STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

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Report of Investigations 88-17

# FLOOD FREQUENCY ESTIMATION FOR ALASKA

By
D.L. Kane and J.R. Janowicz

**STATE OF ALASKA**
**Department of Natural Resources**
**DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS**

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# FLOOD FREQUENCY ESTIMATION FOR ALASKA

By
D.L. Kane[1] and J.R. Janowicz[1]

## ABSTRACT

Alaska's network of gaging stations is sparse and the length of record in most cases is very short; estimating flood frequency on such limited data is difficult and frustrating. Most stations in the network are centered around the three major population centers: Anchorage, Fairbanks, and Juneau. Using various hydrologic parameters, we performed statistical analysis of the data to partition the state into hydrologic regions. The analysis indicated three distinct regions, referred to as Southern Coast, South Central, and North of the Alaska Range (which includes the upper Copper River drainage). Flood frequency curves of various return periods were developed for each area. Within an area, floods of a calculated return period were plotted against drainage area. Then a curve of best fit was made through the data, including a 95 percent upper confidence curve. Equations that define these curves are given as a function of drainage area for the three areas.

## INTRODUCTION

The quality of flood frequency estimates in sparse data regions is often inadequate for the design of engineering structures. This is generally the case in Alaska, where streamflow data were not seriously collected until the late 1940s and 1950s. In addition, the density of stream gaging stations in Alaska is quite low except around the populated areas of Juneau, Anchorage, and Fairbanks. Estimates for small watersheds, in particular, are poor because few have been gaged continuously. Many of these small basins have crest gages instead of continuous water-level recorders.

This report provides a method for making flood estimates for three hydrologic regions of the state for various return periods. The philosophy behind this method was to keep the procedure simple and yet as reliable and accurate as possible. For input, the method requires simply drainage area and desired return period. For each of the three hydrologic regions of the state and for the selected return period, graphs of flood flow (Q, cfs) and area (A, $mi^2$) were developed from results of our flood frequency analyses. Data used in the analysis were collected by the U.S. Geological Survey through 1980 at both continuous recording stations and crest gages.

## PROCEDURE FOR DEVELOPING THE METHOD

Our objective was to develop a technique for determining peak design flows from ungaged watersheds throughout the state for various return periods. Basically, flood frequency analyses were carried out for all U.S. Geological Survey hydrometric stations in Alaska with at least five years of record. Estimates of peak design flows for selected return periods were plotted against area, and least squares curves were fitted to the data, yielding functional relationships. Two major intermediate steps were performed, however, before this task was complete. We divided the state into homogeneous hydrologic units and then determined which theoretical probability distribution should be used.

To identify similar hydrologic regions within the state, multiple discriminant analyses were performed on various hydrologic parameters. This statistical technique distinguishes between two or more distinct groups of data. We initially selected a set of representative characteristics which were expected to differ among groups. These values were then combined in a manner analogous to multiple regression analysis to maximize the separation among groups so they were as statistically distinct as possible. This technique relies on a one-way analysis of variance to select the most appropriate variables.

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Discriminating variables included sample statistics of the instantaneous annual flood series that was divided by drainage area and a timing parameter. Sample statistics of the instantaneous annual flood series consisted of the mean, standard deviation, coefficient of variation, skew and kurtosis. The timing parameter represented the arithmetic mean of the dates of the instantaneous annual flow events expressed in months (for example, 10 June would be 6.33).

A common base period was selected for this analysis. Inspection of available historic data showed the 10-yr period from 1965 to 1974 to contain the largest data set. Basins greater than 10,000 $mi^2$ were eliminated because they often include more than one physiographic zone. Similarly, basins with large areas of lakes and glaciers (10 percent and 20 percent, respectively) were omitted. After station elimination, 166 data sets were available for analysis.

Three distinct hydrologic regions were identified in the state: Southern Coast, South Central, and North of Alaska Range (fig. 1). Some drainages south of the Alaska Range are included in the group specified as north of the Alaska Range; for example, the drainages around Glennallen and Copper Center. These drainages are very similar hydrologically to basins north of the Alaska Range because of the orographic effects of surrounding mountains. Four variables contributed significantly to the discrimination: timing parameter, mean, coefficient of variation, and standard deviation. Other hydrologic units obviously exist, but, because of the paucity of data, these regions could not be identified statistically. (For example, the area North of the Alaska Range could probably be broken into several regions.)

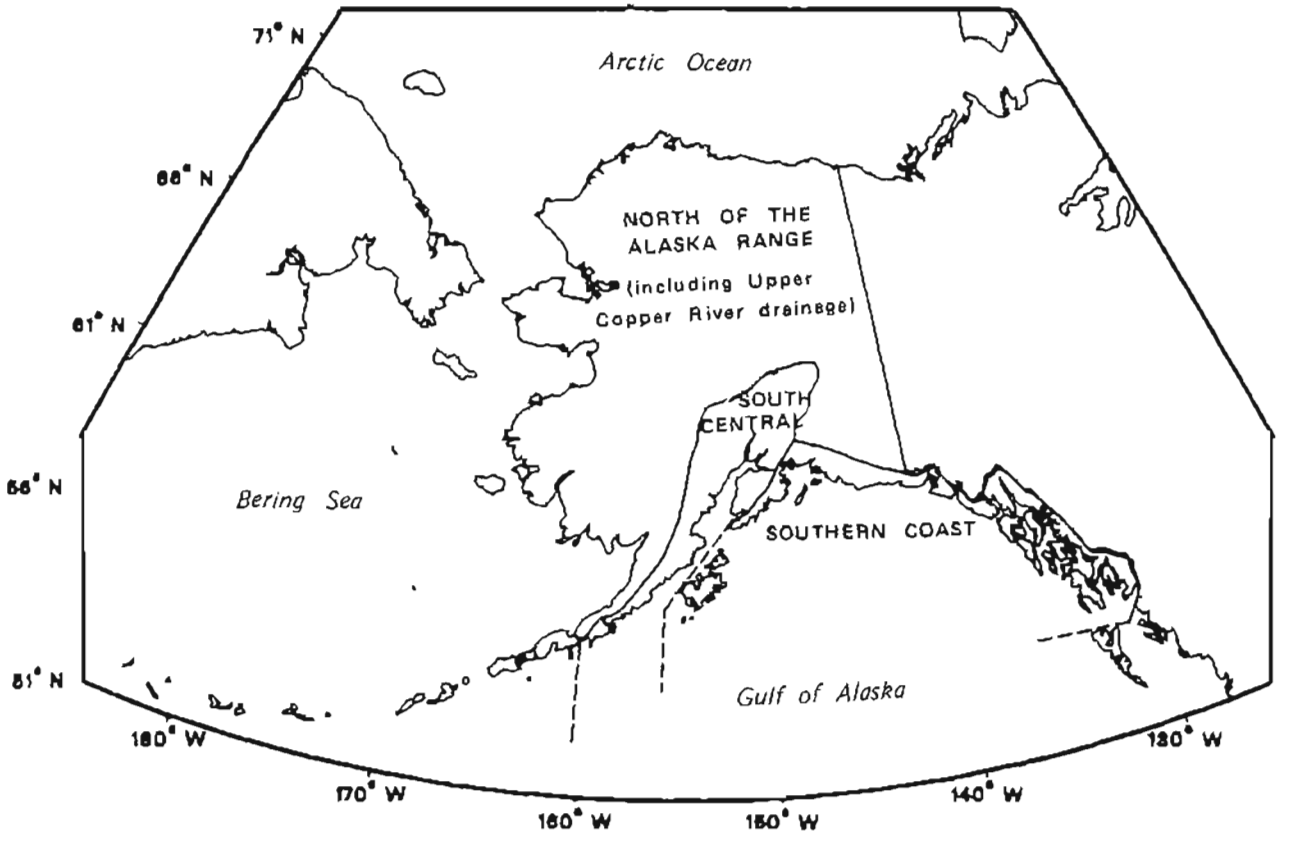


Figure 1. The three statistically based hydrologic regions of Alaska: Southern Coast, South Central, and North of the Alaska Range.

Considerable time was spent deciding which theoretical probability distribution should be used. Initially, analyses were carried out using four probability distributions: Gumbel I (extreme value); two-parameter log normal; three-parameter log normal; and log Pearson III. Presently, no criteria exist to guide the user in the selection of a flood frequency distribution. The U.S. Water Resources Council in 1966 (Benson, 1968) recommended that the log Pearson III method be used for administrative, not theoretical, reasons. In our study, flood frequency estimates were obtained for these four distributions using a revised computer program initially developed by Environment Canada, Inland Water Directorate (Condie and others, 1975).

For single station analysis, U.S. Geological Survey data current to 1980 were used. Initially, all streams with 5 yr of record were considered for analysis; but it became evident that approximately 10 yr of data were required to yield reasonable estimates. Stream data considered for analysis are shown in appendix A, along with flood estimates based on the two-parameter log normal method. Records were not screened for mixed populations (snowmelt vs. rain-generated floods). Outliers, which are flow data deviating from the general trend, were not omitted. Flood peaks produced by ice jams or glacier outburst floods were not included in the analysis.

In the plots that accompany this report, the Weibull plotting formula was used:

$$R = (n + 1)/m$$

where

R = return period in years,

n = total number of events,

m = order of each event (largest event = 1).

Recently, use of this equation was criticized because it was originally developed for a uniform distribution and may be somewhat biased when used for a normal distribution (Adamowski, 1981). The flood estimates for each station are not altered by the use of this equation; however, the goodness of fit criterion used to select the most appropriate probability distribution may be dependent on the plotting formula. We fitted the distributions to the sample data by the method of maximum likelihood whenever possible. This method will fail to yield estimates in some instances such as small sample sizes, in which case a moment solution was obtained.

A test was developed to evaluate the goodness of fit of the four theoretical distributions to the actual distributions. There is little agreement on the selection of a particular distribution for the general application to a sample set, and no rigorous discriminating procedure is available. Deviations between observed and estimated flood events are the result of two main sources of error. The sample data may not be representative of the population because of inadequate record length, or the sample data may not conform adequately to the assumed theoretical probability distribution. Of the classical methods, the asymptotic standard error of estimate represents the first source of error, and the Kolmogorov-Smirnov test and the least square standard error represent the second source of error. A cumulative goodness of fit index was developed using all three tests.

In summary, the asymptotic standard error of estimate provides a measure of the variance or dispersion of the estimate for a flood event occurring with a given return period T. This statistic, primarily a function of sample size, is important because confidence intervals are derived directly from the standard error (Hardison, 1969). We used a return period of 20 yr in our analysis.

The Kolmogorov-Smirnov test yields a test value which represents the maximum absolute deviation between theoretical cumulative distribution and sample cumulative density function. This statistic is compared with a critical value. If the critical value is exceeded, the sample data do not conform to the theoretical distribution. Unfortunately, this test is not a powerful discriminator. In our case for 299 data series, the critical value was exceeded only five times. The results of this test were ranked for each probability distribution without reference to a critical value.

The least squares standard error of estimate provides the sum of square of differences between observed and computed magnitudes. Interpolation between adjacent data points is necessary to determine the magnitude of a flood event at a given return period. This creates a problem, being a form of a distribution itself which, in turn, is compared with a theoretical distribution (Kite, 1977).

Using the results of these three tests, we developed a goodness of fit index. Each of the three tests (asymptotic standard error of estimate for 20-yr flood event, Kolmogorov-Smirnov test, and least squares standard error of estimate) was applied to the four theoretical probability distributions. Each probability distribution was then ranked, applying the respective tests. An average score was obtained by using the equation:

$$\bar{X} = \frac{\sum_{i=1}^{k} N_i \bar{R}_i}{\sum_{i=1}^{k} N_i}$$

where

$\bar{X}$ = average score of each distribution for each hydrologic region,

$i$ = number assigned to each station within hydrologic region,

$N_i$ = number of observations per sample (number of annual floods measured for each gaging station),

$\bar{R}_i$ = average rank of the three tests for each station (i).

The overall score in this equation is weighted according to the length of record at each station. This goodness fit test was carried out for the state as a whole, as well as for each of the three identified hydrologic regions within the state. Results (presented in table 1) indicate that the two-parameter log normal distribution provides the best fit overall.

Table 1. Goodness of fit indices for various probability distributions statewide and by region.

| Distribution | Entire State | Southern Coast region | South Central region | North of Alaska Range |
|---|---|---|---|---|
| 2-parameter log normal | 2.34 | 2.37 | 2.33 | 2.39 |
| 3-parameter log normal | 2.56 | 2.41 | 2.52 | 2.51 |
| Extremal Type I | 2.41 | 2.48 | 2.50 | 2.40 |
| Log Pearson Type III | 2.73 | 2.75 | 2.67 | 2.76 |

## RESULTS

Using the techniques described earlier and working under the limitations of the regional identification, we developed flood estimation curves for selected return periods and for the three identified hydrologic regions. The only variable required to make a flood estimate is drainage area. The determination of what hydrologic region the basin represents must also be made. Figure 1, showing the hydrologic regions, can assist this process, along with U.S. Geological Survey topographic maps.

