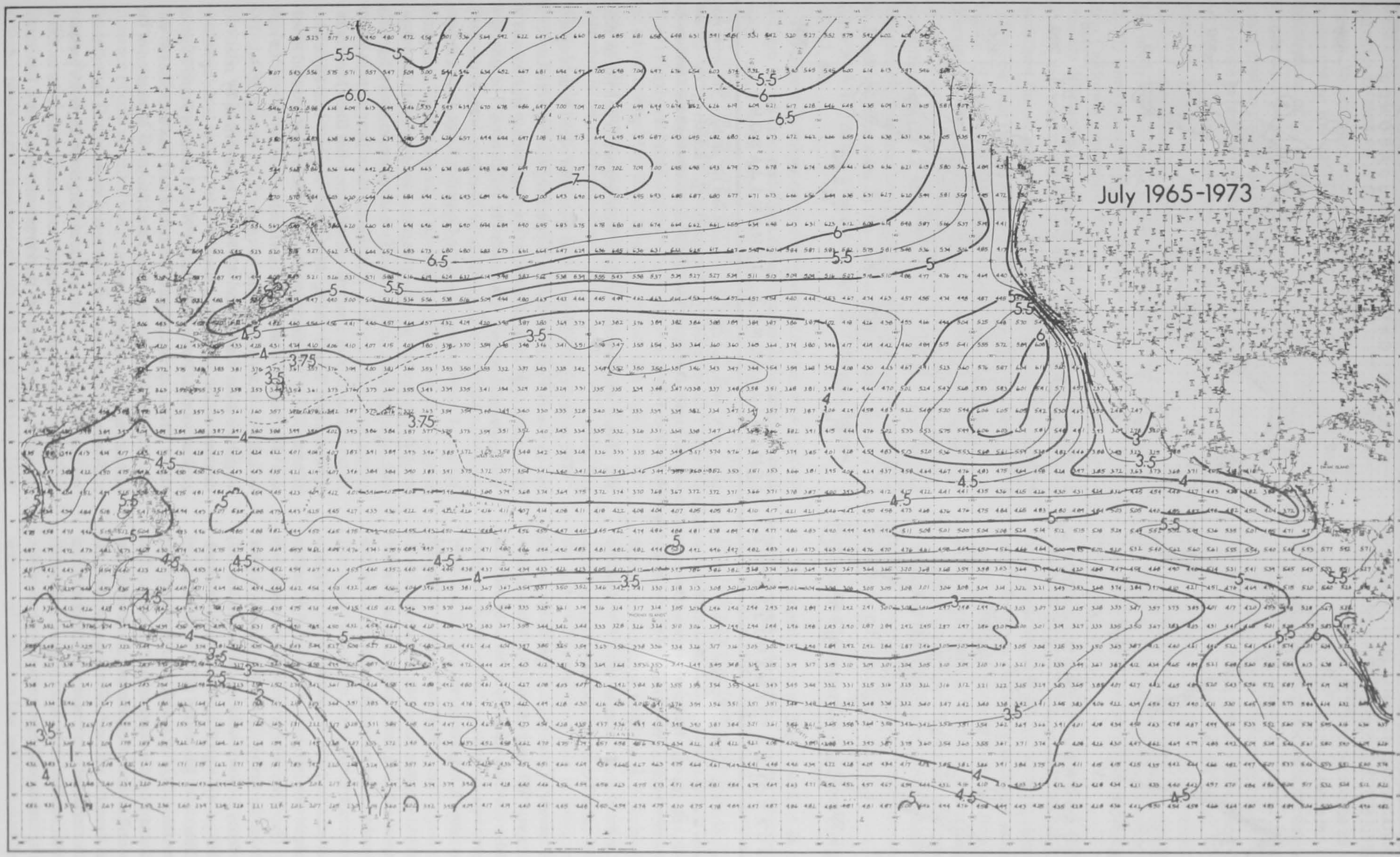


Figure 18.—Composite monthly mean total cloud cover (oktas) over the North Pacific Ocean for July derived from nephanalyses of meteorological satellite photographs during the period 1965-73. The 2.5° latitude-longitude grid extends from 30°S to 60°N latitude and from 105°E to 75°W longitude. The contour inteval is 0.5 okta (after Sadler et al. 1976).

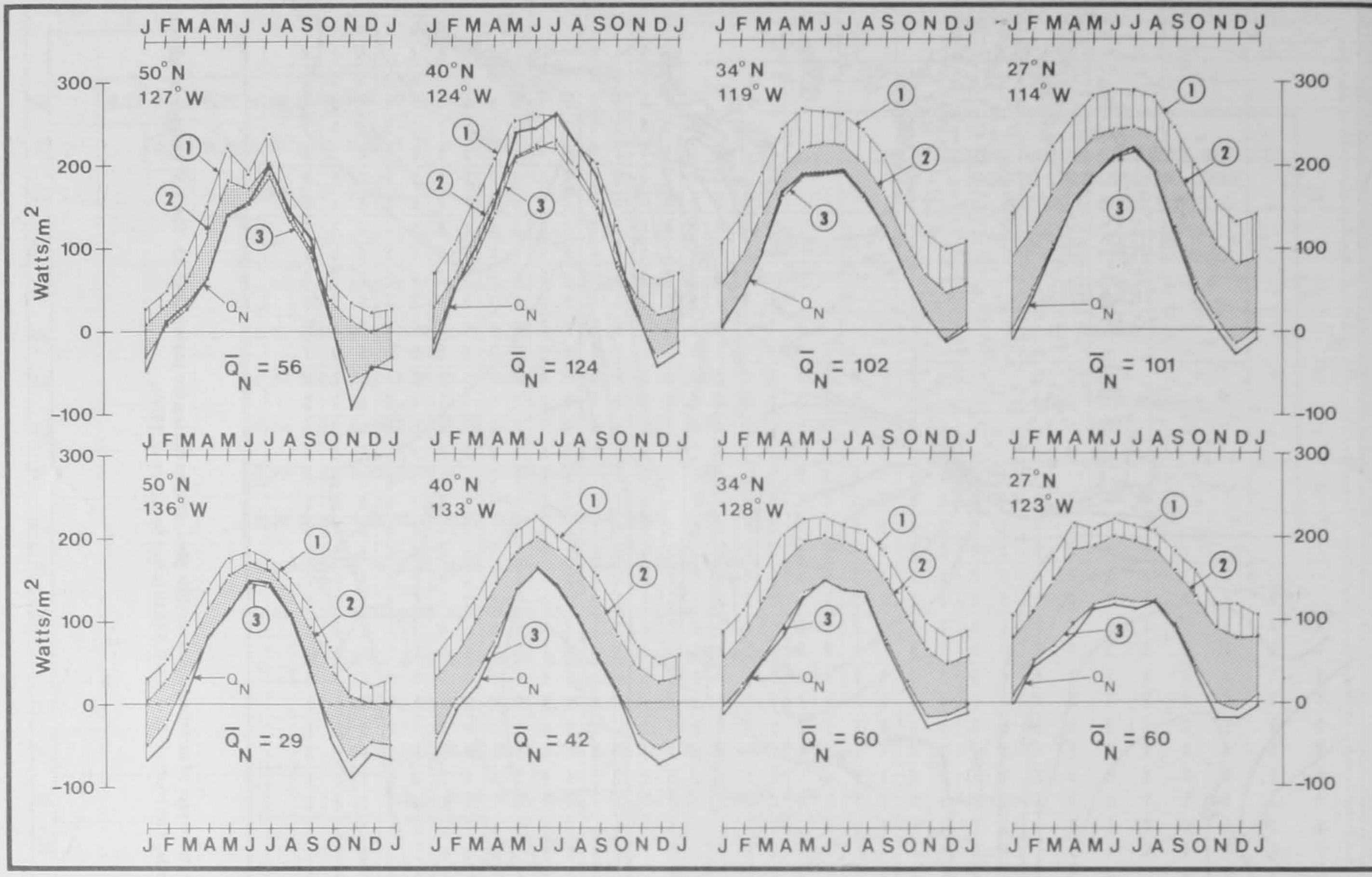


Figure 19.—Mean annual cycles of heat exchange processes for the 1° squares at lat. 50°N, 40°N, 34°N, and 27°N near the coast and 10° offshore. The upper row displays 1° square values at the coast and the lower row displays the offshore exchange processes. 1 denotes values of $\bar{Q}_S$; 2 denotes $\bar{Q}_S - \bar{Q}_B$; 3 denotes $\bar{Q}_S - \bar{Q}_B - \bar{Q}_E$, and the heavy line denotes $\bar{Q}_N = \bar{Q}_S - \bar{Q}_B - \bar{Q}_E - \bar{Q}_C$. The hatched regions between 1 and 2 denote the magnitude of $\bar{Q}_B$ and the stippled regions between 2 and 3 indicate the magnitude of $\bar{Q}_E$. The annual mean net heat exchange ($\bar{Q}_N$) is indicated for each location. Units are W/m².

tion of solar radiation at the coastal square at lat. 27°N with the minimum value of 131 W/m² in December and the maximum value of 290 W/m² in June.

The annual range of monthly $\bar{Q}_s$ values is larger in the coastal upwelling areas off northern California and Oregon than in the corresponding squares offshore, which primarily reflects the effect of relatively low cloud cover in summer when the input of solar radiation is the highest. The range is largest near the coast at lat. 40°N and 50°N where values range from <50 W/m² in winter (Chart 12) to more than 200 W/m² in summer (Chart 6). The lack of well-defined maximum in solar radiation in the offshore squares at lat. 27°N and 34°N is indicative of the extensive area of low-level stratocumulus clouds previously discussed.

The hatched areas between the two topmost curves for each location in Figure 19 indicate the annual cycles of heat loss due to effective back radiation, $\bar{Q}_B$. This term shows little seasonal or latitudinal variation over the entire California Current region. However, there is a tendency for lower values in summer (Chart 18) than in winter (Chart 24), except near the coast between San Francisco (lat. 38°N) and Vancouver Island (lat. 50°N). The principal gradients in the distributions of $\bar{Q}_B$ are zonal and reflect the sharp increase in mean cloudiness from the coast toward midocean. The higher mean cloud cover offshore reduces the magnitude of the net long-wave flux emitted from the sea surface to approximately 20 W/m². Near the coast the estimated heat loss exceeds 50 W/m². The effects of horizontal variations in cloud cover on $\bar{Q}_B$ are enhanced, but to a lesser extent, by corresponding increases in atmospheric vapor pressure in the offshore direction, and moderated by warmer sea surface temperatures offshore with respect to conditions near the coast.

The annual cycles of latent heat flux from ocean to atmosphere are shown in Figure 19 by the stippled regions between curves 2 and 3. Variations in the latent heat flux are related to fluctuations in windspeed and sea-air vapor pressure differences. The principal seasonal variations in $\bar{Q}_E$ occur in the nearshore areas particularly between Cape Mendocino and the Columbia River. In this region, the presence of cold upwelled water at the sea surface in summer cools the air, lowers the vapor pressure of the air close to the saturation vapor pressure at the sea surface temperature, and effectively suppresses latent heat flux. This effect is noted by minimum values of latent heat flux in a narrow coastal zone from Cape Mendocino to Vancouver Island during June, July, August, and September (Charts 30-33). In this region the latent heat flux is lowered to values of <5 to 20 W/m². In certain locations the turbulent flux may actually be from atmosphere to ocean (i.e., condensation). The nearshore areas south of lat. 40°N are characterized by relatively constant values of $\bar{Q}_E$, about 50 to 70 W/m², except in the upwelling regions south of Punta Baja (lat. 30°N) and south of Punta Eugenia (lat. 27°N) in spring and summer. Latent heat flux decreases to values of 30 to 40 W/m² at these locations due to the depression of the sea-air vapor pressure difference.

Seasonal variations in $\bar{Q}_E$ are less pronounced in the offshore regions. Higher mean windspeeds and larger sea-air vapor pressure differences contribute to evaporative fluxes which are 30 to 100% greater in winter (Chart 36) than in summer (Chart 30). Horizontal gradients of $\bar{Q}_E$ lie in a southwest-northeast direction and values of latent heat flux are approximately 20 to 40 W/m^2 larger in southern and offshore sections of the grid than in the northern and inshore regions. Values range from about 30 to 60 W/m^2 north of lat. 40°N to about 60 to 100 W/m^2 south of lat. 30°N. The observed spatial distributions of $\bar{Q}_E$ primarily result from systematic variations in sea-air vapor pressure differences and to a lesser extent from horizontal gradients in windspeed. Monthly mean winds are, at most, only twice as large off the Pacific Northwest compared with values off Baja California. However, mean sea-air vapor pressure differences are 2 to 4 times greater in the southern region than in the northern section and 2 to 3 times larger offshore than near the coast. The north-south contrast is particularly evident in winter (Charts 25-27) when the atmospheric circulation off the coast of southern Baja California contributes to relatively large mean sea-air vapor pressure differences ($\bar{e}_w - \bar{e}_a > 10$ mbars). During summer (Charts 30-32), east-west gradients in $\bar{Q}_E$ are enhanced by the reduction in latent heat flux near the coast due to the local effects of upwelling.

Sensible heat flux between ocean and atmosphere is depicted in Figure 19 by the difference between curve 3 and the heavy line denoting $\bar{Q}_N$. The magnitude of $\bar{Q}_C$ is virtually negligible over much of the California Current region due to the small sea-air temperature differences ($\bar{T}_s - \bar{T}_a < 1.0°C$) over the area during most of year. The sensible heat flux from ocean to atmosphere ranges from near 0 to 20 W/m^2 over most of the grid with the higher heat losses ($\bar{Q}_C > 30$ W/m^2) during winter in the northern latitudes (Charts 37, 38, 47, 48).

The largest $\bar{Q}_C$ values occur during summer in the area adjacent to Cape Mendocino and Cape Blanco, when upwelling of cold water causes mean air-sea temperature differences to exceed 1.5°C; the ocean receives a sensible heat gain of up to 30 W/m^2 (Charts 42-45). Sensible heat gains are <5 W/m^2 during late spring and summer along the coast of Baja California and values of 5 to 10 W/m^2 extend over broad regions from Point Conception to Vancouver Island during May, June, July, and August. In a region off the coast of Washington, high vertical stability associated with the Columbia River freshwater plume (Barnes et al. 1972) may contribute to relatively warm sea surface temperatures and, consequently, to sensible heat loss in this area (Charts 41-43).

The net heat gain or loss across the sea surface, $\bar{Q}_N$, is indicated by the heavy lines in Figure 19. The annual mean net heat exchange is characterized by heat transfer to the ocean over the entire region, a feature previously described by Wyrtki (1965). The annual net heat gain is much larger near the coast than offshore as a result of small heat losses by turbulent heat fluxes and the greater input of solar radiation due to the lower relative cloud cover during summer. The ocean loses heat to the atmosphere over the entire area only in December (Chart 60).

Over most of the California Current region the net heat exchange is determined by a balance between the incident solar radiation and the heat losses due to effective back radiation and latent heat flux. In the offshore regions the largest heat loss term is the latent heat flux, $\bar{Q}_E$, while along the coast the effective back radiation, $\bar{Q}_B$, is the largest heat loss term. Seasonal variations in the components contributing to oceanic heat loss are largest in the coastal upwelling regions off northern California and Oregon and to a lesser extent off the coasts of Baja California and Vancouver Island where the presence of cold upwelled water in late spring and summer reduces the turbulent flux of latent heat and causes sensible heat gain to the ocean, thereby increasing the heat input to the ocean.

The coastal upwelling zones along the west coast of the United States and Baja California experience the largest net annual heat gain as a result of the combined effects of the increase in incident solar radiation in regions of minimum cloudiness and the decrease in heat losses by turbulent fluxes. The net annual heat gain is largest off Cape Mendocino with a mean value of 124 W/m^2. Seasonal variations in the net heat exchange within the 1° squares adjacent to the coast are graphically portrayed in the time series isogram displayed in Figure 20. The coastal zone north of lat. 47°N is characterized by net heat losses of more than 100 W/m^2 during December and January and net heat gains of 200 W/m^2 during July. The coastal upwelling zone between lat. 38°N and 44°N shows net heat gains of 200 to 250 W/m^2 during July and relatively small heat losses of 20 to 40 W/m^2 during winter. The coastal square at lat. 34°N, southeast of Point Conception, experiences net heat gain during nearly the entire year with maximum heat gain >180 W/m^2 during May, June, and July.

There are considerable latitudinal differences in the annual cycles of net heat exchange along the coast of Baja California. The region near Punta Baja (lat. 30°N) is characterized by a relatively small maximum net heat gain during summer of about 150 W/m^2 due to high cloud cover (0.8) during June and July. The area south of Punta Eugenia (lat. 27°N) is influenced by a less extensive cloud deck and shows much higher net heat gain, >200 W/m^2, during spring and summer (Charts 53-56), which may mask the effects of coastal upwelling on sea surface temperatures in this area (Bakun and Nelson 1977).

Spectral Characteristics of Heat Exchange Processes

The monthly mean data described in this report resolve the annual cycle. However, marine biological communities must respond to a wider spectrum of atmosphere-ocean variations on time scales ranging from a few days to several years. Relatively rapid diurnal and "event scale" fluctuations (i.e., periods of 1-10 d) contribute to turbulent mixing and dispersion of biological microstructure. Lower frequency "climatic" variations, which appear as long-term trends or periodicities, or as interyear differences, affect fisheries over much broader space and time scales. Year-to-year fluctuations in the timing, amplitude, and spread of the seasonal production cycle in major spawning regions may induce significant changes in recruitment of year classes to the fisheries (Cushing 1975). Annual differences in the character of the production cycle are environmentally controlled and related to changes in the stability of the upper water column which is enhanced by an increase in solar radiation and a decrease in wind strength.

Available ship reports are unevenly distributed in space and time. Therefore, it is generally not possible to construct consistent time series of air-sea interaction processes for large regions and preserve fine spatial resolution, by applying the simple space and time averaging methods which were used to assemble the long-term monthly means. Where the density of reports is large, e.g., within 300 km of the coast south of Point Conception, statistically significant monthly mean values might be computed over fairly long periods. A few time series of air-sea interaction processes have been produced, either by compositing ship reports in 5° square blocks (Clark et al. 1974) or by making use of objectively analyzed meteorological products (Bakun 1973) which have a spatial resolution of approximately 3°. Analyses of these data show wide variations in space and time. However, the errors associated with the low frequency, nonseasonal fluctuations are generally unknown, and there is little coherence or persistence in the monthly anomaly patterns of the heat exchange processes (Clark et al. 1974).

Seasonal and nonseasonal fluctuations in net heat exchange, $\bar{Q}_N$, were investigated at a few selected locations in the Southern Cali-

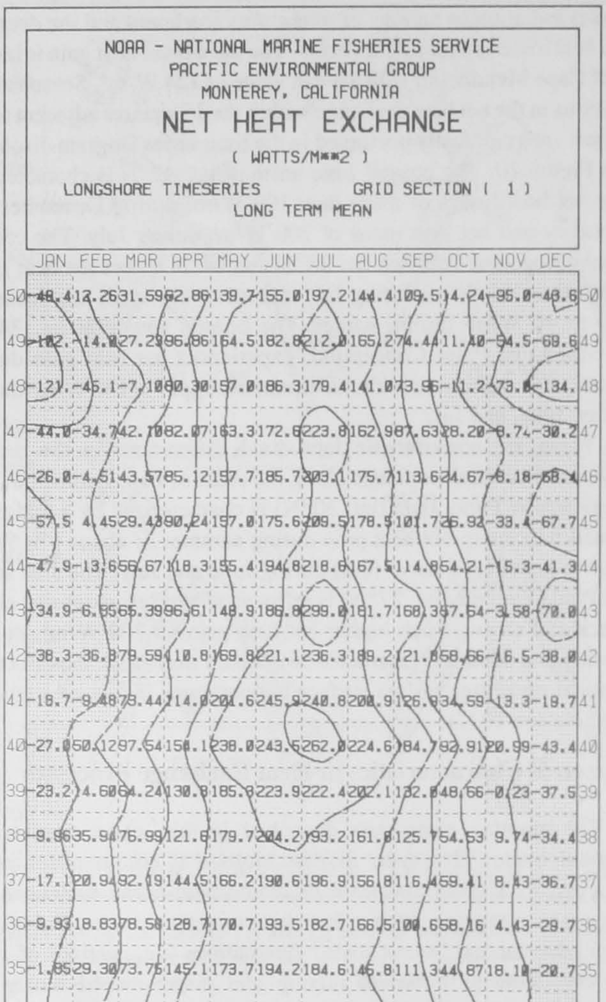


Figure 20.—Seasonal cycle of net heat exchange near the coast. Means of net heat exchange were computed by month for the 1° squares immediately adjacent to the coast. Units are W/m². The contour interval is 50.0 W/m². Negative values are shaded and indicate net heat loss from ocean to atmosphere.

fornia Bight (lat. 32°N, long. 117°W; lat. 32°N, long. 118°W; lat. 32°N, long. 119°W) and near Punta Eugenia (lat. 27°N, long. 114°W; lat. 27°N, long. 115°W). A 23-yr time series (1950-72) of monthly values was computed for each 1° square. For these particular grid points, the computed values were based on an average of 10 to 30 observations/mo. Spectrum analysis was used to demonstrate the predominance of the annual cycle and to possibly identify other frequency bands accounting for substantial variance.

Power spectra of $\bar{Q}_N$ at each location (Fig. 21A, B) show strong peaks at frequencies representing the annual cycle and suggest lesser peaks corresponding to a semiannual component. Referring to the 95% confidence limits for 10 degrees of freedom, it is clear that the variance associated with the annual cycle is at least an order of magnitude larger than the average level of variance at lower or higher frequencies. Within the Southern California Bight (Fig. 21A), no significant long period fluctuations are apparent. Near Punta Eugenia (Fig. 21B), there is a general increase in spectral energy density at low frequencies, from a relative minimum at a frequency corresponding to a 2-yr cycle to a relative maximum for periods exceeding 8 yr. This feature is also evident in power spectra of monthly anomalies of $\bar{Q}_N$ (Fig. 21C), for which the seasonal variation in the time series has been removed by subtracting out the long-term (1950-72) monthly mean values. The increase in variance at low frequencies reflects the general 2- to 6-yr persistence in the sign of the annual $\bar{Q}_N$ anomalies at these locations.

Time series of net heat exchange may be characterized by large interannual differences, persistence, and long-term trends. However, these features may not be spatially coherent. Coherence functions were computed to test the significance of correlations between time series of $\bar{Q}_N$ in adjacent 1° squares. In the Southern California Bight (Fig. 21A), coherency squared consistently exceeds the 95% significance level for 10 degrees of freedom only in the frequency band from 0.06 to 0.11/mo (0.7 to 1.3/yr). The spread over several frequency bands reflects the nonsinusoidal shape of seasonal fluctuations which tend to have a faster rate of change in spring and fall than in summer or winter. Near Punta Eugenia (Fig. 21B), coherency squared is significant (95% level) at frequencies corresponding to semiannual and annual periodicities and at frequencies <0.03/mo (0.4/yr). Low frequency coherence remains significant at the 95% level after seasonal variations have been removed (Fig. 21C). The lack of significant coherence between adjacent squares in the Southern California Bight probably reflects the large uncertainty in net heat exchange calculations based on surface observations archived in the TDF-11 file, but also may be related to significant spatial variations over distances <200 km in this region.

These data demonstrate the relatively large amplitude of the annual cycle in midlatitude atmospheric properties, which suggests that the long-term monthly mean heat exchange fields (Appendix I) represent the expected seasonal variability. More extensive time series calculations have been published by Clark et al. (1974). However, the wide variations and lack of persistence in patterns of net heat exchange anomalies computed from their data, in addition to our own results, support the conclusion that merchant vessel data may not always be sufficiently reliable to compute statistically significant indices of the month-to-month or interannual variations in air-sea interaction processes (Husby 1980).

Heat Budget of a Coastal Upwelling Region

The principal processes affecting the seasonal variation of air-sea heat transfer over the California Current are related to seasonal changes in the atmospheric circulation patterns which modify the cloud cover and the oceanic circulation. Coastal upwelling has a marked effect on the turbulent fluxes of heat, particularly off north-

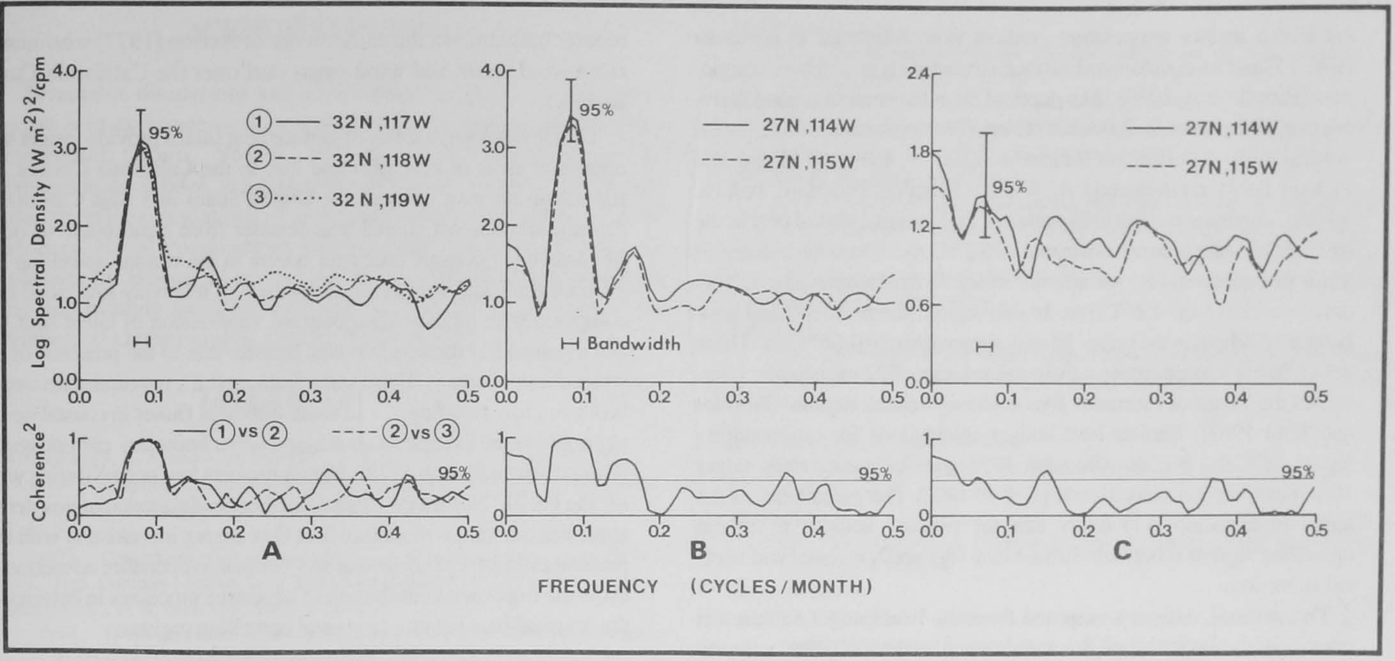


Figure 21.—Power and coherence spectra of monthly mean net heat exchange estimates for 1950-72. Spectra are plotted for time series at A) lat. 32°N, long. 117°W; lat. 32°N, long. 118°W; lat. 32°N, long. 119°W and B) lat. 27°N, long. 114°W; lat. 27°N, long. 115°W. Spectra of the monthly anomalies from the long-term monthly means at lat. 27°N, long. 114°W and lat. 27°N, long. 115°W are displayed in Figure C.

ern California and Oregon. On an annual time scale the entire region experiences net heat gain to the ocean. Previous summaries have shown that the North Pacific Ocean gains heat primarily on the eastern side (Wyrtki 1965), and we have shown that the net heat gain reaches a maximum in the coastal upwelling region off northern California as a consequence of relatively low cloudiness and a change in sign of the turbulent heat fluxes at the sea surface due to the presence of cold water during summer. In the absence of a climatic increase in the mean sea surface temperature along the coast (i.e., in a steady state balance), this net annual heat gain must be balanced by mixing and cold advection, i.e., the influx of cold water into the region, either by horizontal or vertical motions.

In the region of maximum offshore Ekman transport between Cape Mendocino and Cape Blanco, the amplitude of the annual cycle of sea surface temperature is suppressed (Bakun et al. 1974). Near the coast, the difference between minimum and maximum temperatures is <3°C. From May to September, $\bar{T}_s$ increases at a mean rate of 0.5°C/mo. In the offshore areas, the seasonal range of sea surface temperature exceeds 6°C and $\bar{T}_s$ increases at a rate >1.5°C/mo during summer. In the California Current, maximum sea surface temperatures occur in September, well after the period of maximum net oceanic heat gain in June and July. However, the maximum in the annual cycle of $\bar{Q}_N$ corresponds directly to the maximum rate of change in surface temperature.

The equation of conservation of heat for an incompressible fluid, expressed in terms of mean temperature, $\bar{T}$, is given by:

$$\frac{\partial \bar{T}}{\partial t} = \frac{\bar{Q}_N}{\rho_0 c_P z} - \vec{V}_H \cdot \nabla_H \bar{T} - \bar{w}\frac{\partial \bar{T}}{\partial z} + A_H \nabla_H^2 \bar{T} + A_z \frac{\partial^2 \bar{T}}{\partial z^2} \qquad (11)$$

where $\partial/\partial t$ is the local time rate of change with time scales large compared with the averaging time; $\bar{Q}_N$ is the mean net heat exchange across the sea surface which heats a column of water extending from the surface to a depth z; ρ_0 is density; c_p is the specific heat of water at constant pressure; $\vec{V} = \vec{\bar{u}i} + \vec{\bar{v}j}$ is the mean horizontal velocity; $\bar{w}$ is the mean vertical velocity component (positive upward); ∇_H and ∇^2_H are the horizontal gradient and Laplacian, respectively; and A_H and A_Z are the horizontal and vertical coefficients of eddy thermal conductivity. Assuming a constant mixed layer depth, the terms in Equation (11) express a balance between the local change of temperature (heat content) and those changes resulting from radiative and turbulent heat fluxes across the air-sea interface and horizontal and vertical advection and diffusion (i.e., mixing).

To test the general validity of our heat exchange calculations we applied Equation (11) to the upper 30 m of the water column in a 3° square adjacent to Cape Mendocino and centered at lat. 40°N, long. 125°W. The terms were evaluated by month and averaged over the "upwelling season" from May to September to obtain a mean seasonal heat budget appropriate for this region. We used climatological surface and subsurface temperature data (Robinson 1976) to estimate the local change, the horizontal and vertical gradients, and the second derivatives of temperature. Mean east and north components of velocity were obtained from seasonal distributions of surface currents based on ship drift observations (Stidd 1974).

During summer, the mean net heat flux, $\bar{Q}_N$, across the air-sea interface is 180 W/m^2. To calculate the equivalent rate of change in temperature, we used the constant values $\rho_o = 1.0 \times 10^3$ kg/m^3, $c_p = 4.180 \times 10^3$ J/kg per °C, and z = 30 m. This mean surface flux equals a temperature increase at the rate of 3.7°C/mo. However, the local change of temperature in the upper 30 m is only 0.6°C/mo. The excess heat input at the surface must be balanced by horizontal and vertical advection and diffusion.

We estimated mean zonal and meridional temperature gradients of -7.4×10^{-3} and -3.6×10^{-3} °C/km, respectively. The corresponding second derivatives were 4.7×10^{-5} °C/km^2 in the east-west direction and 2.0×10^{-5} °C/km^2 in the north-south direction. Combining these values with mean east and north velocity components of -2.0 and -10.0 cm/s and assuming a horizontal eddy diffusion coefficient of 100 m^2/s (Bathen 1971) gives a mean horizontal advection ($-V_H \cdot \nabla_H \bar{T}$) of −1.3°C/mo and mean horizontal diffusion ($A_H \nabla^2_H T$) of 0.02 °C/mo. The sign of the advection term implies cold advection which is consistent with a surface temperature gradient from southwest to northeast (Fig. 13) and an equatorward surface current with an offshore component (Pattullo et al. 1969). At a depth of 30 m the vertical second derivative of temperature is -8.0 $\times 10^{-4}$ °C/m². The approximate scale for the vertical eddy diffusion coefficient is A_H/A_Z = 1.0 $\times 10^{-6}$ (Pond and Pickard 1978); consequently A_Z = 1.0 $\times 10^{-4}$ m²/s. Therefore, vertical mixing, as parameterized in Equation (11), leads to a loss of heat at the base of the water column at the rate of 0.2°C/mo. From the balance of terms in Equation (11), we inferred mean vertical temperature advection ($-\bar{w}\partial\bar{T}/\partial z$) of -1.6°C/mo. In this region, the mean vertical temperature gradient in the upper 30 m is approximately 0.05°C/m. These values imply a mean (upward) vertical velocity of 32 m/mo, which lies within the range of estimates for coastal upwelling regions (Wooster and Reid 1963). Similar heat budget calculations for an upwelling region off Cabo Bojador (Bowden 1977) yielded substantially larger 10-d mean vertical velocities (e.g., 4-10 m/d). The magnitudes of the terms in Equation (11) imply that the primary balance in coastal upwelling regions is between surface heat flux and horizontal and vertical advection.

The vertical velocity computed from the heat budget equation is considerably larger than the mean open ocean vertical velocity associated with horizontal divergence in the surface Ekman layer (Yoshida and Mao 1957). We used the approximate relationship,

$$\bar{w} \approx \frac{\vec{k} \bullet (\nabla \bullet \vec{\tau})}{\rho_o f}, \qquad (12)$$

where $\vec{k} \bullet (\nabla \bullet \vec{\tau})$ is the vertical component of wind stress curl, and f is the Coriolis parameter, and distributions of wind stress curl (Nelson 1977) to independently compute a mean upwelling velocity of 5 m/mo. The heat budget calculations would be consistent with this estimate of $\bar{w}$ if the surface heat flux, $\bar{Q}_N$, were distributed from the surface to a depth of 50 m.

The uncertainty in each of the terms in Equation (11) may be as large as the error in $\bar{Q}_N$, which we estimated to be 15 to 70%. Roden (1959) estimated an error of 50% in calculating the horizontal advection term from observed velocity components and temperature gradients. In addition, the physical basis for parameterizing vertical mixing as a function of a constant eddy coefficient, A_Z, and the vertical second derivative of temperature, $\partial^2\bar{T}/\partial z^2$, is not well founded. Therefore, the computed vertical eddy diffusion may grossly underestimate the effects of mixing at the base of the mixed layer (Niiler and Kraus 1977). In our heat budget calculations, an order of magnitude increase in A_Z would have resulted in an approximate balance between heat gain at the surface and heat loss by horizontal advection and vertical mixing, without the requirement for vertical advection. Because of the uncertainties associated with heat budget calculations, the "balance" which we computed may have been fortuitous. However, these calculations demonstrate that our values of net surface heat exchange are not inconsistent with independent estimates of temperature advection and diffusion.

SUMMARY AND CONCLUSIONS

Distributions of long-term composite monthly atmosphere-ocean heat exchange processes have been presented for the California Current region over a 1° latitude-longitude grid. The monthly fields represent summarizations of the radiative and turbulent heat fluxes computed from individual surface marine weather reports archived in the National Climatic Center's TDF-11 data file. This report complements the earlier work of Nelson (1977) who summarized wind stress and wind stress curl over the California Current region.

The climatological fields of surface heat fluxes provide insight to the important areas of heat gain and loss in the California Current. The region off the west coast of the United States and Baja California is characterized by net annual heat transfer from atmosphere to ocean. Maximum net oceanic heat gain occurs in the coastal upwelling zone off northern California as a consequence of relatively low cloud cover compared with offshore distributions, suppression of latent heat flux, and a reversal of the sensible heat transfer due to the presence of cold water during summer. These same features (i.e., maximum net oceanic heat gain, low cloudiness, and small turbulent fluxes in coastal upwelling regions) are evident in all major eastern boundary current systems (Hastenrath and Lamb 1978). Maximum heat loss occurs during winter off the Pacific Northwest. Simplified heat budget calculations demonstrate that our values of surface heat flux are not inconsistent with independent estimates of horizontal and vertical temperature advection and show the important contribution of advective processes in determining the seasonal heat balance in coastal upwelling regions.

Because of the heterogeneous character of the surface marine weather observations, relatively large errors are associated with empirical estimates of the radiative and turbulent heat fluxes. Nonrandom distributions of reports, sampling errors, fair-weather bias, and methods of computation introduce uncertainties which cast doubt on the validity of heat exchange estimates derived from merchant vessel data. Reasonable estimates of the error in each heat exchange component (e.g., 10%) lead to errors in the long-term mean net heat exchange, $\bar{Q}_N$, ranging from 10 to 70%. Our analyses indicate that the principal spatial and temporal features of surface heat flux over the California Current region (e.g., maximum oceanic heat gain near the coast during summer) are independent of computational methods which use monthly mean properties and variable exchange coefficients in the empirical formulae as opposed to individual observations and constant coefficients. Spectrum analyses of representative time series of $\bar{Q}_N$ show a general absence of variance at low frequencies and demonstrate the large signal-to-noise ratio of the annual cycle in midlatitude regions. The lack of coherence between time series in adjacent 1° squares is partially explained by the errors in monthly heat flux estimates, even in densely sampled areas.

The results of this study will be useful in modeling mean seasonal variations in the thermal structure of the California Current. For the purpose of indicating anomalies from the long-term means, however, further research in marine boundary layer processes is needed to place narrower confidence limits on the derived atmosphere-ocean exchanges. Because the largest relative errors are associated with heat exchange components which also have the largest absolute magnitudes (i.e., Q_S and Q_E), more extensive experimental studies in the open ocean and in the coastal boundary zone must be conducted 1) to improve the empirical formulae for short-wave radiation by using more objectively measured parameters (e.g., satellite observations of cloud cover), and 2) to evaluate the moisture flux parameterization for wider ranges of atmospheric stability and windspeed. With the increased application of air-sea interaction research to global climatic and fisheries problems, there is also an urgent requirement for consensus on the empirical formulae and methods of computation to be used. Although the absolute magnitudes of the long-term monthly mean values cannot be precisely fixed, the spatial and temporal consistency of independent estimates of surface heat exchange indicate that the geographical patterns (Appendix I) are realistic and significant.

ACKNOWLEDGMENTS

Invaluable discussions and advice on all aspects of atmosphere-ocean heat exchange were provided by G. R. Seckel, Pacific Environmental Group, NMFS, NOAA. R. W. Garwood, Naval Postgraduate School, suggested the editing procedures which were used to refine calculations of latent and sensible heat flux. C. N. K. Mooers, Naval Postgraduate School, kindly reviewed the revised manuscript. Historical surface marine data and electronic computing and plotting facilities were provided by the U. S. Navy, Fleet Numerical Oceanography Center, Monterey, Calif.

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APPENDIX I

Monthly Surface Heat Flux Distributions

Long-term composite monthly mean surface heat flux distributions are displayed in Charts 1-60. Charts 1-12 are the monthly values of incident solar radiation corrected for cloud cover and reflection, Charts 13-24 the monthly effective back radiation, Charts 25-36 the monthly latent heat flux, Charts 37-48 the monthly sensible heat flux, and Charts 49-60 the monthly net heat exchange across the sea surface. Values are plotted in units of watts per square meter. The distributions are contoured with a contour interval of 25 W/m^2, except in Charts 13-24 and Charts 37-48 where a contour interval of 10 W/m^2 has been used. Positive values denote oceanic heat gain in Charts 1-12 and Charts 49-60 and oceanic heat loss in Charts 13-48. Negative values are shaded and indicate heat transfer from atmosphere to ocean in Charts 37-48 and heat loss from ocean to atmosphere in Charts 49-60.

The month is indicated in the figure legend in the upper right corner of the charts. The long-term mean monthly values were computed for the approximate time period 1921 to 1972. Scattered reports were available between 1921 and 1940 but the bulk of the data was collected after 1945. The coastline configuration is superimposed on the grid as a visual aid and does not represent a conformal mapping.

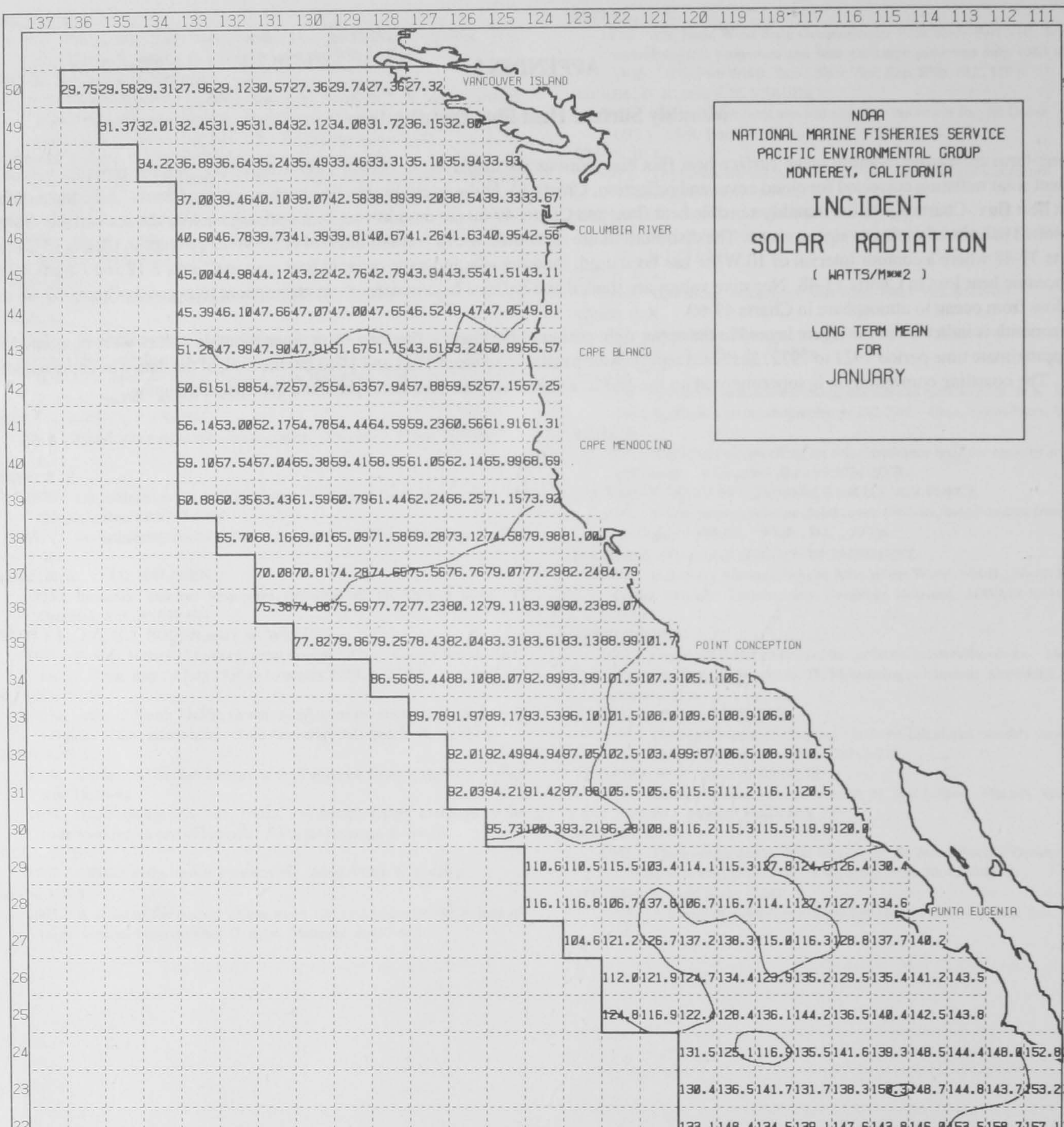

Chart 1.—Composite monthly mean incident solar radiation for January.

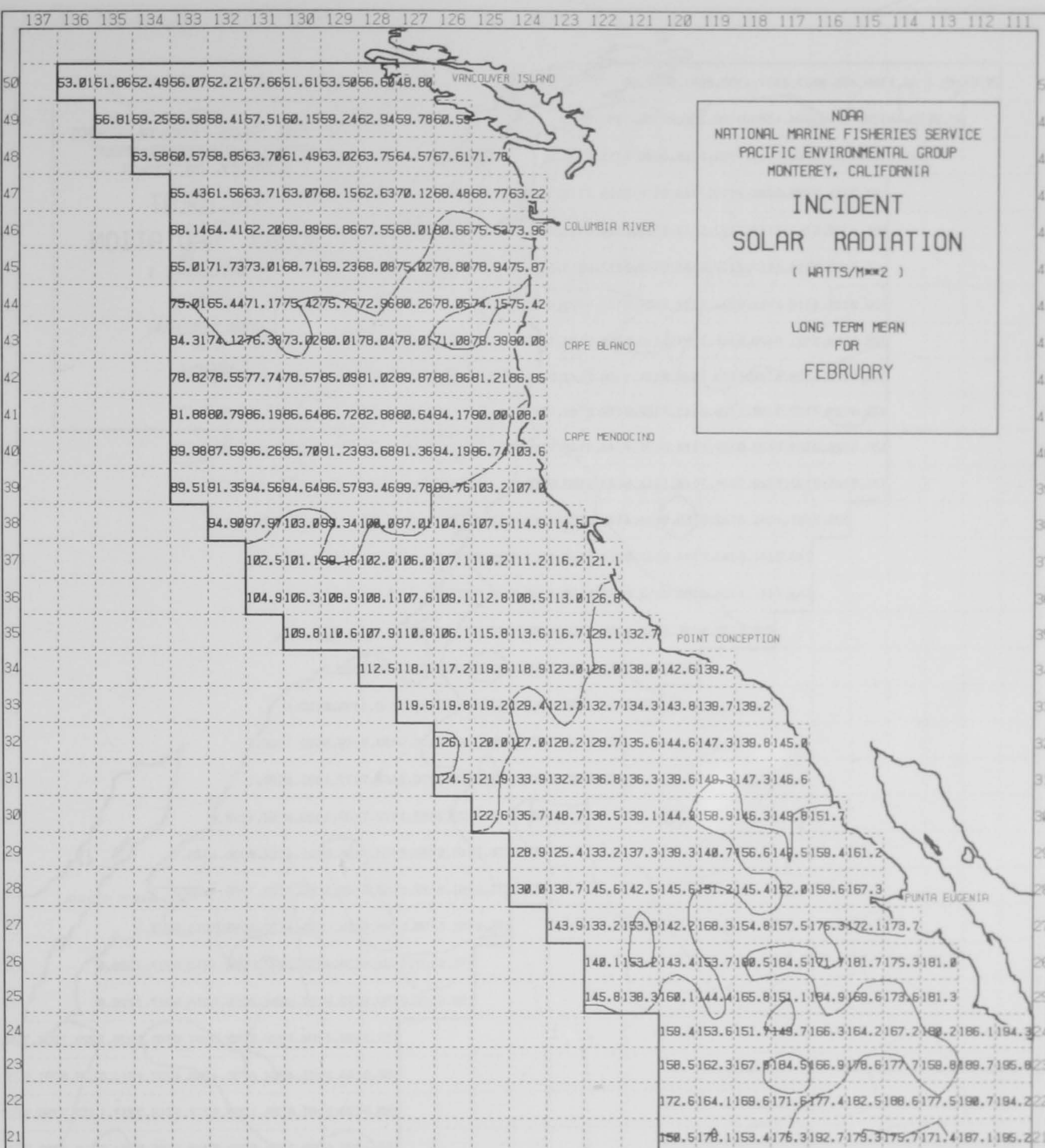

Chart 2.—Composite monthly mean incident solar radiation for February.

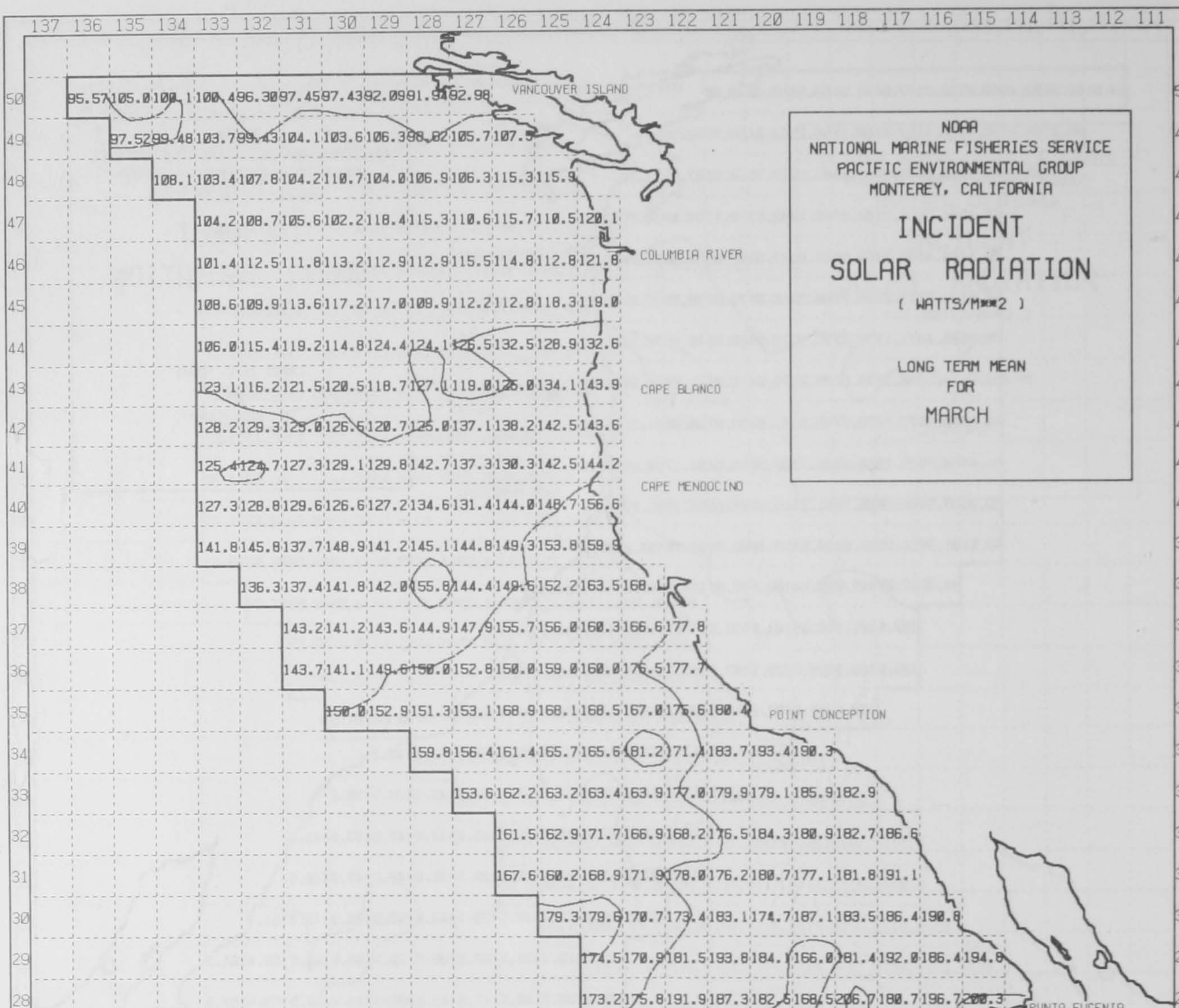

Chart 3.—Composite monthly mean incident solar radiation for March.

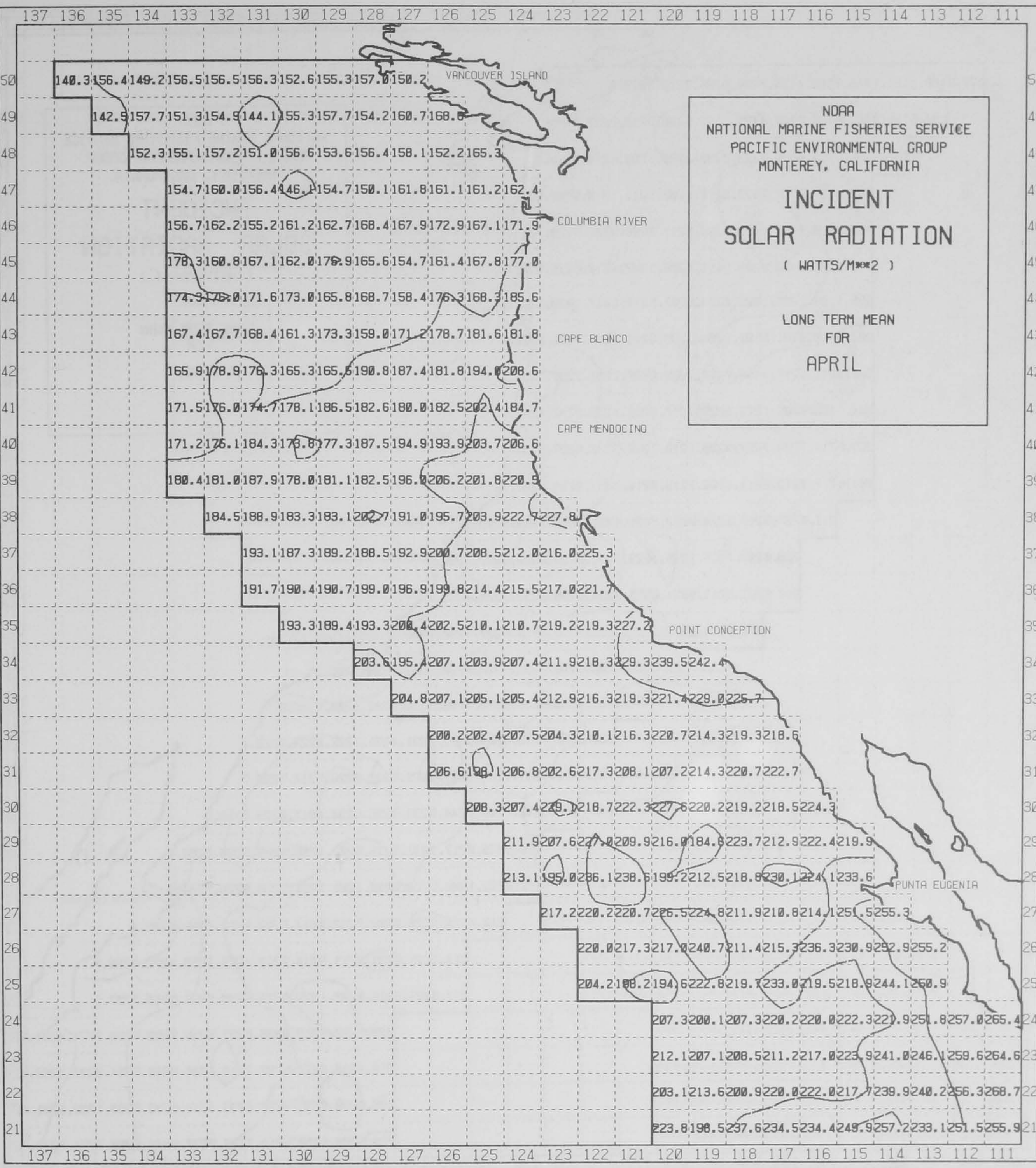

Chart 4.—Composite monthly mean incident solar radiation for April.

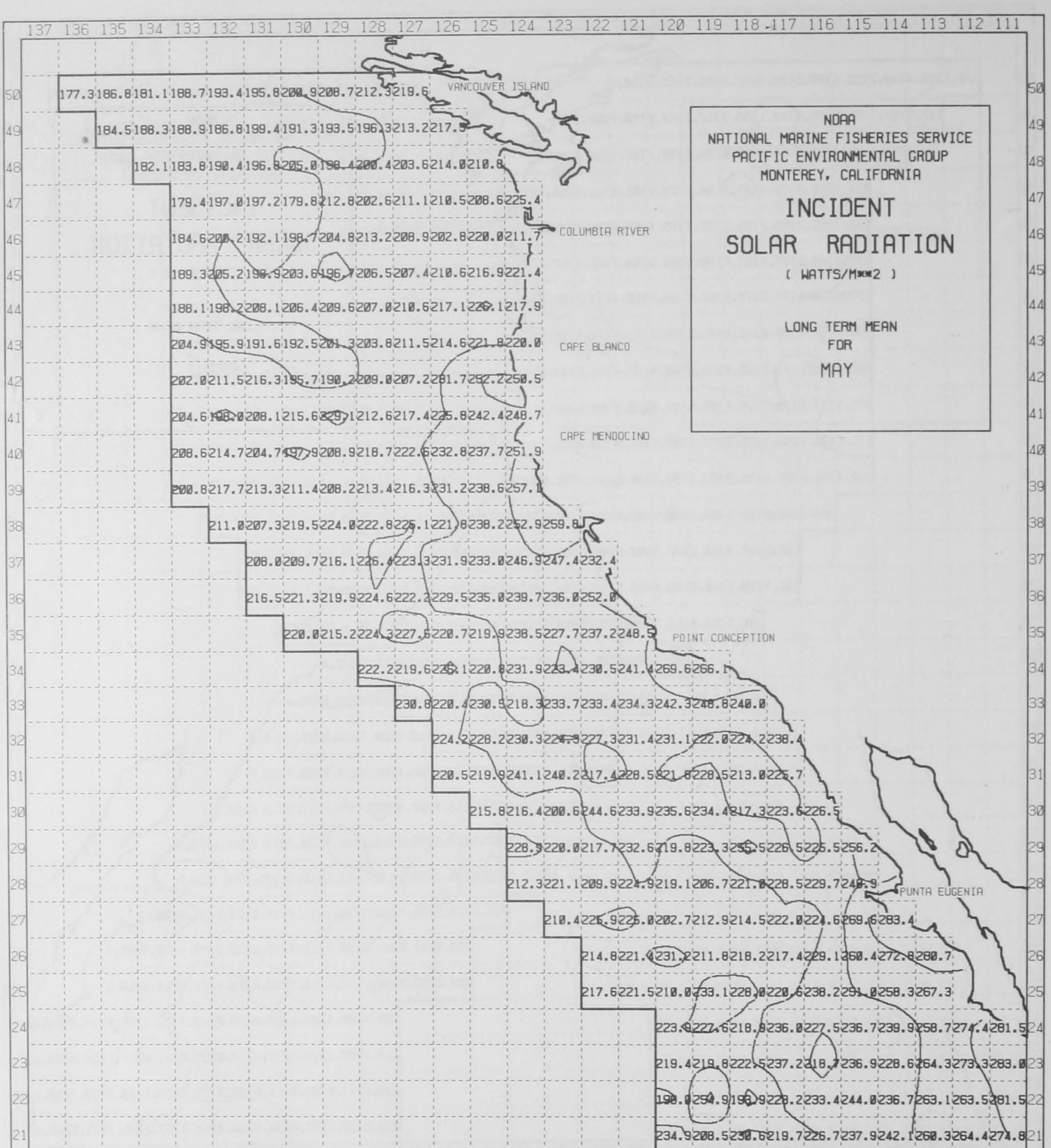

Chart 5.—Composite monthly mean incident solar radiation for May.

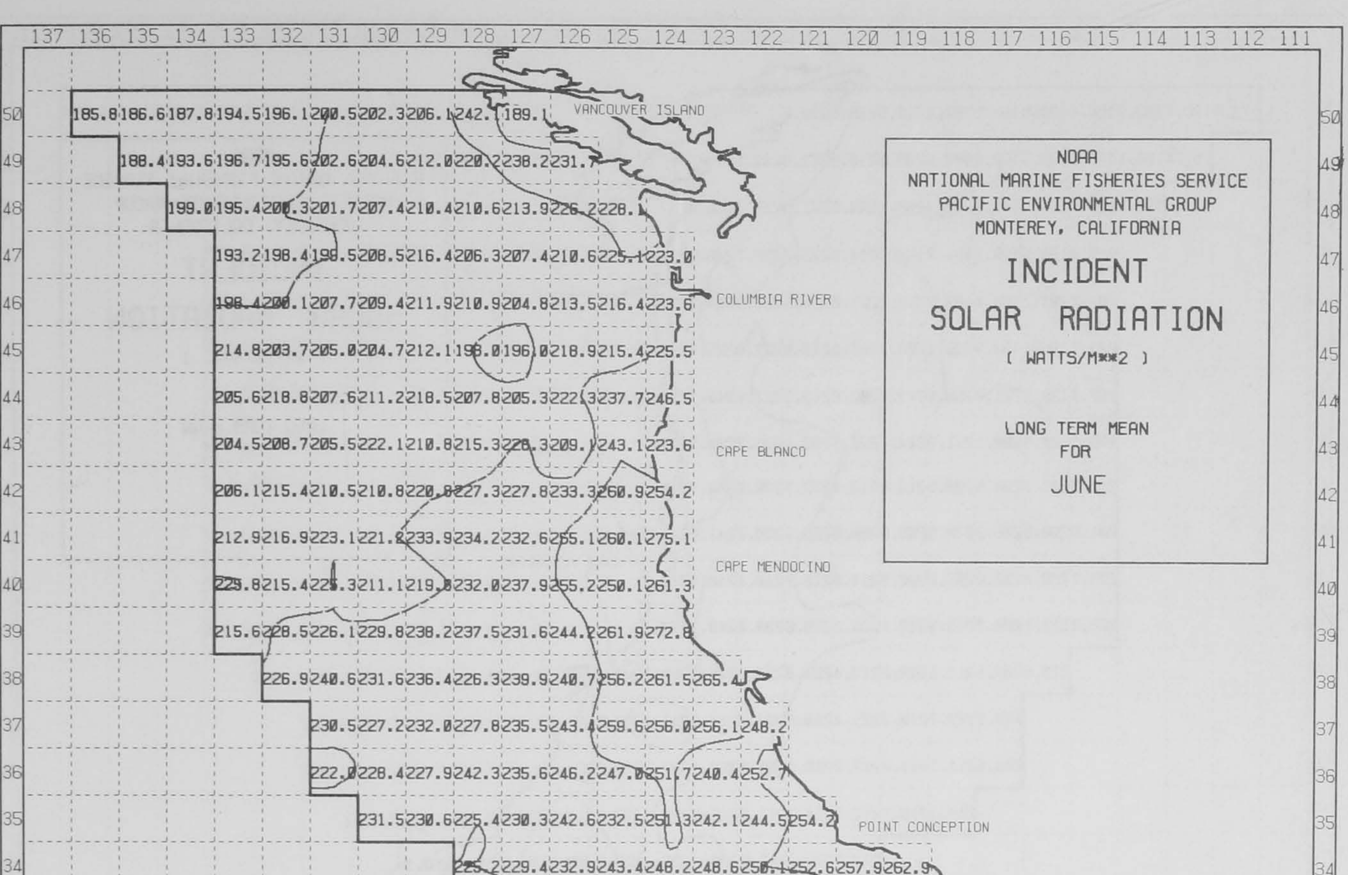

Chart 6.—Composite monthly mean incident solar radiation for June.

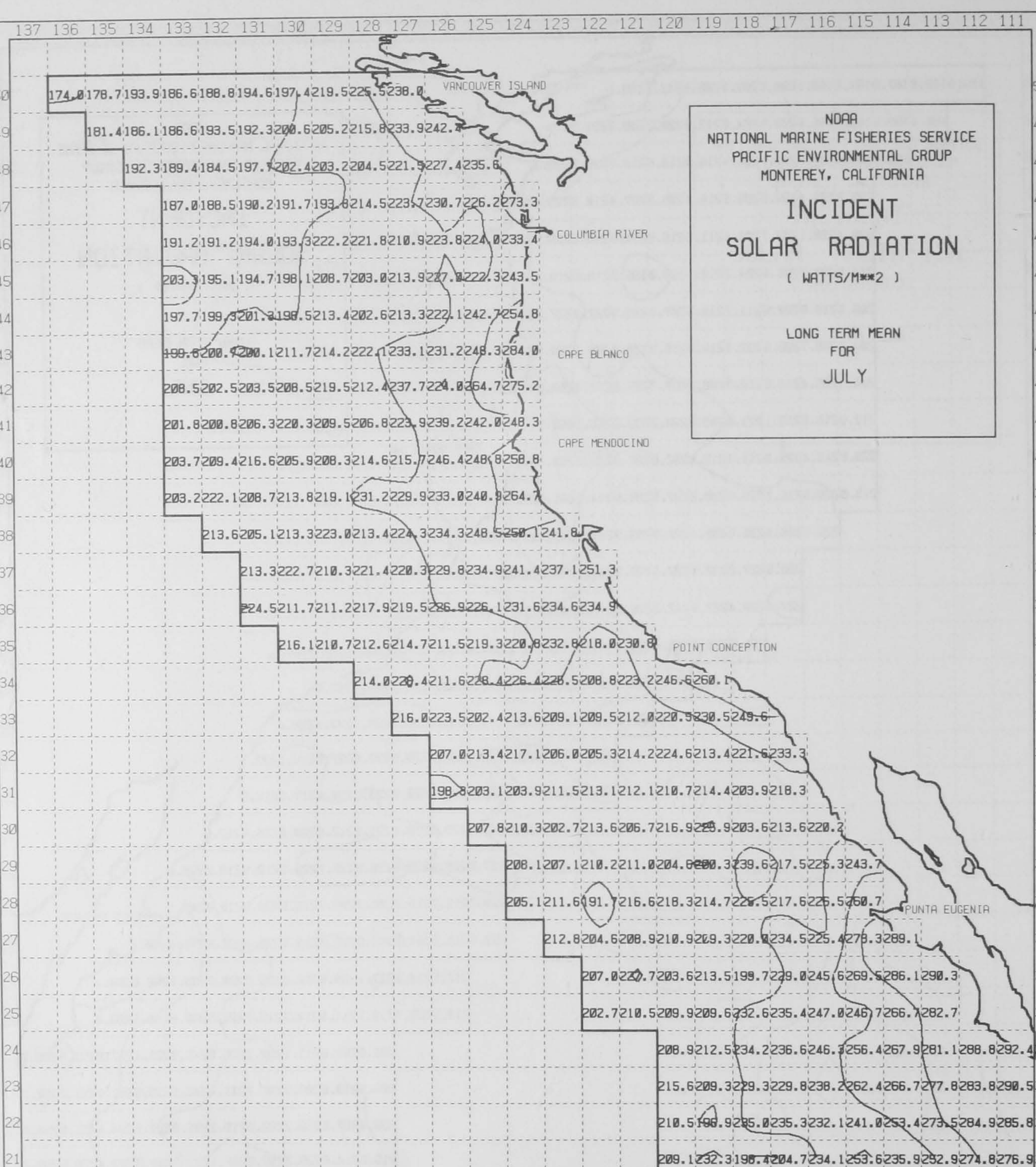

Chart 7.—Composite monthly mean incident solar radiation for July.

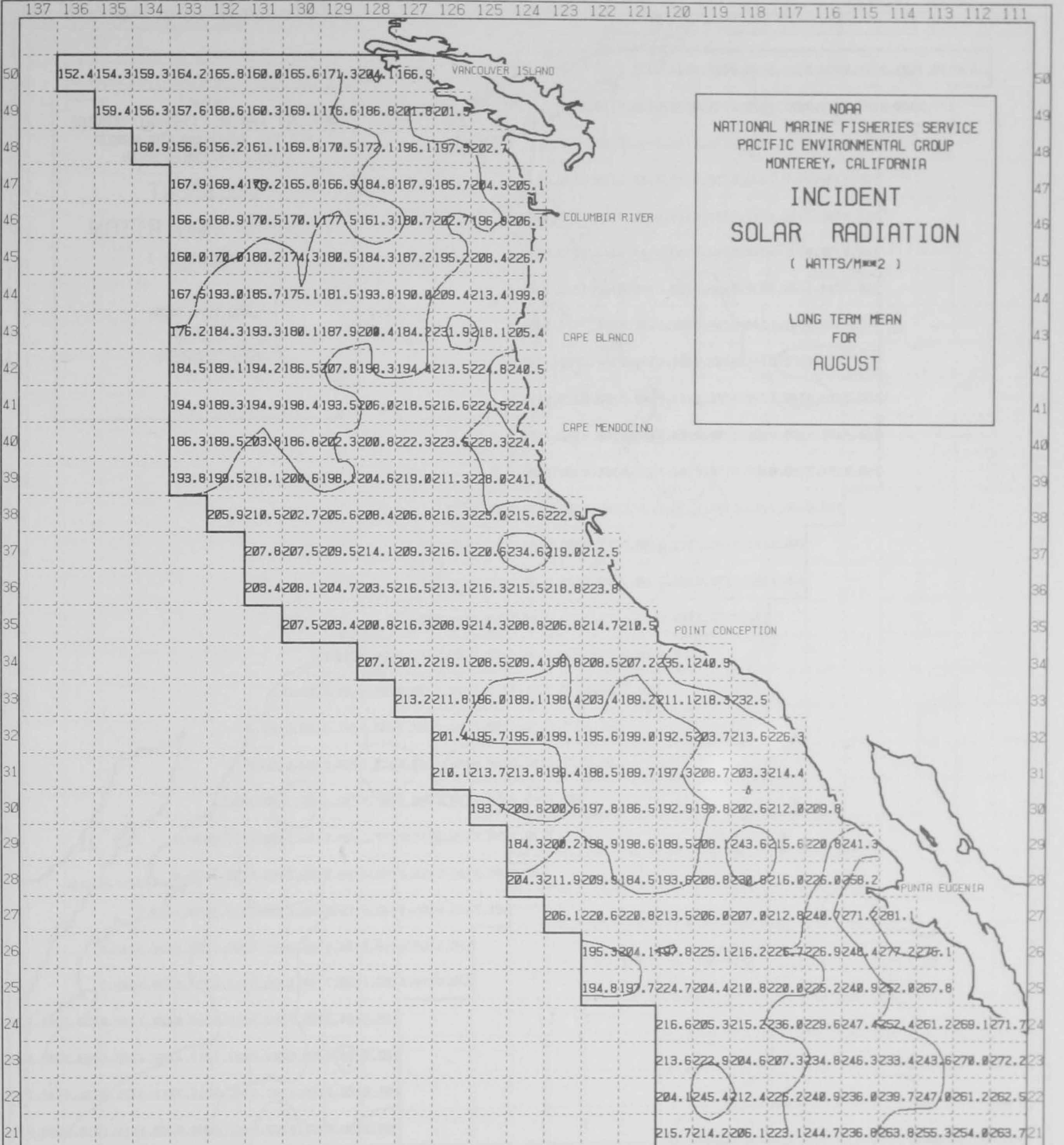

Chart 8.—Composite monthly mean incident solar radiation for August.

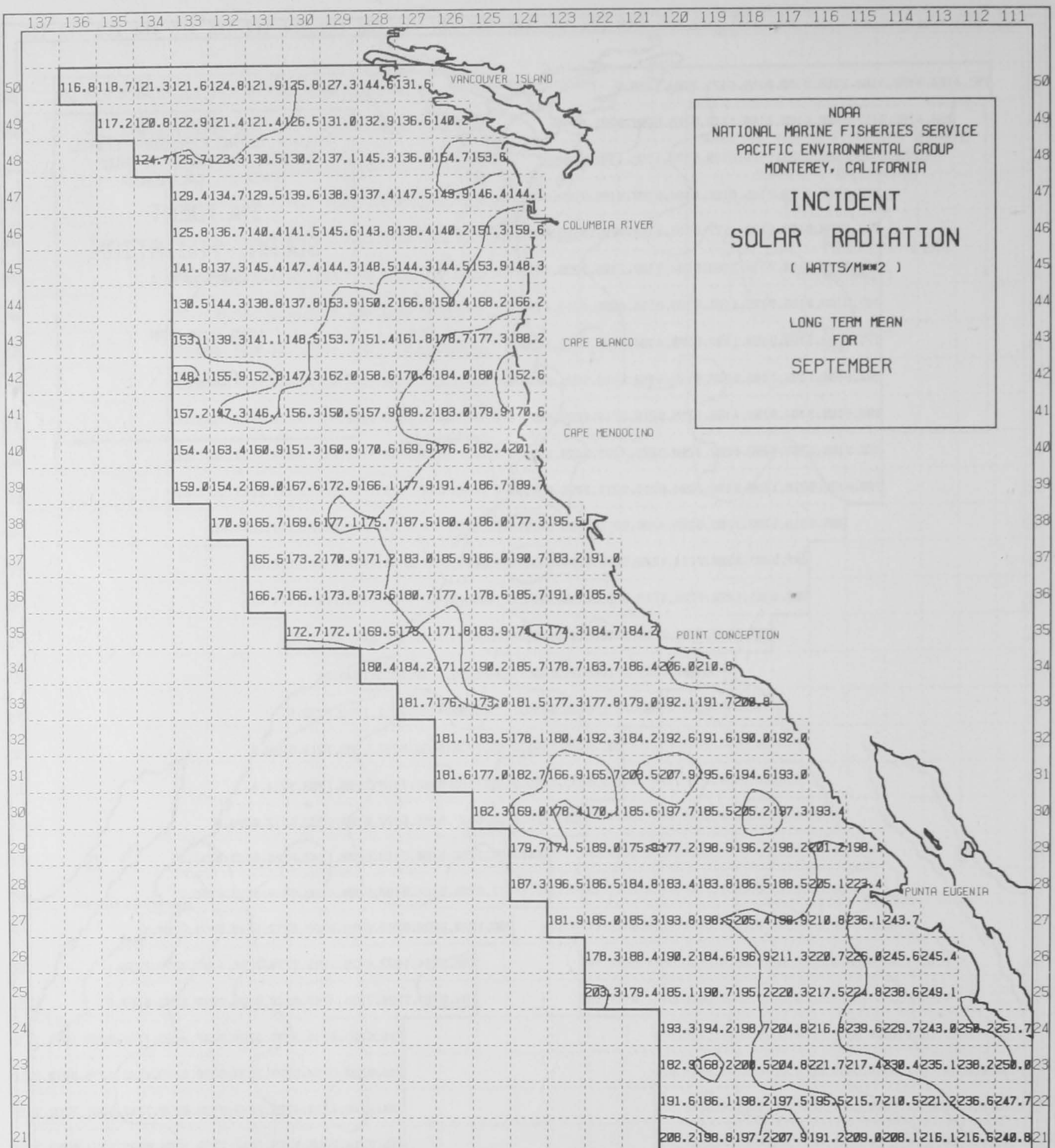

Chart 9.—Composite monthly mean incident solar radiation for September.

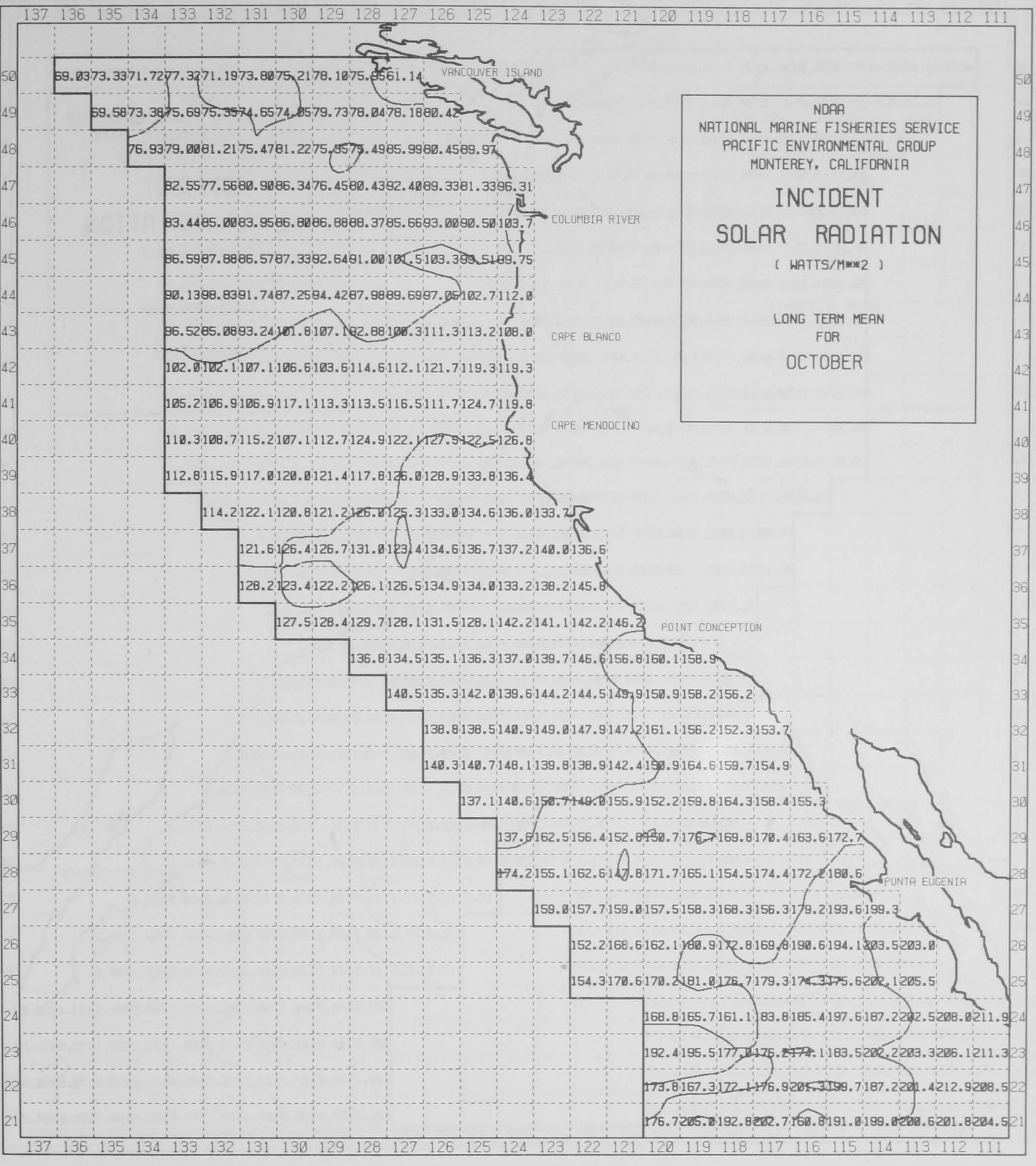

Chart 10.—Composite monthly mean incident solar radiation for October.

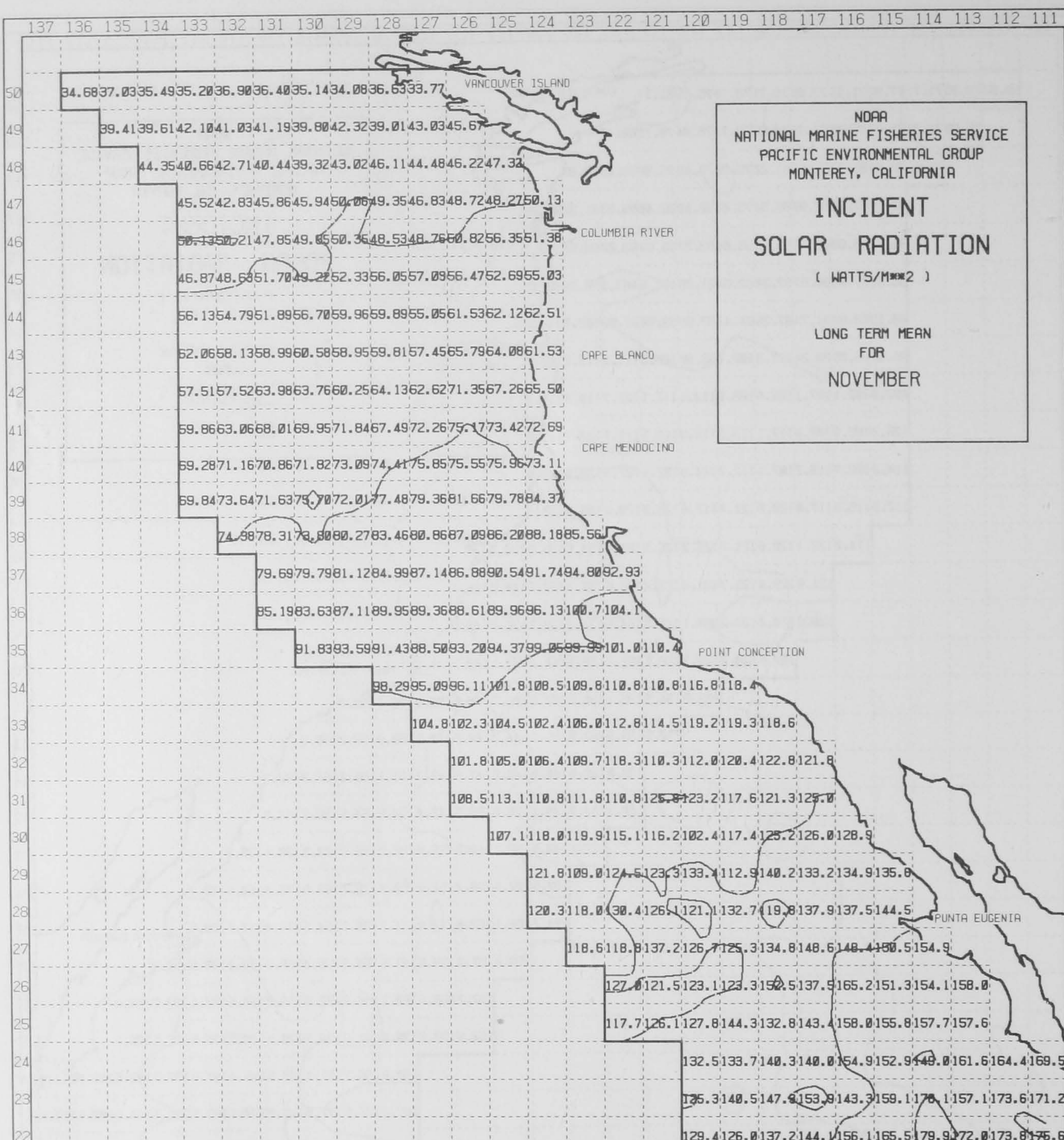

Chart 11.—Composite monthly mean incident solar radiation for November.

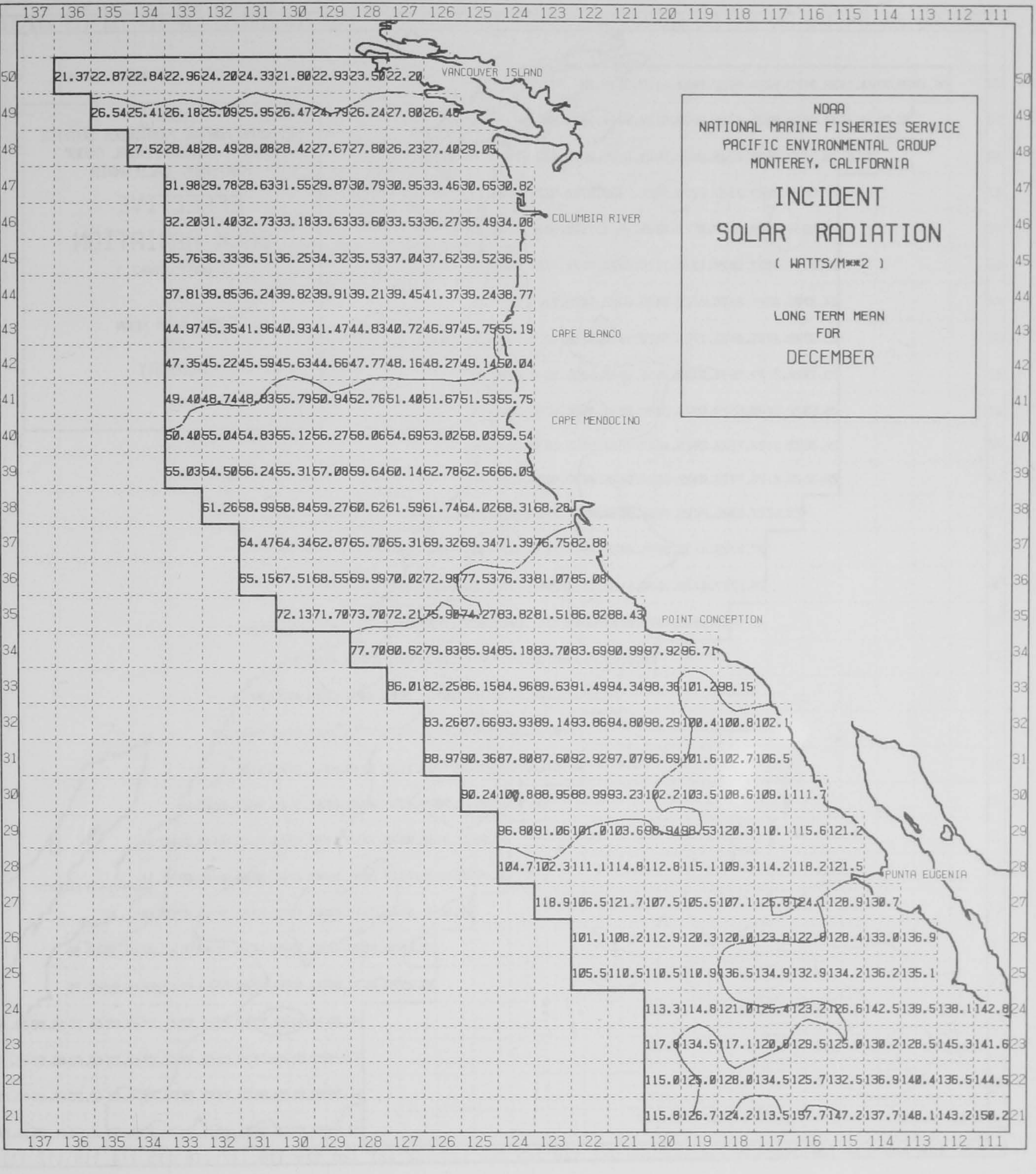

Chart 12.—Composite monthly mean incident solar radiation for December.

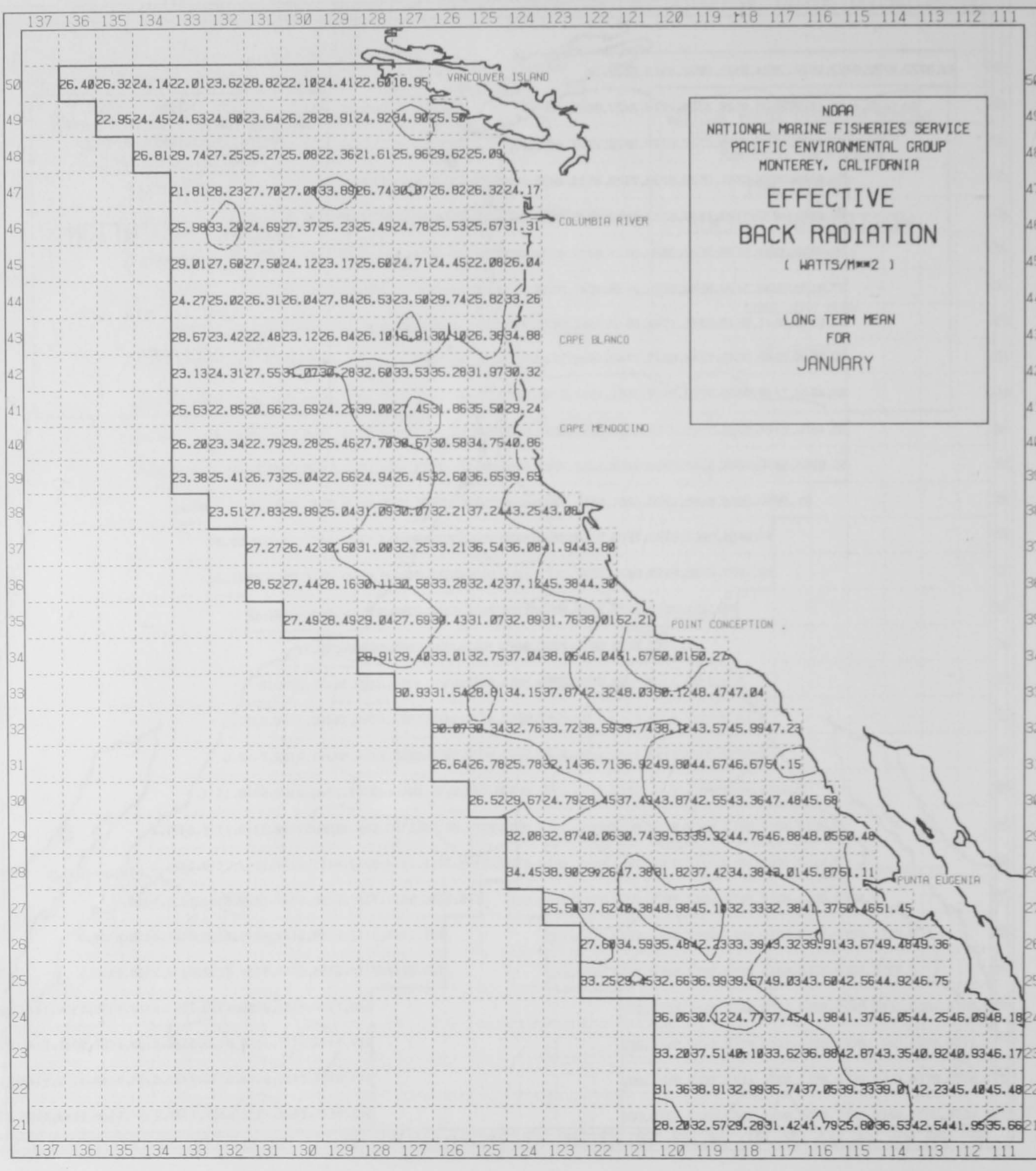

Chart 13.—Composite monthly mean effective back radiation for January.

