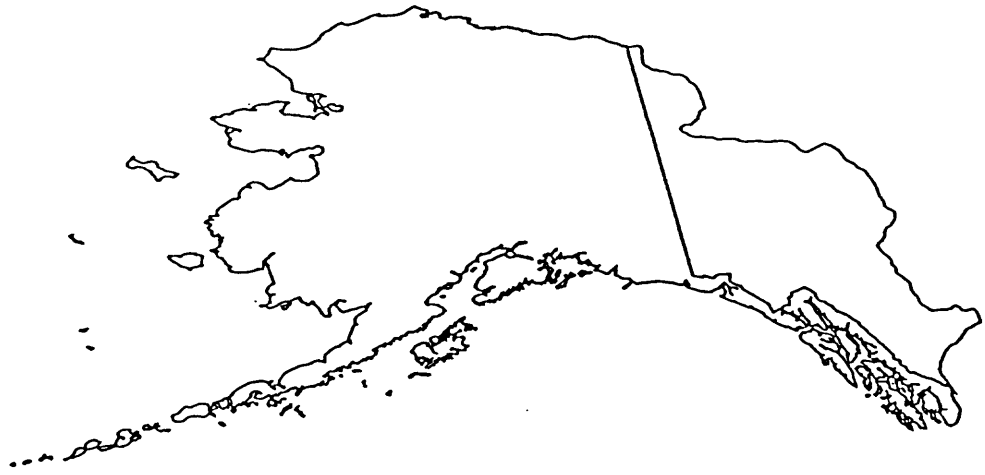
Magnitude and Frequency of Floods in Alaska and Conterminous Basins of Canada

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 93-4179



Prepared in cooperation with the

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
and
FEDERAL HIGHWAY ADMINISTRATION

Cover map. The map of Alaska and conterminous basins of Canada on the cover is a Molleweide projection, which is an equal-area projection of the Earth within an ellipse. The Molleweide projection is used for very large regions because only two points on the Molleweide are completely free of distortion unless the projection is interrupted (Snyder, 1987, p. 249).

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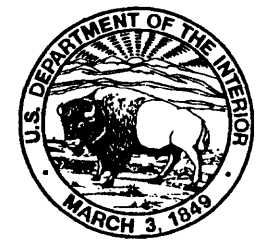
1994

U.S. DEPARTMENT OF THE INTERIOR
BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY
ROBERT M. HIRSCH, Acting Director



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[Plates are in pocket]

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To Obtain
inch (in.)	25.4	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
square mile (mi^2)	2.590	square kilometer
foot per mile (ft/mi)	0.1894	meter per kilometer
cubic foot per second (ft^3/s)	0.02832	cubic meter per second
cubic foot per second per square mile [$(ft^3/s)/mi^2$]	0.01093	cubic meter per second per square kilometer
degree Fahrenheit (°F)	°C = 5/9 x (°F-32)	degree Celsius (°C)

National Geodetic Vertical Datum of 1929 (NGVD of 1929):

A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

A "Glossary" of technical terms used in this report starts on page 37.

Magnitude and Frequency of Floods in Alaska and Conterminous Basins of Canada

By Stanley H. Jones[1] *and* Charles B. Fahl[2]

ABSTRACT

Equations for estimating the magnitude and frequency of floods at ungaged sites on streams in Alaska and conterminous basins of Canada were developed using multiple-regression analyses of basin climatic and physical characteristics and peak-flow statistics from 260 gaged locations in Alaska and 72 gaged locations in Canada. Methods are presented for estimating flood magnitude and frequency at sites on gaged streams. Flood-frequency data based on observed peaks and basin physical and climatic characteristics are given for 332 gaged locations on streams with natural flow. The State of Alaska and conterminous basins of Canada were divided into five flood-frequency areas having similar flood characteristics on the basis of statistical cluster analyses and regional regression analyses. Generalized skew coefficients were determined for each of the five flood-frequency areas using at-site unbiased skew coefficients computed for 82 stations in Alaska having 22 or more annual peaks through the 1987 water year and 31 stations in Canada having 22 or more annual peaks through the 1984 calendar year. A set of equations for estimating peak discharge having recurrence intervals of 2, 5, 10, 25, 50, 100, 200, and 500 years was developed for each flood-frequency area. Significant basin characteristics in the equations are drainage area, mean annual precipitation, percentage of lakes and ponds, mean minimum January temperature, mean basin elevation, and percentage of forest. Drainage basin sizes range from 1.02 to 321,000 square miles. Average standard errors of prediction for the equations range from 26 to 77 percent.

A regionalized mean annual precipitation map for the climatic normal period of 1951-80 was developed for Alaska west of longitude 141° and modified from published maps for southeastern Alaska and conterminous basins of Canada. Maximum known floods at 722 sites in Alaska and conterminous basins of Canada are tabulated.

INTRODUCTION

Floods in Alaska and conterminous basins of Canada result from rainfall, snowmelt runoff, a combination of rain on snow, rapid melting of snow and ice during eruptions of glacier-clad volcanoes, and the sudden release of water stored behind natural dams--dams created by glaciers, river ice, snow (avalanches), and rock and unconsolidated materials (landslides and debris flows). Information about the probable magnitude and frequency of floods, whatever their cause, is necessary

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for the design of culverts, bridges, and other hydraulic structures that must withstand or "accommodate" those floods, and is useful for flood-plain management.

A data-collection program designed to define flood magnitudes and frequency on small streams--those with drainage areas of about 50 mi^2 or less--throughout Alaska was begun in 1962 by the U.S. Geological Survey in cooperation with the State of Alaska Department of Transportation and Public Facilities and the Federal Highway Administration. Additional support for the collection of peak discharge data was provided by other Federal, State, and local agencies.

Analyses of peak discharge data for Alaskan streams have been presented in reports by Berwick and others (1964), Childers (1970), Lamke (1978), Parks and Madison (1985), and Kane and Janowicz (1989). Peak discharge data and flood magnitude and frequency analysis for northwestern Canada are included in reports by Water Resources Branch (1982), Canada Department of Indian and Northern Affairs (1984), Melone (1985), Water Survey of Canada (1985a), Janowicz (1986, 1989, and 1990), and Gerard and others (1992).

This report was prepared under a cooperative agreement between the State of Alaska Department of Transportation and Public Facilities, the Federal Highway Administration, and the U.S. Geological Survey. Most of the small-stream data described herein were collected under this cooperative program. The remainder of the streamflow data were collected throughout Alaska under various cooperative study agreements between the U.S. Geological Survey and other Federal agencies, State agencies, and local government. The data were also collected by the Water Survey of Canada and the Canada Department of Indian and Northern Affairs.

Purpose and Scope

This report describes methods for evaluating the magnitude and frequency of floods at sites on streams with natural flow, and provides procedures for estimating flood magnitude and frequency at ungaged sites in Alaska and conterminous basins of Canada. The report is based on flood data from stations that have been operated for at least 8 years on unregulated streams; on nonurban streams; or on streams unaffected by (1) failure of natural dams (Costa, 1987a), (2) failure of snow avalanche dams (Martinec, 1989; Butler, 1989), (3) sudden releases of channel blockage by snow and ice (Church, 1987), or (4) rapid melting of snow and ice during volcanic eruptions.

Methods

Flood-frequency curves were developed from annual peak-discharge data for 260 gaging stations and crest-stage partial-record sites in Alaska and 72 stations in conterminous basins of Canada (plate 1) using techniques described in Bulletin 17B (Interagency Advisory Committee on Water Data, 1982) and by Tasker (1978). On the basis of flood magnitude and frequency analysis, peak-flow statistics were determined for each location (table 1, see p. 39). The flood-frequency data developed using the observed data were then used along with basin physical and climatic characteristics in multiple-regression analyses to develop equations for estimating magnitude and frequency of floods (Thomas, 1987). Stations used in this analysis have records ranging from 8 to 69 years through the 1990 water year for Alaskan stations and the 1984 calendar year for Canadian stations (Water Survey of Canada, 1985a 1985b). Annual maximum instantaneous and annual maximum mean daily peak discharges were used without separating mixed flood populations such

as snowmelt, glacier icemelt, rainstorms, or rainfall on snow as recommended by Crippen (1978) and Church (1987). Prior to 1989, only the highest annual maximum instantaneous peak discharge or highest annual maximum daily peak discharge was determined for Alaskan stations, and no distinction was made in regard to the cause of the flood. Since 1989, two separate peak discharges are determined according to the hydrologic condition: (1) snowmelt or icemelt and (2) rainfall or rain on snow.

The estimating equations presented in this report were developed using generalized least squares (GLS) regression procedures described by Stedinger and Tasker (1985, 1986) and by Tasker and Stedinger (1989). Climatic and physical characteristics of the drainage basins for 332 gaged locations in Alaska and conterminous basins in Canada were used as the independent variables, and corresponding peak-discharge statistics were used as the dependent variables. The hydrologic regions used to define physiographic, climatic, and basin boundaries for the purpose of selecting a streamflow and flood data-collection network are shown on figure 1. Alaska and conterminous basins of Canada were also divided into five flood-frequency areas (fig. 2, and plate 1) having similar flood-frequency characteristics. These flood-frequency areas were delineated on the basis of regional-wide cluster analysis (Helwig and Council, 1979; Tasker, 1982), examination of physical and climatic characteristics, and basin boundaries. Each flood-frequency area in figure 2 may incorporate all or part of one or more of the hydrologic regions shown in figure 1. A set of equations for estimating peak discharges with recurrence intervals of 2, 5, 10, 25, 50, 100, 200, and 500 years was developed for each flood-frequency area.

Annual maximum mean daily discharges for large rivers in conterminous basins of Canada were used in developing the regression equations in flood-frequency areas 1, 4, and 5 (fig. 2) where the maximum daily discharge was at least 90 percent of the maximum instantaneous peak discharge on the concurrent day. Many of the peak discharges are maximum mean daily discharges on these large rivers, because a concurrent maximum instantaneous discharge was not determined.

Acknowledgments

Long-term daily precipitation and snowfall data used in the compilation of the precipitation map in this report were obtained from the National Oceanic and Atmospheric Administration; Soil Conservation Service; Atmospheric Environment Service, Canada; Yukon Weather Office, Canada; and the Canada Department of Indian and Northern Affairs. Excellent reviews of the mean annual precipitation map for Alaska west of longitude 141^{0} were provided by Gerald Nibler, Paul Meyer, and David L. Chapman, National Weather Service; James L. Wise, Environment and Natural Resources Institute, University of Alaska Anchorage; and George P. Clagett, Soil Conservation Service. The assistance of J.R. Janowicz, Canada Department of Indian and Northern Affairs, in providing annual peak-flow and basin characteristics data for Canada as well as a comprehensive review of this report is gratefully acknowledged. The authors thank Paul F. Doyle, BC Environment-Lands and Parks, for his thorough and constructive review of the report.

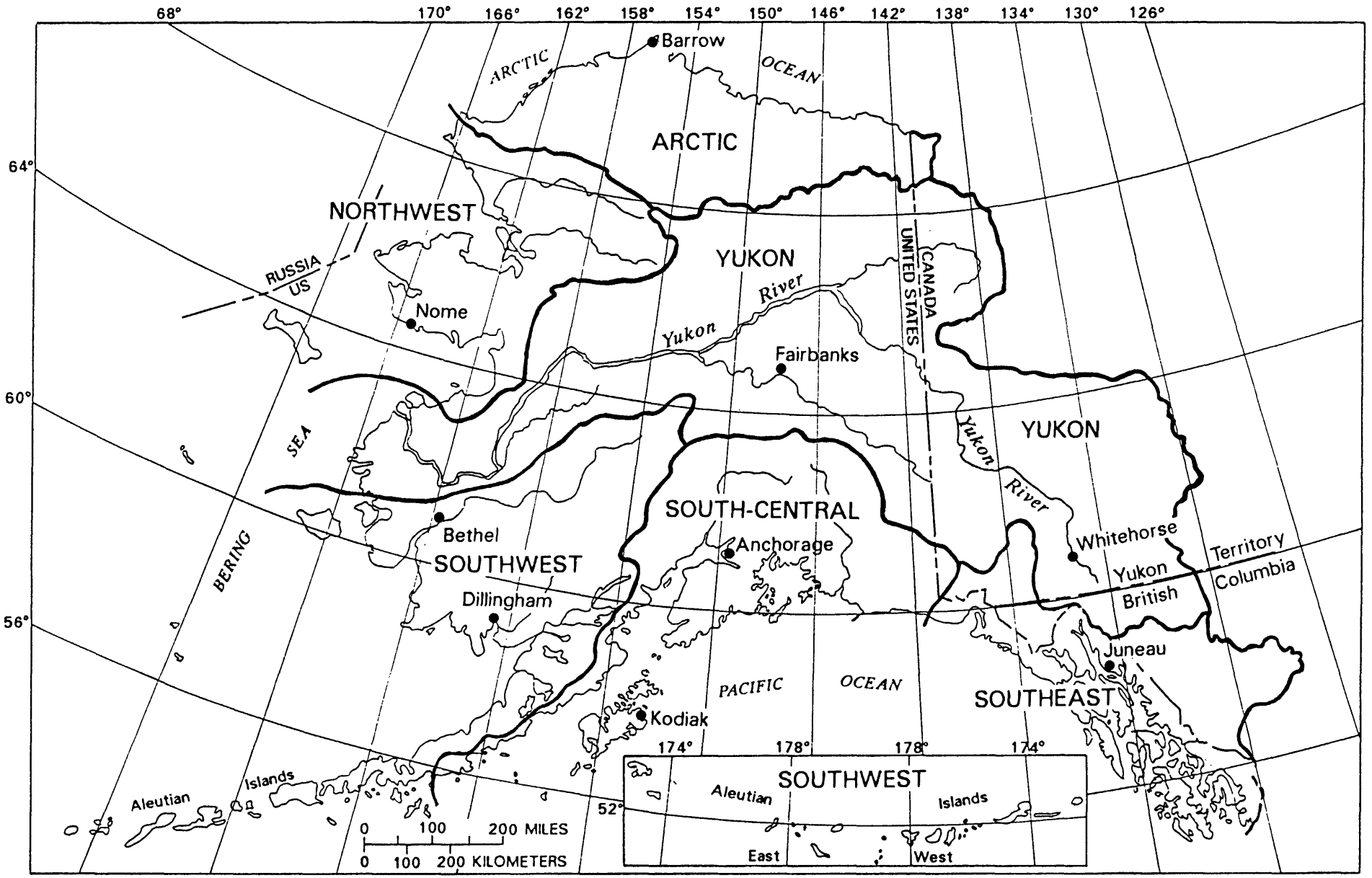

Figure 1. Hydrologic regions of Alaska and conterminous basins of Canada used in the flood-frequency analysis. (Adapted from Seaber and others, 1984).

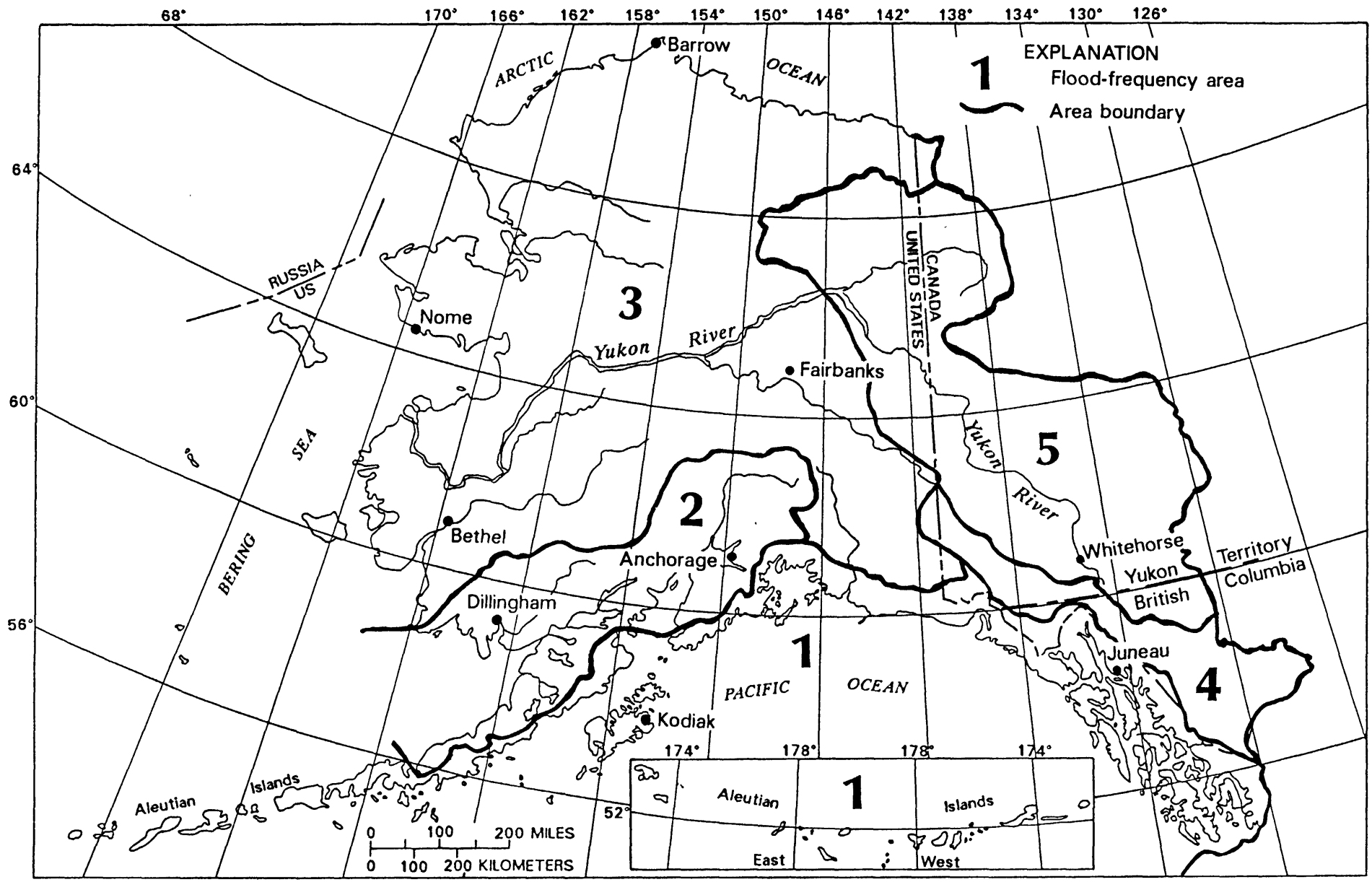

Figure 2. Areas used to develop flood-frequency estimating equations.

ESTIMATION OF FLOOD MAGNITUDE AND FREQUENCY

Peak discharges of selected recurrence intervals at ungaged and gaged sites on streams with natural flow in Alaska and conterminous basins of Canada can be estimated by the following procedures:

1. Locate the site on figure 2 or plate 1 and determine if the site is on an ungaged or gaged stream. Determine the flood-frequency area in which the site is located.
2. If the site is on an ungaged stream, follow the procedures outlined in the next section "Sites on Ungaged Streams."
3. If the site is on a gaged stream, follow the procedures outlined in the section "Sites on Gaged Streams" (p. 19).

The procedures are based on regional regression analysis and at-site station flood-frequency analysis. Equations (table 2) were developed to estimate flood magnitudes at 2-, 5-, 10-, 25-, 50-, 100-, 200-, and 500-year recurrence intervals from basin physical and climatic characteristics at sites on ungaged streams for the five flood-frequency areas. The peak discharge from the at-site station flood-frequency analysis and the regional regression equations are weighted to obtain an estimate of flood peaks for sites on gaged streams. This estimated weighted peak discharge can be transferred upstream or downstream by using a drainage area adjustment factor for sites on the same stream as the gaged site.

Sites on Ungaged Streams

Flood magnitudes having a specific recurrence interval can be estimated by the following procedures for a site on an ungaged stream:

1. If the site is on an ungaged stream in an ungaged basin, use the equations (table 2) for the applicable flood-frequency area (see examples 1 and 2 in the next section of this report).
2. Determine the basin characteristics to be used in the equations (table 2) following the procedures described in the "Drainage Basin Characteristics" section (p. 26).
3. If a drainage basin upstream from the site on an ungaged stream occupies two different flood-frequency areas, determine basin characteristics for the entire basin. Using these basin characteristics, compute the flood magnitude for a specific recurrence interval using the flood-frequency equation for each flood-frequency area. Weight the two flood-frequency estimates on the basis of the percentage of drainage area in each flood-frequency area (see example 3, next section).
4. To evaluate peak discharges estimated from regression equations for credibility, compare the estimated discharges with discharges of maximum known floods (figs. 3-7) for streams having similar drainage areas in the same flood-frequency area. The envelope curves shown in figures 3-7 are described later in the section "Maximum Known Floods" (p. 28).

