P_5

FLOOD CHARACTERISTICS OF ALASKAN STREAMS

$$Q_T = \frac{Q_{50}}{Q_5} \times P_5$$

$$Q_{50} = 0.65\ M^{1.024}\ D^{2.325}$$

Q_5

$$Q_2 = 1.16 \frac{M^{0.988}}{D^{0.05}} = 1.16 \frac{(2,450)^{0.988}}{(1.38)^{0.05}} = 2,550\ ft^3/s$$

Prepared by the United States
Department of the Interior
Geological Survey
in cooperation with
State of Alaska
Department of Transportation
and
U.S. Department of Transportation
Federal Highway Administration

$$Q_T = C\ M^a\ D^k$$

Q_2

WATER RESOURCES INVESTIGATIONS 78-129

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FLOOD CHARACTERISTICS OF ALASKAN STREAMS

by

R. D. Lamke

Techniques for calculating magnitude and frequency of floods in Alaska, with compilations of flood data through October 1, 1975.

Prepared in cooperation with
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
and
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

U.S. Geological Survey
Water Resources Investigations 78-129

Anchorage, Alaska

1979

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

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Multiply inch-pound units	by	to obtain SI units
cubic feet per second (ft^3/s)	0.0283	cubic meters per second (m^3/s)
cubic feet per second per square mile [$(ft^3/s)/mi^2$]	0.0109	cubic meters per second per square kilometer [$(m^3/s)/km^2$]
square miles (mi^2)	2.589	square kilometers (km^2)
feet (ft)	0.3048	meters (m)
inches (in.)	2.540	centimeters (cm)
degrees Fahrenheit (°F)	$5/9$ (°F-32)	degrees Celsius (°C)

FLOOD CHARACTERISTICS OF ALASKAN STREAMS

R. D. Lamke

ABSTRACT

Peak discharge data for Alaskan streams are summarized and analyzed. Alaska is divided into two regions, one having a maritime climate with fall and winter rains and floods (Area I), the other having spring and summer floods of a variety or combinations of causes (Area II).

Multiple-regression equations relate the magnitude of a discharge that has a given frequency to the climatic and physical characteristics of a stream's drainage basin. The physical characteristics include drainage area, amount of storage in the lakes and ponds, and the amount of forested land (significant only in Area II). The climatic characteristics found to be significant are annual precipitation and mean minimum January temperature. Maps show the lines of equal intensity of these climatic variables and locations of the 260 sites used in the multiple-regression analyses.

The equations resulting from the analyses for 260 gaged basins can be used to estimate floods of specified exceedance probability (or average recurrence interval) at ungaged sites. These equations are for the 1.25-, 2-, 5-, 10-, 25-, and 50-year average recurrence intervals (80 to 2 percent exceedance probability). Average standard errors of the multiple-regression equations for Areas I and II are 48 and 74 percent, respectively. Statistical methods are also presented to estimate flood discharges with low exceedance probability at sites with only a short record of flood discharges or at ungaged sites whose basin characteristics are similar to those at a nearby gaged site where there is a long record of yearly flood peaks.

Little information on floods in western and arctic Alaska has been collected, and the predictive equations for those areas are therefore less reliable than for areas for which there are more data.

Maximum recorded floods at more than 400 sites throughout Alaska are tabulated.

INTRODUCTION

Knowledge of flood characteristics is necessary to evaluate flood hazards and to design economical structures along streams. One way of evaluating flood characteristics at a gaging station or a crest-stage gage is to relate the magnitudes of instantaneous peak discharges to their frequencies of occurrence. However, flood records have been collected in Alaska at few such gaged sites.

This report presents methods for calculating the magnitude and frequency of flood discharges at ungaged sites. The methods described utilize flood magnitude and frequency data collected at gaged sites and relate the data to physical and climatic characteristics of these gaged basins. (See tables 1 and 2 at the back of this report for the basin characteristics of sites used in developing equations, the bottom of table 2 for definitions of basin characteristics, and tables 3 and 4 for the flood data used.)

No attempt is made in this study to predict peak discharges from glacier-dammed lakes. A report entitled "Glacier Dammed Lakes and Outburst Floods in Alaska" by Post and Mayo (1971) shows the location of those lakes and describes their recent history, as well as delineating areas where outburst flooding may be expected.

Maximum known peak discharges for all Alaskan gaging stations and numerous miscellaneous measurement sites are listed in table 5. The maximum discharge in cubic feet per second per square mile provides an estimate of the largest floods that might be expected at ungaged sites in a region.

Floods can result from causes other than high rates of runoff from rain or snowmelt. Floods may occur when the water surface along a stream rises above some predetermined level because of backwater from a downstream obstruction such as an ice jam. Peak discharges can occur from the sudden release of water impounded by temporary dams of earth or snow slides. Another common type of flood that occurs in Alaska results from the formation of excessive ice in the channel. This ice formation (aufeis or icing) frequently spreads beyond the channel banks; any runoff from snowmelt or rain then travels over the ice surface or beside the ice formation. The probability of these flood events, their importance in designing a structure, or the possibility of a developed area being inundated are not susceptible to a regional analysis but must be estimated for each site by field investigations or from a history of past occurrences.

This report is based on flood data collected by the Geological Survey in cooperation with several federal, state, and local agencies. Of special importance is a continuing program of flood data collection on small streams throughout Alaska under a cooperative agreement with the State of Alaska Department of Transportation (formerly Department of Highways).

BASIN CHARACTERISTICS

The characteristics of gaged basins comprise selected physical and topographic parameters, as well as climatic variables of the drainages of the individual gaged sites. The basin characteristics of the stations used in this analysis are listed in tables 1 and 2. Descriptions and definitions of the characteristics are shown at the bottom of table 2.

FLOOD DATA

The annual maximum instantaneous peak discharge records collected at 260 gaging stations in Alaska were analyzed to determine their flood magnitude and frequency relations. The method used in the analysis was the log-Pearson Type III distribution as recommended by the U.S. Water Resources Council (WRC) in Bulletin 17A (1977). The criteria in Bulletin 17A, that 10 or more years of flood record be used in the analysis, were relaxed because a number of records with less than 10 years were available for otherwise ungaged areas of the state. The results are presented in tables 3 and 4.

The following criteria were used to select flood-frequency data for use in the analysis:

(1) All stations with 5 or more years of flood record prior to October 1, 1975, were used if peak discharges were not significantly affected by outburst floods from glacier-dammed lakes.

(a) The flood records were not used for the following stations:

15008000 Salmon River near Hyder
15202000 Tazlina River near Glenallen
15243500 Snow River near Divide

(b) Only the parts of the flood record that were not outburst floods from Lake George were used for 15281000, Knik River near Palmer.

(2) Only the 1.25-, 2-, and 5-year peaks were used for stations having less than 8 years of record.

(3) Only the 1.25- through the 10-year peaks were used for stations having 8 to 12 years of record.

(4) Only the 1.25- through the 25-year peaks were used for stations having 13 to 17 years of record.

(5) Only the 1.25- through the 50-year peaks were used for stations having 18 to 22 years of record.

(6) The 1.25- through the 100-year peaks were used for stations having more than 22 years of record.

(7) The means and standard deviations of log-Pearson Type III analyses are shown in tables 3 and 4 for all stations with more than 10 years of record.

(8) The station skew coefficient is also shown for all stations with more than 20 years of record.

Some of the flood records were adjusted as outlined below:

(1) Some peak discharges were augmented by the failure of natural dams or diversion from an adjacent stream during the floods of August 1971.

Appropriate adjustments were made for the following stations:

15284000 Matanuska River at Palmer
15292900 Goose Creek near Montana
15294500 Chakachatna River near Tyonek

(2) Some records were adjusted for historical peaks according to the methods recommended in WRC Bulletin 17A (1977). These records were:

15283500 Eska Creek near Sutton
15484000 Salcha River near Salchaket
15493000 Chena River near Two Rivers
15511000 Little Chena River near Fairbanks
15514000 Chena River at Fairbanks
15515500 Tanana River at Nenana

(3) All records were analyzed by log-Pearson Type III analysis using WRC guidelines for low outliers and zero flow years.

(4) A few of the streamgaging stations have one or more years in which the instantaneous peak could not be determined. However, a maximum daily discharge was published. Figures for maximum daily discharge were not used in the log-Pearson Type III analysis except in a few selected instances.

In tables 3 and 4 the headings $P_{1.25}$ and P_{50}, for example, mean that the discharge values shown have recurrence intervals of 1.25 years and 50 years, respectively. The recurrence interval is the average interval in years within which the stated discharge will be exceeded once. The exceedance probability is the probability of the given discharge being exceeded in any given year and is the reciprocal of the recurrence interval. A comparison of the recurrence interval and exceedance probability in percent is presented below:

Recurrence interval, in years	Exceedance probability, in percent
1.25	80
2	50
5	20
10	10
25	4
50	2
100	1

METHOD OF ANALYSIS

Statewide

A preliminary multiple-regression analysis for all of Alaska was made of flood magnitude and frequency using basin characteristics of gaged sites (tables 1 and 2) and the seven flood-peak values, $P_{1.25}$ through P_{100}, at each site (tables 3 and 4). This computer analysis resulted in several versions of seven equations, $Q_{1.25}$ through Q_{100}, using various combinations of basin characteristics. Further analysis showed that drainage area (A), mean annual precipitation (p), and area of lake storage (St + 1) were the most significant variables. Another multiple-regression analysis was computed using only these three basin characteristics for each of the seven flood values. The ratios of calculated values to values based on actual flood peaks at the gaged sites were plotted on a map of Alaska. This plot showed that the results of the flood-frequency analysis for stations in a maritime climatic environment were different than those for the rest of Alaska. The state was therefore divided into two areas, Area I and Area II, for further analysis as shown in figure 1. Another difference between Areas I and II is that the annual maximum discharge occurs at a different time of the year (fig. 2).

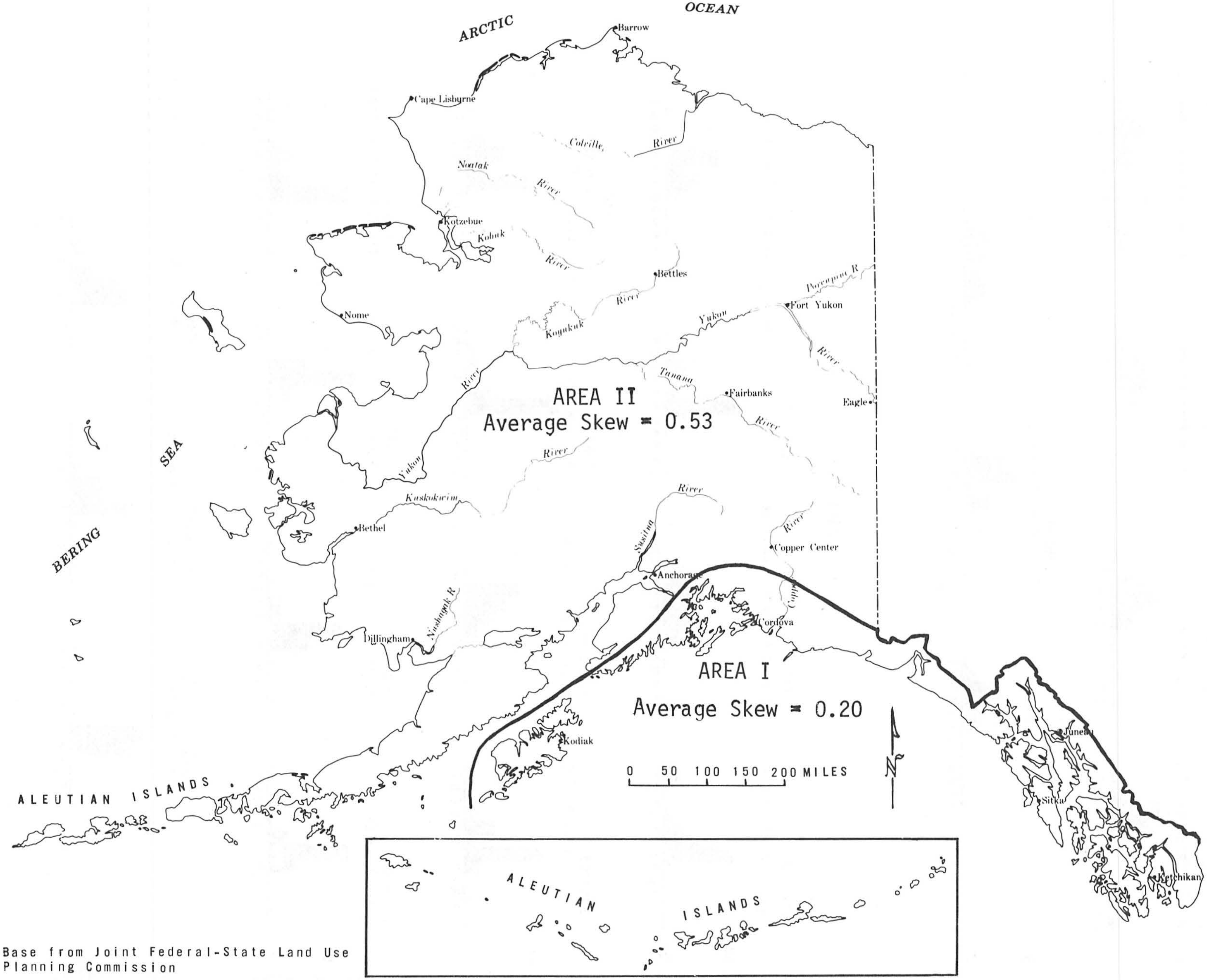

Figure 1.--Areas of Alaska used in the flood-frequency analysis.

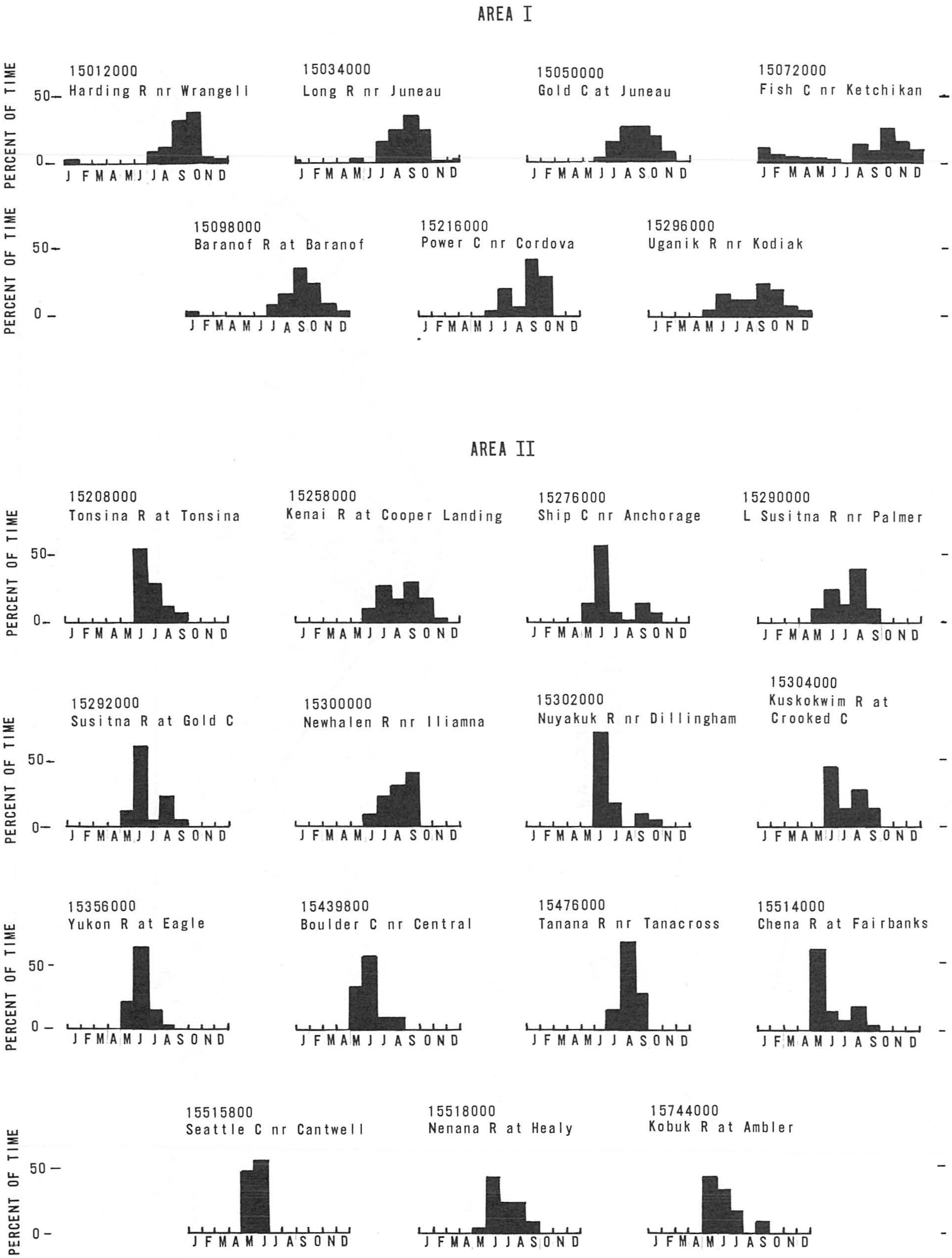

Figure 2.--Time of occurrence of highest peak of the year at selected long-term gaging stations throughout Alaska.

Area I

Area I consists of most areas in Alaska with a maritime climate, excluding the Aleutian Islands and the Pacific Ocean side of the Alaska Peninsula (Johnson and Hartman, 1969, plate 26). Area I includes those areas shown in figure 3 at the back of this report as the Kodiak-Shelikof area and southeast Alaska. It also includes that part of the Gulf of Alaska area south of the crest of the Chugach Mountains. The location of the stations used in the analysis is shown in figures 4-15 and 4-18 and in part of figure 4-17. Floods in maritime Alaska can occur any time during the year and generally are the result of rainstorms; most annual maximum peak discharges in Area I occur in August, September, and October (fig. 2).

Analysis

In addition to the variables mentioned previously, a fourth variable, mean minimum January temperature (T + 1), was found to be significant at the 5-percent level of significance. It is believed that (T + 1) is an indirect geographic indicator of the probability of winter floods. (A value of 1 is added to avoid zero or negative values.) Because these analyses involved a varying and decreasing number of values based on actual flood peaks at the stations, $P_{1.25}$ through P_{100}, the equations used to calculate $Q_{1.25}$ through Q_{100} sometimes resulted in irregular answers that did not increase as Q_T increased. Table 6 lists resultant equations, standard errors, and number of stations used in the analyses.

To overcome these drawbacks, a different method of analysis was chosen. The method used is based on the log-Pearson Type III distribution of the annual series of flood events at a station (WRC, 1977, p. 9). The general equation for floods of selected exceedance probabilities (Q_T) follows:

$$\text{Log } Q_T = \overline{X} + KS, \text{ where:}$$

$\overline{X}$ is the mean logarithm of the annual series,

S is the standard deviation of the logarithms, and

K is a factor that is a function of the skew coefficient and selected exceedance probability.

A variant of this equation was used in the present analysis to determine prediction equations for ungaged sites:

$Q_T = CM^a D^k$, where:

CM^a is the anti-log equivalent of $\overline{X}$ for an ungaged site,

D is the anti-log equivalent of S and

k is an exponent that varies with the exceedance probability,

C is a constant that varies with exceedance probability,

M is an anti-log form of the mean (see below), and

a is an exponent which is near a value of 1.00.

It was assumed that 10 years of flood record is sufficient to define the mean and standard deviations of the logarithms at each station. These logarithmic values are given in table 3 as "MEAN" and "SD". A multiple-regression analysis of $\overline{X}$ and S at the 46 stations with 10 or more years of flood record was made using the basin characteristics. This resulted in two equations for a regional predictor of the mean value and the standard deviation:

$$M = 10.43 \frac{A^{0.812} P^{0.522} (T + 1)^{0.187}}{(St + 1)^{0.266}}$$

$$D = \frac{1.63}{(T + 1)^{0.049}}$$

The standard errors of the above equations were 38 and 9 percent, respectively, for the 46 values used.

The values of the constants (C) and the exponents (a) of each of the equations for $Q_{1.25}$ through Q_{100} were determined by a multiple-regression of $P_{1.25}$ through P_{100} in table 3 divided by D^k, calculated for each station listed in table 1, with the M values calculated for each station. The above equations were used to calculate M and D. The values of the exponent (k) were determined from the table of K values in Appendix 3 of WRC Bulletin 17A for an average regional skew coefficient of 0.20, and the values were modified slightly to reduce the standard error. See table 3 for station skew coefficients.

Equations

	Standard error
$Q_{1.25} = 1.02 \dfrac{M^{1.003}}{D^{0.85}}$	56 percent
$Q_2 = 1.16 \dfrac{M^{0.988}}{D^{0.05}}$	50 percent
$Q_5 = 1.24\ M^{0.984}\ D^{0.70}$	48 percent
$Q_{10} = 0.97\ M^{1.008}\ D^{1.30}$	45 percent
$Q_{25} = 0.66\ M^{1.050}\ D^{1.85}$	48 percent
$Q_{50} = 0.70\ M^{1.051}\ D^{2.20}$	42 percent

Discussion

The standard error of these equations cannot be calculated exactly. However, an approximation of the standard error was made. The standard errors of the equations presented above were slightly greater than for the equations in table 6. Most of the irregularities in the equations were removed (that is, there should be a gradual increase in the computed values from $Q_{1.25}$ through Q_{50}). However, no satisfactory equation could be determined for Q_{100}, partly because there are only 15 values of P_{100} to use in the regression. A reasonable estimate of Q_{100} can be made by using the exponent (k) equal to 2.5 instead of equal to 2.2 in the formula for Q_{50}. Also, the equations can be irregular for drainage areas of less than two square miles. (For some combinations of basin characteristics, Q_{25} is less than Q_{10}.) The only local area where the equations seriously underestimated peaks was a small area about 30 (east and west) by 20 (north and south) miles around Ketchikan and eastward (fig.4-18). For gaged streams with flood records, use the method shown on page 22 to determine the desired discharge at an ungaged site on the stream. Reasonable results can be obtained by multiplying the equation results by 1.5 for ungaged streams in that area. This value of 1.5 is based on the average relation of the flood magnitudes computed by formulas, $Q_{1.25}$ to Q_{50}, to the actual magnitudes, $P_{1.25}$ to P_{50}, shown in table 3 for stations in the area.

Area II

Area II consists of those parts of Alaska with transitional, continental, and arctic climates; also included are the Aleutian Islands and Pacific Ocean side of the Alaskan Peninsula (Johnson and Hartman, 1969, plate 26) which have a maritime climate. The annual maximum peak discharges generally occur between May and October (fig. 2). The most common cause of the peak flows on the larger streams is snowmelt or a combination of snowmelt and rainstorms that cover a large general area. However, the larger annual maximum peak discharges at a station are the result of widespread general rains in August or later. Often these peak flows are augmented by sustained snowmelt from higher elevations and glaciers. Occasionally, these peak discharges are also augmented by high discharges caused by breakouts from glacier-dammed lakes. The likelihood of the peak discharge of the year being caused by rainstorms rather than by other causes is greater for those streams with smaller drainage areas, with little capacity for storage, and with drainage areas at lower elevations.

It was not feasible to further subdivide Area II into smaller areas for analysis primarily because there are not enough long-term flood records; only 26 stations in the area have 18 or more years of record.

Analysis

In addition to drainage area (A), mean annual precipitation (p), and area of lake storage (St + 1), the basin characteristics for forested area (F + 1) and mean minimum January temperatures (T + 30) were found to be significant at the 5-percent level. These characteristics, (T + 30) and (F + 1), are believed to be indirect geographic indicators of the absence or presence of permafrost. For a given frequency of flood occurrence and similar values of A, p, and (St + 1), the magnitude of the flood is greater in a permafrost area than in a permafrost-free area because of the proximity to the surface of impermeable frozen soil. However, some permafrost areas have a deeper active layer of permafrost (the seasonally thawed layer of soil on top of the permafrost) than other areas. The presence of forested terrain in permafrost areas is a measure of the effect of the active layer.

The frequency curves using the equations derived from multiple-regression analysis were also irregular. (See table 6 for resultant equations and their standard errors.) The same method of suppressing the irregularities that was utilized to develop the equations for maritime Alaska was used here:

$$Q_T = C\, M^a\, D^k$$

The resultant solutions for M and D for the 100 sites with 10 or more years of flood records were:

	Standard error
$M = 1.94 \dfrac{A^{0.949}\, P^{0.762}}{(St + 1)^{0.192}\, (F + 1)^{0.148}}$	60 percent
$D = \dfrac{3.91}{A^{0.072}\, (T + 30)^{0.141}}$	30 percent

The values for the constants (C) and the exponents were determined in a manner similar to the method used for Area I. The values for the exponent (k) were taken from WRC Bulletin 17A for an average regional skew coefficient of 0.53.

Equations

	Standard error
$Q_{1.25} = 1.15 \dfrac{M^{0.984}}{D^{0.857}}$	83 percent
$Q_2 = 1.22 \dfrac{M^{0.977}}{D^{0.088}}$	77 percent
$Q_5 = 1.04\, M^{0.988}\, D^{0.806}$	78 percent

$$Q_{10} = 0.91\ M^{0.999}\ D^{1.325} \qquad 79\ \text{percent}$$

$$Q_{25} = 0.65\ M^{1.025}\ D^{1.920} \qquad 59\ \text{percent}$$

$$Q_{50} = 0.65\ M^{1.024}\ D^{2.325} \qquad 68\ \text{percent}$$

Discussion

In general, the comments on the results of the regression analysis are the same as for Area I. No satisfactory equations could be determined for Q_{100} because there were only 19 values of P_{100} to use in the regression. However, a reasonable estimate of Q_{100} can be made by using the exponent (k) equal to 2.707 instead of equal to 2.325 in the formula for Q_{50}. The lower limit on drainage area for which these equations should be used to predict flood magnitudes and frequencies is one square mile.

The Aleutian Islands and the Pacific Ocean side of the Alaska Peninsula are included in Area II, even though the climate is maritime and flood peaks can occur in the wintertime. There are few flood records for the area. Only the three sites on Amchitka Island with 5 to 7 years of record were used in this analysis. The preliminary regression studies showed that the equations developed for Area II defined the flood magnitude and frequency relations for these three stations better than the equations for Area I.

The only area in which the equations for Area II appear to overestimate peaks is the Anchorage bowl area from Campbell Creek to Meadow Creek. It is difficult to determine the precipitation (p) for sites in the Anchorage bowl from figure 4-16. The flood peaks used in the analysis were for essentially nonurbanized conditions; urbanization will increase future peak flows. If these equations are used to estimate peaks in the Anchorage area, the results should be multiplied by a factor of about 0.5. (See page 12 for an example of the method used to determine this factor.) For greater accuracy, the most recent log-Pearson Type III analysis for gaging stations in the area may be used and the magnitude and frequency values can be transferred to the ungaged site. The magnitude of the flood discharge for a given frequency at an ungaged site can be estimated by first computing Q_T for the ungaged site and also for a nearby gaged site with similar basin characteristics, and then multiplying the ratio of the above two Q_T values by the flood magnitude at the gaged site for the given frequency determined by log-Pearson Type III analysis.

Actual flood peaks on the small streams between Healy and Nenana, in the Livengood area, and near Chena Hot Springs were also higher than would be expected from the equations. Those streams are in an area affected by the 1967 flood (an extraordinary flood), and the 1967 flood values were used in the analysis. Applying a correction factor to the results probably is not warranted.

There is a probability that these equations underestimate the flood peak values for northwest Alaska and the Arctic Slope of Alaska (fig. 3). Only eleven sites in these regions were used in the regression equation, and the longest period of record is 11 years. The precipitation maps (figs. 4-1 through 4-5) may also underestimate the precipitation for these regions. The records of wintertime snow depths, expressed as inches of precipitation, are known to be too low. This problem has been recognized by several agencies, notably the Soil Conservation Service, National Weather Service, Cold Regions Research Engineering Laboratory, and the Geophysical Institute of the University of Alaska. During the summer there are only a few precipitation stations operating in these regions. The shortage of precipitation records is most evident for mountainous areas away from the Arctic Ocean. A multiplicative correction factor of 1.7 may be arbitrarily applied to the equation results. The factor is the average ratio of P_T to Q_T for stations in northwest Alaska and Arctic Slope of Alaska. A flood-magnitude and frequency study should be periodically updated; by the time the next study is made, a more accurate precipitation map may be available for these two regions. At that time, there will be more sites with peak records and a longer period of record for many of the stations shown in table 4.

REMARKS AND CAUTIONS

No attempt is made in the present study to predict the discharges of glacier-dammed lakes. Some flood values for streams affected by outbursts are presented in tables 3 and 4. General criteria used to determine which of the stations affected by outburst floods would be included in the analysis were: (1) an outburst flood peak that occurred within any given year might or might not be the highest peak of the year and (2) the magnitude of the outburst peaks was in the same general range as peak flows resulting from other causes.

Stream-gaging records long enough (5 years or more) to make a log-Pearson Type III analysis generally provide more reliable estimates of peak flow at the gages in Alaska than the equations do. (See Childers, 1970, p. 16, for an example.) Therefore, a logical extension of this statement would be that if the ungaged site is on the same stream as a gaged site and if there are no large differences between basin characteristics for the two sites, then the flood values obtained at the gaged site should be modified for the differences in basin characteristics and used for the ungaged site. No guidelines for establishing limits on adjusting a flood value determined at a gaged site to an ungaged site are presented. However, the user should be cautious in making such adjustments. See pages 14 and 15 for an explanation of the method to use; an example is shown on page 22.

Flood records of short length (5 to 9 years) can be used to determine a discharge for a low exceedance probability. For example, suppose the discharge for a flood with an exceedance probability of 2 percent (50-year recurrence interval) is needed at a station with 7 years of record. Q_{50} and Q_5 can be computed for the site, and P_5 can be determined by log-Pearson Type III analysis. The desired discharge can then be determined by multiplying the ratio of Q_{50} to Q_5 by P_5; see the example on page 20. The user might want to average the discharge computed by the above method and Q_{50}. For a more detailed discussion of the recommended guidelines for refinements of frequency curves with 10 or more years of flood record at a gaging station consult pages 17 through 20 of WRC Bulletin 17A (1977).

There are large geographic areas of Alaska for which there are no flood records; figures 4-1 through 4-18 show the location of gaging stations that provide these records. The reliability of the flood prediction equations is less certain for those station-less areas than areas for which flood records have been obtained. Figures 4-1 through 4-18 also show lines of equal intensity for precipitation and mean minimum January temperatures.

Data that can be used to estimate the size of large floods that might be expected at ungaged sites are presented in table 5. The table lists maximum known discharges for all Alaskan gaging stations and miscellaneous sites. A plot comparing the maximum known floods in cubic feet per second per square mile [$(ft^3/s)/mi^2$] and the drainage area for the sites in the area of concern can be prepared and an envelope curve drawn. The peak discharge at the ungaged site can be estimated by using the value in $(ft^3/s)/mi^2$ from the envelope curve and a measured drainage area. The peak magnitude thus determined would have an unknown frequency of occurrence or exceedance probability.

The standard error of estimate is a statistical measurement of the reliability of the equations and is expressed as a percentage of the average value of the characteristic being analyzed. The standard error is an estimated limit within which about two-thirds of the true long-term values of the predicted characteristic are expected to fall. Thus, for a standard error of 80 percent, two-thirds of the actual flood magnitudes at an ungaged site should lie between approximately 56 percent (100/1.80) and 180 percent (100 x 1.80) of their predicted value.

As explained on pages 21 and 22 of WRC Bulletin 17A, these equations predict the flow exceedance probability, not the risk. There is a two-percent chance that Q_{50} (a discharge with an average recurrence interval of 50 years) will be exceeded in a given year. However, there is a 50-percent chance that the flood discharge with an annual exceedance probability of two percent (Q_{50}) will be exceeded one or more times in the next 34 years (from fig. 10-1 of WRC Bulletin 17A).

Area I

The equations given in this report should not be used for the large rivers breaching the mountains along the United States-Canada border in southeast Alaska or the main stem of the Copper River. The equations for Area I can be used for the streams tributary to the Copper River south of the crest of the Chugach Mountains. A correction factor to the equations of 1.5 is suggested for a small area near Ketchikan for ungaged streams. (See p. 11 and fig. 4-18.) For sites on gaged streams, flood data from the gaged site can be transferred to the site in question.

Area II

Equations for Area II should be used for Copper River tributaries north of the crest of the Chugach Mountains. A correction factor of 1.7 is suggested if the equations are used for northwest and Arctic Slope Alaska. It is also suggested that the prediction equations for ungaged sites be used with caution for the Anchorage bowl area; to avoid unreliable results, either a correction factor of 0.5 may be applied or flood data from gaged sites can be transferred to the site in question.

EXAMPLES OF CALCULATIONS

Area I

Problem: Compute Q_2 and Q_{50} for a stream with the following pertinent basin characteristics:

A = drainage area = 33.9 mi^2

p = annual precipitation = 160 in.

T = mean minimum January temperature = 28°F

St = area of lakes and ponds or "storage" = 12 percent

Solution:

First, determine M and D:

$$M = 10.43 \frac{A^{0.812}\ p^{0.522}\ (T+1)^{0.187}}{(St+1)^{0.266}}$$

$$= 10.43 \frac{(33.9)^{0.812}\ (160)^{0.522}\ (29)^{0.187}}{(13)^{0.266}}$$

$= 2,450\ ft^3/s$ (cubic feet per second).

$$D = \frac{1.63}{(T+1)^{0.049}} = \frac{1.63}{(29)^{0.049}} = 1.38$$

Next, use the formula for Q_2:

$$Q_2 = 1.16 \frac{M^{0.988}}{D^{0.05}} = 1.16 \frac{(2,450)^{0.988}}{(1.38)^{0.05}} = 2,550\ ft^3/s$$

Finally, use the formula for Q_{50}:

$$Q_{50} = 0.70\ M^{1.051}\ D^{2.20}$$

$$= 0.70\ (2,450)^{1.051}\ (1.38)^{2.20} = 5,190\ ft^3/s$$

Problem: Assume that the site used in the computations on the preceeding page has six years of flood record. The discharge with an exceedance probability of two percent is desired.

P_5 = 3,580 ft^3/s from log-Pearson Type III analysis

Q_{50} = 5,190 ft^3/s

Solution:

First, determine Q_5:

$$Q_5 = 1.24\ M^{0.984}\ D^{0.70}$$

$$= 1.24\ (2{,}450)^{0.984}\ (1.38)^{0.70} = 3{,}360\ \text{ft}^3/\text{s}$$

Next, determine the desired discharge:

$$Q_T = \frac{Q_{50}}{Q_5} \times P_5$$

$$= \frac{5{,}190}{3{,}360} \times 3{,}580 = 5{,}530\ \text{ft}^3/\text{s}$$

Area II

Problem: Compute Q_{50} for a river with the following pertinent basin characteristics.