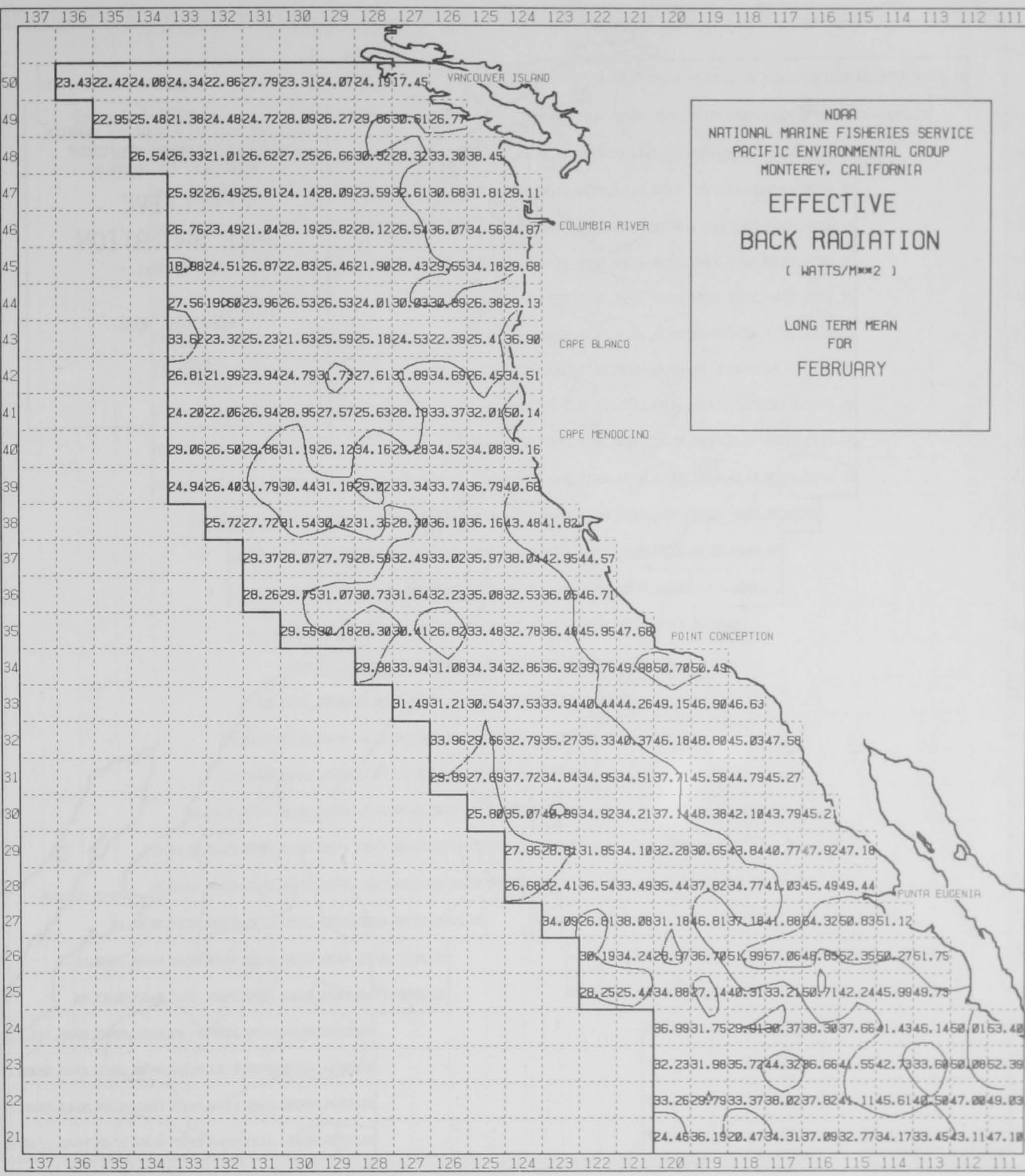

Chart 14.—Composite monthly mean effective back radiation for February.

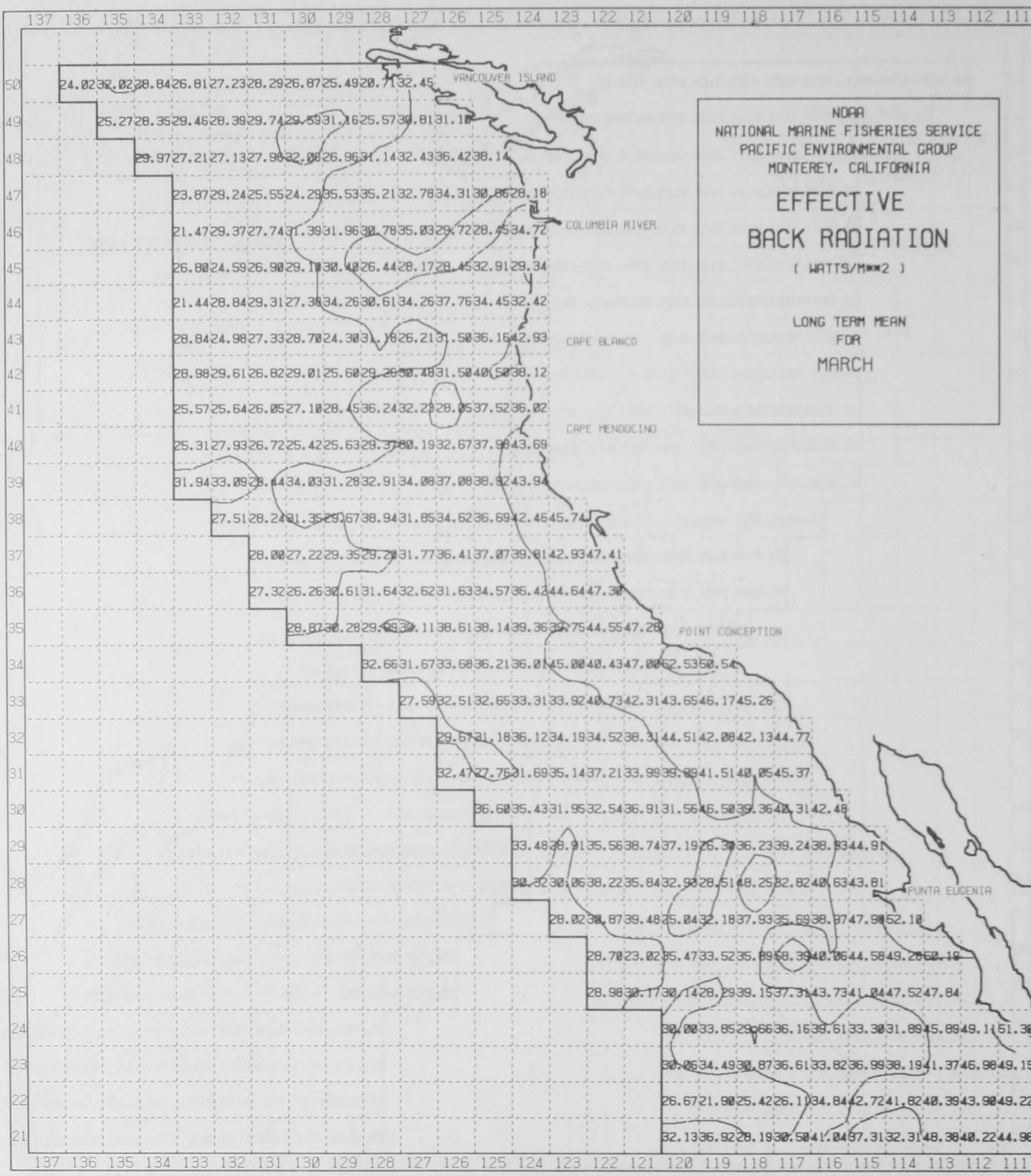

Chart 15.—Composite monthly mean effective back radiation for March.

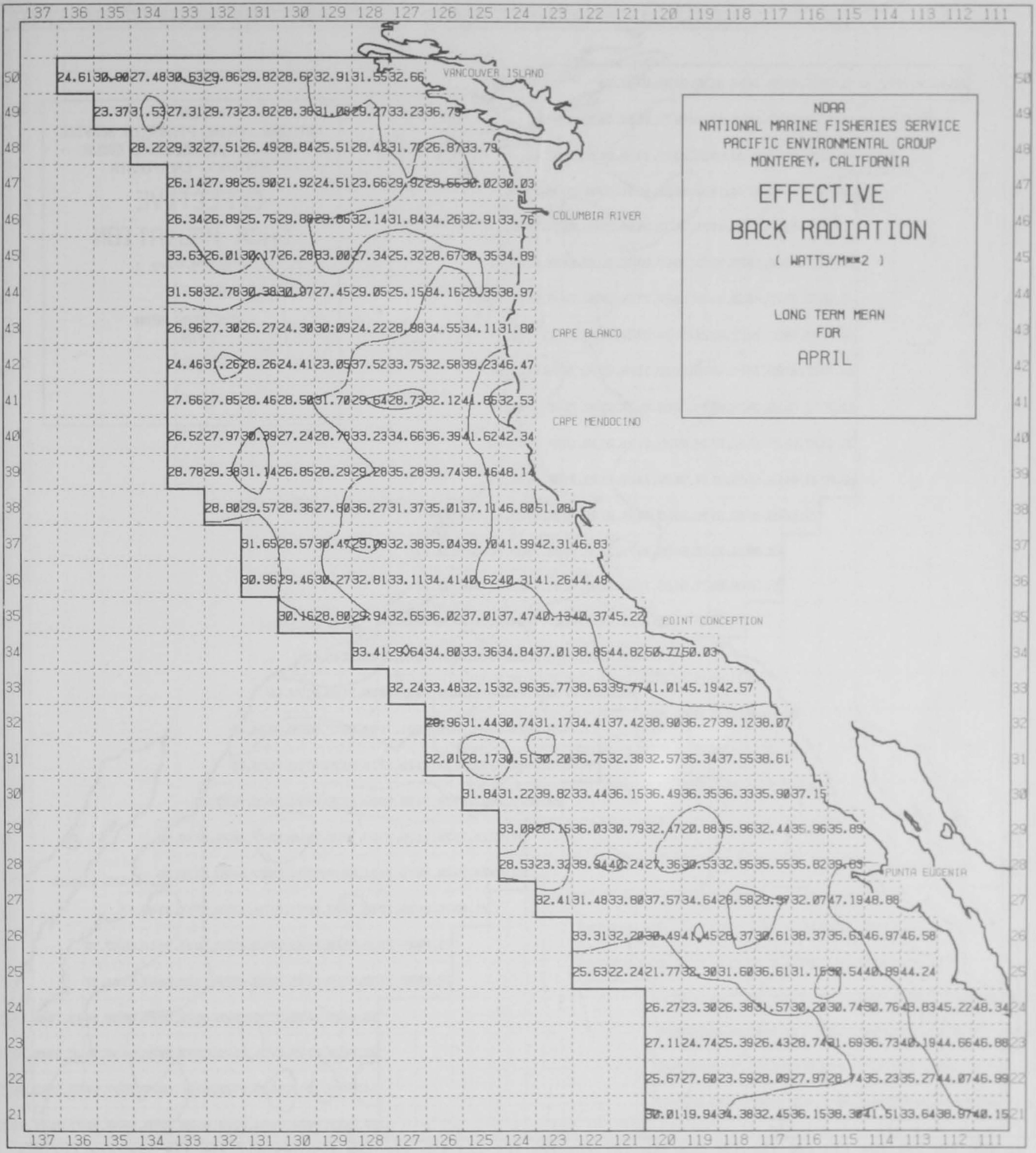

Chart 16.—Composite monthly mean effective back radiation for April.

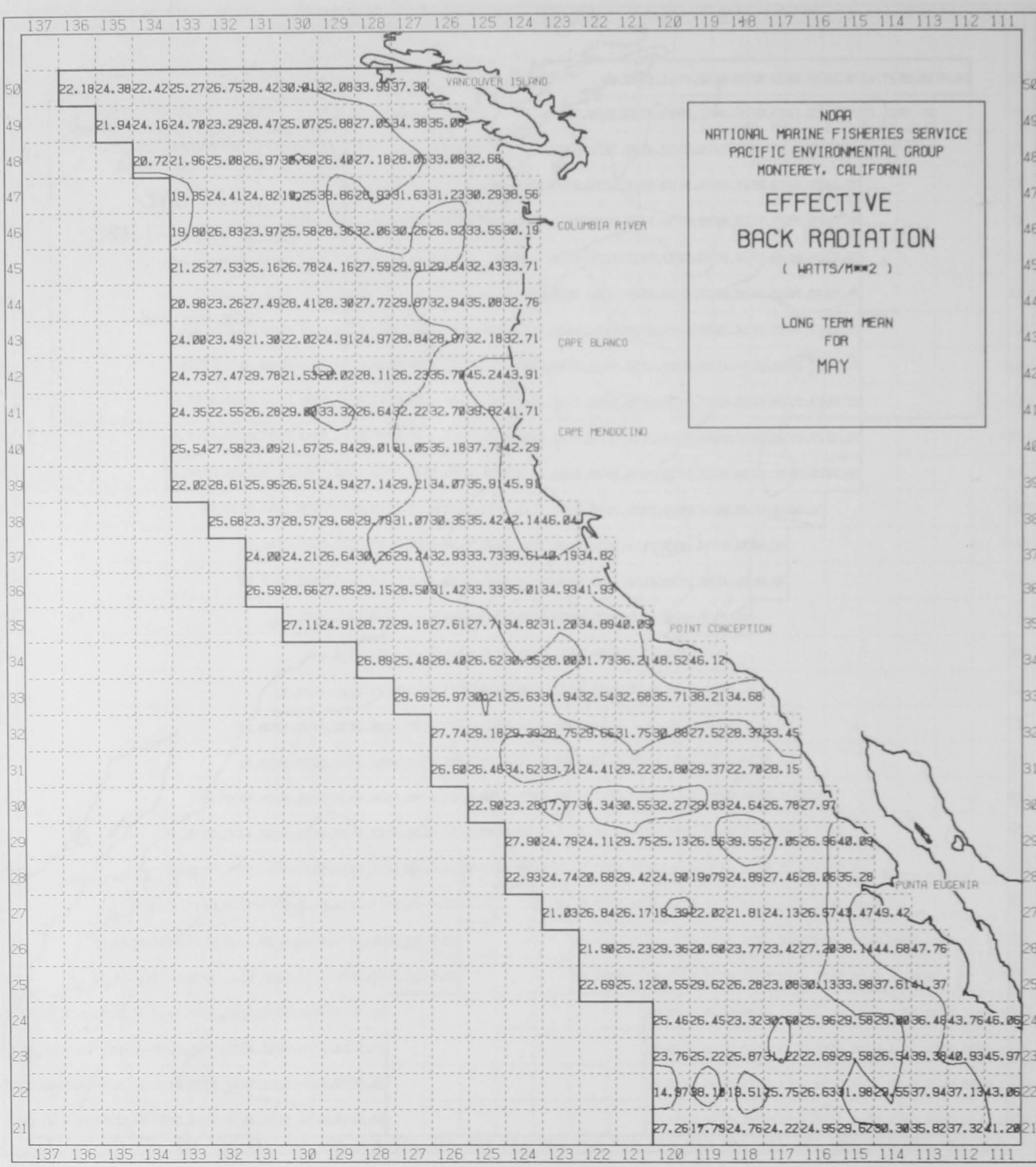

Chart 17.—Composite monthly mean effective back radiation for May.

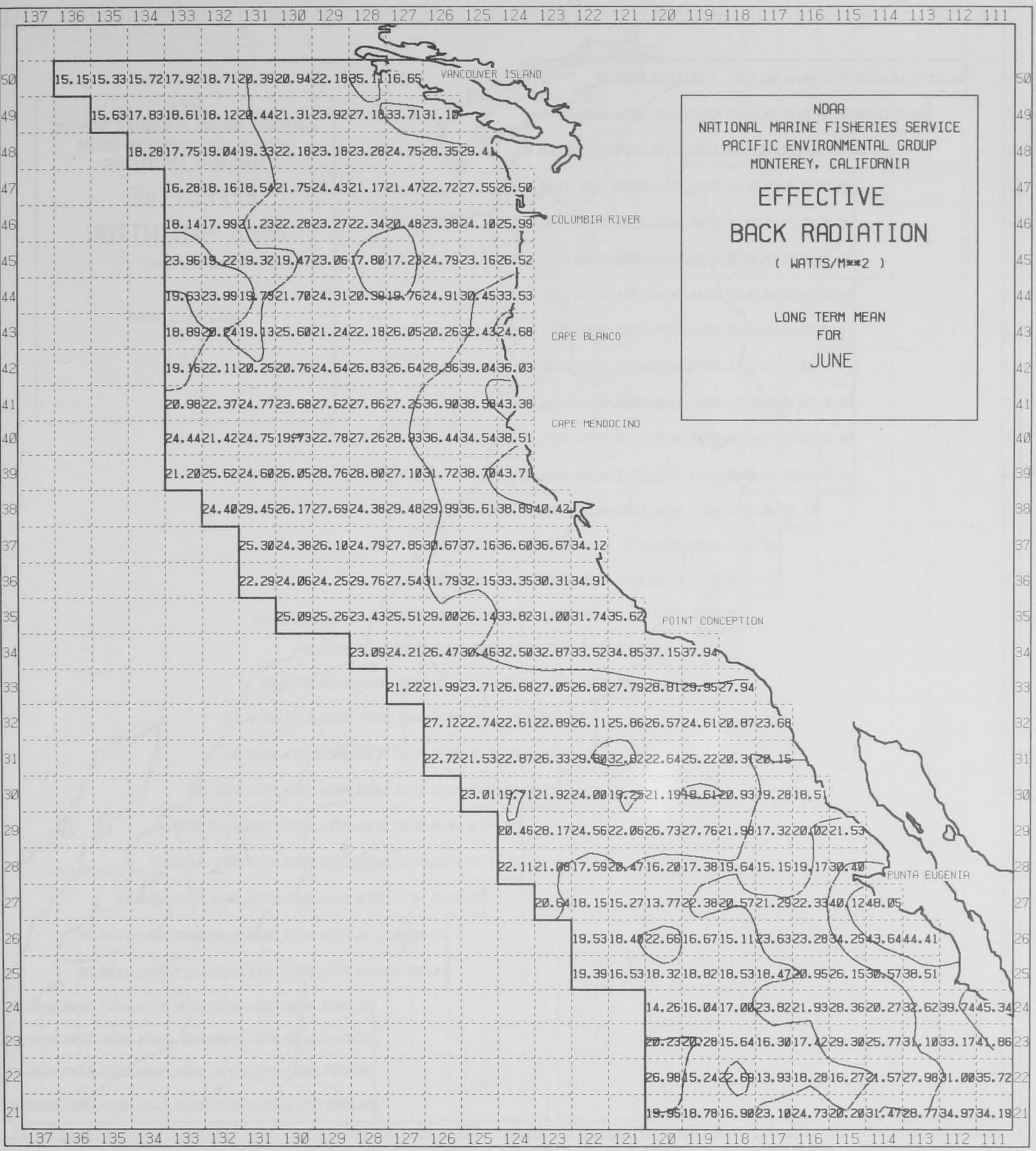

Chart 18.—Composite monthly mean effective back radiation for June.

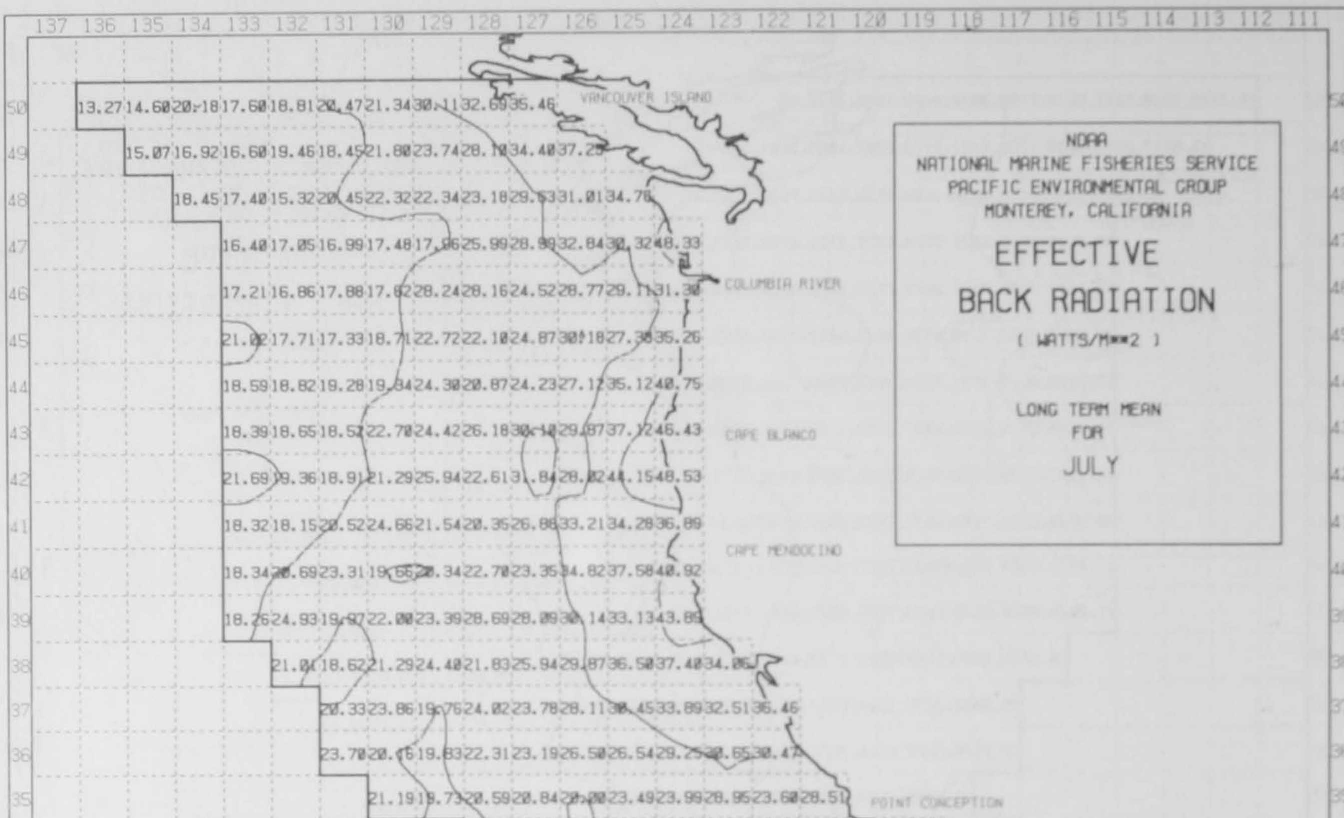

Chart 19.—Composite monthly mean effective back radiation for July.

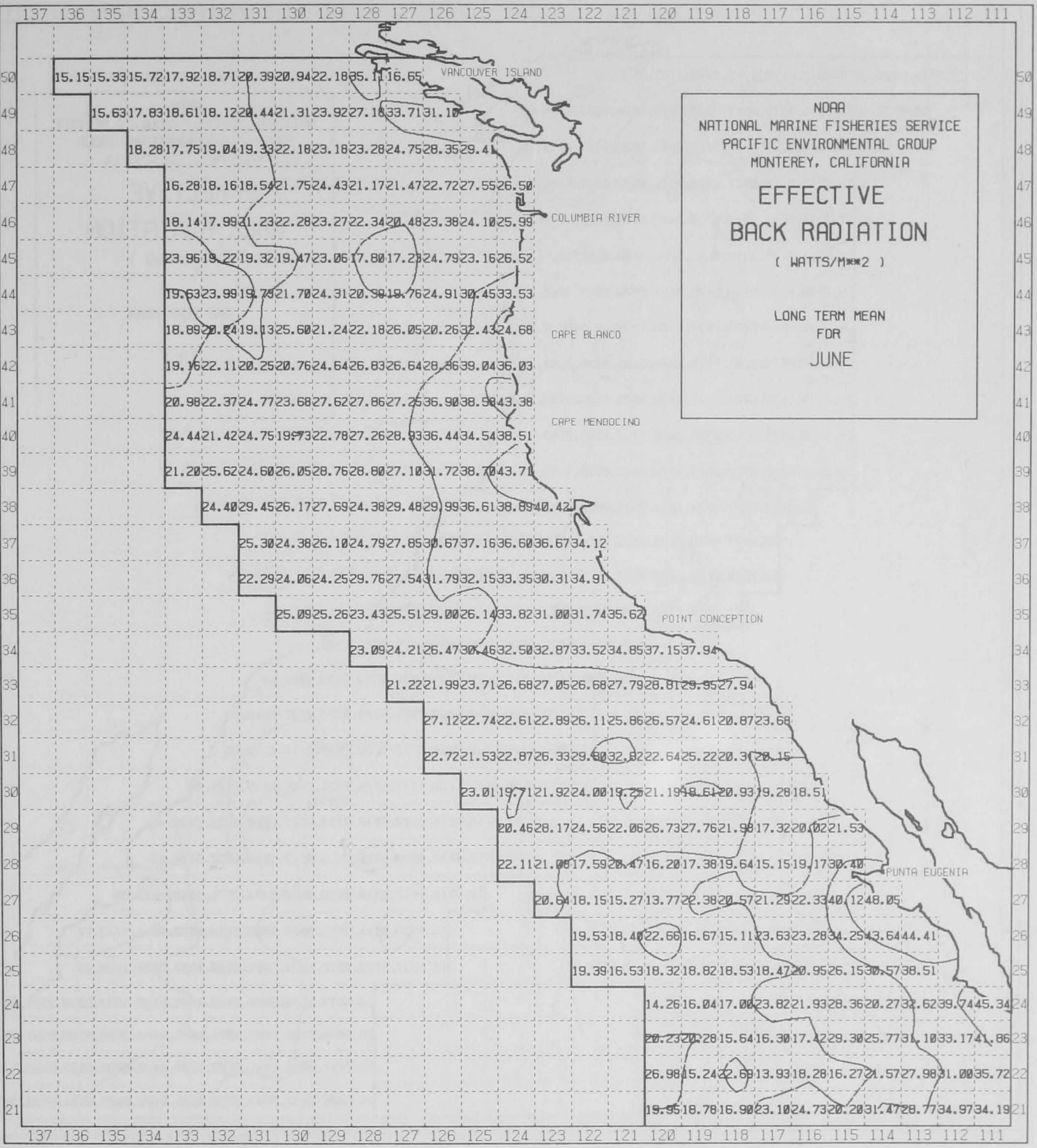

Chart 18.—Composite monthly mean effective back radiation for June.

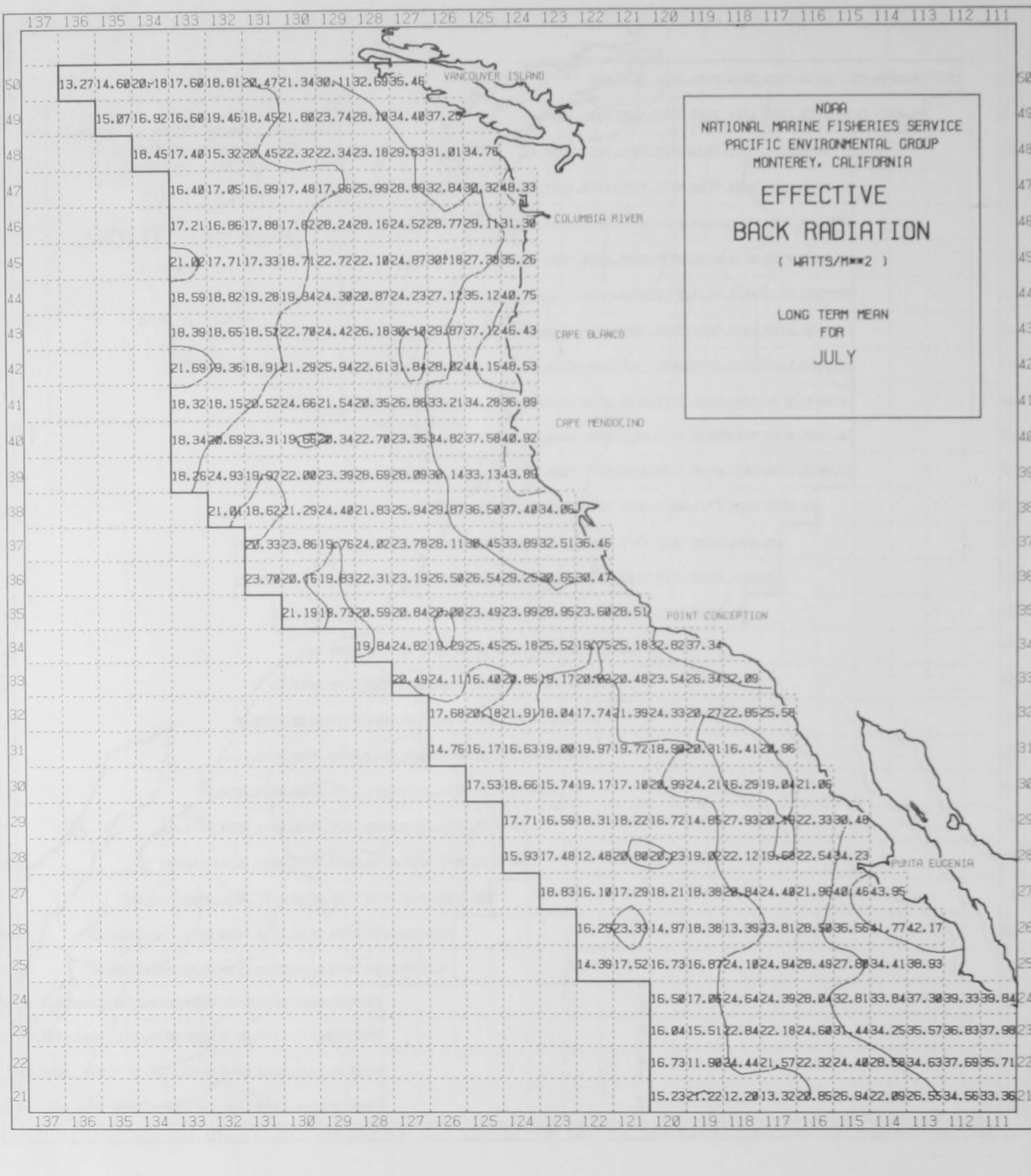

Chart 19.—Composite monthly mean effective back radiation for July.

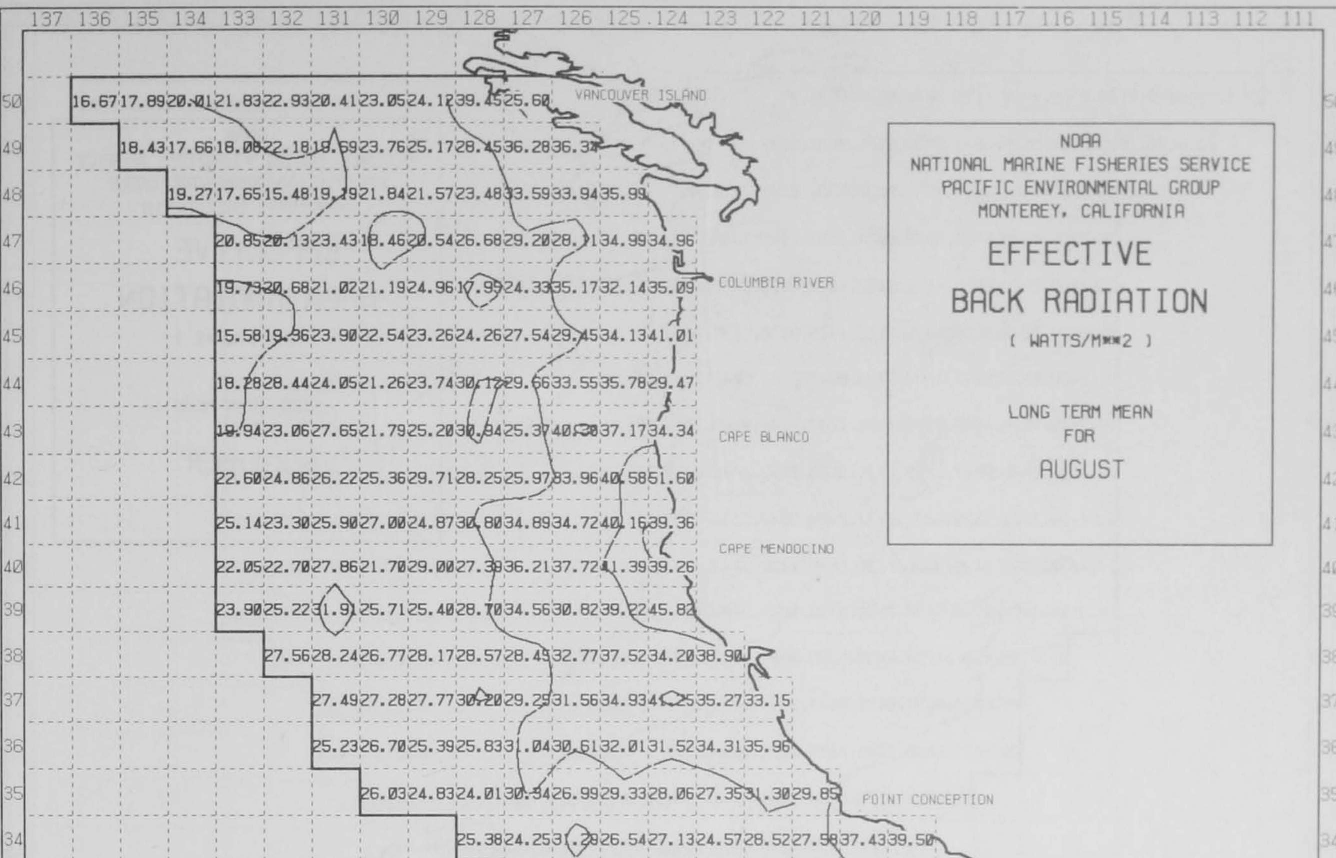

Chart 20.—Composite monthly mean effective back radiation for August.

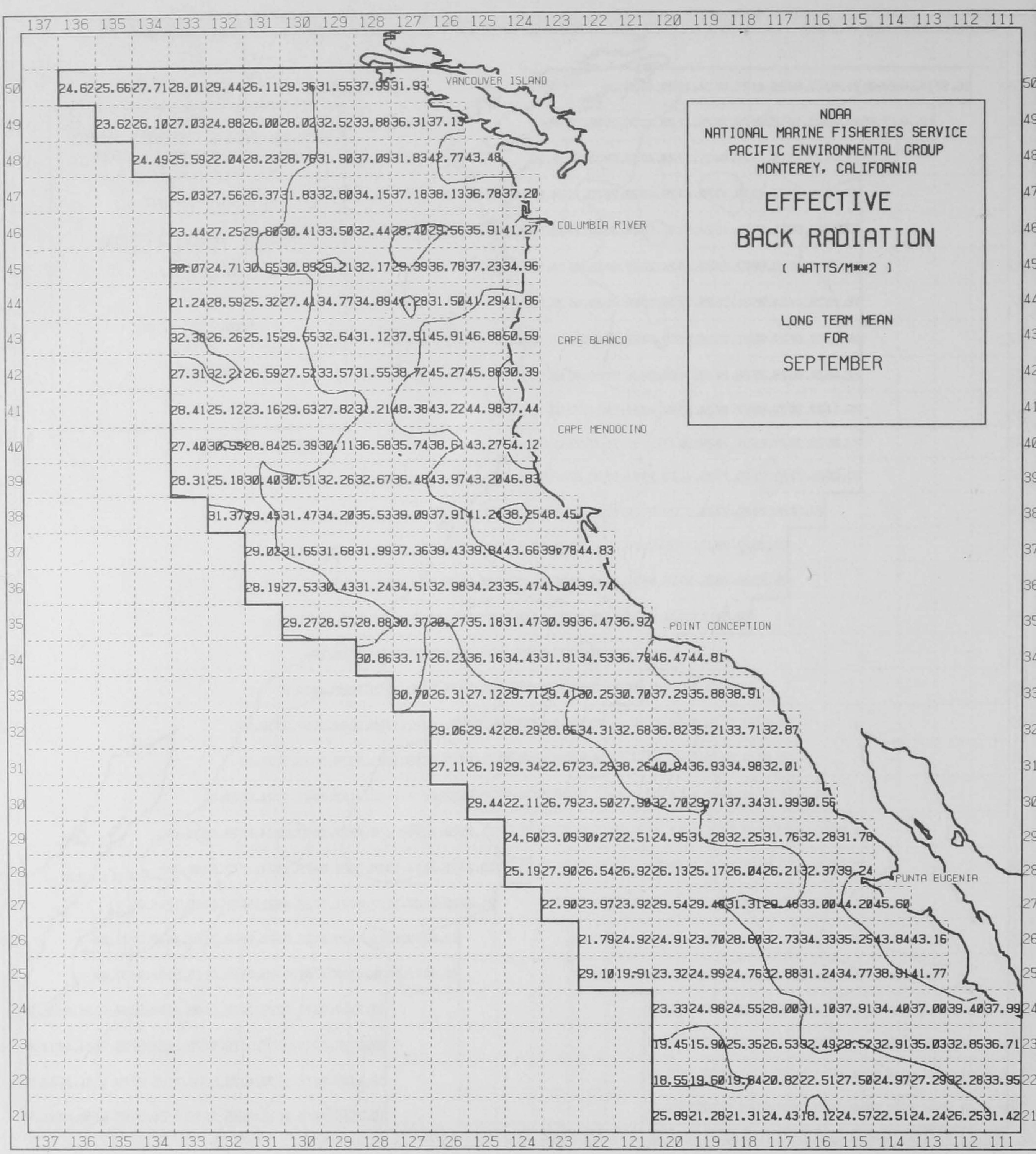

Chart 21.—Composite monthly mean effective back radiation for September.

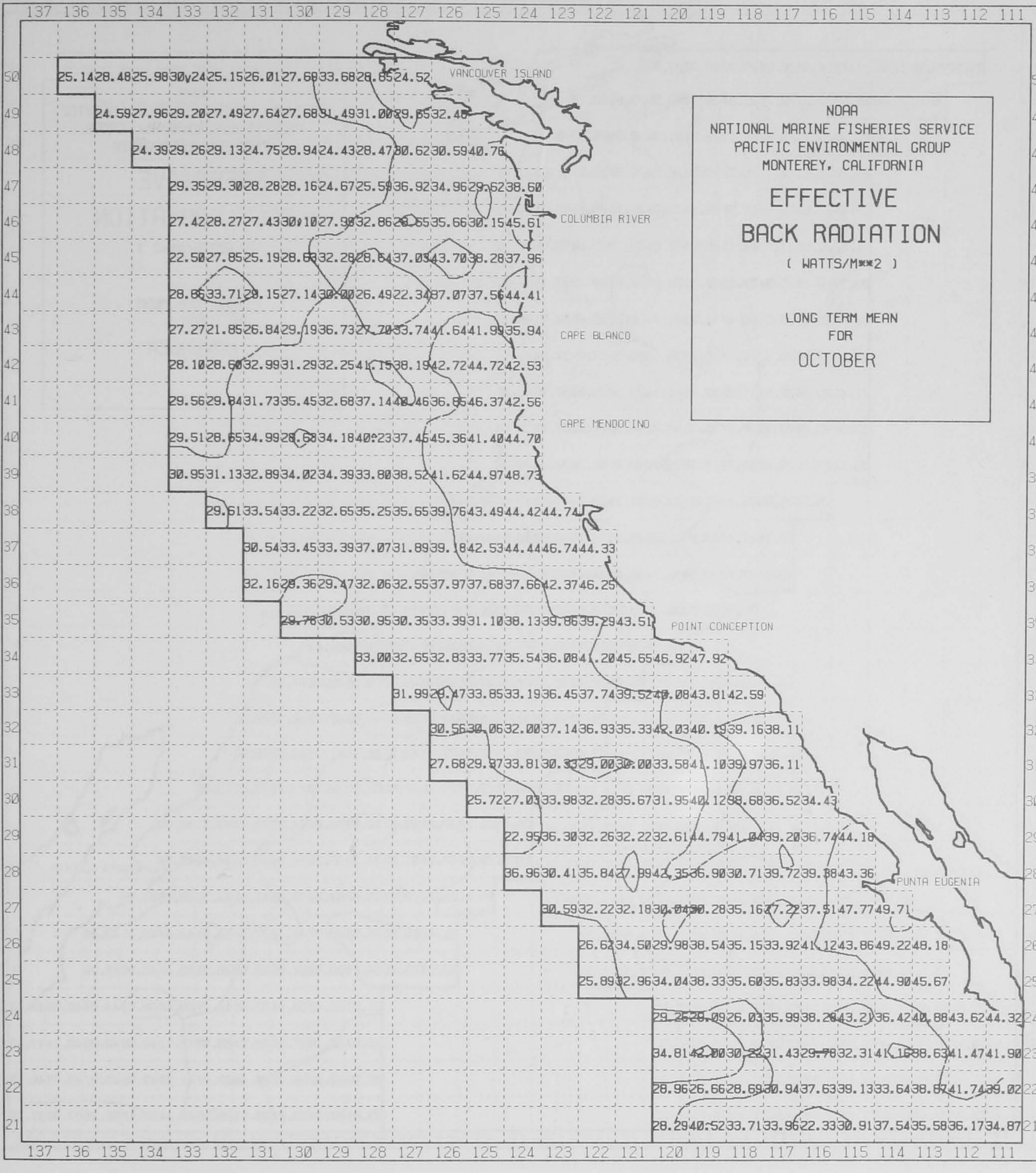

Chart 22.—Composite monthly mean effective back radiation for October.

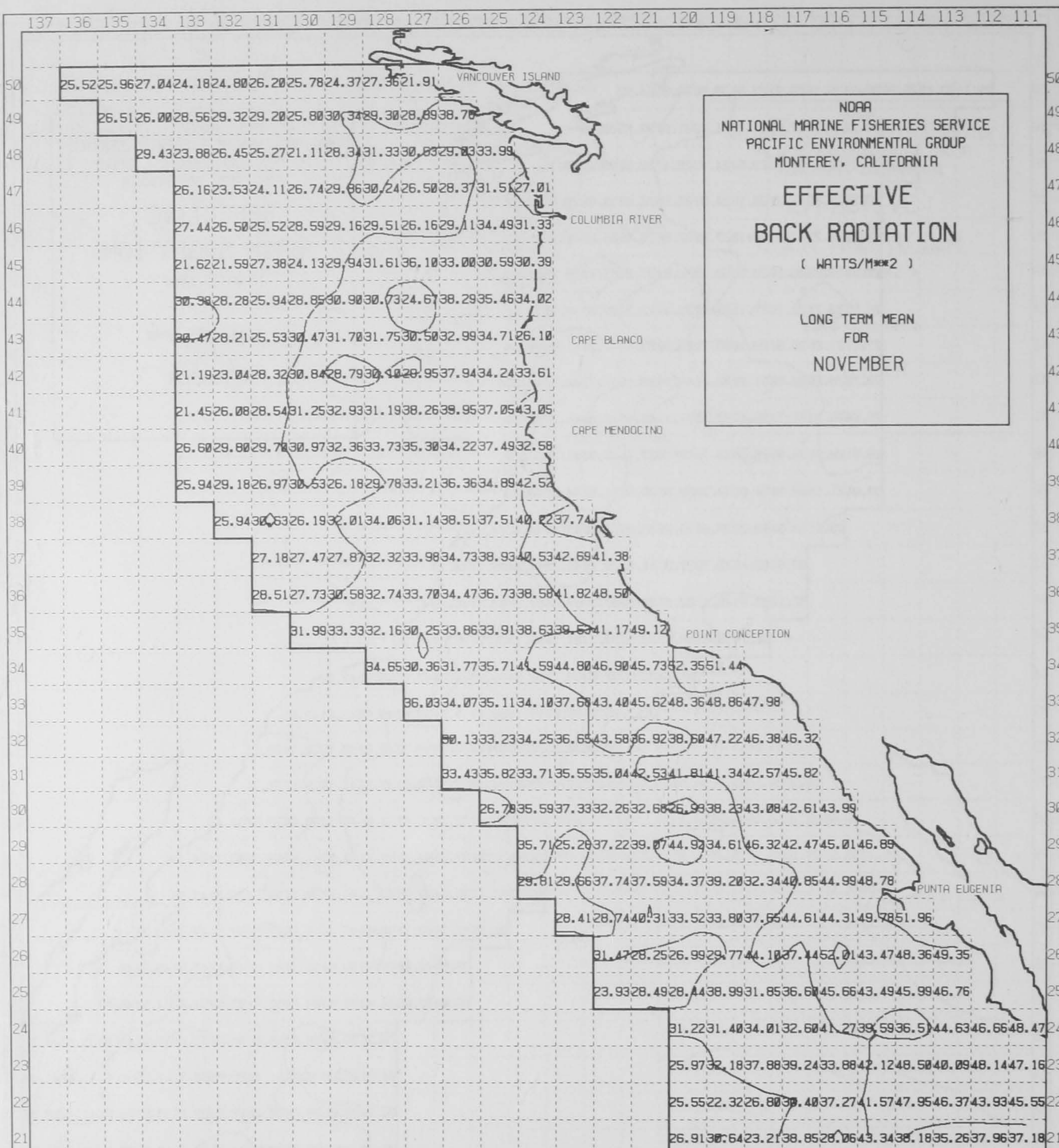

Chart 23.—Composite monthly mean effective back radiation for November.

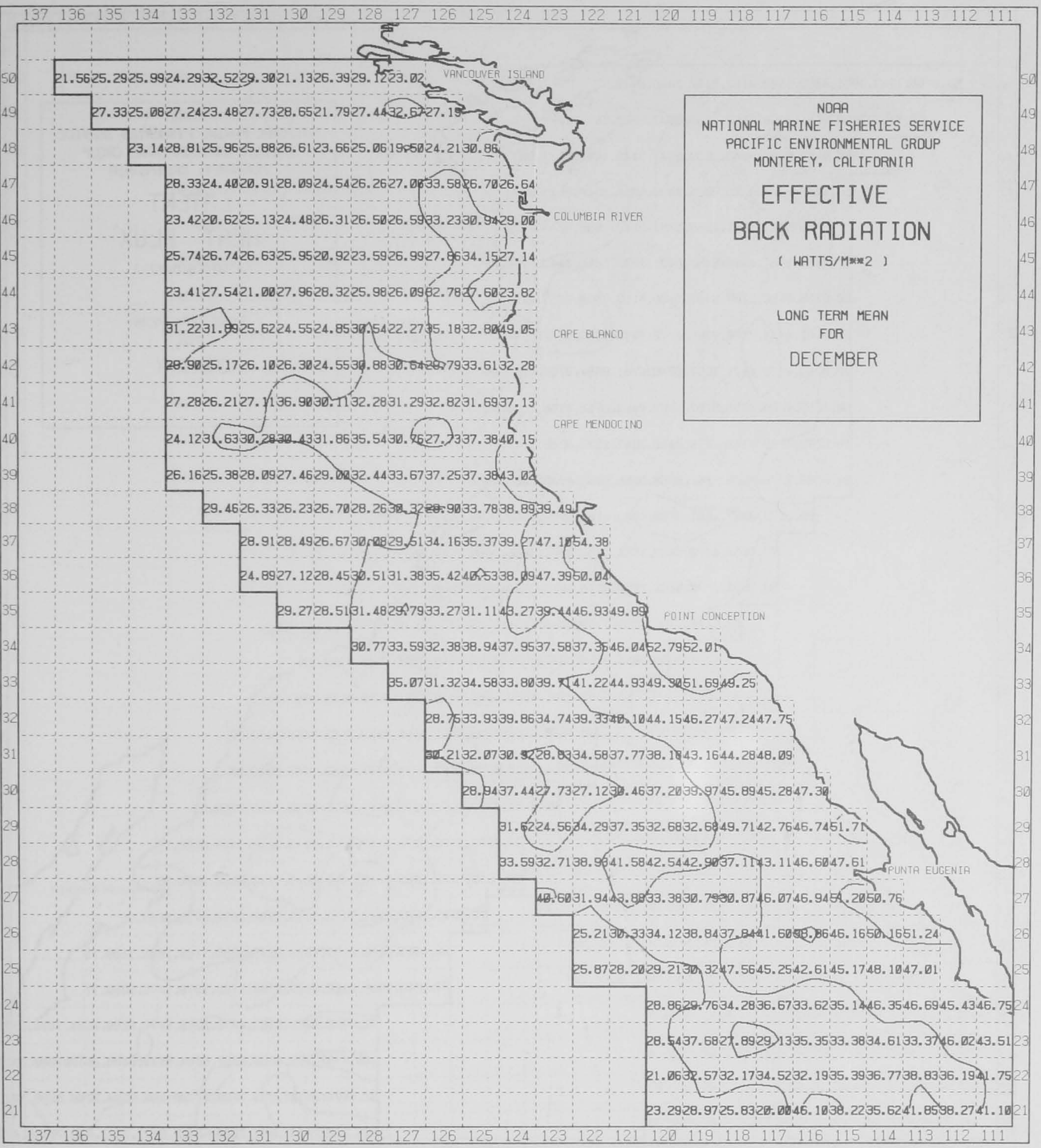

Chart 24.—Composite monthly mean effective back radiation for December.

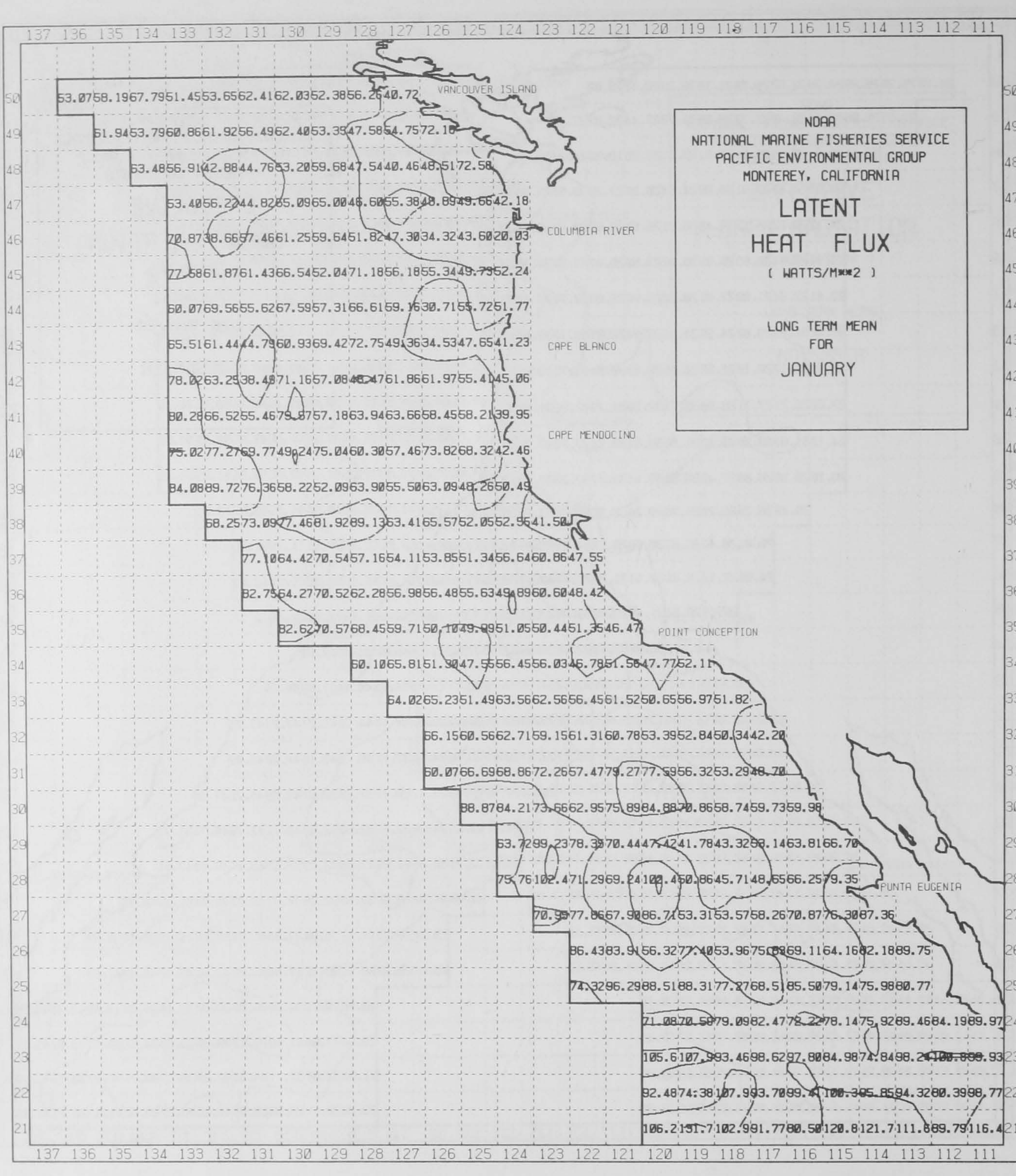

Chart 25.—Composite monthly mean latent heat flux for January.

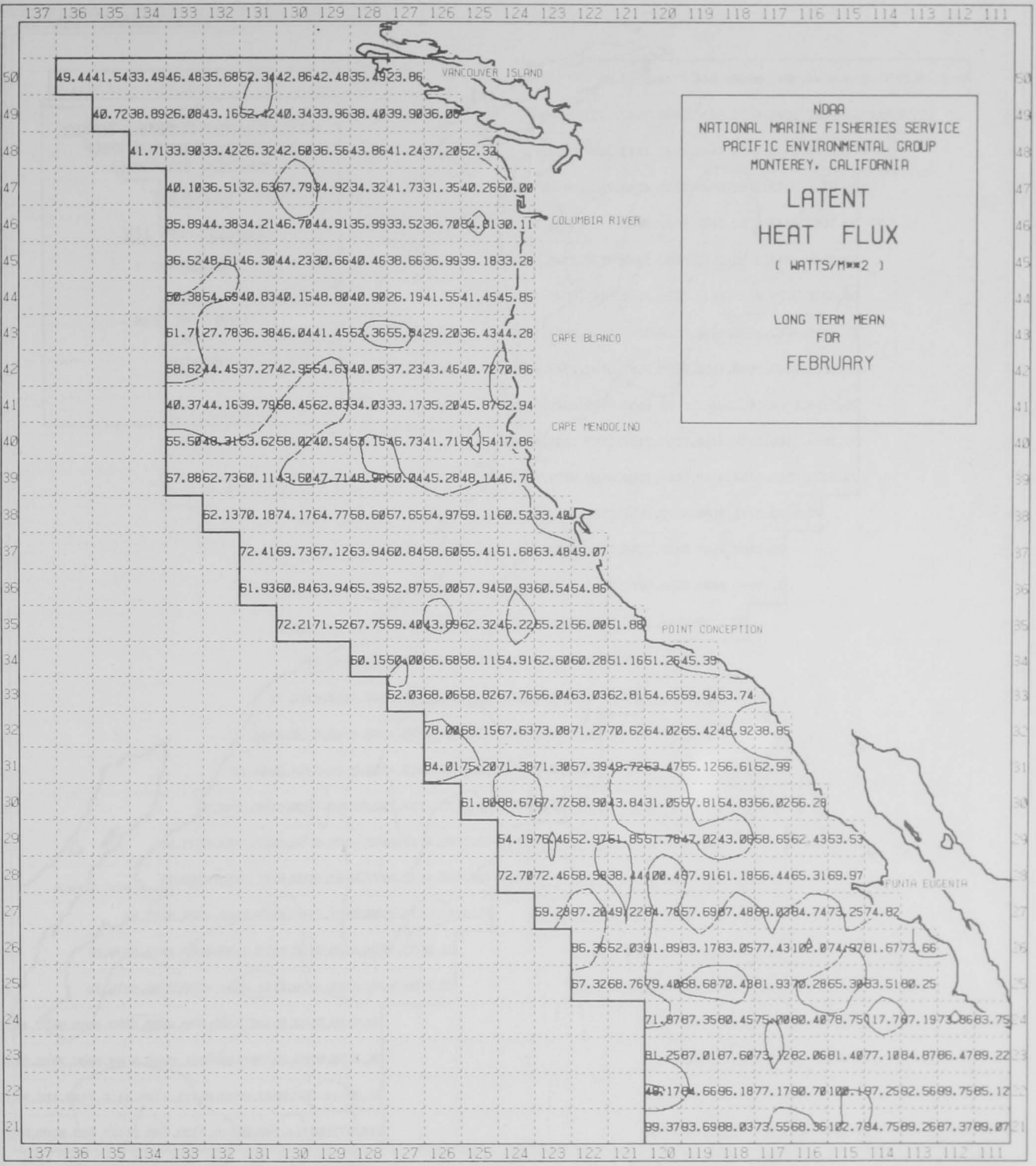

Chart 26.—Composite monthly mean latent heat flux for February.

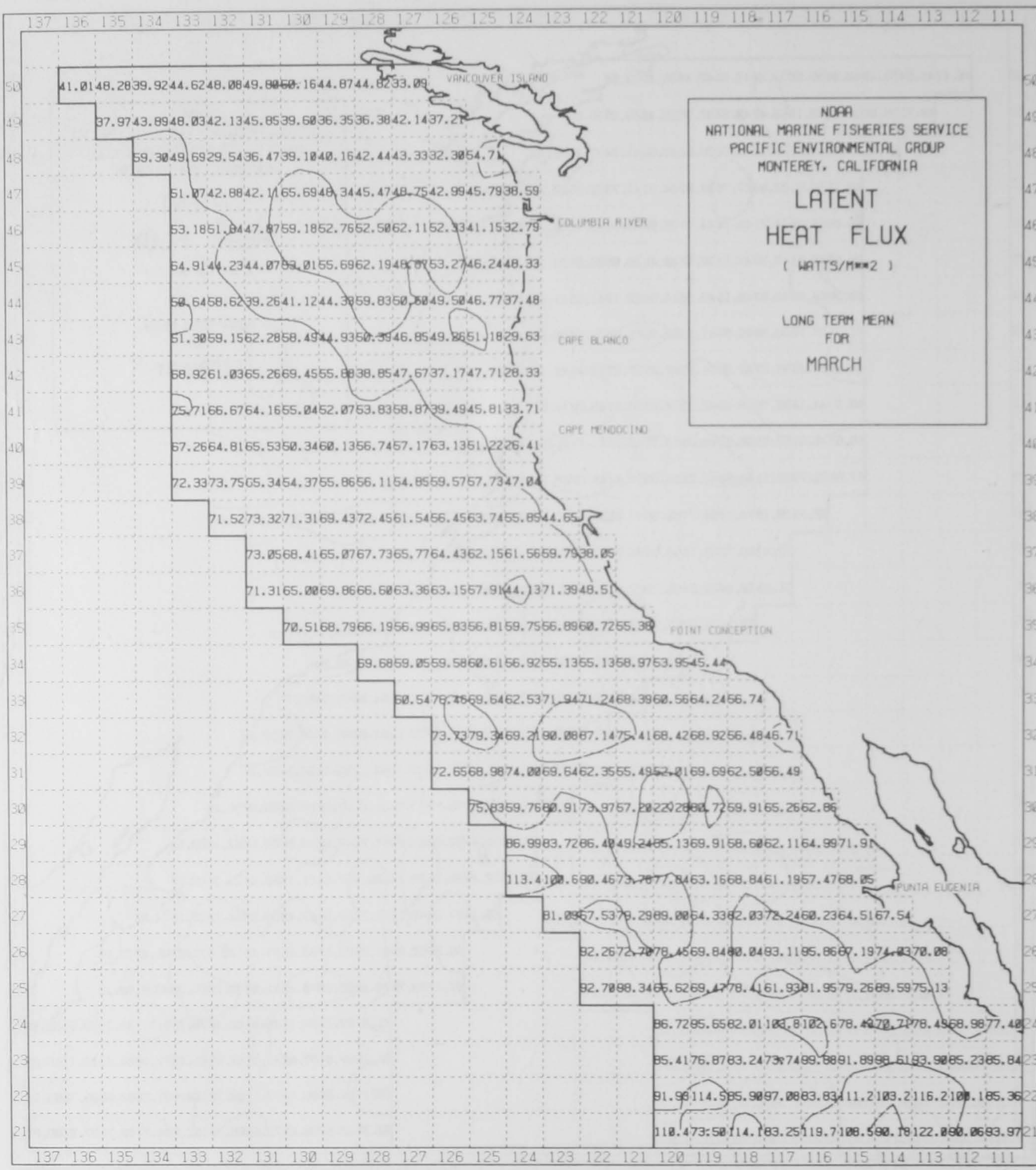

Chart 27.—Composite monthly mean latent heat flux for March.

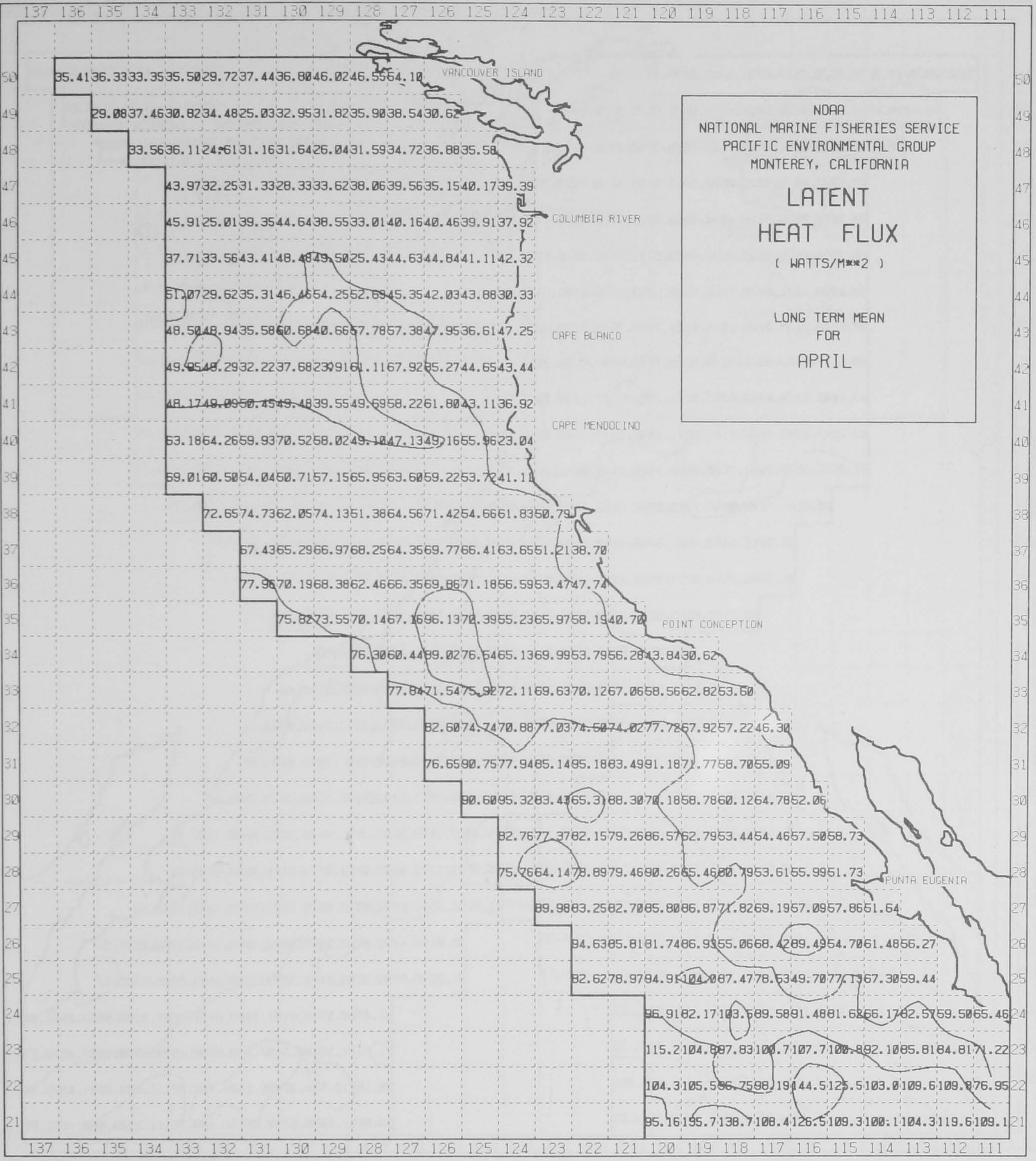

Chart 28.—Composite monthly mean latent heat flux for April.

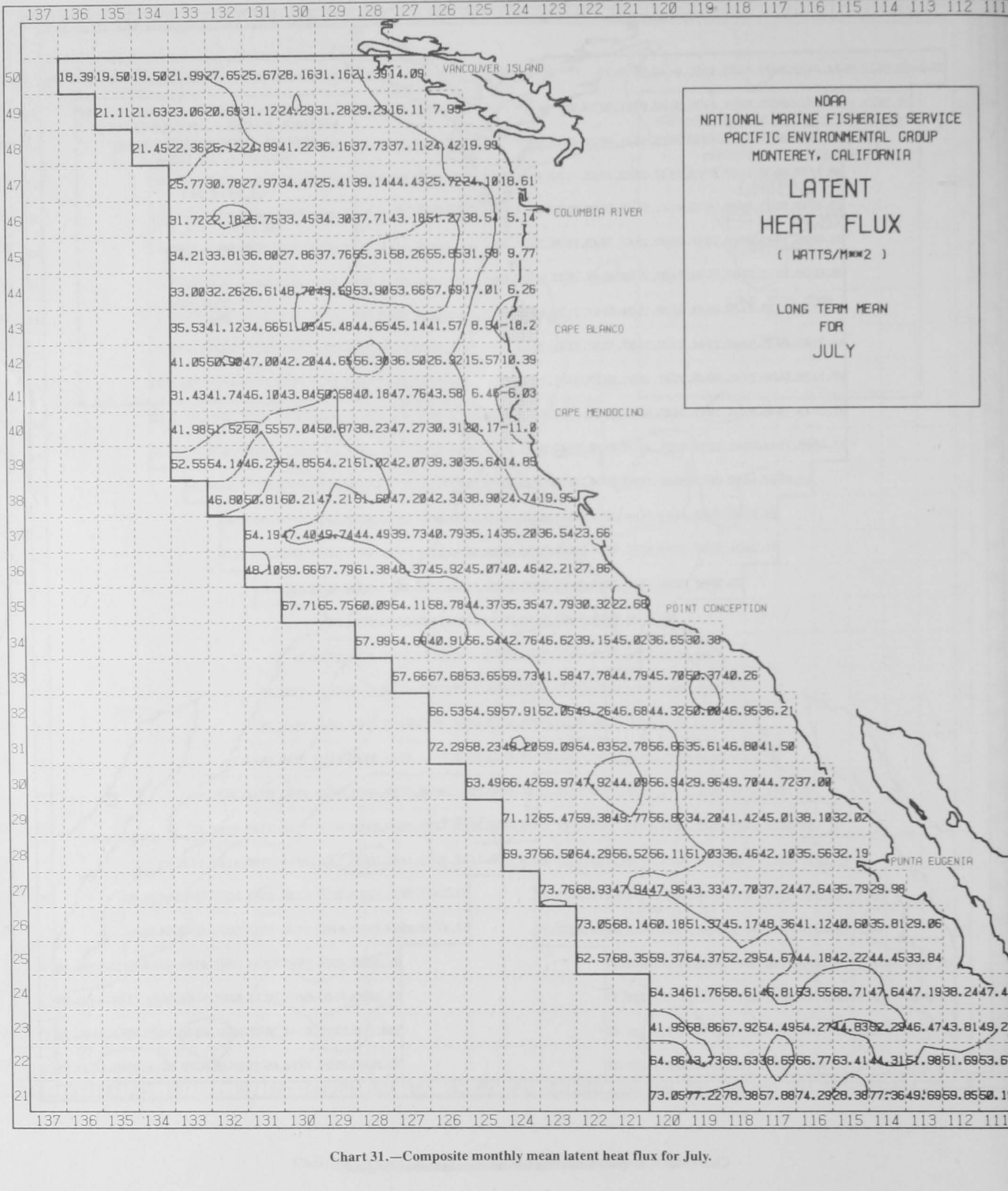

Chart 31.—Composite monthly mean latent heat flux for July.

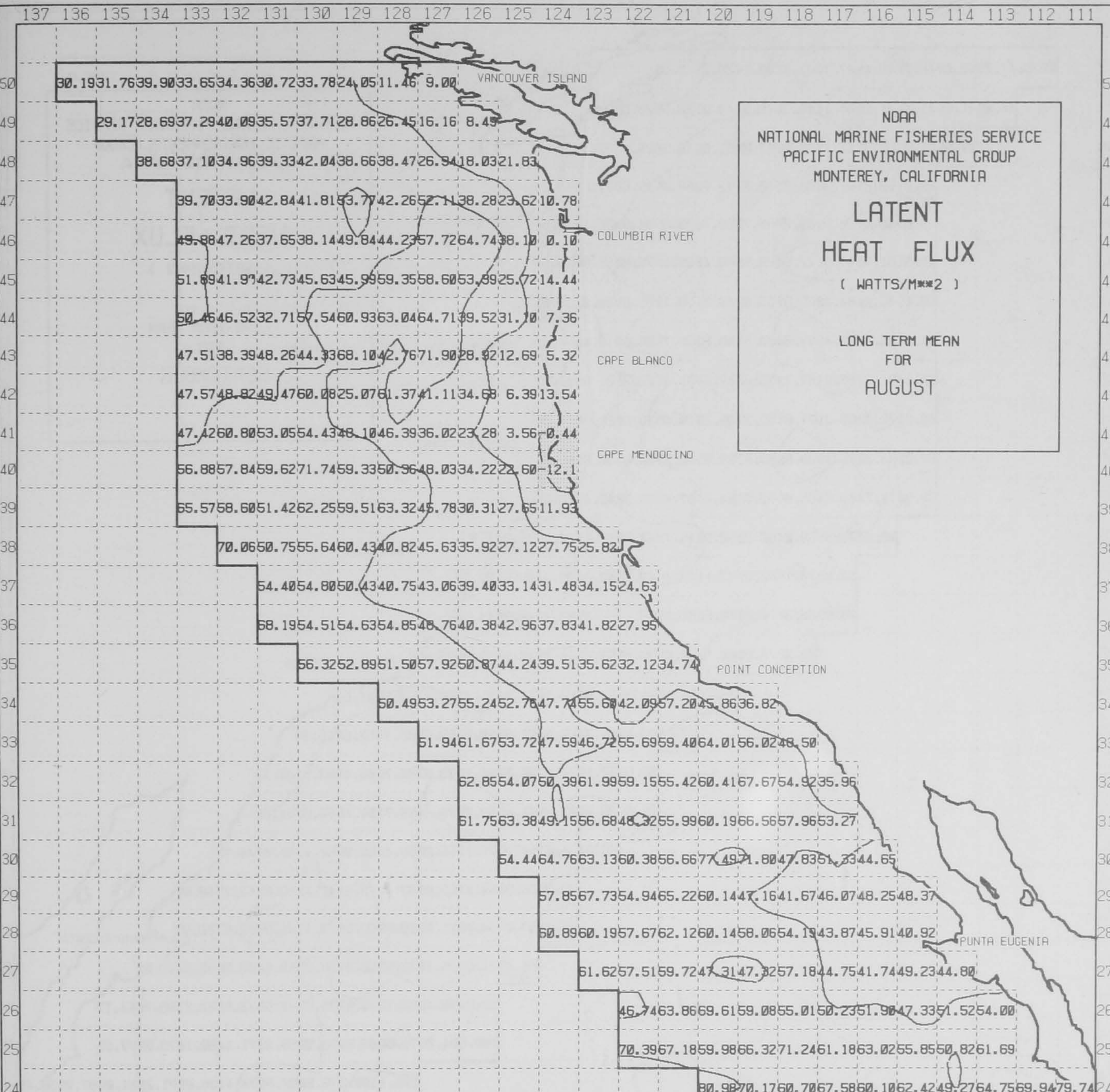

Chart 32.—Composite monthly mean latent heat flux for August.

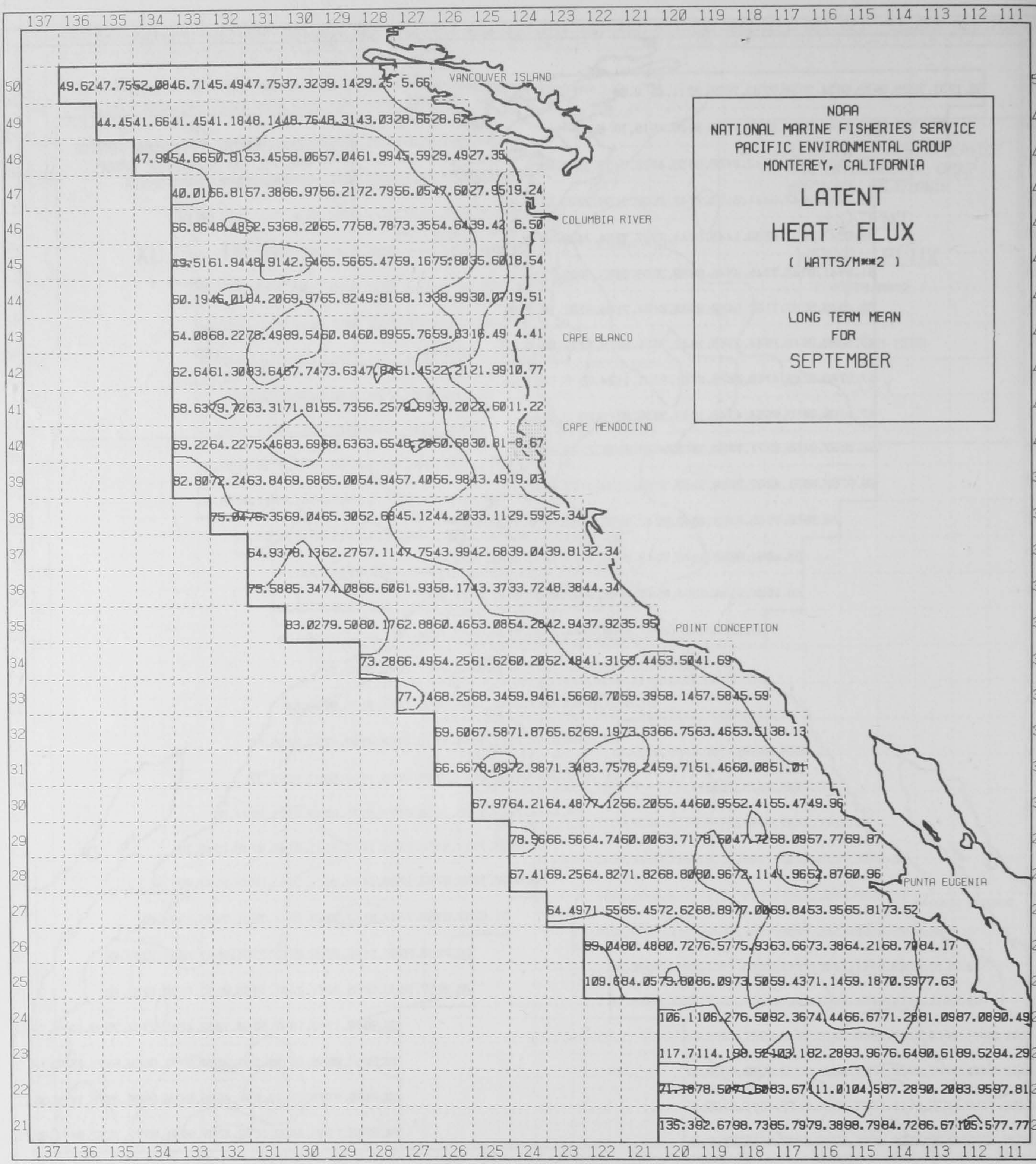

Chart 33.—Composite monthly mean latent heat flux for September.

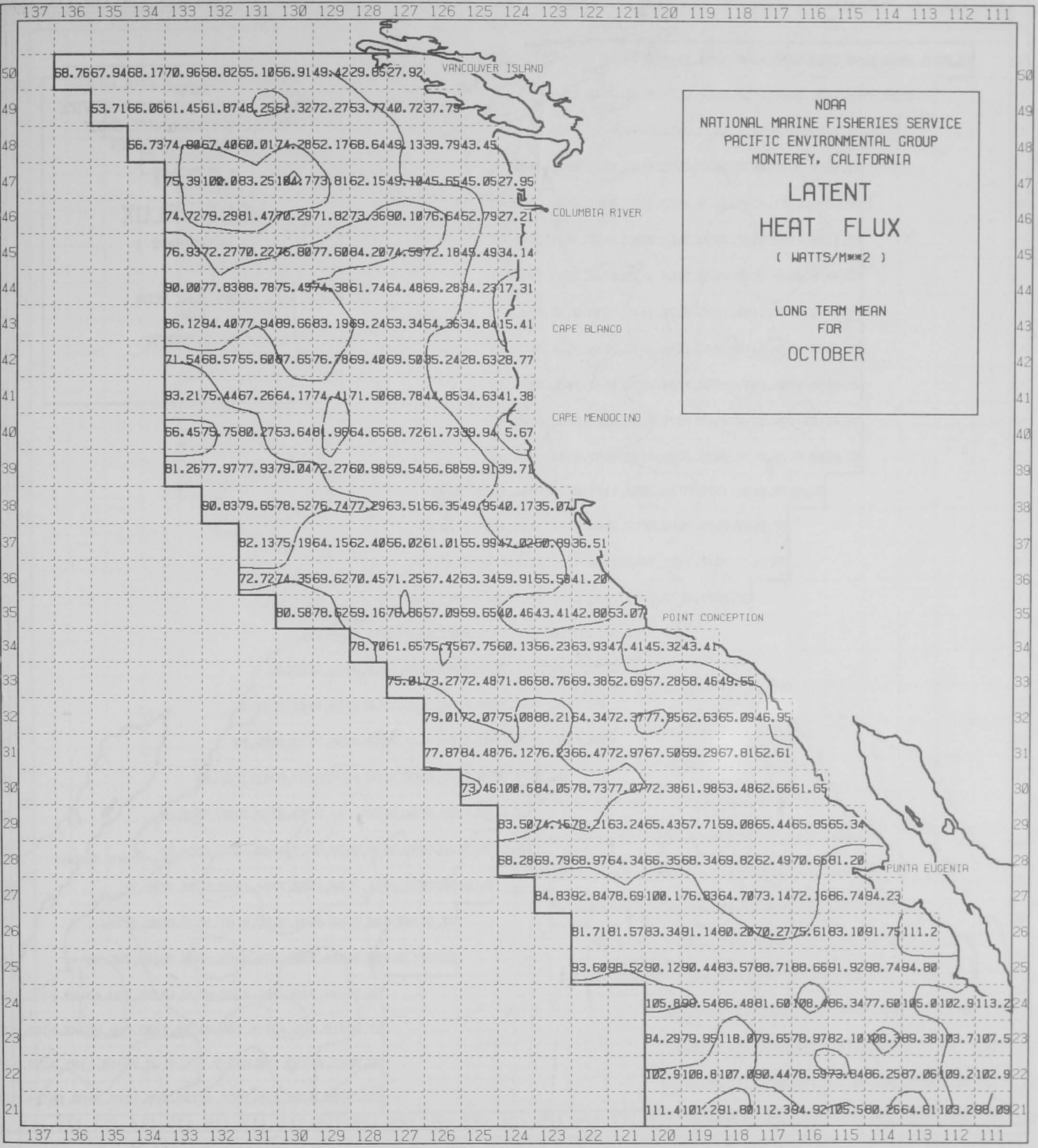

Chart 34.—Composite monthly mean latent heat flux for October.

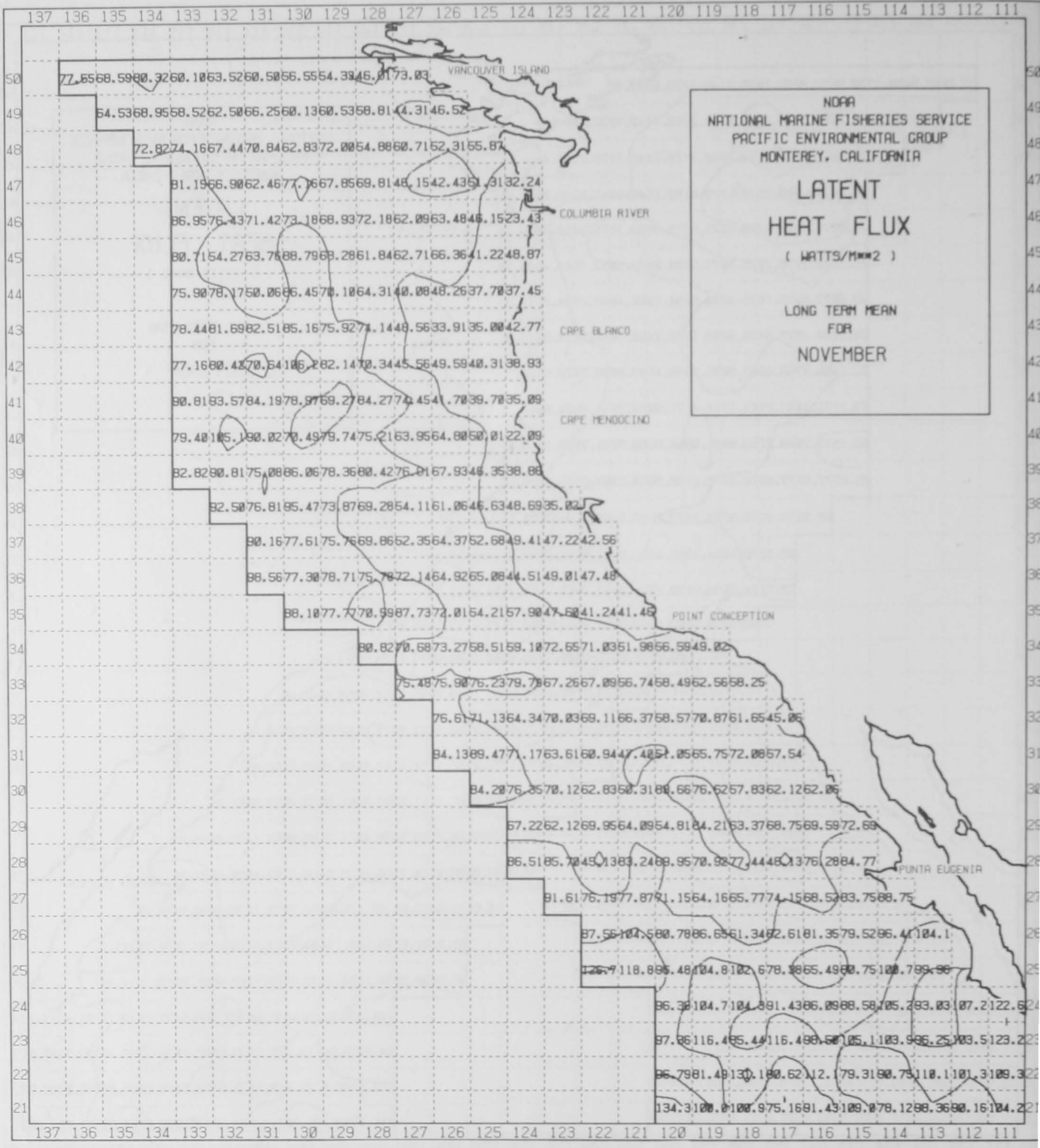

Chart 35.—Composite monthly mean latent heat flux for November.

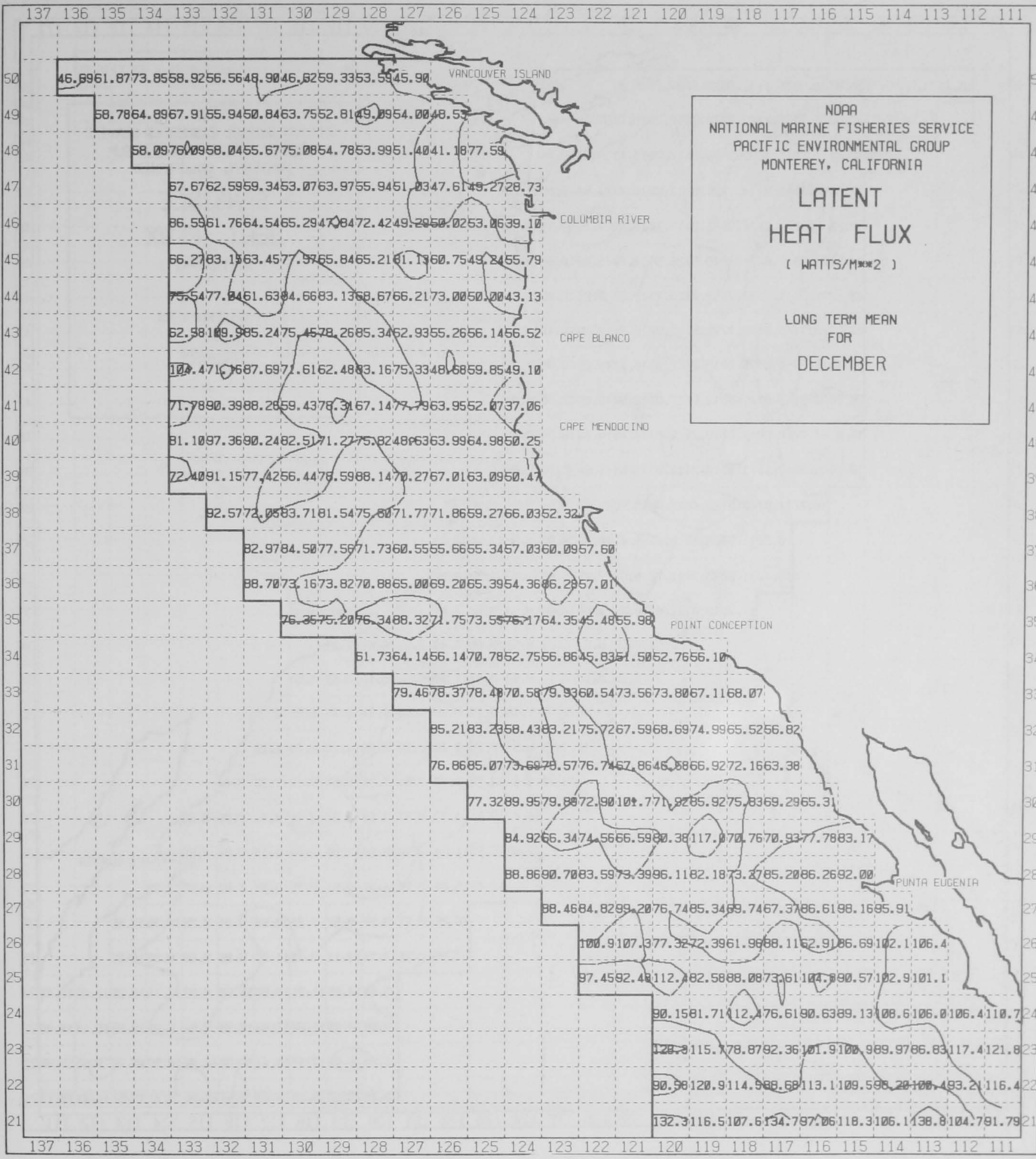

Chart 36.—Composite monthly mean latent heat flux for December.

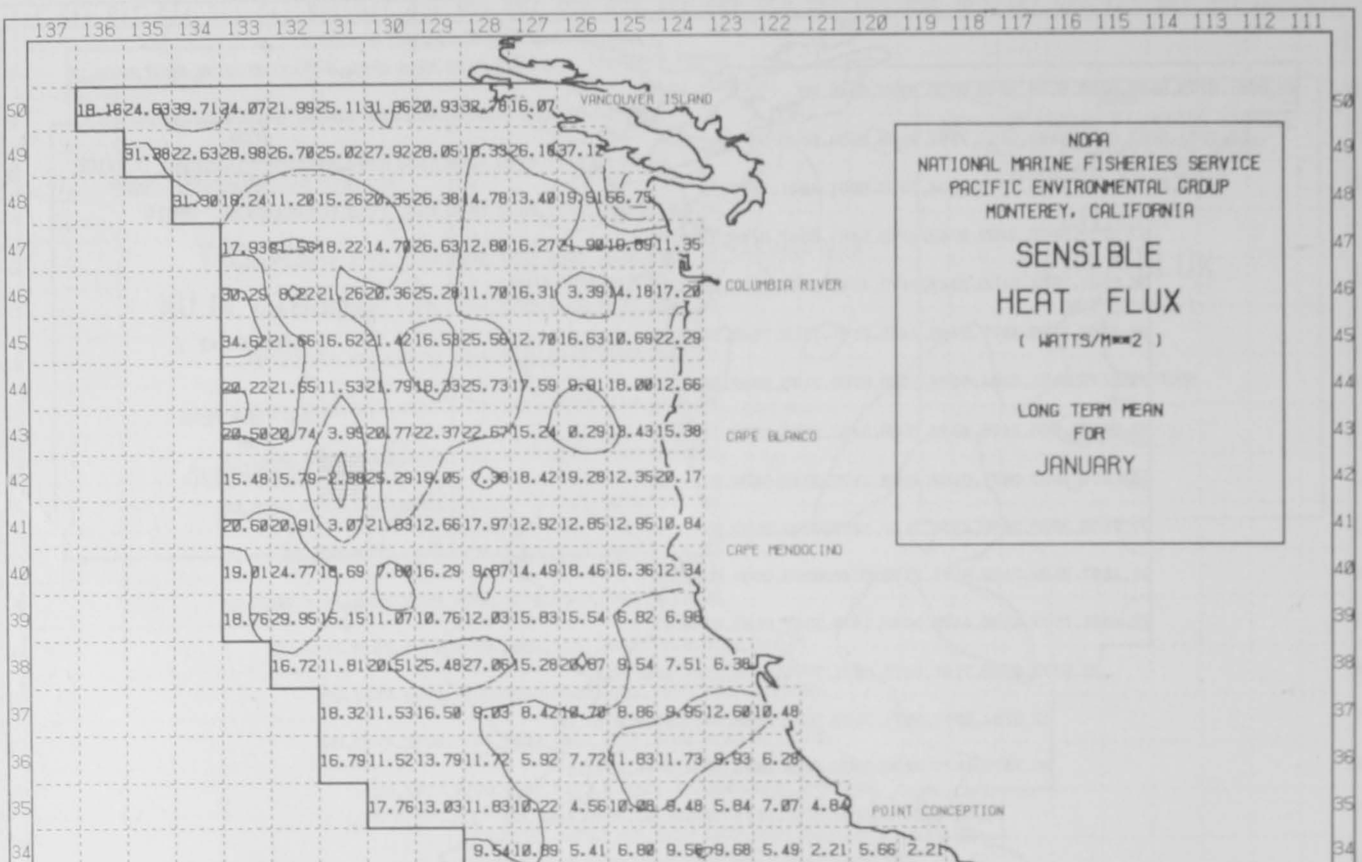

Chart 37.—Composite monthly mean sensible heat flux for January.