Table 2. Equations for estimating magnitude and frequency of floods in Alaska and conterminous basins of Canada

[mi^2, square mile; in., inch; ft, feet; °F, degree Fahrenheit]

Flood-frequency area 1 (83 stations)

	Equation	Average standard error of prediction		Range of standard error of prediction (percent)		Average equivalent years of record
		Log unit	Percent			
Q_2	$= 0.0120\ A^{0.806}\ P^{0.819}\ (ST+1)^{-0.357}\ (J+32)^{1.499}$	0.144	34	+39	-28	1
Q_5	$= 0.0235\ A^{0.807}\ P^{0.746}\ (ST+1)^{-0.363}\ (J+32)^{1.495}$	0.146	35	+40	-29	2
Q_{10}	$= 0.0353\ A^{0.808}\ P^{0.710}\ (ST+1)^{-0.365}\ (J+32)^{1.477}$	0.149	35	+41	-29	2
Q_{25}	$= 0.0572\ A^{0.808}\ P^{0.674}\ (ST+1)^{-0.365}\ (J+32)^{1.443}$	0.156	37	+43	-30	3
Q_{50}	$= 0.0802\ A^{0.809}\ P^{0.651}\ (ST+1)^{-0.365}\ (J+32)^{1.415}$	0.161	39	+45	-31	4
Q_{100}	$= 0.110\ A^{0.809}\ P^{0.630}\ (ST+1)^{-0.364}\ (J+32)^{1.386}$	0.168	40	+47	-32	4
Q_{200}	$= 0.149\ A^{0.810}\ P^{0.612}\ (ST+1)^{-0.363}\ (J+32)^{1.356}$	0.175	42	+50	-33	5
Q_{500}	$= 0.217\ A^{0.810}\ P^{0.589}\ (ST+1)^{-0.362}\ (J+32)^{1.318}$	0.185	45	+53	-35	6

Statistics of basin characteristics used in flood-frequency area 1 regression analysis

Basin characteristic	Maximum	Minimum	Mean	Median
A Drainage area	571 mi^2	1.35 mi^2	37.0 mi^2	12.1 mi^2
P Mean annual precipitation	300 in.	70 in.	138 in.	125 in.
ST Area of lakes and ponds	26 percent	0 percent	3.3 percent	0 percent
J Mean minimum January temperature	32 °F	0 °F	23 °F	25 °F

Table 2. Equations for estimating magnitude and frequency of floods in Alaska and conterminous basins of Canada--Continued

Flood-frequency area 2 (68 stations)

Equation	Average standard error of prediction		Range of standard error of prediction (percent)		Average equivalent years of record
	Log unit	Percent			
$Q_2 = 24.2\ A^{0.963}\ P^{1.261}\ (ST+1)^{-0.294}\ E^{-0.185}\ (J+32)^{-0.947}$	0.169	40	+47	-32	1
$Q_5 = 42.3\ A^{0.932}\ P^{1.220}\ (ST+1)^{-0.313}\ E^{-0.217}\ (J+32)^{-0.845}$	0.155	37	+42	-30	3
$Q_{10} = 47.8\ A^{0.916}\ P^{1.200}\ (ST+1)^{-0.320}\ E^{-0.229}\ (J+32)^{-0.753}$	0.155	37	+42	-30	4
$Q_{25} = 91.9\ A^{0.897}\ P^{1.191}\ (ST+1)^{-0.325}\ E^{-0.272}\ (J+32)^{-0.753}$	0.164	39	+46	-31	5
$Q_{50} = 123\ A^{0.885}\ P^{1.187}\ (ST+1)^{-0.329}\ E^{-0.296}\ (J+32)^{-0.726}$	0.174	42	+49	-33	5
$Q_{100} = 160\ A^{0.875}\ P^{1.187}\ (ST+1)^{-0.332}\ E^{-0.319}\ (J+32)^{-0.704}$	0.185	45	+53	-35	6
$Q_{200} = 205\ A^{0.886}\ P^{1.188}\ (ST+1)^{-0.335}\ E^{-0.341}\ (J+32)^{-0.685}$	0.198	48	+58	-37	7
$Q_{500} = 276\ A^{0.855}\ P^{1.191}\ (ST+1)^{-0.339}\ E^{-0.368}\ (J+32)^{-0.663}$	0.218	54	+65	-39	7

Statistics of basin characteristics used in flood-frequency area 2 regression analysis

Basin characteristic	Maximum	Minimum	Mean	Median
A Drainage area	19,400 mi^2	1.28 mi^2	1,030 mi^2	75.0 mi^2
P Mean annual precipitation	100 in.	20 in.	42 in.	35 in.
ST Area of lakes and ponds	28 percent	0 percent	3.7 percent	1.0 percent
E Mean basin elevation	4,700 ft	140 ft	2,230 ft	2,480 ft
J Mean minimum January temperature	16 °F	-6 °F	5 °F	6 °F

Table 2. Equations for estimating magnitude and frequency of floods in Alaska and conterminous basins of Canada--Continued

Flood-frequency area 3 (109 stations)

	Equation	Average standard error of prediction		Range of standard error of prediction (percent)		Average equivalent years of record
		Log unit	Percent			
Q_2	$= 16.2\ A^{0.894}\ P^{0.949}\ (ST+1)^{-0.209}\ E^{-0.345}$	0.177	43	+50	-33	2
Q_5	$= 43.9\ A^{0.843}\ P^{0.753}\ (ST+1)^{-0.206}\ E^{-0.305}$	0.191	46	+55	-36	2
Q_{10}	$= 70.3\ A^{0.818}\ P^{0.667}\ (ST+1)^{-0.202}\ E^{-0.288}$	0.206	50	+61	-38	3
Q_{25}	$= 112\ A^{0.793}\ P^{0.588}\ (ST+1)^{-0.194}\ E^{-0.272}$	0.225	56	+68	-40	3
Q_{50}	$= 147\ A^{0.778}\ P^{0.544}\ (ST+1)^{-0.187}\ E^{-0.264}$	0.240	60	+74	-42	4
Q_{100}	$= 185\ A^{0.765}\ P^{0.509}\ (ST+1)^{-0.179}\ E^{-0.257}$	0.256	64	+80	-44	4
Q_{200}	$= 224\ A^{0.754}\ P^{0.480}\ (ST+1)^{-0.171}\ E^{-0.252}$	0.273	70	+87	-47	4
Q_{500}	$= 275\ A^{0.742}\ P^{0.451}\ (ST+1)^{-0.160}\ E^{-0.245}$	0.296	77	+98	-49	4

Statistics of basin characteristics used in flood-frequency area 3 regression analysis

Basin characteristic	Maximum	Minimum	Mean	Median
A Drainage area	321,000 mi^2	1.13 mi^2	13,300 mi^2	34.0 mi^2
P Mean annual precipitation	80 in.	5 in.	22 in.	20 in.
ST Area of lakes and ponds	22 percent	0 percent	1.5 percent	0 percent
E Mean basin elevation	5,800 ft	40 ft	2,600 ft	2,640 ft

Table 2. Equations for estimating magnitude and frequency of floods in Alaska and conterminous basins of Canada--Continued

Flood-frequency area 4 (26 stations)

Equation	Average standard error of prediction		Range of standard error of prediction (percent)		Average equivalent years of record
	Log unit	Percent			
$Q_2 = 3.58\ A^{0.906}\ P^{0.891}\ (ST+1)^{-0.331}\ E^{-0.125}$	0.110	26	+29	-22	1
$Q_5 = 87.5\ A^{0.872}\ P^{0.881}\ (ST+1)^{-0.360}\ E^{-0.444}$	0.112	26	+29	-23	2
$Q_{10} = 384\ A^{0.854}\ P^{0.893}\ (ST+1)^{-0.373}\ E^{-0.595}$	0.116	27	+31	-23	3
$Q_{25} = 1{,}699\ A^{0.836}\ P^{0.917}\ (ST+1)^{-0.386}\ E^{-0.749}$	0.123	29	+33	-25	4
$Q_{50} = 4{,}323\ A^{0.824}\ P^{0.936}\ (ST+1)^{-0.395}\ E^{-0.848}$	0.128	30	+34	-26	4
$Q_{100} = 9{,}898\ A^{0.814}\ P^{0.955}\ (ST+1)^{-0.403}\ E^{-0.936}$	0.134	32	+36	-27	5
$Q_{200} = 20{,}950\ A^{0.805}\ P^{0.973}\ (ST+1)^{-0.411}\ E^{-1.017}$	0.140	33	+38	-28	6
$Q_{500} = 51{,}400\ A^{0.795}\ P^{0.995}\ (ST+1)^{-0.421}\ E^{-1.114}$	0.147	35	+40	-29	6

Statistics of basin characteristics used in flood-frequency area 4 regression analysis

Basin characteristic	Maximum	Minimum	Mean	Median
A Drainage area	19,920 mi^2	42.3 mi^2	3,240 mi^2	994 mi^2
P Mean annual precipitation	110 in.	12 in.	33 in.	25 in.
ST Area of lakes and ponds	9 percent	0 percent	2.3 percent	1.0 percent
E Mean basin elevation	6,180 ft	2,730 ft	4,270 ft	4,280 ft

Table 2. Equations for estimating magnitude and frequency of floods in Alaska and conterminous basins of Canada--Continued

Flood-frequency area 5 (46 stations)

Equation	Average standard error of prediction		Range of standard error of prediction (percent)		Average equivalent years of record
	Log unit	Percent			
$Q_2 = 418\ A^{0.911}\ P^{1.342}\ (ST+1)^{-0.307}\ E^{-0.495}\ (F+1)^{-0.605}\ (J+32)^{-0.344}$	0.173	41	+49	-33	1
$Q_5 = 4{,}555\ A^{0.888}\ P^{1.218}\ (ST+1)^{-0.357}\ E^{-0.704}\ (F+1)^{-0.593}\ (J+32)^{-0.287}$	0.168	40	+47	-32	1
$Q_{10} = 14{,}740\ A^{0.877}\ P^{1.155}\ (ST+1)^{-0.383}\ E^{-0.809}\ (F+1)^{-0.579}\ (J+32)^{-0.259}$	0.170	41	+48	-32	2
$Q_{25} = 46{,}460\ A^{0.866}\ P^{1.083}\ (ST+1)^{-0.414}\ E^{-0.908}\ (F+1)^{-0.560}\ (J+32)^{-0.232}$	0.176	42	+50	-33	2
$Q_{50} = 90{,}720\ A^{0.860}\ P^{1.031}\ (ST+1)^{-0.436}\ E^{-0.962}\ (F+1)^{-0.546}\ (J+32)^{-0.217}$	0.182	44	+52	-34	3
$Q_{100} = 156{,}700\ A^{0.856}\ P^{0.979}\ (ST+1)^{-0.457}\ E^{-1.003}\ (F+1)^{-0.534}\ (J+32)^{-0.205}$	0.190	46	+55	-35	3
$Q_{200} = 246{,}400\ A^{0.853}\ P^{0.929}\ (ST+1)^{-0.479}\ E^{-1.033}\ (F+1)^{-0.522}\ (J+32)^{-0.196}$	0.197	47	+57	-36	3
$Q_{500} = 399{,}400\ A^{0.850}\ P^{0.863}\ (ST+1)^{-0.507}\ E^{-1.060}\ (F+1)^{-0.508}\ (J+32)^{-0.186}$	0.207	50	+61	-38	4

Statistics of basin characteristics used in flood-frequency area 5 regression analysis

Basin characteristic	Maximum	Minimum	Mean	Median
A Drainage area	113,500 mi^2	1.02 mi^2	13,800 mi^2	2,900 mi^2
P Mean annual precipitation	25 in.	10 in.	17 in.	17 in.
ST Area of lakes and ponds	30 percent	0 percent	2.8 percent	2.0 percent
E Mean basin elevation	5,040 ft	1,200 ft	3,600 ft	3,750 ft
F Area of forest	99 percent	9 percent	62 percent	68 percent
J Mean minimum January temperature	-8 °F	-30 °F	-19 °F	-19 °F

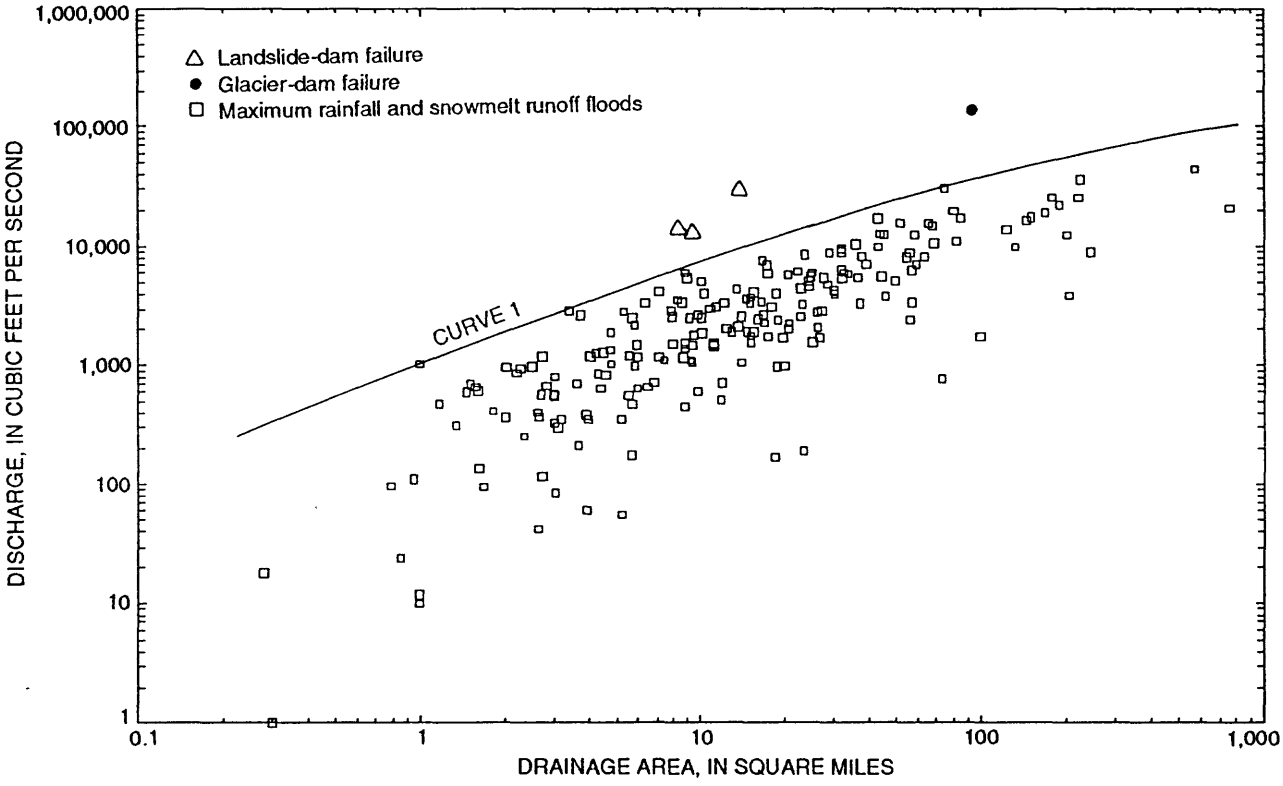

Figure 3. Peak discharge as a function of drainage area and envelope curve for rainfall and snowmelt runoff floods in flood-frequency area 1, Alaska and Canada.

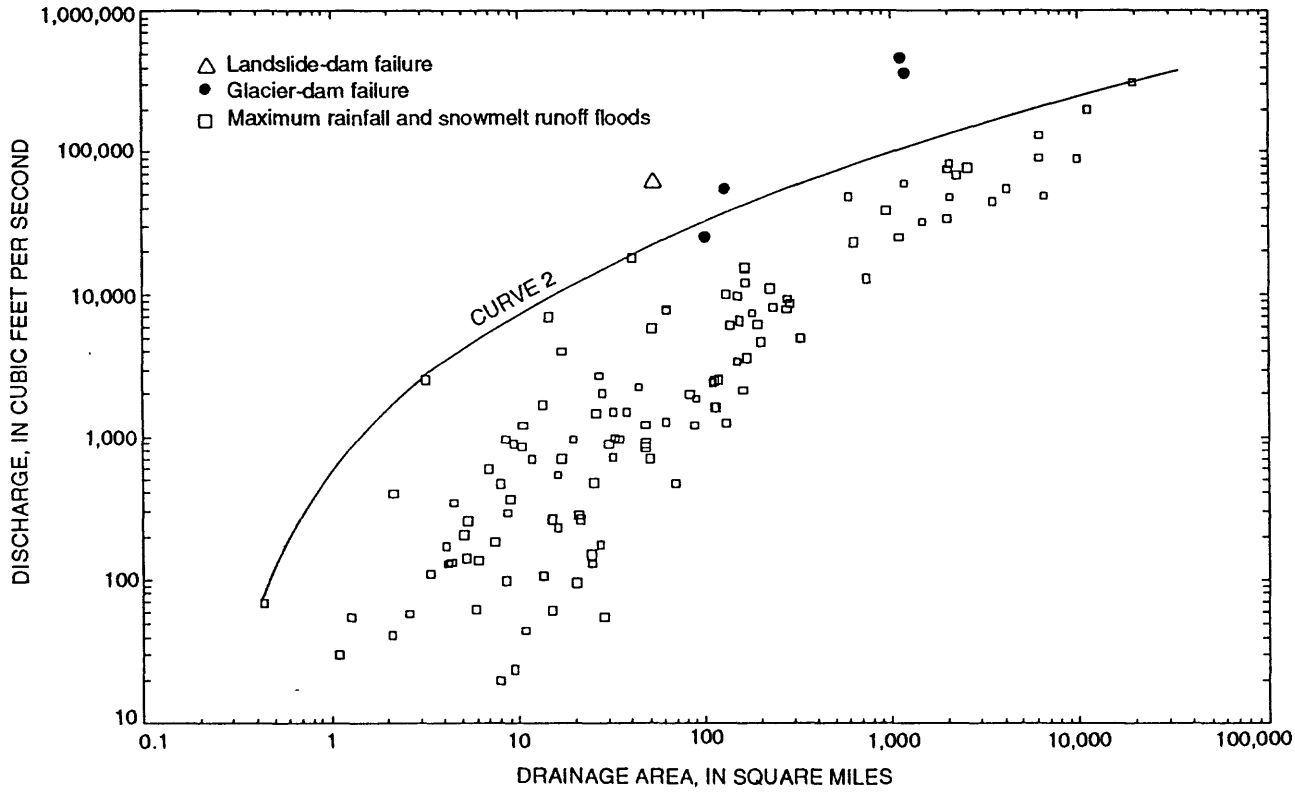

Figure 4. Peak discharge as a function of drainage area and envelope curve for rainfall and snowmelt runoff floods in flood-frequency area 2, Alaska.

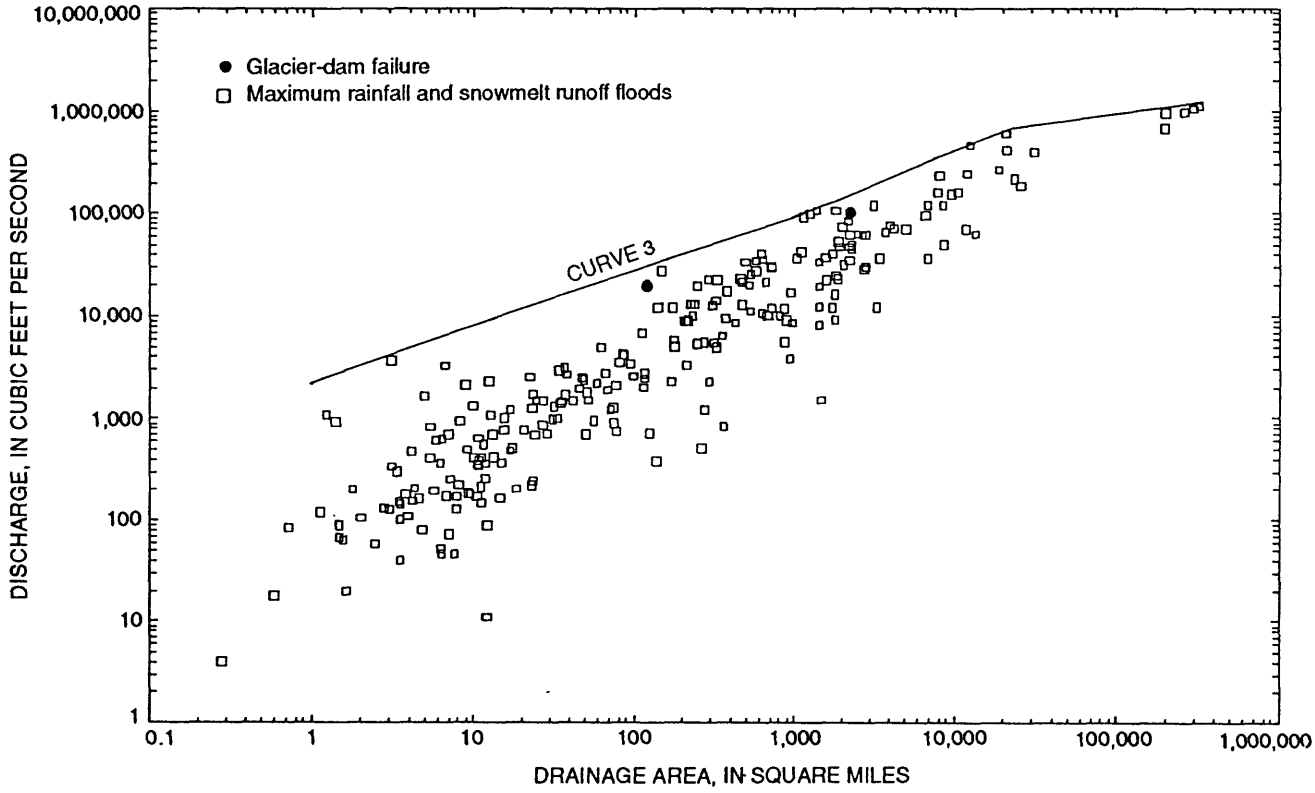

Figure 5. Peak discharge as a function of drainage area and envelope curve for rainfall and snowmelt runoff floods in flood-frequency area 3, Alaska and Canada.

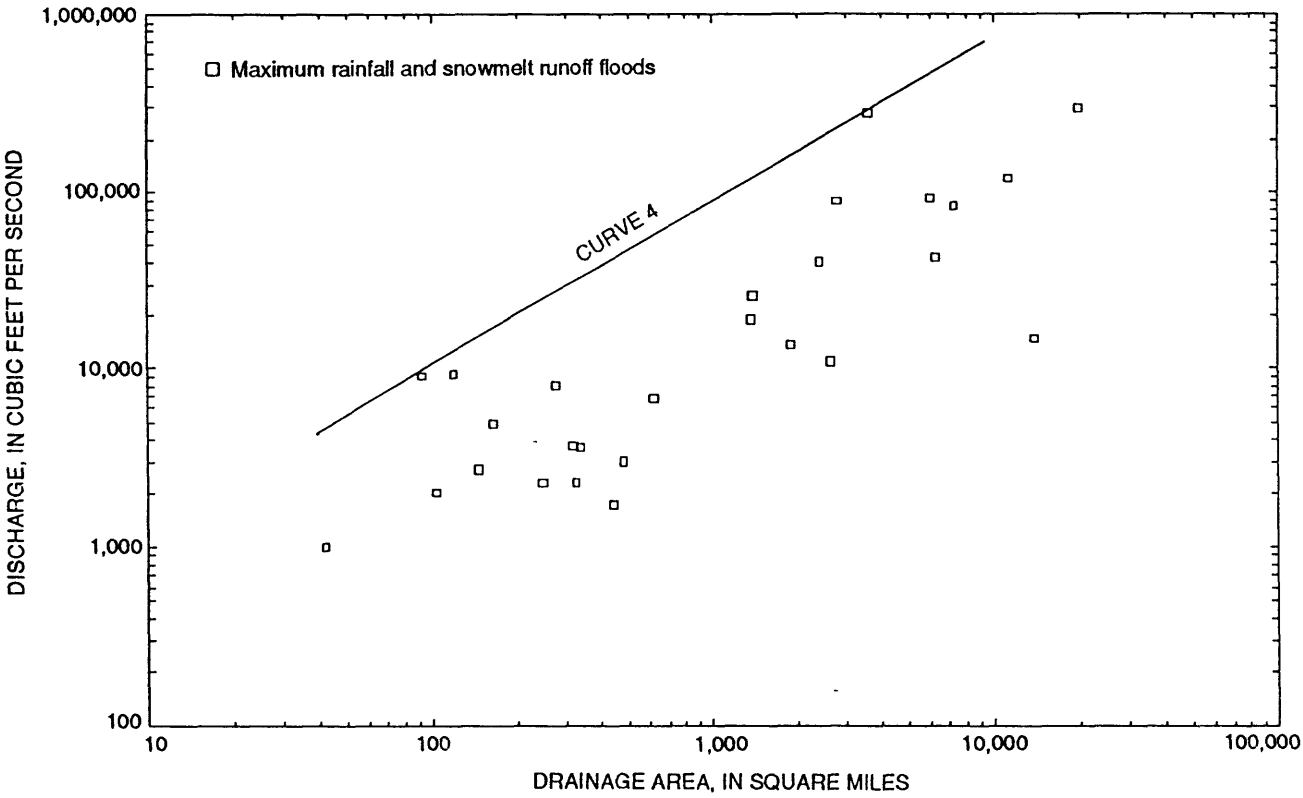

Figure 6. Peak discharge as a function of drainage area and envelope curve for rainfall and snowmelt runoff floods in flood-frequency area 4, Canada and Alaska.

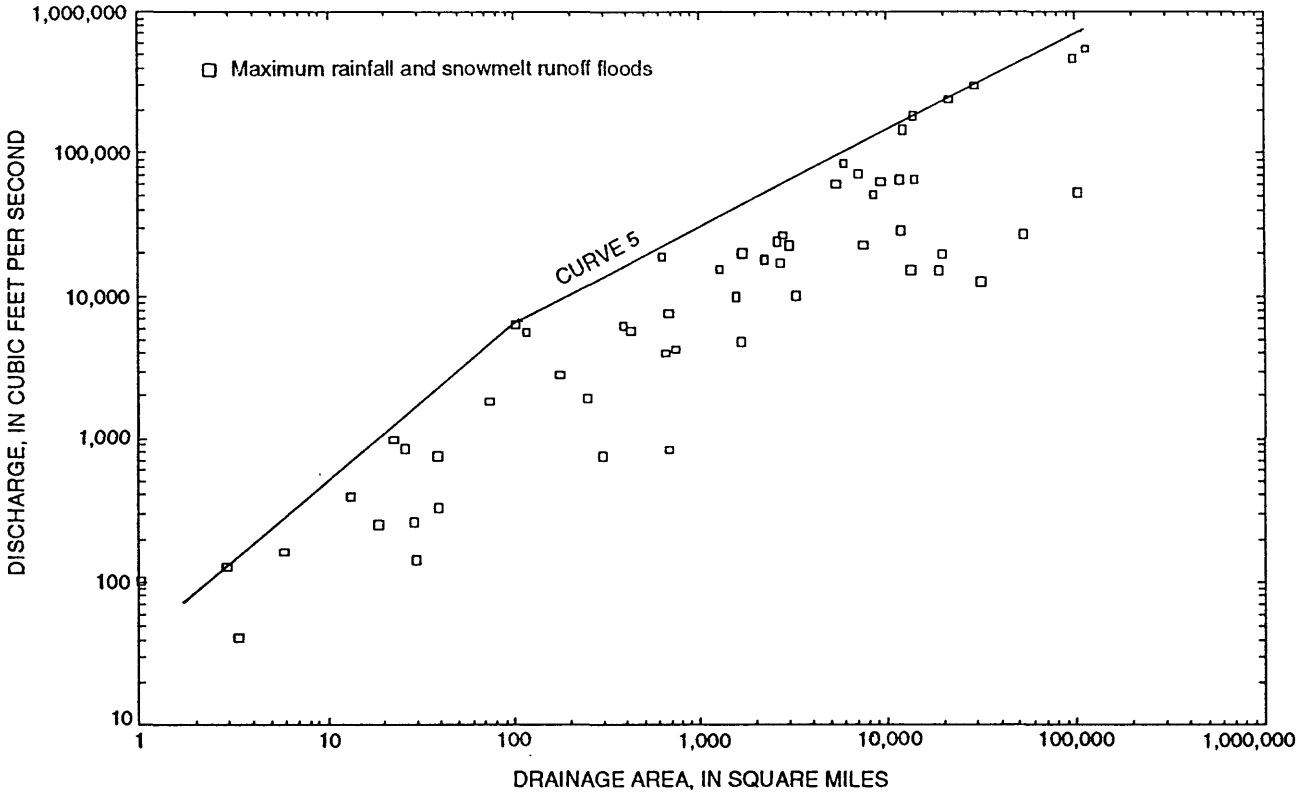

Figure 7. Peak discharge as a function of drainage area and envelope curve for rainfall and snowmelt runoff floods in flood-frequency area 5, Canada and Alaska.