$A = 1{,}910\ mi^2$

$p = 40$ in.

$T = -8°F$

$St = 1$ percent

F = area of forests = 8 percent

Solution:

Use the formula for Q_{50}:

$$Q_{50} = 0.65\ M^{1.024}\ D^{2.325}$$

or

$$Q_{50} = 0.65 \left[1.94\ \frac{A^{0.949}\ p^{0.762}}{(St + 1)^{0.192}\ (F + 1)^{0.148}} \right]^{1.024}$$

$$\text{multiplied by} \left[\frac{3.91}{A^{0.072}\ (T + 30)^{0.141}} \right]^{2.325}$$

$$= 0.65 \left[1.94\ \frac{(1{,}910)^{0.949}\ (40)^{0.762}}{(2)^{0.192}\ (9)^{0.148}} \right]^{1.024}$$

$$\text{multiplied by} \left[\frac{3.91}{(1{,}910)^{0.072}\ (22)^{0.141}} \right]^{2.325} = 54{,}500\ ft^3/s.$$

Problem: An alternate answer is desired for Q_{50} at the above ungaged site. There is a gage upstream with a long record. The pertinent basin and flow characteristics at the gage are:

$A = 1{,}310 \text{ mi}^2$

$p = 38 \text{ in.}$

$T = -8°F$

$St = 2 \text{ percent}$

$F = 7 \text{ percent}$

$P_{50} = 28{,}500 \text{ ft}^3/\text{s}$

Solution:

First, determine Q_{50} for the gaged site:

M was determined as 16,800 ft³/s and D as 1.508.

$$Q_{50} = 0.65\ M^{1.024}\ D^{2.325}$$

$$= 0.65\ (16{,}800)^{1.024}\ (1.508)^{2.325} = 36{,}200 \text{ ft}^3/\text{s}.$$

Next, determine the desired discharge:

$$Q_T = \frac{Q_{50} \text{ at site}}{Q_{50} \text{ at gage}} \times P_{50} \text{ at gage}$$

$$= \frac{54{,}500}{36{,}200} \times 28{,}500 = 42{,}900 \text{ ft}^3/\text{s}.$$

If the above value and the previously computed Q_{50} for the ungaged site are given equal weight, the design discharge would be 48,700 ft³/s.

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Post, Austin, and Mayo, L. R., 1971, Glacier dammed lakes and outburst floods in Alaska: U.S. Geological Survey Hydrologic Investigation Atlas HA-455.

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Table 1.--*Basin characteristics* of Area I gages.*

Station no.	Station name	Location Latitude (Degrees)	Location Longitude (Degrees)	Drainage area (mi^2)
15010000	DAVIS R NR HYDER AK	55.7500	130.2000	80.0000
15010500	HALIBUT BAY TR NR HYDER AK	55.2500	130.1000	8.5800
15011500	RED R NR METLAKATLA AK	55.1400	130.5300	45.3000
15011900	CABIN C NR KETCHIKAN AK	55.3200	130.7800	8.8000
15012000	WINSTANLEY C NR KETCHIKAN AK	55.4200	130.8700	15.5000
15015600	KLAHINI R NR BELL ISLAND AK	56.0500	131.0500	58.0000
15018000	SHELOKAM LK OUTLET NR BELL ISLAND AK	55.9800	131.6500	18.0000
15019000	BLACK BEAR C NR MEYER CHUCK AK	55.7200	132.1600	16.5000
15020100	TYEE C AT MOUTH NR WRANGELL AK	56.2100	131.5100	16.1000
15022000	HARDING R NR WRANGELL AK	56.2100	131.6400	67.4000
15026000	CASCADE C NR PETERSBURG AK	57.0100	132.7800	23.0000
15030000	SWEETHEART FALLS C NR JUNEAU AK	57.9500	133.6800	27.0000
15031000	LONG R ABV LONG LK NR JUNEAU AK	58.1800	133.8800	8.2900
15034000	LONG R NR JUNEAU AK	58.1700	133.7000	32.5000
15036000	SPEEL R NR JUNEAU AK	58.2000	133.6100	226.0000
15038000	CRATER C NR JUNEAU AK	58.1400	133.7700	11.4000
15040000	DOROTHY C NR JUNEAU AK	58.2300	134.0400	15.2000
15042000	CARLSON C AT SUNNY COVE AK	58.3200	134.1800	22.3000
15044000	CARLSON C NR JUNEAU AK	58.3200	134.1700	24.3000
15048000	SHEEP C NR JUNEAU AK	58.2700	134.3100	4.5700
15050000	GOLD C AT JUNEAU AK	58.3100	134.4000	9.7600
15052000	LEMON C NR JUNEAU AK	58.3900	134.4200	12.1000
15052500	MENDENHALL R NR AUKE BAY AK	58.4200	134.5400	85.1000
15052800	MONTANA C NR AUKE BAY AK	58.4000	134.6100	15.5000
15053800	LAKE C AT AUKE BAY AK	58.3900	134.6300	2.5000
15054000	AUKE C NR AUKE BAY AK	58.3800	134.6400	3.9600
15054500	BESSIE C NR AUKE BAY AK	58.5900	134.9000	1.3500
15056100	SKAGWAY R AT SKAGWAY AK	59.4600	135.3200	145.0000
15056200	WEST C NR SKAGWAY AK	59.5300	135.3500	43.2000
15056210	TAIYA R NR SKAGWAY AK	59.5100	135.3400	179.0000
15056400	CHILKAT R AT GORGE NR KLUKWAN AK	59.6300	135.9300	190.0000
15057500	WILLIAM HENRY C NR AUKE BAY AK	58.7500	135.2400	1.5800
15058000	PURPLE LK OUTLET NR METLAKATLA AK	55.1000	131.4300	6.8000
15059500	WHIPPLE C NR WARD COVE AK	55.4400	131.7900	5.2900
15060000	PERSEVERANCE C NR WACKER AK	55.4100	131.6700	2.8100
15062000	WARD C NR WACKER AK	55.4300	131.6700	14.0000
15064000	KETCHIKAN C AT KETCHIKAN AK	55.3400	131.6300	13.5000
15066000	BEAVER FALLS C NR KETCHIKAN AK	55.3800	131.4700	5.8000
15068000	MAHONEY C NR KETCHIKAN AK	55.4200	131.5100	5.7000
15070000	FALLS C NR KETCHIKAN AK	55.6100	131.3500	36.5000
15072000	FISH C NR KETCHIKAN AK	55.3900	131.1900	32.1000
15072200	SEA LEVEL C NR KETCHIKAN AK	55.3700	131.1800	18.6000
15074000	ELLA C NR KETCHIKAN AK	55.5100	131.0200	19.7000
15076000	MANZANITA C NR KETCHIKAN AK	55.6000	130.9800	33.9000
15078000	GRACE C NR KETCHIKAN AK	55.6600	130.9700	30.2000
15079800	KLU C NR BELL ISLAND AK	55.8400	131.4200	5.9700
15080000	ORCHARD C NR BELL ISLAND AK	55.8300	131.4500	59.0000
15081490	YATUK C NR KLAWOCK AK	55.9000	133.1400	5.8000
15081501	STANEY C NR CRAIG AK	55.8200	133.1300	51.6000
15081800	NB TROCADERO C NR HYDABURG AK	55.3600	132.8700	17.4000
15082000	REYNOLDS C NR HYDABURG AK	55.2100	132.6000	5.7000
15084000	MYRTLE C AT NIBLACK AK	55.0700	132.1300	0.8400
15085100	OLD TOM C NR KASSAN AK	55.4000	132.4100	5.9000
15085200	DOG SALMON C NR HOLLIS AK	55.3400	132.5100	16.8000
15085600	INDIAN C NR HOLLIS AK	55.4500	132.6900	8.8200
15085700	HARRIS C NR HOLLIS AK	55.4600	132.7000	28.7000
15085800	MAYBESO C NR HOLLIS AK	55.4900	132.6800	15.1000
15086000	KARTA R NR KASAAN AK	55.5600	132.5800	49.5000
15086500	NECK C NR POINT BAKER AK	56.1000	133.1400	17.0000
15086600	BIG C NR POINT BAKER AK	56.1300	133.1400	11.2000
15086900	RED C NR POINT BAKER AK	56.2600	133.3300	11.2000
15087500	TWIN C NR PETERSBURG AK	56.7200	132.9300	3.8200
15088000	SAWMILL C NR SITKA AK	57.0500	135.2300	39.0000
15092000	MAKSOUTOF R NR PT ALEXANDER AK	56.5000	134.9700	26.0000
15093400	SASHIN C NR BIG PORT WALTER AK	56.3800	134.6600	3.7200
15094000	DEER LK OUTLET NR PORT ALEXANDER AK	56.5200	134.6700	7.4100
15098000	BARANOF R NR BARANOF AK	57.0900	134.8400	32.0000
15100000	TAKATZ C NR BARANOF AK	57.1400	134.8600	17.5000
15101600	WHEELER C NR DOUGLAS AK	58.0300	134.7700	57.1000
15101800	FISHERY C NR ANGOON AK	57.7600	134.7100	54.3000
15102000	HASSELBORG C NR ANGOON AK	57.6600	134.2500	56.2000
15102350	N ARM C NR ANGOON AK	57.4000	134.3200	8.6400
15106920	KADASHAN R AB HOOK C NR TENAKEE AK	57.6600	135.1800	10.2000
15106940	HOOK C AB TR NR TENAKEE AK	57.6800	135.1300	4.4800
15106960	HOOK C NR TENAKEE AK	57.6700	135.1800	8.0000
15106980	TONALITE C NR TENAKEE AK	57.6700	135.2300	14.5000
15107000	KADASHAN R NR TENAKEE AK	57.7000	135.2200	37.7000
15108000	PAVLOF R NR TENAKEE AK	57.8400	135.0400	24.3000
15108250	GAME C NR HOONAH AK	58.0500	135.4900	42.8000
15109000	FISH C NR AUKE BAY AK	58.3300	134.5900	13.6000
15195000	DICK C NR CORDOVA AK	60.3400	144.3000	7.9500
15216000	POWER C NR CORDOVA AK	60.5900	145.6200	20.5000
15219000	WF OLSEN BAY C NR CORDOVA AK	60.7600	146.1700	4.7800
15219100	CONTROL C NR CORDOVA AK	60.7500	146.2300	4.2200
15226000	SOLOMON GULCH NR VALDEZ AK	61.0800	146.3000	19.0000
15236200	SHAKESPEARE C AT WHITTIER AK	60.7800	148.7300	3.0500
15236900	WOLVERINE C NR LAWING AK	60.3700	148.9000	9.5100
15237000	NELLIE JUAN R NR HUNTER AK	60.4200	148.7200	125.0000
15237400	CHALMERS R NR CORDOVA AK	60.2200	147.2200	6.3200
15238000	LOST C NR SEWARD AK	60.2000	149.3700	7.9600
15238600	SPRUCE C NR SEWARD AK	60.0700	149.4500	9.2600
15295600	TERROR R NR KODIAK AK	57.6500	153.0200	15.0000
15295700	TERROR R AT MOUTH NR KODIAK AK	57.7000	153.1700	46.0000
15296000	UGANIK R NR KODIAK AK	57.6900	153.4200	123.0000
15297200	MYRTLE C NR KODIAK AK	57.6000	152.4000	4.7400
15297300	KALSIN BAY TR NR KODIAK AK	57.5900	152.4300	2.3500
15297500	RED CLOUD C TR NR KODIAK AK	57.8200	152.6200	1.5100

*See definitions at end of table 2.

Table 1.--*Basin characteristics of Area I gages--Continued.*

Station no.	Main-channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forests (percent)	Area of glacier (percent)	Mean annual precipitation (in)	Precipitation intensity (in)	Mean annual snowfall (in)	Mean minimum January temperature (°F)
15010000	197.0000	14.5000	3400.0000	0.0	26.0000	11.0000	160.0000	5.0000	300.0000	27.0000
15010500	375.0000	5.5000	2140.0000	0.0	64.0000	0.0	160.0000	5.0000	300.0000	27.0000
15011500	107.0000	10.7000	1700.0000	0.0	64.0000	0.0	160.0000	5.0000	80.0000	28.0000
15011900	117.0000	5.1500	1650.0000	3.0000	87.0000	0.0	150.0000	7.0000	100.0000	28.0000
15012000	130.0000	7.6000	1730.0000	1.0000	84.0000	0.0	140.0000	7.0000	100.0000	28.0000
15015600	132.0000	14.6000	2790.0000	2.0000	49.0000	5.0000	150.0000	7.0000	170.0000	27.0000
15018000	315.0000	6.1000	1700.0000	11.0000	47.0000	0.0	150.0000	6.0000	200.0000	27.0000
15019000	144.0000	6.2000	1070.0000	1.0000	99.0000	0.0	80.0000	4.0000	50.0000	28.0000
15020100	254.0000	8.4000	2620.0000	4.0000	45.0000	2.0000	160.0000	6.0000	250.0000	26.0000
15022000	85.7000	18.8000	2400.0000	0.0	40.0000	9.0000	150.0000	7.0000	200.0000	26.0000
15026000	360.0000	9.8000	3160.0000	4.0000	22.0000	13.0000	80.0000	5.0000	120.0000	24.0000
15030000	59.0000	13.5000	2110.0000	9.0000	6.0000	10.0000	80.0000	3.0000	100.0000	20.0000
15031000	1110.0000	3.0000	3020.0000	0.0	4.0000	39.0000	120.0000	4.0000	200.0000	20.0000
15034000	161.0000	11.1000	2400.0000	9.0000	15.0000	22.0000	120.0000	4.0000	200.0000	20.0000
15036000	148.0000	17.0000	3100.0000	0.0	5.0000	25.0000	100.0000	4.0000	400.0000	20.0000
15038000	248.0000	5.0000	2590.0000	1.0000	1.0000	28.0000	120.0000	4.0000	200.0000	20.0000
15040000	234.0000	8.5000	3100.0000	15.0000	13.0000	16.0000	80.0000	3.0000	120.0000	20.0000
15042000	246.0000	7.6000	2300.0000	0.0	70.0000	11.0000	120.0000	3.0000	180.0000	22.0000
15044000	219.0000	8.5000	2200.0000	0.0	68.0000	10.0000	120.0000	3.0000	180.0000	22.0000
15048000	232.0000	3.4000	1900.0000	0.0	44.0000	2.0000	120.0000	3.0000	100.0000	22.0000
15050000	541.0000	4.9000	2400.0000	0.0	29.0000	8.0000	120.0000	3.0000	100.0000	22.0000
15052000	500.0000	5.3000	3430.0000	0.0	4.0000	67.0000	120.0000	3.0000	120.0000	22.0000
15052500	291.5000	18.3000	3260.0000	4.0000	9.0000	66.0000	120.0000	2.5000	200.0000	24.0000
15052800	264.0000	7.6000	1500.0000	0.0	64.0000	3.0000	80.0000	2.5000	80.0000	24.0000
15053800	555.0000	3.6000	1170.0000	0.0	70.0000	0.0	80.0000	3.0000	80.0000	24.0000
15054000	430.0000	4.4000	1160.0000	8.0000	48.0000	0.0	70.0000	3.0000	80.0000	24.0000
15054500	1238.0000	2.8000	1100.0000	0.0	100.0000	0.0	70.0000	4.0000	80.0000	24.0000
15056100	192.0000	19.0000	3900.0000	0.0	11.0000	17.0000	60.0000	5.0000	60.0000	0.0
15056200	439.0000	12.1000	3400.0000	0.0	18.0000	26.0000	80.0000	5.0000	80.0000	0.0
15056210	172.0000	15.6000	3400.0000	0.0	3.0000	37.0000	80.0000	5.0000	100.0000	0.0
15056400	130.0000	23.0000	4820.0000	1.0000	11.0000	36.0000	60.0000	5.0000	400.0000	0.0
15057500	2222.0000	1.8000	1720.0000	0.0	42.0000	0.0	110.0000	5.0000	100.0000	24.0000
15058000	1.0000	4.2000	860.0000	37.0000	62.0000	0.0	150.0000	7.0000	50.0000	28.0000
15059500	220.0000	3.9000	880.0000	0.0	99.0000	0.0	100.0000	5.0000	50.0000	28.0000
15060000	2.6260	2.0000	1340.0000	11.0000	91.0000	0.0	150.0000	5.0000	50.0000	28.0000
15062000	276.0000	6.1000	1040.0000	7.0000	91.0000	0.0	150.0000	5.0000	50.0000	28.0000
15064000	164.0000	6.5000	1280.0000	9.0000	81.0000	0.0	150.0000	5.0000	50.0000	28.0000
15066000	312.0000	4.2000	1630.0000	9.0000	69.0000	0.0	150.0000	5.0000	50.0000	28.0000
15068000	770.0000	4.2000	1680.0000	9.0000	79.0000	0.0	160.0000	5.0000	50.0000	28.0000
15070000	51.0000	12.3000	1800.0000	6.0000	61.0000	0.0	160.0000	6.0000	120.0000	28.0000
15072000	40.6000	16.3000	1300.0000	19.0000	72.0000	0.0	160.0000	7.0000	110.0000	28.0000
15072200	35.7000	7.4000	720.0000	10.0000	82.0000	0.0	160.0000	7.0000	110.0000	28.0000
15074000	115.0000	8.1000	900.0000	16.0000	66.0000	0.0	160.0000	7.0000	120.0000	28.0000
15076000	40.0000	10.1000	1300.0000	12.0000	68.0000	0.0	160.0000	7.0000	120.0000	28.0000
15078000	133.0000	13.0000	1500.0000	10.0000	67.0000	0.0	160.0000	6.0000	120.0000	28.0000
15079800	345.0000	3.9000	1400.0000	1.0000	80.0000	0.0	160.0000	7.0000	100.0000	28.0000
15080000	45.2000	19.4000	1700.0000	3.0000	68.0000	0.0	160.0000	7.0000	100.0000	28.0000
15081490	78.4000	3.4000	390.0000	2.0000	98.0000	0.0	80.0000	4.0000	140.0000	28.0000
15081500	37.0000	12.6000	850.0000	1.0000	95.0000	0.0	90.0000	4.0000	140.0000	28.0000
15081800	144.0000	6.5000	1050.0000	0.0	95.0000	0.0	160.0000	3.0000	100.0000	32.0000
15082000	235.0000	5.2000	1600.0000	21.0000	53.0000	0.0	140.0000	3.0000	100.0000	32.0000
15084000	675.0000	2.1000	900.0000	13.0000	28.0000	0.0	150.0000	4.0000	40.0000	32.0000
15085100	351.0000	5.5000	1000.0000	8.0000	85.0000	0.0	150.0000	3.0000	80.0000	30.0000
15085200	195.0000	5.4000	1200.0000	1.0000	85.0000	0.0	160.0000	3.0000	80.0000	30.0000
15085600	292.0000	5.4000	1000.0000	0.0	77.0000	0.0	150.0000	3.0000	180.0000	30.0000
15085700	51.0000	13.1000	1400.0000	0.0	84.0000	0.0	150.0000	3.0000	180.0000	30.0000
15085800	125.0000	6.4000	1120.0000	0.0	88.0000	0.0	150.0000	3.0000	180.0000	30.0000
15086000	28.4000	13.6000	1000.0000	6.0000	83.0000	0.0	150.0000	3.0000	100.0000	30.0000
15086500	115.0000	7.1000	500.0000	11.0000	81.0000	0.0	90.0000	4.0000	100.0000	28.0000
15086600	82.9000	5.3000	680.0000	9.0000	85.0000	0.0	90.0000	4.0000	100.0000	28.0000
15086900	122.0000	4.7000	980.0000	6.0000	80.0000	0.0	90.0000	3.5000	80.0000	28.0000
15087500	429.0000	3.0000	1200.0000	0.0	96.0000	0.0	80.0000	3.5000	120.0000	26.0000
15088000	95.5000	11.2000	2400.0000	3.0000	23.0000	3.0000	160.0000	7.0000	50.0000	28.0000
15092000	25.2000	13.4000	1500.0000	15.0000	35.0000	0.0	160.0000	8.0000	70.0000	28.0000
15093400	229.0000	3.7000	1130.0000	7.0000	21.0000	0.0	250.0000	7.0000	70.0000	30.0000
15094000	33.7000	5.4000	1300.0000	21.0000	38.0000	0.0	280.0000	7.0000	200.0000	28.0000
15098000	93.8000	12.1000	2000.0000	9.0000	60.0000	12.0000	200.0000	7.0000	400.0000	30.0000
15100000	446.0000	7.4000	2300.0000	7.0000	43.0000	19.0000	200.0000	6.0000	400.0000	30.0000
15101600	73.7000	19.5000	1710.0000	0.0	64.0000	0.0	70.0000	5.0000	90.0000	24.0000
15101800	34.2000	13.6000	1300.0000	0.0	83.0000	0.0	50.0000	5.0000	100.0000	24.0000
15102000	21.4000	12.5000	1200.0000	11.0000	68.0000	1.0000	80.0000	4.0000	200.0000	24.0000
15102350	261.0000	5.7000	1020.0000	0.0	91.0000	0.0	60.0000	7.0000	200.0000	24.0000
15106920	49.7000	4.8000	1020.0000	0.0	94.0000	0.0	160.0000	7.0000	160.0000	26.0000
15106940	440.0000	3.4000	1260.0000	0.0	99.0000	0.0	160.0000	7.0000	140.0000	26.0000
15106960	155.0000	5.2000	1160.0000	0.0	99.0000	0.0	160.0000	7.0000	140.0000	26.0000
15106980	136.0000	7.5000	950.0000	0.0	88.0000	0.0	160.0000	7.0000	180.0000	26.0000
15107000	48.0000	7.2000	970.0000	0.0	93.0000	0.0	160.0000	7.0000	150.0000	26.0000
15108000	27.8000	9.7000	900.0000	1.0000	90.0000	0.0	120.0000	7.0000	100.0000	24.0000
15108250	41.0000	13.1000	1100.0000	0.0	80.0000	0.0	100.0000	7.0000	200.0000	24.0000
15109000	289.0000	6.9000	1600.0000	0.0	72.0000	0.0	70.0000	3.0000	80.0000	24.0000
15195000	202.0000	3.6000	890.0000	0.0	63.0000	0.0	140.0000	5.0000	200.0000	16.0000
15216000	219.0000	11.0000	2000.0000	0.0	29.0000	27.0000	160.0000	7.0000	200.0000	16.0000
15219000	396.0000	3.8000	1400.0000	0.0	43.0000	0.0	140.0000	5.0000	160.0000	16.0000
15219100	381.0000	2.8000	1200.0000	0.0	48.0000	0.0	140.0000	5.0000	160.0000	16.0000
15226000	343.0000	9.5000	2400.0000	2.0000	33.0000	28.0000	80.0000	5.0000	300.0000	10.0000
15236200	1100.0000	2.8000	1580.0000	1.0000	8.0000	27.0000	240.0000	6.0000	190.0000	13.0000
15236900	682.0000	4.7000	3730.0000	0.0	0.0	72.0000	160.0000	6.0000	400.0000	14.0000
15237000	49.2000	24.5000	2740.0000	3.0000	10.0000	38.0000	180.0000	6.0000	350.0000	14.0000
15237400	531.0000	3.6000	1230.0000	0.0	11.0000	42.0000	200.0000	5.0000	110.0000	20.0000
15238000	246.0000	8.1000	2210.0000	7.0000	4.0000	0.0	80.0000	5.0000	150.0000	12.0000
15238600	507.0000	5.5000	1990.0000	0.0	22.0000	8.0000	80.0000	5.0000	100.0000	12.0000
15295600	126.0000	8.9000	2300.0000	3.0000	8.0000	1.0000	60.0000	3.0000	65.0000	22.0000
15295700	161.0000	13.5000	1860.0000	1.0000	40.0000	1.0000	60.0000	4.0000	60.0000	22.0000
15296000	31.2000	23.0000	1830.0000	2.0000	13.0000	0.0	60.0000	3.0000	50.0000	21.0000
15297200	105.0000	5.1000	700.0000	0.0	0.0	0.0	80.0000	3.0000	100.0000	24.0000
15297300	252.0000	3.7000	530.0000	0.0	1.0000	0.0	80.0000	3.0000	2.2800	24.0000
15297500	443.0000	2.7000	720.0000	0.0	0.0	0.0	70.0000	3.0000	100.0000	24.0000

Table 2.--*Basin characteristics of Area II gages.*

Station no.	Station name	Location: Latitude (Degrees)	Location: Longitude (Degrees)	Drainage area (mi^2)
15198500	STATION C NR MENTASTA AK	62.9300	143.6700	15.3000
15199000	COPPER R TR NR SLANA AK	62.7200	144.2400	4.3200
15200000	GAKONA R AT GAKONA AK	62.3000	145.3100	620.0000
15201000	DRY C NR GLENALLEN AK	62.1500	145.4800	11.4000
15201100	L NELCHINA R TR NR EUREKA LODGE AK	61.9900	147.0100	7.8100
15201900	MOOSE C TR NR GLENALLEN AK	62.1100	145.5200	7.1200
15206000	KLUTINA R AT COPPER CENTER AK	61.9500	145.3100	880.0000
15208000	TONSINA R AT TONSINA AK	61.6600	145.1800	420.0000
15208100	SQUIRREL C AT TONSINA AK	61.6700	145.1700	70.5000
15208200	ROCK C NR TONSINA AK	61.7100	145.1500	14.3000
15211700	STRELNA C NR CHITINA AK	61.5100	144.0700	23.8000
15211900	O'BRIEN C NR CHITINA AK	61.4800	144.4600	44.8000
15212000	COPPER R NR CHITINA AK	61.4700	144.4600	20600.0000
15212500	BOULDER C NR TIEKEL AK	61.3400	145.3100	9.8000
15212800	PTARMIGAN C TR NR VALDEZ AK	61.1400	144.7400	0.7200
15239000	BRADLEY R NR HOMER AK	59.7600	150.8500	54.0000
15239500	FRITZ C NR HOMER AK	59.7100	151.3400	10.4000
15239800	DIAMOND C NR HOMER AK	59.6700	151.6700	5.3500
15239900	ANCHOR R NR ANCHOR PT AK	59.7500	151.7500	133.0000
15240000	ANCHOR R AT ANCHOR POINT AK	59.7700	151.8300	226.0000
15240500	COOK INLET TR NR NINILCHIK AK	59.9800	151.7200	1.6900
15241600	NINILCHIK R AT NINILCHIK AK	60.0500	151.6600	131.0000
15242000	KASILOF R NR KASILOF AK	60.3200	151.2600	738.0000
15243950	PORCUPINE C NR PRIMROSE AK	60.3400	149.3700	16.8000
15244000	PTARMIGAN C AT LAWING AK	60.4100	149.3600	32.6000
15246000	GRANT CR NR MOOSE PASS AK	60.4600	149.3500	44.2000
15248000	TRAIL R NR LAWING AK	60.4300	149.3700	181.0000
15250000	FALLS C NR LAWING AK	60.4300	149.3700	11.8000
15251800	QUARTZ C AT GILPATRICKS AK	60.6000	149.5400	9.4100
15254000	CRESCENT C NR COOPER LANDING AK	60.5000	149.6800	31.7000
15258000	KENAI R AT COOPER LANDING AK	60.4900	149.8100	634.0000
15260000	COOPER C NR COOPER LANDING AK	60.4300	149.8200	31.8000
15260500	STETSON C NR COOPER LANDING AK	60.4400	149.8500	8.6000
15261000	COOPER C AT MOUTH NR COOPER LANDING AK	60.4700	149.8700	48.0000
15264000	RUSSIAN R NR COOPER LANDING AK	60.4500	149.9800	61.8000
15266300	KENAI R AT SOLDOTNA AK	60.4800	151.0800	2010.0000
15266500	BEAVER C NR KENAI AK	60.5600	151.1200	51.0000
15267900	RESURRECTION C NR HOPE AK	60.8900	149.6400	149.0000
15269500	GRANITE C NR PORTAGE AK	60.7300	149.2800	28.2000
15270100	FRESNO C AT SHIELD AK	60.6700	149.4800	6.0300
15270400	DONALDSON C NR WIBEL AK	60.7600	149.4600	4.0700
15271900	CUB C NR SUNRISE AK	60.8700	149.4300	1.8000
15272530	CALIFORNIA C AT GIRDWOOD AK	60.9600	149.1300	6.9600
15272550	GLACIER C AT GIRWOOD AK	60.9400	149.1600	62.0000
15273900	SF CAMPBELL C AT CANYON MTH NR ANCHORAGE AK	61.1500	149.7200	25.2000
15274000	S F CAMPBELL C NR ANCHORAGE AK	61.1700	149.7700	30.4000
15274300	NF CAMPBELL C NR ANCHORAGE AK	61.1700	149.7600	13.4000
15274600	CAMPBELL C NR SPENARD AK	61.1400	149.9200	69.7000
15274800	SB SF CHESTER C NR ANCHORAGE AK	61.2100	149.7300	10.8000
15275000	CHESTER C AT ANCHORAGE AK	61.2000	149.8400	20.0000
15275100	CHESTER C AT ARCTIC BLVD AT ANCH AK	61.2100	145.9000	27.2000
15276000	SHIP C NR ANCHORAGE AK	61.2200	149.6300	90.5000
15276500	SHIP C AT ELMENDORF AFB AK	61.2400	149.7900	113.0000
15277100	EAGLE R AT EAGLE RIVER AK	61.3100	149.5600	192.0000
15277200	MEADOW C AT EAGLE RIVER AK	61.3200	149.5400	7.4300
15280000	EKLUTNA C NR PALMER AK	61.4000	149.1500	119.0000
15281000	KNIK R NR PALMER AK	61.5100	149.0300	1180.0000
15282000	CARIBOU C NR SUTTON AK	61.8000	147.6800	289.0000
15282300	PINOCHLE C NR SUTTON AK	61.7900	147.9300	7.9900
15282400	PURITAN C NR SUTTON AK	61.8100	148.1300	8.5100
15283500	ESKA C NR SUTTON AK	61.7300	148.9100	13.4000
15284000	MATANUSKA R AT PALMER AK	61.6100	149.0700	2070.0000
15286000	COTTONWOOD C NR WASILLA AK	61.5700	149.4100	28.5000
15290000	LITTLE SUSITNA R NR PALMER AK	61.7100	149.2300	61.9000
15291000	SUSITNA R NR DENALI AK	63.1000	147.5200	950.0000
15291100	RAFT C NR DENALI AK	63.0500	147.2700	4.3300
15291200	MACLAREN R NR PAXSON AK	63.1200	146.5300	280.0000
15291500	SUSITNA R NR CANTWELL AK	62.7000	147.5400	4140.0000
15292000	SUSITNA R AT GOLD CR AK	62.7700	149.6900	6160.0000
15292400	CHULITNA R NR TALKEETNA AK	62.5600	150.2300	2570.0000
15292700	TALKEETNA R NR TALKEETNA AK	62.3500	150.0200	2006.0000
15292800	MONTANA C NR MONTANA AK	62.1100	150.0500	164.0000
15292900	GOOSE C NR MONTANA AK	62.0600	150.0600	14.5000
15293000	CASWELL C NR CASWELL AK	61.9500	150.0500	19.6000
15294300	SKWENTNA R NR SKWENTNA AK	61.8700	151.3700	2250.0000
15294500	CHAKACHATNA R NR TYONEK AK	61.2100	152.3600	1120.0000
15297655	CLEVENGER C ON AMCHITKA ISLAND AK	51.4100	179.1800	0.2800
15297680	BRIDGE C AT AMCHITKA ISLAND AK	51.4500	179.1800	3.0300
15297690	WHITE ALICE C ON AMCHITKA ISLAND AK	51.4800	179.1200	0.7900
15297900	ESKIMO C AT KING SALMON AK	58.6900	156.6700	16.1000
15298000	TANALIAN R NR PT ALSWORTH AK	60.1900	154.2600	200.0000
15300000	NEWHALEN R NR ILIAMNA AK	59.8600	154.8700	3478.0000
15300500	KVICHAK R AT IGIUGIG AK	59.3300	155.9000	6500.0000
15302000	NUYAKUK R NR DILLINGHAM AK	59.9300	158.1800	1490.0000
15302800	GRANT LK OUTLET NR ALEKNAGIK AK	59.8000	158.5500	34.3000
15302900	MOODY C AT ALEGNAGIK AK	59.2800	158.6000	1.2800
15303000	WOOD R NR ALEKNAGIK AK	59.2700	158.5900	1110.0000
15303010	SILVER SALMON C NR ALEKNAGIK AK	59.2300	158.6700	4.4600
15303600	KUSKOKWIM R AT MCGRATH AK	62.9500	155.5900	11700.0000
15304000	KUSKOKWIM R AT CROOKED CR AK	61.8700	158.1100	31100.0000
15305900	DENNISON FK NR TETLIN JUNCTION, AK	63.4200	142.4800	2.9300
15305920	WF TR NR TETLIN JUNCTION AK	63.6700	142.2700	1.0200
15305950	TAYLOR C NR CHICKEN AK	63.9100	142.2200	38.4000
15356000	YUKON R AT EAGLE AK	64.7900	141.2000	113500.0000
15365000	DISCOVERY F AMERICAN C NR EAGLE AK	64.6600	141.3000	5.5300
15367500	BLUFF C NR EAGLE AK	64.7500	141.2300	3.3800
15389000	PORCUPINE R NR FORT YUKON AK	66.9900	143.1400	29500.0000
15389500	CHANDALAR R NR VENETIE AK	67.1000	147.1800	9330.0000
15438500	BEDROCK C NR MILLAR HOUSE AK	65.5600	145.0900	9.9400
15439800	BOULDER C NR CENTRAL AK	65.5700	144.8900	31.3000