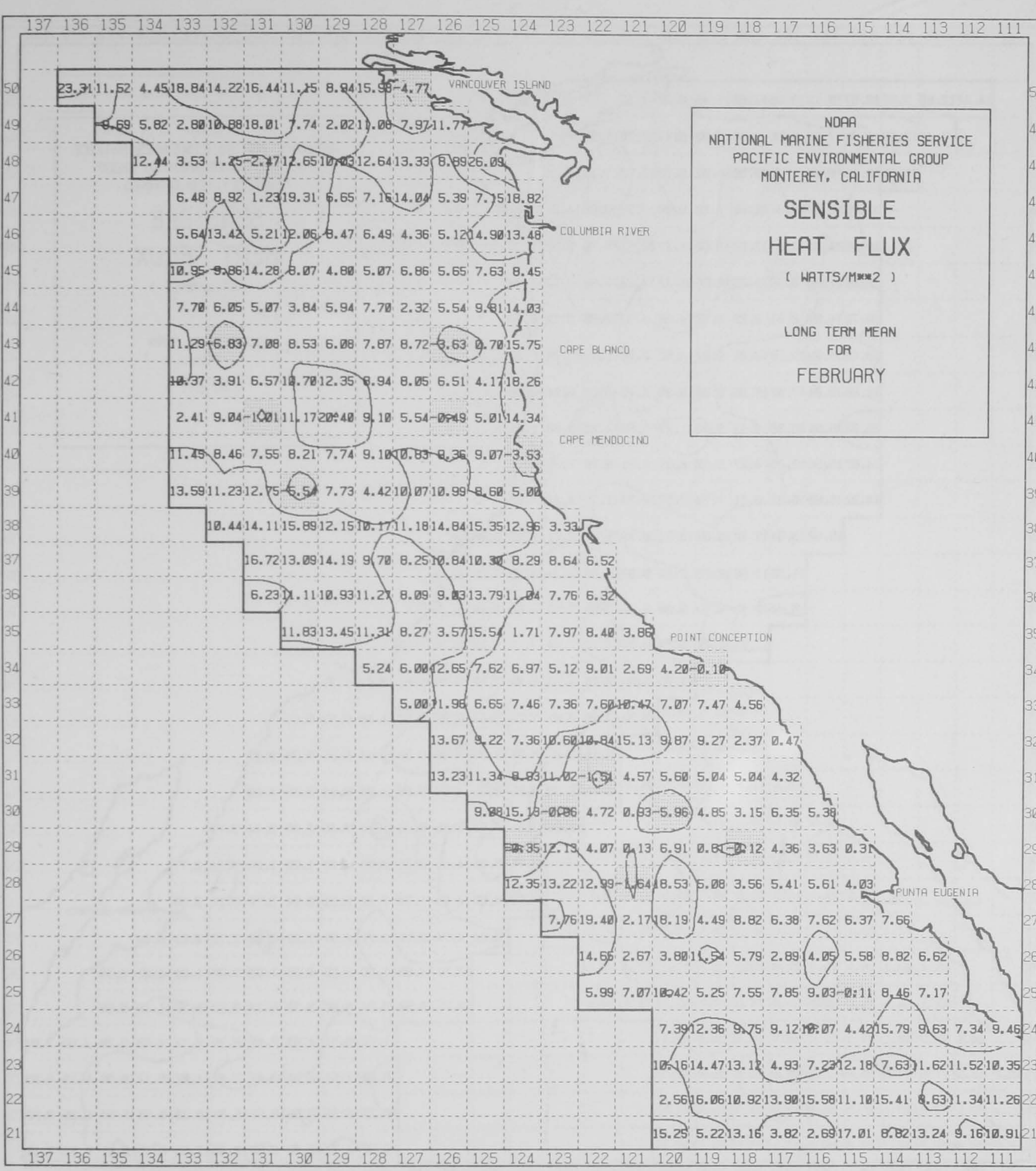

Chart 38.—Composite monthly mean sensible heat flux for February.

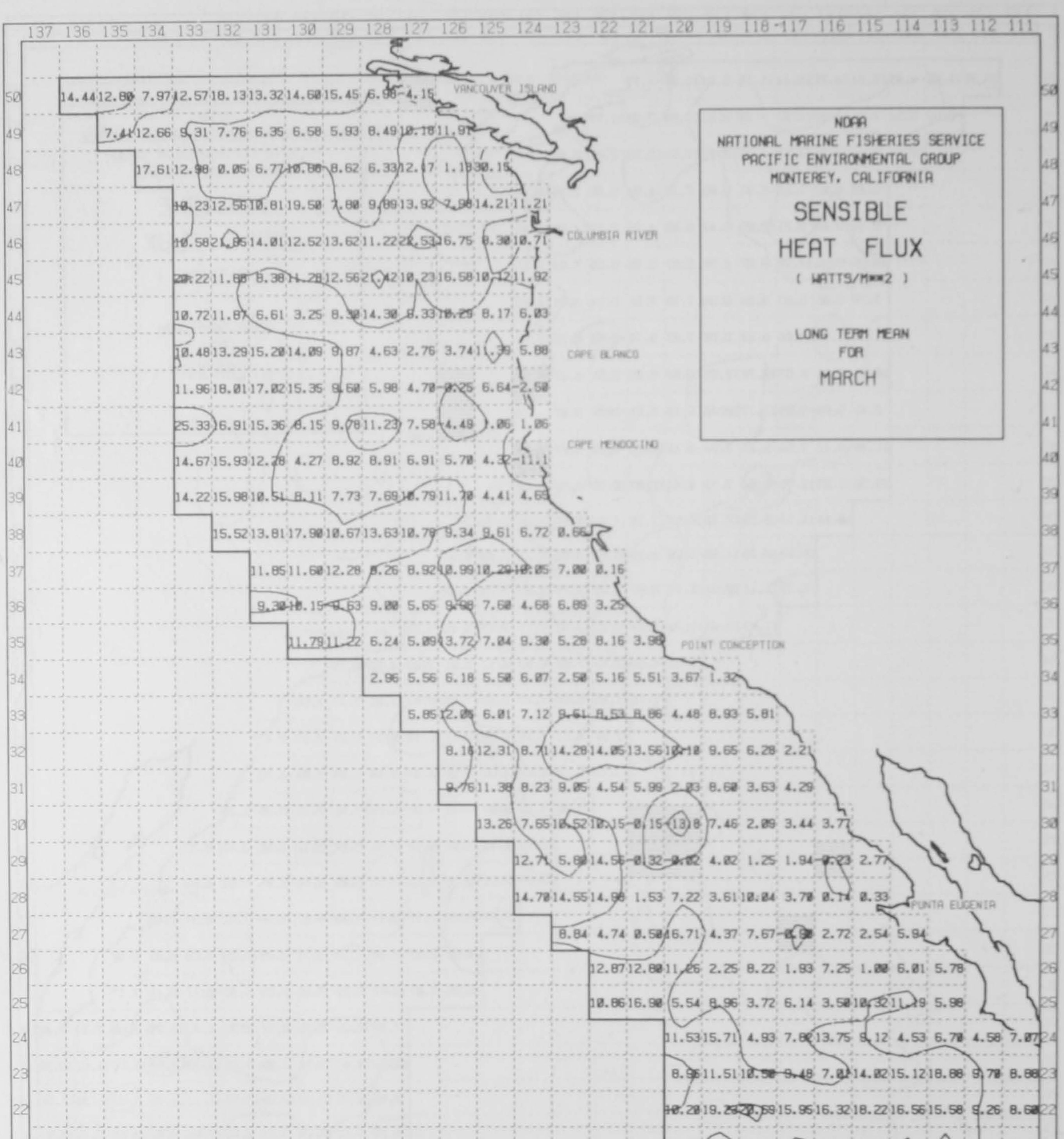

Chart 39.—Composite monthly mean sensible heat flux for March.

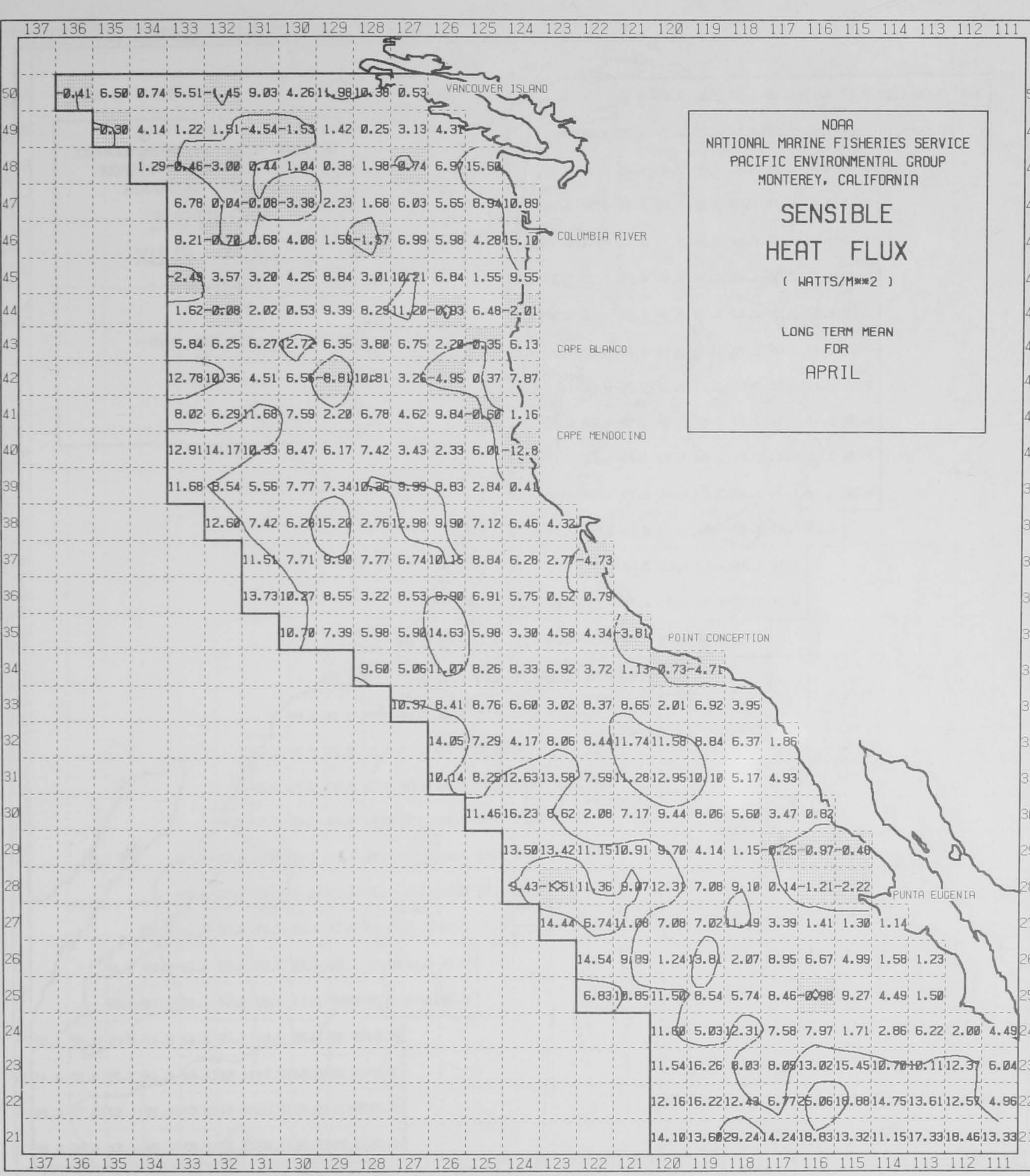

Chart 40.—Composite monthly mean sensible heat flux for April.

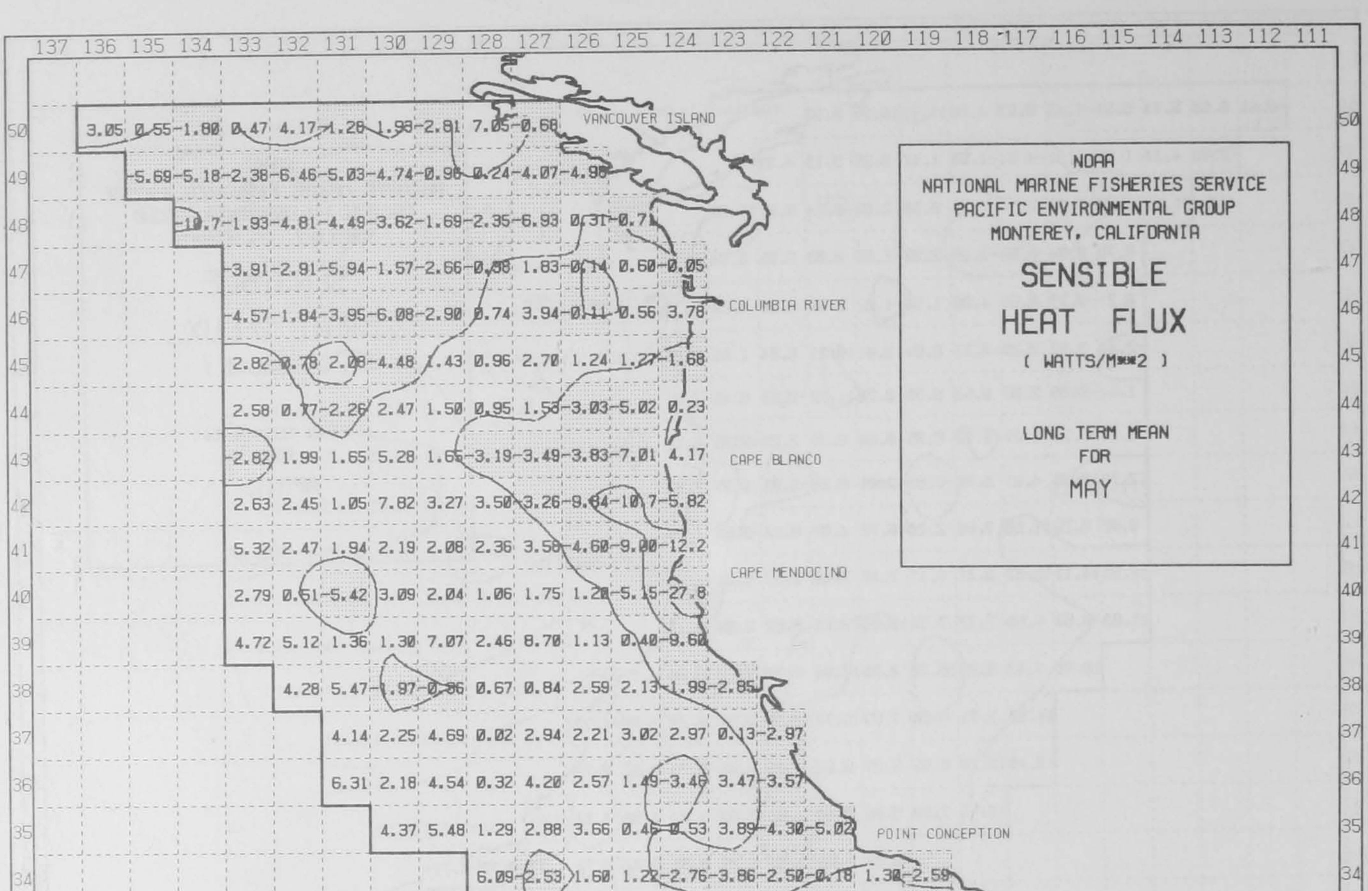

Chart 41.—Composite monthly mean sensible heat flux for May.

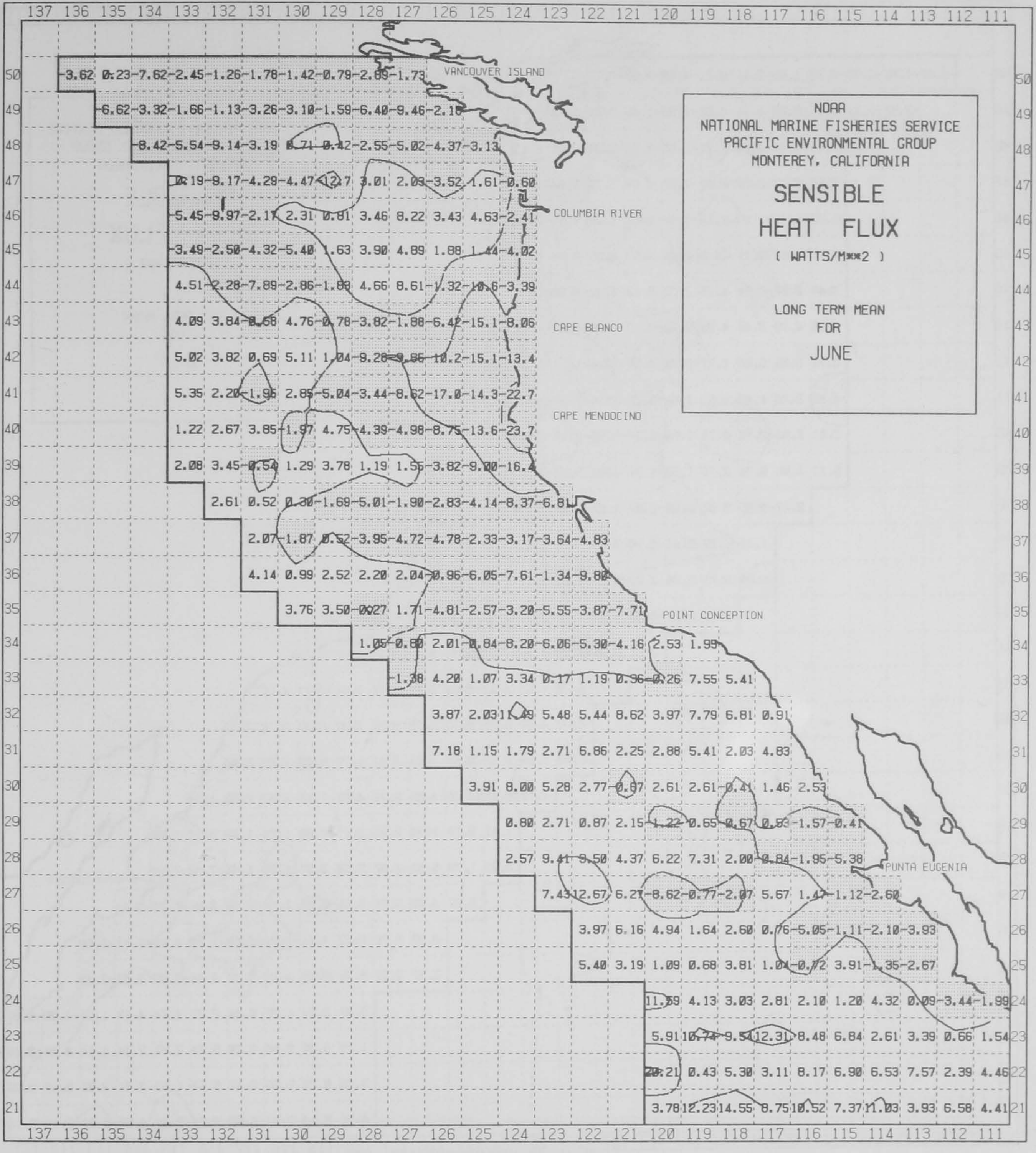

Chart 42.—Composite monthly mean sensible heat flux for June.

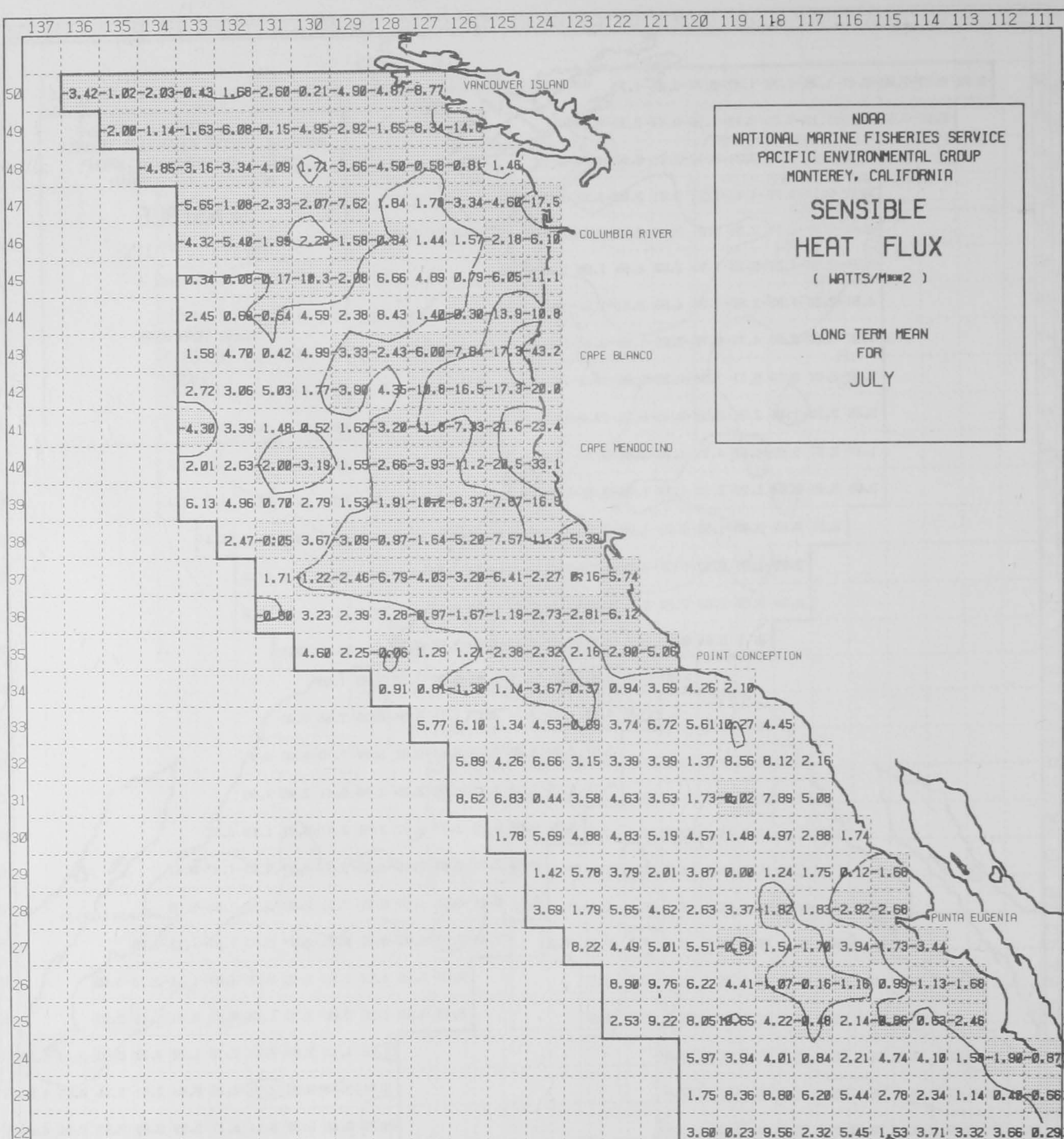

Chart 43.—Composite monthly mean sensible heat flux for July.

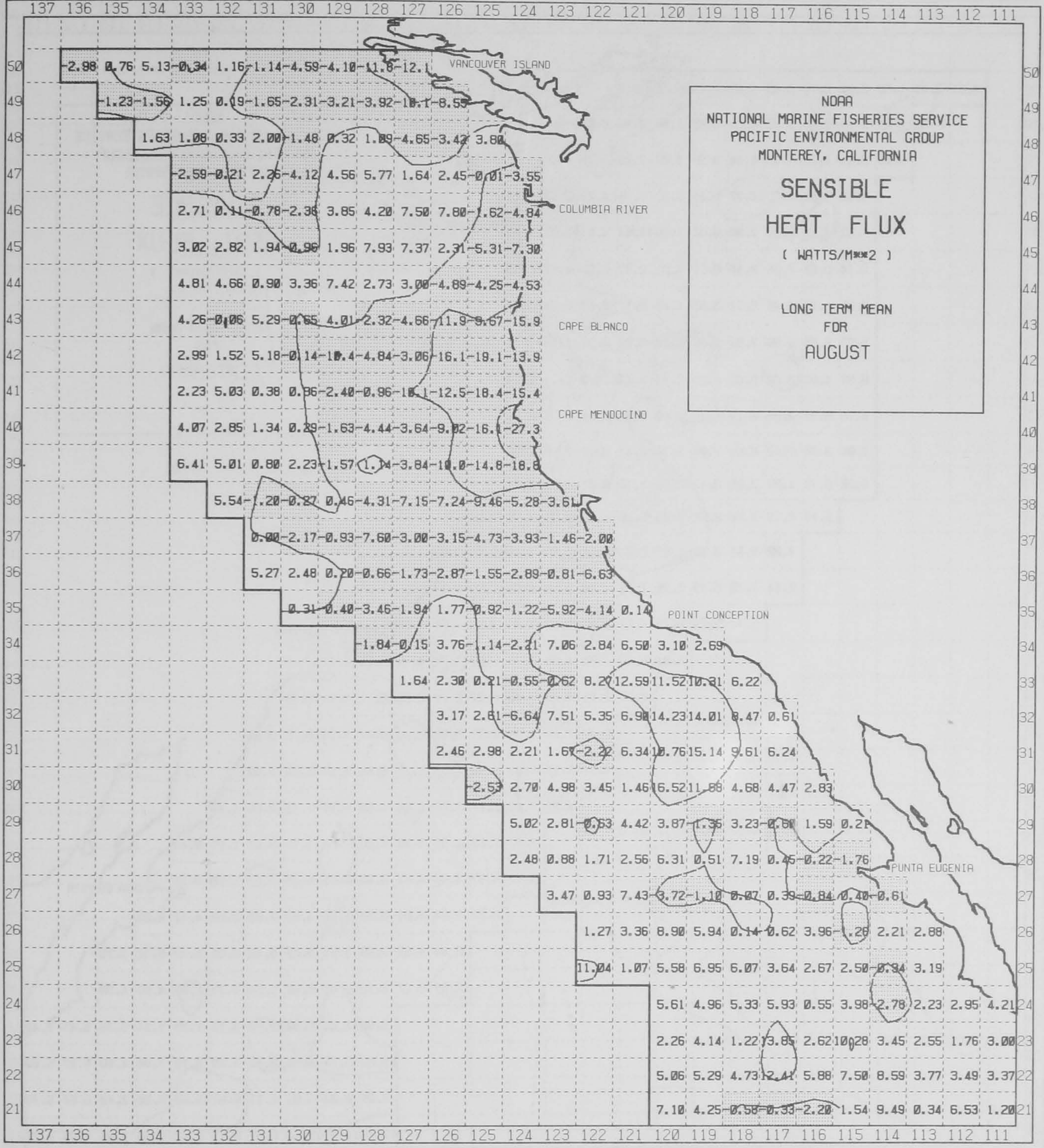

Chart 44.—Composite monthly mean sensible heat flux for August.

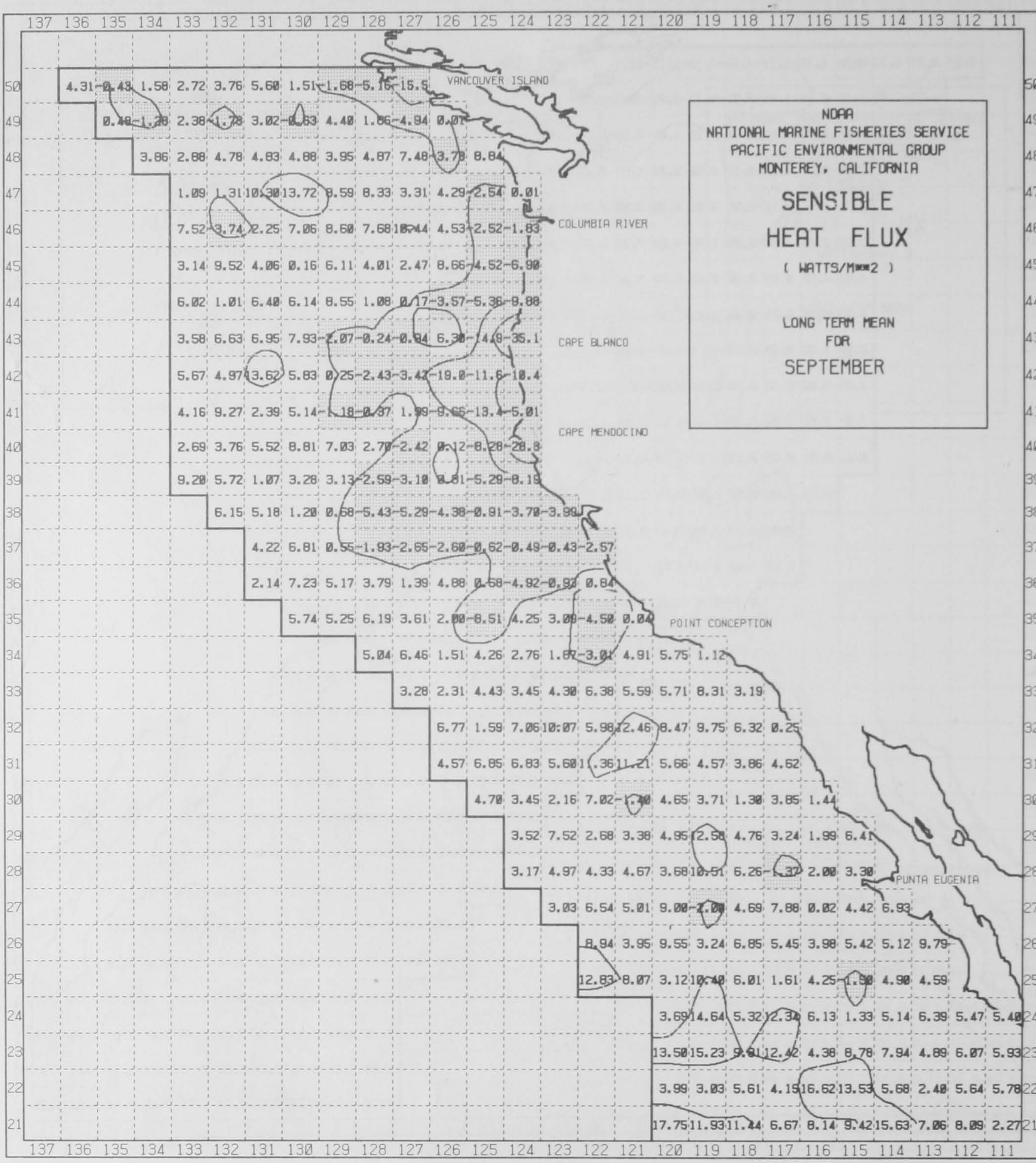

Chart 45.—Composite monthly mean sensible heat flux for September.

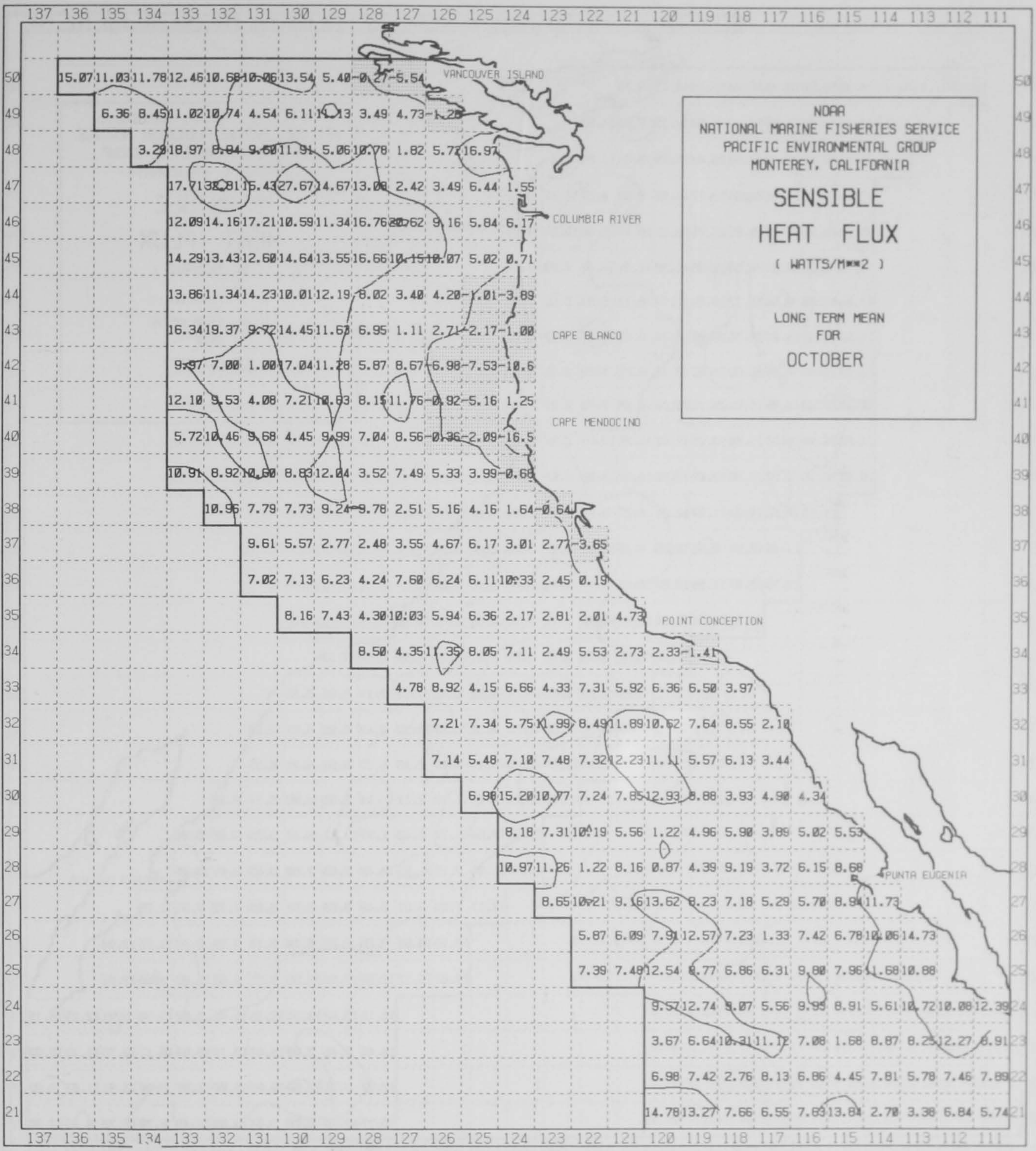

Chart 46.—Composite monthly mean sensible heat flux for October.

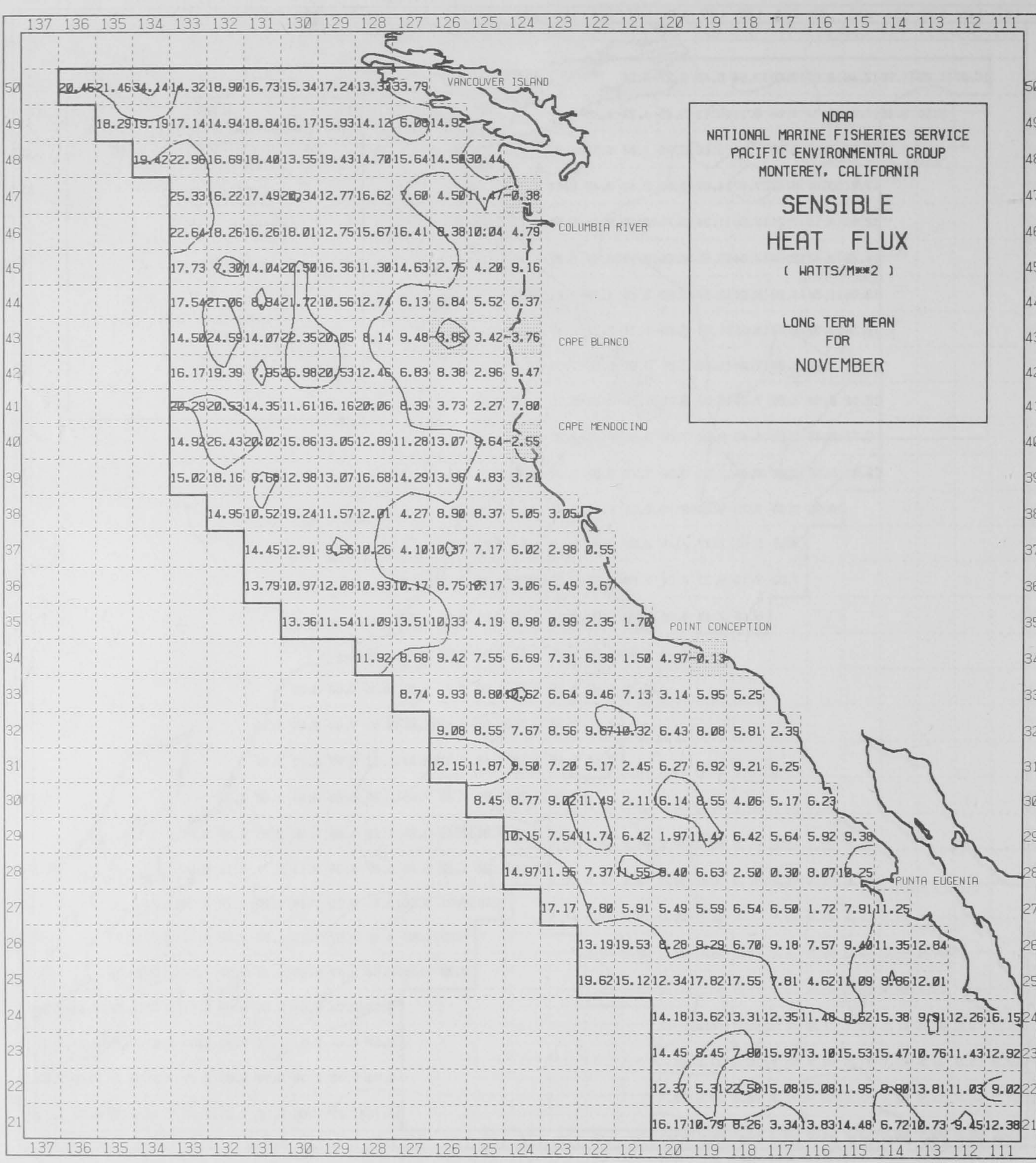

Chart 47.—Composite monthly mean sensible heat flux for November.

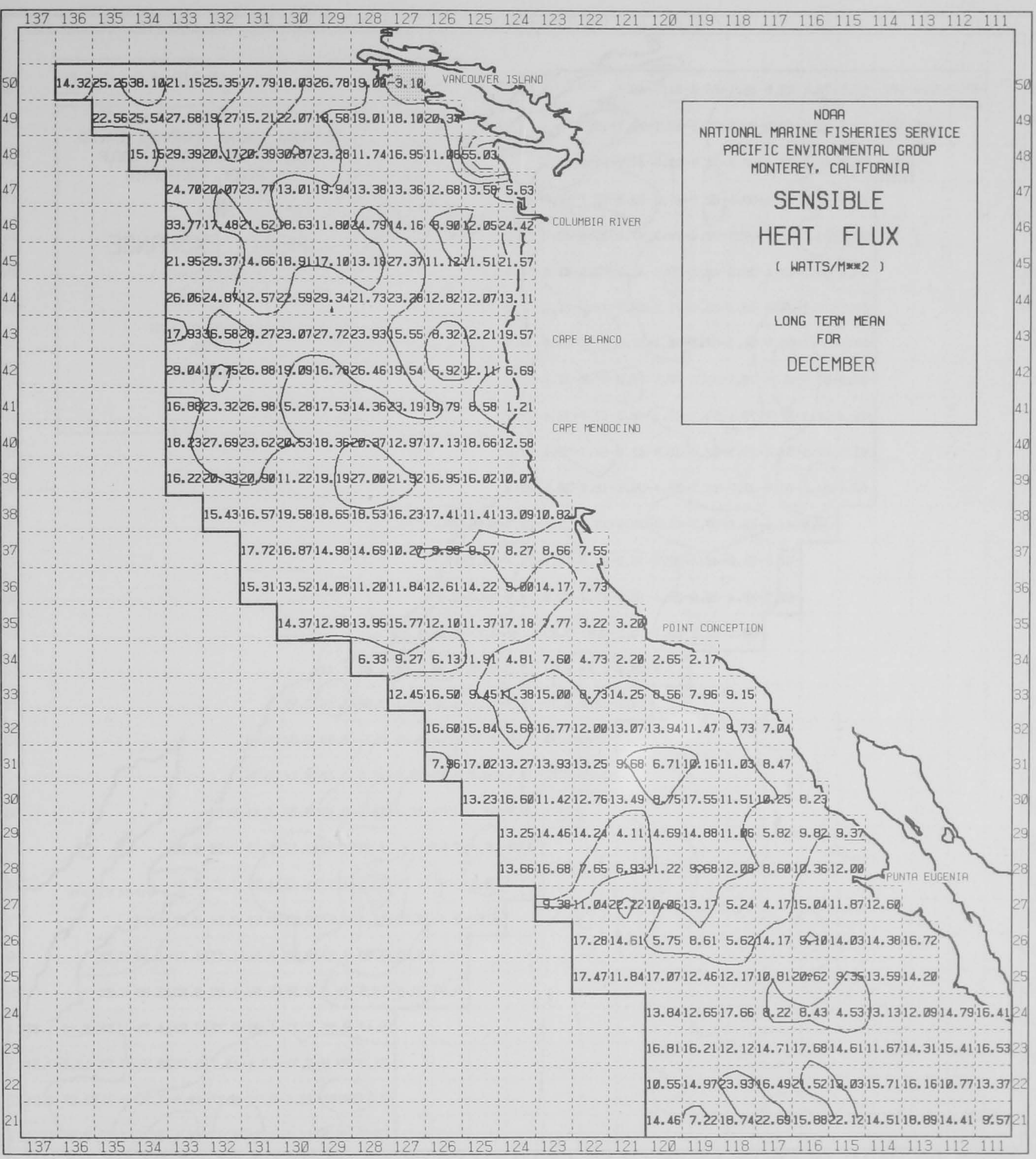

Chart 48.—Composite monthly mean sensible heat flux for December.

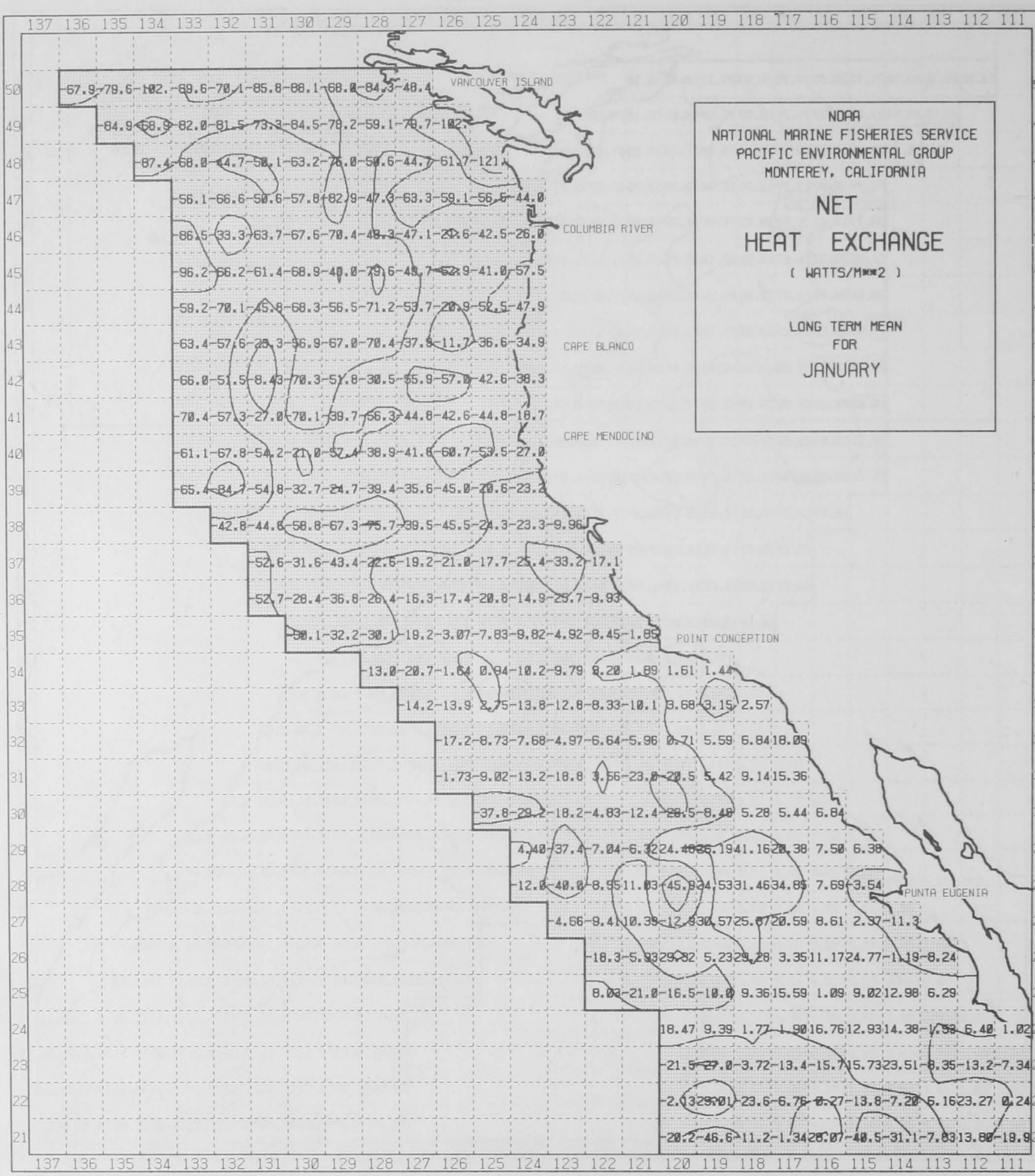

Chart 49.—Composite monthly mean net heat exchange for January.

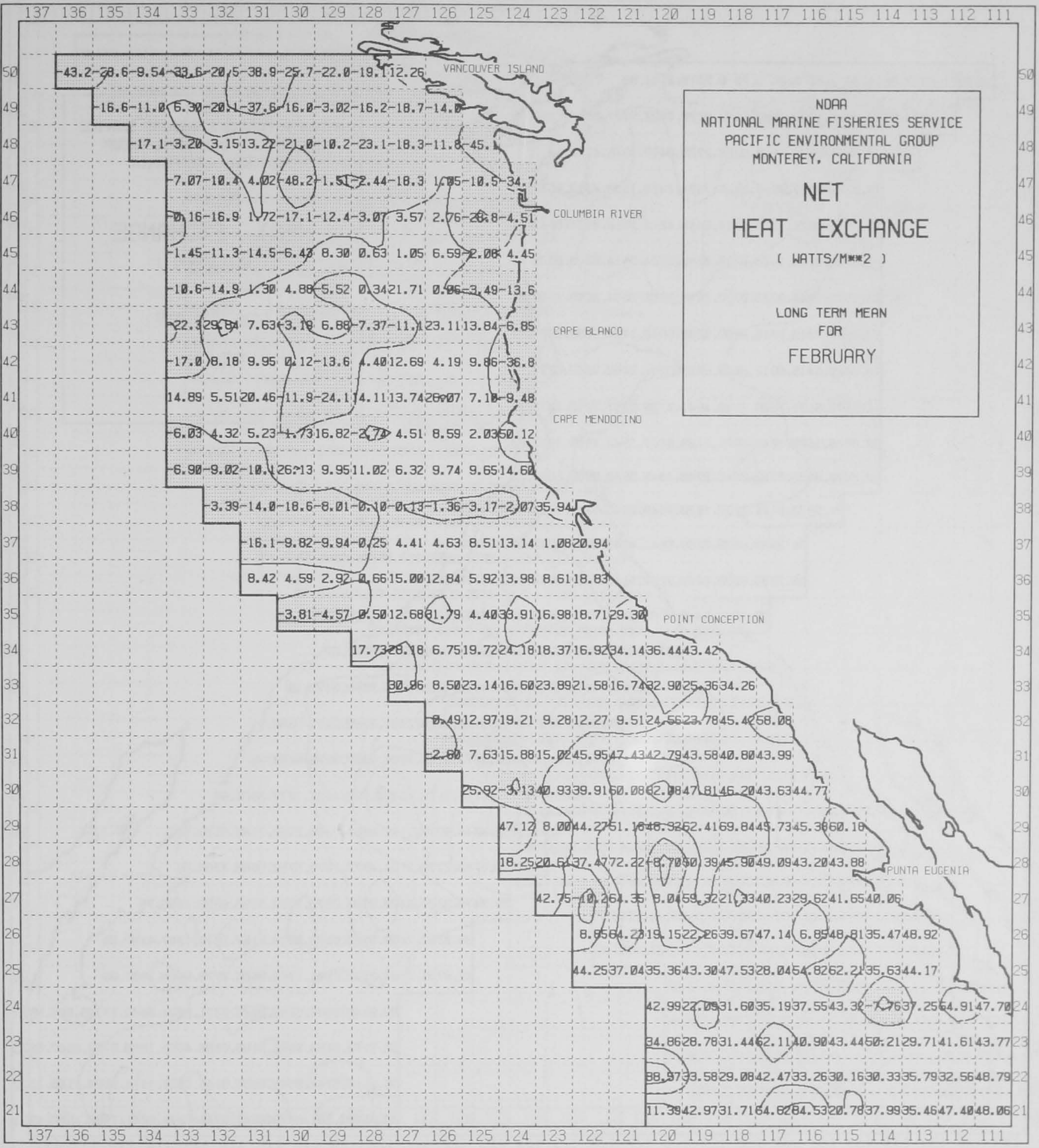

Chart 50.—Composite monthly mean net heat exchange for February.

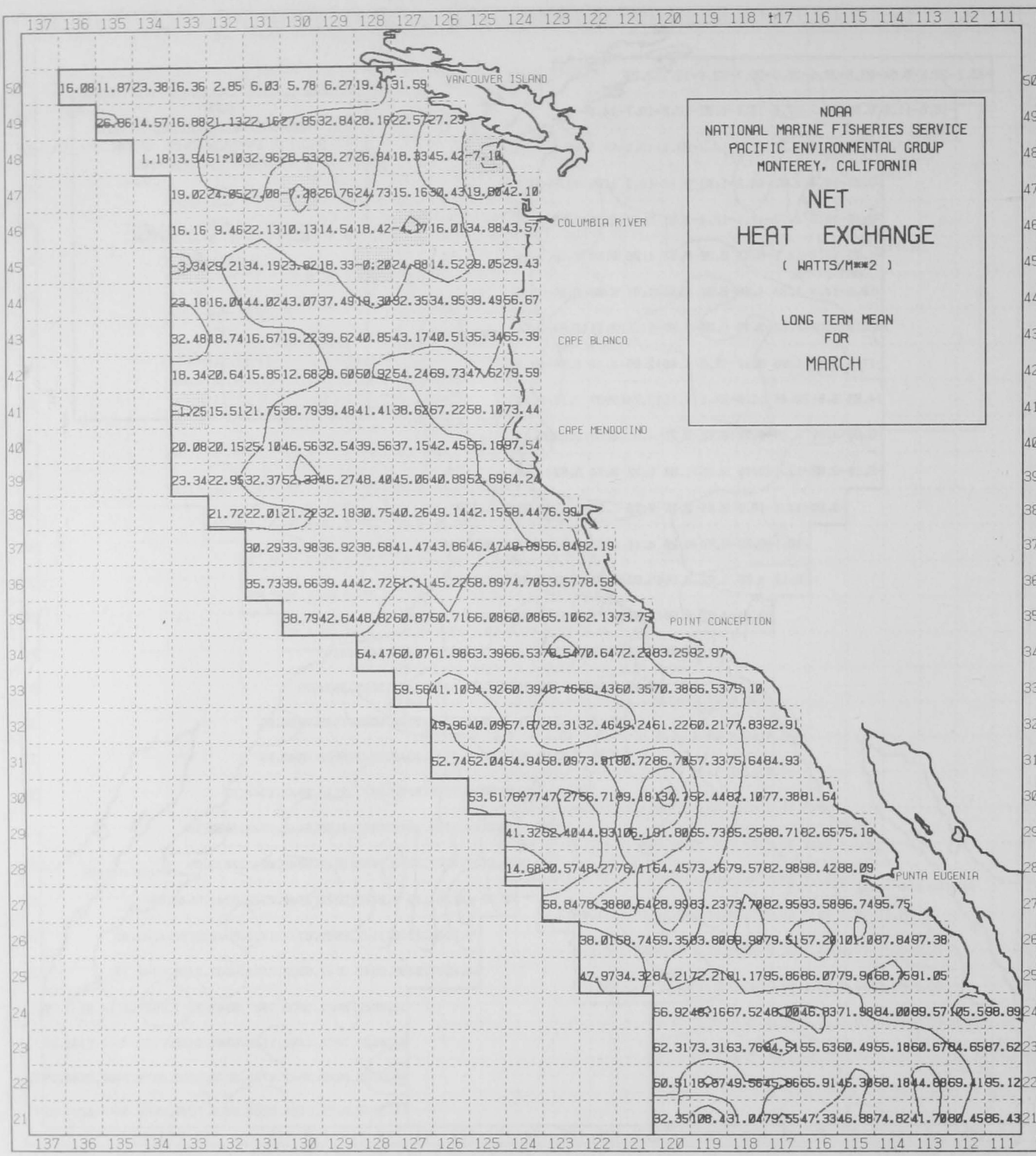

Chart 51.—Composite monthly mean net heat exchange for March.

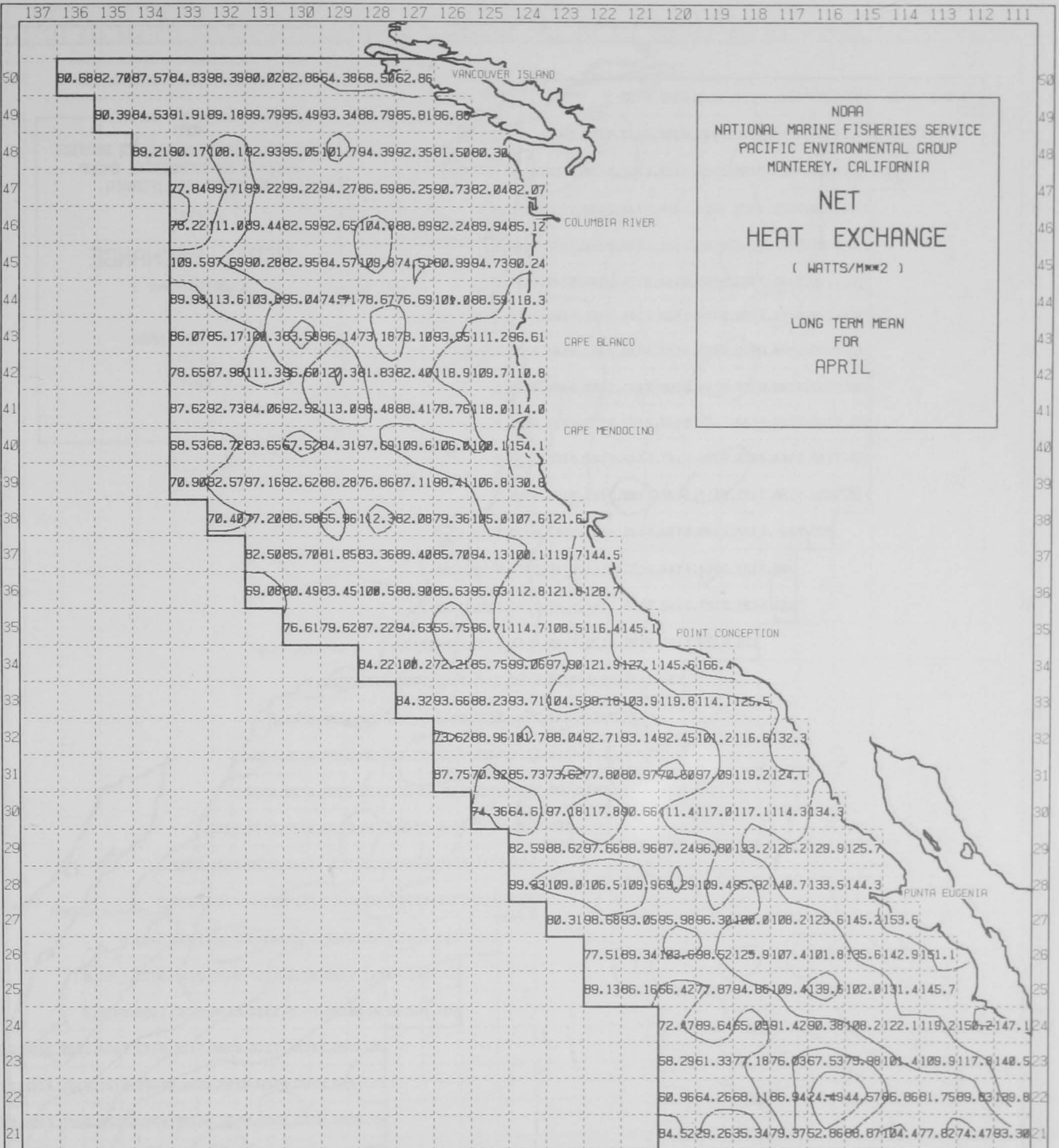

Chart 52.—Composite monthly mean net heat exchange for April.

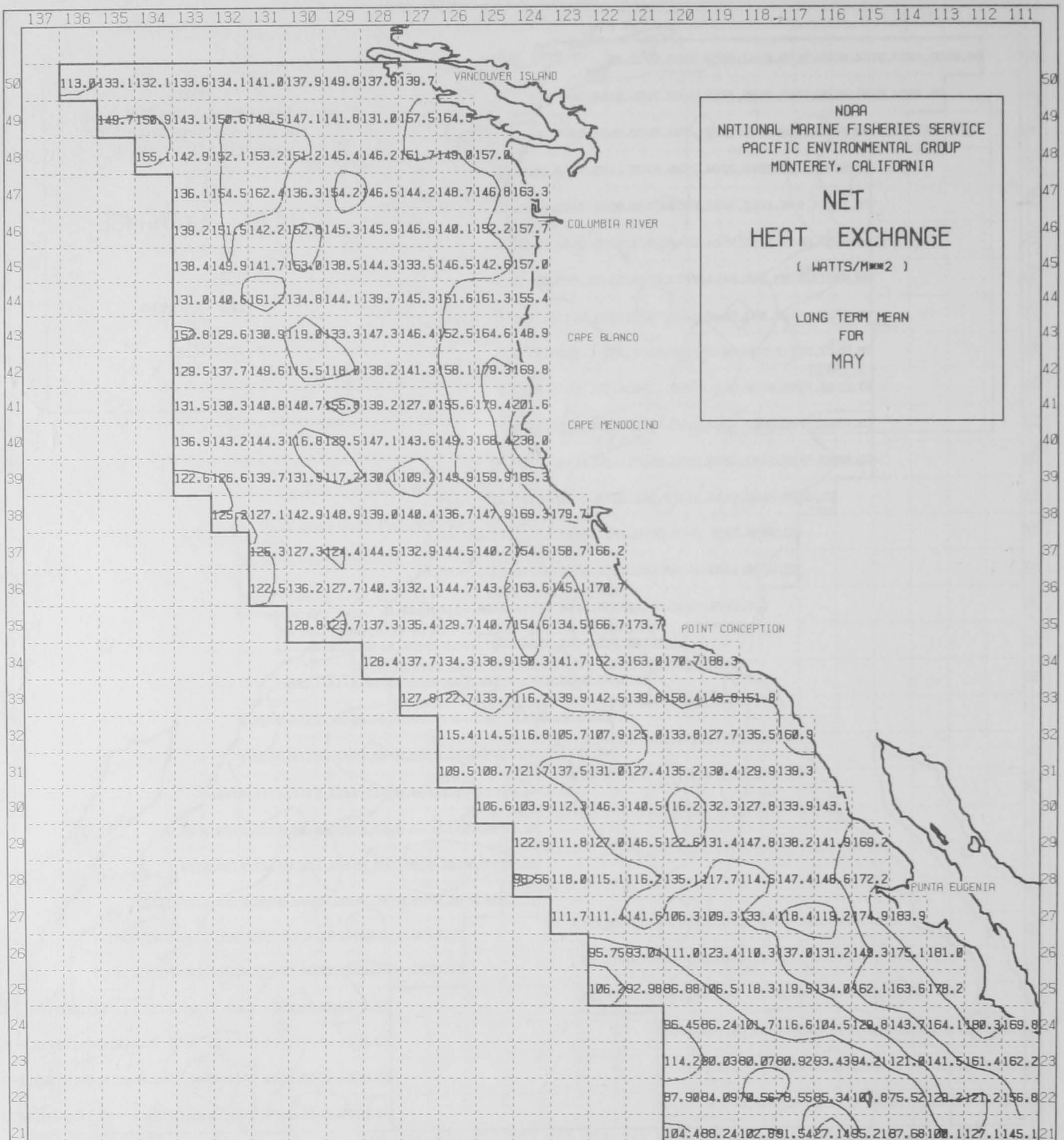

Chart 53.—Composite monthly mean net heat exchange for May.

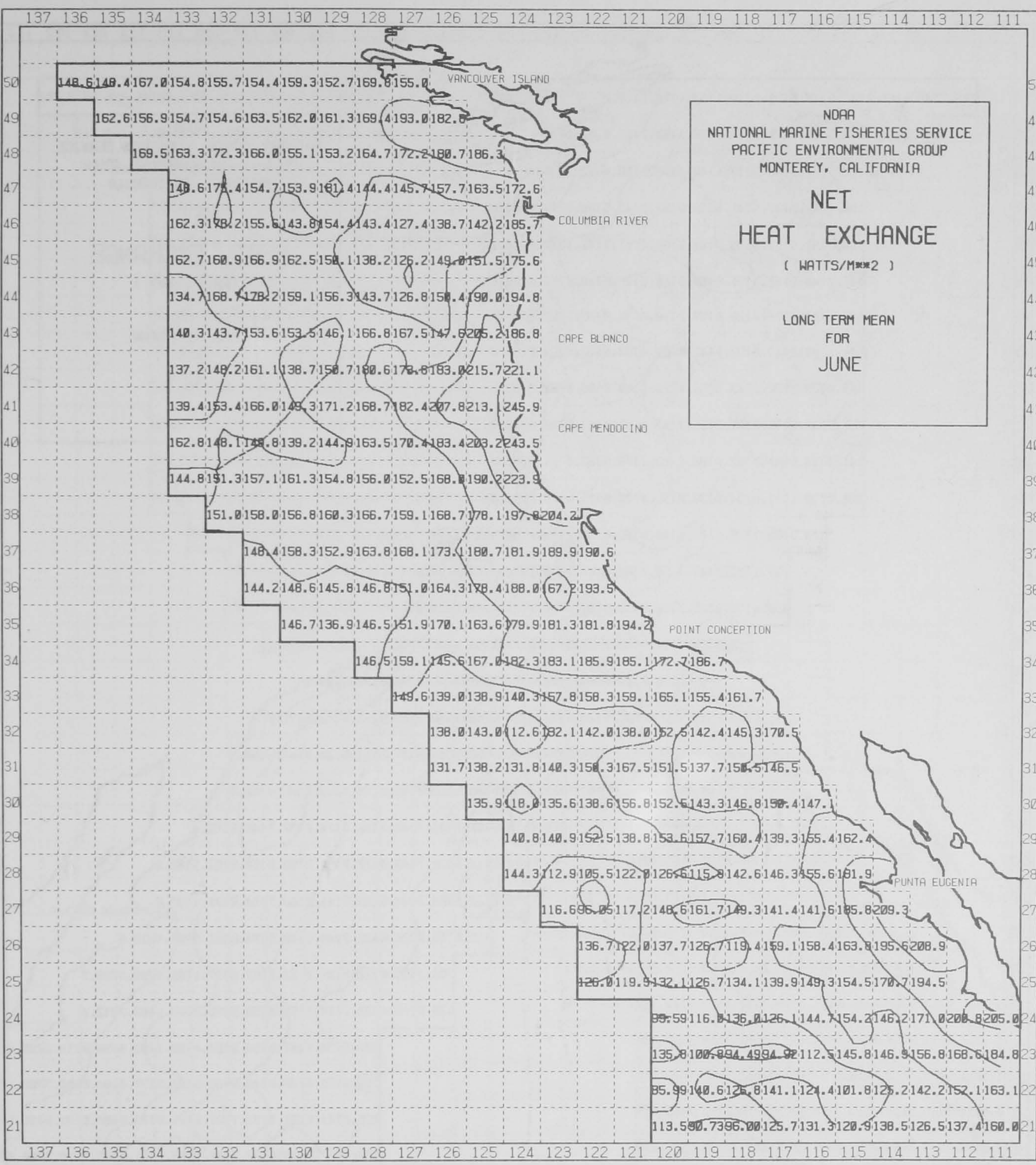

Chart 54.—Composite monthly mean net heat exchange for June.

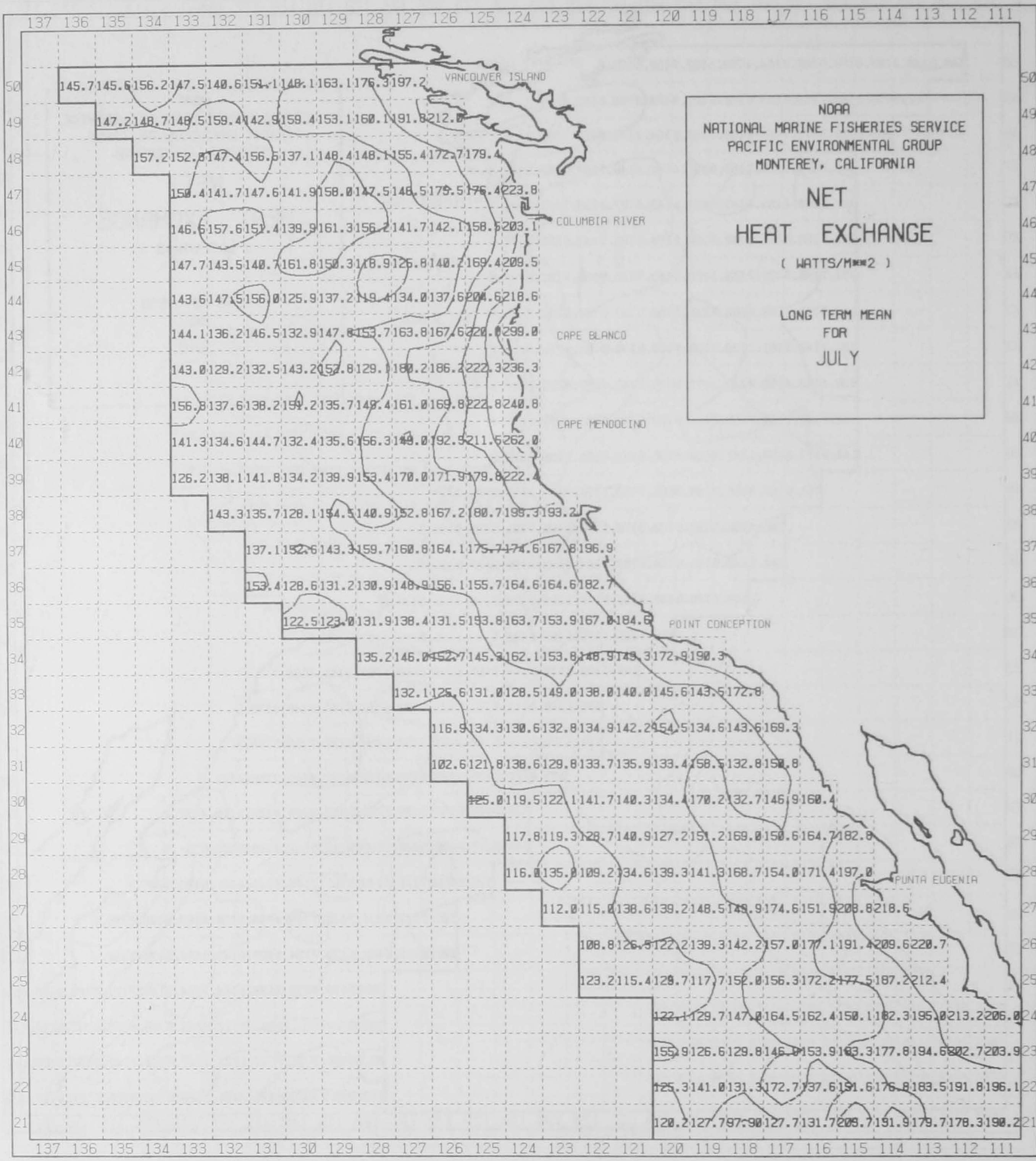

Chart 55.—Composite monthly mean net heat exchange for July.

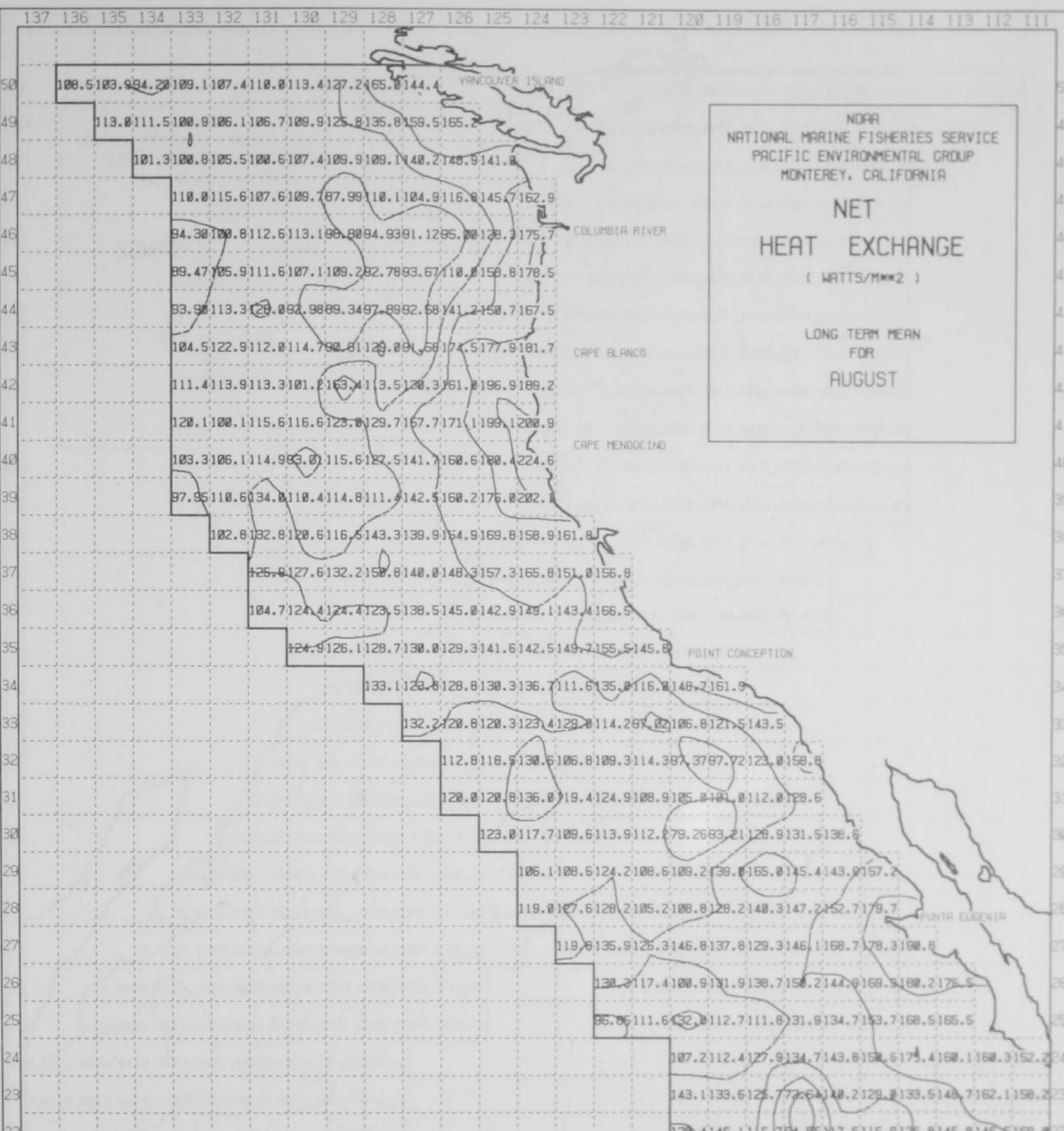

Chart 56.—Composite monthly mean net heat exchange for August.

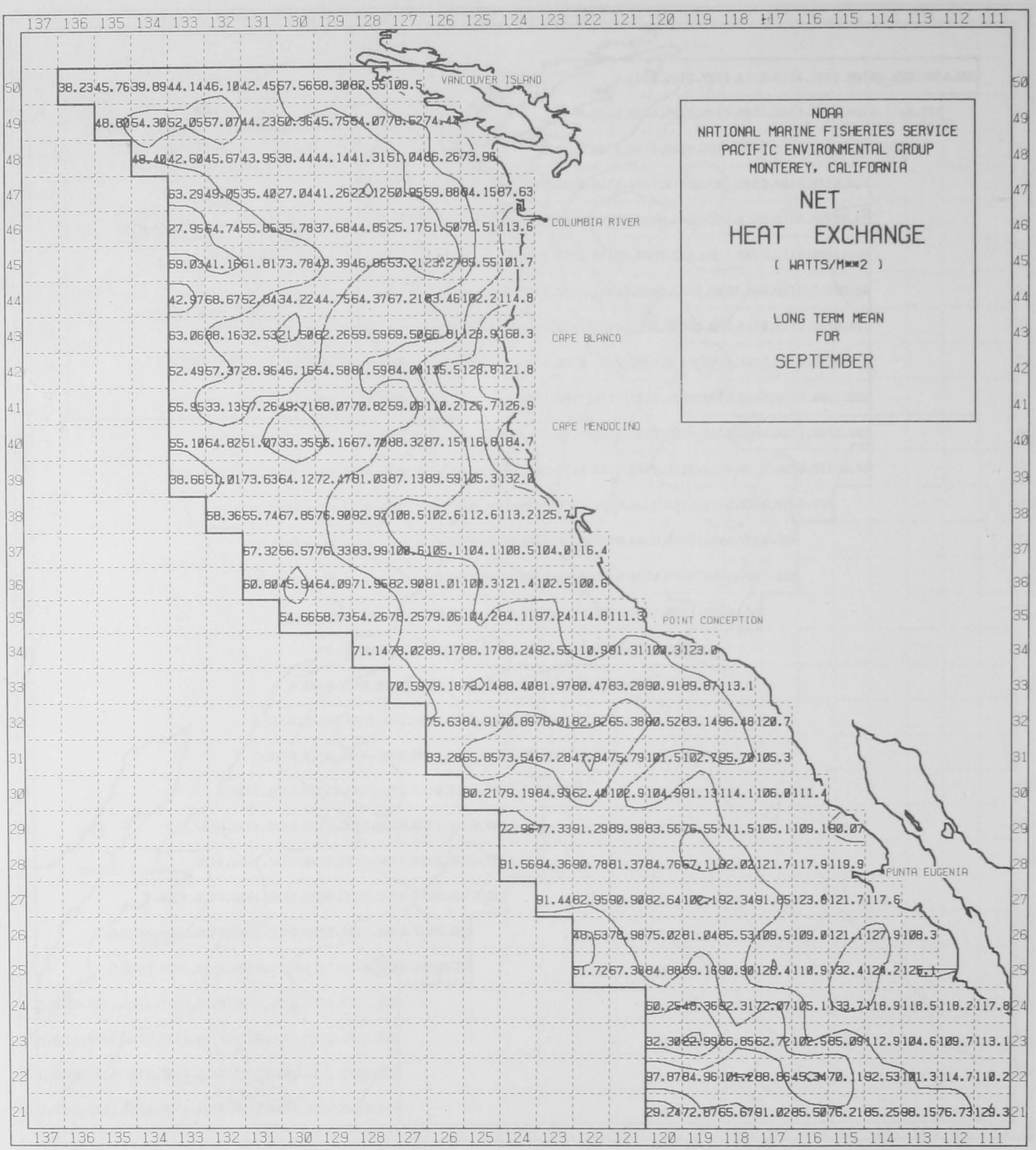

Chart 57.—Composite monthly mean net heat exchange for September.

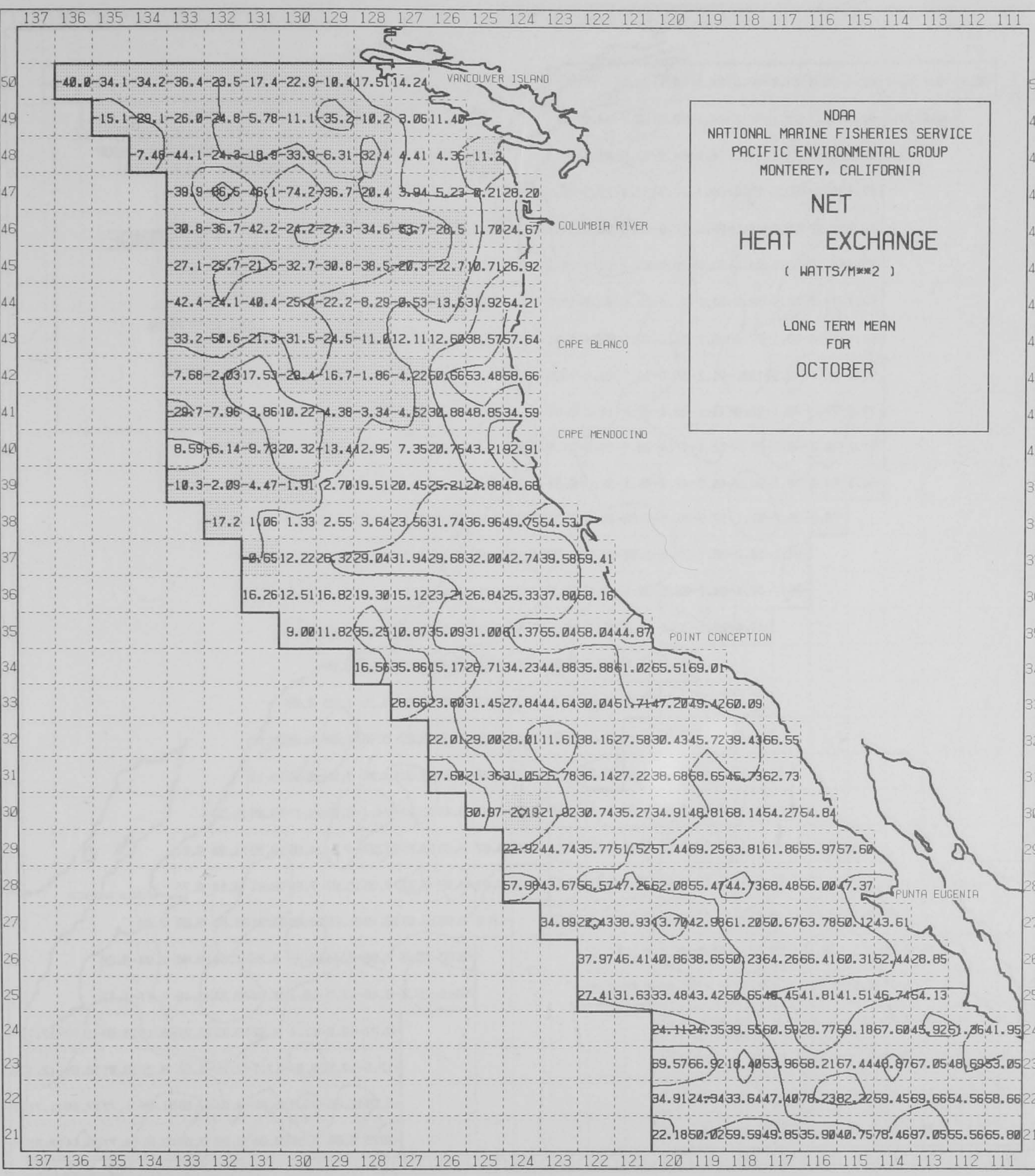

Chart 58.—Composite monthly mean net heat exchange for October.

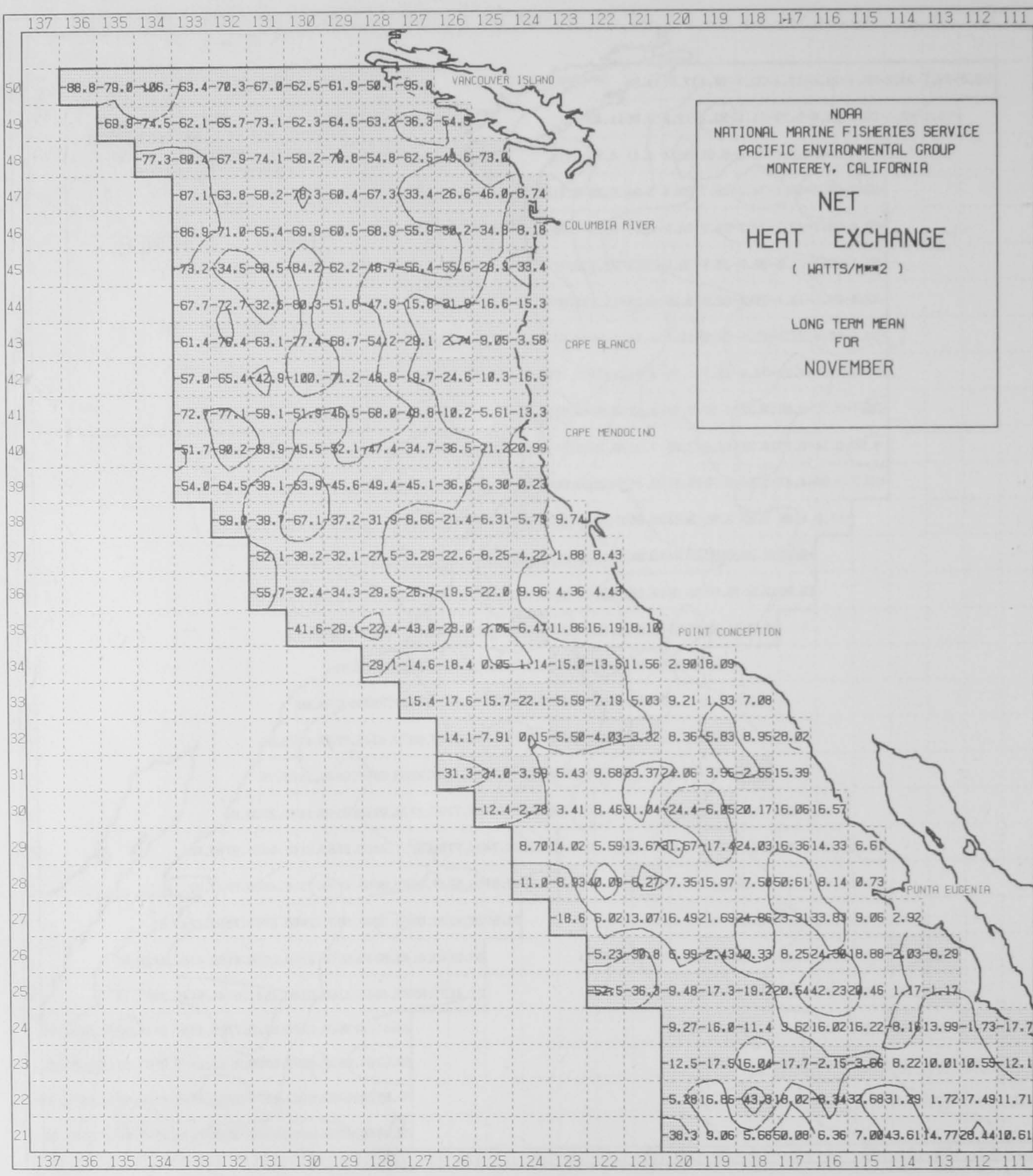

Chart 59.—Composite monthly mean net heat exchange for November.

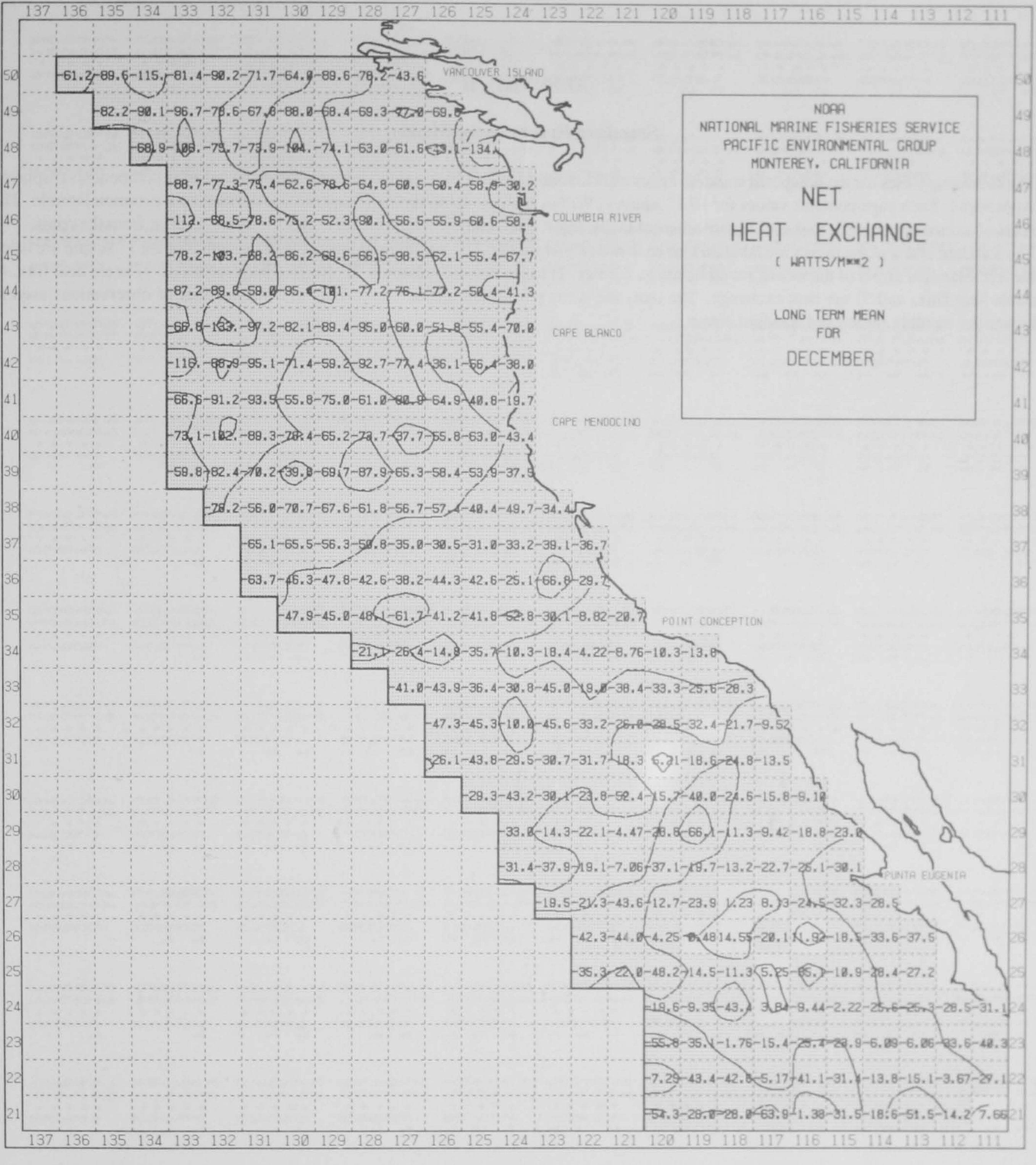

Chart 60.—Composite monthly mean net heat exchange for December.

APPENDIX II

Standard Errors of the Means

The following tables list the computed standard errors of the monthly means by 1° square area for the heat exchange components displayed in Appendix I. Each page contains values for 10 1° squares. Within each group of 10, all 1° squares are defined by a common latitude. The first set of values corresponds to the 1° square adjacent to the coast. The final tabulations refer to the 1° square farthest from the coast.

The standard errors of the means are tabulated for each month and square. The latitude and longitude of the center of the 1° square are listed at the left. Standard errors of the means are tabulated as follows: 1) incident solar radiation, 2) effective back radiation, 3) latent heat flux, 4) sensible heat flux, and 5) net heat exchange. The units are watts per square meter. The last value is the number of observations used to calculate the monthly means and standard errors.