Sample Problems for Sites on Ungaged Streams

The following examples show methods for estimating flood discharge of selected recurrence intervals for an ungaged site. Locations of sites for sample problems are shown on figure 8.

Example 1. Determine a flood discharge for a selected recurrence interval for a site in an ungaged basin where no gaged data exist.

Determine the discharge for the 100-year recurrence interval flood for an ungaged stream site. Suzy Q Creek near Black Rapids (fig. 8) is located in flood-frequency area 3 as determined from figure 2 or plate 1. The equations for estimating flood peak discharges in flood-frequency area 3 (table 2) require drainage area (A) in square miles, mean annual precipitation (P) in inches (plate 2), area of lakes and ponds (ST) as a percentage of the total drainage area, and mean basin elevation (E) in feet, as independent variables. Physical and climatic characteristics of the basin determined from a topographic map and mean annual precipitation from plate 2 are as follows:

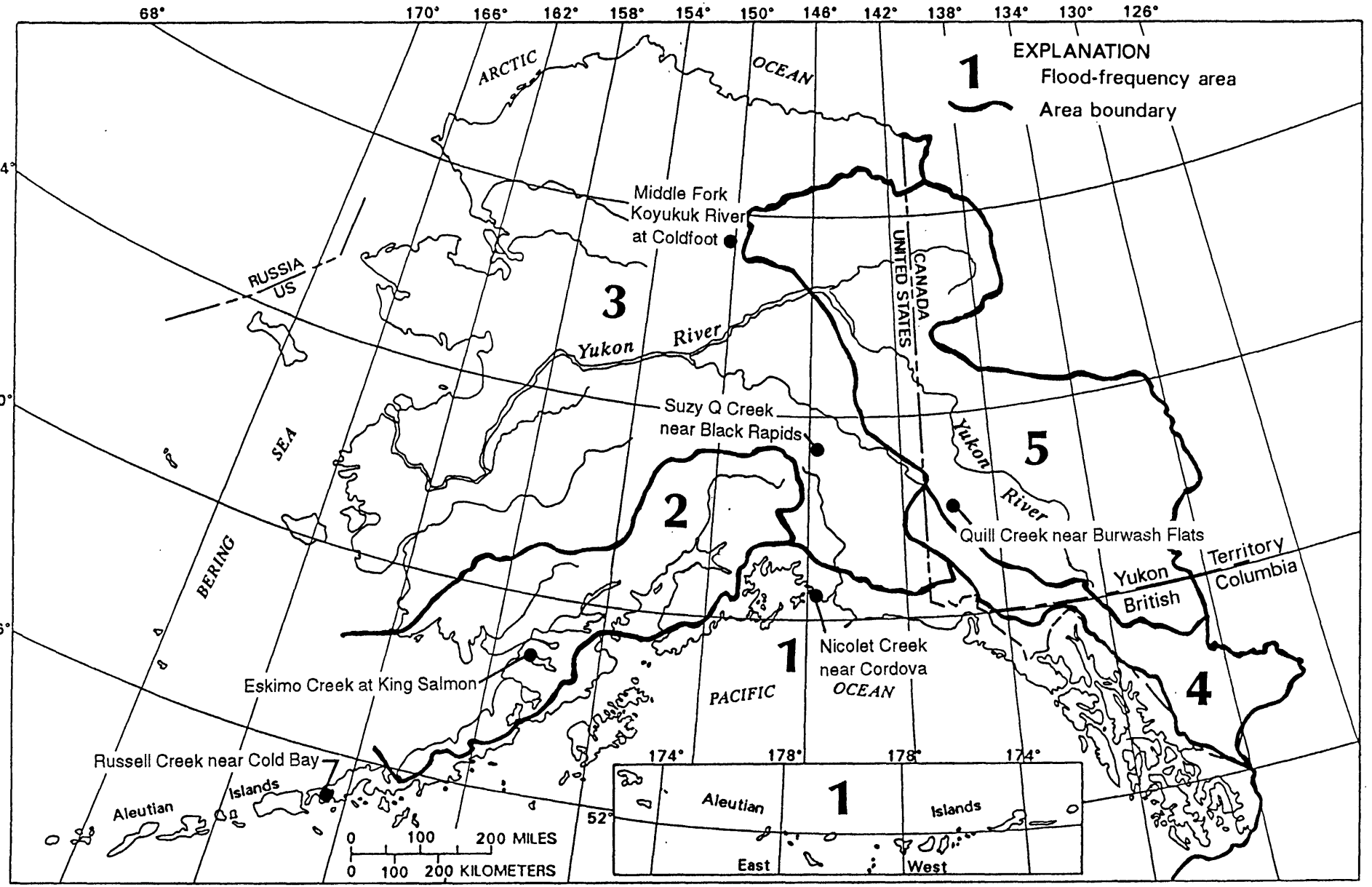

Figure 8. Locations of sites for sample problems.

Suzy Q Creek near Black Rapids

Latitude 63°29'43" longitude 145°51'27"
Drainage area (A): 1.29 mi^2
Area of lakes and ponds (ST): 0 percent
Mean basin elevation (E): 4,100 ft
Mean annual precipitation (P): 50 in.

All basin and climatic characteristics are within the limits of the characteristics used to develop the equations in table 2.

The equation for estimating the 100-year peak discharge is:

$$Q_{100} = 185\ A^{0.765}\ P^{0.509}\ (ST+1)^{-0.179}\ E^{-0.257}$$

Substitute the values of basin characteristics for the ungaged stream site in the equation:

$$Q_{100} = 185\ (1.29)^{0.765}\ (50)^{0.509}\ (0+1)^{-0.179}\ (4{,}100)^{-0.257} = 194\ ft^3/s.$$

Example 2. Develop a flood-frequency curve for an ungaged stream site.

Develop a flood-frequency curve for an ungaged stream, Nicolet Creek near Cordova (fig. 8), in flood-frequency area 1. The equations for estimating flood peaks in flood-frequency area 1 (table 2) require drainage area (A) in square miles, mean annual precipitation (P) in inches (plate 2), area of lakes and ponds (ST) as a percentage of the total drainage area, and mean minimum January temperature (J) in degrees Fahrenheit (plate 1), as independent variables. Physical and climatic characteristics of the basin determined from a topographic map and mean annual precipitation from plate 2 are as follows:

Nicolet Creek near Cordova

Latitude 60°31'09" longitude 145°47'22"
Drainage area (A): 0.75 mi^2
Mean annual precipitation (P): 160 in.
Area of lakes and ponds (ST): 0.8 percent
Mean minimum January temperature (J): 18 °F

The drainage area for the basin is less than the minimum drainage area used to develop the equations in table 2. Caution should be used because the drainage area is outside the range of those used to develop the equations. The equations for estimating the 2-, 5-, 10-, 25-, 50-, 100-, 200-, and 500-year recurrence interval floods for the ungaged stream site located in flood-frequency area 1 (table 2) are:

$$Q_2 = 0.0120\ A^{0.806}\ P^{0.819}\ (ST+1)^{-0.357}\ (J+32)^{1.499}$$

$$Q_5 = 0.0235\ A^{0.807}\ P^{0.746}\ (ST+1)^{-0.363}\ (J+32)^{1.495}$$

$$Q_{10} = 0.0353\ A^{0.808}\ P^{0.710}\ (ST+1)^{-0.365}\ (J+32)^{1.477}$$

$$Q_{25} = 0.0572\ A^{0.808}\ P^{0.674}\ (ST+1)^{-0.365}\ (J+32)^{1.443}$$

$$Q_{50} = 0.0802\ A^{0.809}\ P^{0.651}\ (ST+1)^{-0.365}\ (J+32)^{1.415}$$

$$Q_{100} = 0.110\ A^{0.809}\ P^{0.630}\ (ST+1)^{-0.364}\ (J+32)^{1.386}$$

$$Q_{200} = 0.149\ A^{0.810}\ P^{0.612}\ (ST+1)^{-0.363}\ (J+32)^{1.356}$$

$$Q_{500} = 0.217\ A^{0.810}\ P^{0.589}\ (ST+1)^{-0.362}\ (J+32)^{1.318}$$

Substitute the values of basin characteristics for the ungaged stream site in the equations and plot the magnitude and frequency curve (fig. 9):

$$Q_2 = 0.0120\ (0.75)^{0.806}\ (160)^{0.819}\ (0.8+1)^{-0.357}\ (+18+32)^{1.499} = 173\ ft^3/s$$

$$Q_5 = 0.0235\ (0.75)^{0.807}\ (160)^{0.746}\ (0.8+1)^{-0.363}\ (+18+32)^{1.495} = 230\ ft^3/s$$

$$Q_{10} = 0.0353\ (0.75)^{0.808}\ (160)^{0.710}\ (0.8+1)^{-0.365}\ (+18+32)^{1.477} = 268\ ft^3/s$$

$$Q_{25} = 0.0572\ (0.75)^{0.808}\ (160)^{0.674}\ (0.8+1)^{-0.365}\ (+18+32)^{1.443} = 317\ ft^3/s$$

$$Q_{50} = 0.0802\ (0.75)^{0.809}\ (160)^{0.651}\ (0.8+1)^{-0.365}\ (+18+32)^{1.415} = 354\ ft^3/s$$

$$Q_{100} = 0.110\ (0.75)^{0.809}\ (160)^{0.630}\ (0.8+1)^{-0.364}\ (+18+32)^{1.386} = 390\ ft^3/s$$

$$Q_{200} = 0.149\ (0.75)^{0.810}\ (160)^{0.612}\ (0.8+1)^{-0.363}\ (+18+32)^{1.356} = 429\ ft^3/s$$

$$Q_{500} = 0.217\ (0.75)^{0.810}\ (160)^{0.589}\ (0.8+1)^{-0.362}\ (+18+32)^{1.318} = 479\ ft^3/s$$

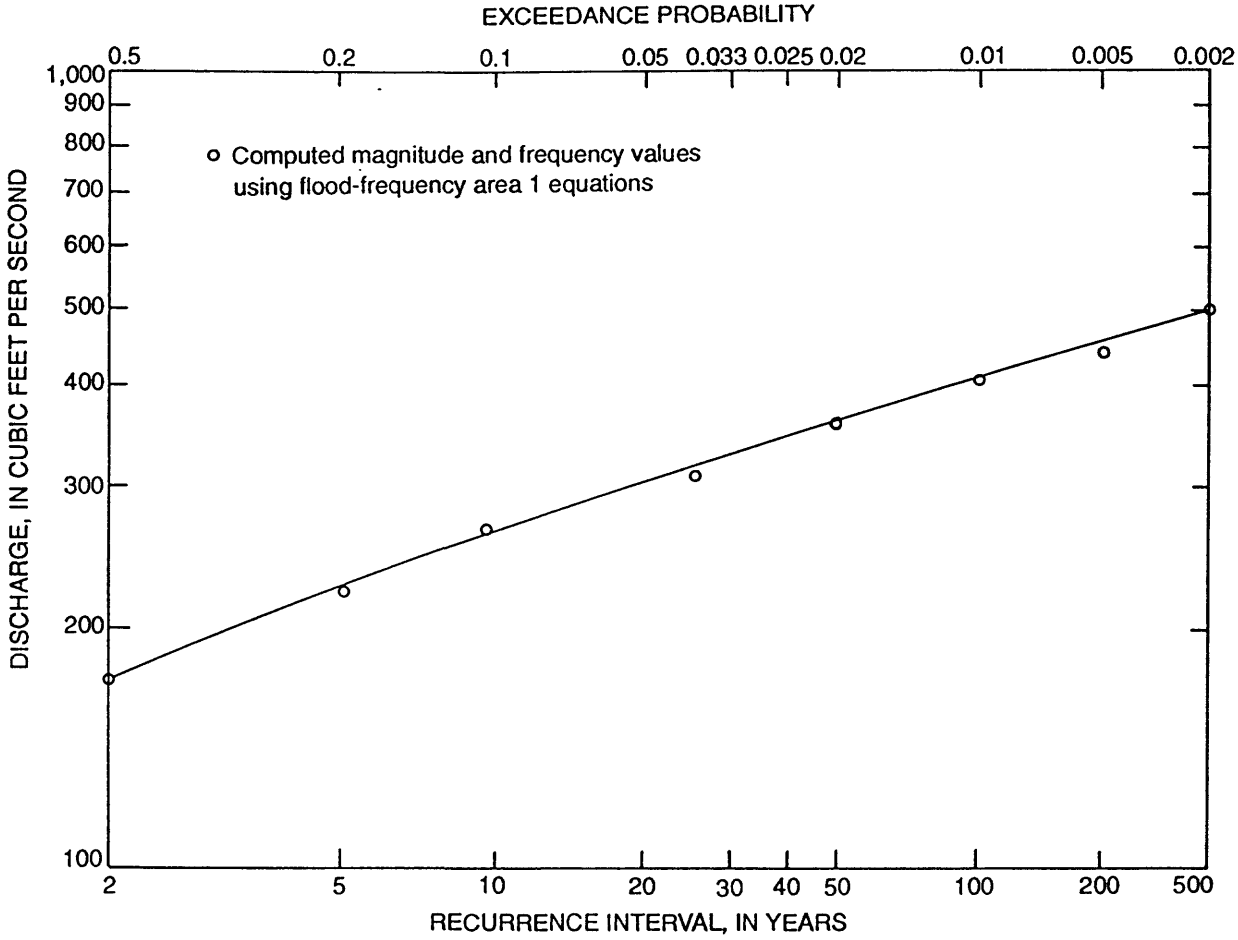

Figure 9. Magnitude and frequency curve for Nicolet Creek near Cordova.

Example 3. Determine a flood discharge for an ungaged site draining a basin subdivided by two different flood-frequency areas.

Determine a flood discharge for the 50-year recurrence interval flood for an ungaged stream site located on a stream draining a basin subdivided by two different flood-frequency areas. The site selected, Quill Creek near Burwash Flats, Yukon Territory, Canada (fig. 8), is located in flood-frequency area 5 as determined from figure 2 or plate 1. The total drainage area of Quill Creek near Burwash Flats is 27.1 mi^2. In this case, 77.1 percent of the basin is in flood-frequency area 4 and 22.9 percent is in flood-frequency area 5. The equations for estimating flood peak discharges in flood-frequency area 4 (table 2) require drainage area (A) in square miles, mean annual precipitation (P) in inches (plate 2), area of lakes and ponds (ST) in percent, and mean basin elevation (E) in feet, as independent variables. The equations for estimating flood peak discharges in flood-frequency area 5 (table 2) require drainage area (A) in square miles, mean annual precipitation (P) in inches (plate 2), area of lakes and ponds (ST) in percent, mean basin elevation (E) in feet, area of forest (F) in percent, and mean minimum January temperature (J) in degrees Fahrenheit, as independent variables. Physical and climatic characteristics of the basin determined from a topographic map, mean annual precipitation from plate 2, and mean minimum January temperature from plate 1 are as follows:

Quill Creek near Burwash Flats
Latitude 61°30'10" longitude 139°19'27"
Drainage area (A): 27.1 mi^2
Mean annual precipitation (P): 15 in.
Area of lakes and ponds (ST): 0 percent
Mean basin elevation (E): 4,000 ft
Area of forest (F): 34 percent
Mean minimum January temperature (J): -21 °F

Although the site is located in flood-frequency area 5, it has 77.1 percent of its drainage area in flood-frequency area 4. The equation for estimating the 50-year peak discharge for flood-frequency area 4 is:

$$Q_{50} = 4{,}323\ A^{0.824}\ P^{0.936}\ (ST+1)^{-0.395}\ E^{-0.848}$$

Substitute the values of basin characteristics for the ungaged stream site in the equation:

$$Q_{50} = 4{,}323\ (27.1)^{0.824}\ (15)^{0.936}\ (0+1)^{-0.395}\ (4{,}000)^{-0.848} = 729\ ft^3/s$$

The site has 22.9 percent of its drainage area in flood-frequency area 5. The equation for estimating the 50-year peak discharge for flood-frequency area 5 is:

$$Q_{50} = 90{,}720\ A^{0.860}\ P^{1.031}\ (ST+1)^{-0.436}\ E^{-0.962}\ (F+1)^{-0.546}\ (J+32)^{-0.217}$$

Substitute the values of basin characteristics for the ungaged stream site in the equation:

$$Q_{50} = 90{,}720\ (27.1)^{0.860}\ (15)^{1.031}\ (0+1)^{-0.436}\ (4{,}000)^{-0.962}\ (34+1)^{-0.546}(-21+32)^{-0.217}$$

$$Q_{50} = 739\ ft^3/s$$

The 50-year peak discharge for the ungaged stream site located in flood-frequency area 5 is computed by weighting the two estimates based on the percentage of area in each region:

$$Q_{50} = 0.771[\ Q_{50}(area4)] + 0.229[\ Q_{50}(area5)]$$

$$Q_{50} = 0.771(729) + 0.229(739) = 731\ ft^3/s$$

Sites on Gaged Streams

Flood magnitudes having a specific flood recurrence interval can be estimated by the following procedure for a site on a gaged stream:

1. If the site is located along the Yukon River, use figure 10 to determine the flood characteristics.
2. If the site is at a gaged location with 8 or more years of peak discharge data, use the weighted estimate of Q_T from table 3 (p. 49). See discussion of methods used to develop table 3 in the "Magnitude and Frequency of Floods at Gaged Sites" section (p. 28).
3. If the site is at a gaged location with 5 to 7 years of peak discharge data, the weighted estimate of Q_T should be calculated. See discussion of methods used to estimate the weighted Q_T in the "Magnitude and Frequency of Floods at Gaged Sites" section (p. 28). Generalized skew $\overline{G}$ and standard error of generalized skew $SE_{\overline{G}}$ from table 4 (p. 20) should be used in computing the station log-Pearson Type III frequency analysis. Generalized skew and standard error of generalized skew are described later in the section "Generalized Skew Coefficients" (p. 31).

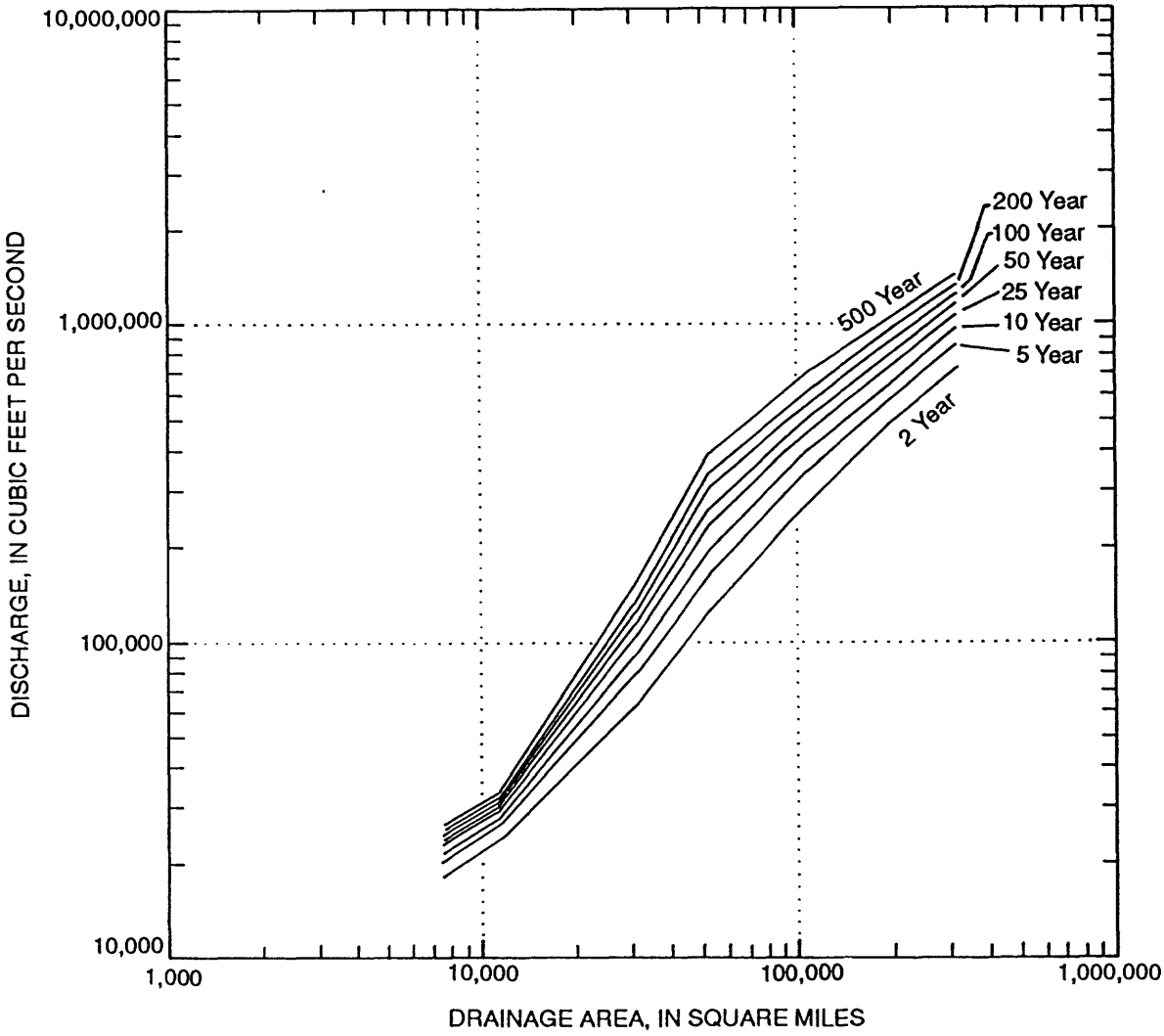

Figure 10. Relation of discharge to drainage area for selected recurrence intervals along the Yukon River.

Table 4. Values of unbiased station skew, generalized skew, standard error of generalized skew, and standard deviation of generalized skew

Flood-frequency area	Number of stations	Range of unbiased station skew		Generalized skew $\overline{G}$	Standard error of generalized skew $SE_{\overline{G}}$	Standard deviation of generalized skew
		Maximum	Minimum			
1	22	1.257	-0.427	0.31	0.49	0.48
2	23	1.877	-1.145	0.55	0.74	0.70
3	35	2.540	-2.632	0.13	1.15	1.14
4	14	2.731	-1.344	0.39	1.02	1.04
5	19	1.228	-1.077	0.21	0.66	0.65

4. If the site is at a gaged location with less than 5 years of peak discharge data, the equations (table 2) for each flood-frequency area should be used.
5. If the drainage area of an ungaged site on a gaged stream is less than 50 percent or greater than 150 percent of the drainage area of a gaged site on the same stream, the discharge should be estimated from the equations in table 2 as if the site were on an ungaged stream. An example using the estimating equations is shown in the section "Sample Problems for Sites on Ungaged Streams" (p. 14, example 1).
6. If the drainage area of an ungaged site on a gaged stream is between 50 and 150 percent of the drainage area of a gaged site on the same stream, the discharge should be estimated from weighted gaged data (table 3, lower number) and the estimating equations (table 3, middle number) (see example 3 in the next section "Sample Problems for Sites on Gaged Streams"). Sauer (1974) suggests the following technique for estimating flood-peak discharges for selected recurrence intervals for ungaged sites on a gaged stream. The weighting procedure takes into account the length of record at the gaged site, the basin physical and climatic characteristics of the ungaged site, and regional regression relations of the flood-frequency area. An estimate of the T-year peak discharge at an ungaged site is determined by first computing the ratio:

$$r = \frac{Q_T(\text{weighted at gaged site})}{Q_T(\text{regression at gaged site})}$$

or at the gaged site,

$$Q_T(\text{weighted at gaged site}) = r[Q_T(\text{regression at gaged site})].$$

Q_T(weighted at gaged site) is the weighted estimate of the T-year flood at the gaged site from the lower number of table 3 and Q_T(regression at the gaged site) is the estimate of the T-year

flood at the gaged site (table 3, middle number) determined by a flood-frequency area equation (table 2). This correction adjusts the flood-frequency area equation value to the weighted value at the gaged site. Values of Q_T(weighted at gaged site) and Q_T(regression at gaged site) for 332 gaged sites are listed in table 3. The weighting factor (r_w) to multiply the estimate of Q_T(ungaged site) is computed as:

$$r_w = r - \frac{2\Delta A}{A_g}(r-1),$$

where r is the ratio defined above, and

ΔA is the absolute value of the difference between the drainage area of the gaged site, A_g, and the ungaged site, A_u: $\Delta A = |A_g - A_u|$.

