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A METHOD OF ESTIMATING FLOOD-FREQUENCY PARAMETERS FOR STREAMS IN IDAHO

By L. C. Kjelstrom and R. L. Moffatt

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U.S. Army Corps of Engineers,

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ABSTRACT

Skew coefficients for the log-Pearson Type III distribution are generalized on the basis of some similarity of floods in the Snake River basin and other parts of Idaho. Generalized skew coefficients aid in shaping flood-frequency curves because skew coefficients computed from gaging stations having relatively short periods of peak flow records can be unreliable. Generalized skew coefficients can be obtained for a gaging station from one of three maps in this report. The map to be used depends on whether (1) snowmelt floods are dominant (generally when more than 20 percent of the drainage area is above 6,000 feet altitude), (2) rainstorm floods are dominant (generally when the mean altitude is less than 3,000 feet), or (3) either snowmelt or rainstorm floods can be the annual maximum discharge. For the latter case, frequency curves constructed using separate arrays of each type of runoff can be combined into one curve, which, for some stations, is significantly different than the frequency curve constructed using only annual maximum discharges. For 269 gaging stations, flood-frequency curves that include the generalized skew coefficients in the computation of the log-Pearson Type III equation tend to fit the data better than previous analyses.

Frequency curves for ungaged sites can be derived by estimating three statistics of the log-Pearson Type III distribution. The mean and standard deviation of logarithms of annual maximum discharges are estimated by regression equations that use basin characteristics as independent variables. Skew coefficient estimates are the generalized skews. The log-Pearson Type III equation is then applied with the three estimated statistics to compute the discharge at selected exceedance probabilities. Standard errors at the 2-percent exceedance probability range from 41 to 90 percent.

INTRODUCTION

Flood-frequency analysis of streamflow records provides information for establishing potential flood risk, for efficient design of hydraulic structures, such as bridges and dams, and for effective flood-plain management and regulation. Over the years, efforts to accurately and consistently predict flood characteristics of a stream have been considerable. In spite of these efforts, many uncertainties and inconsistencies arise in flood-frequency analyses. The choice of technique used to fit frequency curves to annual flood data can make a significant difference in estimating the magnitude of discharge of a given exceedance probability, especially when estimating beyond the range of the data. Exceedance probability is the chance that a random event will be greater than a specified magnitude in a given time period, which is 1 year for this study. Continual improvement of developed techniques is the most immediate method of obtaining flood-frequency curves of greater reliability.

The U.S. Water Resources Council has published several bulletins in an attempt to standardize the procedure for estimating flood magnitudes and frequencies. Bulletin 17A (U.S. Water Resources Council, 1977; Bulletin 17A not referenced hereafter) is the most recent.

Bulletin 17A recommends the log-Pearson Type III distribution over other possible distributions as the basic method for analyzing annual peak discharge data at a stream-gaging site. Three statistical parameters of this distribution--mean, standard deviation, and skew coefficient of logarithms of annual peak discharges--define the position, slope, and curvature, respectively, of the flood-frequency curve. Best estimates of the mean and standard deviation are derived from the observed flood data. However, the skew coefficient can be significantly over-estimated or underestimated from short records. A generalized skew coefficient used to shape or help shape the flood-frequency curve may increase the reliability of the analysis, especially for short periods of record. A generalized skew coefficient map for the United States is included in Bulletin 17A, and guidelines for more detailed studies to develop generalized skew coefficients for local regions are suggested. Studies by Landwehr, Matalas, and Wallis (1978) and Wallis, Matalas, and Slack (1974 and 1977), however, indicate that the usefulness of regional skew maps is questionable.

The isolines of generalized skew on the Bulletin 17A map often pass through what seems to be quite contrary data (station skew averages) in the study area. Widely varied topography, geology, and physiography can affect the way a watershed responds to peak runoff and therefore can determine the skew of the flood-frequency distribution. For instance, warm wind and rain on snowpacks cause floods of infrequent occurrence that can be greater in magnitude than floods caused by annual spring snowmelt. Warm wind- and rain-caused floods generally do not occur above 6,000 ft altitude in the study area (U.S. Army Corps of Engineers, oral commun., 1978). McCain and Ebling (1979), while analyzing skew coefficients for foothills, plains, and mountainous areas in Colorado, noted that foothill streams have large positive skews--sometimes greater than 1.0, whereas plains streams have skews near zero and mountain streams have slightly negative skews, about -0.3. The Bulletin 17A generalized skew map shows isolines of skew coefficients of -0.2 and -0.3 for Idaho. Therefore, a study is needed to better define the variations in skew coefficients in Idaho.

Flood-frequency data obtained from peak flow records at gaging stations become more valuable when information can be transferred to ungaged sites. Thomas and others (1973) and Harenberg (1980) established a relation between discharges at selected exceedance probabilities and basin characteristics. Another technique done by U.S. Army Corps of Engineers (1977) developed regression equations for the mean and standard deviation of logarithms of annual peak flows with basin characteristics as independent variables. The generalized skew coefficient is used as the third log-Pearson Type III statistic. The log-Pearson Type III equation is then applied to these statistics to compute the discharge at selected exceedance probabilities.

This study was made in cooperation with the U.S. Army Corps of Engineers, U.S. Water and Power Resources Service, U.S. Bureau of Land Management, and Idaho Transportation Department.

Purposes of the study were to: (1) Provide equations or maps for estimating generalized skew coefficients that will have greater reliability than those from the generalized skew map in Bulletin 17A; (2) determine if separately analyzing floods caused by different types of hydrologic events, such as snowmelt or rainstorms, improves the representativeness of skew coefficients; (3) produce flood-frequency curves for gaging stations in the study area; and (4) establish a procedure for estimating flood-frequency curves at ungaged sites.

DESCRIPTION OF STUDY AREA

The study area (fig. 1) includes tributaries of the Snake River as far downstream as the confluence of the Snake and Palouse Rivers in Washington; tributaries of the Kootenai, Pend Oreille, and Spokane Rivers in northern Idaho; and tributaries of the Bear River in southeastern Idaho. Topography ranges from broad, mildly sloping valleys and rolling hills in the south to mountainous terrain in the central and northern parts.

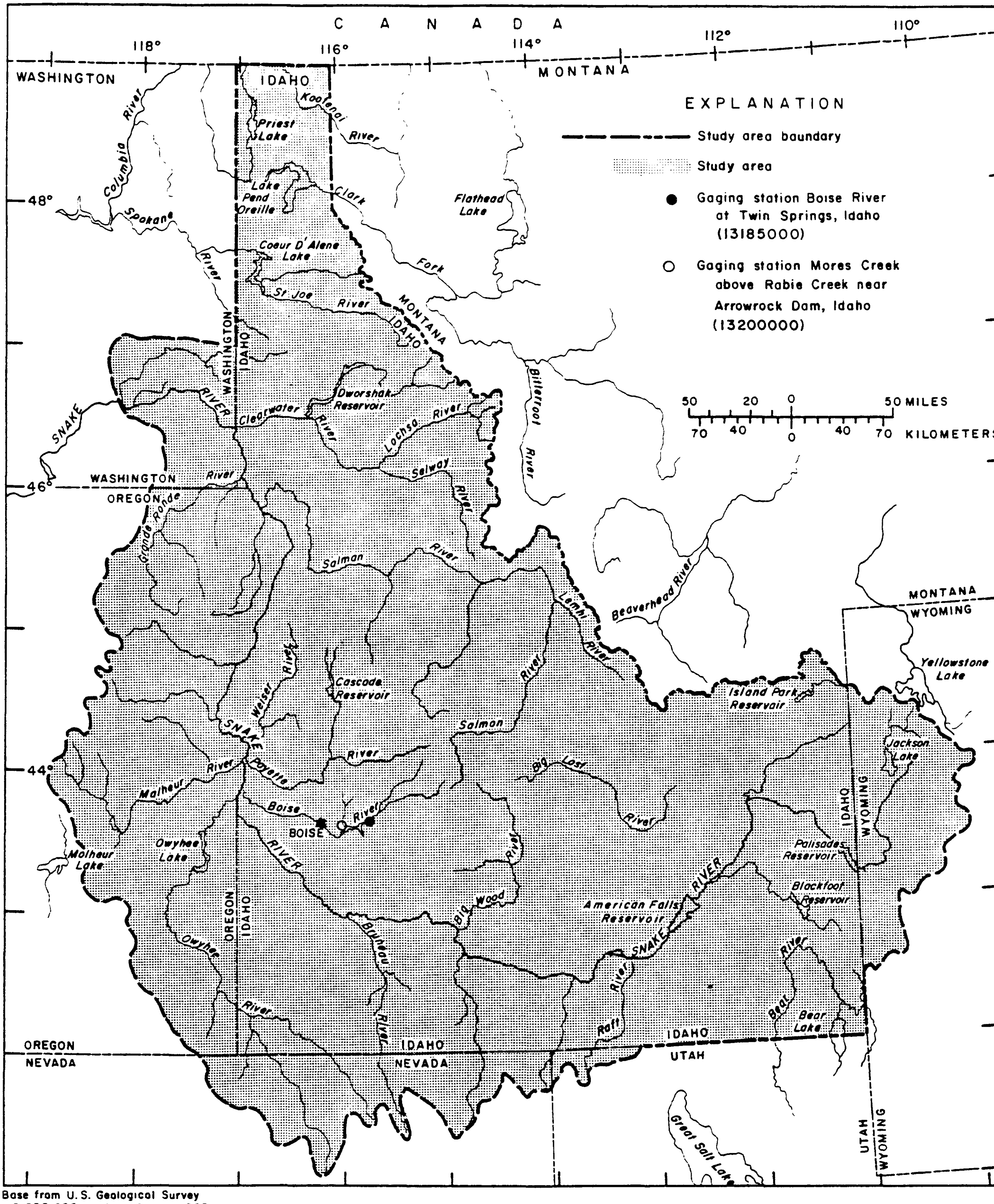


Figure 1.--Location of study area.

Regional geology is complex in rock type and structure, ranging in age from Precambrian to Holocene and consisting of sedimentary, igneous, and metamorphic rocks greatly faulted and folded in places (Bond, 1978). The dominant structural features are the Idaho batholith in the central part of the study area and the basalt in southern Idaho and the western part of the study area (Ross and Savage, 1967).

Storms moving inland from the Pacific Ocean are the source of most precipitation in the study area. Massive frontal systems move eastward across the area, releasing much of their moisture because of orographic effects. Seasonal distribution of precipitation shows a pattern of winter maximum and midsummer minimum in the northern and southwestern parts of the study area. In the northern part, less than 40 percent of the annual rainfall occurs from April through September, and in the southwestern part, less than 30 percent of the annual rainfall occurs then. In the eastern part of the study area, many weather stations report maximum monthly amounts of precipitation in summer and minimum monthly amounts in winter. In the northeastern valleys and eastern highlands, more than 50 percent of the annual rainfall occurs from April through September. During summer months, moisture-laden air occasionally moves into the area from the south at high altitudes and produces unstable air masses and associated thunderstorm activity. Resulting rainfall is generally of short duration and high intensity, which causes rapid runoff from small basins in the southern part of the study area.

Snowfall distribution is affected primarily by availability of moisture and by altitude. The major mountain ranges accumulate deep snow cover in winter and release water from the melting snowpack in late spring. Floods occur in the study area most often in April and May during spring snowmelt runoff. However, extreme rainstorm flooding can occur during the winter months at altitudes less than 6,000 ft when warm, moist air associated with a large frontal system releases its moisture as rain on the snowpack and frozen ground and produces rapid melt and concentration of water (National Oceanic and Atmospheric Administration, 1971).

Rate of runoff is affected by land-use practices and vegetal cover. Forested and agriculturally productive land extends throughout the study area. Several million acres of forest are in the eastern part of the area, mostly in the high, mountainous regions of western Wyoming, southwestern Montana, and eastern Idaho. Forested land areas increase in size and density from the middle to the northern parts of Idaho and western Montana, where the annual precipitation is greater.

Lumber is a chief resource in the northern part of the region, and logging is a large-scale business. Livestock and crop farming are predominant land-use industries in the middle and southern parts of Idaho, and these activities extend into adjacent states.

DATA AVAILABLE

Data from a total of 137 gaging stations in or near the study area, all having at least 20 years of record (considered long term), were used in this study. Primarily, only records from gaging stations where peak discharges were relatively unaffected by regulation or diversion were used in the data base. An additional 132 gaging stations having shorter periods of record (at least 10 years) were given some weight in areas where few stations having long-term records were located. Data from stations on the main stem and several stations on tributaries of the Snake River were not included because of upstream regulation or diversions. Maximum drainage area of any gaging station used in the study was 2,440 mi^2.

Attempts were made to improve some of the data prior to their use in subsequent analyses. For example, at three stations that were used in the data base, the gaging sites were moved during their respective periods of record, but the change in drainage area at each station was less than 10 percent. For these stations, the split periods of record were combined, and adjustments were made to account for changes in tributary inflows.

In some records, only daily mean discharges were available to represent annual peaks. The mean of the annual peaks computed by including these daily mean discharges would always be lower than if only all instantaneous peaks were included. Therefore, estimates of the instantaneous peaks were made by adjusting daily mean discharges at sites where an average relation among other instantaneous peaks and daily mean discharges could be determined. Generally, the daily mean peaks adjusted were below a base discharge chosen for the gaging station, so that an average of three peaks a year would appear above that base discharge. Data from three test stations, having instantaneous peaks for the period of record and where maximum adjustments were made in the daily mean discharges, indicated that the adjusted mean peak remained several percent less than the mean of the instantaneous peaks. Only minimal effect on the station skew coefficient was observed when the estimated instantaneous peaks were used.

Types of Runoff

Annual peak discharges from watersheds in the study area are caused by three types of runoff: (1) from thunderstorms, (2) from snowmelt, and (3) from rainstorms or rain plus snowmelt.

Thunderstorms occur mainly from July to September but can occur at other times. They are generally of short duration and high intensity. The resulting runoff causes flash flooding but produces annual maximum peaks only in relatively small drainage basins. The number of events are not sufficient to construct frequency curves for thunderstorm floods in Idaho. Peak-flow data from crest-stage gages and indirect discharge measurements of peak flows at miscellaneous sites have been obtained for only a few thunderstorm floods.

Peak discharges resulting from snowmelt and rainstorms are recorded at gaging stations, but it is necessary to accurately determine the type of runoff associated with particular peak discharges if separate frequency curves are to be defined.

Flooding from snowmelt in the study area generally occurs from March through June, whereas flooding associated with rainstorms can occur between November and March or April, particularly at altitudes below 6,000 ft. However, the time of year a flood occurs is not a conclusive indicator for either type of flood runoff. A more conclusive test for the type of runoff was made by examining the mean daily discharge hydrographs of gaging stations. It was assumed that a fairly steady rise and recession would indicate snowmelt runoff, and that a sharp rise would indicate runoff from rainstorms. For further clarification as to the type of runoff associated with a particular peak discharge, climatological records were examined for occurrence of rainfall throughout the area.

By examining climatological records and daily mean discharge hydrographs, two arrays of annual peaks (one for snowmelt and one for rainstorms) were defined at 32 long-term gaging stations (data table A). Rainstorm floods did not occur every year at all these gaging stations, or else runoff was so low that it was not identifiable. In these cases, a base peak discharge was established and the conditional probability techniques described in appendix 4 of Bulletin 17A were used in the computations.

Investigation of the annual maximum discharge records at the 137 gaging stations used in the study indicated that spring snowmelt is the only type of flood runoff at 47 stations; rainstorms are the dominant type of flood runoff at 11 stations; and annual maximum peak discharges are associated with both (1) annual spring snowmelt and (2) rainstorms, or rain plus snowmelt, at 79 gaging stations.

From the latter group, separation of annual peak discharges by runoff type was made for the 32 stations mentioned previously. The other 47 are crest-stage stations, which record only annual maximum discharge, or are gaging stations having too few floods associated with rainstorms or rain plus snowmelt to use as a separate array. Although records from several precipitation and temperature recording stations were examined to aid in identifying rainstorm floods, the records were generally from valleys not necessarily in the watershed being examined and often at altitudes lower than parts of the drainage basin. Generally, extreme floods that occurred at several gaging stations were easily identified as to cause, whereas peaks in the midrange were difficult to classify. Since skew coefficients are determined largely by the extremes, any errors in classifying mid-range peaks are thought to have minimal effect on the station skew coefficient.

In summary, using the 137 long-term stations, snowmelt flood arrays were available for 79 stations (47 where spring snowmelt is dominant plus 32 where a separate array was defined); rainstorm flood arrays were available for 43 stations (11 where rainstorms are dominant plus 32 where a separate array was defined); and annual maximum discharges associated with either runoff type were available for 79 stations. Annual maximum discharges for the 105 stations without two separate arrays of runoff type are listed in data table B.

Further examination of gaging-station records shows that many stations have no significant peaks resulting from rainstorms. An attempt was made to identify those subject to significant rainstorm runoff and those with floods that could be attributed to only snowmelt. Percentage of drainage area below 6,000 ft altitude was determined for each long-term gaging station and was plotted against the percentage of the 10 highest peaks for each gaging-station record caused by rainstorms (fig. 2). Percentiles were established so that a nearly even number of drainage basins are represented in each category of the abscissa. In the category "greater than zero to 20 percent of drainage area below 6,000 ft altitude," only gaging stations in the Bruneau, Owyhee, and Humboldt River basins (southwestern part of study area) experienced significant rainstorm peaks. In the Bruneau and Owyhee River basins, no significant rainstorm peaks occurred on streams having less than 20 percent of the drainage area below 6,500 ft. In more than 1,200 years of record for 33 gaging stations on streams having less than 20 percent of the drainage area below 6,000 ft throughout the rest of the study area, a rainstorm peak was neither the annual peak nor one of the 10 highest peaks of record. On this basis, less than 20 percent of drainage area below 6,000 ft was used as a guideline to identify sites where annual peaks are dominated by snowmelt floods.

Several stations having more than 20 percent of drainage area below 6,000 ft altitude also have not experienced significant rainstorm floods. On the other hand, peaks of record at a few gaging stations that have 20 to 50 percent of drainage area below 6,000 ft altitude were caused by rainstorms. Although latitude and weather patterns may be other influences, no further attempt was made to provide guidelines for identifying gaging stations dominated by snowmelt floods.

Figure 2 shows that the probability of significant rainstorm-caused peaks increases as percentage of drainage area below 6,000 ft increases. A likely reason is that the rainstorm flood in the

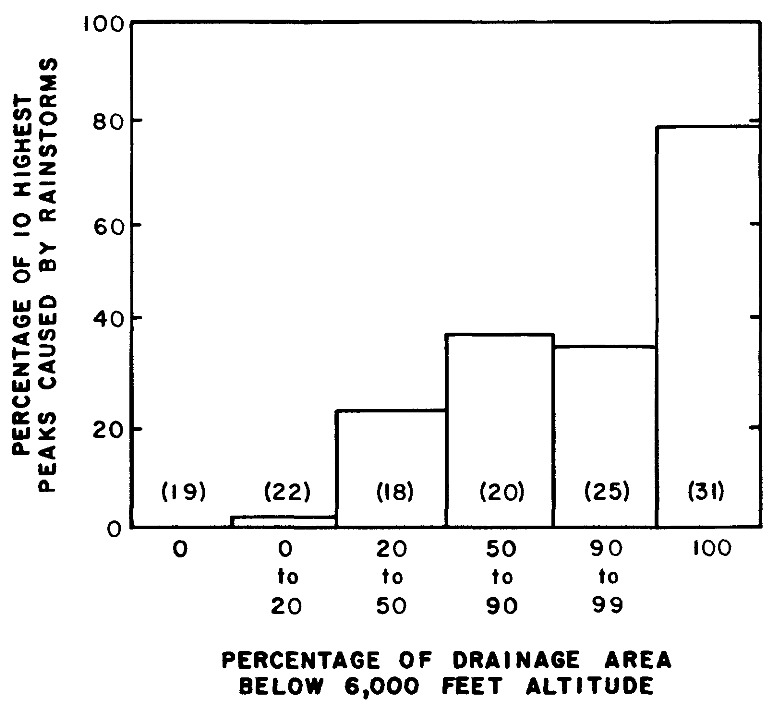


Figure 2.--Relation between frequency of rainstorm peaks and basin altitude. (Number of gaging stations are in parentheses)

winter can be more severe because of frozen ground and augmented runoff from melting snow. For a winter storm, however, the temperature is usually freezing above 5,000-7,000 ft altitude and the rain changes to snow. Therefore, rainstorm floods are runoff from lower altitudes.

For the 31 gaging stations having drainage areas completely below 6,000 ft, the following table indicates that drainage areas having mean altitudes below 3,000 ft can be assumed as being dominated by rainstorm floods:

Mean altitude	Number of stations	Percentage of 10 highest peaks caused by rainstorms
Below 3,000 ft	12	92
3,000 to 4,500 ft	12	78
Above 4,500 ft	7	59

Double-Mass Curves

Although gaging-station records selected for use in this study were examined to exclude those where regulation or diversions might affect peak discharge, there still could be changes in basin-runoff characteristics because of activities such as logging, forest fires, placer mining, or unrecorded diversions. Under the assumption that a constant ratio of cumulative annual peak runoff exists between a given station and a group of stations, each record was tested for homogeneity by a double-mass curve (fig. 3).

Runoff characteristics for the area were established by 30 long-term gaging-station records. Adequate data for drawing the double-mass curves were available only since the 1927 water year. The cumulative annual maximum discharge per square mile of drainage area at each gaging station was plotted against the cumulative average annual maximum discharge per square mile of drainage area for all 30 stations. Only a few stations showed a definite inflection in the slope of the curve. Some inflections seem to coincide with changes in logging or mining activities in the drainage basin. None of the inflections in the double-mass curves were thought to be statistically significant on the basis of a variance-ratio test (F-test).

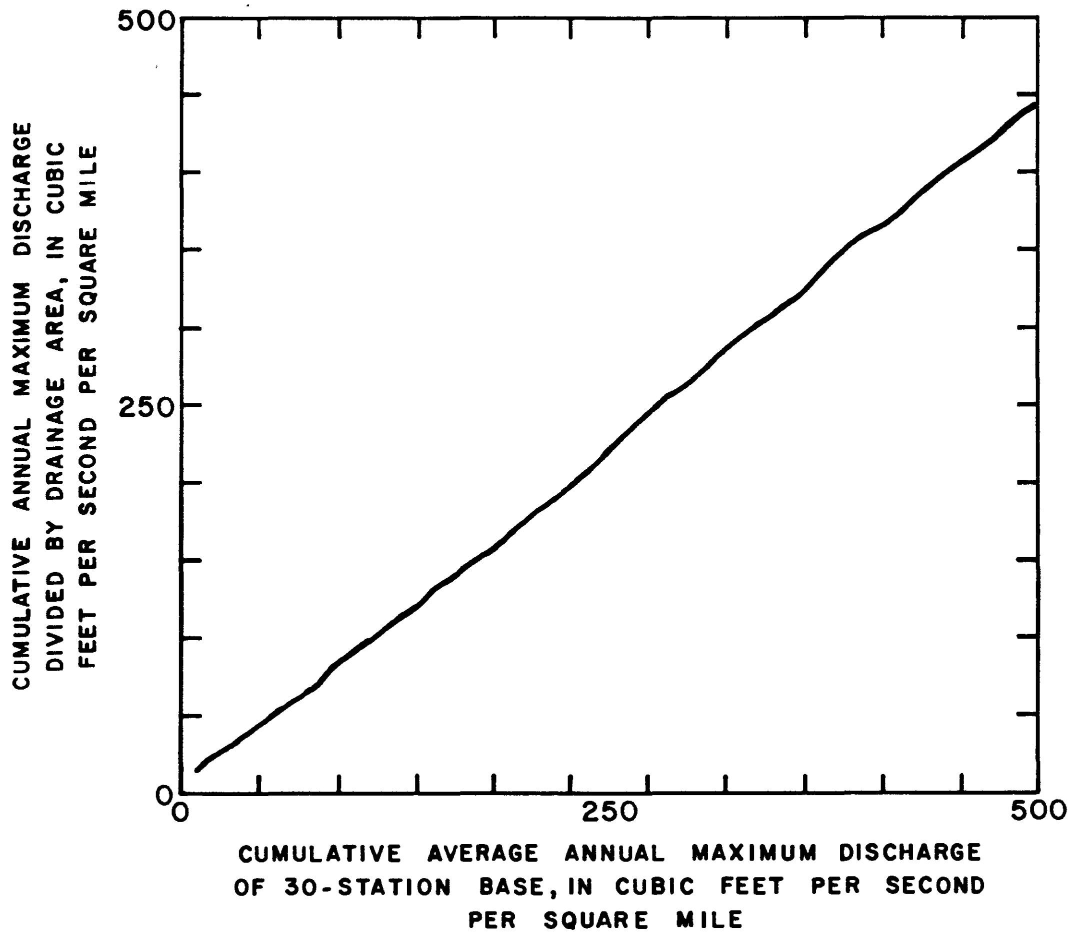


Figure 3.-- Double-mass curve for Boise River at Twin Springs, Idaho (13185000).

(See fig. 1 for location of gaging station)

GENERALIZED SKEW COEFFICIENTS

Station skew coefficients were computed for the long-term stations as a basis for determining generalized skew coefficients. The annual peak data were adjusted for historical floods and outliers (peaks that depart significantly from the frequency curve) in the computation of the station skews, as outlined in Bulletin 17A. The historical floods used were known to be the highest peaks for a longer period than the systematic record. Peak discharges within the systematic records that appeared to be high outliers by Bulletin 17A criteria, or were identified as being the highest peak for a longer period than the systematic record, were also treated as historical floods. Historical information on outstanding floods and long-term gaging-station records were used in determining historical periods. Low outliers, which highly bias skew coefficients, were deleted, and an adjustment for the incomplete record was made in accordance with Bulletin 17A. Low outliers were observed at 17 percent of the gaging stations; only about 45 percent of these could be identified by Bulletin 17A low-outlier criteria. The remaining 55 percent were generally identified with drought years. The 1977 water year, when many long-term gaging stations in most river basins in the study area had the lowest annual flows of record, accounted for 70 percent of the observed low outliers. Most other low outliers occurred in 1934 or 1944, which were also drought years in some areas.

In determining the generalized skew coefficients from peaks caused by snowmelt, station skew coefficients were computed for 79 gaging stations. These stations comprise the 32 stations where both snowmelt and rainstorm arrays were developed (pl. 1), and 47 long-term stations having less than 20 percent of drainage area below 6,000 ft altitude. Skew coefficients range from +0.18 to -1.07 (data table C); no regional pattern is apparent.

Station skews determined from peaks caused by snowmelt were subsequently regressed by using, as independent variables, the basin characteristics described later in this report. No basin characteristic had a statistically significant correlation with skew coefficients, and it was concluded that the regression equations fail to predict a sufficient part of skew variability.

The average skew coefficient of frequency distributions, using peaks caused by spring snowmelt for all 79 stations, is -0.31; the standard deviation is 0.27. Average skews in the southern, central, and northern parts of the study area are -0.32, -0.28, and -0.35, respectively. Average skew of the 47 stations having less than 20 percent of drainage area below 6,000 ft altitude is -0.33. Nearly the same average skew (-0.31) was obtained from the 32 stations where both snowmelt and rainstorm arrays of annual peaks were developed. In summary, there is no regional pattern from which isolines might be drawn and no regression equation using basin characteristics that can satisfactorily explain variations in skew coefficients for snowmelt peaks. Therefore, a skew coefficient of -0.3 is recommended for peaks caused by snowmelt throughout the study area.

In the determination of generalized skew coefficients from peaks caused by rainstorms, station skew coefficients were computed for 43 gaging stations. These 43 stations included 11 stations where annual maximum peaks were caused by runoff from rainstorms and for the 32 stations where both rainstorm and snowmelt arrays of annual peaks were developed (data table C). The coefficients for rainstorm floods were plotted on a map, and a regional pattern was identified.

Boundary lines were used rather than isolines to define generalized skew coefficients for drainage basins (pl. 2). Generally, boundary lines for the generalized skew coefficients coincide with boundaries of hydrologic units (U.S. Geological Survey, 1975).

Initial boundary lines were drawn on the basis of topography and a definite trend of the skew coefficient to decrease in a northwesterly direction. Averages of station skews within the skew boundary lines were computed. The averages required considerable modification before generalized skew coefficients were selected. Boundary lines were then refined by recomputing log-Pearson Type III frequency curves for the long-term stations using only the tentatively selected generalized skew coefficients. The basis for applying this refinement is that the frequency function of extreme floods is not known and that with relatively short records being used, observed floods should be considered within the 0.02 exceedance probability. The frequency curves for long-term stations in a hydrologic unit were then examined for the position of the maximum peak discharge. If the maximum peak discharge was greater than the discharge at the 0.2-percent exceedance probability, boundary lines were redrawn, if possible, to include the hydrologic unit in the area having a higher generalized skew coefficient. For further refinement of the boundary lines, frequency curves were computed for the short-term stations. When possible, boundary lines were moved to include or exclude short-term stations where maximum peak discharge was greater than the discharge at the 0.2-percent exceedance probability. Only a few boundary lines were redrawn using this procedure, and where a line was redrawn, the generalized skew coefficient changed only 0.1 for any hydrologic unit.

Prior to areal separation, regression analyses were used in an attempt to develop predictor equations for skew. Basin characteristics and a flow-variability index were the independent variables. The flow-variability index is defined as the ratio of the daily mean discharge exceeded 10 percent of the time to that which is exceeded 90 percent of the time. Though the flow-variability index was most highly correlated with skew, $r=0.40$, the relation was not statistically significant, and predictor equations for skew were not developed.

In the determination of generalized skew coefficients from peaks caused by either snowmelt or rainstorms, or both, station skew coefficients were computed for 79 long-term stations (data table C). Boundary lines for generalized skew coefficients (pl. 3) were drawn by using the same procedures as described for peaks caused only by rainstorms (pl. 2).

For peaks caused by snowmelt, a generalized skew coefficient of -0.3 should be used (weighted with the station skew) for gaging stations having less than 20 percent of drainage area below 6,000 ft altitude (pl. 1). Gaging-station records indicate that the possibility of experiencing significant runoff from a winter rainstorm at altitudes above 6,000 ft is extremely rare. Some stations having more than 20 percent of drainage area below 6,000 ft experienced only annual maximum peak discharges caused by snowmelt; however, the chance of having significant peaks caused by rainstorms appears to be sufficient that the generalized skew from plate 3 should be used for these stations.

When a gaging station's annual maximum discharge record is exclusively rainstorm floods, or the mean altitude of the basin is below 3,000 ft, a generalized skew coefficient from plate 2 should be used.

The generalized skew coefficient from plate 3 should be used for all sites where separate arrays of snowmelt and rainstorm floods cannot be obtained, 20 percent or more of the drainage area is below 6,000 ft altitude, and the mean altitude of the basin is above 3,000 ft.

In the following flood-frequency analyses using the log-Pearson Type III distribution, the generalized skew coefficient is weighted with the station skew coefficient by the same equation as given in Bulletin 17A.

$$G_w=[1.0-(N-25)/75]G+[(N-25)/75]G_s \qquad (1)$$

where

G_w = weighted skew coefficient,

G = generalized skew coefficient,

G_s = station skew coefficient, and

N = length of record, in years.

No attempt to evaluate this weighting procedure was made, because of the limited data base of this study.

FLOOD-FREQUENCY ANALYSES FOR GAGING STATIONS

To evaluate different flood-frequency analyses, the upper end of the frequency curve is examined for the best fit. As a means of comparison, a test ratio of observed to average expected number of peaks greater than the discharge at a given exceedance probability is used.

The probability of not exceeding an N-year event in any one year equals 1, minus the exceedance probability (P). Riggs (1968) showed that the probability of not exceeding an N-year event in N years is $(1-P)^N$, and the probability of one or more events exceeding the N-year event (P_1), is $P_1=1-(1-P)^N$. To determine the probability of exceeding the N-year event in any one year (P_2), the conditional probability that an event will occur in any one year of the period of record (n) must be considered, or $P_2=P_1(1/n)$. The average number of occurrences that could be expected in an n-year period (B) would be $B=P_2n$; then, the test ratio equals $\Sigma A/\Sigma B$, where ΣA is observed peaks greater than the discharge at a given exceedance probability for all gaging stations.

Counting observed peaks and computing probable number of peaks assumes independence of gaging stations. The ratio could be expected to approach 1.0 if the area sampled were sufficiently large, which could have the effect of increasing the independence of the sample.

To determine if the test ratio provides an adequate means of comparison, all stations were divided into three groups by selecting every third station, listed by downstream station number. The test ratio at the 0.01 exceedance probability was computed for each of the three groups for two different frequency analyses. The average deviation from the test ratios for all stations was 10 percent; the largest deviation was 16 percent.

A comparison of frequency analyses was made for streams having peaks caused by runoff from rainstorms. Frequency analyses using the log-normal and log-Gumbel distributions were made and included in a comparison with the log-Pearson Type III distribution. The ratio of observed to average expected number of peaks greater than the discharge at the 1-percent exceedance probability was used to compare the frequency curves of the following types of analyses:

Type of analysis	Ratio of observed to average expected number of peaks greater than discharge at 1-percent exceedance probability
(1) Log-Pearson Type III with generalized skew weighted by station skew	0.96
(2) Log-Pearson Type III with station skew	.62
(3) Log-normal	1.77
(4) Log-Gumbel	.23

The comparison indicates that the log-Pearson Type III distribution using a weighted skew coefficient gives the better fit. The log-normal distribution tends to be low at the upper end; the log-Gumbel distribution is just the opposite. A total of 43 gaging stations having an average historical period of record of 54 years were included in this comparison.

A separate array for each type of runoff may be analyzed for gaging stations where peaks caused by runoff from both snowmelt and rainstorms represent significant floods. The generalized skew coefficient of -0.3 for peaks caused by snowmelt and the generalized skew coefficient for peaks caused by rainstorms (pl. 2) should be used for each analysis. The two curves are then combined, using the equation:

$$P_c = P_s + P_r - P_s P_r \qquad (2)$$

where

P_c = exceedance probability of a given magnitude from the combined frequency curve,
P_s = exceedance probability of the given magnitude from the snowmelt frequency curve, and
P_r = exceedance probability of the given magnitude from the rainstorm frequency curve.

The exceedance probability should be determined for several discharges so that the combined frequency curve is adequately defined.