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
21 N 111 W	QS	5.46	5.57	5.85	7.26	6.34	7.16	6.53	6.85	5.56	5.43	6.00	4.75
	QB	3.17	3.05	2.54	2.71	2.43	2.33	2.03	2.04	1.75	2.32	2.97	2.85
	QE	11.76	8.98	6.81	10.41	5.91	6.58	5.86	7.02	7.39	7.86	10.66	7.26
	QC	3.34	2.28	2.02	3.30	2.30	2.11	1.74	1.82	1.78	2.07	2.30	1.40
	QN	14.84	12.04	9.42	14.17	8.32	9.73	8.94	10.34	9.59	9.91	13.19	8.61
	OBS	50	53	77	57	81	75	81	66	86	73	52	67
21 N 112 W	QS	7.05	7.48	8.15	10.20	7.71	7.84	9.70	9.21	8.26	7.33	6.78	6.03
	QB	4.19	3.88	3.47	3.93	2.92	2.98	3.14	2.95	2.82	3.06	3.54	3.66
	QE	10.42	9.42	10.82	12.06	9.35	9.11	9.69	12.41	13.89	13.35	10.12	10.97
	QC	3.16	2.29	3.56	3.00	2.86	2.34	2.55	2.95	3.47	3.01	1.77	2.65
	QN	13.97	12.35	15.16	15.69	13.61	11.69	14.08	17.50	18.13	16.73	11.82	13.43
	OBS	33	45	37	36	53	57	40	32	43	35	28	40
21 N 113 W	QS	8.82	8.35	8.62	11.15	9.09	10.98	11.82	13.02	10.09	10.04	8.85	6.23
	QB	5.37	4.05	4.14	4.21	3.48	3.90	3.41	4.15	3.31	4.29	4.44	4.10
	QE	15.56	12.21	18.45	12.55	12.06	10.41	10.71	17.60	12.89	12.64	18.57	13.33
	QC	4.75	3.64	4.72	3.77	4.04	4.19	3.33	3.44	4.20	4.00	4.28	3.59
	QN	20.47	16.71	24.20	16.63	17.02	13.96	17.07	23.16	14.63	18.43	21.05	16.77
	OBS	23	32	28	31	34	29	29	21	27	23	23	40
21 N 114 W	QS	8.84	8.09	9.33	13.24	12.04	17.07	13.66	18.37	14.03	9.68	9.21	7.09
	QB	5.59	4.48	3.73	5.38	4.27	5.82	3.74	5.40	4.56	3.66	4.29	4.59
	QE	15.80	13.48	12.03	20.04	16.69	15.66	19.29	29.16	14.13	17.50	14.00	10.31
	QC	3.86	4.31	3.39	5.33	5.52	6.53	5.73	7.43	4.81	2.63	2.15	2.71
	QN	19.15	19.02	15.28	28.87	22.62	23.05	25.58	38.66	24.21	19.32	15.51	11.87
	OBS	23	31	29	21	21	16	20	13	21	19	21	24
21 N 115 W	QS	10.10	11.47	11.79	16.77	12.86	12.67	13.24	19.26	13.92	9.48	8.93	8.52
	QB	5.24	5.38	5.09	6.46	5.00	3.84	4.14	4.97	4.23	4.03	4.17	4.98
	QE	27.58	22.89	18.77	18.90	11.87	11.69	6.44	13.75	16.65	16.29	22.93	16.35
	QC	5.42	6.80	5.97	6.86	4.89	2.91	4.21	3.75	5.28	2.76	8.45	4.40
	QN	32.47	32.50	27.29	27.59	17.30	15.48	15.02	20.26	22.63	22.99	29.78	21.54
	OBS	15	18	26	13	20	17	17	10	18	15	12	21
21 N 116 W	QS	10.36	12.58	10.79	16.10	16.08	15.87	13.02	20.08	14.77	10.11	14.36	9.64
	QB	5.70	5.37	4.68	6.96	5.63	4.83	3.36	5.33	4.05	3.71	7.88	6.09
	QE	17.93	13.39	15.42	21.80	13.86	14.50	14.47	13.37	21.37	15.62	22.40	19.06
	QC	4.48	2.65	3.65	7.59	3.40	3.64	4.03	5.44	6.24	2.49	7.01	4.71
	QN	24.52	17.75	20.42	31.12	12.93	19.11	19.02	23.19	33.27	21.55	29.36	25.37
	OBS	12	11	25	14	10	12	22	12	14	14	10	12
21 N 117 W	QS	9.45	13.05	10.25	15.49	20.18	11.99	11.20	14.21	12.18	15.59	14.54	9.04
	QB	5.47	6.25	3.87	5.38	7.87	3.50	2.56	3.76	4.19	4.79	8.10	4.50
	QE	16.15	14.31	15.15	16.44	14.76	10.17	21.17	12.12	19.97	18.97	22.11	24.95
	QC	4.12	5.87	4.60	6.59	4.85	3.34	9.35	3.75	5.72	4.53	9.51	7.83
	QN	22.07	21.02	21.75	26.59	15.88	13.73	34.13	17.38	29.09	28.18	34.97	34.35
	OBS	18	12	20	17	9	19	12	17	18	12	11	11
21 N 118 W	QS	9.04	12.70	12.73	15.35	13.44	11.27	7.68	12.44	13.43	10.15	10.82	9.00
	QB	4.74	5.18	5.40	5.52	4.28	3.78	2.06	3.70	4.31	3.97	4.51	5.41
	QE	16.21	21.16	14.14	21.41	13.15	13.10	13.78	11.53	13.62	6.57	16.36	15.57
	QC	4.75	6.58	4.21	6.13	5.96	3.82	3.20	6.31	4.10	2.45	4.95	5.67
	QN	23.52	28.89	13.94	34.54	25.12	19.68	19.17	20.55	22.36	11.20	20.42	21.47
	OBS	16	10	10	15	16	16	18	15	16	24	14	16
21 N 119 W	QS	12.45	10.44	13.63	8.95	11.15	12.22	13.18	13.29	10.61	9.51	8.19	8.42
	QB	8.31	5.43	5.28	3.01	3.20	4.10	3.69	4.01	3.47	4.12	3.74	5.22
	QE	25.07	17.75	14.49	11.42	15.82	16.70	12.34	11.87	12.47	14.01	10.51	17.44
	QC	6.97	6.71	4.15	5.54	3.99	4.02	4.75	2.04	3.41	3.71	3.30	6.18
	QN	33.32	24.90	19.02	17.20	23.33	22.17	22.96	18.05	19.68	18.88	13.68	21.55
	OBS	10	19	18	24	17	18	19	16	24	27	24	20
21 N 120 W	QS	8.66	8.70	13.02	12.91	12.10	10.50	9.33	14.92	14.32	10.18	8.62	6.36
	QB	4.70	4.42	5.60	4.71	4.18	3.61	2.54	4.14	4.55	4.40	4.07	4.34
	QE	10.08	12.47	15.15	9.78	13.77	7.48	7.66	14.44	19.36	13.40	11.67	12.59
	QC	4.49	3.17	3.88	4.18	2.21	2.96	3.32	4.21	6.22	4.32	3.11	4.37
	QN	14.84	16.68	18.27	15.57	20.30	11.83	14.39	23.69	29.84	18.08	16.08	14.81
	OBS	15	26	20	21	23	27	28	16	16	21	23	17

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
22 N 111 W	QS	4.03	5.78	4.06	4.92	4.45	5.75	5.07	5.01	4.40	3.90	3.54	3.91
	QB	2.53	3.13	1.89	2.09	1.71	2.01	1.61	1.45	1.44	1.67	1.92	2.55
	QE	3.75	8.08	5.88	6.94	5.40	5.03	5.47	5.43	7.92	7.44	7.10	9.37
	QC	2.33	2.04	1.90	2.65	1.83	2.31	1.80	1.42	1.89	1.54	1.62	1.91
	QN	11.14	11.01	8.17	10.47	7.82	8.16	7.99	7.83	10.97	9.04	8.81	11.38
	OBS	88	62	111	101	136	116	106	115	121	125	113	85
22 N 112 W	QS	5.47	6.10	6.49	6.90	5.66	6.33	5.53	5.80	5.15	4.47	4.09	5.37
	QB	3.37	3.28	2.91	2.92	2.16	2.25	1.90	1.76	1.67	1.88	2.01	3.44
	QE	7.70	10.98	7.73	9.97	7.79	5.86	5.53	7.07	7.81	9.31	7.73	9.00
	QC	1.80	2.89	2.63	3.18	2.72	2.48	1.64	1.95	1.86	1.62	1.55	2.02
	QN	9.67	13.95	10.19	13.56	11.04	9.31	7.73	9.99	11.01	11.56	9.86	10.54
	OBS	53	50	65	69	85	90	95	94	92	83	77	49
22 N 113 W	QS	6.59	7.10	6.72	7.72	7.71	7.40	7.17	7.61	6.71	5.47	5.01	5.74
	QB	3.76	3.72	3.00	2.88	2.97	2.50	2.31	2.37	2.16	2.46	2.77	3.54
	QE	11.97	9.78	10.57	9.69	6.85	6.52	6.28	7.76	8.70	9.89	8.65	9.98
	QC	2.82	2.17	3.68	4.04	2.41	2.09	2.17	1.83	3.02	2.15	1.60	2.76
	QN	15.59	12.39	15.17	13.48	10.20	9.99	10.28	11.87	12.97	12.37	10.47	13.35
	OBS	41	40	54	54	63	66	74	63	61	60	61	48
22 N 114 W	QS	8.06	7.46	6.91	8.10	7.23	7.87	8.74	11.09	8.05	7.56	6.44	4.84
	QB	5.18	4.11	3.24	3.19	2.87	2.43	2.71	2.93	2.69	3.22	3.25	2.95
	QE	14.31	11.21	10.40	10.18	10.29	7.96	5.57	13.16	11.25	12.14	12.47	10.05
	QC	4.45	3.37	3.64	3.03	3.11	3.14	1.99	2.94	3.71	2.63	2.42	2.90
	QN	18.48	14.44	13.73	12.26	14.09	12.57	10.07	13.50	14.16	16.36	15.75	13.10
	OBS	29	36	38	46	53	44	57	31	51	39	29	47
22 N 115 W	QS	6.92	7.70	7.82	8.22	10.49	7.44	11.76	10.98	12.66	6.78	10.24	8.54
	QB	4.83	3.93	3.55	3.34	3.94	2.60	3.32	3.27	4.41	3.70	5.26	5.55
	QE	14.87	13.33	11.50	14.18	11.52	11.27	11.10	10.39	16.95	9.35	12.66	17.30
	QC	4.45	4.16	3.13	3.62	3.94	4.71	3.80	3.04	5.20	2.65	3.64	5.73
	QN	13.20	18.81	16.03	17.91	17.69	15.48	18.87	14.23	24.38	11.45	16.29	22.95
	OBS	30	27	41	33	35	31	25	31	25	28	16	20
22 N 116 W	QS	10.14	9.63	10.43	15.20	9.65	7.86	13.39	18.24	13.87	8.82	8.76	7.07
	QB	5.53	4.94	4.59	4.82	3.40	2.06	3.83	5.03	5.13	3.97	4.29	4.84
	QE	14.79	11.20	15.20	26.87	13.32	11.94	10.91	12.78	19.17	10.44	14.30	19.87
	QC	5.49	4.21	5.51	7.44	4.99	4.21	3.28	3.87	5.29	3.19	3.06	6.33
	QN	20.10	17.07	22.11	38.30	19.40	16.91	15.58	22.86	25.36	13.66	19.32	25.65
	OBS	20	25	25	14	29	26	21	15	19	17	23	22
22 N 117 W	QS	7.43	10.64	9.18	14.00	14.70	10.56	16.18	18.07	12.23	11.06	10.72	8.72
	QB	4.71	5.24	3.85	4.74	5.16	3.13	4.37	6.05	3.68	4.82	5.05	5.11
	QE	18.01	9.88	15.13	13.95	15.01	10.94	11.38	19.56	21.38	12.06	10.08	8.55
	QC	5.51	3.01	4.96	4.64	3.27	3.40	3.94	6.16	5.40	3.66	2.29	3.74
	QN	23.78	13.34	20.58	20.85	21.07	16.83	23.22	28.89	29.25	17.93	11.58	12.92
	OBS	19	23	22	19	15	10	16	14	16	17	16	17
22 N 118 W	QS	9.99	11.18	10.23	13.12	8.64	13.69	19.19	13.51	15.02	20.15	10.86	7.70
	QB	6.54	5.54	4.25	5.15	2.81	4.56	6.68	3.52	4.17	8.25	5.42	4.71
	QE	23.24	13.12	13.65	12.55	18.61	14.71	17.24	22.30	22.74	22.73	24.60	19.78
	QC	8.03	6.09	7.02	4.76	5.44	5.68	4.85	5.61	5.38	4.56	4.60	6.52
	QN	31.52	19.18	22.11	14.74	22.55	22.59	22.51	31.23	34.32	27.23	32.18	27.37
	OBS	14	15	16	18	13	16	10	14	13	8	11	21
22 N 119 W	QS	11.51	13.73	7.00	12.71	16.09	9.10	10.39	16.20	12.10	13.19	8.42	11.46
	QB	6.44	5.95	2.72	4.78	6.96	2.70	2.84	4.90	4.50	5.89	4.20	8.31
	QE	10.03	21.07	19.38	11.37	11.27	11.26	12.65	17.91	16.09	11.15	11.35	29.94
	QC	4.57	8.23	5.26	4.35	3.51	2.61	3.29	2.88	6.74	5.16	3.06	11.63
	QN	17.07	31.93	24.96	17.78	20.15	14.38	18.29	25.29	24.34	17.34	15.14	41.84
	OBS	13	16	15	21	14	14	16	18	18	16	24	14
22 N 120 W	QS	9.02	11.69	10.96	14.95	6.55	25.01	14.52	17.13	13.63	13.47	7.65	12.29
	QB	5.78	5.86	3.97	6.69	2.37	9.36	4.95	6.11	3.85	5.69	4.65	5.63
	QE	14.12	15.05	13.81	13.98	13.49	49.19	18.41	7.86	20.87	14.02	9.60	25.42
	QC	3.34	4.39	4.64	3.37	4.11	13.19	5.05	4.16	2.88	6.40	3.69	6.67
	QN	15.54	23.30	18.92	18.57	16.30	57.58	26.46	15.88	26.87	17.98	12.13	33.78
	OBS	14	17	22	16	29	9	12	12	14	12	18	8

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
23 N	QS	1.45	1.59	1.76	1.89	1.93	2.18	1.79	1.84	1.74	1.46	1.33	1.39
111 W	QB	.95	.89	.83	.79	.76	.83	.59	.57	.59	.62	.75	.94
	QE	3.13	2.71	2.74	2.32	2.35	2.13	2.01	2.42	2.90	2.81	3.38	3.59
	QC	.85	.75	.92	.88	1.05	.97	.67	.63	.68	.66	.77	.88
	QN	4.04	3.48	3.80	3.33	3.60	3.34	2.87	3.26	3.79	3.60	4.14	4.46
	OBS	738	740	782	812	865	781	824	831	786	860	744	678
23 N	QS	3.63	4.73	5.31	5.21	5.05	4.80	4.67	4.75	4.33	3.35	3.38	3.64
112 W	QB	2.34	2.61	2.51	2.12	1.86	1.67	1.54	1.46	1.40	1.45	1.87	2.49
	QE	6.51	7.76	7.77	5.79	5.20	4.03	4.17	6.20	6.65	5.46	6.83	9.11
	QC	1.84	2.64	2.44	2.15	2.28	1.63	1.42	1.56	1.58	1.45	1.88	2.38
	QN	8.34	10.58	10.65	8.43	8.25	6.31	6.27	8.40	9.08	7.51	8.66	11.39
	OBS	118	87	94	106	133	165	143	125	147	147	113	107
23 N	QS	6.61	7.66	8.20	8.46	7.46	7.59	7.12	7.60	6.31	6.47	5.03	5.28
113 W	QB	4.29	4.19	3.64	3.57	2.81	2.67	2.33	2.18	2.20	2.54	2.77	3.30
	QE	12.96	12.23	10.72	7.82	8.13	6.90	5.87	7.24	9.41	7.89	7.87	13.26
	QC	3.18	3.11	3.73	2.83	3.44	3.22	3.03	2.08	2.37	2.42	2.13	3.72
	QN	16.08	15.62	15.83	11.63	12.63	11.83	10.14	10.52	13.07	12.24	10.23	17.79
	OBS	38	34	35	45	65	65	61	59	71	61	62	40
23 N	QS	6.07	7.85	6.62	7.75	6.51	7.26	7.29	6.12	6.82	5.56	4.39	6.01
114 W	QB	4.07	3.98	2.90	2.86	2.51	2.39	2.49	1.73	2.35	2.64	2.24	3.63
	QE	7.55	9.41	8.44	8.52	7.42	6.08	4.91	7.78	9.60	11.29	11.31	12.95
	QC	2.13	3.74	2.78	3.26	3.34	2.51	1.77	2.23	2.60	3.23	2.84	2.84
	QN	8.90	12.23	11.54	13.20	11.30	9.29	8.79	10.86	13.54	14.29	14.69	16.56
	OBS	39	34	46	55	71	67	77	86	65	57	54	36
23 N	QS	5.91	7.90	7.26	7.01	6.95	7.37	8.59	9.14	6.92	6.36	5.59	4.70
115 W	QB	3.70	3.83	3.35	2.75	2.75	2.70	2.66	2.64	2.38	2.75	3.16	3.18
	QE	11.71	11.00	8.08	9.41	9.61	7.39	6.16	10.08	10.34	8.12	8.69	12.66
	QC	3.14	3.52	2.71	2.90	3.37	2.34	1.93	2.93	2.83	2.69	2.39	3.66
	QN	12.44	15.90	11.37	13.32	13.46	10.87	11.43	16.05	13.57	11.49	11.11	16.16
	OBS	35	41	48	63	63	62	54	45	61	60	51	49
23 N	QS	6.66	7.73	7.54	9.07	6.96	7.50	7.53	8.98	7.74	7.09	5.66	5.73
116 W	QB	4.30	4.31	3.46	3.47	2.53	2.48	2.38	2.74	2.97	3.20	3.23	3.72
	QE	10.55	12.50	10.55	11.81	8.22	9.87	4.81	3.69	12.00	8.26	11.22	10.39
	QC	3.63	2.94	4.65	3.91	2.46	3.41	1.94	2.53	4.08	2.07	2.35	2.76
	QN	13.55	14.95	14.38	15.83	11.15	12.87	9.23	13.36	17.10	9.72	13.94	13.54
	OBS	38	33	39	38	61	36	58	48	46	42	43	44
23 N	QS	7.43	9.47	7.39	8.96	9.07	7.61	8.05	11.27	9.63	8.67	8.66	5.14
117 W	QB	5.39	4.52	3.32	3.46	3.63	2.62	2.45	3.71	3.31	4.29	4.71	3.02
	QE	16.59	11.08	9.03	11.96	10.07	8.42	6.10	12.31	12.27	10.03	13.90	9.88
	QC	4.61	3.29	2.92	5.42	4.31	3.36	2.20	2.40	3.85	2.76	3.32	3.76
	QN	20.07	14.95	12.99	16.23	15.04	11.94	9.88	14.93	16.92	14.34	18.94	14.08
	OBS	22	29	51	35	44	41	37	23	33	30	27	46
23 N	QS	7.84	10.35	11.26	7.98	9.55	9.17	10.09	11.40	11.27	10.28	8.95	6.10
118 W	QB	5.05	4.86	5.09	3.08	4.10	2.91	3.31	3.47	4.01	4.27	5.20	3.90
	QE	12.36	13.01	9.38	11.69	12.36	10.67	10.82	12.18	13.36	12.42	8.54	9.92
	QC	3.37	4.42	3.51	4.04	3.75	3.25	3.22	4.62	3.57	2.73	3.33	3.06
	QN	16.53	18.82	14.48	16.29	15.27	15.56	16.99	13.58	19.27	14.65	13.91	13.00
	OBS	26	25	22	30	31	25	24	18	26	23	23	30
23 N	QS	8.43	8.77	9.88	10.46	10.23	9.66	9.92	17.44	10.30	9.76	7.06	8.51
119 W	QB	5.50	4.11	4.62	3.52	4.22	3.37	2.62	5.14	3.81	5.06	4.12	5.19
	QE	16.75	11.40	11.36	11.64	11.27	11.65	8.22	12.99	19.70	10.91	19.86	22.92
	QC	5.00	2.38	3.90	2.54	3.28	2.13	2.28	4.75	6.20	2.30	7.09	4.01
	QN	23.43	15.53	16.63	15.70	14.53	15.31	13.71	22.60	23.80	13.51	24.39	26.49
	OBS	19	29	30	23	31	30	22	15	18	22	14	21
23 N	QS	7.89	[illegible]	12.54	10.91	[illegible]	14.43	13.34	12.82	11.29	16.32	8.24	5.87
120 W	QB	5.07	5.01	4.59	3.38	5.77	4.01	3.43	4.06	3.63	6.52	4.45	3.63
	QE	9.57	11.74	14.74	11.91	10.74	10.75	17.54	9.95	13.42	15.13	11.78	19.09
	QC	[illegible]	3.26	4.84	4.78	3.65	4.27	8.91	3.11	4.31	3.90	2.10	2.52
	QN	14.95	14.13	19.51	17.01	17.67	21.58	23.20	15.45	13.83	22.07	15.33	19.95
	OBS	26	19	13	15	15	13	12	17	20	13	23	21

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
24 N 111 W	QS	1.93	2.32	2.35	2.74	2.92	3.06	2.59	2.51	2.26	2.18	1.86	1.82
	QB	1.31	1.29	1.12	1.15	1.18	1.20	.88	.80	.80	.98	1.07	1.31
	QE	3.74	3.55	3.21	2.93	3.06	2.60	3.10	3.57	3.94	4.62	4.63	4.37
	QC	1.05	1.06	1.19	1.15	1.46	1.33	.93	.92	1.00	1.08	1.09	1.16
	QN	4.81	4.63	4.48	4.31	4.75	4.36	4.18	4.59	5.16	5.89	5.72	5.47
	OBS	405	358	421	397	406	401	400	446	395	370	401	370
24 N 112 W	QS	1.32	1.53	1.61	1.84	1.93	2.15	1.76	1.78	1.56	1.40	1.25	1.22
	QB	.91	.87	.75	.77	.77	.81	.60	.59	.56	.61	.73	.89
	QE	2.33	2.23	2.11	1.77	1.66	1.46	1.68	2.36	2.51	2.64	2.75	2.93
	QC	.70	.64	.75	.73	.83	.75	.64	.67	.65	.64	.73	.77
	QN	3.07	2.92	3.00	2.68	2.66	2.57	2.54	3.13	3.32	3.37	3.51	3.71
	OBS	841	843	953	938	1015	944	968	914	942	991	895	812
24 N 113 W	QS	3.73	4.76	4.49	5.38	5.45	5.25	4.91	4.50	3.88	3.83	3.25	3.46
	QB	2.55	2.59	2.13	2.28	2.03	1.89	1.61	1.46	1.39	1.53	1.78	2.49
	QE	6.97	7.09	5.94	7.10	5.21	4.09	4.16	6.21	7.05	7.39	6.56	8.33
	QC	1.98	2.50	1.96	2.96	2.47	1.76	1.54	1.87	1.91	2.20	1.56	1.82
	QN	8.89	10.00	8.09	9.82	8.12	6.86	6.30	8.56	9.32	10.34	8.53	10.33
	OBS	96	96	137	109	127	154	142	155	158	138	132	102
24 N 114 W	QS	6.66	8.10	9.86	10.93	9.15	7.39	9.56	7.45	6.95	5.73	6.55	7.96
	QB	4.59	4.49	4.40	4.13	3.11	2.22	3.10	2.28	2.39	2.72	3.59	5.46
	QE	11.32	18.77	10.77	9.05	6.98	7.53	8.12	6.13	8.27	11.00	13.83	26.35
	QC	3.12	4.63	3.75	3.11	2.85	4.63	3.52	1.83	1.89	3.34	3.41	6.94
	QN	15.20	23.53	15.21	10.65	11.57	13.28	11.88	8.91	10.46	15.14	18.70	33.89
	OBS	31	28	32	29	42	45	40	61	65	50	34	19
24 N 115 W	QS	7.12	9.41	8.27	8.30	7.85	9.37	6.60	9.46	6.60	7.03	6.65	7.03
	QB	4.98	5.43	3.70	3.17	2.96	3.30	2.38	2.85	2.51	3.25	3.64	4.39
	QE	12.80	11.56	9.05	7.68	6.91	7.28	5.43	6.54	7.39	11.42	9.98	17.66
	QC	3.53	2.74	3.17	3.40	2.93	2.56	2.09	2.32	2.75	2.56	3.03	5.33
	QN	16.28	13.63	14.26	11.78	10.31	10.75	7.55	11.86	10.86	14.25	13.95	21.08
	OBS	27	27	34	42	52	46	80	43	60	50	38	21
24 N 116 W	QS	6.46	6.94	9.21	7.90	6.62	7.04	7.73	6.80	8.60	6.96	5.20	5.43
	QB	4.51	4.10	4.23	2.94	2.45	2.38	2.54	2.12	2.97	3.13	3.00	3.40
	QE	7.91	7.50	10.39	9.23	6.96	6.31	5.10	7.86	9.82	9.04	8.95	11.19
	QC	2.94	2.69	3.73	2.95	2.60	2.79	2.14	2.22	3.15	2.50	2.30	2.68
	QN	11.25	9.05	13.66	12.99	9.57	10.13	8.82	11.11	15.94	12.12	11.30	14.06
	OBS	27	35	36	50	66	60	63	67	51	53	50	38
24 N 117 W	QS	6.17	7.86	9.91	9.22	7.70	7.53	7.20	8.49	7.71	7.22	5.35	5.08
	QB	4.01	4.31	4.92	3.62	3.09	2.58	2.29	2.64	2.74	3.19	2.86	3.52
	QE	9.14	9.46	8.90	10.37	7.73	7.12	6.59	9.78	9.39	8.40	11.30	7.50
	QC	3.31	2.63	3.34	3.44	2.50	2.87	2.36	2.60	3.13	2.85	3.30	2.55
	QN	12.07	12.98	10.02	13.27	10.78	10.83	9.21	14.45	14.60	12.75	15.03	10.24
	OBS	38	28	29	40	58	62	64	58	53	52	44	54
24 N 118 W	QS	6.49	6.83	7.91	8.78	7.17	5.79	8.81	10.00	8.03	6.70	5.87	5.35
	QB	4.06	3.77	3.45	3.64	2.63	1.85	2.87	3.17	2.70	2.98	3.36	3.58
	QE	8.54	9.09	9.11	11.40	6.42	7.43	6.50	9.09	9.88	7.65	10.40	9.52
	QC	2.31	2.77	3.92	3.86	2.87	2.58	2.66	2.55	3.49	2.37	3.50	2.68
	QN	9.50	11.01	13.45	16.13	9.56	11.04	10.25	12.53	14.62	10.28	14.24	11.71
	OBS	23	40	40	33	52	43	43	35	44	50	46	34
24 N 119 W	QS	6.74	7.69	7.62	7.38	7.54	8.41	7.69	9.52	8.04	7.78	6.75	4.79
	QB	4.26	4.01	3.48	2.87	2.78	2.70	2.32	2.81	2.94	3.64	4.18	3.25
	QE	7.95	11.89	9.42	8.82	9.71	7.09	6.87	9.79	16.24	10.41	12.65	6.38
	QC	3.12	4.00	2.76	3.30	3.44	3.15	2.28	3.56	3.28	2.64	3.08	2.06
	QN	11.16	16.03	12.40	10.48	14.19	11.88	9.85	14.72	21.28	14.10	15.58	8.06
	OBS	28	35	46	41	51	36	45	35	30	33	31	38
24 N 120 W	QS	6.73	7.04	7.71	8.57	7.69	7.67	7.35	12.76	10.05	9.39	6.38	5.33
	QB	4.59	3.77	3.24	3.39	2.92	2.49	2.36	4.05	3.40	4.14	3.55	3.65
	QE	10.47	6.95	9.06	8.64	8.18	11.11	7.02	12.95	14.73	12.40	11.30	8.88
	QC	3.49	2.97	3.19	3.03	3.80	3.28	2.81	3.34	5.45	3.39	2.46	2.55
	QN	13.65	9.41	12.26	11.58	11.08	16.58	10.28	20.62	18.21	17.60	14.18	10.10
	OBS	31	47	39	34	38	25	31	23	25	31	37	37

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
25 N	QS	1.26	1.46	1.59	1.86	1.95	2.14	1.85	1.78	1.56	1.36	1.25	1.14
113 W	QB	.88	.85	.76	.79	.78	.81	.63	.60	.57	.61	.76	.87
	QE	2.29	2.18	1.97	1.60	1.46	1.35	1.43	2.21	2.41	2.45	2.58	2.71
	QC	.67	.68	.69	.71	.68	.65	.61	.72	.76	.65	.70	.68
	QN	2.98	2.83	2.72	2.37	2.34	2.38	2.40	3.06	3.30	3.27	3.34	3.36
	OBS	909	903	1010	1000	1052	1020	1018	991	979	992	955	891
25 N	QS	3.45	4.61	5.31	5.37	5.44	5.55	5.63	4.83	4.43	3.65	3.71	3.72
114 W	QB	2.42	2.59	2.65	2.22	2.12	2.04	1.90	1.60	1.60	1.72	2.16	2.72
	QE	6.77	7.73	7.05	5.50	5.09	4.02	4.18	4.25	5.79	6.95	7.34	8.30
	QC	1.95	2.85	2.67	2.09	2.43	1.86	2.05	1.51	1.79	1.87	1.93	2.08
	QN	8.46	11.00	10.25	7.93	7.63	6.49	7.81	6.70	8.26	9.18	9.41	10.34
	OBS	104	85	91	112	128	148	123	161	139	134	111	90
25 N	QS	8.89	8.02	10.00	7.84	8.61	8.26	7.48	8.00	7.96	6.21	5.91	5.67
115 W	QB	5.96	4.51	4.13	3.20	3.07	3.17	2.40	2.62	2.94	2.84	3.36	4.40
	QE	9.39	9.93	11.76	10.75	5.27	5.79	4.71	7.17	7.68	9.42	12.29	17.58
	QC	2.61	3.46	3.59	3.23	2.80	2.94	2.58	2.26	2.55	2.54	2.70	4.58
	QN	11.49	12.98	16.86	13.96	10.96	9.67	9.67	10.30	11.54	13.13	16.42	21.14
	OBS	20	25	29	49	55	48	68	55	55	51	35	24
25 N	QS	12.03	8.83	10.50	11.81	8.37	9.75	9.75	9.25	9.02	10.95	7.03	10.73
116 W	QB	9.23	4.84	4.77	5.11	3.04	3.34	3.31	3.15	2.98	5.33	4.44	7.13
	QE	22.60	12.54	13.86	7.34	6.82	6.96	6.72	8.18	11.61	12.52	9.26	24.91
	QC	6.43	5.21	4.50	4.46	3.59	2.00	2.57	2.74	3.60	3.04	3.85	8.40
	QN	27.97	16.70	17.60	11.33	12.36	7.60	11.73	11.00	17.25	17.26	13.37	33.51
	OBS	13	20	21	19	32	29	37	37	32	20	26	9
25 N	QS	8.25	8.44	9.30	9.14	8.00	9.44	8.60	7.40	9.55	6.87	5.86	7.25
117 W	QB	6.14	5.08	4.15	3.65	2.64	3.07	2.81	2.36	3.43	3.16	3.51	5.04
	QE	10.91	12.72	7.65	8.89	6.66	7.60	5.60	7.12	7.32	9.59	12.11	10.77
	QC	4.77	6.13	3.30	2.86	2.48	2.59	2.66	1.56	3.20	3.41	3.02	3.60
	QN	15.54	17.58	12.29	11.62	10.82	12.51	10.05	10.01	11.65	14.01	15.17	14.46
	OBS	21	23	30	34	49	36	48	53	36	37	32	20
25 N	QS	6.72	7.92	10.39	9.41	6.35	6.71	7.30	7.16	8.21	7.25	5.59	4.94
118 W	QB	4.28	4.91	4.71	3.71	2.29	2.42	2.37	2.51	2.71	3.47	3.19	3.38
	QE	11.20	12.80	9.33	9.50	7.23	6.91	4.99	7.48	9.26	7.10	13.56	7.73
	QC	3.79	5.16	3.48	3.93	2.77	2.66	1.81	2.33	2.34	2.48	3.97	1.94
	QN	15.44	17.74	14.26	14.23	10.25	9.15	8.76	9.60	13.51	9.20	18.44	9.80
	OBS	24	24	27	41	57	49	64	54	43	48	39	42
25 N	QS	6.69	6.28	8.17	8.50	7.95	6.08	6.41	7.29	6.79	6.03	5.62	5.01
119 W	QB	4.21	3.16	3.48	3.26	3.19	2.14	2.04	2.18	2.59	2.88	3.26	3.67
	QE	7.88	12.32	7.41	9.95	7.75	5.66	7.32	8.73	7.55	6.98	14.73	8.49
	QC	2.70	3.54	1.98	3.45	2.89	1.96	2.32	2.40	2.15	1.95	3.96	2.53
	QN	9.59	15.39	11.35	13.81	11.20	8.02	10.57	12.27	10.03	10.14	19.50	10.20
	OBS	33	27	38	39	54	64	51	54	53	53	40	36
25 N	QS	7.08	7.84	8.03	6.42	6.01	7.88	7.36	9.65	9.16	7.25	4.88	6.56
120 W	QB	5.27	3.79	3.64	2.74	2.44	2.58	2.36	3.39	3.51	3.85	2.67	4.41
	QE	10.71	12.48	6.20	8.43	8.22	5.52	5.75	8.05	8.44	10.81	12.27	11.08
	QC	3.68	4.03	2.72	2.24	3.71	2.19	1.66	2.23	2.27	3.16	2.84	3.07
	QN	14.30	17.42	9.17	9.63	10.53	8.71	9.37	11.72	11.92	14.61	15.54	14.42
	OBS	21	31	40	47	53	40	46	44	35	40	49	29
25 N	QS	6.66	8.06	8.20	9.24	8.68	7.88	7.11	8.75	7.74	8.33	5.65	7.44
121 W	QB	4.76	4.42	3.67	3.31	3.39	2.62	2.36	3.08	2.66	3.95	3.66	4.71
	QE	11.10	8.49	12.94	6.50	7.94	6.28	7.13	9.58	11.89	10.00	16.71	11.63
	QC	3.19	3.14	4.17	2.51	2.79	3.81	2.64	3.85	2.93	2.52	3.72	3.68
	QN	14.03	9.94	18.72	10.74	11.56	11.12	11.37	13.46	16.35	14.07	19.93	16.04
	OBS	25	28	30	33	38	35	49	34	35	38	26	22
25 N	QS	6.95	7.64	8.43	7.62	7.91	10.65	6.61	8.75	11.59	8.87	5.57	4.78
122 W	QB	4.49	3.67	3.65	2.83	2.70	3.55	1.89	2.64	4.15	3.81	3.22	3.40
	QE	11.42	9.75	9.63	9.97	8.92	8.89	9.74	11.21	12.08	10.16	16.19	10.08
	QC	3.14	3.13	3.44	2.77	3.08	2.43	3.20	3.04	3.61	2.76	3.96	2.59
	QN	14.51	12.99	13.74	12.66	12.97	11.81	13.07	17.16	16.38	13.28	19.78	12.34
	OBS	25	31	31	44	41	24	32	28	27	27	27	38

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
26 N 113 W	QS	2.21	2.56	2.88	3.55	3.42	3.71	3.43	3.17	2.90	2.35	2.16	1.86
	QB	1.64	1.55	1.40	1.49	1.42	1.40	1.23	1.14	1.11	1.12	1.34	1.49
	QE	4.57	3.70	3.53	2.74	2.75	2.07	2.71	3.61	4.82	5.02	4.71	5.16
	QC	1.37	1.10	1.34	1.28	1.23	1.08	1.05	1.32	1.27	1.39	1.17	1.41
	QN	5.90	4.72	4.88	4.25	4.31	3.82	4.37	5.12	6.41	6.62	5.84	6.55
	OBS	273	297	304	285	325	321	277	290	297	311	313	289
26 N 114 W	QS	1.29	1.50	1.66	1.98	2.09	2.24	1.99	1.80	1.70	1.42	1.28	1.17
	QB	.97	.91	.82	.86	.85	.88	.71	.65	.65	.68	.82	.95
	QE	2.51	2.35	2.00	1.75	1.66	1.56	1.37	2.01	2.38	2.44	2.88	3.01
	QC	.74	.77	.78	.78	.78	.79	.65	.73	.75	.73	.78	.83
	QN	3.27	3.09	2.80	2.60	2.54	2.59	2.41	2.92	3.26	3.22	3.71	3.79
	OBS	828	861	989	927	929	908	911	926	922	924	854	807
26 N 115 W	QS	4.23	4.28	5.50	6.22	6.26	6.26	6.45	5.84	5.14	4.58	4.12	4.11
	QB	3.09	2.66	2.63	2.52	2.37	2.33	2.23	1.89	1.82	2.18	2.30	3.27
	QE	6.17	6.73	7.26	4.64	5.62	4.72	4.07	4.85	5.72	7.80	7.68	10.15
	QC	2.40	2.45	2.81	2.64	2.74	2.73	1.92	1.62	1.96	3.04	2.14	3.06
	QN	8.13	9.13	9.71	8.09	9.05	7.02	7.06	7.64	8.30	10.72	10.27	13.48
	OBS	85	76	78	92	94	110	109	109	106	89	87	65
26 N 116 W	QS	7.45	11.47	11.18	9.33	7.07	7.51	8.29	8.85	8.01	7.08	4.76	7.43
	QB	5.20	7.52	5.17	4.15	2.75	2.64	2.90	3.04	2.87	2.92	2.94	5.51
	QE	12.38	23.49	12.37	10.73	7.03	7.59	4.61	6.74	8.47	11.64	10.45	13.64
	QC	3.94	8.96	2.89	3.68	3.11	3.34	2.25	2.35	2.82	3.06	2.34	4.03
	QN	15.57	32.54	14.59	13.53	10.70	10.97	7.67	10.26	12.68	16.27	13.42	17.64
	OBS	24	16	24	39	57	57	54	43	49	44	44	20
26 N 117 W	QS	9.21	11.34	13.82	10.93	10.67	9.32	8.07	9.31	8.78	6.58	8.00	8.67
	QB	7.70	6.89	6.52	4.15	4.10	3.28	2.96	2.88	3.37	3.44	4.93	6.38
	QE	17.90	21.38	26.25	9.07	6.29	7.75	6.18	6.44	8.13	8.55	9.90	19.41
	QC	3.42	7.55	8.56	4.65	2.19	3.53	2.36	2.76	2.93	2.30	3.77	4.75
	QN	22.70	27.32	37.42	14.38	10.58	12.53	9.63	11.47	12.60	10.91	14.12	23.41
	OBS	12	14	11	31	28	31	45	40	34	31	25	15
26 N 118 W	QS	7.53	8.41	10.52	11.90	9.64	6.33	6.77	8.74	6.44	8.46	8.19	9.59
	QB	4.69	4.97	5.06	4.93	3.37	2.09	1.84	2.93	2.58	4.18	4.98	6.80
	QE	10.11	11.51	11.43	8.45	7.69	6.39	5.04	7.06	7.30	8.27	10.12	14.26
	QC	4.08	3.10	3.18	4.29	2.32	2.19	3.70	2.76	2.87	1.94	2.87	4.93
	QN	15.19	13.15	15.95	14.61	9.82	8.16	9.14	11.35	9.75	10.71	13.81	19.05
	OBS	25	21	28	23	31	31	32	38	50	31	20	13
26 N 119 W	QS	8.29	10.01	11.96	10.07	7.73	8.64	8.25	10.61	12.01	10.77	6.20	8.01
	QB	5.60	6.49	5.37	4.23	2.61	2.98	2.77	3.91	4.62	4.70	3.86	5.69
	QE	14.53	19.00	12.77	9.63	6.40	8.43	5.22	9.47	12.59	11.57	7.35	13.20
	QC	2.55	6.37	4.14	3.13	2.54	3.61	2.88	3.33	5.02	3.16	2.71	3.73
	QN	17.42	24.50	17.24	12.93	8.69	11.06	10.17	14.38	17.22	16.37	9.30	16.71
	OBS	17	21	19	30	36	27	38	35	22	25	32	17
26 N 120 W	QS	7.17	9.60	9.22	9.93	7.56	7.87	6.23	7.96	8.22	6.88	5.80	5.26
	QB	4.35	5.36	5.03	3.62	3.15	2.66	1.97	2.77	3.19	3.24	3.30	4.22
	QE	10.03	10.42	11.70	8.51	7.03	5.19	6.83	9.32	11.14	8.35	11.17	10.15
	QC	2.53	4.80	3.05	3.22	2.43	2.05	2.62	3.00	3.66	2.41	2.30	2.73
	QN	12.66	14.09	15.77	10.94	9.99	8.35	10.54	14.26	15.74	11.18	13.78	11.82
	OBS	21	16	27	34	52	49	49	39	42	45	32	30
26 N 121 W	QS	6.51	10.67	8.39	8.41	9.63	6.58	10.06	7.53	8.21	7.63	5.28	4.56
	QB	4.02	5.19	3.99	3.38	3.24	2.21	3.39	2.49	3.02	3.65	3.19	3.34
	QE	10.25	11.94	8.90	8.73	10.58	6.29	7.79	8.21	9.19	7.63	14.94	10.51
	QC	4.16	3.11	3.48	2.75	3.23	2.13	2.28	3.15	2.28	2.48	4.83	4.33
	QN	14.32	11.15	13.91	12.18	13.15	8.54	11.02	12.48	11.88	10.61	19.90	14.89
	OBS	33	18	29	46	45	59	39	48	42	37	35	32
26 N 122 W	QS	6.26	6.95	6.93	9.52	7.41	7.09	6.34	7.87	7.36	6.99	5.25	4.59
	QB	4.32	4.32	3.59	4.19	2.59	2.46	1.96	2.76	2.88	3.29	3.48	3.16
	QE	10.36	11.31	7.67	9.84	7.44	5.38	5.85	8.59	8.83	10.93	9.39	15.24
	QC	3.22	3.52	3.26	2.83	2.75	1.86	2.12	3.43	3.32	2.53	2.29	4.65
	QN	13.81	15.06	10.57	11.53	11.12	8.82	9.21	12.72	12.26	14.57	11.62	20.00
	OBS	24	26	40	35	45	47	50	42	40	43	45	38

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
27 N 114 W	QS	1.99	2.29	2.57	3.13	3.11	3.51	3.22	2.79	2.69	2.25	1.96	1.63
	QB	1.52	1.45	1.30	1.40	1.28	1.41	1.18	1.08	1.09	1.13	1.36	1.36
	QE	4.11	3.43	2.83	2.62	2.53	2.22	2.15	3.38	3.97	4.03	4.21	4.16
	QC	1.43	1.16	1.12	1.26	1.17	1.14	1.08	1.26	1.25	1.23	1.13	1.20
	QN	5.53	4.50	3.92	3.83	3.81	3.88	3.87	4.94	5.57	5.29	5.44	5.26
	OBS	324	342	388	352	387	352	361	317	375	380	348	373
27 N 115 W	QS	1.29	1.51	1.80	2.06	2.19	2.43	2.25	1.97	1.95	1.59	1.31	1.19
	QB	1.01	.95	.89	.91	.88	.94	.81	.73	.80	.78	.87	1.01
	QE	2.45	2.32	1.92	1.78	1.72	1.60	1.56	1.99	2.39	2.65	2.61	3.18
	QC	.84	.90	.84	.88	.89	.83	.78	.83	.85	.94	.80	.95
	QN	3.22	3.10	2.79	2.73	2.76	2.73	2.70	3.02	3.42	3.66	3.38	4.07
	OBS	744	764	855	816	854	812	803	830	779	825	763	685
27 N 116 W	QS	4.75	4.76	6.75	6.69	7.03	6.81	6.88	6.44	5.58	6.36	4.89	5.23
	QB	3.28	2.98	3.27	2.97	2.81	2.42	2.23	2.16	2.17	3.02	3.06	4.57
	QE	8.54	8.45	7.34	4.81	7.75	5.49	6.45	4.56	6.10	8.59	8.92	11.30
	QC	2.12	3.51	3.05	2.01	2.72	3.04	2.66	1.81	2.32	3.01	2.56	4.09
	QN	11.32	11.97	11.55	7.32	10.55	9.30	9.04	8.10	8.51	11.69	10.93	15.38
	OBS	58	71	61	75	73	70	69	88	96	58	54	39
27 N 117 W	QS	6.79	8.37	8.52	8.57	7.97	7.32	7.71	7.36	6.57	7.16	5.90	7.11
	QB	4.86	5.29	4.25	3.46	2.87	2.56	2.52	2.28	2.60	3.02	3.68	5.81
	QE	11.86	10.36	11.77	7.96	6.15	5.47	4.55	5.03	5.66	7.39	11.60	12.19
	QC	2.55	3.34	6.79	3.46	2.52	1.89	2.32	2.03	1.79	2.62	4.44	5.74
	QN	13.34	13.70	17.40	10.84	9.46	7.21	8.32	8.81	8.24	12.02	15.39	16.53
	OBS	24	30	30	40	44	49	59	55	63	43	38	19
27 N 118 W	QS	7.36	12.53	14.10	11.56	10.26	8.94	7.26	8.46	7.90	9.79	6.55	7.50
	QB	5.69	7.25	5.86	4.33	3.63	3.12	2.44	2.74	3.32	4.51	4.74	5.48
	QE	10.04	14.91	15.18	11.49	7.62	6.58	5.25	6.58	8.98	7.49	10.72	12.79
	QC	1.88	5.19	6.14	4.12	2.35	2.97	2.34	2.70	2.91	2.52	3.86	4.74
	QN	10.78	18.91	21.13	17.04	10.56	10.76	7.96	12.30	12.34	11.49	14.88	16.03
	OBS	21	15	15	30	31	41	61	44	43	25	27	16
27 N 119 W	QS	8.39	9.89	12.80	10.92	9.22	10.57	10.02	10.06	8.34	9.10	8.91	8.16
	QB	5.50	6.74	6.12	4.39	3.63	3.37	3.86	3.78	3.29	4.25	5.85	6.01
	QE	11.42	5.47	14.87	9.28	11.07	7.63	9.51	6.26	9.94	11.93	9.69	26.62
	QC	4.69	6.23	5.55	4.88	2.63	2.97	4.66	2.92	3.80	3.45	2.35	6.49
	QN	16.10	12.41	21.80	16.13	13.70	13.76	14.82	10.50	14.91	16.17	11.71	33.65
	OBS	15	10	10	32	29	29	24	30	34	33	22	12
27 N 120 W	QS	6.92	13.47	9.26	13.42	7.31	6.43	8.72	10.28	10.52	8.60	10.93	10.05
	QB	5.31	8.37	4.74	6.11	2.73	2.23	3.19	3.69	4.45	4.26	8.03	7.52
	QE	17.46	33.84	14.36	10.42	7.89	10.15	5.70	7.26	11.80	15.13	16.54	15.32
	QC	4.60	10.59	4.35	3.59	4.85	7.14	1.78	2.97	3.90	3.86	2.81	3.74
	QN	21.44	43.57	19.41	17.43	10.89	9.55	8.50	11.43	15.86	18.81	17.20	18.64
	OBS	21	11	19	18	28	24	26	33	32	23	12	12
27 N 121 W	QS	7.66	12.85	12.20	10.04	9.00	10.24	9.65	11.81	11.20	8.27	7.93	9.57
	QB	5.67	7.03	5.30	4.29	3.34	4.23	3.15	4.41	4.05	4.32	4.90	6.86
	QE	12.10	7.29	15.32	12.25	9.25	10.69	6.91	9.41	12.61	11.18	11.88	23.71
	QC	2.32	3.44	7.58	4.21	4.00	2.22	2.58	2.20	4.38	2.72	3.42	6.90
	QN	14.48	9.23	25.29	16.63	13.91	12.87	10.75	15.35	20.34	13.64	15.49	30.18
	OBS	20	17	17	34	38	17	27	29	23	31	23	8
27 N 122 W	QS	5.96	6.98	8.26	9.74	8.43	7.44	7.71	8.58	8.43	7.44	6.04	4.58
	QB	4.14	3.88	3.77	3.60	3.12	2.70	2.64	2.86	3.18	4.25	3.47	3.51
	QE	8.24	16.62	9.98	9.77	8.74	7.32	5.28	8.37	10.63	10.71	11.03	9.88
	QC	2.04	5.02	3.33	3.55	2.76	1.68	2.63	3.43	3.94	2.83	3.08	2.73
	QN	10.44	20.56	12.74	13.97	12.45	9.60	9.31	14.41	14.00	13.40	14.12	12.48
	OBS	24	21	33	39	46	45	41	41	32	35	27	35
27 N 123 W	QS	5.46	7.51	7.35	9.13	6.36	5.84	7.48	7.10	6.03	5.82	5.48	4.85
	QB	3.55	4.82	3.23	3.78	2.42	2.04	2.55	2.39	2.26	2.62	3.30	3.59
	QE	9.25	7.54	10.10	7.38	7.03	5.28	7.72	5.72	5.87	7.13	12.78	12.05
	QC	2.82	2.51	3.26	2.56	2.47	2.23	2.45	2.27	1.77	2.29	3.89	3.89
	QN	12.63	8.54	13.13	10.33	10.35	7.28	10.81	9.07	8.01	9.87	17.00	15.47
	OBS	36	30	41	45	57	76	48	56	56	55	38	33

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
28 N	QS	1.56	2.01	2.32	2.75	3.01	3.15	3.28	2.76	2.69	2.09	1.66	1.49
115 W	QB	1.24	1.26	1.16	1.16	1.16	1.15	1.13	1.01	1.04	1.07	1.16	1.26
	QE	3.16	2.95	2.50	2.17	2.02	1.78	1.93	2.21	2.93	3.36	3.67	3.91
	QC	1.14	1.06	1.00	.98	1.07	.97	.96	.86	1.05	1.10	1.19	1.11
	QN	4.21	3.89	3.49	3.34	3.40	3.39	3.65	3.50	4.42	4.55	4.85	4.88
	OBS	486	451	515	497	494	466	423	486	481	487	462	448
28 N	QS	1.47	1.86	2.17	2.50	2.58	2.20	2.61	2.44	2.48	1.94	1.51	1.39
116 W	QB	1.18	1.16	1.05	1.05	.98	.76	.86	.83	.96	1.00	1.06	1.23
	QE	2.86	2.26	2.07	2.11	2.04	1.73	1.55	2.16	2.34	2.64	3.10	3.38
	QC	.95	.88	.92	.99	.96	.81	.80	.87	.85	.93	.92	1.14
	QN	3.74	3.08	3.03	3.15	3.26	2.80	2.98	3.47	3.66	3.66	4.01	4.39
	OBS	543	526	584	571	585	619	560	593	549	602	548	505
28 N	QS	4.15	5.37	7.08	8.54	9.12	6.07	9.08	7.87	7.71	6.16	5.82	4.89
117 W	QB	3.09	3.71	3.48	3.26	3.42	2.09	2.85	2.68	3.01	3.26	3.45	4.33
	QE	7.49	7.61	7.14	6.01	6.55	5.07	6.03	6.12	5.70	6.73	8.14	12.46
	QC	2.11	1.99	2.82	2.57	3.96	2.92	2.60	1.98	2.09	2.45	3.44	4.14
	QN	9.56	9.58	9.79	8.82	9.85	8.25	10.89	9.39	8.86	9.33	11.51	15.77
	OBS	51	52	50	52	42	46	40	48	53	48	38	46
28 N	QS	6.93	9.46	11.08	10.80	10.65	8.81	9.36	8.63	9.28	8.00	8.10	7.31
118 W	QB	5.27	5.60	5.43	4.59	4.06	3.10	2.97	2.94	3.84	4.16	6.12	6.06
	QE	7.16	13.40	11.77	12.50	9.13	4.98	5.82	5.81	8.81	9.69	15.66	19.61
	QC	3.17	2.46	3.31	4.53	4.18	3.78	2.33	2.22	3.59	2.33	3.54	5.45
	QN	10.39	15.58	11.66	15.48	13.88	10.85	10.75	10.25	14.29	12.38	17.22	24.21
	OBS	25	20	15	22	30	33	44	51	37	34	18	16
28 N	QS	6.70	8.46	9.69	8.77	6.42	5.58	6.19	7.73	9.98	8.00	7.45	10.74
119 W	QB	5.17	5.00	4.80	3.60	2.61	2.01	2.03	2.71	3.84	3.82	4.68	9.08
	QE	7.95	9.08	9.17	7.66	6.38	7.66	4.94	6.47	9.37	9.06	8.07	26.73
	QC	3.02	2.07	3.39	2.61	2.33	2.75	1.83	1.91	2.57	1.96	3.29	13.04
	QN	10.07	10.81	13.92	9.55	9.77	10.10	7.22	9.97	12.20	12.08	11.20	38.88
	OBS	22	27	26	38	48	56	61	50	29	37	30	13
28 N	QS	8.43	12.95	9.52	8.44	10.53	8.10	8.86	8.06	7.09	10.05	8.42	8.52
120 W	QB	7.04	7.95	4.97	3.56	4.03	2.83	2.91	3.26	3.17	5.30	5.73	7.12
	QE	23.67	28.83	9.94	11.52	8.81	6.38	7.24	5.32	8.00	9.46	9.28	18.57
	QC	4.12	9.94	3.57	4.08	4.21	2.89	3.26	1.76	2.51	3.07	2.52	7.29
	QN	27.40	37.55	13.17	14.76	13.53	12.24	9.90	9.09	10.98	14.33	12.76	25.22
	OBS	12	12	31	40	32	31	30	33	42	21	23	16
28 N	QS	9.49	10.33	10.80	9.61	11.93	9.04	12.34	7.09	9.00	9.07	7.66	7.94
121 W	QB	7.65	6.56	5.33	3.79	5.43	3.01	4.40	2.48	3.57	4.80	5.15	6.65
	QE	19.47	13.23	8.45	8.83	8.36	7.58	7.18	8.16	10.66	10.58	13.07	8.93
	QC	8.41	6.76	5.95	3.98	2.58	3.42	3.19	2.86	3.87	3.41	3.29	2.61
	QN	28.61	15.83	13.01	14.30	13.18	12.65	8.98	12.49	15.14	14.13	16.49	10.65
	OBS	10	8	18	34	27	34	24	35	28	29	24	16
28 N	QS	6.32	9.41	8.97	12.08	8.51	8.14	5.30	9.79	8.42	9.86	8.41	7.05
122 W	QB	4.86	5.79	4.36	4.78	3.09	2.60	1.94	3.30	3.74	5.21	6.09	5.72
	QE	10.90	9.17	11.75	9.80	8.06	9.19	5.88	6.73	6.45	8.09	9.94	11.64
	QC	3.08	4.49	4.66	4.16	3.74	3.23	2.79	3.14	2.09	6.54	4.68	5.61
	QN	14.19	14.22	17.44	14.63	11.23	12.20	8.12	11.32	8.50	14.52	15.68	16.65
	OBS	28	18	28	19	32	32	35	37	29	23	16	22
28 N	QS	6.61	8.59	9.74	7.81	8.10	10.87	7.47	8.72	9.21	7.39	5.32	4.92
123 W	QB	5.63	4.79	4.43	2.95	2.75	3.94	2.22	3.01	3.28	3.79	3.38	4.05
	QE	19.24	9.38	15.76	7.85	8.57	10.39	6.61	6.71	7.61	8.90	11.16	8.66
	QC	4.05	2.68	3.72	4.07	3.47	3.88	3.80	3.79	2.48	3.27	3.05	2.80
	QN	22.27	11.90	19.24	11.44	12.78	13.79	10.38	11.77	10.40	13.49	14.16	11.40
	OBS	27	24	26	39	42	25	34	39	29	40	37	28
28 N	QS	5.20	7.46	9.17	9.33	9.39	9.45	8.41	9.09	12.37	6.62	5.92	5.18
124 W	QB	3.61	3.86	4.05	3.25	3.60	3.32	2.62	3.20	4.34	3.15	3.40	4.07
	QE	8.19	13.35	16.47	8.55	10.65	6.96	6.55	10.67	10.26	5.94	10.77	11.65
	QC	2.84	3.52	4.53	2.75	3.15	3.30	2.93	4.09	4.22	2.13	4.23	2.85
	QN	10.96	17.10	22.31	11.67	14.95	11.87	10.53	14.72	15.60	8.97	15.47	14.39
	OBS	33	20	26	31	38	37	34	31	17	45	33	29

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
29 N	QS	5.00	5.28	5.83	8.61	10.33	9.30	10.92	10.04	9.96	7.67	5.58	4.50
115 W	QB	4.13	3.38	3.19	3.91	4.28	3.50	4.03	3.75	3.92	4.25	4.29	3.94
	QE	10.39	6.37	7.87	7.92	7.03	6.38	8.02	7.11	12.28	8.85	9.67	13.12
	QC	3.91	2.11	2.78	3.60	4.32	2.86	4.38	3.08	3.52	2.75	2.42	3.65
	QN	13.95	7.81	10.93	11.24	13.17	9.66	13.55	12.58	16.94	12.85	11.80	15.85
	OBS	48	69	71	54	43	46	44	47	39	36	48	49
29 N	QS	1.26	1.58	1.75	2.13	2.10	2.04	2.25	2.22	2.18	1.69	1.30	1.15
116 W	QB	1.03	1.03	.90	.89	.81	.72	.75	.78	.86	.90	.93	1.01
	QE	2.35	2.11	2.00	1.74	1.69	1.55	1.39	1.75	2.22	2.03	2.42	2.90
	QC	.78	.76	.83	.82	.79	.77	.74	.68	.80	.74	.77	.92
	QN	3.12	2.74	2.69	2.58	2.54	2.62	2.66	2.85	3.33	2.84	3.13	3.72
	OBS	689	700	812	801	843	749	720	761	729	755	726	684
29 N	QS	2.51	3.12	3.32	3.96	4.61	3.41	4.11	4.06	4.14	3.36	2.58	2.47
117 W	QB	1.94	1.92	1.61	1.65	1.70	1.18	1.37	1.36	1.62	1.71	1.69	2.15
	QE	3.61	3.93	3.26	2.99	3.49	3.07	2.69	3.15	3.73	4.20	4.53	5.77
	QC	1.41	1.77	1.38	1.46	1.74	1.42	1.47	1.40	1.35	1.50	1.34	1.73
	QN	4.86	5.50	4.61	4.21	5.43	4.58	5.08	4.97	5.61	5.90	5.90	7.08
	OBS	182	180	245	226	169	213	185	202	202	190	188	155
29 N	QS	3.72	7.18	6.86	7.43	9.56	8.99	12.25	9.61	9.40	7.89	6.34	5.13
118 W	QB	2.76	4.11	3.22	3.06	3.95	3.00	4.28	3.34	3.85	4.22	4.48	4.23
	QE	5.22	5.81	7.30	5.56	6.23	5.43	5.64	5.97	7.13	8.06	7.41	12.35
	QC	1.88	2.04	2.68	2.19	4.16	2.36	3.18	2.49	2.53	2.01	3.90	4.19
	QN	6.96	7.91	10.65	7.44	9.46	9.60	12.67	11.86	12.41	10.89	10.60	16.41
	OBS	85	43	59	59	51	43	28	45	40	33	36	31
29 N	QS	8.69	10.64	8.05	8.15	10.19	12.01	6.87	10.20	9.99	6.58	7.07	5.85
119 W	QB	6.62	5.63	3.99	3.34	3.99	4.56	2.24	4.03	3.90	3.35	4.50	4.97
	QE	11.19	7.37	11.46	8.21	7.76	9.14	6.70	8.81	6.76	5.93	11.75	16.62
	QC	3.92	3.64	4.34	2.60	2.95	2.91	2.39	2.77	2.75	2.47	2.38	4.74
	QN	13.66	10.44	16.89	10.94	11.63	11.93	10.09	10.50	10.71	8.77	15.35	20.39
	OBS	15	17	26	27	34	29	34	24	34	46	22	20
29 N	QS	8.55	8.76	10.36	7.39	9.55	11.48	6.06	5.87	8.04	7.93	7.55	4.67
120 W	QB	7.16	5.10	5.03	2.82	3.61	4.12	2.17	2.26	3.43	4.22	4.85	3.96
	QE	13.58	9.30	13.10	10.15	5.92	9.25	6.48	4.98	5.97	12.63	6.37	9.90
	QC	3.65	3.17	5.13	4.32	2.62	4.00	2.44	2.07	2.39	5.61	3.58	2.62
	QN	17.53	12.05	16.68	16.03	9.83	14.33	7.80	8.23	9.50	17.54	9.94	11.33
	OBS	19	25	17	52	44	33	41	56	40	31	23	29
29 N	QS	4.63	7.73	8.86	8.70	9.50	7.99	6.91	8.05	7.28	7.24	5.79	5.57
121 W	QB	3.60	5.17	4.21	3.65	3.52	2.78	2.32	3.09	2.97	3.68	4.64	4.87
	QE	8.75	10.85	7.56	9.32	8.11	6.80	6.16	6.92	5.75	7.93	8.18	11.21
	QC	2.32	5.54	2.60	3.56	3.31	2.81	2.89	2.97	2.04	2.27	2.35	3.36
	QN	10.86	13.61	11.29	13.72	12.08	10.97	10.21	9.59	9.60	9.36	9.73	13.96
	OBS	44	23	31	38	45	49	51	39	36	32	34	27
29 N	QS	5.27	6.56	7.14	9.09	6.48	7.07	7.48	6.63	8.85	6.33	4.85	5.14
122 W	QB	4.48	3.94	3.43	3.60	2.30	2.60	2.75	2.55	3.72	2.93	3.20	4.38
	QE	13.49	6.42	9.47	8.84	4.39	4.38	6.27	5.99	7.67	6.60	7.28	9.55
	QC	3.25	3.62	4.14	3.56	2.06	2.21	2.95	2.65	3.36	2.54	2.09	2.60
	QN	15.90	9.70	14.03	12.17	7.32	7.70	9.30	9.16	11.22	9.71	9.13	11.93
	OBS	36	36	38	45	66	74	43	57	36	57	51	29
29 N	QS	6.76	7.92	8.02	10.21	8.48	8.56	5.82	9.13	7.62	8.36	6.49	4.88
123 W	QB	4.54	5.51	3.81	3.85	2.93	3.31	1.95	3.33	3.18	4.21	4.58	3.75
	QE	17.56	18.07	15.46	10.25	6.76	7.07	6.26	8.15	7.16	9.25	11.27	9.41
	QC	3.72	5.98	4.76	4.16	2.40	3.05	2.51	2.91	2.74	2.84	2.41	2.86
	QN	21.16	22.56	17.38	15.11	10.13	11.32	8.95	12.98	10.95	13.49	13.98	12.17
	OBS	28	18	25	25	44	57	50	42	41	34	21	24
29 N	QS	5.99	9.91	9.52	10.85	9.26	9.55	7.10	7.77	9.32	7.58	5.51	8.89
124 W	QB	4.17	5.09	4.85	4.67	3.30	3.20	2.45	3.10	3.92	3.62	3.72	7.38
	QE	8.24	12.16	20.57	12.63	6.58	8.40	5.69	7.19	11.42	10.86	9.16	22.41
	QC	3.95	4.55	5.91	4.04	2.55	3.95	2.86	3.02	3.24	2.64	3.48	6.87
	QN	11.67	17.23	28.13	15.89	11.30	13.07	9.47	10.99	14.10	13.63	12.29	28.97
	OBS	29	20	20	29	48	37	40	33	28	31	38	12

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
30 N	QS	1.76	2.27	2.44	3.19	3.12	2.70	3.14	3.03	3.12	2.39	1.96	1.71
116 W	QB	1.43	1.47	1.23	1.33	1.21	.97	1.04	1.07	1.23	1.26	1.46	1.57
	QE	[illegible]	2.79	2.83	2.42	2.60	2.16	1.95	2.24	2.77	3.07	3.64	3.37
	QC	[illegible]	.97	1.10	1.13	1.03	.92	.95	.92	1.18	.99	1.10	1.06
	QN	3.34	3.79	3.35	3.67	3.87	3.30	3.70	3.72	4.36	4.20	4.68	4.34
	OBS	375	344	429	371	420	396	349	354	358	363	318	311
30 N	QS	1.57	2.03	2.30	2.82	2.90	2.75	2.62	2.66	2.74	2.07	1.57	1.40
117 W	QB	1.34	1.31	1.19	1.20	1.12	.93	.86	.94	1.09	1.12	1.19	1.27
	QE	2.61	2.60	2.62	2.49	2.11	1.90	1.77	2.11	2.42	2.64	2.85	3.26
	QC	.96	1.02	.95	1.11	.97	.85	.89	.78	.96	.89	1.04	.96
	QN	3.45	3.48	3.57	3.63	3.35	3.20	3.33	3.48	3.79	3.65	3.79	4.11
	OBS	416	460	490	455	460	454	465	495	446	475	445	434
30 N	QS	2.91	3.81	4.69	5.32	5.34	5.12	4.00	4.61	5.33	4.02	3.27	2.88
118 W	QB	2.41	2.35	2.41	2.30	2.06	1.81	1.40	1.59	2.26	2.11	2.48	2.66
	QE	5.06	4.71	4.26	4.26	4.00	3.81	3.33	4.14	4.75	3.47	5.85	6.84
	QC	2.12	1.88	1.96	1.74	1.81	1.90	1.89	1.77	2.21	1.60	1.62	2.00
	QN	8.08	6.08	6.14	5.78	6.17	6.67	5.67	7.01	7.29	5.18	7.17	8.59
	OBS	130	136	131	134	125	137	135	135	124	136	102	115
30 N	QS	4.52	6.00	7.55	8.88	13.57	7.81	9.73	10.11	8.54	5.23	5.91	4.42
119 W	QB	3.48	3.90	4.71	3.67	4.67	2.83	3.45	4.12	3.52	2.83	4.25	4.04
	QE	9.93	8.70	9.39	5.78	9.90	4.40	3.85	11.71	7.94	6.39	9.92	14.03
	QC	3.76	2.76	2.79	3.02	4.59	3.18	2.20	4.22	3.78	2.35	2.81	4.09
	QN	13.84	10.88	13.07	10.15	14.20	6.52	8.85	18.63	12.58	9.49	12.62	17.70
	OBS	57	48	39	46	26	50	47	29	46	75	36	38
30 N	QS	4.84	4.43	6.31	6.83	6.77	7.51	8.47	6.31	8.90	5.35	6.32	3.95
120 W	QB	4.00	2.53	2.96	2.71	2.66	2.67	2.91	2.57	3.54	2.72	5.07	3.40
	QE	11.41	5.46	5.64	8.06	6.54	5.38	5.08	10.30	6.09	7.07	10.36	10.79
	QC	2.96	2.57	4.52	3.32	2.42	2.17	3.52	3.64	2.15	2.01	4.21	2.72
	QN	14.50	7.77	10.43	11.68	9.05	7.75	10.38	14.03	10.67	9.96	13.75	13.32
	OBS	50	90	49	70	75	65	51	58	45	81	25	41
30 N	QS	4.58	5.42	8.94	5.86	6.91	7.07	5.12	4.50	8.30	6.29	6.61	4.01
121 W	QB	3.87	3.18	4.11	2.52	2.67	2.52	1.77	1.73	2.99	3.45	4.62	3.58
	QE	9.95	6.19	7.36	6.37	4.66	5.04	3.69	3.88	6.07	8.74	5.63	14.72
	QC	3.42	2.19	3.70	2.34	2.61	3.17	1.87	1.96	3.16	2.94	2.69	2.87
	QN	13.54	7.81	11.74	8.63	7.66	8.49	6.16	6.06	11.01	12.24	7.87	16.94
	OBS	45	60	38	83	77	59	70	84	53	58	27	33
30 N	QS	4.07	6.40	7.71	8.87	7.00	6.02	6.34	6.65	7.38	6.19	5.57	5.55
122 W	QB	3.99	3.92	3.77	3.77	2.70	2.26	2.06	2.46	2.81	3.30	3.54	4.88
	QE	8.98	10.54	8.76	9.28	5.76	6.05	5.14	6.53	8.89	9.28	7.71	21.48
	QC	3.25	3.63	3.98	3.95	2.60	2.01	2.23	2.62	3.61	3.83	3.17	5.75
	QN	11.80	13.05	12.07	12.49	9.38	7.93	7.55	9.77	13.12	13.71	11.02	27.25
	OBS	49	38	37	36	81	89	63	64	51	44	39	17
30 N	QS	4.40	7.89	8.16	8.89	6.03	6.72	5.57	8.99	7.82	8.63	5.30	3.77
123 W	QB	3.12	4.88	4.19	3.91	2.18	2.45	2.12	3.63	3.27	4.53	3.95	3.32
	QE	14.70	9.77	12.40	10.34	4.47	6.99	5.73	5.72	7.72	13.36	7.94	10.41
	QC	3.12	4.84	4.87	3.96	2.45	2.25	2.17	2.06	2.56	3.31	2.23	3.60
	QN	17.53	13.36	17.67	15.64	6.83	9.65	8.69	9.09	10.82	15.46	9.91	13.60
	OBS	32	26	31	33	58	64	52	41	43	27	39	36
30 N	QS	4.26	6.21	8.47	8.31	5.61	5.84	8.55	8.16	8.14	5.60	4.86	5.36
124 W	QB	3.37	4.15	4.28	3.52	1.99	2.12	2.95	2.93	3.61	2.82	3.54	4.63
	QE	11.58	9.95	7.54	9.23	6.05	4.18	6.21	6.75	6.02	9.21	9.13	14.15
	QC	3.28	3.22	3.52	3.64	2.66	1.64	3.02	2.44	3.06	2.61	2.68	4.81
	QN	14.90	12.31	11.83	12.64	8.59	6.57	10.21	10.76	10.65	12.22	11.20	18.85
	OBS	44	44	32	45	76	87	43	51	34	52	39	27
30 N	QS	4.00	5.47	8.48	8.07	7.84	7.18	7.17	8.05	8.34	6.66	4.49	4.14
125 W	QB	3.66	3.43	4.14	3.40	2.71	2.75	2.48	2.90	4.00	3.04	2.86	3.88
	QE	12.09	11.30	11.45	8.55	9.84	5.25	6.73	7.43	8.89	9.35	10.03	11.42
	QC	3.98	4.20	4.01	2.60	4.25	2.68	3.11	3.35	3.04	3.21	2.96	3.92
	QN	15.41	14.57	15.10	10.25	12.81	8.71	8.79	10.75	11.28	13.76	12.33	14.96
	OBS	36	44	38	46	37	64	45	43	37	42	44	32

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
31 N	QS	1.43	1.84	2.12	2.67	2.64	2.44	2.62	2.62	2.65	2.07	1.60	1.36
117 W	QB	1.26	1.25	1.14	1.16	1.03	.88	.88	.93	1.09	1.13	1.23	1.35
	QE	2.19	2.37	2.39	2.11	1.82	1.59	1.68	2.16	2.08	2.13	2.65	3.24
	QC	.80	1.01	.89	.87	.80	.64	.75	.82	.75	.77	.91	1.08
	QN	2.91	3.21	3.32	3.09	2.95	2.64	3.13	3.43	3.24	3.02	3.44	4.19
	OBS	492	510	549	540	575	554	521	520	508	516	474	450
31 N	QS	1.85	2.63	2.68	3.34	3.34	3.64	3.12	3.33	3.08	2.65	1.95	1.71
118 W	QB	1.58	1.74	1.46	1.45	1.29	1.31	1.05	1.25	1.39	1.49	1.53	1.65
	QE	3.24	3.39	3.08	2.92	2.64	2.43	2.34	2.88	2.86	3.84	3.62	4.09
	QC	1.21	1.45	1.28	1.39	1.20	1.37	1.15	1.23	1.24	1.49	1.18	1.31
	QN	4.41	4.55	4.23	4.49	4.13	4.28	4.05	4.74	4.29	5.13	4.75	5.16
	OBS	291	263	328	312	303	268	256	307	336	319	279	273
31 N	QS	2.29	3.42	3.91	4.51	5.00	4.23	4.26	5.10	4.14	2.93	2.80	2.44
119 W	QB	2.01	2.19	2.23	1.97	1.94	1.55	1.51	1.95	1.87	1.62	2.20	2.29
	QE	3.92	4.31	5.70	4.77	3.34	3.20	2.25	4.05	3.22	3.18	4.90	6.54
	QC	1.41	1.49	2.07	1.83	1.38	1.42	1.68	1.65	1.33	1.24	1.52	2.09
	QN	5.06	5.39	8.10	6.52	5.39	5.15	4.85	6.64	4.99	4.32	6.29	8.23
	OBS	205	165	147	185	171	218	185	150	192	257	139	103
31 N	QS	2.92	4.21	5.69	5.35	5.68	6.73	4.93	5.59	6.57	3.73	3.85	3.67
120 W	QB	2.76	2.67	2.86	2.30	2.12	2.52	1.66	2.39	2.94	2.14	2.68	3.52
	QE	6.67	5.34	5.86	6.58	4.31	4.38	3.87	5.20	5.78	4.09	4.94	6.35
	QC	1.89	2.54	2.28	2.16	2.11	2.39	1.69	1.95	2.67	1.42	1.80	1.72
	QN	8.60	6.75	8.10	9.28	6.99	7.61	6.19	7.05	9.13	5.83	6.67	7.85
	OBS	120	101	79	108	113	82	136	91	77	170	93	60
31 N	QS	3.75	3.71	5.42	5.60	6.44	8.77	5.66	4.84	7.96	4.78	4.03	3.54
121 W	QB	3.19	2.25	2.81	2.32	2.44	3.14	2.08	1.91	3.26	2.55	2.75	3.27
	QE	8.64	4.96	6.18	5.92	4.60	5.10	4.72	4.97	7.88	6.16	6.08	7.20
	QC	2.30	1.96	3.48	2.43	2.15	2.49	2.30	2.21	4.04	2.30	2.03	2.31
	QN	10.80	6.43	9.98	9.26	6.75	8.09	7.51	6.95	13.29	8.79	8.29	9.38
	OBS	79	107	76	100	98	73	96	81	62	93	80	62
31 N	QS	3.75	5.04	5.84	7.23	6.36	7.38	6.69	5.70	7.09	4.94	3.56	3.36
122 W	QB	3.06	3.02	2.91	3.22	2.31	2.80	2.39	2.10	2.77	2.76	2.68	3.04
	QE	5.89	7.84	6.90	9.22	4.98	5.50	4.67	4.44	7.82	6.58	7.29	7.48
	QC	2.32	3.33	3.54	5.18	2.57	2.14	2.54	2.15	2.31	2.33	2.67	2.92
	QN	7.78	10.92	10.66	14.31	8.09	8.06	8.05	6.85	10.89	8.46	9.63	10.01
	OBS	62	63	68	54	77	79	76	71	63	81	69	66
31 N	QS	3.08	4.59	5.68	6.11	7.13	6.67	4.51	5.98	5.05	4.12	3.95	3.61
123 W	QB	2.78	3.09	2.78	2.58	2.87	2.57	1.53	2.24	2.20	2.45	3.15	3.11
	QE	6.11	7.22	6.84	7.67	6.03	5.16	3.81	3.98	5.80	5.88	6.29	9.61
	QC	2.39	3.04	2.48	3.01	2.92	2.28	2.09	2.26	1.84	1.91	2.08	2.89
	QN	8.18	9.51	9.65	10.46	9.70	7.88	6.53	7.33	7.74	7.23	8.33	11.97
	OBS	74	72	63	71	72	89	124	89	88	93	61	48
31 N	QS	3.02	5.01	5.01	5.29	5.05	5.29	4.86	7.56	6.58	4.94	3.83	3.00
124 W	QB	2.44	3.36	2.59	2.16	2.00	1.90	1.67	2.75	2.78	2.67	3.02	2.87
	QE	7.97	8.25	7.70	5.22	3.96	4.64	3.99	5.28	5.84	5.95	8.64	9.34
	QC	2.30	3.57	2.98	2.21	1.52	1.89	1.75	2.23	1.80	1.81	2.86	3.20
	QN	9.75	11.52	10.52	7.19	6.28	7.12	5.87	9.59	7.58	7.93	11.51	12.10
	OBS	70	60	76	115	164	130	108	66	72	79	62	60
31 N	QS	3.01	3.43	4.89	5.02	5.95	5.53	4.53	6.65	5.08	4.18	3.22	3.16
125 W	QB	2.27	1.97	2.25	2.17	2.31	1.96	1.50	2.49	2.20	2.23	2.61	2.80
	QE	6.77	7.55	5.74	6.50	6.07	4.03	4.22	5.32	6.03	7.14	7.94	11.24
	QC	2.78	3.03	2.23	2.96	2.10	2.00	1.78	2.28	2.04	3.01	2.41	4.46
	QN	9.20	10.46	8.82	8.95	9.02	6.63	6.57	8.65	7.32	9.84	10.01	15.37
	OBS	82	81	87	97	99	116	111	84	78	102	79	59
31 N	QS	2.74	3.31	4.75	5.47	5.45	4.93	3.69	5.60	4.82	3.59	2.87	2.76
126 W	QB	2.21	2.24	2.19	2.46	2.10	1.71	1.27	2.14	2.08	1.80	2.17	2.35
	QE	5.59	7.32	5.44	5.72	5.47	3.87	4.88	5.03	4.47	5.06	9.30	9.19
	QC	2.77	3.25	2.49	2.54	2.01	1.73	1.91	1.83	1.60	1.62	2.45	2.80
	QN	7.81	10.87	7.88	8.38	8.49	6.12	6.90	7.30	6.42	6.70	10.30	11.25
	OBS	95	92	102	94	112	128	113	109	99	126	98	77

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
32 N 117 W	QS	1.19	1.74	2.06	2.52	2.56	2.48	2.67	2.25	2.45	1.89	1.46	1.27
	QB	1.08	1.21	1.13	1.11	1.03	.89	.90	.82	1.04	1.09	1.19	1.29
	QE	1.79	1.97	2.11	2.05	1.51	1.22	1.43	1.36	1.74	2.15	2.13	2.93
	QC	.68	.82	.76	.89	.65	.57	.62	.55	.77	.75	.70	1.13
	QN	2.38	2.71	2.99	3.13	2.61	2.33	2.56	2.34	2.84	3.01	2.74	3.90
	OBS	667	573	610	590	660	673	585	761	535	595	506	445
32 N 118 W	QS	.81	1.21	1.28	1.60	1.60	1.63	1.67	1.54	1.44	1.21	.93	.98
	QB	.76	.83	.68	.72	.63	.58	.58	.57	.63	.73	.73	1.02
	QE	1.38	1.40	1.34	1.47	1.14	1.10	.99	1.26	1.13	1.87	1.70	2.51
	QC	.50	.56	.51	.60	.49	.46	.46	.44	.48	.55	.59	.80
	QN	1.85	1.91	1.83	2.18	1.82	1.76	1.82	1.93	1.77	2.35	2.25	3.27
	OBS	1441	1172	1543	1432	1556	1305	1366	1546	1586	1431	1248	780
32 N 119 W	QS	1.13	1.62	1.73	2.29	2.51	2.67	2.21	2.09	1.95	1.45	1.27	1.11
	QB	1.04	1.09	.96	1.01	1.00	1.00	.79	.81	.88	.85	1.06	1.13
	QE	1.91	2.56	2.05	2.13	1.91	1.97	1.54	1.88	1.71	1.73	2.58	3.01
	QC	.75	.89	.80	.91	.83	.99	.78	.79	.75	.62	.79	.96
	QN	2.60	3.29	2.80	3.12	2.93	3.19	2.69	2.80	2.57	2.29	3.28	3.90
	OBS	787	658	824	731	675	615	709	767	873	1021	668	570
32 N 120 W	QS	1.79	2.76	3.00	3.48	4.02	4.75	3.47	3.24	2.96	2.67	2.14	1.95
	QB	1.68	1.82	1.54	1.48	1.58	1.75	1.27	1.34	1.40	1.52	1.68	1.94
	QE	3.60	4.34	3.14	4.04	3.28	3.56	2.02	3.26	2.54	3.57	3.44	5.68
	QC	1.19	1.65	1.18	1.72	1.57	1.65	1.17	1.42	1.07	1.27	1.30	2.11
	QN	4.68	5.74	4.62	5.84	5.17	5.77	3.75	4.93	3.63	4.76	4.46	7.68
	OBS	278	224	304	318	281	215	359	277	377	354	262	191
32 N 121 W	QS	2.41	3.03	3.71	4.31	4.94	5.51	4.55	4.36	4.51	3.45	2.52	2.44
	QB	2.17	2.08	1.95	1.90	1.94	2.12	1.71	1.80	2.04	1.96	2.04	2.37
	QE	4.66	4.50	5.20	4.56	3.86	4.26	3.52	3.49	4.75	4.26	5.27	5.07
	QC	1.86	2.03	2.08	1.82	1.71	2.04	1.62	1.49	1.93	1.80	1.82	1.95
	QN	6.16	6.20	7.37	6.43	5.93	6.53	5.66	5.18	6.89	6.11	7.02	6.79
	OBS	165	180	178	186	195	150	184	175	176	199	162	128
32 N 122 W	QS	2.49	3.10	3.71	4.36	5.31	5.48	4.58	5.36	5.10	3.34	2.58	2.55
	QB	2.15	2.05	1.88	1.89	2.02	2.05	1.68	2.23	2.31	1.96	2.08	2.49
	QE	5.44	5.88	5.43	4.48	4.92	4.66	3.99	4.72	5.16	4.27	5.46	6.42
	QC	2.42	2.49	2.16	2.04	2.14	2.08	2.02	2.18	2.02	1.41	1.97	2.72
	QN	7.56	8.11	7.38	5.94	7.24	7.19	6.64	7.09	7.19	5.70	7.27	8.79
	OBS	131	152	161	154	138	132	141	109	126	198	139	112
32 N 123 W	QS	2.13	3.07	3.51	4.65	5.57	5.46	4.74	5.19	5.18	3.46	2.62	2.38
	QB	1.79	1.95	1.77	1.94	2.18	1.97	1.73	2.02	2.20	2.02	2.13	2.32
	QE	4.20	5.72	5.51	5.12	4.78	3.95	4.10	4.35	5.07	5.75	5.90	7.71
	QC	1.69	2.18	2.07	2.25	2.06	1.76	1.87	1.52	1.95	1.87	2.11	3.14
	QN	5.84	7.62	7.47	7.76	7.27	6.35	6.68	6.70	7.73	7.36	7.77	10.63
	OBS	180	139	153	131	126	121	125	127	118	154	145	111
32 N 124 W	QS	1.39	2.21	2.67	3.71	3.32	3.35	3.38	2.66	2.75	2.13	1.74	1.44
	QB	1.18	1.33	1.33	1.45	1.23	1.23	1.21	.99	1.15	1.22	1.35	1.41
	QE	3.07	3.56	3.18	3.61	3.23	3.21	2.64	2.30	3.20	3.16	3.00	3.62
	QC	.97	1.31	1.18	1.50	1.25	1.54	1.21	1.06	1.33	1.11	1.03	1.25
	QN	3.95	4.45	4.37	5.67	5.08	4.71	4.25	3.54	4.56	4.16	3.92	4.61
	OBS	382	290	349	239	305	312	359	388	363	415	326	331
32 N 125 W	QS	1.93	2.89	3.37	3.95	4.52	3.97	4.08	3.80	4.29	2.76	2.05	1.62
	QB	1.68	1.77	1.65	1.69	1.68	1.36	1.43	1.40	1.76	1.55	1.57	1.59
	QE	4.01	5.31	5.37	4.34	4.28	3.77	3.29	3.02	4.34	4.32	4.23	5.73
	QC	1.58	2.09	2.11	2.14	1.59	1.60	1.55	1.45	1.67	1.65	1.50	1.84
	QN	5.42	6.89	7.35	6.65	6.58	5.75	5.44	4.97	6.07	5.96	5.43	7.36
	OBS	189	161	176	178	197	199	188	187	160	198	190	198
32 N 126 W	QS	1.92	2.95	2.81	3.56	3.99	4.49	3.47	3.68	3.65	2.69	1.88	1.64
	QB	1.61	1.89	1.32	1.51	1.51	1.64	1.18	1.31	1.50	1.46	1.43	1.53
	QE	4.41	6.04	3.98	4.02	3.95	4.33	3.69	3.03	4.63	4.52	4.51	6.13
	QC	1.99	2.10	1.68	1.70	1.85	1.94	1.63	1.33	1.74	1.43	1.39	2.12
	QN	6.23	7.73	5.62	5.53	6.11	6.76	5.52	4.90	6.73	5.82	5.66	8.06
	OBS	206	160	225	223	220	208	196	217	191	233	224	[illegible]

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
33 N	QS	.60	.85	1.00	1.28	1.39	1.43	1.49	1.26	1.21	.91	.65	.63
118 W	QB	.59	.62	.55	.58	.56	.51	.52	.47	.53	.54	.56	.70
	QE	1.13	1.19	1.16	1.14	.90	.81	.81	.88	.87	1.06	1.33	1.82
	QC	.40	.37	.42	.44	.36	.32	.36	.32	.36	.36	.40	.60
	QN	1.46	1.47	1.59	1.61	1.44	1.32	1.45	1.38	1.32	1.38	1.66	2.36
	OBS	2385	2257	2504	2329	2271	2262	2150	2400	2259	2406	2344	1622
33 N	QS	1.00	1.40	1.54	2.17	2.25	2.44	2.50	1.93	1.87	1.36	1.02	.90
119 W	QB	.95	.99	.84	1.01	.90	.91	.89	.74	.85	.80	.85	.99
	QE	2.34	2.20	1.96	2.07	1.57	1.67	1.82	1.42	1.59	1.67	1.97	2.56
	QC	.73	.76	.77	.85	.73	.81	.81	.60	.66	.61	.70	.83
	QN	2.70	2.81	2.79	2.89	2.53	2.68	3.05	2.26	2.26	2.19	2.54	3.30
	OBS	860	807	1054	854	948	835	727	1061	927	1146	1023	762
33 N	QS	1.27	2.10	2.13	2.67	3.08	3.02	3.09	2.93	2.74	2.25	1.48	1.28
120 W	QB	1.23	1.41	1.12	1.23	1.23	1.14	1.13	1.20	1.29	1.33	1.21	1.38
	QE	2.69	3.06	2.37	2.73	2.31	1.97	2.36	3.10	2.38	2.91	2.74	3.79
	QC	1.01	1.16	1.05	1.35	1.18	1.16	1.20	1.44	1.12	1.07	.97	1.48
	QN	3.64	4.05	3.38	4.06	3.74	3.44	4.10	4.75	3.65	3.87	3.50	5.04
	OBS	495	399	586	534	527	553	453	457	476	447	462	406
33 N	QS	1.85	2.83	3.31	4.15	4.36	4.35	4.37	3.95	3.71	3.80	2.20	1.86
121 W	QB	1.76	1.94	1.74	1.91	1.73	1.64	1.59	1.60	1.69	2.22	1.84	1.94
	QE	3.53	4.08	3.80	5.04	3.59	3.22	3.44	3.74	3.77	4.39	3.95	6.05
	QC	1.58	1.93	1.82	2.28	1.76	1.64	2.02	1.83	1.82	1.61	1.46	2.35
	QN	4.89	5.82	5.60	7.28	5.38	5.27	6.22	6.28	5.79	6.23	5.14	8.20
	OBS	260	194	229	216	229	248	196	195	237	158	222	190
33 N	QS	1.92	2.85	3.20	3.76	4.56	4.74	4.37	4.43	3.70	3.25	2.14	1.75
122 W	QB	1.85	1.87	1.66	1.74	1.78	1.67	1.68	1.77	1.76	1.98	1.73	1.81
	QE	3.79	4.46	4.15	4.10	3.62	3.68	3.83	3.63	3.73	4.98	3.82	4.43
	QC	1.63	1.96	1.85	1.84	1.76	1.89	2.05	1.44	1.39	1.59	1.57	1.75
	QN	5.49	5.91	5.83	5.94	5.78	5.89	6.02	5.53	5.30	6.39	5.20	5.88
	OBS	225	209	240	241	212	196	186	190	210	200	229	213
33 N	QS	1.88	2.59	3.06	3.20	3.60	4.45	3.54	4.25	3.46	3.04	2.21	1.68
123 W	QB	1.76	1.72	1.59	1.34	1.40	1.55	1.30	1.69	1.57	1.78	1.82	1.73
	QE	4.36	4.03	3.69	3.01	3.27	3.71	2.63	2.83	3.72	3.69	5.20	5.31
	QC	1.90	1.60	1.84	1.26	1.37	1.78	1.42	1.47	1.44	1.47	1.88	2.31
	QN	6.15	5.25	5.52	4.19	5.03	5.73	4.37	4.48	5.38	4.99	6.79	7.30
	OBS	233	224	248	349	296	231	280	203	227	204	198	220
33 N	QS	1.70	2.67	2.94	3.38	3.57	4.63	4.12	3.28	3.86	2.72	1.86	1.65
124 W	QB	1.55	1.83	1.55	1.48	1.34	1.69	1.47	1.23	1.65	1.54	1.54	1.65
	QE	4.00	4.57	3.28	3.97	3.73	4.03	3.57	2.88	3.48	3.78	4.83	4.31
	QC	1.57	1.92	1.48	1.94	1.55	1.85	1.67	1.38	1.18	1.43	1.69	1.84
	QN	5.47	6.04	4.55	5.72	5.70	5.95	5.31	4.48	5.10	5.10	6.40	5.84
	OBS	248	189	266	239	245	211	217	239	231	254	245	224
33 N	QS	1.65	2.45	3.24	3.89	4.05	4.16	3.27	3.69	4.12	2.85	1.91	1.52
125 W	QB	1.36	1.58	1.61	1.65	1.53	1.45	1.10	1.44	1.30	1.56	1.60	1.50
	QE	3.88	4.09	3.68	4.59	3.64	3.97	3.26	3.11	4.80	5.10	4.39	4.72
	QC	1.98	1.94	1.64	2.03	1.86	1.74	1.53	1.49	1.53	1.74	1.65	1.86
	QN	5.62	5.66	5.10	6.44	6.00	5.98	4.92	4.50	6.41	6.73	5.54	6.17
	OBS	228	212	231	204	226	212	204	214	175	212	216	234
33 N	QS	2.18	3.35	3.59	4.57	5.10	5.27	5.15	5.16	4.39	3.27	2.35	2.02
126 W	QB	1.85	2.17	1.88	2.02	1.99	1.85	1.86	2.03	1.81	1.81	1.90	2.02
	QE	5.54	5.81	5.34	5.14	4.17	4.61	4.79	4.26	5.56	5.58	5.08	5.76
	QC	2.28	2.41	2.29	2.30	1.78	1.96	2.12	2.22	2.12	1.75	1.85	2.40
	QN	7.71	7.75	7.30	7.45	6.62	6.63	7.96	6.50	7.26	7.36	6.79	7.90
	OBS	155	107	158	136	139	118	139	133	135	144	144	138
33 N	QS	2.72	3.29	4.03	5.32	5.82	5.84	5.09	6.07	5.14	3.43	2.65	2.13
127 W	QB	2.31	2.16	2.00	2.21	2.12	1.97	1.71	2.28	2.24	1.83	2.19	2.16
	QE	5.98	5.48	4.92	6.09	4.55	5.16	5.65	4.47	7.74	6.99	6.13	7.57
	QC	2.72	3.00	2.23	2.44	2.30	2.15	2.40	1.98	2.88	2.07	2.10	2.71
	QN	8.39	7.85	7.30	8.37	7.56	7.73	8.15	7.05	10.50	9.03	7.80	10.16
	OBS	100	114	132	119	114	103	127	101	96	135	111	117