The T-year peak discharge at the ungaged site is then determined by the equation:

$$Q_T(\text{ungaged site}) = [Q_T\ (\text{regression at ungaged site})]\ [r_w],$$

where Q_T(regression at ungaged site) is the estimate of the T-year flood at the ungaged site determined by a flood-frequency area equation (table 2), and

r_w is the weighting factor defined above. Since r_w is a multiplier, r_w increases from a value at the gaged site to 1.00 as ΔA increases to 50 percent of A_g.

Sample Problems for Sites on Gaged Streams

Methods for estimating flood discharges of selected recurrence intervals for a gaged site on a stream are shown by the following examples:

Example 1. Determine a flood discharge for a selected recurrence interval for a gaged basin having 8 or more years of peak discharge data.

Determine the flood discharge for the 100-year recurrence interval flood for station number 15297900, Eskimo Creek at King Salmon, Alaska (fig. 8), which has 17 years of peak discharge data. The drainage area is 16.1 mi^2. The site is located in flood-frequency area 2 as determined from figure 2 or plate 1. Table 3 contains three estimates of Q_{100} for this station: the upper number, 523 ft^3/s, is the value of Q_T flood-frequency analysis of observed station data; the middle number, 542 ft^3/s, is the value of Q_T(regression at the gaged site) estimated by regression equation for flood-frequency area 2 (table 2); and the lower number, 528 ft^3/s, is the value of Q_T(weighted at the gaged site) obtained by weighting the station and regression estimates. The weighting procedure and analysis of observed peak data are described later in the section "Magnitude and Frequency of Floods at Gaged Sites" (p. 28). The weighted estimate, 528 ft^3/s, is the best estimate of the Q_{100} for the gaging station on Eskimo Creek at King Salmon, Alaska.

Example 2. Determine a flood discharge for a selected recurrence interval for a gaged location having 5 to 7 years of peak discharge data.

Determine the flood discharge for the 50-year recurrence interval flood for station number 15297610, Russell Creek near Cold Bay, Alaska (fig. 8), which had 5 years of peak discharge data

before the station was discontinued. The drainage area is 25 mi^2. The site is located in flood-frequency area 1 as determined from figure 2 or plate 1. The best estimate of the Q_{50} for the gaging station would be the weighted estimate. The weighting procedure and analysis of observed peak discharge data are described later in the section "Magnitude and Frequency of Floods at Gaged Sites" (p. 28). The Q_{50} flood-frequency analysis of observed station data is calculated using a generalized skew for flood-frequency area 1 of 0.31 and standard error of generalized skew of 0.49 (table 4). The station skew or weighted skew is not used for gaged locations having 5 to 7 years of peak discharge data. The Q_{50} from log-Pearson Type III station frequency analysis is 9,880 ft^3/s. The equation for estimating the 50-year peak discharge in flood-frequency area 1 (table 2) requires drainage area (A) in square miles, mean annual precipitation (P) in inches (plate 2), area of lakes and ponds (ST) as a percentage of the total drainage area, and mean minimum January temperature (J) in degrees Fahrenheit (plate 1), as independent variables. Physical and climatic characteristics of the basin characteristics from a topographic map, mean annual precipitation from plate 2, and mean minimum January temperature from plate 1 are as follows:

Russell Creek near Cold Bay, Alaska

Latitude 55°10'50" longitude 162°41'08"
Drainage area (A): 25.0 mi^2
Mean annual precipitation (P): 80 in.
Area of lakes and ponds (ST): 0 percent
Mean minimum January temperature (J): 25° F

All basin and climatic characteristics are within the limits of the characteristics used to develop the equations in table 2. The equation for estimating the 50-year recurrence interval flood for the gage site is :

$$Q_{50} = 0.0802\ A^{0.809}\ P^{0.651}\ (ST+1)^{-0.365}\ (J+32)^{1.415}$$

Substitute the values of basin characteristics for the gaged stream site in the equation:

$$Q_{50} = 0.0802\ (25)^{0.809}\ (80)^{0.651}\ (0+1)^{-0.365}\ (+25+32)^{1.415} = 5{,}620\ ft^3/s$$

The best estimate of the 50-year recurrence interval flood for Russell Creek near Cold Bay, Alaska is the weighted estimate obtained by the equation:

$$\log Q_T(\text{weighted}) = \frac{(\text{sta yrs rec})\ (\log \text{sta}\ Q_T) + (\text{eq yrs rec})\ (\log \text{reg}\ Q_T)}{(\text{sta yrs rec}) + (\text{eq yrs rec})}$$

where (sta yrs rec) is station years of record (5 years), and
(eq yrs rec) is equivalent years of record determined from table 2 for flood-frequency area 1 (4 years).

Substitute the values for station Q_{50} and regression equation Q_{50} in the equation:

$$\log Q_{50} = \frac{(5)\ (\log 9{,}880) + (4)\ (\log 5{,}620)}{(5) + (4)}$$

$$\log Q_{50} = 3.886$$
$$Q_{50} = 7{,}690\ ft^3/s$$

Example 3. Determine a flood for an ungaged site on a gaged stream. The drainage area of the ungaged site is between 50 and 150 percent of the drainage area of the gaged site.

Determine the flood discharge for the 50-year recurrence interval flood for an ungaged site on the Middle Fork Koyukuk River at Coldfoot (fig. 8), 14 mi downstream from gaging station 15564875, Middle Fork Koyukuk River near Wiseman, Alaska. The site is located in flood-frequency area 3 as determined from figure 2 or plate 1. The equation for estimating the flood peak discharge in flood-frequency area 3 (table 2) requires drainage area (A) in square miles, mean annual precipitation (P) in inches (plate 2), area of lakes and ponds (ST) as a percentage of the total drainage area, and mean basin elevation (E) in feet, as independent variables. All basin characteristics are within the limits of the characteristics used to develop the equations in table 2. Physical and climatic characteristics of the basin determined from topographic maps area are as follows:

Middle Fork Koyukuk River below Slate Creek at Coldfoot

Latitude 67°15'31" longitude 150°11'57"
Drainage area (A_u): 1,420 mi^2
Mean annual precipitation (P): 25 in.
Area of lakes and ponds (ST): 0.6 percent
Mean basin elevation (E): 3,390 ft

The Q_{50} for the ungaged location is first estimated by the regression equation for flood-frequency area 3 (table 2):

$$Q_{50} = 147\ A_u^{0.778}\ P^{0.544}\ (ST+1)^{-0.187}\ E^{-0.264}$$

Substitute the variables of the basin characteristics for the ungaged site in the equation:

$$Q_{50} = 147\ (1{,}420)^{0.778}\ (25)^{0.544}\ (0.6+1)^{-0.187}\ (3{,}390)^{-0.264} = 25{,}700\ ft^3/s$$

Determine the flood discharge for the 50-year recurrence interval flood for the station number 15564875 Middle Fork Koyukuk River near Wiseman, Alaska. The drainage area, A_g, is 1,200 mi^2. From figure 2 or plate 1, the site is located in flood-frequency area 3. Table 3 contains three estimates of Q_{50} for this station: the upper number, 22,900 ft^3/s, is the value of Q_T from flood-frequency analysis of observed station data; the middle number, 22,600 ft^3/s, is the value of Q_T(regression at gaged site) estimated by regression equation for flood-frequency area 3 (table 2); and the lower number, 22,800 ft^3/s, is the value of Q_T(weighted at gaged site) obtained by weighting the station and regression estimates. The weighting procedure and analysis of observed peak data are described later in the section "Magnitude and Frequency of Floods at Gaged Sites" (p. 28). The best estimate of the Q_{50} for the gaging station on Middle Fork Koyukuk River near Wiseman is the weighted estimate, 22,800 ft^3/s.

The drainage area of the ungaged site (A_u), Middle Fork Koyukuk River at Coldfoot, is 1,420 mi^2 and the drainage area of the gaged location (A_g), Middle Fork Koyukuk River near Wiseman, is 1,200 mi^2. The drainage area at the ungaged stream location is between 50 and 150 percent of the drainage area at the gaged location.

The weighting factor to be applied to the estimate of the Q_{50} from the regression equation at the ungaged location is calculated as follows:

$$r_w = r - \frac{2\Delta A}{A_g}(r-1)$$

where $$r = \frac{Q_T\,(\text{weighted at gaged site})}{Q_T\,(\text{regression at gaged site})} = \frac{22,800}{22,600} = 1.009$$

Q_T(regression at gaged site) is the T-year flood estimated at the gaged site determined by a regional regression equation,
Q_T(weighted at gaged site) is the T-year flood obtained by weighting the station and regression estimates,
ΔA is $|A_g - A_u|$,
A_g is the drainage area gaged, and
A_u is the drainage area ungaged.

Substitute:

$$r_w = \frac{22,800}{22,600} - \frac{(2)\,|1,200 - 1,420|}{1,200}\left(\frac{22,800}{22,600} - 1\right) = 1.006$$

The T-year peak discharge at the ungaged site on the Middle Fork Koyukuk River at Coldfoot is the determined by the equation:

$$Q_T = [Q_T(\text{regression at ungaged site})]\,(r_w),$$

Substitute:

$$Q_{50} = (25{,}700)\,(1.006) = 25{,}800\ \text{ft}^3/\text{s}.$$

Accuracy and Limitations

The accuracy of the estimating equations in table 2 is expressed as average standard error of prediction (log units and percent), range of standard error of prediction in percent, and average equivalent years of record. The average standard error of prediction as used in this report differs from the standard error of the regression because it indicates the error in the regression equation as well as the sampling error. The standard error of prediction is a measure of how well the discharges determined by the equations compare with the discharges at ungaged sites. Because of the transformation of the variables to corresponding base 10 logarithmic values before regression analysis, the average standard error of prediction was determined in log units and was converted to percent and average equivalent years of record by techniques given by Hardison (1971). On the average, two-thirds of the observations of discharge at ungaged sites lie within one standard error of prediction (expressed in log units) of corresponding values computed by the equations. For example, the average standard error of prediction for the Q_{100} equation in flood-frequency area 3 is 0.256 log

unit. This means that two-thirds of the time, logarithms of the Q_{100} values at ungaged sites will be within 0.256 log units of the logarithms of the Q_{100} values computed from the equation for flood-frequency area 3. The standard error of 0.256 log unit was converted to 64 percent by the conversion table in Hardison (1971). The average standard error of prediction in log units was also converted to average equivalent years of record by using Hardison's equation:

$$N_U = R^2\left[\frac{\bar{I}_v}{SE_p}\right]^2$$

where N_U is equivalent years of record,

R is a factor which is a function of the recurrence interval T and skewness (Hardison, 1971),

$\bar{I}_v$ is the index of variability equal to average standard deviation of logarithms of annual events at all sites in a given region, and

SE_p is the standard error of prediction in log units.

Using this equation and $\bar{I}_v$ (table 1) for stations in flood-frequency area 3, the average standard error of prediction (0.256 log unit) was converted to an accuracy equivalent of 4 years. Thus, the estimate of a 100-year peak discharge at a site in flood-frequency area 3 computed from the estimating equation has an accuracy similar to that obtained by flood-frequency analysis of 4 years of peak-discharge data collected at the site. The overall measure of predictive ability is average equivalent years of record.

The estimating equations are not applicable to the estimation of flood peak discharges at sites located on alluvial fans. The flood discharge will increase with drainage area to the base of the mountains and from that location may decrease or not increase at the same rate as in the upper part of the basin.

Methodology is not given in this report for estimating flood magnitude and frequency at ungaged urban streams. A nationwide study of flood magnitude and frequency in urban areas (Sauer and others, 1983), which may be applicable to Alaska, describes methods of estimating urban flood flow characteristics in ungaged areas. Methods for estimating the magnitude and frequency of floods for urban gaged streams in the Anchorage area are reported by Brabets (1986).

Statistics of the basin characteristics used in developing the flood-frequency area equations are also given in table 2. The equations are valid at sites where the basin characteristics are within the range of the variables shown in the table. Caution should be used when the basin characteristics of the ungaged site are outside the range of those used to develop the equations, because the standard error of prediction may be appreciably larger than that reported in table 2.

The reliability of flood-frequency estimates is uncertain for extreme or extraordinary floods having very large return periods (National Research Council, 1988). Estimating equations for the 200- and 500-year recurrence intervals are provided, but include large uncertainty in estimates of these extreme flood discharges.

FLOOD-FREQUENCY ANALYSIS

Drainage Basin Characteristics

Climatic and physical characteristics of the drainage basins for the stations listed in table 5 (p. 77), which were determined using methods of Thomas and Benson (1970) and U.S. Geological Survey (1978, p. 7-1 to 7-19), are summarized in table 2. Climatic characteristics were determined from plates 1 and 2 and are described later in the "Precipitation Map" section (p. 34). Mean minimum January temperatures shown on plate 1 were developed for Alaska by Hartman and Johnson (1984, p. 71) and for the Yukon Territory and the Taku and Stikine River basins, Canada by Wahl and others (1987, p. 166).

Physical characteristics were computed from the latest available U.S. Geological Survey topographic maps and Canada Department of Mines and Resources maps. U.S. Geological Survey topographic maps of Alaska are based on Universal Transverse Mercator Projection, scales 1:63,360 and 1:250,000, and aerial photographs taken from 1957 through 1972. Canada Department of Mines and Resources topographic maps use the Universal Transverse Mercator Projection, scale 1:250,000, and aerial photographs taken from 1957 through 1972.

Methods recommended by the U.S. Geological Survey (1978, p. 7-1 to 7-19) include planimetering areas or using grid-sampling points to determine physical characteristics of drainage basins. The scale of the map determines the accuracy of the measurement of a physical basin characteristic. The grid size is selected to provide a minimum of 50 points within a drainage basin boundary. The grid size is selected so that a sufficient number of features, such as line contour intersections, fall within the grid. Several grid sizes are used depending on basin size and map scales available. A 1:63,360 scale map depicts the number and area of lakes and ponds, forests, and glaciers in more detail than does a 1:250,000 scale map. Measurement accuracy is described by the U.S. Geological Survey (1978, p. 7-6 to 7-8).

Basin characteristics are defined as follows:

Drainage area (A), in square miles, is the total drainage area upstream from the location on the stream. The symbol "A_g" is the total drainage area upstream from a gaged location. "A_u" is the total drainage area upstream from an ungaged location. The area is measured in a horizontal plane and is enclosed by a drainage divide. Standard procedures developed by the Federal Interagency River Basin Committee (1951) were used to compute drainage areas. Relative standard error of estimate is 5 percent (U.S. Geological Survey, 1978, p. 7-9 to 7-10).

Main channel slope (S), in feet per mile, is the average slope between points 10 percent and 85 percent of the distance along the main stream from the location on the stream to the basin divide. Relative standard error of estimate is 5 percent (U.S. Geological Survey, 1978, p. 7-15 to 7-16).

Main channel length (L), in miles, is the length of the main channel between the location on the stream and the basin divide measured along the channel that drains the largest basin (U.S. Water Resources Council, 1968, p. 9-10). Relative standard error of estimate is 5 percent (U.S. Geological Survey, 1978, p. 7-15).

Mean basin elevation (E), in feet (National Geodetic Vertical Datum of 1929), is the mean elevation of the drainage basin determined by the grid-sampling method from topographic maps. Relative standard error of estimate is 5 percent (U.S. Geological Survey, 1978, p. 7-12).

Area of lakes and ponds (ST), in percent, is the percentage of the total drainage area shown as lakes and ponds on the topographic maps and represents the conditions at the time the aerial photographs were taken to make the maps. Areas are determined by using a planimeter or by the grid-sampling method from topographic maps having a blue overprint which indicates lakes and ponds. Area is determined to the nearest 0.1 percent. Relative standard error of estimate is 10 percent (U.S. Geological Survey, 1978, p. 7-13).

Area of forests (F), in percent, is the percentage of the total drainage area shown as forested on the topographic maps. Areas are determined by using a planimeter or by the grid-sampling method from topographic maps having a green overprint which indicates forest cover. Area is determined to the nearest 1.0 percent. Relative standard error of estimate is 10 percent (U.S. Geological Survey, 1978, p. 7-13).

Area of glaciers (GL), in percent, is the percentage of the total drainage area shown as perennial snow or ice on the topographic maps and represents the conditions at the time the aerial photographs were taken to make the maps. These maps may not represent the current conditions. Area of glaciers is determined by using a planimeter or by the grid-sampling method from topographic maps. Area is determined to the nearest 1.0 percent. Relative standard error of estimate is 10 percent (U.S. Geological Survey, 1978, p. 7-13).

Mean annual precipitation (P), in inches, as determined from an equal-precipitation map (plate 2 in this report) using the grid-sampling method. The mean annual precipitation is the average value for the entire drainage area. Precipitation is determined to the nearest 1.0 in. The base map used for plate 2 is a polyconic projection published in 1954 at a scale of 1:2,500,000 (U.S. Geological Survey Map E) (Snyder, 1987, p. 64-65).

Mean minimum January temperature (J), in degrees Fahrenheit, as determined from an equal-temperature map (plate 1 in this report) using the grid-sampling method. The mean minimum January temperature is the average value for the entire drainage area. Temperature is determined to the nearest 1.0 ^{o}F. The base map used for plate 1 is a polyconic projection published in 1954 at a scale of 1:2,500,000 (U.S. Geological Survey Map E) (Snyder, 1987, p. 64-65).

Flood Characteristics

Floods in Alaska and conterminous basins of Canada result from rainfall, snowmelt runoff, a combination of rainfall on snow, sudden release of channel blockage by snow or ice (ice-jam floods), failure of natural dams, and rapid melting of snow and ice during volcanic eruptions. Extreme floods in coastal maritime areas (flood-frequency area 1) of British Columbia and Alaska occur in the fall and winter, and are caused by rainstorms from large-scale atmospheric circulation patterns (Melone, 1985). Rain on snow may induce the most extreme floods recorded in nival regions, particularly in temperate coastal mountains (Church, 1987). In the rest of Alaska (flood-frequency areas 2 and 3), areawide floods have resulted either from snowmelt or local rains in spring, or from widespread summer rains (Lamke, 1991). Extreme floods on small streams draining the mountains of flood-frequency area 3 are caused by severe thunderstorm activity. Streamflow in the Yukon Territory (flood-frequency areas 4 and 5) is characterized by peak flows in the spring or summer caused by snowmelt or glacial inputs and secondary peaks caused by summer rainfall (Janowicz, 1990). Ice-jam floods occur throughout the Yukon Territory (National Research Council Canada, 1989, p. 30-31), primarily during spring breakup, and are perhaps the most severe type of flooding in the Yukon Territory (Janowicz, 1990; Gerard and others, 1992). Maximum runoff rates from rainfall-induced extreme floods are greater than those from snowmelt-induced floods.

Maximum Known Floods

Maximum known peak discharges for gaging stations and crest-stage partial record sites, and measurements of miscellaneous peak flows in Alaska and conterminous basins of Canada are listed in table 6 (p. 90). The maximum runoff rates provide an index for comparison of flood peaks between sites (Crippen, 1982; Melone, 1985; Costa, 1987b). The sites are listed in downstream order, grouped by flood-frequency areas (fig. 2) and hydrologic regions (fig. 1) (Seaber and others, 1984). Envelope curves of maximum known floods for each of the five flood-frequency areas are shown on figures 3-7. Peak discharges estimated from regression equations can be evaluated by comparison with maximum known peak discharges for streams having similar drainage areas in the same flood-frequency area. Rainfall- and snowmelt-produced flood peak discharges should be plotted on figures 3-7 to determine if they exceed the envelope curve of maximum known floods. Maximum known floods affected by the failure of natural dams such as glacier-dammed lake-outburst floods, landslide dams, snow avalanche dams, or debris flows commonly plot above the envelope curves.

According to Costa (1987a), the most common types of natural-dam failures that have produced large floods are the failures of ice dams, morainal dams, volcanic flow dams, landslide dams, and snow-avalanche dams. Post and Mayo (1971) described the formation and failure of glacier-dammed lakes and outburst floods in Alaska. Floods from formation and failure of landslide dams in Alaska are discussed by Jones and Zenone (1988) and those flood discharge values are included in this report on figures 3-7 and table 6. Flood surges resulting from the failure of snow avalanche dams are discussed by Butler (1989) and Martinec (1989).

A maximum evident flood is defined by Childers (1974) as that flood which produces "the highest flood debris, washlines on steep banks, and channels swept clear of vegetation." If large floods have occurred in the recent past (within the last 50 years), floodmarks are usually evident (Childers and Kernodle, 1981). Maximum evident floods in Alaska determined by Childers (1974), Childers and others (1979), Childers and Kernodle (1981), and Kernodle and others (1983) are shown on table 6.

Magnitude and Frequency of Floods at Gaged Sites

Annual peak-flow data from 260 gaging stations and crest-stage partial-record sites in Alaska and from 72 stations in conterminous basins of Canada (plate 1) were analyzed by techniques described in Bulletin 17B (Interagency Advisory Committee on Water Data [IACWD], 1982) and by Tasker (1978) to determine peak-flow statistics for each location (table 1). For these analyses, sites having at least 8 years of peak-flow data were used to fit a Pearson Type III distribution to the logarithms of annual peak discharges. The criterion for including the site in the computation of peak flow-statistics was reduced to 8 or more annual peaks, because the period of record for many small streams was less than 10 years. This criterion allowed a more representative sample of small streams to be included in the computation of peak-flow statistics. Historical peaks and high outliers were given appropriate weight, low outliers were censored, series with zero flood-flow years were adjusted, and station skew was weighted with generalized skew values from table 4 (IACWD, 1982).

The technique for fitting a Pearson Type III distribution to observed logarithms of annual peak discharges is to compute the base 10 logarithm of the discharge (Q) at a selected exceedance probability (P) using the equation:

$$\log Q = \bar{x} + KS,$$

where $\bar{x}$ is the mean of the logarithms of the annual peak discharges,
S is the standard deviation of the logarithms of the annual peak discharges, and
K is a function of the weighted skew coefficient (G_w) and the selected exceedance probability (P).

Values of K can be obtained from Bulletin 17B (IACWD, 1982). A summary of the statistics of the logarithms of the annual peak discharges used in developing flood-frequency curves for the gaged sites is shown in table 1.

A flood-frequency analysis defines the relation of flood-peak magnitude to exceedance probability or to recurrence interval. A 50-year recurrence interval flood is a discharge that will be exceeded, on average, once every 50 years, or, in other words, have a 0.02 probability of being exceeded in a given year. Because annual floods are random events, the occurrence of a 50-year flood in one year does not exclude the possibility that a flood of equal or greater magnitude will occur in the following year.