A combined frequency curve was computed from the frequency curves of peaks caused by runoff from snowmelt and rainstorms for the 32 gaging stations where the two arrays of peaks were available. For these stations, a frequency analysis was made of the annual maximum peaks by using the generalized skew coefficient from plate 3. A sample of the frequency curves for the 32 stations is shown in figure 4. The average difference between the combined and maximum annual frequency curves at the 1-percent exceedance probability is +20 percent. A comparison was made of the test ratio of observed to average expected number of peaks greater than the discharge at the 1-percent exceedance probability.

Type of analysis	Ratio of observed to average expected number of peaks greater than the discharge at 1-percent exceedance probability
Combined frequency curves	1.03
Annual maximum series with weighted generalized skew coefficient	1.77

This comparison indicates that at gaging stations having annual maximum peaks caused by both snowmelt and rainstorms, two separate arrays could show an upper end of the frequency curve significantly different from that of the annual maximum series. If the period of record were of sufficient length, the upper end of the combined frequency curve for the two arrays could be expected to merge with the upper end of the frequency curve determined by using the annual maximum discharges. A plot was made of the percentage deviation of the discharges at the 1-percent exceedance probability against the years of historical record (fig. 5). A general scatter of points occurs, but the plot indicates that at least 80 years of record, and probably more than 100 years of record, would be required to achieve the same estimate by using the annual maximum peaks, as that obtained by using the combined frequency curve. Certainly, other factors, such as short systematic records, historical periods not assigned or assigned incorrectly, and extremely rare floods, add to the scatter. For gaging stations where significant rainstorm peaks are more of a rarity than at stations used in the analysis, the length of record required could be even greater.

Results of the final frequency analysis for each station are listed in data table D. This list includes all gaging stations used in determining generalized skew coefficients, as well as gaging stations in the study area that have 10 or more years of

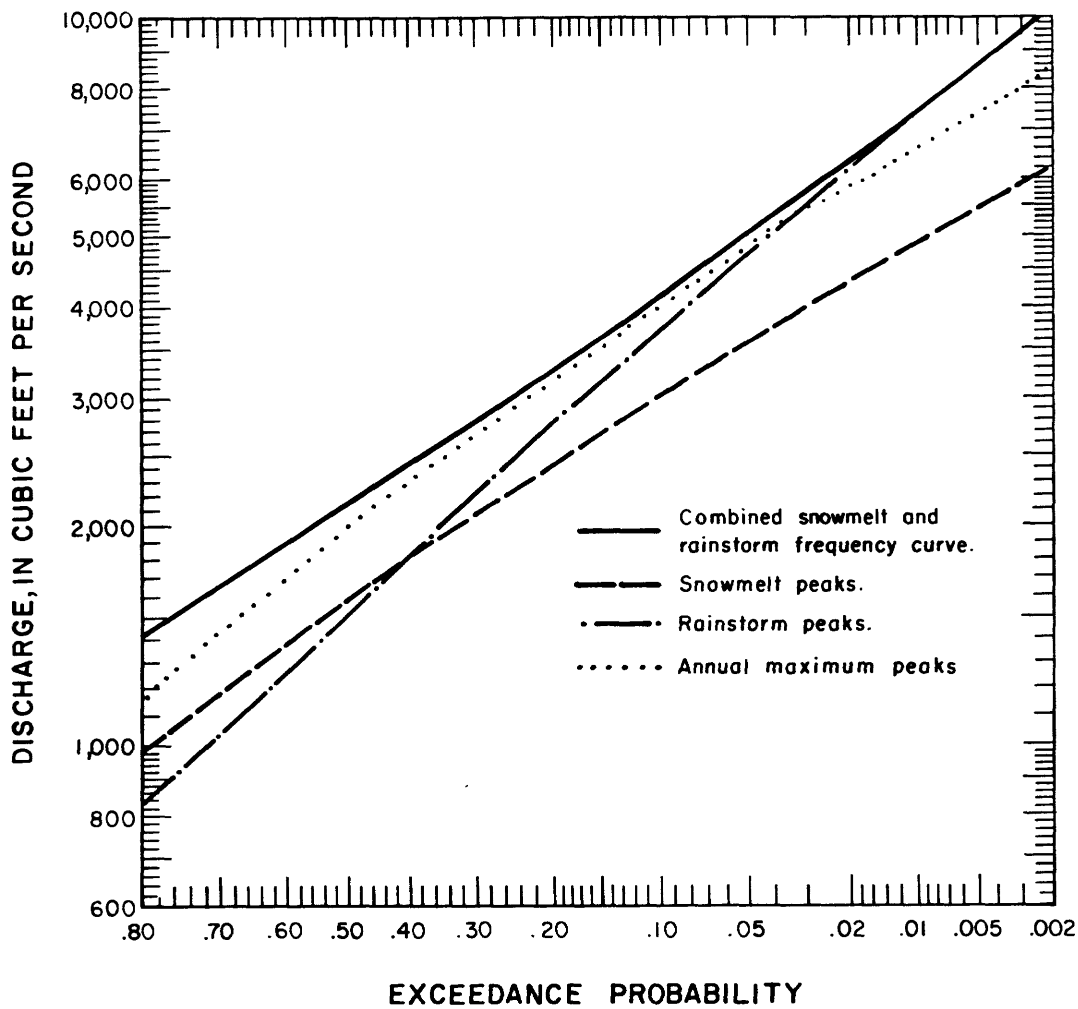


Figure 4.-- Frequency curves for Mores Creek above Robie Creek, near Arrowrock Dam, Idaho (13200000).
(See fig. 1 for location of gaging station)

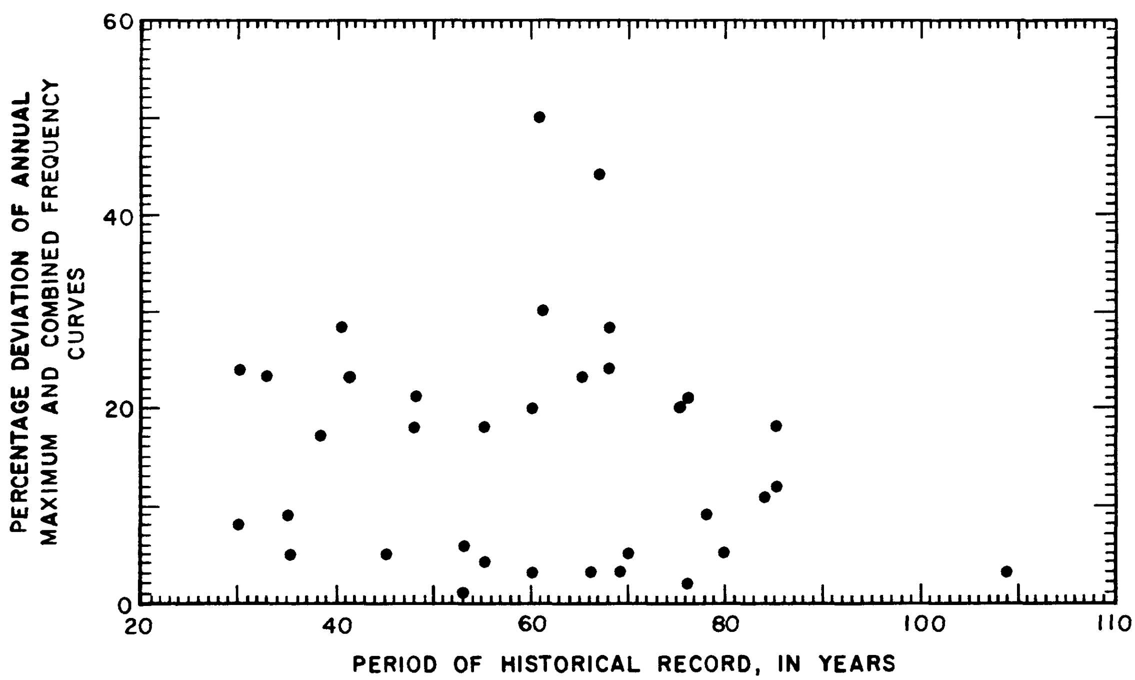


Figure 5.--Deviation of annual maximum and combined frequency curves at 1-percent exceedance probability for period of historical record.

unregulated peak discharge record. The discharge at the 1-percent exceedance probability is not given for stations having short records where the upper end of the frequency curve may be unreliable.

The log-Pearson Type III distribution was used as the basic method. A generalized skew coefficient for each analysis was selected, and the weighting procedure with the station skew was used. Data from the combined frequency curve are given for stations where a separate analysis was made for snowmelt and rainstorm peaks.

The test ratio was computed from both the discharges listed in data table D and the discharges of a frequency analysis that used the generalized skew map and the otherwise similar procedures from Bulletin 17A. All 269 gaging stations shown in data table D are included in the following comparison:

Log-Pearson Type III distribution using generalized skew coefficients	Ratio of observed to average expected number of peaks greater than the discharge at the given exceedance probability	
	(1-percent)	(0.2-percent)
From this report	0.86	0.61
From Bulletin 17A	1.28	2.07

This comparison indicates that using generalized skew coefficients from this report gives a better fit to data than using those from Bulletin 17A. It normally could be expected that the ratio would decrease from the 1- to 0.2-percent exceedance probability, due to the relatively short records.

Ratios computed separately for 120 gaging stations having less than 25 years of record, which were not used to develop the generalized skew coefficients, follow:

Log-Pearson Type III distribution using generalized skew coefficients	Ratio of observed to average expected number of peaks greater than the discharge at the given exceedance probability (1-percent)	(0.2-percent)
From this report	0.90	0.76
From Bulletin 17A	1.45	2.28

In this comparison, the station skew has no weight because the record length is less than 25 years, so generalized skews are used directly. The same trend is evident for a better fit, using this report's generalized skew coefficients.

The average increase of discharge at 1-percent exceedance probability of frequency analyses is 17 percent for all gaging stations not dominated by snowmelt runoff, computed by using generalized skews from this report, rather than generalized skews from Bulletin 17A. Most gaging stations that are dominated by snowmelt runoff had similar skews from this report and Bulletin 17A; therefore, frequency curves were similar.

FLOOD-FREQUENCY ANALYSIS FOR UNGAGED SITES

Estimates of the most important statistic of the log-Pearson Type III distribution--the mean logarithm of annual peak discharges--can be predicted by basin characteristics. If reasonable estimates of the standard deviation of logarithms of annual peak discharges, which ranged from 0.084 to 0.538, could also be predicted by basin characteristics, the log-Pearson Type III equation could be used to develop a frequency curve for ungaged sites. Because generalized skew coefficients seem to give reasonable results when used directly for the 120 stations having less than 25 years of record, the generalized skew maps can also provide estimates of skew for ungaged basins. Regression analyses of the mean and standard deviations of logarithms of annual peaks with basin characteristics were made using 269 gaging stations (data table D) having 10 or more years of systematic record.

After investigating several methods, it was determined that the two statistics could best be predicted by: (1) Regionalizing the data on the basis of significant basin characteristics; for example, drainage area, mean altitude, and mean annual precipitation; and (2) separating the regionalized data by basin size. The comparison of various regression equations, correlation coefficients, and computer plots of dependent and independent variables aided in defining the regions and drainage basin sizes in some cases where different sets of variables were effective. Some subjective judgment was necessary to make the finer distinctions, but the division into subareas and drainage size was largely dictated from analyzing the data. For this study, the area was divided into three regions, on the basis of similarity of basin characteristic effect, and each region was analyzed separately (fig. 6). For both the mean and standard deviation in region 1 and the standard deviations in regions 2 and 3, a separation of basin size was required because of changes in statistically significant basin characteristics. Regression equations for region 1 could not be defined for drainage basins greater than 250 mi^2 because nearly all larger basins are affected by diversions or regulation. Multiple regression was done by using stepwise and step-backward techniques. Regression equations (table 1) with two or three independent variables were selected on the basis of coefficients of determination, correlation coefficients, and statistical tests. The form of the equations remains in logarithmic units so an estimate of the statistics can be used in the log-Pearson Type III equation.

Descriptions and a brief explanation of computation procedures for the basin characteristics listed in data table E are given below:

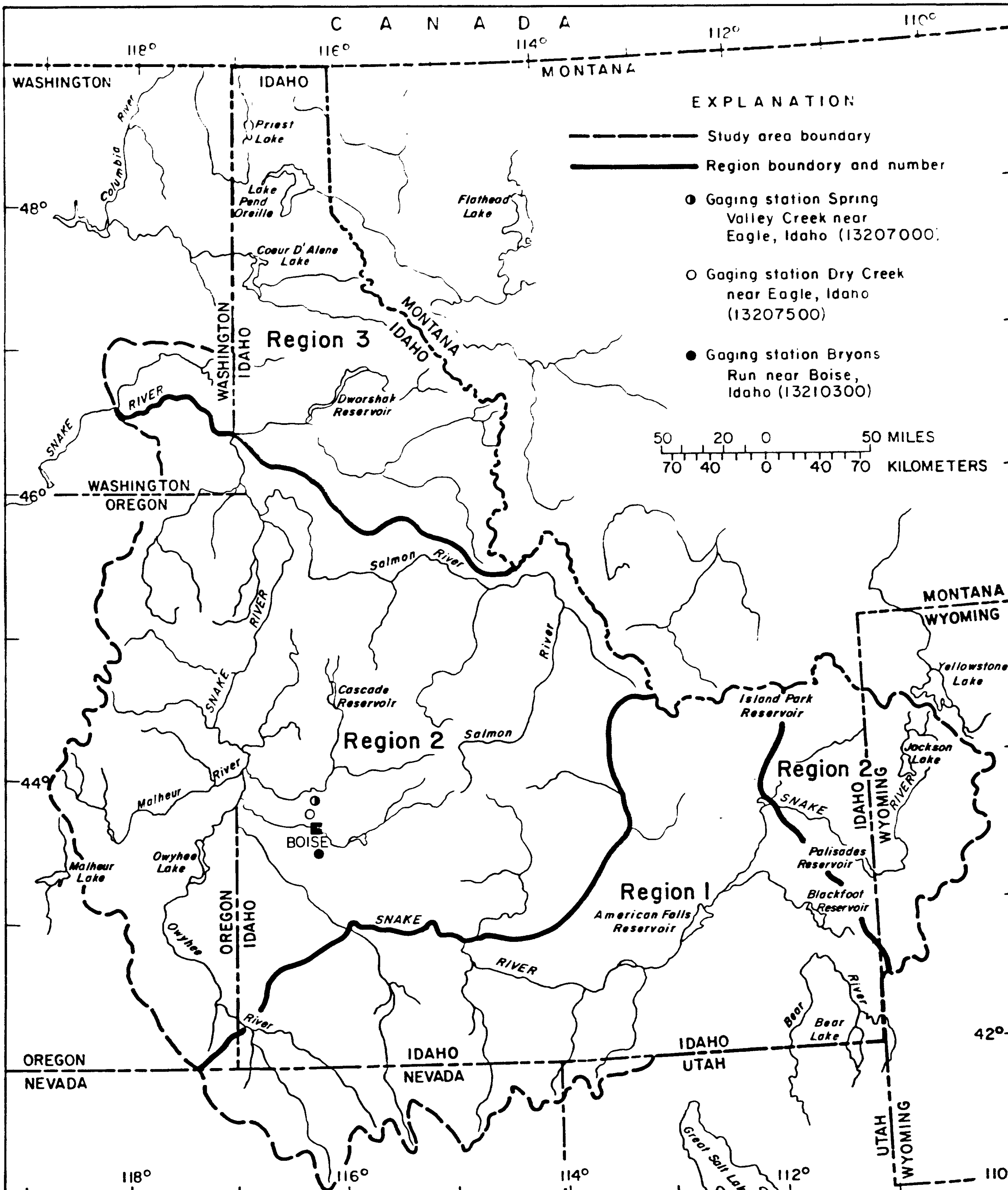
Drainage area (DA)--in square miles, is the total area contributing to flood discharge and is planimetered from U.S. Geological Survey topographic maps.

Drainage area below 6,000 ft altitude (PL6T)--is expressed as a percentage of the total drainage area and is obtained by outlining the 6,000-ft contour and planimetering the subbasin.

Forest cover (F)--is expressed as a percentage of the drainage covered by forests and is obtained by a grid-overlay method. The grid is selected so that approximately 30 intersections are within the basin. The number of intersections within forested areas are then counted and expressed as a percentage of all intersections.

Length--is the total distance, in miles, along the main channel between the divide and the gage.

Slope (S)--is the average fall in the main channel, in feet per mile, in a reach from the 10th to the 85th percentile of the length upstream from the gage.



Base from U.S. Geological Survey 1:2,500,000, United States 1965

Figure 6.-- Regions where different sets of regression equations are effective and locations of gaging stations cited on page 26.

Table 1. Regionalized regression equations for the mean and standard deviation of logarithms of annual maximum discharges

Region: See figure 6 for division of regions.

DA: Drainage area, in square miles.

S: Average slope of the main channel between points at 85 and 10 percent of the length above the gage to the basin divide.

F: Percentage of forest cover plus 1 percent.

MAP: Mean annual precipitation.

ALT: Mean altitude of the basin.

INT24HR: Rainfall intensity of a 24-hour period at the 50-percent exceedance probability.

MMJT: Mean minimum January temperature.

Region	Drainage area (mi^2)	Regression equation for mean logarithm of annual maximum discharges	Regression equation for standard deviation of logarithms of annual maximum discharges	Standard error of estimate, in percent, at 0.02 exceedance probability: Average	Range
1	≤35	1.477 + 1.280 log DA − 0.399 log S	3.289 − 0.175 log DA − 0.739 log ALT	90	+131 to −55
	>35 to <250	0.637 + 0.808 log DA + 0.155 log F	3.250 − 0.083 log F − 0.732 log ALT − 0.523 log INT24HR	63	+81 to −44
2	≤250	−0.037 + 0.839 log DA + 0.834 log MAP	1.877 − 0.067 log DA − 0.193 log MAP − 0.337 log ALT	59	+75 to −43
	>250	−0.037 + 0.839 log DA + 0.834 log MAP	0.600 − 0.157 log F − 0.123 log MAP + 0.060 log MMJT	41	+49 to −33
3	≤250	0.800 + 0.993 log DA + 0.169 log S	0.751 − 0.050 log DA − 0.111 log ALT −0.057 log MAP	48	+60 to −37
	>250	0.800 + 0.993 log DA + 0.169 log S	0.600 − 0.157 log F − 0.123 log MAP + 0.060 log MMJT	63	+81 to −44

Mean altitude (ALT)--in feet, is computed by a grid-overlay method. The grid selected should have at least 20 points inside the basin. (This may not be possible for very small basins.) Altitudes at the intersection points are then averaged.

Mean annual precipitation (MAP)--in inches, is computed by a grid-overlay method on a 1930-57 mean annual precipitation map (National Oceanic and Atmospheric Administration, 1965). The grid selected should have at least 20 points inside the basin. (This may not be possible for very small basins.) Precipitation at the intersection points is then averaged.

Precipitation intensity for 24 hours with a 50-percent exceedance probability (INT24HR)--in inches, is computed by using a grid-overlay method and a map of isopluvials of 2-year, 24-hour precipitation (National Oceanic and Atmospheric Administration, 1973, or Harenberg, 1980).

Mean minimum January temperature (MMJT)--in degrees Fahrenheit, is determined from a map based on the period 1931-52 (National Oceanic and Atmospheric Administration, 1971).

The regression equations were used to estimate the standard deviation and mean of the logarithms of annual peak discharges for each gaging station in the study area. The generalized skew coefficient previously determined for each station was used to obtain a value for the log-Pearson Type III frequency factor--a function of the skew coefficient and exceedance probability (Bulletin 17A, appendix 3)--at the 2-percent exceedance probability. The log-Pearson equation was then computed, and the results were compared with the discharge listed in data table D, based on the gaging-station record. This comparison, which indicates the relative accuracy of the regression equations, is expressed as the standard error of estimate. For a large sample, two out of every three observations can be expected to be within one standard error. The standard error, in percent, for the 2-percent exceedance probability, is shown in table 1 for each set of equations. The lost degrees of freedom in computing the standard error were obtained by summing the number of constants in each regression equation and adding one for the skew coefficient.

The regression equations should be used only for streams that have some homogeneity with the streams that defined the equations. Regression equations are not well defined for very small drainage basins, and it is not recommended that equations be used for drainage areas less than 0.5 mi^2. Also, the regression equations are poorly defined in a range of about 1,500 to 2,000 mi^2 and are undefined above that range. The regression equations would not apply to streams that are ephemeral, that are subject to intensive thunderstorms, or that drain areas significantly affected by man's activities. Streams that drain unforested basins or that flow through alluvial valleys may also be poorly defined.

The following is a series of steps employed to estimate the discharge at a given exceedance probability for an ungaged site, using Spring Valley Creek near Eagle, Idaho (13207000), as an example (fig. 6):

1. Locate drainage basin in figure 6, and determine region in which it is located; in this case, region 2.

2. From table 1, determine equations to be used from the basin size and compute the mean and standard deviation of logarithms of annual peak discharges. For the example given, drainage area, mean annual precipitation, and altitude are 20.9 mi^2, 14 in., and 3,990 ft, respectively. Mean logarithm is 2.026, and standard deviation of the logarithms is 0.354.

3. The annual peak discharge can be caused by snowmelt or rainstorm runoff, because the drainage basin is completely below 6,000 ft and the mean altitude is 3,990 ft. Therefore, plate 3 is used to identify the generalized skew coefficient (G), which, in this case, is +0.3.

4. For a log-Pearson Type III variable at exceedance probability (P_e),

$$\text{Log } Q_{P_e} = M + K_{P_e} S. \tag{3}$$

Here, M=2.026; S=0.354. From data table F, at P_e=0.02 and G=+0.3, K is 2.21081; therefore,

$$\text{Log } Q = 2.026 + 2.21081\ (0.354), \tag{4}$$

and

$$Q = 644\ ft^3/s, \tag{5}$$

where

Q = discharge,
M = discharge, and
S = discharge.

5. Compare with nearby gaging stations (fig. 6). In this case, Dry Creek near Eagle, Idaho (13207500), drainage area 59.4 mi^2, and Bryans Run near Boise, Idaho (13210300), drainage area

7.94 mi^2, have runoffs of 15.3 $(ft^3/s)/mi^2$ and 55.4 $(ft^3/s)/mi^2$, respectively. The 30.8 $(ft^3/s)/mi^2$ runoff from Spring Valley Creek appears to be reasonable from this comparison.

Another method using regression equations for ungaged basins is cited in Thomas and others (1973). Equations were developed to compute floods at a 0.1 exceedance probability from ungaged basins ranging in area from 0.5 to 200 mi^2. Estimates of discharges at the 0.04 and 0.02 exceedance probabilities can be computed by multiplying a given average ratio by the discharge at the 0.1 exceedance probability.

For 120 gaging stations defined by regression equations in Thomas and others (1973), only a slight decrease in standard error was obtained by using the present method. However, for 36 gaging stations that were noted as poorly defined or undefined in Thomas and others (1973), the standard error using the present method at 0.10 exceedance probability was 68 percent. Harenberg (1980) regressed discharge at selected exceedance probabilities with basin characteristics. Standard errors at 2-percent exceedance probability ranged from +109 to -52 percent for an equation using two basin characteristics (DA and INT24HR). Use of estimated statistics of the log-Pearson Type III equation resulted in seemingly lower standard errors of discharge than obtained by Harenberg (1980) and more areally defined regression equations than obtained by Thomas and others (1973).

Observations show that as the exceedance probability decreases, the correlation coefficients of discharges at probabilities less than 0.1 and the independent variables decrease rapidly. The decreased correlation coefficients are probably related to an increasing proportion of discharge being determined by the standard deviation and skew coefficient, neither of which may be correlated with the same basin characteristics (independent variables) as the mean peaks, that is, as those used in the regression equation for mean logarithm of annual maximum discharges in table 1. For instance, drainage area, which is the most important variable in estimating the mean peak, is not used in the regression equations to estimate the standard deviation for large drainage basins, as shown in table 1. Also, skew coefficients did not correlate well with basin characteristics. However, some part of the variance in skew coefficients may be explained by type of runoff and geographic area.

Riggs and Harenberg (1976) and Harenberg (1980) showed that channel-geometry characteristics can be used as predictors of flood discharges. In Harenberg (1980), bankfull width, when regressed with discharge at the 2-percent exceedance probability, had standard errors of +93 and -48 percent. When both the basin characteristics and bankfull width were used as independent variables, the standard error was reduced to +77 and -43 percent at the 2-percent exceedance probability.

SUMMARY AND CONCLUSIONS

Generalized skew coefficient maps (pls. 1, 2, and 3) were prepared for the study area for (1) snowmelt, (2) rainstorm, and (3) snowmelt or rainstorm floods. Average skew coefficients for gaging stations shown on each of the skew maps are indicative of the differences in skew coefficients resulting from separate analysis of flood types. Skew values determined from the three categories of floods mentioned above averaged -0.31, 0.17, and -0.05, respectively. The values used to compute each of these averages are, however, widely spaced and have standard deviations of 0.27, 0.32, and 0.38, respectively.

Generalized skew maps for peaks caused by rainstorms and annual maximum peaks caused by either snowmelt or rainstorms were made by plotting the station skews and determining a regional pattern. Most of the generalized skew boundary lines coincide with hydrologic unit boundaries (U.S. Geological Survey, 1975). In attempting to develop a method to estimate generalized skew, regression equations using basin characteristics did not adequately define variability of the skew coefficient.

Generalized skew coefficients range from +0.2 to +0.5 for analysis of rainstorm floods, and -0.1 to +0.2 for analysis of annual maximum peaks caused by either snowmelt or rainstorms. Although the skew maps provide considerably different values, some consistency between the findings of this study and the generalized skew coefficient map in Bulletin 17A should be noted. Bulletin 17A applies a generalized skew coefficient of -0.3 to much of Idaho. This coefficient was based on gaging stations having 25 or more years of record. In developing the Bulletin 17A skew map, greater weight was given to long-term record stations. The floods at many of these long-term stations are caused only by snowmelt. Thus, the skew on the Bulletin 17A map would seem to correspond to the generalized skew obtained for snowmelt floods in the present study.

The generalized skew coefficients on plates 1 and 2 should be used only where the annual maximum peak is dominated by one type of flood or where separate snowmelt and rainstorm flood arrays are available for analysis. At stations where it is not possible to develop separate flood arrays, the annual maximum peaks and the generalized skew coefficients from plate 3 should be used.

Percentage of drainage area below 6,000 ft altitude can be used as a guideline for determining the type of flood. Except for the southwestern corner of the study area, stations having less than 20 percent of drainage area below 6,000 ft should be considered as being dominated by snowmelt floods. Except for southeastern Washington, few gaging stations were observed to be dominated by rainstorm floods. The generalized skew coefficient map for rainstorm floods (pl. 2) should be used when a combined frequency curve for both types of floods is being prepared or where the mean altitude of the basin is below 3,000 ft.

Study results that should be emphasized are: (1) Some variance in skew coefficients can be attributed to type of flood, and (2) comparatively better definition of the upper end of the flood frequency curve, that is, a better data fit, can be obtained by using generalized skew coefficients derived in this study than can be obtained by using the generalized skews from Bulletin 17A.

Other results that should be noted are that for rainstorm peaks, neither the log-normal nor log-Gumbel distribution seems to fit the data as well as the log-Pearson Type III distribution. Also, for some stations where either rainstorm or snowmelt flooding may occur, the combined frequency curve seems to fit the data better than the curve based only on annual maximum peaks. Frequency analyses that use generalized skew coefficients derived in this study seem to fit the data from gaging stations that have less than 25 years of record. Therefore, the generalized skew coefficients given in this report should provide reasonable estimates of skew at ungaged sites.

The mean and standard deviation of logarithms of peak discharges used in the log-Pearson Type III equation can be estimated by regression equations using basin characteristics. Frequency curves for ungaged sites can be computed by using estimates of the three statistics of the log-Pearson equation. In this study, standard errors of discharge at the 2-percent exceedance probability ranged from 41 to 90 percent. The method of estimating flood frequencies for ungaged sites resulted in seemingly lower standard errors of discharge than obtained by Harenberg (1980) and more areally defined regression equations than obtained by Thomas and others (1973).

Weaknesses in the methodology include the possible bias that results from interdependence of flood events at many sites and the unknown effects on derivation of sample statistics caused by using different periods of record. Limitations of the data base include the lack of records for small drainage basins and the uneven areal distribution of stations. Interpretive problems include considerable difficulty in separating snowmelt and rainstorm peaks and the subjectivity needed to apply many of the procedures used.

It should be noted that this report includes areas outside Idaho where other flood studies are or may be available. The results presented in this report may be different than the results in those studies.

Future studies covering a larger area and having a larger data base may develop more definitive guidelines for identifying sites completely dominated by either snowmelt or rainstorm floods. The discharges at selected exceedance probabilities presented in this report are subject to change as more data are collected and further improvements to the procedures are made.

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CONVERSION FACTORS

The following conversion table is included for the convenience of those who prefer to use SI (International System of Units) rather than the inch-pound system of units.

Multiply inch-pound unit	By	To obtain SI unit
	Length	
inch (in.)	25.40	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
	Area	
square mile (mi^2)	2.590	square kilometer
	Flow	
cubic foot per second (ft^3/s)	0.02832	cubic meter per second

The conversion of °C (degrees Celsius) to °F (degrees Fahrenheit) is by the equation, °F=(1.8)(°C)+32. Water temperatures are recorded to the nearest one-half degree.

DATA TABLES

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations

[A - Adjustments made to account for changes in tributary inflows resulting from slight relocation in gaging site during period of record collection;

HP- Historic peak or high outlier; number in parentheses is number of years that peak has not been exceeded;

MD- Daily mean discharge.]