The results from the two-parameter log normal frequency analysis and the results from the discriminant analysis were used to plot flood estimates against drainage area for selected return periods (2, 5, 10, 20, 50, and 100 yr) and for the three identified hydrologic regions. A log relationship was then fitted to the data. The coefficient of determination ($r^2$) is shown on each graph (figs. 2-4), and it generally decreases as the magnitude of the return period increases. An equivalent exponential form of the previous equation is also presented.

On each graph (figs. 2-4), the upper 95 percent confidence limit is shown; almost all of the data fall below this limit. There may be cases where the designer would be somewhat uncertain of making an estimate from the curve of best fit. To be more conservative, the upper 95 percent confidence interval curve could be used, or some intermediate value. For example, detailed examination of the data for north of the Alaska Range suggests that many data points that plot above the curve are for basins north of the Brooks Range. This is also true for predominantly high elevation basins. In these two cases, the user may want to pick a more conservative estimate.

The user can also refine the estimate by examining the results of the flood frequency analysis for streams nearby the one of interest. Flood frequency estimates for 2-, 5-, 10-, 20-, 50- and 100-yr return periods, along with drainage area, record length, mean annual flood, and maximum flood of record, are shown in appendix A for all gaged streams in Alaska. Tables 2 and 3 show equations for estimating flood magnitude for various return periods in the three hydrologic regions; table 2 presents a set of equations of best fit, and table 3 equations predict the upper 95 percent confidence limit values.

Table 2. Flood estimate equations, based on fitted curve, for the three hydrologic regions of Alaska.

| | | |
|---|---|---|
| | SOUTHERN COAST | |
| 2 yr | Log Q = 2.235 + (0.811 * Log A) | or Q = e$^{(5.146 + 0.811 \text{ Ln A})}$ |
| 5 yr | Log Q = 2.366 + (0.815 * Log A) | or Q = e$^{(5.448 + 0.815 \text{ Ln A})}$ |
| 10 yr | Log Q = 2.434 + (0.818 * Log A) | or Q = e$^{(5.604 + 0.818 \text{ Ln A})}$ |
| 20 yr | Log Q = 2.491 + (0.820 * Log A) | or Q = e$^{(5.736 + 0.820 \text{ Ln A})}$ |
| 50 yr | Log Q = 2.555 + (0.822 * Log A) | or Q = e$^{(5.833 + 0.822 \text{ Ln A})}$ |
| 100 yr | Log Q = 2.597 + (0.823 * Log A) | or Q = e$^{(5.980 + 0.823 \text{ Ln A})}$ |
| | SOUTH CENTRAL | |
| 2 yr | Log Q = 0.928 + (1.046 * Log A) | or Q = e$^{(2.137 + 1.046 \text{ Ln A})}$ |
| 5 yr | Log Q = 1.179 + (1.000 * Log A) | or Q = e$^{(2.715 + 1.000 \text{ Ln A})}$ |
| 10 yr | Log Q = 1.310 + (0.976 * Log A) | or Q = e$^{(3.016 + 0.976 \text{ Ln A})}$ |
| 20 yr | Log Q = 1.417 + (0.956 * Log A) | or Q = e$^{(3.263 + 0.956 \text{ Ln A})}$ |
| 50 yr | Log Q = 1.538 + (0.934 * Log A) | or Q = e$^{(3.541 + 0.934 \text{ Ln A})}$ |
| 100 yr | Log Q = 1.619 + (0.919 * Log A) | or Q = e$^{(3.728 + 0.919 \text{ Ln A})}$ |
| | NORTH OF THE ALASKA RANGE | |
| 2 yr | Log Q = 1.198 + (0.867 * Log A) | or Q = e$^{(2.758 + 0.867 \text{ Ln A})}$ |
| 5 yr | Log Q = 1.554 + (0.810 * Log A) | or Q = e$^{(3.578 + 0.810 \text{ Ln A})}$ |
| 10 yr | Log Q = 1.739 + (0.781 * Log A) | or Q = e$^{(4.004 + 0.781 \text{ Ln A})}$ |
| 20 yr | Log Q = 1.891 + (0.757 * Log A) | or Q = e$^{(4.354 + 0.757 \text{ Ln A})}$ |
| 50 yr | Log Q = 2.062 + (0.730 * Log A) | or Q = e$^{(4.748 + 0.730 \text{ Ln A})}$ |
| 100 yr | Log Q = 2.176 + (0.712 * Log A) | or Q = e$^{(5.010 + 0.712 \text{ Ln A})}$ |

*Log = Log to the base 10.
Ln = Log to the base e.

Table 3. Fitted equations of 95 percent confidence interval for flood estimation in the three hydrologic regions of Alaska.

| | | |
|---|---|---|
| | **SOUTHERN COAST** | |
| 2 yr | Log Q = 2.657 + (0.811 * Log A) | or Q = e$^{(6.118 + 0.811 \text{ Ln A})}$ |
| 5 yr | Log Q = 2.785 + (0.816 * Log A) | or Q = e$^{(6.413 + 0.816 \text{ Ln A})}$ |
| 10 yr | Log Q = 2.863 + (0.818 * Log A) | or Q = e$^{(6.592 + 0.818 \text{ Ln A})}$ |
| 20 yr | Log Q = 2.933 + (0.820 * Log A) | or Q = e$^{(6.754 + 0.820 \text{ Ln A})}$ |
| 50 yr | Log Q = 3.017 + (0.822 * Log A) | or Q = e$^{(6.947 + 0.822 \text{ Ln A})}$ |
| 100 yr | Log Q = 3.076 + (0.824 * Log A) | or Q = e$^{(7.083 + 0.824 \text{ Ln A})}$ |
| | **SOUTH CENTRAL** | |
| 2 yr | Log Q = 1.598 + (1.049 * Log A) | or Q = e$^{(3.680 + 1.049 \text{ Ln A})}$ |
| 5 yr | Log Q = 1.854 + (1.003 * Log A) | or Q = e$^{(4.268 + 1.003 \text{ Ln A})}$ |
| 10 yr | Log Q = 1.995 + (0.979 * Log A) | or Q = e$^{(4.594 + 0.979 \text{ Ln A})}$ |
| 20 yr | Log Q = 2.116 + (0.960 * Log A) | or Q = e$^{(4.872 + 0.960 \text{ Ln A})}$ |
| 50 yr | Log Q = 2.257 + (0.938 * Log A) | or Q = e$^{(5.197 + 0.938 \text{ Ln A})}$ |
| 100 yr | Log Q = 2.353 + (0.923 * Log A) | or Q = e$^{(5.418 + 0.923 \text{ Ln A})}$ |
| | **NORTH OF THE ALASKA RANGE** | |
| 2 yr | Log Q = 1.987 + (0.868 * Log A) | or Q = e$^{(4.575 + 0.868 \text{ Ln A})}$ |
| 5 yr | Log Q = 2.317 + (0.812 * Log A) | or Q = e$^{(5.335 + 0.812 \text{ Ln A})}$ |
| 10 yr | Log Q = 2.519 + (0.782 * Log A) | or Q = e$^{(5.800 + 0.782 \text{ Ln A})}$ |
| 20 yr | Log Q = 2.700 + (0.759 * Log A) | or Q = e$^{(6.217 + 0.759 \text{ Ln A})}$ |
| 50 yr | Log Q = 2.919 + (0.732 * Log A) | or Q = e$^{(6.721 + 0.732 \text{ Ln A})}$ |
| 100 yr | Log Q = 3.072 + (0.714 * Log A) | or Q = e$^{(7.074 + 0.714 \text{ Ln A})}$ |

*Log = Log to the base 10.
Ln = Log to the base e.

Example Problem

Assume that you have a drainage basin of 20 $mi^2$ located north of the Alaska Range and you want to estimate the 10-yr flood. The appropriate equation to use from table 2 is:

Log Q = 1.739 + 0.781 Log A
Q = flow, cfs
A = area, $mi^2$

Log Q = 1.739 + 0.781 (Log 20)
Log 20 = 1.301 and Log Q = 2.755
$Q_{10}$ = 569 cfs

If one wanted to select a more conservative value based on additional information, one could use the equation for the upper 95 percent confidence interval (table 3):

Log Q = 2.519 + 0.782 Log A
$Q_{10}$ = 3,439 cfs (at 95 percent interval)

It should be noted that, because of the scale on the log-log plots, it is very difficult to directly and accurately determine Q graphically. The graphs are presented to give the user a sense of the relationship between the flood estimate and the fitted curve.

## ACKNOWLEDGMENTS

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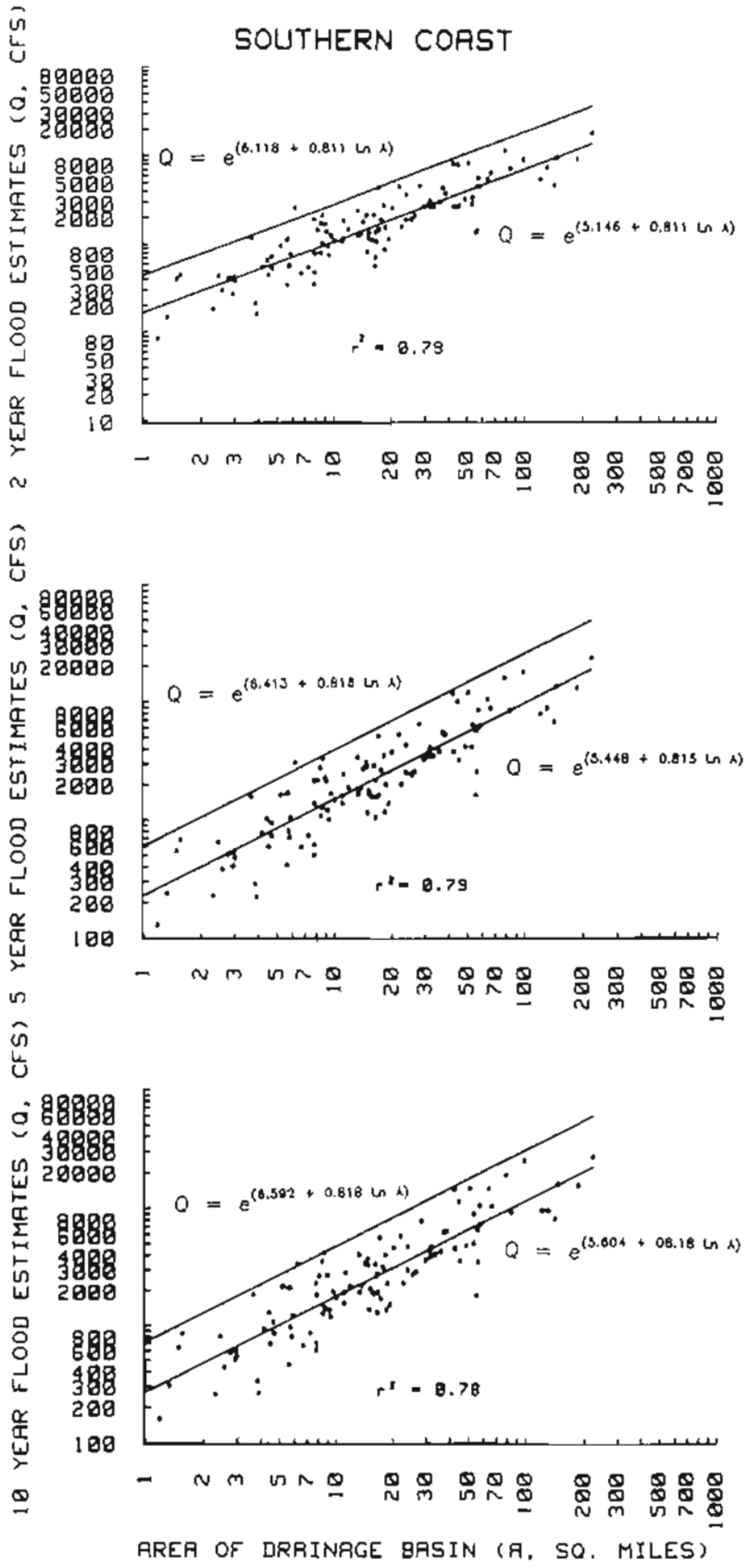
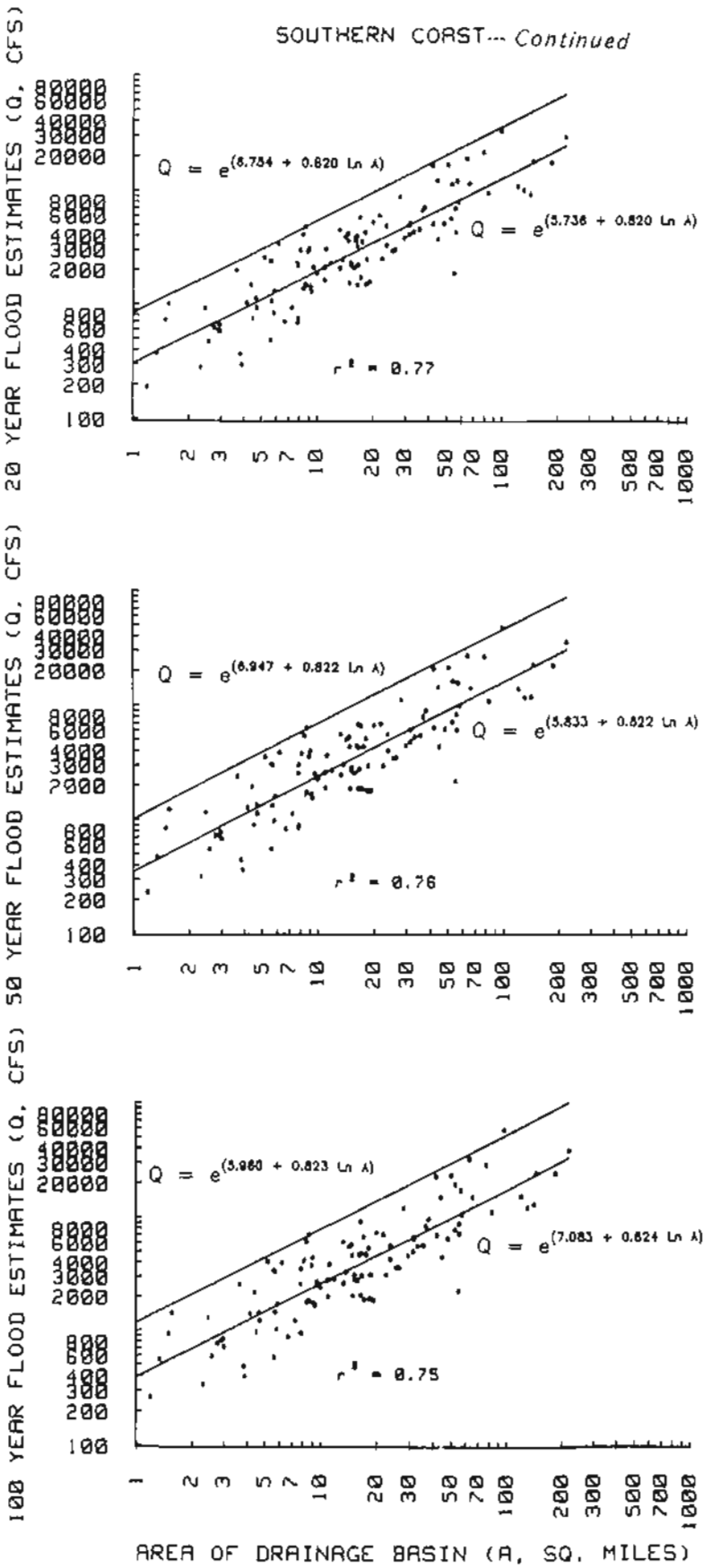