Table 2.--*Basin characteristics of Area II gages--Continued.*

Station no.	Main-channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forests (percent)	Area of glacier (percent)	Mean annual precipitation (in)	Precipitation intensity (in)	Mean annual snowfall (in)	Mean minimum January temperature (°F)
15198500	281.0000	7.0000	3370.0000	0.0	29.0000	0.0	30.0000	3.0000	100.0000	-16.0000
15199000	504.0000	3.7000	3370.0000	0.0	29.0000	0.0	18.0000	3.0000	90.0000	-17.0000
15200000	35.9000	78.0000	3030.0000	8.0000	18.0000	8.0000	17.0000	3.0000	110.0000	-9.0000
15201000	28.0000	14.2000	1700.0000	1.0000	81.0000	0.0	10.0000	1.5000	40.0000	-14.0000
15201100	185.0000	7.2000	2940.0000	0.0	99.0000	0.0	10.0000	1.5000	70.0000	0.0
15201900	31.2000	8.6000	1600.0000	4.0000	49.0000	0.0	10.0000	1.5000	45.0000	-12.0000
15206000	16.1000	62.0000	3500.0000	4.0000	36.0000	11.0000	25.0000	2.0000	220.0000	-7.0000
15208000	71.0000	46.0000	3600.0000	4.0000	27.0000	11.0000	25.0000	2.0000	180.0000	-2.0000
15208100	119.0000	17.9000	3100.0000	4.0000	58.0000	0.0	11.0000	1.5000	49.0000	-10.0000
15208200	129.0000	8.0000	2680.0000	1.0000	70.0000	0.0	10.0000	1.5000	48.0000	-10.0000
15211700	264.0000	11.4000	3350.0000	0.0	31.0000	0.0	16.0000	2.0000	60.0000	-8.0000
15211900	282.0000	14.2000	4120.0000	0.0	18.0000	0.0	13.0000	2.0000	55.0000	-6.0000
15212000	14.4000	178.0000	3620.0000	3.0000	22.0000	17.0000	37.0000	2.0000	120.0000	-4.0000
15212500	538.0000	4.7000	4300.0000	0.0	3.0000	0.0	30.0000	2.0000	70.0000	0.0
15212800	467.0000	2.0000	3290.0000	0.0	0.0	0.0	60.0000	4.0000	600.0000	4.0000
15239000	191.0000	13.3000	2800.0000	6.0000	7.0000	36.0000	120.0000	5.0000	200.0000	16.0000
15239500	150.0000	9.8000	880.0000	0.0	68.0000	0.0	25.0000	4.0000	70.0000	16.0000
15239800	142.0000	4.7000	890.0000	0.0	37.0000	0.0	25.0000	4.0000	70.0000	16.0000
15239900	45.8000	26.2000	1120.0000	0.0	60.0000	0.0	25.0000	4.0000	90.0000	14.0000
15240000	51.0000	28.0000	970.0000	0.0	53.0000	0.0	25.0000	4.0000	80.0000	13.0000
15240500	21.0000	3.2000	150.0000	0.0	37.0000	0.0	20.0000	3.0000	70.0000	12.0000
15241600	12.7000	21.0000	670.0000	1.0000	95.0000	0.0	20.0000	2.5000	70.0000	11.0000
15242000	68.3000	55.0000	1810.0000	15.0000	39.0000	28.0000	50.0000	3.0000	170.0000	10.0000
15243950	316.0000	7.4000	2300.0000	0.0	34.0000	5.0000	70.0000	5.0000	90.0000	10.0000
15244000	220.0000	14.6000	2800.0000	6.0000	46.0000	12.0000	90.0000	5.0000	90.0000	10.0000
15246000	150.0000	12.8000	2900.0000	10.0000	20.0000	18.0000	90.0000	5.0000	90.0000	10.0000
15248000	89.0000	28.0000	2470.0000	2.0000	9.0000	11.0000	90.0000	6.0000	90.0000	10.0000
15250000	477.0000	8.1000	3480.0000	0.0	19.0000	6.0000	80.0000	5.0000	90.0000	10.0000
15251800	263.0000	6.6000	3260.0000	0.0	11.0000	0.0	60.0000	4.0000	100.0000	10.0000
15254000	136.0000	14.7000	2700.0000	13.0000	38.0000	0.0	50.0000	4.0000	110.0000	8.0000
15258000	26.8000	60.0000	2650.0000	5.0000	13.0000	10.0000	80.0000	5.0000	140.0000	10.0000
15260000	194.0000	9.9000	2400.0000	16.0000	44.0000	6.0000	60.0000	3.0000	110.0000	8.0000
15260500	459.0000	4.8000	3200.0000	0.0	47.0000	0.0	50.0000	3.0000	110.0000	8.0000
15261000	74.1000	13.5000	2500.0000	10.0000	49.0000	4.0000	50.0000	3.0000	110.0000	8.0000
15264000	116.0000	23.5000	2100.0000	4.0000	51.0000	12.0000	70.0000	3.0000	180.0000	10.0000
15266300	10.7000	118.0000	1750.0000	5.0000	29.0000	11.0000	60.0000	3.0000	120.0000	8.0000
15266500	4.7500	13.5000	140.0000	15.0000	67.0000	0.0	20.0000	1.5000	60.0000	6.0000
15267900	126.0000	19.8000	2750.0000	0.0	24.0000	0.0	30.0000	1.5000	65.0000	6.0000
15269500	236.0000	9.6000	2220.0000	0.0	36.0000	7.0000	60.0000	4.0000	80.0000	10.0000
15270100	409.0000	5.9000	3200.0000	1.0000	8.0000	0.0	50.0000	3.0000	80.0000	10.0000
15270400	696.0000	3.6000	2580.0000	0.0	31.0000	0.0	50.0000	3.0000	80.0000	10.0000
15271900	1460.0000	2.8000	2670.0000	0.0	11.0000	0.0	30.0000	3.0000	80.0000	10.0000
15272530	745.0000	5.9000	2480.0000	0.0	36.0000	4.0000	80.0000	4.0000	140.0000	8.0000
15272550	455.0000	11.0000	2610.0000	0.0	28.0000	11.0000	80.0000	4.0000	160.0000	10.0000
15273900	255.0000	9.2000	2760.0000	1.0000	8.0000	0.0	24.0000	1.5000	80.0000	6.0000
15274000	246.0000	11.5000	2530.0000	1.0000	26.0000	0.0	22.0000	1.5000	80.0000	6.0000
15274300	389.0000	10.6000	2670.0000	2.0000	30.0000	0.0	22.0000	1.5000	80.0000	6.0000
15274600	162.0000	19.2000	1680.0000	1.0000	46.0000	0.0	20.0000	1.5000	70.0000	6.0000
15274800	384.0000	6.0000	1340.0000	0.0	68.0000	0.0	18.0000	1.5000	70.0000	6.0000
15275000	226.0000	11.4000	800.0000	1.0000	61.0000	0.0	18.0000	1.5000	70.0000	6.0000
15275100	169.0000	12.8000	780.0000	1.0000	59.0000	0.0	17.0000	1.5000	70.0000	6.0000
15276000	119.0000	19.0000	3100.0000	1.0000	13.0000	0.0	34.0000	2.0000	80.0000	8.0000
15276500	121.0000	23.0000	2600.0000	1.0000	21.0000	0.0	30.0000	2.0000	80.0000	8.0000
15277100	112.0000	33.5000	3120.0000	0.5000	15.0000	13.0000	50.0000	1.5000	90.0000	8.0000
15277200	533.0000	7.5000	2980.0000	0.0	20.0000	0.0	20.0000	1.5000	70.0000	7.0000
15280000	265.0000	18.0000	3700.0000	3.0000	7.0000	17.0000	55.0000	3.0000	80.0000	7.0000
15281000	183.0000	43.0000	4000.0000	4.0000	11.0000	54.0000	100.0000	3.0000	140.0000	6.0000
15282000	13.6000	30.0000	4190.0000	0.0	10.0000	0.0	28.0000	1.5000	80.0000	2.0000
15282300	295.0000	5.7000	2590.0000	1.0000	66.0000	0.0	20.0000	1.5000	70.0000	2.0000
15282400	679.0000	3.7000	3000.0000	1.0000	45.0000	0.0	20.0000	1.5000	70.0000	0.0
15283500	486.0000	8.0000	2560.0000	0.0	50.0000	2.0000	30.0000	1.5000	60.0000	4.0000
15284000	79.7000	77.0000	4000.0000	0.0	14.0000	12.0000	35.0000	1.5000	80.0000	4.0000
15286000	44.0000	11.4000	500.0000	6.0000	85.0000	0.0	20.0000	1.5000	55.0000	5.0000
15290000	187.0000	14.9000	3700.0000	0.0	16.0000	5.0000	50.0000	1.5000	50.0000	4.0000
15291000	56.6000	51.0000	4510.0000	1.0000	1.0000	25.0000	60.0000	2.0000	400.0000	-6.0000
15291100	617.0000	4.0000	4700.0000	0.0	12.0000	0.0	32.0000	1.5000	350.0000	-8.0000
15291200	133.0000	23.0000	4520.0000	1.0000	0.0	19.0000	55.0000	1.5000	400.0000	-6.0000
15291500	10.0000	107.0000	3560.0000	2.0000	5.0000	7.0000	32.0000	1.5000	200.0000	-4.0000
15292000	10.2000	189.0000	3420.0000	1.0000	7.0000	5.0000	29.0000	2.0000	200.0000	-4.0000
15292400	23.0000	87.0000	3760.0000	1.0000	22.0000	27.0000	55.0000	1.6000	250.0000	-5.0000
15292700	35.0000	90.3000	3630.0000	0.0	25.0000	7.0000	70.0000	2.5000	150.0000	-2.0000
15292800	114.0000	25.0000	1930.0000	3.0000	54.0000	0.0	40.0000	2.2000	90.0000	0.0
15292900	60.4000	6.4000	500.0000	1.0000	86.0000	0.0	35.0000	2.0000	90.0000	0.0
15293000	53.8000	12.3000	400.0000	3.0000	72.0000	0.0	35.0000	1.5000	70.0000	0.0
15294300	30.6000	98.0000	2810.0000	5.0000	34.0000	16.0000	43.0000	2.0000	140.0000	-5.0000
15294500	48.8000	54.5000	3900.0000	4.0000	17.0000	30.0000	75.0000	2.0000	400.0000	0.0
15297655	111.0000	0.6000	108.0000	7.0000	0.0	0.0	36.0000	3.6000	70.0000	28.0000
15297680	59.0000	2.6000	124.0000	35.0000	0.0	0.0	36.0000	3.6000	70.0000	28.0000
15297690	91.7000	1.6000	194.0000	2.0000	0.0	0.0	36.0000	3.6000	70.0000	28.0000
15297900	18.2000	7.3000	140.0000	5.0000	14.0000	0.0	20.0000	1.5000	40.0000	8.0000
15298000	54.0000	28.0000	2700.0000	4.0000	28.0000	6.0000	60.0000	3.0000	90.0000	8.0000
15300000	5.7000	106.0000	2160.0000	6.0000	46.0000	8.0000	65.0000	3.0000	110.0000	8.0000
15300500	6.5000	174.0000	1790.0000	20.0000	64.0000	6.0000	60.0000	3.0000	100.0000	10.0000
15302000	12.5000	76.0000	1100.0000	14.0000	14.0000	0.0	53.0000	3.0000	150.0000	4.0000
15302800	82.6600	9.0000	876.0000	12.0000	52.0000	0.0	40.0000	2.0000	80.0000	6.0000
15302900	347.0000	2.0000	480.0000	3.0000	78.0000	0.0	37.0000	2.0000	70.0000	8.0000
15303000	1.4000	92.0000	690.0000	22.0000	26.0000	0.0	60.0000	3.0000	120.0000	4.0000
15303010	28.6000	3.6000	380.0000	2.0000	78.0000	0.0	35.0000	2.0000	70.0000	8.0000
15303600	2.3900	251.0000	1850.0000	4.0000	57.0000	0.0	23.0000	1.5000	75.0000	-12.0000
15304000	1.1400	456.0000	1480.0000	3.0000	44.0000	1.0000	22.0000	1.5000	90.0000	-12.0000
15305900	187.0000	2.1000	3000.0000	0.0	97.0000	0.0	16.0000	1.5000	40.0000	-24.0000
15305920	1160.0000	1.6000	4240.0000	0.0	12.0000	0.0	20.0000	1.8000	50.0000	-24.0000
15305950	298.0000	9.4000	2500.0000	0.0	99.0000	0.0	20.0000	1.8000	80.0000	-24.0000
15356000	2.4000	690.0000	3340.0000	1.0000	78.0000	3.0000	12.0000	1.0000	55.0000	-11.0000
15365000	370.0000	3.6000	2930.0000	0.0	75.0000	0.0	18.0000	1.2000	60.0000	-22.0000
15367500	563.0000	3.9000	2260.0000	0.0	100.0000	0.0	18.0000	1.2000	50.0000	-21.0000
15389000	3.3000	440.0000	1800.0000	2.0000	65.0000	0.0	12.0000	1.0000	45.0000	-29.0000
15389500	9.9000	208.0000	3160.0000	2.0000	17.0000	0.0	15.0000	1.3000	65.0000	-20.0000
15438500	478.0000	5.8000	2910.0000	0.0	50.0000	0.0	16.0000	1.2500	50.0000	-24.0000
15439800	154.8000	12.4000	2570.0000	0.0	73.0000	0.0	15.0000	1.2000	50.0000	-24.0000

Table 2.--*Basin characteristics of Area II gages--Continued.*

Station no.	Station name	Location: Latitude (Degrees)	Location: Longitude (Degrees)	Drainage area (mi^2)
15442500	QUARTZ C NR CENTRAL AK	65.6200	144.4800	17.2000
15457800	HESS C NR LIVENGOOD AK	65.6700	149.0900	662.0000
15468000	YUKON R AT RAMPART AK	65.5100	150.1700	199400.0000
15469900	SILVER C NR NORTHWAY JUNCTION AK	62.9800	141.6700	11.7000
15470000	CHISANA R AT NORTHWAY JCT AK	63.0100	141.8000	3280.0000
15471000	BITTERS C NR NORTHWAY JUNCTION AK	63.1600	142.0900	15.4000
15471500	TANANA R TR NR TETLIN JUNCTION AK	63.2800	142.5100	2.4300
15473600	LOG CABIN C NR LOG CABIN INN AK	63.0200	143.3400	10.7000
15473950	CLEARWATER C NR TOK AK	63.1600	143.1900	36.4000
15476000	TANANA R AT TANACROSS AK	63.3900	143.7500	8550.0000
15476050	TANANA R TR NR TANACROSS AK	63.4100	143.8000	3.3200
15476200	TANANA R TR NR DOT LAKE AK	63.6900	144.2900	11.0000
15476300	BERRY C NR DOT LK AK	63.6900	144.3600	65.1000
15476400	DRY C NR DOT LK AK	63.6900	144.5700	57.6000
15478000	TANANA R AT BIG DELTA AK	64.1600	145.8500	13500.0000
15478010	ROCK C NR PAXSON AK	63.0700	146.1000	50.3000
15478040	PHELAN C NR PAXSON AK	63.2400	145.4600	12.2000
15478050	MCCALLUM C NR PAXSON AK	63.2200	145.6500	15.5000
15478500	RUBY C NR DONNELLY AK	63.6300	145.8800	5.3200
15480000	BANNER C AT RICHARDSON AK	64.2900	146.3500	20.2000
15484000	SALCHA R NR SALCHAKET AK	64.4700	146.9200	2170.0000
15490000	MONUMENT C AT CHENA HOT SPRINGS AK	65.0500	146.0500	26.7000
15493000	CHENA R NR TWO RIVERS AK	64.9000	146.4100	941.0000
15511000	L CHENA R NR FAIRBANKS AK	64.8900	147.2500	372.0000
15511500	STEELE R NR FAIRBANKS AK	64.8900	147.4900	10.7000
15514000	CHENA R AT FAIRBANKS AK	64.8500	147.7000	1980.0000
15514500	WOOD R NR FAIRBANKS AK	64.4400	148.2100	855.0000
15515500	TANANA R AT NENANA AK	64.5700	149.0900	25600.0000
15515800	SEATTLE C NR CANTWELL AK	63.3300	148.2500	36.2000
15515900	LILY C NR CANTWELL AK	63.3300	148.2700	5.6300
15516000	NENANA R NR WINDY AK	63.4600	148.8000	710.0000
15516200	SLIME C NR CANTWELL AK	63.5100	148.8100	6.9000
15518000	NENANA R NR HEALY AK	63.8500	148.9400	1910.0000
15518100	L PANGUINGUE C NR LIGNITE AK	63.9300	149.1000	3.4400
15518200	ROCK C NR FERRY AK	64.0300	149.1400	8.1700
15518250	BIRCH C NR REX AK	64.1800	149.2900	4.1000
15518350	TEKLANIKA R NR LIGNITE AK	63.9200	149.5000	490.0000
15519000	BRIDGE C NR LIVENGOOD AK	65.4600	148.2500	12.6000
15519200	BROOKS C TR NR LIVENGOOD AK	65.3800	148.9400	7.8100
15520000	IDAHO C NR MILLAR HOUSE AK	65.3500	146.1700	5.3100
15530000	FAITH C NR CHENA HOT SPRINGS AK	65.2900	146.3800	61.1000
15535000	CARIBOU C NR CHATANIKA AK	65.1500	147.5500	9.1900
15541600	GLOBE C NR LIVENGOOD AK	65.2800	148:1400	23.0000
15541650	GLOBE C TR NR LIVENGOOD AK	65.2800	148.1200	9.0100
15541800	WASHINGTON C NR FOX AK	65.1500	147.8600	46.7000
15564600	MELOZITNA R NR RUBY AK	64.7900	155.5600	2693.0000
15564800	YUKON R AT RUBY AK	64.7400	155.4900	259000.0000
15564875	MF KOYUKUK R NR WISEMAN AK	67.4300	150.0800	1426.0000
15564877	WISEMAN C AT WISEMAN AK	67.4100	150.1100	49.2000
15564885	JIM R NR BETTLES AK	66.7800	150.8700	465.0000
15564900	KOYUKUK R AT HUGHES AK	66.0500	154.2600	18700.0000
15565200	YUKON R NR KALTAG AK	64.3300	158.7200	296000.0000
15621000	SNAKE R NR NOME AK	64.5600	165.5100	85.7000
15625000	ARTIC C NR NOME AK	64.6400	165.7100	1.7600
15633000	WASHINGTON C NR NOME AK	64.7100	165.8200	6.3400
15668100	STAR C NR NOME AK	64.9300	164.9600	3.7800
15668200	CRATER C NR NOME AK	64.9300	164.8700	21.9000
15712000	KUZITRIN R NR NOME AK	65.2200	164.6200	1720.0000
15744000	KOBUK R AT AMBLER AK	67.0900	157.8500	6570.0000
15746000	NOATAK R AT NOATAK AK	67.5700	162.9400	12000.0000
15748000	OGOTORUK R NR POINT HOPE AK	68.1100	165.7500	34.9000
15896000	KUPARUK R NR DEADHORSE AK	70.2800	148.9600	3130.0000
15910000	SAGAVANIRKTOK R NR SAGWON AK	69.0900	148.7500	2208.0000

Drainage Basin Characteristics

Precipitation and topographic characteristics of drainage basins at the gaging stations are tabulated above. Precipitation characteristics were determined from National Weather Service publications. Topographic characteristics were computed from the latest U.S. Geological Survey topographic maps. Basin characteristics are defined as follows:

Drainage area: in square miles, is the total drainage area upstream from the gaging station or measurement site. The area is measured in a horizontal plane and is enclosed by a drainage divide.

Main-channel slope: in feet per mile, is the average slope between points 10 percent and 85 percent of the distance along the main stream from the gaging site to the basin divide.

Stream length: in miles, is the length of the main channel between the gaging station and the basin divide measured along the channel that drains the largest basin.

Mean basin elevation: in feet above mean sea level, is the mean elevation of the drainage basin measured by the grid-sampling method from topographic maps.

Area of lakes and ponds: in percent, is the percentage of the total drainage area occupied by lakes and ponds. This is measured by the grid-sampling method from topographic maps having a blue overprint which indicates lakes and ponds.

Station no.	Main-channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forests (percent)	Area of glacier (percent)	Mean annual precipitation (in)	Precipitation intensity (in)	Mean annual snowfall (in)	Mean minimum January temperature (°F)
15442500	96.0000	8.5000	1270.0000	0.0	98.0000	0.0	14.0000	1.0000	50.0000	-24.0000
15457800	23.8000	44.8000	1400.0000	0.0	49.0000	0.0	15.0000	1.0000	50.0000	-16.0000
15468000	2.1000	1160.0000	2810.0000	3.0000	69.0000	2.0000	13.0000	1.0000	55.0000	-16.0000
15469900	305.0000	4.8000	2400.0000	1.0000	98.0000	0.0	12.0000	1.5000	40.0000	-24.0000
15470000	2.5400	12.1000	3730.0000	2.0000	50.0000	5.0000	15.0000	1.3000	60.0000	-23.0000
15471000	123.0000	5.4000	2430.0000	0.0	99.0000	0.0	10.0000	1.5000	30.0000	-24.0000
15471500	428.0000	2.8000	2600.0000	0.0	100.0000	0.0	10.0000	1.5000	30.0000	-24.0000
15473600	543.0000	5.4000	3730.0000	0.0	58.0000	0.0	15.0000	2.0000	40.0000	-16.0000
15473950	225.0000	12.6000	4300.0000	0.0	31.0000	0.0	12.0000	3.0000	30.0000	-20.0000
15476000	8.9300	230.0000	3860.0000	2.0000	45.0000	7.0000	18.0000	1.5000	55.0000	-22.0000
15476050	828.0000	4.2000	3300.0000	0.0	63.0000	0.0	12.0000	3.0000	30.0000	-16.0000
15476200	169.0000	7.1000	2000.0000	1.0000	82.0000	0.0	15.0000	3.0000	30.0000	-14.0000
15476300	223.0000	19.1000	3200.0000	1.0000	40.0000	5.0000	18.0000	2.0000	30.0000	-14.0000
15476400	185.0000	12.9000	3100.0000	1.0000	35.0000	0.0	18.0000	2.0000	30.0000	-13.0000
15478000	3.8600	346.0000	3440.0000	2.0000	50.0000	6.0000	22.0000	1.5000	60.0000	-20.0000
15478010	74.0000	12.8000	4200.0000	7.0000	0.0	0.0	25.0000	2.0000	200.0000	-8.0000
15478040	552.0000	4.6000	5800.0000	0.0	0.0	69.0000	80.0000	1.5000	200.0000	-8.0000
15478050	356.0000	9.0000	4880.0000	0.0	0.0	19.0000	80.0000	1.5000	200.0000	-6.0000
15478500	351.0000	5.7000	3300.0000	0.0	12.0000	0.0	30.0000	1.5000	100.0000	-8.0000
15480000	217.0000	8.0000	1730.0000	0.0	95.0000	0.0	14.0000	1.5000	60.0000	-16.0000
15484000	19.4000	124.0000	2520.0000	0.0	59.0000	0.0	16.0000	1.6000	90.0000	-19.0000
15490000	192.0000	10.4000	2660.0000	0.0	44.0000	0.0	18.0000	1.2000	100.0000	-20.0000
15493000	23.4000	63.0000	2270.0000	0.0	58.0000	0.0	18.0000	1.2000	100.0000	-19.0000
15511000	17.0000	55.0000	1480.0000	0.0	94.0000	0.0	15.0000	1.4000	100.0000	-18.0000
15511500	109.0000	4.6000	1400.0000	0.0	82.0000	0.0	12.0000	1.2500	80.0000	-16.0000
15514000	126.0000	119.0000	1770.0000	2.0000	80.0000	0.0	15.0000	1.3000	90.0000	-18.0000
15514500	39.8000	83.0000	2720.0000	0.0	28.0000	2.0000	14.0000	1.3000	60.0000	-12.0000
15515500	4.1200	489.0000	3920.0000	4.0000	56.0000	6.0000	17.0000	1.4000	70.0000	-18.0000
15515800	169.0000	10.2000	3400.0000	2.0000	6.0000	0.0	20.0000	1.5000	300.0000	-6.0000
15515900	397.0000	5.7000	3590.0000	0.0	13.0000	0.0	20.0000	1.5000	300.0000	-6.0000
15516000	48.7000	52.0000	3470.0000	2.0000	5.0000	2.0000	35.0000	2.0000	200.0000	-7.0000
15516200	586.0000	5.8000	3950.0000	0.0	4.0000	0.0	40.0000	1.5000	100.0000	-8.0000
15518000	21.2000	88.0000	3500.0000	1.0000	9.0000	4.0000	40.0000	1.5000	140.0000	-8.0000
15518100	222.0000	3.3000	1960.0000	0.0	36.0000	0.0	18.0000	1.2000	70.0000	-10.0000
15518200	337.0000	7.5000	2450.0000	0.0	40.0000	0.0	16.0000	1.2000	60.0000	-12.0000
15518250	200.0000	5.0000	1490.0000	0.0	100.0000	0.0	16.0000	1.2000	50.0000	-14.0000
15518350	490.0000	36.7000	3420.0000	0.0	65.0000	2.0000	30.0000	1.2000	90.0000	-8.0000
15519000	88.0000	5.9000	1000.0000	0.0	14.0000	0.0	20.0000	1.0000	55.0000	-16.0000
15519200	230.0000	5.5000	1410.0000	0.0	98.0000	0.0	20.0000	1.0000	60.0000	-16.0000
15520000	333.0000	4.0000	2920.0000	0.0	28.0000	0.0	20.0000	1.2000	80.0000	-20.0000
15530000	95.2000	16.8000	2800.0000	0.0	48.0000	0.0	20.0000	1.2000	90.0000	-20.0000
15535000	229.0000	3.5000	1640.0000	0.0	97.0000	0.0	18.0000	1.2000	90.0000	-18.0000
15541600	127.6000	7.5000	1590.0000	0.0	90.0000	0.0	20.0000	1.2000	80.0000	-16.0000
15541650	356.0000	6.0000	1710.0000	0.0	100.0000	0.0	20.0000	1.2000	80.0000	-16.0000
15541800	58.0000	13.8000	1500.0000	0.0	94.0000	0.0	16.0000	1.2000	90.0000	-16.0000
15564600	2.9000	184.0000	1410.0000	2.0000	57.0000	0.0	16.0000	1.3000	90.0000	-17.0000
15564800	1.8000	1350.0000	2640.0000	4.0000	62.0000	1.0000	14.0000	1.0000	60.0000	-16.0000
15564875	41.2000	55.0000	3390.0000	0.6000	4.0000	0.0	20.0000	1.5000	80.0000	-16.0000
15564877	171.0000	14.0000	2930.0000	0.0	3.0000	0.0	18.0000	1.5000	75.0000	-17.0000
15564885	38.7000	44.0000	2080.0000	0.0	10.0000	0.0	15.0000	1.5000	60.0000	-16.0000
15564900	18.8000	262.0000	2200.0000	1.0000	36.0000	0.0	18.0000	1.5000	75.0000	-17.0000
15565200	1.7000	1476.0000	2490.0000	4.0000	59.0000	1.0000	15.0000	1.0000	60.0000	-15.0000
15621000	19.6000	19.5000	632.0000	0.0	4.0000	0.0	30.0000	1.5000	70.0000	-6.0000
15625000	429.0000	1.4000	820.0000	0.0	2.0000	0.0	25.0000	1.5000	60.0000	-5.0000
15633000	121.0000	4.3000	860.0000	0.0	3.0000	0.0	25.0000	1.5000	60.0000	-6.0000
15668100	522.0000	3.7000	1500.0000	0.0	1.0000	0.0	40.0000	1.5000	100.0000	-6.0000
15668200	145.0000	9.2000	1620.0000	1.0000	3.0000	0.0	40.0000	1.5000	100.0000	-7.0000
15712000	20.2000	68.0000	700.0000	1.0000	2.0000	0.0	20.0000	1.4000	70.0000	-8.0000
15744000	4.9600	188.0000	1610.0000	1.0000	34.0000	0.0	20.0000	1.5000	70.0000	-16.0000
15746000	5.6000	366.0000	1800.0000	1.0000	2.0000	0.0	20.0000	1.5000	75.0000	-16.0000
15748000	47.8000	10.5000	380.0000	0.0	0.0	0.0	16.0000	1.0000	38.0000	-16.0000
15896000	12.0000	180.0000	900.0000	2.0000	0.0	0.0	9.0000	0.7000	40.0000	-18.0000
15910000	30.4000	79.0000	3220.0000	0.0	0.0	0.0	20.0000	1.2000	60.0000	-16.0000

Area of forests: in percent, is the percentage of the total drainage area shown as forested on the topographic maps. This is measured by the grid-sampling method from topographic maps having a green overprint which indicates forest cover.

Area of glacier: in percent, is the percentage of the total drainage area shown as glacier on the topographic maps. This is measured by the grid-sampling method from topographic maps.

Mean annual precipitation: in inches, as determined from an isohyetal map (NWS, 1972) using the grid-sampling method.

Precipitation intensity: in inches, is the maximum rainfall expected in 24 hours each 2 years as determined from U.S. Weather Bureau Technical Paper 47.

Mean annual snowfall: in inches, as determined from an isohyetal map (NWS, 1972) using the grid-sampling method.

Mean minimum January temperature: in degrees F, as determined from an isothermal map (Johnson and Hartman, 1969) using grid-sampling method.

The grid-method of sampling involves the use of transparent grids to different map scales. The grids can be used in several ways. For determining area, as of ponds, a grid can be laid over a pond and the number of squares and partial squares covering the pond can be totaled and converted to an area, or the number of grid intersections within the area can be multiplied by the area in each square. For determining elevations, temperatures, etc., from a contour map, a reading is taken under each of several grid intersections and the readings are averaged. For determining percentages, as of forested area or perhaps small ponds if very numerous, the number of grid intersections occurring over forest or over water within the basin are counted, and these, multiplied by 100 and divided by the total number of grid intersections withing the basin, give the desired percentage.

Table 3.--*Flood magnitudes, in cubic feet per second, for indicated recurrence intervals, and statistics, in log units, for Area I gages.*

Station no.	P1.25	P2	P5	P10	P25	P50	P100	SKEW	MEAN	SD
15010000	8360.0000	11700.0000	16400.0000	19500.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.0690	0.1740
15010500	1190.0000	1930.0000	2880.0000	3450.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15011500	7040.0000	8820.0000	10400.0000	11100.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.9270	0.1060
15011900	911.0000	1130.0000	1330.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15012000	874.0000	1160.0000	1700.0000	2170.0000	2910.0000	3590.0000	4400.0000	1.0280	3.0950	0.1800
15015600	3890.0000	5530.0000	8540.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15018000	1420.0000	1980.0000	2740.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15019000	1750.0000	2380.0000	2980.0000	3240.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15020100	908.0000	1200.0000	1650.0000	2000.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15022000	4940.0000	6610.0000	9180.0000	11100.0000	13600.0000	15700.0000	17900.0000	0.4070	3.8310	0.1610
15026000	1270.0000	1610.0000	2070.0000	2390.0000	2810.0000	3130.0000	3470.0000	0.3610	3.2130	0.1260
15030000	1850.0000	2280.0000	2670.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15031000	1320.0000	1570.0000	2100.0000	2580.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15034000	2410.0000	3070.0000	4140.0000	4950.0000	6100.0000	7060.0000	8110.0000	0.7170	3.5040	0.1430
15036000	14200.0000	17900.0000	24100.0000	28900.0000	35900.0000	41800.0000	0.0 B	0.0 B	4.2720	0.1410
15038000	1520.0000	1950.0000	2530.0000	2910.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.2930	0.1320
15040000	635.0000	841.0000	1170.0000	1410.0000	1760.0000	2040.0000	2350.0000	0.5440	2.9390	0.1590
15042000	3930.0000	4550.0000	5410.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15044000	3260.0000	3810.0000	4460.0000	4850.0000	0.0 B	0.0 B	0.0 B	0.0	3.5810	0.0810
15048000	351.0000	458.0000	610.0000	714.0000	851.0000	957.0000	1070.0000	0.2760	2.6670	0.1430
15050000	996.0000	1250.0000	1650.0000	1950.0000	2370.0000	2720.0000	3080.0000	0.6880	3.1130	0.1340
15052000	1220.0000	1490.0000	1920.0000	2240.0000	2690.0000	3050.0000	0.0 B	0.7900	3.1900	0.1200
15052500	6900.0000	8050.0000	8950.0000	9300.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15052800	1100.0000	1480.0000	1830.0000	1990.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.1460	0.1380
15053800	305.0000	444.0000	664.0000	830.0000	1060.0000	0.0 B	0.0 B	0.0 B	2.6560	0.2010
15054000	121.0000	170.0000	236.0000	277.0000	328.0000	0.0 B	0.0 B	0.0 B	2.2250	0.1730
15054500	94.0000	163.0000	243.0000	284.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15056100	3140.0000	4380.0000	6780.0000	8900.0000	12300.0000	0.0 B	0.0 B	0.0 B	3.6730	0.2060
15056200	1920.0000	2400.0000	3620.0000	4890.0000	7250.0000	0.0 B	0.0 B	0.0 B	3.4360	0.1930
15056210	7860.0000	9020.0000	10400.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15056400	6930.0000	8150.0000	11900.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15057500	279.0000	370.0000	512.0000	619.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15058000	385.0000	480.0000	604.0000	685.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15059500	838.0000	1290.0000	2040.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15060000	340.0000	433.0000	533.0000	588.0000	645.0000	683.0000	716.0000	-0.5910	2.6290	0.1190
15062000	1290.0000	1870.0000	2550.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15064000	1800.0000	2490.0000	3490.0000	4200.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15066000	833.0000	1210.0000	1770.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15068000	979.0000	1320.0000	1790.0000	2110.0000	2540.0000	2860.0000	0.0 B	0.0 B	3.1230	0.1560
15070000	2480.0000	3130.0000	3920.0000	4410.0000	5000.0000	5410.0000	5810.0000	-0.0550	3.4940	0.1180
15072000	2320.0000	2810.0000	3490.0000	3940.0000	4520.0000	4960.0000	5410.0000	0.3940	3.4560	0.1060
15072200	2350.0000	3060.0000	3630.0000	3850.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15074000	1000.0000	1180.0000	1410.0000	1550.0000	1720.0000	1840.0000	0.0 B	0.1800	3.0750	0.0880
15076000	2090.0000	2710.0000	3580.0000	4180.0000	4960.0000	5560.0000	6170.0000	-0.6010	3.4390	0.1400
15078000	2330.0000	2850.0000	3430.0000	3750.0000	4110.0000	0.0 B	0.0 B	0.0 B	3.4500	0.1000
15079800	614.0000	828.0000	1080.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15080000	3400.0000	4690.0000	6370.0000	7440.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15081490	565.0000	887.0000	1190.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15081500	6810.0000	10000.0000	13200.0000	14700.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15081800	3880.0000	4520.0000	5290.0000	5750.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15082000	291.0000	352.0000	427.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15084000	163.0000	205.0000	284.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15085100	477.0000	582.0000	691.0000	747.0000	808.0000	846.0000	879.0000	-0.5180	2.7560	0.0970
15085200	986.0000	1620.0000	2240.0000	2500.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15085600	1450.0000	2120.0000	3360.0000	4410.0000	6050.0000	0.0 B	0.0 B	0.0 B	3.3510	0.2200
15085700	3310.0000	4640.0000	6660.0000	8120.0000	10100.0000	11700.0000	0.0 B	0.0 B	3.6740	0.1810
15085800	1730.0000	2290.0000	3030.0000	3500.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.3600	0.1440
15086000	2600.0000	3310.0000	4300.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15086500	795.0000	1140.0000	1720.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15086600	837.0000	1210.0000	1720.0000	2060.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.0780	0.1860
15086900	820.0000	1010.0000	1250.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15087500	316.0000	409.0000	542.0000	634.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15088000	2780.0000	3980.0000	5510.0000	6440.0000	7520.0000	8280.0000	0.0 B	-0.3720	3.5890	0.1780
15092000	1560.0000	1950.0000	2480.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15093400	888.0000	1090.0000	1280.0000	1370.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15094000	426.0000	559.0000	753.0000	890.0000	1070.0000	0.0 B	0.0 B	0.0 B	2.7550	0.1480
15098000	2040.0000	2730.0000	3840.0000	4690.0000	5920.0000	6950.0000	8080.0000	0.6040	3.4520	0.1650
15100000	1420.0000	1550.0000	1670.0000	1720.0000	1770.0000	0.0 B	0.0 B	0.0 B	3.1850	0.0440
15101600	739.0000	1420.0000	2640.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15101800	1490.0000	2400.0000	4180.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15102000	1170.0000	1360.0000	1650.0000	1870.0000	2160.0000	0.0 B	0.0 B	0.0 B	3.1470	0.0930
15102350	634.0000	938.0000	1200.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15106920	867.0000	1160.0000	1500.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15106940	390.0000	614.0000	948.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15106960	428.0000	809.0000	1320.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15106980	1160.0000	1860.0000	2820.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15107000	3370.0000	4380.0000	5340.0000	5790.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.6220	0.1240
15108000	1400.0000	1830.0000	2390.0000	2760.0000	3210.0000	0.0 B	0.0 B	0.0 B	3.2640	0.1380
15108250	5620.0000	7440.0000	11000.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15109000	1120.0000	1430.0000	1810.0000	2030.0000	2300.0000	0.0 B	0.0 B	0.0 B	3.1530	0.1220
15195000	1760.0000	2010.0000	2240.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15216000	1850.0000	2830.0000	4090.0000	4850.0000	5710.0000	6290.0000	6830.0000	-0.5350	3.4340	0.2080
15219000	384.0000	567.0000	797.0000	934.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.7380	0.1900
15219100	401.0000	541.0000	779.0000	969.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.7530	0.1750
15226000	1250.0000	1600.0000	2060.0000	2360.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15236200	276.0000	352.0000	451.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15236900	557.0000	722.0000	967.0000	1140.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15237000	6380.0000	7740.0000	9130.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15237400	2450.0000	2810.0000	3040.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15238000	254.0000	322.0000	432.0000	515.0000	633.0000	0.0 B	0.0 B	0.0 B	2.5250	0.1400
15238600	835.0000	1340.0000	2110.0000	2640.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.1210	0.2390
15295600	1480.0000	2230.0000	3320.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15295700	2330.0000	2740.0000	3320.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15296000	3800.0000	5400.0000	8070.0000	10200.0000	13200.0000	15800.0000	18700.0000	0.4800	3.7480	0.1960
15297200	637.0000	765.0000	921.0000	1020.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.8840	0.0950
15297300	155.0000	195.0000	238.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15297500	324.0000	432.0000	565.0000	646.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.6300	0.1440

Note.--0.0 B means no data.