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
10324500 Rock Creek near Battle Mountain, Nevada					
1918	350		1896	1,130	MD
1919	700		1918	39	MD
1920	18	MD	1919	366	MD
1921	2,750		1920	212	
1922	215	MD	1921	804	MD
1923	292		1922	851	
1946	150	MD	1923	101	MD
1947	213		1946	230	
1948	134		1947	35	MD
1949	113	MD	1948	97	MD
1950	130	MD	1949	194	
1951	1,200		1950	363	
1952	510	MD	1951	208	MD
1953	13	MD	1952	3,000	HP (39)
1954	38		1953	73	
1955	141		1954	20	MD
1956	500		1955	34	MD
1957	200	MD	1956	338	MD
1958	247	MD	1957	785	
1959	24		1958	445	
1960	253		1959	13	MD
1961	7	MD	1960	163	MD
1962	4,800	HP (38)	1961	68	
1963	1,070		1962	431	
1964	10	MD	1963	272	
1965	368		1964	300	
1966	--		1965	338	
1967	110		1966	--	
1968	94		1967	154	
1969	895		1968	95	
1970	858		1969	2,150	
1971	434		1970	188	
1972	1,070		1971	329	
1973	372		1972	382	
1974	750		1973	201	
1975	1,970		1974	285	
1976	76	MD	1975	1,010	
1977	55		1976	130	
			1977	17	MD
10329000 Little Humboldt River near Paradise Valley, Nevada					
1922	82	MD	1922	331	
1923	52		1923	44	MD
1924	--		1924	29	
1925	24	MD	1925	36	
1926	55		1926	66	
1927	500		1927	234	MD
1944	20	MD	1944	47	
1945	250		1945	170	MD
1946	15	MD	1946	108	
1947	48		1947	37	MD
1948	11	MD	1948	62	
1949	16	MD	1949	103	
1950	12	MD	1950	85	
1951	115	MD	1951	129	
1952	1,100		1952	876	MD, HP (37)
1953	11	MD	1953	57	
1954	--		1954	19	
1955	11	MD	1955	28	
1956	81	MD	1956	154	
1957	144	MD	1957	182	
1958	250	MD	1958	482	
1959	13	MD	1959	21	
1960	12	MD	1960	64	
1961	10	MD	1961	27	
1962	57	MD	1962	369	
1963	30	MD	1963	54	

Data Table A.-- Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
10329000 Little Humboldt River near Paradise Valley, Nevada (Continued)					
1964	17	MD	1964	97	
1965	198		1965	160	MD
1966	10	MD	1966	48	
1967	53	MD	1967	104	
1968	48		1968	15	MD
1969	2,380	HP (37)	1969	700	MD
1970	312		1970	134	MD
1971	218		1971	157	MD
1972	110	MD	1972	426	
1973	389		1973	98	MD
1974	232		1974	141	MD
10329500 Martin Creek near Paradise Valley, Nevada					
1922	144		1922	275	
1923	24	MD	1923	101	
1924	74	MD	1924	45	MD
1925	550		1925	112	MD
1926	220		1926	112	MD
1927	2,000		1927	280	MD
1929	65	MD	1929	82	
1930	38	MD	1930	85	
1931	106		1931	22	MD
1932	420		1932	274	MD
1933	58	MD	1933	104	MD
1935	126	MD	1935	242	
1936	116	MD	1936	200	
1937	247		1937	104	MD
1938	129	MD	1938	1,000	
1939	--		1939	330	
1940	441		1940	308	MD
1941	361		1941	176	MD
1942	400		1942	195	MD
1943	9,000		1943	483	MD
1944	73	MD	1944	145	
1945	1,500		1945	243	MD
1946	269		1946	166	MD
1947	296		1947	78	MD
1948	201		1948	146	MD
1949	209		1949	154	MD
1950	262		1950	174	MD
1951	470		1951	170	MD
1952	290	MD	1952	955	
1953	64	MD	1953	174	
1954	112		1954	38	MD
1955	87		1955	63	MD
1956	1,200		1956	187	MD
1957	684		1957	236	MD
1958	1,940		1958	494	MD
1959	12	MD	1959	71	
1960	265		1960	131	MD
1961	78	MD	1961	137	
1962	808		1962	387	MD
1963	3,770		1963	102	MD
1964	184		1964	102	MD
1965	880		1965	204	
1966	--		1966	84	
1967	560		1967	304	
1968	207		1968	40	MD
1969	1,560		1969	684	
1970	840		1970	237	
1971	656		1971	249	
1972	632		1972	132	
1973	1,380		1973	156	MD
1974	880		1974	273	
1975	696		1975	318	
1976	150		1976	139	MD
1977	203		1977	39	MD

Data Table A.-- Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
10352500 McDermitt Creek near McDermitt, Nevada					
1949	36	MD	1949	248	
1950	346		1950	60	MD
1951	401		1951	154	MD
1952	552	MD	1952	1,240	
1953	203	MD	1953	694	
1954	522		1954	38	MD
1955	109		1955	36	MD
1956	2,100		1956	165	MD
1957	1,270		1957	210	
1958	1,920		1958	480	
1959	13	MD	1959	52	
1960	36	MD	1960	298	
1961	209		1961	53	MD
1962	1,800		1962	1,140	
1963	3,970		1963	163	
1964	--		1964	214	
1965	446		1965	95	MD
1966	20	MD	1966	178	
1967	1,660		1967	208	
1968	180		1968	20	MD
1969	2,820		1969	1,080	
1970	740		1970	83	MD
1971	1,000		1971	164	
1972	784		1972	644	
1973	594		1973	397	
1974	447		1974	565	
1975	294		1975	440	
1976	318		1976	82	MD
1977	12	MD	1977	82	
10353000 East Fork Quinn River near McDermitt, Nevada					
1949	36	MD	1949	286	
1950	934		1950	80	MD
1951	257	MD	1951	380	
1952	36	MD	1952	940	
1953	56	MD	1953	190	
1954	88		1954	29	MD
1955	105	MD	1955	208	
1956	1,270		1956	143	MD
1957	609		1957	317	MD
1958	602	MD	1958	727	
1959	8	MD	1959	53	
1960	28	MD	1960	290	
1961	409		1961	117	MD
1962	357		1962	512	
1963	601		1963	109	
1964	274		1964	272	
1965	688		1965	146	
1966	56	MD	1966	149	
1967	130	MD	1967	342	
1968	386		1968	--	
1969	613		1969	633	
1970	940		1970	142	
1971	840		1971	127	
1972	780		1972	493	
1973	47	MD	1973	281	
1974	310		1974	442	
1975	241		1975	595	
1976	331		1976	139	MD
1977	10	MD	1977	40	

Data Table A.-- Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		12305500 Boulder Creek near Leonia, Idaho			
1929	226	MD	1929	880	
1930	194	MD	1930	683	
1931	147	MD	1931	835	
1932	1,100	MD	1932	1,330	
1933	398	MD	1933	1,330	
1934	428	MD	1934	1,320	
1935	1,540		1935	992	MD
1936	36	MD	1936	1,100	
1937	132	MD	1937	920	
1938	218	MD	1938	2,050	
1939	258	MD	1939	854	
1940	270	MD	1940	760	
1941	101	MD	1941	1,200	
1942	2,170		1942	600	MD
1943	282	MD	1943	1,170	
1944	178	MD	1944	488	
1945	103	MD	1945	1,080	
1946	330	MD	1946	1,220	
1947	241	MD	1947	1,140	
1948	2,700		1948	1,710	
1949	50	MD	1949	1,340	
1950	1,770		1950	1,230	
1951	1,050		1951	964	
1952	606	MD	1952	1,050	
1953	790		1953	1,220	
1954	201	MD	1954	2,040	
1955	163	MD	1955	1,360	
1956	845		1956	1,660	
1957	130	MD	1957	1,320	
1958	277	MD	1958	950	
1959	220	MD	1959	1,320	
1960	261	MD	1960	1,140	
1961	250	MD	1961	1,410	
1962	282	MD	1962	1,120	
1963	952		1963	620	MD
1964	220	MD	1964	1,350	
1965	164	MD	1965	1,050	
1966	285	MD	1966	1,120	
1967	155	MD	1967	1,950	
1968	295	MD	1968	1,170	
1969	308	MD	1969	2,720	
1970	182	MD	1970	1,610	
1971	250	MD	1971	2,390	
1972	--		1972	--	
1973	--		1973	--	
1974	3,140		1974	1,180	
1975	430	MD	1975	807	
1976	850	MD	1976	1,730	
1977	138	MD	1977	579	
		12311000 Deep Creek at Moravia, Idaho			
1928	--		1928	612	MD
1929	--		1929	390	MD
1930	--		1930	403	MD
1931	--		1931	360	MD
1932	819	MD	1932	925	MD
1933	476	MD	1933	975	MD
1934	1,300	MD	1934	1,110	MD
1935	357	MD	1935	825	MD
1936	129	MD	1936	920	MD
1937	149	MD	1937	830	MD
1938	1,260	MD	1938	930	MD
1939	342	MD	1939	450	MD
1940	176	MD	1940	550	MD
1941	227	MD	1941	558	MD
1942	921	MD	1942	492	MD
1943	113	MD	1943	1,100	
1944	109	MD	1944	227	MD
1945	223	MD	1945	1,280	MD
1946	155	MD	1946	1,040	MD
1947	428	MD	1947	779	MD
1948	251	MD	1948	1,110	MD
1949	170	MD	1949	905	MD
1950	318	MD	1950	1,500	
1951	1,200	MD	1951	910	MD

Data Table A.-- Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
12311000 Deep Creek at Moravia, Idaho (Continued)					
1952	591	MD	1952	1,400	MD
1953	1,150		1953	1,030	MD
1954	610		1954	1,670	
1955	115	MD	1955	804	MD
1956	1,020	MD	1956	1,180	MD
1957	294	A	1957	1,100	
1958	886	MD	1958	859	MD
1959	565	MD	1959	1,060	MD
1960	331	MD	1960	1,240	
1961	930	MD	1961	1,040	
1962	154	MD	1962	856	
1963	988		1963	630	
1964	160	MD	1964	1,210	
1965	451	MD	1965	1,070	
1966	115	MD	1966	905	
1967	597	MD	1967	1,070	
1968	455	MD	1968	586	
1969	524	MD	1969	1,360	
1970	284	MD	1970	1,010	
1971	668	MD	1971	1,350	
1974	4,400				
12396000 Calispell Creek near Dalkena, Washington					
1951	338	MD	1951	515	
1952	345	MD	1952	877	
1953	135	MD	1953	755	
1954	134	MD	1954	456	
1955	50	MD	1955	426	
1956	364	MD	1956	904	
1957	55	MD	1957	485	
1958	1,070		1958	624	MD
1959	444		1959	340	MD
1960	918		1960	474	MD
1961	543		1961	442	MD
1962	38	MD	1962	314	
1963	174	MD	1963	502	
1964	47	MD	1964	262	
1965	100	MD	1965	721	
1966	32	MD	1966	337	
1967	526		1967	370	MD
1968	37	MD	1968	272	
1969	78	MD	1969	1,040	HP (28)
1970	34	MD	1970	385	
1971	103	MD	1971	679	
1972	392		1972	253	
1973	159		1973	129	MD
1974	3,190	HP (28)			
12413000 Coeur d'Alene River at Enaville, Idaho					
1912	--		1912	10,500	
1934	48,200		1934	--	
1938	12,200		1938	--	
1940	2,820		1940	10,000	
1941	2,060		1941	5,800	
1942	12,200		1942	9,380	
1943	11,000		1943	17,700	
1944	4,640		1944	5,700	
1945	8,940		1945	14,100	
1946	9,180		1946	16,700	
1947	28,100		1947	8,190	
1948	6,380		1948	14,600	
1949	4,100		1949	16,400	
1950	7,740		1950	23,100	HP (58)
1951	27,400		1951	8,480	
1952	9,620		1952	18,400	
1953	20,100		1953	14,800	
1954	4,450		1954	14,300	
1955	3,920		1955	14,600	
1956	16,700		1956	19,100	
1957	9,180		1957	15,900	MD
1958	12,900		1958	8,720	MD
1959	10,200		1959	14,000	
1960	10,100		1960	12,600	MD

Data Table A.-- Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
12413000 Coeur d'Alene River at Enaville, Idaho (Continued)					
1961	31,500		1961	9,960	MD
1962	18,400		1962	12,000	
1963	9,400		1963	7,260	
1964	2,500		1964	15,800	
1965	34,800		1965	17,600	
1966	1,780		1966	9,520	
1967	8,670		1967	10,900	
1968	13,300		1968	7,040	
1969	9,950		1969	11,600	
1970	6,550		1970	15,300	
1971	11,900		1971	15,400	
1972	17,300		1972	13,600	
1973	8,200		1973	3,660	
1974	61,000	HP (58)	1974	18,100	
1975	2,290		1975	16,400	
1976	25,700		1976	13,600	
1977	133		1977	4,670	
12414500 St. Joe River at Calder, Idaho					
1911	14,400		1911	8,660	MD
1912	8,660	MD	1912	15,700	
1921	12,700		1921	17,400	
1922	10,500		1922	17,600	
1923	12,000		1923	13,600	
1924	4,740		1924	13,100	
1925	17,000		1925	17,200	
1926	--		1926	11,500	
1927	17,700		1927	18,000	
1928	14,600		1928	16,600	
1929	8,510		1929	9,360	
1930	3,510	MD	1930	8,510	
1931	4,460	MD	1931	8,790	
1932	14,100		1932	17,400	
1933	19,600		1933	15,900	
1934	53,000		1934	11,500	
1935	10,700		1935	13,400	
1936	--		1936	20,000	
1937	12,700		1937	10,700	
1938	46,000		1938	13,800	
1939	10,700		1939	13,800	
1940	5,860	MD	1940	8,140	
1941	--		1941	5,280	
1942	10,400		1942	10,100	
1943	--		1943	14,800	
1944	3,700	MD	1944	5,470	
1945	3,680	MD	1945	15,500	
1946	13,900		1946	15,200	
1947	23,600		1947	16,800	
1948	23,700		1948	--	
1949	14,000		1949	19,200	
1950	12,300		1950	18,400	
1951	17,200		1951	11,000	
1952	11,400		1952	16,200	
1953	13,600		1953	11,800	
1954	13,400		1954	20,400	
1955	10,800		1955	18,200	
1956	19,900		1956	20,600	
1957	16,700		1957	4,900	MD
1958	14,000		1958	13,000	MD
1959	15,200		1959	12,400	MD
1960	7,570	MD	1960	13,500	
1961	14,200		1961	15,500	
1962	16,600		1962	11,800	
1963	7,200		1963	6,790	MD
1964	5,530	MD	1964	19,100	
1965	30,400		1965	22,800	
1966	14,400		1966	6,820	MD
1967	10,700		1967	18,200	
1968	14,000		1968	7,660	MD
1969	16,600		1969	15,800	
1970	14,100		1970	14,700	
1971	10,200		1971	23,000	
1972	13,200		1972	21,600	
1973	3,970	MD	1973	6,500	
1974	33,000		1974	16,400	
1975	11,400		1975	16,600	
1976	18,500		1976	21,600	
1977	6,240	MD	1977	6,730	

Data Table A.-- Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
12415000 St. Maries River at Lotus, Idaho					
1921	8,660		1921	3,450	MD
1922	2,120	MD	1922	2,780	MD
1923	3,950	MD	1923	2,310	MD
1926	2,800	MD	1926	1,320	MD
1927	4,570		1927	1,770	MD
1928	6,370		1928	4,840	MD
1929	1,030	MD	1929	1,500	MD
1930	2,270	MD	1930	780	MD
1931	3,990	MD	1931	2,970	MD
1932	5,060		1932	4,410	MD
1933	2,760	MD	1933	3,740	MD
1934	23,800	HP (57)	1934	3,330	MD
1935	4,330	MD	1935	3,990	MD
1936	2,360	MD	1936	3,880	
1937	6,940		1937	2,130	MD
1938	7,980	MD	1938	--	
1939	--		1939	3,460	MD
1940	4,220	MD	1940	1,630	MD
1941	3,260		1941	1,100	MD
1942	2,570	MD	1942	1,400	MD
1943	5,950		1943	3,430	MD
1944	2,120		1944	2,120	
1945	2,000	MD	1945	1,660	MD
1946	2,830	MD	1946	2,780	MD
1947	7,710	MD	1947	2,340	MD
1948	11,300		1948	6,080	
1949	3,750		1949	5,050	
1950	8,670		1950	4,510	
1951	10,300		1951	2,650	
1952	2,360		1952	4,680	
1953	4,190		1953	1,410	
1954	5,560		1954	1,780	
1955	3,230		1955	3,300	
1956	8,500		1956	5,200	
1957	10,800		1957	3,820	
1958	4,840		1958	3,860	MD
1959	9,980		1959	3,360	MD
1960	5,540		1960	--	
1961	9,420		1961	2,860	
1962	7,360		1962	2,460	
1963	4,010		1963	1,620	
1964	3,900		1964	2,780	
1965	22,000		1965	11,600	HP (57)
1966	2,510		1966	2,920	
13075000 Marsh Creek near McCammon, Idaho					
1955	91	MD	1955	147	
1956	118	MD	1956	280	
1957	282		1957	218	MD
1958	416		1958	206	MD
1959	154	MD	1959	167	
1960	140	MD	1960	321	
1961	277		1961	130	MD
1962	1,120	HP (68)	1962	324	MD
1963	643		1963	108	MD
1964	100	MD	1964	317	
1965	433		1965	189	MD
1966	104	MD	1966	300	
1967	109	MD	1967	98	MD
1968	282		1968	133	MD
1969	299	MD	1969	522	HP (24)
1970	246		1970	102	MD
1971	125	MD	1971	501	
1972	286		1972	246	MD
1973	181	MD	1973	278	
1974	185	MD	1974	428	
1975	158	MD	1975	230	
1976	111	MD	1976	361	
1977	81	MD	1977	148	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13078000 Raft River at Peterson Ranch near Bridge, Idaho					
1947	72		1947	26	MD
1948	101		1948	35	MD
1949	338		1949	--	
1950	80		1950	51	MD
1951	1,090		1951	118	MD
1952	36	MD	1952	224	
1953	68	MD	1953	72	MD
1955	--		1955	16	MD
1956	24	MD	1956	112	
1957	28	MD	1957	77	
1958	183		1958	77	MD
1959	18	MD	1959	30	
1960	112		1960	26	MD
1961	15	MD	1961	11	MD
1962	669		1962	96	MD
1963	28	MD	1963	176	
1964	13	MD	1964	156	
1965	284		1965	105	MD
1966	20	MD	1966	30	MD
1967	14	MD	1967	133	
1968	42		1968	17	MD
1969	109		1969	54	MD
1970	233		1970	148	MD
1971	2,060	HP (67)	1971	252	HP (27)
13082500 Goose Creek above Trapper Creek near Oakley, Idaho					
1912	560		1912	493	MD
1913	--		1913	527	
1914	--		1914	418	
1915	--		1915	80	
1916	--		1916	245	
1919	--		1919	169	
1920	--		1920	231	MD
1921	--		1921	764	MD, HP (67)
1922	--		1922	554	
1923	--		1923	185	
1924	--		1924	149	
1925	--		1925	311	
1926	--		1926	97	
1927	400		1927	219	MD
1928	--		1928	208	MD
1929	--		1929	263	
1930	31	MD	1930	81	
1931	--		1931	66	
1932	--		1932	228	
1933	--		1933	159	
1934	--		1934	46	MD
1935	--		1935	95	
1936	--		1936	217	MD
1937	--		1937	147	
1938	33	MD	1938	244	
1939	--		1939	744	
1940	--		1940	84	
1941	--		1941	100	
1942	30	MD	1942	401	
1943	1,670		1943	233	MD
1944	--		1944	203	
1945	311		1945	238	MD
1946	166	MD	1946	330	
1947	146		1947	86	MD
1948	111	MD	1948	169	
1949	--		1949	304	
1950	--		1950	232	
1951	858		1951	297	MD
1952	30	MD	1952	412	
1953	245		1953	186	MD
1954	165		1954	79	MD
1955	--		1955	83	
1956	98	MD	1956	349	
1957	60	MD	1957	319	
1958	557		1958	339	MD
1959	40	MD	1959	89	
1960	24	MD	1960	183	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13082500 Goose Creek above Trapper Creek near Oakley, Idaho (Continued)					
1961	125		1961	61	MD
1962	3,240	HP (67)	1962	176	MD
1963	69	MD	1963	142	
1964	19	MD	1964	301	
1965	952		1965	290	MD
1966	--		1966	111	
1967	--		1967	101	MD
1968	126		1968	59	MD
1969	90		1969	225	
1970	195		1970	380	
1971	2,280		1971	414	MD
1972	70	MD	1972	354	
1973	--		1973	304	
1974	33	MD	1974	375	
1975	100	MD	1975	681	
1976	552		1976	353	MD
1977	36	MD	1977	106	
13083000 Trapper Creek near Oakley, Idaho					
1914	70		1914	52	MD
1915	--		1915	35	
1916	--		1916	52	
1919	--		1919	37	
1920	47		1920	38	MD
1921	--		1921	98	
1922	--		1922	89	
1923	--		1923	51	
1924	--		1924	25	
1925	47		1925	40	MD
1926	45		1926	16	MD
1927	68		1927	47	MD
1928	--		1928	49	
1929	--		1929	45	
1930	40		1930	16	MD
1932	45		1932	40	MD
1933	--		1933	35	
1934	16		1934	12	MD
1935	--		1935	21	
1936	57		1936	47	MD
1937	--		1937	38	
1938	12	MD	1938	47	
1939	12	MD	1939	59	
1940	27		1940	20	MD
1941	--		1941	16	MD
1942	11	MD	1942	58	
1943	120		1943	54	MD
1944	12	MD	1944	32	
1945	104		1945	34	MD
1946	32	MD	1946	57	
1947	15	MD	1947	25	
1948	54		1948	32	MD
1949	12	MD	1949	57	
1950	18	MD	1950	48	
1951	28	MD	1951	52	
1952	18	MD	1952	80	
1953	19	MD	1953	44	
1954	62		1954	23	MD
1955	160		1955	21	MD
1956	19	MD	1956	34	
1957	72		1957	48	MD
1958	20	MD	1958	52	
1959	24		1959	18	MD
1960	16	MD	1960	34	
1961	14	MD	1961	24	
1962	187	HP (65)	1962	28	MD
1963	55		1963	24	MD
1964	13	MD	1964	50	
1965	129		1965	64	MD
1966	26		1966	17	MD
1967	11	MD	1967	44	
1968	23		1968	15	MD
1969	12	MD	1969	34	
1970	131		1970	68	MD

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13083000 Trapper Creek near Oakley, Idaho (Continued)					
1971	89		1971	83	MD
1972	28	MD	1972	96	
1973	62		1973	56	MD
1974	19	MD	1974	100	
1975	23	MD	1975	106	HP (65)
1976	--		1976	66	
1977	--		1977	66	
13105000 Salmon Falls Creek near San Jacinto, Nevada					
1911	1,060		1911	723	MD
1912	134	MD	1912	1,305	
1913	81	MD	1913	809	
1914	376	MD	1914	837	
1915	--		1915	246	
1916	89	MD	1916	626	
1919	--		1919	825	
1920	--		1920	583	
1921	856	MD	1921	1,170	
1922	97	MD	1922	1,170	
1923	62	MD	1923	524	
1924	--		1924	646	
1925	--		1925	731	
1926	--		1926	350	
1927	24	MD	1927	818	
1928	99	MD	1928	594	
1929	--		1929	521	
1930	74	MD	1930	376	
1931	--		1931	204	
1932	--		1932	775	
1933	--		1933	477	
1934	--		1934	98	
1935	58	MD	1935	582	
1936	60	MD	1936	796	
1937	--		1937	362	
1938	64	MD	1938	803	
1939	--		1939	1,760	
1940	65	MD	1940	338	
1941	69	MD	1941	316	
1942	1,370		1942	1,160	MD
1943	2,420	HP (68)	1943	1,100	MD
1944	82	MD	1944	890	
1945	172	MD	1945	950	
1946	96	MD	1946	896	
1947	184	MD	1947	342	
1948	--		1948	549	
1949	--		1949	998	
1950	102	MD	1950	799	
1951	1,220		1951	940	MD
1952	105	MD	1952	1,430	
1953	--		1953	480	
1954	--		1954	200	
1955	53	MD	1955	370	
1956	222	MD	1956	859	
1957	1,230		1957	--	
1958	260	MD	1958	872	
1959	102	MD	1959	305	
1960	--		1960	629	
1961	--		1961	236	
1962	1,970		1962	1,460	MD
1963	351	MD	1963	722	
1964	--		1964	846	
1965	472	MD	1965	825	
1966	--		1966	335	
1967	72	MD	1967	643	
1968	--		1968	324	
1969	130	MD	1969	923	
1970	439	MD	1970	1,120	
1971	760	MD	1971	1,370	
1972	255	MD	1972	1,130	
1973	--		1973	847	
1974	1,430		1974	953	MD
1975	--		1975	2,430	HP (68)
1976	--		1976	1,000	
1977	--		1977	269	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13147900 Little Wood River above High Five Creek near Carey, Idaho					
1920	--		1920	427	
1921	--		1921	993	
1922	50	MD	1922	993	
1923	--		1923	738	
1924	--		1924	355	
1925	840		1925	602	MD
1926	352		1926	--	
1941	449		1941	370	MD
1942	246	MD	1942	1,369	
1943	--		1943	1,215	
1944	610		1944	512	MD
1945	--		1945	505	
1946	--		1946	974	
1947	85	MD	1947	885	
1948	--		1948	574	
1949	--		1949	574	
1950	72	MD	1950	1,514	
1951	964		1951	672	MD
1952	63	MD	1952	2,266	
1953	67	MD	1953	648	
1954	1,300		1954	456	MD
1955	77	MD	1955	438	
1956	3,000	HP (59)	1956	986	MD
1957	1,350		1957	840	MD
1958	1,620		1958	1,410	MD
1959	--		1959	508	
1960	189	MD	1960	822	
1961	62	MD	1961	301	
1962	64	MD	1962	1,340	
1963	1,200		1963	598	MD
1964	141	MD	1964	701	
1965	2,090		1965	1,490	MD
1966	101	MD	1966	835	
1967	64	MD	1967	1,510	
1968	119	MD	1968	597	
1969	91	MD	1969	2,480	HP (39)
1970	75	MD	1970	683	
1971	169	MD	1971	1,380	
1972	68	MD	1972	679	
1973	71	MD	1973	659	
1974	160	MD	1974	1,220	
13178000 Jordan Creek above Lone Tree Creek near Jordan Valley, Oregon					
1946	514	MD	1946	2,100	
1947	334	MD	1947	676	
1948	1,530		1948	799	
1949	1,250		1949	1,350	
1950	1,490		1950	942	
1951	2,930		1951	1,920	
1952	1,100		1952	3,250	
1955	--		1955	1,430	
1956	2,020		1956	3,100	
1957	2,870		1957	1,720	
1958	693	MD	1958	2,000	
1959	27	MD	1959	901	
1960	2,740		1960	1,250	
1961	1,100		1961	1,260	
1962	791		1962	1,160	
1963	3,110		1963	829	
1964	1,040		1964	2,770	
1965	7,530	HP (35)	1965	2,190	
1966	851		1966	1,100	
1967	1,130		1967	1,950	
1968	1,280		1968	150	MD
1969	2,720		1969	2,270	
1970	2,000		1970	1,680	
1971	3,870		1971	3,360	HP (30)

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13185000 Boise River near Twin Springs, Idaho			
1871	--		1871	19,600	
1872	--		1872	22,700	HP (108)
1911	2,670	MD	1911	7,560	MD
1912	935	MD	1912	7,900	MD
1913	570	MD	1913	7,220	MD
1914	920	MD	1914	5,520	MD
1915	452	MD	1915	3,140	
1916	556	MD	1916	8,530	
1917	1,440	MD	1917	9,430	
1918	3,080	MD	1918	7,990	
1919	5,440		1919	8,790	
1920	4,570		1920	5,840	
1921	8,800		1921	9,210	
1922	7,680		1922	7,860	
1923	5,700		1923	6,080	
1924	521	MD	1924	3,000	
1925	5,320		1925	7,060	
1926	901	MD	1926	4,250	
1927	8,770		1927	10,300	
1928	9,400		1928	8,560	
1929	4,580		1929	5,320	
1930	3,820		1930	3,860	
1931	384	MD	1931	3,020	
1932	5,320		1932	7,460	
1933	7,260		1933	4,040	
1934	3,680		1934	2,470	MD
1935	4,780		1935	4,970	
1936	7,830		1936	8,880	
1937	758	MD	1937	3,610	
1938	6,790		1938	8,730	
1939	718	MD	1939	4,290	
1940	4,650		1940	5,210	
1941	4,120		1941	4,830	
1942	5,480		1942	6,240	
1943	6,530		1943	8,920	
1944	1,080	MD	1944	3,800	
1945	4,580		1945	5,600	
1946	6,910		1946	7,560	
1947	4,190		1947	7,670	
1948	7,140		1948	8,210	
1949	3,990		1949	6,990	
1950	5,220		1950	6,570	
1951	4,710		1951	7,290	
1952	6,990		1952	9,210	
1953	9,090		1953	6,250	
1954	6,720		1954	8,560	
1955	6,270		1955	5,090	
1956	10,300		1956	11,200	
1957	8,390		1957	8,730	
1958	8,790		1958	10,700	
1959	5,160		1959	3,810	
1960	5,300		1960	6,280	
1961	970	MD	1961	4,750	
1962	4,480		1962	5,530	
1963	4,630		1963	5,710	
1964	3,870		1964	5,990	
1965	18,800	HP (106)	1965	8,400	
1966	689	MD	1966	4,240	
1967	5,910		1967	7,800	
1968	1,860	MD	1968	3,950	
1969	4,640		1969	6,860	
1970	6,840		1970	7,460	
1971	4,620		1971	8,700	
1972	10,100		1972	7,560	
1973	890	MD	1973	5,760	
1974	10,300		1974	8,790	
1975	5,770		1975	8,760	
1976	1,120	MD	1976	7,310	
1977	--		1977	1,490	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13200000 Mores Creek above Robie Creek near Arrowrock Dam, Idaho					
1916	2,980	A, MD	1916	--	
1917	2,310	A	1917	--	
1918	1,390	A, MD	1918	1,000	A, MD
1919	2,660	A	1919	2,170	A, MD
1920	544	A, MD	1920	1,090	A, MD
1921	1,100	A, MD	1921	2,060	A, MD
1922	1,080	A, MD	1922	1,890	A, MD
1923	259	A, MD	1923	1,180	A
1924	291	A, MD	1924	340	A, MD
1925	2,280	A, MD	1925	--	
1926	412	A, MD	1926	769	A, MD
1927	855	A, MD	1927	2,540	A, MD
1928	2,810	A, MD	1928	1,600	A, MD
1929	1,040	A, MD	1929	717	A, MD
1930	363	A, MD	1930	694	A, MD
1931	885	A, MD	1931	--	
1932	4,030	A	1932	2,300	A, MD
1933	2,660		1933	1,800	A, MD
1934	1,040	A, MD	1934	--	
1935	1,980		1935	--	
1936	452	A, MD	1936	4,310	A
1937	1,550		1937	1,040	A, MD
1938	1,400	A, MD	1938	3,060	A
1939	325	A, MD	1939	1,420	A, MD
1940	3,190		1940	--	
1941	375	A, MD	1941	796	A, MD
1942	398	A, MD	1942	1,380	A
1943	6,270	A, HP (83)	1943	--	
1944	272	A, MD	1944	736	A
1945	937	A, MD	1945	1,470	A
1946	3,780	A	1946	--	
1947	1,030	A, MD	1947	912	A, MD
1948	2,650	A	1948	1,210	A, MD
1949	111	A, MD	1949	1,610	A
1950	1,110	A, MD	1950	1,850	A
1951	1,720		1951	2,270	
1952	3,470		1952	3,620	
1953	2,110		1953	1,100	MD
1954	1,910		1954	1,550	
1955	115	MD	1955	1,170	
1956	5,440		1956	2,350	MD
1957	1,280	MD	1957	2,210	
1958	2,320		1958	968	
1959	920		1959	1,210	
1960	1,340		1960	2,810	
1961	169	MD	1961	762	
1962	1,180		1962	1,490	
1963	1,420		1963	1,080	
1964	1,070		1964	1,120	
1965	5,360		1965	4,330	
1966	291	MD	1966	846	
1967	469	MD	1967	928	
1968	1,220		1968	354	MD
1969	2,800		1969	1,230	
1970	1,400		1970	1,330	
1971	1,070		1971	2,370	
1972	1,200		1972	2,580	
1973	456	MD	1973	813	
1974	1,570		1974	2,800	
1975	1,550		1975	2,920	
1976	1,320		1976	2,040	
1977	129	MD	1977	297	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13200500 Robie Creek near Arrowrock, Idaho			
1951	53		1951	72	
1952	55		1952	116	HP (35)
1953	118		1953	41	
1954	14	MD	1954	40	
1955	--		1955	56	
1956	163		1956	80	
1957	88		1957	92	
1958	43		1958	91	
1959	29		1959	24	MD
1960	72		1960	73	
1961	8	MD	1961	19	
1962	16	MD	1962	33	
1963	41		1963	17	MD
1964	38		1964	35	
1965	274	HP (35)	1965	91	
1966	12	MD	1966	28	
1967	30		1967	16	MD
1968	80		1968	8	MD
1969	72		1969	73	
1970	68		1970	25	MD
1971	51		1971	103	
		13214000 Malheur River near Drewsey, Oregon			
1921	--		1921	2,240	
1922	850		1922	3,700	
1927	2,300		1927	1,360	
1928	915		1928	3,050	
1929	100		1929	746	
1931	565		1931	340	MD
1932	3,800		1932	1,360	
1933	452	MD	1933	845	
1934	132		1934	99	MD
1935	530	MD	1935	900	
1936	2,400		1936	1,610	
1937	444	MD	1937	730	
1938	1,610		1938	1,970	
1939	525	MD	1939	1,030	
1940	4,290		1940	3,080	
1941	1,670		1941	1,870	
1942	1,210	MD	1942	1,880	
1943	2,260		1943	2,480	
1944	1,090		1944	1,200	
1945	3,260		1945	1,880	
1946	2,960		1946	1,730	
1947	4,210		1947	515	MD
1948	1,180		1948	1,010	
1949	2,920		1949	1,120	
1950	1,270		1950	970	
1951	2,260		1951	1,460	
1952	9,030		1952	4,030	HP (67)
1953	3,190		1953	1,540	
1954	710		1954	620	MD
1955	333	MD	1955	509	
1956	1,740		1956	2,440	
1957	10,700		1957	1,290	
1958	2,980		1958	2,850	
1959	210		1959	734	
1960	370		1960	1,860	
1961	1,360		1961	620	MD
1962	1,000		1962	1,490	
1963	6,000		1963	1,120	
1964	858		1964	738	MD
1965	12,000	HP (74)	1965	2,370	
1966	952		1966	579	MD
1967	3,320		1967	1,030	
1968	1,060		1968	335	MD
1969	580		1969	3,580	
1970	5,160		1970	990	
1971	4,600		1971	2,470	
1972	888		1972	2,080	
1973	3,120		1973	346	MD
1974	3,770		1974	3,800	
1975	862		1975	2,030	
1976	1,040		1976	834	
1977	--		1977	342	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13216500 N. F. Malheur River above Beulah Reservoir near Beulah, Oregon					
1937	111	MD	1937	382	
1938	852		1938	905	
1939	--		1939	640	MD
1940	667	MD	1940	975	
1941	169	MD	1941	944	
1942	145	MD	1942	816	
1943	350	MD	1943	933	
1944	368		1944	199	MD
1945	659		1945	533	MD
1946	<100		1946	868	
1947	1,010		1947	337	MD
1948	726		1948	684	MD
1949	250	MD	1949	623	
1950	135	MD	1950	534	
1951	300	MD	1951	662	
1952	200	MD	1952	1,300	
1953	1,130		1953	517	MD
1954	255	MD	1954	460	
1955	112	MD	1955	346	
1956	685		1956	1,080	
1957	1,600		1957	456	MD
1958	1,350		1958	1,050	MD
1959	102	MD	1959	461	
1960	<100		1960	840	
1961	760		1961	266	MD
1962	200	MD	1962	860	
1963	2,060		1963	506	MD
1964	108	MD	1964	352	
1965	3,970		1965	950	MD
1966	600		1966	346	MD
1967	1,300		1967	650	
1968	945		1968	260	MD
1969	120	MD	1969	1,500	
1970	1,740		1970	712	
1971	800		1971	1,350	
1972	560		1972	788	
1973	1,080		1973	208	MD
1974	1,990		1974	2,010	
1975	112	MD	1975	1,470	
1976	545		1976	402	MD
1977	<100		1977	380	MD
13226500 Bully Creek near Vale, Oregon					
1904	5,730		1904	--	
1905	--		1905	394	
1906	3,300		1906	--	
1910	6,240		1910	--	
1911	1,590		1911	590	MD
1912	155	MD	1912	78	MD
1913	113	MD	1913	152	MD
1914	--		1914	1,060	
1915	--		1915	185	
1916	--		1916	1,200	
1917	--		1917	675	
1922	--		1922	780	
1923	--		1923	55	MD
1938	970	A	1938	350	A
1939	--		1939	135	A
1940	3,250	A	1940	570	A
1941	2,090	A	1941	1,170	A
1942	1,360	A	1942	190	A
1943	2,580	A	1943	470	A
1944	420	A	1944	190	A
1945	1,430	A	1945	250	A
1946	940	A	1946	510	A
1947	1,240	A	1947	40	A
1948	--		1948	20	A
1949	330	A	1949	300	A
1950	290	A	1950	280	A
1951	2,440	A	1951	720	A
1952	270	A	1952	2,760	A
1953	910	A	1953	550	A
1954	350	A	1954	83	A, MD
1955	--		1955	51	A