Results of flood-frequency analysis of observed annual peaks at 332 individual stations through the 1990 water year in Alaska and through the 1984 calendar year for conterminous basins of Canada are given in table 3. Peak discharges having recurrence intervals of 2, 5, 10, 25, 50, 100, 200, and 500 years estimated by analysis of the observed data using weighted skew are shown in table 3 as the upper number for each station. Because the T-year flood estimated from the Pearson Type III distribution of the logarithms of the annual peak discharges and the corresponding estimate from the regression equations (table 2) are considered to be independent, a technique for weighting the two estimates is recommended (IACWD, 1982). The best estimate of flood magnitude at a selected recurrence interval for a gaged location is obtained using the equation:

$$\log Q_T = \frac{(\text{sta yrs rec})\ (\log \text{sta } Q_T) + (\text{eq yrs rec})\ (\log \text{reg } Q_{TR})}{(\text{sta yrs rec}) + (\text{eq yrs rec})},$$

where log sta Q_T (log station Q_T) is the upper number for each site in table 3 converted to a logarithm,
sta yrs rec (station years of record) is determined from table 1,
log reg Q_{TR} (log regression Q_{TR}) is computed as the logarithm of the discharge computed by the estimating equations in table 2 or obtained from table 3 (middle number), and
eq yrs rec (equivalent years of record, which is the accuracy of the regression equation) is determined from table 2.

The antilog of the calculated log Q_T is the best estimate of flood magnitude at a selected frequency. Weighted estimates of flood magnitude and frequency at each of the stations used in the regression analysis are shown as the lower number in table 3.

Regional Regression Analysis

Regional flood estimates for sites on ungaged natural streams are based on multiple-regression techniques that relate flood discharges of selected recurrence intervals to basin physical and climatic characteristics. Annual peak-discharge data and basin characteristics for 332 continuous-record and crest-stage partial-record stations having at least 8 years of natural flow record in Alaska and conterminous basins of Canada were used in a cluster analysis to define five flood-frequency areas having similar flood-frequency characteristics. Calculations for the regional cluster analysis were made using Statistical Analysis System procedures (Helwig and Council, 1979). The median flood for 332 stations in Alaska and conterminous basins of Canada was used to compute a regression equation for the entire area using basin characteristics that were significant at the 10 percent level. Actual median floods at each station were compared with predicted values to determine how to divide Alaska and Canada into flood-frequency areas. Delineations of the five flood-frequency area boundaries were verified by comparison with hydrologic regions as defined by Janowicz (1984) and Canada Department of Indian and Northern Affairs (1984), an analysis of hydrologic regions (Seaber and others, 1984), climate zones of Alaska (Hartman and Johnson, 1984), and climate regions of the Yukon (Wahl and others, 1987).

Flood-frequency data for large and small streams were analyzed together in the regional regression analysis to strengthen the discharge area relation and to use the predominantly longer periods of record on the larger streams. This was done to minimize the time sampling error described by Hardison (1971).

Criteria

The regional regression analyses are based on data from stations having 8 or more years of peak discharge data prior to October 1, 1990 in Alaska and January 1, 1985 in conterminous basins of Canada. At-site flood peak discharge data were used from stations on unregulated streams; on non-urban streams; and on streams unaffected by (1) failure of natural dams, (2) sudden releases of channel blockage by snow and ice, or (3) rapid melting of snow and ice during volcanic eruptions. Stations having 8 or more years of peak discharge data of questionable accuracy or of undefinable drainage area were excluded from this regional regression analysis.

The annual maximum instantaneous discharges were used in the flood-frequency analysis for most stations included in the regression analyses. However, instantaneous peak discharges were not determined for every year of record at most Canadian stations and at all stations on large rivers in Alaska. When the instantaneous peak discharge was not available, the annual maximum daily discharge was entered into the peak-flow data for that year. These maximum daily discharges were used in the frequency analysis for the station only if the maximum daily discharges were 90 percent or more of the concurrent instantaneous peaks for those years where both values were available. Only instantaneous maximums were used for 31 Canadian stations having drainage areas ranging from 13.2 to 96,000 mi^2. The mixed records of both instantaneous and maximum daily peak discharges were used at another 31 Canadian stations at which more than half the values were instantaneous peaks (drainage areas ranged from 100 to 30,000 mi^2). Mixed records were used at 10 Canadian stations at which less than half the annual values were instantaneous values (drainage areas ranged from 2,000 to 102,000 mi^2). The Yukon River above Whitehorse and the Takhini River near Whitehorse, Yukon Territory have instream flow regulations that do not affect the annual maximum daily discharges, and these peak values were used in their flood-frequency analyses.

Generalized Skew Coefficients

Estimates of the peak discharge for large recurrence intervals are sensitive to the value of skew coefficients. The coefficient of skewness used in fitting the log-Pearson Type III distribution for single at-site stations are biased and subject to large sampling errors when computed for short periods of flood data. The accuracy of the estimated skew coefficient can be improved by weighting the at-site station skew coefficient with the generalized skew coefficient. The IACWD (1982) recommends using a generalized estimate of skew coefficient for regional regression analysis.

Three methods recommended by the IACWD (1982) were evaluated for estimating skew of the log-Pearson Type III distribution in Alaska and conterminous basins in Canada: (1) constructing a map showing lines of equal skew coefficients for the study area, (2) developing a prediction equation relating skew to basin physical and climatic characteristics, and (3) using a generalized-mean skew. Errors in individual at-site station skew coefficients computed from peak-flow records were compared with errors in generalized skew coefficients determined using these methods to define the best results. The third method, generalized-mean skew, was used in determining peak-discharge statistics for each station to develop the flood-frequency equations for the five flood- frequency areas. A brief explanation of the results of applying the three methods follows.

(1) Map showing equal skew coefficients. Station skews for 332 gaging stations and crest-stage partial record sites were plotted on a map of Alaska and conterminous basins of Canada. Stations having 8 years or more of peak discharges were evaluated for regional trends. Plotted skew coefficients were found to be to sparse in areal extent and had no areal, topographic, or climatological trends to develop contours; thus, the skew map was not developed.

(2) Prediction equations. A set of prediction equations for estimating generalized skew was developed for each flood-frequency area by computing generalized least-squares regression analysis to relate at-site station unbiased skews to basin physical and climatic characteristics (Tasker and Stedinger, 1989). The characteristics considered were drainage area, main channel slope, stream length, mean basin elevation, percentage of basin having lakes and ponds, percentage of basin having forest cover, percentage of basin containing ice and perennial snow, mean annual precipitation, and mean minimum January temperature. The prediction equations for estimating generalized skew did not significantly improve the accuracy of the equations for estimating the magnitude and frequency of floods.

(3) Generalized-mean skew. Generalized-mean skews were determined using the following procedure. The study area was divided into five flood-frequency areas on the basis of a cluster analysis (Helwig and Council, 1979; Tasker, 1982) of peak-flow statistics from 332 stations in Alaska and conterminous basins of Canada. Drainage area boundaries were followed except for the upper Alsek and Yukon River basins in Canada, which were divided into flood-frequency areas 4 and 5.

Peak-flow records at 82 gaging stations and crest-stage partial-record stations in Alaska having 22 or more annual peaks through 1987 water year and 31 gaged locations in Yukon Territory and British Columbia, Canada having 22 or more annual peaks through 1984 calendar year were selected for computing unbiased station skews. Different periods of record and ending years of peak-flow data were used for Alaska and Canada because of the availability of records at the time the regional skew analysis and regional regression analysis were completed. The criterion for including the site in the regional skew analysis was reduced to 22 or more annual peaks, because the period of record for most small streams was less than 25 years. This criterion allowed a more

representative sample of small streams to be included in the determination of generalized-mean skew.

Stations used to determine generalized skew are listed in table 1. Unbiased station skews range from -2.632 to 2.731 (table 4). The standard error of generalized skew ($SE_{\overline{G}}$) in table 4 expresses the reliability of the generalized skew estimate and determines the relative weights to be put on the generalized skew ($\overline{G}$) and the unbiased station skew (G_g) in computing the weighted skew estimate (G_w) (IACWD, 1982). Estimates of station skew are sensitive to extremely high and low peak discharges in the annual flood series. Historical peaks and high outliers were used in the analysis; low outliers and zero flow years were censored and the frequency curve was appropriately adjusted.

Station skew, G, is a biased estimate of the population skew coefficient (Wallis and others, 1974). A nearly unbiased estimate, G_g, of the population skew coefficient can be computed by multiplying G times a biased correction factor (Tasker and Stedinger, 1986):

$$G_g = \left(1 + \frac{6}{n}\right)G$$

This unbiased estimate of station skew is based on a correction for the length of record, n. Station skews for each station were weighted for relative length of record, n, in the computation of the generalized skews for each flood-frequency area. Values are shown in table 4.

Flood-frequency areas 1, 2 and 5 have the lowest standard error of generalized skew and the most extensive areal distribution of station skews. Flood-frequency areas 3 and 4 have the highest standard error of generalized skew. These areas have a biased areal distribution with 31 stations located in the Yukon Region and Copper River Basin, one station in the Southwest Region, three stations in the Northwest Region and none in the Arctic Region. Although regional skew analysis indicates lower station skews in the Southwest, Northwest and Arctic Regions, insufficient station data exist to subdivide flood-frequency area 3.

Multiple Regression Analysis

Equations were developed to estimate flood magnitudes at 2-, 5-, 10-, 25-, 50-, 100-, 200- and 500-year recurrence intervals from basin characteristics at ungaged sites for the five flood-frequency areas. Flood magnitudes for specific recurrence intervals (table 3, upper number) and basin characteristics (table 5) for 260 gaged locations in Alaska and 72 gaged locations in Canada having at least 8 years of natural flow were analyzed using generalized least squares procedures (Stedinger and Tasker, 1985; Tasker and Stedinger, 1986) to develop the equations (table 2). These equations can be used to estimate the magnitude and frequency of floods on unregulated streams, nonurban streams, or streams unaffected by failure of natural dams or volcanic eruptions.

Independent variables (basin characteristics) and dependent variables (peak-flow statistics) were transformed to base 10 logarithms before analysis by generalized least squares regression procedures, and the equations were developed in log-linear form. Equations for estimating flood frequency are presented so that information from sites where peak data are available can be transferred to ungaged locations. These equations, which relate the most significant basin characteristics to peak discharge at specific recurrence intervals, are of the form:

$$\log Q_T = \log a + b \log A + c \log B + d \log C + \ldots . n \log N \text{ or}$$

$$Q_T = a A^b B^c C^d \ldots N^n,$$

where Q_T is the flood magnitude, in cubic feet per second, having a recurrence interval of T-years;

a is the regression constant;

$A, B, C \ldots . N$ are the basin characteristics; and

$b, c, d \ldots . n$ are the regression coefficients.

The generalized least squares procedures provide regression coefficients that are estimated by taking into consideration the time-sampling error in the peak-flow statistics and the cross-correlation between gaged sites. The average standard error of prediction (in log units and percent) (table 2) for ungaged sites includes both temporal- and spatial-sampling errors and can be partitioned into average model error and average sampling error.

Weisberg (1985) and Myers (1986) recommend selection of the best model as the regression equation with the smallest PRESS (Predicted Sum of Squares) statistic (see "Glossary"). A form of model validation, very much in the spirit of data splitting, is the computation of the PRESS statistic (Myers, 1986). For each of the five flood-frequency areas, the equations with the smallest PRESS statistic and logical regression coefficients were chosen to estimate flood magnitudes at recurrence intervals of 2, 5, 10, 25, 50, 100, 200, and 500 years shown in table 2.

Nine basin physical and climatic characteristics (table 5) were used in the generalized least squares regression analysis. The physical and climatic characteristics determined to be the most significant were drainage area, mean annual precipitation, area of lakes and ponds, mean basin elevation, area of forest, and mean minimum January temperature. Basin characteristics were selected by computing the regression equation with the smallest PRESS statistic.

Mean minimum January temperature was found to be a significant basin characteristic in flood-frequency areas 1, 2, and 5. The positive exponent on the variable (J+32) indicates the effects of winter temperatures on winter floods, such as rainstorms or rain on snow. Plate 1 shows that flood-frequency area 1 has higher winter temperatures on island and coastal maritime areas, which cause higher winter floods to occur, and lower winter temperatures on the mainland, which cause lower winter floods to occur. In flood-frequency area 2, the negative exponent on the variable (J+32) indicates areas of more extensive permafrost and tends to compute higher flood peak discharges. In flood-frequency area 5, the negative exponents on the basin characteristics of mean minimum January temperature (J+32) and forest area (F+1) indicate the presence or absence of permafrost. Lower values of mean minimum January temperature and forest area indicate areas of more extensive permafrost and tend to compute higher flood discharges. The magnitude of a flood is greater in a permafrost area than in a non-permafrost area because of the proximity to the surface of the impermeable frozen soil. The presence of forested terrain in permafrost areas is a measure of the effect of the active layer (Lamke, 1978). A value of 32 is added to mean minimum January temperature to avoid zero or negative values.

Residual errors (difference between observed and computed values) were plotted on a map to investigate areal bias in the estimating equations for each flood-frequency area. These plots showed no significant regional trends. Residual errors plotted as a function of drainage area for each of the flood-frequency areas validated the applicability of the equations to small and large streams.

PRECIPITATION MAP

The diverse physiography and climate in Alaska and in conterminous basins of Canada cause precipitation to vary significantly with latitude from south to north, with distance from the Gulf of Alaska, and with elevation. The mean annual precipitation ranges from more than 300 in. along islands and coastal areas of southeast Alaska to less than 7 in. along the Arctic coast. Mean annual precipitation is the most significant climatic characteristic for estimating floods.

A regionalized mean annual precipitation map for the period 1951-80 for Alaska west of longitude 141° (plate 2) was developed by analysis of data from climatological stations, snow survey data, and runoff from streamflow stations. Lines of mean annual precipitation were drawn using data from 304 climatological stations, 102 snow surveys, and 223 streamflow stations in Alaska west of longitude 141°. Climatological stations with short periods of record were adjusted to the 30-year normal period 1951-80, as recommended by the World Meteorological Organization (1983). The lines of mean annual precipitation for southeast Alaska, 1941-70, are based on information from Schwartz and Miller (1983, p. 13); those for conterminous basins of Canada, 1951-80, are from Wahl and others (1987, p. 209). Mean annual precipitation lines were modified to create uniform intervals and smooth lines along the Coast Mountains in southeast Alaska, the St. Elias Mountains, and the Alaska-Canada border equivalent to 141° longitude.

SUMMARY

Methods for estimating the magnitude and frequency of floods on unregulated streams, nonurban streams, and streams having no history of failure of natural dams in Alaska and conterminous basins of Canada are given in this report. A log-Pearson Type III frequency distribution was used to develop flood-frequency curves for the at-site individual stations. Alaska and conterminous basins of Canada were divided into five flood-frequency areas, and a set of equations for estimating peak discharges with recurrence intervals of 2, 5, 10, 25, 50, 100, 200, and 500 years was developed for each area. Peak-discharge and basin-characteristics data from 260 gaging stations and crest-stage partial-record stations in Alaska and 72 gaged locations in Canada were used in multiple-regression analysis to develop the equations. Basin characteristics shown to be significant in estimating flood magnitude include drainage area, mean annual precipitation, percentage area of lakes and ponds, mean minimum January temperature, mean basin elevation, and percentage area of forest. Average standard error of prediction ranged from 26 to 77 percent. Maximum known floods at 722 sites in Alaska and conterminous basins of Canada are tabulated.

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GLOSSARY

Annual peak discharge, Q. The maximum instantaneous discharge at a site on a stream. The maximum instantaneous discharges for Alaska streams are determined during the water year, October through September. The maximum instantaneous discharges for Canadian streams are determined for the calendar year.

Equivalent years of record, N_U. Number of actual years of peak discharge record needed at an ungaged site to provide an estimate equal in accuracy to the standard error of prediction, SE_p.

Exceedance probability, *P.* The chance, in any 1-year period that the annual peak discharge will exceed a specified magnitude. The reciprocal of recurrence interval.

Generalized least squares regression, GLS. A technique using multiple regression analysis to relate peak-flow characteristics to basin physical and climatic characteristics, and taking into account variable record lengths and cross-correlation between concurrent flows at different sites.

Generalized skew, $\overline{G}$. Skew coefficients derived by a procedure that integrates skew coefficients obtained at many locations within a given area.

Mean logarithmic standard deviation, $\overline{I_v}$. Average index of variability equal to standard deviation of logarithms of annual events.

Multiple regression analysis. A statistical technique by which a relation between a dependent variable and two or more independent variables is derived.

n. Number of years of peak discharge record.

Nival. Characterized by or living in or under snow, or pertaining to a snowy environment.

Outlier. Data points of extreme events which depart from the trend of other data points.

PRESS statistic. Predicted residual sum of squares: $\sum \hat{e}^2_{(i)}$.

R. Factor that is a function of recurrence interval T and skewness.

Recurrence interval, T. The average interval of time, in years, within which a given flood will be exceeded once. The reciprocal of exceedance probability.

Skew coefficient. Numerical measure or index of the lack of symmetry in a frequency distribution. It is a function of the third moment of magnitudes about their mean, which is a measure of asymmetry. Also called coefficient of skewness.

Standard error of generalized skew, $SE_{\overline{G}}$. Standard error of sample skew coefficient is an estimate of the standard deviation of station skews. The standard error expresses the reliability of the generalized skew estimate and determines the relative weights to be put on the generalized and station skews in computing the weighted skew estimate recommended by the Hydrology Subcommittee.

Standard error of prediction, SE_p. The average standard error of prediction as used in this report differs from the standard error of estimate of the regression in that it includes the error in the regression equation as well as the sampling error. The standard deviation, adjusted for degrees of freedom, of the residual errors (differences between observed and computed values) about the regression relation used to predict the dependent variable. Approximately two-thirds of the data values are included within one standard error of estimate assuming the errors are normally distributed.

Station skew. Skew coefficient of the logarithms of annual peak discharge values available for the period of record at a streamflow gaging station or crest-stage gage site. G is a biased estimate of the population skew coefficient; G_g is a nearly unbiased estimate of the population skew coefficient.

Weighted skew, G_w. Skew coefficient computed by combining the generalized skew and station skew in inverse proportion to their individual mean-square errors.

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984

[AK, Alaska; BC, British Columbia; YT, Yukon Territory;
$\overline{G}$, generalized skew; $SE_{\overline{G}}$, standard error of generalized skew; $\bar{I}_v$, mean logarithmic standard deviation;
*stations used to determine generalized skew]

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 1 -- SOUTHEAST ($\overline{G}$ = 0.31, $SE_{\overline{G}}$ = 0.49, $\bar{I}_v$ = 0.15)				
15010000	Davis River near Hyder AK	10	4.069	0.174	0.189
15011500	Red River near Metlakatla AK	14	3.930	0.107	-0.014
15012000*	Winstanley Creek near Ketchikan AK	29	3.095	0.180	0.629
15015590	Unuk River near Stewart BC	18	4.420	0.177	0.094
15022000*	Harding River near Wrangell AK	37	3.820	0.142	0.391
15024750	Goat Creek near Wrangell AK	9	3.255	0.280	0.473
15026000*	Cascade Creek near Petersburg AK	35	3.213	0.126	0.340
15028300	Farragut River near Petersburg AK	11	4.077	0.162	-0.069
15031000	Long River above Long Lake near Juneau AK	9	3.232	0.136	0.572
15034000*	Long River near Juneau AK	27	3.504	0.143	0.508
15036000	Speel River near Juneau AK	16	4.272	0.141	0.515
15038000	Crater Creek near Juneau AK	9	3.293	0.132	0.258
15040000*	Dorothy Creek near Juneau AK	35	2.939	0.159	0.441
15044000	Carlson Creek near Juneau AK	10	3.581	0.081	0.205
15048000*	Sheep Creek near Juneau AK	30	2.667	0.143	0.291
15050000*	Gold Creek at Juneau AK	39	3.127	0.145	0.432
15052000*	Lemon Creek near Juneau AK	22	3.190	0.120	0.522
15052500	Mendenhall River near Auke Bay AK	21	3.917	0.137	0.051
15052800	Montana Creek near Auke Bay AK	13	3.128	0.128	-0.028
15053800	Lake Creek at Auke Bay AK	10	2.656	0.201	0.295
15054000	Auke Creek at Auke Bay AK	15	2.225	0.173	0.091
15054500	Bessie Creek near Auke Bay AK	14	2.211	0.202	-0.061
15056100*	Skagway River at Skagway AK	23	3.700	0.205	0.594
15056200	West Creek near Skagway AK	16	3.439	0.180	0.655
15056210	Taiya River near Skagway AK	8	3.994	0.127	0.657
15056560	Klehini River near Klukwan AK	9	3.833	0.112	-0.053
15057500	William Henry Creek near Auke Bay AK	8	2.588	0.148	0.333
15058000	Purple Lake outlet near Metlakatla AK	8	2.685	0.116	0.274
15059500	Whipple Creek near Ward Cove AK	11	3.058	0.205	0.346
15060000*	Perseverance Creek near Wacker AK	25	2.638	0.103	0.085
15067900	Upper Mahoney Lake outlet near Ketchikan AK	12	2.786	0.150	0.185
15068000	Mahoney Creek near Ketchikan AK	19	3.132	0.156	0.173
15070000*	Falls Creek near Ketchikan AK	25	3.494	0.118	0.112
15072000*	Fish Creek near Ketchikan AK	69	3.462	0.107	0.262
15074000*	Ella Creek near Ketchikan AK	22	3.075	0.088	0.245

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued				
15076000*	Manzanita Creek near Ketchikan AK	29	3.452	0.121	0.090
15078000	Grace Creek near Ketchikan AK	15	3.450	0.100	0.059
15081490	Yatuk Creek near Klawock AK	9	2.836	0.135	-0.006
15081500	Staney Creek near Craig AK	14	3.978	0.145	0.025
15081580	Black Bear Lake outlet near Klawock AK	9	2.349	0.130	0.487
15081890	Natzuhini Creek near Hydaburg AK	9	3.234	0.145	0.181
15083500	Perkins Creek near Metlakatla AK	14	3.130	0.187	0.173
15085100*	Old Tom Creek near Kasaan AK	40	2.938	0.099	0.127
15085600	Indian Creek near Hollis AK	13	3.351	0.220	0.435
15085700	Harris River near Hollis AK	15	3.674	0.181	0.281
15085800	Maybeso Creek at Hollis AK	11	3.360	0.144	0.195
15086600	Big Creek near Point Baker AK	18	3.005	0.114	-0.108
15086900	Red Creek near Point Baker AK	10	3.068	0.084	0.194
15087250	Twin Creek near Petersburg AK	13	2.653	0.133	0.169
15087545	Municipal Watershed Creek near Petersburg AK	8	2.879	0.119	0.288
15087570	Hamilton Creek near Kake AK	15	3.947	0.205	-0.138
15087585	Twelvemile Creek near Petersburg AK	9	3.019	0.090	0.237
15087590	Rocky Pass Creek near Point Baker AK	10	2.687	0.183	0.489
15087690	Indian River near Sitka AK	10	3.555	0.131	0.219
15088000	Sawmill Creek near Sitka AK	20	3.589	0.178	-0.005
15093400	Sashin Creek near Big Port Walter AK	14	3.095	0.140	0.357
15094000	Deer Lake outlet near Port Alexander AK	16	2.771	0.137	0.401
15098000*	Baranof River at Baranof AK	25	3.463	0.145	0.709
15100000	Takatz Creek near Baranof AK	18	3.185	0.044	-0.167
15101500	Greens Creek near Juneau AK	12	3.099	0.209	-0.043
15102000	Hasselborg Creek near Angoon AK	17	3.147	0.093	0.536
15106920	Kadashan River above Hook Creek nr Tenakee AK	20	3.015	0.128	0.268
15106940	Hook Creek above tributary near Tenakee AK	13	2.849	0.217	0.022
15106960	Hook Creek near Tenakee AK	11	3.066	0.122	-0.102
15106980	Tonalite Creek near Tenakee AK	17	3.332	0.167	-0.171
15107000	Kadashan River near Tenakee AK	16	3.682	0.109	0.299
15108000*	Pavlof River near Tenakee AK	24	3.298	0.146	0.295
15108250	Game Creek near Hoonah AK	10	3.924	0.182	0.455
15109000	Fish Creek near Auke Bay AK	20	3.125	0.132	0.213
	FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL ($\bar{G}$ = 0.31, $SE_{\bar{G}}$ = 0.49, $\bar{I}_v$ = 0.15)				
15195000	Dick Creek near Cordova AK	11	3.295	0.053	0.378
15216000*	Power Creek near Cordova AK	43	3.456	0.194	-0.143
15219000	West Fork Olsen Bay Creek near Cordova AK	16	2.749	0.149	0.077
15219100	Control Creek near Cordova AK	11	2.753	0.175	0.431
15236200	Shakespeare Creek at Whittier AK	17	2.622	0.107	-0.135