Figure 2. Flood frequency estimates for southern coast region of Alaska.


20 YEAR FLOOD ESTIMATES (Q, CFS)
Q = e^(5.734 + 0.820 Ln A)
Q = e^(5.736 + 0.820 Ln A)
r² = 0.77
50 YEAR FLOOD ESTIMATES (Q, CFS)
Q = e^(6.947 + 0.822 Ln A)
Q = e^(5.833 + 0.822 Ln A)
r² = 0.76
100 YEAR FLOOD ESTIMATES (Q, CFS)
Q = e^(5.960 + 0.823 Ln A)
Q = e^(7.083 + 0.824 Ln A)
r² = 0.75
AREA OF DRAINAGE BASIN (A, SQ. MILES)

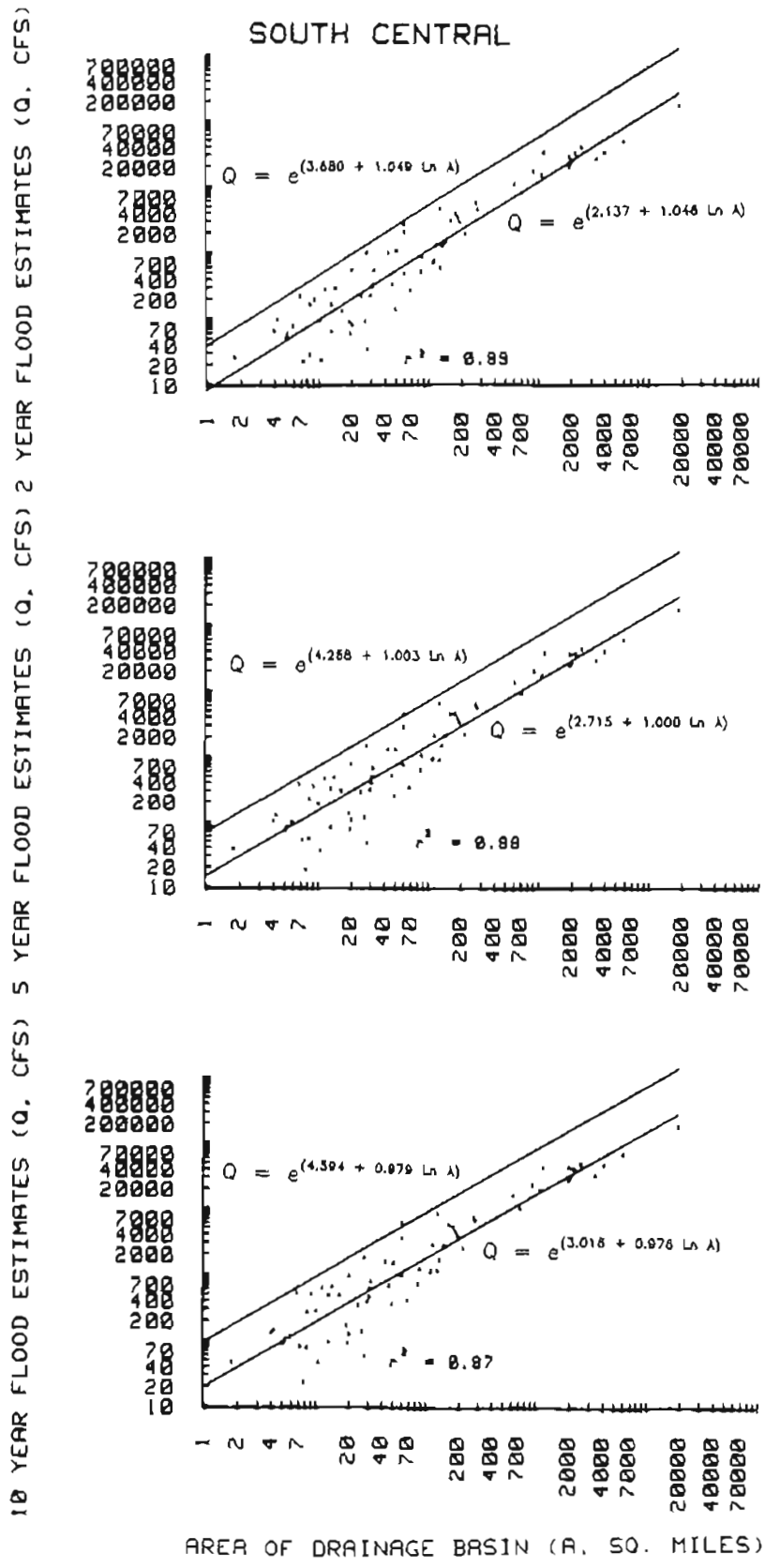
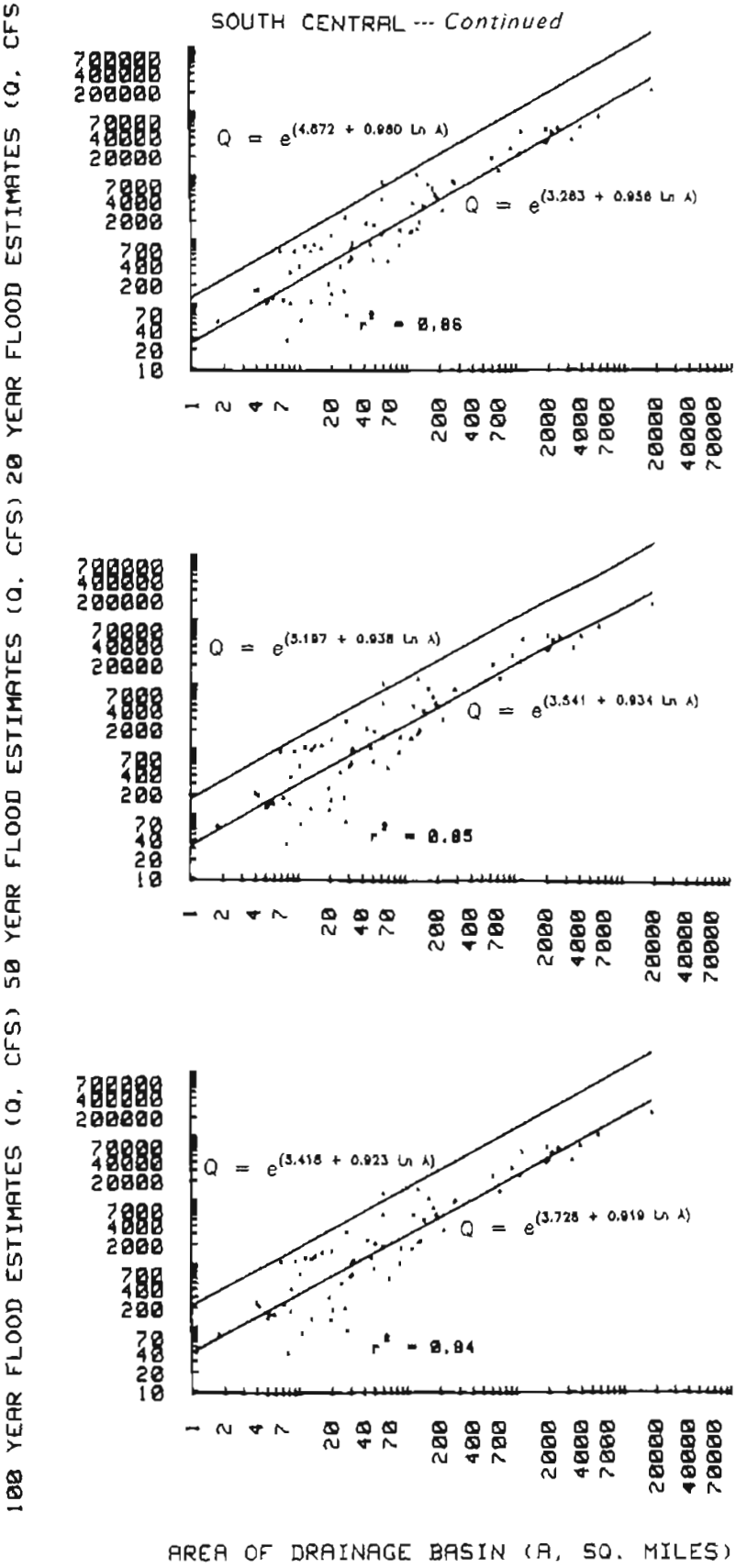



Figure 3. Flood frequency estimates for south central region of Alaska.