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13226500 Bully Creek near Vale, Oregon (Continued)					
1956	770	A	1956	415	A
1957	5,600		1957	700	
1958	2,460		1958	424	
1959	--		1959	32	MD
1960	51	MD	1960	1,320	
1961	401		1961	63	MD
1962	1,960		1962	1,000	
1963	--		1963	--	
1964	67	MD	1964	453	
1965	12,800	HP (75)	1965	193	MD
1966	446		1966	11	MD
1967	1,750		1967	108	
1968	1,170		1968	11	MD
1969	274		1969	1,800	
1970	2,240		1970	265	
1971	5,070		1971	1,380	
1972	884		1972	--	
1973	2,990		1973	259	
1974	2,170		1974	1,080	
1975	380		1975	428	
1976	900		1976	132	
1977	--		1977	11	MD
13251500 Weiser River at Tamarack, Idaho					
1937	--		1937	253	
1938	431	MD	1938	715	
1939	--		1939	272	
1940	230	MD	1940	775	
1941	24	MD	1941	330	
1942	188	MD	1942	511	
1943	--		1943	614	
1944	146		1944	128	
1945	108	MD	1945	365	
1946	28	MD	1946	580	
1947	346		1947	200	MD
1948	62	MD	1948	628	
1949	133	MD	1949	309	
1950	67	MD	1950	404	
1951	130	MD	1951	474	
1952	458		1952	771	
1953	155	MD	1953	520	
1954	367		1954	524	
1955	12	MD	1955	392	
1956	1,320	HP (52)	1956	513	
1957	206	MD	1957	434	
1958	182	MD	1958	640	
1959	38	MD	1959	371	
1960	342		1960	511	
1961	222	MD	1961	414	
1962	28	MD	1962	466	
1963	282		1963	318	
1964	15	MD	1964	479	
1965	423		1965	996	
1966	25	MD	1966	364	
1967	149	MD	1967	464	
1968	110	MD	1968	180	
1969	81	MD	1969	473	
1970	567		1970	361	
1971	82	MD	1971	598	
1974	--		1974	744	
1975	14	MD	1975	707	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13258500 Weiser River, Cambridge, Idaho			
1939	--		1939	3,320	
1940	6,670		1940	--	
1941	3,870		1941	2,080	MD
1942	5,150		1942	4,040	
1943	3,970		1943	5,320	
1944	504	MD	1944	1,640	
1945	4,960		1945	4,030	
1946	4,420		1946	4,440	
1947	3,360		1947	2,300	MD
1948	2,160	MD	1948	4,320	
1949	4,010		1949	2,660	MD
1950	4,370		1950	3,520	MD
1951	1,460	MD	1951	3,060	
1952	5,970		1952	5,620	HP (46)
1953	4,820		1953	3,780	
1954	4,600		1954	3,870	
1955	191	MD	1955	3,300	
1956	10,100	HP (47)	1956	3,460	
1957	7,600		1957	4,470	
1958	7,260		1958	3,890	MD
1959	1,880	MD	1959	2,210	
1960	4,440		1960	3,030	MD
1961	2,710		1961	2,070	MD
1962	2,980		1962	2,660	MD
1963	6,120		1963	2,330	
1964	242	MD	1964	4,790	
1965	8,500		1965	--	
1966	3,140		1966	1,850	MD
1967	7,540		1967	3,900	
1968	5,940		1968	1,480	MD
1969	2,260	MD	1969	4,540	
1970	8,170		1970	3,940	
1971	7,170		1971	5,240	
1972	8,340		1972	4,420	
1973	8,300		1973	1,590	MD
1974	8,410		1974	4,040	
1975	2,370	MD	1975	5,050	
1976	936	MD	1976	4,100	
1977	114	MD	1977	310	
		1[illegible]61000 Little Weiser River near Indian Valley, Idaho			
1923	--		1923	550	MD
1924	--		1924	271	
1925	1,840	HP (51)	1925	570	MD
1926	102	MD	1926	311	
1927	422	MD	1927	1,130	
1938	--		1938	1,200	
1939	419		1939	389	MD
1940	626		1940	518	MD
1941	305	MD	1941	482	
1942	292	MD	1942	605	
1943	300	MD	1943	925	
1944	475		1944	370	MD
1945	367	MD	1945	844	
1946	512	MD	1946	617	
1947	272	MD	1947	740	
1948	313	MD	1948	844	
1949	169	MD	1949	620	
1950	306	MD	1950	372	
1951	285	MD	1951	568	
1952	517		1952	1,280	
1953	1,240		1953	766	
1954	450		1954	662	
1955	24	MD	1955	588	
1956	1,200		1956	950	
1957	1,480		1957	1,750	HP (51)
1958	566		1958	950	
1959	455		1959	330	MD
1960	444		1960	620	
1961	440		1961	556	
1962	748		1962	400	MD
1963	872		1963	777	
1964	51	MD	1964	828	
1965	1,480		1965	1,070	
1966	400		1966	317	MD

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13261000 Little Weiser River near Indian Valley, Idaho (Continued)					
1967	592		1967	710	
1968	882		1968	302	MD
1969	509		1969	703	
1970	734		1970	793	
1971	600		1971	728	
13263500 Weiser River above Crane Creek near Weiser, Idaho					
1921	--		1921	7,550	
1922	1,980	MD	1922	13,300	
1923	1,010	MD	1923	5,020	
1924	6,890		1924	1,190	MD
1925	16,000		1925	5,870	
1926	9,600		1926	2,280	MD
1927	11,900		1927	5,670	
1928	10,400		1928	4,630	MD
1929	5,690	MD	1929	3,580	MD
1930	3,500		1930	1,870	MD
1931	5,100	MD	1931	3,340	MD
1932	16,900		1932	5,400	MD
1933	200	MD	1933	6,660	
1934	4,000		1934	2,550	MD
1935	1,320	MD	1935	4,340	
1936	--		1936	5,710	
1937	5,380		1937	3,680	MD
1938	10,200		1938	9,690	
1939	--		1939	5,980	
1940	15,100		1940	13,400	HP (45)
1941	6,580		1941	4,700	MD
1942	6,790		1942	4,440	MD
1943	7,900		1943	7,210	
1944	2,350	MD	1944	3,120	
1945	9,620		1945	6,940	
1946	7,690		1946	8,770	
1947	5,310		1947	3,360	MD
1948	5,020		1948	6,340	
1949	6,560		1949	3,740	MD
1950	8,130		1950	4,350	MD
1951	4,320		1951	3,690	MD
1952	8,390		1952	9,370	
1956	19,800	HP (69)	1956	--	
13267000 Mann Creek near Weiser, Idaho					
1911	--		1911	196	MD
1912	49	MD	1912	390	MD
1913	17	MD	1913	386	MD
1937	--		1937	200	
1938	510	MD	1938	945	HP (33)
1939	--		1939	498	
1940	1,540	HP (37)	1940	--	
1941	118	MD	1941	316	
1942	153	MD	1942	450	
1943	100	MD	1943	500	MD
1944	237		1944	152	MD
1945	810		1945	332	MD
1946	129	MD	1946	393	
1947	157		1947	125	MD
1948	94	MD	1948	343	
1949	322		1949	263	MD
1950	156	MD	1950	298	
1951	102	MD	1951	421	
1952	434	MD	1952	756	
1953	261	MD	1953	403	
1954	560		1954	168	MD
1955	372		1955	164	MD
1956	550		1956	373	MD
1957	602		1957	236	MD
1958	679		1958	437	MD
1959	91	MD	1959	198	
1960	64	MD	1960	376	
1961	143	MD	1961	233	
1962	143		1962	410	
1963	--		1963	370	
1964	--		1964	750	
1965	900		1965	--	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13292000 Imnaha River at Imnaha, Oregon					
1929	--		1929	2,330	
1930	--		1930	1,190	
1931	--		1931	1,280	
1932	4,030		1932	1,870	MD
1933	--		1933	3,450	
1934	--		1934	1,120	
1935	257	MD	1935	1,780	
1936	138	MD	1936	1,880	
1937	120	MD	1937	1,740	
1938	1,740		1938	4,800	
1939	300	MD	1939	1,520	
1940	1,830		1940	1,640	MD
1941	915	MD	1941	2,740	
1942	5,400		1942	--	
1943	308	MD	1943	2,440	
1944	--		1944	1,680	
1945	162	MD	1945	2,680	
1946	405	MD	1946	2,830	
1947	932	MD	1947	2,140	
1948	1,750		1948	5,700	
1949	--		1949	2,570	
1950	--		1950	2,170	
1951	413	MD	1951	2,140	
1952	800	MD	1952	3,930	
1953	3,250		1953	2,270	
1954	451	MD	1954	2,160	
1955	160	MD	1955	2,740	
1956	4,650		1956	3,490	
1957	6,650		1957	1,370	
1958	2,090		1958	3,910	
1959	830	MD	1959	2,790	
1960	1,000	MD	1960	2,280	
1961	744	MD	1961	2,170	
1962	378	MD	1962	1,800	
1963	1,620		1963	2,210	
1964	2,440		1964	2,260	
1965	3,520		1965	2,500	
1966	1,300	MD	1966	2,160	
1967	4,720		1967	2,520	
1968	289	MD	1968	2,260	
1969	540	MD	1969	3,220	
1970	1,220	MD	1970	3,920	
1971	769	MD	1971	5,350	
1972	362	MD	1972	2,740	
1973	588	MD	1973	1,920	
1974	10,100		1974	4,220	
1975	1,600	MD	1975	5,630	
1976	423	MD	1976	2,690	
1977	269	MD	1977	1,020	
13319000 Grande Ronde River at La Grande, Oregon					
1904	1,080	MD	1904	6,300	
1905	230	MD	1905	4,430	
1906	--		1906	4,940	
1907	2,790	MD	1907	2,960	
1908	6,300		1908	2,790	MD
1909	1,130		1909	1,130	
1911	392	MD	1911	1,370	MD
1912	--		1912	4,000	
1913	1,210	MD	1913	4,040	
1914	--		1914	2,210	
1915	--		1915	1,300	
1918	--		1918	2,540	MD
1919	378	MD	1919	3,440	MD
1920	1,660	MD	1920	3,450	MD
1921	2,800	MD	1921	4,350	MD
1922	1,950	MD	1922	4,750	MD
1923	425	MD	1923	2,330	MD
1926	130	MD	1926	1,830	
1927	1,530		1927	2,460	
1928	4,330		1928	2,580	
1929	2,970	MD	1929	1,900	MD
1930	1,380	MD	1930	1,590	MD

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13319000 Grande Ronde River at La Grande, Oregon (Continued)					
1931	8,500		1931	2,070	MD
1932	8,880		1932	3,930	MD
1933	208	MD	1933	2,600	
1934	1,550		1934	1,230	MD
1935	345	MD	1935	3,150	
1936	1,040	MD	1936	4,380	
1937	1,000	MD	1937	3,220	
1938	410	MD	1938	2,410	
1939	223	MD	1939	4,480	
1940	2,060		1940	1,470	MD
1941	1,790		1941	2,540	
1942	1,220	MD	1942	2,870	
1943	1,380	MD	1943	3,750	
1944	2,570		1944	1,130	MD
1945	618	MD	1945	1,920	
1946	2,450		1946	2,420	
1947	5,320		1947	1,720	MD
1948	3,230		1948	4,620	
1949	--		1949	3,140	
1950	2,240		1950	2,750	
1951	3,030		1951	2,660	
1952	--		1952	5,160	
1953	2,840		1953	3,520	
1954	758	MD	1954	2,220	
1955	--		1955	2,760	
1956	4,400		1956	6,360	
1957	3,250		1957	4,850	
1958	814	MD	1958	4,480	
1959	5,100		1959	1,880	MD
1960	614	MD	1960	3,960	
1961	186	MD	1961	1,730	
1962	2,000		1962	1,860	MD
1963	2,130		1963	1,340	MD
1964	--		1964	2,880	
1965	14,100	HP (84)	1965	3,280	
1966	--		1966	1,620	
1967	1,340	MD	1967	2,300	
1968	1,070	MD	1968	3,100	
1969	2,700		1969	2,760	
1970	3,920		1970	1,680	MD
1971	2,990		1971	1,910	MD
1972	3,890		1972	6,310	
1973	582	MD	1973	675	
1974	4,190		1974	2,720	
1975	4,290		1975	3,480	
1976	1,120	MD	1976	5,210	
1977	116	MD	1977	2,060	
13341000 North Fork Clearwater River near Ahsahka, Idaho					
1927	12,000	MD	1927	37,000	MD
1928	37,200	MD	1928	40,300	MD
1929	5,400	MD	1929	22,800	MD
1930	--		1930	19,600	MD
1931	24,800		1931	18,800	MD
1932	14,400	MD	1932	40,900	
1933	6,450	MD	1933	46,700	
1934	100,000	HP (58)	1934	39,600	
1935	11,800	MD	1935	27,700	
1936	5,920	MD	1936	40,000	
1937	1,860	MD	1937	20,600	
1938	62,700		1938	24,700	MD
1939	7,360	MD	1939	27,100	
1940	14,600	MD	1940	17,100	
1941	5,640	MD	1941	12,200	
1942	11,500	MD	1942	23,000	
1943	9,940	MD	1943	32,800	
1944	7,210	MD	1944	14,400	
1945	12,000	MD	1945	29,000	
1946	15,100	MD	1946	25,500	
1947	46,300		1947	37,300	
1948	22,600		1948	55,600	HP (58)
1949	12,600	MD	1949	42,900	
1950	12,700	MD	1950	33,700	
1951	23,800		1951	24,900	
1952	8,960	MD	1952	31,900	
1953	24,800		1953	23,500	
1954	11,700	MD	1954	37,700	
1955	3,170	MD	1955	31,800	

Data Table A.--Annual maximum peak discharges caused by rainstorms and snowmelt at selected gaging stations (Continued)

Rainstorms			Snowmelt		
Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13341000 North Fork Clearwater River near Ahsahka, Idaho (Continued)					
1956	42,700		1956	42,800	
1957	10,500	MD	1957	40,600	
1958	11,800	MD	1958	32,500	
1959	12,600	MD	1959	26,400	
1960	19,400		1960	26,500	
1961	22,100		1961	31,300	
1962	37,900		1962	23,500	
1963	12,000	MD	1963	15,400	
1964	2,520	MD	1964	41,800	
1965	67,900		1965	29,900	MD

Data Table B.--Annual maximum peak discharges at selected gaging stations

[A - Adjustments made to account for changes in tributary inflows resulting from slight relocation in gaging site during period of record collection;

B - Adjusted for upstream regulation. Data furnished by U.S. Army Corps of Engineers;

HP- Historic peak or high outlier. Number in parentheses is number of years that peak has not been exceeded;

MD- Daily mean discharge.]

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	06013500 Big Sheep Creek below Muddy Creek, near Dell, Montana				
1947	379		1966	195	
1948	369		1967	365	
1949	477		1968	455	
1950	406		1969	710	
1951	234		1970	355	
1952	909		1971	300	
1953	313		1972	250	
1960	168		1973	620	
1961	84		1974	180	
1962	236		1975	615	
1963	343		1976	578	
1964	491		1977	277	
1965	354		1978	184	
	06015500 Grasshopper Creek near Dillon, Montana				
1921	516		1953	719	
1922	543		1955	328	
1923	283		1956	1,870	
1924	120		1957	433	
1925	557		1958	579	
1926	197		1960	539	
1927	355		1961	252	
1928	327		1962	450	
1929	172		1963	465	
1930	90		1964	539	
1931	85		1965	635	
1932	322		1966	180	
1946	160		1967	730	
1947	640		1968	435	
1948	719		1969	1,140	
1949	324		1970	400	
1950	252		1971	465	
1951	559		1972	585	
1952	257		1973	105	
			1975	970	
	06017500 Blacktail Deer Creek near Dillon, Montana				
1946	218		1957	236	
1947	399		1958	208	
1948	378		1959	156	
1949	226		1960	148	
1950	159		1961	71	
1951	130		1962	--	
1952	169		1963	157	
1953	304		1964	426	
1955	166		1965	302	
1956	144		1966	110	
	06019500 Ruby River above Reservoir, near Alder, Montana				
1939	645		1959	1,140	
1940	668		1960	1,210	
1941	537		1961	644	
1942	1,140		1962	729	
1943	575		1963	662	
1944	730		1964	1,340	
1945	805		1965	835	
1946	735		1966	747	
1947	1,210		1967	1,140	
1948	1,230		1968	1,110	
1949	755		1969	1,050	
1950	800		1970	1,670	

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
		06019500 Ruby River above Reservoir, near Alder, Montana (Continued)			
1951	654		1971	1,210	
1952	1,090		1972	1,700	
1953	1,090		1973	1,230	
1954	539		1974	1,000	
1955	950		1975	1,590	
1956	960		1976	1,290	
1957	867		1977	776	
1958	885		1978	942	
		06026000 Birch Creek near Glen, Montana			
1946	90		1962	147	
1947	140		1963	362	
1948	175		1964	350	
1949	139		1965	314	
1950	206		1966	87	
1951	144		1967	277	
1952	173		1968	244	
1953	223		1969	277	
1955	166		1970	246	
1956	246		1971	274	
1957	200		1972	297	
1958	228		1973	139	
1959	180		1974	247	
1960	130		1975	427	
1961	195		1976	215	
		06033000 Boulder River near Boulder, Montana			
1929	1,480		1952	1,060	
1930	778		1953	1,900	
1931	418		1954	634	
1932	962		1955	839	
1934	468		1956	1,760	
1935	488		1957	1,030	
1936	448		1958	1,280	
1937	430		1959	1,260	
1938	1,830		1960	1,180	
1939	796		1961	1,220	
1940	662		1962	839	
1941	592		1963	1,320	
1942	1,640		1964	3,490	
1943	1,630		1965	2,160	
1944	790		1966	936	
1945	595		1967	2,150	
1946	555		1968	1,660	
1947	1,620		1969	1,250	
1948	2,620		1970	1,760	
1949	878		1971	1,550	
1950	1,040		1972	1,750	
1951	1,250		1975	3,500	HP (50)
		06037500 Madison River near West Yellowstone, Montana			
1914	1,400		1944	1,130	
1915	1,040		1945	1,090	
1916	1,770		1946	1,130	
1917	1,950		1947	1,380	
1919	1,110		1948	1,400	
1920	1,510		1949	1,280	
1921	1,440		1950	1,490	
1922	1,300		1951	1,660	
1923	1,270		1952	1,400	
1924	864		1953	1,660	
1925	1,220		1954	1,440	
1926	1,010		1955	1,160	
1927	1,770		1956	2,150	
1928	1,580		1957	1,320	
1929	1,330		1958	1,160	
1930	992		1959	1,180	
1931	902		1960	1,100	
1932	1,450		1961	1,180	
1933	1,160		1962	1,410	
1934	661		1963	1,320	
1935	1,060		1964	1,500	
1936	1,320		1965	1,670	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
06037500 Madison River near West Yellowstone, Montana (Continued)					
1937	780		1966	1,150	
1938	1,440		1967	2,110	
1939	951		1968	1,600	
1940	1,020		1969	1,340	
1941	973		1970	1,700	
1942	1,220		1971	2,050	
1943	2,090		1972	1,810	
			1973	1,400	
06043500 Gallatin River near Gallatin Gateway, Montana					
1890	3,800		1952	6,910	
1891	2,975		1953	6,010	
1892	8,060		1954	3,790	
1893	6,800		1955	4,480	
1894	8,060		1956	7,030	
1931	2,940		1957	5,970	
1932	5,780		1958	5,010	
1933	4,270		1959	7,230	
1934	1,740		1960	4,940	
1935	4,340		1961	3,670	
1936	3,660		1962	4,780	
1937	3,120		1963	4,800	
1938	4,550		1964	6,450	
1939	3,170		1965	7,010	
1940	3,660		1966	4,530	
1941	2,820		1967	5,960	
1942	6,050		1968	6,570	
1943	6,480		1969	5,350	
1944	3,600		1970	9,240	
1945	4,450		1971	9,270	
1946	4,360		1972	6,030	
1947	5,250		1973	6,500	
1948	6,740		1974	9,690	HP (64)
1949	4,110		1975	7,950	
1950	5,030		1976	5,870	
1951	3,940		1977	3,370	
			1978	5,230	
09208000 La Barge Creek near La Barge Meadows Ranger Station, Wyoming					
1941	103		1963	120	
1942	112		1964	192	
1951	188		1965	164	
1952	132		1966	95	
1953	140		1967	158	
1954	136		1968	120	MD
1955	107		1969	111	
1956	189		1970	105	MD
1957	186		1971	191	
1958	142		1972	196	
1959	122		1973	85	
1960	82		1974	152	
1961	98		1975	159	
1962	134		1976	119	
			1977	26	
09223000 Hams Fork below Pole Creek near Frontier, Wyoming					
1953	664		1965	1,030	
1954	636		1966	840	
1955	504		1967	1,110	
1956	1,010		1968	900	
1957	1,010		1969	768	
1958	1,000		1970	864	
1959	444		1971	1,520	
1960	744		1972	1,100	
1961	240		1973	872	
1962	594		1974	1,010	
1963	767		1975	1,030	
1964	866		1976	972	
			1977	48	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
10015700 Sulphur Creek above Reservoir, near Evanston, Wyoming					
1958	560		1968	292	
1959	436		1969	332	
1960	499		1970	314	
1961	274		1971	282	
1962	397		1972	452	
1963	211		1973	456	
1964	248		1974	756	
1965	1,220	HP (25)	1975	353	
1966	274		1976	609	
1967	254		1977	37	
10041000 Thomas Fork near Wyoming-Idaho State Line					
1950	869		1964	664	
1951	620	MD	1965	776	
1952	848		1966	322	
1953	171		1967	504	
1954	200		1968	119	
1955	152		1969	579	
1956	634		1970	431	
1957	766		1971	1,040	
1958	417		1972	806	
1959	157		1973	488	
1960	268		1974	617	
1961	69		1975	741	
1962	640		1976	655	
1963	304		1977	56	
10047500 Montpelier Creek at Irrigators Weir, near Montpelier, Idaho					
1943	134		1957	113	
1944	62		1958	107	
1945	88		1959	44	
1946	170		1960	91	
1947	89		1961	27	
1948	126		1962	192	
1949	73		1963	96	
1950	224		1964	120	
1951	134		1965	190	
1952	164		1966	81	
1953	64		1967	96	
1954	49		1968	52	
1955	54		1969	124	
1956	124		1970	79	
			1977	56	
10084500 Cottonwood Creek near Cleveland, Idaho					
1939	330		1958	505	
1940	186		1959	406	
1941	197		1960	489	
1942	250		1961	224	
1943	380		1962	433	
1944	120		1963	338	
1945	486		1964	377	
1946	660		1965	689	
1947	205		1966	233	
1948	680		1967	328	
1949	308		1968	195	
1950	584		1969	396	
1951	345		1970	303	
1952	773		1971	446	
1953	189		1972	388	
1954	133		1973	373	
1955	205		1974	454	
1956	260		1975	788	
1957	521		1976	382	
			1977	78	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		10093000 Cub River near Preston, Idaho			
1940	498		1960	505	
1941	431		1961	331	
1942	499		1962	555	
1943	705		1963	442	
1944	498		1964	692	
1945	474		1965	686	
1946	574		1966	475	
1947	566		1967	565	
1948	650		1968	534	
1949	533		1969	495	
1950	692		1970	719	
1951	633		1971	803	
1952	571		1972	747	
1956	695		1973	640	
1957	715		1974	654	
1958	692		1975	753	
1959	415		1976	516	
			1977	144	
		10119000 Little Malad River above Elkhorn Reservoir near Malad City, Idaho			
1912	27	MD	1954	28	
1913	61	MD	1955	32	MD
1932	21	MD	1956	91	
1941	118		1957	259	
1942	126		1958	118	
1943	63		1959	56	
1944	116		1960	46	MD
1945	25	MD	1961	86	MD
1946	--		1962	1,450	HP (68)
1947	199		1963	1,100	
1948	270		1964	85	
1949	--		1965	739	
1950	84		1966	135	
1951	--		1967	--	
1952	--		1968	--	
1953	32		1969	--	
		10132500 Lost Creek near Croydon, Utah			
1921	472		1954	89	
1922	647		1955	163	
1923	770	HP (46)	1956	166	
1941	66		1957	290	
1942	106		1958	187	
1943	298		1959	80	
1944	184		1960	112	
1945	216		1961	80	
1946	400		1962	260	
1947	175		1963	179	
1948	341		1964	236	
1949	317		1965	424	
1950	564		1966	148	
1951	350		1967	41	
1952	730				
		10315500 Marys River above Hot Springs Creek near Deeth, Nevada			
1943	1,030		1960	276	
1944	306		1961	113	
1945	676		1962	4,210	HP (68)
1946	508		1963	301	
1947	202		1964	277	
1948	259		1965	518	
1949	456		1966	172	
1950	454		1967	358	
1951	452		1968	134	
1952	1,250		1969	665	
1953	398		1970	514	
1954	128		1971	553	
1955	189		1972	458	
1956	610		1973	370	
1957	510		1974	621	
1958	500		1975	860	
1959	128		1976	290	
			1977	127	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		10316500 Lamoille Creek near Lamoille, Nevada			
1915	315		1958	457	
1916	330		1959	238	
1918	300		1960	348	
1919	360		1961	340	
1920	377		1962	415	
1922	416		1963	570	
1944	341		1964	473	
1945	486		1965	448	
1946	299		1966	246	
1947	326		1967	473	
1948	383		1968	391	
1949	330		1969	369	
1950	588		1970	680	
1951	505		1971	712	
1952	415		1972	617	
1953	311		1973	660	
1954	235		1974	400	
1955	323		1975	560	
1956	447		1976	291	
1957	794	HP (40)	1977	359	
		10317500 North Fork Humboldt River at Devils Gate near Halleck, Nevada			
1914	726		1958	914	
1915	194		1959	69	
1916	632		1960	371	
1917	1,260		1961	275	
1918	287		1962	10,400	HP (82)
1919	763		1963	488	
1944	729		1964	1,240	
1945	615		1965	418	
1946	476		1966	207	
1947	136		1967	338	
1948	215		1968	187	
1949	544		1969	2,430	
1950	263		1970	656	
1951	954		1971	2,890	
1952	2,450		1972	1,480	
1953	1,050		1973	668	
1954	106		1974	2,360	
1955	43		1975	1,140	
1956	1,200		1976	736	
1957	860		1977	78	
			1978	1,600	
		10396000 Donner and Blitzen River near Frenchglen, Oregon			
1911	1,800		1953	2,750	
1912	1,360		1954	1,240	
1913	1,380		1955	1,060	
1914	855		1956	2,140	
1915	2,060		1957	2,560	
1916	1,820		1958	1,420	
1918	442		1959	331	
1919	1,670		1960	1,030	
1920	1,140		1961	470	
1921	2,200		1962	848	
1930	276		1963	1,400	
1938	1,080		1964	1,500	
1939	1,580		1965	2,690	
1940	1,570		1966	630	
1941	834		1967	1,200	
1942	2,270		1968	774	
1943	1,230		1969	2,380	
1944	545		1970	2,720	
1945	1,280		1971	2,750	
1946	628		1972	2,830	
1947	646		1973	698	
1948	1,700		1974	1,920	
1949	1,020		1975	1,090	
1950	793		1976	1,060	
1951	2,000		1977	1,080	
1952	2,260		1978	4,270	HP (52)

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		10403000 Silver Creek near Riley, Oregon			
1952	1,300		1965	1,810	
1953	415		1966	560	
1954	403		1967	488	
1955	275		1968	114	
1956	1,090		1969	1,070	
1957	1,120		1970	617	
1958	878		1971	739	
1959	155		1972	1,080	
1960	499		1973	131	
1961	217		1974	1,280	
1962	625		1975	460	
1963	970		1976	527	
1964	456		1977	304	
			1978	1,220	
		10406500 Trout Creek near Denio, Nevada			
1911	132		1950	88	
1922	149		1951	88	
1923	39		1952	250	
1925	92		1953	180	
1926	85		1954	35	
1927	235		1955	53	
1928	138		1956	112	
1929	89		1957	211	
1930	42		1958	141	
1931	46		1959	35	
1932	256		1960	80	
1933	470		1961	77	
1934	31		1962	87	
1935	163		1963	110	
1936	78		1964	103	
1937	127		1965	79	
1938	305		1966	37	
1939	55		1967	148	
1940	107		1968	53	
1941	124		1969	145	
1942	239		1970	115	
1943	112		1971	208	
1944	124		1972	89	
1945	228		1973	180	
1946	101		1974	144	
1947	60		1975	196	
1948	131		1976	250	
1949	73		1977	32	
			1978	175	
		12302500 Granite Creek near Libby, Montana			
1933	1,360		1959	769	
1937	415		1960	793	
1938	1,960	HP (47)	1961	808	
1939	534		1962	690	
1940	408		1963	360	
1941	430		1964	627	
1942	965		1965	426	
1943	575		1966	515	
1944	35		1967	710	
1948	1,520		1968	500	
1954	1,100		1969	609	
		12304500 Yaak River near Troy, Montana			
1948	12,500		1966	7,440	
1954	13,400	HP (54)	1967	10,200	
1956	12,100		1968	5,080	
1957	7,930		1969	8,130	
1958	6,270		1970	5,760	
1959	6,810		1971	9,220	
1960	7,680		1972	8,840	
1961	9,780		1973	5,900	
1962	5,230		1974	9,640	
1963	4,750		1975	7,080	
1964	8,400		1976	10,200	
1965	6,750		1977	2,060	
			1978	6,010	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	12307500 Moyie River at Eileen, Idaho				
1926	3,200		1952	7,030	
1927	5,910		1953	5,540	
1928	6,270		1954	11,000	
1929	4,820		1955	6,550	
1930	3,680		1956	10,300	
1931	3,540		1957	7,710	
1932	6,840		1958	5,900	
1933	6,390		1959	7,140	
1934	8,780		1960	8,020	
1935	6,230		1961	10,100	
1936	4,950		1962	5,420	
1937	3,850		1963	5,380	
1938	7,680		1964	8,140	
1939	4,500		1965	6,440	
1940	3,630		1966	8,220	
1941	3,290		1967	10,000	
1942	6,320		1968	5,980	
1943	6,680		1969	7,620	
1944	1,840		1970	5,430	
1945	4,780		1971	8,680	
1946	6,900		1972	8,080	
1947	7,210		1973	6,020	
1948	9,650		1974	7,770	
1949	7,430		1975	6,540	
1950	8,090		1976	8,900	
1951	7,150		1977	2,530	
	12320500 Long Canyon Creek near Porthill, Idaho				
1928	448	MD	1944	216	
1929	580	MD	1945	456	
1930	347		1946	435	
1931	598		1947	569	
1932	538		1948	1,300	
1933	950	MD	1949	570	
1934	818		1950	726	
1935	637		1951	586	
1936	616		1952	399	
1937	644		1953	530	
1938	938		1954	827	
1939	455		1955	1,240	
1940	375		1956	900	MD
1941	580		1957	520	MD
1942	568		1958	600	MD
1943	640		1959	760	MD
	12321000 Smith Creek near Porthill, Idaho				
1928	1,340	MD	1949	2,400	
1929	1,480		1950	2,600	
1930	1,210		1951	1,730	
1931	1,560		1952	1,490	
1932	1,490		1953	2,430	
1933	3,060		1954	2,570	
1934	1,960		1955	3,810	HP (52)
1935	1,520		1956	2,560	
1936	1,470		1957	1,790	
1937	1,550		1959	1,950	
1938	2,100		1960	1,690	
1939	1,400		1962	1,670	
1940	1,330		1963	1,730	
1941	3,150		1964	1,980	
1942	2,750		1965	2,100	
1943	1,870		1966	1,950	
1944	830		1967	2,140	
1945	1,500		1968	3,500	
1946	1,890		1969	3,100	
1947	1,610		1970	1,200	
1948	2,480		1971	2,750	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
	12321500 Boundary Creek near Porthill, Idaho				
1929	1,300		1953	2,350	
1930	1,020		1954	2,350	
1931	1,320		1955	3,280	
1932	1,680		1956	2,610	
1933	2,400		1957	1,810	
1934	1,760		1958	1,910	
1935	1,600		1959	1,900	
1936	1,490		1960	1,730	
1937	1,320		1961	3,170	
1938	2,270		1962	1,400	
1939	1,400		1963	1,660	
1940	1,200		1964	1,970	
1941	2,300		1965	1,780	
1942	1,610		1966	1,750	
1943	2,400		1967	2,230	
1944	746		1968	3,540	HP (52)
1945	1,840		1969	2,690	
1946	1,970		1970	1,850	
1947	1,700		1971	3,000	
1948	2,530		1972	2,810	
1949	2,120		1973	2,120	
1950	2,250		1974	3,260	
1951	1,620		1975	1,960	
1952	2,270		1976	2,970	
			1977	1,220	
	12332000 Middle Fork Rock Creek near Philipsburg, Montana				
1938	992		1957	999	
1939	611		1958	1,220	
1940	395		1959	870	
1941	482		1960	836	
1942	1,250		1961	860	
1943	1,220		1962	770	
1944	565		1963	914	
1945	550		1964	1,150	
1946	466		1965	1,380	
1947	1,310		1966	515	
1948	1,360		1967	969	
1949	1,000		1968	752	
1950	1,340		1969	812	
1951	1,180		1970	1,210	
1952	884		1971	948	
1953	1,430		1972	1,590	
1954	998		1973	550	
1955	824		1975	1,170	
1956	1,220		1976	930	
			1977	352	
	12392300 Pack River near Colburn, Idaho				
1959	1,880		1969	4,370	
1960	2,380		1970	2,110	
1961	3,180		1971	3,420	
1962	2,430		1972	2,760	
1963	1,700		1973	1,870	
1964	2,690		1974	6,880	HP (51)
1965	2,190		1975	3,100	
1966	2,270		1976	3,990	
1967	3,080		1977	1,310	
1968	2,160		1978	1,970	
	12394000 Priest River near Coolin, Idaho				
1949	6,840		1963	4,430	
1950	5,680		1964	6,180	
1951	5,550		1965	5,130	
1952	5,740		1966	4,540	
1953	5,270		1967	6,540	
1954	7,290		1968	4,970	
1955	6,580		1969	6,650	
1956	8,130		1970	4,700	
1957	6,230		1971	6,350	
1958	5,860		1972	7,080	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	12394000 Priest River near Coolin, Idaho (Continued)				
1959	5,590		1973	3,880	
1960	5,390		1974	8,900	HP (32)
1961	7,970		1975	6,330	
1962	4,720	MD	1976	5,640	
			1977	2,470	
	12395000 Priest River near Priest River, Idaho				
1904	6,300	MD	1954	8,300	
1931	4,850	MD	1955	7,570	
1932	8,890	MD	1956	9,690	
1933	7,080	MD	1957	8,540	
1934	6,900	MD	1958	6,680	
1935	6,150	MD	1959	6,920	
1936	5,710		1960	6,840	
1937	4,000		1961	9,390	
1938	6,960	MD	1962	6,130	
1939	5,000	MD	1963	5,190	
1940	4,540	MD	1964	7,200	
1941	5,100	MD	1965	6,240	
1942	5,550	MD	1966	5,490	
1943	6,000	MD	1967	7,410	MD
1944	3,310		1968	5,430	
1945	7,640		1969	7,980	
1946	8,300		1970	5,750	
1947	7,120		1971	7,900	
1948	10,500		1972	8,080	
1949	8,630		1973	4,480	
1950	6,740		1974	10,300	
1951	6,880		1975	7,340	
1952	7,140		1976	6,660	
1953	6,400		1977	2,430	
	12411000 Coeur d'Alene River at Shoshone Creek near Prichard, Idaho				
1951	9,610		1964	6,620	
1952	7,470		1965	11,900	
1953	6,900		1966	4,880	
1954	6,560		1967	4,920	
1955	5,800		1968	3,610	
1956	7,110		1969	5,810	
1957	6,300		1970	5,880	
1958	6,220		1971	6,630	
1959	5,570		1972	5,880	
1960	5,890		1973	3,110	
1961	11,000		1974	22,000	HP (58)
1962	8,600		1975	6,840	
1963	3,100		1976	9,600	
			1977	1,930	
	12413500 Coeur d'Alene River near Cataldo, Idaho				
1911	13,500		1946	19,800	
1912	14,900		1947	36,000	
1921	24,000		1948	20,600	
1922	20,200		1949	19,400	
1923	17,600		1950	26,200	
1924	16,600		1951	34,800	
1925	27,600		1952	21,100	
1926	11,000		1953	20,900	
1927	25,800		1954	18,300	
1928	18,500		1955	18,100	
1929	11,400		1956	24,200	
1930	7,880		1957	23,200	
1931	13,100		1958	17,000	
1932	22,400		1959	17,500	
1933	21,500		1960	16,300	
1934	67,000		1961	41,400	
1935	14,400		1962	22,500	
1936	23,100		1963	13,400	
1937	17,300		1964	19,400	
1938	55,600		1965	47,200	
1939	13,000		1966	13,800	
1940	10,700		1967	14,700	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	12413500 Coeur d'Alene River near Cataldo, Idaho (Continued)				
1941	6,440		1968	17,000	
1942	13,000		1969	18,600	
1943	22,000		1970	16,900	
1944	6,210		1971	17,800	
1945	18,200		1972	22,800	
			1974	79,000	HP (55)
	12416000 Hayden Creek below North Fork near Hayden Lake, Idaho				
1948	680		1967	393	
1949	295		1968	195	
1950	774		1969	328	
1951	600	MD	1970	423	
1952	371		1971	160	
1953	744		1972	770	
1959	366		1973	51	
1962	299		1974	650	
1963	196		1975	200	
1964	206		1976	236	
1965	790	HP (40)	1977	24	
1966	211		1978	317	
	12424000 Hangman Creek at Spokane, Washington				
1948	11,900		1963	20,600	
1949	6,210		1964	3,900	
1950	9,150		1965	14,500	
1951	6,080		1966	4,560	
1952	9,140		1967	5,310	
1953	3,560		1968	4,590	
1954	6,500		1969	7,490	
1955	4,730		1970	8,650	
1956	11,300		1971	5,340	
1957	9,320		1972	11,600	
1958	6,090		1973	11,500	
1959	16,200		1974	17,700	
1960	2,710		1975	8,420	
1961	6,320		1976	6,320	
1962	4,610		1977	1,560	
	12427000 Little Spokane River at Elk, Washington				
1949	110		1964	79	
1950	141		1965	104	
1951	114		1966	80	
1952	128		1967	98	
1953	89		1968	80	
1954	86		1969	111	MD
1955	94		1970	125	
1956	148		1971	82	
1957	108		1972	123	
1958	113		1973	125	
1959	101		1974	205	
1960	137		1975	122	
1961	152		1976	90	
1962	88		1977	77	
1963	146				
	12431000 Little Spokane River at Dartford, Washington				
1929	439		1960	2,460	
1930	730		1961	1,870	
1931	260		1962	1,260	
1932	1,900		1963	1,950	
1947	640		1964	940	
1948	1,660		1965	1,230	
1949	1,620		1966	1,110	
1950	2,240		1967	1,470	
1951	1,560		1968	1,160	
1952	1,580		1969	1,970	
1953	950		1970	3,170	HP (35)
1954	1,110		1971	1,110	
1955	1,320		1972	970	
1956	1,860		1973	1,680	
1957	2,060		1974	2,860	
1958	2,040		1975	2,170	
1959	2,060		1976	1,760	
			1977	577	