Table 4.--*Flood magnitudes and statistics for Area II gages.*

Station no.	P1.25	P2	P5	P10	P25	P50	P100	SKEW	MEAN	SD
15198500	22.0000	121.0000	349.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15199000	17.0000	38.0000	87.0000	133.0000	212.0000	0.0 B	0.0 B	0.0 B	1.5790	0.4260
15200000	3450.0000	4790.0000	6830.0000	8310.0000	10300.0000	12000.0000	13700.0000	0.2820	3.6890	0.1770
15201000	30.0000	69.0000	159.0000	246.0000	263.0000	0.0 B	0.0 B	0.0 B	1.8800	0.3620
15201100	14.0000	26.0000	56.0000	88.0000	150.0000	0.0 B	0.0 B	0.0 B	1.4620	0.3640
15201900	13.0000	35.0000	97.0000	165.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.5490	0.5210
15206000	6280.0000	7030.0000	7830.0000	8270.0000	8750.0000	0.0 B	0.0 B	0.0 B	3.8460	0.0570
15208000	3660.0000	4750.0000	6190.0000	7100.0000	8230.0000	9050.0000	9860.0000	0.0090	3.6770	0.1360
15208100	177.0000	306.0000	542.0000	737.0000	1030.0000	0.0 B	0.0 B	0.0 B	2.4930	0.2890
15208200	21.0000	48.0000	85.0000	104.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.6030	0.3890
15211700	114.0000	180.0000	256.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15211900	333.0000	519.0000	933.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15212000	141000.0000	158000.0000	186000.0000	206000.0000	234000.0000	257000.0000	0.0 B	1.1630	5.2130	0.0760
15212500	98.0000	230.0000	345.0000	378.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.3190	0.1930
15212800	14.0000	45.0000	85.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15239000	1890.0000	2920.0000	4590.0000	5840.0000	7590.0000	0.0 B	0.0 B	0.0 B	3.4700	0.2300
15239500	38.0000	87.0000	187.0000	274.0000	406.0000	0.0 B	0.0 B	0.0 B	1.9250	0.4080
15239800	41.0000	58.0000	89.0000	114.0000	154.0000	0.0 B	0.0 B	0.0 B	1.7860	0.2040
15239900	999.0000	1200.0000	1560.0000	1850.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.1030	0.1220
15240000	1610.0000	1940.0000	2400.0000	2710.0000	3110.0000	0.0 B	0.0 B	0.0 B	3.2950	0.1040
15240500	36.0000	49.0000	63.0000	71.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15241600	300.0000	564.0000	934.0000	1160.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.7130	0.3010
15242000	6770.0000	8070.0000	9610.0000	10500.0000	11600.0000	12400.0000	13100.0000	0.0080	3.9070	0.0900
15243950	486.0000	727.0000	1040.0000	1230.0000	1450.0000	0.0 B	0.0 B	0.0 B	2.8480	0.1970
15244000	398.0000	534.0000	725.0000	854.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15246000	721.0000	911.0000	1300.0000	1660.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.9970	0.1670
15248000	2810.0000	3460.0000	4530.0000	5360.0000	6550.0000	7550.0000	8640.0000	0.8930	3.5580	0.8930
15250000	147.0000	259.0000	454.0000	609.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15251800	97.0000	151.0000	283.0000	428.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15254000	214.0000	294.0000	470.0000	645.0000	957.0000	1280.0000	1690.0000	1.3430	2.5150	0.2200
15258000	8220.0000	10400.0000	14100.0000	17000.0000	21300.0000	24900.0000	28900.0000	0.8740	4.0380	0.1440
15260000	225.0000	278.0000	390.0000	493.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.4810	0.1580
15260500	123.0000	174.0000	236.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15261000	206.0000	354.0000	547.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15264000	288.0000	460.0000	779.0000	1050.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15266300	15700.0000	19800.0000	25000.0000	28300.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.2970	0.1210
15266500	60.0000	126.0000	280.0000	436.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15267900	749.0000	1130.0000	1850.0000	2480.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15269500	558.0000	886.0000	1430.0000	1850.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15270100	61.0000	81.0000	104.0000	116.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15270400	42.0000	70.0000	109.0000	136.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.8290	0.2460
15271900	18.0000	27.0000	38.0000	44.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.4040	0.2030
15272530	108.0000	206.0000	401.0000	570.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15272550	1240.0000	2240.0000	4480.0000	6700.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.3810	0.3360
15273900	152.0000	208.0000	277.0000	318.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15274000	150.0000	203.0000	313.0000	417.0000	595.0000	769.0000	987.0000	1.2500	2.3480	0.2030
15274300	45.0000	63.0000	86.0000	100.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15274600	179.0000	233.0000	311.0000	366.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.3750	0.1440
15274800	15.0000	26.0000	40.0000	48.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15275000	46.0000	63.0000	83.0000	94.0000	106.0000	0.0 B	0.0 B	0.0 B	1.7850	0.1540
15275100	64.0000	83.0000	112.0000	132.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15276000	625.0000	808.0000	1090.0000	1290.0000	1570.0000	1800.0000	2040.0000	0.5080	2.9200	0.1450
15276500	483.0000	647.0000	943.0000	1190.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15277100	2500.0000	3000.0000	3990.0000	4840.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.5080	0.1320
15277200	10.0000	24.0000	55.0000	85.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.3720	0.4340
15280000	1410.0000	1740.0000	2230.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15281000	28000.0000	32200.0000	37900.0000	41700.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.5250	0.0790
15282000	3420.0000	4550.0000	6110.0000	7160.0000	8510.0000	9540.0000	0.0 B	0.1400	3.6610	0.1500
15282300	8.0000	13.0000	20.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15282400	12.0000	25.0000	48.0000	66.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.3840	0.3440
15283500	73.0000	124.0000	238.0000	351.0000	552.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15284000	19500.0000	24400.0000	31000.0000	35300.0000	40800.0000	44900.0000	49100.0000	0.2310	4.3920	0.1200
15286000	23.0000	31.9000	44.7000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15290000	1370.0000	1990.0000	3110.0000	4040.0000	5460.0000	6730.0000	8190.0000	0.6070	3.3210	0.2150
15291000	13700.0000	15800.0000	20700.0000	25300.0000	32900.0000	0.0 B	0.0 B	0.0 B	4.2370	0.1270
15291100	77.0000	104.0000	130.0000	142.0000	210.0000	0.0 B	0.0 B	0.0 B	1.9940	0.1390
15291200	4640.0000	5690.0000	7140.0000	8120.0000	9400.0000	0.0 B	0.0 B	0.0 B	3.7630	0.1120
15291500	25300.0000	35100.0000	47300.0000	54500.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.5360	0.1620
15292000	38600.0000	50100.0000	66900.0000	78700.0000	94400.0000	107000.0000	120000.0000	0.3620	4.7080	0.1430
15292400	33200.0000	36900.0000	45000.0000	52100.0000	63400.0000	73300.0000	0.0 B	0.0 B	4.5950	0.0940
15292700	21500.0000	28300.0000	40800.0000	51500.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.4790	0.1730
15292800	2000.0000	3560.0000	4820.0000	5510.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.4780	0.2430
15292900	175.0000	328.0000	513.0000	609.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15293000	64.0000	106.0000	156.0000	182.0000	210.0000	0.0 B	0.0 B	0.0 B	1.9880	0.2380
15294300	27600.0000	32700.0000	38900.0000	42600.0000	47000.0000	0.0 B	0.0 B	0.0 B	4.5150	0.0890
15294500	13600.0000	16100.0000	19200.0000	21000.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15297655	15.0000	16.0000	17.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15297680	58.0000	65.0000	74.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15297690	18.0000	32.0000	64.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15297900	43.0000	110.0000	225.0000	303.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.9750	0.4430
15298000	2220.0000	2660.0000	3470.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15300000	22100.0000	26000.0000	31100.0000	34400.0000	38500.0000	41500.0000	44400.0000	0.3230	4.4200	0.0890
15300500	25400.0000	31100.0000	38200.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15302000	15500.0000	19200.0000	23300.0000	25700.0000	28300.0000	30100.0000	0.0 B	-0.2700	4.2780	0.1050
15302800	405.0000	494.0000	683.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15302900	22.0000	28.0000	40.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15303000	10600.0000	13500.0000	18100.0000	21500.0000	26200.0000	0.0 B	0.0 B	0.0 B	4.1460	0.1400
15303010	72.0000	107.0000	173.0000	231.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.0560	0.2310
15303600	37600.0000	50200.0000	65800.0000	75400.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15304000	132000.0000	172000.0000	236000.0000	284000.0000	352000.0000	409000.0000	0.0 B	0.0 B	5.2520	0.1520
15305900	14.0000	26.0000	53.0000	80.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.4350	0.3570
15305920	13.0000	25.0000	48.0000	68.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15305950	50.0000	86.0000	187.0000	311.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15356000	231000.0000	288000.0000	374000.0000	436000.0000	520000.0000	588000.0000	659000.0000	0.6140	5.4720	0.1250
15365000	3.6000	7.0000	16.0000	27.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.8960	0.4030
15367500	2.6000	5.5000	15.0000	27.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.8080	0.4630
15389000	104000.0000	159000.0000	234000.0000	282000.0000	0.0 B	0.0 B	0.0 B	0.0 B	5.1900	0.2100
15389500	32100.0000	46100.0000	58900.0000	64300.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.6280	0.1680
15438500	53.0000	120.0000	233.0000	312.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.0340	0.3890
15439800	162.0000	273.0000	509.0000	734.0000	1120.0000	0.0 B	0.0 B	0.0 B	2.4670	0.3000

Table 4.--*Flood magnitudes and statistics for Area II gages*--*Continued.*

Station no.	P1.25	P2	P5	P10	P25	P50	P100	SKEW	MEAN	SD
15442500	67.0000	166.0000	285.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15457800	2200.0000	4560.0000	7860.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15468000	486000.0000	591000.0000	740000.0000	842000.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15469900	13.0000	31.0000	89.0000	169.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.5460	0.5110
15470000	6870.0000	7650.0000	8830.0000	9670.0000	10800.0000	11700.0000	12600.0000	1.0000	3.8950	0.0680
15471000	49.0000	93.0000	226.0000	400.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.0420	0.4170
15471500	9.0000	15.0000	25.0000	34.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.1820	0.2670
15473600	47.0000	106.0000	243.0000	376.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.0290	0.4250
15473950	231.0000	431.0000	769.0000	1020.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.6210	0.3110
15476000	26500.0000	29400.0000	33100.0000	35500.0000	38300.0000	40400.0000	42400.0000	0.4310	4.4730	0.0580
15476050	30.0000	103.0000	231.0000	304.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15476200	49.0000	75.0000	109.0000	131.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.8620	0.2070
15476300	415.0000	698.0000	1240.0000	1720.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.8610	0.2840
15476400	566.0000	943.0000	1430.0000	1720.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.9460	0.2440
15478000	42900.0000	48900.0000	55800.0000	59800.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15478010	394.0000	726.0000	1190.0000	1470.0000	1790.0000	0.0 B	0.0 B	0.0 B	2.8250	0.2920
15478040	633.0000	900.0000	1370.0000	1770.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15478050	328.0000	456.0000	696.0000	902.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15478500	48.0000	105.0000	190.0000	241.0000	297.0000	0.0 B	0.0 B	0.0 B	1.9630	0.3710
15480000	50.0000	156.0000	416.0000	658.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.1460	0.5520
15484000	12300.0000	18300.0000	27400.0000	34000.0000	42900.0000	50000.0000	57300.0000	0.0770	4.2650	0.2070
15490000	207.0000	554.0000	1140.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15493000	4450.0000	7210.0000	12800.0000	18000.0000	26700.0000	35000.0000	0.0 B	0.0 B	3.8860	0.5540
15511000	1330.0000	1790.0000	2700.0000	3530.0000	4880.0000	0.0 B	0.0 B	0.0 B	3.2880	0.1940
15511500	9.7000	27.0000	103.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15514000	6740.0000	9920.0000	15600.0000	20300.0000	27400.0000	33800.0000	41000.0000	0.5560	4.0170	0.2190
15514500	3690.0000	4210.0000	4860.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15515500	69200.0000	80600.0000	97800.0000	110000.0000	127000.0000	0.0 B	0.0 B	0.0 B	4.9190	0.0920
15515800	345.0000	596.0000	1200.0000	1840.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.8220	0.3320
15515900	46.0000	90.0000	153.0000	193.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.9110	0.3210
15516000	5480.0000	6710.0000	8380.0000	9480.0000	10900.0000	11900.0000	13000.0000	0.3150	3.8330	0.1100
15516200	93.0000	156.0000	301.0000	451.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15518000	17400.0000	21200.0000	27600.0000	32500.0000	39400.0000	45100.0000	51300.0000	0.8740	4.3450	0.1240
15518100	11.0000	45.0000	118.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15518200	71.0000	194.0000	542.0000	933.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15518250	37.0000	87.0000	201.0000	309.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.9320	0.4400
15518350	3300.0000	4950.0000	9970.0000	16500.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.7830	0.3280
15519000	89.0000	175.0000	411.0000	692.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.2960	0.4070
15519200	14.0000	56.0000	130.0000	171.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.5940	0.6320
15520000	64.0000	136.0000	313.0000	500.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.1580	0.4120
15530000	867.0000	1210.0000	2050.0000	2940.0000	0.0 B	0.0 B	0.0 B	0.0 B	3.1410	0.2450
15535000	59.0000	82.0000	112.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15541600	124.0000	250.0000	535.0000	817.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.4160	0.3800
15541650	67.0000	119.0000	228.0000	331.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.0990	0.3190
15541800	306.0000	623.0000	1310.0000	1940.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.8030	0.3750
15564600	13200.0000	21100.0000	27800.0000	30300.0000	0.0 B	0.0 B	0.0 B	0.0 B	4.2670	0.2180
15564800	481000.0000	625000.0000	777000.0000	857000.0000	939000.0000	991000.0000	0.0 B	0.0 B	5.7820	0.1260
15564875	6150.0000	9110.0000	14100.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15564877	358.0000	486.0000	633.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15564885	6500.0000	8570.0000	9860.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15564900	92300.0000	130000.0000	184000.0000	220000.0000	267000.0000	0.0 B	0.0 B	0.0 B	5.1150	0.1770
15565200	583000.0000	744000.0000	936000.0000	1050000.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15621000	2350.0000	2930.0000	3670.0000	4130.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15625000	19.0000	69.0000	153.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15633000	51.0000	117.0000	262.0000	397.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.0600	0.4250
15668100	25.0000	70.0000	140.0000	179.0000	0.0 B	0.0 B	0.0 B	0.0 B	1.7410	0.4820
15668200	389.0000	873.0000	1660.0000	2190.0000	0.0 B	0.0 B	0.0 B	0.0 B	2.8910	0.3850
15712000	9140.0000	14100.0000	23100.0000	36100.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15744000	54400.0000	72700.0000	89700.0000	97400.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15746000	136000.0000	165000.0000	208000.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15748000	613.0000	1000.0000	1380.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15896000	26000.0000	44000.0000	73300.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
15910000	13900.0000	21800.0000	28300.0000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B

Table 5.--*Maximum known floods in Alaska.*

Station no.	Stream	Location: Latitude	Location: Longitude	Drainage area (mi²)	Period of record (years/dates)	Maximum known flood: Date	Gage height (ft)	Discharge (ft³/s)	Discharge [(ft³/s)/mi²]
					SOUTHEAST				
15008000	Salmon R nr Hyder	56°01'34"	130°03'55"	94.0	10(1963-73)	Aug. 30, 1971	28.9	*140,000	1,490
15010000	Davis R nr Hyder	55°45'00"	130°12'00"	80	10(1930-40)	Nov. 12, 1936	13.30	19,500	244
15010500	Halibut Bay Tr nr Hyder	55°15'00"	130°06'00"	8.58	8(1963-71)	Oct. 19, 1964	14.48	3,400	396
15011500	Red R nr Metlakatla	55°08'29"	130°31'50"	45.3	13(1963-76)	Dec. 31, 1963	10.66	11,700	258
15011900	Cabin C nr Ketchikan	55°19'19"	130°47'00"	8.80	6(1964-71)	Sept.23, 1967	11.41	1,400	159
15012000	Winstanley C nr Ketchikan	55°25'00"	130°52'05"	15.5	30(1936-38, 1947-75)	Jan. 30, 1962	6.65	4,120	266
15014000	Punchbowl L O nr Ketchikan	55°31'00"	130°44'00"	12	6(1923-30)	Dec. 7, 1925	-	710	59.1
15015600	Klahini R nr Bell Island	56°03'15"	131°02'55"	58.0	6(1967-73)	Nov. 1, 1969	8.95	12,400	214
15016000	Short C nr Bell Island	56°01'00"	131°32'00"	20	1(1922-25)	Sept. 5, 1924	-	1,000	50.0
15018000	Shelokum L O nr Bell Island	55°59'00"	131°39'00"	18	6(1915-25)	Dec. 18, 1919	-	3,100	172
15019000	Black Bear C nr Meyers Chuck	55°43'30"	132°09'48"	16.5	8(1963-71)	Mar. 29, 1966	16.76	3,470	210
15020000	Tyee C nr Wrangell	56°12'00"	131°31'00"	14	1(1921-22, 1924-27)	Oct. 5, 1926	-	1,060	75.8
15020100	Tyee C at mouth nr Wrangell	56°12'54"	131°30'25"	16.1	7(1963-69)	Oct. 23, 1965	4.46	2,440	152
15022000	Harding R nr Wrangell	56°12'48"	131°38'12"	67.4	25(1951-76)	Oct. 14, 1961	16.22	15,000	223
15024000	Mill C nr Wrangell	56°28'00"	132°12'00"	37	3(1915-17, 1923-25 1927-28)	Oct. 16, 1915	-	3,310	89.4
15026000	Cascade C nr Petersburg	57°00'21"	132°46'45"	23.0	35(1917-28, 1946-73)	Sept.11, 1947	10.0	3,280	143
15028000	Scenery C nr Petersburg	57°05'00"	132°47'00"	30.0	4(1949-52, 1953-54)	Sept.23, 1949	5.82	4,300	143
15030000	Sweetheart Falls C nr Juneau	57°57'00"	133°41'00"	27	5(1915-17, 1918-27)	Sept.26, 1918	-	2,880	106
15031000	Long R ab Long L nr Juneau	58°10'56"	133°53'06"	8.29	10(1965-75)	Sept.28, 1968	15.05	3,530	426
15032000	Long L O nr Juneau	58°10'00"	133°43'30"	30.2	1(1913-15)	Oct. 20, 1913	-	4,250	141
15034000	Long R nr Juneau	58°10'00"	133°41'50"	32.5	28(1915-24, 1926-33, 1951-73)	Sept.10, 1927	10.2	6,000	185
15036000	Speel R nr Juneau	58°12'10"	133°36'40"	226	17(1916-18, 1960-75)	Sept.27, 1918	-	35,600	158
15038000	Crater C near Juneau	58°08'15"	133°46'15"	11.4	9(1913-21, 1922-24, 1927-32	Sept. 9, 1927	-	3,100	272
15040000	Dorothy C nr Juneau	58°13'40"	134°02'25"	15.2	37(1929-67)	Nov. 3, 1949	5.85	1,780	117
15042000	Carlson C at Sunny Cove nr Juneau	58°19'00"	134°11'00"	22.3	5(1914-20)	Sept.26, 1918	-	6,200	278
15044000	Carlson C nr Juneau	58°18'25"	134°08'43"	24.3	10(1951-61)	Aug. 12, 1961	10.5	5,100	210
15046000	Grindstone C nr Juneau	58°12'31"	134°10'34"	3.6	3(1916-20)	Sept.26, 1918	-	700	194
15048000	Sheep C nr Juneau	58°16'30"	134°18'50"	4.57	30(1911-13, 1916-20, 1946-73)	Sept. 8, 1948	3.60	840	184
15050000	Gold C at Juneau	58°18'25"	134°24'05"	9.76	33(1916-20, 1946-48, 1949-76)	Aug. 12, 1961	6.57	2,650	272
15052000	Lemon C nr Juneau	58°23'15"	134°25'15"	12.1	22(1951-73)	Aug. 13, 1961	5.31	3,370	279
15052500	Mendenhall R nr Auke Bay	58°25'05"	134°32'40"	85.1	11(1965-76)	Sept.28, 1976	8.67	9,820	115
15052800	Montana C nr Auke Bay	58°23'53"	134°36'34"	15.5	10(1965-76)	Aug. 23, 1966	16.77	1,920	124
15053800	Lake C at Auke Bay	58°23'40"	134°37'50"	2.50	10(1963-73)	Aug. 23, 1966	5.20	980	391
15054000	Auke C at Auke Bay	58°22'56"	134°38'10"	3.96	16(1947-50, 1962-75)	Nov. 2, 1949	4.85	348	92.7
15054200	Herbert R nr Auke Bay	58°31'26"	134°47'40"	56.9	5(1966-71)	Sept.18, 1967	22.40	6,280	110
15054500	Bessie C nr Auke Bay	58°35'30"	134°54'00"	1.35	10(1966-76)	Nov. 2, 1974	7.51	300	222
15054600	Bridget Cove Tr nr Auke Bay	58°37'14"	134°56'08"	0.95	3(1970-73)	May 20, 1972	2.97	108	114
15054990	Davies C nr Auke Bay	58°39'06"	134°53'07"	15.2	3(1969-72)	Aug. 8, 1972	7.85	1,560	103
15056000	Sherman C at Comet	58°52'05"	135°07'05"	3.65	2(1914-16)	Oct. 15, 1915	-	208	57.0
15056100	Skagway R at Skagway	59°27'27"	135°19'23"	145	12(1963-75)	Sept.15, 1967	8.50	13,600	93.7
15056200	West C nr Skagway	59°31'35"	135°21'10"	43.2	15(1962-76)	Sept.15, 1967	7.75	9,800	226
15056210	Taiya R nr Skagway	59°30'44"	135°20'40"	179	7(1969-76)	Sept. 1967	-	25,000+	140+
15056500	Chilkat R at gorge nr Klukwan	59°37'40"	135°55'55"	190	6(1962-68)	Sept.15, 1967	14.59	22,000	116
15056500	Chilkat R nr Klukwan	59°24'55"	135°55'45"	760	3(1959-61)	Aug. 14, 1961	27.40	20.600	27.1
15057500	William Henry C nr Auke Bay	58°44'46"	135°14'25"	1.58	8(1966-76)	Sept.15, 1967	13.70	663	419
15058000	Purple L O nr Metlakatla	55°06'00"	131°26'00"	6.8	8(1947-56)	Apr. 27, 1949	5.15	716	105
15059500	Whipple C nr Ward Cove	55°26'30"	131°47'38"	5.29	8(1968-76)	Nov. 19, 1968	8.73	2,830	535
15060000	Perseverance C nr Wacker	55°24'40"	131°40'05"	2.81	26(1931-39, 1946-69)	Oct. 18, 1964	5.68	682	243
15062000	Ward C nr Wacker	55°25'50"	131°40'00"	14.0	4(1948-58)	Apr. 16, 1952	6.83	2,600	186
15064000	Ketchikan C at Ketchikan	55°20'40"	131°38'05"	13.5	9(1909-12, 1915-19, 1964-67)	Nov. 18, 1917	-	4,400	325
15066000	Beaver Falls C nr Ketchikan	55°22'55"	131°28'25"	5.8	5(1917, 1920-25, 1927-32)	Nov. 7, 1929	-	2,180	376
15068000	Mahoney C nr Ketchikan	55°25'30"	131°30'45"	5.70	18(1920-33 1947-58)	Feb. 2, 1954	4.66	2,530	444
15070000	Falls C nr Ketchikan	55°36'50"	131°20'55"	36.5	25(1916-26, 1927-33, 1946-59)	Nov. 1, 1917	-	5,500	150
15072000	Fish C nr Ketchikan	55°23'30"	131°11'40"	32.1	55(1915-35, 1938-76)	Oct. 15, 1961	5.85	5,400	168
15072200	Sea Level C nr Ketchikan	55°22'05"	131°11'03"	18.6	8(1963-71)	Oct. 19, 1964	13.50	4,000	215
15074000	Ella C nr Ketchikan	55°30'20"	131°01'25"	19.7	22(1927-38, 1947-58)	Dec. 7, 1930	-	1,720	87.3
15076000	Manzanita C nr Ketchikan	55°35'45"	130°58'40"	33.9	30(1927-37, 1947-67)	Oct. 14, 1961	10.27	5,820	171
15078000	Grace C nr Ketchikan	55°39'28"	130°58'14"	30.2	16(1927-37 1963-69)	Sept. 4, 1966	6.22	3,990	132
15079800	Klu C nr Bell Island	55°50'30"	131°25'20"	5.97	6(1963-68)	Feb. 10, 1965	13.20	1,180	198
15080000	Orchard C nr Bell Island	55°50'00"	131°27'00"	59	7(1915-27)	Nov. 1, 1917	-	7,100	120
15080500	Traitors R nr Bell Island	55°43'59"	131°30'00"	20.8	4(1964-68)	Oct. 18, 1964	6.10	2,280	110
15081490	Yatuk C nr Klawock	55°53'57"	133°08'42"	5.80	6(1971-76)	Oct. 8, 1974	18.69	1,150	198
15081500	Staney C nr Craig	55°48'57"	133°07'58"	51.6	12(1964-76)	Oct. 18, 1964	13.1	15,600	302
15081800	N B Trocadero C nr Hydaburg	55°21'41"	132°52'20"	17.4	7(1967-73)	Sept.29, 1972	7.75	5,900	339
15081890	Natzuhini C nr Hydaburg	55°17'08"	132°49'18"	9.10	5(1971-76)	Aug. 19, 1971	21.17	2,520	277
15082000	Reynolds C nr Hydaburg	55°12'50"	132°36'10"	5.7	6(1951-56)	Feb. 2, 1954	3.35	475	83.4