SOUTH CENTRAL --- *Continued*



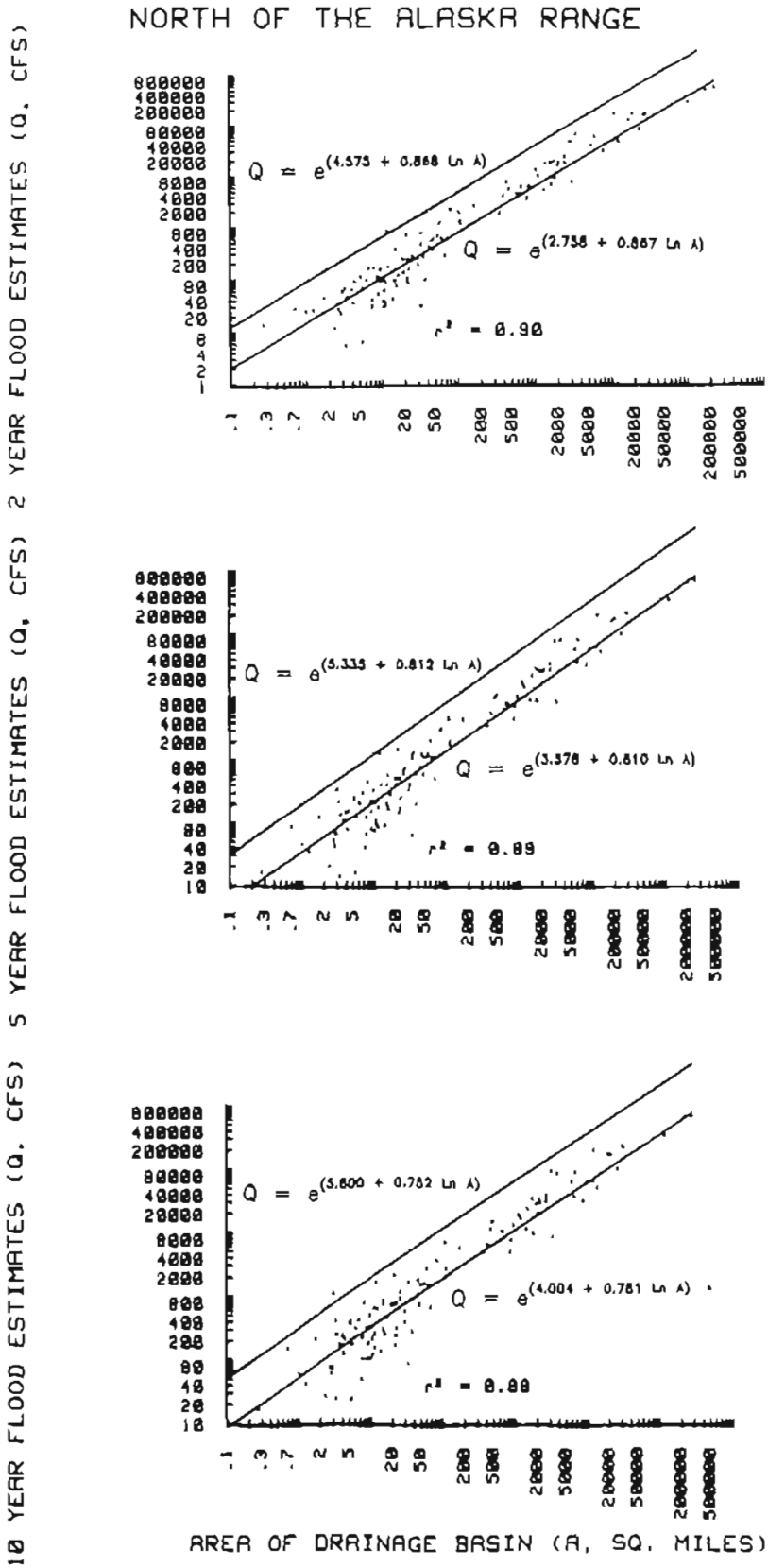
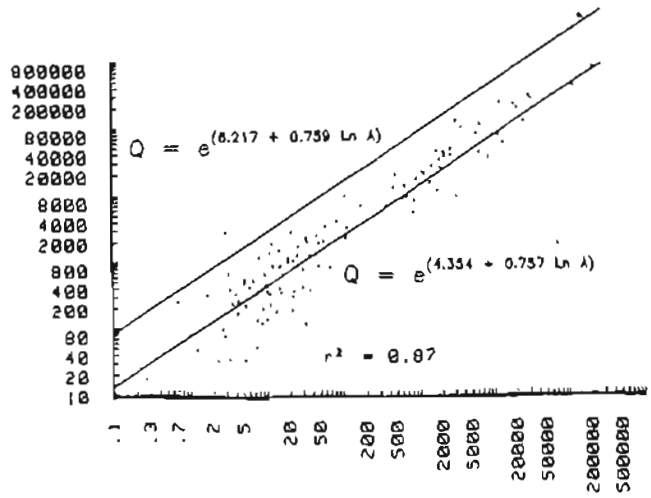
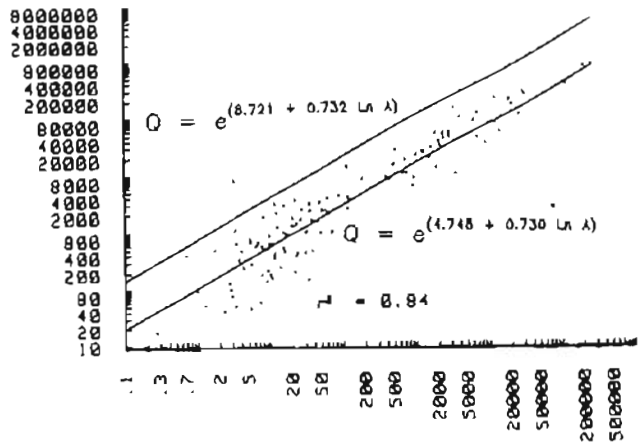
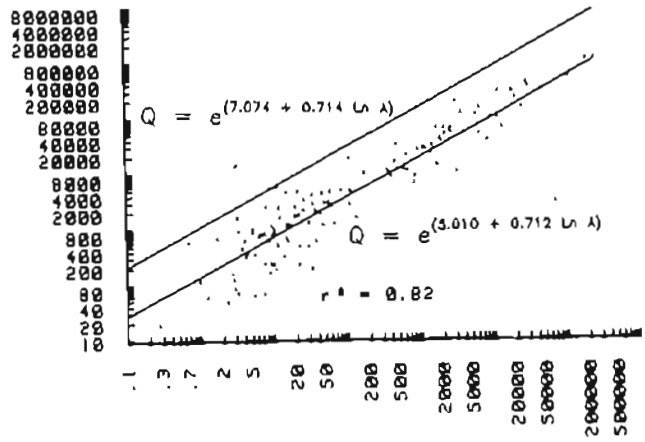



Figure 4. Flood frequency estimates for region north of Alaska Range.




100 YEAR FLOOD ESTIMATES (Q, CFS) 50 YEAR FLOOD ESTIMATES (Q, CFS) 20 YEAR FLOOD ESTIMATES (Q, CFS)

AREA OF DRAINAGE BASIN (A, SQ. MILES)

# APPENDIX A
## HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD

SOUTHERN COAST

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL): 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15010000 | DAVIS R NEAR HYDER | 80.00 | 10 | 12570. | 19500. | 11708. | 16409. | 19574. | 22639. | 26673. | 29745. |
| 15010500 | HALIBUT BAY TRIBUTARY NEAR HYDER | 8.58 | 8 | 2039. | 3400. | 1821. | 2860. | 3622. | 4400. | 5479. | 6340. |
| 15011500 | RED RIVER NEAR METLAKATLA | 45.30 | 15 | 8493. | 12400. | 8212. | 10346. | 11673. | 12895. | 14426. | 15544. |
| 15011900 | CABIN CREEK NEAR KETCHIKAN | 8.80 | 6 | 1110. | 1400. | 1086. | 1324. | 1469. | 1600. | 1762. | 1879. |
| 15012000 | WINSTANLEY CREEK NEAR KETCHIKAN | 15.50 | 30 | 1353. | 4120. | 1230. | 1742. | 2088. | 2426. | 2871. | 3212. |
| 15014000 | PUNCHBOWL LAKE OULET NEAR KETCHIKAN | 8.00 | 6 | 515. | 710. | 497. | 633. | 719. | 798. | 898. | 971. |
| 15015600 | KLAHINI RIVER NEAR BELL ISLAND | 58.00 | 6 | 6483. | 12400. | 5860. | 8770. | 10827. | 12882. | 15668. | 17848. |
| 15018000 | SHELKUH LAKE OUTLET NEAR BELL ISLAND | 18.00 | 6 | 2095. | 3100. | 1970. | 2732. | 3242. | 3733. | 4375. | 4863. |
| 15019000 | BLACK BEAR CREEK NEAR MEYERS CHUCK | 16.50 | 8 | 2345. | 3470. | 2243. | 2971. | 3442. | 3886. | 4455. | 4879. |
| 15020100 | TYEE CREEK AT MOUTH NEAR WRANGELL | 16.10 | 8 | 1249. | 2440. | 1163. | 1612. | 1911. | 2200. | 2578. | 2864. |
| 15022000 | HARDING RIVER NEAR WRANGELL | 67.40 | 28 | 7120. | 15000. | 6658. | 9065. | 10652. | 12168. | 14135. | 15617. |
| 15026000 | CASCADE CREEK NEAR PETERSBURG | 23.00 | 35 | 1704. | 3280. | 1633. | 2086. | 2371. | 2635. | 2967. | 3211. |
| 15030000 | SWEETHEART FALLS CREEK NEAR JUNEAU | 27.00 | 5 | 2242. | 2880. | 2198. | 2662. | 2942. | 3196. | 3507. | 3731. |
| 15031000 | LONG RIVER ABOVE LONG LAKE NEAR JUNEAU | 8.29 | 10 | 1674. | 3530. | 1536. | 2231. | 2712. | 3185. | 3819. | 4308. |
| 15034000 | LONG RIVER NEAR JUNEAU | 32.50 | 33 | 3393. | 6000. | 3221. | 4220. | 4859. | 5459. | 6225. | 6792. |
| 15036000 | SPEEL RIVER NEAR JUNEAU | 226.00 | 17 | 19282. | 35600. | 18234. | 24122. | 27920. | 31501. | 36087. | 39502. |
| 15038000 | CRATER CREEK NEAR JUNEAU | 11.40 | 9 | 2047. | 3100. | 1964. | 2535. | 2898. | 3235. | 3662. | 3977. |
| 15040000 | DOROTHY CREEK NEAR JUNEAU | 15.20 | 37 | 916. | 1780. | 850. | 1179. | 1399. | 1611. | 1889. | 2100. |
| 15042000 | CARLSON CREEK AT SUNNY COVE NEAR JUNEAU | 22.30 | 5 | 4714. | 6200. | 4642. | 5463. | 5948. | 6381. | 6906. | 7280. |
| 15044000 | CARLSON CREEK NEAR JUNEAU | 24.30 | 10 | 3872. | 5100. | 3811. | 4462. | 4845. | 5186. | 5599. | 5891. |
| 15048000 | SHEEP CREEK NEAR JUNEAU | 4.57 | 30 | 490. | 840. | 464. | 613. | 708. | 798. | 912. | 998. |
| 15050000 | GOLD CREEK AT JUNEAU | 9.76 | 37 | 1391. | 2650. | 1320. | 1731. | 1994. | 2241. | 2556. | 2790. |
| 15052000 | LEMON CREEK NEAR JUNEAU | 12.10 | 22 | 1611. | 3370. | 1549. | 1955. | 2208. | 2442. | 2734. | 2948. |
| 15052500 | *HENDENHALL RIVER NEAR AUKE BAY* | 85.10 | 14 | 7569. | 9820. | 7450. | 8727. | 9479. | 10148. | 10959. | 11533. |
| 15052800 | MONTANA CREEK NEAR AUKE BAY | 15.50 | 10 | 1458. | 1920. | 1399. | 1828. | 2102. | 2359. | 2686. | 2929. |
| 15053800 | LAKE CREEK AT AUKE BAY | 2.50 | 10 | 499. | 980. | 452. | 669. | 820. | 971. | 1174. | 1331. |
| 15054000 | AUKE CREEK AT AUKE BAY | 3.96 | 16 | 179. | 348. | 166. | 230. | 273. | 315. | 369. | 410. |
| 15054200 | HERBERT RIVER NEAR AUKE BAY | 56.90 | 5 | 4776. | 6280. | 4624. | 5896. | 6695. | 7434. | 8366. | 9049. |
| 15054500 | BESSIE CREEK NEAR AUKE BAY | 1.35 | 12 | 174. | 310. | 153. | 245. | 314. | 385. | 484. | 564. |
| 15056100 | SKAGWAY RIVER AT SKAGWAY | 145.00 | 16 | 5336. | 13600. | 4827. | 6987. | 8476. | 9940. | 11895. | 13404. |
| 15056200 | WEST CREEK NEAR SKAGWAY | 43.20 | 16 | 3044. | 9800. | 2746. | 3892. | 4670. | 5427. | 6429. | 7195. |
| 15056210 | TAIYA RIVER NEAR SKAGWAY | 149.00 | 9 | 10749. | 25000. | 9870. | 13868. | 16565. | 19182. | 22628. | 25255. |
| 15056400 | CHILKAT RIVER AT GORGE NEAR KLUKWAN | 190.00 | 6 | 10305. | 22000. | 9422. | 13412. | 16130. | 18783. | 22297. | 24991. |
| 15057500 | WILLIAM HENRY CREEK NEAR AUKE BAY | 1.58 | 10 | 518. | 1130. | 462. | 697. | 865. | 1033. | 1261. | 1440. |
| 15058000 | PURPLE LAKE OUTLET NEAR METLAKATLA | 6.80 | 8 | 499. | 716. | 484. | 605. | 681. | 750. | 837. | 900. |
| 15059500 | WHIPPLE CREEK NEAR WARK COVE | 5.29 | 11 | 1179. | 2830. | 1000. | 1682. | 2207. | 2762. | 3556. | 4206. |
| 15060000 | PERSEVERANCE CREEK NEAR WACKER | 2.81 | 26 | 437. | 682. | 422. | 531. | 598. | 660. | 737. | 794. |
| 15062000 | WARD CREEK NEAR WACKER | 14.00 | 10 | 1490. | 2600. | 1383. | 1921. | 2281. | 2628. | 3082. | 3427. |
| 15064000 | KETCHIKAN CREEK AT KETCHIKAN | 13.50 | 9 | 2698. | 4400. | 2518. | 3505. | 4167. | 4805. | 5643. | 6279. |
| 15066000 | BEAVER FALLS CREEK NEAR KETCHIKAN | 5.80 | 5 | 1315. | 2180. | 1214. | 1769. | 2153. | 2532. | 3040. | 3432. |
| 15068000 | MAHONEY CREEK NEAR KETCHIKAN | 5.70 | 21 | 1286. | 2530. | 1163. | 1735. | 2139. | 2542. | 3088. | 3514. |
| 15070000 | FALLS CREEK NEAR KETCHIKAN | 36.50 | 25 | 3230. | 5500. | 3118. | 3921. | 4420. | 4879. | 5454. | 5873. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