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
		12465000 Crab Creek at Irby, Washington			
1943	304		1960	1,290	
1944	840		1961	1,970	
1945	532		1962	580	
1946	965		1963	7,750	
1947	159		1964	124	
1948	1,180		1965	599	
1949	2,970		1966	119	
1950	3,070		1967	258	
1951	2,410		1968	1,240	
1952	1,300		1969	2,700	
1953	103		1970	2,240	
1954	744		1971	3,560	
1955	2,160		1972	148	
1956	4,170		1973	1,600	
1957	8,370	HP (40)	1974	1,820	
1958	832		1975	918	
1959	5,550		1976	2,270	
			1977	22	
		13011500 Pacific Creek at Moran, Wyoming			
1918	3,030		1960	2,050	
1945	1,310		1961	2,630	
1946	1,710		1962	1,810	
1947	1,600		1963	2,180	
1948	2,280		1964	2,590	
1949	2,150		1965	3,300	
1950	2,670		1966	2,400	
1951	2,260		1967	2,150	
1952	2,530		1968	2,370	
1953	2,760		1969	2,180	
1954	3,470		1970	2,600	
1955	2,290		1971	3,390	
1956	3,410		1972	3,190	
1957	2,950		1973	1,690	
1958	2,370		1974	3,790	
1959	3,070		1975	2,240	
		13023000 Grey River at Reservoir near Alpine, Wyoming			
1918	5,200		1963	2,420	
1937	2,070		1964	4,280	
1938	3,180		1965	3,860	
1954	4,210		1966	3,150	
1955	2,010		1967	4,050	
1956	5,010		1968	3,260	
1957	4,290		1971	7,230	HP (33)
1958	3,720		1972	5,170	
1959	2,920		1973	2,550	
1960	2,500		1974	5,220	
1961	2,110		1975	3,650	
1962	3,110		1976	3,590	
			1977	650	
		13024500 Cottonwood Creek near Smoot, Wyoming			
1933	332		1945	238	
1934	71		1946	249	
1935	212		1947	250	
1936	247		1948	268	
1937	137		1949	250	
1938	316		1950	256	
1939	147		1951	399	
1940	140		1952	302	
1941	174		1953	335	
1942	200		1954	225	
1943	320		1955	171	
1944	213		1956	438	
			1957	318	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

13025000 Swift Creek near Afton, Wyoming

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
1943	491		1960	406	
1944	420		1961	401	
1945	418		1962	536	
1946	428		1963	420	
1947	385		1964	748	
1948	560		1965	341	
1949	495		1966	355	
1950	540		1967	679	
1951	545		1968	560	
1952	520		1969	352	
1953	555		1970	710	
1954	426		1971	770	
1955	306		1972	557	
1956	565		1973	514	
1957	775		1974	758	
1958	518		1975	793	
1959	584		1976	463	
			1977	237	

13027500 Salt River at Reservoir near Etna, Wyoming

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
1918	2,380		1964	2,790	
1954	1,560		1965	2,310	
1955	1,280		1966	2,230	
1956	2,420		1967	2,190	
1957	2,320		1968	1,720	
1958	2,260		1971	3,870	HP (35)
1959	1,230		1972	3,560	
1960	1,520		1973	2,250	
1961	899		1974	3,590	
1962	2,250		1975	3,580	
1963	1,830		1976	3,760	
			1977	914	

13047500 Fall River near Squirrel, Idaho

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
1905	2,710		1939	2,670	
1906	2,580		1940	3,950	
1907	3,130		1941	2,490	
1908	2,970		1942	2,950	
1909	4,160		1943	3,320	
1918	5,380		1944	2,640	
1919	4,730		1945	2,940	
1920	2,900		1946	2,700	
1921	3,560		1947	3,500	
1922	3,980		1948	3,690	
1923	2,630		1949	3,710	
1924	1,920		1950	3,310	
1925	3,650		1951	3,200	
1926	2,520		1952	3,560	
1927	6,440		1953	3,450	
1928	4,330		1954	3,450	
1929	3,540		1955	3,420	
1930	2,300		1956	3,890	
1931	3,120		1957	4,080	
1932	5,600		1958	3,640	
1933	4,960		1959	3,830	
1934	1,780		1960	4,750	
1935	2,940		1961	2,890	
1936	4,040		1962	3,000	
1937	3,010		1963	3,180	
1938	3,050		1964	3,900	

13055000 Teton River near St. Anthony, Idaho

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
1890	4,440	MD	1942	3,550	
1891	2,360	MD	1943	3,280	
1892	5,410	MD	1944	2,830	
1893	5,830	MD	1945	3,270	
1903	3,080	MD	1946	2,370	
1904	3,950	MD	1947	2,680	
1905	1,760	MD	1948	3,560	
1906	3,300	MD	1949	3,660	
1907	3,040	MD	1950	4,010	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13055000 Teton River near St. Anthony, Idaho (Continued)					
1908	4,250	MD	1951	3,490	
1909	5,230	MD	1952	3,180	
1920	3,040		1953	3,270	
1921	4,390	MD	1954	2,950	
1922	3,300		1955	2,070	
1923	3,410		1956	3,790	
1924	1,580		1957	4,660	
1925	4,230		1958	3,680	
1926	2,370		1959	3,790	
1927	4,100		1960	2,300	
1928	4,350		1961	2,130	
1929	3,220		1962	11,000	HP (57)
1930	1,780		1963	7,280	
1931	1,260		1964	5,000	
1932	3,390	MD	1965	3,080	
1933	2,560	MD	1966	2,510	
1934	862		1967	4,150	
1935	2,540		1968	3,560	
1936	3,990		1969	2,440	
1937	2,020		1970	4,210	
1938	3,940		1971	4,630	
1939	2,270		1972	4,110	
1940	2,040		1973	3,180	
1941	2,390		1974	4,580	
			1975	4,210	
13068500 Blackfoot River near Blackfoot, Idaho					
1912	2,410	B	1940	780	B
1913	1,420	B	1941	960	B
1914	2,170	B	1942	1,460	B
1915	1,200	B	1943	2,290	B
1916	1,710	B	1944	1,090	B
1917	3,370	B	1945	2,010	B
1918	1,560	B	1946	1,980	B
1919	2,050	B	1947	1,440	B
1920	2,470	B	1948	1,910	B
1921	2,690	B	1949	1,800	B
1922	3,150	B	1950	2,600	B
1923	1,810	B	1951	1,500	B
1924	1,920	B	1952	3,500	B
1925	2,090	B	1953	820	B
1926	1,120	B	1954	1,010	B
1927	1,630	B	1955	1,060	B
1928	2,300	B	1956	1,940	B
1929	1,500	B	1957	1,520	B
1930	1,680	B	1958	1,520	B
1931	870	B	1959	1,930	B
1932	1,470	B	1960	1,610	B
1933	1,480	B	1961	620	B
1934	850	B	1962	2,300	B
1935	--		1963	1,430	B
1936	1,980	B	1964	1,750	B
1937	1,760	B	1965	2,670	B
1938	2,370	B	1966	1,330	B
1939	1,220	B	1967	1,460	B
13079000 Clear Creek near Naf, Idaho					
1910	180	MD	1957	126	
1911	115	MD	1958	220	
1945	132		1959	61	
1946	64		1960	118	
1947	80		1961	41	
1948	127		1962	120	
1949	122		1963	212	
1950	89		1964	123	
1951	112		1965	306	
1952	91		1966	125	
1953	107		1967	386	HP (28)
1954	47		1968	73	
1955	73		1969	200	
1956	124		1970	197	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	13092000 Rock Creek near Rock Creek, Idaho				
1910	211	MD	1957	315	
1911	111	MD	1958	294	
1912	429	MD	1959	70	
1913	128	MD	1960	119	
1939	89	MD	1961	51	
1944	247		1962	153	
1945	311		1963	193	
1946	292		1964	429	
1947	130		1965	374	
1948	227		1966	57	
1949	239		1967	119	
1950	258		1968	40	
1951	265		1969	241	
1952	300		1970	461	HP (35)
1953	205		1971	389	
1954	80		1972	360	
1955	165		1973	230	
1956	152		1974	360	
	13108500 Camas Creek at Eighteenmile Shearing Corral near Kilgore, Idaho				
1921	1,090		1944	538	
1922	1,550		1945	1,170	
1923	750		1946	1,340	
1925	850		1947	619	
1926	760		1948	500	MD
1927	1,190		1949	828	
1930	1,030		1950	700	MD
1937	447		1951	1,030	
1938	1,200		1952	2,030	
1939	418		1953	755	
1940	432		1969	2,590	HP (29)
1941	273		1970	1,010	
1942	418		1971	1,790	
1943	817		1972	558	
			1973	1,340	
	13116000 Medicine Lodge Creek at Ellis Ranch near Argora, Idaho				
1941	129		1955	78	
1942	125		1956	138	
1943	68		1957	98	
1944	229		1958	131	
1945	134		1959	71	
1946	78		1960	67	
1947	201		1961	57	
1948	78		1962	361	
1949	85		1963	95	
1950	122		1964	163	
1951	65		1965	126	
1952	100		1966	139	
1953	74		1967	140	
1954	66		1968	97	
			1969	135	
	13120000 North Fork Big Lost River at Wildhorse near Chilly, Idaho				
1944	622		1961	424	
1945	548		1962	598	
1946	499		1963	778	
1947	616		1964	590	
1948	876		1965	1,420	HP (58)
1949	516		1966	387	
1950	525		1967	1,380	
1951	807		1968	609	
1952	1,080		1969	995	
1953	859		1970	885	
1954	879		1971	925	
1955	543		1972	966	
1956	1,270		1973	577	
1957	1,100		1974	1,300	
1958	1,200		1975	1,090	
1959	462		1976	654	
1960	433		1977	531	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13120500 Big Lost River at Howell Ranch, near Chilly, Idaho			
1904	1,600	MD	1943	2,370	
1905	1,360	MD	1944	2,310	
1906	2,380	MD	1945	1,890	
1907	2,270		1946	1,660	
1908	2,030	MD	1947	1,890	
1909	2,880	MD	1948	2,390	
1910	915		1949	1,550	
1911	3,420	MD	1950	1,530	
1912	2,030		1951	2,210	
1913	2,820		1952	2,960	
1914	2,540		1953	2,400	
1920	1,620		1954	3,960	
1921	3,500		1955	1,740	
1922	3,360		1956	3,410	
1923	2,360		1957	3,570	
1924	932		1958	3,280	
1925	2,240		1959	1,670	
1926	831		1960	1,550	
1927	2,490		1961	1,460	
1928	2,020		1962	2,110	
1929	1,560		1963	2,580	
1930	1,910		1964	2,050	
1931	835		1965	3,450	
1932	2,400		1966	1,150	
1933	1,910		1967	4,420	
1934	639		1968	2,110	
1935	2,260		1969	3,140	
1936	1,230		1970	3,240	
1937	910		1971	2,810	
1938	3,170		1972	3,230	
1939	1,000		1973	1,990	
1940	1,350		1974	3,510	
1941	1,530		1975	3,310	
1942	2,070		1976	1,860	
			1977	1,700	
		13135500 Big Wood River near Ketchum, Idaho			
1948	1,200		1960	611	
1949	721		1961	454	
1950	732		1962	655	
1951	946		1963	857	
1952	1,240		1964	733	
1953	833		1965	1,450	
1954	978		1966	455	
1955	703		1967	1,690	
1956	1,620		1968	471	
1957	1,200		1969	1,360	
1958	1,540		1970	1,030	
1959	647		1971	1,460	
		13141500 Camas Creek near Blaine, Idaho			
1924	280		1951	7,470	
1925	5,070		1952	9,420	
1927	3,540		1953	2,530	
1928	1,850		1954	2,610	
1929	1,800		1955	552	
1930	525		1956	4,410	
1931	466		1957	2,570	
1932	2,870		1958	3,620	
1933	2,510		1959	1,150	
1934	292		1960	5,280	
1935	3,540		1961	784	
1936	7,490		1962	4,530	
1937	3,610		1963	9,200	
1938	8,690		1964	2,990	
1939	4,510		1965	4,470	
1940	2,930		1966	4,230	
1941	1,060		1967	820	MD
1942	4,400		1968	398	
1943	9,780		1969	6,600	
1944	810		1970	2,410	
1945	1,110		1971	6,400	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13141500 Camas Creek near Blaine, Idaho (Continued)			
1946	5,680		1972	3,680	
1947	1,340		1973	1,730	
1948	1,100		1974	5,300	
1949	3,560		1975	3,820	
1950	6,750		1976	5,250	
			1977	67	
		13154000 Clover Creek near Bliss, Idaho			
1939	1,020		1965	11,000	HP (21)
1940	1,320		1966	310	
1941	194		1967	500	
1942	860		1968	600	
1943	1,560		1969	2,650	
1958	1,360		1970	4,500	
1959	875		1971	3,000	
1960	2,700		1972	2,500	
1961	723		1973	1,000	
1962	4,100		1974	2,000	
1963	8,000		1975	2,400	
1964	1,900		1976	2,250	
		13161500 Bruneau River near Rowland, Nevada			
1913	383		1967	426	
1914	972		1968	332	
1915	271		1969	1,140	
1916	1,000		1970	828	
1917	1,300		1971	1,240	
1918	301		1972	905	
1962	2,120	HP (22)	1973	582	
1963	1,270		1974	701	
1964	600		1975	2,100	
1965	886		1976	612	
1966	500		1977	298	
		13167500 East Fork Bruneau River near Hot Spring, Idaho			
1911	450		1958	123	
1912	316		1959	81	
1913	176		1960	239	
1914	449		1961	58	
1949	204		1962	358	
1950	228		1963	619	HP (27)
1951	160		1964	484	
1952	222		1965	174	
1953	172		1966	89	
1954	44		1967	232	
1955	83		1968	101	
1956	145		1969	140	
1957	463		1970	224	
			1971	568	
		13169500 Big Jacks Creek near Bruneau, Idaho			
1939	500		1966	0	
1940	36		1967	52	
1941	62		1968	62	
1942	290		1969	232	
1943	2,100	HP (40)	1970	132	
1944	5		1971	247	
1945	61		1972	472	
1946	469		1973	324	
1947	211		1974	510	
1948	76		1975	125	
1949	198		1976	847	
1963	1,720		1977	0.75	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	13186000 South Fork Boise River near Featherville, Idaho				
1945	2,930		1961	2,770	
1946	4,210		1962	3,540	
1947	4,300		1963	4,060	
1948	4,750		1964	3,660	
1949	3,880		1965	6,920	
1950	4,520		1966	2,930	
1951	5,340		1967	6,020	
1952	5,530		1968	2,330	
1953	4,640		1969	5,960	
1954	5,380		1970	5,020	
1955	3,890		1971	6,640	
1956	7,580	HP (67)	1972	6,560	
1957	5,880		1973	3,300	
1958	7,560		1974	6,290	
1959	3,130		1975	6,130	
1960	4,440		1976	4,250	
			1977	820	
	13191000 South Fork Boise River near Lenox, Idaho				
1911	6,420	MD	1928	7,570	
1912	5,800	MD	1929	3,660	
1913	5,440	MD	1930	3,440	
1914	5,450	MD	1931	2,100	
1915	2,100		1932	5,730	
1916	7,530		1933	5,190	
1917	9,200		1934	2,070	
1918	5,040		1935	4,190	
1919	5,520		1936	8,400	
1920	3,640		1937	3,060	
1921	9,020		1938	8,600	
1922	7,060		1939	3,320	
1923	5,080		1940	4,190	
1924	2,150		1941	3,880	
1925	6,660		1942	4,510	
1926	3,040		1943	9,550	
1927	8,440		1944	3,180	
			1945	3,880	
	13196500 Bannock Creek near Idaho City, Idaho				
1939	4.4		1960	14	MD
1940	23		1961	4.4	
1941	4.7		1962	11	
1951	14		1963	12	
1952	33		1964	8.2	
1953	16		1965	46	HP (24)
1954	14		1966	6.0	
1955	9.0		1967	7.5	
1956	31		1968	5.4	
1957	24		1969	23	
1958	34		1970	18	
1959	6.2		1971	35	
	13235000 South Fork Payette River at Lowman, Idaho				
1941	3,580		1959	3,800	
1942	3,320		1960	3,700	
1943	4,860		1961	3,500	
1944	2,230		1962	3,070	
1945	2,960		1963	3,880	
1946	3,690		1964	3,410	MD
1947	4,460		1965	5,590	
1948	5,250		1966	2,880	
1949	4,530		1967	4,550	
1950	4,370		1968	2,940	
1951	4,570		1969	4,500	
1952	4,860		1970	4,870	
1953	5,030		1971	4,870	
1954	5,450		1972	7,190	
1955	4,060		1973	3,180	
1956	7,050		1974	8,980	HP (106)
1957	5,840		1975	4,990	
1958	5,820		1976	4,030	
			1977	2,060	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13240000 Lake Fork Payette River above Jumbo Creek near McCall, Idaho					
1926	647		1952	1,260	
1927	1,870		1953	1,660	
1928	1,620		1954	1,640	
1929	1,000		1955	1,440	
1930	643		1956	1,950	
1931	862		1957	1,800	
1932	2,080		1958	1,920	
1933	2,520		1959	1,310	
1934	1,120		1960	944	
1935	810		1961	1,300	
1936	1,720		1962	907	
1937	924		1963	1,280	
1938	1,730		1964	1,490	
1939	961		1965	1,450	
1940	1,420		1966	788	
1941	1,340		1967	1,900	
1942	1,420		1968	970	
1943	1,680		1969	1,310	
1944	1,030		1970	1,690	
1945	1,620		1971	2,770	
1946	925		1972	1,670	
1947	1,570		1973	1,020	
1948	2,600		1974	2,710	
1949	1,350		1975	1,260	
1950	1,310		1976	1,310	
1951	1,080		1977	487	
13250600 Big Willow Creek near Emmett, Idaho					
1957	2,100		1971	921	
1962	882		1972	1,360	
1963	813		1973	797	
1964	499		1974	809	
1965	1,860	HP (31)	1975	1,080	
1966	397		1976	403	
1967	492		1977	33	
1968	764		1978	869	
1969	1,050		1979	790	
1970	1,450				
13260000 Pine Creek near Cambridge, Idaho					
1939	145		1951	156	
1940	392		1952	370	
1941	246		1953	209	
1942	348		1954	151	
1943	326		1955	199	
1944	149		1956	420	
1945	363		1957	510	
1946	259		1958	850	
1947	204		1959	120	
1948	505		1960	215	
1949	259		1961	292	
1950	196		1962	125	
13266000 Weiser River near Weiser, Idaho					
1890	11,200	MD	1928	14,400	B
1891	9,300	MD	1929	9,900	B
1895	4,300	MD	1930	4,800	B
1896	12,800		1931	6,100	B
1897	10,500	MD	1932	20,200	B
1898	3,500	MD	1933	8,500	B
1899	7,850	MD	1934	5,100	B
1900	10,600	MD	1935	5,600	B
1901	10,600	MD	1936	6,100	B
1902	9,180	MD	1937	6,000	B
1903	14,500	MD	1938	11,300	B
1904	16,900	MD	1939	7,200	B
1911	6,010	MD	1940	17,200	B
1912	5,070	MD	1941	7,400	B
1913	9,220	MD	1942	7,200	B
1914	4,900	MD	1943	11,300	B
1924	6,800	B	1944	4,600	B
1925	22,600	B	1945	10,400	B
1926	14,600	B	1946	11,800	B
1927	14,900	B	1947	7,400	

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
	13266000 Weiser River near Weiser, Idaho (Continued)				
1948	6,900	B	1957	20,900	B
1949	7,000	B	1958	17,100	B
1950	9,100	B	1959	7,200	B
1951	5,400	B	1960	7,000	B
1952	11,000	B	1961	10,100	B
1953	16,800	B	1962	18,900	B
1954	11,000	B	1963	16,800	B
1955	8,200	B	1964	17,600	B
1956	23,500	B, HP (84)	1965	20,000	B
	13273000 Burnt River near Hereford, Oregon				
1940	1,340	B	1954	451	B
1941	484	B	1955	252	B
1942	881	B	1956	1,300	B
1943	2,220	B, HP (49)	1957	780	B
1944	201	B	1958	1,570	B
1945	816	B	1959	518	B
1946	926	B	1960	916	B
1947	289	B	1961	320	B
1948	675	B	1962	666	B
1949	749	B	1963	340	B
1950	803	B	1964	554	B
1951	902	B	1965	1,510	B
1952	1,360	B	1966	220	B
1953	1,040	B	1967	280	B
	13275500 Powder River near Baker, Oregon				
1904	1,690		1943	1,040	
1905	333		1944	238	
1906	880		1945	667	
1907	900		1946	845	
1908	639		1947	657	
1909	650		1948	1,200	
1910	1,820		1949	876	
1911	472		1950	512	
1912	1,000		1951	822	
1913	1,020		1952	1,090	
1914	940		1953	804	
1927	1,010		1954	432	
1928	1,010		1955	422	
1929	550		1956	1,340	
1930	250		1957	701	
1931	301		1958	1,400	
1932	970		1959	608	
1933	715		1960	800	
1934	210		1961	581	
1935	441		1962	570	
1936	870		1963	625	
1937	418		1964	737	
1938	845		1965	1,150	
1939	745		1966	443	
1940	665		1967	895	
1941	695		1968	570	
1942	772				
	13295000 Valley Creek at Stanley, Idaho				
1911	1,450	MD	1946	891	MD
1912	1,090		1947	1,150	MD
1913	1,040	MD	1948	1,290	MD
1921	1,850	MD	1949	947	
1922	1,220	MD	1950	1,070	
1923	886	MD	1951	1,340	
1924	485	MD	1952	1,150	
1925	939		1953	1,010	
1926	507	MD	1954	1,240	
1927	1,390	MD	1955	930	
1928	1,300	MD	1956	2,000	HP (56)
1929	689	MD	1957	1,460	
1930	631	MD	1958	1,300	
1931	457	MD	1959	910	
1932	838	MD	1960	773	
1933	1,520		1961	798	
1934	565	MD	1962	689	
1935	710	MD	1963	1,020	

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
	13295000 Valley Creek at Stanley, Idaho (Continued)				
1936	1,170	MD	1964	878	
1937	538	MD	1965	1,410	
1938	1,090	MD	1966	636	
1939	457	MD	1967	1,230	
1940	710	MD	1968	784	
1941	700	MD	1969	1,180	
1942	1,010	MD	1970	1,470	
1943	1,300	MD	1971	1,650	
1944	598	MD	1972	1,460	
1945	664		1974	1,520	
	13295500 Salmon River below Valley Creek at Stanley, Idaho				
1926	1,970		1944	1,720	
1927	5,020		1945	2,200	
1928	4,380	MD	1946	2,830	
1929	2,340	MD	1947	3,270	
1930	2,580		1948	4,090	
1931	1,480		1949	2,840	
1932	3,230		1950	3,400	
1933	4,400		1951	4,090	
1934	1,660		1952	3,750	
1935	2,550		1953	3,200	
1936	3,700		1954	4,280	
1937	1,720		1955	3,070	
1938	3,790		1956	5,070	
1939	1,580		1957	4,480	
1940	2,390		1958	4,360	
1941	2,320		1959	2,800	
1942	2,720		1960	2,410	
1943	3,850		1974	5,650	HP (61)
	13296000 Yankee Fork Salmon River near Clayton, Idaho				
1921	3,360	MD	1935	1,160	MD
1922	2,830		1936	2,010	MD
1923	1,730		1937	800	MD
1924	729	MD	1938	2,110	
1925	1,760	MD	1939	872	
1926	602	MD	1940	1,510	
1927	2,420	MD	1941	965	
1928	2,520	MD	1942	2,330	
1929	921		1943	2,410	
1930	1,120		1944	900	
1931	710		1945	800	
1932	1,780		1946	1,320	
1933	1,800	MD	1947	2,240	
1934	920	MD	1948	2,260	
			1974	4,900	HP (61)
	13296500 Salmon River below Yankee Fork near Clayton, Idaho				
1922	6,760	MD	1950	5,770	
1923	4,930		1951	7,140	
1924	2,820	MD	1952	5,960	
1925	5,620	MD	1953	5,720	
1926	2,360		1954	6,550	
1927	8,000	MD	1955	5,090	
1928	7,530		1956	10,300	
1929	3,440		1957	7,670	
1930	3,760		1958	7,160	
1931	2,120	MD	1959	4,770	
1932	5,360		1960	4,020	
1933	6,400		1961	3,880	
1934	2,940		1962	3,950	
1935	4,000	MD	1963	4,750	
1936	6,450		1964	4,660	
1937	2,620		1965	8,220	
1938	6,770		1966	3,060	
1939	2,620		1967	6,220	
1940	3,770		1968	3,730	
1941	3,370		1969	5,820	
1942	5,570		1970	6,340	
1943	7,200		1971	7,470	
1944	2,830		1972	8,740	
1945	3,250		1973	3,310	
1946	4,430		1974	10,500	
1947	6,060		1975	5,990	
1948	7,060		1976	5,160	
1949	4,920		1977	1,370	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	13299000 Challis Creek near Challis, Idaho				
1944	214		1957	401	
1945	138		1958	444	
1946	147		1959	210	
1947	388		1960	131	
1948	418		1961	163	
1949	193		1962	197	
1950	256		1963	239	
1951	345		1964	266	A
1952	200		1965	872	A, HP (48)
1953	319		1966	96	A
1954	204		1967	421	A
1955	202		1968	342	A
1956	508		1969	316	A
			1970	285	A
	13306500 Panther Creek near Shoup, Idaho				
1945	2,010	MD	1961	1,100	
1946	834	MD	1962	1,050	
1947	2,500	MD	1963	1,480	
1948	2,400		1964	2,160	
1949	1,450	MD	1965	2,750	
1950	1,370	MD	1966	574	
1951	1,880	MD	1967	2,030	
1952	1,160	MD	1968	1,240	
1953	2,640	MD	1969	1,620	
1954	1,600	MD	1970	2,190	
1955	1,250	MD	1971	3,030	
1956	2,740	MD	1972	2,720	
1957	2,490	MD	1973	774	
1958	1,960		1974	3,050	
1959	1,960		1975	2,580	
1960	1,710		1976	2,180	
			1977	612	
	13308500 Middle Fork Salmon River near Cape Horn, Idaho				
1929	1,010		1951	1,950	
1930	946		1952	1,750	
1931	723		1953	1,890	
1932	1,520		1954	2,010	
1933	2,340		1955	1,570	
1934	1,110		1956	2,980	
1935	1,180		1957	2,270	
1936	1,810		1958	2,440	
1937	942		1959	1,510	
1938	2,260		1960	1,420	
1939	880		1961	1,370	
1940	1,640		1962	1,380	
1941	1,290		1963	1,630	
1942	1,700		1964	1,410	
1943	2,340		1965	2,490	
1944	930		1966	1,100	
1945	1,110		1967	1,840	
1946	1,530		1968	1,270	
1947	2,110		1969	1,950	
1948	2,340		1970	2,060	
1949	1,690		1971	2,460	
1950	1,790		1972	2,420	
			1974	3,320	HP (50)
	13309000 Bear Valley Creek near Cape Horn, Idaho				
1922	2,230		1941	1,910	
1923	2,300		1942	1,670	
1924	1,140		1943	3,090	
1925	2,800		1944	1,060	
1926	1,470		1945	1,800	
1927	2,950		1946	2,000	
1928	3,120		1947	2,890	
1929	1,540		1948	2,960	
1930	1,160		1949	2,530	
1931	1,040		1950	2,480	
1932	2,320		1951	2,560	
1933	3,450		1952	2,030	
1934	1,490		1953	2,800	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
		13309000 Bear Valley Creek near Cape Horn, Idaho (Continued)			
1935	1,540		1954	3,100	
1936	2,500		1955	1,560	
1937	1,190		1956	3,860	HP (51)
1938	2,560		1957	2,700	
1939	1,330		1958	3,270	
1940	1,860		1959	1,600	
			1960	1,830	
		13310500 South Fork Salmon River near Knox, Idaho			
1929	600	MD	1945	806	
1931	648	MD	1946	1,060	
1932	745	MD	1947	1,410	
1933	1,560	MD	1948	1,330	
1934	593	MD	1949	1,310	
1935	878	MD	1950	1,160	
1936	1,340	MD	1951	1,080	
1937	682	MD	1952	1,140	
1938	1,340	MD	1953	1,260	
1939	605	MD	1954	1,340	
1940	800	MD	1955	1,040	
1941	735	MD	1956	1,620	
1942	1,020	MD	1957	1,510	
1943	1,320		1958	1,480	
1944	670		1959	885	
			1960	915	
		13313000 Johnson Creek at Yellow Pine, Idaho			
1929	2,200		1953	3,680	
1930	1,980		1954	4,170	
1931	1,450		1955	2,930	
1932	3,200		1956	5,440	
1933	5,150		1957	4,210	
1934	2,100		1958	4,290	
1935	2,420		1959	2,880	
1936	3,430		1960	2,560	
1937	1,720		1961	3,170	
1938	3,520		1962	2,720	
1939	2,070		1963	3,410	
1940	2,910		1964	3,110	
1941	2,520		1965	4,340	
1942	2,520		1966	1,780	
1943	3,390		1967	3,180	
1944	1,470		1968	2,050	
1945	2,430		1969	3,200	
1946	2,470		1970	4,050	
1947	4,530		1971	3,790	
1948	4,620		1972	4,510	
1949	4,610		1973	2,110	
1950	3,200		1974	6,230	
1951	3,020		1975	2,960	
1952	2,800		1976	2,610	
			1977	633	
		13315500 Mud Creek near Tamarack, Idaho			
1937	100		1957	188	
1938	300		1958	216	
1946	287		1959	110	
1947	95		1962	360	
1948	292		1963	210	
1949	155		1964	170	
1950	173		1965	295	
1951	193		1966	143	
1952	395	HP (26)	1967	205	
1953	257		1968	110	
1954	213		1969	180	
1955	138		1970	170	
1956	393		1971	240	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
	13316500 Little Salmon River at Riggins, Idaho				
1948	9,200		1964	5,740	
1951	3,720		1965	5,970	
1952	5,530		1966	2,840	
1953	5,650		1967	6,080	
1954	5,060		1968	3,960	
1956	8,500		1969	5,280	
1957	5,720		1970	6,960	
1958	6,720		1971	7,500	
1959	4,680		1972	6,760	
1960	4,540		1973	4,190	
1961	4,860		1974	12,600	HP (42)
1962	3,530		1975	4,600	
1963	3,800		1976	4,870	
			1977	1,510	
	13320000 Catherine Creek near Union, Oregon				
1912	1,240		1950	605	
1915	498		1951	690	
1918	960		1952	1,040	
1919	825		1953	872	
1926	675		1954	548	
1927	895		1955	655	
1928	1,200		1956	1,060	
1929	1,000		1957	946	
1930	335		1958	1,200	
1931	525		1959	715	
1932	1,080		1960	670	
1933	1,240		1961	705	
1934	338		1962	502	
1935	680		1963	480	
1936	905		1964	665	
1937	520		1965	805	
1938	1,100		1966	386	
1939	754		1967	995	
1940	565		1968	552	
1941	500		1969	800	
1942	678		1970	870	
1943	706		1971	930	
1944	464		1972	1,200	
1945	964		1973	490	
1946	868		1974	1,150	
1947	844		1975	1,020	
1948	1,740		1976	872	
1949	974		1977	475	
	13325000 East Fork Wallowa River near Joseph, Oregon				
1925	116		1951	55	
1926	43		1952	132	
1927	211		1953	164	
1928	128		1954	81	
1929	125		1955	130	
1930	66		1956	119	
1931	56		1957	188	
1932	79		1958	169	
1933	145		1959	112	
1934	80		1960	97	
1935	53		1961	81	
1936	79		1962	91	
1937	450		1963	132	
1938	154		1964	83	
1939	53		1965	136	
1940	57		1966	66	
1941	66		1967	134	
1942	110		1968	84	
1943	118		1969	144	
1944	78		1970	158	
1945	87		1971	154	
1946	99		1972	122	
1947	101		1973	52	
1948	245		1974	161	
1949	82		1975	187	
1950	102		1976	77	
			1977	151	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13329500 Hurricane Creek near Joseph, Oregon			
1915	238		1950	562	
1924	525		1951	360	
1925	570		1952	590	
1926	228		1953	1,010	
1927	680		1954	458	
1928	716		1955	850	
1929	658		1956	659	
1930	403		1957	816	
1931	350		1958	575	
1932	630		1959	690	
1933	636		1960	465	
1934	301		1961	590	
1935	340		1962	505	
1936	465		1963	642	
1937	396		1964	526	
1938	515		1965	570	
1939	330		1966	366	
1940	355		1967	595	
1941	290		1968	401	
1942	377		1969	1,080	
1943	774		1970	820	
1944	335		1971	820	
1945	680		1972	792	
1946	551		1973	395	
1947	534		1974	877	
1948	1,110		1975	961	
1949	562		1976	460	
			1977	378	
		13330000 Lostine River near Lostine, Oregon			
1913	2,540		1951	1,250	
1926	665		1952	1,700	
1927	2,010		1953	1,620	
1928	2,010		1954	1,340	
1929	1,570		1955	1,690	
1930	1,090		1956	1,880	
1931	1,040		1957	2,170	
1932	1,800		1958	1,740	
1933	2,310		1959	1,780	
1934	1,080		1960	1,410	
1935	1,160		1961	1,740	
1936	1,770		1962	1,560	
1937	1,290		1963	1,350	
1938	1,860		1964	1,480	
1939	1,160		1965	1,820	
1940	1,240		1966	1,100	
1941	958		1967	1,820	
1942	1,280		1968	1,340	
1943	1,780		1969	2,210	
1944	1,180		1970	2,150	
1945	1,780		1971	2,290	
1946	1,480		1972	1,940	
1947	1,500		1973	1,170	
1948	1,960		1974	2,550	
1949	1,480		1975	2,270	
1950	1,760		1976	1,380	
			1977	1,230	
		13330500 Bear Creek near Wallowa, Oregon			
1915	755		1950	962	
1924	1,000		1951	618	
1925	930		1952	904	
1926	528		1953	781	
1927	1,480		1954	781	
1928	1,220		1955	1,540	
1929	950		1956	1,330	
1930	580		1957	1,240	
1931	715		1958	1,320	
1932	875		1959	1,230	
1933	1,540		1960	632	
1934	480		1961	1,070	
1935	640		1962	548	
1936	1,620		1963	666	
1937	586		1964	1,000	
1938	926		1965	980	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
	13330500 Bear Creek near Wallowa, Oregon (Continued)				
1939	596		1966	530	
1940	747		1967	1,190	
1941	498		1968	882	
1942	886		1969	744	
1943	972		1970	1,290	
1944	853		1971	1,290	
1945	764		1972	1,400	
1946	902		1973	843	
1947	992		1974	1,730	
1948	1,270		1975	1,540	
1949	1,080		1976	774	
			1977	653	
	13334700 Asotin Creek below Kearney Gulch near Asotin, Washington				
1904	1,180		1952	360	
1929	187		1953	270	
1930	160		1954	315	
1931	540		1955	215	
1932	340		1956	1,040	
1933	323		1957	1,000	
1934	500		1958	895	
1935	174		1959	370	
1936	372		1960	315	
1937	220		1961	266	
1938	345		1962	281	
1939	343		1963	420	
1940	236		1964	250	
1941	128		1965	2,720	
1942	416		1966	2,270	
1943	373		1967	228	
1944	142		1968	196	
1945	152		1969	720	
1946	303		1970	316	
1947	562		1971	336	
1948	674		1972	590	
1949	378		1973	236	
1950	277		1974	3,700	HP (72)
1951	490		1975	500	
			1976	1,360	
	13336500 Selway River near Lowell, Idaho				
1911	15,600	MD	1953	27,500	
1930	14,600		1954	29,900	
1931	17,500	MD	1955	32,400	
1932	30,300		1956	41,200	
1933	33,800		1957	26,500	
1934	20,500		1958	31,600	
1935	21,900		1959	29,000	
1936	31,600		1960	27,300	
1937	17,400		1961	31,300	
1938	32,800		1962	19,500	
1939	23,600		1963	21,100	
1940	20,400		1964	43,400	
1941	16,100		1965	25,600	
1942	19,500		1966	18,400	
1943	26,400		1967	35,200	
1944	18,600		1968	22,500	
1945	20,400		1969	25,500	
1946	18,100		1970	35,800	
1947	37,000		1971	35,800	
1948	48,900		1972	43,400	
1949	38,600		1973	19,000	
1950	32,500		1974	43,100	
1951	23,100		1975	32,400	
1952	24,200		1976	33,300	
			1977	15,400	