Table 5.--*Maximum known floods in Alaska--Continued.*

Station no.	Stream	Location: Latitude	Location: Longitude	Drainage area (mi²)	Period of record (years/dates)	Maximum known flood: Date	Maximum known flood: Gage height (ft)	Discharge (ft³/s)	Discharge [(ft³/s)/mi²]
					SOUTHEAST--Continued				
15084000	Myrtle C at Niblack	55°04'00"	132°08'00"	3.9	5(1917-21)	Nov. 14, 1917	-	387	99.2
15085000	Saltery C nr Kasaan	55°24'00"	132°18'48"	5.53	3(1962-64)	Oct. 31, 1963	4.07	1,220	220
15085100	Old Tom C nr Kasaan	55°23'44"	132°24'25"	5.90	27(1949-76)	Apr. 16, 1952	6.96	883	150
15085200	Dog Salmon C nr Hollis	55°20'42"	132°30'24"	16.8	8(1963-70)	Oct. 19, 1964	17.14	2,680	159
15085300	Cabin C nr Kasaan	55°25'20"	132°28'40"	8.83	3(1962-64)	Jan. 6, 1963	5.39	1,530	173
15085400	Virginia C nr Kasaan	55°25'50"	132°25'55"	3.08	3(1962-64)	Sept.29, 1962	4.50	300	97.5
15085600	Indian C nr Hollis	55°26'58"	132°41'41"	8.82	14(1949-64)	Oct. 13, 1961	8.08	6,000	680
15085700	Harris C nr Hollis	55°27'47"	132°42'11"	28.7	15(1949-64)	Dec. 5, 1959	10.03	8,810	307
15085800	Maybeso C at Hollis	55°29'26"	132°40'31"	15.1	14(1949-63)	Oct. 14, 1961	9.39	3,760	249
15086000	Karta R nr Kasaan	55°33'50"	132°35'00"	49.5	5(1915-22)	Nov. 1, 1917	-	5,070	102
15086500	Neck C nr Point Baker	56°05'55"	133°08'20"	17.0	7(1960-67)	Oct. 3, 1961	4.62	2,280	134
15086600	Big C nr Point Baker	56°07'54"	133°08'36"	11.2	13(1963-76)	Sept. 3, 1966	5.28	2,390	214
15086900	Red C nr Point Baker	56°15'36"	133°19'34"	11.2	6(1971-76)	Jan. 31, 1976	19.39	1,530	137
15087200	Hammer Slough at Petersburg	56°48'27"	132°57'10"	1.46	3(1964-67)	Oct. 22, 1965	3.07	602	412
15087500	Twin C nr Petersburg	56°43'13"	132°55'33"	3.82	10(1966-76)	May 30, 1972	11.18	700	183
15087560	No Name C nr Petersburg	56°47'31"	132°54'33"	3.17	3(1970-73)	Oct. 5, 1972	6.23	348	110
15087570	Hamilton C nr Kake	56°52'21"	133°40'30"	65.0	4(1972-76)	Jan. 30, 1976	14.97	8,500	131
15087585	Twelvemile C nr Petersburg	56°52'21"	133°04'05"	9.39	4(1972-76)	Feb. 21, 1973	12.12	1,870	199
15087595	Kadake C nr Kake	56°46'45"	134°00'42"	43.6	4(1972-76)	Sept.30, 1975	103.14	10,000	229
15088000	Sawmill C nr Sitka	57°03'05"	135°13'40"	39.0	20(1920-22, 1928-42, 1945-57)	Oct. 1972	-	9,300	238
15090000	Green L O nr Sitka	56°59'00"	135°07'00"		4(1915-25)	Sept.26, 1918	-	3,300	106
15092000	Maksoutof R nr Port Alexander	56°30'00"	134°58'00"	26.0	5(1951-56)	Oct. 22, 1953	8.02	2,820	108
15093400	Sashin C nr Big Port Walter	56°22'32"	134°39'40"	3.72	10(1965-76)	Nov. 20, 1972	4.70	1,500	403
15094000	Deer L O nr Port Alexander	56°31'10"	134°40'10"	7.41	17(1951-67)	Dec. 14, 1962	3.80	1,120	151
15096000	Coal C nr Baranof	57°01'00"	134°47'00"	28.5	3(1922-26)	Sept.30, 1923	-	4,800	168
15098000	Baranof R at Baranof	57°05'15"	134°50'30"	32.0	25(1915-28, 1957-74)	Oct. 6, 1972	13.5	9,000	281
15100000	Takatz C nr Baranof	57°08'35"	134°51'50"	17.5	18(1951-69)	Sept.28, 1968	5.84	1,750	100
15101600	Wheeler C nr Douglas	55°01'49"	134°46'08"	57.1	5(1971-75)	Oct. 30, 1972	23.93	3,400	59.5
15101800	Fishery C nr Angoon	57°45'45"	134°42'21"	54.3	(1971-76)	May 3, 1976	29.83	7,800	144
15102000	Hasselborg C nr Angoon	57°49'40"	134°14'55"	56.2	17(1951-68)	Oct. 23, 1953	3.78	2,400	42.7
15102350	North Arm C nr Angoon	57°23'48"	134°19'24"	8.64	6(1971-76)	Nov. 11, 1971	18.94	1,170	135
15104000	Porcupine R nr Chichagof	57°50'05"	136°20'25"	7.12	1(1918-20)	Jan. 7, 1920	-	1,180	166
15106000	Falls C nr Chichagof	57°48'10"	136°18'10"	6.48	1(1918-20)	Sept.25, 1918	-	665	103
15106920	Kadashan R ab Hook C nr Tenakee	57°39'46"	135°11'06"	10.2	7(1968-76)	Sept.15, 1976	6.60	1,850	181
15106940	Hook C ab Tr nr Tenakee	57°40'49"	135°07'58"	4.48	9(1967-76)	Sept.15, 1976	3.7	1,290	319
15106960	Hook C nr Tenakee	57°40'32"	135°10'05"	8.00	10(1966-76)	Oct. 5, 1972	4.78	1,410	176
15106980	Tonalite C nr Tenakee	57°40'42"	135°13'17"	14.5	8(1968-76)	Oct. 5, 1972	7.96	3,340	230
15107000	Kadashan R nr Tenakee	57°41'43"	135°12'59"	37.7	12(1964-76)	Oct. 5, 1972	10.41	6,070	161
15108000	Pavlof R nr Tenakee	57°50'30"	135°02'10"	24.3	12(1957-76)	Jan. 4, 1963	8.37	2,970	122
15108250	Game C nr Hoonah	58°03'02"	135°29'21"	42.8	7(1970-76)	Oct. 30, 1972	11.94	15,500	362
15108290	Gos C nr Elfin Cove	58°11'49"	136°03'07"	16.7	3(1973-76)	Nov. 1974	45.76	4,600	275
15108600	Hilda C nr Douglas	58°13'38"	134°29'50"	2.62	5(1966-71)	Nov. 21, 1967	4.60	400	153
15108800	Lawson C at Douglas	58°17'05"	134°24'40"	2.98	5(1966-71)	Sept. 5, 1968	4.30	565	190
15109000	Fish C nr Auke Bay	58°19'50"	134°35'20"	13.6	18(1958-76)	Oct. 2, 1961	5.05	2,120	156
					SOUTH CENTRAL				
15195000	Dick C nr Cordova	60°20'32"	144°18'10"	7.95	6(1970-76)	Sept.18, 1975	8.95	2,380	299
-	Slana R nr Mentasta	62°51'30"	143°41'35"	310	Miscellaneous	Aug. 11, 1971	-	5,440	17.5
15198500	Station C nr Mentasta	62°56'02"	143°40'06"	15.3	7(1970-76)	July 8, 1974	-	281	18.4
15199000	Copper R Tr nr Slana	62°43'03"	144°14'21"	4.32	14(1963-76)	July 1964	13.75	173	40.0
-	Chistochina R at Sinona Lodge	62°36'10"	144°38'15"	610	Miscellaneous	Aug. 1971	-	40,000	65.6
15200000	Gakona R at Gakona	62°18'06"	145°18'20"	620	25(1948, 1949-74)	Aug. 10, 1971	8.10	10,500	16.9
15200280	Gulkana R at Sourdough	62°31'15"	145°31'51"	1,770	4(1973-76)	May 16, 1973	9.92	8,840	5.0
15200280	Gulkana R at Sourdough	62°31'15"	145°31'51"	1,770	Max. Evident	--	-	16,000	9.0
15201000	Dry C nr Glennallen	62°08'49"	145°28'31"	11.4	14(1963-76)	May 1972	25.88	546	47.9
15201100	L Nelchina R Tr nr Eureka	61°59'17"	147°00'34"	7.81	11(1964-76)	May 17, 1967	11.84	115	14.7
15201900	Moose C Tr at Glennallen	62°06'32"	145°30'57"	7.11	12(1963-74)	May 1972	22.03	250	35.2
15202000	Tazlina R nr Glennallen	62°03'20"	145°25'34"	2,670	22(1949-50, 1951-72)	Aug. 14, 1962	13.19	*60,700	22.7
15206000	Klutina R at Copper Center	61°57'10"	145°18'20"	880	19(1948-66, 1971)	June 29, 1953	9.24	9,040	10.3
15207800	Little Tonsina R nr Tonsina	61°28'49"	145°09'05"	22.7	4(1973-76)	July 1, 1975	7.33	127	5.6
15208000	Tonsina R at Tonsina	61°39'41"	145°11'02"	420	26(1950-54, 1955-76)	June 17, 1962	4.91	8,490	20.2
15208100	Squirrel C at Tonsina	61°40'05"	145°10'26"	70.5	13(1963-76)	June 1964	12.64	1,200	17.0
15208200	Rock C nr Tonsina	61°45'32"	145°09'14"	14.3	11(1966-76)	May 31, 1972	10.42	110	7.7
15208500	Fivemile C nr Chitina	61°34'55"	144°26'10"	13.2	4(1963-70)	June 1965	13.49	412	31.2
15209000	Chititu C nr May Creek	61°22'12"	142°40'50"	30.9	3(1970-73)	July 1973	5.31	430	13.9
15209100	May C nr May Creek	61°20'42"	142°41'49"	10.4	4(1973-76)	July 1, 1975	15.91	81	7.8
-	McCarthy C nr McCarthy	61°25'18"	142°53'20"	75.7	Miscellaneous	July 1, 1975	-	2,080	27.5
15211500	Tebay R nr Chitina	61°13'55"	144°11'50"	55.4	4(1962-65)	June 9, 1964	3.84	946	17.1
15211700	Strelna C nr Chitina	61°30'40"	144°04'00"	23.8	6(1971-76)	Sept.11, 1975	10.43	278	11.7
15211900	O'Brien C nr Chitina	61°27'59"	144°27'23"	44.8	7(1970-76)	July 1971	7.32	1,670	37.3
15212000	Copper R nr Chitina	61°27'56"	144°27'71"	20,600	24(1950,1952, 1955-76)	July 15, 1971	29.94	265,000	12.9
15212500	Boulder C nr Tiekel	61°20'08"	145°18'26"	9.80	13(1963-76)	June 1964	12.28	450	45.9
-	Tiekel C at Tiekel	61°19'12"	145°18'33"	93.6	Max. Evident	--	-	3,400	36.3
-	Tsina R nr Ptarmigan	61°12'21"	145°13'00"	120	Max. Evident	--	-	*20,000	167
15212800	Ptarmigan C Tr nr Valdez	61°08'13"	145°44'30"	0.72	5(1965-70)	Sept. 1965	10.82	85	118
15214000	Copper R nr Cordova	60°01'00"	144°32'30"	21,000	Miscellaneous	July 16, 1913	41.0	216,000	9.9
15216000	Power C nr Cordova	60°35'14"	145°37'05"	20.5	29(1947-76)	Sept.25, 1949	7.65	5,540	270
15219000	W F Olsen Bay C nr Cordova	60°45'41"	146°10'20"	4.78	13(1964-76)	Sept.12, 1972	5.30	1,030	213
15219100	Control C nr Cordova	60°45'00"	146°14'00"	4.22	11(1964-74)	Sept.12, 1972	12.43	1,280	303
15226000	Solomon Gulch nr Valdez	61°04'56"	146°18'05"	19	7(1948-56)	Sept. 4, 1951	6.50	2,420	127
-	Sheep C nr Valdez	61°07'03"	145°48'48"	31.9	Max. Evident	--	-	*9,500	298
15226500	Lowe R nr Valdez	61°05'49"	145°51'32"	201	4(1971-74)	Aug. 30, 1974	9.61	12,200	60.7

Table 5.--*Maximum known floods in Alaska--Continued.*

Station no.	Stream	Location: Latitude	Location: Longitude	Drainage area (mi^2)	Period of record (years/dates)	Maximum known flood: Date	Gage height (ft)	Discharge (ft^3/s)	Discharge [(ft^3/s)/mi^2]
					SOUTH CENTRAL--Continued				
15226600	Lowe R in Keystone Cyn nr Valdez	61°05'24"	145°53'15"	222	2(1975-76)	Sept.11, 1975	9.2	12,500	56.3
-	Lowe R nr Valdez	61°05'07"	146°12'50"	345	Miscellaneous	July 10, 1971	-	12,000	34.8
15236200	Shakespeare C at Whittier	60°46'35"	148°43'35"	3.05	7(1969-76)	Oct. 7, 1969	11.95	500	164
15236900	Wolverine C nr Lawing	60°22'14"	148°53'48"	9.51	10(1966-76)	Sept. 7, 1973	6.06	1,260	132
15237000	Nellie Juan R nr Hunter	60°25'20"	148°43'30"	125	5(1960-65)	Sept.12, 1961	11.33	9,820	78.5
15237400	Chalmers R nr Cordova	60°13'10"	147°13'30"	6.32	9(1967-76)	Oct. 11, 1969	12.31	3,040	481
15237700	Resurrection R nr Seward	60°08'30"	149°25'00"	169	3(1964-68)	Aug. 21, 1966	10.68	18,900	112
15237800	Bear C Tr nr Seward	60°11'35"	149°20'20"	1.63	2(1966-68)	Sept. 7, 1967	4.11	134	82.2
15238000	Lost C nr Seward	60°11'50"	149°22'30"	7.96	11(1963-72, 1976)	Sept.20, 1976	-	920	116
15238500	Lowell C at Seward	60°05'55"	149°26'35"	4.02	4(1965-68)	Aug. 21, 1966	-	1,200	298
15238600	Spruce C nr Seward	60°04'10"	149°27'08"	9.26	11(1966-76)	Aug. 21, 1966	10.1	3,090	334
15238820	Barbara C nr Seldovia	59°28'50"	151°38'42"	20.7	5(1972-76)	June 29, 1975	4.09	744	35.9
15238860	Tutka Lagoon C nr Homer	59°29'59"	151°24'36"	10.8	3(1974-76)	Sept.17, 1976	7.61	3,020	280
15239000	Bradley R nr Homer	59°45'24"	150°51'02"	54.0	20(1955, 1957-76)	Oct. 14, 1969	9.13	7,690	142
15239500	Fritz C nr Homer	59°42'30"	151°20'35°	10.4	14(1963-76)	Nov. 1, 1970	17.02	349	33.6
15239800	Diamond C nr Homer	59°40'10"	151°40'00"	5.35	14(1963-76)	May 15, 1973	13.73	174	32.5
15239880	Twitter C nr Homer	59°42'54"	151°37'46"	16.1	2(1971-73)	May 15, 1973	4.14	536	33.3
15239900	Anchor R nr Anchor Point	59°44'50"	151°45'11"	133	10(1965-74)	May 15, 1973	5.91	2,240	16.8
15240000	Anchor R at Anchor Point	59°46'10"	151°50'00"	226	13(1953-66)	May 8, 1963	6.36	3,030	13.4
15240500	Cook Inlet Tr nr Ninilchik	59°58'45"	151°43'20"	1.69	11(1966-76)	May 13, 1976	13.98	140	82.8
15241600	Ninilchik R at Ninilchik	60°02'56"	151°39'48"	131	14(1963-76)	Apr. 24, 1974	6.04	1,240	9.5
15242000	Kasilof R nr Kasilof	60°19'05"	151°15'35"	738	25(1949-74)	Sept.14, 1957	7.90	12,300	16.7
15243500	Snow R nr Divide	60°18'05"	149°14'10"	99.8	5(1960-65)	Sept.30, 1961	10.3	*25,000	250
15243900	Snow R nr Seward	60°17'11"	149°20'19"	128	Miscellaneous	Aug. 31, 1967	42.6	*55,000	430
15243950	Porcupine C nr Primrose	60°20'30"	149°22'15"	16.8	14(1963-76)	Sept.20, 1976	12.39	1,750	104
15244000	Ptarmigan C at Lawing	60°24'20"	149°21'45"	32.6	10(1947-58)	June 29, 1953	-	980	30.0
15246000	Grant C nr Moose Pass	60°27'25"	149°21'15"	44.2	10(1947-58	June 28, 1953	4.46	2,230	50.5
15248000	Trail R nr Lawing	60°26'01"	149°22'19"	181	26(1947-74)	Sept.18, 1967	11.93	7,480	41.3
15250000	Falls C nr Lawing	60°25'50"	149°22'10"	11.8	10(1913, 1963-70, 1976)	Sept.15, 1966	13.86	693	58.7
15251800	Quartz C at Gilpatricks	60°35'45"	149°32'35"	9.41	9(1963-70, 1976)	Oct. 6, 1969	11.54	633	67.3
15253000	Crescent C nr Moose Pass	60°28'45"	149°34'25"	21.4	4(1957-60)	May 25, 1960	2.81	262	12.2
15254000	Crescent C nr Cooper Landing	60°29'50"	149°40'40"	31.7	28(1949-76)	Oct. 6, 1969	12.73	1,500	47.3
15258000	Kenai R at Cooper Landing	60°29'34"	149°48'28"	634	30(1947-76)	Sept.21, 1974	17.18	*23,100	36.4
15260000	Cooper C nr Cooper Landing	60°26'00"	149°49'15"	31.8	11(1949-59)	June 29, 1953	4.02	729	22.9
15260500	Stetson C nr Cooper Landing	60°26'30"	149°51'05"	8.6	6(1958-63)	Sept.12, 1961	3.00	291	33.8
15261000	Cooper C at mouth nr Cooper Lake	60°28'30"	149°52'30"	48.0	7(1957-64)	Sept.21, 1961	2.11	841	17.5
15264000	Russian R nr Cooper Landing	60°27'10"	149°59'05"	61.8	8(1947-54)	Nov. 24, 1952	4.75	1,280	20.7
15266300	Kenai R at Soldotna	60°28'39"	151°04'46"	2,010	12(1965-76)	Oct. 15, 1969	12.20	30,000	14.9
15266500	Beaver C nr Kenai	60°33'50"	151°07'03"	51.0	9(1968-76)	May 8, 1972	10.55	598	11.7
15267900	Resurrection C nr Hope	60°53'40"	149°38'13"	149	9(1968-76)	Oct. 6, 1969	8.40	2,700	18.1
15268000	Resurrection C at Hope	60°55'15"	149°38'40"	162	2(1949-51)	June 20, 1950	2.80	2,140	13.2
15269500	Granite C nr Portage	60°43'40"	149°17'00"	28.2	10(1967-76)	Oct. 6, 1969	12.46	2,040	72.3
15270100	Fresno C at Shield	60°40'15"	149°28'35"	6.03	8(1963-70)	June 1969	10.58	135	22.4
15270400	Donaldson C nr Wibel	60°45'40"	149°27'20"	4.07	10(1963-72)	Sept. 1967	10.46	170	41.8
15271900	Cub C nr Sunrise	60°52'12"	149°26'02"	1.80	12(1965-76)	Sept. 1967	12.09	54	30.0
15272500	Turnagain Arm Tr nr Girdwood	60°55'27"	149°07'40"	0.44	2(1965-68)	Sept.18, 1967	13.14	69	157
15272530	California C at Girdwood	60°57'53"	149°08'02"	6.96	10(1967-76)	Oct. 6, 1969	20.20	600	86.2
15272550	Glacier C at Girdwood	60°56'29"	149°09'44"	62.0	12(1965-76)	Sept.18, 1967	7.90	7,710	124
15272800	Rainbow C nr Anchorage	61°00'03"	149°38'57"	4.18	3(1965-67)	Sept. 1967	12.13	130	31.1
15273900	S F Campbell C at Canyon Mouth	61°08'52"	149°43'12"	25.2	10(1967-76)	Sept.21, 1976	3.89	342	13.6
15274000	S F Campbell C nr Anchorage	61°09'57"	149°46'15"	30.4	25(1947-72)	June 21, 1949	3.30	891	29.3
15274300	N F Campbell C nr Anchorage	61°10'10"	149°45'43"	13.4	10(1967-76)	Aug. 9, 1971	12.18	107	7.99
15274600	Campbell C nr Spenard	61°08'17"	149°55'20"	69.7	11(1966-76)	Aug. 9, 1971	3.63	421	6.04
15274800	S B of S F Chester C nr Anchorage	61°12'37"	149°43'52"	10.8	9(1967-76)	Aug. 9, 1971	11.29	44	4.07
15275000	Chester C at Anchorage	61°11'59"	149°50'07"	20.0	19(1958-76)	Apr. 29, 1963	2.40	95	4.75
15275100	Chester C at Arctic Blvd.	61°12'19"	149°53'43°	27.2	11(1966-76)	Sept.11, 1975	4.37	175	6.4
15276000	Ship C nr Anchorage	61°13'25"	149°37'55"	90.5	30(1947-76)	June 21, 1949	3.44	1,860	20.6
15276500	Ship C at Elmendorf AFB	61°14'20"	149°47'24"	113	9(1963-71)	Aug. 9, 1971	4.89	1,610	14.2
15276570	Ship C bl power plant at Elmendorf AFB	61°13'47"	149°49'38"	115	6(1970-76)	Aug. 9, 1971	-	1,600	13.9
15277100	Eagle R at Eagle R	61°18'28"	149°33'32"	192	11(1965-76)	Sept.18, 1967	9.49	6,240	32.5
15277200	Meadow C at Eagle R	61°19'14"	149°32'11"	7.43	10(1965-74)	Aug. 9, 1971	12.66	184	24.8
15277400	Peters C nr Chugiak	61°24'18"	149°27'25"	83.3	Miscellaneous	Aug. 9, 1971	-	1,990	23.9
15277410	Peters C nr Birchwood	61°25'08"	149°29'20"	87.8	3(1973-76)	June 30, 1975	5.75	564	6.4
15277600	E F Eklutna C nr Palmer	61°18'40"	148°57'05"	38	3(1960-62)	Sept.12, 1961	3.86	1,320	34.7
15277800	W F Eklutna C nr Palmer	61°18'00"	148°58'25"	26	3(1960-62)	Aug. 29, 1962	3.84	1,470	56.5
15280000	Eklutna C nr Palmer	61°24'05"	149°09'00"	119	11(1946-57)	Sept.18, 1951	6.10	2,530	21.2
15281000	Knik R nr Palmer	61°30'18"	149°01'50"	1,180	42(1935-76)	July 18, 1958	24.30	*355,000	300
15281500	Camp C nr Sheep Mountain Lodge	61°50'20"	147°24'31"	1.09	3(1965-71)	Aug. 10, 1971	10.54	30	27.5
15282000	Caribou C nr Sutton	61°48'12"	147°40'57"	289	22(1955-76)	June 15, 1973	7.18	8,720	30.2
15282200	Hicks C nr Sutton	61°47'40"	147°56'00"	47.7	1(1963-65)	June 1964	13.30	1,200	25.2
15282300	Pinochle C nr Sutton	61°47'37"	147°55'46"	7.99	5(1965-71)	Aug. 1971	8.90	20	2.50
15282400	Puritan C nr Sutton	61°48'42"	148°08'01"	8.51	13(1963-76)	May 9, 1972	11.82	85	10.0
-	Kings R nr Sutton	61°43'58"	148°44'52"	151	Miscellaneous	Aug. 10, 1971	-	9,800	64.9
-	Granite C nr Sutton	61°46'46"	148°50'12"	52.5	Miscellaneous	Aug. 10, 1971	-	+58,600	1,120
15283500	Eska C nr Sutton	61°43'44"	148°54'31"	13.4	7(1965-69, 1971-76)	Aug. 10, 1971	26.82	1,680	125
-	Moose C nr Sutton	61°43'32"	149°03'00"	40.7	Miscellaneous	Aug. 10, 1971	-	18,000	442
15284000	Matanuska R at Palmer	61°36'34"	149°04'16"	2,070	26(1949-74)	Aug. 10, 1971	13.60	+82,100	39.7
-	Wasilla C nr Palmer	61°38'47"	149°11'45"	19.3	Miscellaneous	Aug. 10, 1971	-	700	36.3
15826000	Cottonwood C nr Wasilla	61°34'30"	149°24'35"	28.5	6(1949-54)	July5,6, 1949	-	55	1.93
15289800	Fishhook C nr Palmer	61°45'05"	149°13'40"	8.52	3(1963-66)	Aug. 23, 1963	12.97	960	113
15290000	Little Susitna R nr Palmer	61°42'32"	149°13'36"	61.9	28(1948-76)	Aug. 10, 1971	10.30	7,840	127
15291000	Susitna R nr Denali	63°06'14"	147°30'57"	950	17(1957-66, 1968-76)	Aug. 10, 1971	13.32	38,200	40.2

Table 5.--*Maximum known floods in Alaska--Continued.*

Station no.	Stream	Location: Latitude	Location: Longitude	Drainage area (mi²)	Period of record (years/dates)	Maximum known flood: Date	Gage height (ft)	Discharge (ft^3/s)	Discharge [(ft^3/s)/mi^2]
					SOUTH CENTRAL--Continued				
15291100	Raft C nr Denali	63°03'04"	147°16'22"	4.33	14(1963-76)	June 1964	11.72	133	30.7
15291200	Maclaren R nr Paxson	63°07'10"	146°31'45"	280	16(1958-76)	Aug. 11, 1971	8.24	9,260	33.1
15291500	Susitna R nr Cantwell	62°41'57"	147°32'40"	4,140	12(1961-72)	Aug. 10, 1971	-	55,000	13.3
15292000	Susitna R at Gold C	62°46'04"	149°41'28"	6,160	27(1949-76)	June 7, 1964	16.58	90,700	14.7
15292400	Chulitna R nr Talkeetna	62°33'31"	150°14'02"	2,570	17(1958-76)	July 20, 1967	22.48	75,900	29.5
15292700	Talkeetna R nr Talkeetna	62°20'49"	150°01'01"	2,007	13(1964-76)	Aug. 10, 1971	16.35	67,400	33.6
15292780	Susitna R nr Sunshine	62°10'35"	150°10'18"	11,500	Miscellaneous	Aug. 10, 1971	62.0	200,000	17.4
15292800	Montana C nr Montana	62°06'32"	150°03'12"	164	10(1963-72)	Aug. 10, 1971	12.96	6,970	42.5
15292900	Goose C nr Montana	62°03'42"	150°03'20"	14.5	9(1963-71)	June 1964	11.94	/530	36.5
15293000	Caswell C nr Caswell	61°56'55"	150°03'14"	19.6	14(1963-76)	Sept. 1965	12.89	207	10.6
15294025	Moose C nr Talkeetna	62°19'00"	150°26'30"	52.3	5(1972-76)	Aug. 22, 1972	7.79	1,850	35.4
15294300	Skwentna R nr Skwentna	61°52'23"	151°22'01"	2,250	17(1959-76)	June 25, 1971	14.74	50,000	22.2
15294350	Susitna R at Susitna Station	61°32'41"	150°30'45"	19,400	2(1974-76)	July 1, 1975	17.44	173,000	8.9
15294450	Chuitna R nr Tyonek	61°06'31"	151°15'06"	131	1(1975-76)	Sept.20, 1976	8.49	4,380	33.4
15294500	Chakachatna R nr Tyonek	61°12'44"	152°21'26"	1,120	12(1959-73)	Aug. 11, 1971	-	*470,000	420
15295500	Little Kitoi C nr Afognak	58°11'45"	152°21'55"	2.63	1(1960-61)	Jan. 20, 1961	2.64	42	16.0
15295600	Terror R nr Kodiak	57°39'10"	153°01'30"	15.0	6(1962-68)	Aug. 29, 1963	5.92	4,590	306
15295700	Terror R at mouth nr Kodiak	57°41'50"	153°10'10"	46.0	5(1964-68)	Sept.26, 1966	6.48	3,820	83.0
15296000	Uganik R nr Kodiak	57°41'06"	153°25'10"	123	25(1951-76)	Oct. 3, 1952	10.65	13,700	111
15296300	Spiradon L O nr Larsen Bay	57°40'40"	153°39'00"	23.3	4(1962-65)	Mar. 27, 1964	1.72	189	8.11
15296500	Falls C nr Larsen Bay	57°16'30"	153°59'03"	5.67	2(1974-75)	Sept.25, 1975	2.73	174	30.7
15296520	Canyon C nr Larsen Bay	57°17'00"	153°58'52"	8.82	2(1974-76)	Sept.17, 1976	2.31	450	51.0
15296550	Upper Thumb R nr Larsen Bay	57°21'03"	153°58'04"	18.8	2(1974-76)	Sept.18, 1976	2.90	1,000	53.2
15296600	Karluk R at outlet nr Larsen Bay	57°26'37"	154°06'41"	100	1(1975-76)	June 14, 1976	1.93	843	8.4
15296950	Akalura C at Olga Bay	57°10'00"	154°13'35"	18.4	1(1975-76)	Sept.22, 1975	1.72	166	9.0
15297000	Dog Salmon C nr Ayakulik	57°12'30"	154°04'15"	72.9	2(1960-61)	Sept.24, 1961	2.08	777	10.6
15297200	Myrtle C nr Kodiak	57°36'16"	152°24'09"	4.74	14(1963-76)	Sept.14, 1969	5.02	1,110	234
15297300	Kalsin Bay Tr nr Kodiak	57°35'25"	152°25'55"	2.35	7(1963-69)	Sept.14, 1969	13.20	250	106
15297450	M F Pillar C nr Kodiak	57°47'58"	152°27'00"	2.02	2(1968-70)	June 8, 1969	2.14	364	180
15297470	Monashka C nr Kodiak	57°50'34"	152°26'44"	5.51	5(1972-76)	Aug. 3, 1972	9.81	562	102
15297500	Red Cloud C Tr nr Kodiak	57°49'00"	152°37'20"	1.51	10(1963-76)	June 8, 1969	12.52	690	457
					SOUTHWEST				
15297640	Limpet C on Amchitka Island	51°31'31"	178°58'23"	1.69	5(1967-72)	Mar. 18, 1971	3.86	93	55.0
15297650	Falls C on Amchitka Island	51°30'00"	179°01'00"	.86	4(1968-72)	Jan11,Aug26,1969	1.52	24	27.9
15297655	Clevenger C on Amchitka Island	51°24'34"	179°11'00"	.28	5(1968-73)	Aug. 10, 1969	4.19	18	64.3
15297680	Bridge C on Amchitka Island	51°26'54"	179°10'57"	3.03	7(1967-74)	July 27, 1974	5.31	84	27.7
15297690	White Alice C on Amchitka Island	51°28'39"	179°07'29"	0.79	6(1968-74)	Aug. 5, 1970	2.80	96	122
15297767	Lake C at Shemya AFB	52°42'56"	174°05'39"	1.0	2(1970-72)	Mar. 6, 1971	1.24	10	10.2
15297773	Gallery C at Shemya AFB	52°42'42"	174°07'18"	1.0	2(1970-72)	Aug. 20, 1971	1.65	12	12.1
15297900	Eskimo C at King Salmon	58°41'08"	156°40'08"	16.1	11(1964-76)	June 1967	8.51	227	14.1
15298000	Tanalian R nr Port Alsworth	60°11'00"	154°15'00"	200	6(1951-56)	June 28, 1953	5.17	4,720	23.6
15300000	Newhalen R nr Iliamna	59°51'34"	154°52'24"	3,478	25(1951-67, 1969-76)	Aug. 16, 1971	10.68	44,200	12.7
15300100	Bear C nr Iliamna	59°49'28"	154°52'56"	2.59	2(1964-69)	May 1965	10.90	58	22.4
15300200	Roadhouse C nr Iliamna	59°45'26"	154°50'49"	20.8	4(1973-76)	July 13, 1975	12.91	152	7.3
15300500	Kvichak R at Igiugig	59°19'44"	155°53'57"	6,500	10(1967-76)	Aug. 29, 1971	23.17	43,000	6.6
15301500	Allen R nr Aleknagik	60°09'00"	158°44'00"	278	4(1963-66)	Sept.16, 1965	15.79	7,930	28.5
15302000	Nuyakuk R nr Dillingham	59°56'04"	158°11'05"	1,490	23(1953-76)	June 20, 1969	10.70	30,000	20.1
15302800	Grant L O nr Aleknagik	59°48'00"	158°34'00"	34.3	4(1960-65)	June 1, 1965	-	960	28.0
15302900	Moody C at Aleknagik	59°16'34"	158°35'42"	1.28	7(1968-76)	June 7, 1971	19.60	55	43.0
15303000	Wood R nr Aleknagik	59°16'30"	158°35'37"	1,110	14(1957-70, 1972)	June 1972	13.83	25,000	22.5
15303010	Silver Salmon C nr Aleknagik	59°13'34"	158°40'21"	4.46	11(1964-76)	June 12, 1967	11.85	340	76.2
15303100	East C nr Dillingham	59°11'39"	158°49'17"	2.12	2(1973-75)	Sept.17, 1975	5.94	41	19.3
15303150	Snake R nr Dillingham	59°08'54"	158°53'14"	113	3(1973-76)	June 8, 1975	5.95	1,200	10.6
15303600	Kuskokwim R at McGrath	62°57'10"	155°35'11"	11,700	11(1963-73)	June 6, 1964	26.02	70,000	6.0
15304000	Kuskokwim R at Crooked C	61°52'10"	158°06'42"	31,100	22(1951-76)	June 5, 1964	25.74	392,000	12.6
					YUKON				
15305900	Dennison F nr Tetlin Jct	63°25'24"	142°29'00"	2.93	12(1963-76)	July 1964	16.29	128	43.7
15305920	W F Tr nr Tetlin Jct	63°40'03"	142°16'00"	1.02	10(1966-76)	June 1968	11.54	41	40.2
15305950	Taylor C nr Chicken	63°54'32"	142°13'52"	38.4	10(1966-76)	June 27, 1968	12.67	175	4.6
15344000	King C nr Dome C	64°23'28"	141°24'36"	5.99	2(1975-76)	May 1, 1976	6.76	54	9.0
15348000	Fortymile R at Steel C	64°18'33"	141°24'08"	5,880		June 1964	34.5	84,000	14.3
15356000	Yukon R at Eagle	64°47'22"	141°11'52"	113,500	29(1911-13, 1950-76)	June 12, 1964	33.85	545,000	4.8
15365000	Discovery F American C nr Eagle	64°39'40"	141°18'00"	5.53	9(1963-72)	Aug. 7, 1972	11.29	52	9.4
15367500	Bluff C nr Eagle	64°45'08"	141°13'41"	3.38	10(1963-73)	June 1970	11.68	41	12.1
-	Coleen R nr Rampart House	67°53'46"	142°07'16"	1,700	Max. Evident	--	-	20,000	11.8
-	Strangle Woman C nr Rampart House	67°53'34"	141°51'06"	246	Max. Evident	--	-	1,900	7.7
-	Monument C nr Arctic Village	68°04'11"	143°50'36"	101	Max. Evident	--	-	6,400	63.4
-	Sheenjek R nr Arctic Village	67°57'15"	143°16'54"	2,230	Max. Evident	--	-	18,000	8.1
15389000	Porcupine R nr Fort Yukon	66°59'26"	143°08'16"	29,500	12(1964-76)	May 24, 1973	33.68	299,000	10.1
-	Cane C nr mouth nr Arctic Village	68°39'39"	144°54'11"	116	Max. Evident	--	-	5,600	48.3
-	E F Chandalar R blw Cane C nr Arctic Village	68°37'09"	144°55'18"	627	Max. Evident	--	-	19,000	30.3
15389500	Chandalar R nr Venetie	67°05'49"	147°11'04"	9,330	11(1963-74)	June 9, 1968	19.57	62,800	6.7
15393900	N F Twelvemile C nr Miller House	65°24'03"	145°44'18"	23.2	2(1963-69)	Aug. 13, 1967	14.4	1,710	73.7
15438500	Bedrock C nr Central	65°33'28"	145°05'26"	9.94	11(1964-74)	Aug. 13, 1967	15.73	405	40.7
15439800	Boulder C nr Central	65°34'05"	144°53'13"	31.3	13(1963-76)	Aug. 13, 1967	9.72	1,150	36.7
-	Big Mosquito C nr Central	65°36'10"	144°34'10"	3.51	Miscellaneous	Aug. 13, 1967	-	142	40.5
15442500	Quartz C nr Central	65°37'09"	144°28'55"	17.2	8(1967, 1969-76)	July 1976	22.06	500	29.1
15446000	Birch C nr Central	65°43'00"	144°20'00"	2,150	Miscellaneous	Aug. 14, 1967	-	84,000	39.1
15457700	Erickson C nr Livengood	65°34'30"	148°56'18"	26.3	3(1973-76)	May 13, 1975	21.34	1,300	49.4
15457800	Hess C nr Livengood	65°39'55"	149°05'47"	662	6(1970-76)	May 13, 1975	66.78	10,000	15.1