LAT/LONG		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
34 N 119 W	QS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.46	2.81	1.66	1.42
	QB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.59	1.60	1.69	1.46	1.66
	QE	[illegible]	[illegible]	[illegible]	2.37	[illegible]	[illegible]	[illegible]	3.33	[illegible]	2.66	3.69	4.16
	QC	[illegible]	[illegible]	[illegible]	1.37	[illegible]	[illegible]	[illegible]	1.02	1.15	1.16	1.09	1.90
	QN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.73	3.49	3.27	4.64	4.76
	OBS	234	[illegible]	247	[illegible]	[illegible]	267	313	278	275	262	339	276
34 N 120 W	QS	[illegible]	[illegible]	[illegible]	3.27	4.19	4.15	3.69	3.85	3.39	2.58	1.70	1.57
	QB	[illegible]	[illegible]	1.51	1.53	1.78	1.63	1.35	1.52	1.66	1.51	1.56	1.78
	QE	[illegible]	[illegible]	[illegible]	3.36	3.63	[illegible]	2.37	3.46	3.30	2.86	3.74	4.16
	QC	[illegible]	1.39	1.59	1.56	[illegible]	1.81	1.24	1.91	1.40	1.21	1.51	1.63
	QN	[illegible]	4.42	[illegible]	4.64	[illegible]	5.19	3.99	5.74	4.70	4.15	4.97	5.56
	OBS	[illegible]	[illegible]	312	322	261	324	403	307	300	310	315	226
34 N 121 W	QS	1.59	2.27	2.33	3.52	4.16	3.94	3.69	3.55	3.25	2.64	1.68	1.42
	QB	1.55	1.64	1.57	1.58	1.68	1.52	1.39	1.45	1.60	1.57	1.47	1.61
	QE	[illegible]	2.75	3.29	3.51	2.94	2.87	3.13	3.23	3.25	2.96	3.21	3.46
	QC	1.37	1.29	1.62	1.82	1.67	1.69	1.86	1.63	1.60	1.27	1.33	1.23
	QN	4.16	3.86	4.97	5.25	4.80	4.87	5.45	5.06	4.97	4.29	4.20	4.48
	OBS	[illegible]	[illegible]	313	311	279	363	343	334	325	304	334	299
34 N 122 W	QS	2.16	3.07	3.97	5.08	5.75	5.92	4.82	5.78	4.85	3.76	2.20	2.08
	QB	2.21	2.19	2.13	2.20	2.28	2.27	1.79	2.33	2.32	2.40	2.05	2.23
	QE	4.19	4.89	3.96	4.84	4.59	3.70	3.40	4.64	4.25	5.76	4.94	4.11
	QC	1.83	2.15	1.96	2.55	2.33	2.06	1.91	2.28	2.12	2.16	2.06	1.83
	QN	5.93	6.51	5.67	7.57	7.03	6.50	5.96	9.01	6.69	7.71	6.26	5.76
	OBS	[illegible]	150	152	145	145	159	164	137	140	131	166	143
34 N 123 W	QS	2.29	3.21	4.54	5.99	6.17	6.44	6.25	6.07	5.78	3.71	2.61	2.24
	QB	2.25	2.14	2.42	2.68	2.39	2.44	2.26	2.50	2.56	2.33	2.35	2.50
	QE	4.69	5.93	5.25	6.41	5.29	4.51	3.55	5.48	5.49	5.23	6.60	5.65
	QC	2.17	2.77	2.65	2.94	2.96	2.72	2.13	2.55	2.25	2.46	2.88	2.50
	QN	5.72	7.82	7.59	8.93	8.22	8.48	6.86	8.68	8.04	7.37	8.93	7.93
	OBS	128	133	129	97	105	132	122	97	104	139	118	112
34 N 124 W	QS	2.75	3.41	4.43	5.32	6.89	7.27	7.17	7.01	5.51	3.52	3.03	2.27
	QB	2.54	[illegible]	2.28	2.27	2.55	2.76	2.57	2.71	2.53	2.13	2.56	2.37
	QE	6.24	5.24	4.75	5.45	6.66	4.95	5.33	6.13	6.47	4.36	6.95	5.63
	QC	2.46	2.51	2.50	2.51	3.77	3.10	2.89	3.17	2.24	1.79	2.30	2.99
	QN	8.53	[illegible]	7.32	7.84	10.72	8.47	8.99	10.17	8.44	6.01	9.04	8.45
	OBS	[illegible]	124	114	115	82	98	86	82	101	144	99	123
34 N 125 W	QS	2.40	3.43	4.59	4.95	6.33	7.72	5.77	6.45	5.22	3.67	2.94	2.17
	QB	2.15	2.53	2.34	2.11	2.37	2.85	2.36	2.43	2.44	2.13	2.33	2.20
	QE	[illegible]	5.40	5.39	6.52	5.24	6.27	5.85	4.02	5.00	6.21	4.96	6.78
	QC	2.47	2.75	2.81	2.83	3.25	2.51	2.79	2.44	1.80	2.13	1.94	2.76
	QN	5.37	8.44	8.34	9.31	9.17	9.56	9.73	7.43	6.70	8.08	6.70	9.18
	OBS	119	99	120	120	86	92	94	94	115	130	108	107
34 N 126 W	QS	2.62	3.14	4.55	5.25	5.60	6.67	5.31	8.48	5.21	3.57	2.67	1.92
	QB	2.42	2.06	2.22	2.23	2.11	2.46	1.83	3.27	2.06	2.23	2.26	1.98
	QE	5.23	7.59	4.85	7.93	6.22	5.61	4.46	5.98	5.61	7.22	7.51	5.42
	QC	2.52	3.13	2.39	3.20	3.38	2.64	2.25	2.63	2.06	2.47	2.51	2.43
	QN	7.38	10.02	7.51	10.56	10.15	8.89	7.28	10.00	8.01	9.79	9.74	7.64
	OBS	103	129	103	117	107	90	93	61	95	103	100	124
34 N 127 W	QS	2.43	3.69	4.40	4.91	6.45	6.36	7.04	7.84	5.96	4.13	2.79	1.99
	QB	2.17	2.52	2.12	2.03	2.34	2.23	2.46	2.95	2.61	2.49	2.22	2.11
	QE	6.66	6.25	5.17	5.57	5.84	5.69	5.69	5.06	6.23	5.71	7.20	5.51
	QC	2.85	2.47	2.37	2.51	3.56	2.96	1.92	2.32	2.03	1.99	2.55	2.42
	QN	9.35	8.09	7.35	7.88	10.03	9.11	8.74	9.52	8.40	7.37	9.54	7.62
	OBS	114	99	114	116	81	98	84	61	84	93	102	125
34 N 128 W	QS	2.14	3.13	4.35	5.47	5.21	5.85	5.86	6.23	5.49	3.92	2.71	1.74
	QB	1.90	2.16	2.14	2.34	1.87	2.05	1.85	2.29	2.41	2.30	2.32	1.88
	QE	6.21	6.39	6.52	6.53	4.85	6.12	4.45	5.09	6.60	7.34	7.73	6.06
	QC	2.69	2.71	2.19	2.66	1.87	2.68	2.09	2.25	2.24	2.52	2.99	2.18
	QN	8.76	8.50	[illegible]	8.65	7.45	9.55	7.48	7.95	9.24	9.77	10.58	7.98
	OBS	137	116	118	102	131	97	91	85	54	98	105	129

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
35 N 121 W	QS	1.85	2.66	3.08	3.75	4.66	4.39	4.46	4.50	3.98	2.50	1.91	1.63
	QB	1.92	2.00	1.73	1.68	1.97	1.69	1.70	1.89	1.94	1.54	1.76	2.05
	QE	2.87	3.68	3.83	2.95	3.28	2.82	2.98	3.11	3.10	3.18	3.14	4.19
	QC	1.31	1.57	1.78	1.68	2.19	1.80	1.83	1.87	1.68	1.35	1.30	1.77
	QN	3.99	5.05	5.61	4.82	5.71	5.18	5.57	5.17	5.18	4.50	4.37	5.77
	OBS	220	220	268	279	217	296	264	232	241	336	255	201
35 N 122 W	QS	2.34	3.18	3.82	4.06	4.85	4.95	4.45	4.40	4.07	3.09	2.02	2.23
	QB	2.47	2.31	2.11	1.84	1.98	1.89	1.70	1.84	2.05	1.86	1.86	2.72
	QE	5.08	4.76	4.34	4.01	3.36	2.73	2.88	2.94	3.60	3.69	3.06	5.70
	QC	2.08	2.05	1.67	1.79	2.06	1.67	1.81	1.79	1.80	1.81	1.42	2.39
	QN	6.88	6.62	5.97	5.69	5.69	5.10	5.51	5.23	5.26	5.43	4.25	8.01
	OBS	127	152	187	203	198	216	219	226	200	209	208	113
35 N 123 W	QS	2.29	3.53	4.60	4.67	5.89	5.69	5.86	4.93	4.57	4.32	2.49	2.49
	QB	2.38	2.57	2.57	1.99	2.35	2.21	2.16	1.99	2.20	2.65	2.25	2.80
	QE	5.58	5.75	5.08	4.63	5.21	3.97	4.55	3.37	3.44	4.56	5.55	7.52
	QC	2.03	2.98	2.46	2.15	2.67	2.32	2.34	2.04	1.65	1.84	2.29	2.75
	QN	7.24	8.10	7.29	6.74	8.01	6.28	8.05	5.84	5.21	6.81	7.69	10.01
	OBS	110	103	108	148	119	155	161	164	149	113	127	86
35 N 124 W	QS	2.59	3.40	5.12	5.54	5.61	6.22	5.68	5.36	5.05	3.73	2.73	2.13
	QB	2.57	2.45	2.69	2.52	2.17	2.33	2.08	2.13	2.45	2.15	2.37	2.49
	QE	5.67	5.60	6.06	6.15	4.69	4.09	3.53	3.82	4.49	3.92	4.90	7.83
	QC	3.11	2.82	2.97	2.53	2.18	2.30	1.96	2.03	2.03	1.55	1.99	3.00
	QN	8.63	7.89	8.70	8.52	7.53	6.79	5.83	6.39	6.72	5.74	6.86	10.87
	OBS	86	102	99	102	139	136	140	142	122	143	120	99
35 N 125 W	QS	2.66	3.83	4.77	5.73	6.20	5.88	6.05	5.56	5.21	4.31	2.73	2.19
	QB	2.64	2.73	2.38	2.49	2.43	2.10	2.24	2.19	2.40	2.54	2.41	2.45
	QE	6.00	7.07	4.74	5.95	5.03	5.04	4.65	4.84	5.49	6.70	6.59	8.66
	QC	3.03	3.29	2.20	2.92	2.89	2.68	2.70	2.46	2.87	2.05	2.71	3.32
	QN	8.76	10.16	6.83	9.10	8.44	7.95	8.64	8.23	8.55	8.21	9.19	11.40
	OBS	91	86	107	95	98	127	116	127	116	93	101	80
35 N 126 W	QS	2.46	3.33	5.12	5.29	6.50	7.18	6.11	6.26	5.37	4.33	2.90	2.00
	QB	2.36	2.34	2.67	2.39	2.50	2.51	2.12	2.26	2.46	2.55	2.55	2.23
	QE	6.33	6.35	5.77	7.92	5.33	6.11	5.97	6.05	5.64	5.02	7.10	6.76
	QC	3.23	3.01	2.74	3.66	2.55	2.97	2.57	2.28	2.59	1.81	2.58	2.73
	QN	9.31	8.78	8.86	11.01	8.06	9.57	10.22	9.33	7.93	6.68	9.68	9.02
	OBS	99	90	91	109	91	84	91	99	91	99	90	101
35 N 127 W	QS	1.86	3.19	4.05	5.41	5.97	6.50	6.59	6.05	6.91	3.99	2.80	1.74
	QB	1.98	2.15	2.09	2.34	2.13	2.37	2.23	2.39	2.98	2.26	2.35	1.98
	QE	6.67	5.05	5.31	6.15	5.30	5.53	5.37	5.62	5.67	7.59	7.93	8.56
	QC	2.85	2.25	2.65	3.55	2.67	2.37	2.42	2.51	2.95	2.65	3.13	3.47
	QN	9.19	6.89	7.94	9.43	8.63	8.38	9.05	8.41	10.03	9.43	11.05	11.66
	OBS	104	111	116	100	97	100	80	98	67	102	97	110
35 N 128 W	QS	1.41	2.05	2.77	4.01	4.34	4.89	4.05	3.68	3.62	2.73	1.70	1.29
	QB	1.44	1.36	1.45	1.69	1.64	1.72	1.40	1.41	1.60	1.53	1.48	1.45
	QE	4.98	4.40	3.84	4.51	3.65	4.37	3.29	3.07	5.63	3.96	4.06	4.44
	QC	2.18	2.07	1.86	2.28	1.85	2.14	1.74	1.51	1.71	1.45	1.58	1.99
	QN	7.03	5.17	5.62	6.75	5.73	6.86	5.76	4.71	7.01	5.25	5.63	6.26
	OBS	249	229	251	175	187	155	201	219	181	214	242	236
35 N 129 W	QS	1.31	2.03	2.48	3.09	3.55	3.86	3.55	3.75	3.25	2.35	1.64	1.16
	QB	1.29	1.42	1.27	1.36	1.29	1.37	1.21	1.37	1.44	1.33	1.41	1.30
	QE	4.08	4.34	3.14	4.33	3.28	3.64	3.49	3.10	4.43	4.81	4.58	4.35
	QC	1.68	2.00	1.52	1.89	1.37	1.51	1.47	1.26	1.44	1.55	1.61	1.65
	QN	5.67	6.13	4.67	6.02	5.21	5.42	5.46	4.63	6.04	6.24	6.17	5.84
	OBS	294	278	335	255	258	249	237	230	227	261	261	289
35 N 130 W	QS	1.05	1.63	2.13	2.69	2.86	3.24	2.98	3.07	2.55	1.76	1.27	.94
	QB	1.03	1.17	1.12	1.19	1.12	1.12	.99	1.10	1.10	1.02	1.08	1.06
	QE	3.79	3.56	2.90	3.42	2.73	2.83	2.85	2.78	3.42	3.27	3.79	3.41
	QC	1.53	1.55	1.37	1.52	1.35	1.22	.99	1.05	1.08	1.02	1.39	1.36
	QN	5.22	4.39	4.24	4.93	4.34	4.44	4.34	4.33	4.55	4.21	5.05	4.65
	OBS	442	385	425	347	334	347	353	356	306	427	413	412

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
36 N	QS	1.62	2.41	2.88	3.31	4.01	3.72	3.65	4.10	3.30	2.71	1.77	1.63
122 W	QB	1.81	1.83	1.57	1.52	1.66	1.41	1.40	1.76	1.66	1.81	1.74	2.05
	QE	2.95	3.54	3.30	2.62	3.09	2.85	2.29	2.82	3.05	3.13	3.79	4.54
	QC	1.42	1.71	1.65	1.34	1.75	1.69	1.44	1.63	1.48	1.49	1.47	1.89
	QN	4.02	4.89	5.17	4.03	4.94	4.86	4.33	4.70	4.69	4.54	5.18	6.26
	OBS	268	260	322	355	298	411	422	277	303	264	272	196
36 N	QS	2.47	2.75	4.23	4.30	4.90	3.89	4.03	4.15	3.42	3.10	2.52	2.31
123 W	QB	2.75	2.08	2.33	1.93	1.95	1.48	1.56	1.79	1.71	2.10	2.18	3.30
	QE	5.96	4.71	5.52	4.06	3.60	2.40	2.53	2.66	3.01	3.93	4.68	12.28
	QC	2.33	1.92	2.40	1.74	1.78	1.46	1.58	1.46	1.37	1.77	1.90	4.51
	QN	8.18	6.36	7.28	5.71	5.94	4.12	4.45	4.74	4.70	5.51	6.34	17.07
	OBS	106	146	143	191	196	332	331	273	274	190	145	86
36 N	QS	2.79	3.23	5.60	5.37	5.89	5.86	5.67	5.39	5.12	3.87	2.80	2.28
124 W	QB	3.10	2.44	2.96	2.35	2.25	2.15	2.20	2.12	2.42	2.65	2.54	2.76
	QE	6.33	5.26	4.80	4.77	4.45	4.21	3.90	3.02	4.82	6.77	4.81	7.07
	QC	3.59	2.08	2.52	1.94	2.89	2.52	1.90	1.61	2.27	2.42	1.89	2.85
	QN	9.82	6.66	6.82	6.50	7.79	7.64	6.15	5.33	7.21	8.83	6.26	9.57
	OBS	78	99	76	130	136	148	157	157	129	111	110	92
36 N	QS	2.05	3.73	4.20	4.87	4.98	5.92	5.33	5.14	4.75	3.73	2.39	1.83
125 W	QB	2.23	2.84	2.19	2.23	1.93	2.20	2.02	2.02	2.24	2.40	2.38	2.23
	QE	6.05	7.62	4.76	5.61	4.84	3.81	3.68	4.47	4.17	5.03	6.54	6.00
	QC	3.25	3.65	2.22	2.60	2.60	2.20	2.00	2.31	1.73	1.90	2.48	2.64
	QN	8.96	11.04	7.09	8.20	7.45	6.01	6.03	6.76	6.27	6.49	8.83	8.54
	OBS	125	98	134	139	164	144	157	167	134	122	134	129
36 N	QS	1.41	1.98	2.63	3.58	3.96	4.73	4.34	4.09	3.43	2.68	1.43	1.25
126 W	QB	1.43	1.45	1.39	1.63	1.50	1.76	1.58	1.62	1.63	1.58	1.36	1.53
	QE	3.46	3.65	3.58	3.55	3.08	3.56	3.20	2.86	4.31	4.27	3.64	4.41
	QC	1.76	1.77	1.75	1.77	1.60	1.85	1.66	1.58	1.78	1.71	1.50	1.79
	QN	5.04	5.20	5.17	5.19	5.08	5.70	5.43	4.75	6.12	5.78	4.99	6.04
	OBS	292	264	296	244	252	217	249	254	231	259	342	270
36 N	QS	.91	1.39	1.90	2.47	2.66	2.99	2.92	2.72	2.38	1.73	1.16	.82
127 W	QB	.94	1.04	1.00	1.09	1.00	1.07	1.03	1.05	1.08	1.05	1.09	.98
	QE	2.68	2.81	2.47	2.75	2.39	2.52	2.40	2.34	2.79	3.14	3.39	3.14
	QC	1.28	1.45	1.26	1.30	1.16	1.15	1.13	.97	1.05	1.10	1.39	1.27
	QN	3.85	4.07	3.60	4.01	3.79	3.84	3.98	3.54	3.86	4.12	4.68	4.31
	OBS	503	509	543	486	518	482	456	556	494	507	492	540
36 N	QS	.84	1.31	1.72	2.32	2.65	2.85	2.47	2.31	2.06	1.54	.94	.76
128 W	QB	.85	.98	.91	.98	.99	1.02	.84	.87	.94	.94	.81	.90
	QE	2.44	2.47	2.37	2.59	2.31	2.51	2.09	2.00	2.42	2.88	2.76	2.69
	QC	1.06	1.21	1.17	1.26	1.13	1.14	.95	.82	.85	1.01	.92	1.02
	QN	3.42	3.56	3.44	3.90	3.47	3.91	3.44	3.10	3.41	3.80	3.59	3.62
	OBS	586	592	651	563	531	558	580	612	615	601	753	650
36 N	QS	1.14	1.60	1.85	2.29	2.81	2.89	2.63	2.60	2.30	1.72	1.22	.86
129 W	QB	1.13	1.15	.99	1.03	1.07	1.00	.90	.93	1.00	1.05	1.07	1.01
	QE	3.26	3.30	2.68	2.80	2.53	2.36	2.53	2.44	2.62	3.19	3.56	3.49
	QC	1.50	1.58	1.31	1.31	1.19	.99	1.01	.97	.88	1.06	1.33	1.45
	QN	4.62	4.66	3.91	4.01	4.09	3.57	3.82	3.79	3.60	4.16	4.84	4.84
	OBS	393	394	519	484	469	450	444	473	482	455	445	456
36 N	QS	1.35	2.08	2.44	3.29	4.16	4.28	4.11	4.14	3.20	2.26	1.37	1.17
130 W	QB	1.44	1.51	1.24	1.43	1.65	1.45	1.39	1.55	1.37	1.27	1.17	1.38
	QE	4.65	4.18	3.61	3.56	3.45	3.67	3.69	4.11	4.74	4.03	4.26	5.08
	QC	2.31	1.95	1.70	1.81	1.74	1.58	1.57	1.46	1.67	1.39	1.61	2.12
	QN	6.91	5.87	5.19	5.36	5.48	5.66	6.01	6.27	6.31	5.24	5.75	7.11
	OBS	219	233	270	242	211	204	186	183	220	245	309	234
36 N	QS	1.63	2.33	3.20	3.81	4.95	4.57	6.21	5.09	3.91	2.97	1.72	1.25
131 W	QB	1.68	1.64	1.60	1.74	1.87	1.60	2.04	1.83	1.79	1.74	1.48	1.49
	QE	5.65	5.12	4.52	4.78	4.66	4.33	3.74	5.53	5.73	5.08	5.84	5.69
	QC	2.44	2.28	2.11	2.10	1.90	1.82	1.78	2.03	1.98	1.75	2.27	2.35
	QN	7.73	7.02	6.59	6.73	7.08	5.26	7.10	8.08	7.64	6.69	7.79	7.92
	OBS	151	173	193	181	151	151	104	123	134	171	191	171

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
37 N	QS	2.25	3.36	5.35	4.88	5.83	5.92	5.27	6.68	5.11	3.96	2.72	2.23
122 W	QB	2.67	2.57	2.75	2.20	2.45	2.32	2.03	2.93	2.59	2.62	2.82	3.06
	QE	4.18	5.02	4.48	3.57	3.52	3.01	2.58	3.24	4.50	4.26	5.03	6.69
	QC	2.20	2.46	2.49	2.04	1.83	2.02	1.62	2.12	2.44	2.55	1.86	2.86
	QN	6.37	7.26	7.17	5.75	6.05	5.41	5.17	5.99	6.90	6.45	6.71	9.56
	OBS	129	130	108	166	136	161	207	102	120	122	107	91
37 N	QS	1.42	2.11	2.57	3.17	3.58	3.22	3.39	3.24	2.58	2.16	1.50	1.22
123 W	QB	1.68	1.67	1.48	1.45	1.48	1.24	1.33	1.38	1.31	1.50	1.52	1.75
	QE	3.22	4.04	3.41	2.85	2.99	2.03	1.97	2.03	2.20	3.26	3.39	4.17
	QC	1.61	1.64	1.54	1.55	1.59	1.19	1.21	1.25	1.21	1.42	1.36	1.79
	QN	4.69	5.44	4.83	4.54	4.70	3.55	3.74	3.77	3.54	4.44	4.67	5.86
	OBS	320	308	378	378	370	540	502	469	500	376	358	294
37 N	QS	1.29	1.73	2.38	3.02	3.75	4.07	4.27	3.77	3.01	2.41	1.39	1.15
124 W	QB	1.50	1.35	1.34	1.41	1.51	1.56	1.66	1.59	1.52	1.58	1.36	1.50
	QE	3.38	2.90	2.85	3.00	3.21	3.29	2.79	2.69	3.03	3.58	3.11	3.62
	QC	1.70	1.30	1.43	1.64	1.68	1.67	1.63	1.66	1.49	1.71	1.37	1.63
	QN	4.98	4.06	4.18	4.51	5.18	5.16	4.73	4.74	4.54	5.21	4.42	5.02
	OBS	346	381	418	361	330	350	334	329	335	335	401	332
37 N	QS	1.04	1.53	2.08	2.52	2.80	3.49	3.40	3.20	2.65	1.94	1.12	.93
125 W	QB	1.16	1.20	1.14	1.15	1.11	1.31	1.29	1.29	1.29	1.23	1.13	1.19
	QE	2.41	2.84	2.50	2.77	2.41	2.65	2.42	2.26	2.57	2.97	2.73	2.83
	QC	1.24	1.35	1.32	1.44	1.29	1.49	1.36	1.29	1.27	1.20	1.20	1.45
	QN	3.52	4.01	3.69	4.11	3.71	4.49	4.02	3.92	3.84	4.06	3.87	4.15
	OBS	517	466	552	537	527	449	462	452	452	494	585	487
37 N	QS	1.17	1.64	2.25	2.60	3.10	3.29	3.58	3.39	2.84	1.96	1.20	.99
126 W	QB	1.26	1.27	1.21	1.16	1.21	1.20	1.34	1.32	1.38	1.28	1.15	1.23
	QE	2.78	3.13	2.72	3.03	2.63	2.39	2.52	2.61	2.66	3.26	3.43	3.02
	QC	1.44	1.62	1.41	1.59	1.31	1.35	1.35	1.44	1.22	1.28	1.39	1.40
	QN	4.15	4.50	4.03	4.64	4.17	3.96	4.10	4.55	3.86	4.40	4.79	4.29
	OBS	408	367	463	481	442	451	396	379	384	430	477	424
37 N	QS	1.32	1.97	2.67	3.12	3.14	3.89	3.81	3.92	3.16	2.13	1.41	1.13
127 W	QB	1.45	1.51	1.45	1.40	1.20	1.43	1.35	1.53	1.52	1.32	1.30	1.40
	QE	3.73	4.05	3.43	3.38	2.76	3.20	2.97	3.04	3.35	3.83	3.77	3.82
	QC	1.84	1.95	1.79	1.65	1.28	1.60	1.57	1.49	1.61	1.61	1.57	1.79
	QN	5.45	5.77	5.09	5.06	4.26	5.05	4.65	5.11	4.93	5.15	5.24	5.41
	OBS	266	252	279	319	359	279	271	260	277	331	336	270
37 N	QS	1.57	2.25	2.95	3.16	3.84	4.07	4.48	4.54	3.33	2.30	1.55	1.20
128 W	QB	1.80	1.67	1.45	1.38	1.43	1.45	1.57	1.68	1.56	1.48	1.48	1.54
	QE	4.47	4.74	4.89	3.79	3.08	3.30	3.85	3.77	3.78	3.91	5.10	5.02
	QC	2.31	2.32	2.33	2.01	1.65	1.67	1.63	1.68	1.69	1.50	2.01	2.14
	QN	6.39	6.71	7.06	5.78	5.00	5.24	6.00	6.13	5.42	5.27	7.01	7.11
	OBS	190	180	216	242	262	237	191	189	247	271	227	221
37 N	QS	1.65	2.29	3.11	3.47	3.91	4.21	4.04	4.37	3.34	2.31	1.49	1.24
129 W	QB	1.73	1.82	1.62	1.58	1.45	1.47	1.34	1.58	1.52	1.39	1.36	1.56
	QE	5.01	5.33	5.19	3.84	3.57	3.90	3.65	4.02	4.74	4.05	5.04	5.30
	QC	2.10	2.63	2.46	2.22	1.87	1.72	1.63	1.78	1.75	1.82	1.94	2.53
	QN	6.97	7.58	7.68	5.97	5.88	5.96	5.75	6.33	6.44	5.73	6.73	7.63
	OBS	160	154	186	227	222	222	183	186	231	272	236	183
37 N	QS	1.70	2.38	3.29	3.45	4.05	4.10	4.31	4.35	3.35	2.40	1.52	1.20
130 W	QB	1.80	1.72	1.69	1.46	1.50	1.45	1.46	1.57	1.55	1.44	1.47	1.51
	QE	5.44	6.60	4.91	4.37	3.22	3.57	3.22	4.27	4.21	3.83	5.14	6.49
	QC	2.55	3.15	2.35	1.97	1.75	1.67	1.51	1.69	1.52	1.36	2.00	2.64
	QN	7.66	9.56	7.05	6.32	5.38	5.41	5.51	6.67	5.64	4.86	7.03	8.93
	OBS	148	149	154	221	205	213	187	181	231	247	204	180
37 N	QS	1.64	2.61	3.57	3.63	3.99	4.69	4.13	4.43	3.22	2.51	1.62	1.32
131 W	QB	1.84	1.88	1.89	1.57	1.47	1.61	1.35	1.57	1.47	1.57	1.50	1.67
	QE	5.11	5.67	5.45	4.43	3.70	3.99	3.83	3.69	4.36	4.78	6.07	6.05
	QC	3.08	3.04	3.15	2.44	1.72	1.75	1.81	1.47	1.37	1.79	1.98	2.52
	QN	8.95	8.29	8.01	6.95	5.85	6.63	6.25	5.88	5.81	6.49	7.93	8.28
	OBS	140	131	138	198	174	175	177	176	198	221	190	162

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
38 N 123 W	QS	1.17	1.56	2.16	2.43	3.15	3.28	3.16	3.04	2.49	1.99	1.33	.98
	QB	1.40	1.24	1.22	1.19	1.32	1.26	1.23	1.34	1.31	1.41	1.38	1.40
	QE	2.34	1.99	2.16	2.32	2.12	1.94	1.65	1.99	1.71	2.14	1.89	2.44
	QC	1.19	1.10	1.09	1.27	1.36	1.29	1.12	1.28	1.07	1.25	.87	1.29
	QN	3.42	2.90	3.22	3.50	3.61	3.44	3.33	3.55	2.94	3.11	2.66	3.61
	OBS	484	513	575	594	479	540	583	537	505	451	443	446
38 N 124 W	QS	1.79	2.42	3.44	3.42	4.02	3.95	4.30	3.65	3.35	2.97	1.82	1.33
	QB	2.17	1.93	1.92	1.60	1.64	1.52	1.69	1.56	1.67	1.90	1.85	1.78
	QE	3.88	4.31	3.87	3.30	3.26	2.72	2.93	2.86	2.77	3.67	4.66	4.46
	QC	1.95	2.43	1.68	1.57	1.82	1.71	2.07	1.78	1.54	1.62	2.01	2.16
	QN	5.57	6.37	5.41	4.53	5.18	4.68	5.43	5.01	4.43	5.09	6.41	6.19
	OBS	181	206	211	296	291	370	318	344	314	238	233	224
38 N 125 W	QS	1.98	2.73	3.91	4.01	4.48	4.95	5.22	4.29	3.71	3.22	2.14	1.70
	QB	2.42	2.34	2.24	1.85	1.72	1.87	2.02	1.76	1.88	2.17	2.11	2.32
	QE	5.75	5.58	5.46	3.99	4.22	3.97	4.06	3.26	3.46	5.24	4.02	5.23
	QC	2.90	2.85	2.36	1.92	2.00	2.30	2.66	1.90	1.80	2.38	1.84	2.33
	QN	8.45	8.10	7.24	5.64	6.37	6.82	7.22	5.65	5.61	7.29	5.79	7.32
	OBS	124	132	153	205	187	221	216	250	212	165	169	136
38 N 126 W	QS	2.46	2.87	4.27	4.63	4.75	5.64	5.23	4.59	3.88	3.38	2.25	1.57
	QB	2.71	2.30	2.35	2.23	1.90	2.04	1.92	1.83	1.94	2.14	2.13	2.09
	QE	6.96	4.81	5.26	5.96	4.58	4.58	4.08	4.32	4.70	5.13	5.31	6.46
	QC	4.36	2.64	2.56	3.15	2.04	2.50	2.22	2.42	2.16	2.21	2.49	2.76
	QN	11.16	7.09	7.83	8.86	6.85	7.17	6.95	6.89	6.79	7.06	7.73	9.03
	OBS	95	137	120	139	151	161	187	205	202	163	135	136
38 N 127 W	QS	2.33	3.33	3.76	4.61	4.45	4.94	4.26	3.97	3.89	3.05	2.21	1.65
	QB	2.63	2.66	2.03	2.00	1.74	1.78	1.59	1.53	1.84	1.97	2.08	2.30
	QE	8.32	5.57	5.10	5.14	3.91	4.81	4.03	4.46	4.50	6.00	5.38	6.08
	QC	4.19	2.50	3.06	2.69	1.72	2.17	2.18	2.02	2.00	2.30	2.20	2.71
	QN	12.54	7.85	7.80	7.82	6.08	6.97	6.48	6.55	6.51	8.19	7.26	8.62
	OBS	90	88	129	137	179	188	222	213	187	150	134	114
38 N 128 W	QS	2.23	3.27	4.03	4.64	3.81	4.24	3.78	3.80	3.31	3.08	2.08	1.50
	QB	2.39	2.63	2.21	2.07	1.47	1.50	1.36	1.41	1.57	1.89	1.88	1.98
	QE	9.66	5.93	5.31	4.51	3.25	3.61	3.46	3.28	3.66	5.88	6.28	6.69
	QC	4.68	3.28	2.84	2.37	1.69	1.98	1.79	1.47	1.66	2.34	2.40	2.96
	QN	14.26	8.72	8.03	6.64	5.03	5.74	5.58	5.20	5.16	7.92	8.53	9.47
	OBS	98	99	124	141	207	207	244	253	254	165	141	120
38 N 129 W	QS	1.77	2.71	3.62	4.37	4.72	4.76	4.19	4.10	3.59	3.09	2.05	1.44
	QB	2.08	2.16	2.16	1.97	1.80	1.67	1.44	1.59	1.67	1.92	1.99	1.93
	QE	7.64	6.29	5.88	4.86	3.43	3.99	3.47	4.55	4.54	5.39	6.86	6.60
	QC	4.04	2.95	3.03	2.49	1.81	2.08	1.89	1.82	1.81	1.94	2.85	3.07
	QN	11.55	8.80	8.68	7.45	5.81	6.63	6.05	6.64	6.27	7.08	9.48	9.29
	OBS	95	113	121	122	174	172	219	203	193	146	131	117
38 N 130 W	QS	2.18	3.10	4.19	4.60	4.69	5.01	4.27	4.02	3.60	3.26	1.88	1.50
	QB	2.57	2.32	2.18	1.99	1.78	1.74	1.48	1.56	1.66	2.04	1.99	2.00
	QE	9.21	6.41	6.72	5.76	3.90	3.99	4.33	4.07	4.31	6.48	8.39	7.21
	QC	5.04	3.45	3.51	2.37	2.38	2.09	1.67	1.69	1.47	2.03	2.95	2.61
	QN	14.15	9.86	10.12	8.30	6.46	6.76	6.59	5.94	5.53	8.35	10.92	9.73
	OBS	84	105	108	100	152	156	170	188	185	132	110	117
38 N 131 W	QS	2.01	2.92	4.09	4.79	4.38	5.35	4.13	4.25	4.04	3.11	2.20	1.46
	QB	2.25	2.42	2.38	2.14	1.65	1.91	1.41	1.47	1.84	1.97	2.12	1.98
	QE	6.73	7.47	8.48	6.72	3.87	4.55	3.40	3.50	5.51	6.64	7.07	7.64
	QC	3.46	4.10	3.68	3.27	1.84	2.11	1.88	1.46	2.04	2.27	2.65	3.25
	QN	9.90	11.30	11.71	9.94	5.67	7.49	5.67	5.68	7.15	8.78	9.35	10.74
	OBS	93	85	84	99	150	143	158	190	144	121	104	96
38 N 132 W	QS	2.25	3.11	3.62	4.89	4.82	5.46	4.46	4.33	3.87	3.13	1.99	1.48
	QB	2.34	2.22	2.06	2.19	1.87	1.91	1.49	1.56	1.73	2.01	1.80	1.99
	QE	9.30	7.39	5.18	7.73	4.04	4.10	3.48	4.33	4.83	6.98	6.87	8.95
	QC	5.14	3.23	2.73	3.85	1.91	1.81	1.31	1.51	1.72	2.10	2.92	3.75
	QN	14.33	10.30	7.48	11.80	6.47	6.53	5.68	6.63	6.73	8.66	9.45	12.37
	OBS	73	78	112	99	141	126	153	166	168	136	124	101

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
39 N	QS	1.78	2.18	3.50	3.75	4.69	4.47	4.80	4.42	3.96	3.03	1.78	1.43
124 W	QB	2.26	1.86	2.00	1.82	2.00	1.76	1.91	1.89	2.04	2.07	1.99	2.13
	QE	4.37	3.67	3.63	3.11	3.36	2.93	2.76	3.37	2.71	4.34	3.68	4.15
	QC	2.36	1.70	1.86	1.83	2.20	2.03	2.15	2.31	1.75	2.20	1.39	2.06
	QN	6.29	4.92	5.13	4.78	5.51	4.99	5.68	6.30	4.57	6.30	4.85	6.12
	OBS	159	218	211	257	217	282	260	232	213	197	195	176
39 N	QS	2.24	3.75	4.82	5.25	5.62	5.87	5.49	5.10	4.74	3.71	2.73	2.04
125 W	QB	2.77	2.97	2.73	2.54	2.21	2.22	2.07	2.15	2.35	2.38	3.04	3.00
	QE	4.80	5.35	5.53	5.15	4.68	5.16	4.32	4.17	4.72	6.23	6.36	7.08
	QC	2.84	2.74	3.13	3.11	2.33	3.18	2.73	2.77	2.64	2.75	2.84	3.42
	QN	7.55	7.88	8.41	7.90	7.19	8.35	7.37	7.00	7.55	8.52	9.40	10.14
	OBS	99	93	97	125	136	166	177	175	146	129	86	81
39 N	QS	2.26	3.09	4.56	4.80	5.25	5.10	4.89	4.36	4.10	3.61	2.34	2.18
126 W	QB	2.94	2.92	2.52	2.30	2.10	1.88	1.84	1.72	1.99	2.47	2.46	3.18
	QE	8.10	5.45	6.21	4.87	4.52	3.96	3.64	3.73	4.37	5.54	6.68	9.02
	QC	3.41	3.12	3.65	2.30	2.14	2.01	2.43	2.18	1.92	1.95	2.80	3.97
	QN	11.30	8.45	9.88	7.07	7.09	6.17	6.73	6.09	6.02	7.24	9.14	12.75
	OBS	82	81	97	129	156	184	204	209	163	111	114	76
39 N	QS	2.23	3.40	4.77	4.86	5.79	6.24	5.88	5.15	4.94	3.24	2.60	1.87
127 W	QB	2.94	2.83	2.78	2.32	2.39	2.27	2.12	2.00	2.27	2.38	2.63	2.76
	QE	7.49	5.60	5.91	6.05	7.13	5.47	4.68	5.42	6.21	6.54	7.97	7.78
	QC	4.02	2.90	3.75	3.23	3.46	2.75	3.20	2.68	2.76	2.71	3.24	3.87
	QN	11.44	8.51	9.36	9.04	9.92	8.20	7.90	8.75	8.67	8.93	10.32	11.54
	OBS	60	77	85	119	88	108	122	160	113	101	87	80
39 N	QS	2.08	3.47	4.53	5.16	5.71	6.71	6.02	5.03	4.14	4.05	2.53	2.29
128 W	QB	2.55	2.73	2.63	2.26	2.17	2.41	2.16	2.02	2.09	2.66	2.52	3.22
	QE	7.98	5.78	6.39	7.42	6.34	5.42	4.47	5.34	4.97	7.37	9.00	9.02
	QC	4.66	3.58	3.31	3.67	3.13	2.47	2.25	2.53	2.10	2.92	3.51	4.08
	QN	12.09	8.68	9.26	10.66	9.78	8.70	7.53	7.90	6.25	9.95	12.20	12.89
	OBS	68	76	77	95	95	104	140	131	141	81	85	63
39 N	QS	2.26	3.34	3.87	4.60	4.93	5.72	4.78	4.62	4.17	3.56	2.35	1.57
129 W	QB	2.53	2.59	2.26	2.03	1.87	2.01	1.62	1.67	1.95	2.45	2.40	2.15
	QE	6.39	5.81	5.46	5.59	4.69	4.52	4.65	5.06	5.50	6.62	8.58	7.82
	QC	3.30	3.33	2.71	3.00	2.28	2.38	1.97	1.97	1.88	2.18	3.53	3.46
	QN	9.33	8.66	7.69	8.45	7.40	7.68	7.42	7.74	7.38	8.46	11.78	10.94
	OBS	66	89	112	115	116	127	156	134	137	94	97	95
39 N	QS	1.52	2.20	3.82	3.64	3.66	4.84	4.16	4.19	4.35	3.33	2.35	1.24
130 W	QB	1.82	1.85	2.16	1.63	1.44	1.71	1.45	1.50	1.88	2.11	2.29	1.80
	QE	4.65	4.27	4.99	3.62	3.13	3.59	3.60	4.55	5.41	7.34	7.69	5.04
	QC	2.54	2.32	2.32	2.07	1.47	1.74	1.65	1.64	1.69	2.28	3.84	2.48
	QN	7.06	5.89	7.41	5.69	5.03	6.00	5.60	6.71	7.56	9.71	11.15	7.34
	OBS	154	169	119	172	224	159	186	184	142	118	98	162
39 N	QS	2.22	3.19	3.60	4.90	4.58	5.34	3.59	4.44	3.82	3.06	1.93	1.53
131 W	QB	2.60	2.85	2.18	2.18	1.68	1.87	1.20	1.58	1.72	2.05	1.93	2.18
	QE	8.23	5.70	6.69	4.59	3.29	4.66	2.70	3.44	4.71	7.26	7.76	7.02
	QC	4.60	2.97	3.31	2.53	1.89	2.24	1.34	1.21	1.72	2.77	3.47	3.17
	QN	12.17	9.51	9.80	7.51	5.84	7.18	4.67	5.42	6.44	9.73	10.80	10.10
	OBS	60	75	100	108	160	127	226	201	159	111	109	95
39 N	QS	1.85	3.62	4.26	5.34	5.79	5.45	4.80	4.50	3.61	3.67	2.14	1.58
132 W	QB	2.28	2.90	2.37	2.54	2.23	1.97	1.67	1.65	1.67	2.46	1.98	2.22
	QE	9.39	9.38	7.01	6.07	5.30	4.24	3.74	4.77	5.79	7.23	9.79	10.08
	QC	5.28	4.72	3.27	2.95	2.81	1.80	1.68	1.66	1.78	2.37	4.05	4.49
	QN	14.33	13.89	10.19	9.29	8.34	6.76	6.24	7.25	7.46	8.99	13.58	14.66
	OBS	79	54	96	99	104	129	165	142	147	89	101	89
39 N	QS	2.12	3.02	3.95	5.54	4.93	4.80	3.91	4.72	3.96	2.51	1.61	1.53
133 W	QB	2.39	2.48	2.20	2.51	1.87	1.72	1.36	1.76	1.87	1.56	1.69	2.17
	QE	11.15	7.59	7.05	6.56	4.75	3.73	3.48	4.62	5.03	4.81	6.97	8.00
	QC	4.78	4.08	3.81	3.13	2.33	1.70	1.54	2.07	1.58	1.86	2.67	3.67
	QN	16.08	11.51	10.59	9.76	7.05	6.02	5.62	7.28	6.73	6.60	9.45	11.60
	OBS	74	64	97	87	111	140	157	123	147	190	134	92

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
40 N	QS	1.13	1.58	2.29	2.53	3.36	4.05	4.65	4.78	3.10	2.83	1.60	1.21
124 W	QB	1.57	1.30	1.28	1.25	1.32	1.52	1.82	1.95	1.68	2.00	1.74	1.95
	QE	2.78	1.84	1.79	1.57	2.05	2.07	2.55	2.50	2.67	2.93	2.32	3.09
	QC	1.47	1.03	1.07	.95	1.50	1.67	1.89	1.83	2.02	1.97	1.51	1.67
	QN	4.14	2.83	2.50	2.39	4.26	4.41	5.26	5.17	5.10	4.96	3.67	4.47
	OBS	340	404	506	505	431	324	264	224	228	209	227	211
40 N	QS	2.12	3.15	3.91	4.99	7.04	5.88	6.43	5.51	5.12	3.79	2.14	1.64
125 W	QB	2.82	2.65	2.51	2.39	2.89	2.21	2.49	2.39	2.69	2.80	2.46	2.70
	QE	7.35	5.39	5.10	4.78	5.22	3.60	4.41	4.04	5.30	5.83	5.22	7.56
	QC	3.73	3.16	3.17	2.74	3.14	2.39	3.00	2.94	3.17	2.97	2.86	4.24
	QN	10.68	8.06	7.59	7.37	8.36	6.33	8.56	7.32	8.26	8.36	7.78	11.79
	OBS	101	102	115	148	99	156	141	151	123	109	122	93
40 N	QS	2.40	5.16	6.03	6.86	7.54	8.30	8.01	7.05	6.45	4.79	3.20	2.31
126 W	QB	3.31	4.45	3.51	3.20	3.10	3.18	2.96	2.92	3.20	3.57	3.55	3.49
	QE	8.28	6.38	11.01	6.17	6.81	5.63	5.22	5.13	6.41	8.33	9.38	9.82
	QC	3.56	3.70	6.05	3.81	3.45	3.62	3.39	2.88	2.75	3.69	4.67	5.29
	QN	11.65	9.74	16.41	9.74	9.75	8.25	9.01	8.33	9.34	11.88	13.57	15.16
	OBS	50	46	52	67	79	77	83	90	70	55	60	55
40 N	QS	2.22	3.85	4.95	5.48	6.21	5.72	5.37	4.81	5.61	3.71	3.64	2.39
127 W	QB	3.33	3.52	3.20	2.38	2.53	2.03	1.90	2.01	2.72	2.46	3.98	3.81
	QE	7.26	7.18	6.19	4.59	5.37	4.15	5.63	5.03	6.44	6.94	9.23	8.77
	QC	4.14	4.26	3.16	2.98	2.60	2.00	2.49	2.08	2.87	2.68	3.44	4.19
	QN	11.50	10.92	8.86	7.72	8.01	6.49	8.26	7.07	9.13	9.19	12.66	13.09
	OBS	62	57	66	99	93	122	122	165	86	104	54	47
40 N	QS	1.22	3.22	4.74	4.69	5.63	5.02	4.60	4.63	4.41	3.87	3.07	1.59
128 W	QB	1.65	2.87	2.60	2.24	2.27	1.80	1.63	1.78	2.17	2.55	3.29	2.44
	QE	5.32	6.30	6.30	4.74	4.13	3.81	3.64	4.57	5.70	6.27	9.10	7.22
	QC	2.39	3.64	3.19	2.33	2.02	2.12	1.73	1.84	2.17	2.71	3.58	3.72
	QN	7.60	9.47	9.42	7.00	6.84	5.98	6.14	6.61	7.78	8.78	11.90	10.70
	OBS	147	70	79	119	112	156	182	156	121	102	59	95
40 N	QS	1.59	2.70	3.05	3.67	4.50	4.87	4.60	4.74	4.38	2.66	2.24	1.91
129 W	QB	2.18	2.24	1.72	1.75	1.71	1.75	1.52	1.78	2.01	2.06	2.37	2.82
	QE	7.36	5.35	4.28	4.21	3.83	4.21	4.00	4.52	5.28	6.27	8.28	7.94
	QC	3.99	2.67	2.67	2.31	1.93	2.14	1.88	2.04	1.90	2.22	3.26	3.46
	QN	11.07	7.87	6.80	6.03	5.96	6.72	6.56	7.07	7.24	8.11	10.95	11.04
	OBS	85	93	149	165	140	124	150	144	131	130	105	74
40 N	QS	2.07	2.41	2.17	2.81	3.03	3.05	3.22	3.47	3.02	2.07	1.68	1.65
130 W	QB	2.14	1.90	1.32	1.38	1.21	1.04	1.11	1.20	1.42	1.51	1.66	2.45
	QE	5.65	4.40	3.13	4.00	2.77	3.41	3.17	4.37	4.86	3.88	5.72	7.72
	QC	3.21	2.30	1.47	2.06	1.16	1.46	1.50	1.69	1.67	1.33	2.25	3.55
	QN	8.77	6.56	4.37	5.76	4.08	4.97	4.70	6.17	6.36	5.17	7.73	11.07
	OBS	113	156	274	262	269	258	266	208	194	225	194	95
40 N	QS	2.10	3.54	4.16	5.87	5.10	6.33	5.75	5.05	4.12	3.49	2.74	1.61
131 W	QB	2.70	2.71	2.34	2.40	1.92	2.22	1.96	1.84	1.95	2.53	2.79	2.54
	QE	8.70	7.23	6.32	6.28	4.96	5.22	4.56	4.89	5.70	7.17	10.15	9.38
	QC	4.98	3.49	3.43	3.37	3.02	2.28	2.04	1.91	2.08	3.00	4.45	4.48
	QN	13.84	10.99	9.50	10.50	8.03	8.46	7.58	7.47	7.60	9.84	14.16	13.54
	OBS	61	73	85	94	94	96	107	126	105	80	79	78
40 N	QS	1.97	2.36	3.80	5.07	5.48	4.99	4.58	4.14	4.26	3.08	2.18	1.57
132 W	QB	2.46	2.18	2.25	2.37	2.04	1.80	1.58	1.43	1.96	2.00	2.23	2.50
	QE	8.11	5.61	5.74	6.99	3.92	4.15	3.91	4.38	5.05	6.73	8.50	9.88
	QC	4.70	2.38	3.23	3.60	2.15	1.58	1.40	1.67	1.68	2.43	4.15	4.84
	QN	13.00	7.71	8.87	10.50	6.38	6.49	5.82	6.25	7.11	8.99	12.66	14.52
	OBS	77	80	92	87	114	124	145	152	124	119	98	82
40 N	QS	1.80	3.08	3.25	3.49	5.02	4.50	3.62	3.56	3.09	2.33	1.66	1.23
133 W	QB	2.33	2.63	1.85	1.57	1.99	1.52	1.22	1.26	1.43	1.53	1.75	1.92
	QE	8.34	5.93	5.49	4.41	3.61	3.04	2.93	3.69	4.23	3.88	7.13	7.77
	QC	4.79	3.09	2.94	2.14	2.19	1.43	1.23	1.27	1.56	1.36	2.92	3.24
	QN	12.78	8.37	8.00	6.84	6.44	5.74	4.72	5.16	5.71	5.23	10.15	10.94
	OBS	88	83	117	180	129	193	186	199	219	204	127	112

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
41 N 124 W	QS	3.96	6.90	9.45	10.36	14.16	15.08	15.08	14.68	11.04	7.45	5.49	5.29
	QB	4.68	6.38	5.66	5.25	5.70	5.60	5.92	5.97	5.95	5.44	8.05	8.37
	QE	9.75	10.65	7.05	7.92	5.53	6.77	7.41	4.84	6.65	17.68	11.73	14.34
	QC	4.58	7.59	3.62	5.45	5.18	5.48	6.12	3.24	5.41	10.84	5.84	9.36
	QN	14.05	19.25	11.23	11.20	13.49	12.00	17.16	10.93	11.99	27.03	19.53	20.20
	OBS	19	21	25	26	24	25	26	24	22	23	17	10
41 N 125 W	QS	1.90	2.63	3.65	4.51	5.96	5.95	5.90	5.65	5.14	3.53	1.92	1.57
	QB	2.71	2.26	2.26	2.20	2.39	2.24	2.24	2.39	2.63	2.54	2.36	2.69
	QE	6.37	4.62	3.76	4.35	3.60	3.82	3.46	3.09	4.41	4.65	4.12	6.66
	QC	3.24	2.64	2.03	2.70	2.45	2.34	2.36	2.33	2.48	2.47	2.04	3.21
	QN	9.36	6.85	5.30	7.27	6.34	6.40	7.26	6.26	6.54	7.24	5.85	9.43
	OBS	107	149	156	151	140	160	162	153	130	137	145	98
41 N 126 W	QS	4.05	4.65	5.70	6.61	7.49	8.82	8.31	8.06	7.44	4.65	3.41	2.11
	QB	5.16	3.99	3.19	3.29	2.93	3.36	3.19	3.28	3.66	3.36	3.94	3.77
	QE	9.93	7.39	6.39	8.53	5.73	6.74	6.76	4.80	8.00	6.92	7.68	9.00
	QC	6.54	5.66	3.82	4.86	1.89	4.83	3.67	3.71	4.35	3.78	3.70	4.27
	QN	15.96	12.10	9.36	13.29	7.84	11.91	10.84	8.58	12.15	10.10	11.39	13.72
	OBS	34	41	50	66	78	71	70	68	66	70	53	55
41 N 127 W	QS	2.52	3.82	7.10	6.39	6.93	9.68	9.29	8.81	8.90	5.22	3.71	2.39
	QB	3.30	3.17	3.93	3.18	2.98	3.40	3.36	3.54	4.62	4.17	4.52	4.04
	QE	8.26	7.67	11.09	6.25	5.45	6.57	7.80	7.39	11.89	9.51	11.60	13.03
	QC	5.35	4.08	4.80	4.29	2.93	4.70	5.32	4.03	6.29	3.91	5.39	7.99
	QN	13.33	11.63	14.79	10.01	8.51	13.93	14.03	12.20	14.98	12.55	16.54	20.91
	OBS	46	45	42	57	78	45	46	56	33	43	37	38
41 N 128 W	QS	2.82	4.70	7.46	6.87	9.39	10.11	7.10	7.07	7.32	5.37	2.53	2.70
	QB	4.05	4.30	4.48	3.22	3.56	3.53	2.54	2.92	3.77	3.93	3.34	4.13
	QE	11.49	7.84	7.56	5.44	8.41	7.94	6.49	6.95	8.36	10.55	13.59	10.66
	QC	5.56	4.72	5.48	3.49	3.53	4.61	3.05	3.41	2.91	3.74	6.14	5.33
	QN	17.04	12.14	12.45	8.92	12.68	14.29	9.64	11.39	9.68	13.56	18.64	15.53
	OBS	40	30	34	50	42	51	65	59	44	46	40	33
41 N 129 W	QS	1.64	3.73	5.42	5.80	7.43	6.83	6.01	6.19	5.00	4.34	3.22	1.64
	QB	2.43	3.01	2.85	2.73	2.92	2.38	2.13	2.28	2.56	2.64	3.57	2.87
	QE	8.47	9.34	6.29	4.55	4.03	4.45	5.87	6.72	6.38	8.73	10.59	8.97
	QC	4.51	5.53	3.78	2.90	2.34	2.70	2.97	2.47	2.95	3.45	4.83	4.72
	QN	13.00	15.09	9.88	7.24	7.58	7.63	9.73	8.98	8.76	11.71	15.45	13.63
	OBS	57	47	57	76	75	77	90	77	74	71	53	57
41 N 130 W	QS	1.87	3.11	3.84	4.22	5.25	4.93	5.45	4.16	4.11	3.26	2.58	1.58
	QB	2.41	2.82	2.21	1.98	2.16	1.72	1.86	1.54	2.08	1.98	2.59	2.78
	QE	8.89	7.06	5.41	4.47	3.73	3.64	4.10	4.30	5.78	5.37	8.88	6.36
	QC	4.96	3.85	2.65	2.65	1.57	2.06	1.85	1.63	1.73	1.83	2.59	3.08
	QN	13.59	10.47	7.55	7.27	5.55	6.48	7.40	6.22	7.36	6.99	11.12	9.51
	OBS	65	68	93	119	132	139	141	174	115	124	79	70
41 N 131 W	QS	1.59	2.38	2.97	3.88	4.54	5.11	3.87	3.78	3.53	2.70	2.02	1.39
	QB	1.92	2.07	1.68	1.77	1.78	1.89	1.41	1.41	1.58	1.91	2.21	2.34
	QE	7.24	5.16	5.66	4.34	3.51	3.35	3.00	3.63	5.32	5.32	7.45	9.09
	QC	4.83	3.05	3.30	2.55	1.80	1.48	1.55	1.53	1.48	2.32	3.02	4.75
	QN	11.74	7.94	8.61	7.28	5.29	5.13	4.83	5.31	6.67	7.27	10.14	13.76
	OBS	93	106	136	167	150	138	203	212	147	134	109	84
41 N 132 W	QS	1.38	3.48	4.86	5.05	5.43	5.86	4.92	5.71	4.85	3.21	2.03	1.39
	QB	2.38	2.55	2.60	2.39	2.17	2.09	1.63	2.13	2.25	2.15	2.63	2.41
	QE	9.59	7.11	8.12	5.71	5.57	3.98	4.28	6.42	6.58	6.28	9.53	10.62
	QC	5.34	4.32	4.58	3.11	2.89	2.42	1.86	2.23	2.26	2.40	3.74	5.71
	QN	14.87	10.85	12.66	8.54	8.86	7.42	6.78	9.11	8.93	8.26	12.85	15.91
	OBS	62	58	65	91	89	95	93	86	84	101	77	74
41 N 133 W	QS	2.13	3.36	4.21	5.75	6.77	5.61	6.04	6.20	5.60	3.26	2.09	1.72
	QB	2.77	2.75	2.62	2.75	2.66	1.98	2.15	2.33	2.71	2.27	2.38	2.92
	QE	12.58	5.76	8.48	5.91	5.71	4.80	5.25	5.12	6.18	8.18	11.15	9.90
	QC	6.32	4.08	4.85	3.10	3.12	2.25	2.44	1.92	2.56	3.35	5.65	5.73
	QN	13.85	9.21	12.84	8.66	9.10	7.62	8.78	8.26	8.76	11.03	16.30	15.51
	OBS	63	61	66	68	64	93	72	79	80	82	62	59

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
42 N 124 W	QS	4.40	6.40	13.64	16.44	20.97	15.21	14.65	10.94	11.21	10.23	6.45	5.73
	QB	6.54	6.59	7.96	7.72	8.83	5.63	5.94	4.62	6.11	7.10	7.21	8.75
	QE	14.69	13.55	5.36	10.88	16.69	3.94	10.86	4.05	6.78	15.14	11.13	10.85
	QC	8.85	6.63	3.78	6.36	6.24	3.38	9.49	3.51	4.57	5.05	8.70	6.19
	QN	23.32	19.87	10.02	19.57	14.58	10.14	22.55	10.04	11.34	19.42	18.67	13.31
	OBS	13	19	10	11	11	25	26	31	22	19	14	8
42 N 125 W	QS	1.65	2.21	3.69	4.15	6.26	4.89	6.01	5.81	4.67	3.36	1.80	1.48
	QB	2.43	1.98	2.34	2.08	2.62	1.85	2.37	2.44	2.49	2.48	2.34	2.83
	QE	5.51	3.58	3.51	3.49	4.15	3.30	3.64	3.52	4.59	4.10	4.10	6.96
	QC	3.01	1.70	1.99	2.13	2.89	2.29	2.70	2.71	2.74	2.34	1.98	3.75
	QN	8.25	4.80	5.25	5.18	6.87	5.99	6.81	6.84	7.40	6.53	5.82	10.03
	OBS	112	154	166	179	123	209	158	136	135	140	144	110
42 N 126 W	QS	2.94	5.25	6.81	6.50	8.53	11.64	9.90	9.48	10.49	5.83	3.91	2.55
	QB	3.85	4.54	3.94	3.31	3.26	4.18	3.65	3.68	5.41	3.90	4.25	4.44
	QE	8.60	8.89	6.58	6.50	7.43	8.38	8.11	7.50	10.52	7.68	10.49	9.63
	QC	4.74	4.05	3.82	3.55	4.65	4.61	4.77	4.68	5.50	4.31	3.99	6.30
	QN	13.23	12.60	9.28	9.32	13.24	13.13	13.28	13.77	15.44	10.53	14.26	15.78
	OBS	38	41	40	45	48	39	45	46	31	40	38	29
42 N 127 W	QS	2.94	4.48	5.34	6.03	7.29	9.12	9.38	8.85	7.57	5.26	2.72	1.73
	QB	4.09	3.96	3.23	2.67	2.74	3.32	3.43	3.35	3.57	3.62	3.23	3.14
	QE	8.71	6.09	6.08	7.48	6.27	4.96	7.12	5.47	9.48	10.48	7.44	8.89
	QC	5.08	3.33	3.04	4.77	2.79	4.06	4.84	2.98	4.99	4.76	3.77	4.56
	QN	13.33	8.83	8.22	11.95	9.40	8.96	13.16	9.90	14.97	14.69	11.02	13.34
	OBS	48	38	68	66	51	51	57	48	51	47	58	60
42 N 128 W	QS	2.84	3.98	5.78	6.49	7.76	9.95	7.63	7.47	8.31	5.17	2.79	1.65
	QB	3.80	3.94	3.65	3.58	3.06	3.74	2.58	2.94	4.19	3.91	3.14	3.08
	QE	6.84	7.69	5.24	7.41	4.67	6.29	6.18	10.39	11.32	10.21	10.00	8.54
	QC	4.38	3.75	3.07	4.72	2.48	4.12	2.52	4.98	3.21	3.76	4.36	5.70
	QN	10.72	11.20	7.98	11.13	7.62	11.62	10.59	15.93	13.83	13.05	13.76	13.97
	OBS	52	35	52	49	55	46	56	48	35	50	47	57
42 N 129 W	QS	1.44	2.66	3.16	3.63	3.97	6.73	6.95	4.80	7.85	4.84	2.33	1.07
	QB	2.33	2.53	1.71	1.56	1.55	2.44	2.47	1.80	3.74	3.94	2.69	1.81
	QE	8.47	6.26	3.97	3.44	4.36	4.43	4.39	4.12	11.79	10.83	7.53	5.60
	QC	4.86	3.50	2.18	2.26	2.06	2.21	2.98	1.67	4.38	3.70	3.48	2.88
	QN	13.21	9.24	5.84	5.88	6.38	7.52	9.01	6.50	15.95	13.41	10.60	8.42
	OBS	109	92	120	131	137	84	84	151	34	43	81	125
42 N 130 W	QS	2.16	2.83	4.72	6.06	6.06	6.17	5.71	6.48	7.26	4.35	2.14	1.38
	QB	2.87	2.39	2.68	2.64	2.41	2.19	2.05	2.48	3.55	2.92	2.66	2.35
	QE	9.67	5.32	6.24	5.35	7.65	4.17	3.91	5.96	9.25	11.56	9.49	9.40
	QC	5.33	3.35	3.32	3.39	3.57	1.52	2.22	3.08	3.41	4.55	3.02	4.78
	QN	14.80	8.56	9.63	8.69	11.20	6.65	6.09	10.27	12.82	15.30	12.38	13.84
	OBS	79	76	78	55	64	90	85	61	37	50	76	68
42 N 131 W	QS	1.82	2.73	3.26	4.72	7.03	5.47	4.40	4.60	4.12	3.45	1.86	1.45
	QB	2.43	2.33	2.05	2.08	2.73	1.95	1.50	1.67	1.90	2.42	2.21	2.65
	QE	5.82	6.36	6.66	4.56	4.06	4.09	4.12	3.54	6.64	6.35	7.45	9.49
	QC	4.33	3.80	3.53	2.80	1.85	1.60	1.76	1.14	2.09	2.69	3.48	5.00
	QN	9.99	10.08	9.92	7.89	6.81	6.18	6.12	5.83	8.43	8.77	10.51	14.23
	OBS	97	88	106	123	88	102	151	156	124	99	95	79
42 N 132 W	QS	1.91	2.96	5.09	4.81	4.45	4.62	4.08	4.03	4.14	2.99	1.99	1.32
	QB	2.50	2.30	2.76	2.29	1.75	1.60	1.44	1.61	2.22	2.05	2.29	2.33
	QE	8.82	7.48	8.00	5.29	3.57	3.87	4.35	3.96	4.68	6.83	11.51	8.30
	QC	5.82	4.74	4.22	2.93	1.84	1.95	2.09	1.64	1.73	2.92	5.63	4.35
	QN	14.41	11.64	12.46	8.11	5.69	6.31	6.89	5.82	6.22	9.48	16.94	12.36
	OBS	69	66	69	117	134	133	161	150	114	116	68	73
42 N 133 W	QS	1.49	3.07	3.63	4.02	4.30	4.03	4.34	3.81	3.53	2.98	1.83	1.22
	QB	2.30	2.92	2.01	1.92	1.70	1.46	1.57	1.42	1.75	1.86	2.04	2.28
	QE	10.62	6.61	6.37	5.46	3.99	3.68	3.32	3.95	5.07	6.67	9.78	10.12
	QC	5.70	3.84	3.22	2.92	2.22	1.79	1.59	1.42	1.96	2.65	5.33	4.77
	QN	16.23	9.63	8.95	8.41	6.32	5.63	5.46	5.79	7.05	9.10	14.74	14.70
	OBS	87	70	112	110	156	145	156	167	147	122	78	81

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
43 N 124 W	QS	4.29	7.52	13.97	13.58	15.94	17.13	19.74	12.66	7.02	7.27	3.89	5.50
	QB	6.71	7.58	9.56	6.32	6.90	5.80	6.78	5.61	3.85	5.36	7.18	10.45
	QE	8.83	9.81	6.36	9.69	9.68	7.85	8.96	7.82	4.36	5.38	7.65	18.14
	QC	5.81	7.95	4.35	5.18	5.09	4.39	12.18	7.55	5.70	1.80	6.57	9.16
	QN	14.16	18.91	12.19	15.33	20.07	15.43	29.43	17.97	9.28	7.18	11.53	26.69
	OBS	15	20	10	15	13	15	13	16	40	20	8	7
43 N 125 W	QS	1.59	1.92	3.51	4.36	5.66	5.29	6.08	6.01	4.84	3.57	1.74	1.28
	QB	2.33	1.94	2.27	2.05	2.32	1.93	2.30	2.40	2.66	2.70	2.28	2.58
	QE	4.90	3.49	4.17	3.55	4.02	3.53	3.47	3.34	4.36	4.48	4.24	5.43
	QC	3.29	2.74	2.32	2.18	2.54	2.61	2.24	2.08	2.88	2.56	2.21	2.99
	QN	8.00	5.79	6.09	5.80	6.52	6.47	6.57	6.22	7.27	6.75	6.31	8.13
	OBS	116	164	151	153	129	176	147	129	115	123	131	104
43 N 126 W	QS	2.93	3.37	7.04	8.50	10.35	8.05	11.28	11.30	9.80	6.54	3.32	2.94
	QB	4.47	3.45	4.03	4.23	3.97	2.97	3.76	4.44	5.41	4.74	3.99	5.61
	QE	7.92	8.15	8.42	7.18	6.38	7.59	10.22	7.88	10.35	9.82	7.90	11.30
	QC	5.69	8.26	4.21	3.45	3.44	4.47	5.03	3.84	5.53	3.82	3.36	5.82
	QN	12.42	15.39	12.73	9.12	11.32	11.33	17.65	12.70	15.72	12.33	10.32	17.06
	OBS	33	32	34	33	38	30	28	32	30	33	39	27
43 N 127 W	QS	1.46	4.66	4.83	7.35	9.75	11.38	10.06	7.65	9.44	4.17	2.17	1.68
	QB	2.56	3.45	3.03	3.55	4.11	4.05	3.57	3.33	5.12	3.25	3.73	3.21
	QE	9.12	11.58	7.16	8.12	5.35	6.92	6.36	12.61	9.35	8.48	9.28	10.19
	QC	6.27	6.06	3.73	4.18	2.93	3.59	3.83	5.32	2.87	3.94	4.60	6.35
	QN	14.91	16.60	10.33	12.05	8.98	12.86	11.80	16.42	11.10	11.81	13.66	16.72
	OBS	41	30	53	46	35	31	43	40	29	64	42	45
43 N 128 W	QS	2.04	3.33	5.57	6.59	8.35	8.71	9.87	8.38	6.91	4.57	2.28	1.61
	QB	2.73	3.24	3.81	3.03	3.00	2.98	3.26	3.72	3.62	3.21	3.01	2.97
	QE	11.05	8.21	6.40	8.23	5.09	6.61	7.77	6.73	8.72	10.90	10.93	9.88
	QC	6.56	4.72	5.19	4.10	3.68	4.15	4.08	3.17	4.79	3.82	4.33	5.94
	QN	17.33	11.88	11.05	11.46	10.10	12.77	14.48	10.39	13.49	14.38	14.47	15.60
	OBS	41	45	49	44	48	42	43	41	44	52	63	58
43 N 129 W	QS	2.12	2.70	3.98	6.48	6.02	7.16	9.04	6.36	5.49	4.35	2.24	1.33
	QB	2.93	2.69	2.46	3.04	2.38	2.57	3.24	2.28	2.77	3.34	3.21	2.67
	QE	8.47	5.81	5.38	5.56	5.51	6.36	6.69	8.54	7.21	10.71	9.37	10.88
	QC	4.88	4.41	3.40	4.25	2.58	4.03	3.36	3.59	3.17	3.47	4.34	5.42
	QN	13.29	9.55	8.61	10.34	8.57	10.92	12.03	11.92	10.77	13.22	13.85	16.60
	OBS	63	64	74	63	78	56	50	65	64	50	62	61
43 N 130 W	QS	1.11	2.30	2.60	3.02	3.49	4.62	4.20	3.39	3.55	2.79	2.24	.85
	QB	1.62	1.89	1.61	1.40	1.39	1.71	1.41	1.29	1.76	2.02	2.62	1.64
	QE	3.97	4.77	4.05	3.84	2.68	2.69	3.22	3.10	5.21	6.30	7.65	4.98
	QC	2.62	2.71	2.17	1.96	1.41	1.36	1.40	1.19	1.60	2.45	4.12	2.45
	QN	6.51	7.00	5.97	5.76	3.97	4.73	5.76	4.53	6.51	8.34	11.57	7.15
	OBS	197	102	185	192	189	189	185	195	154	119	82	191
43 N 131 W	QS	1.75	2.56	3.85	6.38	4.83	5.22	5.25	5.27	4.30	2.77	1.97	1.32
	QB	2.54	2.43	2.54	2.78	1.88	1.91	1.83	2.12	2.26	2.30	2.28	2.62
	QE	7.37	6.56	6.55	6.61	5.19	4.72	4.48	4.93	8.24	7.75	9.14	9.41
	QC	5.62	3.96	3.69	3.67	2.61	2.38	2.04	2.18	2.53	2.70	4.75	5.05
	QN	12.92	10.47	10.31	10.19	8.18	7.87	6.60	7.67	10.12	9.60	13.82	13.89
	OBS	70	84	79	68	86	101	100	106	86	94	72	66
43 N 132 W	QS	1.58	3.13	4.11	6.28	6.93	7.49	6.96	6.83	5.24	3.04	2.48	1.71
	QB	2.63	3.11	2.39	3.04	2.69	2.65	2.27	2.72	3.06	2.70	3.01	3.20
	QE	9.68	6.65	6.46	5.16	6.03	5.53	7.07	5.24	7.47	12.46	10.26	11.84
	QC	6.07	4.37	3.25	3.71	3.59	2.74	1.89	2.34	2.42	4.76	5.73	6.54
	QN	15.76	11.07	9.43	9.38	8.57	9.89	10.51	8.75	9.51	16.61	16.03	18.16
	OBS	60	56	77	62	57	55	60	51	53	57	49	52
43 N 133 W	QS	1.90	3.50	4.52	6.13	7.18	5.01	5.79	6.35	6.55	3.42	2.07	1.58
	QB	2.86	3.16	2.54	2.76	2.58	1.73	2.11	2.38	3.29	2.56	2.80	2.94
	QE	10.42	9.55	6.76	7.30	6.22	6.46	4.63	5.17	8.89	9.46	12.01	8.19
	QC	5.67	5.04	3.47	3.79	3.08	2.45	2.95	2.46	2.65	4.21	5.51	4.39
	QN	16.16	13.69	9.87	11.07	9.50	8.54	8.29	10.10	11.72	13.21	17.34	12.49
	OBS	54	51	59	59	58	54	63	58	49	70	69	63

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
44 N 124 W	QS	3.19	5.03	8.57	9.17	10.80	10.12	12.36	15.65	10.87	6.17	3.14	2.49
	QB	5.61	5.45	5.01	4.87	4.27	3.57	4.76	5.92	6.06	5.06	4.63	4.77
	QE	9.17	9.42	7.48	4.97	4.42	5.78	4.15	5.38	5.67	3.05	6.49	8.28
	QC	6.39	6.33	6.01	3.80	2.98	2.29	2.65	2.50	4.83	2.04	3.17	6.47
	QN	16.04	16.09	13.99	8.07	9.72	9.46	10.71	14.34	10.29	5.82	9.21	14.44
	OBS	22	27	29	35	40	50	39	15	22	29	37	21
44 N 125 W	QS	1.44	2.25	3.65	4.12	5.52	4.68	5.51	5.15	4.20	3.06	1.93	1.25
	QB	2.31	2.22	2.37	2.04	2.33	1.67	2.12	2.18	2.19	2.50	2.53	2.80
	QE	5.10	4.02	3.73	3.61	3.92	3.04	3.35	3.95	4.53	4.30	3.70	5.92
	QC	3.79	2.63	1.94	1.94	2.16	2.01	2.16	2.19	2.03	1.84	2.13	3.76
	QN	8.94	6.37	5.51	5.50	6.21	5.70	6.23	6.60	6.75	6.17	5.83	9.75
	OBS	115	129	135	143	125	184	160	154	137	126	113	84
44 N 126 W	QS	2.55	5.63	5.86	8.54	8.52	9.16	9.52	9.11	9.97	5.32	3.31	2.37
	QB	4.32	5.11	4.11	4.72	3.66	3.08	3.29	3.63	5.06	4.51	4.74	5.53
	QE	9.27	7.88	6.21	7.28	5.00	7.84	7.09	7.05	5.40	9.67	11.17	18.87
	QC	7.52	4.46	3.00	4.39	2.72	4.21	3.57	4.37	3.18	4.92	6.09	10.84
	QN	17.24	12.10	9.72	10.44	8.66	14.43	11.90	13.42	8.03	13.69	16.83	27.43
	OBS	30	26	44	35	49	43	43	48	27	33	35	25
44 N 127 W	QS	2.39	5.18	6.08	8.54	10.00	9.35	10.83	7.27	8.41	6.32	3.15	1.69
	QB	3.45	4.80	4.10	4.39	4.17	3.39	3.83	3.07	3.90	4.37	3.61	3.50
	QE	11.06	5.84	5.24	9.66	4.65	8.27	5.85	7.06	10.78	20.17	10.59	12.33
	QC	7.26	3.86	3.31	4.30	1.98	3.41	3.13	2.97	4.24	10.46	4.48	8.20
	QN	17.67	9.33	8.55	13.67	6.44	13.24	10.42	10.69	16.37	29.95	14.62	20.21
	OBS	38	30	44	30	41	30	30	46	32	19	36	36
44 N 128 W	QS	1.68	3.43	4.72	6.02	6.27	7.37	6.62	7.16	4.36	2.32	1.64	1.52
	QB	2.57	3.19	2.78	2.97	2.51	2.64	2.48	3.07	2.41	1.76	2.01	3.11
	QE	8.84	7.62	7.40	6.15	4.29	5.43	6.29	6.66	4.97	4.72	5.62	7.69
	QC	5.71	4.80	5.06	4.56	2.44	2.30	2.54	2.63	1.95	1.82	2.66	5.84
	QN	14.67	12.13	12.07	9.28	7.02	8.90	10.03	10.06	7.33	5.86	8.07	12.97
	OBS	54	44	70	65	83	58	65	56	90	155	139	52
44 N 129 W	QS	1.92	3.00	5.20	4.90	6.29	7.21	7.25	5.85	5.13	2.86	1.94	1.05
	QB	3.32	2.91	3.27	2.11	2.44	2.60	2.51	2.42	2.81	2.33	2.45	2.28
	QE	7.40	7.55	6.78	5.82	5.04	7.41	5.71	5.76	6.83	5.95	6.96	7.96
	QC	5.17	5.02	4.52	3.55	2.65	2.71	2.64	2.19	2.72	2.23	3.29	5.04
	QN	12.42	11.73	11.66	9.18	7.23	9.76	10.57	8.28	9.34	7.87	9.93	12.85
	OBS	59	62	62	86	72	67	73	72	79	106	83	91
44 N 130 W	QS	1.55	2.73	4.30	6.49	6.48	7.65	6.08	5.80	4.68	3.07	2.03	1.16
	QB	2.38	2.79	2.79	3.16	2.64	2.73	2.16	2.24	2.61	2.53	2.82	2.50
	QE	7.70	5.40	5.92	6.87	6.22	4.44	5.26	6.10	6.59	9.49	8.50	10.24
	QC	4.99	3.58	3.49	4.84	3.18	2.99	2.20	1.89	2.53	3.69	3.83	4.76
	QN	12.65	8.55	9.00	11.68	9.60	9.25	8.83	8.72	8.78	13.01	12.39	14.82
	OBS	83	78	70	58	78	67	84	66	77	88	77	73
44 N 131 W	QS	1.29	2.27	2.87	4.85	4.71	3.84	3.75	3.70	2.93	2.02	1.32	.78
	QB	2.04	2.25	1.82	2.22	1.87	1.34	1.31	1.47	1.48	1.49	1.93	1.65
	QE	6.35	5.05	3.76	4.16	2.89	3.24	3.00	3.33	4.29	5.77	4.89	6.56
	QC	4.21	3.04	2.42	2.65	1.74	1.77	1.33	1.27	1.63	2.33	2.18	3.48
	QN	10.41	7.98	5.86	6.29	4.77	5.17	4.96	5.04	5.59	7.78	7.01	9.96
	OBS	120	105	155	115	156	192	195	198	206	206	146	133
44 N 132 W	QS	1.32	2.17	3.75	5.73	5.22	7.23	4.76	5.87	4.99	3.10	1.80	1.07
	QB	2.10	2.16	2.15	2.55	2.02	2.57	1.76	2.62	2.80	2.50	2.41	2.18
	QE	8.03	8.98	7.43	3.99	4.86	5.73	3.57	5.75	6.85	7.84	7.39	9.85
	QC	5.43	4.40	4.52	3.49	2.29	3.58	1.67	1.85	2.13	3.04	4.65	5.68
	QN	13.28	12.80	11.56	8.11	7.47	10.76	6.20	7.21	8.59	10.27	11.88	15.44
	OBS	89	68	78	91	92	78	96	72	66	88	86	81
44 N 133 W	QS	1.35	2.82	3.27	6.12	5.45	5.67	5.72	4.89	4.72	2.81	1.86	.95
	QB	2.09	2.85	2.16	3.06	2.27	1.96	2.01	1.92	2.43	2.24	2.72	2.02
	QE	6.39	7.81	6.91	5.13	4.47	5.63	3.88	5.12	7.40	8.44	7.12	7.23
	QC	4.04	4.17	3.76	2.95	2.64	3.01	1.83	1.48	2.30	2.95	3.85	4.10
	QN	10.49	11.83	10.41	7.35	7.77	9.40	5.89	7.06	9.02	10.85	10.78	11.33
	OBS	94	76	83	67	80	83	72	73	67	88	75	[illegible]

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
45 N 124 W	QS	2.14	3.81	5.80	6.90	8.54	5.79	9.10	6.82	7.79	4.66	2.71	2.31
	QB	4.48	3.51	3.57	3.62	3.40	2.04	3.27	2.76	4.53	3.63	4.02	5.09
	QE	8.61	4.56	4.96	4.57	3.69	3.09	3.48	2.30	6.01	6.15	8.05	7.89
	QC	4.87	3.42	4.36	2.56	2.35	1.61	2.08	1.47	3.86	2.74	3.03	6.47
	QN	14.14	7.76	9.13	7.04	7.68	5.61	8.14	5.72	10.23	8.03	10.39	13.74
	OBS	34	45	48	54	63	109	64	91	37	54	40	25
45 N 125 W	QS	1.07	2.09	3.10	3.66	4.44	3.68	4.18	5.37	4.12	2.85	1.54	1.24
	QB	1.91	2.11	2.16	1.85	1.84	1.32	1.47	2.09	2.40	2.25	2.42	3.02
	QE	4.74	3.01	3.63	3.13	3.13	2.66	2.67	3.18	3.56	4.21	3.33	4.86
	QC	3.51	1.99	1.89	1.91	1.42	1.44	1.59	1.82	1.74	1.76	1.72	3.41
	QN	8.23	4.97	5.69	4.74	4.96	4.27	4.90	5.95	5.12	5.54	4.66	8.53
	OBS	139	168	164	164	191	231	232	135	127	156	129	94
45 N 126 W	QS	1.70	3.37	4.70	5.89	6.81	6.06	7.57	6.28	4.29	4.38	2.45	1.38
	QB	2.78	2.81	3.57	2.72	2.75	2.18	2.84	2.51	2.76	3.62	3.18	3.26
	QE	6.05	5.06	8.74	6.29	3.97	3.03	6.34	5.28	6.77	7.18	7.97	9.42
	QC	4.43	3.13	5.95	4.11	2.04	1.65	2.82	2.10	2.39	2.37	3.37	5.90
	QN	10.19	8.29	14.78	10.13	7.25	5.75	9.20	7.67	9.25	9.13	10.96	13.94
	OBS	53	75	49	62	73	104	69	69	69	56	52	52
45 N 127 W	QS	2.01	3.51	4.04	4.98	7.47	6.05	7.49	6.65	6.33	3.89	2.34	1.34
	QB	3.50	3.36	2.53	2.80	3.11	2.25	2.58	2.85	3.54	2.93	3.13	3.17
	QE	9.98	5.23	5.58	6.27	4.58	4.48	5.69	6.74	8.73	8.50	6.55	13.49
	QC	8.97	3.56	4.13	4.29	2.23	2.27	2.69	2.55	3.83	3.77	3.71	7.03
	QN	17.98	8.27	9.90	10.22	6.57	7.75	9.13	10.13	11.15	11.61	10.52	20.19
	OBS	44	61	74	58	62	52	58	53	47	66	63	38
45 N 128 W	QS	1.57	2.78	4.82	6.83	4.82	6.39	7.98	5.72	6.69	3.71	1.96	1.55
	QB	2.89	2.86	3.18	3.21	1.90	2.33	2.96	2.41	3.78	2.73	2.92	3.54
	QE	8.43	6.10	7.42	5.46	3.51	6.08	7.19	4.48	8.30	8.24	6.99	10.24
	QC	4.88	3.30	4.82	4.05	1.87	3.50	3.07	2.05	3.55	3.62	3.39	6.70
	QN	13.37	8.57	12.83	9.79	5.23	10.48	11.18	6.86	11.75	11.49	10.27	16.05
	OBS	55	57	54	55	159	58	53	85	41	75	70	40
45 N 129 W	QS	1.38	3.30	3.85	5.81	6.99	6.54	7.01	4.91	4.21	3.72	1.65	.98
	QB	2.28	3.24	2.61	2.78	2.57	2.52	2.52	2.15	2.20	3.14	2.54	2.28
	QE	7.60	5.01	6.61	6.18	5.04	4.07	4.98	5.22	7.38	9.20	7.45	7.56
	QC	4.41	3.75	3.57	4.01	2.58	1.89	3.37	1.90	2.99	3.95	4.18	4.44
	QN	12.12	8.55	9.78	9.57	8.11	6.84	9.15	7.60	10.52	12.65	11.72	11.63
	OBS	67	53	79	64	57	77	68	70	83	67	81	62
45 N 130 W	QS	.80	1.11	2.19	2.68	4.03	3.44	3.18	3.87	2.81	1.78	1.10	.65
	QB	1.39	1.23	1.36	1.29	1.58	1.21	1.09	1.55	1.48	1.52	1.39	1.47
	QE	4.12	3.29	3.17	2.67	2.28	2.40	2.53	3.57	3.25	5.51	4.60	5.60
	QC	2.38	1.84	2.00	1.57	1.31	1.19	1.39	1.46	1.10	2.34	1.95	2.92
	QN	6.50	4.98	5.10	3.90	4.35	3.88	4.10	5.08	4.06	7.79	6.32	8.36
	OBS	248	288	280	272	195	205	281	164	245	210	238	210
45 N 131 W	QS	1.17	1.81	2.75	4.18	4.15	4.45	3.89	4.43	4.68	2.36	1.52	.81
	QB	1.97	1.82	1.69	2.04	1.71	1.56	1.30	1.71	2.39	1.84	2.04	1.83
	QE	5.32	4.22	3.94	4.36	3.02	2.62	3.32	3.75	5.57	7.23	5.28	6.34
	QC	3.21	2.64	2.48	2.43	1.65	1.78	1.33	1.45	2.19	2.82	2.78	3.28
	QN	8.49	6.67	6.43	6.55	4.90	4.96	5.09	5.94	8.11	9.56	7.84	9.65
	OBS	138	157	160	137	160	148	155	140	115	129	117	148
45 N 132 W	QS	1.64	2.48	3.07	4.28	5.44	4.70	5.17	4.58	3.67	2.99	1.63	.95
	QB	2.56	2.28	2.09	2.04	2.15	1.69	1.82	1.81	1.97	2.15	2.28	2.22
	QE	7.64	5.38	4.42	4.05	3.84	3.30	4.46	4.40	5.34	6.82	6.98	8.52
	QC	5.25	3.44	2.92	2.30	2.44	2.08	2.05	1.75	1.96	3.25	4.04	4.10
	QN	12.84	8.42	7.14	6.17	7.05	6.04	7.33	6.54	7.03	9.80	10.84	12.43
	OBS	90	85	113	113	106	116	83	94	108	109	84	92
45 N 133 W	QS	2.16	4.31	4.84	8.69	7.68	9.34	8.54	6.60	6.82	3.25	1.81	1.20
	QB	3.58	3.06	3.38	4.04	3.28	3.48	3.16	2.42	3.48	2.32	2.51	2.95
	QE	12.86	9.12	9.54	6.20	4.53	4.65	6.26	11.78	8.28	8.77	11.00	9.63
	QC	9.26	5.49	6.10	4.10	2.39	2.84	3.40	4.18	2.82	4.12	5.30	6.69
	QN	21.74	14.67	14.98	11.36	8.60	7.48	10.99	17.27	11.25	12.59	15.98	16.43
	OBS	42	30	41	43	37	48	40	28	46	60	55	46