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
		13337000 Lochsa River near Lowell, Idaho			
1911	14,200	MD	1953	18,900	
1912	16,600		1954	24,500	
1930	11,800		1955	24,100	
1931	12,900		1956	28,500	
1932	22,800		1957	21,100	
1933	34,800		1958	23,400	
1934	22,500		1959	20,900	
1935	15,200		1960	18,600	
1936	21,000	MD	1961	22,900	
1937	12,100		1962	16,100	
1938	24,500		1963	13,900	
1939	16,900		1964	35,100	HP (67)
1940	12,700		1965	19,500	
1941	9,850		1966	16,700	
1942	11,800		1967	22,800	
1943	19,400		1968	14,600	
1944	11,500		1969	17,800	
1945	16,000		1970	23,400	
1946	13,800		1971	27,000	
1947	24,500		1972	31,800	
1948	34,600		1973	13,100	
1949	29,600		1974	32,000	
1950	26,200		1975	22,100	
1951	16,100		1976	24,500	
1952	17,700		1977	10,400	
		13337500 South Fork Clearwater River near Elk City, Idaho			
1945	1,470		1960	1,660	
1946	1,230		1961	1,630	
1947	2,200		1962	2,240	
1948	3,700	MD	1963	1,540	
1949	2,200		1964	4,040	
1950	1,720		1965	3,060	
1951	1,280		1966	1,130	
1952	1,740		1967	2,380	
1953	1,460		1968	1,360	
1954	1,180		1969	2,200	
1955	1,980		1970	2,440	
1956	2,200		1971	3,270	
1957	2,120		1972	3,220	
1958	1,690		1973	706	
1959	1,770		1974	2,580	
		13338000 South Fork Clearwater River near Grangeville, Idaho			
1911	3,590	MD	1938	6,740	
1912	9,830	MD	1939	4,060	
1913	7,450	MD	1940	2,720	
1914	4,270		1941	3,910	
1915	4,200		1942	4,670	
1916	5,050	MD	1943	5,660	
1917	15,000	HP (68)	1944	4,060	
1918	6,100		1945	5,340	
1919	3,700		1946	3,750	
1920	5,600		1947	6,100	
1923	4,450		1948	12,600	
1924	4,600		1949	6,170	
1925	4,010		1950	5,420	
1926	4,440		1951	4,160	
1927	7,560		1952	5,630	
1928	7,560		1953	4,640	
1929	6,450		1954	3,550	
1930	3,130		1955	6,570	
1931	3,270		1956	6,770	
1932	6,630		1957	8,910	
1933	6,090		1958	4,770	
1934	2,380		1959	6,140	
1935	3,130		1960	5,010	
1936	6,810		1961	4,700	
1937	3,550		1962	5,490	
			1963	4,620	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft^3/s)	Remarks	Water year	Annual peak discharge (ft^3/s)	Remarks
13340500 North Fork Clearwater River at Bungalow Ranger Station, Idaho					
1945	15,000		1957	16,300	
1946	13,000		1958	18,500	
1947	19,700		1959	14,100	
1948	27,400	HP (31)	1960	14,100	
1949	23,500		1961	16,600	
1950	17,500		1962	12,800	
1951	13,600		1963	8,870	
1952	15,300		1964	21,400	
1953	12,900		1965	24,700	
1954	20,800		1966	13,700	
1955	18,300		1967	18,000	
1956	22,600		1968	10,800	
			1969	14,900	
13341500 Potlatch Creek at Kendrick, Idaho					
1946	7,600		1961	7,300	
1947	3,660		1962	7,800	
1948	13,000		1963	2,200	
1949	5,480		1964	3,800	
1950	8,900		1965	16,000	HP (33)
1951	8,550		1966	4,500	
1952	4,630		1967	5,700	
1953	4,540		1968	11,000	
1954	3,090		1969	6,820	
1955	5,380		1970	7,920	
1956	7,000		1971	5,310	
1957	8,500		1972	10,100	
1958	4,720		1973	4,470	
1959	8,740		1974	14,000	
1960	5,750		1975	7,690	
13344500 Tucannon River near Starbuck, Washington					
1915	975		1965	7,980	HP (37)
1916	5,740		1966	2,170	
1917	1,940		1967	512	
1929	581		1968	515	
1930	6,000		1969	3,990	
1931	3,060		1970	1,030	
1959	1,040		1971	3,820	
1960	516		1972	3,250	
1961	3,230		1973	1,640	
1962	666		1974	3,220	
1963	4,700		1975	2,540	
1964	1,880		1976	1,070	
13346100 Palouse River at Colfax, Washington					
1956	4,790		1966	1,760	
1957	4,280		1967	2,810	
1958	2,950		1968	6,180	
1959	6,310		1969	6,150	
1960	2,990		1970	4,880	
1961	5,940		1971	3,450	
1962	4,240		1972	7,920	
1963	8,030		1973	7,500	
1964	2,790		1974	12,600	HP (30)
1965	8,510		1975	3,430	
			1976	3,750	
13348000 South Fork Palouse River at Pullman, Washington					
1934	1,800		1964	655	
1935	940		1965	2,610	
1936	830		1966	298	
1937	731		1967	438	
1938	482		1968	1,060	
1939	968		1969	1,400	
1940	743		1970	965	
1941	785		1971	1,220	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
13348000 South Fork Palouse River at Pullman, Washington (Continued)					
1942	780		1972	4,570	
1948	5,000	HP (68)	1973	1,950	
1959	1,860		1974	2,280	
1960	511		1975	1,340	
1961	885		1976	1,390	
1962	734		1977	110	
1963	2,160		1978	948	
			1979	3,720	
13348500 Missouri Flat Creek at Pullman, Washington					
1935	290		1965	1,080	
1936	368		1966	236	
1937	328		1967	83	
1938	262		1968	492	
1939	432		1969	495	
1940	331		1970	315	
1948	1,500	HP (68)	1971	451	
1960	265		1972	1,220	
1961	444		1973	466	
1962	225		1974	625	
1963	915		1975	440	
1964	287		1976	396	
13350500 Union Flat Creek near Colfax, Washington					
1954	509		1965	2,930	
1955	926		1966	348	
1956	1,790		1967	362	
1957	826		1968	614	
1958	2,080		1969	938	
1959	1,730		1970	769	
1960	564		1971	762	
1961	595		1972	1,310	
1962	548		1973	1,310	
1963	2,260		1974	1,660	
1964	325		1975	744	
			1976	883	
14010000 South Fork Walla Walla River near Milton, Oregon					
1903	542		1950	870	
1907	418		1951	718	
1909	590		1952	649	
1910	760		1953	930	
1911	390		1954	636	
1912	760		1955	598	
1913	760		1956	1,360	
1914	390		1957	1,070	
1915	595		1958	1,400	
1916	615		1959	830	
1932	1,400		1960	465	
1933	1,200		1961	750	
1934	1,500		1962	688	
1935	476		1963	400	
1936	1,180		1964	728	
1937	690		1965	2,530	HP (46)
1938	1,030		1966	435	
1939	681		1967	490	
1940	790		1968	1,050	
1941	432		1969	2,190	
1942	624		1970	822	
1943	624		1971	870	
1944	549		1972	800	
1945	660		1973	754	
1946	1,560		1974	1,230	
1947	2,430		1975	1,780	
1948	1,180		1976	1,700	
1949	670		1977	530	

Data Table B.--Annual maximum peak discharges at selected gaging stations (Continued)

Water year	Annual peak discharge (ft³/s)	Remarks	Water year	Annual peak discharge (ft³/s)	Remarks
	14013000 Mill Creek near Walla Walla, Washington				
1914	499		1956	1,300	
1915	460		1957	874	
1916	840		1958	1,380	
1917	1,120		1959	924	
1940	763		1960	386	
1941	542		1961	1,050	
1942	902		1962	642	
1943	628		1963	430	
1944	721		1964	655	
1945	659		1965	3,680	HP (46)
1946	2,610		1966	394	
1947	1,440		1967	610	
1948	1,680		1968	1,140	
1949	602		1969	2,400	
1950	1,680		1970	1,210	
1951	1,330		1971	1,590	
1952	606		1972	1,140	
1953	1,440		1973	565	
1954	678		1974	1,360	
1955	410		1975	1,740	
			1976	1,980	
	14013500 Blue Creek near Walla Walla, Washington				
1940	226		1956	403	
1941	235		1957	240	
1942	600		1958	262	
1944	579		1959	222	
1945	197		1960	90	
1946	725		1961	405	
1947	378		1962	248	
1948	670		1963	160	
1949	522		1964	164	
1950	550		1965	716	
1951	450		1966	175	
1952	253		1967	235	
1953	253		1968	340	
1954	215		1969	1,320	
1955	64		1970	380	
			1971	688	
	14016500 East Fork Touchet River near Dayton, Washington				
1944	357		1958	958	
1945	376		1959	1,010	
1946	1,190		1960	330	
1947	1,280		1961	861	
1948	1,530		1962	850	
1949	1,260		1963	539	
1950	1,480		1964	568	
1951	1,370		1965	5,450	
1956	1,320		1966	514	
1957	965		1967	540	
			1968	754	
	14018500 Walla Walla River near Touchet, Washington				
1949	23,800		1964	3,050	
1952	16,300		1965	33,400	HP (74)
1953	9,850		1966	2,630	
1954	3,680		1967	4,370	
1955	2,390		1968	5,230	
1956	8,240		1969	14,600	
1957	5,480		1970	7,830	
1958	5,980		1971	11,500	
1959	5,950		1972	12,400	
1960	3,010		1973	5,050	
1961	5,420		1974	9,680	
1962	4,940		1975	9,740	
1963	8,000		1976	10,300	

Data Table C.--Station log-Pearson Type III statistics

[Log Q_M: Mean of the logarithms of the peak discharges

SD: Standard deviation of the logarithms of the peak discharges]

Station number	Station name	Log-Pearson Type III statistics: Snowmelt, rainstorm, or both: Log Q_M	SD	Skew	Snowmelt: Log Q_M	SD	Skew	Rainstorm: Log Q_M	SD	Skew
6013500	BIG SHEEP CR BLW MUDDY CR NR DELL, MT.	.	.	.	2.5250	0.2280	-0.3000	.	.	.
6015500	GRASSHOPPER CR NR DILLON, MT.	.	.	.	2.5780	0.2990	-0.3100	.	.	.
6017500	BLACKTAIL DEER CR NR DILLON, MT.	.	.	.	2.2910	0.2020	-0.3000	.	.	.
6019500	RUBY R AB RES NR ALDER, MT.	.	.	.	2.9680	0.1330	-0.2200	.	.	.
6026000	BIRCH CR NR GLEN, MT.	.	.	.	2.3080	0.1660	-0.3000	.	.	.
6033000	BOULDER R NR BOULDER, MT.	.	.	.	3.0420	0.2340	-0.0100	.	.	.
6037500	MADISON R NR WEST YELLOWSTONE, MT.	.	.	.	3.1180	0.1010	-0.2400	.	.	.
6043500	GALLATIN R NR GALLATIN GATEWAY, MT.	.	.	.	3.7020	0.1510	-0.3700	.	.	.
9208000	LA BARGE CR NR LA BARGE MEADOWS RANGER STATION,	.	.	.	2.1130	0.1230	-0.2900	.	.	.
9223000	HAMS FORK BLW POLE CR NR FRONTIER, WY.	.	.	.	2.9350	0.0940	-0.3000	.	.	.
10015700	SULPHUR CR AB RES NR EVANSTON, WY.	.	.	.	2.5750	0.1840	-0.3000	.	.	.
10041000	THOMAS FORK NR WYOMING-IDAHO STATE LINE	.	.	.	2.6400	0.2510	-1.0400	.	.	.
10047500	MONTPELIER CR AT IRRIGATORS WEIR NR MONTPELIER,	.	.	.	1.9680	0.2150	-0.3800	.	.	.
10084500	COTTONWOOD CR NR CLEVELAND, ID.	.	.	.	2.5280	0.2120	-0.2500	.	.	.
10093000	CUB R NR PRESTON, ID.	.	.	.	2.7600	0.0840	-0.5200	.	.	.
10119000	LITTLE MALAD R AB ELKORN RES NR MALAD CITY, ID.	.	.	.	.	.	.	1.7950	0.4860	0.8100
10132500	LOST CR NR CROYDON, UT.	.	.	.	2.3530	0.2920	-0.2200	.	.	.
10315500	MARYS R AB HOT SPRINGS CR NR DEETH, NV.	2.5580	0.2890	0.3900	.	.	.	.	.	.
10316500	LAMOILLE CR NR LAMOILLE, NV.	.	.	.	2.6060	0.1310	-0.1700	.	.	.
10317500	N F HUMBOLDT R AT DEVILS GATE NR HALLECK, NV.	2.7720	0.4010	0.1800	.	.	.	.	.	.
10324500	ROCK CR NEAR BATTLE MOUNTAIN, NV.	2.5529	0.5378	0.0851	2.3235	0.5359	-0.2834	2.4237	0.5252	0.3462
10329000	LITTLE HUMBOLDT R NEAR PARADISE VALLEY, NV.	2.0358	0.5319	0.1885	1.9842	0.4421	-0.2408	1.7594	0.6508	0.4122
10329500	MARTIN CR NEAR PARADISE VALLEY, NV.	2.6000	0.4692	0.2568	2.2212	0.3316	-0.1909	2.4783	0.5188	0.4703
10352500	MCDERMITT CR NEAR MCDERMITT, NV.	2.7386	0.4966	-0.0960	2.2801	0.4667	-0.2819	2.6698	0.4554	0.2952
10353000	E F QUINN R NEAR MCDERMITT, NV.	2.6236	0.2442	-0.1232	2.3237	0.3656	-0.3068	2.4738	0.3121	0.2456
10396000	DONNER AND BLITZEN R NR FRENCHGLEN, OR.	3.1050	0.2560	-0.4700	.	.	.	.	.	.
10403000	SILVER CR NR RILEY, OR.	2.7450	0.3200	-0.6000	.	.	.	.	.	.
10406500	TROUT CR NR DENIO, NV.	2.0290	0.2720	-0.1700	.	.	.	.	.	.
12302500	GRANITE CR NR LIBBY, MT.	2.8020	0.2040	0.6700	.	.	.	.	.	.
12304500	YAAK R NR TROY, MT.	3.8820	0.1200	0.0900	.	.	.	.	.	.
12305500	BOULDER CR NR LEONIA, ID.	3.1620	0.1700	0.1500	3.0700	0.1500	-0.2200	2.5210	0.1480	0.5300
12307500	MOYIE R AT EILEEN, ID.	3.8120	0.1200	-0.7700	.	.	.	.	.	.
12311000	DEEP CR AT MORAVIA, ID.	3.0040	0.1820	0.2500	2.9760	0.1360	-0.7800	2.6320	0.3540	0.5000
12320500	LONG CANYON CR NR PORTHILL, ID.	2.7760	0.1540	0.5200	.	.	.	.	.	.
12321000	SMITH CR NR PORTHILL, ID.	3.2820	0.1380	0.0100	.	.	.	.	.	.
12321500	BOUNDARY CR NR PORTHILL, ID.	3.2280	0.1280	0.0700	.	.	.	.	.	.
12332000	M F ROCK CR NR PHILIPSBURG, MT.	.	.	.	2.9480	0.1660	-0.3800	.	.	.
12392300	PACK R NR COLBURN, ID.	3.4000	0.1430	0.4800	.	.	.	.	.	.
12394000	PRIEST R NR COOLIN, ID.	3.7670	0.0840	0.0500	.	.	.	.	.	.
12395000	PRIEST R NR PRIEST RIVER, ID.	3.4280	0.0930	-0.5300	.	.	.	.	.	.
12396000	CALISPELL CR NR DALKENA, WA.	2.7060	0.2440	0.3100	2.6040	0.2280	-0.3100	2.5210	0.5820	0.4300
12411000	COEUR D ALENE R AT SHOSHONE CR NR PRICHARD, ID.	3.8530	0.1820	0.1900	.	.	.	.	.	.
12413000	COEUR D ALENE R AT ENAVILLE, ID.	4.2160	0.2020	0.2800	4.0780	0.1560	-0.6600	3.9710	0.3900	-0.0200
12413500	COEUR D ALENE R NR CATALDO, ID.	4.2870	0.2120	0.5200	.	.	.	.	.	.
12414500	ST. JOE R AT CALDER, ID.	4.1[illegible]80	0.1880	-0.0700	4.1180	0.1720	-0.6400	4.0830	0.2320	0.1000
12415000	ST. MARIES R AT LOTUS, ID.	3.6980	0.2520	0.4900	3.4540	0.2160	-0.1500	3.6960	0.2570	0.5600
12416000	HAYDEN CR BLW NORTH FORK NR HAYDEN LAKE, ID.	2.5170	0.2770	-0.7300	.	.	.	.	.	.
12424000	HANGMAN CR AT SPOKANE, WA.	.	.	.	.	.	.	3.8620	0.2220	0.1800

Dsta Table C.--Station log-Pearson Type III statistics--Continued

Station number	Station name	Log-Pearson Type III statistics: Snowmelt, rainstorm, or both: Log Q_M	SD	Skew	Snowmelt: Log Q_M	SD	Skew	Rainstorm: Log Q_M	SD	Skew
12427000	LITTLE SPOKANE R AT ELK, WA.	2.036	0.104	0.50	.	.	.	.	.	.
12431000	LITTLE SPOKANE R AT DARTFORD, WA.	3.176	0.152	-0.74	.	.	.	.	.	.
12465000	CRAB CR AT IRBY, WA.	3.047	0.459	-0.45	.	.	.	.	.	.
13011500	PACIFIC CR AT MORAN, WY.	.	.	.	3.385	0.108	-0.34	.	.	.
13023000	GREY R AT RES NR ALPINE, WY.	.	.	.	3.527	0.155	-0.27	.	.	.
13024500	COTTONWOOD CR NR SMOOT, WY.	.	.	.	2.379	0.143	-0.23	.	.	.
13025000	SWIFT CR NR AFTON, WY.	.	.	.	2.698	0.123	-0.31	.	.	.
13027500	SALT R AT RES NR ETNA, WY.	.	.	.	3.322	0.180	-0.32	.	.	.
13047500	FALL R NR SQIRREL, ID.	.	.	.	3.539	0.112	0.05	.	.	.
13055000	TETON R NR ST. ANTHONY, ID.	3.516	0.158	0.15	3.493	0.152	-1.07	.	.	.
13068500	BLACKFOOT R NR BLACKFOOT, ID.	3.124	0.162	-0.36	.	.	.	.	.	.
13075000	MARSH CR NR MCCAMMON, ID.	2.448	0.178	0.21	2.374	0.193	0.10	2.360	0.180	1.04
13078000	RAFT R AT PETERSON RANCH NR BRIDGE, ID	2.134	0.333	0.67	1.378	0.375	-0.57	1.939	0.493	1.00
13079000	CLEAR CR NR NAF, ID.	.	.	.	2.071	0.226	0.16	.	.	.
13082500	GOOSE CR AB TRAPPER CR NR OAKLEY, ID.	2.409	0.363	0.63	3.326	0.295	-0.22	2.222	0.471	0.65
13083000	TRAPPER CR NR OAKLEY, ID.	1.729	0.243	0.43	1.658	0.174	0.14	1.665	0.242	0.70
13092000	ROCK CR NR ROCK CREEK, ID.	2.286	0.278	0.85	2.276	0.280	-0.95	.	.	.
13105000	SALMON FALLS CR NR SAN JACINTO, NV.	2.844	0.244	-0.26	2.824	0.241	-0.37	2.351	0.488	0.44
13108500	CAMAS CR AT EIGHTEENMILE SHEARING CORRAL, KILGOR	.	.	.	2.929	0.229	0.00	.	.	.
13116000	MEDILINE LODGE CR AT ELLIS RANCH NR ARGORA, ID.	2.024	0.198	0.40	.	.	.	.	.	.
13120000	N F BIG LOST R AT WILDHORSE NR CHILLY, ID.	.	.	.	2.861	0.158	0.13	.	.	.
13120500	BIG LOST R AT HOWELL RANCH NR CHILLY, ID.	.	.	.	3.312	0.181	-0.61	.	.	.
13135500	BIG WOOD R NR KETCHUM, ID.	.	.	.	2.944	0.168	-0.14	.	.	.
13141500	CAMAS CR NR BLAINE, ID.	3.382	0.408	-0.70	3.391	0.381	-0.70	.	.	.
13147900	LITTLE WOOD R AB HIGH FIVE CR NR CAREY, ID.	2.934	0.237	0.14	2.292	0.214	0.18	2.468	0.444	0.69
13154000	CLOVER CR NR BLISS, ID.	3.195	0.396	0.41	.	.	.	3.170	0.414	0.34
13161500	BRUNEAU R NR ROWLAND, NV.	2.856	0.265	0.02	.	.	.	.	.	.
13167500	E F BRUNEAU R NR HOT SPRING, ID.	2.292	0.306	-0.21	.	.	.	.	.	.
13169500	BIG JACKS CR NR BRUNEAU, ID.	.	.	.	.	.	.	2.236	0.468	0.12
13178000	JORDAN CR AB LONE TREE CR NR JORDAN VALLEY, OR.	3.291	0.224	0.10	3.172	0.223	-0.04	3.195	0.258	0.50
13185000	BOISE R NR TWIN SPRINGS, ID.	3.827	0.168	0.16	3.811	0.164	-0.01	3.708	0.163	0.60
13186000	S F BOISE R NR FEATHERVILLE, ID.	.	.	.	3.651	0.132	-0.29	.	.	.
13191000	S F BOISE R NR LENOX, ID.	.	.	.	3.680	0.195	-0.29	.	.	.
13196500	BANNOCK CR NR IDAHO CITY, ID.	1.118	0.316	0.00	.	.	.	.	.	.
13200000	MORES CR AB ROBIE CR NR ARROWROCK DAM, ID.	3.248	0.262	-0.42	3.157	0.238	-0.18	3.142	0.308	-0.18
13200500	ROBIE CR NR ARROWROCK, ID.	1.786	0.273	0.10	1.658	0.274	-0.44	1.724	0.261	0.76
13214000	MALHEUR R NR DREWSEY, OR.	3.278	0.362	-0.24	3.088	0.298	-0.70	3.181	0.398	0.24
13216500	N F MALHEUR R AB BEULAH RES NR BEULAH, OR.	2.948	0.302	-0.11	2.811	0.220	-0.12	2.708	0.442	0.12
13226500	BULLY CR NR YALE, OR.	2.907	0.586	-0.56	2.471	0.485	-0.44	3.053	0.443	0.01
13235000	S F PAYETTE R AT LOWMAN, ID.	.	.	.	3.621	0.126	-0.23	.	.	.
13240000	LAKE FORK PAYETTE R AB JUMBO CR NR MCCALL, ID.	.	.	.	3.124	0.162	-0.31	.	.	.
13250600	BIG WILLOW CR NR EMMETT, ID.	2.411	0.205	0.00	.	.	.	.	.	.
13251500	WEISER R AT TAMARACK, ID.	2.666	0.186	-0.42	2.647	0.186	-0.70	2.278	0.292	0.35
13253500	WEISER R NR CAMBRIDGE, ID.	3.681	0.173	-0.42	3.538	0.132	-0.78	3.562	0.185	-0.23
13260000	PINE CR NR CAMBRIDGE, ID.	2.415	0.221	0.41	.	.	.	.	.	.
13261000	LITTLE WEISER R NR INDIAN VALLEY, ID.	2.556	0.188	0.00	2.832	0.153	-0.12	2.734	0.222	0.81
13263500	WEISER R AB CRANE CR NR WEISER, ID.	3.917	0.197	-0.03	3.722	0.200	-0.02	3.794	0.244	-0.31
13266000	WEISER R NR WEISER, ID.	3.988	0.198	-0.06	.	.	.	.	.	.

Station number	Station name	Log-Pearson Type III statistics: Snowmelt, rainstorm, or both: Log Q_M	SD	Skew	Snowmelt: Log Q_M	SD	Skew	Rainstorm: Log Q_M	SD	Skew
13267000	MANN CR NR WEISER, ID.	2.628	0.224	0.26	2.523	0.171	-0.12	2.446	0.322	0.46
13273000	BURNT R NR HEREFORD, OR.	2.812	0.274	-0.27	.	.	.	.	.	.
13275500	POWDER R NR BAKER, OR.	2.837	0.218	-0.46	.	.	.	.	.	.
13292000	IMNAHA R AT IMNAHA, OR.	3.431	0.204	0.31	3.364	0.196	0.15	2.966	0.421	0.53
13295000	VALLEY CR AT STANLEY, ID.	.	.	.	2.986	0.160	-0.31	.	.	.
13295500	SLAMON R BLW VALLEY CR AT STANLEY, ID.	.	.	.	3.477	0.154	-0.33	.	.	.
13296000	YANKEE FORK SALMON R NR CLAYTON, ID.	.	.	.	3.163	0.221	0.03	.	.	.
13296500	SALMON R BLW YANKEE FORK NR CLAYTON, ID.	.	.	.	3.688	0.182	-0.61	.	.	.
13299000	CHALLIS CR NR CHALLIS, ID.	.	.	.	2.412	0.201	0.12	.	.	.
13306500	PANTHER CR NR SHOUP, ID.	.	.	.	3.238	0.198	-0.88	.	.	.
13308500	M F SLAMON R NR CAPE HORN, ID.	.	.	.	3.211	0.152	-0.29	.	.	.
13309000	BEAR VALLEY CR NR CAPE HORN, ID.	.	.	.	3.314	0.154	-0.32	.	.	.
13310500	S F SALMON R NR KNOX, ID.	.	.	.	3.015	0.131	-0.25	.	.	.
13313000	JOHNSON CR AT YELLOWPINE, ID.	.	.	.	3.472	0.153	-0.13	.	.	.
13315500	MUD CR NR TAMARACK, ID.	2.299	0.176	-0.10	.	.	.	.	.	.
13316500	LITTLE SALMON R AT RIGGINS, ID.	3.717	0.146	0.38	3.722	0.136	-0.38	.	.	.
13319000	GRANDE RONDE R AT LAGRANDE, OR.	3.501	0.220	-0.11	3.441	0.198	-0.36	3.186	0.383	-0.05
13320000	CATHERINE CR NR UNION, OR.	2.878	0.155	-0.27	2.867	0.155	-0.23	.	.	.
13325000	E F WALLOWA R NR JOSEPH, OR.	2.024	0.196	0.14	.	.	.	.	.	.
13329500	HURRICANE CR NR JOSEPH, OR.	2.726	0.163	-0.14	2.726	0.163	-0.14	.	.	.
13330000	LOSTINE R NR LOSTINE, OR.	3.194	0.118	-0.49	.	.	.	.	.	.
13330500	BEAR CR NR WALLOWA, OR.	2.958	0.146	0.00	.	.	.	.	.	.
13334700	ASOTIN CR BLW KEARNEY GULCH NR ASOTIN, WA.	2.598	0.312	1.09	.	.	.	2.510	0.319	1.00
13336500	SELWAY R NR LOWELL, ID.	4.416	0.136	-0.05	.	.	.	.	.	.
13337000	LOCHSA R NR LOWELL, ID.	4.284	0.136	-0.17	.	.	.	.	.	.
13337500	S F CLEARWATER R NR ELK CITY, ID.	3.281	0.168	-0.18	.	.	.	.	.	.
13338000	S F CLEARWATER R NR GRANGEVILLE, ID.	3.711	0.152	0.51	.	.	.	.	.	.
13340500	N F CLEARWATER R AT BUNGALOW RANGER STATION, ID.	4.212	0.114	-0.12	.	.	.	.	.	.
13341000	N F CLEARWATER R NR AHSAHKA, ID.	4.478	0.168	0.23	4.456	0.146	-0.43	4.180	0.296	0.98
13341500	POTLATCH CR AT KENDRICK, ID.	3.811	0.194	-0.15	.	.	.	3.811	0.194	-0.15
13344500	TUCANNON R NR STARBUCK, WA.	3.270	0.364	-0.20	.	.	.	3.270	0.364	-0.20
13346100	PALOUSE R AT COLFAX, WA.	3.671	0.201	-0.06	.	.	.	.	.	.
13348000	S F PALOUSE R AT PULLMAN	3.036	0.291	0.36	.	.	.	3.036	0.291	0.36
13348500	MISSOURI FLAT CR AT PULLMAN, WA.	2.610	0.224	0.95	.	.	.	.	.	.
13350500	UNION FLAT CR NR COLFAX, WA.	.	.	.	.	.	.	2.952	0.270	0.18
14010000	S F WALLA WALLA R NR MILTON, OR.	.	.	.	.	.	.	2.906	0.204	0.61
14013000	MILL CR NR WALLA WALLA, WA.	.	.	.	.	.	.	2.972	0.242	0.33
14013500	BLUE CR NR WALLA WALLA, WA.	.	.	.	.	.	.	2.502	0.282	-0.20
14016500	E F TOUCHET R NR DAYTON, WA.	3.052	0.236	0.42	.	.	.	.	.	.
14017500	TOUCHET R NR TOUCHET, WA.	3.596	0.238	0.42	.	.	.	.	.	.
14018500	WALLA WALLA R NR TOUCHET, WA.	3.877	0.239	0.32	.	.	.	.	.	.

Data Table D.--Magnitude and frequency of flood data for selected gaging stations using the log-Pearson Type III distribution

[PCT: Percent chance of exceedance,
MAX PEAK: Maximum known peak, and
YRS REC: Years of systematic record.]