SOUTHERN COAST (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15072000 | FISH CREEK NEAR KETCHIKAN | 32.10 | 59 | 3005. | 5400. | 2914. | 3588. | 4000. | 4375. | 4840. | 5176. |
| 15072200 | SEA LEVEL CREEK NEAR KETCHIKAN | 18.60 | 8 | 2963. | 4000. | 2870. | 3640. | 4121. | 4566. | 5125. | 5534. |
| 15074000 | ELLA CREEK NEAR KETCHIKAN | 19.70 | 22 | 1213. | 1720. | 1188. | 1410. | 1542. | 1659. | 1803. | 1906. |
| 15076000 | HANZANITA CREEK NEAR KETCHIKAN | 33.90 | 30 | 2879. | 5820. | 2785. | 3598. | 4144. | 4657. | 5311. | 5796. |
| 15078000 | GRACE CREEK NEAR KETCHIKAN | 30.20 | 16 | 2843. | 3990. | 2774. | 3368. | 3728. | 4054. | 4455. | 4744. |
| 15079800 | KLU CREEK NEAR BELL ISLAND | 5.97 | 6 | 844. | 1180. | 807. | 1071. | 1241. | 1402. | 1609. | 1763. |
| 15080000 | ORCHARD CREEK NEAR BELL ISLAND | 59.00 | 7 | 4921. | 7100. | 4644. | 6358. | 7493. | 8580. | 9994. | 11062. |
| 15081490 | YATUK CREEK NEAR KLAWOCK | 5.80 | 9 | 633. | 901. | 594. | 829. | 987. | 1139. | 1338. | 1490. |
| 15081500 | STANEY CREEK NEAR CRAIG | 51.60 | 14 | 9265. | 15600. | 8505. | 12408. | 15116. | 17789. | 21371. | 24185. |
| 15081800 | NB TROCADERO CREEK NEAR HYDABURG | 17.40 | 7 | 4600. | 5900. | 4533. | 5293. | 5739. | 6135. | 6615. | 6954. |
| 15081890 | HATZUHINI CREEK NEAR HYDABURG | 9.10 | 8 | 1866. | 2520. | 1780. | 2363. | 2781. | 3098. | 3556. | 3897. |
| 15082000 | REYNOLDS CREEK NEAR HYDABURG | 5.70 | 5 | 360. | 475. | 352. | 427. | 472. | 513. | 563. | 599. |
| 15084000 | MYRTLE CREEK AT NIBLACK | 3.90 | 5 | 232. | 387. | 219. | 295. | 344. | 391. | 452. | 497. |
| 15085100 | OLD TOM CREEK NEAR KASAAN | 5.90 | 29 | 608. | 1030. | 589. | 729. | 814. | 893. | 990. | 1060. |
| 15085200 | DOG SALMON CREEK NEAR HOLLIS | 16.80 | 8 | 1591. | 2680. | 1434. | 2249. | 2844. | 3453. | 4296. | 4968. |
| 15085600 | INDIAN CREEK NEAR HOLLIS | 8.82 | 13 | 2548. | 6000. | 2243. | 3438. | 4297. | 5165. | 6355. | 7294. |
| 15085700 | HARRIS RIVER NEAR HOLLIS | 28.70 | 15 | 5119. | 8810. | 4717. | 6697. | 8043. | 9354. | 11090. | 12419. |
| 15085800 | HAYBESO CREEK AT HOLLIS | 15.10 | 18 | 2334. | 3750. | 2218. | 2931. | 3390. | 3823. | 4377. | 4790. |
| 15086000 | KARTA RIVER NEAR KASAAN | 49.50 | 5 | 3484. | 5070. | 3360. | 4322. | 4930. | 5496. | 6212. | 6738. |
| 15086500 | NECK CREEK NEAR POINT BAKER | 17.00 | 7 | 1219. | 2280. | 1118. | 1621. | 1971. | 2317. | 2780. | 3137. |
| 15086600 | BIG CREEK NEAR POINT BAKER | 11.20 | 16 | 1280. | 2390. | 1198. | 1649. | 1949. | 2238. | 2614. | 2898. |
| 15086900 | RED CREEK NEAR POINT BAKER | 11.20 | 9 | 1180. | 1530. | 1109. | 1416. | 1579. | 1727. | 1911. | 2044. |
| 15087250 | THIN CREEK NEAR PETERSBURG | 3.01 | 12 | 454. | 700. | 436. | 557. | 634. | 704. | 793. | 859. |
| 15087570 | HAMILTON CREEK NEAR KAKE | 65.00 | 7 | 7199. | 15600. | 5617. | 10738. | 15066. | 19922. | 27291. | 33646. |
| 15087585 | TWELVEMILE CREEK NEAR PETERSBURG | 9.39 | 6 | 1030. | 1460. | 1002. | 1239. | 1385. | 1517. | 1682. | 1802. |
| 15088000 | SAWMILL CREEK NEAR SITKA | 39.00 | 20 | 4186. | 7100. | 3883. | 5480. | 6561. | 7612. | 8999. | 10058. |
| 15092000 | NAKSOUTOF RIVER NEAR PORT ALEXANDER | 26.00 | 5 | 2036. | 2820. | 1975. | 2488. | 2808. | 3102. | 3471. | 3740. |
| 15093400 | SASHIN CREEK NEAR BIG PORT ALEXANDER | 3.72 | 13 | 1293. | 2650. | 1225. | 1619. | 1874. | 2114. | 2421. | 2649. |
| 15093600 | EB LOVERS COVE CREEK NEAR PORT WALTER | 1.20 | 6 | 98. | 158. | 88. | 132. | 163. | 195. | 237. | 270. |
| 15094000 | DEER LAKE OUTLET NEAR PORT ALEXANDER | 7.41 | 17 | 602. | 1120. | 569. | 758. | 881. | 997. | 1146. | 1257. |
| 15096000 | BARANOF RIVER AT BARANOF | 32.00 | 25 | 3057. | 9000. | 2832. | 3900. | 4610. | 5292. | 6182. | 6856. |
| 15100000 | TAKATZ CREEK NEAR BARANOF | 17.50 | 18 | 1539. | 1750. | 1531. | 1667. | 1742. | 1807. | 1883. | 1936. |
| 15101600 | WHEELER CREEK NEAR DOUGLAS | 57.10 | 6 | 1766. | 3400. | 1476. | 2650. | 3596. | 4627. | 6147. | 7425. |
| 15101800 | FISHERY CREEK NEAR ANGOON | 54.30 | 7 | 4386. | 7970. | 3514. | 6603. | 9182. | 12052. | 16373. | 20074. |
| 15102000 | HASSELBORG CREEK NEAR ANGOON | 56.20 | 17 | 1435. | 2400. | 1402. | 1680. | 1846. | 1996. | 2179. | 2311. |
| 15102350 | NORTH ARM CREEK NEAR ANGOON | 8.64 | 8 | 880. | 1170. | 841. | 1117. | 1295. | 1464. | 1680. | 1841. |
| 15106920 | KADASHAN RIVER NEAR TENAKEE | 10.20 | 10 | 1209. | 1850. | 1152. | 1527. | 1769. | 1997. | 2291. | 2509. |
| 15106940 | HOOK CREEK ABOVE TRIBUTARY | 4.48 | 12 | 768. | 1290. | 686. | 1055. | 1321. | 1591. | 1961. | 2253. |
| 15106960 | HOOK CREEK NEAR TENAKEE | 8.00 | 13 | 955. | 1510. | 820. | 1404. | 1859. | 2343. | 3042. | 3618. |
| 15106980 | TONALITE CREEK NEAT TENAKEE | 14.50 | 11 | 2062. | 3340. | 1876. | 2817. | 3484. | 4152. | 5056. | 5766. |
| 15107000 | KADASHAN RIVER NEAR TENAKEE | 37.70 | 15 | 4655. | 6530. | 4501. | 5696. | 6491. | 7128. | 7991. | 8622. |
| 15108000 | PAVLOF RIVER NEAR TENAKEE | 24.30 | 22 | 2086. | 4620. | 1962. | 2636. | 3075. | 3493. | 4031. | 4434. |
| 15108250 | CAKE CREEK NEAR HOONAH | 42.80 | 9 | 9166. | 16950. | 8342. | 12132. | 14754. | 17339. | 20799. | 23473. |
| 15108290 | COS CREEK NEAR ELFIN COVE | 16.70 | 5 | 1226. | 4670. | 586. | 1610. | 2729. | 4217. | 6886. | 9540. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