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
46 N 124 W	QS	.70	1.26	1.97	2.16	2.78	2.72	3.08	2.72	2.11	1.61	.90	.49
	QB	1.46	1.46	1.31	1.13	1.08	.96	1.10	1.15	1.17	1.30	1.24	1.31
	QE	2.04	1.86	1.56	1.51	1.45	1.31	1.41	1.09	1.23	1.62	1.80	2.13
	QC	2.01	1.41	1.09	.98	.95	.74	.83	.59	.68	.88	1.33	1.76
	QN	4.20	3.08	2.70	2.66	3.10	2.82	3.12	2.36	2.48	2.64	3.09	3.96
	OBS	355	376	424	490	456	537	502	512	475	471	433	434
46 N 125 W	QS	1.25	2.62	3.12	4.62	5.71	4.25	5.15	5.09	4.39	2.95	1.91	1.50
	QB	2.34	2.58	2.20	2.47	2.30	1.52	1.90	2.06	2.44	2.24	2.79	3.76
	QE	4.39	4.72	4.16	3.55	3.65	3.50	3.51	3.82	4.80	5.88	5.27	7.11
	QC	3.19	3.18	2.42	2.19	1.91	1.56	1.86	1.88	2.31	2.31	2.71	3.86
	QN	7.56	7.73	6.64	5.49	6.01	5.25	5.85	6.07	7.31	7.65	7.79	10.53
	OBS	104	102	119	116	114	173	167	143	125	119	103	64
46 N 126 W	QS	1.89	4.46	5.37	8.07	9.76	8.10	7.61	7.37	6.78	5.45	3.02	1.95
	QB	3.09	4.04	3.82	3.97	4.23	2.92	2.64	3.54	3.67	4.33	4.61	4.67
	QE	9.46	6.30	6.55	7.62	7.08	7.11	5.52	6.92	8.88	8.82	10.88	9.09
	QC	6.26	4.05	3.77	3.89	3.56	2.92	2.61	2.86	4.43	4.43	5.31	5.18
	QN	15.10	8.79	10.71	11.40	11.71	11.02	8.60	10.23	13.44	12.08	15.00	13.37
	OBS	41	51	38	40	27	44	58	49	37	45	31	31
46 N 127 W	QS	1.44	3.57	4.15	7.09	7.74	7.25	7.64	6.22	6.23	3.58	1.54	1.10
	QB	2.74	3.40	3.28	3.32	3.18	2.69	2.83	2.60	3.36	2.79	2.37	2.95
	QE	8.20	6.51	5.50	4.38	4.19	7.43	5.36	5.40	9.28	9.73	6.71	7.92
	QC	6.02	4.58	4.01	3.28	2.24	3.32	2.72	2.01	2.76	4.05	3.30	5.12
	QN	14.22	11.40	9.83	8.20	8.02	12.01	9.01	7.96	11.54	13.56	10.00	12.76
	OBS	62	55	71	56	60	61	51	61	44	55	85	52
46 N 128 W	QS	1.55	2.86	3.82	6.13	8.33	6.75	8.21	5.02	5.73	3.16	1.63	.89
	QB	2.55	3.19	2.52	3.13	3.34	2.40	2.94	2.26	2.95	2.89	2.82	2.37
	QE	6.49	5.04	5.87	5.59	4.50	4.64	4.49	4.90	7.27	9.51	8.15	7.09
	QC	4.40	3.12	3.40	3.54	2.12	2.57	2.59	2.37	2.82	4.57	3.42	4.53
	QN	10.26	7.76	9.25	8.65	7.58	8.77	8.38	7.73	10.30	14.07	11.65	11.34
	OBS	75	59	88	54	48	67	57	55	57	68	71	83
46 N 129 W	QS	1.17	2.12	3.49	5.61	6.88	6.77	7.68	5.63	4.69	3.64	1.93	.94
	QB	2.19	2.55	2.38	2.75	2.66	2.60	2.86	2.33	2.57	2.74	2.76	2.18
	QE	6.41	5.86	5.18	4.23	4.03	4.76	5.19	5.83	7.64	8.05	7.45	6.23
	QC	5.02	4.04	4.09	3.10	2.40	3.08	2.91	2.58	2.85	3.18	3.83	3.93
	QN	10.91	9.48	9.00	7.46	7.37	7.90	7.42	9.12	10.93	10.89	10.86	10.19
	OBS	81	74	90	82	67	72	58	74	71	68	69	87
46 N 130 W	QS	1.35	2.57	3.33	5.20	5.88	5.23	5.36	4.65	4.91	3.13	1.73	.87
	QB	2.45	2.64	2.18	2.80	2.34	1.97	1.86	1.96	2.74	2.50	2.55	2.17
	QE	6.56	5.92	5.97	5.43	3.87	4.50	3.49	5.45	6.26	7.34	6.74	7.20
	QC	5.13	3.68	3.72	3.41	2.67	2.17	2.14	2.90	2.33	3.20	3.83	4.21
	QN	11.43	9.28	9.78	8.69	6.83	7.13	6.62	8.18	8.85	10.17	10.60	11.12
	OBS	80	79	115	77	87	108	85	81	79	81	90	88
46 N 131 W	QS	1.26	2.07	3.73	4.70	5.77	5.54	4.80	4.12	4.91	2.68	1.43	.84
	QB	2.23	2.11	2.52	2.36	2.40	1.94	1.64	1.64	2.65	2.15	2.06	2.12
	QE	5.99	4.75	5.27	4.57	3.79	3.29	3.95	3.53	6.26	8.70	7.30	7.22
	QC	4.42	3.30	4.58	3.03	2.30	2.34	2.03	1.88	2.86	3.81	3.47	4.23
	QN	10.16	7.44	9.93	6.69	6.90	6.71	6.76	5.60	8.95	12.10	10.65	11.49
	OBS	85	65	74	88	89	100	84	101	92	90	107	93
46 N 132 W	QS	1.36	1.85	3.19	3.66	5.31	5.17	5.38	4.16	4.52	3.15	1.97	.79
	QB	2.18	1.92	2.07	1.72	2.16	1.75	1.92	1.83	2.34	2.50	2.50	2.00
	QE	4.71	5.20	3.73	2.75	3.53	3.65	4.38	6.08	6.03	7.27	8.72	7.15
	QC	3.42	3.52	3.01	1.84	2.13	2.57	2.53	1.87	2.61	3.22	4.43	4.29
	QN	8.03	8.23	6.64	4.68	6.82	6.83	7.10	7.81	8.58	10.20	12.79	11.74
	OBS	128	108	146	165	127	85	76	92	103	86	73	80
46 N 133 W	QS	1.14	2.95	3.33	5.63	5.51	6.40	6.46	5.25	4.54	2.83	2.02	.84
	QB	2.05	2.90	2.21	2.80	2.20	2.33	2.19	2.07	2.66	2.35	2.73	2.07
	QE	6.52	6.87	5.93	5.31	5.17	4.37	4.88	5.11	7.75	8.87	9.12	8.84
	QC	4.66	4.83	3.88	3.50	3.36	2.24	3.11	2.97	3.18	3.63	5.56	5.51
	QN	11.18	11.59	9.63	8.55	9.02	7.03	9.29	8.97	10.16	12.28	14.10	14.16
	OBS	80	65	70	72	63	61	56	69	66	85	70	79

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
47 N	QS	2.87	6.08	10.44	11.57	18.08	14.52	16.78	16.98	14.72	6.77	1.42	2.65
124 W	QB	9.06	6.55	7.42	5.67	7.11	4.99	6.67	7.30	8.36	5.67	2.31	7.43
	QE	8.98	9.17	14.71	7.59	5.06	5.91	10.61	10.83	7.22	8.35	4.32	12.42
	QC	9.57	8.29	5.04	3.93	2.72	3.46	6.66	6.20	2.72	2.74	2.18	5.80
	QN	19.77	16.10	20.80	10.67	15.64	12.06	17.62	21.88	13.38	11.04	6.10	10.69
	OBS	12	19	8	21	14	16	16	13	13	24	98	7
47 N	QS	1.27	2.76	3.11	4.33	6.23	4.84	5.69	5.84	4.69	2.75	1.42	.94
125 W	QB	2.22	2.91	2.23	2.28	2.53	1.76	2.14	2.32	2.83	2.52	2.25	2.91
	QE	4.74	5.40	4.04	4.04	3.60	3.31	2.79	3.60	3.94	4.83	3.66	6.09
	QC	4.19	3.81	2.67	2.88	1.83	1.41	1.44	1.76	1.95	1.65	2.41	4.12
	QN	8.89	9.00	6.92	6.59	5.92	5.30	5.12	6.56	6.00	6.32	5.80	9.80
	OBS	104	101	122	110	101	168	138	110	94	115	115	70
47 N	QS	1.36	3.01	3.86	4.82	5.93	6.29	7.53	5.64	5.50	3.98	1.82	1.12
126 W	QB	2.65	3.02	2.94	2.42	2.56	2.41	2.93	2.54	3.11	3.21	2.60	3.12
	QE	6.74	4.94	6.34	4.50	4.01	5.27	3.78	4.63	5.71	6.88	5.12	6.28
	QC	4.66	3.35	3.57	2.48	2.01	3.16	2.47	2.03	2.45	3.23	2.84	3.65
	QN	11.32	8.53	9.10	7.21	6.28	7.83	8.06	7.27	8.32	9.23	7.75	10.12
	OBS	79	76	64	85	84	76	74	77	78	65	84	65
47 N	QS	1.18	2.70	3.18	5.12	5.93	4.60	6.76	5.28	4.06	3.51	1.73	.73
127 W	QB	2.59	2.98	2.42	2.44	2.36	1.71	2.51	2.25	2.35	3.01	2.60	2.10
	QE	6.43	5.40	4.90	4.20	3.34	4.20	4.63	5.62	5.59	6.33	4.93	6.18
	QC	4.00	4.21	2.77	2.80	1.84	2.22	2.31	2.61	2.13	2.98	3.34	4.26
	QN	9.95	9.34	7.81	7.35	6.29	5.98	7.63	8.11	7.77	8.40	8.40	9.84
	OBS	90	84	107	89	102	107	84	76	97	76	89	100
47 N	QS	1.40	2.49	3.48	4.46	6.33	6.13	7.79	5.80	3.82	2.06	1.78	.81
128 W	QB	2.55	2.49	2.55	2.36	2.59	2.18	2.75	2.31	2.32	1.75	2.47	2.31
	QE	6.91	5.90	4.93	5.47	3.85	4.49	4.37	4.57	6.19	5.33	6.59	7.59
	QC	5.44	4.21	2.89	3.34	2.72	2.36	2.12	2.00	2.30	2.32	3.28	5.20
	QN	12.25	9.90	7.71	8.32	7.16	7.47	8.46	7.06	8.87	7.21	9.54	12.78
	OBS	75	72	106	77	82	70	59	80	111	156	91	84
47 N	QS	2.05	3.34	5.09	5.69	7.64	7.24	6.38	6.32	6.44	2.34	2.13	.91
129 W	QB	3.51	3.27	3.36	2.67	3.22	2.67	2.17	2.54	3.54	1.92	2.89	2.59
	QE	9.50	7.75	5.77	4.81	4.49	4.24	4.24	7.53	6.42	6.50	7.05	8.12
	QC	6.85	5.62	4.25	3.49	2.65	3.33	2.93	3.67	2.73	2.42	3.54	4.88
	QN	16.21	12.94	9.57	8.58	8.09	9.03	8.70	10.73	9.16	8.60	10.18	12.97
	OBS	48	50	56	60	59	61	63	49	55	117	68	61
47 N	QS	1.09	1.52	2.42	3.35	3.77	4.68	3.73	3.23	3.29	2.71	2.05	.58
130 W	QB	1.94	1.64	1.71	1.57	1.59	1.62	1.24	1.28	1.72	2.13	3.34	1.68
	QE	4.65	5.46	4.76	2.87	2.64	3.01	2.52	3.54	4.34	11.13	11.32	4.63
	QC	3.96	3.24	3.02	1.73	1.58	1.84	1.21	1.68	1.66	4.16	5.86	2.63
	QN	8.27	8.41	7.87	4.02	4.33	5.24	4.54	5.36	5.80	14.62	16.25	6.95
	OBS	138	148	148	141	113	128	157	136	146	87	47	143
47 N	QS	1.14	2.33	3.11	4.11	5.29	3.62	4.11	3.61	2.99	2.18	1.46	.52
131 W	QB	1.97	2.46	2.01	1.92	2.13	1.31	1.41	1.43	1.60	1.93	2.00	1.52
	QE	4.74	5.81	4.06	3.93	2.45	3.07	2.57	3.76	5.98	7.52	6.45	5.49
	QC	3.57	3.38	2.99	2.11	1.86	1.86	1.60	1.56	2.49	3.44	2.72	3.58
	QN	8.12	8.85	7.04	6.03	5.29	5.44	4.64	5.74	8.68	10.57	8.70	8.96
	OBS	125	79	105	120	112	162	142	180	170	145	110	150
47 N	QS	1.15	1.89	3.34	5.22	4.84	3.23	3.36	3.83	3.70	1.83	1.15	.63
132 W	QB	2.08	2.25	2.14	2.41	1.89	1.16	1.18	1.52	2.06	1.78	1.69	1.89
	QE	6.52	4.57	5.22	4.18	2.52	2.78	2.67	3.32	4.15	7.12	5.92	6.59
	QC	4.64	2.94	3.82	2.84	1.53	1.76	1.23	1.59	1.85	3.36	2.79	3.95
	QN	10.90	7.30	9.31	7.08	4.75	4.72	4.59	5.06	5.31	10.14	8.66	10.61
	OBS	99	113	103	100	143	211	149	142	134	143	148	119
47 N	QS	1.43	2.87	4.05	6.56	6.13	4.99	5.52	5.08	5.40	2.90	1.67	1.08
133 W	QB	2.42	2.73	2.87	3.08	2.51	1.74	1.83	2.17	2.76	2.64	2.42	2.92
	QE	6.18	7.06	7.15	4.93	5.07	5.62	4.50	5.30	5.66	9.60	10.85	8.76
	QC	5.40	3.92	4.93	4.11	3.88	3.60	2.61	2.42	2.49	4.48	5.98	5.80
	QN	11.26	10.48	11.83	8.33	8.77	9.48	7.35	7.30	7.69	13.96	17.29	14.53
	OBS	48	60	49	57	50	60	42	66	59	71	69	61

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
48 N 125 W	QS	.39	1.25	1.68	2.14	2.78	2.96	2.98	2.81	2.06	1.46	.87	.41
	QB	1.01	1.30	1.24	1.13	1.17	1.10	1.14	1.18	1.26	1.40	1.35	1.42
	QE	2.39	2.42	1.92	1.74	1.34	1.21	1.68	2.02	1.98	2.34	2.76	3.00
	QC	2.25	1.85	1.64	1.48	.80	.84	1.07	1.22	1.21	1.47	2.21	2.75
	QN	4.60	4.18	3.67	3.54	2.74	2.76	3.43	3.76	3.48	3.83	4.91	5.67
	OBS	514	458	497	496	439	452	500	455	458	428	390	365
48 N 126 W	QS	1.05	2.65	3.93	4.89	6.20	6.30	6.51	5.94	4.64	2.22	1.22	.61
	QB	2.58	2.96	2.82	2.45	2.46	2.31	2.43	2.53	2.65	1.99	2.00	1.99
	QE	4.92	4.96	3.83	4.85	3.71	3.41	3.55	3.55	4.64	4.50	5.27	5.06
	QC	3.98	3.05	2.94	2.45	1.84	2.10	1.40	1.72	1.98	2.52	3.53	3.39
	QN	9.19	7.74	6.53	7.02	5.99	6.84	6.03	5.88	7.02	6.92	8.69	8.53
	OBS	103	89	102	85	92	98	94	97	94	152	149	119
48 N 127 W	QS	1.20	2.78	4.27	6.32	6.16	7.10	7.60	6.45	4.71	3.78	1.45	.71
	QB	2.42	3.00	3.34	3.57	2.59	2.68	2.92	2.89	2.47	3.07	2.61	2.27
	QE	5.39	5.36	5.99	6.06	4.93	3.47	4.95	5.21	4.75	7.92	5.46	7.50
	QC	4.07	3.92	3.98	4.13	3.96	2.17	2.69	2.74	1.91	3.86	2.79	4.38
	QN	9.31	8.72	9.98	9.00	9.10	6.23	8.52	7.72	7.16	11.42	8.61	11.28
	OBS	83	62	67	54	78	75	68	67	99	66	106	70
48 N 128 W	QS	1.22	2.43	3.92	4.97	6.23	6.26	6.72	6.09	5.29	2.84	1.78	.84
	QB	2.36	2.87	3.04	2.51	2.48	2.35	2.38	2.47	2.74	2.68	2.79	2.50
	QE	7.49	6.40	3.91	3.70	3.74	3.92	5.35	4.94	6.07	10.13	6.25	6.41
	QC	4.67	4.56	2.46	3.02	1.91	2.22	3.40	2.35	3.25	4.85	3.51	4.25
	QN	12.14	10.88	6.11	7.04	5.72	6.87	9.30	7.83	8.76	14.67	9.90	10.38
	OBS	63	78	84	82	84	73	63	67	83	72	73	80
48 N 129 W	QS	1.07	2.43	3.85	6.33	5.41	6.75	7.64	5.17	5.20	3.18	1.48	.73
	QB	2.08	2.64	2.71	3.01	2.23	2.50	2.57	2.02	2.74	2.66	2.24	2.36
	QE	7.90	5.71	6.04	4.42	3.55	5.11	5.17	4.95	5.18	6.88	7.30	6.93
	QC	5.67	4.33	3.77	3.03	2.17	2.86	2.74	2.56	2.41	3.11	4.85	4.98
	QN	13.42	9.70	9.83	8.25	6.55	8.23	8.70	8.28	7.11	9.17	11.81	11.92
	OBS	69	67	63	56	86	71	65	74	81	62	84	75
48 N 130 W	QS	1.27	2.55	3.83	5.53	6.91	5.85	6.14	4.31	3.48	2.76	1.29	.65
	QB	2.44	2.96	2.91	3.06	2.90	2.14	2.31	1.71	1.98	2.46	1.95	2.17
	QE	7.53	6.21	4.82	3.58	3.60	4.00	4.69	4.31	4.42	6.95	6.18	8.49
	QC	5.14	4.63	3.92	2.92	2.68	2.77	2.06	2.42	2.46	3.37	3.24	5.26
	QN	12.46	10.46	9.30	6.93	6.93	6.60	7.71	7.16	7.06	10.02	9.32	13.57
	OBS	73	62	75	70	72	72	69	90	116	79	84	85
48 N 131 W	QS	1.30	2.76	3.54	4.60	5.07	5.23	5.11	3.66	3.85	2.35	1.25	.72
	QB	2.23	2.92	2.67	2.30	2.08	1.80	1.85	1.68	2.17	2.05	2.25	2.19
	QE	6.92	4.87	4.79	3.81	2.89	3.02	3.03	4.18	4.97	7.15	6.94	6.61
	QC	5.49	3.84	2.98	2.68	2.19	1.73	2.19	2.09	2.24	3.29	3.18	4.91
	QN	12.41	8.40	7.88	5.95	5.98	5.45	6.21	6.63	7.34	10.23	9.96	11.43
	OBS	78	77	77	91	116	96	105	98	111	99	95	95
48 N 132 W	QS	.79	1.40	2.28	3.97	3.80	4.05	3.47	2.99	3.36	2.62	1.12	.51
	QB	1.49	1.46	1.64	1.94	1.64	1.44	1.20	1.06	1.77	2.40	1.87	1.61
	QE	3.97	3.62	2.98	2.88	2.02	3.23	2.95	3.34	4.36	8.66	5.93	4.60
	QC	3.08	2.45	2.42	1.85	1.37	2.08	1.75	1.85	1.76	3.50	3.35	3.00
	QN	7.03	5.84	5.28	4.88	3.85	5.74	4.77	5.22	5.97	12.03	9.44	7.60
	OBS	169	157	178	157	196	117	122	114	134	98	131	168
48 N 133 W	QS	1.25	2.58	4.12	5.31	5.49	5.06	4.88	4.15	3.73	2.49	1.18	.63
	QB	2.51	3.12	2.65	2.69	2.27	1.84	1.75	1.67	2.17	2.45	1.99	2.02
	QE	6.75	7.94	4.80	4.36	3.03	3.30	3.28	4.63	6.16	8.04	6.49	6.48
	QC	4.49	5.48	3.28	3.43	2.24	2.57	1.94	2.32	2.76	3.68	4.15	4.36
	QN	10.76	13.43	7.97	7.76	6.53	6.37	5.91	7.21	8.81	11.64	10.30	10.83
	OBS	72	55	71	88	84	82	91	74	96	94	105	108
48 N 134 W	QS	1.54	2.80	4.40	5.24	5.81	5.71	5.91	4.84	5.49	2.74	1.47	.71
	QB	3.39	3.02	2.91	2.79	2.32	1.89	2.07	2.16	3.19	2.35	2.17	2.15
	QE	8.69	5.98	6.02	4.29	3.48	4.47	3.79	5.09	10.26	8.17	8.55	6.71
	QC	6.95	4.94	4.35	3.91	3.09	3.43	3.15	2.88	4.16	3.55	4.45	6.01
	QN	15.87	10.58	10.55	8.51	6.71	9.08	7.52	7.95	14.34	11.25	12.90	12.40
	OBS	43	64	60	64	77	66	58	62	49	70	86	78

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
49 N	QS	1.83	2.90	5.52	6.80	7.40	8.10	7.52	7.18	5.11	3.92	1.97	1.10
126 W	QB	3.73	4.09	4.30	3.83	3.10	3.03	2.82	3.34	3.02	3.78	3.69	3.70
	QE	11.26	6.87	6.90	4.82	4.17	4.04	2.55	3.68	3.74	8.82	5.73	7.93
	QC	8.29	5.53	5.67	3.43	2.70	2.02	2.65	2.74	2.08	3.22	3.93	5.57
	QN	20.31	11.97	12.45	8.15	7.58	7.39	6.57	7.17	6.06	12.15	9.66	13.27
	OBS	37	38	37	57	63	67	89	70	89	53	55	46
49 N	QS	1.42	2.02	3.96	5.29	5.70	6.50	5.73	4.99	4.26	2.54	1.49	.74
127 W	QB	3.22	3.11	2.70	2.89	2.39	2.44	2.19	2.19	2.43	2.34	2.25	2.66
	QE	5.40	5.96	4.62	4.96	3.07	3.13	2.65	3.35	4.61	4.66	4.36	5.58
	QC	4.04	3.61	3.24	2.87	2.08	2.96	1.75	2.36	2.94	2.10	3.35	3.34
	QN	9.63	9.53	8.01	7.86	5.63	6.76	5.27	6.41	8.09	6.88	7.32	9.09
	OBS	74	67	87	92	109	104	140	120	127	109	106	89
49 N	QS	.92	2.36	2.96	4.61	3.77	5.07	4.71	4.16	3.38	2.63	1.05	.70
128 W	QB	2.12	2.71	2.13	2.27	1.57	1.84	1.78	1.69	1.96	2.28	2.04	2.48
	QE	4.96	4.77	3.72	4.48	2.18	2.86	2.60	2.85	4.15	5.41	4.71	5.37
	QC	3.43	3.54	2.67	2.59	1.46	2.10	1.54	1.42	1.90	2.09	2.74	3.85
	QN	8.36	8.38	6.54	6.51	3.95	5.92	4.75	4.70	6.25	6.69	7.47	9.39
	OBS	103	89	116	109	219	148	174	187	161	112	141	95
49 N	QS	1.24	1.83	2.98	3.96	4.10	4.83	4.46	4.09	3.31	2.48	1.14	.58
129 W	QB	2.59	2.19	2.01	2.05	1.70	1.75	1.62	1.67	2.00	2.06	1.89	1.88
	QE	5.61	4.06	3.74	3.02	2.65	3.18	3.14	3.05	4.48	5.62	4.30	4.89
	QC	4.69	2.53	2.40	1.98	1.62	1.78	1.82	1.38	1.82	2.78	2.64	3.75
	QN	10.55	6.50	6.14	5.24	4.35	5.96	5.45	4.62	6.47	8.01	6.95	8.47
	OBS	103	110	127	137	155	130	144	165	142	129	138	111
49 N	QS	.77	1.66	2.64	3.64	4.01	4.12	3.92	3.42	2.84	1.98	.97	.53
130 W	QB	1.73	1.89	1.91	1.77	1.68	1.49	1.42	1.56	1.57	1.79	1.70	1.82
	QE	4.43	3.94	3.18	2.87	2.23	2.42	2.61	3.13	3.45	4.61	4.10	4.45
	QC	3.04	2.83	2.04	1.91	1.54	1.36	1.59	1.58	1.56	2.18	2.39	2.68
	QN	7.53	6.61	5.41	4.96	3.90	4.57	4.78	4.72	4.80	6.75	6.34	7.10
	OBS	169	155	166	168	167	155	165	188	190	159	187	161
49 N	QS	.60	1.30	2.17	2.80	4.02	2.94	2.96	3.35	2.49	1.71	.91	.45
131 W	QB	1.33	1.62	1.57	1.37	1.68	1.03	1.03	1.34	1.42	1.58	1.57	1.54
	QE	3.65	3.40	3.00	2.17	2.32	1.56	2.11	2.83	3.18	4.09	4.48	3.49
	QC	2.68	2.29	1.90	1.73	1.88	.87	1.12	1.52	1.34	2.08	2.41	2.27
	QN	6.29	5.59	4.99	3.83	4.37	3.10	3.63	4.67	4.32	5.99	6.95	5.81
	OBS	221	203	225	239	178	281	237	190	235	204	203	217
49 N	QS	.84	1.88	3.00	4.67	4.37	4.20	4.19	3.78	2.80	2.14	1.19	.48
132 W	QB	2.02	1.99	2.01	2.15	1.77	1.48	1.52	1.64	1.68	1.87	1.94	1.68
	QE	5.57	4.73	4.51	3.36	2.47	3.39	2.31	3.98	4.27	5.72	5.19	4.98
	QC	4.19	3.70	2.46	2.25	2.11	1.65	1.88	1.86	2.13	2.95	3.18	3.77
	QN	9.76	8.11	6.93	5.96	5.16	5.65	4.28	5.56	6.12	8.43	7.92	8.68
	OBS	113	103	114	106	133	116	139	133	141	144	135	133
49 N	QS	.76	1.80	2.91	3.27	3.92	3.77	3.91	3.30	2.91	1.98	1.06	.60
133 W	QB	1.85	2.30	1.96	1.69	1.74	1.34	1.41	1.29	1.72	1.87	1.77	2.05
	QE	6.38	4.87	4.56	2.97	3.33	2.82	2.79	3.17	3.63	5.65	4.68	5.95
	QC	4.99	3.29	2.62	2.31	1.78	1.86	1.87	1.42	1.51	2.80	2.86	4.50
	QN	11.23	8.29	6.69	4.92	5.02	5.16	5.37	4.91	5.03	7.97	7.59	10.33
	OBS	117	97	136	150	148	150	122	170	170	142	163	120
49 N	QS	.84	1.82	2.85	3.94	3.99	3.57	3.70	2.73	2.79	1.81	.95	.49
134 W	QB	1.89	2.17	2.15	2.03	1.69	1.34	1.38	1.16	1.67	1.66	1.64	1.66
	QE	5.26	5.06	4.13	3.24	2.44	2.65	2.57	2.90	3.88	5.74	5.26	5.56
	QC	4.41	3.31	2.69	2.19	1.86	1.87	1.52	1.53	1.95	2.45	3.13	3.62
	QN	9.46	8.32	6.83	5.45	4.67	4.63	4.32	4.11	5.52	7.91	8.35	9.25
	OBS	130	101	125	142	160	146	139	170	179	174	164	135
49 N	QS	.83	1.73	2.71	3.62	4.12	3.53	3.73	2.99	2.82	1.80	.90	.54
135 W	QB	1.99	1.94	1.80	1.83	1.63	1.29	1.41	1.23	1.63	1.67	1.53	1.78
	QE	4.86	4.08	4.00	2.73	2.69	2.70	2.53	3.11	4.19	5.51	4.45	4.84
	QC	4.21	2.60	2.55	2.13	2.33	2.73	1.65	1.54	2.13	2.70	2.80	3.09
	QN	9.19	6.28	6.42	4.48	5.74	5.45	4.27	4.64	5.96	7.94	7.20	7.76
	OBS	102	102	133	139	138	109	111	138	160	138	186	154

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
50 N 127 W	QS	3.20	4.10	6.76	9.30	21.86	9.71	17.97	11.90	11.06	6.95	3.67	1.63
	QB	10.60	3.95	9.04	6.18	10.41	3.78	6.20	4.98	5.12	6.75	7.43	6.53
	QE	16.33	14.81	14.39	13.24	20.80	7.95	8.43	4.33	7.45	12.31	22.54	13.96
	QC	14.91	17.70	14.60	6.13	4.91	8.21	7.52	4.06	6.01	6.12	18.66	5.75
	QN	36.71	32.07	28.12	15.99	24.61	17.03	20.13	9.30	13.36	17.29	39.16	11.79
	OBS	9	8	13	18	11	12	19	24	23	14	12	10
50 N 128 W	QS	1.35	4.55	5.27	8.03	10.04	8.41	9.07	8.98	7.24	4.33	1.47	.96
	QB	4.04	5.01	3.60	4.24	3.93	3.03	3.50	3.85	3.85	3.84	3.33	4.19
	QE	8.64	10.75	6.97	5.60	5.00	5.78	5.86	6.62	5.46	7.96	4.85	11.08
	QC	7.63	6.85	3.10	3.61	4.36	3.19	2.94	4.08	3.73	5.21	2.87	6.14
	QN	16.56	16.43	10.12	9.22	10.56	10.69	9.82	11.05	9.75	13.05	7.84	18.39
	OBS	32	23	35	41	40	61	59	46	42	49	56	35
50 N 129 W	QS	1.39	2.29	3.92	5.04	6.34	6.72	5.64	4.89	4.40	3.36	1.41	.73
	QB	3.37	2.89	3.01	3.13	2.62	2.41	2.52	2.05	2.59	3.16	2.92	3.02
	QE	6.87	8.15	6.92	6.21	4.74	5.10	4.19	4.28	5.44	6.39	5.78	7.27
	QC	4.60	5.12	4.95	4.41	2.31	3.40	2.47	2.19	2.94	3.34	3.97	4.84
	QN	11.45	12.53	11.94	10.50	7.60	9.82	7.57	7.43	8.31	8.89	9.64	11.84
	OBS	55	51	62	71	84	62	97	102	81	69	75	49
50 N 130 W	QS	1.03	2.09	3.77	5.04	5.64	5.26	5.34	4.69	3.71	2.86	1.23	.67
	QB	2.99	2.59	2.74	2.63	2.46	1.90	1.87	2.00	2.24	2.42	2.68	2.90
	QE	7.19	6.25	6.51	5.45	3.21	3.07	3.04	4.42	4.15	6.76	6.48	7.42
	QC	5.79	3.93	4.52	3.34	2.05	1.96	1.55	2.67	2.15	3.63	3.94	4.84
	QN	13.54	10.02	11.33	9.13	6.13	6.44	5.88	7.04	6.02	10.06	10.39	12.50
	OBS	61	74	61	84	95	108	118	93	106	86	74	54
50 N 131 W	QS	1.04	2.70	3.33	3.84	4.75	4.63	4.05	3.49	3.07	2.37	1.19	.69
	QB	2.64	3.02	2.28	1.97	2.11	1.71	1.45	1.50	1.83	2.00	2.17	2.61
	QE	5.96	5.69	6.52	3.46	2.91	2.99	2.22	3.18	4.57	6.09	5.27	5.65
	QC	4.68	3.62	4.38	2.20	2.06	1.93	1.66	1.87	2.02	2.75	3.64	4.25
	QN	10.78	9.17	10.95	5.84	4.99	5.40	4.64	5.30	6.27	8.56	8.63	10.07
	OBS	85	74	84	121	127	113	158	146	143	109	108	75
50 N 132 W	QS	1.11	2.04	3.24	4.68	5.09	4.21	3.80	4.01	3.11	2.32	1.27	.71
	QB	2.38	2.43	2.38	2.35	2.14	1.51	1.41	1.72	2.06	2.34	1.95	3.07
	QE	7.71	4.90	4.52	2.79	2.94	3.21	2.35	3.51	3.61	6.89	6.09	6.54
	QC	5.81	4.58	3.48	2.67	2.18	1.88	1.21	1.90	1.73	3.24	3.92	4.82
	QN	13.87	9.29	8.20	6.09	5.68	5.64	3.75	5.63	5.17	9.83	9.75	11.34
	OBS	66	74	84	98	114	110	140	136	132	84	101	64
50 N 133 W	QS	.97	2.66	3.54	4.41	5.05	4.39	4.37	3.93	3.53	2.57	1.12	.63
	QB	2.43	2.51	2.52	2.25	2.19	1.57	1.56	1.63	2.11	2.27	2.19	2.28
	QE	5.40	5.62	5.74	3.93	3.14	2.93	2.31	3.48	5.50	6.71	6.18	6.89
	QC	5.04	4.73	3.54	3.00	2.25	2.44	1.76	1.76	3.21	2.61	4.25	5.05
	QN	11.72	9.83	9.02	7.36	5.41	5.86	5.20	5.60	8.72	9.03	10.28	12.01
	OBS	64	70	64	107	103	108	114	123	103	93	78	74
50 N 134 W	QS	.66	1.50	2.56	3.25	3.68	2.72	3.87	3.15	3.24	2.34	.93	.44
	QB	1.69	1.73	1.63	1.66	1.61	.96	1.44	1.36	1.99	2.10	1.58	1.80
	QE	4.56	3.36	3.27	2.49	2.84	2.15	1.85	2.79	4.55	7.25	5.03	5.68
	QC	3.44	2.68	1.97	1.91	1.97	1.52	1.16	1.34	2.23	3.18	3.30	3.98
	QN	8.08	5.81	5.41	4.34	4.90	3.82	3.67	4.34	6.39	9.70	8.25	9.94
	OBS	166	141	160	168	160	208	162	178	114	87	170	139
50 N 135 W	QS	.78	1.45	2.82	4.20	4.10	3.17	3.26	3.20	1.70	1.80	.95	.46
	QB	2.01	1.98	1.98	2.10	1.66	1.11	1.20	1.36	1.15	1.80	1.67	1.86
	QE	5.71	4.38	5.58	3.85	2.79	2.60	2.27	3.28	2.65	6.12	5.59	5.42
	QC	4.78	3.34	3.22	2.90	2.07	1.61	1.67	1.54	1.06	3.19	3.25	3.80
	QN	10.47	7.56	8.65	6.99	4.93	4.43	4.31	5.00	3.52	9.18	8.92	9.12
	OBS	104	97	111	123	149	156	131	140	375	139	145	116
50 N 136 W	QS	.49	1.11	1.37	1.65	2.04	1.88	2.16	1.96	2.18	1.23	.51	.23
	QB	1.17	1.32	1.05	.89	.89	.67	.79	.84	1.31	1.09	1.00	.95
	QE	2.80	2.76	2.00	1.58	1.77	1.76	1.34	2.09	3.22	3.79	2.89	2.78
	QC	1.94	2.14	1.39	.96	1.05	1.18	1.13	1.02	1.50	1.80	1.84	1.89
	QN	4.82	4.76	3.35	2.23	2.73	2.94	2.73	3.09	4.31	5.52	4.65	4.70
	OBS	344	328	431	604	487	445	277	312	270	349	431	445

APPENDIX III

Monthly Mean Surface Atmospheric Properties

The following tables list the long-term monthly mean surface atmospheric properties approximately corresponding to the distributions of monthly mean heat exchange components displayed in Appendix I. Each page contains values for 10 1° squares. Within each group of 10, all 1° squares are defined by a common latitude. The first set of values corresponds to the 1° square adjacent to the coast. The final tabulations refer to the 1° square farthest from the coast.

Monthly mean properties are tabulated for windspeed (SPD, m/s), surface air temperature (AIR, °C), sea surface temperature (SEA, °C), vapor pressure of the air (VPA, mbar), saturation vapor pressure at the sea surface temperature (VPS, mbar), and total cloud amount (CLD, %). These estimates of monthly mean surface properties were used to calculate the heat exchange components, $Q_N(M)$, for comparisons with the heat exchange values computed from individual reports, $Q_N(I)$, shown in Figures 5, 6, and 7, and in Table 1.

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
21 N	SPD	5.24	4.20	4.97	6.54	5.87	5.41	4.26	4.40	4.98	5.22	4.39	4.37
111 W	AIR	21.15	21.30	21.26	20.79	21.14	22.06	25.26	27.06	27.05	26.40	24.69	23.13
	SEA	23.07	22.86	22.26	21.84	21.95	22.55	25.64	27.43	27.58	27.26	26.17	24.59
	VPA	18.68	18.53	18.40	19.00	20.01	21.62	27.33	28.84	29.23	27.29	23.50	21.33
	VPS	28.33	27.95	26.94	26.27	26.45	27.51	33.14	36.65	37.04	36.30	34.04	31.05
	CLD	57.50	40.56	42.85	48.46	45.37	52.83	46.14	47.53	46.65	45.89	48.07	45.52
21 N	SPD	4.47	4.65	4.85	6.69	5.87	5.22	4.99	5.29	6.34	4.79	4.74	4.62
112 W	AIR	21.59	21.10	20.28	20.26	21.02	21.49	24.63	26.17	26.23	25.57	24.20	22.09
	SEA	22.90	22.29	21.45	21.95	21.90	22.15	24.79	26.96	26.94	26.43	25.51	24.19
	VPA	19.00	18.39	17.38	18.46	19.68	20.17	25.88	27.50	27.92	25.10	23.94	19.77
	VPS	28.04	26.98	25.66	26.43	26.44	26.75	31.56	35.68	35.74	34.65	32.74	30.37
	CLD	47.72	45.83	51.01	52.08	51.41	54.82	45.93	51.95	59.59	46.07	45.98	52.18
21 N	SPD	5.12	5.79	5.69	5.71	6.26	5.76	4.66	5.24	5.94	4.40	5.75	5.27
113 W	AIR	21.57	20.33	19.70	19.92	20.85	21.61	24.73	26.03	25.91	25.59	23.56	22.47
	SEA	23.02	21.58	21.92	21.73	22.23	22.19	24.53	26.21	26.61	25.85	24.92	24.73
	VPA	18.71	18.39	17.22	17.87	19.24	19.97	25.88	27.57	28.19	26.36	23.25	19.47
	VPS	28.20	25.94	26.39	26.11	26.93	26.92	30.92	34.14	35.06	33.44	31.65	31.31
	CLD	46.73	61.32	40.17	60.48	54.77	65.08	59.48	52.38	62.96	45.65	52.17	48.75
21 N	SPD	5.77	6.54	5.21	6.86	6.69	5.27	6.33	5.90	7.18	3.90	4.80	4.82
114 W	AIR	20.32	20.69	20.16	21.14	20.28	20.82	23.92	25.11	24.47	24.24	23.08	21.47
	SEA	22.09	21.35	21.10	21.95	21.14	22.22	24.21	25.94	25.77	24.62	23.87	23.29
	VPA	17.28	19.31	17.55	19.77	18.30	20.44	24.90	26.05	26.69	22.86	22.62	18.76
	VPS	26.69	25.61	25.17	26.42	25.33	27.31	30.40	33.67	33.26	31.09	29.71	28.75
	CLD	58.69	58.87	62.93	45.23	64.28	60.93	69.37	47.11	67.85	46.71	46.42	58.85
21 N	SPD	5.42	5.80	5.78	6.73	5.53	4.66	3.57	4.37	5.37	5.04	6.09	5.93
115 W	AIR	19.92	20.95	19.40	20.30	19.91	21.25	25.38	25.57	25.23	23.90	22.50	21.95
	SEA	22.37	21.92	20.99	21.23	21.70	22.55	24.12	26.12	26.04	25.70	23.84	23.94
	VPA	17.98	19.35	16.88	18.34	17.89	19.98	26.14	26.86	25.76	22.77	21.81	21.16
	VPS	27.20	26.49	25.09	25.35	26.06	27.49	30.11	33.96	33.87	33.15	29.69	29.81
	CLD	71.66	59.02	55.76	51.92	66.87	78.67	59.55	62.50	65.97	59.16	39.58	48.80
21 N	SPD	6.39	5.24	6.77	7.42	7.77	4.07	5.31	4.28	5.29	5.00	4.89	4.58
116 W	AIR	20.10	21.39	19.35	20.47	19.58	21.99	23.99	25.50	24.94	23.91	21.97	21.18
	SEA	21.05	21.79	20.43	21.98	21.50	23.35	24.58	25.50	25.47	24.89	23.40	23.10
	VPA	18.81	20.17	16.51	18.68	16.87	20.68	25.03	27.35	25.53	22.69	20.87	19.24
	VPS	25.02	26.25	24.12	26.59	25.69	28.98	31.23	32.73	32.65	31.54	28.97	28.36
	CLD	45.83	51.13	51.00	56.25	75.00	69.79	71.59	60.41	76.78	71.42	65.00	40.62
21 N	SPD	4.83	4.80	5.66	6.05	4.74	5.87	4.59	5.51	5.40	5.96	5.14	6.17
117 W	AIR	18.83	19.99	18.74	19.81	19.54	20.78	23.10	25.61	25.21	24.24	23.01	20.69
	SEA	20.49	20.73	19.74	20.98	20.81	21.69	23.28	25.55	25.46	25.15	23.51	22.85
	VPA	15.99	17.36	16.47	17.17	16.34	20.28	23.66	26.40	25.23	23.36	22.34	18.41
	VPS	24.23	24.53	23.18	24.91	24.82	25.97	28.81	32.84	32.66	32.14	29.11	27.97
	CLD	65.27	60.41	66.25	62.50	76.38	73.68	86.45	72.79	65.97	52.08	45.45	80.68
21 N	SPD	6.08	5.09	5.76	7.20	5.79	5.11	5.43	6.48	5.69	4.76	5.62	6.27
118 W	AIR	19.78	20.00	18.89	19.05	20.01	20.38	22.70	24.32	25.04	23.67	23.16	21.04
	SEA	21.08	21.54	21.09	21.48	21.16	22.07	23.73	24.08	25.96	24.68	23.87	22.73
	VPA	17.08	18.23	15.88	17.22	18.56	19.33	23.19	24.81	25.21	22.16	22.01	20.37
	VPS	25.05	25.79	25.07	25.88	25.29	26.67	29.45	30.25	33.77	31.25	29.75	27.88
	CLD	67.18	80.00	71.25	59.16	71.87	83.59	89.58	81.66	71.87	54.16	70.53	69.53
21 N	SPD	7.05	5.71	5.29	7.59	5.32	5.57	5.98	4.76	6.26	5.01	5.55	6.51
119 W	AIR	18.83	20.38	19.31	20.04	19.91	21.56	23.81	24.01	24.08	22.91	22.24	21.02
	SEA	20.51	20.95	19.78	21.24	21.09	22.76	24.50	24.58	25.20	24.35	23.59	21.69
	VPA	15.82	17.82	16.90	17.09	17.60	20.49	24.43	24.71	24.95	21.95	21.00	18.02
	VPS	24.18	24.91	23.17	25.33	25.21	27.86	30.90	30.95	32.27	30.57	29.32	26.00
	CLD	65.00	57.23	56.25	81.25	83.82	80.55	71.05	76.56	70.83	43.98	60.93	68.12
21 N	SPD	5.76	5.84	5.35	6.20	5.86	5.52	6.30	5.53	6.33	5.90	6.28	6.72
120 W	AIR	19.08	19.11	18.98	19.19	19.34	20.92	23.32	23.66	23.31	22.54	21.34	20.02
	SEA	20.81	20.86	20.96	20.87	20.73	21.40	23.59	24.54	25.21	24.16	22.95	21.50
	VPA	16.31	17.35	16.02	17.57	17.59	18.76	23.18	24.37	22.41	21.42	18.32	16.88
	VPS	24.61	24.77	24.88	24.94	24.53	25.54	29.22	30.91	32.12	30.24	28.06	25.72
	CLD	70.00	74.51	65.62	66.07	69.56	80.55	83.03	75.00	67.18	64.88	69.56	77.94

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
22 N 111 W	SPD	4.79	4.52	5.39	6.32	6.10	6.20	4.14	4.36	5.57	4.90	4.77	4.92
	AIR	20.96	20.33	20.49	20.08	20.57	21.18	25.34	26.43	27.39	26.01	24.71	22.59
	SEA	22.53	21.71	21.31	20.36	21.07	21.58	25.28	26.82	28.05	26.95	25.81	24.23
	VPA	18.53	17.85	18.48	18.68	19.60	21.10	26.49	28.14	30.06	26.20	23.31	19.95
	VPS	27.44	26.09	25.46	24.03	25.14	25.93	32.49	35.41	38.07	35.72	33.39	30.35
	CLD	42.89	37.70	35.36	37.37	42.09	51.07	42.45	49.13	39.46	39.39	34.73	46.76
22 N 112 W	SPD	3.91	4.99	5.89	6.72	6.54	5.66	4.09	5.45	5.00	4.91	4.36	4.94
	AIR	20.77	20.41	19.67	19.87	19.78	20.67	24.14	25.82	26.42	25.40	23.91	22.05
	SEA	22.43	21.74	20.82	20.99	20.93	21.21	24.52	26.31	26.88	26.44	25.38	23.49
	VPA	17.68	17.50	17.06	17.87	18.71	19.75	25.25	27.43	28.14	24.83	22.28	20.52
	VPS	27.19	26.13	24.69	25.00	24.88	25.32	31.02	34.46	35.61	34.64	32.35	29.83
	CLD	44.57	42.25	46.73	44.56	53.38	60.83	41.57	48.80	46.33	36.59	38.47	54.84
22 N 113 W	SPD	4.65	5.64	6.00	6.99	6.19	5.16	4.48	4.28	6.13	4.83	5.06	5.21
	AIR	20.42	20.30	19.29	19.55	19.78	20.36	23.48	25.39	26.10	24.48	22.64	21.18
	SEA	21.59	21.35	20.99	20.80	20.86	21.28	23.99	25.94	26.47	25.28	24.35	22.96
	VPA	17.45	17.74	16.50	17.59	18.73	19.58	24.44	26.33	27.41	24.18	20.92	19.58
	VPS	25.91	25.51	24.98	24.66	24.75	25.40	30.05	33.63	34.74	32.37	30.58	28.24
	CLD	48.47	50.31	52.54	57.87	51.78	66.09	47.63	55.35	57.37	42.91	37.70	58.78
22 N 114 W	SPD	4.84	5.50	5.85	5.98	6.70	5.73	4.16	4.40	6.86	4.72	4.58	5.88
	AIR	19.09	19.26	19.03	19.70	19.05	20.69	22.67	25.15	25.06	23.43	22.92	20.74
	SEA	21.31	20.81	20.77	21.28	20.73	21.29	23.15	25.83	25.46	24.52	24.10	22.37
	VPA	16.92	16.88	16.57	17.89	17.42	19.65	23.53	26.00	26.74	22.63	21.24	18.88
	VPS	25.51	24.70	24.59	25.39	24.57	25.46	28.48	33.36	32.75	30.89	30.16	27.17
	CLD	55.17	45.13	50.32	58.42	66.74	76.42	60.08	62.09	62.99	54.48	32.75	54.78
22 N 115 W	SPD	5.06	6.33	6.26	6.28	6.38	5.99	5.64	6.31	6.34	4.50	4.21	5.22
	AIR	19.00	18.75	18.35	19.06	19.20	20.09	22.70	23.89	24.23	23.68	22.02	20.21
	SEA	20.95	19.78	19.97	20.92	20.80	20.67	22.87	24.78	25.36	24.43	23.89	22.42
	VPA	16.66	16.29	15.81	16.07	17.49	18.19	22.79	24.39	25.07	23.07	20.93	17.82
	VPS	24.91	23.23	23.42	24.83	24.74	24.49	28.02	31.46	32.58	30.72	29.80	27.26
	CLD	54.58	51.38	49.69	70.07	62.85	85.88	67.00	62.50	61.00	45.53	44.53	58.12
22 N 116 W	SPD	6.30	6.13	5.25	8.05	6.51	5.56	4.60	7.48	7.61	4.93	5.72	4.98
	AIR	19.21	18.68	18.22	18.80	19.51	20.59	22.70	24.88	23.93	22.78	21.36	19.78
	SEA	20.40	20.12	19.73	20.74	21.01	21.45	23.48	25.43	25.05	23.85	22.84	22.18
	VPA	16.81	16.98	16.17	16.72	18.02	19.88	22.74	26.27	24.67	22.24	19.42	17.27
	VPS	24.07	23.75	23.13	24.58	25.02	25.74	29.12	32.57	31.88	29.69	27.93	26.88
	CLD	55.62	54.50	60.50	68.75	70.25	80.28	72.61	61.66	71.05	47.79	52.17	64.77
22 N 117 W	SPD	6.12	5.25	6.08	6.61	6.34	4.11	5.01	7.57	5.14	4.36	5.27	5.11
	AIR	18.61	18.25	18.01	18.92	18.85	20.82	22.45	24.29	24.69	22.22	20.57	20.62
	SEA	20.12	19.69	19.58	19.65	20.80	21.03	23.01	25.35	24.75	23.50	22.48	22.65
	VPA	16.70	16.60	15.98	16.29	16.76	19.85	23.82	24.52	25.31	19.92	19.94	19.11
	VPS	23.62	23.09	22.96	23.02	24.62	25.03	28.26	32.43	31.33	28.99	27.29	27.63
	CLD	57.89	54.89	72.72	69.07	73.33	88.75	71.09	64.28	72.65	61.76	62.50	58.08
22 N 118 W	SPD	5.58	6.34	5.34	6.80	5.62	4.95	5.81	4.33	7.00	5.72	5.99	5.68
	AIR	18.98	18.61	17.33	17.81	19.13	20.56	21.66	24.88	23.85	23.32	20.44	19.51
	SEA	20.52	19.63	19.33	19.32	20.50	21.41	22.29	25.20	24.24	23.66	22.65	21.81
	VPA	16.13	16.29	15.34	15.65	16.80	18.87	21.71	25.12	24.85	21.19	18.28	17.74
	VPS	24.23	23.00	22.52	22.57	24.28	25.68	26.96	32.26	30.37	29.35	27.56	26.29
	CLD	63.39	61.66	75.00	77.08	91.34	75.00	70.00	77.67	73.07	65.62	70.45	63.89
22 N 119 W	SPD	5.46	6.20	6.28	6.03	6.83	4.44	4.85	5.14	6.92	5.79	5.76	5.88
	AIR	19.58	19.50	18.02	18.79	18.82	20.59	22.13	24.46	23.27	22.26	22.04	20.58
	SEA	20.49	20.65	19.66	20.24	20.82	20.40	22.31	24.80	23.93	23.08	22.57	21.47
	VPA	17.46	18.70	15.37	15.99	16.59	19.04	21.90	25.78	23.49	19.66	20.85	17.24
	VPS	24.17	24.54	23.02	23.83	24.73	24.08	27.00	31.43	29.99	28.34	27.40	25.81
	CLD	50.96	63.28	80.00	71.42	55.35	86.60	90.62	56.94	76.38	69.53	75.52	65.17
22 N 120 W	SPD	5.44	4.87	6.13	6.40	5.66	4.86	4.89	5.66	5.11	5.61	5.40	5.48
	AIR	19.34	20.64	18.57	18.36	19.74	20.32	22.18	23.19	24.05	21.93	20.69	21.02
	SEA	20.64	20.78	19.61	19.63	20.44	21.92	22.41	23.74	24.85	22.90	22.41	22.33
	VPA	17.05	13.96	16.24	15.24	17.91	19.00	21.57	23.61	24.27	19.47	18.33	19.54
	VPS	24.44	24.72	22.89	22.94	24.08	26.41	27.23	29.41	31.61	28.13	27.19	27.16
	CLD	65.17	56.61	71.59	75.00	88.36	68.05	82.29	78.12	76.78	66.66	73.61	76.56

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
23 N	SPD	4.88	5.16	5.88	6.23	6.60	5.93	4.39	4.78	5.13	4.94	4.95	5.10
111 W	AIR	20.45	19.64	19.32	18.97	19.20	20.19	24.46	26.61	27.19	26.03	24.08	21.96
	SEA	22.00	20.76	20.05	19.44	19.51	20.22	24.29	26.92	27.82	27.04	25.61	23.78
	VPA	17.95	17.20	17.35	17.74	18.14	19.89	25.69	28.45	29.28	26.30	22.25	19.38
	VPS	26.56	24.62	23.59	22.74	22.89	23.93	30.68	35.74	37.59	35.93	33.00	29.61
	CLD	42.58	33.85	37.29	39.31	39.36	42.76	39.60	41.71	35.90	33.35	33.90	44.85
23 N	SPD	4.89	5.10	5.72	6.60	6.86	6.23	4.29	4.81	5.50	5.07	4.89	5.02
112 W	AIR	20.14	19.41	19.12	18.46	19.09	20.12	23.96	26.09	26.14	24.67	23.41	21.58
	SEA	22.01	20.55	20.04	19.42	19.29	20.18	23.86	26.21	26.79	26.06	24.70	23.34
	VPA	17.54	17.03	17.09	17.02	18.04	19.37	25.12	27.56	27.99	24.69	21.83	18.98
	VPS	26.56	24.31	23.56	22.67	22.49	23.80	29.78	34.20	35.44	33.91	31.30	28.80
	CLD	51.05	37.35	41.22	43.98	46.99	57.34	42.83	43.09	45.40	36.81	32.63	41.58
23 N	SPD	5.18	4.28	5.67	5.94	6.21	6.05	4.39	5.03	5.95	4.99	4.59	4.44
113 W	AIR	19.72	19.90	18.38	18.78	18.93	19.99	23.24	24.85	25.02	24.51	22.94	20.89
	SEA	21.08	21.05	20.08	19.85	19.51	20.23	23.21	25.17	25.53	25.50	24.39	22.47
	VPA	17.27	17.17	16.49	16.58	17.49	18.97	23.95	26.13	25.75	24.32	21.29	19.03
	VPS	25.08	25.02	23.60	23.23	22.78	23.81	28.64	32.18	32.87	32.74	30.66	27.33
	CLD	51.31	61.39	50.35	52.22	50.76	60.76	46.92	59.95	45.59	42.00	46.77	59.68
23 N	SPD	4.31	4.36	5.89	7.08	6.19	5.72	4.61	5.03	5.21	5.48	4.98	5.13
114 W	AIR	19.64	19.02	18.41	18.40	18.86	19.40	22.61	24.67	24.75	23.70	21.92	20.36
	SEA	20.66	20.25	19.86	19.44	19.38	19.83	23.10	24.97	25.44	24.55	23.54	21.68
	VPA	16.63	16.19	15.86	16.66	17.09	18.18	22.81	25.39	26.20	22.36	20.46	18.36
	VPS	24.47	23.86	23.26	22.66	22.60	23.22	28.42	31.76	32.70	31.03	29.12	26.03
	CLD	48.71	49.26	55.70	56.13	71.30	70.70	51.62	64.82	48.65	42.54	33.33	57.63
23 N	SPD	5.04	5.43	5.84	6.22	6.91	4.90	4.62	4.85	6.06	5.43	5.55	5.42
115 W	AIR	18.97	18.65	18.09	18.32	18.80	19.65	21.99	24.04	24.01	23.63	21.20	19.62
	SEA	19.94	19.91	19.58	19.66	19.83	20.35	22.17	25.04	24.77	24.08	23.09	21.06
	VPA	16.18	16.79	15.86	16.07	17.22	18.29	22.35	25.10	24.55	22.70	19.58	17.12
	VPS	23.37	23.42	22.86	22.97	23.23	23.96	26.86	31.90	31.41	30.09	28.40	25.07
	CLD	48.92	48.78	57.55	64.88	66.66	65.72	55.78	56.11	57.37	55.62	45.58	61.98
23 N	SPD	5.47	5.66	6.15	6.31	6.29	5.20	4.73	4.56	5.47	5.02	5.26	5.77
116 W	AIR	17.82	18.13	18.64	18.65	18.61	19.18	21.51	23.94	23.78	22.55	21.07	19.32
	SEA	19.80	18.93	19.39	19.81	19.88	20.12	22.23	24.32	24.19	23.58	22.51	21.23
	VPA	15.51	15.83	15.25	15.60	16.80	17.44	21.47	24.03	23.75	21.72	19.16	17.65
	VPS	23.18	21.93	22.59	23.20	23.29	23.69	26.93	30.50	31.38	29.23	27.34	25.34
	CLD	59.21	58.33	63.14	70.06	77.25	84.37	69.39	63.02	53.53	62.50	59.01	57.95
23 N	SPD	6.27	6.05	5.44	6.20	7.09	5.78	4.93	6.51	6.47	5.13	6.57	5.27
117 W	AIR	18.91	18.10	17.97	18.82	17.94	18.93	21.09	23.11	22.78	22.03	20.97	19.60
	SEA	19.93	18.78	18.83	19.57	19.41	20.20	21.91	24.59	24.01	23.21	22.64	21.04
	VPA	16.56	16.02	16.10	15.69	15.77	17.40	21.07	23.23	22.62	20.71	19.60	17.51
	VPS	23.34	21.80	21.83	22.87	22.60	23.75	26.35	30.98	30.03	28.51	27.61	25.08
	CLD	63.06	46.55	57.10	72.85	65.90	86.58	74.32	77.71	64.77	60.83	48.14	66.57
23 N	SPD	5.68	6.17	5.17	6.65	6.37	6.46	5.25	5.43	6.29	5.66	5.03	4.83
118 W	AIR	18.29	17.78	17.82	18.42	17.78	19.47	20.98	23.50	23.22	22.36	20.41	18.98
	SEA	19.55	18.87	18.91	19.18	19.24	20.32	21.97	23.89	23.99	23.66	21.40	20.46
	VPA	15.62	15.78	14.45	15.62	15.60	17.79	20.76	22.87	23.09	19.87	17.99	17.12
	VPS	22.84	21.90	21.99	22.33	22.44	23.93	26.54	29.73	29.93	29.36	25.58	24.16
	CLD	53.36	58.00	67.61	74.58	75.00	86.50	72.39	79.86	66.34	63.58	53.80	68.75
23 N	SPD	6.01	6.08	5.35	6.50	5.86	5.71	5.33	5.31	6.66	5.12	6.43	6.69
119 W	AIR	17.88	17.35	17.23	17.73	18.15	19.54	21.05	23.13	22.35	21.29	21.31	19.76
	SEA	19.66	18.65	18.67	19.24	19.42	20.76	22.05	23.33	23.31	22.33	22.09	21.16
	VPA	14.99	15.49	15.20	15.17	15.95	17.71	21.26	23.18	20.80	19.49	18.87	17.60
	VPS	22.99	21.54	21.67	22.37	22.62	24.62	26.62	28.72	28.70	27.12	26.63	25.24
	CLD	57.89	64.22	61.25	75.00	75.00	80.41	84.65	71.66	85.41	45.45	61.60	55.35
23 N	SPD	6.63	5.33	4.94	7.07	4.87	4.79	6.43	4.63	6.97	5.34	5.43	5.83
120 W	AIR	18.18	17.18	18.39	18.33	18.93	19.86	22.04	23.50	22.20	22.35	20.26	19.50
	SEA	19.55	18.27	19.23	19.34	20.23	20.83	22.24	23.93	23.57	22.85	22.07	21.55
	VPA	15.50	14.50	14.89	15.18	16.53	18.18	23.39	24.85	21.15	20.95	17.03	16.44
	VPS	22.80	21.08	22.36	22.49	23.89	24.65	26.98	29.77	29.14	27.96	26.70	25.89
	CLD	62.50	66.44	69.23	72.65	76.66	78.84	82.29	74.26	78.75	53.84	73.36	69.64

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
24 N 111 W	SPD	4.58	5.17	5.90	6.30	6.61	5.95	4.58	5.07	5.07	4.97	4.95	4.67
	AIR	19.99	19.19	18.72	18.46	18.37	19.41	23.85	26.08	26.99	25.52	23.50	21.54
	SEA	21.64	20.28	19.34	18.79	18.74	19.05	23.60	26.52	27.54	26.88	25.26	23.43
	VPA	17.53	16.80	16.81	17.27	17.63	19.16	24.85	27.76	28.95	25.66	21.82	18.77
	VPS	25.99	23.91	22.58	21.82	21.80	22.22	29.53	34.97	37.00	35.62	32.33	28.98
	CLD	40.55	32.78	34.91	37.31	39.96	37.81	37.59	41.11	33.92	30.50	32.79	41.62
24 N 112 W	SPD	4.60	4.90	5.76	6.20	6.57	5.86	4.37	4.86	5.18	5.06	4.77	4.61
	AIR	19.65	18.82	18.43	18.10	18.27	19.02	23.03	25.35	26.20	24.85	23.00	21.09
	SEA	21.06	19.60	18.77	18.24	18.04	18.55	22.67	25.62	26.71	25.95	24.39	22.85
	VPA	17.03	16.44	16.57	16.79	17.21	18.53	23.94	26.78	27.78	24.88	21.05	18.12
	VPS	25.09	22.92	21.78	21.07	20.81	21.51	27.82	33.16	35.27	33.76	30.72	28.00
	CLD	44.06	38.00	37.94	42.63	43.78	47.51	39.86	41.98	33.69	32.85	36.43	44.16
24 N 113 W	SPD	4.81	5.55	6.15	6.91	6.59	6.26	5.09	4.96	5.55	5.50	4.61	5.00
	AIR	19.43	19.03	18.05	18.03	18.31	19.20	22.30	24.48	25.17	24.17	22.40	20.76
	SEA	20.78	19.94	18.56	18.39	18.29	19.08	22.32	24.66	25.66	25.28	23.56	22.19
	VPA	16.55	16.43	15.98	16.20	17.11	18.39	23.09	25.58	26.69	23.93	20.46	17.72
	VPS	24.65	23.42	21.50	21.26	21.11	22.17	27.14	31.27	33.17	32.40	29.23	26.90
	CLD	47.26	43.88	44.34	46.10	55.31	59.41	44.80	47.50	40.03	38.04	39.77	42.03
24 N 114 W	SPD	4.88	6.17	6.01	6.10	5.98	6.36	4.83	4.82	5.70	5.08	5.61	6.42
	AIR	17.96	18.46	18.29	18.07	18.28	19.10	21.19	24.47	24.17	22.92	21.71	19.64
	SEA	19.39	19.82	18.64	18.35	18.73	19.42	21.46	24.20	24.62	23.49	23.40	20.59
	VPA	15.81	15.30	16.28	16.26	17.06	18.75	21.42	25.50	25.01	22.37	20.67	17.41
	VPS	22.60	23.17	21.59	21.22	21.65	22.66	25.81	30.38	31.18	29.09	28.87	24.42
	CLD	44.75	52.67	64.06	65.51	67.26	78.88	53.43	53.48	47.50	48.50	52.57	41.44
24 N 115 W	SPD	5.37	5.47	6.10	7.29	6.34	6.02	6.24	4.81	5.92	4.99	5.25	5.41
	AIR	18.07	18.31	17.54	18.13	18.52	19.68	21.07	23.39	23.88	22.46	21.48	19.99
	SEA	18.62	18.93	18.33	18.31	18.73	19.73	21.42	23.95	24.05	23.53	22.45	20.36
	VPA	15.44	15.69	15.46	15.95	16.30	18.50	20.56	23.88	24.63	21.47	19.85	17.24
	VPS	21.57	21.97	21.17	21.18	21.69	23.17	25.65	29.81	30.03	29.16	27.34	24.07
	CLD	52.77	56.94	62.50	65.47	67.30	66.30	57.18	56.39	42.50	40.50	48.68	58.33
24 N 116 W	SPD	5.51	5.10	6.82	6.83	7.28	5.58	4.63	5.02	6.04	5.75	5.02	5.89
	AIR	17.82	17.67	17.50	18.00	18.53	19.48	21.61	23.73	22.92	21.84	20.48	19.21
	SEA	19.11	19.11	18.77	18.55	19.19	19.70	21.87	23.83	23.38	22.93	21.72	20.21
	VPA	15.91	15.08	15.04	15.84	16.76	18.10	20.80	24.18	23.20	19.83	18.51	16.77
	VPS	22.17	22.22	21.74	21.47	22.28	23.03	26.38	29.69	28.86	28.09	26.11	23.79
	CLD	50.00	56.78	54.51	66.75	72.15	76.45	64.68	65.48	55.63	50.23	48.50	60.52
24 N 117 W	SPD	5.55	6.04	6.33	6.89	6.08	5.93	4.72	4.85	5.52	5.12	5.30	4.96
	AIR	17.14	17.43	17.96	17.57	18.25	19.36	21.34	22.57	22.69	22.17	20.42	18.78
	SEA	18.57	18.32	18.93	18.29	19.04	19.65	21.43	23.35	23.70	22.80	21.65	19.80
	VPA	15.02	15.51	14.30	15.15	16.17	16.93	20.83	22.97	22.17	20.80	18.40	16.34
	VPS	21.46	21.13	21.92	21.11	22.09	22.93	25.72	28.83	29.41	27.87	25.98	23.22
	CLD	57.23	66.07	61.20	66.25	65.94	74.79	70.31	61.63	63.20	51.20	61.07	57.40
24 N 118 W	SPD	5.21	5.92	5.90	6.89	6.25	4.60	4.83	4.86	5.81	5.33	5.25	5.92
	AIR	17.30	17.45	17.60	17.51	18.30	19.63	20.80	23.00	22.65	21.68	20.19	17.99
	SEA	18.77	18.58	18.21	18.67	19.33	19.78	21.54	23.65	23.12	22.75	21.76	20.00
	VPA	14.66	15.46	14.67	14.63	16.04	17.42	20.08	23.43	22.44	20.22	17.52	14.98
	VPS	21.71	21.49	20.98	21.57	22.50	23.14	25.81	29.29	28.42	27.75	26.15	23.47
	CLD	76.08	68.12	68.75	74.24	77.16	84.88	71.22	73.21	67.61	68.50	60.05	63.23
24 N 119 W	SPD	5.11	6.76	5.93	6.29	6.78	5.80	5.22	5.86	5.93	5.49	5.74	4.83
	AIR	16.74	17.34	16.81	18.24	17.92	19.26	20.95	23.06	22.11	21.05	19.94	18.21
	SEA	18.37	18.36	18.43	18.83	19.26	19.55	21.54	23.67	23.31	22.54	21.29	19.79
	VPA	15.04	15.50	14.21	15.75	15.85	17.23	20.29	23.40	21.30	19.05	17.35	15.51
	VPS	21.15	21.20	21.28	21.83	22.41	22.91	25.80	29.44	28.75	27.37	25.36	23.16
	CLD	67.85	65.35	64.40	77.74	72.30	86.11	83.05	78.92	69.58	66.28	65.32	68.42
24 N 120 W	SPD	5.41	5.79	5.92	6.25	6.00	5.12	5.66	6.06	7.35	5.92	5.00	5.38
	AIR	17.96	17.44	17.15	17.73	18.04	19.46	19.87	21.88	22.20	21.38	19.73	18.38
	SEA	18.84	18.40	18.29	18.87	18.91	20.51	20.65	22.54	22.52	22.30	21.42	20.02
	VPA	15.65	15.38	14.42	14.49	15.15	17.98	18.97	20.83	20.97	19.06	16.94	15.91
	VPS	21.86	21.23	21.08	21.84	21.90	24.30	24.42	27.43	27.37	27.06	25.57	23.49
	CLD	59.67	57.97	69.23	74.26	75.32	89.50	85.08	72.82	72.50	65.32	65.54	69.93

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
25 N 113 W	SPD	4.75	5.49	6.19	6.51	6.61	6.02	4.96	5.03	5.44	5.19	4.95	4.91
	AIR	18.86	18.32	17.62	17.61	17.68	18.68	21.73	23.97	24.84	23.62	21.74	20.10
	SEA	19.99	19.03	18.07	17.66	17.52	18.25	21.32	24.19	25.26	24.77	23.03	21.69
	VPA	16.16	15.83	15.60	16.23	16.65	18.08	22.34	25.11	26.02	23.36	19.72	17.34
	VPS	23.49	22.12	20.83	20.30	20.10	21.06	25.56	30.46	32.43	31.47	28.31	26.10
	CLD	43.75	39.20	41.48	44.97	48.26	50.12	42.87	41.90	32.41	31.72	38.19	42.32
25 N 114 W	SPD	5.06	5.73	7.28	6.61	7.21	6.80	5.35	5.31	5.71	5.62	5.63	5.39
	AIR	18.51	17.72	17.07	17.36	17.90	18.61	21.07	23.22	23.76	22.56	21.55	19.42
	SEA	19.57	18.47	17.87	17.62	17.62	18.32	21.09	23.12	24.09	23.71	22.52	20.85
	VPA	16.55	15.06	15.13	15.75	16.63	17.75	21.33	24.15	24.72	21.78	19.81	16.60
	VPS	22.91	21.35	20.57	20.23	20.22	21.12	25.17	28.44	30.20	29.48	27.46	24.80
	CLD	44.83	45.44	42.58	50.78	53.90	63.17	52.83	50.69	39.47	36.10	38.51	41.11
25 N 115 W	SPD	6.69	5.27	6.15	6.38	6.47	6.49	5.35	5.00	6.14	5.40	4.79	5.42
	AIR	17.83	18.25	17.17	17.60	17.86	18.09	20.88	23.16	23.12	21.88	20.63	19.36
	SEA	18.95	18.26	17.77	18.16	18.04	18.36	20.84	23.17	22.91	22.61	21.87	20.35
	VPA	16.42	15.50	15.01	15.93	16.59	17.26	20.77	23.69	23.47	20.23	19.29	17.32
	VPS	21.99	21.06	20.46	20.91	20.74	21.19	24.78	28.54	28.08	27.58	26.40	24.09
	CLD	48.75	49.50	51.72	66.07	59.09	71.35	63.97	59.31	49.09	56.12	42.50	44.79
25 N 116 W	SPD	5.70	5.35	6.49	5.25	6.85	5.98	4.71	4.93	5.71	5.61	4.91	6.52
	AIR	17.41	17.13	17.82	17.44	17.42	18.47	20.81	23.11	23.06	21.28	20.14	18.56
	SEA	18.30	18.29	18.08	17.46	18.04	18.38	20.85	23.22	23.52	22.22	20.97	20.00
	VPA	14.92	14.95	14.76	15.18	15.83	17.30	20.56	23.11	23.13	19.68	18.43	17.09
	VPS	20.69	21.06	20.83	20.03	20.79	21.19	24.71	28.61	29.11	26.89	24.88	23.45
	CLD	50.00	38.12	48.80	66.44	66.40	79.31	63.17	67.56	56.64	58.12	41.34	47.22
25 N 117 W	SPD	5.19	6.02	6.28	6.05	6.59	6.04	5.53	4.77	5.49	5.92	5.00	5.58
	AIR	16.84	17.34	17.27	16.88	18.02	18.78	21.00	22.35	22.34	21.29	20.27	18.40
	SEA	17.90	17.93	18.00	17.87	18.32	18.77	20.88	23.02	22.63	22.00	21.10	19.48
	VPA	15.02	14.75	16.04	14.67	16.06	17.49	20.13	22.35	22.28	19.45	18.41	16.61
	VPS	20.57	20.61	20.75	20.53	21.11	21.78	24.76	28.21	27.56	26.52	25.08	22.74
	CLD	42.26	64.67	55.00	58.45	76.27	81.94	69.79	70.75	54.86	53.71	55.46	43.75
25 N 118 W	SPD	5.44	5.29	6.74	7.29	6.93	5.50	4.72	5.39	5.38	5.14	5.95	5.45
	AIR	17.12	17.58	17.29	17.19	18.10	18.84	20.50	22.28	21.77	21.10	19.70	17.96
	SEA	18.09	18.02	17.73	17.75	18.40	19.34	20.79	22.88	22.36	22.20	21.03	19.38
	VPA	14.89	15.29	14.99	15.04	15.82	17.58	19.43	21.98	20.85	19.16	18.06	15.31
	VPS	20.84	20.71	20.35	20.38	21.21	22.50	24.66	28.00	27.11	26.87	25.00	22.58
	CLD	54.16	52.60	54.62	64.93	72.36	82.90	71.87	74.07	69.47	55.46	62.50	42.85
25 N 119 W	SPD	6.14	5.43	5.56	7.43	6.46	5.70	5.17	5.06	6.18	5.47	5.71	5.39
	AIR	17.02	17.09	16.65	17.20	17.57	18.80	19.57	21.76	21.26	21.23	19.42	17.78
	SEA	18.53	17.55	17.55	17.94	18.49	19.10	20.80	22.42	22.34	22.21	21.16	19.28
	VPA	14.94	14.72	14.52	14.46	15.35	16.33	18.85	21.53	20.35	19.50	17.42	15.59
	VPS	21.41	20.13	20.10	20.60	21.33	22.16	24.65	27.23	27.07	26.82	25.19	22.39
	CLD	58.33	72.22	70.06	65.38	68.51	83.00	84.55	79.16	70.28	50.23	53.12	67.70
25 N 120 W	SPD	6.03	5.77	5.09	6.14	6.42	5.58	4.84	4.43	5.25	5.50	5.62	5.94
	AIR	16.85	17.10	17.19	17.26	18.01	18.88	19.80	21.94	21.39	20.78	19.78	17.99
	SEA	18.71	18.10	17.61	18.43	18.86	19.15	20.76	22.57	21.84	22.07	20.99	19.61
	VPA	14.90	14.76	14.56	14.41	15.55	16.62	19.07	21.06	19.78	19.10	17.60	14.68
	VPS	21.62	20.82	20.19	21.26	21.82	22.23	24.56	27.50	26.28	26.64	24.92	22.93
	CLD	65.47	61.29	67.81	81.11	81.83	83.12	84.23	67.61	73.57	57.81	67.85	69.39
25 N 121 W	SPD	5.90	5.49	5.88	6.14	5.98	5.82	5.21	6.34	6.19	5.86	6.03	5.66
	AIR	17.15	16.55	16.72	17.13	17.60	19.01	19.41	21.14	21.33	21.33	19.53	18.58
	SEA	18.60	17.70	18.29	18.13	18.99	19.51	20.37	21.52	22.20	22.22	21.09	19.67
	VPA	14.13	14.53	13.81	14.96	15.16	17.31	18.17	20.23	20.69	19.19	16.39	15.88
	VPS	21.48	20.34	21.13	20.85	22.03	22.82	24.04	25.80	26.86	26.88	25.08	22.98
	CLD	70.50	75.00	69.16	79.16	75.00	85.71	83.92	81.61	77.85	59.21	69.71	69.31
25 N 122 W	SPD	4.61	6.29	5.81	5.96	5.43	5.38	5.82	5.20	7.05	5.24	6.13	6.02
	AIR	17.88	17.50	17.18	17.73	18.16	18.64	19.90	20.96	21.19	20.79	19.64	17.82
	SEA	18.79	18.24	18.31	18.52	18.85	19.48	20.33	22.06	22.35	21.59	21.46	19.54
	VPA	15.19	15.74	14.11	15.08	15.14	17.12	18.91	20.60	19.86	17.93	16.73	15.64
	VPS	21.75	21.02	21.10	21.40	21.85	22.82	23.90	26.61	27.11	25.84	25.62	22.77
	CLD	62.98	69.75	70.56	74.14	78.04	81.77	88.28	83.92	63.88	72.22	75.92	74.34

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
26 N 113 W	SPD	5.41	5.30	6.21	6.73	6.65	6.38	4.80	5.29	5.59	5.74	5.22	5.21
	AIR	18.32	17.81	17.21	16.98	17.16	18.05	21.07	23.00	23.63	22.78	21.36	19.48
	SEA	19.59	18.43	17.62	17.06	17.14	17.60	20.70	23.20	24.47	24.15	22.62	21.15
	VPA	15.92	15.35	15.39	15.72	16.13	17.57	21.79	23.97	24.63	22.09	19.13	16.64
	VPS	22.92	21.31	20.24	19.53	19.64	20.22	24.62	28.66	30.94	30.35	27.61	25.27
	CLD	40.52	37.07	38.19	41.88	39.34	41.62	38.17	36.33	32.87	30.42	35.38	37.62
26 N 114 W	SPD	5.26	5.78	6.56	6.76	6.95	6.63	5.48	5.42	5.74	5.67	5.38	5.44
	AIR	17.76	17.40	16.85	16.89	17.22	17.96	20.45	22.38	23.20	22.22	20.59	18.95
	SEA	18.87	18.12	17.30	16.97	17.12	17.70	20.22	22.43	23.61	23.18	21.69	20.36
	VPA	15.22	14.92	14.91	15.34	16.07	17.30	20.80	23.20	24.09	21.46	18.54	16.16
	VPS	21.91	20.89	19.84	19.41	19.61	20.36	23.86	27.39	29.37	28.61	26.10	24.07
	CLD	41.31	39.76	40.47	42.13	44.33	43.55	40.75	34.54	32.32	29.66	37.23	39.48
26 N 115 W	SPD	5.72	6.10	6.87	6.70	7.78	7.12	5.61	5.25	6.32	5.70	5.22	5.40
	AIR	17.77	17.15	16.87	16.65	17.39	18.17	20.10	22.54	22.46	21.71	20.32	18.22
	SEA	18.09	17.56	16.85	17.15	17.53	17.99	20.16	22.23	22.85	22.49	21.11	19.52
	VPA	15.71	14.79	14.83	15.84	16.08	16.72	20.30	22.90	23.42	20.83	18.75	15.90
	VPS	20.87	20.16	19.25	19.63	20.11	20.68	23.75	26.96	27.99	27.42	25.16	22.84
	CLD	48.23	37.00	47.27	57.60	54.38	59.31	50.68	53.21	48.23	39.18	43.53	44.23
26 N 116 W	SPD	5.89	6.98	7.33	8.07	6.90	6.39	5.14	4.63	6.36	5.21	5.82	5.86
	AIR	17.12	16.67	16.67	17.01	17.43	18.40	20.47	21.97	21.89	21.15	20.17	18.27
	SEA	17.90	17.58	17.30	17.24	17.66	18.05	20.23	22.39	22.33	21.80	20.82	19.07
	VPA	15.62	14.40	13.90	14.98	15.82	16.96	20.13	22.13	21.96	20.09	18.60	17.81
	VPS	20.57	20.19	19.80	19.72	20.26	20.79	23.83	27.15	27.19	26.23	24.69	22.18
	CLD	52.60	43.75	55.20	56.08	70.83	75.43	64.35	66.56	51.78	44.03	30.68	51.25
26 N 117 W	SPD	4.76	6.54	8.65	6.37	5.03	5.38	5.05	5.21	5.55	4.79	5.39	5.86
	AIR	16.31	16.82	17.07	16.59	17.43	18.23	19.95	22.40	21.04	20.94	19.10	17.54
	SEA	17.94	17.42	17.11	17.50	17.98	18.37	19.93	22.24	21.76	21.18	20.13	18.81
	VPA	14.22	14.42	15.27	14.96	15.43	16.81	18.94	22.46	20.66	18.56	16.76	15.44
	VPS	20.67	19.94	19.58	20.06	20.68	21.20	23.38	26.96	26.12	25.21	23.64	21.78
	CLD	51.04	31.25	25.00	66.93	76.78	75.00	73.05	67.81	56.25	58.46	56.00	52.50
26 N 118 W	SPD	5.27	6.32	6.28	5.79	5.99	6.22	4.90	5.31	6.18	5.72	4.94	5.66
	AIR	16.42	16.61	16.01	17.04	17.24	18.20	19.87	21.92	21.11	20.40	18.93	17.43
	SEA	17.40	17.33	16.90	17.30	17.81	18.25	19.79	21.79	21.75	21.28	19.72	18.01
	VPA	15.06	13.94	13.45	15.28	14.28	16.19	18.62	21.44	20.61	18.67	17.67	15.69
	VPS	19.92	19.82	19.33	19.83	20.43	21.01	23.17	26.20	26.12	25.35	23.06	20.78
	CLD	62.00	38.69	61.60	69.56	77.82	88.70	89.45	73.02	64.50	56.04	43.75	55.76
26 N 119 W	SPD	5.78	6.12	5.52	6.98	6.54	5.73	5.40	4.97	5.54	5.29	5.56	5.54
	AIR	16.26	16.28	17.19	15.98	17.73	18.55	19.48	20.80	21.52	19.94	18.98	18.15
	SEA	17.50	17.51	17.27	17.06	17.71	18.58	19.98	21.45	21.68	21.47	20.13	19.01
	VPA	14.29	14.26	14.41	14.14	15.80	16.46	18.77	20.27	19.81	18.02	16.41	16.15
	VPS	20.06	20.06	19.75	19.50	20.32	21.49	23.44	25.63	26.02	25.71	23.61	22.05
	CLD	50.00	60.71	63.81	52.91	80.90	86.11	81.90	64.64	73.86	52.00	67.96	53.67
26 N 120 W	SPD	5.29	6.33	6.57	7.17	6.49	5.03	5.66	5.18	5.96	5.31	5.11	5.62
	AIR	17.05	17.01	16.67	16.83	17.27	18.41	19.20	21.00	20.94	20.36	19.56	17.95
	SEA	17.64	17.53	17.64	17.16	18.09	19.04	19.83	21.72	21.77	21.51	20.59	18.93
	VPA	15.49	13.55	14.85	14.50	15.31	16.43	18.19	20.33	20.01	18.28	17.62	15.49
	VPS	20.22	20.04	20.20	19.63	20.81	22.11	23.20	26.07	26.15	25.75	24.38	21.96
	CLD	58.92	71.87	60.18	67.27	68.99	77.55	87.23	80.44	70.83	64.72	70.31	62.91
26 N 121 W	SPD	5.67	4.28	5.55	6.36	6.41	5.70	5.88	5.72	6.42	5.53	5.97	6.70
	AIR	17.50	16.77	16.17	16.70	17.64	18.16	19.24	20.80	20.83	20.41	18.69	17.54
	SEA	18.44	17.71	17.46	17.61	18.45	18.80	20.29	21.24	21.41	21.09	20.52	18.92
	VPA	14.83	14.57	14.24	14.27	15.06	16.28	18.56	20.02	19.13	18.45	16.95	14.80
	VPS	21.26	20.30	20.00	20.18	21.35	21.75	23.86	25.39	25.56	25.05	24.19	22.03
	CLD	61.36	62.50	78.44	65.48	74.72	83.68	74.35	78.38	71.13	57.77	69.64	67.96
26 N 122 W	SPD	5.42	5.56	6.21	6.25	6.58	5.13	5.42	5.65	6.28	5.26	4.88	5.93
	AIR	16.81	16.60	16.50	16.54	17.54	18.33	19.38	20.71	20.76	20.68	19.19	18.00
	SEA	18.73	18.26	17.99	17.96	18.31	18.75	20.25	21.02	21.77	21.19	20.87	19.45
	VPA	14.65	14.15	13.87	13.92	14.99	16.51	17.75	20.75	18.85	18.38	17.11	15.44
	VPS	21.68	21.03	20.66	20.62	21.10	21.70	23.83	24.98	26.17	25.23	24.77	22.66
	CLD	72.39	68.75	71.25	65.35	79.72	81.64	86.00	82.44	77.81	69.47	65.27	75.00

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
27 N 114 W	SPD	5.45	5.78	6.15	6.43	6.96	6.46	5.53	5.33	5.67	5.53	5.13	5.29
	AIR	17.32	16.83	16.29	16.45	16.74	17.34	19.97	21.90	22.69	21.65	20.17	18.79
	SEA	18.55	17.56	16.70	16.53	16.65	17.01	19.44	21.63	23.26	22.79	21.36	20.02
	VPA	14.57	14.48	14.25	15.24	15.67	16.87	20.14	22.35	23.21	20.61	18.04	15.79
	VPS	21.48	20.16	19.09	18.89	19.03	19.50	22.74	26.10	28.77	27.96	25.59	23.60
	CLD	39.54	39.25	37.56	39.52	37.59	37.21	38.05	31.19	31.33	31.31	33.47	39.14
27 N 115 W	SPD	5.48	6.16	6.68	6.87	6.96	6.91	5.89	5.73	6.03	6.02	5.63	5.91
	AIR	17.03	16.60	16.19	16.30	16.79	17.35	19.59	21.34	21.95	21.02	19.73	18.03
	SEA	17.86	17.08	16.31	16.33	16.61	17.15	19.28	21.20	22.21	21.78	20.45	19.10
	VPA	14.67	14.41	14.33	14.86	15.50	16.58	19.59	21.55	22.11	19.98	17.75	15.21
	VPS	20.57	19.57	18.62	18.63	18.99	19.66	22.52	25.36	26.97	26.28	24.21	22.26
	CLD	40.17	39.41	42.63	42.41	46.66	49.95	44.75	37.62	35.70	34.07	36.07	39.03
27 N 116 W	SPD	6.21	7.04	6.24	6.12	7.22	7.10	5.70	5.08	6.05	5.90	5.41	6.42
	AIR	16.72	16.37	16.40	16.50	16.76	18.12	19.59	21.44	21.93	20.54	20.06	17.54
	SEA	17.30	16.80	16.48	16.61	17.02	18.08	19.74	21.38	21.90	21.13	20.15	19.01
	VPA	14.92	14.05	14.35	14.74	14.92	16.99	19.31	21.69	22.07	19.93	18.27	15.86
	VPS	19.80	19.19	18.79	18.97	19.49	20.83	23.16	25.58	26.41	25.24	23.72	22.08
	CLD	51.29	35.03	55.32	64.83	72.94	76.96	76.08	57.52	54.55	49.78	42.36	44.23
27 N 117 W	SPD	6.32	5.54	6.72	6.84	6.90	6.08	5.39	4.96	5.68	6.15	5.60	6.04
	AIR	16.37	16.24	16.39	16.57	17.12	17.66	19.86	21.52	20.92	20.10	19.04	17.54
	SEA	16.82	16.97	16.31	16.77	17.76	18.16	19.81	21.50	21.59	20.71	19.97	18.07
	VPA	15.00	14.01	13.89	14.52	15.72	16.71	19.41	21.35	20.39	18.85	17.24	15.83
	VPS	19.18	19.41	18.60	19.14	20.37	20.92	23.22	25.74	25.87	24.51	23.40	20.87
	CLD	63.54	53.33	60.41	67.81	75.56	79.08	71.18	74.31	62.69	67.15	44.07	43.42
27 N 118 W	SPD	5.39	6.79	7.61	6.58	5.13	5.62	5.23	5.62	6.65	4.36	5.62	6.53
	AIR	16.52	16.40	16.49	16.14	17.03	17.88	19.58	21.02	20.94	19.98	18.92	18.15
	SEA	17.10	17.16	16.86	17.15	17.45	17.54	19.50	21.05	21.24	21.01	19.59	18.67
	VPA	14.92	13.90	14.82	14.76	15.21	16.00	18.58	20.24	20.27	18.11	17.46	16.54
	VPS	19.56	19.61	19.25	19.61	19.97	20.10	22.75	25.02	25.32	24.93	22.86	21.63
	CLD	64.88	59.16	55.83	69.16	79.43	80.48	78.07	76.70	59.30	57.00	55.09	64.84
27 N 119 W	SPD	5.28	5.86	5.97	7.14	5.50	5.34	4.89	4.54	5.58	5.02	4.79	5.79
	AIR	16.19	16.68	16.85	16.71	17.05	18.15	19.12	20.33	21.12	19.96	19.04	16.88
	SEA	17.41	17.15	17.13	17.33	17.83	18.13	19.03	20.21	20.82	20.84	19.61	18.14
	VPA	15.33	14.86	14.69	14.40	14.82	16.82	17.82	18.74	19.15	18.29	17.01	14.41
	VPS	19.93	19.57	19.55	19.83	20.53	20.82	22.07	23.74	24.67	24.68	22.91	20.93
	CLD	45.00	43.75	65.00	60.93	79.31	76.29	82.81	76.25	64.33	63.63	60.79	67.70
27 N 120 W	SPD	6.00	6.17	5.85	7.00	6.36	4.99	5.34	4.88	5.30	5.41	5.83	4.54
	AIR	16.67	16.38	15.81	16.31	17.15	17.85	18.51	21.04	20.43	19.78	18.98	17.31
	SEA	17.92	17.72	17.30	16.87	17.53	17.44	19.13	20.71	21.11	21.17	19.63	18.66
	VPA	14.67	15.04	13.13	13.75	14.59	15.56	17.78	20.08	18.88	17.29	17.09	14.02
	VPS	20.60	20.32	19.80	19.28	20.09	19.99	22.20	24.52	25.22	25.25	22.88	21.56
	CLD	42.85	67.04	76.97	59.02	84.82	91.14	83.17	72.72	65.23	66.84	62.50	64.58
27 N 121 W	SPD	5.86	4.54	6.63	7.17	6.02	4.66	5.10	5.44	5.10	5.01	5.28	6.43
	AIR	16.32	16.74	17.21	16.17	17.90	17.91	18.77	19.99	20.61	19.94	18.93	16.38
	SEA	17.32	17.35	17.40	16.98	17.49	18.58	19.36	20.55	21.07	21.10	19.60	18.29
	VPA	14.70	14.62	14.43	14.46	15.38	15.72	17.93	19.35	19.03	17.61	16.27	14.59
	VPS	19.85	19.82	19.90	19.42	20.03	21.53	22.52	24.22	25.04	25.09	22.84	21.10
	CLD	53.12	56.61	54.41	62.86	72.36	88.97	84.25	66.37	72.82	62.50	52.71	50.00
27 N 122 W	SPD	5.08	6.32	6.08	6.71	6.05	6.64	6.40	6.31	5.75	4.92	6.21	5.58
	AIR	16.00	16.01	16.63	16.55	17.56	17.33	19.16	20.20	20.32	19.61	19.28	17.49
	SEA	18.04	17.87	16.97	17.09	18.15	18.46	19.67	20.34	20.90	21.03	19.90	18.83
	VPA	14.03	13.57	14.67	14.05	14.98	15.62	17.85	19.60	19.12	16.45	17.57	14.91
	VPS	20.75	20.51	19.38	19.53	20.91	21.30	23.02	24.00	24.78	24.99	23.29	21.84
	CLD	58.85	75.00	66.66	66.34	71.73	84.44	86.28	67.37	73.43	64.28	67.12	66.07
27 N 123 W	SPD	5.46	5.93	6.15	6.77	6.15	6.25	5.99	5.63	5.35	5.36	6.27	6.41
	AIR	16.25	16.59	16.49	16.25	17.03	18.11	18.66	19.91	20.45	20.09	18.42	17.45
	SEA	17.72	17.44	17.48	17.58	17.54	18.94	19.61	20.28	20.86	20.98	19.93	18.42
	VPA	14.41	15.32	14.35	14.17	14.94	16.43	17.25	18.77	18.83	18.05	17.01	15.21
	VPS	20.37	19.98	20.01	20.14	20.10	21.97	22.88	23.83	24.74	24.89	23.34	21.35
	CLD	74.30	62.50	71.34	65.48	80.70	80.59	82.03	77.45	75.00	64.31	69.07	52.66