		Discharge, in ft^3/s							
STA_NO	STA_NAME	_50_PCT	_10_PCT	_4_PCT	_2_PCT	_1_PCT	MAX_PEAK	DATE	YRS_REC
06013500	BIG SHEEP C BELOW MUDDY CREEK NR DELL, MT	344	643	792	901	1010	909	04-18-52	26
06015500	GRASSHOPPER C NR DILLON, MT	392	891	1170	1380	1600	1870	03-24-56	39
06019500	RUBY R ABOVE RES. NR ALDER, MT	939	1360	1550	1670	1800	1700	06-08-72	40
06026000	BIRCH C NR GLEN, MT	207	329	383	421	457	427	07-05-75	30
06033000	BOULDER R NR BOULDER, MT	1120	2180	2740	3160	3580	3500	06-19-75	44
06037500	MADISON R NR WEST YELLOWSTONE, MT	1330	1790	1990	2120	2240	2150	05-24-56	59
06043500	GALLATIN R NR GALLATIN GATEWAY, MT	5150	7740	8840	9590	10300	9690	06-17-74	53
09208000	LA BARGE C NR LA BARGE MEADOWS R S, WY	131	185	208	223	237	196	06-16-72	29
09223000	HAMS FORK BELOW POLE C NR FRONTIER, WY	870	1130	1230	1290	1360	1520	05-28-71	25
10015700	SULPHUR C ABOVE RES. NR EVANSTON, WY	351	665	894	1100	1350	1220	04-21-65	20
10041000	THOMAS FORK NR WY/-ID STATE LINE	454	886	1100	1250	1390	1040	05-14-71	28
10047500	MONTPELIER C AT IRRIGATORS WEIR MONTPELIER I	96	173	211	239	265	224	05-18-50	29
10058600	BLOOMINGTON C AT BLOOMINGTON, ID	153	207	229	243	256	248	06-11-71	16
10069000	GEORGETOWN C NR GEORGETOWN, ID	53	89	110	127	.	162	06-08-12	19
10072800	EIGHTMILE C NR SODA SPRINGS, ID	111	147	162	171	180	160	06-18-71	17
10084500	COTTONWOOD C NR CLEVELAND, ID	346	622	756	853	947	788	05 16 75	39
10090800	BATTLE C TRIBUTARY NR TREASURETON, ID	37	128	208	287	.	98	02-01-63	16
10093000	CUB R NR PRESTON, ID	581	732	790	828	862	803	06-11-71	35
10119000	L MALAD R AB ELKHORN RES NR MALAD CITY, ID	103	343	569	804	1110	1450	02-10-62	32
10132500	LOST C NR CROYDON, UT	232	528	700	834	973	770	05-10-23	28
10172970	ROCK C NR HOLBROOK, ID	104	340	546	750	1010	1390	02-11-62	16
10315500	MARYS R ABOVE HOT SPRINGS C NR DEETH, NV	349	864	1240	1580	1970	4210	02-12-62	35
10316500	LAMOILLE C NR LAMOILLE, NV	408	592	673	731	786	794	06-04-57	40
10317500	N F HUMBOLDT R AT DEVILS GATE NR HALLECK, NV	577	1970	3160	4310	5740	10400	02-11-62	41
10324500	ROCK C NR BATTLE MOUNTAIN, NV	455	1710	2900	4230	5980	4800	02-11-62	39
10329000	L HUMBOLDT R NR PARADISE VALLEY, NV	104	534	1000	1520	2220	2380	01-21-69	37
10329500	MARTIN C NR PARADISE VALLEY, NV	360	1460	2920	4670	7260	9000	01-21-43	54
10352500	MCDERMITT C NR MCDERMITT, NV	540	1960	3250	4740	6710	3970	02-01-63	29
10353000	EF QUINN R NR MCDERMITT, NV	390	895	1220	1540	1900	1270	01-15-56	29
10396000	DONNER UND BLITZEN NR FRENCHGLEN, OR	1300	2670	3400	3960	4530	4270	04-26-78	52
10403000	SILVER C NR RILEY, OR	564	1420	1960	2420	2910	1810	12-22-64	27
10406500	TROUT C NR DENIO, NV	108	237	312	371	434	470	08-01-33	57
12302500	GRANITE C NR LIBBY, MT	619	1180	1520	1810	2120	1960	04-18-38	22
12304500	YAAK R NR TROY, MT	7570	10900	12600	13800	15000	13400	05-20-54	24
12305500	BOULDER C NR LEONIA, ID	1250	1950	2450	3000	4100	3140	01-16-74	47
12307500	MOYIE R AT EILEEN, ID	6530	9080	10200	11000	11700	11000	05-20-54	52
12310800	TRAIL C AT NAPLES, ID	160	328	443	544	660	1100	01-16-74	17
12311000	DEEP C AT MORAVIA, ID	1050	1570	2070	2650	3500	4400	01-15-74	44
12313500	BALL C NR BONNERS FERRY, ID	542	1220	1660	2030	.	2180	06-17-74	14
12316800	MISSION C NR COPELAND, ID	340	471	532	577	620	528	05-26-16	20
12320500	LONG CANYON C NR PORTHILL, ID	593	947	1130	1270	1420	1300	05-27-48	32
12321000	SMITH C NR PORTHILL, ID	1910	2880	3370	3720	4080	3810	06-23-55	43
12321500	BOUNDARY C NR PORTHILL, ID	1930	2840	3270	3600	3920	3540	06-02-68	49
12332000	M F ROCK C NR PHILIPSBURG, MT	908	1420	1640	1790	1930	1590	06-02-72	39
12392100	TRAPPER C NR CLARK FORK, ID	40	88	121	148	179	230	01-16-74	17
12392300	PACK R NR COLBURN, ID	2470	3860	4610	5190	5790	6880	01-16-74	20
12392800	HORNBY C NR DOVER, ID	36	49	56	61	.	48	02-10-61	11
12393600	BINARCH C NR COOLIN, ID	66	132	172	204	237	158	01-15-74	16
12394000	PRIEST R NR COOLIN, ID	5830	7510	8260	8790	9300	8900	06-18-74	29
12395000	PRIEST R NR PRIEST RIVER, ID	6750	8840	9730	10300	10900	10500	05-29-48	47
12396000	CALISPELL C NR DALDENA, WA	475	1030	1660	2700	4230	3190	01-15-74	27
12411000	COEUR D'ALENE R AB SHOSHONE C NR PRICHARD, ID	7030	12300	15300	17600	20100	22000	01-15-74	36
12413000	COEUR D'ALENE R AT ENAVILLE, ID	15600	28100	43300	57500	74500	61000	01-16-74	37
12413100	BOULDER C AT MULLAN, ID	100	173	215	247	281	220	06-03-74	17
12413140	PLACER C AT WALLACE, ID	341	643	824	969	1120	1300	1964	18

Data Table D.--Magnitude and frequency of flood data for selected gaging stations using the log-Pearson Type III distribution--Continued

STA_NO	STA_NAME	Discharge, in ft^3/s							
		_50_PCT	_10_PCT	_4_PCT	_2_PCT	_1_PCT	MAX_PEAK	DATE	YRS_REC
12413200	MONTGOMERY C NR KELLOGG, ID	72	160	218	268	.	155	01-31-71	10
12413500	COEUR D'ALENE NR CATALDO, ID	18900	36700	51500	69000	90100	79000	01-16-74	54
12413700	LATOUR C NR CATALDO, ID	608	1140	1450	1700	.	1900	01-16-74	10
12414500	ST. JOE R AT CALDER, ID	16400	26200	32200	38400	45400	53000	12-23-33	59
12414900	ST. MARIES R NR SANTA, ID	2470	5450	7370	8980	.	10700	01-15-74	13
12415000	ST. MARIES R AT LOTUS, ID	4780	10900	15200	19000	23500	23800	12-22-33	44
12415100	CHERRY C NR ST. MARIES, ID	115	198	245	283	.	317	01-16-74	12
12415200	PLUMMER C TRIB AT PLUMMER, ID	67	115	140	161	182	150	01-15-74	16
12416000	HAYDEN C BW NORTH FORK, NR HAYDEN LAKE, ID	328	644	825	968	1120	790	12-23-64	23
12424000	HANGMAN C AT SPOKANE, WA	7170	14100	18400	21900	25600	20600	02-03-63	30
12427000	LITTLE SPOKANE R AT ELK, WA	108	149	169	184	198	205	01-16-74	29
12431000	LITTLE SPOKANE R AT DARTFORD, WA	1490	2360	2800	3130	3460	3170	02-17-70	35
12465000	CRAB C AT IRBY, WA	1120	4310	7070	9720	12900	8370	02-27-57	35
13011500	PACIFIC C AT MORAN, WY	2460	3300	3650	3880	4090	3790	06-15-74	31
13011900	BUFFALO FORK AB LAVA C, NR MORAN, WY	4250	5200	5570	5810	.	6020	06-19-74	12
13014500	GROS VENTRE R AT KELLY, WY	3100	4590	5290	5790	.	6960	06-16-18	15
13023000	GREYS R ABOVE RES. NR ALPINE, WY	3420	5280	6110	6690	7240	7230	06-19-71	25
13024500	COTTONWOOD C NR SMOOT, WY	243	360	411	445	478	438	06-02-56	25
13025000	SWIFT C NR AFTON, WY	506	710	795	853	907	793	07-06-75	35
13025500	CROW C NR FAIRVIEW, WY	227	334	379	411	.	346	02-01-63	10
13027500	SALT R ABOVE RES. NR ETNA, WY	2140	3510	4130	4570	4980	3870	06-01-71	23
13029500	MCCOY C ABOVE RES NR ALPINE, ID	915	1330	1500	1610	1720	1670	05-10-74	19
13030000	INDIAN C ABOVE RES NR ALPINE, ID	207	304	345	373	400	350	06-14-18	18
13030500	ELK C ABOVE RES NR IRWIN, ID	476	702	799	866	928	870	06-15-18	18
13032000	BEAR C ABOVE RES NR IRWIN, ID	521	754	853	920	983	784	05-05-36	22
13038900	TARGHEE C NR MACKS INN, ID	274	379	423	452	479	458	05-23-70	15
13044500	WARM R AT WARM RIVER, ID	467	729	846	928	1000	900	06-02-12	18
13045500	ROBINSON C AT WARM RIVER, ID	596	998	1180	1320	1440	1140	05-28-12	18
13047500	FALL R NR SQUIRREL, ID	3480	4790	5370	5770	6150	6440	06-27-27	65
13050700	MAIL CABIN C NR VICTOR, ID	39	59	68	74	.	81	06-21-71	10
13050800	MOOSE C NR VICTOR, ID	281	371	407	431	.	390	06-23-71	10
13052200	TETON R ABOVE S LEIGH C NR DRIGGS, ID	1290	2030	2350	2580	2800	2270	06-19-74	22
13054400	MILK C NR TETONIA, ID	102	519	891	1250	1670	1350	02-01-63	16
13055000	TETON R NR ST. ANTHONY, ID	3260	5270	6320	7120	7940	11000	02-12-62	67
13058000	WILLOW C NR RIRIE, ID	1720	3130	3890	4490	5100	5080	02-11-62	25
13061100	SNAKE R TRIB NR OSGOOD, ID	89	330	540	747	1000	450	01-21-69	17
13062700	ANGUS C NR HENRY, ID	266	667	906	1100	.	1060	05-11-76	13
13063000	BLACKFOOT R ABOVE RES NR HENRY, ID	1260	2140	2550	2840	3120	2150	04-26-74	22
13063500	L BLACKFOOT R AT HENRY, ID	143	254	307	346	.	292	04-19-14	12
13068500	BLACKFOOT R NR BLACKFOOT, ID	1650	2650	3130	3490	3840	3500	05-01-52	55
13073700	ROBBERS ROOST C NR MCCAMMON, ID	13	27	35	42	.	24	04-22-69	11
13075000	MARSH C NR MCCAMMON, ID	294	476	585	680	780	1120	02-12-62	23
13075600	N F POCATELLO C NR POCATELLO, ID	21	46	62	75	.	57	03-13-71	11
13077700	GEORGE C NR YOST, UT	66	110	131	146	160	146	06-10-63	18
13078000	RAFT R AT PETERSON RH NR BRIDGE, ID	130	430	828	1390	2270	2060	01-17-71	24
13079000	CLEAR C NR NAF, ID	121	226	278	317	355	386	06-15-67	28
13079200	CASSIA C NR ELBA, ID	163	438	642	827	.	982	12-23-64	11
13079800	HEGLAR CANYON TRIBUTARY NR ROCKLAND, ID	117	396	652	916	1260	1930	07- -58	16
13082500	GOOSE C AB TRAPPER NR OAKLEY, ID	300	810	1360	2140	3280	3240	02-11-62	64
13083000	TRAPPER C NR OAKLEY, ID	58	105	142	173	216	270	08-17-41	61
13092000	ROCK C NR ROCK CREEK, ID	197	420	538	625	712	461	05-19-70	36
13105000	SALMON FALLS C NR SAN JACINTO, NV	760	1560	2200	3000	4300	2430	05-18-75	65
13108500	CAMAS C AT 18 M SHEARING CORRAL NR KILGORE I	870	1640	2020	2310	2590	2590	05-08-69	29
13112900	HUNTLEY CANYON AT SPENCER, ID	10	23	30	36	.	36	05-15-69	10
13113000	BEAVER C AT SPENCER, ID	321	570	702	803	906	1190	05-18-75	21

Data Table D.--Magnitude and frequency of flood data for selected gaging stations using the log-Pearson Type III distribution--Continued

		Discharge, in ft^3/s							
STA_NO	STA_NAME	_50_PCT	_10_PCT	_4_PCT	_2_PCT	_1_PCT	MAX_PEAK	DATE	YRS_REC
13116000	MEDICINE LODGE C AT ELLIS RCH NR ARGORA, ID	105.0	192	241	279	320	361	04-15-62	31
13117000	BIRCH C NR RENO, ID	100.0	125	137	145	154	220	04-01-62	16
13117200	MAIN FORK NR GOLDBURG, ID	134.0	238	288	324	.	273	06-12-65	10
13117300	SAWMILL C NR GOLDBURG, ID	364.0	650	788	888	.	651	06-12-65	13
13118700	LITTLE LOST R BLW WET C NR HOWE, ID	307.0	490	574	632	687	509	06-16-75	17
13120000	N F BIG LOST R AT WILDHORSE NR CHILLY, ID	733.0	1150	1360	1500	1650	1420	06-12-65	34
13120500	BIG LOST R AT HOWELL RANCH NR CHILLY, ID	2120.0	3400	3930	4290	4620	4420	05-25-67	74
13128900	LOWER CEDAR C AB DIVERSIONS NR MACKAY, ID	155.0	247	289	318	.	256	06-08-72	11
13135200	PRAIRIE C NR KETCHUM, ID	167.0	285	341	380	.	293	05-24-63	10
13135500	BIG WOOD R NR KETCHUM, ID	891.0	1430	1690	1870	2050	1690	05-24-67	24
13135600	ADAMS GULCH NR KETCHUM, ID	40.0	113	161	199	.	124	1971	10
13141400	DEER C NR FAIRFIELD, ID	54.0	112	147	175	.	150	04-03-65	11
13141500	CAMAS C NR BLAINE, ID	2650.0	7150	9720	11700	13600	9780	04-08-43	53
13145700	SCHODLER C NR GOODING, ID	23.0	55	76	93	112	68	02-01-63	16
13147900	LITTLE WOOD R AB HIGH FIVE C NR CAREY, ID	930.0	1800	2450	3200	4500	3000	12-22-55	41
13154000	CLOVER C NR BLISS, ID	1410.0	5160	8640	12200	16800	11000	12-22-64	24
13155200	BURNS GULCH NR GLENNS FERRY, ID	5.3	17	27	35	.	22	02-01-63	10
13155300	L CANYON C AT STOUT XING NR GLENNS FERRY, ID	88.0	230	338	438	555	500	12-23-64	15
13161100	BRUNEAU R NR CHARLESTON, NV	,20.0	181	404	678	1080	1890	02-11-62	15
13161200	SEVENTY SIX C NR CHARLESTON, NV	24.0	74	108	136	166	89	05-00-75	15
13161300	MEADOW C NR ROLAND, NV	180.0	633	1010	1380	1820	940	06-04-63	15
13161500	BRUNEAU R NR ROWLAND, NV	710.0	1580	2130	2590	3100	2120	02-11-62	22
13161600	MCDONALD C NR ROWLAND, NV	43.0	76	95	109	124	85	06- -75	16
13162200	JARBIDGE R AT JARBIDGE, NV	299.0	606	790	940	.	700	06- -70	15
13162400	BUCK C NR JARBIDGE, NV	79.0	261	410	550	.	380	06- -71	16
13162500	E F JARBIDGE R NR THREE CREEK, ID	436.0	735	894	1020	1140	798	06-22-71	22
13162600	COLUMBET C NR JARBIDGE, NV	11.0	35	52	69	88	46	05- -75	16
13167500	E F BRUNEAU R NR HOT SPRING, ID	194.0	486	687	861	1060	619	06-08-63	27
13169500	BIG JACKS C NR BRUNEAU, ID	162.0	712	1290	1940	2810	2100	01-22-43	23
13170000	L JACKS C NR BRUNEAU, ID	138.0	756	1430	2180	.	908	01-21-43	11
13170100	SUGAR C TRIBUTARY NR GRASMERE, ID	24.0	83	131	177	233	105	06-10-69	17
13172666	WEST FORK REYTNOLDS C NR REYNOLDS, ID	4.7	13	20	25	.	14	06-02-75	14
13172666	EAST FORK REYNOLDS C NR REYNOLDS, ID	4.0	9	13	16	.	11	04-29-65	16
13172680	REYNOLDS C AT TOLLGATE WEIR NR REYNOLDS, ID	207.0	307	355	390	.	404	05-10-69	13
13172720	MACKS C NR REYNOLDS, ID	89.0	345	566	780	.	1200	12-23-64	15
13172735	SALMON C NR REYNOLDS, ID	75.0	269	429	580	.	1010	12-23-64	15
13172740	REYNOLDS C AT OUTLET WEIR NR REYNOLDS, ID	414.0	1460	2310	3110	.	3800	12-23-64	16
13172800	L SQUAW C TRIBUTARY NR MARSING, ID	9.0	45	80	117	164	93	01-31-63	17
13178000	JORDAN C AB LONE TREE C NR JORDAN VALLEY, OR	2050.0	3800	5000	6040	7470	7530	12-24-64	24
13184200	ROARING R NR ROCKY BAR, ID	326.0	537	635	704	.	575	06-22-67	14
13184800	BEAVER C NR LOWMAN, ID	102.0	182	224	257	.	195	1971	10
13185000	BOISE R NR TWIN SPRINGS, ID	7200.0	11300	13500	15000	16800	22700	1872	67
13186000	S F BOISE R NR FEATHERVILLE, ID	4550.0	6540	7380	7950	8490	7580	05-24-56	33
13186500	LIME C NR BENNETT, ID	649.0	1180	1470	1690	.	1180	04-27-52	11
13187400	FALL C NR ANDERSON RANCH DAM, ID	521.0	838	998	1120	.	1150	04-27-52	12
13191000	S F BOISE R NR LENOX, ID	4800.0	8540	10500	12000	13600	9550	04-17-43	35
13196500	BANNOCK C NR IDAHO CITY, ID	13.0	34	47	59	72	46	04-22-65	24
13200000	MORES C AB ROBIE CR NR ARROWROCK DAM, ID	2000.0	3880	5100	6080	7100	6270	04-08-43	62
13200500	ROBIE C NR ARROWROCK, ID	69.0	135	179	215	256	274	01-29-65	21
13207000	SPRING VALLEY C NR EAGLE, ID	51.0	241	442	663	.	435	02-11-79	16
13207500	DRY C NR EAGLE, ID	93.0	386	649	908	.	373	01-29-65	14
13210300	BRYANS RUN NR BOISE, ID	67.0	217	334	440	565	420	01-16-71	19
13214000	MALHEUR R NR DREWSEY, OR	2080.0	5400	8080	11100	14900	12000	12-23-64	57
13216500	N F MALHEUR R AB BEULAH RES NR BEULAH, OR	860.0	1900	2910	4000	5360	5910	03-20-10	41
13226500	BULLY C AT WARMSPRINGS NR VALE, OR	1280.0	4350	6910	9540	12800	12800	02-24-57	53

Data Table D.--Magnitude and frequency of flood data for selected gaging stations using the log-Pearson Type III distribution--Continued

		Discharge, in ft^3/s							
STA_NO	STA_NAME	_50_PCT	_10_PCT	_4_PCT	_2_PCT	_1_PCT	MAX_PEAK	DATE	YRS_REC
13234300	FIVEMILE C NR LOWMAN, ID	145.0	253	312	358	.	520	06-17-74	14
13235000	S F PAYETTE R AT LOWMAN, ID	4220.0	6010	6780	7310	7810	8980	06-16-74	37
13235100	ROCK C AT LOWMAN, ID	150.0	310	404	480	.	400	05-13-71	10
13237300	DANSKIN C NR GRIMES PASS, ID	34.0	69	90	106	.	71	04-22265	10
13238300	DEEP C NR MCCALL, ID	349.0	490	553	597	.	540	06-06-70	10
13240000	LAKE FORK PAYETTE R AB JUMBO C NR MCCALL, ID	1360.0	2120	2460	2690	2910	2770	06-26-71	52
13245400	TRIPOD C AT SMITHS FERRY, ID	84.0	160	203	237	.	183	1971	16
13246900	COTTONWOOD C NR HORSESHOE BEND, ID	68.0	170	244	311	.	303	02-01-63	17
13250600	BIG WILLOW C NR EMMETT, ID	814.0	1490	1860	2150	2450	2100	12-22-64	18
13250650	FOURMILE C NR EMMETT, ID	90.0	367	578	764	.	500	12-22-64	10
13251300	W BRANCH WEISER R NR TAMARACK, ID	38.0	74	94	110	126	87	05-04-71	18
13251500	WEISER R AT TAMARACK, ID	480.0	800	945	1060	1200	1320	12-22-55	37
13252500	EF WEISER R NR COUNCIL, ID	56.0	71	76	80	.	77	06-16-38	10
13253500	WEISER R AT STARKEY, ID	992.0	1940	2480	2920	.	2800	12-22-55	12
13257000	MF WEISER R NR MESA, ID	778.0	1290	1540	1720	1890	1710	12-22-55	19
13258500	WEISER R NR CAMBRIDGE, ID	4880.0	8000	9790	11300	12800	10100	12-22-55	39
13260000	PINE C NR CAMBRIDGE, ID	260.0	498	632	737	847	850	02-25-58	24
13261000	LITTLE WEISER R NR INDIAN VALLEY, ID	790.0	1250	1550	1820	2120	1840	02-04-25	39
13263500	WEISER R AB CRANE C NR WEISER, ID	7700.0	13500	16400	19300	22400	19800	12-23-55	69
13266000	WEISER R NR WEISER, ID	9780.0	17500	21600	24700	27900	23500	12-23-55	58
13267000	MANN C NR WEISER, ID	412.0	790	1110	1460	1880	1540	03-27-40	32
13267100	DEER C NR MIDVALE, ID	61.0	152	211	262	.	156	01-27-70	10
13269300	N F BURNT R NR WHITNEY, OR	693.0	1050	1220	1340	.	1190	04-06-71	13
13270800	S F BURNT R ABOVE BARNEY C NR UNITY, OR	75.0	150	190	220	.	186	04-29-65	14
13273000	BURNT R NR HEREFORD, OR	659.0	1440	1890	2240	2610	2220	04-17-43	28
13275500	POWDER R NR BAKER, OR	706.0	1290	1580	1800	2010	1860	1921	52
13288200	EAGLE C ABOVE SKULL C NR NEW BRIDGE, OR	2030.0	3230	3850	4310	4780	5310	07-12-75	23
13290150	W PINE C NR HOMESTEAD, OR	72.0	185	262	328	.	226	04-30-65	13
13290190	PINE C NR OXBOW, OR	2740.0	6360	8650	10600	.	7110	02-21-68	13
13292000	IMNAHA R AT IMNAHA, OR	2600.0	4800	6450	8190	11500	10100	01-17-74	49
13292500	SALMON R NR OBSIDIAN, ID	518.0	714	794	849	.	721	05-29-52	12
13293000	ALTURAS LAKE C NR OBSIDIAN, ID	469.0	658	736	789	.	633	06-07-52	12
13295000	VALLEY C AT STANLEY, ID	990.0	1540	1780	1950	2110	2000	05-24-56	56
13295500	SALMON R BELOW VALLEY C AT STANLEY, ID	3050.0	4650	5350	5830	6290	5650	06-17-74	35
13296000	YANKEE FORK SALMON R NR CLAYTON, ID	1480.0	2790	3490	4020	4550	4900	06-17-74	28
13296500	SALMON R BELOW YANKEE FORK NR CLAYTON, ID	5040.0	8170	9530	10500	11300	10500	06-17-74	56
13297300	HOLMAN C NR CLAYTON, ID	9.1	20	25	30	.	25	06-13-65	10
13298000	E F SALMON R NR CLAYTON, ID	1510.0	2900	3620	4160	4710	4020	06-17-74	15
13298300	MALM GULCH NR CLAYTON, ID	85.0	391	672	948	.	440	04-01-69	10
13299000	CHALLIS C NR CHALLIS, ID	260.0	455	552	624	696	872	06-12-65	27
13301700	MORSE C ABOVE DIVERSIONS NR MAY, ID	142.0	228	267	295	.	270	06-16-75	14
13305700	DAHLONEGA C AT GIBBONVILLE, ID	98.0	211	272	319	.	235	1971	10
13305800	HUGHES C NR NORTH FORK, ID	138.0	256	320	368	417	250	01-16-74	17
13306500	PANTHER C NR SHOUP, ID	1780.0	3050	3630	4050	4440	3050	06-16-74	33
13308500	M F SALMON R NR CAPE HORN, ID	1650.0	2510	2890	3150	3390	3320	06-17-74	44
13309000	BEAR VALLEY C NR CAPE HORN, ID	2100.0	3210	3700	4040	4360	3860	05-27-56	39
13310000	BIG CREEK NR BIG CREEK, ID	3740.0	5380	6070	6540	.	5800	06-03-48	14
13310500	S F SALMON R NR KNOX, ID	1040.0	1500	1690	1830	1950	1620	05-27-56	31
13311000	E F SOUTH FORK SALMON R AT STIBNITE, ID	174.0	261	299	326	.	369	06-14-33	14
13311500	EF SOUTH FORK SALMON R NR STIBNITE, ID	356.0	590	698	775	.	783	06-15-33	12
13312000	E F SOUTH FORK SALMON R NR YELLOW PINE, ID	942.0	1370	1550	1670	.	2050	06-14-33	15
13313000	JOHNSON C AT YELLOW PINE, ID	3020.0	4630	5350	5850	6340	6230	06-17-74	49
13313500	SECESH R NR BURGDORF, ID	1410.0	2000	2250	2420	.	2500	06-03-48	10
13314000	S F SALMON R NR WARREN, ID	11600.0	17300	19800	21500	.	23000	05-28-48	12
13315500	MUD C NR TAMARACK, ID	199.0	335	405	458	511	395	04-27-52	26

Data Table D.--Magnitude and frequency of flood data for selected gaging etations ueing the log-Pearson Type III distribution--Continued

		Diecharge, in ft^3/s							
STA_NO	STA_NAME	_50_PCT	_10_PCT	_4_PCT	_2_PCT	_1_PCT	MAX_PEAK	DATE	YRS_F
13316500	LITTLE SALMON R AT RIGGINS, ID	5180	8040	9490	10600	11600	12600	06-17-74	27
13316800	N F SKOOKUMCHUCK C NR WHITE BIRD, ID	129	231	289	335	384	471	06-08-64	12
13317200	JOHNS C NR GRANGEVILLE, ID	97	309	472	621	.	400	01-29-65	12
13319000	GRANDE RONDE R AT LAGRANDE, OR	3290	5900	7700	9600	12000	14100	01-30-65	69
13320000	CATHRINE C NR UNION, OR	764	1190	1380	1520	1660	1740	05-27-48	56
13323600	INDIAN C NR IMBLER, OR	405	637	752	838	.	818	05-27-48	13
13325000	E F WALLOWA R NR JOSEPH, OR	105	190	239	278	319	450	07-25-37	53
13329500	HURRICANE C NR JOSEPH, OR	537	858	1010	1130	1240	1110	06-09-48	55
13330000	LOSTINE R NR LOSTINE, OR	1580	2200	2470	2650	2810	2550	06-16-74	53
13330500	BEAR C NR WALLOWA, OR	912	1400	1630	1800	1970	1730	06-15-74	55
13331500	MINAM R AT MINAM, OR	3280	5100	5980	6620	7260	6260	06-16-74	13
13334700	ASOTIN C BELOW KEARNEY GULCH NR ASOTIN, WA	362	1040	1660	2300	3130	3700	01-15-74	49
13336500	SELWAY R NR LOWELL, ID	26200	39000	45100	49500	53800	48900	05-29-48	49
13336600	SWIFTWATER C NR LOWELL, ID	72	145	188	221	.	150	01-29-65	10
13336650	EF PAPOOSE C NR POWELL RANGER STA, ID	78	125	148	166	.	125	04-20-65	10
13336850	WEIR C NR POWELL RANGER STATION, ID	264	526	677	796	.	500	05-20-64	10
13336900	FISH C NR LOWELL, ID	1630	2400	2760	3020	.	2280	05-20-64	10
13337000	LOCHSA R NR LOWELL, ID	19300	28700	33000	36100	39100	35100	06-08-64	50
13337200	RED HORSE C NR ELK CITY, ID	89	177	228	268	.	200	05-21-64	10
13337500	S F CLEARWATER R NR ELK CITY, ID	1910	3130	3750	4210	4670	4040	06-08-64	30
13337700	PEASLEY C NR GOLDEN, ID	79	169	224	268	.	240	06-08-64	14
13338000	S F CLEARWATER R NR GRANGEVILLE, ID	5030	8140	9860	11200	12700	15000	05-30-17	51
13338200	SALLY ANN C NR STITES, ID	184	292	348	390	.	305	06-08-64	11
13339700	CANAL GULCH C AT PIERCE RANGER STATION, ID	116	230	298	352	.	291	04-20-65	16
13339900	DEER C NR OROFINO, ID	96	306	473	629	.	485	01-29-65	15
13340500	N F CLEARWATER R AT BUNGALOW R S , ID	16300	23000	26100	28400	30700	27400	05-29-48	25
13341000	N F CLEARWATER R NR AHSAHKA, ID	31500	48000	60000	75200	98500	100000	12-23-33	58
13341100	COLD SPRINGS C NR CRAIGMONT, ID	47	155	244	328	429	200	01-29-65	15
13341300	BLOOM C NR BOVILL, ID	55	113	150	180	213	151	12-24-64	18
13341400	E F POTLATCH R NR BOVILL, ID	633	1130	1410	1630	.	1740	12-23-64	12
13341500	POTLATCH C AT KENDRICK, ID	6380	11600	14500	16900	19400	16000	01-29-65	30
13343800	MEADOW C NR CENTRAL FERRY, WA	600	2240	3680	5080	.	2380	09-13-66	13
13344500	TUCANNON R NR STARBUCK, WA	1850	5470	8180	10600	13500	7980	12-22-64	24
13344700	DEEP C TRIBUTARY NR POTLATCH, ID	56	103	130	152	.	157	12-23-64	11
13344300	DEEP C NR POTLATCH, ID	726	1480	1950	2340	.	2330	01-16-74	16
13345000	PALOUSE R NR POTLATCH, ID	3460	6070	7560	8740	.	10100	01-16-74	16
13346100	PALOUSE R AT COLFAX, WA	4620	8550	10800	12700	14600	12600	01-16-74	21
13348000	S F PALOUSE R AT PULLMAN, WA	1050	2610	3750	4770	5970	5000	02-26-48	30
13348500	MISSOURI FLAT C AT PULLMAN, WA	387	813	1120	1390	1720	1500	02-26-48	23
13349210	PALOUSE R BELOW SOUTH FORK AT COLFAX, WA	6750	14400	19300	23500	.	16800	01-16-74	14
13349400	PINE C AT PINE CITY, WA	1920	5080	7400	9500	.	10600	02-03-63	15
13350500	UNION FLAT C NR COLFAX, WA	877	2010	2770	3420	4150	2930	01-29-65	23
13352500	COW C AT HOOPER, WA	114	496	876	1280	1800	1250	02-05-52	17
14010000	S F WALLA WALLA R NR MILTON, OR	783	1490	1940	2320	2730	2530	01-29-65	56
14013000	MILL C NR WALLA WALLA, WA	918	1940	2600	3160	3780	3680	01-29-65	41
14013500	BLUE C NR WALLA WALLA, WA	314	733	1010	1240	1500	1320	01-06-69	31
14015500	E F TOUCHET R NR DAYTON, WA	1100	2310	3090	3750	4480	5450	12-23-64	21
14017500	TOUCHET R NR TOUCHET, WA	3860	8080	10800	13100	15600	15100	1965	13
14018500	WALLA WALLA R NR TOUCHET, WA	7370	15500	20700	25100	30000	33400	12-22-64	26

Data Table E.--Basin characteristics for selected gaging stations

[DA: Drainage area, in square miles;
MEAN ALT: Mean altitude of the basin, in feet;
PL6T: Percentage of drainage area below 6,000 feet altitude;
MAP: Mean annual precipitation, in inches;
INT24HR: Rainfall intensity of a 24-hour period at the 50-percent exceedance probability, in inches;
FOREST: Percentage of drainage covered by forest; and
MMJT: Mean minimum January temperature, in degrees Fahrenheit]