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL--Continued				
15236900	Wolverine Creek near Lawing AK	13	2.925	0.170	0.349
15237400	Chalmers River near Cordova AK	13	3.430	0.083	-0.125
15238600*	Spruce Creek near Seward AK	25	3.241	0.219	0.121
15238820	Barabara Creek near Seldovia AK	18	2.887	0.230	0.188
15239050	Middle Fork Bradley River tributary near Homer AK	10	2.664	0.193	0.498
15295600	Terror River near Kodiak AK	10	3.237	0.182	0.198
15296000*	Uganik River near Kodiak AK	27	3.750	0.193	0.286
15297200*	Myrtle Creek near Kodiak AK	28	2.900	0.110	0.083
15297475*	Red Cloud Creek tributary near Kodiak AK	27	2.599	0.162	-0.012
	FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL ($\bar{G}$ = 0.55, $SE_{\bar{G}}$ = 0.74, $\bar{I}_v$ = 0.19)				
15239500*	Fritz Creek near Homer AK	28	2.065	0.361	0.014
15239800	Diamond Creek near Homer AK	19	1.836	0.244	0.723
15239900	Anchor River near Anchor Point AK	18	3.226	0.224	0.896
15240000	Anchor River at Anchor Point AK	19	3.405	0.216	1.036
15240500	Cook Inlet tributary near Ninilchik AK	16	1.725	0.193	0.373
15241600*	Ninilchik River at Ninilchik AK	23	2.762	0.201	0.228
15242000*	Kasilof River near Kasilof AK	26	3.911	0.103	0.177
15243950*	Porcupine Creek near Primrose AK	27	2.925	0.246	0.898
15244000	Ptarmigan Creek at Lawing AK	9	2.731	0.155	0.338
15246000	Grant Creek near Moose Pass AK	8	3.022	0.180	0.765
15248000*	Trail River near Lawing AK	27	3.578	0.131	0.530
15250000	Falls Creek near Lawing AK	9	2.372	0.275	0.233
15251800	Quartz Creek at Gilpatricks AK	8	2.232	0.285	0.945
15254000*	Crescent Creek near Cooper Landing AK	32	2.550	0.221	0.545
15260000	Cooper Creek near Cooper Landing AK	10	2.493	0.162	0.888
15266300*	Kenai River at Soldotna AK	25	4.294	0.109	0.439
15266500	Beaver Creek near Kenai AK	21	2.249	0.342	0.224
15267900	Resurrection Creek near Hope AK	18	3.108	0.204	0.567
15269500	Granite Creek near Portage AK	14	3.003	0.214	-0.039
15270400	Donaldson Creek near Wibel AK	10	1.829	0.246	0.094
15271000	Sixmile Creek near Hope AK	12	3.697	0.132	0.585
15271900	Cub Creek near Hope AK	15	1.464	0.153	0.278
15272530	California Creek at Girdwood AK	23	2.315	0.247	0.308
15272550	Glacier Creek at Girdwood AK	13	3.440	0.303	0.268
15273900*	South Fork Campbell Creek at canyon mouth near mouth near Anchorage AK	33	2.429	0.186	0.654

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued				
15274000	South Fork Campbell Creek near Anchorage AK	24	2.357	0.203	0.936
15274300	North Fork Campbell Creek near Anchorage AK	36	1.879	0.186	0.590
15276000*	Ship Creek near Anchorage AK	43	2.942	0.145	0.496
15277100	Eagle River at Eagle River AK	15	3.528	0.112	0.763
15277200	Meadow Creek at Eagle River AK	10	1.442	0.319	1.023
15277410	Peters Creek near Birchwood AK	11	2.816	0.188	0.107
15280000	Eklutna Creek near Palmer AK	8	3.238	0.105	0.732
15281000*	Knik River near Palmer AK	23	4.556	0.126	1.017
15282000*	Caribou Creek near Sutton AK	22	3.649	0.156	0.173
15282400	Purinton Creek near Sutton AK	21	1.533	0.328	-0.287
15283500	Eska Creek near Sutton AK	20	2.290	0.271	0.966
15284000*	Matanuska River at Palmer AK	27	4.390	0.115	0.224
15285000	Wasilla Creek near Palmer AK	15	2.147	0.266	0.676
15290000*	Little Susitna River near Palmer AK	42	3.305	0.202	0.435
15290200	Nancy Lake tributary near Willow AK	8	2.156	0.326	0.405
15291000*	Susitna River near Denali AK	26	4.245	0.109	1.054
15291100*	Raft Creek near Denali AK	28	1.977	0.121	-0.236
15291200*	Maclaren River near Paxson AK	26	3.749	0.102	0.537
15291500	Susitna River near Cantwell AK	14	4.511	0.144	0.295
15292000*	Susitna River at Gold Creek AK	41	4.677	0.132	0.375
15292392	Byers Creek near Talkeetna AK	10	2.685	0.333	0.121
15292400*	Chulitna River near Talkeetna AK	27	4.615	0.097	0.915
15292700*	Talkeetna River near Talkeetna AK	27	4.469	0.173	0.655
15292800	Montana Creek near Montana AK	10	3.526	0.182	1.195
15293000*	Caswell Creek near Caswell AK	25	2.006	0.285	1.020
15293700	Little Willow Creek near Kashwitna AK	8	3.174	0.185	1.115
15294005	Willow Creek near Willow AK	11	3.532	0.160	0.937
15294010	Deception Creek near Willow AK	8	2.722	0.136	-0.223
15294025	Moose Creek near Talkeetna AK	19	3.111	0.213	1.051
15294100	Deshka River near Willow AK	8	3.841	0.198	1.279
15294300*	Skwentna River near Skwentna AK	24	4.537	0.116	0.652
15294350	Susitna River at Susitna Station AK	16	5.288	0.087	0.478
15294450	Chuitna River near Tyonek AK	11	3.576	0.117	1.060
	FLOOD-FREQUENCY AREA 2 -- SOUTHWEST ($\overline{G} = 0.55$, $SE_{\overline{G}} = 0.74$, $\overline{I}_v = 0.19$)				
15297900	Eskimo Creek at King Salmon AK	17	1.921	0.362	-0.165
15300000*	Newhalen River near Iliamna AK	31	4.409	0.092	0.355
15300200	Roadhouse Creek near Iliamna AK	10	2.043	0.244	0.522
15300500	Kvichak River at Igiugig AK	17	4.506	0.112	0.063
15302000*	Nuyakuk River near Dillingham AK	31	4.291	0.104	-0.010

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 2 -- SOUTHWEST--Continued				
15302500	Nushagak River at Ekwok AK	13	4.865	0.134	0.155
15302900	Moody Creek at Aleknagik AK	19	1.444	0.125	0.549
15303000	Wood River near Aleknagik AK	13	4.143	0.136	0.637
15303010	Silver Salmon Creek near Aleknagik AK	22	2.093	0.212	0.263
15303150	Snake River near Dillingham AK	10	3.210	0.122	0.394
	FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL ($\overline{G}$ = 0.13, $SE_{\overline{G}}$ = 1.15, $\overline{I}_v$ = 0.25)				
15198500	Station Creek near Mentasta AK	18	2.217	0.311	-0.516
15199000*	Copper River tributary near Slana AK	28	1.746	0.400	-0.361
15200000*	Gakona River at Gakona AK	25	3.689	0.177	0.260
15200270	Sourdough Creek at Sourdough AK	12	2.483	0.414	-0.141
15200280	Gulkana River at Sourdough AK	8	3.940	0.105	0.222
15201000*	Dry Creek near Glennallen AK	28	1.882	0.592	-1.123
15201100*	Little Nelchina River tributary nr Eureka Lodge AK	25	1.684	0.307	-0.610
15201900	Moose Creek tributary at Glennallen AK	12	1.519	0.579	-0.200
15206000	Klutina River at Copper Center AK	18	3.846	0.061	-0.048
15208000*	Tonsina River at Tonsina AK	32	3.658	0.141	-0.022
15208100	Squirrel Creek at Tonsina AK	19	2.507	0.239	-0.027
15208200*	Rock Creek near Tonsina AK	23	1.678	0.318	-0.745
15209000	Chititu Creek near May Creek AK	11	2.560	0.176	0.918
15209100	May Creek near May Creek AK	11	1.733	0.280	-0.097
15211700	Strelna Creek near Chitina AK	20	2.347	0.217	-0.014
15211900	O'Brien Creek near Chitina AK	20	2.850	0.292	-0.116
15212000*	Copper River near Chitina AK	37	5.236	0.087	1.377
15212500*	Boulder Creek near Tiekel AK	26	2.359	0.228	1.176
15213400	Stuart Creek near Valdez AK	10	3.061	0.185	0.633
	FLOOD-FREQUENCY AREA 3 -- SOUTHWEST ($\overline{G}$ = 0.13, $SE_{\overline{G}}$ = 1.15, $\overline{I}_v$ = 0.25)				
15303600	Kuskokwim River at McGrath AK	11	4.709	0.137	-0.272
15304000*	Kuskokwim River at Crooked Creek AK	39	5.217	0.153	-0.039
15304200	Kisarlik River near Akiak AK	8	3.625	0.090	-0.595
	FLOOD-FREQUENCY AREA 3 -- YUKON ($\overline{G}$ = 0.13, $SE_{\overline{G}}$ = 1.15, $\overline{I}_v$ = 0.25)				
15438500	Bedrock Creek near Central AK	12	2.107	0.448	-0.126
15439800*	Boulder Creek near Central AK	25	2.472	0.320	0.598
15442500	Quartz Creek near Central AK	13	2.140	0.384	-0.483
15453481	West Fork Dall River tributary near Stevens Village AK	9	1.864	0.211	0.357
15453500	Yukon River near Stevens Village AK	43	5.690	0.084	0.605

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 3 -- YUKON--Continued				
15453610	Ray River tributary near Stevens Village AK	14	1.773	0.386	0.160
15457700	Erickson Creek near Livengood AK	18	2.452	0.255	-0.068
15457800	Hess Creek near Livengood AK	12	3.718	0.145	0.501
15468000	Yukon River at Rampart AK	43	5.679	0.099	0.654
15469900	Silver Creek near Northway Junction AK	10	1.546	0.511	0.550
15470000*	Chisana River at Northway Junction AK	22	3.895	0.068	0.817
15470300	Little Jack Creek near Nabesna AK	16	1.960	0.236	-0.040
15470330	Chalk Creek near Nabesna AK	16	2.130	0.234	0.364
15470340	Jack Creek near Nabesna AK	9	2.931	0.315	-0.331
15471000*	Bitters Creek near Northway Junction AK	25	2.076	0.333	0.622
15471500*	Tanana River tributary near Tetlin Junction AK	26	1.190	0.280	0.325
15473600*	Log Cabin Creek near Log Cabin Inn AK	25	2.131	0.343	-0.500
15473950	Clearwater Creek near Tok AK	17	2.501	0.377	-0.122
15476000*	Tanana River near Tanacross AK	38	4.490	0.063	0.659
15476049	Tanana River tributary near Cathedral Rapids AK	19	1.752	0.638	-1.246
15476050	Tanana River tributary near Tanacross AK	8	1.879	0.584	-0.791
15476200	Tanana River tributary near Dot Lake AK	17	1.819	0.210	-0.191
15476300*	Berry Creek near Dot Lake AK	27	2.867	0.273	0.143
15476400*	Dry Creek near Dot Lake AK	26	2.904	0.285	-0.551
15478000	Tanana River at Big Delta AK	8	4.690	0.068	0.030
15478010*	Rock Creek near Paxson AK	25	2.841	0.252	-0.479
15478040	Phelan Creek near Paxson AK	15	2.977	0.185	0.400
15478050	McCallum Creek near Paxson AK	24	2.660	0.162	0.317
15478500	Ruby Creek near Donnelly AK	18	2.156	0.475	-0.036
15480000*	Banner Creek at Richardson AK	27	2.327	0.429	-0.313
15484000*	Salcha River near Salchaket AK	39	4.218	0.228	-0.116
15490000	Monument Creek at Chena Hot Springs AK	21	2.557	0.347	-0.088
15493000	Chena River near Two Rivers AK	23	3.860	0.209	-0.336
15493500	Chena River near North Pole AK	9	3.742	0.261	-0.311
15511000	Little Chena River near Fairbanks AK	23	3.252	0.187	1.064
15514000*	Chena River at Fairbanks AK	32	3.976	0.235	0.230
15514500	Wood River near Fairbanks AK	8	3.623	0.081	0.329
15515500*	Tanana River at Nenana AK	28	4.914	0.082	1.073
15515800*	Seattle Creek near Cantwell AK	25	2.725	0.258	1.152
15515900	Lily Creek near Cantwell AK	15	1.923	0.286	-0.570
15516000*	Nenana River near Windy AK	28	3.828	0.111	0.230
15516050	Jack River near Cantwell AK	9	3.413	0.156	0.262
15516200*	Slime Creek near Cantwell AK	25	2.247	0.220	0.854
15518000*	Nenana River near Healy AK	28	4.331	0.133	0.385
15518100	Little Panguingue Creek near Lignite AK	10	1.801	0.318	-0.233

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 3 -- YUKON--Continued				
15518200	Rock Creek near Ferry AK	12	2.329	0.519	-0.063
15518250*	Birch Creek near Rex AK	25	1.949	0.370	-0.278
15518350	Teklanika River near Lignite AK	10	3.783	0.328	1.039
15519000	Bridge Creek near Livengood AK	10	2.309	0.408	0.513
15519200*	Brooks Creek tributary near Livengood AK	26	1.786	0.241	-0.086
15520000*	Idaho Creek near Miller House AK	28	2.065	0.323	0.769
15530000	Faith Creek near Chena Hot Springs AK	10	3.141	0.245	0.940
15535000	Caribou Creek near Chatanika AK	12	1.947	0.294	-0.575
15541600*	Globe Creek near Livengood AK	27	2.428	0.355	0.151
15541650	Globe Creek tributary near Livengood AK	10	2.099	0.319	0.339
15541800	Washington Creek near Fox AK	10	2.803	0.375	0.140
15564600	Melozitna River near Ruby AK	12	4.317	0.146	-1.082
15564800*	Yukon River at Ruby AK	22	5.767	0.130	-0.349
15564868	Snowden Creek near Wiseman AK	14	2.603	0.141	1.229
15564872	Nugget Creek near Wiseman AK	15	2.114	0.126	-0.410
15564875	Middle Fork Koyukuk River near Wiseman AK	14	4.067	0.167	-0.531
15564877	Wiseman Creek at Wiseman AK	8	2.624	0.197	-0.271
15564884	Prospect Creek near Prospect Camp AK	16	3.324	0.296	-0.515
15564885	Jim River near Bettles AK	8	3.958	0.121	1.084
15564887	Bonanza Creek tributary near Prospect Camp AK	16	2.141	0.184	-0.137
15564900*	Koyukuk River at Hughes AK	22	5.085	0.164	0.125
15565200	Yukon River near Kaltag AK	22	5.858	0.101	-0.224
15565447	Yukon River at Pilot Station AK	15	5.832	0.095	0.508
	FLOOD-FREQUENCY AREA 3 -- NORTHWEST ($\overline{G}$ = 0.13, $SE_{\overline{G}}$ = 1.15, $\bar{I}_v$ = 0.25)				
15585000	Goldengate Creek near Nome AK	14	1.507	0.272	-0.682
15619000	Dexter Creek near Nome AK	10	1.937	0.151	-0.149
15621000	Snake River near Nome AK	20	3.458	0.097	0.143
15624998	Arctic Creek above tributary near Nome AK	12	1.679	0.332	-0.464
15625000	Arctic Creek near Nome AK	10	1.789	0.305	0.120
15633000*	Washington Creek near Nome AK	27	1.942	0.337	0.284
15668100*	Star Creek near Nome AK	26	1.772	0.312	-0.490
15668200*	Crater Creek near Nome AK	26	2.948	0.253	-0.063
15744000	Kobuk River at Ambler AK	13	4.781	0.180	-0.323
15744500	Kobuk River near Kiana AK	14	4.974	0.176	-0.336

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 3 -- ARCTIC ($\overline{G}$ = 0.13, $SE_{\overline{G}}$ = 1.15, $\tilde{I}_v$ = 0.25)				
15798700	Nunavak Creek near Barrow AK	19	1.576	0.316	0.332
15896000	Kuparuk River near Deadhorse AK	20	4.674	0.242	-0.204
15896700	Putuligayuk River near Deadhorse AK	20	3.450	0.241	-0.551
15904900	Atigun River tributary near Pump Station 4 AK	15	2.779	0.135	-0.114
15906000	Sagavanirktok River tributary near Pump Station 3 AK	12	2.397	0.338	-0.253
15908000	Sagavanirktok River near Pump Station 3 AK	8	4.105	0.129	0.706
15910000	Sagavanirktok River near Sagwon AK	11	4.291	0.188	-0.516
15910200	Happy Creek at Happy Valley Camp near Sagwon AK	19	2.850	0.274	-0.995
15999900	Firth River near mouth near Herschel YT	12	4.308	0.208	-0.255
	FLOOD-FREQUENCY AREA 4 -- SOUTHEAST ($\overline{G}$ = 0.39, $SE_{\overline{G}}$ = 1.02, $\tilde{I}_v$ = 0.12)				
15024200*	Klappan River near Telegraph Creek BC	22	4.165	0.074	-0.026
15024300*	Stikine River above Grand Canyon near Telegraph Creek BC	25	4.779	0.094	-0.073
15024400	Tanzilla River near Telegraph Creek BC	8	3.646	0.124	0.654
15024500*	Tuya River near Telegraph Creek BC	23	4.110	0.173	-0.183
15024600*	Stikine River at Telegraph Creek BC	30	4.918	0.105	-0.151
15024640	Stikine River above Butterfly Creek BC	13	5.029	0.095	-0.167
15024670	Iskut River at outlet of Kinaskan Lake BC	20	3.341	0.095	-0.488
15024684	More Creek near mouth BC	11	4.070	0.166	0.410
15024690	Forrest Kerr Creek near Wrangell BC	13	3.789	0.085	-0.015
15024695	Iskut River above Snippaker Creek BC	17	4.717	0.119	0.433
15024700*	Iskut River below Johnson River BC	26	4.924	0.173	1.101
15024800	Stikine River near Wrangell AK	14	5.318	0.072	0.305
15041000*	Sloko River near Atlin BC	23	3.290	0.133	0.941
15041100*	Taku River near Tulsequah BC	31	4.694	0.101	0.111
15120600	Alsek River above Bates River near Haines Junction YT	8	4.517	0.079	0.274
15120720	Takhanne River near Haines Junction YT	10	3.219	0.136	0.348
	FLOOD-FREQUENCY AREA 4 -- YUKON ($\overline{G}$ = 0.39, $SE_{\overline{G}}$ = 1.02, $\tilde{I}_v$ = 0.12)				
15304600*	Atlin River near Atlin BC	35	3.889	0.079	0.017
15304650*	Wann River near Atlin BC	26	3.096	0.109	0.386
15304700*	Fantail River at outlet of Fantail Lake near Atlin BC	27	3.587	0.115	0.901
15304750*	Tutshi River at outlet of Tutshi Lake near Atlin BC	26	3.354	0.104	0.298
15304800*	Lindeman River near Bennett BC	30	3.290	0.174	1.459
15304850*	Wheaton River near Carcross YT	26	3.272	0.113	0.043
15304855	Watson River near Carcross YT	8	3.022	0.178	-0.309
15305500*	Kluane River at outlet of Kluane Lake YT	32	3.986	0.080	-0.637
15305540	White River at Alaska Highway near Koidern BC	9	4.478	0.076	-0.053
15305545	Dry Creek No. 2 near Beaver Creek YT	9	2.457	0.346	0.204

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 5 -- SOUTHEAST ($\overline{G}$ = 0.21, $SE_{\overline{G}}$ = 0.66, $\overline{I}_v$ = 0.15)				
15120500	Dezadeash River at Haines Junction YT	21	3.742	0.159	-0.083
	FLOOD-FREQUENCY AREA 5 -- YUKON ($\overline{G}$ = 0.21, $SE_{\overline{G}}$ = 0.66, $\overline{I}_v$ = 0.15)				
15304520*	Lubbock River near Atlin BC	22	2.547	0.181	-0.092
15304950*	Maclintock River near Whitehorse YT	28	3.265	0.166	0.182
15305000*	Yukon River at Whitehorse YT	41	4.262	0.059	-0.033
15305030*	Takhini River at Kusawa Lake at Whitehorse YT	28	3.838	0.095	0.003
15305040	Mendenhall River near Champagne YT	9	2.593	0.193	0.004
15305050*	Takhini River near Whitehorse YT	36	3.895	0.109	0.514
15305100*	Yukon River above Frank Creek YT	31	4.383	0.056	-0.279
15305150*	Swift River near Swift River BC	27	3.946	0.114	0.339
15305200*	Gladys River at outlet of Gladys Lake near Atlin BC	26	3.309	0.135	-0.106
15305250*	Teslin River near Teslin YT	38	4.566	0.113	0.212
15305260	Teslin River near Whitehorse YT	18	4.615	0.118	0.145
15305300*	Big Salmon River near Carmacks YT	26	4.074	0.122	0.567
15305350*	Yukon River at Carmacks YT	33	4.820	0.111	0.316
15305360	Big Creek near mouth near Minto YT	9	3.570	0.218	0.057
15305380	Riddell Creek near Ross River YT	8	2.656	0.120	0.640
15305385	180 Mile Creek near Ross River YT	10	2.392	0.156	-0.361
15305390*	Ross River at Ross River YT	22	4.172	0.115	0.333
15305400	Pelly River at Ross River YT	19	4.583	0.137	0.247
15305405	Vangorda Creek at Faro YT	8	2.098	0.290	-0.032
15305406	Pelly River at Faro YT	12	4.549	0.086	0.395
15305411	South MacMillan River near Ross River YT	10	2.937	0.176	0.167
15305412	South MacMillan River at Canol Road near Ross River YT	10	3.619	0.071	0.687
15305420*	Pelly River at Pelly Crossing YT	31	4.844	0.150	0.480
15305450*	Yukon River above White River near Dawson YT	27	5.120	0.129	0.675
15305590*	Stewart River at Mayo YT	30	4.894	0.141	-0.280
15305620	Stewart River at Stewart Crossing YT	13	4.955	0.114	0.409
15305650	Stewart River at mouth YT	21	4.932	0.146	0.634
15305670	Yukon River at Stewart YT	24	5.394	0.113	0.549
15305673	Sixty Mile River near Dawson YT	8	3.226	0.188	-0.020
15305692	Grizzly Creek near Dawson YT	8	2.368	0.182	0.206
15305693	Wolf Creek near Dawson YT	8	2.706	0.202	-0.043
15305695	North Klondike River near mouth near Dawson YT	10	3.544	0.126	0.416
15305698	Klondike River above Bonanza Creek near Dawson YT	18	4.133	0.108	0.076
15305700*	Yukon River at Dawson YT	33	5.419	0.107	0.654
15305900*	Dennison Fork near Tetlin Junction AK	27	1.446	0.256	0.333

Table 1. Statistics of logarithms of annual peaks in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station No.	Station name	Length of record (years)	Mean	Standard deviation	Weighted skew
	FLOOD-FREQUENCY AREA 5 -- YUKON--Continued				
15305920	West Fork tributary near Tetlin Junction AK	18	1.497	0.288	0.038
15305950	Taylor Creek near Chicken AK	24	2.169	0.379	0.319
15344000	King Creek near Dome Creek AK	16	1.744	0.276	0.077
15348000	Fortymile River near Steele Creek AK	9	4.561	0.133	0.775
15356000*	Yukon River at Eagle AK	43	5.467	0.108	0.546
15388944	Porcupine River below Bell River YT	9	5.088	0.097	0.179
15388948	Old Crow River near mouth near Old Crow YT	8	4.466	0.149	0.621
15388950*	Porcupine River at Old Crow YT	28	5.140	0.163	-0.376
15389000	Porcupine River near Fort Yukon AK	15	5.200	0.192	-0.083
15389500	Chandalar River near Venetie AK	11	4.644	0.144	-0.375