Table 5.--*Maximum known floods in Alaska--Continued.*

Station no.	Stream	Location: Latitude	Location: Longitude	Drainage area (mi²)	Period of record (years/dates)	Maximum known flood: Date	Gage height (ft)	Discharge (ft³/s)	Discharge [(ft³/s)/mi²]
				YUKON--Continued					
15468000	Yukon R at Rampart	65°30'25"	150°10'15"	199,400	13(1955-67)	June 15, 1964	49.98	950,000	4.8
15469900	Silver C nr Northway Jct	62°59'01"	141°40'07"	11.7	10(1963-72)	July 11, 1964	16.25	355	30.3
15470000	Chisana R at Northway Jct	63°00'23"	141°48'17"	3,280	22(1949-71)	June 28, 1964	13.18	12,000	3.7
15470300	L Jack C nr Nabesna	62°32'47"	143°19'30"	6.73	2(1975-76)	Sept 11, 1975	16.92	171	25.4
15470330	Chalk C nr Nabesna	62°30'19"	143°09'24"	14.8	2(1975-76)	Sept 11. 1975	17.69	297	20.1
15471000	Bitters C nr Northway Jct	63°09'38"	142°05'20"	15.4	12(1964-76)	June 1964	17.54	1,010	65.6
15471500	Tanana R Tr nr Tetlin Jct	63°16'45"	142°30'27"	2.43	12(1965-76)	May 1972	12.45	28	11.5
15472000	Tanana R nr Tok Jct	63°19'00"	142°38'30"	6,800	4(1950-53)	Aug. 7, 1953	9.00	35,700	5.2
15473000	Bartell C nr Mentasta	62°55'45"	143°34'30"	12.0	2(1964-69)	June 1966	-	88	7.3
15473600	Log Cabin C nr Log Cabin Inn	63°01'48"	143°20'36"	10.7	11(1965-76)	June 3, 1975	11.70	350	32.7
15473950	Clearwater C nr Tok	63°10'19"	143°12'03"	36.4	13(1963-76)	June 27, 1968	18.39	1,040	28.6
15474000	Tok R nr Tok Jct	63°19'30°	142°50'05"	930	3(1951-54)	June 16, 1952	6.83	3,830	4.1
15476000	Tanana R nr Tanacross	63°23'18"	143°44'47"	8,550	23(1953-76)	June 19, 1962	11.65	39,100	4.6
15476049	Tanana R Tr nr Cathedral Rapids	63°24'24"	143°48'28"	3.09	5(1972-76)	July 27, 1972	15.38	332	107
15476050	Tanana R Tr nr Tanacross	63°24'44"	143°48'38"	3.32	8(1963-72)	July 7, 1970	12.69	297	89.5
15476200	Tanana R Tr nr Dot Lake	63°41'40"	144°17'40"	11.0	13(1964-76)	July 1964	12.70	146	13.3
15476300	Berry C nr Dot Lake	63°41'25"	144°21'47"	65.1	13(1963-76)	July 19, 1964	15.49	2,800	43.0
15476400	Dry C nr Dot Lake	63°41'32"	144°34'16"	57.6	13(1963-76)	July 10, 1964	16.20	2,200	38.2
15478000	Tanana R at Big Delta	64°09'25"	145°51'00"	13,500	8(1948-57)	July 29, 1949	23.57	62,800	4.6
15478010	Rock C nr Paxson	63°04'16"	146°06'17"	50.3	14(1963-76)	June 1973	12.26	1,500	29.8
15478040	Phelan C nr Paxson	63°14'27"	145°28'03"	12.2	10(1966-76)	Aug. 13, 1967	11.51	2,320	190
15478050	McCallum C nr Paxson	63°13'27"	145°38'56"	15.5	10(1966-76)	Aug. 13, 1967	12.12	1,010	65.2
-	Flood C nr Rapids	63°26'42"	145°48'06"	3.30	Max. Evident	--	-	1,500	455
15478500	Ruby C nr Donnelly	63°37'52"	145°53'03"	5.32	14(1963-76)	July 19, 1975	12.75	250	47.0
15480000	Banner C at Richardson	64°17'24"	146°20'56"	20.2	12(1963-75)	1966	13.55	732	36.2
15484000	Salcha R nr Salchaket	64°28'22"	146°55'26"	2,170	26(1909-10, 1948-76)	Aug. 14, 1967	21.78	97,000	44.7
-	L Salcha R nr Salchaket	64°30'50"	146°58'10"	67.4	Miscellaneous	Aug. 13, 1967	-	1,900	28.2
15485000	Moose C at Eielson AFB	64°42'50"	147°06'45"	136	2(1964-65)	June 14, 1965	7.88	370	2.7
15485200	Garrison Slough at Eielson AFB	64°42'15"	147°70'05"	6.24	2(1964-65)	Apr. 18, 1965	4.45	51	8.2
15490000	Monument C at Chena Hot Springs	65°03'17"	146°03'05"	26.7	7(1970-76)	June 7, 1972	28.06	1,700	63.7
15493000	Chena R nr Two Rivers	64°53'55"	146°24'42"	941	10(1967-76)	May 12, 1975	21.05	16,800	17.9
-	Potlatch C nr Two Rivers	64°52'14"	147°03'00"	3.49	Miscellaneous	Aug. 12, 1967	-	40	11.5
-	Chena R ab L Chena R nr Eielson AFB	64°50'45"	146°57'55"	1,370	Miscellaneous	Aug.13,14,1967	-	105,000	76.6
15493500	Chena R nr North Pole	64°47'47"	147°11'56"	1,430	5(1972-76)	May 14, 1975	14.18	12,300	8.6
15511000	L Chena R nr Fairbanks	64°53'10"	147°14'50"	372	10(1966-76)	Aug. 13, 1967	31.95	17,000	45.7
15511500	Steele C nr Fairbanks	64°53'36"	147°29'12"	10.7	6(1967, 1970-74)	Aug. 12, 1967	11.23	340	31.8
15514000	Chena R at Fairbanks	64°50'45"	147°42'04"	1,980	29(1947-76)	Aug. 15, 1967	18.82	74,400	37.6
-	Isabella C nr Fairbanks	64°53'10"	147°40'30"	4.56	Miscellaneous	Aug. 12, 1967	-	160	35.1
15514500	Wood R nr Fairbanks	64°26'06"	148°12'46"	855	8(1968-76)	Aug. 13, 1976	8.98	5,510	6.4
15515500	Tanana R at Nenana	64°33'55"	149°05'30"	25,600	15(1962-76)	Aug. 18, 1967	18.90	186,000	7.27
15515800	Seattle C nr Cantwell	63°19'32"	148°14'49"	36.2	13(1963-76)	June 1964	8.05	3,100	85.6
15515900	Lily C nr Cantwell	63°19'54"	148°16'16"	5.63	11(1965-76)	June 1966	12.08	191	33.9
15516000	Nenana R nr Windy	63°27'28"	148°48'11"	710	24(1950-56, 1958-76)	June 15, 1962	9.84	11,900	16.8
15516100	Nenana R Tr nr Cantwell	63°27'50"	148°48'25"	1.62	3(1965-70)	July 1967	-	20	12.3
15516200	Slime C nr Cantwell	63°30'34"	148°48'39"	6.90	11(1965-76)	July 1967	14.52	685	99.3
15518000	Nenana R nr Healy	63°50'43"	148°56'37"	1,910	26(1950-76)	July 25, 1967	13.40	46,800	24.5
15518100	L Panguingue C nr Lignite	63°56'05"	149°06'00"	3.44	10(1965-74)	Aug. 12, 1967	14.13	151	43.9
15518200	Rock C nr Ferry	64°01'56"	149°08'40"	8.17	8(1964-75)	July 21, 1967	11.78	880	108
15518250	Birch C nr Rex	64°10'35"	149°17'26"	4.10	11(1966-76)	Aug. 12, 1967	14.74	464	113
15518300	Nenana R nr Rex	64°13'05"	149°16'40"	2,450	4(1964-68)	July 25, 1967	14.85	63,000	25.7
15518350	Teklanika R nr Lignite	65°55'14"	149°29'51"	490	10(1964-74)	July 25, 1967	12.51	33,100	67.6
15518400	Tanana R Tr nr Nenana	64°38'27"	149°00'34"	0.58	2(1965-69)	May 1967	12.01	18	31.0
-	Tolovana R nr Livengood	65°28'20"	148°15'50"	140	Miscellaneous	Aug.12,13,1967	-	12,000	85.7
15519000	Bridge C nr Livengood	65°27'52"	148°15'13"	12.6	10(1963-72)	Aug. 1964	17.60	1,070	85.0
-	W F Tolovana R nr Livengood	65°28'05"	148°38'35"	291	Miscellaneous	Aug. 13, 1967	-	2,290	7.9
15519200	Brooks C Tr nr Livengood	65°23'02"	148°56'12"	7.81	13(1964-76)	May 1975	13.27	168	21.5
15520000	Idaho C nr Miller House	65°21'13"	146°09'33"	5.31	14(1963-76)	July 1964	16.00	813	15.3
15530000	Faith C nr Chena Hot Springs	65°17'32"	146°22'48"	61.1	10(1911-12, 1963-72)	Aug. 14, 1967	15.15	4,950	81.0
-	Chatanika R nr Chatanika	65°14'00"	146°52'00"	244	Miscellaneous	Aug. 13, 1967	-	19,600	80.3
15534900	Poker C nr Chatanika	65°09'32"	147°28'49"	23.1	5(1971-76)	May 12, 1975	9.3	240	10.4
15535000	Caribou C nr Chatanika	65°09'00"	147°33'05"	9.19	7(1969-76)	May 12, 1975	5.47	117	12.7
-	Chatanika R nr Olnes	65°05'20"	147°43'00"	528	Miscellaneous	Aug.13,14,1967	-	25,000	47.3
-	Rose C nr Fox	64°58'23"	147°30'50"	2.00	Miscellaneous	Aug. 13, 1967	-	104	52.0
-	L Goldstream C nr Nenana	64°40'00"	148°56'40"	40.8	Miscellaneous	Aug.12-14,1967	-	1,490	36.5
-	Tatalina R nr Livengood	65°19'45"	148°18'25"	80.8	Miscellaneous	Aug.12-14,1967	-	3,560	44.1
15541600	Globe C nr Livengood	65°17'07"	148°08'00"	23.0	13(1964-76)	Aug. 12, 1967	17.05	1,240	53.9
15541650	Globe C Tr nr Livengood	65°16'31"	148°06'58"	9.01	10(1963-72)	Aug. 12, 1967	15.35	490	54.4
15541800	Washington C nr Fox	65°09'03"	147°51'22"	46.7	10(1963-72)	Aug. 12, 1967	18.29	2,500	53.5
15564500	New York C nr Ruby	64°34'45"	155°26'00"	6.99	2(1964-67)	Sept. 1965	10.84	72	10.3
15564600	Melozitna R nr Ruby	64°47'34"	155°33'39"	2,693	12(1961-73)	Sept. 3, 1962	9.40	28,200	10.5
15564800	Yukon R at Ruby	64°44'28"	155°29'22"	259,000	20(1956-76)	June 20, 1964	35.40	970,000	3.7
-	Snowden C nr Dietrich Camp	67°44'20"	149°45'00"	15.6	Max. Evident	--	-	1,200	76.9
-	Dietrich R at Bettles River	67°38'40"	149°42'50"	349	Max. Evident	--	-	6,400	18.3
-	Hammond R nr Wiseman	67°27'50"	150°01'40"	244	Max. Evident	--	-	5,400	22.1
15564872	Nugget C nr Wiseman	67°29'25"	144°52'20"	9.47	2(1975-76)	June 1976	15.93	195	20.6
15564875	M F Koyukuk R nr Wiseman	67°26'18"	150°04'30"	1,426	6(1970-76)	Aug. 21, 1973	13.50	17,100	12.0
15564805	M F Koyukuk R nr Wiseman	67°26'18"	150°04'30"	1,426	Max. Evident	--	-	33,000	23.1
15564877	Wiseman C at Wiseman	67°24'38"	150°06'21"	49.2	6(1970-76)	June 6, 1976	5.16	686	13.9
15564884	Prospect C nr Prospect Camp	66°46'56"	150°41'06"	110	2(1975-76)	Sept.19, 1975	7.91	2,500	22.7
15564885	Jim R nr Bettles	66°47'10"	150°52'23"	465	6(1970-76)	Sept.19, 1975	17.27	9,810	21.1
15564885	Jim R nr Bettles	66°47'10"	150°52'23"	465	Max. Evident	--	-	13,000	28.0
15564887	Bonanza C Tr nr Prospect Camp	66°36'52"	150°41'24"	11.7	2(1975-76)	May 10, 1975	19.28	220	18.8
15564999	Koyukuk R at Hughes	66°02'51"	154°15'30"	18,700	17(1960-76)	June 6, 1964	31.09	266,000	14.2
15565200	Yukon R at Kaltag	64°19'40"	158°43'10"	296,000	10(1956-66)	June 22, 1964	26.44	1,030,000	3.5

Table 5.--*Maximum known floods in Alaska--Continued.*

Station no.	Stream	Location: Latitude	Location: Longitude	Drainage area (mi²)	Period of record (years/dates)	Maximum known flood: Date	Gage height (ft)	Discharge (ft^3/s)	Discharge $[(ft^3/s)/mi^2]$
				NORTHWEST					
15585000	Goldengate C nr Nome	64°26'03"	165°02'46"	1.55	1(1965-67)	Sept. 8, 1965	11.70	63	40.6
15621000	Snake R nr Nome	64°33'51"	165°30'26"	85.7	10(1965-76)	June 2, 1966	11.90	4,200	49.0
15625000	Arctic C nr Nome	64°38'15"	165°42'46"	1.76	8(1967-76)	July 10, 1975	-	199	113
15633000	Washington C nr Nome	64°42'52"	165°49'13"	6.34	11(1964-76)	July 10, 1975	19.35	620	97.8
15668000	Kruzgamepa R nr Iron C	64°55'00"	164°57'20"	84	2(1908-10)	Sept. 8, 1910	-	4,300	51.2
15668100	Star C nr Nome	64°55'40"	164°57'39"	3.78	12(1964-76)	July 30, 1972	13.30	152	40.2
15668200	Crater C nr Nome	64°55'48"	164°52'12"	21.9	12(1964-76)	July 10, 1975	19.71	2,540	116
15712000	Kuzitrin R nr Nome	65°13'17"	164°37'15"	1,720	11(1908-10, 1962-73)	June 3, 1971	-	40,000	23.3
15743000	June C nr Kotzebue	66°51'37"	162°36'13"	10.9	3(1965-67)	June 8, 1966	6.72	209	19.2
15744000	Kobuk R at Ambler	67°05'13"	157°50'51"	6,570	11(1965-76)	May 29, 1971	-	95,000	14.6
15746000	Noatak R at Noatak	67°34'18"	162°56'38"	12,000	5(1965-71)	June 14, 1968	28.7	242,000	20.2
15748000	Ogotoruk R nr Point Hope	68°06'40"	165°45'10"	35	5(1958-62)	Sept. 4, 1961	4.36	1,450	41.4
				ARCTIC SLOPE					
15798700	Nunavak C nr Barrow	71°15'35"	156°46'57"	2.79	5(1972-76)	June 23, 1974	2.92	66	23.7
15799000	Esatkuat C nr Barrow	71°16'30"	156°43'44"	1.46	2(1972-73)	June 13, 1972	2.90	67	45.9
15799300	Esatkuat Lagoon O at Barrow	71°17'40"	156°46'06"	3.52	2(1972-73)	June 12, 1973	1.46	101	28.7
-	Colville R nr Nuiqsut	70°09'56"	150°55'00"	20,670	Max. Evident	--	-	600,000	29.0
15875000	Colville R at mouth	70°30'00"	150°30'00"	23,300	Miscellaneous	June 14, 1962	-	216,000	9.3
15896000	Kuparuk R nr Deadhorse	70°16'54"	148°57'35"	3,130	6(1971-76)	June 6, 1973	36.7	82,000	26.2
15896000	Kuparuk R nr Deadhorse	70°16'54"	148°57'35"	3,130	Max. Evident	--	-	100,000	31.9
15896700	Putuligayuk R nr Deadhorse	70°16'04"	148°37'36"	176	7(1970-76)	June 6, 1971	24.50	4,980	28.3
-	Atigun R nr Galbraith Lake	68°22'08"	149°20'12"	173	Max. Evident	--	-	12,000	69.4
15904900	Atigun R Tr nr Pump Sta 4	68°22'25"	149°18'48"	32.6	1(1976-)	July 29, 1976	-	1,000	30.7
15905000	Galbraith Lk Tr nr Galbraith Camp	68°29'30"	149°30'36"	7.55	2(1975-76)	June 1976	29.8	38	5.0
15910000	Sagavanirktok R nr Sagwon	69°05'24"	147°45'34"	2,208	8(1969-76)	Aug. 1969	18.4	34,900	15.8
15910000	Sagavanirktok R nr Sagwon	69°05'24"	147°45'34"	2,208	Max. Evident	--	-	62,000	28.1
15910200	Happy C nr Happy Valley	69°08'50"	148°49'50"	34.5	5(1972-76)	June 6, 1976	18.51	1,390	40.3
-	Kadleroshilik R nr Deadhorse	69°56'06"	147°51'15"	451	Max. Evident	--	-	23,000	51.0
-	Shaviovik R (Upper site)	69°52'21"	147°38'44"	660	Max. Evident	--	-	21,000	31.8
-	Shaviovik R nr Deadhorse	70°05'07"	147°16'30"	1,580	Max. Evident	--	-	22,000	13.9
-	Kavik R nr Deadhorse	69°32'10"	146°39'44"	237	Max. Evident	--	-	13,000	54.9
-	Marsh Fk Canning R nr Arctic Village	69°09'53"	145°53'30"	588	Max. Evident	--	-	18,000	30.6
-	Canning R nr Arctic Village	69°21'10"	146°02'31"	1,326	Max. Evident	--	-	22,000	16.6
-	Canning R nr Deadhorse	69°50'38"	146°27'10"	1,871	Max. Evident	--	-	53,000	28.3
-	Katakturuk R nr Kaktovik	69°52'25"	145°27'10"	228	Max. Evident	--	-	10,000	43.9
-	Marsh C nr Kaktovik	69°47'32"	144°49'00"	261	Max. Evident	--	-	500	1.9
15975000	Chamberlin C nr Barter Island	69°17'30"	144°57'50"	1.46	Miscellaneous	July 5, 1958	-	88	60.3
15976000	Neruokpukkoonga C nr Barter Island	69°18'30"	145°01'30"	123	Miscellaneous	June 23, 1958	-	706	5.7
-	Sadlerochit R nr Kaktovik	69°39'13"	144°12'10"	529	Max. Evident	--	-	11,000	20.8
-	Hulahula R nr Kaktovik	69°41'47"	144°12'10"	682	Max. Evident	--	-	10,000	14.7
-	Jago R nr Kaktovik	69°37'02"	143°41'06"	321	Max. Evident	--	-	14,000	43.6
-	Okerokovik R nr Kaktovik	69°42'07"	143°14'23"	169	Max. Evident	--	-	2,300	13.6
-	Aichilik R nr Kaktovik	69°35'23"	142°58'03"	563	Max. Evident	--	-	27,000	48.0
-	Egaksrak R nr Kaktovik	69°32'05"	142°41'05"	215	Max. Evident	--	-	9,000	41.9
-	Ekaluakat R nr Kaktovik	69°34'35"	142°18'38"	146	Max. Evident	--	-	27,000	185
-	Kongakut R nr Kaktovik	69°30'54"	142°42'34"	1,240	Max. Evident	--	-	98,000	79.0
-	Turner R nr Kaktovik	69°35'56"	141°24'10"	51	Max. Evident	--	-	1,500	29.4

Footnote explanation

* Glacier-dammed lake breakout.

\+ Augmented by release of stored water from unnamed lake after embankment was breached.

≠ Flood from Sheep Creek overflow August 10, 1971, 19.69 ft., 3,270 ft^3/s.

Table 6.--*First version of prediction equations for flood magnitude and frequency.*

Formulas for computing flood discharges for a given recurrence interval are given below. These formulas were superseded. If these formulas are used, be aware that for some combinations of basin characteristics Q50 might be lower than Q_{25}, Q_{25} lower than Q_{10}, and Q_{10} lower than Q_5. However, these equations have a lower standard error than the equations in the text. The difference is shown in the table.

Recurrence interval	Exceedance probability in percent	Formulas	Percent standard error	Difference in percent standard error	Number of sites
		Area I			
1.25	80	$7.62\ A^{0.819}\ P^{0.556}\ (St+1)^{-.175}\ (T+1)^{0.120}$	54	2	97
2	50	$12.2\ A^{0.813}\ P^{0.500}\ (St+1)^{-.201}\ (T+1)^{0.162}$	49	1	97
5	20	$21.9\ A^{0.812}\ P^{0.442}\ (St+1)^{-.218}\ (T+1)^{0.163}$	48	0	97
10	10	$20.6\ A^{0.824}\ P^{0.482}\ (St+1)^{-.266}\ (T+1)^{0.172}$	45	0	64
25	4	$14.9\ A^{0.827}\ P^{0.660}\ (St+1)^{-.324}\ (T+1)^{0.058}$	47	1	33
50	2	$42.8\ A^{0.894}\ P^{0.546}\ (St+1)^{-.185}\ (T+1)^{-.161}$	39	3	21
100	1	-Not Shown-	--	-	15
		Area II			
1.25	80	$1.59\ A^{0.980}\ P^{0.816}\ (St+1)^{-.127}\ (T+30)^{-.095}\ (F+1)^{-.258}$	79	4	163
2	50	$5.73\ A^{0.925}\ P^{0.735}\ (St+1)^{-.171}\ (T+30)^{-.189}\ (F+1)^{-.252}$	73	4	163
5	20	$16.5\ A^{0.877}\ P^{0.692}\ (St+1)^{-.205}\ (T+30)^{-.287}\ (F+1)^{-.224}$	75	3	163
10	10	$19.8\ A^{0.856}\ P^{0.709}\ (St+1)^{-.218}\ (T+30)^{-.318}\ (F+1)^{-.157}$	78	1	132
25	4	$13.1\ A^{0.837}\ P^{0.758}\ (St+1)^{-.193}\ (T+30)^{-.244}\ (F+1)^{-.104}$	58	1	50
50	2	$6.44\ A^{0.816}\ P^{0.477}\ (St+1)^{-.315}\ (T+30)^{0.268}\ (F+1)^{0.084}$	58	10	26
100	1	-Not Shown-	--	--	19

EXPLANATION OF SYMBOLS USED IN FIGURES 4-1 THROUGH 4-18.

2580 ▲ Active stations used in analysis

2610 △ Discontinued stations used in analysis

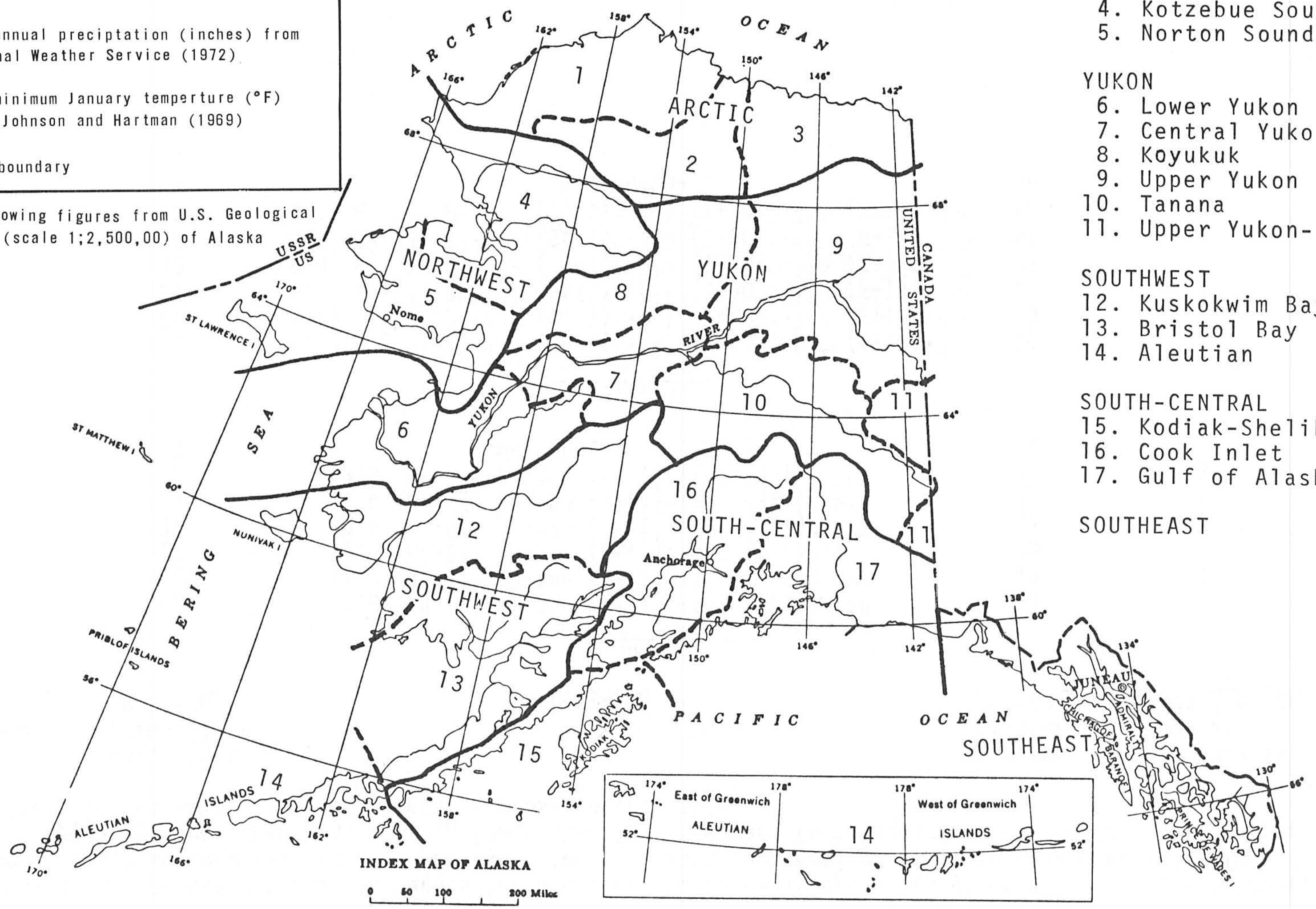
Station numbers are without state prefix 15

—40— Mean annual preciptation (inches) from National Weather Service (1972)

—-8°— Mean minimum January temperture (°F) from Johnson and Hartman (1969)

▬ Area boundary

Base for following figures from U.S. Geological Survey map E (scale 1;2,500,00) of Alaska



MAP INDEX

ARCTIC
1. West Arctic
2. Colville
3. East Arctic

NORTHWEST
4. Kotzebue Sound
5. Norton Sound

YUKON
6. Lower Yukon
7. Central Yukon
8. Koyukuk
9. Upper Yukon
10. Tanana
11. Upper Yukon-Canada

SOUTHWEST
12. Kuskokwim Bay
13. Bristol Bay
14. Aleutian

SOUTH-CENTRAL
15. Kodiak-Shelikof
16. Cook Inlet
17. Gulf of Alaska

SOUTHEAST

Figure 3.--Map index and symbols used in figures 4-1 through 4-18.

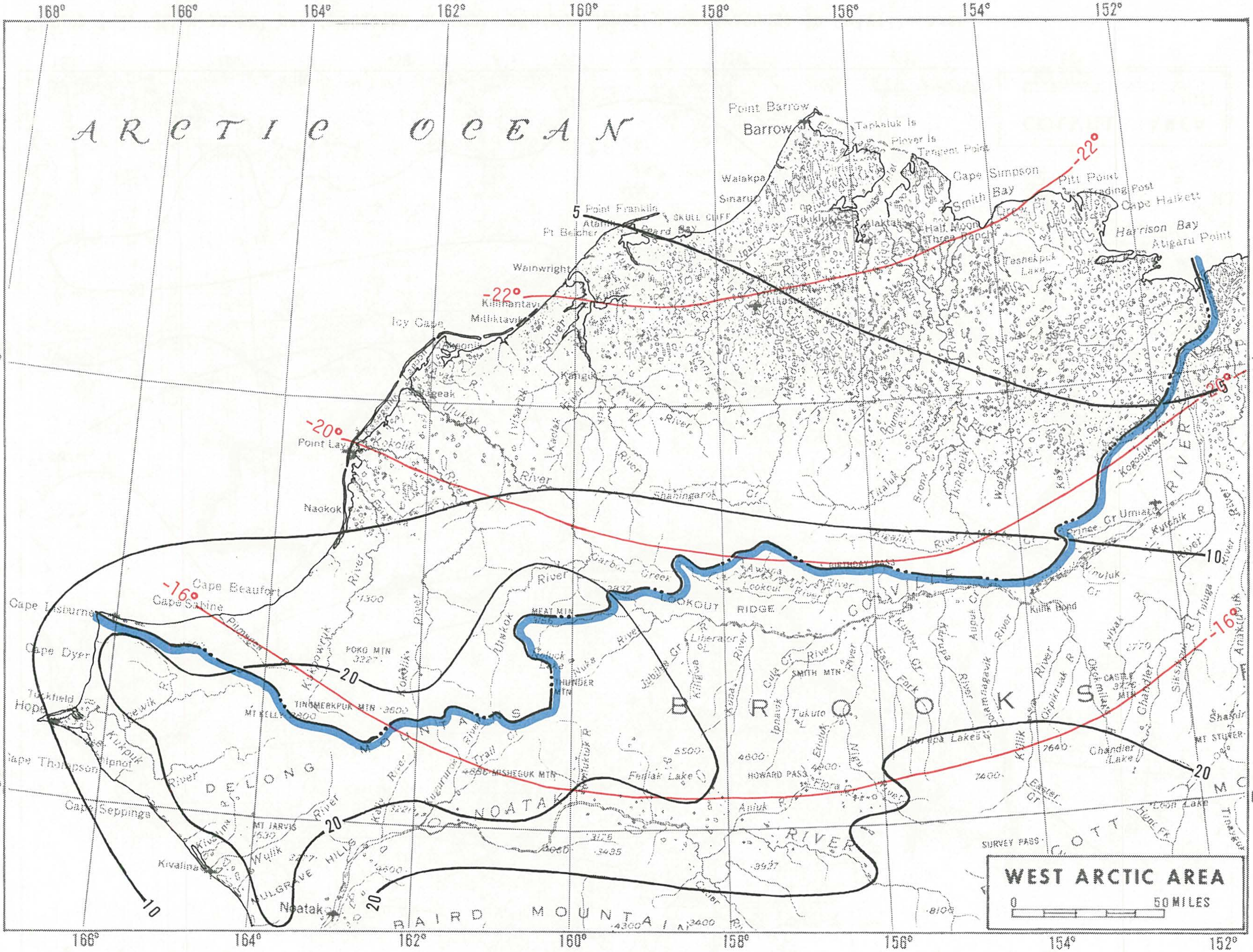


Figure 4-1.--Mean annual precipitation and mean minimum January temperatures in west Arctic area.

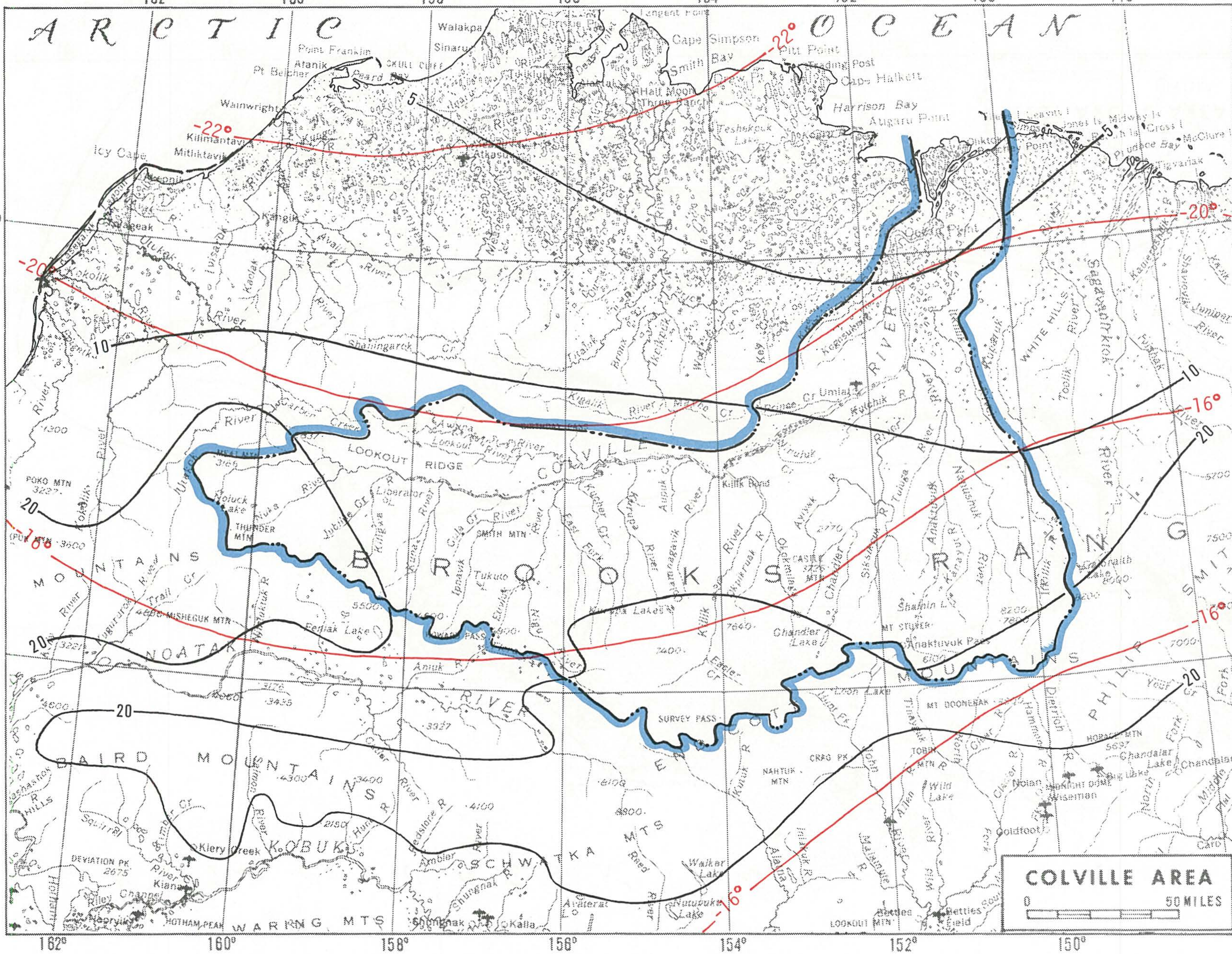


Figure 4-2.--Mean annual precipitation and mean minimum January temperatures in Colville area.

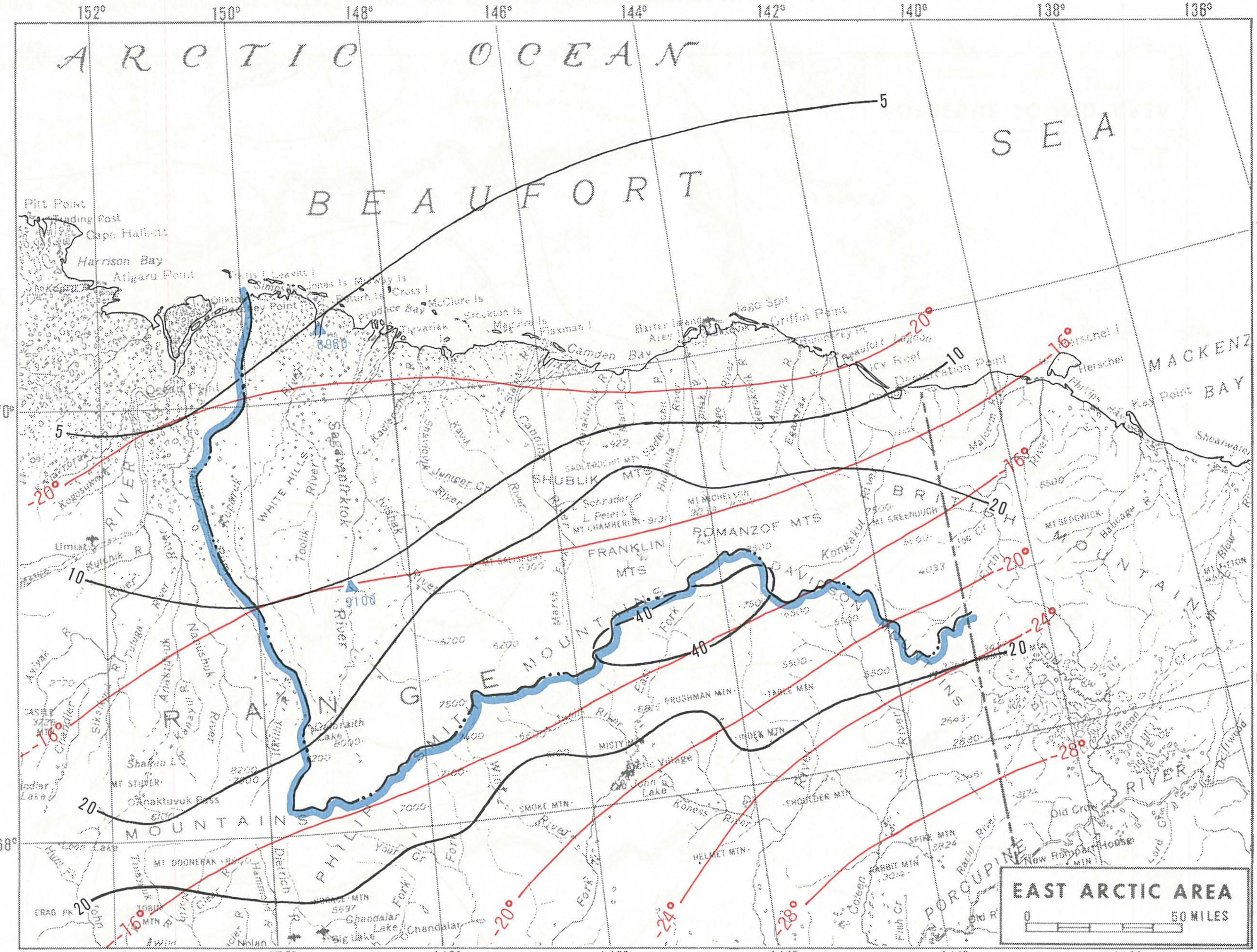


Figure 4-3.--Mean annual precipitation and mean minimum January temperatures in east Arctic area.