SOUTHERN COAST (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15108600 | HILDA CREEK NEAR DOUGLAS | 2.62 | 5 | 318. | 400. | 308. | 394. | 448. | 498. | 562. | 609. |
| 15108800 | LAWSON CREEK AT DOUGLAS | 2.98 | 5 | 311. | 565. | 282. | 421. | 518. | 615. | 747. | 849. |
| 15109000 | FISH CREEK NEAR AUKE BAY | 13.60 | 20 | 1393. | 2120. | 1332. | 1721. | 1967. | 2196. | 2487. | 2701. |
| 15195000 | DICK CREEK NEAR CORDOVA | 7.95 | 9 | 2036. | 2380. | 2023. | 2238. | 2353. | 2456. | 2577. | 2661. |
| 15216000 | POWER CREEK NEAR CORDOVA | 20.50 | 32 | 2916. | 5540. | 2659. | 3889. | 4743. | 5588. | 6721. | 7600. |
| 15219000 | WF OLSEN BAY CREEK NEAR CORDOVA | 4.78 | 15 | 589. | 1030. | 555. | 748. | 874. | 994. | 1149. | 1265. |
| 15219100 | CONTROL CREEK NEAR CORDOVA | 4.22 | 11 | 613. | 1280. | 566. | 795. | 949. | 1099. | 1296. | 1446. |
| 15226000 | SOLOMON GULCH NEAR VALDEZ | 19.00 | 7 | 1670. | 2420. | 1607. | 2066. | 2355. | 2624. | 2964. | 3214. |
| 15236200 | SHAKESPEARE CREEK AT WHITTIER | 3.05 | 10 | 408. | 620. | 395. | 495. | 558. | 615. | 687. | 740. |
| 15236900 | WOLVERINE CREEK NEAR LAWING | 9.51 | 12 | 831. | 1280. | 790. | 1048. | 1207. | 1362. | 1559. | 1706. |
| 15237000 | NELLIE JUAN RIVER NEAR HUNTER | 133.00 | 5 | 7727. | 9820. | 7587. | 9099. | 10006. | 10822. | 11820. | 12535. |
| 15237400 | CHALMERS RIVER NEAR CORDOVA | 6.32 | 12 | 2786. | 3380. | 2751. | 3174. | 3420. | 3637. | 3899. | 4084. |
| 15238000 | LOST CREEK NEAR SEWARD | 7.96 | 12 | 399. | 920. | 364. | 520. | 627. | 731. | 870. | 976. |
| 15238600 | SPRUCE CREEK NEAR SEWARD | 9.26 | 14 | 1627. | 3090. | 1470. | 2216. | 2746. | 3277. | 4000. | 4567. |
| 15239000 | BRADLEY RIVER NEAR HOMER | 54.00 | 23 | 3230. | 6020. | 2968. | 4264. | 5153. | 6025. | 7184. | 8076. |
| 15243500 | SNOW RIVER NEAR DIVIDE | 99.80 | 5 | 11976. | 25000. | 9339. | 18278. | 25961. | 34678. | 48052. | 59692. |
| 15243950 | PORCUPINE CREEK NEAR PRIMROSE | 16.80 | 17 | 812. | 1750. | 738. | 1082. | 1321. | 1558. | 1876. | 2122. |
| 15295600 | TERROR RIVER NEAR KODIAK | 15.00 | 8 | 2416. | 4590. | 2239. | 3191. | 3839. | 4473. | 5312. | 5956. |
| 15295700 | TERROR RIVER AT MOUTH NEAR KODIAK | 46.00 | 5 | 2848. | 3820. | 2795. | 3347. | 3677. | 3974. | 4337. | 4597. |
| 15296000 | UGANIK RIVER NEAR KODIAK | 123.00 | 27 | 6200. | 13700. | 5626. | 8179. | 9946. | 11688. | 14018. | 15820. |
| 15296550 | UPPER THUMB RIVER NEAR LARSEN BAY | 18.80 | 5 | 941. | 1190. | 904. | 1200. | 1392. | 1572. | 1804. | 1977. |
| 15297200 | MYRTLE CREEK NEAR KODIAK | 4.74 | 18 | 789. | 1350. | 758. | 965. | 1094. | 1214. | 1365. | 1475. |
| 15297300 | KALSIN BAY TRIBUTARY NEAR KODIAK | 2.35 | 7 | 196. | 250. | 190. | 236. | 265. | 292. | 329. | 348. |
| 15297475 | RED CLOUD CREEK TRIBUTARY NEAR KODIAK | 1.51 | 17 | 442. | 690. | 417. | 563. | 658. | 748. | 865. | 953. |

SOUTH CENTRAL

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15238820 | BARBARA CREEK NEAR SELDOVIA | 20.70 | 8 | 592. | 974. | 537. | 808. | 1000. | 1192. | 1453. | 1658. |
| 15239500 | FRITZ CREEK NEAR HOMER | 10.40 | 17 | 129. | 349. | 95. | 198. | 291. | 398. | 569. | 720. |
| 15239800 | DIAMOND CREEK NEAR HOMER | 5.35 | 17 | 67. | 174. | 60. | 87. | 106. | 124. | 149. | 168. |
| 15239900 | ANCHOR RIVER NEAR ANCHOR POINT | 137.00 | 11 | 1305. | 2240. | 1259. | 1577. | 1774. | 1955. | 2181. | 2346. |
| 15240000 | ANCHOR RIVER AT ANCHOR POINT | 224.00 | 13 | 1970. | 3030. | 1909. | 2370. | 2654. | 2913. | 3236. | 3470. |
| 15240500 | COOK INLET TRIBUTARY NEAR NINILCHIK | 5.19 | 14 | 58. | 140. | 53. | 76. | 93. | 109. | 130. | 147. |
| 15241600 | NINILCHIK RIVER AT NINILCHIK | 131.00 | 18 | 668. | 1240. | 581. | 948. | 1225. | 1513. | 1920. | 2249. |
| 15242000 | KASILOF RIVER NEAR KASILOF | 738.00 | 26 | 8363. | 13000. | 8140. | 9935. | 11025. | 12014. | 13235. | 14114. |
| 15244000 | PTARMIGAN CREEK AT LAWING | 32.60 | 10 | 563. | 980. | 534. | 709. | 822. | 929. | 1066. | 1169. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

SOUTH CENTRAL (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15246000 | GRANT CREEK NEAR MOOSE PASS | 44.20 | 10 | 1071. | 2230. | 993. | 1372. | 1624. | 1868. | 2185. | 2426. |
| 15248000 | TRAIL RIVER NEAR LAWING | 181.00 | 29 | 3972. | 7480. | 3783. | 4908. | 5624. | 6292. | 7140. | 7767. |
| 15250000 | FALLS CREEK NEAR LAWING | 11.80 | 10 | 333. | 693. | 276. | 385. | 650. | 828. | 1068. | 1304. |
| 15251800 | QUARTZ CREEK AT GILPATRICKS | 9.41 | 9 | 261. | 633. | 197. | 374. | 523. | 689. | 940. | 1155. |
| 15254000 | CRESCENT CREEK NEAR COOPER LANDING | 31.70 | 31 | 380. | 1500. | 328. | 504. | 630. | 757. | 932. | 1070. |
| 15258000 | KENAI RIVER AT COOPER LANDING | 634.00 | 34 | 11846. | 23100. | 11227. | 14751. | 17012. | 19136. | 21849. | 23863. |
| 15260000 | COOPER CREEK NEAR COOPER LANDING | 31.80 | 11 | 325. | 729. | 303. | 411. | 483. | 551. | 640. | 707. |
| 15260500 | STETSON CREEK NEAR COOPER LANDING | 8.60 | 6 | 180. | 291. | 168. | 234. | 279. | 321. | 377. | 420. |
| 15261000 | COOPER CREEK AT MOUTH | 48.00 | 6 | 375. | 608. | 329. | 542. | 704. | 873. | 1113. | 1308. |
| 15264000 | RUSSIAN RIVER NEAR COOPER LANDING | 61.80 | 8 | 562. | 1280. | 479. | 791. | 1028. | 1277. | 1629. | 1916. |
| 15266300 | KENAI RIVER AT SOLDOTNA | 2010.00 | 16 | 21400. | 33700. | 20586. | 26244. | 29795. | 33083. | 37224. | 40262. |
| 15266500 | BEAVER CREEK NEAR KENAI | 51.00 | 11 | 182. | 598. | 136. | 265. | 375. | 500. | 691. | 856. |
| 15267900 | RESURRECTION CREEK NEAR HOPE | 149.00 | 13 | 1642. | 3380. | 1442. | 2261. | 2860. | 3472. | 4320. | 4995. |
| 15269500 | GRANITE CREEK NEAR PORTAGE | 28.20 | 13 | 1112. | 2040. | 993. | 1526. | 1910. | 2298. | 2831. | 3252. |
| 15270100 | FRESNO CREEK NEAR SUNRISE | 6.03 | 8 | 82. | 135. | 78. | 103. | 118. | 132. | 151. | 165. |
| 15270400 | DONALDSON CREEK NEAR WIBEL | 4.07 | 10 | 77. | 170. | 67. | 108. | 139. | 171. | 216. | 252. |
| 15271900 | CUB CREEK NEAR HOPE | 1.80 | 15 | 30. | 54. | 27. | 40. | 49. | 57. | 69. | 78. |
| 15272530 | CALIFORNIA CREEK NEAR GIRDWOOD | 6.96 | 13 | 276. | 600. | 223. | 401. | 545. | 701. | 932. | 1126. |
| 15272550 | GLACIER CREEK AT GIRDWOOD | 62.00 | 14 | 3263. | 7710. | 2599. | 4701. | 6408. | 8274. | 11034. | 13362. |
| 15273900 | SF CAMPBELL CREEK AT CANYON MOUTH | 25.20 | 13 | 237. | 342. | 224. | 301. | 351. | 398. | 459. | 504. |
| 15274000 | SF CAMPBELL CREEK NEAR ANCHORAGE | 30.40 | 25 | 253. | 891. | 223. | 330. | 406. | 481. | 582. | 662. |
| 15274300 | NF CAMPBELL CREEK NEAR ANCHORAGE | 13.40 | 14 | 68. | 107. | 65. | 86. | 99. | 112. | 128. | 141. |
| 15274600 | CAMPBELL CREEK NEAR SPENARD | 69.70 | 15 | 283. | 421. | 267. | 359. | 420. | 477. | 551. | 606. |
| 15274800 | SB OF SF CHESTER CREEK AT TANK TRAIL | 10.80 | 11 | 28. | 44. | 24. | 38. | 48. | 59. | 73. | 85. |
| 15275000 | CHESTER CREEK AT ANCHORAGE | 20.00 | 18 | 64. | 95. | 60. | 80. | 94. | 106. | 123. | 135. |
| 15275100 | CHESTER CREEK AT ANCHORAGE | 27.20 | 24 | 98. | 180. | 92. | 124. | 145. | 164. | 189. | 208. |
| 15276000 | SHIP CREEK NEAR ANCHORAGE | 90.50 | 33 | 897. | 1860. | 852. | 1116. | 1286. | 1445. | 1649. | 1799. |
| 15276500 | SHIP CREEK AT EAFB NEAR ANCHORAGE | 113.00 | 9 | 745. | 1610. | 685. | 969. | 1162. | 1349. | 1596. | 1785. |
| 15276570 | SHIP CREEK BELOW POWERPLANT AT EAFB | 115.00 | 9 | 796. | 1600. | 743. | 1020. | 1204. | 1381. | 1611. | 1785. |
| 15277100 | EAGLE RIVER AT EAGLE RIVER | 192.00 | 15 | 3489. | 6240. | 3376. | 4192. | 4694. | 5153. | 5724. | 6139. |
| 15277200 | MEADOW CREEK AT EAGLE RIVER | 7.43 | 10 | 38. | 184. | 23. | 54. | 84. | 122. | 183. | 241. |
| 15277410 | PETERS CREEK NEAR BIRCHWOOD | 87.80 | 6 | 527. | 696. | 507. | 660. | 758. | 849. | 964. | 1050. |
| 15280000 | EKLUTNA CREEK NEAR PALMER | 119.00 | 13 | 1449. | 2530. | 1255. | 2227. | 3004. | 3846. | 5080. | 6113. |
| 15281000 | KNIK RIVER NEAR PALMER | 1180.00 | 15 | 35207. | 60200. | 34312. | 41536. | 45897. | 49838. | 54684. | 58166. |
| 15282000 | CARIBOU CREEK NEAR SUTTON | 289.00 | 24 | 4798. | 8720. | 4530. | 6070. | 7073. | 8024. | 9249. | 10166. |
| 15282300 | PINOCHLE CREEK NEAR SUTTON | 7.99 | 5 | 14. | 20. | 12. | 19. | 24. | 29. | 36. | 42. |
| 15282400 | PURITAN CREEK NEAR SUTTON | 8.51 | 16 | 38. | 100. | 29. | 57. | 81. | 108. | 150. | 187. |
| 15283500 | ESKA CREEK NEAR SUTTON | 13.40 | 10 | 288. | 1680. | 164. | 342. | 502. | 689. | 985. | 1246. |
| 15284000 | MATANUSKA RIVER AT PALMER | 2070.00 | 25 | 24708. | 40100. | 24005. | 29540. | 32922. | 36003. | 39820. | 42581. |
| 15285000 | WASILLA CREEK NEAR PALMER | 16.80 | 5 | 218. | 700. | 129. | 320. | 514. | 760. | 1180. | 1581. |
| 15286000 | COTTONWOOD CREEK NEAR WASILLA | 28.50 | 6 | 38. | 55. | 35. | 49. | 60. | 69. | 82. | 92. |
| 15290000 | LITTLE SUSITNA RIVER NEAR PALMER | 61.90 | 31 | 2284. | 7840. | 2017. | 3019. | 3727. | 4434. | 5393. | 6143. |
| 15291000 | SUSITNA RIVER NEAR DENALI | 950.00 | 21 | 18076. | 38200. | 17374. | 21805. | 24553. | 27079. | 30238. | 32541. |
| 15291100 | RAFT CREEK NEAR DENALI | 4.33 | 16 | 103. | 133. | 97. | 131. | 152. | 173. | 200. | 220. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