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984

[Q_T, flood magnitude, in cubic feet per second, having a recurrence interval of T-years;
UPPER number, value of Q_T from flood frequency analysis of observed station data using weighted skew;
MIDDLE number, value of Q_T estimated by regression equation (table 2);
LOWER number, value of Q_T obtained by weighting the station and regression estimates]

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST								
15010000	11600	16300	19700	24200	27800	31400	35300	40700
15010000	12700	16900	19700	23000	25700	28100	30800	34100
15010000	11700	16400	19700	23900	27300	30400	34000	38700
15011500	8510	10500	11700	13100	14100	15100	16000	17200
15011500	7190	9400	10900	12700	14100	15300	16800	18500
15011500	8410	10400	11600	13000	14100	15100	16200	17500
15012000	1190	1730	2160	2790	3330	3940	4620	5650
15012000	1700	2250	2610	3070	3420	3750	4120	4580
15012000	1200	1760	2190	2820	3340	3920	4560	5510
15015590	26100	37000	44500	54300	61900	69700	77800	89000
15015590	21000	28800	34200	40900	46300	51400	57200	64400
15015590	25800	36100	43300	52100	59400	65900	73600	83900
15022000	6470	8630	10200	12200	13800	15500	17300	19800
15022000	8430	11100	13000	15200	16900	18600	20400	22600
15022000	6520	8740	10300	12400	14000	15800	17600	20100
15024750	1710	3030	4220	6130	7910	10000	12600	16700
15024750	1760	2300	2660	3120	3480	3820	4200	4660
15024750	1710	2880	3880	5180	6440	7440	8990	11300
15026000	1610	2070	2390	2810	3120	3450	3790	4250
15026000	2430	3180	3690	4340	4840	5310	5830	6480
15026000	1630	2120	2450	2910	3230	3610	3960	4440
15028300	12000	16300	19200	22700	25300	27800	30400	33700
15028300	10400	13600	15800	18600	20700	22800	25100	27900
15028300	11900	15900	18600	21800	24200	26400	28900	32000
15031000	1660	2190	2590	3120	3560	4020	4520	5230
15031000	1690	2240	2610	3070	3430	3770	4140	4610
15031000	1660	2200	2590	3110	3530	3940	4400	5030
15034000	3100	4160	4930	5990	6830	7730	8700	10100
15034000	2290	2990	3470	4080	4560	5010	5520	6150
15034000	Presently regulated							
15036000	18200	24300	28800	34900	39700	44900	50500	58400
15036000	19000	25100	29300	34500	38600	42400	46800	52100
15036000	18200	24400	28900	34800	39500	44400	49700	57100

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued								
15038000	1940	2520	2920	3430	3820	4210	4620	5170
15038000	1040	1360	1580	1860	2080	2290	2520	2810
15038000	Presently regulated							
15040000	847	1170	1410	1740	2000	2290	2600	3040
15040000	974	1290	1500	1770	1990	2190	2420	2720
15040000	850	1180	1420	1740	2000	2280	2580	3010
15044000	3790	4450	4860	5360	5710	6060	6400	6850
15044000	4760	6250	7240	8470	9430	10300	11300	12500
15044000	3870	4710	5190	5960	6410	7050	7530	8130
15048000	458	610	715	853	960	1070	1180	1340
15048000	978	1310	1530	1810	2020	2220	2450	2730
15048000	469	640	750	913	1030	1170	1290	1460
15050000	1310	1760	2080	2520	2870	3240	3630	4180
15050000	1800	2410	2830	3340	3740	4110	4520	5050
15050000	1320	1790	2110	2570	2930	3310	3710	4250
15052000	1510	1940	2230	2630	2940	3270	3610	4100
15052000	2490	3290	3820	4490	5010	5490	6020	6690
15052000	1540	2030	2330	2800	3130	3540	3910	4420
15052500	8230	10800	12400	14400	15900	17400	18900	20900
15052500	7310	9600	11200	13100	14600	16000	17700	19700
15052500	8190	10700	12300	14200	15700	17200	18700	20700
15052800	1340	1720	1950	2240	2450	2650	2840	3100
15052800	1880	2590	3080	3690	4170	4630	5130	5780
15052800	1370	1820	2070	2460	2710	3020	3260	3590
15053800	443	664	831	1070	1260	1470	1700	2030
15053800	359	503	602	726	824	919	1020	1160
15053800	435	634	788	978	1140	1290	1470	1730
15054000	167	235	281	342	389	437	486	554
15054000	238	329	391	473	537	599	668	757
15054000	171	245	292	361	411	467	520	592
15054500	163	240	294	363	415	468	523	597
15054500	219	306	365	442	501	558	620	702
15054500	166	247	302	376	429	487	543	619
15056100	4790	7320	9400	12500	15300	18400	22000	27500
15056100	5190	7200	8660	10600	12100	13700	15400	17700
15056100	4810	7310	9340	12300	14900	17600	20900	25800

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued								
15056200	2630	3820	4770	6170	7370	8730	10300	12600
15056200	1960	2710	3250	3970	4560	5140	5800	6650
15056200	2590	3680	4570	5760	6830	7850	9180	11100
15056210	9560	12400	14600	17500	19800	22300	25000	28900
15056210	5650	7890	9520	11700	13400	15200	17200	19800
15056210	9020	11300	13400	15700	17800	19600	22100	25500
15056560	6820	8460	9460	10600	11500	12300	13100	14100
15056560	7440	10500	12700	15600	18100	20500	23200	26800
15056560	6880	8800	9980	11700	12900	14400	15600	17200
15057500	380	511	604	728	825	926	1030	1180
15057500	313	429	506	605	681	755	835	938
15057500	372	493	583	692	783	865	960	1090
15058000	478	603	686	791	870	949	1030	1140
15058000	550	723	838	986	1100	1210	1330	1480
15058000	486	625	714	840	928	1030	1120	1240
15059500	1110	1680	2130	2760	3290	3870	4500	5450
15059500	1140	1540	1810	2140	2400	2640	2910	3240
15059500	1110	1660	2080	2610	3080	3500	4010	4740
15060000	433	530	590	662	715	765	815	881
15060000	396	513	591	689	764	835	913	1010
15060000	432	529	590	665	720	774	828	898
15067900	605	814	957	1140	1280	1430	1580	1780
15067900	385	499	573	668	739	810	880	973
15067900	584	759	889	1020	1150	1240	1370	1530
15068000	1340	1830	2160	2600	2930	3270	3630	4110
15068000	810	1050	1200	1400	1550	1700	1850	2050
15068000	1310	1740	2040	2390	2690	2920	3230	3640
15070000	3100	3910	4430	5070	5540	6010	6470	7080
15070000	4080	5300	6110	7120	7910	8630	9450	10400
15070000	Presently regulated							
15072000	2870	3550	4000	4560	4980	5390	5810	6380
15072000	2430	3170	3660	4280	4760	5220	5730	6350
15072000	2860	3540	3990	4550	4970	5380	5810	6380
15074000	1180	1410	1550	1720	1850	1980	2100	2270
15074000	1530	2000	2310	2700	3010	3300	3620	4020
15074000	1190	1450	1600	1820	1960	2140	2280	2480

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued								
15076000	2820	3570	4060	4650	5090	5520	5950	6510
15076000	3120	4050	4660	5430	6040	6600	7230	8000
15076000	2830	3600	4100	4720	5170	5640	6090	6680
15078000	2810	3420	3790	4240	4560	4860	5170	5560
15078000	2840	3680	4240	4950	5500	6010	6580	7290
15078000	2810	3450	3840	4350	4710	5080	5440	5890
15081490	685	890	1020	1180	1290	1410	1520	1670
15081490	689	944	1120	1330	1500	1660	1830	2060
15081490	685	900	1040	1220	1340	1480	1610	1780
15081500	9490	12600	14600	17100	19000	20800	22700	25200
15081500	5940	8210	9740	11600	13100	14500	16000	18000
15081500	9200	11900	13900	16000	17800	19200	21000	23400
15081580	218	285	332	396	446	498	554	632
15081580	146	198	233	277	312	346	382	430
15081580	209	267	311	362	408	445	494	561
15081890	1700	2260	2650	3140	3520	3900	4300	4830
15081890	2030	2730	3190	3760	4200	4600	5050	5610
15081890	1730	2340	2740	3290	3680	4100	4520	5060
15083500	1330	1930	2350	2930	3390	3870	4370	5080
15083500	989	1320	1540	1810	2020	2210	2410	2670
15083500	1300	1840	2230	2690	3090	3420	3830	4400
15085100	863	1050	1160	1300	1400	1500	1600	1730
15085100	597	814	9610	1150	1290	1430	1580	1770
15085100	855	1040	1150	1290	1390	1490	1600	1730
15085600	2160	3390	4380	5850	7120	8550	10200	12600
15085600	1460	2020	2390	2860	3220	3550	3920	4390
15085600	2100	3160	4040	5120	6140	6950	8150	9830
15085700	4630	6650	8130	10200	11800	13500	15400	18000
15085700	4400	6000	7070	8380	9410	10400	11400	12700
15085700	4620	6570	8000	9870	11400	12800	14500	16700
15085800	2270	3020	3530	4180	4680	5190	5710	6430
15085800	2620	3570	4210	4990	5590	6160	6780	7560
15085800	2300	3100	3630	4340	4860	5430	5980	6710
15086600	1020	1260	1410	1590	1710	1820	1940	2080
15086600	965	1310	1540	1830	2060	2280	2520	2820
15086600	1020	1270	1420	1620	1760	1900	2040	2200

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued								
15086900	1160	1370	1500	1660	1770	1890	1990	2140
15086900	1010	1360	1590	1890	2120	2330	2570	2880
15086900	1150	1370	1520	1710	1850	2010	2140	2330
15087250	446	581	670	784	869	954	1040	1160
15087250	543	749	887	1060	1200	1320	1460	1650
15087250	452	601	696	830	923	1030	1130	1260
15087545	747	949	1080	1260	1390	1520	1650	1840
15087545	433	597	706	845	952	1050	1160	1310
15087545	703	865	992	1130	1250	1340	1470	1640
15087570	8940	13200	16100	19700	22500	25200	28000	31700
15087570	4950	7030	8460	10200	11700	13000	14500	16400
15087570	8620	12300	14900	17700	20200	21900	24400	27600
15087585	1040	1240	1370	1520	1640	1750	1860	2010
15087585	1230	1670	1960	2340	2630	2900	3200	3580
15087585	1060	1310	1460	1690	1850	2040	2200	2400
15087590	470	685	850	1090	1290	1510	1750	2110
15087590	356	488	576	688	775	858	949	1060
15087590	458	647	797	980	1150	1290	1470	1730
15087690	3550	4600	5310	6210	6890	7580	8280	9240
15087690	2050	2760	3230	3810	4260	4680	5140	5720
15087690	3380	4230	4890	5550	6170	6600	7230	8060
15088000	3880	5480	6560	7940	8990	10000	11100	12600
15088000	3930	5230	6090	7170	8020	8810	9690	10800
15088000	Presently regulated							
15093400	1220	1620	1900	2280	2570	2870	3190	3630
15093400	855	1070	1220	1400	1530	1660	1790	1960
15093400	1190	1540	1800	2090	2350	2540	2810	3170
15094000	578	764	894	1070	1200	1350	1500	1710
15094000	919	1150	1300	1490	1640	1770	1930	2120
15094000	594	800	932	1130	1260	1430	1580	1790
15098000	2790	3780	4540	5610	6510	7480	8560	10100
15098000	2730	3570	4130	4830	5380	5890	6470	7170
15098000	2790	3760	4510	5520	6380	7240	8240	9630
15100000	1540	1670	1740	1820	1870	1910	1950	2010
15100000	2020	2640	3050	3570	3980	4360	4780	5300
15100000	1560	1750	1840	2000	2080	2220	2300	2400

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued								
15101500	1260	1890	2320	2900	3340	3800	4260	4900
15101500	1670	2330	2790	3370	3830	4270	4760	5390
15101500	1290	1950	2380	2990	3430	3910	4380	5020
15102000	1380	1670	1860	2120	2310	2510	2710	2990
15102000	2310	3140	3710	4440	5030	5590	6210	7000
15102000	1420	1790	2000	2370	2600	2920	3170	3520
15106920	1020	1320	1520	1780	1980	2180	2380	2660
15106920	1490	2060	2440	2920	3290	3640	4030	4520
15106920	1040	1380	1590	1900	2120	2370	2600	2910
15106940	705	1080	1340	1700	1990	2280	2590	3020
15106940	768	1060	1250	1500	1690	1870	2070	2320
15106940	709	1080	1330	1660	1930	2180	2460	2840
15106960	1170	1480	1660	1880	2040	2190	2340	2520
15106960	1230	1690	2000	2400	2700	2990	3310	3720
15106960	1170	1510	1710	1980	2170	2380	2570	2800
15106980	2170	2980	3500	4120	4580	5020	5450	6020
15106980	1980	2730	3240	3880	4370	4840	5360	6020
15106980	2160	2950	3470	4080	4550	4990	5430	6020
15107000	4740	5910	6680	7650	8380	9110	9860	10900
15107000	4280	5910	7020	8390	9480	10500	11600	13000
15107000	4710	5910	6720	7760	8550	9370	10200	11300
15108000	1950	2620	3090	3700	4180	4680	5200	5920
15108000	2220	3060	3630	4340	4910	5440	6040	6790
15108000	1960	2650	3130	3770	4260	4780	5310	6040
15108250	8120	11800	14600	18600	21900	25500	29500	35400
15108250	3740	5260	6300	7600	8640	9620	10700	12100
15108250	7570	10300	12700	15100	17700	19300	22100	26000
FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL								
15109000	1320	1710	1980	2320	2570	2830	3100	3460
15109000	1490	2080	2490	3010	3420	3810	4230	4780
15109000	1330	1740	2020	2400	2670	2970	3270	3650
15195000	1960	2180	2320	2480	2600	2710	2820	2970
15195000	1620	2130	2470	2900	3230	3540	3890	4330
15195000	1930	2170	2340	2570	2720	2910	3070	3280
15216000	2890	4180	5030	6110	6910	7710	8510	9570
15216000	2900	3870	4530	5360	6010	6630	7320	8190
15216000	2890	4170	5010	6060	6850	7610	8400	9440

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL--Continued								
15219000	559	749	875	1030	1150	1270	1400	1560
15219000	708	964	1140	1360	1540	1700	1890	2120
15219000	567	770	901	1080	1200	1350	1490	1660
15219100	550	786	964	1210	1420	1640	1880	2230
15219100	640	871	1030	1230	1390	1540	1710	1920
15219100	557	799	974	1210	1410	1610	1830	2140
15236200	422	516	572	637	682	724	764	816
15236200	372	492	573	676	757	834	918	1030
15236200	419	513	572	643	693	744	791	852
15236900	823	1160	1410	1750	2020	2310	2620	3070
15236900	1420	1890	2210	2320	2950	3260	3600	4040
15236900	856	1240	1500	1850	2170	2510	2820	3280
15237400	2700	3160	3420	3720	3920	4110	4290	4520
15237400	1520	1990	2310	2700	3010	3290	3600	4000
15237400	2590	2970	3250	3500	3730	3900	4120	4390
15238600	1720	2660	3350	4310	5080	5900	6780	8030
15238600	1060	1440	1710	2050	2320	2580	2860	3240
15238600	1690	2540	3190	3980	4670	5260	6020	7090
15238820	759	1200	1540	2020	2420	2850	3320	4010
15238820	1670	2370	2860	3470	3960	4430	4960	5630
15238820	791	1290	1640	2180	2600	3090	3570	4270
15239050	444	660	829	1080	1280	1520	1780	2160
15239050	605	854	1030	1250	1430	1610	1800	2050
15239050	457	689	860	1120	1310	1550	1790	2130
15295600	1700	2440	2980	3700	4270	4870	5500	6390
15295600	1380	1860	2180	2590	2910	3210	3550	3980
15295600	Presently regulated							
15296000	5510	8120	10100	12800	15000	17400	19900	23600
15296000	5170	7260	8720	10600	12100	13500	15100	17100
15296000	5500	8060	10000	12600	14700	16800	19200	22600
15297200	792	982	1100	1250	1350	1450	1550	1690
15297200	946	1280	1500	1780	2000	2200	2420	2710
15297200	797	1000	1120	1290	1400	1530	1640	1790
15297475	397	544	640	761	852	942	1030	1150
15297475	352	479	563	670	752	830	914	1020
15297475	395	539	634	751	841	927	1010	1130

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL								
15239500	116	233	337	499	643	808	996	1280
15239500	98	166	223	298	361	427	522	599
15239500	115	228	320	462	589	722	889	1120
15239800	64	107	145	207	266	337	423	564
15239800	51	89	121	163	200	238	289	338
15239800	63	105	141	197	251	310	386	499
15239900	1560	2510	3360	4780	6120	7750	9740	13100
15239900	1160	1810	2310	2910	3390	3890	4860	5110
15239900	1540	2430	3140	4290	5380	6520	8190	10400
15240000	2330	3690	4950	7050	9080	11600	14700	19900
15240000	1920	2950	3750	4700	5470	6260	7900	8200
15240000	2310	3610	4720	6480	8170	10000	12700	16100
15240500	52	76	95	122	144	168	195	233
15240500	54	99	137	199	253	312	392	479
15240500	52	79	102	137	165	199	236	284
15241600	568	848	1060	1350	1580	1840	2110	2500
15241600	804	1260	1600	2070	2440	2820	3550	3760
15241600	576	875	1130	1460	1710	2010	2350	2720
15242000	8080	9910	11100	12500	13500	14600	15600	16900
15242000	6230	8250	9810	11500	12800	14100	17600	17100
15242000	8000	9780	10900	12300	13400	14500	16000	16900
15243950	774	1300	1790	2630	3450	4480	5750	7930
15243950	637	975	1240	1560	1820	2090	2510	2770
15243950	769	1270	1710	2420	3120	3900	4950	6550
15244000	528	721	859	1040	1190	1350	1510	1740
15244000	762	1090	1340	1640	1870	2110	2530	2700
15244000	548	777	985	1220	1400	1610	1860	2070
15246000	998	1450	1830	2390	2880	3440	4080	5080
15246000	889	1250	1530	1840	2090	2350	2820	2960
15246000	985	1410	1720	2160	2550	2920	3480	4030
15248000	3690	4830	5650	6760	7640	8570	9560	11000
15248000	5210	7200	8720	10400	11700	13100	16000	16300
15248000	3740	4970	5980	7230	8170	9260	10500	11800
15250000	230	398	537	748	933	1140	1380	1740
15250000	420	641	816	1010	1180	1340	1600	1760
15250000	244	434	611	833	1020	1220	1460	1750

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued								
15251800	154	282	411	647	891	1210	1630	2390
15251800	238	371	477	598	698	800	948	1050
15251800	162	298	432	628	811	1010	1290	1680
15254000	339	534	697	945	1160	1420	1700	2150
15254000	304	438	542	662	757	854	1020	1080
15254000	338	528	678	901	1100	1310	1570	1930
15260000	295	415	513	660	788	934	1100	1360
15260000	370	529	654	800	916	1040	1240	1320
15260000	301	432	550	704	829	972	1150	1350
15266300	19300	24100	27300	31600	34800	38100	41500	46200
15266300	23000	30000	35100	40600	44800	49000	62100	58800
15266300	19400	24500	28300	32900	36300	40000	44900	48400
15266500	172	341	496	748	984	1260	1600	2130
15266500	264	424	548	758	927	1110	1420	1600
15266500	175	348	504	750	973	1230	1560	2000
15267900	1230	1870	2390	3180	3860	4640	5520	6870
15267900	1610	2360	2920	3520	4000	4460	5460	5560
15267900	1250	1910	2480	3250	3890	4590	5510	6520
15269500	1010	1530	1890	2370	2740	3120	3520	4060
15269500	893	1350	1710	2130	2480	2840	3430	3720
15269500	1000	1510	1850	2300	2670	3030	3490	3960
15270400	67	108	140	185	222	262	305	368
15270400	66	109	143	185	220	256	302	346
15270400	67	108	141	185	221	260	304	360
15271000	4840	6350	7450	8960	10200	11500	12800	14800
15271000	4730	6610	8020	9550	10800	12000	14700	14900
15271000	4830	6390	7590	9130	10400	11700	13400	14800
15271900	29	39	46	56	63	71	79	91
15271900	32	53	70	92	110	128	150	175
15271900	29	40	50	63	73	84	95	109
15272530	201	330	435	591	727	879	1050	1310
15272530	246	385	495	630	742	857	1020	1150
15272530	203	334	443	598	730	874	1040	1280
15272550	2670	4900	6850	9940	12700	16000	19800	25800
15272550	1740	2570	3200	3910	4490	5080	6170	6520
15272550	2590	4500	5730	7670	9510	11100	13700	16700

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued								
15273900	256	378	475	621	747	890	1050	1300
15273900	188	290	369	459	531	602	721	773
15273900	254	372	462	597	714	838	991	1200
15274000	212	325	425	587	736	916	1130	1480
15274000	195	301	383	478	553	627	753	805
15274000	211	323	419	567	701	849	1040	1310
15274300	73	107	134	173	208	246	288	353
15274300	78	122	157	198	231	263	312	341
15274300	73	108	136	176	211	248	291	351
15276000	851	1140	1360	1650	1890	2140	2410	2790
15276000	795	1160	1440	1740	1980	2210	2670	2750
15276000	850	1140	1370	1660	1900	2150	2440	2790
15277100	3270	4130	4760	5620	6320	7050	7850	8980
15277100	2560	3640	4440	5280	5930	6580	8040	8100
15277100	3220	4070	4690	5530	6220	6910	7900	8720
15277200	24	48	74	125	180	258	364	569
15277200	53	86	113	144	170	195	230	257
15277200	26	53	84	131	177	232	306	422
15277410	649	940	1150	1420	1630	1860	2090	2410
15277410	1150	1690	2100	2540	2890	3230	3920	4040
15277410	681	1030	1350	1700	1950	2260	2610	2890
15280000	1680	2090	2390	2790	3110	3450	3810	4320
15280000	1520	2120	2580	3050	3420	3790	4580	4640
15280000	Presently regulated							
15281000	34300	44800	53100	65200	75500	86900	99600	119000
15281000	29200	36800	42700	47800	51900	56200	69500	65700
15281000	34100	43800	51400	61700	70600	79400	91600	104000
15282000	4410	6010	7110	8530	9630	10800	11900	13500
15282000	2490	3510	4250	4980	5540	6070	7390	7270
15282000	4300	5750	6570	7720	8690	9550	10700	11800
15282400	35	65	88	118	143	168	195	231
15282400	70	111	142	180	210	240	283	313
15282400	36	68	95	128	154	182	212	247
15283500	177	313	449	693	942	1270	1680	2430
15283500	169	266	340	431	504	577	687	755
15283500	177	308	429	630	831	1060	1370	1860

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued								
15284000	24300	30600	34700	39800	43700	47500	51400	56700
15284000	24200	31900	37400	42200	45800	49400	61600	57200
15284000	24300	30700	35000	40200	44000	47800	53100	56800
15285000	131	228	317	466	608	783	996	1350
15285000	174	280	363	469	555	642	776	859
15285000	133	234	326	467	594	740	927	1190
15290000	1950	2940	3720	4860	5820	6880	8060	9830
15290000	1310	1900	2350	2830	3210	3590	4310	4480
15290000	1930	2880	3570	4590	5460	6340	7450	8910
15290200	136	264	385	588	783	1020	1310	1800
15290200	61	101	132	180	219	260	316	366
15290200	124	218	269	373	480	568	712	909
15291000	16800	21200	24600	29400	33400	37800	42600	49700
15291000	19500	24600	28000	31700	34200	36700	44900	42200
15291000	16900	21400	25000	29800	33500	37600	43000	48200
15291100	96	120	135	151	163	173	183	196
15291100	69	107	134	170	196	222	256	285
15291100	95	119	135	154	168	181	194	209
15291200	5500	6790	7670	8830	9720	10600	11600	12900
15291200	6000	7890	9140	10600	11600	12600	15200	14800
15291200	5520	6860	7850	9090	10000	10900	12200	13200
15291500	31900	42600	50000	59700	67300	75100	83200	94500
15291500	39100	48300	54200	60300	64400	68400	85300	76900
15291500	32300	43300	50900	59900	66500	73000	83800	88800
15292000	46600	61000	70900	84000	94200	105000	116000	131000
15292000	62800	77600	87100	96600	103000	109000	137000	123000
15292000	46900	61700	72200	85300	95100	106000	118000	130000
15292392	477	919	1310	1910	2460	3080	3800	4920
15292392	729	1050	1270	1580	1800	2030	2450	2590
15292392	496	940	1300	1790	2220	2630	3220	3870
15292400	39800	48900	55500	64600	71900	79700	88100	100000
15292400	57100	70500	79200	88400	94900	101000	126000	115000
15292400	40300	50100	58100	67800	75100	83200	94000	103000
15292700	28200	40400	50000	64200	76200	89600	105000	127000
15292700	28400	36900	42600	48300	52400	56400	70200	65200
15292700	28200	40100	49000	61400	71900	82400	97600	113000