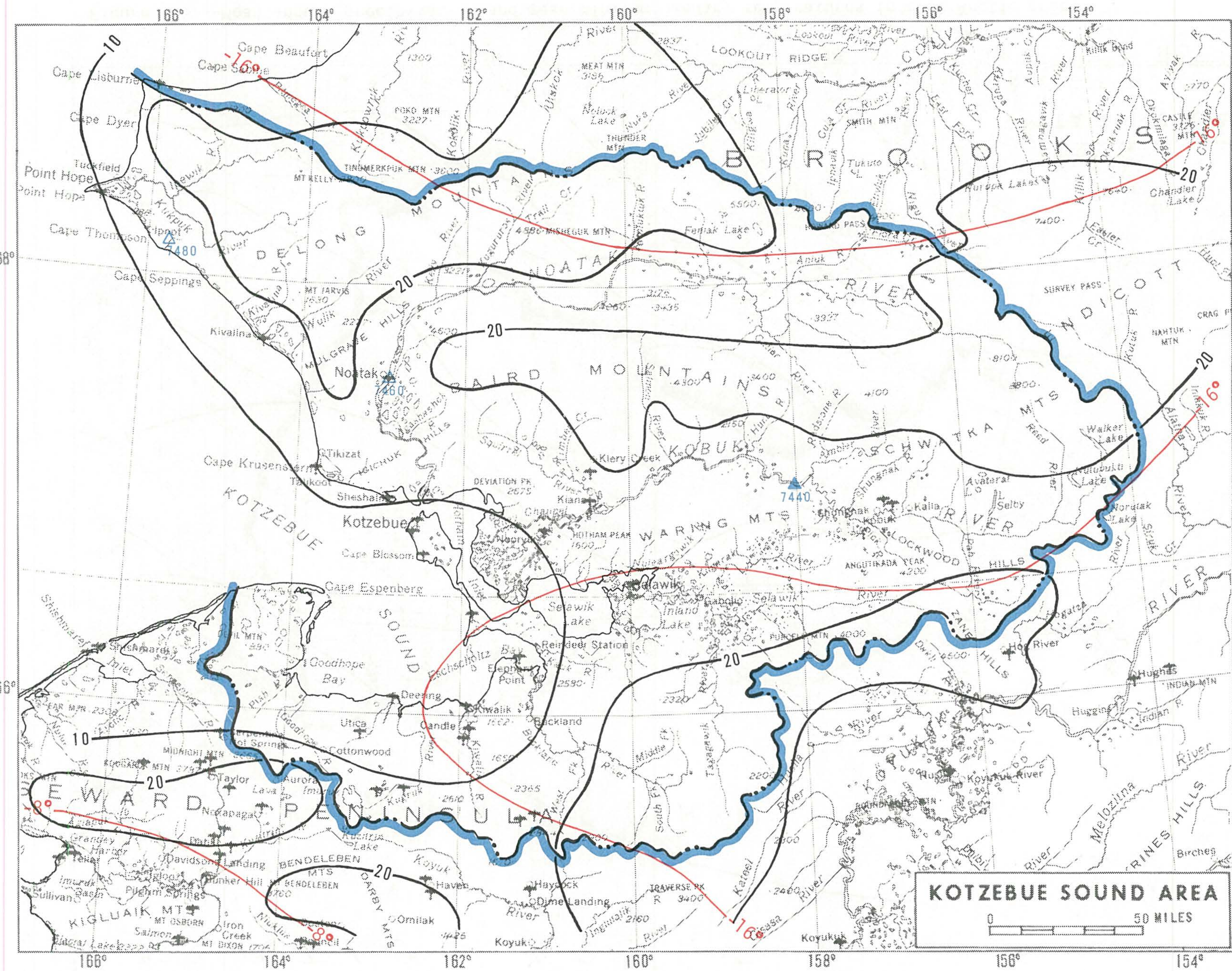


Figure 4-4.--Mean annual precipitation and mean minimum January temperatures in Kotzebue Sound area.

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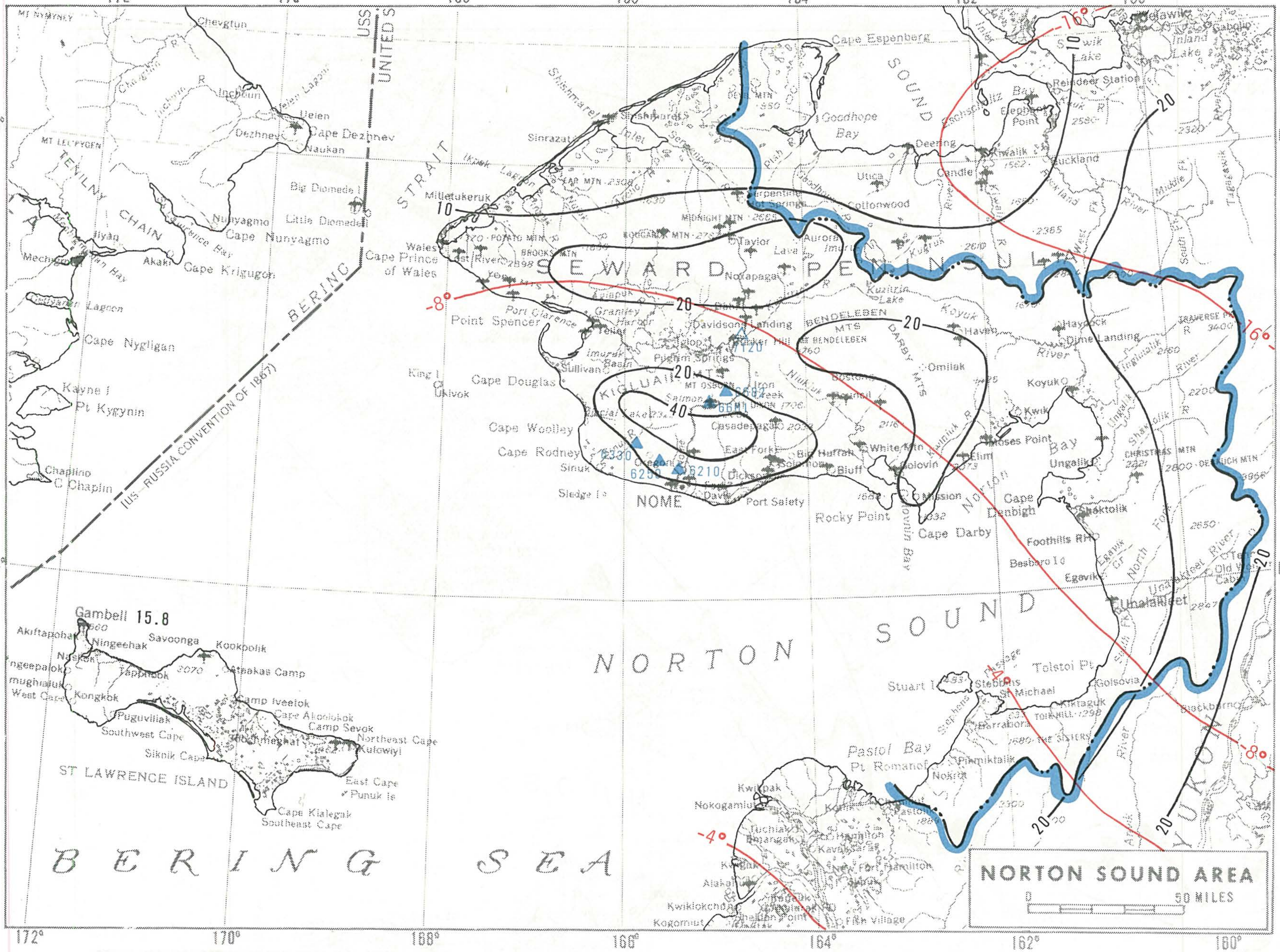


Figure 4-5.--Mean annual precipitation and mean minimum January temperatures in Norton Sound area.

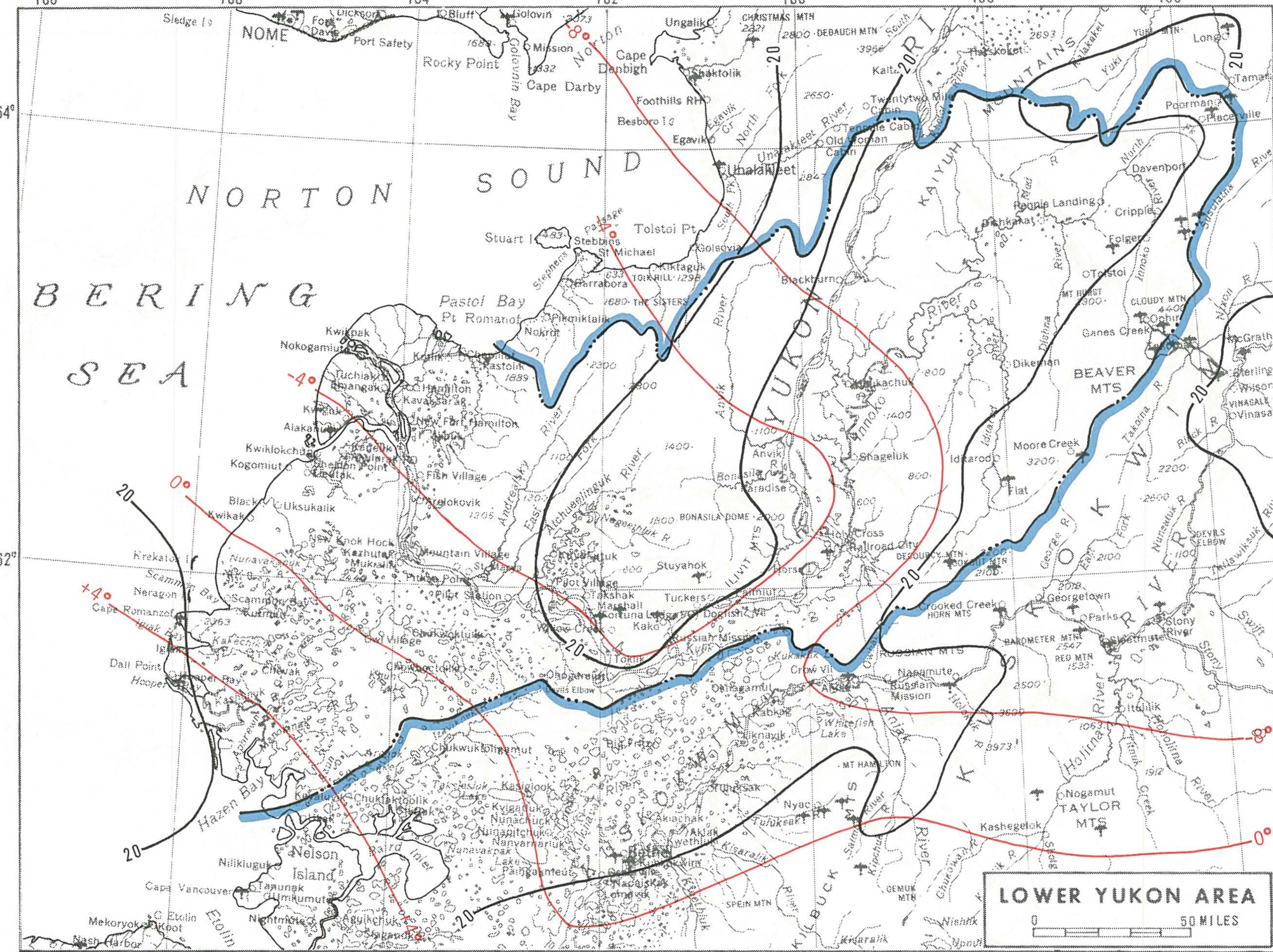


Figure 4-6.--Mean annual precipitation and mean minimum January temperatures in lower Yukon area.

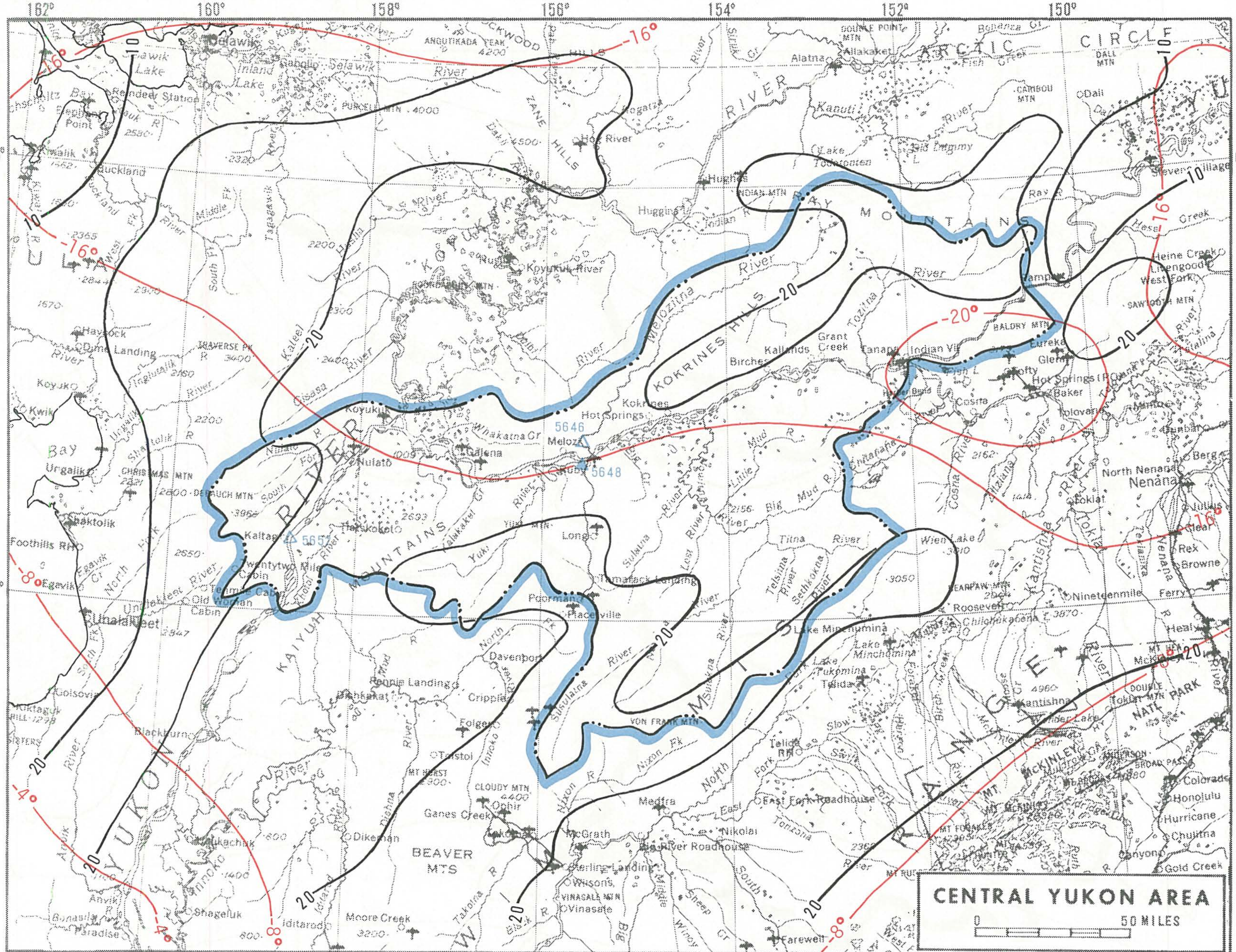


Figure 4-7.--Mean annual precipitation and mean minimum January temperatures in central Yukon area.

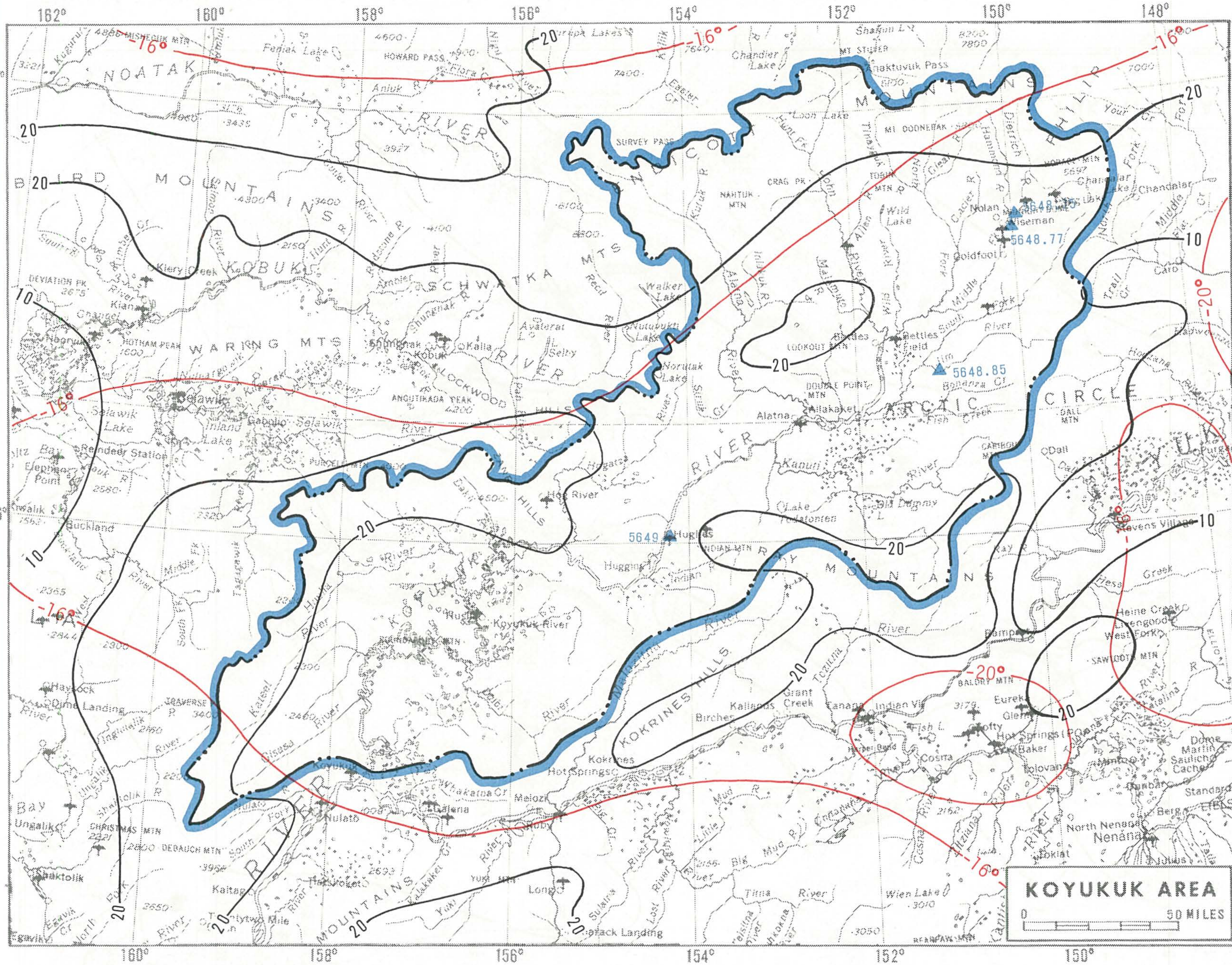


Figure 4-8.--Mean annual precipitation and mean minimum January temperatures in Koyukuk area.

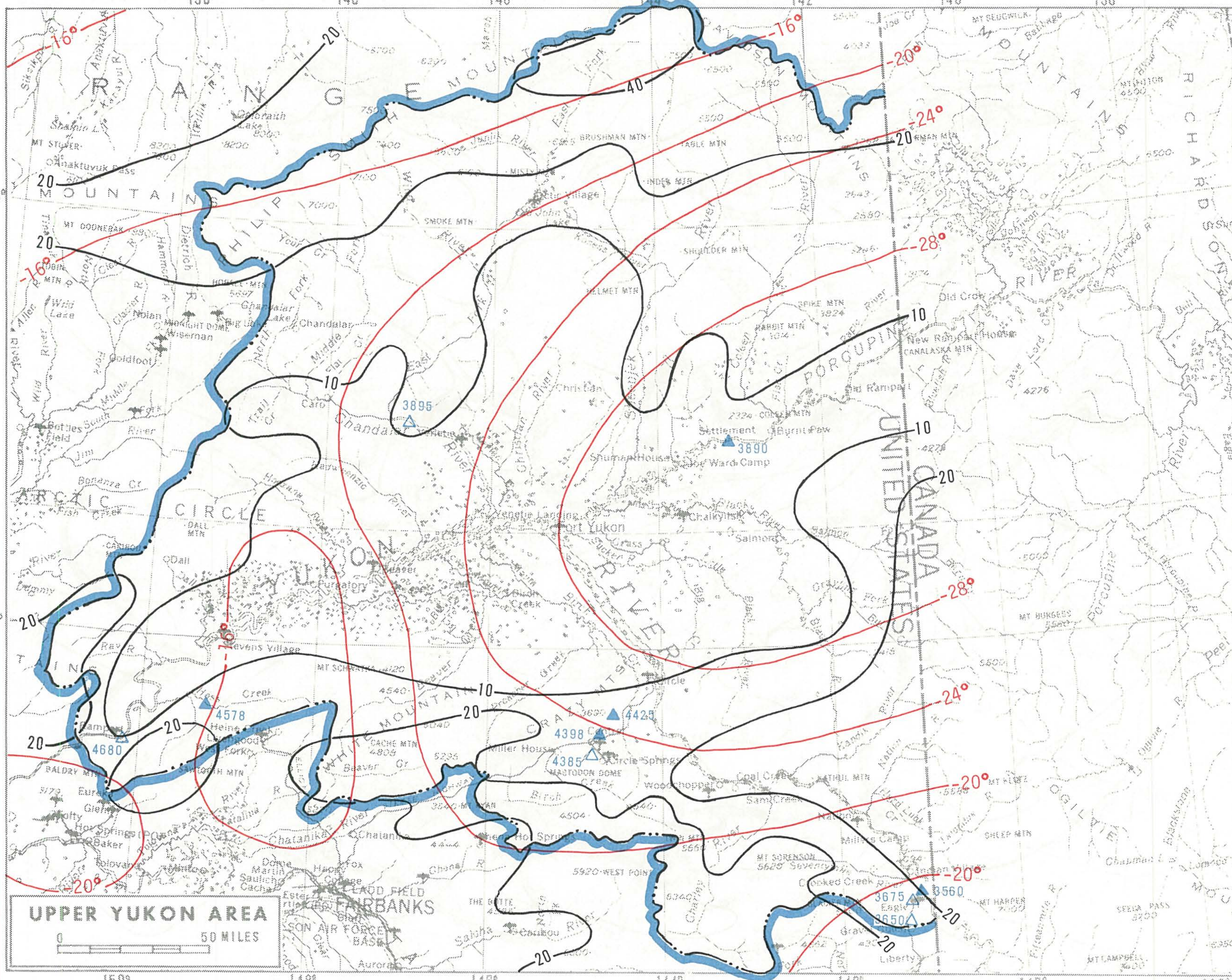


Figure 4-9.--Mean annual precipitation and mean minimum January temperatures in upper Yukon area.

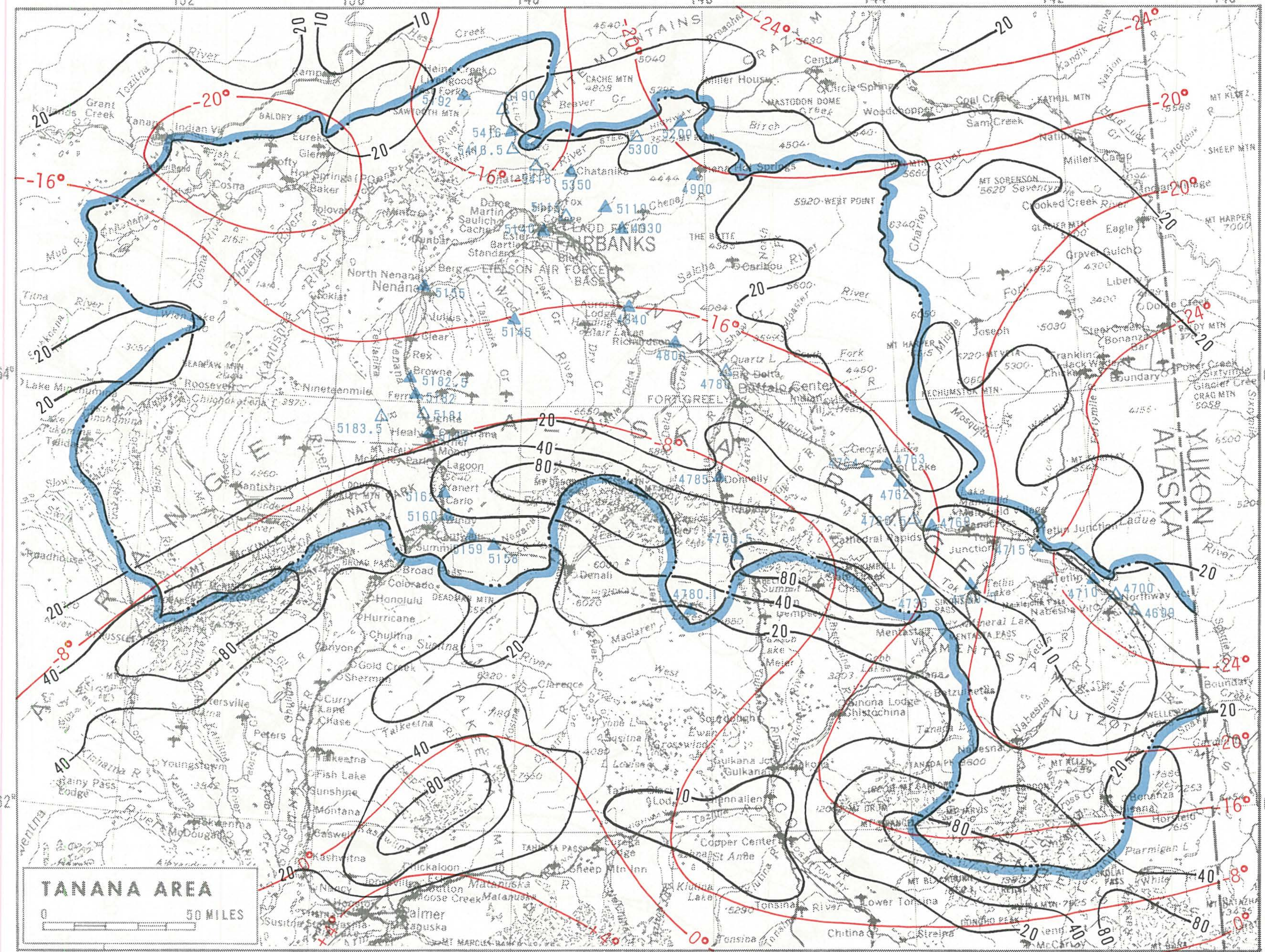


Figure 4-10.--Mean annual precipitation and mean minimum January temperatures in Tanana area.

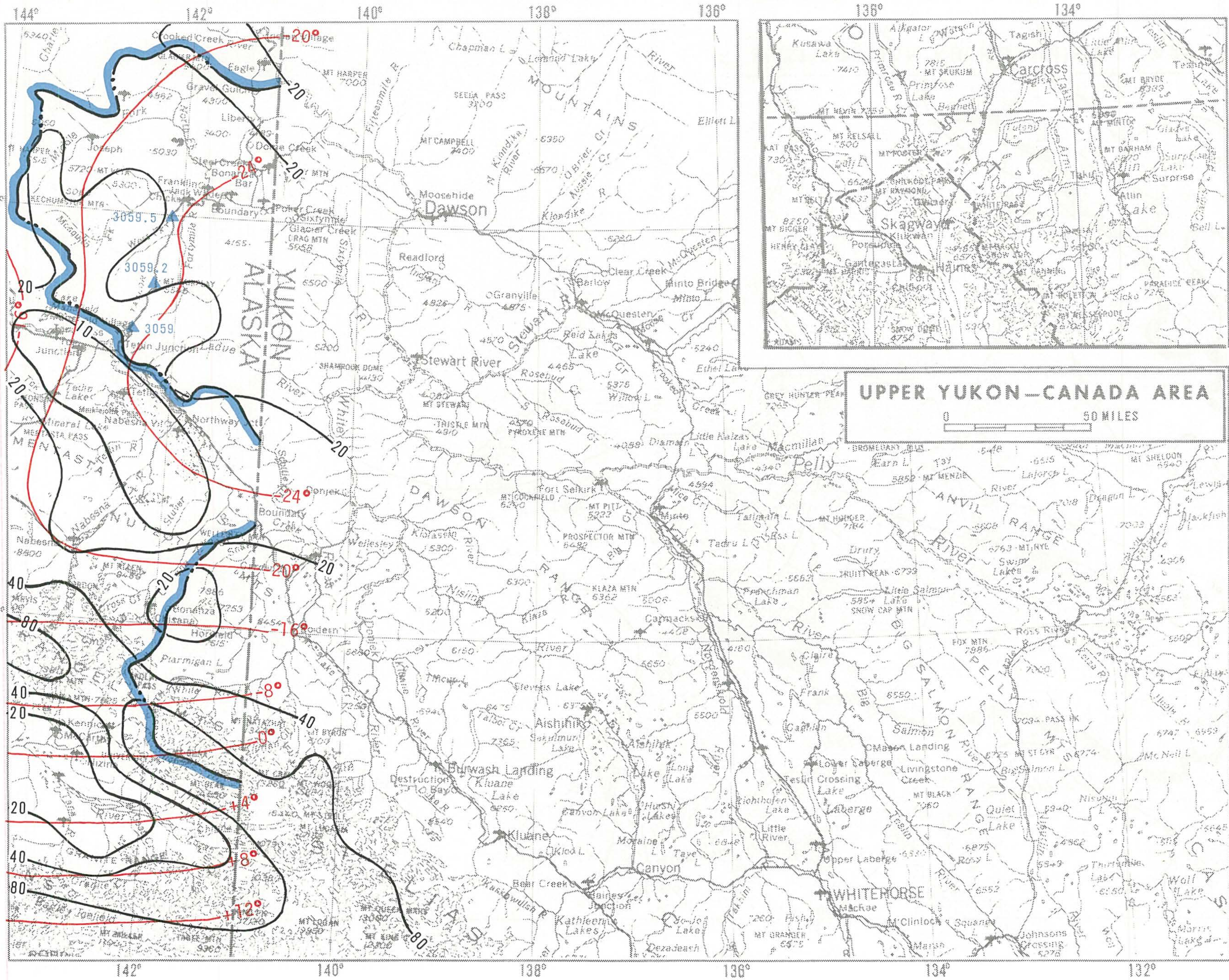


Figure 4-11.--Mean annual precipitation and mean minimum January temperatures in upper Yukon-Canada area.

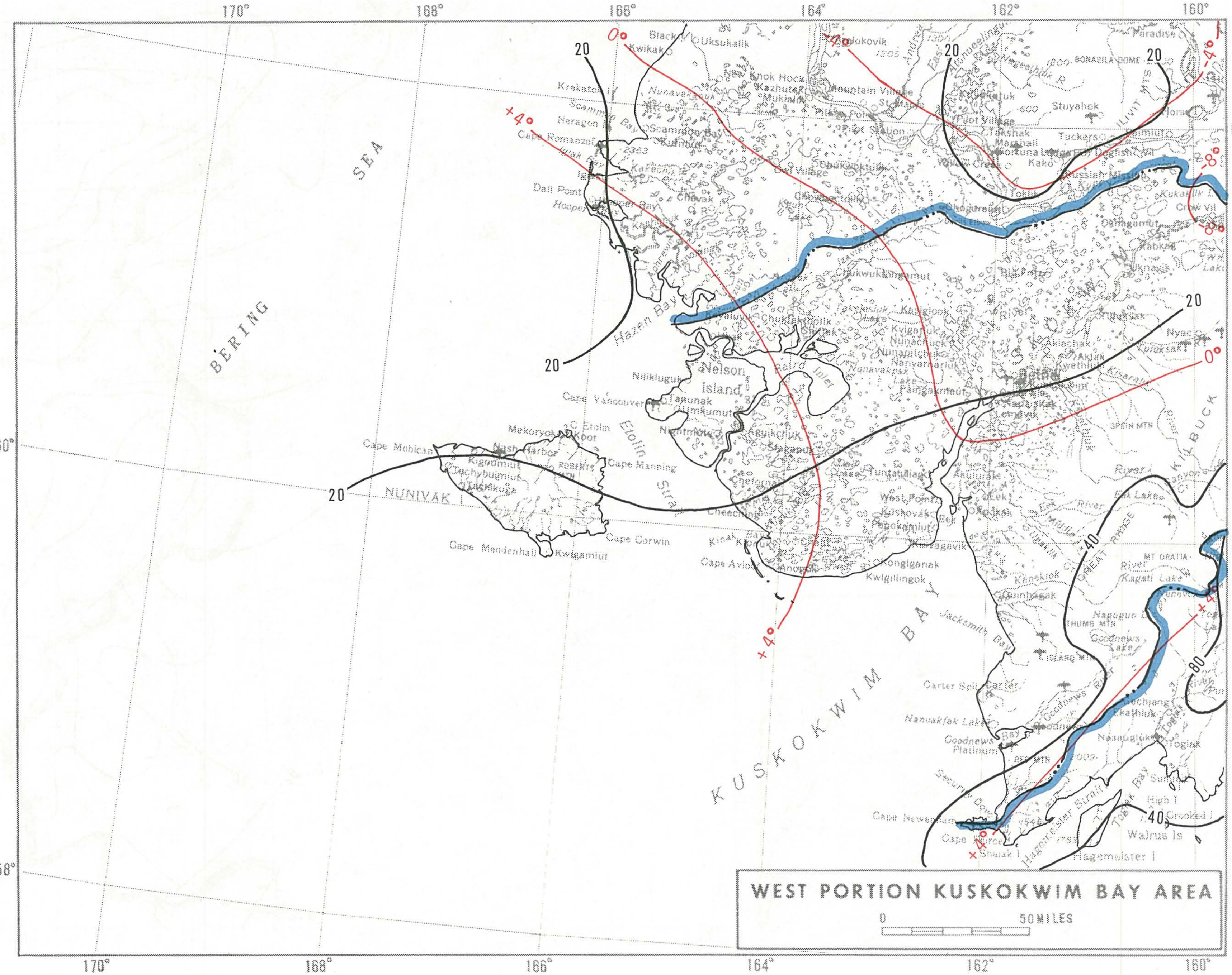


Figure 4-12a.--Mean annual precipitation and mean minimum January temperatures in west portion Kuskokwim Bay area.