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
28 N	SPD	5.83	6.34	6.82	6.68	6.74	6.47	5.67	5.31	5.86	5.83	5.77	5.84
115 W	AIR	16.79	16.18	16.08	16.22	16.96	17.38	19.14	20.81	21.40	20.36	18.93	17.74
	SEA	17.45	16.46	16.00	15.94	16.27	16.87	18.72	20.40	21.59	21.16	19.82	18.84
	VPA	14.17	13.92	13.90	14.63	15.24	16.23	18.92	20.65	21.28	19.17	17.08	15.24
	VPS	20.03	18.80	18.26	18.19	18.59	19.31	21.72	24.16	25.98	25.31	23.29	21.90
	CLD	39.94	41.96	49.02	53.16	59.03	64.91	55.64	45.21	44.56	42.83	38.47	43.69
28 N	SPD	5.72	6.16	6.48	6.65	6.64	6.20	5.70	5.36	5.55	5.61	5.70	6.10
116 W	AIR	16.22	15.84	15.96	16.33	16.87	17.48	19.32	20.84	21.16	20.13	18.65	17.08
	SEA	16.92	16.32	15.92	16.15	16.63	17.18	18.95	20.70	21.20	20.74	19.29	17.99
	VPA	14.41	13.96	14.16	14.67	15.29	16.44	18.92	20.58	20.97	18.97	16.83	14.66
	VPS	19.37	18.63	18.16	18.42	18.99	19.65	22.01	24.55	25.31	24.62	22.49	20.75
	CLD	46.40	47.05	52.86	59.19	69.63	81.76	74.33	64.71	56.35	48.58	44.34	45.96
28 N	SPD	5.50	5.39	6.15	6.52	6.47	5.56	5.25	5.31	5.08	5.57	4.47	7.27
117 W	AIR	16.52	15.95	15.94	16.61	17.52	17.44	19.53	21.08	21.39	19.78	18.90	17.08
	SEA	16.76	16.64	16.01	16.53	17.07	17.34	19.42	21.11	21.16	20.11	18.84	17.70
	VPA	14.95	14.09	13.93	14.98	15.23	16.14	19.39	21.27	20.98	18.48	17.62	15.35
	VPS	19.12	18.99	18.23	18.86	19.52	19.87	22.64	25.14	25.19	23.60	21.87	20.28
	CLD	48.52	54.32	64.75	59.61	71.13	88.58	78.43	69.79	66.74	48.69	48.02	50.08
28 N	SPD	4.92	5.73	5.21	7.69	6.43	6.30	4.79	5.26	5.82	5.14	5.86	6.38
118 W	AIR	16.01	16.12	15.42	16.03	16.75	17.62	19.46	20.05	20.25	19.37	19.24	16.94
	SEA	16.28	16.52	16.64	16.70	17.22	17.96	19.10	20.80	20.66	20.20	19.65	17.68
	VPA	13.81	14.34	13.22	14.31	14.55	16.55	18.69	19.91	18.87	17.61	17.14	15.68
	VPS	18.54	18.83	18.98	19.04	19.77	20.63	22.23	24.69	24.48	23.72	22.93	20.29
	CLD	62.00	60.62	45.00	64.77	75.41	81.0[illegible]	75.00	62.25	69.59	63.97	63.88	57.81
28 N	SPD	4.86	5.66	5.68	6.73	6.08	6.14	5.57	5.72	6.88	4.91	5.78	6.69
119 W	AIR	16.37	16.01	16.09	16.09	16.73	17.37	19.07	19.94	19.68	19.13	18.74	16.95
	SEA	16.64	16.54	16.30	16.76	17.17	17.85	19.34	20.17	20.82	19.70	19.33	17.72
	VPA	14.26	14.24	13.93	14.51	14.97	15.70	18.42	18.98	19.13	16.85	16.82	15.26
	VPS	18.97	18.84	18.56	19.11	3.63	20.54	22.62	23.71	24.71	23.00	22.50	20.39
	CLD	57.95	57.40	70.67	67.43	82.55	85.71	81.14	75.50	70.25	55.74	52.50	50.96
28 N	SPD	5.70	7.63	5.72	6.37	6.43	5.97	5.88	5.60	5.12	5.31	5.37	6.85
120 W	AIR	15.68	15.54	16.12	16.03	16.58	17.38	18.75	19.04	19.88	20.13	18.00	16.98
	SEA	17.74	16.89	17.09	17.15	16.92	17.69	18.86	19.62	20.50	20.26	18.92	17.60
	VPA	12.56	13.82	13.52	13.56	14.88	15.95	17.58	17.75	17.93	18.08	16.08	14.15
	VPS	20.59	19.27	19.52	19.63	19.32	20.29	21.87	22.88	24.17	23.83	21.92	20.23
	CLD	68.75	61.45	65.72	73.12	75.00	86.69	80.00	82.95	70.83	45.23	60.86	51.56
28 N	SPD	6.48	5.98	6.83	6.69	5.31	6.58	5.76	5.63	5.68	4.79	5.04	5.92
121 W	AIR	16.44	16.38	16.91	16.22	17.15	17.58	18.75	19.36	19.97	19.41	18.26	17.29
	SEA	17.23	16.83	16.94	17.07	17.68	17.81	19.42	19.67	20.40	20.35	19.57	18.08
	VPA	15.06	15.51	14.36	14.34	14.16	15.49	17.80	18.18	18.33	17.81	15.83	15.07
	VPS	19.70	19.24	19.39	19.49	20.46	20.43	22.60	22.97	24.04	23.97	22.82	20.86
	CLD	42.50	62.50	60.41	53.30	69.90	80.88	79.16	87.85	69.19	68.53	57.29	52.34
28 N	SPD	5.40	5.23	6.45	7.15	7.20	6.43	5.54	5.53	5.27	6.06	4.27	6.03
122 W	AIR	15.52	16.32	15.44	15.72	16.94	17.24	18.52	19.87	19.46	19.26	18.08	17.24
	SEA	17.12	17.55	16.69	16.63	17.23	17.98	19.23	20.13	20.20	19.70	18.96	18.09
	VPA	13.71	14.97	12.89	14.01	14.96	15.45	17.01	18.78	17.96	17.38	16.93	14.47
	VPS	19.57	20.10	19.07	18.95	19.71	20.65	22.33	23.75	23.74	23.07	21.96	20.80
	CLD	70.98	57.63	58.92	55.26	80.85	85.54	92.14	75.33	69.82	55.97	53.90	56.81
28 N	SPD	6.44	5.79	6.55	6.70	6.71	6.34	6.04	6.53	5.66	5.27	5.94	6.21
123 W	AIR	15.70	15.92	15.82	16.51	17.24	17.62	19.03	19.65	20.10	19.18	18.24	16.60
	SEA	17.26	17.34	17.02	16.64	17.32	18.44	19.42	19.95	20.63	20.64	19.36	18.33
	VPA	13.42	14.31	12.93	14.35	14.71	15.95	18.03	18.55	18.92	17.72	16.04	14.45
	VPS	19.78	19.83	19.42	19.00	19.81	21.26	22.77	23.35	24.59	24.40	22.53	21.11
	CLD	58.79	65.10	70.67	77.56	75.00	80.00	83.45	74.03	66.37	65.31	68.24	65.62
28 N	SPD	5.91	5.58	7.34	6.47	6.32	6.24	6.55	6.34	5.51	5.41	6.22	5.84
124 W	AIR	15.40	16.22	16.39	16.35	17.28	17.69	18.59	20.04	19.87	19.40	18.41	17.13
	SEA	17.25	17.59	17.34	17.27	17.45	17.98	19.04	20.14	20.44	20.60	19.60	18.62
	VPA	14.03	14.64	13.37	14.58	14.26	16.45	17.08	18.99	17.87	18.25	16.73	14.71
	VPS	19.75	20.13	19.85	19.81	19.93	20.73	22.07	23.70	24.11	24.37	22.85	21.51
	CLD	62.87	73.12	69.23	70.56	78.94	77.70	86.39	75.80	72.05	54.44	66.28	63.79

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
29 N 115 W	SPD	6.25	6.10	7.35	7.17	8.05	6.23	6.39	5.98	6.58	6.19	5.58	5.73
	AIR	15.88	16.08	15.37	15.87	16.13	16.50	18.65	20.10	20.13	19.18	17.78	17.38
	SEA	16.54	16.28	15.42	15.84	15.70	16.37	18.30	20.11	20.47	19.65	19.02	18.05
	VPA	13.95	14.31	13.41	14.39	14.97	16.03	18.85	19.74	19.74	18.20	16.26	14.69
	VPS	18.88	18.60	17.56	18.10	17.94	18.71	21.15	23.81	24.25	23.04	22.15	20.83
	CLD	40.88	43.65	48.23	59.95	52.03	79.07	62.21	53.19	59.29	41.66	43.75	37.75
29 N 116 W	SPD	5.63	6.00	6.85	6.78	7.02	6.31	5.83	5.59	6.23	5.92	5.80	5.90
	AIR	15.81	15.78	15.75	16.16	16.57	17.22	18.78	20.31	20.63	19.55	18.36	16.82
	SEA	16.44	16.10	15.66	16.02	16.39	17.03	18.78	20.34	20.71	20.06	18.86	17.66
	VPA	13.87	13.79	13.66	14.43	14.91	16.14	18.57	20.03	20.28	18.49	16.66	14.76
	VPS	18.78	18.37	17.86	18.27	18.71	19.48	21.78	24.02	24.57	23.59	21.89	20.31
	CLD	43.79	44.00	56.37	59.20	71.84	80.74	75.01	66.44	57.49	53.50	44.16	44.88
29 N 117 W	SPD	5.36	5.97	6.77	6.56	6.87	6.57	5.92	5.37	5.83	5.82	5.60	5.79
	AIR	15.84	15.75	15.67	16.06	16.76	17.36	18.65	20.52	20.61	19.88	18.33	16.62
	SEA	16.32	16.05	15.87	16.02	16.76	17.40	18.76	20.36	20.84	20.24	18.83	17.24
	VPA	14.14	14.04	13.96	14.52	15.00	16.19	18.16	19.97	20.02	18.81	16.50	14.45
	VPS	18.62	18.29	18.09	18.25	19.16	19.92	21.72	24.00	24.76	23.83	21.81	19.77
	CLD	44.09	53.54	55.40	64.21	71.59	85.03	78.85	70.54	58.41	48.88	47.67	50.64
29 N 118 W	SPD	4.81	5.51	5.80	6.61	6.08	6.23	5.71	4.98	4.73	5.89	4.94	5.87
	AIR	16.76	16.24	16.12	15.92	16.58	17.73	18.52	20.16	20.00	19.02	18.70	16.63
	SEA	16.16	16.15	16.05	16.04	17.16	17.58	18.73	20.57	20.56	19.53	19.28	17.57
	VPA	14.24	14.55	13.90	14.63	14.49	16.54	18.19	20.21	19.03	18.17	16.66	14.95
	VPS	18.39	18.38	18.30	18.25	19.60	20.13	21.65	24.34	24.29	22.76	22.40	20.16
	CLD	47.05	48.25	59.32	58.89	55.63	77.90	66.07	55.27	59.37	46.96	43.05	39.91
29 N 119 W	SPD	4.97	4.78	6.87	6.08	6.48	6.40	4.51	5.92	6.81	5.86	5.12	6.92
	AIR	15.70	16.26	16.01	15.77	16.66	17.40	18.51	20.08	19.35	19.20	17.27	16.67
	SEA	17.00	16.29	15.98	16.23	16.91	17.24	18.46	19.96	20.46	19.74	18.61	18.06
	VPA	14.70	14.01	14.02	13.80	14.91	16.17	17.80	19.67	18.61	18.47	14.63	13.52
	VPS	19.47	18.55	18.28	18.47	19.29	19.72	21.35	23.40	24.12	23.06	21.48	20.80
	CLD	55.83	67.64	73.07	81.48	72.42	68.96	87.13	72.91	61.39	39.94	61.93	66.87
29 N 120 W	SPD	3.98	5.47	5.87	7.27	6.30	6.44	6.05	5.63	5.89	5.82	5.17	5.44
	AIR	16.16	15.83	15.47	16.03	16.52	17.64	18.12	18.91	19.11	18.78	18.64	16.33
	SEA	16.42	16.40	15.44	16.39	17.11	17.47	18.27	19.37	19.56	19.08	18.48	18.20
	VPA	13.35	14.58	13.35	13.88	14.71	16.05	17.04	17.54	17.84	17.17	16.40	13.99
	VPS	18.70	18.77	17.61	18.79	19.57	20.03	21.04	22.54	22.83	22.21	21.33	20.93
	CLD	57.23	65.00	59.55	64.66	74.71	70.83	85.97	85.49	72.81	61.29	44.02	66.37
29 N 121 W	SPD	5.61	6.06	5.66	7.41	6.36	6.00	6.04	6.28	5.66	5.46	4.87	5.12
	AIR	15.72	15.95	16.69	15.47	16.49	17.28	18.31	19.08	19.33	19.02	18.16	16.68
	SEA	16.79	15.90	16.60	16.52	16.46	17.38	18.33	19.31	19.77	19.71	18.83	17.27
	VPA	13.48	14.16	15.03	13.94	14.24	15.25	17.23	17.85	17.99	17.32	15.98	13.92
	VPS	19.19	18.11	18.97	18.85	18.79	19.90	21.15	22.44	23.11	23.02	21.81	19.76
	CLD	69.03	63.04	54.83	67.43	68.88	78.57	82.84	79.48	76.38	62.50	54.04	59.25
29 N 122 W	SPD	6.27	6.82	7.78	7.13	6.63	5.85	6.84	5.98	6.12	6.36	5.76	6.40
	AIR	15.99	15.54	15.10	15.85	16.19	17.06	18.71	19.17	19.71	19.05	17.70	16.18
	SEA	16.48	15.98	16.23	16.72	16.62	17.22	19.06	19.30	19.97	20.05	18.83	17.59
	VPA	13.84	14.46	13.42	13.96	14.48	15.56	17.85	18.02	18.59	17.73	16.10	14.72
	VPS	18.81	18.20	18.49	19.08	18.94	19.73	22.10	22.44	23.41	23.55	21.80	20.15
	CLD	55.55	64.93	61.84	60.55	76.13	74.32	82.55	79.16	63.19	61.40	56.61	62.93
29 N 123 W	SPD	7.22	6.00	6.19	6.38	6.79	6.88	6.93	6.48	5.87	5.51	5.19	5.64
	AIR	15.40	15.59	15.99	15.65	16.56	17.16	18.41	18.99	19.11	19.09	17.82	16.23
	SEA	16.70	16.68	16.79	16.78	16.93	17.28	18.73	19.26	19.78	19.84	18.64	17.65
	VPA	13.14	13.52	13.36	13.78	14.23	15.54	17.41	17.56	17.69	17.27	15.89	14.86
	VPS	19.06	19.05	19.16	19.15	19.37	19.76	21.65	22.38	23.11	23.22	21.60	20.24
	CLD	66.07	71.52	70.50	72.00	75.85	69.07	85.50	78.27	75.30	55.88	74.40	75.52
29 N 124 W	SPD	6.10	5.17	6.69	6.88	6.82	6.49	7.41	5.97	5.64	6.69	5.51	5.57
	AIR	15.55	17.02	15.80	15.36	16.25	17.30	18.10	19.02	20.33	18.66	17.92	16.17
	SEA	16.78	16.90	16.54	16.62	16.69	17.43	18.39	19.48	20.36	19.55	18.86	17.74
	VPA	14.07	15.07	13.62	13.31	14.31	15.94	16.50	18.03	17.63	16.76	16.22	13.64
	VPS	19.19	19.31	18.86	18.95	19.03	19.96	21.21	22.70	24.10	22.79	21.86	20.40
	CLD	66.37	71.25	63.12	65.94	70.83	80.40	84.37	87.12	72.76	76.20	59.21	67.78

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
30 N 116 W	SPD	5.50	5.49	6.35	6.42	6.48	5.99	5.49	5.35	5.68	5.82	5.25	5.60
	AIR	15.54	15.36	15.27	15.82	16.20	16.71	18.38	19.87	19.98	19.20	17.92	16.28
	SEA	16.22	15.88	15.58	15.84	16.27	16.91	18.50	20.09	20.08	19.54	18.46	17.12
	VPA	13.66	13.55	13.46	14.34	14.69	15.86	18.17	19.78	19.53	18.18	16.34	14.52
	VPS	18.51	18.10	17.76	18.06	18.58	19.34	21.40	23.65	23.64	22.86	21.33	19.64
	CLD	47.40	48.00	51.63	57.58	70.38	83.33	77.47	72.13	60.96	57.12	46.22	44.21
30 N 117 W	SPD	5.12	5.47	6.46	6.75	6.63	6.06	5.72	5.28	5.73	5.46	5.34	5.64
	AIR	15.37	15.21	15.40	15.75	16.06	16.96	18.31	19.82	20.16	19.33	17.90	16.07
	SEA	16.11	15.76	15.65	16.07	16.37	17.04	18.59	20.22	20.42	19.81	18.44	17.05
	VPA	13.36	13.58	13.49	14.03	14.52	15.98	17.79	19.40	19.76	18.01	16.19	14.34
	VPS	18.38	17.96	17.85	18.31	18.67	19.49	21.50	23.79	24.10	23.21	21.30	19.52
	CLD	45.49	50.00	54.82	60.00	72.30	81.99	80.86	71.06	58.15	54.57	48.31	47.11
30 N 118 W	SPD	5.52	5.72	6.19	6.53	6.77	6.99	6.04	5.06	5.99	5.30	5.19	5.62
	AIR	15.10	15.40	15.22	15.32	15.92	17.09	17.53	19.93	19.71	19.04	17.78	15.95
	SEA	15.81	15.55	15.46	15.87	16.40	16.96	18.10	20.49	19.80	19.58	18.22	17.01
	VPA	13.59	13.65	13.26	13.99	14.67	15.88	17.04	19.79	19.15	18.21	16.08	14.07
	VPS	18.04	17.72	17.62	18.10	18.70	19.38	20.86	24.49	23.17	22.86	20.99	19.50
	CLD	50.48	51.83	56.29	59.32	75.29	79.19	85.92	76.11	50.90	50.36	47.30	46.73
30 N 119 W	SPD	6.33	5.74	7.49	6.44	7.52	6.67	4.55	6.24	5.92	5.69	6.10	5.64
	AIR	15.16	14.81	14.53	15.37	16.20	16.55	17.82	18.20	19.12	18.68	17.49	15.90
	SEA	15.66	15.41	15.01	16.06	16.20	16.78	18.01	19.25	19.51	19.55	18.22	17.72
	VPA	13.25	13.15	12.44	14.01	14.62	15.65	17.75	17.26	17.83	17.89	15.61	13.95
	VPS	17.84	17.57	17.10	18.29	18.49	19.17	20.77	22.42	22.78	22.80	20.96	20.31
	CLD	51.53	44.01	49.35	59.78	67.30	83.75	72.87	76.29	64.94	48.50	54.51	56.25
30 N 120 W	SPD	6.57	5.58	6.11	6.70	7.09	6.64	6.27	6.22	5.68	5.70	5.58	5.91
	AIR	14.64	16.40	16.98	15.02	15.64	16.84	17.30	18.08	18.82	18.09	16.59	16.87
	SEA	16.06	15.58	15.55	15.70	16.71	17.09	17.92	19.28	19.39	19.31	18.19	17.83
	VPA	13.04	15.23	15.68	13.50	14.16	16.46	16.14	17.41	17.92	17.35	14.25	15.06
	VPS	18.31	17.76	17.70	17.87	19.11	19.54	20.62	22.48	22.58	22.46	20.94	20.47
	CLD	51.00	55.97	63.26	59.82	65.33	79.23	79.16	81.25	59.44	61.41	74.50	58.53
30 N 121 W	SPD	6.02	6.31	6.65	7.90	7.27	6.56	5.88	6.66	6.43	6.26	5.41	7.42
	AIR	15.40	15.23	15.59	14.97	15.74	16.79	17.22	18.50	19.01	18.62	17.47	16.84
	SEA	16.08	15.24	15.60	15.62	15.96	16.86	17.70	18.81	18.90	19.24	17.97	17.79
	VPA	12.94	14.38	13.92	12.85	14.27	16.21	16.75	17.62	17.76	16.97	15.95	14.68
	VPS	18.34	17.39	17.79	17.77	18.23	19.26	20.32	21.75	21.91	22.40	20.66	20.40
	CLD	60.00	61.66	58.88	60.99	67.04	81.99	85.00	85.71	66.98	56.89	62.50	68.18
30 N 122 W	SPD	4.96	7.87	6.83	7.45	7.25	7.32	6.34	7.27	6.75	6.32	6.01	5.96
	AIR	15.16	15.34	15.17	15.53	15.98	16.95	17.25	18.40	18.61	18.29	17.47	15.71
	SEA	16.32	15.79	16.04	15.59	16.10	17.12	17.52	18.67	19.15	18.94	18.57	16.79
	VPA	13.07	14.35	13.16	13.83	14.26	15.72	16.70	17.70	17.21	16.33	16.52	14.01
	VPS	18.62	18.03	18.27	17.75	18.35	19.59	20.07	21.61	22.26	21.97	21.45	19.16
	CLD	73.72	61.18	66.55	63.88	62.03	75.84	82.14	79.68	74.75	62.78	63.14	73.52
30 N 123 W	SPD	5.66	7.88	7.10	7.98	7.56	7.29	6.21	6.29	6.27	7.07	5.72	6.13
	AIR	14.44	15.69	15.11	15.18	15.70	16.51	17.89	18.70	19.36	18.11	17.30	16.16
	SEA	15.85	15.85	15.96	15.90	16.11	16.78	18.29	19.30	19.64	19.06	18.28	17.32
	VPA	12.72	13.98	13.20	13.31	14.11	15.52	16.74	17.63	17.90	16.56	15.44	13.82
	VPS	18.09	18.06	18.20	18.11	18.33	19.16	21.12	22.43	22.99	22.09	21.08	19.84
	CLD	76.95	52.88	66.93	55.68	85.99	78.90	87.25	75.91	69.47	60.64	57.37	72.91
30 N 124 W	SPD	6.70	7.10	6.03	7.13	7.78	6.71	7.08	6.19	5.81	6.84	5.59	6.33
	AIR	15.14	14.75	15.02	14.91	15.99	16.55	17.55	18.90	19.34	18.45	17.89	16.04
	SEA	16.67	16.05	16.00	16.24	16.69	17.16	18.24	19.10	19.90	19.83	18.92	17.42
	VPA	13.63	12.78	13.44	12.77	14.30	14.98	16.44	17.47	17.73	16.64	15.78	13.48
	VPS	19.04	18.31	18.23	18.52	19.07	19.62	21.02	22.21	23.34	23.23	21.90	19.94
	CLD	69.88	63.63	61.32	68.88	77.96	82.47	83.13	72.79	76.47	71.15	59.93	59.25
30 N 125 W	SPD	7.46	7.09	6.73	7.22	7.56	7.06	6.32	6.94	5.81	6.12	5.99	6.00
	AIR	15.37	15.25	15.50	15.03	16.33	16.96	17.61	19.14	19.33	18.79	18.42	16.39
	SEA	16.88	16.08	16.30	16.08	16.52	17.42	17.90	18.96	19.81	19.46	19.26	17.88
	VPA	13.69	14.32	13.95	12.67	14.30	15.90	16.01	18.19	17.84	17.04	16.06	14.35
	VPS	19.29	18.35	18.56	18.36	18.88	19.99	20.56	21.99	23.23	22.67	22.43	20.56
	CLD	75.00	74.71	60.19	68.20	78.37	76.95	85.27	81.39	66.21	72.02	72.15	71.48

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
31 N	SPD	4.72	5.38	5.92	5.94	5.97	5.60	5.29	5.21	5.32	5.03	5.05	5.14
117 W	AIR	15.15	15.00	14.86	15.27	15.84	16.48	18.00	19.39	19.60	18.95	17.47	15.83
	SEA	15.68	15.48	15.23	15.79	16.40	17.01	18.60	20.09	20.14	19.43	18.08	16.78
	VPA	13.34	13.29	13.20	13.80	14.51	15.64	17.79	18.91	19.16	17.91	15.91	14.05
	VPS	17.89	17.65	17.37	17.99	18.71	19.47	21.54	23.61	23.70	22.68	20.82	19.21
	CLD	40.16	48.11	47.67	56.43	70.41	81.00	77.73	68.89	59.27	54.84	44.06	44.05
31 N	SPD	5.41	6.11	6.72	6.67	6.31	6.09	5.57	5.59	6.06	5.71	5.87	5.86
118 W	AIR	14.81	14.94	14.84	15.00	15.74	16.38	17.03	18.41	19.30	18.61	17.21	15.72
	SEA	15.46	15.29	15.09	15.50	16.15	16.59	17.87	19.47	19.66	19.25	18.05	16.91
	VPA	13.42	13.36	13.16	13.68	14.48	15.51	16.65	17.95	18.47	17.24	15.49	13.87
	VPS	17.65	17.43	17.20	17.68	18.41	18.95	20.57	22.72	22.97	22.39	20.80	19.35
	CLD	45.79	48.47	55.22	57.69	78.21	80.69	85.83	73.73	55.54	50.43	49.23	49.63
31 N	SPD	5.72	6.45	7.26	7.22	6.79	7.27	6.26	6.31	6.00	5.96	5.62	5.79
119 W	AIR	14.84	14.35	14.34	14.61	15.25	16.09	16.69	17.54	18.69	18.55	17.25	15.11
	SEA	15.30	14.68	14.89	15.31	15.83	16.46	16.95	18.98	19.09	19.05	17.94	16.25
	VPA	13.19	13.08	12.96	13.22	13.96	14.96	16.35	17.30	18.12	17.58	15.39	13.56
	VPS	17.45	16.75	16.99	17.44	18.04	18.77	19.43	22.04	22.17	22.11	20.63	18.58
	CLD	48.71	47.50	53.57	61.75	68.93	74.31	80.20	71.08	52.73	47.56	51.43	51.09
31 N	SPD	6.43	6.51	6.58	7.49	7.40	7.25	7.09	6.13	6.81	5.68	5.82	4.47
120 W	AIR	14.95	14.93	14.87	14.42	15.43	16.20	16.86	17.25	18.54	17.77	17.34	15.63
	SEA	15.70	15.27	14.95	15.42	15.65	16.46	17.08	18.13	18.96	19.04	17.99	16.51
	VPA	12.69	13.64	13.70	12.31	14.25	15.80	15.76	16.59	17.69	16.73	16.50	14.39
	VPS	17.89	17.41	17.04	17.55	17.82	18.79	19.58	20.89	22.02	22.09	20.69	18.84
	CLD	43.85	58.04	54.58	66.66	73.67	76.98	82.81	78.84	47.07	60.29	48.38	56.87
31 N	SPD	6.54	6.79	6.63	7.26	7.86	7.80	7.53	6.29	7.68	6.53	5.46	6.07
121 W	AIR	14.56	14.76	14.57	14.13	15.18	16.13	16.53	17.43	18.10	17.89	16.98	15.81
	SEA	15.68	15.03	14.84	15.12	15.59	16.32	16.85	18.10	18.98	18.95	16.94	16.77
	VPA	12.68	13.76	13.49	12.08	13.94	15.49	15.94	16.68	17.38	16.94	15.71	14.03
	VPS	17.87	17.15	16.92	17.24	17.76	18.60	19.29	20.85	22.05	21.98	19.37	19.15
	CLD	60.75	62.26	62.66	66.75	69.38	62.50	81.38	83.33	51.81	65.72	47.50	58.26
31 N	SPD	5.77	7.86	7.19	8.89	7.40	7.56	6.86	6.81	7.36	6.48	6.23	6.38
122 W	AIR	14.72	15.06	14.72	14.69	15.06	16.10	17.00	18.13	18.12	17.83	16.86	15.87
	SEA	15.67	14.86	14.95	15.25	15.46	16.58	17.43	17.92	18.96	18.47	17.42	16.93
	VPA	13.43	13.80	13.26	12.50	13.68	15.53	16.19	17.32	17.04	16.62	15.56	14.12
	VPS	17.87	16.98	17.05	17.39	17.61	18.95	19.99	20.58	22.00	21.34	20.00	19.37
	CLD	60.28	60.91	58.82	60.18	76.29	67.08	80.92	83.62	75.39	68.05	59.60	63.25
31 N	SPD	6.65	7.26	6.49	7.34	7.28	7.50	7.19	6.95	6.68	7.01	5.89	6.86
123 W	AIR	14.81	14.56	14.54	14.78	15.50	16.72	17.29	18.31	18.65	17.60	17.09	15.77
	SEA	15.96	15.56	15.27	15.79	15.84	16.83	17.58	18.50	19.09	18.29	17.94	16.98
	VPA	13.13	13.30	12.68	13.05	13.97	15.39	16.25	17.44	17.37	16.03	15.52	14.60
	VPS	18.19	17.77	17.40	18.00	18.09	19.24	20.16	21.34	22.19	21.08	20.65	19.41
	CLD	67.39	63.36	62.89	69.36	62.67	72.47	82.35	77.24	76.27	66.80	59.83	69.53
31 N	SPD	6.72	6.70	7.32	7.80	7.37	8.20	6.67	6.70	6.80	6.64	5.73	6.94
124 W	AIR	14.90	14.94	14.85	14.52	15.54	16.59	17.48	18.20	18.77	18.19	17.44	15.65
	SEA	15.75	15.63	15.36	15.52	15.92	16.76	17.47	18.53	19.37	18.87	18.15	16.84
	VPA	13.41	13.07	13.01	13.10	13.47	15.35	16.56	17.64	17.64	16.56	15.51	14.46
	VPS	17.93	17.81	17.52	17.69	18.15	19.13	20.02	21.46	22.58	21.88	20.89	19.25
	CLD	75.35	59.16	67.10	69.02	62.50	76.92	85.87	69.31	65.97	60.44	62.50	68.54
31 N	SPD	6.70	7.36	6.07	8.22	7.07	7.35	6.78	7.71	6.29	7.34	6.90	6.84
125 W	AIR	15.15	14.95	14.82	15.16	15.58	16.75	17.43	18.67	19.23	18.52	17.50	15.84
	SEA	15.99	15.73	15.87	15.66	16.22	16.89	17.91	18.75	19.76	19.17	18.50	17.25
	VPA	13.67	13.68	13.05	13.08	13.81	15.25	16.67	17.79	17.49	16.72	15.52	14.25
	VPS	18.24	17.96	18.08	17.85	18.52	19.31	20.59	21.70	23.12	22.32	21.39	19.74
	CLD	73.01	72.22	72.41	72.29	73.61	79.63	86.48	69.49	71.31	67.15	59.96	65.88
31 N	SPD	6.61	7.79	7.07	7.25	6.58	7.10	7.22	6.56	5.75	6.36	7.05	6.87
126 W	AIR	15.48	14.82	14.99	14.89	15.64	16.77	17.37	18.90	19.29	18.75	17.57	16.30
	SEA	16.23	15.61	15.73	15.66	16.49	17.33	18.04	19.09	19.73	19.42	18.55	17.05
	VPA	14.04	13.30	13.11	13.07	13.83	15.64	16.18	17.70	17.79	16.89	15.59	14.68
	VPS	18.51	17.80	17.93	17.86	18.83	19.85	20.77	22.24	23.08	22.63	21.42	19.54
	CLD	73.68	69.29	66.05	66.88	73.43	77.53	89.04	70.98	69.57	69.74	63.01	67.20

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
32 N	SPD	4.23	4.36	4.67	4.98	4.45	3.93	4.14	4.03	4.28	4.46	4.19	4.66
117 W	AIR	14.57	14.58	14.93	15.32	16.19	17.19	18.74	19.99	19.76	18.86	17.45	15.71
	SEA	14.95	14.59	15.01	15.57	16.31	17.31	19.09	20.07	19.79	19.06	17.75	16.41
	VPA	12.74	12.81	12.94	13.58	14.40	16.02	18.06	19.44	19.07	17.56	15.67	13.71
	VPS	17.08	16.69	17.15	17.78	18.64	19.86	22.23	23.61	23.21	22.17	20.41	18.77
	CLD	46.27	45.39	49.32	57.37	62.99	75.70	70.83	60.90	58.10	52.71	43.82	44.91
32 N	SPD	5.09	5.07	5.63	5.74	5.39	4.90	5.10	4.97	5.14	5.10	5.12	5.16
118 W	AIR	14.14	14.46	14.44	14.82	15.18	16.12	17.32	18.73	18.79	18.26	17.19	15.45
	SEA	14.73	14.69	15.01	15.39	15.94	16.89	18.33	19.70	19.49	19.15	17.74	16.45
	VPA	12.53	12.76	12.83	13.26	13.82	15.17	16.83	18.21	18.02	16.93	15.23	13.49
	VPS	16.85	16.80	17.14	17.56	18.20	19.31	21.17	23.07	22.73	22.28	20.41	18.81
	CLD	48.51	48.93	52.68	56.23	70.88	80.58	75.97	68.28	58.16	52.83	44.37	46.37
32 N	SPD	5.78	6.56	7.10	6.97	6.80	6.69	6.39	6.27	6.32	5.72	5.87	5.93
119 W	AIR	14.19	14.07	13.81	14.27	14.60	15.49	16.36	17.62	18.02	17.97	16.45	15.00
	SEA	14.63	14.73	14.53	14.91	15.30	16.10	17.22	18.97	18.98	18.80	17.21	16.09
	VPA	12.68	12.62	12.45	12.79	13.68	14.85	16.08	17.10	17.49	16.83	14.54	13.08
	VPS	16.75	16.83	16.59	17.03	17.46	18.39	19.75	22.05	22.03	21.79	19.74	18.39
	CLD	51.04	44.16	53.39	60.77	72.00	75.18	80.37	74.18	56.71	50.67	44.49	47.54
32 N	SPD	5.80	7.15	7.48	8.21	7.68	7.30	7.47	6.81	7.04	6.94	6.13	6.04
120 W	AIR	14.13	14.01	13.85	14.07	14.68	15.31	16.04	16.73	17.93	17.65	16.61	14.93
	SEA	14.88	14.79	14.49	14.74	15.01	15.59	16.30	17.93	18.68	18.55	17.19	16.02
	VPA	12.96	12.90	12.60	12.72	13.78	14.67	15.74	16.64	17.25	16.48	15.28	13.70
	VPS	16.99	16.88	16.55	16.84	17.12	17.78	18.62	20.64	21.64	21.44	19.69	18.28
	CLD	58.63	47.04	49.21	56.83	67.03	72.15	74.30	79.87	54.50	48.19	55.24	49.28
32 N	SPD	6.93	7.64	7.49	7.82	7.65	7.84	7.65	7.28	7.13	6.63	6.96	6.51
121 W	AIR	14.20	13.74	14.01	14.02	14.63	15.35	16.14	17.09	17.61	17.37	16.44	15.18
	SEA	15.03	14.90	14.84	14.89	15.20	15.92	16.49	17.63	18.43	18.40	17.25	16.26
	VPA	13.21	12.86	12.76	12.73	13.59	14.83	15.83	16.72	16.79	16.42	15.51	14.03
	VPS	17.14	17.01	16.93	16.99	17.35	18.15	18.83	20.25	21.32	21.25	19.75	18.54
	CLD	55.90	55.55	57.65	59.07	65.70	73.50	78.80	76.92	61.36	58.16	57.02	54.58
32 N	SPD	6.66	8.10	8.42	8.32	8.96	8.41	7.64	7.83	7.12	6.46	6.35	7.04
122 W	AIR	14.56	14.03	13.82	14.30	14.45	15.65	16.49	17.33	18.11	17.68	16.30	15.07
	SEA	15.22	14.78	14.72	14.93	15.04	15.97	16.83	17.73	18.60	18.50	17.19	15.99
	VPA	13.39	12.97	12.40	12.88	13.19	14.97	16.00	16.81	17.01	16.89	14.87	13.55
	VPS	17.35	16.90	16.80	17.03	17.17	18.23	19.25	20.39	21.52	21.41	19.67	18.26
	CLD	57.06	62.25	63.89	63.55	69.29	72.72	84.30	77.86	59.22	55.61	48.47	56.47
32 N	SPD	6.62	7.44	8.02	8.68	8.50	7.73	6.94	7.68	6.36	7.32	6.70	7.63
123 W	AIR	14.62	14.03	13.73	14.47	14.63	15.88	16.82	17.48	17.99	17.60	16.60	15.03
	SEA	15.44	14.76	14.80	14.99	15.32	16.47	17.00	18.08	18.93	18.51	17.29	16.24
	VPA	13.52	12.69	12.02	13.08	13.36	14.81	16.01	17.04	17.38	16.09	15.12	13.79
	VPS	17.58	16.85	16.89	17.12	17.48	18.79	19.46	20.79	21.98	21.41	19.83	18.53
	CLD	63.68	62.67	65.03	67.36	70.33	77.78	83.79	75.78	66.94	56.41	58.79	62.50
32 N	SPD	6.81	7.59	6.55	8.66	7.49	7.60	6.92	7.01	6.80	6.89	6.32	6.03
124 W	AIR	14.94	14.65	14.65	14.93	15.59	16.86	17.68	18.49	18.73	18.10	16.38	15.72
	SEA	15.48	15.09	15.21	15.18	15.95	17.76	18.06	17.77	19.21	18.55	17.09	16.15
	VPA	13.68	13.33	12.86	13.56	13.64	15.89	17.04	17.19	17.69	16.44	14.87	14.13
	VPS	17.64	17.19	17.33	17.29	18.17	20.45	20.79	20.43	22.35	21.46	19.55	18.41
	CLD	65.01	65.38	61.03	67.31	69.50	77.64	77.33	79.18	67.42	63.73	61.57	54.34
32 N	SPD	6.59	7.35	7.29	7.79	7.42	7.81	7.35	6.91	6.34	6.67	6.59	7.00
125 W	AIR	14.80	14.44	14.20	14.66	15.23	16.55	17.31	18.35	18.99	18.15	16.83	15.40
	SEA	15.72	15.10	14.90	15.12	15.83	16.73	17.62	18.52	19.17	18.80	17.62	16.78
	VPA	13.91	13.28	12.58	13.03	13.60	15.65	16.62	17.63	17.53	16.85	15.31	13.90
	VPS	17.91	17.22	17.02	17.25	18.06	19.11	20.22	21.40	22.31	21.79	20.23	19.18
	CLD	68.58	69.79	68.11	67.34	69.73	77.07	80.11	78.94	65.62	65.90	63.15	63.82
32 N	SPD	6.67	7.35	7.61	7.89	7.31	7.33	7.78	6.82	5.94	6.33	6.66	6.98
126 W	AIR	14.98	14.38	14.50	14.34	15.32	16.85	17.34	18.54	19.02	18.50	17.11	15.85
	SEA	16.03	15.38	15.10	15.35	15.98	17.14	17.75	18.81	19.52	19.11	17.96	17.11
	VPA	13.84	13.03	12.86	12.90	13.87	15.47	16.43	17.44	17.72	16.61	15.48	14.41
	VPS	18.28	17.54	17.20	17.49	18.23	19.64	20.37	21.78	22.82	22.20	20.67	19.60
	CLD	68.81	64.37	70.13	70.01	71.81	71.09	84.50	76.03	66.16	65.82	67.57	70.33

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
33 N	SPD	4.52	4.93	5.19	5.16	4.84	4.38	4.44	4.45	4.45	4.24	4.59	4.82
118 W	AIR	14.51	14.61	14.52	15.15	15.75	16.78	18.16	19.55	19.38	18.53	17.04	15.10
	SEA	15.00	15.09	15.01	15.48	16.37	17.50	18.77	20.34	19.89	19.09	17.61	16.08
	VPA	12.26	12.53	12.62	13.30	14.17	15.65	17.58	19.04	18.55	17.08	14.81	12.55
	VPS	17.12	17.21	17.13	17.66	18.70	20.09	21.80	23.99	23.32	22.20	20.24	18.35
	CLD	48.06	48.09	49.06	51.61	61.64	69.92	61.18	56.59	49.80	47.02	43.28	45.66
33 N	SPD	5.40	5.98	6.36	6.52	6.37	5.79	5.50	5.39	5.52	5.20	5.44	5.50
119 W	AIR	14.21	14.25	14.03	14.14	14.89	15.72	16.84	17.97	18.24	17.80	16.47	15.17
	SEA	14.73	14.84	14.66	14.70	15.42	16.47	17.98	19.14	19.12	18.56	17.05	15.87
	VPA	12.37	12.66	12.57	12.70	13.78	14.99	16.51	17.50	17.44	16.46	14.57	12.98
	VPS	16.83	16.93	16.75	16.81	17.60	18.86	20.74	22.28	22.25	21.49	19.55	18.11
	CLD	45.11	46.93	47.43	48.47	56.59	67.39	71.07	64.27	56.01	46.14	41.88	40.81
33 N	SPD	6.04	7.10	7.71	7.98	8.05	7.71	7.12	7.63	7.22	6.42	6.52	6.71
120 W	AIR	13.91	13.56	13.60	13.53	14.28	15.03	15.80	16.81	17.45	17.18	16.05	14.67
	SEA	14.25	14.10	13.78	13.51	14.10	14.95	16.31	17.63	17.92	17.67	16.29	15.32
	VPA	12.75	12.73	12.37	12.49	13.48	14.40	15.56	16.57	16.85	16.37	14.68	12.92
	VPS	16.30	16.15	15.81	15.57	16.17	17.08	18.67	20.29	20.66	20.31	18.60	17.52
	CLD	41.48	42.60	50.70	53.60	59.93	69.07	75.74	67.34	54.09	51.23	41.45	43.81
33 N	SPD	7.18	7.62	8.69	8.78	8.69	8.05	7.31	7.63	7.61	6.82	6.84	7.16
121 W	AIR	13.50	13.26	13.16	13.61	13.98	15.14	15.84	16.31	17.49	16.70	15.73	14.12
	SEA	14.21	14.20	13.74	13.94	14.29	15.22	16.31	17.29	17.94	17.19	16.33	15.23
	VPA	12.44	12.39	12.21	12.83	13.42	14.53	15.66	16.24	17.01	16.11	14.90	13.08
	VPS	16.27	16.27	15.77	16.00	16.35	17.37	18.64	19.83	20.69	19.70	18.64	17.38
	CLD	44.75	49.87	52.78	55.20	64.41	70.36	80.22	80.32	63.55	51.81	45.10	48.75
33 N	SPD	6.92	7.52	8.57	8.95	8.00	8.45	8.43	7.58	7.19	7.19	7.10	6.95
122 W	AIR	13.54	13.52	13.35	13.82	14.30	15.43	15.89	16.78	17.42	17.08	15.81	14.71
	SEA	14.38	14.19	13.85	14.28	14.55	15.56	16.15	17.41	18.02	17.51	16.51	15.41
	VPA	12.89	12.51	12.20	12.81	13.38	14.88	15.67	16.45	16.65	16.06	14.68	13.81
	VPS	16.45	16.24	15.90	16.34	16.64	17.76	18.43	19.95	20.78	20.09	18.87	17.58
	CLD	52.00	55.26	55.05	57.15	64.85	71.61	81.04	72.82	65.11	55.31	48.41	53.11
33 N	SPD	7.28	7.44	8.42	8.52	8.42	8.00	7.28	7.50	6.82	6.79	6.71	7.39
123 W	AIR	14.09	13.65	13.37	14.53	14.76	15.65	16.44	17.22	17.88	17.46	16.23	14.58
	SEA	14.70	14.15	13.96	14.70	14.66	15.71	16.37	17.24	18.21	17.82	16.71	15.59
	VPA	13.00	12.80	12.17	13.06	13.55	14.88	15.83	16.71	16.88	16.42	14.78	13.25
	VPS	16.79	16.20	16.00	16.77	16.75	17.93	18.70	19.74	21.02	20.47	19.11	17.82
	CLD	58.26	64.11	64.51	60.95	65.32	71.15	82.00	75.49	66.29	56.49	56.94	56.02
33 N	SPD	6.98	7.48	7.41	8.74	7.59	8.24	7.97	7.21	6.48	7.15	7.16	6.99
124 W	AIR	14.22	13.91	13.88	14.09	15.14	15.99	16.86	17.79	18.32	17.78	16.33	15.22
	SEA	14.99	14.45	14.39	14.50	15.41	16.27	17.15	17.69	18.61	18.29	17.17	16.07
	VPA	13.08	12.62	12.68	12.86	13.51	15.01	16.13	17.16	17.17	16.52	14.89	13.91
	VPS	17.10	16.51	16.46	16.56	17.56	18.57	19.64	20.32	21.51	21.10	19.70	18.33
	CLD	63.60	59.32	64.84	65.11	74.79	71.91	79.72	82.21	65.36	61.56	62.29	63.28
33 N	SPD	6.69	7.17	7.89	8.00	7.63	8.31	7.44	7.36	6.65	6.89	6.82	7.28
125 W	AIR	14.55	14.25	14.01	14.25	15.33	16.37	17.13	17.91	18.62	18.13	16.78	15.37
	SEA	15.08	14.64	14.43	14.81	15.40	16.39	17.21	17.85	18.87	18.52	17.53	16.18
	VPA	13.72	13.21	12.40	12.79	13.78	15.19	16.25	17.06	17.39	16.56	15.12	13.83
	VPS	17.22	16.72	16.49	16.89	17.58	18.70	19.71	20.51	21.91	21.39	20.11	18.46
	CLD	70.12	68.39	66.12	56.66	67.97	75.94	86.39	77.97	69.35	60.43	61.05	62.39
33 N	SPD	7.08	6.96	7.86	8.06	7.03	7.41	7.74	7.71	6.62	6.68	6.88	6.76
126 W	AIR	14.58	14.06	13.95	14.37	15.03	16.32	17.26	18.19	18.97	18.01	16.78	15.26
	SEA	15.29	15.07	14.68	14.92	15.48	16.61	17.69	18.37	19.18	18.77	17.68	16.58
	VPA	13.34	12.89	12.62	13.07	13.48	15.47	16.25	17.45	17.55	16.88	15.25	13.82
	VPS	17.44	17.19	16.77	17.02	17.64	18.99	20.30	21.24	22.33	21.73	20.32	18.95
	CLD	66.61	67.64	66.37	64.15	72.93	78.49	74.82	69.36	70.74	66.57	62.06	67.39
33 N	SPD	7.39	6.78	7.43	7.77	7.78	7.33	6.98	6.53	6.97	6.04	6.84	6.98
127 W	AIR	14.84	14.69	13.87	14.37	15.52	16.85	17.61	18.46	19.20	19.07	17.18	15.72
	SEA	15.49	15.30	14.11	14.97	15.64	16.75	18.01	19.62	19.48	19.26	17.90	16.78
	VPA	13.73	13.59	12.64	12.71	13.59	15.79	16.91	17.70	17.81	17.36	15.45	14.28
	VPS	17.68	17.47	16.17	17.06	17.84	19.16	20.74	21.53	22.76	22.41	20.59	19.11
	CLD	67.00	66.55	72.63	67.12	68.96	79.36	79.72	68.44	64.06	62.50	59.57	61.64

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
34 N 119 W	SPD	4.97	4.66	5.09	5.14	5.31	4.57	4.29	4.32	4.58	4.46	4.80	4.64
	AIR	14.08	13.99	14.14	15.17	15.53	16.66	17.85	18.85	18.84	18.48	16.65	15.40
	SEA	14.15	13.94	14.19	14.39	15.15	16.72	17.98	19.22	19.01	18.26	16.35	15.54
	VPA	11.74	11.92	12.65	13.99	14.33	15.64	17.56	18.47	18.11	16.70	14.65	12.88
	VPS	16.20	15.98	16.25	16.49	17.34	19.15	20.79	22.44	22.14	21.07	18.70	17.73
	CLD	43.69	43.37	41.37	38.50	44.05	54.96	53.03	48.96	41.04	39.26	37.72	40.67
34 N 120 W	SPD	5.32	6.61	7.25	7.41	8.13	7.14	5.80	7.57	6.25	5.67	6.12	6.12
	AIR	13.52	13.29	13.32	13.32	13.63	14.81	16.08	16.82	17.22	17.17	15.46	14.60
	SEA	13.96	13.41	13.45	13.07	13.63	15.01	16.32	17.03	17.72	17.19	15.76	14.73
	VPA	12.06	12.14	12.27	12.55	12.97	14.32	15.89	16.65	16.41	16.19	14.03	13.13
	VPS	15.99	15.44	15.50	15.14	15.70	17.21	18.68	19.62	20.42	19.74	18.03	16.84
	CLD	43.19	41.52	38.22	39.71	42.19	57.13	61.84	53.74	41.29	40.68	36.98	37.58
34 N 121 W	SPD	6.65	6.78	8.09	8.45	8.27	8.03	8.04	8.10	7.61	7.15	6.66	6.47
	AIR	13.43	13.04	13.02	13.20	13.43	14.72	15.24	16.07	16.63	16.47	15.27	14.15
	SEA	13.62	13.22	13.29	13.28	13.31	14.33	15.42	16.47	16.86	16.53	15.50	14.25
	VPA	12.18	11.88	12.13	12.33	12.94	14.29	15.05	15.62	16.12	15.78	14.24	12.82
	VPS	15.65	15.25	15.33	15.36	15.36	16.45	17.66	18.85	19.33	18.90	17.70	16.31
	CLD	40.04	42.67	46.20	48.43	59.54	59.98	73.61	69.79	55.80	42.92	45.39	47.65
34 N 122 W	SPD	7.11	7.64	7.25	8.06	8.21	8.10	8.23	7.09	7.25	7.93	7.47	6.10
	AIR	13.50	13.07	13.30	13.27	14.08	14.90	15.86	16.66	17.02	16.69	15.41	14.15
	SEA	13.94	13.60	13.52	13.46	13.89	14.56	15.92	16.77	16.91	17.07	15.98	14.49
	VPA	12.87	12.14	12.33	12.52	13.15	14.48	15.73	16.38	16.45	15.82	13.98	13.20
	VPS	15.97	15.63	15.56	15.51	15.93	16.64	18.19	19.18	19.40	19.56	18.25	16.56
	CLD	46.50	56.66	55.01	56.37	65.86	61.79	80.94	67.33	58.30	50.19	45.10	58.82
34 N 123 W	SPD	7.20	7.92	8.05	8.05	8.97	8.22	8.34	7.95	7.12	7.38	7.50	6.64
	AIR	13.52	13.41	13.47	13.51	14.62	15.27	16.25	16.68	17.44	16.86	15.48	14.32
	SEA	14.23	13.66	13.59	13.93	14.34	14.87	16.31	17.08	17.60	17.05	15.88	14.99
	VPA	12.71	12.46	12.58	12.18	13.45	14.74	15.72	16.28	16.76	16.05	14.10	13.31
	VPS	16.32	15.71	15.63	15.99	16.42	16.99	18.61	19.55	20.23	19.51	18.14	17.11
	CLD	58.30	60.24	48.43	60.18	71.07	62.12	72.33	73.84	62.37	57.19	47.66	59.26
34 N 124 W	SPD	6.89	7.46	7.16	8.13	8.83	8.08	8.70	7.82	6.94	7.34	6.55	7.48
	AIR	13.76	13.26	13.35	13.55	14.76	15.93	16.50	17.57	18.06	16.69	16.06	14.94
	SEA	14.50	13.74	13.79	14.00	14.29	15.42	16.25	17.42	18.00	17.22	16.42	15.29
	VPA	12.93	12.49	12.32	12.47	13.66	14.94	16.27	16.97	17.22	15.86	14.93	14.10
	VPS	16.62	15.77	15.84	16.06	16.38	17.63	18.53	20.05	20.77	19.73	18.75	17.47
	CLD	59.11	65.92	61.18	62.82	67.07	62.88	72.52	68.90	58.04	58.15	51.13	57.11
34 N 125 W	SPD	6.77	7.26	7.78	8.25	8.14	8.11	8.38	8.46	7.04	6.98	6.30	7.31
	AIR	13.69	13.39	13.67	13.78	14.77	15.65	16.71	17.82	18.10	17.13	16.21	14.84
	SEA	14.39	13.89	13.87	14.29	14.66	15.56	16.72	17.63	18.41	17.77	16.90	15.55
	VPA	13.04	12.47	12.52	12.45	13.66	15.10	16.12	17.16	17.36	16.16	15.06	13.73
	VPS	16.47	15.92	15.92	16.35	16.75	17.79	19.15	20.21	21.25	20.43	19.34	17.77
	CLD	65.14	64.01	60.52	65.10	72.96	66.03	72.60	69.94	55.65	61.25	59.49	56.19
34 N 126 W	SPD	7.24	7.59	7.33	8.07	7.81	8.28	7.85	7.26	6.41	6.86	6.41	7.22
	AIR	14.14	13.38	13.45	14.16	15.29	15.76	16.64	18.20	18.74	17.45	16.51	15.18
	SEA	14.65	14.11	13.83	14.62	15.16	15.82	16.63	18.26	18.61	18.20	17.28	15.70
	VPA	13.31	12.56	12.15	12.21	13.77	14.74	16.34	17.45	17.98	16.37	14.85	14.21
	VPS	16.73	16.16	15.89	16.71	17.31	18.05	19.00	21.05	21.54	20.99	19.83	17.92
	CLD	64.07	68.70	64.92	63.99	70.32	72.08	81.58	62.70	69.60	62.25	65.37	64.91
34 N 127 W	SPD	7.62	6.93	6.89	7.93	8.25	7.89	7.78	7.22	6.65	6.16	7.33	6.98
	AIR	14.44	13.85	13.82	14.19	15.48	16.39	17.25	18.16	18.72	17.79	16.55	15.44
	SEA	15.13	14.26	14.18	14.36	15.26	16.11	17.20	18.21	19.20	18.19	17.27	16.42
	VPA	13.60	13.15	12.31	12.96	14.11	15.64	16.62	17.32	17.84	16.40	15.46	14.33
	VPS	17.30	16.32	16.25	16.43	17.40	18.40	19.71	20.98	22.35	21.00	19.79	18.76
	CLD	69.62	63.51	67.65	69.82	74.07	74.74	73.21	73.97	60.26	63.03	66.66	63.39
34 N 128 W	SPD	7.27	7.29	7.43	8.03	7.47	7.30	7.12	7.44	6.83	6.68	7.50	6.87
	AIR	14.49	13.84	14.05	13.94	14.90	16.15	17.69	19.06	18.85	18.31	16.87	15.41
	SEA	15.22	14.22	14.29	14.67	15.39	16.32	17.70	18.82	19.23	18.96	17.63	16.03
	VPA	13.70	12.67	12.35	12.54	13.85	15.05	16.65	18.52	17.64	16.91	15.53	14.11
	VPS	17.36	16.29	16.35	16.78	17.57	18.62	20.33	21.88	22.40	22.02	20.23	18.32
	CLD	69.61	70.68	66.31	65.31	72.32	77.06	80.90	70.58	63.39	61.73	60.23	67.53

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
35 N	SPD	6.10	6.55	7.57	7.79	8.00	7.51	6.71	7.11	6.18	6.01	5.66	6.19
121 W	AIR	12.75	12.66	12.68	12.65	13.16	14.21	14.60	15.48	16.15	16.25	14.97	13.99
	SEA	13.14	12.95	12.77	12.40	12.84	13.63	14.26	15.58	16.10	16.71	15.17	14.23
	VPA	11.69	11.56	11.73	12.02	12.66	13.64	14.58	15.37	15.65	15.29	13.94	11.96
	VPS	15.16	14.99	14.82	14.49	14.92	15.70	16.38	17.83	18.44	19.18	17.33	16.31
	CLD	40.34	46.70	46.36	47.80	54.37	59.37	68.56	66.37	55.54	47.47	41.12	44.27
35 N	SPD	7.08	6.75	7.69	8.02	7.92	7.61	8.00	7.78	7.12	6.71	6.50	5.82
122 W	AIR	13.01	12.38	12.59	12.93	13.49	14.34	14.99	15.90	16.67	16.03	15.00	13.91
	SEA	13.40	13.04	13.12	13.20	13.21	14.03	14.78	15.68	16.28	16.28	15.21	14.09
	VPA	12.36	11.46	11.82	12.09	12.88	13.93	14.89	15.72	16.11	15.48	14.32	12.77
	VPS	15.43	15.07	15.18	15.23	15.27	16.10	16.89	17.91	18.61	18.61	17.37	16.13
	CLD	56.79	48.76	50.06	55.41	61.17	64.81	75.68	63.66	55.43	52.69	51.74	46.46
35 N	SPD	7.30	8.12	7.53	8.26	8.53	8.37	8.24	8.16	6.52	6.29	6.64	7.74
123 W	AIR	12.99	12.55	12.95	13.19	13.61	14.78	15.55	16.73	16.71	16.35	15.25	13.76
	SEA	13.47	13.25	13.20	13.43	13.87	14.24	15.65	16.33	17.00	16.59	15.05	14.28
	VPA	12.43	12.19	11.96	11.92	12.83	14.32	15.17	16.41	16.25	15.73	14.31	12.74
	VPS	15.48	15.28	15.24	15.45	15.93	16.31	17.86	18.65	19.46	18.97	17.22	16.36
	CLD	67.15	60.67	56.25	56.25	67.22	65.64	67.70	69.05	64.01	51.76	54.03	56.54
35 N	SPD	7.15	7.41	7.51	7.79	7.17	8.43	7.57	7.17	7.03	6.01	6.93	7.61
124 W	AIR	13.01	12.97	12.99	13.41	13.83	15.04	16.20	17.06	17.02	17.14	15.34	13.68
	SEA	13.70	13.15	13.59	13.49	13.82	14.80	15.97	17.06	17.34	17.14	16.00	14.75
	VPA	12.57	12.32	12.12	12.45	12.85	14.57	15.86	16.75	16.33	16.50	14.56	12.73
	VPS	15.74	15.17	15.64	15.52	15.90	16.92	18.22	19.56	19.94	19.62	18.28	16.86
	CLD	65.55	65.68	57.32	58.82	61.78	61.21	74.91	67.60	63.42	52.97	55.72	51.76
35 N	SPD	7.04	7.65	7.48	8.38	7.74	7.83	8.44	7.94	7.53	6.46	6.63	8.15
125 W	AIR	13.07	12.60	13.13	13.20	14.15	15.09	16.37	17.52	18.16	17.02	16.07	14.48
	SEA	13.94	13.54	13.60	13.61	14.17	14.91	16.21	17.41	17.53	17.50	16.38	15.11
	VPA	12.70	12.21	12.14	11.91	13.20	14.32	15.79	17.19	16.81	16.14	15.00	13.49
	VPS	15.99	15.59	15.64	15.66	16.22	17.07	18.48	20.02	20.15	20.06	18.72	17.23
	CLD	67.99	65.26	58.76	60.52	71.42	72.93	75.64	65.35	56.89	65.05	62.00	67.50
35 N	SPD	7.82	6.93	7.39	9.27	8.07	8.65	8.70	7.20	6.83	6.42	7.67	7.31
126 W	AIR	13.86	13.26	12.83	13.27	14.18	15.73	16.23	17.92	17.89	17.26	15.83	14.40
	SEA	14.20	13.67	13.85	14.02	14.35	15.38	16.24	17.94	17.99	17.87	16.43	15.52
	VPA	13.41	12.65	11.96	11.61	13.07	14.82	15.59	17.44	16.70	16.16	14.61	13.26
	VPS	16.28	15.71	15.91	16.06	16.40	17.56	18.53	20.68	20.75	20.55	18.77	17.68
	CLD	67.80	73.61	58.37	62.95	72.25	68.15	80.90	68.56	65.52	61.74	62.77	64.85
35 N	SPD	7.46	7.95	7.94	8.45	8.34	8.02	7.68	7.94	6.67	7.12	7.95	8.25
127 W	AIR	13.85	13.32	13.32	13.38	14.38	15.69	16.82	18.21	18.45	17.55	16.07	14.58
	SEA	14.57	14.09	13.75	13.86	14.53	15.75	16.95	18.13	18.66	18.21	17.00	15.54
	VPA	13.05	12.58	12.44	12.14	13.28	15.00	15.96	17.22	17.24	16.29	14.53	13.29
	VPS	16.67	16.15	15.80	15.90	16.60	18.01	19.39	20.92	21.61	21.02	19.45	17.73
	CLD	72.59	69.25	69.61	66.37	69.58	73.50	79.53	64.54	64.55	66.42	67.91	70.11
35 N	SPD	7.51	8.12	7.86	7.87	7.47	7.92	7.94	7.32	7.14	6.69	6.51	7.35
128 W	AIR	13.98	13.43	13.63	13.55	14.68	16.19	17.20	18.41	18.61	17.81	16.33	14.96
	SEA	14.85	14.24	14.01	13.87	14.70	16.11	17.14	18.14	18.97	18.03	17.35	16.04
	VPA	12.95	12.57	12.27	11.99	13.34	15.07	16.07	17.55	17.20	16.76	15.04	13.67
	VPS	16.97	16.32	16.06	15.90	16.80	18.38	19.62	20.91	22.02	20.75	19.88	18.31
	CLD	71.08	72.05	69.97	70.35	70.38	76.53	80.09	73.97	67.47	64.54	64.97	67.37
35 N	SPD	7.73	7.89	7.77	7.88	7.15	7.60	7.56	6.65	7.25	7.13	6.87	7.23
129 W	AIR	14.07	13.58	13.36	13.80	14.58	16.30	17.51	18.63	19.08	18.17	16.64	15.20
	SEA	15.08	14.58	14.19	14.26	14.94	16.52	17.64	18.62	19.42	18.69	17.50	16.32
	VPA	13.03	12.55	12.25	12.26	13.31	15.04	16.22	17.74	17.72	16.72	15.20	14.05
	VPS	17.21	16.68	16.25	16.32	17.06	18.89	20.26	21.56	22.66	21.63	20.08	18.62
	CLD	71.76	69.87	69.62	71.91	75.77	74.39	81.43	72.44	67.45	65.46	63.12	71.02
35 N	SPD	8.00	7.74	7.83	7.36	6.91	6.98	7.27	6.12	7.02	6.82	7.30	7.38
130 W	AIR	13.96	13.66	13.47	13.69	14.88	16.50	17.68	19.37	19.21	18.24	16.88	15.42
	SEA	15.35	14.62	14.41	14.48	15.24	16.75	18.08	19.37	19.65	18.96	17.86	16.60
	VRA	12.90	12.53	12.35	11.99	13.51	15.56	16.48	18.29	17.61	16.67	15.29	14.18
	VPS	17.51	16.72	16.48	16.55	17.38	19.16	20.81	22.57	22.98	21.99	20.53	18.96
	CLD	73.61	70.74	71.52	70.35	72.72	74.02	79.09	70.01	66.56	67.00	65.13	70.08

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
36 N	SPD	6.50	7.26	7.06	8.05	8.70	8.66	7.37	7.55	7.04	6.84	5.95	6.71
122 W	AIR	12.32	12.26	12.39	12.35	12.72	14.00	15.06	15.25	15.96	15.55	14.51	13.18
	SEA	12.80	12.68	12.46	12.30	12.49	13.17	14.46	14.75	15.91	15.40	14.61	13.75
	VPA	11.41	11.46	11.46	11.73	12.29	13.50	14.72	15.06	15.31	14.80	13.33	12.05
	VPS	14.82	14.71	14.52	14.38	14.56	15.28	16.61	16.89	18.20	17.62	16.72	15.79
	CLD	51.49	47.69	46.27	49.50	51.97	60.27	65.46	57.31	52.06	43.89	43.01	43.11
36 N	SPD	7.29	8.02	7.97	8.82	8.36	8.43	8.55	8.38	7.40	7.84	7.04	7.62
123 W	AIR	12.24	12.33	12.31	12.42	13.25	14.21	15.25	15.99	16.67	15.44	14.54	13.16
	SEA	12.98	12.77	12.77	12.34	13.41	14.26	15.20	15.97	16.54	15.68	14.99	13.96
	VPA	11.24	11.46	11.15	11.79	12.65	13.76	14.83	15.81	15.82	14.62	14.01	11.73
	VPS	15.00	14.79	14.82	14.41	15.46	16.36	17.36	18.25	18.90	17.90	17.11	16.01
	CLD	50.58	62.15	50.78	53.99	61.79	67.39	65.86	59.24	49.31	49.60	50.77	49.12
36 N	SPD	7.53	6.57	6.99	8.06	7.97	9.01	8.22	7.81	7.19	7.04	6.05	6.45
124 W	AIR	12.32	12.09	12.47	12.64	13.76	14.53	15.58	16.61	17.10	15.93	14.79	13.64
	SEA	13.18	13.12	12.64	12.98	13.43	13.90	15.31	16.52	16.69	16.61	15.21	14.36
	VPA	12.21	11.66	11.88	11.84	12.89	14.03	15.12	16.42	16.86	15.37	13.99	12.88
	VPS	15.23	15.15	14.67	15.01	15.46	15.97	17.47	18.87	19.13	19.01	17.36	16.41
	CLD	60.25	66.66	60.85	56.05	61.21	62.07	67.91	62.73	56.00	56.30	56.36	58.01
36 N	SPD	8.03	7.45	7.89	9.02	8.79	8.88	8.88	8.25	6.67	7.48	7.19	7.29
125 W	AIR	12.51	12.40	12.41	12.75	13.71	14.53	15.64	16.85	17.16	16.52	14.92	13.30
	SEA	13.33	13.21	12.79	13.13	13.68	14.17	15.56	16.71	17.24	16.97	15.68	14.39
	VPA	12.33	12.08	11.70	11.63	12.88	13.91	15.24	16.59	16.70	15.61	14.03	12.56
	VPS	15.36	15.25	14.82	15.18	15.73	16.23	17.76	19.10	19.79	19.41	17.90	16.46
	CLD	66.79	63.01	63.80	55.75	64.25	64.67	71.65	62.12	58.67	55.94	59.79	55.42
36 N	SPD	7.92	7.89	8.01	8.84	7.87	8.90	8.58	7.62	7.18	7.84	7.16	7.80
126 W	AIR	12.92	12.35	12.36	12.35	13.56	14.97	16.11	17.14	17.67	16.78	15.31	13.80
	SEA	13.48	13.10	13.05	12.99	13.75	14.89	15.96	16.88	17.98	17.16	15.97	14.83
	VPA	12.27	11.84	11.64	11.46	12.79	14.26	15.59	16.73	16.93	15.79	14.29	12.91
	VPS	15.52	15.15	15.09	15.02	15.80	17.02	18.23	19.32	20.72	19.67	18.25	16.96
	CLD	65.32	67.18	68.28	64.60	66.86	64.91	71.53	64.07	61.03	55.21	62.20	62.31
36 N	SPD	7.61	7.71	8.06	7.93	7.93	8.46	8.48	7.54	7.33	7.48	7.30	7.35
127 W	AIR	13.08	12.66	12.78	12.86	13.75	15.16	16.27	17.66	18.11	17.02	15.79	14.28
	SEA	13.52	13.15	13.16	13.35	14.04	15.20	16.15	17.47	18.13	17.48	16.44	15.13
	VPA	12.23	12.13	11.66	11.69	12.76	14.47	15.74	17.03	17.12	15.90	14.59	13.37
	VPS	15.59	15.19	15.19	15.37	16.11	17.35	18.44	20.07	20.92	20.06	18.81	17.28
	CLD	69.15	67.26	66.73	66.22	71.11	70.95	76.15	63.17	58.45	63.11	63.03	67.38
36 N	SPD	7.21	7.72	7.64	7.82	7.42	8.26	8.15	7.20	7.14	7.07	7.16	7.45
128 W	AIR	13.74	12.88	13.02	13.51	14.49	16.08	17.00	18.24	18.40	17.62	16.34	14.83
	SEA	14.74	13.78	13.61	13.59	14.44	16.11	17.14	18.10	18.57	17.80	17.20	15.77
	VPA	12.87	11.94	11.76	12.11	13.24	14.96	16.09	17.29	17.20	16.18	15.01	13.60
	VPS	16.87	15.83	15.65	15.62	16.50	18.39	19.62	20.85	21.46	20.46	19.71	18.00
	CLD	69.38	69.44	68.31	66.03	70.05	67.38	77.43	71.18	63.53	63.64	64.17	68.65
36 N	SPD	7.69	7.74	7.94	7.60	7.45	7.46	7.42	6.72	6.94	6.85	7.33	7.57
129 W	AIR	13.55	13.04	13.00	13.33	14.20	16.08	17.15	18.57	18.91	17.76	16.25	14.66
	SEA	14.59	13.87	13.65	13.85	14.49	16.24	17.32	18.50	19.29	18.25	17.15	15.78
	VPA	12.57	12.24	11.75	12.02	12.93	15.08	16.25	17.70	17.61	16.52	14.93	13.60
	VPS	16.69	15.93	15.68	15.88	16.57	18.55	19.84	21.38	22.45	21.05	19.65	18.01
	CLD	72.45	68.65	69.67	69.88	71.98	75.72	81.13	71.40	64.54	67.19	67.30	71.57
36 N	SPD	8.01	7.55	7.71	7.85	6.98	7.20	7.23	6.18	7.45	6.46	7.22	7.96
130 W	AIR	13.68	13.13	13.10	13.24	14.50	16.12	17.47	19.12	18.95	17.95	16.53	15.12
	SEA	14.65	13.99	13.85	13.96	14.70	16.18	17.68	19.27	19.43	18.53	17.37	16.15
	VPA	12.91	12.39	12.10	11.95	13.20	14.98	16.51	18.31	17.58	16.36	15.21	14.14
	VPS	16.76	16.04	15.89	15.99	16.79	18.47	20.31	22.47	22.66	21.42	19.95	18.42
	CLD	73.28	70.27	75.18	71.12	70.67	75.98	80.57	69.05	68.86	67.65	71.19	72.80
36 N	SPD	8.39	7.44	8.02	7.65	7.17	6.78	6.37	6.24	6.99	6.47	8.25	8.44
131 W	AIR	13.61	13.62	13.51	13.19	14.55	16.26	18.07	19.30	19.45	18.39	16.81	14.99
	SEA	14.91	14.14	14.16	14.11	14.97	16.39	18.05	19.82	19.63	19.02	17.75	16.04
	VPA	12.56	12.49	12.12	11.74	13.30	15.45	17.10	18.14	18.10	17.05	14.99	13.63
	VPS	17.04	16.19	16.20	16.17	17.12	18.72	20.78	23.24	22.94	22.08	20.39	18.30
	CLD	72.10	72.10	73.83	69.68	73.67	78.22	74.39	72.05	67.53	62.42	70.74	76.75

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
37 N 122 W	SPD	6.02	6.87	6.47	7.28	7.76	7.01	6.21	5.85	5.68	6.05	6.30	6.64
	AIR	11.79	12.19	12.39	12.32	12.71	13.54	14.25	14.48	15.79	15.22	14.13	12.47
	SEA	12.70	12.66	12.26	11.83	12.39	13.08	13.75	14.41	15.37	14.88	14.18	13.08
	VPA	11.21	11.58	11.68	11.57	12.43	13.27	14.03	14.39	15.13	14.30	13.00	11.21
	VPS	14.74	14.71	14.34	13.93	14.47	15.16	15.84	16.52	17.62	17.02	16.25	15.12
	CLD	53.10	50.38	45.71	46.23	61.58	62.11	57.48	62.13	44.47	46.92	53.97	38.87
37 N 123 W	SPD	7.58	8.01	7.87	8.32	8.86	8.00	7.62	7.86	6.89	7.02	6.90	6.79
	AIR	11.51	11.74	11.87	11.95	12.67	13.74	14.35	15.01	15.70	15.11	14.08	12.67
	SEA	12.41	12.31	12.26	12.11	12.55	13.43	14.48	14.86	15.65	15.20	14.19	13.20
	VPA	10.89	10.98	11.09	11.46	12.26	13.55	14.22	14.91	15.18	14.25	13.27	11.54
	VPS	14.46	14.37	14.34	14.21	14.62	15.50	16.60	17.01	17.92	17.38	16.27	15.26
	CLD	55.78	53.69	53.24	52.67	54.66	57.93	63.59	58.36	52.05	43.68	51.25	48.59
37 N 124 W	SPD	7.93	8.11	8.05	9.23	9.00	8.79	8.75	8.78	7.31	7.51	7.06	7.50
	AIR	11.86	11.66	11.63	11.90	12.53	13.99	14.77	15.53	16.17	15.11	14.02	12.87
	SEA	12.58	12.23	12.23	12.29	12.59	13.65	14.62	15.19	16.09	15.34	14.49	13.55
	VPA	11.41	11.42	11.03	11.21	12.17	13.66	14.72	15.55	15.94	14.64	13.53	12.20
	VPS	14.63	14.31	14.32	14.38	14.67	15.74	16.74	17.38	18.46	17.55	16.59	15.61
	CLD	62.57	59.18	57.65	54.01	55.60	58.14	60.96	48.63	45.07	46.26	53.86	57.19
37 N 125 W	SPD	7.39	7.82	8.09	8.99	9.08	9.41	8.73	8.24	7.53	7.47	7.03	7.56
	AIR	11.97	11.75	11.88	12.10	12.88	14.31	15.24	16.33	16.70	15.62	14.41	12.91
	SEA	12.65	12.52	12.52	12.55	12.97	14.05	14.76	15.98	16.59	16.02	14.96	13.70
	VPA	11.57	11.44	11.24	11.42	12.26	13.96	14.93	16.23	16.26	15.09	13.81	12.36
	VPS	14.71	14.58	14.58	14.62	15.01	16.15	16.89	18.28	19.00	18.31	17.11	15.76
	CLD	61.53	62.25	61.09	57.91	63.97	56.93	65.96	57.49	50.58	48.81	55.98	62.52
37 N 126 W	SPD	7.92	7.86	7.94	8.73	8.75	8.81	8.77	7.80	7.40	7.45	7.24	7.18
	AIR	12.36	11.89	11.83	12.15	13.22	14.67	15.74	17.02	17.20	16.30	14.83	13.35
	SEA	13.16	12.67	12.51	12.74	13.26	14.25	15.50	16.72	17.03	16.59	15.57	14.26
	VPA	12.01	11.46	11.08	11.25	12.62	14.01	15.44	16.69	16.68	15.37	14.00	12.75
	VPS	15.20	14.72	14.59	14.80	15.30	16.32	17.72	19.15	19.56	19.01	17.81	16.34
	CLD	65.68	66.14	62.25	63.72	64.76	66.49	68.93	62.46	50.97	53.69	62.13	63.94
37 N 127 W	SPD	7.59	8.28	8.47	8.44	8.30	8.67	8.07	7.87	7.37	7.11	7.19	7.54
	AIR	12.67	12.19	12.25	12.44	13.51	15.01	16.05	17.36	17.75	16.58	15.52	13.54
	SEA	13.33	12.77	12.80	12.83	13.62	14.56	15.75	17.03	17.50	16.70	15.69	14.24
	VPA	12.06	11.47	11.40	11.51	12.50	14.25	15.59	16.98	17.06	15.70	14.74	12.81
	VPS	15.36	14.81	14.84	14.87	15.65	16.66	[illegible]	19.53	20.13	19.12	17.94	18.32
	CLD	67.05	66.71	68.18	66.92	70.22	70.51	75.46	65.76	53.79	64.16	61.90	70.13
37 N 128 W	SPD	8.31	8.15	8.12	8.35	7.69	8.38	8.18	7.47	7.69	7.05	7.25	7.81
	AIR	13.06	12.45	12.44	12.61	13.85	15.25	16.74	18.29	18.17	17.10	15.79	13.87
	SEA	13.75	13.11	12.85	13.05	13.79	14.87	16.23	17.55	17.94	17.22	16.50	14.91
	VPA	12.54	11.63	11.46	11.43	12.78	14.54	15.85	17.55	17.26	15.71	14.79	12.92
	VPS	15.82	15.15	14.91	15.07	15.82	16.99	18.52	20.17	20.69	19.77	18.88	17.04
	CLD	68.28	72.36	71.29	71.79	68.51	74.63	74.80	63.35	62.09	56.64	64.75	69.73
37 N 129 W	SPD	7.54	8.38	8.01	7.71	8.11	7.57	7.84	6.88	7.13	6.84	7.56	8.21
	AIR	12.90	12.24	12.36	12.64	13.67	15.58	17.09	18.73	18.54	17.40	16.10	14.28
	SEA	14.18	13.32	13.08	13.36	13.99	15.51	16.86	18.56	18.42	17.61	16.76	15.29
	VPA	12.02	11.75	11.60	11.50	12.57	14.65	16.28	17.92	17.34	15.87	14.85	13.15
	VPS	16.30	15.39	15.11	15.38	16.04	17.70	19.28	21.49	21.31	20.23	19.17	17.47
	CLD	69.68	73.45	71.23	70.15	73.87	72.80	81.07	68.01	62.77	61.90	70.81	74.18
37 N 130 W	SPD	8.25	8.03	8.13	7.73	7.27	7.27	7.19	6.75	7.44	6.81	7.34	8.43
	AIR	13.52	12.77	12.50	13.04	14.05	15.95	17.36	18.92	18.70	17.88	16.07	14.51
	SEA	14.40	13.65	13.35	13.48	14.21	15.64	17.25	18.55	19.26	18.43	17.18	15.49
	VPA	12.80	12.00	11.53	11.78	12.64	14.93	16.55	17.75	17.60	16.23	14.70	13.34
	VPS	16.47	15.70	15.37	15.50	16.26	17.85	19.76	21.47	22.44	21.28	19.67	17.67
	CLD	74.66	72.90	74.43	72.28	77.31	75.52	74.66	68.37	62.93	62.04	72.36	71.52
37 N 131 W	SPD	8.58	7.96	8.60	7.34	6.67	7.22	7.10	6.03	6.40	7.03	7.94	7.78
	AIR	13.27	12.51	12.68	12.92	13.92	15.76	17.47	19.05	19.01	17.66	16.40	14.54
	SEA	14.59	13.84	13.46	13.67	14.17	15.80	17.57	19.08	19.36	18.56	17.41	15.81
	VPA	12.51	11.63	11.64	11.82	12.65	14.68	16.62	17.85	18.00	16.03	15.05	13.32
	VPS	16.68	15.90	15.49	15.70	16.21	18.03	20.19	22.19	22.57	21.46	19.96	18.04
	CLD	74.01	71.75	73.55	68.11	77.58	73.85	79.94	68.39	66.22	66.68	72.17	71.37

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
38 N	SPD	7.38	6.71	7.46	8.52	7.88	7.85	6.27	6.69	5.46	5.80	5.69	6.98
123 W	AIR	11.56	11.82	11.91	11.45	12.47	13.45	14.06	14.48	14.98	14.37	13.59	11.81
	SEA	12.04	11.92	11.86	11.61	12.46	12.82	13.53	14.10	14.33	14.35	13.78	12.59
	VPA	11.44	11.68	11.31	11.08	12.07	13.22	14.00	14.19	14.31	13.63	12.99	11.30
	VPS	14.11	14.01	13.96	13.77	14.68	14.95	15.65	16.26	16.47	16.45	15.81	14.64
	CLD	53.02	53.43	48.47	41.18	46.79	52.93	60.99	53.93	40.12	47.28	58.09	58.18
38 N	SPD	7.18	8.48	7.88	8.94	9.26	8.93	8.93	8.53	7.15	6.54	7.37	8.26
124 W	AIR	11.48	11.22	11.40	11.45	12.33	13.45	14.06	14.72	15.33	14.87	13.96	12.47
	SEA	12.12	12.12	11.72	11.75	12.11	12.83	13.40	14.26	14.88	14.85	14.29	13.40
	VPA	10.89	10.98	10.78	10.87	12.13	13.21	14.00	14.82	15.15	14.43	13.56	11.85
	VPS	14.21	14.20	13.84	13.86	14.22	14.94	15.49	16.40	17.05	17.01	16.39	15.44
	CLD	53.38	52.54	54.20	47.88	51.89	55.03	56.09	60.06	53.94	46.63	54.18	58.37
38 N	SPD	7.03	8.69	8.77	8.36	8.76	9.58	9.88	8.80	7.25	7.27	6.49	7.60
125 W	AIR	11.95	11.14	11.27	11.71	12.77	13.99	15.04	15.78	15.98	15.25	14.19	12.72
	SEA	12.87	12.25	11.82	12.15	12.73	13.74	14.60	15.13	15.76	15.52	15.08	13.46
	VPA	11.50	11.21	10.80	11.34	12.16	13.49	14.68	15.74	15.92	14.73	13.87	12.12
	VPS	14.91	14.35	13.96	14.23	14.82	15.87	16.74	17.33	18.05	17.74	17.24	15.58
	CLD	60.78	62.40	62.17	60.67	61.56	58.14	57.11	54.09	48.52	48.03	58.13	64.79
38 N	SPD	7.69	8.58	7.46	8.84	8.58	9.23	9.25	8.56	7.74	7.35	7.57	8.38
126 W	AIR	11.39	10.98	11.73	11.85	12.76	14.25	15.41	16.52	16.91	15.95	14.67	12.87
	SEA	12.86	12.11	12.36	12.41	12.87	14.06	15.12	15.80	16.49	16.36	15.35	14.00
	VPA	11.09	11.11	11.13	10.94	12.24	13.88	14.99	16.19	16.35	15.31	13.98	12.26
	VPS	14.89	14.19	14.40	14.46	14.91	16.15	17.29	18.08	18.90	18.71	17.52	16.08
	CLD	67.89	62.04	64.27	64.20	68.62	67.70	66.44	60.85	53.71	52.99	56.01	70.12
38 N	SPD	8.12	8.46	8.17	8.17	7.88	9.38	8.66	8.35	7.52	7.77	7.12	8.17
127 W	AIR	12.16	11.61	11.69	11.76	13.17	14.79	15.95	17.26	17.59	16.49	15.36	13.43
	SEA	13.24	12.35	12.23	12.71	13.16	14.60	15.78	16.68	17.17	16.77	15.72	14.53
	VPA	11.74	11.25	11.08	11.18	12.00	14.04	15.37	16.64	16.91	15.29	14.43	12.62
	VPS	15.28	14.42	14.27	14.77	15.19	16.73	18.04	19.12	19.70	19.17	17.94	16.61
	CLD	70.69	72.72	68.21	68.88	68.01	68.41	72.69	67.42	51.13	59.16	66.51	69.84
38 N	SPD	8.98	8.38	8.44	7.49	7.39	8.26	8.25	7.31	7.44	7.65	7.37	8.58
128 W	AIR	11.91	12.11	11.73	12.42	13.48	15.06	16.40	17.87	18.20	16.86	15.45	13.41
	SEA	13.44	12.87	12.58	12.58	13.53	14.72	16.25	17.44	17.70	17.43	16.22	14.81
	VPA	11.28	11.50	10.73	11.35	12.28	14.44	15.57	17.29	17.11	15.73	14.43	12.72
	VPS	15.46	14.92	14.63	14.61	15.58	16.83	18.58	20.05	20.36	19.98	18.52	16.93
	CLD	69.64	68.68	59.27	62.23	69.86	75.36	78.63	66.74	56.54	59.54	62.32	72.39
38 N	SPD	9.31	7.98	8.33	8.10	7.49	7.90	8.27	7.58	7.27	7.41	7.59	8.22
129 W	AIR	12.33	12.13	11.95	12.11	13.48	15.61	16.79	17.95	18.57	17.26	15.66	14.05
	SEA	13.84	13.00	12.70	13.08	13.50	15.43	16.55	17.96	18.57	17.90	16.49	15.38
	VPA	12.00	11.34	11.02	11.06	12.67	14.64	16.09	17.00	17.37	15.97	14.52	13.02
	VPS	15.91	15.04	14.74	15.11	15.53	17.62	18.91	20.71	21.51	20.59	18.84	17.54
	CLD	77.36	70.13	71.48	73.77	69.18	70.42	74.14	68.10	59.00	63.52	65.93	74.46
38 N	SPD	8.69	8.57	8.29	7.62	7.20	7.57	7.54	7.05	6.97	7.11	8.39	8.75
130 W	AIR	12.51	12.15	11.71	12.45	13.60	15.22	16.84	18.39	18.79	17.57	15.64	13.92
	SEA	13.88	13.27	12.85	12.95	13.54	15.23	17.13	18.39	18.87	18.20	16.82	15.31
	VPA	11.95	11.31	11.15	11.16	12.31	14.29	15.78	17.53	17.34	15.97	14.43	13.14
	VPS	15.93	15.32	14.90	14.97	15.59	17.39	19.63	21.26	21.86	20.97	19.21	17.47
	CLD	70.83	68.57	68.98	73.00	71.46	73.07	79.70	70.07	63.58	62.50	74.31	75.10
38 N	SPD	8.25	8.52	8.18	7.95	6.76	7.55	7.33	6.11	7.21	7.35	7.32	8.14
131 W	AIR	13.05	12.45	12.14	12.73	14.04	15.71	17.31	19.03	18.79	17.79	16.09	14.34
	SEA	13.91	13.28	12.91	13.20	14.41	15.73	17.33	18.81	19.29	18.42	16.92	15.59
	VPA	11.89	11.52	11.37	11.17	12.96	14.68	16.37	17.93	17.55	16.27	14.79	13.60
	VPS	15.94	15.30	14.93	15.24	16.48	17.94	19.86	21.84	22.47	21.25	19.37	17.77
	CLD	73.25	73.67	73.21	71.21	78.58	68.09	82.91	66.90	66.49	62.08	67.06	74.47
38 N	SPD	8.89	8.30	8.31	7.74	6.91	6.97	6.58	6.83	6.42	7.48	8.10	9.12
132 W	AIR	12.59	12.67	12.10	12.36	13.68	15.63	17.41	18.86	19.02	17.96	15.93	14.61
	SEA	13.90	13.60	13.24	13.16	13.99	15.83	17.65	19.32	19.57	18.71	17.04	15.74
	VPA	12.16	11.79	11.38	11.21	12.30	14.77	16.77	17.81	17.55	16.24	14.49	13.41
	VPS	15.98	15.66	15.28	15.20	16.04	18.08	20.26	22.52	22.84	21.63	19.49	17.95
	CLD	79.28	76.12	74.21	72.72	75.53	75.49	79.24	68.59	63.61	68.29	74.39	70.66

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
39 N 124 W	SPD	7.64	7.79	7.59	7.51	9.11	8.80	8.99	8.63	6.29	6.79	6.28	6.93
	AIR	10.76	11.08	10.91	10.88	11.83	13.32	13.45	14.43	14.46	13.94	13.40	11.55
	SEA	11.46	11.38	11.03	10.70	11.23	12.11	12.42	13.06	13.55	13.66	13.58	12.39
	VPA	10.50	10.90	10.58	10.67	11.52	13.04	13.51	14.39	14.26	13.42	12.98	11.15
	VPS	13.58	13.51	13.21	12.97	13.39	14.24	14.55	15.17	15.68	15.75	15.62	14.47
	CLD	58.64	56.07	51.83	45.42	47.23	48.09	46.63	42.40	42.19	41.24	51.28	53.48
39 N 125 W	SPD	7.98	7.63	8.79	9.07	9.02	9.40	9.65	9.12	8.31	7.60	7.37	7.72
	AIR	11.53	11.18	11.27	11.51	12.34	14.06	14.89	15.84	15.78	15.22	14.10	12.21
	SEA	11.89	11.80	11.50	11.57	12.29	13.51	14.52	14.81	15.53	15.56	14.56	13.29
	VPA	11.36	10.92	10.61	11.02	12.29	13.37	14.65	15.49	15.26	14.43	13.58	11.82
	VPS	13.97	13.89	13.61	13.67	14.37	15.60	16.66	17.02	17.80	17.79	16.74	15.32
	CLD	60.73	61.96	58.89	59.00	60.38	55.57	62.07	51.71	47.08	46.12	62.20	60.80
39 N 126 W	SPD	8.77	7.60	8.19	8.08	8.22	9.07	9.36	8.63	7.96	6.81	7.31	7.76
	AIR	11.60	11.29	10.95	11.48	12.87	14.47	15.62	16.59	17.17	15.77	14.25	12.53
	SEA	12.61	11.98	11.78	12.05	12.90	14.19	15.16	15.97	17.13	16.18	15.34	13.64
	VPA	11.43	11.55	10.51	10.83	12.29	13.71	15.12	16.38	16.32	14.81	13.43	12.00
	VPS	14.65	14.07	13.88	14.10	14.94	16.25	17.35	18.27	19.66	18.49	17.57	15.71
	CLD	66.76	64.66	61.85	57.55	63.38	65.42	66.11	63.75	45.09	51.23	60.52	60.36
39 N 127 W	SPD	8.85	7.34	8.27	8.16	8.95	8.98	9.26	7.95	7.99	7.15	8.04	8.46
	AIR	11.42	10.84	10.97	11.73	12.46	14.11	16.06	17.31	17.37	16.54	14.80	12.28
	SEA	12.60	11.67	11.72	12.07	13.10	14.16	15.55	17.03	17.14	17.03	15.85	13.81
	VPA	11.52	10.77	10.68	10.85	11.71	13.64	15.41	16.75	16.29	15.65	13.88	12.02
	VPS	14.68	13.79	13.80	14.12	15.12	16.22	17.75	19.53	19.65	19.49	18.08	15.84
	CLD	75.20	65.90	65.88	64.28	71.30	72.22	68.75	58.04	55.86	54.57	64.51	65.62
39 N 128 W	SPD	8.23	8.56	8.21	8.49	8.24	8.34	7.97	8.10	7.83	7.09	8.51	8.17
	AIR	12.43	11.61	11.38	11.53	13.11	14.90	16.58	17.79	17.83	16.64	15.20	12.66
	SEA	13.22	11.96	11.75	12.06	13.16	14.87	16.34	17.84	17.66	17.07	16.27	14.52
	VPA	11.84	11.36	10.66	10.87	12.30	14.16	15.67	17.01	16.92	15.56	14.51	12.05
	VPS	15.26	14.03	13.83	14.13	15.21	16.99	18.65	20.55	20.28	19.54	18.58	16.60
	CLD	77.20	71.54	67.37	71.71	73.02	69.35	68.21	67.27	61.79	61.57	68.82	67.65
39 N 129 W	SPD	8.17	8.25	8.26	8.01	7.05	7.60	7.87	7.61	7.75	6.64	8.33	8.03
	AIR	12.66	11.91	11.39	12.28	13.01	14.70	16.68	18.08	18.10	16.68	15.36	12.99
	SEA	13.63	12.62	11.93	12.55	13.59	14.90	16.70	17.91	18.30	17.80	16.18	14.44
	VPA	12.32	11.68	10.86	11.48	11.98	14.07	15.90	16.89	17.36	15.29	14.35	12.18
	VPS	15.67	14.66	14.00	14.60	15.63	17.01	19.11	20.63	21.14	20.43	18.45	16.50
	CLD	80.30	68.39	69.30	72.82	76.93	69.58	75.80	72.01	61.58	61.96	74.22	71.84
39 N 130 W	SPD	8.62	8.69	7.81	7.17	6.84	6.60	7.72	6.73	7.36	7.65	8.18	8.10
	AIR	12.80	12.63	11.57	11.67	13.09	14.84	16.62	18.53	18.29	17.13	15.63	13.31
	SEA	13.65	12.16	11.95	12.34	13.04	14.91	16.73	18.68	18.51	17.67	16.54	14.01
	VPA	12.30	11.81	11.03	11.00	11.72	14.07	15.71	17.44	17.14	15.72	13.98	12.94
	VPS	15.66	14.21	14.02	14.38	15.06	17.02	19.11	21.64	21.39	20.27	18.89	16.06
	CLD	76.54	69.08	65.12	75.00	74.72	73.74	78.56	71.39	64.34	61.44	68.23	72.45
39 N 131 W	SPD	9.50	8.14	8.16	7.24	6.85	6.79	6.86	6.23	6.86	7.26	8.42	8.31
	AIR	12.13	11.37	11.37	12.18	13.80	15.22	17.19	18.84	18.95	17.07	15.67	13.23
	SEA	13.23	12.44	12.14	12.59	13.90	15.05	17.20	18.85	19.00	17.97	16.19	14.83
	VPA	11.35	11.09	10.62	11.24	12.66	14.21	16.42	17.94	17.75	15.80	14.54	12.57
	VPS	15.26	14.48	14.18	14.64	15.94	17.17	19.68	21.87	22.07	20.66	18.48	16.90
	CLD	75.41	68.00	72.12	69.09	74.76	75.68	80.64	61.44	64.54	63.17	72.82	72.76
39 N 132 W	SPD	9.24	8.17	8.86	7.26	7.23	7.06	6.76	6.41	7.49	6.98	8.75	9.74
	AIR	11.83	12.01	11.55	11.85	13.13	15.24	16.85	18.86	18.54	17.25	15.31	13.70
	SEA	13.58	12.60	12.49	12.60	13.46	15.32	17.33	19.27	18.91	18.00	16.39	14.86
	VPA	11.49	11.05	10.91	10.77	12.06	14.47	16.02	18.09	17.54	15.86	14.13	12.77
	VPS	15.67	14.64	14.54	14.65	15.50	17.47	19.87	22.45	21.95	20.71	18.70	16.96
	CLD	76.89	75.46	66.92	72.09	71.63	73.74	73.86	71.74	72.95	66.29	70.17	76.82
39 N 133 W	SPD	9.55	7.81	8.35	8.16	6.81	6.13	6.35	6.04	7.13	7.15	8.57	8.24
	AIR	12.68	11.86	11.83	11.88	13.33	15.51	17.17	18.83	18.80	17.78	15.72	14.05
	SEA	13.72	12.84	12.62	12.68	13.69	15.65	17.67	19.29	19.55	18.75	16.80	15.26
	VPA	12.09	11.44	10.91	10.99	12.23	14.21	16.32	17.55	17.44	16.21	14.58	13.38
	VPS	15.77	14.88	14.66	14.73	15.71	17.83	20.28	22.45	22.80	21.70	19.17	17.39
	CLD	79.56	76.95	68.55	72.70	80.96	80.62	83.91	74.79	68.62	65.98	74.81	75.18