SOUTH CENTRAL (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15291200 | MACLAREN RIVER NEAR PAXSON | 280.00 | 23 | 5746. | 9260. | 5579. | 6846. | 7619. | 8322. | 9192. | 9820. |
| 15291500 | SUSITNA RIVER NEAR CANTWELL | 4140.00 | 13 | 34246. | 55000. | 32436. | 43281. | 50322. | 56985. | 65555. | 71957. |
| 15292000 | SUSITNA RIVER AT GOLD CREEK | 6160.00 | 30 | 51097. | 90700. | 48424. | 63898. | 73862. | 83242. | 95245. | 104170. |
| 15292400 | CHULITNA RIVER NEAR TALKEETNA | 2570.00 | 20 | 40570. | 75900. | 39562. | 47508. | 52276. | 56569. | 61828. | 65594. |
| 15292700 | TALKEETNA RIVER NEAR TALKEETNA | 2006.00 | 17 | 31076. | 67400. | 28952. | 39547. | 46545. | 53243. | 61950. | 68516. |
| 15292800 | MONTANA CREEK NEAR MONTANA | 164.00 | 10 | 3389. | 6970. | 3005. | 4816. | 6162. | 7551. | 9495. | 11057. |
| 15292900 | GOOSE CREEK NEAR MONTANA | 14.50 | 8 | 340. | 530. | 289. | 511. | 688. | 880. | 1161. | 1396. |
| 15293000 | CASWELL CREEK NEAR CASWELL | 19.60 | 16 | 102. | 207. | 91. | 141. | 177. | 214. | 265. | 306. |
| 15294025 | MOOSE CREEK NEAR TALKEETNA | 52.30 | 8 | 1104. | 1850. | 1058. | 1366. | 1562. | 1748. | 1975. | 2145. |
| 15294300 | SKWENTNA RIVER NEAR SKWENTNA | 2250.00 | 21 | 33838. | 51600. | 32982. | 40019. | 44275. | 48126. | 52866. | 56274. |
| 15294350 | SUSITNA RIVER AT SUSITNA STATION | 19400.00 | 5 | 167600. | 197000. | 166000. | 189292. | 202736. | 214544. | 228673. | 238582. |
| 15294450 | SHUITNA RIVER NEAR TYONEK | 131.00 | 5 | 4896. | 7620. | 4408. | 6948. | 8813. | 10722. | 13374. | 15491. |
| 15294500 | CHACKACHATNA RIVER NEAR TYONEK | 1120.00 | 11 | 15818. | 23400. | 15507. | 18465. | 20229. | 21811. | 23741. | 25119. |
| 15298000 | TANALIAN RIVER NEAR PORT ALSWORTH | 200.00 | 6 | 2933. | 4720. | 2826. | 3600. | 4085. | 4535. | 5100. | 5515. |
| 15300000 | NEWHALEN RIVER NEAR ILLIAMNA | 3478.00 | 26 | 26819. | 44200. | 26226. | 31398. | 34495. | 37278. | 40684. | 43120. |
| 15300200 | ROADHOUSE CREEK NEAR ILLIAMNA | 20.80 | 6 | 87. | 152. | 81. | 111. | 131. | 150. | 174. | 193. |

NORTH OF ALASKA RANGE

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15198500 | STATION CREEK NEAR MENTASTA | 15.30 | 8 | 190. | 309. | 106. | 425. | 875. | 1589. | 3111. | 4864. |
| 15199000 | COPPER RIVER TRIBUTARY NEAR SLANA | 4.32 | 16 | 57. | 173. | 39. | 85. | 129. | 181. | 266. | 343. |
| 15200000 | GAKONA RIVER AT GAKONA | 620.00 | 25 | 5296. | 10500. | 4881. | 6877. | 8226. | 9536. | 11263. | 12582. |
| 15200280 | GULKANA RIVER AT SOURDOUGH | 1770.00 | 6 | 7448. | 9170. | 7172. | 9412. | 10849. | 12198. | 13920. | 15197. |
| 15201000 | DRY CREEK NEAR GLENNALLEN | 11.40 | 16 | 111. | 546. | 42. | 256. | 656. | 1423. | 3404. | 6081. |
| 15201100 | LITTLE NELCHINA RIVER TRIBUTARY | 7.81 | 13 | 49. | 127. | 35. | 72. | 105. | 143. | 203. | 256. |
| 15202000 | TAZLINA RIVER NEAR GLENNALLEN | 2670.00 | 21 | 27110. | 52600. | 24602. | 35616. | 43212. | 50685. | 60663. | 68365. |
| 15206000 | KLUTINA RIVER AT COPPER CENTER | 880.00 | 16 | 7064. | 9040. | 7007. | 7827. | 8292. | 8697. | 9178. | 9512. |
| 15207800 | LITTLE TONSINA RIVER AT TONSINA | 22.70 | 6 | 126. | 214. | 120. | 156. | 178. | 200. | 226. | 246. |
| 15208000 | TONSINA RIVER AT TONSINA | 420.00 | 30 | 4758. | 8490. | 4519. | 5950. | 6871. | 7736. | 8843. | 9665. |
| 15208100 | SQUIRREL CREEK AT TONSINA | 70.50 | 16 | 382. | 1200. | 320. | 536. | 701. | 874. | 1122. | 1324. |
| 15208200 | ROCK CREEK NEAR TONSINA | 14.30 | 14 | 62. | 163. | 47. | 97. | 141. | 192. | 272. | 343. |
| 15209000 | CHITITU CREEK NEAR MAY CREEK | 30.90 | 6 | 300. | 430. | 291. | 361. | 404. | 443. | 491. | 526. |
| 15209100 | MAY CREEK NEAR MAY CREEK | 10.40 | 7 | 52. | 90. | 42. | 80. | 111. | 147. | 201. | 248. |
| 15211700 | STRELNA CREEK NEAR CHITINA | 23.80 | 9 | 196. | 345. | 178. | 265. | 327. | 388. | 470. | 535. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

NORTH OF ALASKA RANGE (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15211900 | O'BRIEN CREEK NEAR CHITINA | 49.80 | 10 | 590. | 1670. | 489. | 826. | 1066. | 1360. | 1754. | 2078. |
| 15212000 | COPPER RIVER NEAR CHITINA | 20600.00 | 27 | 166488. | 265000. | 164259. | 188167. | 202015. | 214203. | 228819. | 239087. |
| 15212500 | BOULDER CREEK NEAR TIEKEL | 9.80 | 16 | 216. | 450. | 175. | 352. | 507. | 685. | 962. | 1206. |
| 15212800 | PTARMIGAN CREEK TRIBUTARY NEAR VALDEZ | 0.72 | 6 | 46. | 85. | 30. | 91. | 162. | 260. | 442. | 630. |
| 15297655 | CLEVENGER CREEK ON AMCHITKA ISLAND | 0.28 | 5 | 16. | 18. | 15. | 17. | 18. | 18. | 19. | 20. |
| 15297680 | BRIDGE CREEK ON AMCHITKA ISLAND | 3.03 | 7 | 66. | 84. | 65. | 73. | 78. | 82. | 87. | 91. |
| 15297690 | WHITE ALICE CREEK ON AMCHITKA ISLAND | 34.00 | 5 | 84. | 96. | 34. | 66. | 93. | 123. | 169. | 206. |
| 15297900 | ESKIMO CREEK AT KING SALMON | 16.10 | 14 | 116. | 227. | 86. | 181. | 265. | 364. | 521. | 661. |
| 15300500 | KVICHAK RIVER AT IGIUGIG | 6500.00 | 13 | 32154. | 43000. | 31348. | 38214. | 42381. | 46159. | 50820. | 54178. |
| 15302000 | NUYAKUK RIVER NEAR DILLINGHAM | 1490.00 | 27 | 19622. | 32200. | 19024. | 23548. | 26326. | 28862. | 32014. | 34298. |
| 15302900 | HOODY CREEK AT ALEKNAGIK | 1.28 | 10 | 30. | 55. | 28. | 37. | 44. | 50. | 58. | 64. |
| 15303000 | WOOD RIVER NEAR ALEKNAGIK | 1110.00 | 14 | 14724. | 25000. | 13997. | 18351. | 21140. | 23758. | 27098. | 29576. |
| 15303010 | SILVER SALMON CREEK NEAR ALEKNAGIK | 4.46 | 14 | 121. | 340. | 102. | 170. | 221. | 275. | 352. | 414. |
| 15303150 | SNAKE RIVER NEAR DILLINGHAM | 113.00 | 6 | 1578. | 2470. | 1519. | 1949. | 2220. | 2471. | 2789. | 3022. |
| 15303600 | KUSKOKWIM RIVER AT MCGRATH | 11700.00 | 11 | 53485. | 70000. | 51173. | 66804. | 76789. | 86141. | 98048. | 106665. |
| 15304000 | KUSKOKWIM RIVER AT CROOKED CREEK | 31100.00 | 26 | 176500. | 392000. | 165656. | 224454. | 263066. | 299873. | 347550. | 383383. |
| 15305900 | DENNISON FORK NEAR TETLIN JUNCTION | 2.93 | 15 | 33. | 128. | 25. | 46. | 63. | 82. | 110. | 134. |
| 15305920 | WEST FORK TRIBUTARY NEAR TETLIN JUNCTION | 1.02 | 13 | 34. | 102. | 27. | 48. | 64. | 81. | 105. | 126. |
| 15305950 | TAYLOR CREEK NEAR CHICKEN | 38.40 | 13 | 152. | 600. | 112. | 212. | 296. | 391. | 533. | 656. |
| 15348000 | FORTYMILE RIVER NEAR STEEL CREEK | 5880.00 | 7 | 44871. | 84000. | 40640. | 59964. | 73481. | 86898. | 104971. | 119027. |
| 15356000 | YUKON RIVER AT EAGLE | 113500.00 | 32 | 303594. | 545000. | 292383. | 367151. | 413545. | 456202. | 509558. | 548454. |
| 15365000 | DISCOVERY FORK AMERICAN CREEK NEAR EAGLE | 5.53 | 10 | 12. | 52. | 7. | 17. | 25. | 36. | 52. | 68. |
| 15367500 | BLUFF CREEK NEAR EAGLE | 3.38 | 10 | 11. | 41. | 6. | 15. | 25. | 37. | 57. | 76. |
| 15389000 | PORCUPINE RIVER NEAR FORT YUKON | 29500.00 | 15 | 172887. | 299000. | 158574. | 229950. | 279239. | 327761. | 392607. | 442687. |
| 15389500 | CHANDALAR RIVER NEAR VENETIE | 9330.00 | 11 | 45100. | 62800. | 42496. | 58920. | 69892. | 80465. | 94307. | 104607. |
| 15438500 | BEDROCK CREEK NEAR CENTRAL | 9.94 | 11 | 147. | 405. | 108. | 230. | 341. | 473. | 682. | 871. |
| 15439800 | BOULDER CREEK NEAR CENTRAL | 31.30 | 16 | 302. | 1150. | 223. | 433. | 612. | 815. | 1124. | 1393. |
| 15442500 | QUARTZ CREEK NEAR CENTRAL | 17.20 | 11 | 195. | 500. | 137. | 311. | 476. | 676. | 1004. | 1307. |
| 15457700 | ERICKSON CREEK NEAR LIVENGOOD | 26.30 | 7 | 417. | 860. | 316. | 656. | 962. | 1317. | 1878. | 2378. |
| 15457800 | HESS CREEK NEAR LIVENGOOD | 662.00 | 8 | 5654. | 10000. | 4873. | 8525. | 11419. | 14533. | 19070. | 22846. |
| 15468000 | YUKON RIVER AT RAMPART | 199400.00 | 12 | 564000. | 950000. | 539481. | 701814. | 805266. | 901999. | 1024982. | 1115919. |
| 15469900 | SILVER CREEK NEAR NORTHWAY JUNCTION | 11.70 | 10 | 71. | 355. | 35. | 94. | 158. | 243. | 394. | 542. |
| 15470000 | CHISANA RVER AT NOTHWAY JUNCTION | 3280.00 | 22 | 7943. | 12000. | 7847. | 8946. | 9581. | 10138. | 10805. | 11273. |
| 15470340 | JACK CREEK NEAR NABESNA | 113.00 | 5 | 1502. | 2480. | 1325. | 2172. | 2812. | 3460. | 4424. | 5190. |
| 15471000 | BITTERS CREEK NEAR NORTHWAY JUNCTION | 15.40 | 15 | 166. | 1010. | 107. | 217. | 315. | 428. | 604. | 760. |
| 15471500 | TANANA RIVER TRIBUTARY NEAR TETLIN JUNCTION | 2.93 | 15 | 16. | 45. | 13. | 22. | 28. | 35. | 45. | 52. |
| 15473600 | LOG CABIN CREEK NEAR LOG CABIN INN | 10.70 | 14 | 155. | 350. | 112. | 233. | 342. | 466. | 667. | 844. |
| 15473950 | CLEARWATER CREEK NEAR TOK | 37.50 | 16 | 432. | 1040. | 321. | 655. | 951. | 1294. | 1829. | 2303. |
| 15476000 | TANANA RIVER NEAR TANACROSS | 8550.00 | 27 | 30726. | 39100. | 30459. | 34108. | 36166. | 37995. | 40142. | 41636. |
| 15476049 | TANANA RIVER TRIBUTARY NEAR CATHEDRAL RAPIDS | 3.09 | 8 | 120. | 332. | 42. | 372. | 1163. | 2976. | 8582. | 17354. |
| 15476050 | TANANA RIVER TRIBUTARY NEAR TANACROSS | 3.32 | 8 | 124. | 297. | 75. | 235. | 424. | 692. | 1200. | 1730. |
| 15476200 | TANANA RIVER TRIBUTARY NEAR DOT LAKE | 11.00 | 16 | 76. | 146. | 68. | 101. | 124. | 147. | 179. | 203. |
| 15476300 | BERRY CREEK NEAR DOT LAKE | 65.10 | 17 | 832. | 2800. | 692. | 1151. | 1502. | 1871. | 2396. | 2824. |
| 15476400 | DRY CREEK NEAR DOT LAKE | 57.60 | 16 | 914. | 2200. | 782. | 1310. | 1716. | 2144. | 2755. | 3254. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