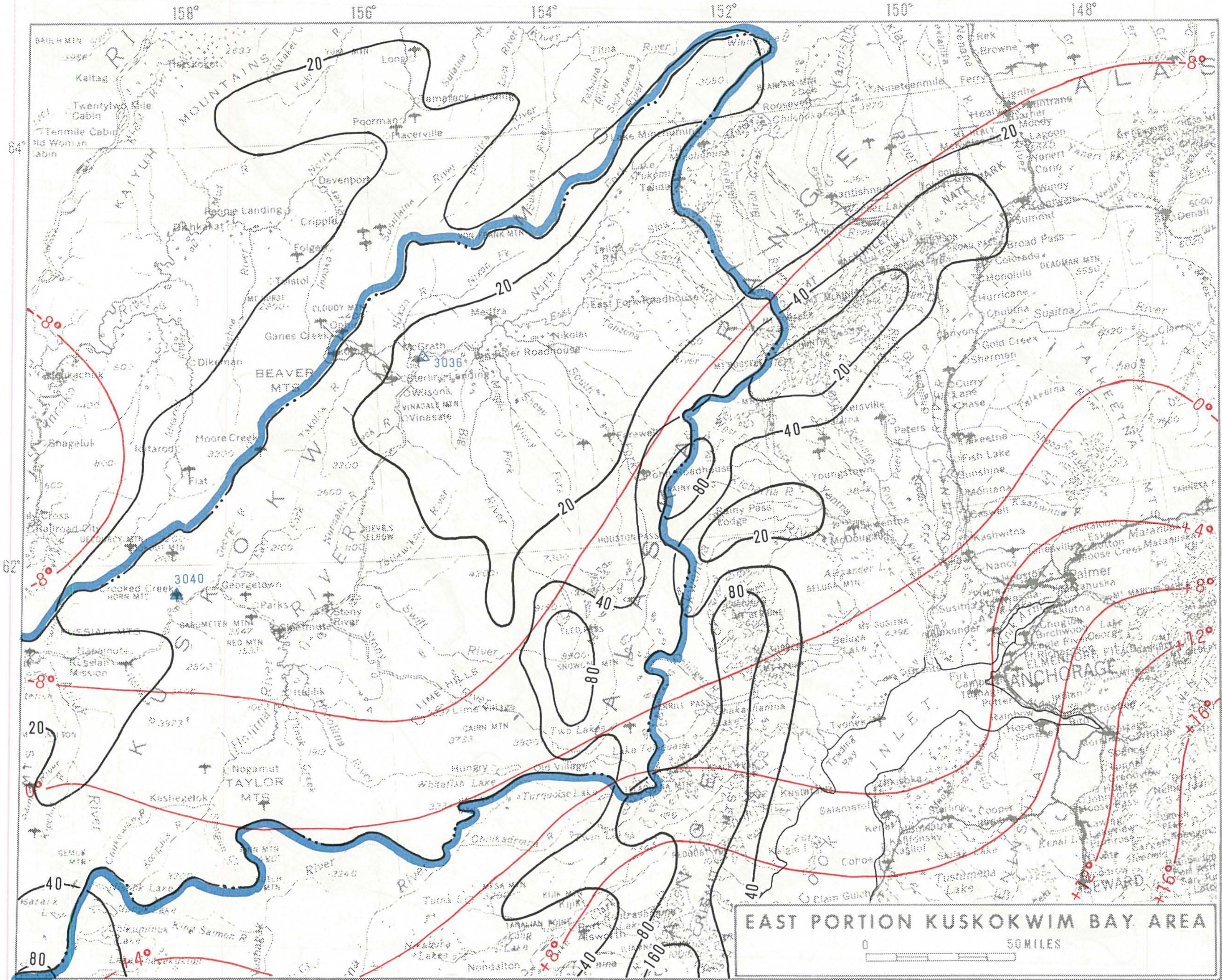
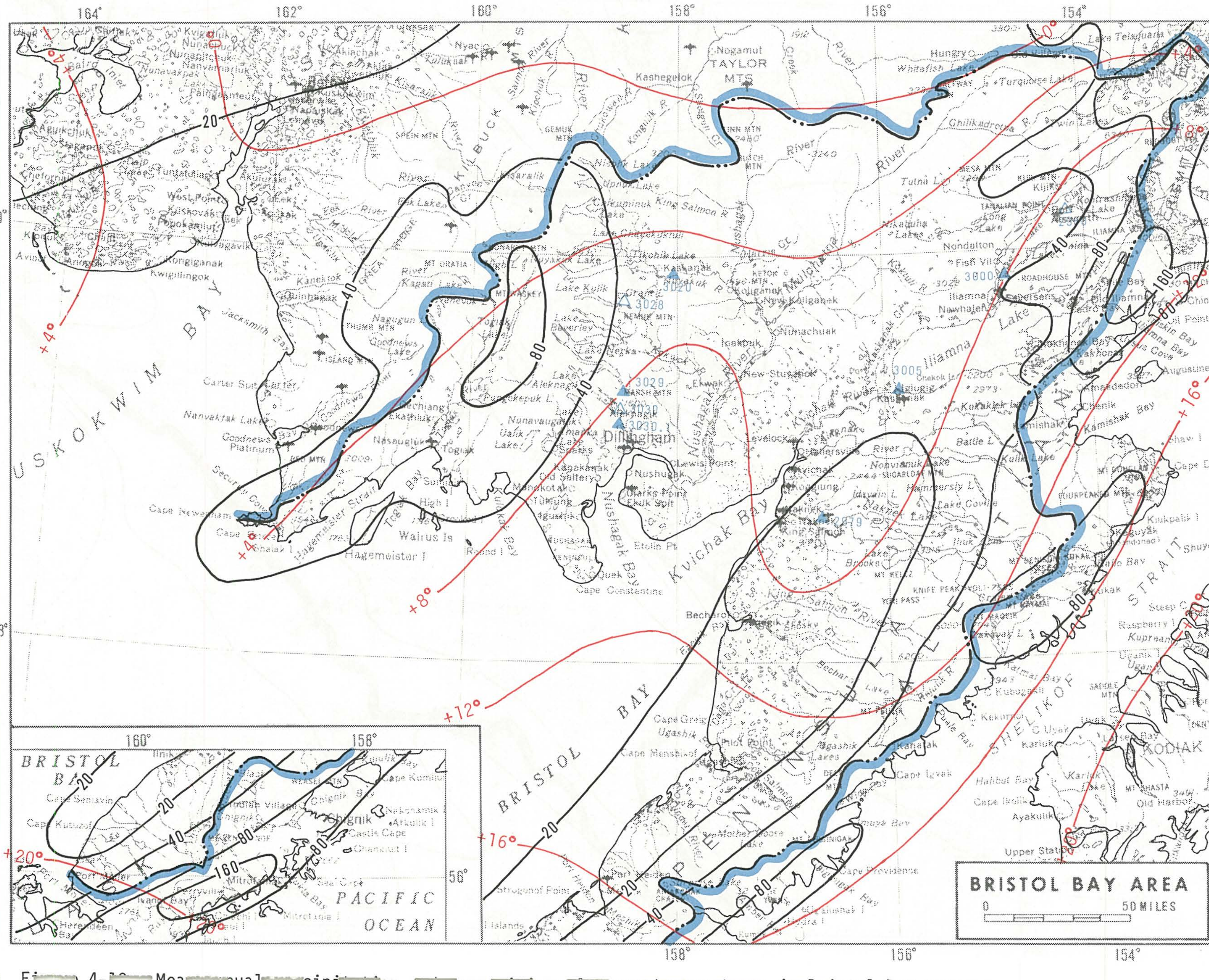


Figure 4-12b.--Mean annual precipitation and mean minimum January temperatures in east portion Kuskokwim Bay area.



Fi[illegible]e 4-1[illegible]Mea[illegible]nual [illegible]cipit[illegible]on a[illegible]ean [illegible]mum [illegible]ary [illegible]era[illegible]s in B[illegible]istol Ba[illegible] area

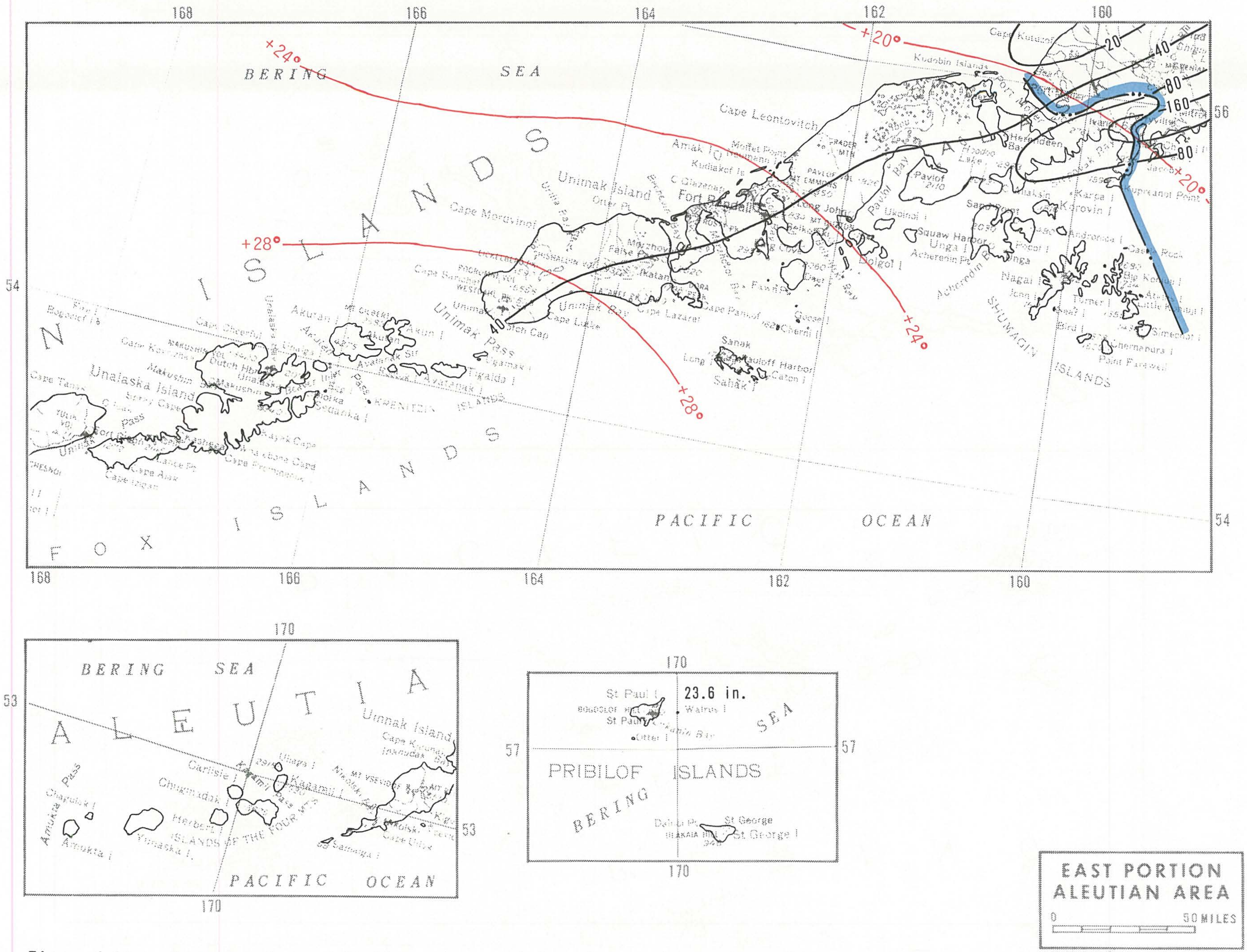


Figure 4-14a.--Mean annual precipitation and mean minimum January temperatures in east portion Aleutian area.

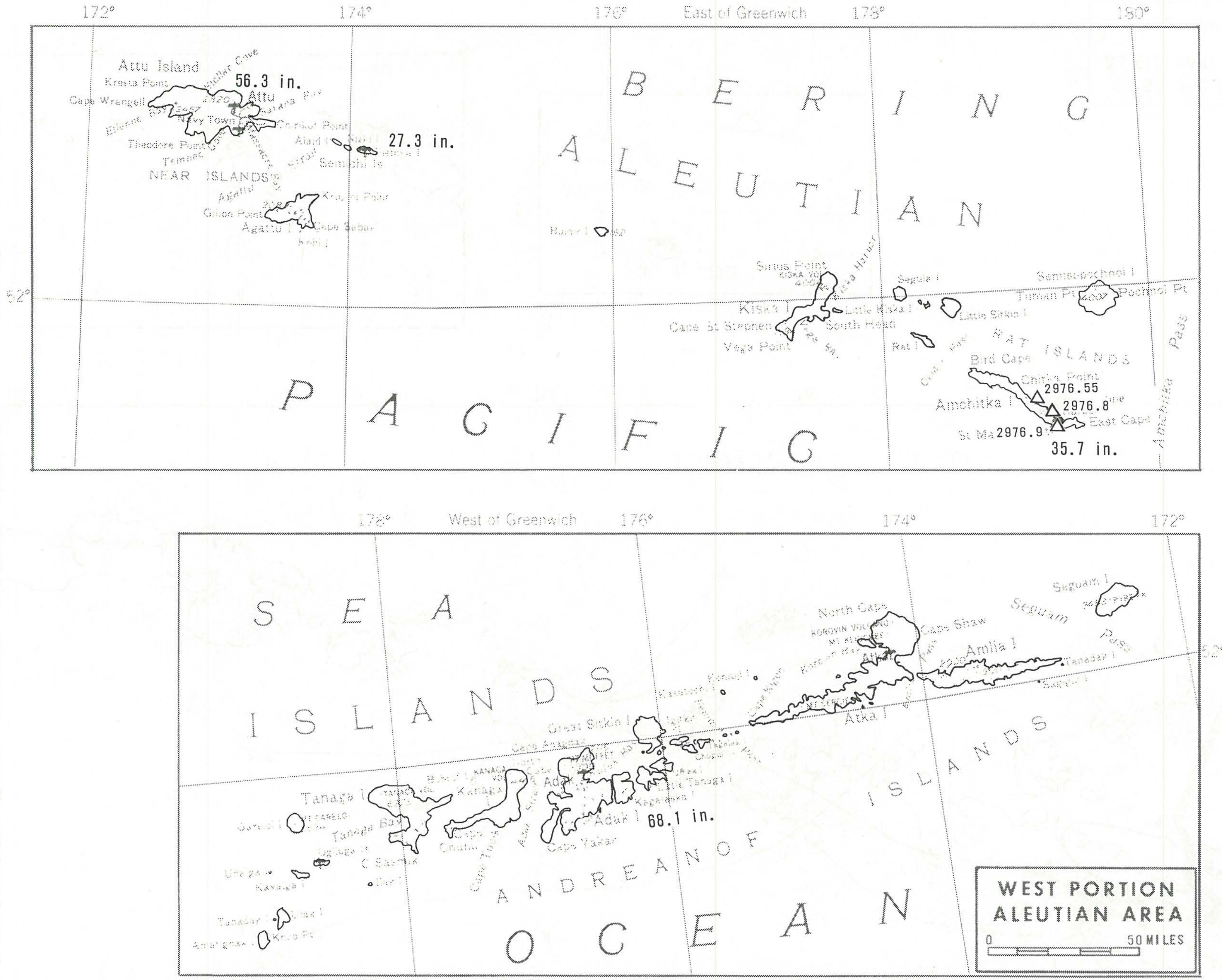


Figure 4-14b.--Mean annual precipitation and mean minimum January temperatures in west portion Aleutian area.

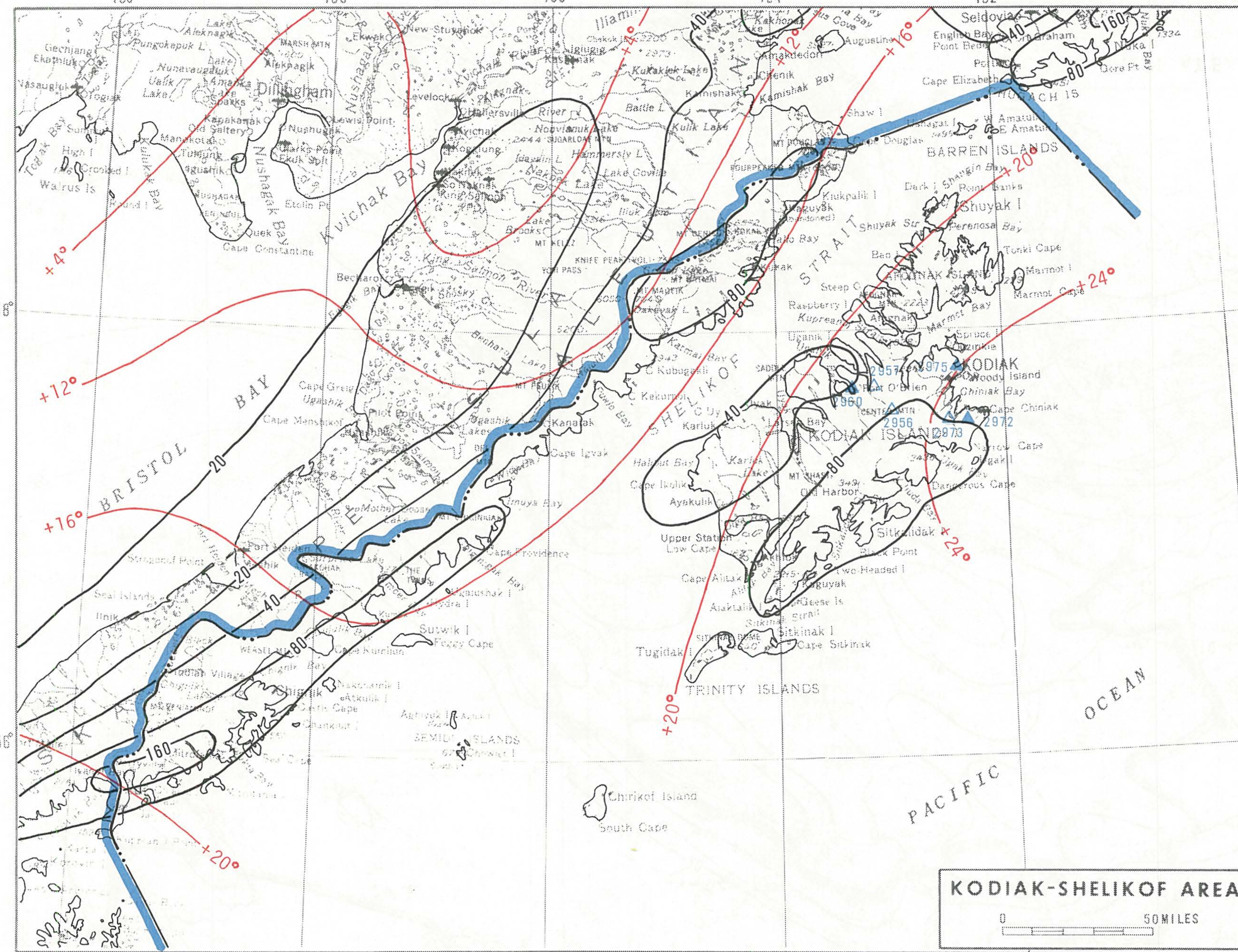


Figure 4-15.--Mean annual precipitation and mean minimum January temperatures in Kodiak-Shelikof area.

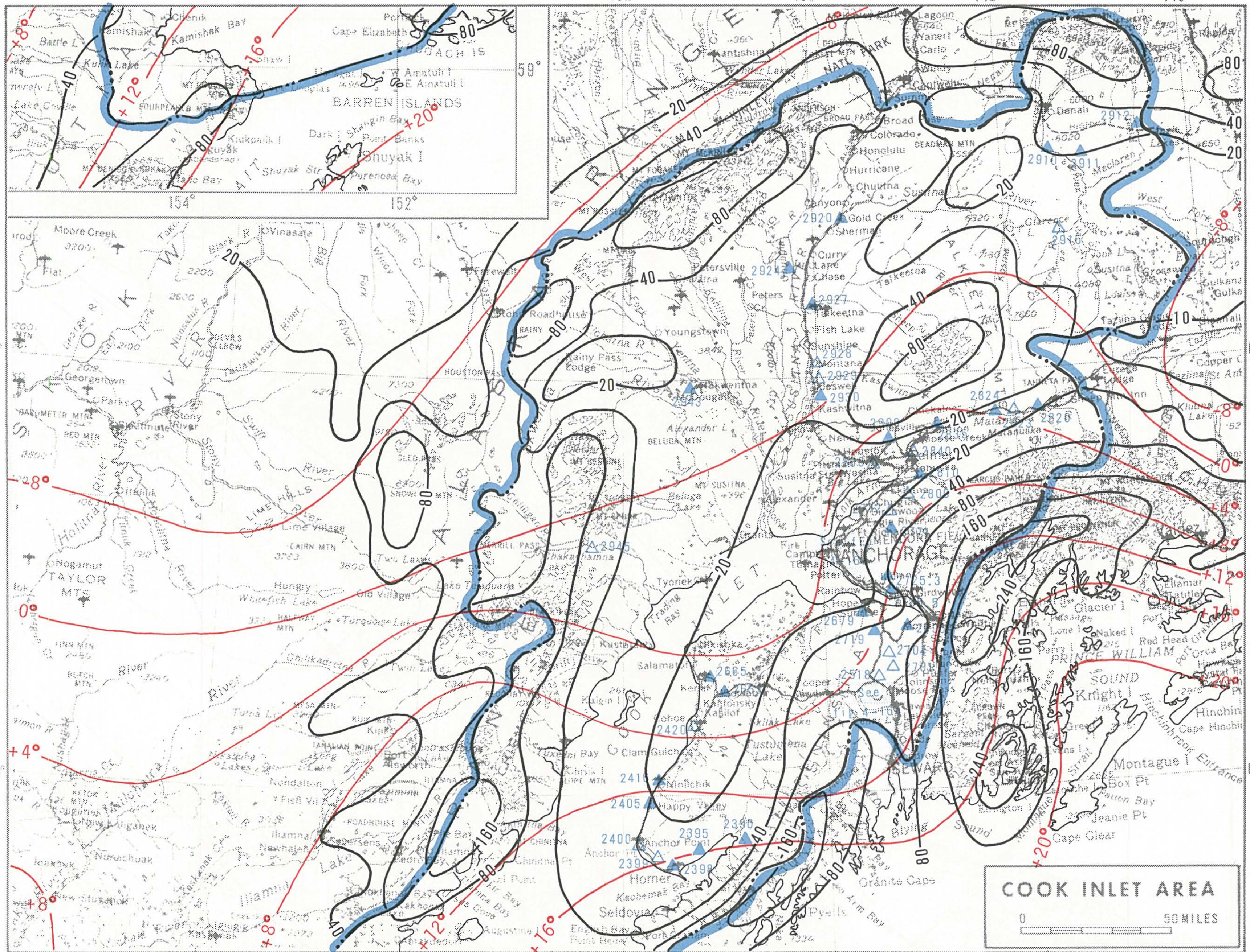


Figure 4-16.--Mean annual precipitation and mean minimum January temperatures in Cook Inlet area.

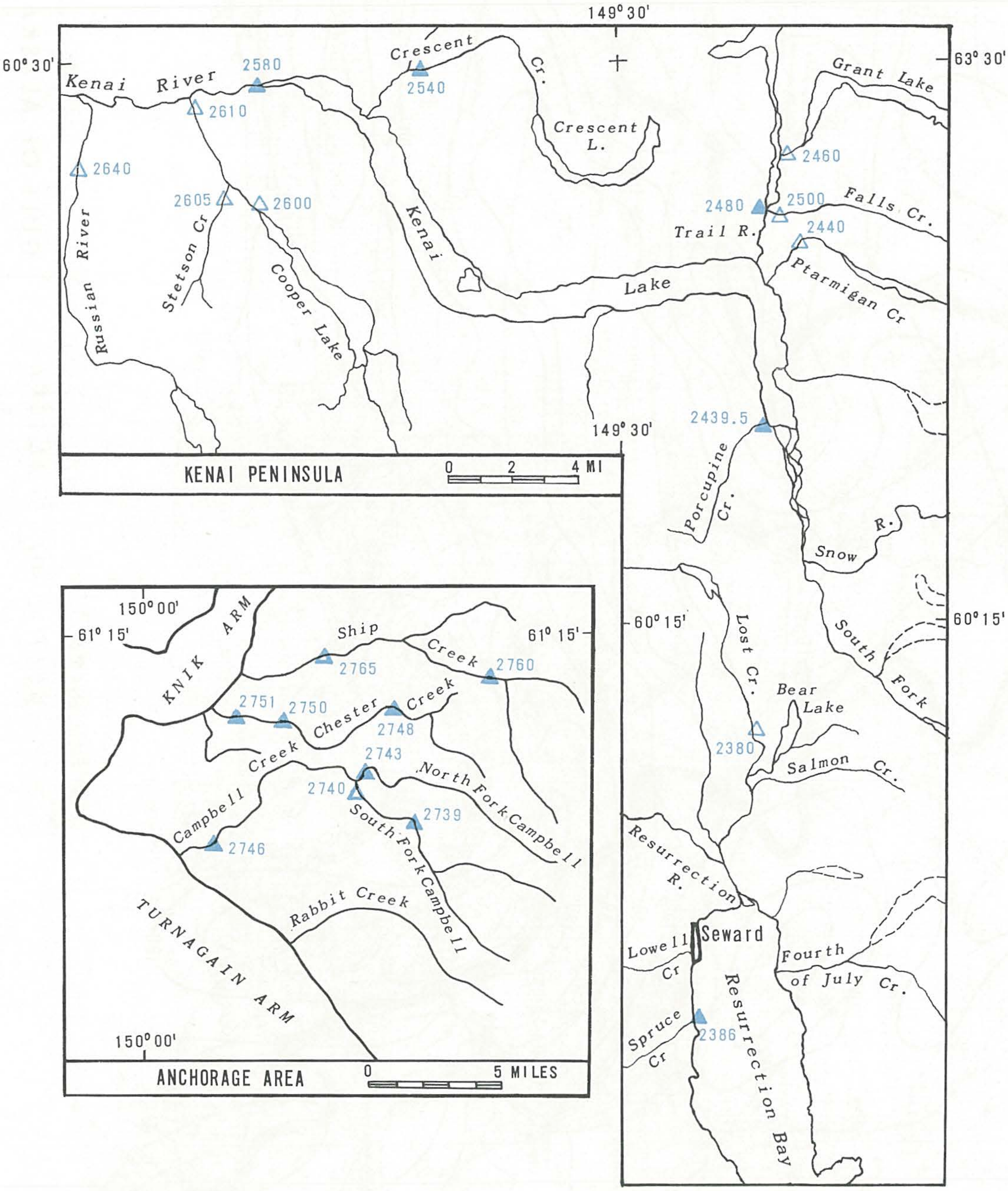


Figure 4-16a.--Details for figure 4-16.

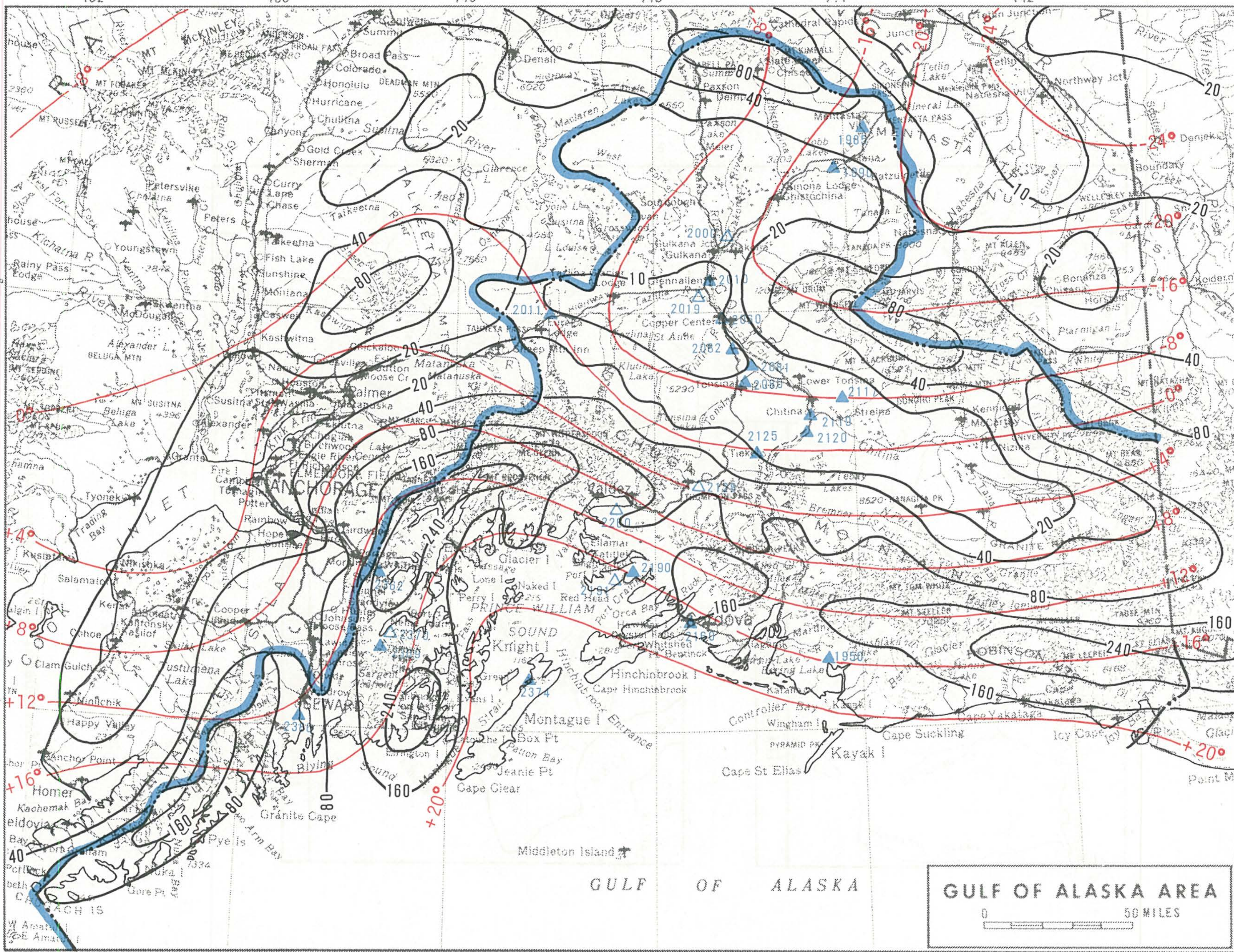


Figure 4-17. Mean annual precipitation and mean minimum January temperatures in Gulf of Alaska area.

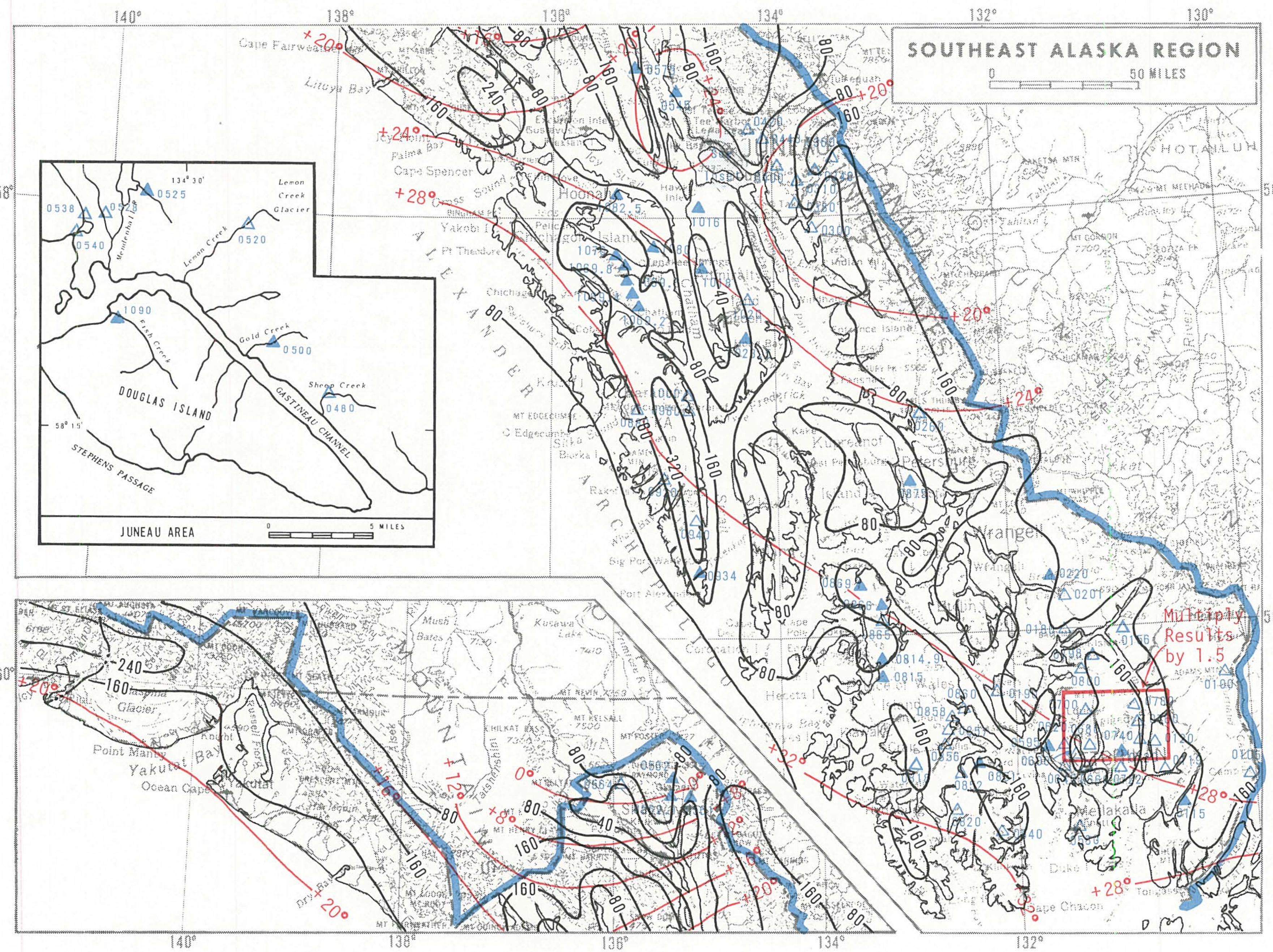


Figure 4-18.--Mean annual precipitation and mean minimum January temperatures in southeast Alaska. Anomolous peak discharge area outlined in red.