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
40 N 124 W	SPD	9.32	7.14	7.96	8.31	9.76	8.67	9.92	8.40	7.35	7.11	7.31	7.07
	AIR	10.28	11.46	11.16	10.91	11.82	12.58	13.06	13.35	13.92	12.97	13.02	10.85
	SEA	11.19	10.94	10.37	9.89	10.08	10.81	11.01	11.32	11.51	11.53	12.85	12.08
	VPA	10.93	11.98	11.04	10.84	12.10	12.65	13.40	13.77	13.72	13.05	13.10	10.79
	VPS	13.33	13.12	12.63	12.21	12.38	13.01	13.19	13.48	13.66	13.69	14.88	14.12
	CLD	55.77	55.41	50.51	52.32	49.62	55.01	50.14	51.95	29.98	45.99	64.42	57.10
40 N 125 W	SPD	8.68	8.32	7.57	8.77	8.93	8.62	9.43	9.23	8.08	7.26	7.88	8.53
	AIR	10.35	10.59	10.79	10.95	12.14	13.66	14.66	15.33	15.01	13.77	12.88	10.79
	SEA	11.29	11.09	11.05	11.17	11.55	12.65	13.19	14.30	14.40	13.54	13.43	11.93
	VPA	10.11	10.58	10.38	10.54	11.82	13.18	14.22	15.15	14.67	13.34	12.71	10.67
	VPS	13.43	13.25	13.21	13.31	13.68	14.74	15.30	16.48	16.60	15.62	15.48	14.05
	CLD	65.71	65.56	60.65	55.23	58.71	61.05	54.78	48.75	47.45	52.29	59.01	61.82
40 N 126 W	SPD	10.17	7.85	8.90	7.54	9.33	10.24	8.52	7.29	7.18	7.91	9.16	9.08
	AIR	10.97	10.83	11.24	11.06	12.18	14.37	15.62	16.88	16.57	15.46	13.21	12.00
	SEA	12.11	11.60	11.24	11.31	12.09	13.69	14.76	15.96	16.63	15.41	13.91	13.04
	VPA	10.80	11.02	10.40	10.34	12.01	13.78	15.11	16.12	15.77	14.17	12.89	11.92
	VPS	14.18	13.69	13.39	13.42	14.17	15.75	16.88	18.27	19.06	17.60	16.01	15.11
	CLD	70.25	64.40	67.54	62.31	62.34	58.60	59.03	53.75	53.92	45.90	63.33	73.40
40 N 127 W	SPD	9.05	8.05	9.28	7.94	7.89	8.03	8.58	8.30	7.54	8.34	7.55	7.66
	AIR	11.11	11.18	10.83	11.54	12.68	14.72	15.94	16.89	17.18	15.99	13.85	12.58
	SEA	12.15	11.69	11.35	11.66	12.63	14.29	15.62	16.64	17.10	16.58	14.82	13.75
	VPA	11.24	11.18	10.35	10.93	12.09	13.76	15.28	16.46	16.58	15.22	13.15	12.54
	VPS	14.22	13.78	13.47	13.75	14.66	16.36	17.85	19.04	19.60	18.94	16.92	15.82
	CLD	70.16	71.05	71.40	64.14	68.01	69.46	76.33	55.83	56.83	56.85	62.26	69.41
40 N 128 W	SPD	8.84	8.95	7.35	7.52	7.55	8.03	7.58	8.16	8.01	7.24	7.97	8.29
	AIR	11.75	10.95	10.85	11.09	12.62	14.79	16.12	17.58	17.44	16.34	14.22	12.93
	SEA	12.14	11.47	11.57	11.68	12.64	14.44	15.92	17.20	17.70	17.01	15.21	14.23
	VPA	11.19	11.00	10.32	10.70	12.11	13.74	15.61	16.88	16.58	15.30	13.15	12.44
	VPS	14.18	13.59	13.69	13.76	14.68	16.52	18.15	19.74	20.36	19.45	17.34	16.29
	CLD	73.80	64.64	72.15	66.49	70.64	71.87	76.99	68.83	56.19	52.08	64.19	62.63
40 N 129 W	SPD	8.86	7.45	8.26	7.90	7.49	7.27	7.60	7.75	7.82	7.72	8.09	7.93
	AIR	11.62	11.23	11.88	11.77	12.83	14.76	16.40	18.02	17.92	16.86	15.12	14.07
	SEA	12.57	11.62	12.42	12.16	13.08	14.96	16.37	17.79	18.25	17.59	16.15	15.45
	VPA	10.95	11.39	11.09	11.00	11.93	14.06	15.60	16.90	17.03	15.36	14.00	13.62
	VPS	14.63	13.72	14.46	14.23	15.11	17.09	18.68	20.46	21.04	20.16	18.45	17.68
	CLD	77.50	75.26	76.84	72.57	75.62	78.62	80.50	67.01	65.36	61.92	65.71	66.38
40 N 130 W	SPD	8.05	8.12	8.68	8.19	7.46	8.03	8.56	8.68	8.09	6.48	7.76	8.16
	AIR	12.85	11.75	12.03	12.21	13.11	14.88	16.55	17.98	17.99	17.24	15.23	13.70
	SEA	13.27	12.26	12.36	12.64	13.23	14.63	16.40	17.90	18.56	17.52	16.36	15.12
	VPA	12.56	11.10	11.46	10.92	11.78	13.80	15.53	16.83	16.61	16.37	14.57	12.83
	VPS	15.30	14.31	14.39	14.66	15.23	16.72	18.73	20.61	21.42	20.04	18.68	17.28
	CLD	70.13	68.83	76.87	74.80	81.59	82.89	81.76	78.18	73.64	68.50	66.68	69.86
40 N 131 W	SPD	8.74	8.78	8.53	7.71	6.48	7.01	7.16	6.32	7.37	7.26	7.93	9.13
	AIR	11.76	11.61	11.29	11.65	14.49	14.53	17.45	18.69	18.15	16.73	14.86	13.08
	SEA	13.10	12.00	12.04	12.41	13.68	14.72	17.18	18.64	18.58	17.58	16.09	14.48
	VPA	11.43	11.28	10.76	10.90	12.62	13.83	16.30	17.33	16.76	14.96	13.46	12.14
	VPS	15.15	14.06	14.11	14.47	15.70	16.82	19.67	21.59	21.47	20.16	18.40	16.55
	CLD	80.73	69.86	75.29	70.21	79.12	75.52	76.16	68.35	67.97	60.93	70.25	70.35
40 N 132 W	SPD	8.93	7.48	8.16	7.55	7.07	6.31	6.50	6.31	6.67	7.73	9.02	9.01
	AIR	11.40	11.51	11.05	11.42	13.05	14.72	16.71	18.50	18.31	17.08	14.73	12.88
	SEA	13.18	12.20	12.09	12.44	13.24	14.88	16.90	18.81	18.58	17.87	16.40	14.60
	VPA	11.09	11.24	10.62	10.90	12.18	13.81	15.61	17.48	16.97	16.03	13.59	11.97
	VPS	15.27	14.27	14.16	14.51	15.27	17.00	19.32	21.84	21.47	20.53	18.72	16.68
	CLD	80.35	75.00	73.77	73.85	73.35	80.44	80.60	76.39	65.02	69.11	70.02	68.90
40 N 133 W	SPD	9.09	8.18	8.98	6.93	6.69	6.06	6.39	6.38	6.98	6.87	8.41	9.22
	AIR	12.19	11.65	11.01	11.71	12.87	14.94	16.75	18.53	18.30	17.23	15.52	13.41
	SEA	13.54	12.63	11.93	12.77	13.12	14.96	16.80	18.86	18.49	17.78	16.55	14.75
	VPA	11.72	11.43	10.58	10.58	11.96	14.08	16.17	17.66	16.79	15.77	14.47	12.63
	VPS	15.59	14.68	14.00	14.82	15.16	17.06	19.22	21.87	21.36	20.40	18.90	16.85
	CLD	75.85	71.83	77.56	76.04	75.96	75.58	83.46	77.38	70.20	67.58	73.42	78.68

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
41 N 124 W	SPD	7.12	7.13	7.31	6.45	6.47	8.60	9.18	5.72	5.17	7.13	6.78	6.89
	AIR	10.11	9.44	10.63	10.70	11.78	12.86	13.31	14.39	13.84	13.22	11.90	10.77
	SEA	10.87	10.41	10.76	10.70	10.89	11.27	11.64	12.69	13.80	12.77	12.35	11.95
	VPA	10.36	9.72	10.62	10.50	11.49	12.76	13.55	14.54	14.32	12.77	12.14	10.85
	VPS	13.05	12.66	12.95	12.88	13.08	13.44	13.80	14.81	15.95	14.91	14.39	14.03
	CLD	71.71	44.04	62.50	67.30	52.60	48.00	56.73	51.56	56.25	50.54	52.20	61.25
41 N 125 W	SPD	8.01	8.33	7.38	7.73	8.15	7.92	8.77	7.41	7.21	6.83	7.50	8.80
	AIR	10.09	10.47	10.83	10.93	12.27	13.52	14.33	14.81	14.80	13.72	12.71	11.11
	SEA	11.19	10.80	10.85	10.85	11.53	12.36	12.61	13.29	13.59	13.08	12.88	11.77
	VPA	10.02	10.46	10.24	10.53	11.83	13.08	14.19	14.88	14.29	12.94	12.54	11.11
	VPS	13.35	13.00	13.04	13.06	13.67	14.47	14.74	15.43	15.72	15.15	14.92	13.88
	CLD	65.18	68.45	61.05	54.13	55.53	55.54	59.64	50.32	45.09	45.25	59.39	68.23
41 N 126 W	SPD	9.32	8.07	8.13	8.71	8.10	8.05	7.84	7.89	8.08	8.96	7.50	9.23
	AIR	10.54	11.10	11.19	10.70	12.26	14.56	15.37	16.63	16.31	14.69	12.78	10.79
	SEA	11.00	10.85	10.78	11.22	11.77	13.43	14.79	15.80	15.63	14.47	13.22	12.04
	VPA	10.48	10.99	10.70	10.18	11.67	13.67	14.42	16.40	15.76	14.10	12.54	10.77
	VPS	13.17	13.04	12.98	13.36	13.86	15.51	16.93	18.04	17.93	16.56	15.28	14.10
	CLD	68.75	65.54	73.00	68.93	65.86	57.21	62.67	57.72	46.59	58.39	55.66	67.72
41 N 127 W	SPD	9.63	8.72	9.05	7.94	8.08	8.54	9.02	8.02	8.92	7.39	9.69	9.07
	AIR	10.56	10.38	10.29	11.03	11.79	14.34	16.16	17.16	16.91	14.80	13.32	11.98
	SEA	11.56	10.81	10.59	11.37	11.93	13.53	15.36	16.35	16.86	15.63	13.88	13.04
	VPA	10.30	10.93	10.16	10.06	11.05	13.54	14.90	16.60	15.57	13.79	12.25	11.53
	VPS	13.68	13.00	12.82	13.48	14.01	15.58	17.54	18.72	19.31	17.83	15.97	15.09
	CLD	75.00	72.22	68.45	73.46	67.94	71.38	71.46	57.58	40.15	55.23	59.12	69.07
41 N 128 W	SPD	9.44	6.86	8.87	7.00	7.83	7.64	8.17	7.30	6.59	7.63	9.00	8.54
	AIR	11.28	10.78	10.24	10.97	12.34	14.56	16.08	17.38	17.99	15.68	13.74	12.18
	SEA	12.10	11.48	11.08	11.29	12.23	14.19	15.85	17.07	17.89	16.12	15.09	13.19
	VPA	11.25	11.42	10.38	10.11	11.96	13.65	15.83	16.80	16.70	14.49	13.09	11.64
	VPS	14.16	13.62	13.23	13.41	14.29	16.29	18.08	19.56	20.55	18.40	17.24	15.24
	CLD	58.12	75.41	62.86	71.75	73.80	70.58	80.76	63.55	65.05	58.15	67.81	66.66
41 N 129 W	SPD	9.97	9.70	8.16	6.54	7.16	6.78	7.23	7.09	7.02	8.06	8.33	9.41
	AIR	11.34	10.23	10.47	11.05	12.27	14.89	16.00	17.69	17.90	16.37	14.80	12.63
	SEA	12.16	11.37	11.09	11.39	12.36	14.48	16.17	17.51	18.05	17.07	15.88	13.73
	VPA	11.56	10.60	10.42	10.60	11.96	13.82	15.17	17.05	16.74	15.39	14.44	11.89
	VPS	14.23	13.49	13.24	13.51	14.41	16.56	18.48	20.09	20.78	19.52	18.11	15.80
	CLD	78.07	73.93	72.80	68.58	64.50	71.26	79.30	72.88	69.59	63.55	64.15	70.83
41 N 130 W	SPD	9.57	9.36	8.23	6.83	7.08	7.17	7.13	7.02	7.32	7.28	7.55	8.24
	AIR	11.27	10.59	10.59	11.22	12.27	14.28	16.19	17.82	17.75	16.86	14.55	12.72
	SEA	12.47	11.43	11.21	11.63	12.40	14.49	16.14	17.66	18.12	17.47	15.50	13.78
	VPA	10.83	10.57	10.26	10.50	11.64	13.40	15.51	16.91	16.50	15.98	13.18	12.42
	VPS	14.50	13.55	13.36	13.72	14.45	16.58	18.43	20.29	20.86	20.03	17.66	15.82
	CLD	79.61	72.24	75.26	73.10	71.30	77.24	74.11	69.82	66.95	58.77	68.35	60.71
41 N 131 W	SPD	9.56	9.90	9.21	7.55	6.90	6.31	6.48	6.59	7.09	7.57	9.11	9.08
	AIR	11.87	11.23	10.49	10.67	12.17	14.57	16.46	18.14	18.48	16.82	14.91	12.27
	SEA	11.89	11.25	11.30	11.31	12.20	14.38	16.67	18.11	18.59	17.28	15.84	13.96
	VPA	11.35	11.35	10.27	10.69	11.71	13.83	15.50	17.15	17.59	15.42	13.78	11.84
	VPS	13.99	13.39	13.45	13.47	14.26	16.43	19.06	20.88	21.50	19.80	18.07	16.01
	CLD	82.93	74.29	76.56	72.90	75.08	75.72	80.91	71.75	75.51	65.20	71.55	74.85
41 N 132 W	SPD	8.90	9.32	9.05	7.97	7.47	6.19	6.64	6.71	7.69	7.29	9.03	10.85
	AIR	11.30	11.09	10.14	10.86	12.19	14.28	16.28	17.92	17.83	16.50	14.52	12.67
	SEA	12.50	11.68	11.25	11.27	12.22	14.53	16.53	18.42	18.64	17.50	15.94	13.94
	VPA	11.23	11.48	10.16	10.56	11.70	13.45	15.79	17.08	16.87	15.13	13.55	12.23
	VPS	14.54	13.79	13.40	13.40	14.28	16.60	18.90	21.31	21.58	20.06	18.18	15.99
	CLD	80.44	80.38	77.11	74.03	80.19	79.21	83.87	75.29	73.51	68.31	75.48	75.84
41 N 133 W	SPD	9.87	9.27	9.67	7.13	7.16	6.38	6.45	5.53	6.89	8.41	9.43	9.20
	AIR	11.03	11.25	10.52	11.15	12.09	14.13	16.65	18.08	18.12	16.66	14.25	12.98
	SEA	12.48	11.60	11.95	11.81	12.48	14.57	16.22	18.34	18.52	17.70	15.60	14.12
	VPA	10.80	11.43	10.59	10.78	11.56	13.22	15.12	17.16	16.45	14.98	13.29	12.49
	VPS	14.59	13.71	14.04	13.90	14.52	16.65	18.51	21.17	21.41	20.28	17.79	16.18
	CLD	77.77	78.07	77.08	74.26	77.92	81.58	82.98	72.78	69.37	69.05	81.65	74.15

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
42 N	SPD	7.72	9.45	7.46	5.75	7.34	5.88	9.10	5.31	5.35	6.85	8.71	7.27
124 W	AIR	8.99	8.71	10.49	9.50	11.16	13.53	12.84	16.72	13.73	13.67	12.12	10.45
	SEA	10.48	9.98	10.25	10.16	10.47	12.09	11.96	14.93	12.07	12.64	12.72	10.89
	VPA	10.17	8.93	10.60	9.22	10.79	13.04	13.04	15.91	13.64	12.93	12.53	10.15
	VPS	12.72	12.31	12.54	12.42	12.74	14.17	14.23	17.12	14.14	14.76	14.76	13.07
	CLD	71.15	67.10	58.75	50.00	52.27	59.50	40.86	32.66	67.04	50.65	63.39	67.18
42 N	SPD	8.27	7.40	7.53	7.94	9.10	8.04	9.39	7.52	7.61	6.87	7.55	8.28
125 W	AIR	9.81	10.26	10.15	10.61	12.02	13.47	13.85	14.78	14.64	13.61	12.58	10.81
	SEA	10.78	10.54	10.60	10.65	11.29	12.30	12.75	13.19	13.63	13.06	12.85	11.78
	VPA	9.69	10.31	9.98	10.24	11.40	13.06	13.83	14.62	14.37	13.14	12.30	10.47
	VPS	12.98	12.77	12.84	12.86	13.45	14.42	14.87	15.32	15.79	15.11	14.89	13.90
	CLD	69.64	75.40	57.37	58.51	48.78	54.60	46.28	50.18	43.42	47.05	63.62	66.93
42 N	SPD	8.43	8.31	8.50	7.55	8.47	7.60	7.71	8.40	8.18	7.67	7.45	8.21
126 W	AIR	9.82	10.32	10.63	11.13	12.57	14.59	15.98	17.50	16.21	14.64	12.57	11.14
	SEA	11.07	10.82	10.79	10.91	11.97	13.76	14.78	16.07	14.79	14.07	13.08	11.82
	VPA	10.16	10.50	10.63	10.72	11.42	13.76	14.87	16.47	15.54	13.94	12.33	11.01
	VPS	13.23	13.01	12.98	13.08	14.05	15.81	16.92	18.40	17.00	16.18	15.10	13.97
	CLD	63.81	64.93	68.43	66.66	61.45	70.19	69.72	58.42	43.14	49.37	58.88	71.12
42 N	SPD	9.99	6.86	8.55	9.14	7.07	7.96	7.55	7.00	8.49	8.67	8.11	9.07
127 W	AIR	9.56	10.11	10.22	10.62	12.04	14.25	16.03	17.28	16.64	14.86	12.57	10.98
	SEA	10.64	10.68	10.46	10.84	11.67	13.47	15.30	16.99	16.44	15.30	13.22	12.52
	VPA	9.98	10.11	10.27	9.55	11.12	13.07	15.01	16.51	16.06	13.89	12.46	10.75
	VPS	12.85	12.91	12.70	13.02	13.80	15.50	17.45	19.45	18.86	17.46	15.26	14.61
	CLD	67.44	68.42	70.77	67.04	75.24	73.28	63.15	71.35	52.69	56.91	69.82	70.62
42 N	SPD	8.12	7.61	7.52	8.16	6.86	8.58	7.66	7.97	5.92	7.76	8.54	9.80
128 W	AIR	10.55	10.18	9.89	10.21	11.65	14.41	15.43	17.96	17.33	15.82	13.66	10.89
	SEA	11.17	10.67	10.39	10.97	11.80	13.82	15.58	17.48	17.15	16.08	14.55	12.46
	VPA	10.57	10.55	10.22	9.73	11.19	14.05	14.59	16.57	15.94	14.39	12.79	10.58
	VPS	13.39	12.88	12.66	13.13	13.88	15.87	17.78	20.07	19.62	18.33	16.66	14.53
	CLD	67.30	73.92	71.87	61.98	72.72	71.73	77.67	68.22	65.00	53.50	69.68	70.83
42 N	SPD	7.98	8.97	8.27	7.29	8.10	7.26	7.82	5.89	7.78	8.67	8.89	8.44
129 W	AIR	10.68	10.41	10.03	12.18	12.15	13.54	16.19	18.44	17.69	15.50	13.29	12.53
	SEA	11.66	11.26	10.70	11.36	12.32	13.57	15.81	16.92	17.59	16.29	14.86	13.62
	VPA	11.12	10.52	9.74	11.64	11.58	12.73	15.23	17.71	16.12	14.60	12.47	12.27
	VPS	13.74	13.39	12.90	13.47	14.35	15.59	17.99	19.33	20.20	18.60	16.95	15.63
	CLD	69.72	68.61	77.50	79.19	83.66	76.33	72.17	64.40	61.39	65.11	72.06	77.50
42 N	SPD	8.66	8.14	8.56	6.96	7.31	7.03	6.70	6.83	7.29	7.86	9.89	9.13
130 W	AIR	10.35	10.56	9.96	10.21	11.84	13.55	15.73	18.09	17.53	16.10	14.01	11.97
	SEA	11.71	11.11	10.98	10.74	12.20	13.95	15.90	18.13	17.98	17.25	15.59	13.21
	VPA	10.57	10.86	9.61	10.40	11.35	12.97	15.01	16.65	16.41	15.02	13.07	11.40
	VPS	13.82	13.27	13.16	12.95	14.28	15.98	18.13	20.87	20.65	19.80	17.76	15.24
	CLD	68.98	77.46	73.07	78.18	81.83	81.66	80.00	72.95	69.93	66.50	69.24	75.73
42 N	SPD	8.88	9.61	8.26	7.14	6.76	6.46	6.88	6.05	7.24	7.34	8.88	10.10
131 W	AIR	11.53	10.91	9.74	10.36	12.02	14.25	16.29	18.00	17.98	16.44	14.90	12.38
	SEA	11.26	11.39	10.91	10.50	11.95	14.20	16.67	18.48	19.05	16.57	15.30	13.99
	VPA	11.24	11.54	9.58	10.70	11.58	14.10	15.93	17.41	16.92	15.05	13.76	12.09
	VPS	13.41	13.54	13.14	12.74	14.02	16.23	19.07	21.35	22.12	18.92	17.45	16.09
	CLD	73.19	78.12	76.41	72.56	69.88	81.86	83.11	70.75	72.07	63.63	71.71	76.10
42 N	SPD	10.92	10.56	9.28	7.93	6.88	6.25	6.87	6.21	6.59	7.66	9.37	9.18
132 W	AIR	10.83	10.88	9.62	10.22	11.97	13.94	16.21	17.76	17.65	16.54	14.02	12.33
	SEA	11.75	11.18	10.72	10.73	12.02	14.16	16.44	18.01	18.20	17.07	15.16	13.59
	VPA	11.03	11.34	9.87	10.28	11.29	13.07	15.44	16.83	16.49	15.40	13.31	12.03
	VPS	13.85	13.33	12.92	12.95	14.10	16.22	18.79	20.74	20.96	19.52	17.28	15.64
	CLD	78.07	81.06	72.10	69.55	73.60	79.88	82.45	73.83	63.70	69.82	79.04	77.05
42 N	SPD	11.04	9.85	9.61	7.94	7.87	6.29	6.12	5.81	6.87	7.71	9.53	10.53
133 W	AIR	10.99	10.38	10.04	10.40	11.98	13.80	15.84	17.66	17.71	16.57	14.12	11.73
	SEA	11.86	11.18	10.81	11.01	11.89	14.17	16.22	17.93	18.17	17.26	15.02	13.31
	VPA	10.80	10.42	9.97	10.46	11.41	13.06	15.09	16.82	16.61	15.52	13.44	11.06
	VPS	13.95	13.34	13.00	13.18	13.97	16.25	18.53	20.64	20.92	19.76	17.17	15.33
	CLD	80.89	75.53	72.54	78.52	77.32	84.13	79.40	76.87	70.32	70.18	81.89	72.22

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
43 N 124 W	SPD	6.79	7.97	6.94	7.03	6.92	5.93	8.71	5.72	6.15	5.68	8.55	6.69
	AIR	9.17	8.74	9.28	9.91	11.53	13.53	15.04	14.73	15.36	13.39	12.47	8.18
	SEA	10.78	9.90	10.06	10.13	11.81	12.85	12.17	13.42	12.23	13.26	12.31	9.84
	VPA	9.98	9.65	10.15	9.59	11.57	13.30	14.85	14.28	13.64	13.89	11.75	8.69
	VPS	13.02	12.22	12.41	12.40	13.92	14.93	14.31	15.56	14.29	15.27	14.40	12.21
	CLD	65.00	61.87	52.50	69.16	65.38	75.00	39.42	60.15	36.56	58.12	75.00	48.21
43 N 125 W	SPD	8.73	8.77	8.21	7.01	8.06	7.73	7.13	6.17	6.96	6.76	7.02	8.34
	AIR	9.29	9.81	9.73	10.32	11.85	13.69	14.63	15.23	14.60	13.52	12.11	10.47
	SEA	10.50	10.15	10.56	10.42	11.37	12.62	13.08	14.24	13.39	13.25	12.52	11.32
	VPA	9.85	10.05	9.92	10.04	11.56	13.24	14.46	15.24	14.11	12.89	12.10	10.39
	VPS	12.74	12.45	12.80	12.66	13.52	14.74	15.22	16.43	15.51	15.31	14.58	13.47
	CLD	77.26	77.36	63.41	65.44	66.27	64.27	55.44	55.03	41.95	52.23	62.97	67.54
43 N 126 W	SPD	9.64	9.00	7.52	6.27	7.35	7.70	8.29	7.56	7.29	7.47	7.85	8.23
	AIR	10.16	9.86	10.22	10.72	12.65	14.75	16.18	16.93	16.06	13.82	12.89	10.92
	SEA	10.38	10.07	10.45	10.86	12.01	14.24	15.42	16.07	16.51	13.93	12.61	11.44
	VPA	10.61	10.55	9.67	9.69	11.63	13.62	15.57	16.26	15.23	12.82	12.46	10.39
	VPS	12.63	12.37	12.69	13.04	14.08	16.29	17.63	18.34	18.89	15.97	14.64	13.57
	CLD	70.07	80.46	69.48	66.28	71.05	82.08	65.62	49.21	44.16	53.03	65.06	64.35
43 N 127 W	SPD	10.58	10.10	8.18	7.75	6.97	5.89	7.14	8.66	7.29	7.56	7.13	10.22
	AIR	9.51	9.72	9.82	10.24	12.12	14.18	16.11	17.76	17.14	14.89	11.79	10.54
	SEA	10.43	10.26	10.01	10.61	11.61	13.99	15.62	17.28	17.19	15.01	12.57	11.47
	VPA	10.10	9.98	9.74	9.53	11.06	13.34	14.90	16.06	16.25	13.81	11.71	10.59
	VPS	12.66	12.53	12.33	12.82	13.71	16.05	17.81	19.81	19.67	17.16	14.61	13.58
	CLD	89.02	78.75	76.65	73.36	71.78	73.79	66.56	73.43	55.60	63.67	69.64	81.94
43 N 128 W	SPD	8.85	9.34	9.63	8.45	6.59	6.72	7.59	6.30	7.66	8.30	9.07	9.98
	AIR	9.40	9.52	9.55	10.01	11.67	13.67	15.89	17.61	17.07	14.98	12.86	10.54
	SEA	10.77	10.09	10.07	10.12	11.39	13.20	15.70	17.50	17.09	15.34	13.43	11.89
	VPA	9.40	9.81	9.70	9.57	11.04	13.07	15.13	16.76	15.77	14.04	11.60	10.16
	VPS	12.97	12.41	12.40	12.43	13.50	15.23	17.93	20.05	19.58	17.56	15.48	13.98
	CLD	77.13	77.50	69.89	79.26	76.30	79.16	71.51	64.32	65.05	71.39	68.65	71.12
43 N 129 W	SPD	9.35	7.93	8.00	7.08	7.68	7.22	6.88	6.88	7.19	7.62	8.85	10.25
	AIR	10.07	10.12	9.32	10.01	11.42	13.97	16.02	17.63	17.57	15.51	12.75	10.83
	SEA	11.42	10.43	10.12	10.19	11.47	13.74	15.63	17.82	17.38	16.37	14.21	12.35
	VPA	10.28	10.25	9.78	9.98	11.07	12.93	14.53	16.34	15.97	13.88	12.12	11.10
	VPS	13.58	12.71	12.42	12.46	13.59	15.78	17.84	20.53	19.91	18.70	16.26	14.48
	CLD	75.59	76.56	78.88	70.83	77.08	80.58	75.50	73.65	62.69	60.00	68.54	78.27
43 N 130 W	SPD	10.36	9.07	9.57	8.53	6.89	5.85	7.17	6.02	7.72	8.25	9.08	9.15
	AIR	10.95	10.31	9.64	9.66	11.30	13.57	16.13	18.08	17.77	16.04	13.09	11.82
	SEA	12.35	10.89	10.51	10.48	11.85	13.98	16.43	17.92	18.19	17.18	14.60	13.34
	VPA	11.30	10.67	9.98	9.52	10.73	12.94	15.34	16.97	15.77	14.60	12.26	11.55
	VPS	14.41	13.08	12.73	12.70	13.93	16.01	18.72	20.59	20.92	19.66	16.67	15.37
	CLD	80.01	82.10	73.17	79.42	81.61	75.19	77.22	77.94	68.50	70.27	69.81	78.33
43 N 131 W	SPD	9.25	9.61	8.93	7.79	6.90	6.45	6.18	5.52	7.37	8.22	8.90	10.10
	AIR	10.43	10.29	9.47	10.17	11.91	14.33	16.33	18.13	17.91	15.90	13.79	11.16
	SEA	10.88	10.57	10.41	10.27	11.70	13.98	16.24	18.44	18.45	16.57	14.67	12.72
	VPA	10.58	11.12	9.64	10.64	11.41	13.82	15.85	17.31	16.53	14.48	12.48	10.86
	VPS	13.09	12.81	12.70	12.54	13.78	16.02	18.52	21.30	21.32	18.93	16.84	14.79
	CLD	81.25	76.19	75.31	75.36	81.68	83.53	83.75	69.22	74.12	74.06	76.56	77.27
43 N 132 W	SPD	10.39	11.40	9.48	8.07	7.26	6.46	5.20	6.07	7.16	8.37	8.67	11.08
	AIR	9.79	10.31	9.48	9.94	11.32	13.27	15.81	17.89	17.27	15.39	13.04	10.77
	SEA	10.95	10.07	10.34	10.47	11.53	13.35	16.14	17.88	17.87	16.63	14.76	12.78
	VPA	11.36	10.77	9.76	9.74	11.01	12.78	15.16	17.30	15.92	14.20	12.50	10.48
	VPS	13.13	12.38	12.61	12.71	13.64	15.37	18.42	20.57	20.56	18.99	16.87	14.85
	CLD	79.79	79.68	78.08	75.00	79.38	82.50	83.33	75.73	72.64	80.92	72.70	69.95
43 N 133 W	SPD	9.23	10.41	8.00	7.76	6.82	6.34	5.67	6.00	6.63	8.81	8.86	9.17
	AIR	9.56	9.89	9.36	10.34	12.02	13.15	15.53	17.19	17.24	15.41	13.80	11.26
	SEA	11.00	10.37	10.24	10.58	11.58	13.46	15.69	17.73	17.53	16.69	14.69	12.50
	VPA	9.91	10.02	9.55	10.24	11.70	12.58	14.81	16.50	16.38	14.43	12.80	11.33
	VPS	13.16	12.62	12.53	12.80	13.69	15.50	17.89	20.35	20.10	19.05	16.81	14.57
	CLD	73.61	66.17	73.09	75.00	78.01	84.72	84.32	81.03	62.75	73.21	69.02	68.65

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
44 N 124 W	SPD	7.23	7.49	8.16	6.11	5.76	4.82	5.35	3.26	5.52	5.04	6.51	7.18
	AIR	8.09	8.58	9.55	9.95	10.80	13.56	13.79	14.49	15.21	13.34	11.74	9.49
	SEA	9.60	9.72	9.85	10.06	10.92	13.14	12.41	13.19	14.20	12.65	12.51	10.90
	VPA	8.20	9.14	9.83	9.77	10.64	13.08	13.76	14.71	14.44	12.79	11.52	10.05
	VPS	11.99	12.08	12.20	12.35	13.08	15.24	14.59	15.39	16.35	14.70	14.54	13.14
	CLD	69.88	73.61	68.10	59.64	66.56	63.00	50.96	66.66	49.43	46.98	65.20	79.16
44 N 125 W	SPD	9.50	7.91	8.21	7.03	7.04	6.20	6.77	6.34	6.29	6.23	6.97	9.84
	AIR	8.72	9.12	9.61	9.96	12.11	14.61	15.47	15.91	15.77	13.65	11.87	10.18
	SEA	10.17	10.05	10.17	10.53	11.74	13.78	14.30	15.40	15.03	13.36	12.36	11.04
	VPA	9.36	9.63	9.74	9.81	11.54	13.50	14.97	15.39	15.01	12.99	11.64	10.33
	VPS	12.46	12.36	12.47	12.76	13.86	15.86	16.47	17.66	17.22	15.43	14.40	13.21
	CLD	78.36	76.64	65.37	72.37	62.59	67.18	58.51	57.46	50.00	58.43	62.72	75.00
44 N 126 W	SPD	7.51	8.31	7.33	7.20	5.92	6.84	7.84	6.18	6.97	8.90	8.14	10.62
	AIR	10.18	9.80	9.52	10.48	12.07	14.48	16.13	17.13	17.15	13.96	12.30	10.19
	SEA	10.65	10.35	10.23	10.42	11.72	14.12	16.26	16.81	16.85	14.20	12.64	11.16
	VPA	10.92	10.08	9.34	10.13	10.95	13.05	15.02	16.04	16.35	12.72	12.13	10.30
	VPS	12.88	12.61	12.51	12.65	13.83	16.17	18.61	19.25	19.25	16.30	14.65	13.33
	CLD	70.41	69.71	61.93	65.71	66.32	75.58	71.22	60.67	63.88	59.84	57.85	68.50
44 N 127 W	SPD	9.71	7.55	7.68	7.80	6.00	6.16	7.17	6.40	6.88	8.91	8.40	10.68
	AIR	9.78	9.74	8.99	9.58	11.70	13.24	15.81	17.36	17.63	15.06	12.31	10.38
	SEA	10.71	9.96	9.80	10.28	11.70	14.16	16.08	17.61	17.62	14.93	12.84	11.17
	VPA	10.25	10.51	9.07	9.73	10.98	12.66	14.73	15.38	16.19	13.94	12.56	10.77
	VPS	12.97	12.31	12.15	12.56	13.78	16.22	18.32	20.18	20.21	17.13	14.90	13.35
	CLD	79.60	70.41	66.47	77.91	71.03	83.75	75.83	68.20	48.82	78.94	77.43	76.04
44 N 128 W	SPD	9.60	8.26	9.25	7.64	6.84	6.33	7.08	6.63	6.86	8.29	9.01	9.86
	AIR	8.54	8.80	8.89	9.73	11.52	13.45	15.43	17.36	17.06	15.22	12.99	10.35
	SEA	10.09	9.42	9.67	10.10	11.53	13.77	16.10	17.51	17.29	15.74	13.77	11.68
	VPA	9.33	9.58	9.22	9.52	10.95	13.07	14.73	15.78	16.04	14.39	12.59	10.54
	VPS	12.39	11.86	12.05	12.41	13.65	15.81	18.35	20.08	19.78	17.93	15.79	13.80
	CLD	76.85	79.54	71.07	73.26	73.49	82.32	80.76	67.18	59.30	73.54	68.52	76.92
44 N 129 W	SPD	9.13	9.58	8.71	8.15	6.03	6.46	6.34	6.69	6.97	7.72	9.08	10.97
	AIR	8.97	9.40	8.96	9.04	11.55	13.45	15.58	16.96	16.87	14.95	12.99	10.13
	SEA	10.24	9.69	9.56	9.63	11.44	13.27	15.81	17.50	17.76	15.91	13.81	11.65
	VPA	9.47	9.69	9.50	9.20	11.05	12.65	14.46	16.00	16.12	13.65	12.01	10.43
	VPS	12.53	12.07	12.00	12.03	13.61	15.32	18.06	20.05	20.40	18.14	15.85	13.77
	CLD	75.00	76.20	65.72	75.00	72.56	77.42	75.51	75.86	60.12	69.57	68.97	73.90
44 N 130 W	SPD	9.56	9.58	9.28	8.52	6.65	6.59	6.96	6.25	7.30	8.63	9.70	9.35
	AIR	9.30	9.43	9.23	9.43	11.30	13.44	15.32	17.11	17.00	14.94	13.05	10.83
	SEA	10.59	9.82	9.52	9.42	11.23	12.99	15.55	17.39	17.53	15.51	14.44	12.28
	VPA	9.68	10.06	9.65	9.32	10.83	12.64	14.48	15.90	15.58	13.71	12.35	10.43
	VPS	12.84	12.19	11.93	11.86	13.43	15.03	17.74	19.94	20.09	17.71	16.52	14.35
	CLD	77.10	75.64	74.82	70.04	72.27	80.03	82.58	79.54	71.91	74.00	72.40	74.65
44 N 131 W	SPD	10.04	9.10	8.27	7.21	7.18	6.62	6.13	5.35	7.34	8.86	7.69	9.78
	AIR	9.70	9.74	9.17	9.76	11.84	13.66	15.57	17.67	17.27	14.97	12.64	11.36
	SEA	10.54	10.18	9.51	10.02	11.42	12.66	15.48	17.64	17.80	15.86	13.44	12.15
	VPA	10.18	10.38	9.81	10.06	12.13	13.62	15.49	17.34	16.90	13.60	12.22	11.36
	VPS	12.81	12.49	11.94	12.40	13.54	14.76	17.67	20.29	20.44	18.10	15.47	14.23
	CLD	76.14	79.28	71.93	70.43	72.43	82.16	81.98	74.05	73.36	70.99	75.94	82.98
44 N 132 W	SPD	10.58	10.41	9.43	7.05	6.56	6.49	5.67	5.59	6.74	8.06	9.43	10.88
	AIR	9.24	9.52	9.27	9.63	11.40	13.92	15.48	17.31	17.21	15.20	12.50	10.51
	SEA	10.46	9.86	10.04	9.57	11.43	13.44	15.42	17.77	17.39	16.10	13.75	11.87
	VPA	9.66	9.97	9.73	10.10	11.31	13.57	14.73	16.37	16.58	14.05	11.85	10.79
	VPS	12.72	12.21	12.36	11.96	13.55	15.54	17.59	20.40	19.91	18.37	15.78	13.99
	CLD	78.23	85.11	72.91	66.34	79.07	76.28	83.59	69.44	68.56	64.06	73.40	74.53
44 N 133 W	SPD	10.16	10.43	9.12	8.27	6.61	7.12	5.29	6.05	6.89	8.27	8.40	10.18
	AIR	9.39	9.43	9.22	9.57	11.23	13.34	15.22	17.01	16.95	14.91	12.79	10.43
	SEA	10.72	9.90	9.84	9.84	11.14	13.58	15.42	17.51	17.56	15.85	14.16	12.03
	VPA	10.13	9.95	9.75	9.28	10.99	12.60	14.39	16.02	15.93	13.26	11.96	10.73
	VPS	12.95	12.23	12.21	12.17	13.31	15.66	17.59	20.07	20.14	18.08	16.23	14.11
	CLD	79.12	74.34	82.68	69.77	82.18	83.43	84.37	84.07	80.59	72.01	70.83	80.19

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
45 N 124 W	SPD	7.67	7.42	7.15	6.73	6.03	5.64	4.82	4.89	5.41	5.61	7.96	6.60
	AIR	7.87	9.02	8.84	9.41	11.91	13.69	15.19	15.22	15.22	13.03	11.25	8.66
	SEA	9.94	9.67	9.94	10.37	11.71	13.25	13.63	14.18	14.49	13.30	11.86	10.87
	VPA	8.82	9.63	9.00	9.52	11.20	12.88	14.50	14.86	14.71	12.56	10.93	9.26
	VPS	12.26	12.04	12.28	12.63	13.82	15.34	15.76	16.27	16.60	15.36	13.94	13.06
	CLD	78.67	71.38	72.65	65.27	64.88	73.39	58.39	49.72	59.45	57.87	70.31	76.00
45 N 125 W	SPD	9.29	7.23	7.80	7.00	6.49	6.01	6.46	5.35	6.12	6.71	7.31	8.49
	AIR	8.98	9.19	9.05	10.01	12.09	14.29	15.81	16.46	15.94	13.58	11.74	9.70
	SEA	10.04	9.87	9.80	10.06	12.02	14.45	15.27	15.90	15.50	13.96	12.24	10.70
	VPA	9.52	9.43	9.26	9.77	11.30	13.49	15.03	15.73	14.85	12.85	11.39	9.90
	VPS	12.35	12.21	12.15	12.37	14.09	16.56	17.46	18.19	17.71	16.02	14.28	12.92
	CLD	82.82	66.29	68.14	70.88	66.95	78.19	70.31	59.44	57.08	57.85	69.86	67.28
45 N 126 W	SPD	8.70	7.12	8.45	7.29	5.63	6.15	7.28	6.21	7.13	7.23	7.60	8.65
	AIR	8.83	9.46	8.70	9.44	11.84	14.10	16.13	17.12	15.58	13.45	12.09	9.47
	SEA	10.21	9.94	9.97	10.06	11.97	14.18	16.22	17.24	16.31	14.50	13.16	10.61
	VPA	9.31	9.69	9.19	9.48	11.12	12.90	14.74	15.94	13.71	11.93	11.12	9.52
	VPS	12.50	12.27	12.31	12.36	14.05	16.24	18.53	19.75	18.60	16.60	15.21	12.83
	CLD	79.00	71.66	74.48	73.38	71.06	76.44	67.75	67.57	60.32	52.90	66.58	75.48
45 N 127 W	SPD	11.53	8.59	9.16	7.06	6.58	5.94	7.27	5.72	6.94	7.67	8.04	10.21
	AIR	9.21	8.89	8.90	9.07	11.27	13.43	15.83	17.11	17.07	14.36	11.65	9.88
	SEA	9.98	9.62	9.53	9.77	11.54	14.00	16.16	17.74	17.12	15.09	12.70	11.52
	VPA	9.71	9.56	9.14	9.26	10.58	12.19	14.62	15.83	15.93	13.07	11.17	10.13
	VPS	12.31	12.01	11.93	12.13	13.68	16.04	18.42	20.38	19.61	17.23	14.73	13.69
	CLD	78.97	73.56	74.32	78.23	71.37	87.50	75.00	70.51	68.08	60.03	62.50	75.98
45 N 128 W	SPD	9.34	8.92	10.38	7.34	6.25	6.23	6.86	6.55	7.52	8.68	8.78	10.79
	AIR	8.56	9.12	8.17	9.37	11.41	13.14	15.71	16.66	17.27	14.47	12.21	10.60
	SEA	10.25	9.47	9.40	9.63	11.33	13.40	16.20	17.54	17.60	15.59	13.06	11.46
	VPA	9.09	9.61	8.91	10.11	11.10	12.70	14.70	15.72	16.17	13.38	11.75	10.63
	VPS	12.52	11.88	11.86	12.01	13.47	15.47	18.48	20.08	20.21	17.81	15.09	13.62
	CLD	78.18	81.79	76.62	74.09	73.58	85.99	79.24	75.88	63.10	71.66	68.92	79.68
45 N 129 W	SPD	8.88	8.71	9.24	8.05	6.06	6.26	7.00	5.77	7.41	8.62	9.37	9.63
	AIR	8.79	9.09	8.81	8.93	10.65	12.94	14.95	17.08	16.66	14.26	11.96	10.32
	SEA	9.81	9.54	9.47	9.40	10.52	13.02	14.82	17.24	17.04	15.12	13.20	11.62
	VPA	9.57	10.06	9.13	9.05	10.36	12.32	13.96	16.08	15.42	13.18	11.62	10.45
	VPS	12.16	11.96	11.89	11.84	12.76	15.06	16.92	19.73	19.50	17.24	15.24	13.76
	CLD	80.59	77.12	71.67	68.16	78.50	79.22	78.67	76.25	68.52	66.79	71.29	83.66
45 N 130 W	SPD	9.08	8.83	8.44	8.49	5.90	5.73	6.88	6.67	5.83	8.39	9.74	10.27
	AIR	9.96	9.73	9.44	9.92	11.47	13.77	15.27	16.57	16.54	15.05	13.02	10.96
	SEA	11.38	10.45	10.20	10.24	10.74	12.93	14.24	16.39	16.67	16.09	14.39	12.07
	VPA	10.06	10.11	9.55	9.76	10.70	12.65	14.36	15.54	15.36	14.21	12.16	10.68
	VPS	13.52	12.70	12.49	12.52	12.93	14.96	16.30	18.68	19.03	18.37	16.48	14.17
	CLD	79.48	80.94	72.72	76.47	74.48	83.47	83.49	77.97	66.88	71.13	78.57	76.90
45 N 131 W	SPD	9.91	9.24	8.46	7.87	6.44	6.69	6.69	6.03	7.24	7.57	8.21	9.96
	AIR	9.25	9.00	8.91	9.28	11.09	13.80	15.41	17.58	16.68	14.70	12.39	10.39
	SEA	10.23	10.00	9.33	9.40	11.12	13.37	15.29	17.72	17.10	15.55	13.41	11.37
	VPA	9.72	9.99	9.47	9.40	11.22	13.52	14.83	16.97	16.08	13.62	11.76	10.51
	VPS	12.55	12.35	11.79	11.85	13.29	15.42	17.43	20.38	19.55	17.73	15.45	13.50
	CLD	75.00	75.23	75.15	71.53	76.64	83.10	85.56	74.55	65.97	76.25	74.67	75.92
45 N 132 W	SPD	10.38	9.35	8.70	8.02	6.96	6.49	5.91	6.23	7.13	8.19	9.18	10.64
	AIR	8.87	9.19	8.55	9.34	11.14	13.27	14.99	17.10	16.46	14.47	12.92	9.52
	SEA	10.00	9.78	9.32	9.58	10.95	13.00	14.98	17.25	17.20	15.54	13.52	11.22
	VPA	9.52	9.70	9.33	10.02	11.20	12.99	14.40	16.53	15.67	13.53	12.52	9.91
	VPS	12.34	12.16	11.78	12.01	13.12	15.05	17.09	19.75	19.67	17.72	15.56	13.38
	CLD	75.13	78.82	78.76	75.99	72.87	83.51	85.24	82.04	75.11	72.70	81.25	76.49
45 N 133 W	SPD	10.65	8.94	9.88	8.04	6.59	6.00	5.88	7.55	5.83	9.49	9.51	10.65
	AIR	8.05	8.51	8.25	9.34	10.10	13.27	14.99	16.65	16.83	14.33	12.23	9.83
	SEA	9.87	9.24	9.42	9.05	10.46	12.80	14.96	16.83	16.98	15.15	13.23	11.30
	VPA	8.96	9.72	9.00	9.39	10.40	12.51	14.21	16.08	15.70	13.56	11.59	10.29
	VPS	12.23	11.70	11.86	11.56	12.71	14.83	17.08	19.21	19.41	17.26	15.26	13.45
	CLD	73.51	85.83	76.52	65.69	82.43	77.60	80.62	87.50	67.93	80.00	82.04	77.17

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
46 N 124 W	SPD	6.70	7.20	6.75	7.40	6.85	6.01	6.20	5.32	5.44	6.20	7.60	8.49
	AIR	6.36	7.91	8.05	8.62	11.34	13.47	14.72	15.11	14.02	11.67	10.18	7.02
	SEA	8.13	9.05	9.23	9.89	11.58	13.16	13.98	14.37	13.78	12.34	10.73	9.13
	VPA	9.25	9.66	9.20	9.72	12.29	13.88	15.50	16.27	14.95	12.26	11.24	9.31
	VPS	10.89	11.55	11.69	12.20	13.68	15.19	16.02	16.46	15.80	14.40	12.92	11.62
	CLD	69.54	64.06	65.30	66.02	67.62	72.62	62.74	55.90	48.36	46.70	67.34	73.21
46 N 125 W	SPD	8.50	7.48	7.89	6.71	6.01	6.23	6.15	5.89	6.23	6.82	7.45	8.84
	AIR	7.98	8.14	8.94	9.70	11.86	13.97	15.55	16.53	16.13	13.82	11.52	9.44
	SEA	9.38	9.23	9.47	9.96	11.82	14.35	15.21	16.33	15.84	14.10	12.28	10.61
	VPA	9.00	8.49	9.39	9.49	11.39	13.17	14.52	15.64	15.14	12.87	11.39	9.86
	VPS	11.83	11.69	11.89	12.29	13.92	16.44	17.37	18.71	18.12	16.16	14.35	12.84
	CLD	78.12	66.78	73.52	67.88	65.13	77.09	68.63	63.37	58.30	69.43	64.32	70.70
46 N 126 W	SPD	8.28	6.32	7.68	7.06	5.98	6.87	6.82	6.60	6.42	7.69	8.66	8.18
	AIR	9.13	9.35	8.17	9.43	11.54	13.45	15.86	16.52	16.61	14.05	11.67	9.57
	SEA	9.20	9.59	9.51	10.09	11.52	13.52	15.94	17.27	16.76	14.87	12.21	10.53
	VPA	9.93	9.71	8.74	9.56	11.13	12.50	14.64	15.06	15.20	12.34	11.27	9.62
	VPS	11.69	12.08	11.92	12.48	13.66	15.59	18.17	19.76	19.13	16.98	14.30	12.78
	CLD	76.52	62.74	72.69	65.93	74.07	78.12	69.39	60.20	67.56	62.77	71.77	67.33
46 N 127 W	SPD	9.78	8.20	9.04	6.94	5.61	6.42	5.95	6.08	7.31	8.64	8.89	8.91
	AIR	8.55	9.03	7.94	8.81	10.87	13.17	15.18	16.65	16.45	13.71	11.48	9.46
	SEA	9.60	9.45	9.32	9.37	11.09	13.80	15.36	17.31	17.38	15.09	12.67	10.64
	VPA	9.75	9.82	8.72	9.11	11.03	12.60	13.97	15.59	15.23	12.51	11.37	10.05
	VPS	12.00	11.91	11.78	11.80	13.26	15.90	17.54	19.83	19.92	17.23	14.69	12.88
	CLD	78.42	75.68	66.02	69.41	69.79	82.37	75.98	75.61	68.75	72.04	76.02	75.96
46 N 128 W	SPD	9.09	8.10	8.48	7.35	6.43	6.64	6.61	5.70	6.28	8.88	9.19	9.22
	AIR	8.71	8.70	8.07	9.17	10.92	12.81	15.13	16.56	16.09	13.71	11.75	9.52
	SEA	9.86	9.20	8.88	8.87	11.03	13.07	14.92	17.02	16.89	14.62	12.96	11.12
	VPA	9.34	9.49	8.66	9.24	10.63	12.35	14.19	15.68	14.90	13.01	11.16	9.70
	VPS	12.22	11.69	11.44	11.42	13.19	15.08	17.05	19.51	19.32	16.71	15.00	13.29
	CLD	77.50	73.94	71.16	68.51	67.96	79.47	70.17	84.77	64.47	66.17	72.53	76.95
46 N 129 W	SPD	9.19	8.87	8.40	8.14	6.96	5.89	5.64	5.89	6.77	8.75	8.38	9.23
	AIR	8.09	8.82	7.87	8.71	11.05	13.07	14.96	16.94	16.28	14.38	12.15	10.06
	SEA	9.54	9.39	8.86	8.89	10.77	12.94	14.84	17.22	16.92	15.23	12.99	10.84
	VPA	9.14	9.51	8.49	9.16	10.53	12.33	14.05	15.81	14.86	13.51	11.33	10.60
	VPS	11.97	11.85	11.42	11.43	12.98	15.01	16.96	19.73	19.34	17.37	15.03	13.03
	CLD	77.93	76.85	69.72	71.49	72.57	78.99	70.47	74.32	63.20	72.24	72.10	75.57
46 N 130 W	SPD	9.49	8.91	9.23	8.31	6.37	6.48	5.99	6.55	7.60	8.43	8.77	9.91
	AIR	8.15	8.57	8.29	8.45	10.77	12.67	14.91	16.94	16.25	14.06	11.70	9.87
	SEA	9.62	9.28	8.89	8.80	10.28	12.72	14.90	16.64	16.92	14.84	12.93	11.02
	VPA	8.84	9.33	8.77	8.85	10.57	12.01	14.22	15.95	14.93	13.05	11.24	10.15
	VPS	12.01	11.74	11.43	11.36	12.56	14.76	17.01	18.99	19.34	16.95	14.95	13.19
	CLD	76.09	73.89	70.00	71.91	76.14	80.20	85.29	79.47	67.72	69.75	73.19	78.83
46 N 131 W	SPD	9.55	9.30	9.00	8.24	6.46	6.37	6.06	5.60	7.82	8.65	10.08	9.96
	AIR	7.89	8.49	7.91	8.89	10.62	13.01	14.85	17.00	16.31	14.12	12.00	9.32
	SEA	9.28	8.93	8.51	8.65	10.16	12.62	14.66	16.77	16.40	14.94	12.89	10.63
	VPA	8.94	9.58	8.81	9.20	10.44	12.22	14.36	15.88	15.56	12.88	11.68	9.91
	VPS	11.75	11.50	11.15	11.27	12.49	14.70	16.77	19.16	18.73	17.07	14.92	12.88
	CLD	79.11	82.88	74.49	77.13	78.23	81.37	84.67	79.95	67.39	73.61	76.75	77.95
46 N 132 W	SPD	9.42	8.94	9.26	7.26	6.29	6.54	6.17	6.12	7.98	8.54	9.57	9.93
	AIR	7.79	8.31	7.30	8.84	10.56	13.48	15.27	16.80	16.82	13.78	11.93	9.80
	SEA	8.38	9.29	8.82	8.80	10.00	12.34	14.76	16.70	16.59	14.76	13.01	10.84
	VPA	9.09	9.55	8.70	9.67	10.90	13.24	14.82	15.56	15.89	12.53	11.40	10.18
	VPS	11.08	11.77	11.38	11.37	12.40	14.43	16.89	19.08	18.94	16.85	15.04	13.05
	CLD	67.08	79.74	72.77	74.77	73.42	84.85	86.34	80.57	70.26	72.38	75.51	84.06
46 N 133 W	SPD	9.76	10.25	9.21	8.90	7.86	6.22	6.37	6.53	7.55	8.90	10.81	10.97
	AIR	7.32	8.24	7.69	8.18	10.21	12.75	15.09	16.29	15.84	13.69	11.57	8.70
	SEA	9.21	8.61	8.40	8.73	9.64	12.10	14.46	16.56	16.27	14.68	12.59	10.43
	VPA	8.38	9.44	8.42	8.82	10.18	12.29	14.12	15.23	14.63	12.82	11.08	9.24
	VPS	11.69	11.23	11.06	11.31	12.03	14.19	16.52	18.91	18.59	16.78	14.65	12.68
	CLD	77.96	75.76	83.21	77.08	84.12	85.65	85.71	82.24	77.84	73.38	74.28	80.85

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
47 N 124 W	SPD	9.00	8.26	6.37	6.34	5.11	4.21	6.17	4.79	3.64	4.52	5.35	6.17
	AIR	7.23	7.25	8.92	9.08	10.88	12.92	15.03	14.58	15.13	11.80	10.01	10.08
	SEA	8.24	8.58	9.62	10.00	10.75	12.75	13.21	13.43	15.06	12.34	10.19	11.28
	VPA	8.43	8.57	9.39	9.46	10.43	12.03	13.91	14.89	14.29	11.65	9.86	10.69
	VPS	10.97	11.21	12.01	12.30	12.99	14.81	15.28	15.49	17.17	14.48	12.46	13.39
	CLD	81.25	73.68	73.43	71.42	58.03	74.21	40.62	58.65	57.69	58.33	75.12	75.00
47 N 125 W	SPD	8.94	7.84	7.62	6.80	5.61	5.33	5.67	4.40	5.14	6.70	7.50	8.88
	AIR	7.77	8.36	8.08	9.18	11.89	13.61	14.79	15.94	15.41	12.43	10.61	8.93
	SEA	9.11	8.86	9.08	9.69	11.69	13.77	14.26	15.89	15.02	13.01	11.53	10.05
	VPA	8.90	8.85	8.81	9.42	11.34	13.08	14.29	15.52	14.70	12.06	10.39	9.53
	VPS	11.61	11.43	11.59	12.06	13.82	15.82	16.36	18.16	17.20	15.06	13.65	12.38
	CLD	77.16	69.92	71.31	71.70	69.55	72.09	66.48	58.86	57.18	70.65	69.45	76.07
47 N 126 W	SPD	8.79	8.13	7.64	7.09	6.09	6.60	6.13	5.70	6.53	7.31	7.69	8.04
	AIR	7.40	8.43	8.01	8.84	11.31	13.73	15.11	15.92	15.44	13.57	11.12	9.08
	SEA	9.10	8.77	8.40	9.12	11.21	13.35	14.93	16.33	15.91	13.82	11.57	10.08
	VPA	8.85	9.42	8.63	9.33	11.10	13.07	14.74	15.21	14.61	12.96	10.99	9.48
	VPS	11.62	11.35	11.04	11.61	13.37	15.42	17.06	18.66	18.20	15.87	13.68	12.42
	CLD	76.42	70.23	66.01	71.76	68.45	79.11	62.16	69.96	56.41	62.30	72.91	67.30
47 N 127 W	SPD	9.63	8.46	7.72	7.73	6.58	6.23	6.47	6.55	7.42	7.38	8.51	8.66
	AIR	7.75	8.05	7.53	8.68	11.07	13.53	15.16	16.69	15.84	13.63	11.36	9.00
	SEA	9.06	9.07	8.58	8.87	11.06	13.50	15.33	16.82	16.00	14.00	12.08	10.10
	VPA	8.82	9.14	8.37	9.09	10.94	12.82	14.33	15.48	14.87	12.81	11.30	9.57
	VPS	11.57	11.61	11.21	11.42	13.25	15.54	17.50	19.22	18.29	16.08	14.09	12.41
	CLD	71.11	68.45	69.04	71.48	67.40	80.95	69.04	68.09	57.08	60.03	75.42	75.37
47 N 128 W	SPD	9.35	8.85	8.40	8.15	6.05	6.37	5.81	6.17	7.94	8.37	8.28	9.35
	AIR	7.93	7.93	7.93	8.77	10.41	12.81	15.24	16.46	16.02	14.23	11.73	9.62
	SEA	8.93	8.49	8.51	8.72	10.46	13.16	15.43	16.91	16.55	15.21	12.91	10.53
	VPA	9.10	9.25	8.67	9.22	10.47	12.34	14.40	16.12	14.60	13.76	11.21	9.95
	VPS	11.47	11.13	11.14	11.31	12.77	15.23	17.58	19.32	18.91	17.33	14.98	12.78
	CLD	76.00	79.86	65.21	79.70	71.64	81.42	73.30	71.25	62.27	75.48	70.87	76.63
47 N 129 W	SPD	9.47	9.41	8.77	7.66	6.02	6.65	6.43	6.23	6.80	8.62	8.59	9.29
	AIR	7.45	7.80	7.91	8.76	10.79	13.64	15.26	16.82	15.78	14.22	11.79	9.05
	SEA	9.00	8.08	8.27	8.74	10.35	12.38	14.50	17.00	16.77	15.19	12.81	10.32
	VPA	8.53	9.07	8.49	9.36	10.56	12.80	14.67	15.92	15.09	13.38	11.14	9.53
	VPS	11.52	10.85	10.97	11.32	12.61	14.47	16.56	19.46	19.17	17.31	14.91	12.58
	CLD	67.18	73.75	64.73	78.33	64.61	75.61	84.32	80.86	64.31	77.45	71.13	79.30
47 N 130 W	SPD	10.64	10.93	9.88	7.07	6.04	6.85	6.09	6.38	7.45	9.84	10.48	9.04
	AIR	9.11	8.95	8.16	8.71	10.27	13.08	15.64	17.69	16.11	13.80	11.44	10.10
	SEA	10.03	10.05	9.23	8.55	10.00	12.56	15.39	17.11	17.20	15.39	12.46	10.98
	VPA	9.84	9.42	8.83	9.08	10.26	12.10	14.63	16.50	15.40	12.92	11.46	10.39
	VPS	12.33	12.39	11.68	11.16	12.33	14.59	17.53	19.57	19.66	17.56	14.50	13.13
	CLD	74.63	79.72	79.56	82.09	85.06	80.76	85.58	83.08	65.32	72.84	75.00	73.51
47 N 131 W	SPD	9.46	9.28	8.33	7.16	6.31	6.41	6.50	6.32	7.39	9.24	9.93	10.21
	AIR	7.71	8.18	7.59	8.11	10.95	13.16	14.41	16.79	16.37	13.70	11.30	9.05
	SEA	8.96	8.30	8.41	8.00	10.23	12.63	14.19	16.93	16.95	14.48	12.43	10.44
	VPA	9.21	9.19	8.75	8.76	11.03	12.41	14.04	16.04	15.96	12.87	11.45	10.03
	VPS	11.48	10.99	11.10	10.76	12.52	14.71	16.26	19.36	19.38	16.57	14.48	12.70
	CLD	74.50	76.89	77.38	76.87	76.56	85.03	86.35	76.25	72.35	72.58	78.40	83.58
47 N 132 W	SPD	10.70	8.71	8.87	8.35	6.56	6.43	6.81	6.58	7.65	9.87	9.07	10.65
	AIR	7.50	7.42	7.49	8.23	10.32	12.17	14.40	16.29	16.20	12.55	11.18	8.84
	SEA	8.66	8.00	8.11	7.97	9.99	11.10	14.27	16.21	16.36	14.54	12.13	10.04
	VPA	8.88	8.82	8.72	9.09	10.77	12.21	14.09	15.91	15.04	12.06	11.00	9.62
	VPS	11.26	10.76	10.86	10.73	12.35	13.31	16.34	18.53	18.68	16.67	14.28	12.39
	CLD	73.86	76.10	72.45	73.50	77.27	85.18	86.07	80.80	71.17	71.85	79.64	79.30
47 N 133 W	SPD	9.62	9.19	9.17	9.32	7.32	6.76	5.93	6.27	7.34	8.28	11.08	9.83
	AIR	6.91	7.55	7.28	7.82	9.53	11.80	14.06	16.33	15.48	13.27	10.66	8.48
	SEA	8.23	8.07	7.69	8.00	9.17	11.47	13.47	16.09	15.70	14.47	11.79	9.94
	VPA	8.21	8.79	8.22	8.68	9.87	11.75	13.44	15.44	14.88	12.36	10.67	9.28
	VPS	10.95	10.83	10.54	10.76	11.67	13.62	15.51	18.36	17.89	16.54	13.88	12.30
	CLD	82.81	76.87	79.59	76.75	85.00	88.33	87.50	80.11	74.78	71.47	76.44	74.18

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
48 N 125 W	SPD	9.58	8.31	8.96	7.66	4.73	4.32	5.82	6.11	5.79	6.85	7.87	9.68
	AIR	4.66	7.04	6.55	8.01	10.66	12.56	12.74	13.52	12.46	10.21	8.14	5.38
	SEA	8.37	8.68	8.55	9.08	10.48	12.08	12.41	13.35	13.09	11.48	10.29	8.79
	VPA	7.57	8.53	8.32	9.37	10.65	12.50	13.23	14.16	13.04	10.88	9.45	7.79
	VPS	11.02	11.26	11.17	11.56	12.72	14.18	14.48	15.39	15.15	13.65	12.56	11.35
	CLD	79.66	60.99	61.56	65.82	66.20	69.05	60.22	57.66	48.68	55.95	66.31	72.32
48 N 126 W	SPD	8.67	7.53	7.55	7.05	6.13	5.84	6.27	5.37	6.18	7.06	8.43	9.07
	AIR	7.11	7.73	7.76	8.52	10.69	13.05	14.12	15.57	14.29	12.26	9.68	8.52
	SEA	8.58	8.38	8.04	8.93	10.75	12.38	13.97	15.02	13.79	12.69	10.52	9.58
	VPA	8.51	8.83	8.65	9.18	10.52	12.74	14.31	15.56	13.89	12.17	10.05	9.59
	VPS	11.20	11.05	10.80	11.46	12.98	14.45	16.02	17.20	15.87	14.77	12.82	11.98
	CLD	73.42	68.25	63.35	75.58	66.30	70.40	65.29	59.79	49.33	68.91	72.73	79.41
48 N 127 W	SPD	8.49	9.29	8.44	7.48	8.19	5.95	7.89	6.04	5.44	7.94	9.28	9.88
	AIR	7.23	7.22	7.44	8.60	10.42	12.84	14.18	16.07	15.12	13.90	10.32	8.79
	SEA	8.47	7.98	7.97	8.71	10.02	12.29	14.18	15.63	15.74	14.17	11.44	9.95
	VPA	8.63	8.74	8.64	9.20	10.50	12.37	13.93	15.58	14.34	13.29	10.58	9.82
	VPS	11.15	10.76	10.77	11.38	12.36	14.36	16.25	17.87	17.99	16.34	13.57	12.27
	CLD	77.40	73.79	68.28	69.44	72.75	76.16	68.01	61.19	65.02	67.80	70.51	85.17
48 N 128 W	SPD	9.42	8.69	8.18	7.54	7.07	6.46	7.47	6.61	7.44	9.53	8.89	9.27
	AIR	7.58	7.68	7.67	8.41	10.74	13.03	14.88	15.97	15.51	13.31	10.70	8.92
	SEA	8.41	8.34	8.07	8.62	10.36	12.64	14.63	15.94	15.90	13.58	11.64	9.72
	VPA	8.84	8.76	8.47	9.16	10.71	12.76	13.98	15.43	14.20	12.64	10.87	9.47
	VPS	11.07	11.02	10.81	11.25	12.64	14.70	16.75	18.21	18.16	15.64	13.76	12.10
	CLD	82.73	71.63	70.53	73.62	73.80	78.25	77.57	76.49	58.28	71.52	69.17	78.12
48 N 129 W	SPD	9.32	9.55	8.79	6.76	6.73	6.76	6.96	6.62	7.80	8.64	9.87	9.16
	AIR	6.81	7.32	7.23	8.48	10.58	12.42	14.81	16.44	15.66	13.59	10.54	8.33
	SEA	8.60	7.92	7.68	8.40	10.21	12.38	14.60	16.32	15.88	13.94	11.93	9.81
	VPA	8.37	8.82	8.51	9.11	10.49	12.12	14.08	15.90	14.81	13.11	10.45	9.32
	VPS	11.21	10.71	10.53	11.06	12.52	14.46	16.67	18.66	18.14	15.98	14.04	12.17
	CLD	82.06	75.93	75.79	77.23	74.85	78.69	78.84	78.54	64.50	77.21	73.66	80.33
48 N 130 W	SPD	9.03	9.63	8.23	7.55	6.92	6.22	6.97	6.50	7.65	9.42	10.21	9.64
	AIR	6.99	7.20	7.22	8.49	9.91	12.00	14.15	16.41	15.65	13.18	10.87	8.29
	SEA	8.37	7.94	7.95	8.36	9.65	11.99	14.18	16.14	15.81	13.99	11.68	10.04
	VPA	8.48	8.66	8.53	9.05	10.10	11.84	13.49	15.43	14.52	12.39	10.87	9.15
	VPS	11.03	10.75	10.72	11.04	12.06	14.12	16.25	18.44	18.05	16.06	13.80	12.37
	CLD	78.42	74.79	69.00	72.67	69.44	80.38	78.98	78.47	69.82	71.83	83.03	76.61
48 N 131 W	SPD	11.06	9.11	8.10	7.35	6.45	6.24	5.53	6.48	7.61	8.64	10.00	10.06
	AIR	7.42	7.41	7.25	8.07	10.24	12.30	14.83	16.44	15.41	13.15	10.49	8.34
	SEA	8.32	7.43	7.69	7.99	9.61	11.84	14.44	16.44	15.78	13.86	11.79	9.57
	VPA	8.95	8.75	8.48	8.78	10.50	12.46	14.24	15.88	14.56	12.61	10.49	9.42
	VPS	10.99	10.36	10.53	10.75	12.03	13.97	16.55	18.78	18.00	15.93	13.89	11.97
	CLD	77.56	75.32	74.51	76.37	73.92	83.46	81.07	82.65	70.49	77.14	77.89	77.23
48 N 132 W	SPD	8.80	9.68	7.83	7.39	6.19	6.20	6.40	6.31	8.03	8.43	9.94	9.73
	AIR	7.11	6.97	7.10	7.98	9.84	12.69	14.30	15.98	15.57	13.51	10.78	8.18
	SEA	7.77	7.08	7.08	7.56	9.26	11.63	13.92	16.04	15.93	14.00	11.66	9.51
	VPA	8.29	8.37	8.33	8.96	10.32	12.34	13.99	15.59	15.05	12.46	10.68	9.08
	VPS	11.58	10.10	10.12	10.44	11.72	13.75	15.99	18.34	18.18	16.07	13.79	11.94
	CLD	75.59	83.43	75.42	74.12	76.59	83.86	88.93	87.93	78.82	71.55	76.04	77.38
48 N 133 W	SPD	8.89	9.65	9.38	8.06	6.65	6.51	5.75	6.81	8.08	8.98	10.08	10.82
	AIR	6.71	7.05	6.81	7.71	8.99	11.80	13.70	15.23	15.22	12.11	9.84	7.11
	SEA	9.06	7.28	7.52	7.70	8.87	11.25	13.32	15.37	15.28	13.22	11.16	8.96
	VPA	7.95	8.51	8.11	8.36	9.62	11.77	13.30	14.72	14.36	11.63	10.07	8.28
	VPS	10.82	10.27	10.41	10.55	11.45	13.41	15.36	17.52	17.45	15.26	13.33	11.49
	CLD	72.91	76.59	75.88	72.72	81.25	86.12	86.12	85.30	74.21	72.47	79.64	74.53
48 N 134 W	SPD	9.27	10.22	9.39	7.98	6.55	6.88	4.73	7.04	8.71	9.46	10.11	11.16
	AIR	5.78	6.55	6.22	7.40	9.55	11.89	14.11	14.92	14.66	13.06	10.07	7.80
	SEA	7.50	7.27	7.26	7.38	8.58	10.91	13.55	15.04	14.88	13.30	11.09	8.71
	VPA	7.52	8.26	7.44	8.32	9.89	11.75	13.29	14.51	14.18	12.47	10.25	8.91
	VPS	10.40	10.23	10.24	10.32	11.19	13.11	15.57	17.17	16.98	15.33	13.26	11.31
	CLD	77.03	76.17	72.91	74.02	82.79	85.03	84.69	82.86	77.04	77.50	72.23	80.92

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
49 N 126 W	SPD	10.65	7.91	8.26	7.44	5.93	5.67	6.29	5.29	5.66	7.25	7.20	8.59
	AIR	6.24	7.94	7.10	8.42	11.21	12.28	14.46	14.75	13.47	11.87	9.20	7.73
	SEA	8.28	8.69	8.04	8.74	10.42	11.85	12.91	13.64	13.42	11.57	10.40	9.33
	VPA	8.04	9.07	8.49	9.24	10.95	12.33	14.26	14.79	13.11	11.69	9.73	9.03
	VPS	10.97	11.27	10.80	11.31	12.69	13.94	14.97	15.74	15.50	13.71	12.68	11.79
	CLD	79.72	75.98	70.27	62.06	62.89	66.79	55.33	56.78	58.70	66.50	60.00	75.54
49 N 127 W	SPD	8.93	8.09	8.53	7.95	6.63	6.47	6.65	6.52	6.90	7.61	8.01	9.21
	AIR	6.47	7.37	7.32	8.46	10.91	13.11	14.32	15.44	14.38	12.45	10.11	7.94
	SEA	8.35	7.78	7.96	8.66	10.45	12.33	13.36	14.53	14.15	12.77	10.81	9.26
	VPA	8.07	8.49	8.46	9.10	10.83	12.49	14.23	15.29	14.05	12.29	10.10	8.92
	VPS	11.01	10.61	10.75	11.25	12.72	14.40	15.40	16.63	16.26	14.82	13.03	11.72
	CLD	66.72	71.08	70.68	67.11	63.76	63.34	60.08	56.25	58.66	70.29	72.87	68.82
49 N 128 W	SPD	9.83	9.34	8.66	8.27	7.90	7.21	7.39	6.70	7.49	8.81	8.95	9.65
	AIR	6.88	7.27	7.13	8.39	10.56	12.36	14.27	15.82	14.75	12.79	9.78	7.81
	SEA	8.08	7.98	7.76	8.20	10.47	11.80	14.05	15.44	14.80	13.00	10.86	9.14
	VPA	8.53	8.63	8.53	9.08	10.48	11.78	14.14	15.56	14.22	12.21	9.89	9.08
	VPS	10.82	10.75	10.60	10.91	12.72	13.88	16.09	17.63	16.92	15.04	13.06	11.64
	CLD	79.00	72.47	77.69	72.36	74.25	73.05	70.04	68.18	62.11	68.52	72.87	75.65
49 N 129 W	SPD	9.42	8.50	8.77	8.04	6.75	6.92	6.84	6.78	7.38	9.28	8.97	9.85
	AIR	6.31	7.39	7.24	7.96	10.15	12.29	14.50	15.92	14.80	12.63	10.27	8.15
	SEA	7.91	7.65	7.58	7.91	9.97	12.02	14.17	15.53	15.07	13.27	11.38	9.25
	VPA	8.19	8.52	8.53	8.81	10.31	12.07	13.95	15.57	14.15	11.80	10.26	9.10
	VPS	10.70	10.51	10.47	10.70	12.30	14.11	16.21	17.69	17.19	15.33	13.50	11.71
	CLD	74.15	76.81	69.98	69.89	76.12	77.21	76.30	73.56	64.70	68.41	71.01	82.88
49 N 130 W	SPD	10.77	10.45	8.41	8.65	6.64	6.52	6.58	7.10	7.99	8.58	8.66	10.56
	AIR	6.95	7.43	7.29	8.07	9.97	11.94	14.15	15.80	15.21	12.88	10.56	8.17
	SEA	8.56	7.90	7.62	7.88	9.41	11.56	13.64	15.58	15.13	13.32	11.57	9.36
	VPA	8.42	8.78	8.32	8.79	10.08	11.83	13.79	15.13	14.28	12.33	10.48	8.99
	VPS	11.18	10.71	10.50	10.67	11.84	13.67	15.68	17.77	17.26	15.34	13.71	11.79
	CLD	77.36	73.70	72.59	73.36	77.09	81.04	79.16	76.13	70.65	73.27	77.00	73.83
49 N 131 W	SPD	10.33	10.13	9.34	8.85	6.91	6.03	6.63	7.22	7.82	8.35	8.86	9.78
	AIR	7.00	7.36	7.14	8.09	9.66	12.10	13.94	15.49	14.77	13.12	10.25	8.43
	SEA	8.43	8.44	7.55	7.73	9.29	11.48	13.67	15.36	14.98	13.45	11.62	9.43
	VPA	8.58	8.66	8.08	8.93	9.79	11.75	13.47	15.05	14.09	12.55	10.21	9.27
	VPS	11.09	11.09	10.43	10.56	11.75	13.58	15.69	17.51	17.08	15.48	13.75	11.85
	CLD	80.37	79.18	72.77	79.39	72.89	82.51	84.49	81.90	73.98	73.10	73.02	74.76
49 N 132 W	SPD	10.09	10.12	9.22	8.27	6.68	7.01	6.23	7.10	8.16	9.57	9.41	9.77
	AIR	6.11	6.76	6.69	7.27	9.40	11.22	14.04	15.36	14.89	12.44	9.81	7.66
	SEA	7.66	7.35	7.17	7.32	8.72	10.93	13.43	15.35	14.77	13.19	10.87	8.84
	VPA	7.83	8.26	8.10	8.37	9.79	11.60	13.69	14.84	14.27	12.12	9.96	8.76
	VPS	10.51	10.30	10.19	10.27	11.32	13.12	15.48	17.52	16.90	15.26	13.87	11.40
	CLD	79.53	79.12	74.12	71.69	79.41	85.66	82.91	78.94	75.26	73.69	72.50	80.54
49 N 133 W	SPD	9.92	10.38	9.50	8.68	7.06	6.80	5.97	7.31	8.01	8.67	10.52	10.53
	AIR	5.92	6.48	6.37	7.20	8.77	10.91	13.57	15.23	14.62	12.32	9.91	7.58
	SEA	7.55	6.78	6.85	7.20	8.53	10.65	13.33	15.33	14.76	13.02	10.87	9.05
	VPA	7.80	8.46	7.83	8.44	9.63	11.13	13.33	14.95	14.31	11.87	10.33	8.68
	VPS	10.44	9.90	9.95	10.18	11.17	12.91	15.38	17.49	16.85	15.06	13.07	11.58
	CLD	79.48	83.11	72.61	75.08	77.61	85.25	87.19	84.33	71.91	71.74	73.31	75.93
49 N 134 W	SPD	10.01	9.69	9.49	8.66	6.26	7.04	6.12	6.74	8.00	9.94	10.73	10.23
	AIR	6.10	6.50	6.01	6.80	8.80	10.85	13.31	15.14	14.40	11.85	9.45	7.25
	SEA	7.43	6.83	6.84	7.02	8.27	10.51	13.11	14.99	14.30	12.39	10.50	8.66
	VPA	7.98	8.08	7.84	8.02	9.46	11.10	13.27	14.88	13.71	11.45	9.79	8.42
	VPS	10.35	9.95	9.95	10.06	10.98	12.76	15.16	17.13	16.38	14.46	12.76	11.25
	CLD	79.32	77.72	74.40	69.89	78.35	86.38	86.69	85.14	74.02	73.34	77.85	78.79
49 N 135 W	SPD	10.10	9.93	9.43	8.12	7.08	6.86	6.16	7.00	8.78	9.32	10.13	10.85
	AIR	5.39	6.13	6.23	6.88	8.69	10.82	13.08	14.71	14.25	12.11	9.34	7.40
	SEA	7.21	6.80	6.60	6.83	8.29	10.21	12.71	14.62	14.33	12.46	10.46	8.79
	VPA	7.47	8.02	7.99	8.19	9.56	11.24	13.12	14.54	13.83	11.89	9.74	8.68
	VPS	10.20	9.91	9.78	9.93	10.99	12.54	14.78	16.70	16.38	14.52	12.72	11.36
	CLD	81.98	81.00	78.00	80.48	81.25	89.22	89.41	84.14	77.50	77.26	76.28	79.56

LAT/LON		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
50 N 127 W	SPD	7.26	9.33	8.27	7.57	5.84	4.41	6.04	3.83	5.50	7.39	9.99	8.69
	AIR	6.12	7.75	7.33	8.48	10.31	11.86	14.67	13.74	12.88	11.10	7.21	7.57
	SEA	7.18	7.25	6.64	8.55	10.48	11.38	13.68	11.31	10.80	10.44	9.72	7.42
	VPA	7.83	9.05	7.70	8.39	9.43	11.29	14.31	13.08	12.91	10.61	8.74	8.12
	VPS	10.22	10.22	9.81	11.17	12.78	13.60	15.83	13.59	13.14	12.78	12.07	10.39
	CLD	88.88	87.50	70.19	68.75	64.77	88.54	57.89	73.43	63.58	78.57	83.33	81.25
50 N 128 W	SPD	9.79	9.17	7.92	8.19	6.53	7.38	6.71	6.22	6.80	7.08	7.57	10.31
	AIR	6.19	7.00	7.71	7.99	10.16	12.70	13.81	15.79	13.86	11.88	9.56	7.63
	SEA	8.24	8.13	8.10	8.84	10.46	12.26	13.19	14.22	13.15	11.97	10.76	9.10
	VPA	8.06	9.10	8.39	8.71	10.32	11.90	13.87	15.53	13.42	11.85	10.00	8.72
	VPS	10.94	10.87	10.83	11.39	12.72	14.34	15.25	16.38	15.21	14.11	12.95	11.61
	CLD	82.42	78.80	83.92	69.81	65.00	61.88	63.55	51.63	55.95	71.68	74.77	74.64
50 N 129 W	SPD	9.32	9.14	8.90	9.20	6.25	7.65	7.22	6.46	7.89	8.64	9.17	9.02
	AIR	7.01	7.54	6.80	7.87	10.31	12.45	14.28	15.48	14.54	12.02	9.18	6.89
	SEA	8.36	7.95	7.74	8.51	9.93	12.26	13.79	15.04	14.30	12.50	10.40	8.79
	VPA	8.41	8.82	8.29	8.76	10.23	12.23	13.82	15.19	14.12	11.83	9.79	8.21
	VPS	11.04	10.73	10.59	11.14	12.28	14.35	15.86	17.19	16.39	14.55	12.66	11.36
	CLD	79.77	78.92	78.62	68.13	67.41	79.43	67.13	74.87	65.43	64.85	79.16	77.55
50 N 130 W	SPD	10.05	9.23	9.22	7.87	7.02	6.62	6.67	7.16	7.86	8.45	9.53	8.59
	AIR	6.79	7.16	7.07	8.07	9.62	11.71	13.90	15.58	14.77	12.34	10.08	7.93
	SEA	8.46	7.83	7.74	8.22	9.73	11.56	13.74	15.18	14.80	13.25	11.05	9.36
	VPA	8.46	8.58	8.23	8.79	10.00	11.88	13.70	14.98	14.62	12.14	10.38	9.23
	VPS	11.12	10.65	10.57	10.94	12.11	13.68	15.77	17.34	16.90	15.28	13.22	11.79
	CLD	82.99	80.74	76.22	73.06	70.52	81.48	79.87	77.15	68.04	73.25	77.02	83.56
50 N 131 W	SPD	9.59	10.17	9.31	7.84	6.89	6.11	6.36	6.69	7.85	8.94	9.53	9.90
	AIR	6.77	7.12	6.76	7.61	9.62	11.82	13.86	15.44	14.70	12.58	9.95	8.00
	SEA	8.44	8.04	7.49	8.13	9.51	11.54	13.58	15.36	14.83	13.19	10.99	9.12
	VPA	8.20	8.45	8.11	8.76	9.81	11.52	13.52	15.11	14.27	12.21	10.08	9.23
	VPS	11.10	10.79	10.40	10.85	11.93	13.65	15.62	17.52	16.92	15.21	13.18	11.63
	CLD	74.26	75.33	74.55	71.59	73.12	82.74	81.40	80.90	73.60	75.68	76.62	72.33
50 N 132 W	SPD	9.27	8.86	8.88	7.61	6.57	6.59	6.22	6.27	7.85	9.78	10.31	9.96
	AIR	6.04	6.60	6.05	7.46	8.94	11.16	13.26	15.31	14.48	12.11	9.40	6.99
	SEA	7.58	7.31	7.20	7.45	9.17	11.03	13.36	15.31	14.70	12.83	10.56	8.67
	VPA	7.82	8.54	7.77	8.48	9.62	11.53	13.08	14.79	13.97	11.90	9.85	8.66
	VPS	10.45	10.28	10.18	10.38	11.65	13.22	15.38	17.47	16.80	14.86	12.82	11.26
	CLD	81.06	80.57	76.19	71.42	75.32	84.88	84.28	77.48	68.93	76.93	78.21	68.75
50 N 133 W	SPD	9.29	10.38	9.45	7.97	7.10	6.90	6.14	6.62	8.17	9.13	10.48	11.43
	AIR	6.01	6.21	6.32	6.96	8.93	11.33	13.27	15.00	14.27	12.02	9.38	7.31
	SEA	7.64	7.17	6.98	7.42	8.90	10.97	13.23	14.88	14.39	12.81	10.19	8.40
	VPA	7.89	8.17	7.96	8.29	9.47	11.50	13.38	14.54	13.75	11.43	9.79	8.60
	VPS	10.50	10.17	10.03	10.36	11.44	13.15	15.27	16.98	16.46	14.85	12.50	11.07
	CLD	82.61	79.10	75.97	70.79	77.18	85.99	85.52	79.16	70.99	70.56	79.00	79.72
50 N 134 W	SPD	10.96	9.16	8.11	8.42	7.13	6.72	4.92	6.87	7.95	9.83	10.42	10.72
	AIR	6.29	7.11	6.54	7.01	8.88	11.14	13.43	14.91	14.02	12.04	8.58	7.10
	SEA	8.60	7.45	7.13	7.05	8.70	10.33	13.12	15.24	14.13	12.65	10.57	9.18
	VPA	8.33	8.52	7.94	8.19	9.42	11.51	13.04	14.56	13.10	11.63	9.34	8.64
	VPS	11.23	10.37	10.12	10.08	11.30	12.59	15.16	17.39	16.18	14.69	12.81	11.66
	CLD	80.12	79.69	73.59	74.85	81.25	89.00	82.25	82.23	72.14	76.00	76.02	77.78
50 N 135 W	SPD	10.58	10.29	9.32	8.68	7.45	6.76	5.63	6.61	8.97	9.90	10.39	10.09
	AIR	5.77	6.29	6.13	6.73	8.31	10.48	12.87	14.81	15.00	11.86	9.18	6.76
	SEA	7.05	6.92	6.77	6.94	8.36	10.38	12.67	14.71	14.99	12.56	10.39	8.25
	VPA	7.65	8.06	7.81	8.16	9.15	11.06	12.96	14.52	14.42	11.34	9.69	8.11
	VPS	10.09	9.99	9.90	10.01	11.07	12.66	14.72	16.81	17.11	14.62	12.66	10.95
	CLD	77.28	81.82	68.91	70.42	78.69	89.74	89.98	85.00	74.66	73.02	76.98	78.44
50 N 136 W	SPD	9.84	10.33	8.37	9.17	7.97	7.59	5.41	6.69	8.47	10.01	10.98	11.08
	AIR	6.18	6.30	6.22	6.56	8.02	11.22	12.67	14.60	13.78	11.70	8.56	7.27
	SEA	7.47	7.64	7.21	6.51	8.32	10.89	12.39	14.28	14.06	12.60	9.76	8.10
	VPA	7.78	8.30	8.01	7.83	8.72	11.34	12.56	14.14	13.30	11.42	8.86	8.73
	VPS	10.39	10.51	10.18	9.71	11.03	13.08	14.43	16.35	16.10	14.69	12.12	10.82
	CLD	77.36	80.64	79.72	79.05	82.05	90.02	92.14	86.73	76.57	77.25	78.50	83.00