NORTH OF ALASKA RANGE (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15478000 | TANANA RIVER AT BIG DELTA | 13500.00 | 8 | 49450. | 62800. | 48922. | 55618. | 59800. | 63298. | 67485. | 70422. |
| 15478010 | ROCK CREEK NEAR PAXSON | 50.30 | 17 | 825. | 1800. | 686. | 1200. | 1607. | 2045. | 2683. | 3214. |
| 15478040 | PHELAN CREEK NEAR PAXSON | 12.20 | 12 | 1070. | 2320. | 979. | 1404. | 1695. | 1980. | 2359. | 2650. |
| 15478050 | MCCALLUM CREEK NEAR PAXSON | 15.50 | 13 | 872. | 1010. | 822. | 626. | 768. | 910. | 1102. | 1252. |
| 15478500 | RUBY CREEK NEAR DONNELLY | 5.32 | 17 | 170. | 400. | 123. | 272. | 410. | 575. | 843. | 1087. |
| 15480000 | BANNER CREEK AT RICHARDSON | 20.20 | 16 | 267. | 732. | 157. | 441. | 757. | 1180. | 1948. | 2718. |
| 15484000 | SALCHA RIVER NEAR SALCHAKET | 2170.00 | 29 | 20838. | 97000. | 17350. | 28562. | 37061. | 45946. | 58534. | 68761. |
| 15485500 | TANANA RIVER AT FAIRBANKS | 3740.00 | 8 | 70838. | 125000. | 68815. | 85446. | 95971. | 105623. | 117666. | 126426. |
| 15490000 | MONUMENT CREEK AT CHENA HOT SPRINGS | 26.70 | 9 | 506. | 1700. | 326. | 782. | 1236. | 1803. | 2758. | 3659. |
| 15493000 | CHENA RIVER NEAR TWO RIVERS | 941.00 | 12 | 7543. | 16800. | 6391. | 10923. | 14455. | 18212. | 23628. | 28095. |
| 15493500 | CHENA RIVER NEAR NORTH POLE | 1430.00 | 8 | 6629. | 12300. | 5662. | 9695. | 12842. | 16193. | 21027. | 25017. |
| 15511000 | LITTLE CHENA RIVER NEAR FAIRBANKS | 372.00 | 13 | 3026. | 17000. | 2051. | 3895. | 5448. | 7177. | 9799. | 12053. |
| 15511500 | STEELE CREEK NEAR FAIRBANKS | 10.70 | 6 | 88. | 340. | 33. | 116. | 222. | 379. | 691. | 1030. |
| 15512000 | CHENA SLOUGH NEAR FAIRBANKS | 20.00 | 5 | 362. | 740. | 279. | 551. | 786. | 1053. | 1465. | 1824. |
| 15514000 | CHENA RIVER NEAR FAIRBANKS | 1980.00 | 32 | 12494. | 74400. | 10045. | 16768. | 21917. | 27336. | 35062. | 41374. |
| 15514500 | WOOD RIVER NEAR FAIRBANKS | 855.00 | 10 | 4043. | 5510. | 3936. | 4860. | 5427. | 5944. | 6586. | 7051. |
| 15515500 | TANANA RIVER AT NENANA | 25600.00 | 20 | 86650. | 186000. | 83029. | 105161. | 118982. | 131742. | 147766. | 159487. |
| 15515800 | SEATTLE CREEK NEAR CANTWELL | 71600.00 | 15 | 808. | 3100. | 610. | 1103. | 1503. | 1940. | 2587. | 3133. |
| 15515900 | LILY CREEK NEAR CANTWELL | 5.63 | 13 | 93. | 191. | 77. | 137. | 184. | 235. | 310. | 373. |
| 15516000 | NENANA RIVER NEAR WINDY | 710.00 | 26 | 6895. | 11900. | 6674. | 8285. | 9276. | 10182. | 11309. | 12127. |
| 15516200 | SLIME CREEK NEAR CANTWELL | 6.90 | 14 | 231. | 685. | 184. | 323. | 433. | 551. | 723. | 866. |
| 15518000 | NENANA RIVER NEAR HEALY | 1910.00 | 29 | 22017. | 96800. | 20855. | 27594. | 31981. | 36039. | 41289. | 45198. |
| 15518100 | LITTLE PANGUINGUE CREEK NEAR LIGNITE | 3.44 | 10 | 76. | 151. | 49. | 146. | 257. | 410. | 695. | 986. |
| 15518200 | ROCK CREEK NEAR FERRY | 8.17 | 11 | 316. | 880. | 186. | 492. | 817. | 1243. | 1992. | 2726. |
| 15518250 | BIRCH CREEK NEAR REX | 4.10 | 14 | 110. | 464. | 71. | 161. | 246. | 350. | 520. | 677. |
| 15518350 | TEKLANIKA RIVER NEAR LIGNITE | 490.00 | 10 | 8517. | 33100. | 6071. | 11467. | 15988. | 21031. | 28644. | 35177. |
| 15519000 | BRIDGE CREEK NEAR LIVENGOOD | 12.60 | 10 | 307. | 1070. | 197. | 435. | 657. | 923. | 1354. | 1747. |
| 15519200 | BROOKS CREEK TRIBUTARY NEAR LIVENGOOD | 7.81 | 16 | 69. | 168. | 45. | 132. | 233. | 372. | 629. | 893. |
| 15520000 | IDAHO CREEK NEAR MILLER HOUSE | 5.31 | 17 | 188. | 813. | 124. | 259. | 381. | 523. | 747. | 947. |
| 15530000 | FAITH CREEK NEAR CHENA HOT SPRINGS | 61.10 | 10 | 1646. | 4950. | 1384. | 2224. | 2850. | 3497. | 4403. | 5133. |
| 15534900 | POKER CREEK NEAR CHATANIKA | 23.10 | 7 | 123. | 240. | 99. | 182. | 250. | 325. | 436. | 530. |
| 15535000 | CARIBOU CREEK NEAR CHATANIKA | 9.19 | 10 | 65. | 117. | 58. | 87. | 107. | 128. | 155. | 176. |
| 15541600 | GLOBE CREEK NEAR LIVENGOOD | 23.00 | 16 | 378. | 1240. | 270. | 553. | 803. | 1092. | 1544. | 1945. |
| 15541650 | GLOBE CREEK TRIBUTARY NEAR LIVENGOOD | 9.01 | 10 | 162. | 490. | 125. | 233. | 322. | 420. | 567. | 693. |
| 15541800 | WASHINGTON CREEK NEAR FOX | 46.70 | 10 | 878. | 2500. | 635. | 1314. | 1921. | 2628. | 3741. | 4731. |
| 15564600 | MELOZITNA RIVER NEAR RUBY | 2693.00 | 12 | 20968. | 28200. | 19390. | 28749. | 35318. | 41853. | 50676. | 57551. |
| 15564600 | YUKON RIVER AT RUBY | 259000.00 | 22 | 609636. | 970000. | 585272. | 753009. | 858995. | 957576. | 1082267. | 1174055. |
| 15564672 | NUGGET CREEK NEAR WISEMAN | 9.47 | 5 | 131. | 167. | 126. | 164. | 188. | 210. | 238. | 259. |
| 15564675 | NF KOYUKUK RIVER NEAR WISEMAN | 1200.00 | 10 | 11728. | 19100. | 10600. | 15638. | 18975. | 22256. | 26642. | 30026. |
| 15564877 | WISEMAN CREEK AT WISEMAN | 49.20 | 9 | 479. | 686. | 441. | 644. | 785. | 924. | 1111. | 1255. |
| 15564884 | PROSPECT CREEK NEAR PROSPECT CAMP | 110.00 | 6 | 3067. | 6800. | 2265. | 4940. | 7426. | 10394. | 15180. | 19529. |
| 15564885 | JIM RIVER NEAR BETTLES | 465.00 | 7 | 8581. | 12800. | 8241. | 10763. | 12374. | 13884. | 15806. | 17229. |
| 15564887 | BONANZA CREEK TRIBUTARY NEAR PROSPECT CAMP | 11.70 | 5 | 123. | 220. | 102. | 191. | 265. | 347. | 471. | 577. |
| 15564900 | KOYUKUK RIVER AT HUGHES | 18700.00 | 19 | 132342. | 266000. | 122575. | 171949. | 205218. | 237459. | 279893. | 312233. |

HISTORICAL USGS HYDROMETRIC DATA WITH AT LEAST FIVE YEARS RECORD (CONTINUED)

NORTH OF ALASKA RANGE (CONTINUED)

| STATION NUMBER | STATION NAME | AREA (sq mi) | REC LEN (yrs) | MEAN ANNUAL FLOOD (cfs) | MAX OBS FLOOD (cfs) | FLOOD ESTIMATES (2 PARAMETER LOGNORMAL) 2YR (cfs) | 5YR (cfs) | 10YR (cfs) | 20YR (cfs) | 50YR (cfs) | 100YR (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15621000 | SNAKE RIVER NEAR NOME | 65.70 | 15 | 2693. | 4200. | 2577. | 3347. | 3837. | 4295. | 4676. | 5306. |
| 15625000 | ARCTIC CREEK NEAR NOME | 1.76 | 10 | 74. | 199. | 49. | 132. | 220. | 336. | 540. | 740. |
| 15633000 | WASHINGTON CREEK NEAR NOME | 6.34 | 13 | 154. | 620. | 109. | 224. | 327. | 447. | 636. | 803. |
| 15668100 | STAR CREEK NEAR NOME | 3.78 | 15 | 71. | 152. | 52. | 117. | 179. | 253. | 376. | 488. |
| 15668200 | CRATER CREEK NEAR NOME | 21.90 | 15 | 1041. | 2540. | 822. | 1587. | 2238. | 2973. | 4092. | 5061. |
| 15712000 | KUZITRIN RIVER NEAR NOME | 1720.00 | 10 | 21534. | 40000. | 18960. | 30263. | 38639. | 47268. | 59321. | 68994. |
| 15744000 | KOBUK RIVER AT AMBLER | 6570.00 | 13 | 65038. | 95000. | 60394. | 85659. | 102822. | 119543. | 141661. | 158592. |
| 15746000 | NOATAK RIVER AT NOATAK | 12000.00 | 5 | 174000. | 242000. | 169324. | 210420. | 235722. | 258871. | 287668. | 308607. |
| 15748000 | OGOTORUK CREEK NEAR POINT HOPE | 35.00 | 5 | 979. | 1450. | 889. | 1391. | 1758. | 2131. | 2648. | 3060. |
| 15798700 | NUNAVAK CREEK NEAR BARROW | 2.79 | 9 | 41. | 131. | 30. | 57. | 80. | 104. | 141. | 173. |
| 15896000 | KUPARUK RIVER NEAR DEADHORSE | 3130.00 | 9 | 57278. | 118000. | 49079. | 81880. | 106988. | 133402. | 171055. | 201809. |
| 15896700 | PUTULIGAYUK RIVER NEAR DEADHORSE | 176.00 | 10 | 3394. | 5800. | 3003. | 4773. | 6080. | 7424. | 9298. | 10800. |
| 15905000 | GALBRAITH LAKE TRIBUTARY NEAR GALBRAITH | 7.55 | 5 | 35. | 46. | 33. | 44. | 51. | 57. | 66. | 72. |
| 15910000 | SAGAVANIRKTOK RIVER NEAR SAGWON | 2208.00 | 11 | 21131. | 34900. | 19558. | 28162. | 34073. | 39873. | 47598. | 53546. |
| 15910200 | HAPPY CREEK AT HAPPY VALLEY CAMP | 34.50 | 8 | 725. | 1390. | 553. | 1174. | 1740. | 2406. | 3466. | 4421. |