STA_NO	LAT	LONG	DA	LENGTH	SLOPE	MEAN_ALT	PL6T	MAP	INT24HR	FOREST	MMJT
6013500	44 39 00	112 46 48	280.00	23.10	75.0	8010	1	19	1.6	31.0	4
6015500	45 06 36	112 48 00	348.00	42.00	46.0	7050	6	19	1.3	30.0	4
6017500	45 03 00	112 33 00	312.00	34.70	36.5	7210	.	.	1.4	18.8	3
6019500	45 10 31	112 08 52	538.00	39.50	53.0	7280	9	18	1.3	29.0	6
6026000	45 22 46	112 47 48	36.00	12.80	207.0	7690	3	12	1.5	87.0	4
6033000	46 12 40	112 05 27	381.00	31.30	66.0	6640	20	19	1.5	89.0	4
6037500	44 39 24	111 04 00	420.00	38.90	34.0	7920	1	24	1.4	94.0	2
6043500	45 29 51	111 16 09	825.00	59.50	17.0	7960	5	37	1.6	83.0	12
9208000	42 30 30	110 40 10	6.30	6.10	113.0	8970	0	19	1.7	67.0	-5
9223000	42 06 38	110 42 34	128.00	22.40	62.0	8380	0	14	1.4	69.0	-5
10015700	41 08 39	110 48 18	64.00	13.50	183.0	8050	0	18	1.3	33.0	4
10041000	42 24 10	111 01 30	113.00	11.80	127.0	7290	0	29	1.2	39.0	0
10047500	42 18 47	111 14 12	49.50	12.80	82.0	7370	.	27	1.2	43.0	1
10058600	42 11 05	111 25 30	24.00	8.30	261.0	7960	.	31	1.2	17.0	2
10069000	42 30 00	111 18 36	22.20	8.90	206.0	7830	.	30	1.3	52.0	2
10072800	42 30 00	111 34 48	22.60	8.70	211.0	7570	.	.	1.8	90.0	.
10084500	42 19 57	111 46 27	61.70	17.80	70.0	6650	.	23	1.3	55.0	3
10090800	42 16 40	111 48 50	4.50	2.25	213.0	5810	.	.	1.4	0.0	4
10093000	42 08 28	111 41 19	31.60	6.40	205.0	6890	.	24	1.4	30.0	4
10119000	42 20 12	112 26 22	120.00	16.80	60.0	6080	40	24	1.4	21.0	3
10132500	41 10 50	111 24 00	133.00	15.00	116.0	7320	2	19	1.3	40.0	5
10172970	42 13 51	112 43 45	44.00	16.20	77.0	5610	.	17	1.6	0.0	10
10315500	41 15 10	115 15 20	415.00	44.20	37.0	6220	21	10	1.1	2.0	5
10316500	40 41 30	115 28 30	25.00	9.90	270.0	9090	0	21	1.6	100.0	14
10317400	41 34 48	115 54 36	11.00	5.10	117.0	7780	.	18	1.4	39.0	13
10317500	41 11 00	115 29 00	830.00	53.30	18.0	7000	23	14	1.2	6.0	6
10324500	40 49 50	116 35 15	875.00	55.20	24.0	5930	70	10	1.2	2.0	13
10329000	41 25 00	117 22 00	1030.00	57.20	23.0	5520	79	8	1.1	4.0	13
10329500	41 32 00	117 25 40	172.00	23.70	63.0	6190	47	11	1.2	21.0	13
10352500	41 58 00	117 49 57	225.00	27.30	68.0	5875	99	11	1.1	2.0	12
10353000	41 59 00	117 35 00	140.00	23.80	68.0	6080	42	9	1.3	12.0	12
10396000	42 47 28	118 52 00	200.00	22.50	98.0	6160	70	14	1.1	11.0	13
10403000	43 41 30	119 39 30	228.00	25.60	42.0	5180	95	20	1.1	71.0	15
10406500	42 09 20	118 27 30	88.00	22.00	152.0	5920	85	14	1.1	8.0	13
12302000	48 15 00	115 17 24	780.00	58.10	23.0	4190	100	32	1.7	91.0	9
12302500	48 18 10	115 25 25	23.60	9.40	254.0	5260	69	67	1.9	88.0	12
12303100	48 20 41	115 36 22	11.10	5.90	636.0	5240	46	79	1.4	96.0	12
12303500	48 26 24	115 52 12	210.00	27.50	32.0	4080	91	67	1.9	96.0	14
12304250	48 49 48	115 49 12	2.48	3.30	617.0	4220	100	37	1.6	97.0	14
12304300	48 45 00	115 54 00	5.73	5.10	506.0	4610	100	65	1.6	95.0	14
12304400	48 42 00	115 52 12	7.84	5.10	478.0	4520	100	68	1.6	89.0	14
12304500	48 33 45	115 58 05	766.00	65.00	33.0	5050	78	43	1.7	97.0	14
12305500	48 35 54	116 05 30	53.00	13.00	152.0	4980	98	40	1.8	100.0	16
12307500	48 46 27	116 09 26	755.00	76.00	21.0	4710	92	28	1.3	100.0	16
12310800	48 34 28	116 23 20	16.10	8.50	277.0	3340	.	30	2.1	98.0	16
12311000	48 37 49	116 23 10	133.00	14.00	19.0	3400	100	36	1.4	95.0	16
12313500	48 47 40	116 24 54	26.60	11.70	312.0	5260	.	56	2.1	97.0	16
12316800	48 55 54	116 20 00	23.00	7.50	288.0	4800	.	22	1.4	95.0	15
12320500	48 57 02	116 32 06	29.00	14.00	109.0	5260	70	48	1.8	100.0	15
12321000	48 57 40	116 33 15	70.00	18.00	156.0	5100	80	48	2.1	100.0	15
12321500	48 59 50	116 34 05	97.00	18.80	164.0	4650	90	45	2.0	100.0	15
12332000	46 11 42	113 30 00	123.00	20.20	78.9	7180	2	36	1.8	93.0	8
12353800	47 12 00	114 55 12	12.20	9.10	416.0	4720	87	43	2.3	87.0	14
12392100	48 15 57	116 07 00	1.12	1.70	1789.0	4610	.	40	2.0	100.0	16
12392300	48 25 22	116 30 02	124.00	23.00	132.0	4210	90	46	2.0	100.0	16
12392800	48 15 10	116 37 50	2.20	2.90	166.0	2540	.	30	1.9	92.0	18

Data Table E.--Basin characteristics for selected gaging stations--Continued

STA_NO	LAT	LONG	DA	LENGTH	SLOPE	MEAN_ALT	PL6T	MAP	INT24HR	FOREST	MMJT
12393600	48 28 10	116 55 20	10.70	8.2	91.0	3310	.	38	2.0	100	16
12394000	48 27 07	116 53 58	611.00	46.9	9.9	4050	97	43	1.9	88	16
12395000	48 12 31	116 54 49	902.00	87.0	12.0	3820	98	41	2.1	95	16
12396000	48 14 35	117 20 30	68.30	16.2	109.0	3650	100	38	1.4	99	16
12398900	49 04 12	117 16 40	476.00	36.6	62.0	4000	.	30	2.0	92	14
12399900	49 01 12	117 56 24	134.00	23.0	130.0	3700	.	25	2.0	90	15
12400500	48 56 24	117 46 48	225.00	34.8	93.0	4120	.	25	2.0	96	15
12401500	48 58 48	118 46 12	2220.00	125.4	20.0	4560	.	27	2.0	96	13
12408300	48 28 12	117 45 00	132.00	23.2	54.0	3475	.	29	1.3	98	16
12411000	47 42 30	115 58 35	335.00	42.0	37.0	4120	98	52	2.2	90	18
12413000	47 34 20	116 15 10	895.00	73.0	24.0	3610	100	51	2.1	95	18
12413100	47 28 10	115 47 44	3.13	3.5	793.0	5140	.	55	2.3	77	17
12413140	47 27 50	115 56 10	14.90	6.7	249.0	4380	.	52	2.4	97	17
12413200	47 33 10	116 04 17	4.53	3.6	548.0	3520	.	40	2.1	48	17
12413500	47 33 50	116 18 25	1220.00	78.0	22.0	3900	100	50	2.1	90	18
12413700	47 28 10	116 26 15	24.80	8.0	275.0	4310	.	.	.	83	18
12414500	47 16 30	116 11 15	1030.00	53.0	64.0	4210	95	51	2.0	95	15
12414900	47 10 35	116 29 30	275.00	26.0	20.0	3740	.	42	2.1	97	20
12415000	47 14 40	116 37 25	437.00	42.0	19.0	3560	100	40	2.0	95	20
12415100	47 19 00	116 36 47	7.07	5.1	340.0	3570	.	30	1.7	54	20
12415200	47 20 20	116 53 14	2.10	2.7	84.0	2960	.	24	1.6	73	20
12416000	47 49 22	116 39 10	22.00	6.9	319.0	3580	100	35	1.5	100	20
12424000	47 39 10	117 26 55	689.00	76.6	12.0	2710	100	20	1.5	78	20
12427000	48 01 20	117 16 19	115.00	12.2	63.0	2800	100	30	1.9	91	17
12431000	47 47 05	117 24 12	665.00	47.9	13.0	2400	100	25	1.5	60	17
12465000	47 21 40	118 51 00	1042.00	76.8	13.0	2200	100	13	1.0	3	18
13011500	43 51 04	110 30 59	169.00	31.0	69.0	8160	0	30	1.4	81	2
13011900	43 50 14	110 26 21	323.00	39.0	59.0	9270	0	41	1.5	53	2
13014500	43 37 20	110 37 30	622.00	53.8	50.0	8850	.	38	1.4	60	4
13023000	43 08 35	110 58 34	448.00	55.2	46.0	8080	0	40	1.6	75	4
13024500	42 36 40	110 53 30	26.30	.	.	.	.	.	.	.	.
13025000	42 43 30	110 54 00	27.40	10.5	275.0	8550	0	18	1.2	74	2
13025500	42 40 30	111 00 25	115.00	20.9	76.0	7420	.	18	1.2	36	4
13027500	43 04 47	111 02 12	829.00	56.2	38.0	8470	5	31	1.4	50	4
13029500	43 10 50	111 06 55	108.00	17.5	64.0	6960	.	24	1.3	65	5
13030000	43 15 35	111 04 00	36.80	9.8	336.0	7790	.	30	1.4	65	4
13030500	43 19 25	111 06 40	59.20	12.5	149.0	7670	.	32	1.4	70	5
13032000	43 17 00	111 13 17	77.10	15.2	106.0	7130	.	24	1.3	70	5
13038900	44 38 50	111 20 30	20.80	10.4	244.0	8300	.	27	1.4	89	2
13044500	44 06 52	111 19 26	178.00	29.2	90.0	6830	.	27	1.3	75	2
13045500	44 06 57	111 19 09	129.00	25.5	102.0	6450	.	27	1.2	95	2
13047500	44 04 07	111 14 25	351.00	41.2	80.0	7520	2	16	.	80	2
13050700	43 29 50	110 59 00	3.27	2.8	457.0	8400	.	28	1.4	79	3
13050800	43 33 48	111 04 00	21.40	12.7	206.0	8300	.	24	1.4	78	3
13052200	43 46 54	111 12 30	335.00	28.1	50.0	7350	.	36	1.4	35	3
13054400	43 53 00	111 20 40	17.90	11.2	153.0	6540	.	20	1.3	22	4
13055000	43 55 38	111 36 55	890.00	64.0	27.0	6900	20	26	1.3	45	3
13058000	43 35 35	111 46 07	627.00	73.8	22.0	6390	.	16	1.2	15	9
13061100	43 34 07	112 08 47	7.64	5.4	54.0	4900	.	10	0.9	0	8
13062700	42 49 43	111 20 18	13.90	7.9	69.0	7000	.	18	1.3	43	8
13063000	42 49 00	111 30 35	360.00	37.8	24.0	6940	.	25	1.3	45	7
13063500	42 54 30	111 31 45	38.80	10.5	58.0	6600	.	18	1.2	10	7
13073700	42 42 20	112 12 10	5.70	5.5	630.0	6910	.	20	1.3	37	8
13075000	42 37 50	112 13 30	355.00	37.5	21.0	5630	75	19	1.5	15	11
13075600	42 53 10	112 23 45	14.00	6.6	163.0	5800	.	10	1.3	16	9
13077700	41 55 10	113 28 50	7.84	4.8	464.0	8570	.	25	1.2	25	6

Data Table E.--Basin characteristics for selected gaging stations--Continued

STA_NO	LAT	LONG	DA	LENGTH	SLOPE	MEAN_ALT	PL6T	MAP	INT24HR	FOREST	MMJT
13078000	42 04 00	113 27 00	412.00	33.7	42	6150	40	24.0	1.2	12	12
13079000	41 58 00	113 17 05	20.20	8.8	409	7870	2	28.0	1.6	35	12
13079200	42 17 00	113 31 00	84.00	12.8	120	6560	.	35.0	1.2	35	14
13079800	42 28 25	113 08 47	7.72	5.3	322	5300	.	15.0	1.2	0	12
13082500	42 07 30	113 56 20	633.00	50.8	34	6030	60	22.0	1.2	10	12
13083000	42 10 10	113 58 20	53.70	13.0	168	6360	5	18.0	1.2	15	12
13092000	42 21 23	114 18 12	80.00	17.8	160	6330	25	15.0	1.4	20	13
13105000	41 56 40	114 41 15	1450.00	51.0	29	6020	50	15.0	1.3	1	12
13108500	44 17 50	111 54 20	210.00	24.2	96	6970	2	25.0	1.4	55	3
13112900	44 21 50	112 11 00	4.00	4.6	305	6800	.	17.0	1.4	71	4
13113000	44 21 20	112 10 45	120.00	22.8	85	7110	.	25.0	1.4	25	3
13116000	44 17 30	112 30 05	165.00	24.2	86	7520	2	25.0	1.6	20	3
13117000	44 12 00	112 57 00	320.00	24.8	30	7580	.	.	1.7	20	2
13117200	44 24 06	113 24 18	15.60	6.1	236	8730	.	38.0	1.8	94	2
13117300	44 18 40	113 20 20	74.30	14.4	139	8390	.	35.0	1.3	76	2
13120000	43 55 59	114 06 47	114.00	20.0	83	8540	0	39.0	1.9	40	-1
13120500	43 59 54	114 01 12	450.00	36.8	48	8590	0	38.0	1.2	25	-1
13128900	43 57 57	113 34 40	8.26	4.0	1260	9900	.	30.0	1.7	27	4
13135200	43 49 00	114 35 50	18.00	7.5	237	8420	.	43.0	2.4	44	-1
13135500	43 47 11	114 25 27	137.00	19.0	76	8120	0	41.0	1.8	50	0
13135800	43 42 20	114 23 50	10.50	5.5	352	7370	.	25.0	2.3	69	0
13141400	43 22 11	114 43 08	13.20	9.0	210	6440	.	20.0	1.6	45	3
13141500	43 19 59	114 32 27	648.00	50.0	12	5600	95	18.0	1.3	5	7
13145700	43 11 30	114 39 25	2.22	3.1	30	5640	.	12.0	1.3	0	12
13147900	43 29 30	114 03 30	248.00	20.3	141	7220	25	28.0	2.0	10	8
13154000	43 01 30	115 00 20	267.00	22.5	115	7160	95	27.0	1.9	10	8
13155200	43 11 42	115 19 59	0.76	1.6	650	6160	.	15.0	1.6	0	20
13155300	43 09 14	115 18 32	14.20	8.7	226	5960	.	15.0	0.9	12	18
13161100	41 30 50	115 27 05	44.00	3.9	552	6620	.	13.0	1.4	0	12
13161200	41 42 40	115 28 57	3.52	5.2	226	7510	.	14.0	1.7	82	13
13161300	41 54 00	115 40 40	57.80	9.9	164	6180	.	11.0	1.3	11	12
13161500	41 56 00	115 40 25	382.00	44.2	63	6790	8	11.0	1.2	0	12
13161600	41 55 10	115 46 20	10.80	3.9	172	7030	.	14.0	1.3	100	12
13162200	41 51 45	115 25 40	22.60	5.5	507	7950	1	8.4	1.6	100	12
13162400	41 58 45	115 25 55	20.20	7.4	196	6990	.	13.0	1.4	71	12
13162500	42 02 00	115 22 20	84.60	21.3	125	7600	.	19.0	1.3	25	13
13162600	41 58 00	115 29 05	3.37	3.9	339	7020	.	14.0	1.4	60	12
13167500	42 33 25	115 30 35	620.00	64.0	30	5420	85	11.0	.	.	14
13169500	42 47 06	115 59 00	253.00	44.2	77	5150	100	13.0	1.1	0	14
13170000	42 50 00	116 00 00	100.00	31.4	117	5020	.	12.0	1.1	0	14
13170100	42 33 49	115 54 25	4.50	3.0	104	4860	.	12.0	1.1	0	14
13172666	43 04 12	116 45 36	0.20	0.6	434	6880	30	41.0	2.4	1	.
13172668	43 04 12	116 45 00	0.16	0.5	480	6800	30	41.0	2.4	1	.
13172680	43 06 00	116 46 12	21.00	6.4	334	5940	.	31.0	1.3	25	.
13172720	43 13 48	116 47 24	12.30	7.1	276	4860	100	19.0	1.5	1	.
13172735	43 16 12	116 47 24	14.00	7.1	276	4870	99	19.0	1.5	1	.
13172740	43 10 48	116 45 36	90.00	15.2	155	5000	.	20.0	1.5	7	.
13172800	43 21 50	116 55 17	1.81	3.2	242	4440	.	13.0	1.1	0	15
13178000	42 52 27	116 57 12	440.00	40.6	33	5760	90	15.0	1.3	30	15
13184200	43 42 20	115 27 50	23.30	8.4	354	7200	.	43.0	2.1	77	6
13184800	43 58 20	115 36 30	9.30	7.0	148	5860	.	45.0	2.0	100	5
13185000	43 39 52	115 43 34	830.00	54.8	62	6350	40	42.0	2.2	75	6
13186000	43 29 40	115 18 20	635.00	51.8	52	6840	20	37.0	2.2	20	7
13186500	43 25 00	115 16 00	131.00	21.2	133	6140	.	23.0	1.8	25	9
13187000	43 26 00	115 23 10	55.30	15.0	192	6070	.	26.0	2.1	90	12
13191000	43 30 00	115 41 00	1090.00	89.6	35	6270	70	31.0	2.0	25	10

Data Table E.--Basin characteristics for selected gaging atstions--Continued

STA_NO	LAT	LONG	DA	LENGTH	SLOPE	MEAN_ALT	PL6T	MAP	INT24HR	FOREST	MMJT
13196500	43 48 30	115 46 25	5.75	4.50	96	5200	100	30	1.7	70	13
13200000	43 38 53	115 59 20	399.00	45.00	92	4960	60	28	1.7	85	11
13200500	43 37 49	115 59 55	15.80	8.10	356	4960	100	20	1.6	80	12
13207000	43 44 20	116 18 00	20.90	9.50	221	3990	100	14	1.3	5	18
13207500	43 43 55	116 18 15	59.40	15.30	177	4050	.	13	1.3	10	18
13210300	43 27 02	116 04 08	7.94	7.10	81	3540	.	12	1.1	0	18
13214000	43 47 05	118 19 50	910.00	49.20	45	4900	95	16	1.0	29	12
13216500	43 57 01	118 10 28	355.00	34.40	67	5360	95	19	1.0	50	12
13226500	44 01 10	117 27 35	539.00	52.40	39	4150	100	18	1.0	4	14
13234300	44 06 20	115 27 30	7.80	5.90	610	6530	.	30	1.9	100	8
13235000	44 05 05	115 37 10	456.00	45.90	79	6780	30	40	1.8	90	6
13235100	44 04 50	115 37 30	14.60	8.80	410	5920	.	35	1.8	99	6
13237300	44 03 36	115 49 06	10.10	5.30	393	4750	.	28	1.8	93	11
13238300	45 06 00	116 02 18	4.38	4.80	455	7000	.	43	2.0	83	5
13240000	44 54 50	115 59 10	48.90	12.00	139	6950	10	39	2.2	100	5
13245400	44 17 55	116 05 17	8.63	5.50	146	5550	.	32	1.6	98	4
13248900	43 53 35	116 12 09	6.53	5.60	312	3880	.	30	1.4	0	18
13250600	44 04 25	116 29 10	47.40	14.80	64	3990	.	31	1.4	0	18
13250650	44 04 24	116 29 13	6.50	7.00	198	3760	.	30	1.4	96	18
13251300	45 01 14	116 26 06	3.96	4.30	366	4940	.	35	2.1	95	8
13251500	44 56 49	116 22 55	36.50	14.70	56	4690	100	34	2.1	85	10
13252500	44 45 40	116 15 30	2.00	3.00	391	6900	.	35	1.8	55	12
13253500	44 51 00	116 26 40	106.00	29.00	48	5010	.	34	2.0	85	12
13257000	44 39 30	116 27 00	86.50	22.50	151	5430	.	30	1.9	70	14
13258500	44 34 47	116 38 20	605.00	59.00	32	4650	90	34	1.8	55	13
13260000	44 35 23	116 44 12	54.00	13.90	14	4730	80	35	2.1	25	13
13261000	44 29 35	116 23 45	81.90	18.80	215	5300	75	34	1.8	50	15
13263500	44 17 20	116 47 22	1160.00	92.00	22	4280	90	30	1.8	35	13
13267000	44 23 30	116 53 40	56.00	18.20	174	4860	100	34	1.7	40	16
13267100	44 23 28	116 52 47	4.60	3.90	242	3210	.	25	1.4	0	16
13269300	44 36 00	118 15 10	110.00	.	.	.	.	.	.	.	.
13270800	44 24 23	118 18 02	38.50	.	.	.	.	.	.	.	.
13273000	44 30 14	118 10 35	309.00	23.00	48	4500	95	24	.	82	14
13275500	44 39 20	117 52 30	219.00	28.60	57	5170	95	25	1.1	75	12
13288200	44 52 50	117 15 10	156.00	26.40	143	5791	.	45	1.2	59	12
13290150	45 05 25	116 53 45	2.89	1.91	527	4950	.	.	1.8	100	.
13290190	44 57 13	116 52 21	230.00	32.20	66	4280	.	23	1.6	40	.
13292000	45 33 45	116 50 00	622.00	56.00	73	5690	100	28	1.2	51	13
13292500	43 57 57	114 48 01	94.70	14.20	60	8140	0	43	2.0	50	0
13293000	43 57 00	114 50 00	35.70	11.90	130	8110	0	48	2.2	75	0
13295000	44 13 21	114 55 49	147.00	22.20	60	7400	0	26	1.6	75	0
13295500	44 14 00	114 55 00	501.00	36.40	40	7800	0	33	1.8	60	0
13296000	44 17 15	114 43 11	195.00	26.20	91	7980	0	32	1.7	90	0
13296500	44 16 06	114 43 55	802.00	47.20	37	7790	0	34	1.7	70	0
13297300	44 14 52	114 31 43	6.10	5.00	346	7300	.	22	1.4	58	2
13298000	44 13 29	114 17 06	497.00	35.00	63	8100	.	33	1.7	30	0
13298300	44 21 18	114 15 45	9.38	6.20	525	7000	.	20	1.3	25	2
13299000	44 34 20	114 18 20	85.00	15.00	219	7830	5	30	1.5	70	4
13301700	44 36 55	113 48 25	18.00	7.30	468	8200	.	28	1.4	61	4
13305700	45 32 50	113 55 40	32.00	8.60	314	6200	.	30	1.6	92	4
13305600	45 31 12	114 01 59	15.70	7.10	408	6900	20	37	2.0	92	4
13306500	45 18 22	114 23 31	529.00	42.20	99	7030	20	28	1.4	95	5
13308500	44 24 30	115 10 20	138.00	16.80	95	7370	0	28	1.6	95	0
13309000	44 25 48	115 16 48	180.00	22.00	33	7040	0	35	1.8	90	0
13310000	45 07	114 55	470.00	34.40	41	7000	.	37	1.8	85	0
13310500	44 39 00	115 42 00	92.00	15.60	92	6630	25	42	2.2	90	2

Data Table E.--Basin characteristics for selected gaging stations--Continued

STA_NO	LAT	LONG	DA	LENGTH	SLOPE	MEAN_ALT	PL6T	MAP	INT24HR	FOREST	MMJT
13311000	44 54	115 19	19.50	4.9	312.0	7780	.	35	1.6	90	2
13311500	45 37 12	117 43 48	42.50	7.2	238.0	7640	.	33	1.6	95	2
13312000	44 57 50	115 27 30	104.00	14.7	184.0	7420	.	34	1.6	90	2
13313000	44 57 44	115 29 58	213.00	34.5	71.0	7170	10	38	1.8	100	2
13313500	45 04 48	115 17 24	40.60	18.2	76.0	6860	.	44	2.0	95	4
13314000	45 10 12	115 34 48	1160.00	62.6	69.0	6710	.	37	1.9	70	4
13315500	44 59 48	116 20 54	15.80	10.3	130.0	4660	100	32	1.8	90	8
13316500	45 24 47	116 19 29	576.00	48.2	61.0	5430	50	32	1.9	80	14
13316800	45 43 34	116 12 16	15.30	9.0	361.0	5000	100	23	1.6	76	20
13317200	45 56 16	116 12 03	6.67	7.2	206.0	3900	.	23	1.5	27	18
13319000	45 20 47	118 07 26	678.00	44.8	26.8	4640	95	24	1.5	84	19
13320000	45 09 20	117 46 26	105.00	26.4	114.0	5320	98	25	1.2	88	17
13323600	45 26 00	117 49 20	22.00	.	.	.	.	.	.	.	.
13325000	45 16 20	117 12 35	10.30	6.0	422.0	7890	90	47	1.2	50	11
13329500	45 20 15	117 17 30	29.60	10.8	296.0	7460	10	43	1.3	53	13
13330000	45 26 20	117 25 35	70.90	20.1	189.0	6820	40	38	1.2	80	14
13330500	45 31 37	117 33 05	68.00	18.4	178.0	5810	60	38	1.3	85	15
13331500	45 37 12	117 43 32	240.00	.	.	.	54	23	1.6	90	.
13334700	46 19 29	117 09 03	170.00	27.1	140.0	3550	100	24	1.5	46	21
13336500	46 05 12	115 30 46	1910.00	92.0	39.0	5640	75	46	2.2	95	8
13336600	46 06 55	115 34 21	6.17	5.7	655.0	3800	.	35	1.6	100	8
13336650	46 32 07	114 45 52	4.51	4.0	623.0	4800	.	48	2.1	100	10
13336850	46 27 31	115 01 51	12.20	6.1	419.0	4800	.	48	2.1	100	10
13336900	46 20 01	115 20 50	89.20	18.6	134.0	4470	.	48	2.1	100	8
13337000	46 09 02	115 35 11	1180.00	98.0	44.0	5250	90	50	2.2	100	8
13337200	45 47 39	115 23 59	9.13	8.6	119.0	5100	.	25	1.8	100	10
13337500	45 49 29	115 31 36	261.00	30.0	34.0	5150	95	30	1.8	100	10
13337700	45 49 05	115 49 01	14.20	9.2	302.0	4900	.	28	1.8	100	14
13338000	45 55	116 01	865.00	66.0	47.0	5160	85	32	1.8	100	11
13338200	46 00 40	115 57 40	13.90	7.8	469.0	3100	.	25	1.6	11	15
13339700	46 29 50	115 47 30	5.90	4.0	413.0	3500	.	45	2.0	100	16
13339900	46 29 30	116 10 30	6.80	5.0	395.0	2800	.	35	1.8	98	20
13340500	46 37 53	115 30 28	996.00	50.0	40.0	4930	90	58	2.4	100	18
13341000	46 31 00	116 17 35	2440.00	133.0	23.0	4220	95	50	2.2	95	18
13341100	46 14 10	116 31 06	8.25	6.2	81.0	4020	.	25	1.6	27	20
13341300	46 51 28	116 17 22	3.20	3.1	426.0	3700	100	20	2.2	100	20
13341400	46 50 08	116 23 26	41.60	13.4	73.0	3600	.	46	2.2	52	20
13341500	46 36 44	116 39 25	425.00	43.0	50.0	2980	100	38	1.8	75	18
13343800	46 35 51	117 46 54	66.20	19.6	89.0	1980	100	15	1.2	10	25
13344500	46 30 17	118 03 55	431.00	50.6	72.0	3000	100	23	1.5	35	25
13344700	47 01 28	116 52 57	2.90	3.4	196.0	3150	.	35	1.6	72	20
13344800	46 57 38	116 56 04	36.60	10.0	48.0	2970	.	25	1.6	56	20
13345000	45 54 55	116 57 00	317.00	28.5	206.0	3080	100	31	1.7	78	18
13346100	46 53 50	117 21 20	497.00	.	.	.	100	21	1.6	60	22
13348000	46 43 48	117 10 57	132.00	23.6	19.0	2770	100	22	1.3	8	26
13348500	46 43 59	117 10 47	27.10	15.0	28.0	2670	100	21	1.3	4	24
13349210	46 53 23	117 22 09	796.00	58.9	19.0	2990	.	25	1.4	34	23
13349400	47 12 24	117 30 14	302.00	49.6	13.0	2200	.	18	1.4	5	22
13350500	46 48 37	117 25 52	189.00	48.1	19.0	2680	100	18	1.3	1	26
13352500	46 45 56	118 08 46	679.00	68.7	19.0	1870	100	13	1.0	10	20
14010000	45 49 48	118 10 12	63.00	17.8	190.0	4260	100	33	2.0	86	20
14013000	46 00 36	118 07 12	59.60	13.3	160.0	3860	100	40	2.4	87	20
14013500	46 03 36	118 08 24	17.00	8.4	294.0	3140	100	36	2.4	33	21
14016000	46 07 12	118 14 24	48.40	16.4	176.0	2360	.	29	2.0	81	25
14016500	46 16 48	117 54 00	102.00	17.7	151.0	3750	100	30	1.8	85	25
14017500	46 02 24	118 40 48	721.00	68.6	38.0	2200	100	20	1.2	30	23
14018500	46 02 24	118 46 12	1657	59.4	60	1600	100	22	1.5	25	19

P_e	G =-0.3	G =-0.2	G =-0.1	G =0.0	G =0.1	G =0.2	G =0.3	G =0.4	G =0.5
0.9999	-4.37394	-4.15301	-3.93453	-3.71902	-3.50703	-3.29921	-3.09631	-2.89907	-2.70836
0.9995	-3.78820	-3.62113	-3.45513	-3.29053	-3.12767	-2.96698	-2.80889	-2.65390	-2.50257
0.9990	-3.52139	-3.37703	-3.23322	-3.09023	-2.94834	-2.80786	-2.66915	-2.53261	-2.39867
0.9980	-3.24371	-3.12169	-2.99978	-2.87816	-2.75706	-2.63672	-2.51741	-2.39942	-2.28311
0.9950	-2.85636	-2.76321	-2.66965	-2.57583	-2.48187	-2.38795	-2.29423	-2.20092	-2.10825
0.9900	-2.54421	-2.47226	-2.39961	-2.32635	-2.25258	-2.17840	-2.10394	-2.02933	-1.95472
0.9800	-2.21081	-2.15935	-2.10697	-2.05375	-1.99973	-1.94499	-1.88959	-1.83361	-1.77716
0.9750	-2.09795	-2.05290	-2.00688	-1.95996	-1.91219	-1.86360	-1.81427	-1.76427	-1.71366
0.9600	-1.84949	-1.81756	-1.78462	-1.75069	-1.71580	-1.67999	-1.64329	-1.60574	-1.56740
0.9500	-1.72562	-1.69971	-1.67279	-1.64485	-1.61594	-1.58607	-1.55527	-1.52357	-1.49101
0.9000	-1.30936	-1.30105	-1.29178	-1.28155	-1.27037	-1.25824	-1.24516	-1.23114	-1.21618
0.8000	-0.82377	-0.83044	-0.83639	-0.84162	-0.84611	-0.84986	-0.85285	-0.85508	-0.85653
0.7000	-0.48600	-0.49927	-0.51207	-0.52440	-0.53624	-0.54757	-0.55839	-0.56867	-0.57840
0.6000	-0.20552	-0.22168	-0.23763	-0.25335	-0.26882	-0.28403	-0.29897	-0.31362	-0.32796
0.5704	-0.12820	-0.14472	-0.16111	-0.17733	-0.19339	-0.20925	-0.22492	-0.24037	-0.25558
0.5000	0.04993	0.03325	0.01662	0.0	-0.01662	-0.03325	-0.04993	-0.06651	-0.08302
0.4296	0.22492	0.20925	0.19339	0.17733	0.16111	0.14472	0.12820	0.11154	0.09478
0.4000	0.29897	0.28403	0.26882	0.25335	0.23763	0.22168	0.20552	0.18916	0.17261
0.3000	0.55839	0.54757	0.53624	0.52440	0.51207	0.49927	0.48600	0.47228	0.45812
0.2000	0.85285	0.84986	0.84611	0.84162	0.83639	0.83044	0.82377	0.81638	0.80829
0.1000	1.24516	1.25824	1.27037	1.28155	1.29178	1.30105	1.30936	1.31671	1.32309
0.0500	1.55527	1.58607	1.61594	1.64485	1.67279	1.69971	1.72562	1.75048	1.77428
0.0400	1.64329	1.67999	1.71580	1.75069	1.78462	1.81756	1.84949	1.88039	1.91022
0.0250	1.81427	1.86360	1.91219	1.95996	2.00688	2.05290	2.09795	2.14202	2.18505
0.0200	1.88959	1.94499	1.99973	2.05375	2.10697	2.15935	2.21081	2.26133	2.31084
0.0100	2.10394	2.17840	2.25258	2.32635	2.39961	2.47226	2.54421	2.61539	2.68572
0.0050	2.29423	2.38795	2.48187	2.57583	2.66965	2.76321	2.85636	2.94900	3.04102
0.0020	2.51741	2.63672	2.75706	2.87816	2.99978	3.12169	3.24371	3.36566	3.48737
0.0010	2.66915	2.80786	2.94834	3.09023	3.23322	3.37703	3.52139	3.66608	3.81090
0.0005	2.80889	2.96698	3.12767	3.29053	3.45513	3.62113	3.78820	3.95605	4.12443
0.0001	3.09631	3.29921	3.50703	3.71902	3.93453	4.15301	4.37394	4.59687	4.82141

Table 1. Regionalized regression equations of logarithms of annual ma

Region: See figure 6 for division of regions.

DA: Drainage area, in square miles.

S: Average slope of the main channel between points at 85 and 10 percent of the length above the gage to the basin divide.

F: Percentage of forest cover plus 1 percent.

Region	Drainage area (mi^2)	Regression equation for mean logarithm of annual maximum discharges	Regressi standar logarit maximu
1	≤35	1.477 + 1.280 log DA - 0.399 log S	3.289 - 0.175 l
	>35 to ≤250	0.637 + 0.808 log DA + 0.155 log F	3.250 - 0.083 l - 0.523 log I
2	≤250	-0.037 + 0.839 log DA + 0.834 log MAP	1.877 - 0.067 l - 0.337 log A
	>250	-0.037 + 0.839 log DA + 0.834 log MAP	0.600 - 0.157 l + 0.060 log M
3	≤250	0.800 + 0.993 log DA + 0.169 log S	0.751 - 0.050 l -0.057 log MA
	>250	0.800 + 0.993 log DA + 0.169 log S	0.600 - 0.157 l + 0.060 log M