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued								
15292800	3090	4560	5890	8050	10100	12500	15500	20500
15292800	1480	2090	2530	3070	34700	3870	4740	4820
15292800	2890	4000	4630	5840	7070	8050	9940	11900
15293000	91	166	244	388	539	741	1010	1500
15293000	203	325	416	563	679	803	994	1130
15293000	94	174	263	413	560	753	1010	1420
15293700	1380	2050	2640	3590	4480	5560	6850	8970
15293700	1630	2360	2890	3530	4020	4510	5550	5680
15293700	1410	2110	2720	3570	4300	5080	6260	7380
15294005	3210	4510	5570	7170	8580	10200	12000	14900
15294005	1610	2280	2780	3320	3740	4150	5050	5100
15294005	3030	4060	4630	5640	6620	7430	8840	10200
15294010	534	688	781	889	965	1040	1100	1190
15294010	499	751	938	1190	1380	1580	2920	2060
15294010	530	700	830	995	1110	1240	1670	1510
15294025	1190	1870	2490	3540	4540	5780	7310	9880
15294025	589	857	1050	1340	1560	1790	2300	2360
15294025	1150	1740	2140	2890	3630	4360	5540	7010
15294100	6310	9640	12800	18100	23300	29700	37800	51700
15294100	4910	6910	82900	10400	12000	13600	17300	17500
15294100	6140	9020	11100	14600	18100	21300	27000	32500
15294300	33400	42500	49000	57900	64900	72300	80200	91400
15294300	29800	36800	41400	46800	50500	54100	67400	62300
15294300	33200	42000	47800	55800	62200	68200	77500	84700
15294350	191000	228000	253000	284000	308000	331000	355000	388000
15294350	176000	211000	235000	255000	269000	284000	362000	314000
15294350	190000	226000	249000	277000	298000	317000	357000	366000
15294450	3590	4610	5400	6550	7520	8590	9780	11600
15294450	2250	3250	3970	4940	5680	6450	8000	8340
15294450	3450	4370	4980	6000	6890	7760	9110	10300
FLOOD-FREQUENCY AREA 2 -- SOUTHWEST								
15297900	85	169	239	342	428	523	627	777
15297900	111	189	251	357	445	542	687	806
15297900	87	171	241	345	432	528	642	784
15300000	25300	30500	33900	38100	41200	44400	47500	51800
15300000	27000	34600	40300	45700	49800	54000	68400	63300
15300000	25400	30700	34600	39100	42300	45800	50400	53500

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 2 -- SOUTHWEST--Continued								
15300200	105	174	232	324	407	503	616	795
15300200	186	300	389	529	642	765	954	1090
15300200	111	191	269	382	474	589	726	895
15300500	32000	39900	44800	50700	55000	59200	63400	68800
15300500	37000	45800	52500	59000	63800	68800	87800	79700
15300500	32300	40500	46200	52500	56900	61600	69000	71500
15302000	19500	23900	26600	29700	32000	34100	36200	38900
15302000	19900	25700	29900	35200	39100	43200	54800	52700
15302000	19500	24000	27000	30400	32900	35400	38700	40900
15302500	72700	94800	109000	128000	142000	156000	170000	189000
15302500	72200	92600	107000	123000	135000	147000	192000	175000
15302500	72700	94500	109000	127000	140000	153000	177000	184000
15302900	27	35	41	48	54	61	68	77
15302900	21	36	49	69	85	104	125	154
15302900	27	35	42	52	60	69	78	91
15303000	13400	17800	21100	25600	29300	33200	37500	43700
15303000	14100	18500	21700	26100	29400	32900	42100	41300
15303000	13400	17900	21200	25700	29300	33100	38900	42900
15303010	121	185	234	304	361	423	491	590
15303010	78	133	177	246	304	367	450	538
15303010	119	180	224	292	350	410	482	578
15303150	1590	2040	2350	2750	3060	3380	3720	4180
15303150	1180	1690	2070	2630	3070	3530	4420	4690
15303150	1550	1980	2270	2710	3060	3440	3970	4360
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL								
15198500	175	304	393	504	585	663	739	835
15198500	284	476	610	790	915	1040	1160	1320
15198500	184	318	411	527	624	707	788	891
15199000	59	123	174	248	308	372	439	531
15199000	68	130	176	242	289	339	384	449
15199000	59	123	174	248	306	369	433	522
15200000	4800	6830	8310	10300	11900	13600	15400	17900
15200000	4290	6180	7380	8990	10100	11200	12300	13700
15200000	4760	6780	8240	10200	11700	13300	15000	17400
15200270	311	681	1010	1540	2000	2520	3110	4000
15200270	420	724	942	1250	1470	1700	1930	2250
15200270	325	687	1000	1500	1880	2330	2830	3570

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL--Continued								
15200280	8630	10600	11900	13500	14700	15900	17100	18700
15200280	7320	10600	12800	15600	17500	19500	21300	23900
15200280	8350	10600	12100	13900	15400	16800	18200	20000
15201000	97	242	342	457	529	529	641	695
15201000	84	173	244	345	421	502	578	684
15201000	97	237	334	449	517	581	635	694
15201100	52	88	113	142	162	181	199	222
15201100	85	167	231	320	385	454	517	606
15201100	54	93	119	151	178	200	220	247
15201900	34	103	177	310	442	603	797	1110
15201900	47	98	140	202	250	302	352	423
15201900	36	102	171	292	394	525	677	915
15206000	7030	7900	8390	8940	9320	9670	9990	10400
15206000	7500	10300	12000	14200	15700	17200	18500	20400
15206000	7080	8110	8700	9360	10000	10500	10900	11500
15208000	4560	5980	6900	8020	8830	9640	10400	11500
15208000	3830	5460	6500	7850	8750	9700	10500	11700
15208000	4510	5950	6880	8010	8820	9650	10400	11500
15208100	322	511	649	838	987	1140	1310	1540
15208100	424	754	992	1320	1560	1810	2040	2370
15208100	331	530	676	875	1050	1210	1390	1630
15208200	52	89	113	140	158	174	189	207
15208200	130	248	338	464	555	653	742	869
15208200	56	97	123	154	183	203	221	244
15209000	341	495	623	822	999	1200	1440	1820
15209000	496	808	1020	1300	1500	1690	1870	2110
15209000	361	534	672	882	1090	1290	1520	1880
15209100	55	93	123	164	197	232	269	321
15209100	153	279	372	500	591	686	772	892
15209100	64	111	146	195	249	293	337	400
15211700	223	339	421	532	618	707	800	929
15211700	355	603	777	1010	1170	1340	1480	1690
15211700	233	357	445	564	672	768	867	1000
15211900	717	1250	1660	2240	2700	3200	3720	4470
15211900	692	1110	1390	1750	2000	2260	2470	2790
15211900	715	1240	1630	2190	2600	3060	3530	4200

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL--Continued								
15212000	165000	199000	225000	264000	296000	331000	370000	427000
15212000	109000	133000	145000	161000	171000	180000	188000	201000
15212000	162000	195000	220000	257000	284000	316000	352000	404000
15212500	207	337	463	684	906	1190	1550	2190
15212500	230	377	479	615	709	807	893	1020
15212500	209	340	464	679	883	1140	1460	2020
15213400	1100	1610	2020	2630	3160	3750	4420	5430
15213400	1120	1500	1750	2080	2300	2540	2740	3050
15213400	1100	1590	1970	2530	2940	3430	3960	4750
FLOOD-FREQUENCY AREA 3 -- SOUTHWEST								
15303600	51900	67000	76000	86400	93500	100000	107000	115000
15303600	73400	90500	100000	113000	120000	128000	134000	144000
15303600	54700	70200	79300	90000	98600	105000	112000	121000
15304000	165000	222000	258000	304000	337000	370000	403000	447000
15304000	191000	224000	241000	264000	278000	292000	302000	320000
15304000	166000	222000	257000	302000	332000	364000	395000	436000
15304200	4310	5040	5410	5790	6030	6230	6410	6610
15304200	4840	6250	7130	8320	9100	9940	10600	11700
15304200	4410	5260	5720	6230	6750	7080	7350	7720
FLOOD-FREQUENCY AREA 3 -- YUKON								
15438500	131	306	473	743	991	1280	1610	2130
15438500	105	205	282	389	466	548	622	726
15438500	127	289	439	677	852	1080	1330	1720
15439800	275	534	788	1240	1680	2250	2970	4220
15439800	306	561	746	998	1180	1360	1520	1750
15439800	277	536	785	1220	1620	2130	2760	3840
15442500	148	294	406	555	670	786	903	1060
15442500	229	420	560	752	889	1030	1160	1340
15442500	157	308	424	578	706	827	946	1110
15453481	71	109	138	181	216	256	299	364
15453481	56	111	155	217	263	312	357	420
15453481	68	109	141	187	227	269	313	377
15453500	480000	571000	633000	712000	772000	834000	897000	984000
15453500	551000	650000	700000	763000	796000	832000	857000	902000
15453500	483000	574000	636000	714000	774000	834000	894000	978000

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued								
15453610	58	124	188	295	398	522	671	914
15453610	74	154	218	309	376	447	514	606
15453610	60	127	192	297	394	508	640	850
15457700	285	465	598	779	924	1080	1230	1460
15457700	316	571	755	1010	1180	1370	1530	1760
15457700	288	475	612	799	957	1120	1270	1500
15457800	5080	6830	8110	9870	11300	12800	14400	16700
15457800	5780	8840	10800	13200	14800	16400	17700	19600
15457800	5180	7090	8450	10300	11900	13500	15000	17200
15468000	466000	573000	647000	745000	822000	901000	985000	1100000
15468000	560000	660000	711000	774000	808000	843000	868000	914000
15468000	470000	577000	650000	746000	821000	897000	977000	1090000
15469900	32	91	167	338	549	863	1330	2280
15469900	77	160	226	321	392	469	540	641
15469900	37	100	176	335	508	750	1080	1700
15470000	7680	8860	9660	10700	11500	12300	13200	14300
15470000	18000	25000	29200	34500	37900	41300	44100	48200
15470000	8250	9660	10600	11800	13300	14200	15300	16500
15470300	92	144	182	234	275	317	361	423
15470300	105	187	246	329	389	452	510	592
15470300	93	148	188	243	290	335	381	446
15470330	131	210	274	370	452	545	650	809
15470330	195	331	428	563	659	762	855	991
15470330	137	221	288	388	480	575	679	835
15470340	887	1580	2100	2780	3310	3850	4400	5150
15470340	1370	2090	2570	3190	3610	4040	4410	4960
15470340	960	1660	2180	2850	3380	3900	4400	5100
15471000	110	220	330	529	732	994	1330	1930
15471000	113	231	324	455	551	652	746	875
15471000	110	221	330	523	710	950	1250	1770
15471500	15	26	36	51	65	81	99	128
15471500	21	48	70	103	129	156	182	219
15471500	15	27	38	54	70	86	106	135
15473600	144	266	353	466	550	632	714	820
15473600	136	252	337	456	541	629	709	822
15473600	143	265	352	465	549	632	713	820

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued								
15473950	323	661	953	1400	1780	2210	2680	3390
15473950	386	676	882	1160	1350	1550	1720	1970
15473950	329	663	945	1370	1710	2100	2510	3130
15476000	30500	34700	37500	41000	43600	46300	49000	52600
15476000	37900	51300	59100	68700	74700	80700	85500	92900
15476000	30800	35400	38400	42100	45400	48200	51000	54800
15476049	76	194	274	361	413	454	486	519
15476049	35	73	104	147	180	215	248	294
15476049	71	177	250	331	369	410	443	480
15476050	90	240	364	534	662	786	906	1050
15476050	38	78	111	157	192	229	264	312
15476050	76	192	287	418	472	562	647	754
15476200	67	99	121	149	169	189	210	237
15476200	113	217	296	408	489	576	656	768
15476200	71	108	133	166	198	223	249	283
15476300	725	1240	1660	2280	2800	3390	4030	5000
15476300	562	967	1250	1640	1900	2180	2430	2780
15476300	712	1220	1630	2230	2690	3240	3830	4720
15476400	851	1410	1770	2210	2530	2820	3100	3460
15476400	510	881	1140	1500	1750	2000	2230	2560
15476400	820	1360	1720	2150	2440	2720	3000	3350
15478000	48900	55800	59800	64500	67700	70700	73600	77200
15478000	71800	90800	101000	115000	122000	131000	137000	147000
15478000	52800	61500	66400	72400	79500	83700	87200	92000
15478010	726	1140	1410	1730	1960	2180	2390	2650
15478010	494	791	996	1280	1480	1690	1880	2170
15478010	706	1110	1370	1690	1900	2120	2330	2590
15478040	921	1340	1660	2110	2480	2890	3330	3970
15478040	488	697	834	1010	1130	1260	1360	1520
15478040	855	1240	1530	1940	2180	2520	2870	3380
15478050	448	622	746	914	1050	1190	1340	1550
15478050	488	724	880	1090	1220	1360	1490	1660
15478050	451	629	756	926	1070	1210	1360	1560
15478500	144	360	578	957	1320	1770	2300	3170
15478500	111	197	259	344	404	468	525	605
15478500	140	339	533	864	1120	1460	1860	2500

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
				FLOOD-FREQUENCY AREA 3 -- YUKON--Continued				
15480000	223	493	725	1070	1360	1680	2020	2510
15480000	162	322	446	619	745	876	997	1160
15480000	218	479	701	1030	1280	1570	1880	2320
15484000	16700	25800	32100	40500	46900	53500	60200	69400
15484000	13600	20100	24000	28900	32000	35000	37400	40900
15484000	16500	25500	31600	39800	45600	51900	58200	66800
15490000	365	709	997	1430	1790	2200	2650	3310
15490000	279	509	677	906	1070	1230	1380	1590
15490000	357	689	964	1370	1680	2050	2440	3020
15493000	7440	10900	13200	15900	17800	19700	21500	23800
15493000	7130	10800	13000	15900	17800	19600	21100	23300
15493000	7420	10900	13200	15900	17800	19700	21500	23700
15493500	5700	9230	11700	14800	17200	19500	21900	25000
15493500	10300	15300	18500	22400	24800	27200	29200	32100
15493500	Presently regulated							
15511000	1660	2470	3190	4340	5410	6700	8240	10800
15511000	3390	5350	6620	8260	9330	10400	11300	12600
15511000	1760	2630	3380	4570	5760	7050	8550	11000
15514000	9270	14800	19200	25400	30700	36400	42800	52200
15514000	11300	16500	19800	23900	26600	29400	31700	35000
15514000	Presently regulated							
15514500	4160	4900	5360	5940	6360	6770	7190	7730
15514500	5780	8960	11000	13500	15200	16800	18200	20100
15514500	4440	5530	6190	7000	8070	8670	9260	10000
15515500	79400	94500	106000	121000	133000	146000	160000	180000
15515500	80800	106000	120000	138000	149000	160000	169000	182000
15515500	79500	95200	107000	122000	134000	147000	161000	180000
15515800	475	824	1180	1830	2500	3400	4570	6720
15515800	331	576	752	993	1170	1350	1510	1740
15515800	462	802	1140	1750	2310	3080	4060	5810
15515900	89	147	185	231	263	293	322	357
15515900	77	148	202	277	331	389	441	515
15515900	88	147	187	236	273	307	339	379
15516000	6670	8320	9400	10700	11700	12700	13700	15100
15516000	6910	9560	11200	13300	14600	16000	17200	18900
15516000	6690	8400	9510	10900	12000	13000	14000	15400

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued								
15516050	2550	3480	4140	5010	5680	6390	7130	8160
15516050	3670	5290	6300	7620	8470	9350	10100	11700
15516050	2730	3760	4470	5410	6280	7030	7780	8930
15516200	165	261	348	488	618	776	967	1280
15516200	132	232	304	402	472	545	610	703
15516200	162	259	345	481	600	747	920	1200
15518000	21000	27500	32000	38000	42600	47500	52500	59600
15518000	15300	20800	24100	28200	30800	33400	35500	38700
15518000	20600	27000	31400	37300	41300	45900	50500	57200
15518100	65	118	158	214	259	306	355	423
15518100	76	139	186	252	299	349	395	458
15518100	67	121	162	220	268	315	364	431
15518200	216	585	978	1680	2380	3250	4310	6060
15518200	152	269	354	471	553	639	716	825
15518200	205	524	846	1400	1780	2350	3010	4070
15518250	92	184	257	363	449	541	638	775
15518250	79	148	201	274	327	383	434	505
15518250	91	181	252	356	434	521	612	740
15518350	5340	10700	16700	28600	41900	60700	86900	138000
15518350	5270	7680	9170	11000	12200	13400	14400	15900
15518350	5330	10100	15100	24400	31500	42800	57400	83800
15519000	188	435	707	1230	1800	2560	3590	5470
15519000	188	347	465	627	743	864	974	1130
15519000	188	419	659	1100	1470	1990	2660	3800
15519200	62	98	124	159	186	215	244	285
15519200	74	154	217	308	375	446	513	604
15519200	62	101	129	167	200	232	263	308
15520000	106	208	314	509	713	983	1340	1980
15520000	71	139	190	263	316	372	423	495
15520000	103	202	304	487	659	895	1200	1730
15530000	1270	2130	2940	4340	5710	7440	9600	13300
15530000	643	1100	1420	1850	2140	2440	2700	3060
15530000	1130	1910	2600	3770	4550	5750	7160	9480
15535000	94	158	200	250	286	319	351	391
15535000	120	229	312	427	510	598	678	789
15535000	98	167	213	270	321	362	400	450

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued								
15541600	263	529	773	1170	1530	1960	2470	3270
15541600	274	501	666	891	1050	1220	1360	1570
15541600	264	527	765	1150	1470	1870	2330	3040
15541650	120	230	329	493	646	830	1050	1410
15541650	116	222	303	415	497	582	661	769
15541650	119	229	325	479	608	765	944	1230
15541800	623	1310	1940	3000	3990	5170	6580	8830
15541800	528	926	1210	1590	1850	2120	2360	2690
15541800	606	1240	1790	2700	3340	4210	5190	6710
15564600	22000	27600	30200	32500	33800	34800	35500	36300
15564600	16100	23000	27200	32500	35900	39400	42300	46500
15564600	21000	26900	29800	32500	34200	35700	36800	38100
15564800	596000	756000	848000	952000	1020000	1090000	1150000	1220000
15564800	690000	801000	857000	927000	965000	1010000	1030000	1090000
15564800	603000	760000	849000	950000	1010000	1080000	1130000	1200000
15564868	375	508	619	791	945	1120	1330	1650
15564868	281	476	613	798	925	1060	1180	1340
15564868	362	504	618	792	941	1110	1300	1590
15564872	133	167	186	207	221	234	246	260
15564872	161	286	376	499	586	677	758	873
15564872	136	178	202	230	260	279	297	318
15564875	12100	16200	18600	21200	22900	24500	25900	27600
15564875	10700	14900	17400	20600	22600	24600	26200	28600
15564875	11900	16000	18400	21100	22800	24500	26000	27800
15564877	429	620	742	892	1000	1110	1210	1340
15564877	712	1160	1460	1860	2130	2410	2650	2990
15564877	475	703	850	1030	1230	1370	1500	1670
15564884	2240	3790	4830	6130	7060	7950	8810	9910
15564884	1270	2080	2620	3330	3800	4290	4710	5290
15564884	2100	3550	4510	5730	6400	7210	7980	8980
15564885	8640	11200	13200	16100	18600	21300	24400	29000
15564885	4370	66700	8140	10000	11200	12400	13400	14900
15564885	7540	10100	12000	14600	16200	18400	20700	24200
15564887	140	198	236	284	320	355	390	436
15564887	194	346	457	609	716	828	928	1070
15564887	145	211	254	309	363	406	447	502

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued								
15564900	121000	167000	199000	240000	271000	304000	337000	383000
15564900	90200	117000	132000	150000	161000	172000	180000	193000
15564900	118000	162000	192000	231000	255000	284000	313000	353000
15565200	728000	879000	966000	1060000	1130000	1190000	1250000	1320000
15565200	793000	913000	972000	1050000	1090000	1130000	1160000	1220000
15565200	733000	882000	966000	1060000	1130000	1180000	1240000	1310000
15565447	666000	810000	906000	1030000	1130000	1220000	1320000	1460000
15565447	926000	1050000	1100000	1180000	1220000	1260000	1290000	1350000
15565447	692000	835000	927000	1050000	1140000	1230000	1310000	1440000
FLOOD-FREQUENCY AREA 3 -- NORTHWEST								
15585000	34	55	68	82	92	101	109	118
15585000	44	86	118	165	200	237	272	319
15585000	36	58	73	90	105	117	128	141
15619000	87	116	134	156	171	186	201	220
15619000	94	169	224	301	357	415	468	542
15619000	88	124	146	174	203	224	244	271
15621000	2850	3450	3830	4280	461	4930	5250	5660
15621000	2360	3390	4040	4890	544	6000	6470	7140
15621000	2800	3440	3850	4330	4710	5060	5400	5830
15624998	51	92	122	160	189	217	246	283
15624998	38	72	98	134	160	189	215	251
15624998	49	89	118	156	183	211	239	276
15625000	61	111	153	216	272	335	406	514
15625000	56	103	138	188	224	262	297	345
15625000	60	110	150	211	260	317	378	469
15633000	84	166	241	365	482	622	790	1060
15633000	174	299	389	512	599	689	770	883
15633000	89	173	249	374	493	628	788	1040
15668100	63	109	142	183	213	242	270	307
15668100	108	187	245	325	382	441	495	570
15668100	65	113	148	191	226	257	287	327
15668200	892	1450	1860	2430	287	3340	3840	4530
15668200	505	784	973	1230	140	1580	1750	1980
15668200	856	1390	1780	2320	2670	3090	3540	4160
15744000	61800	86100	101000	119000	13200	144000	155000	170000
15744000	60200	74700	82800	92900	9880	105000	110000	117000
15744000	61600	84500	98400	115000	125000	136000	145000	158000

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 3 -- NORTHWEST--Continued								
15744500	96300	133000	155000	182000	20000	218000	235000	256000
15744500	87000	105000	116000	128000	13600	143000	149000	158000
15744500	95100	129000	149000	174000	187000	202000	217000	235000
FLOOD-FREQUENCY AREA 3 -- ARCTIC								
15798700	36	68	98	146	190	244	308	410
15798700	42	85	119	171	213	258	304	369
15798700	37	70	100	148	193	246	307	404
15896000	48200	75800	95100	120000	139000	159000	178000	204000
15896000	13200	20300	24900	30600	34400	38200	41500	46100
15896000	42800	67200	84200	106000	116000	132000	147000	168000
15896700	2960	4530	5500	6640	7420	8150	8830	9670
15896700	1380	2340	3020	3950	4620	5330	6000	6890
15896700	2760	4270	5210	6330	6980	7710	8400	9250
15904900	604	781	890	1020	1110	1200	1290	1400
15904900	407	692	890	1160	1340	1530	1690	1920
15904900	577	770	890	1040	1150	1250	1350	1480
15906000	258	484	661	908	1110	1320	1540	1850
15906000	254	445	584	777	917	1070	1200	1400
15906000	257	478	649	888	1070	1270	1470	1750
15908000	12300	16100	18900	22900	26100	29500	33300	38700
15908000	13100	18300	21500	25500	28000	30500	32600	35600
15908000	12500	16500	19400	23400	26600	29800	33100	37800
15910000	20300	28300	33100	38500	42100	45400	48400	52200
15910000	18300	25300	29300	34400	37400	40500	42900	46400
15910000	20000	27800	32500	37800	41000	44300	47200	50900
15910200	785	1210	1440	1680	1820	1930	2030	2130
15910200	217	421	575	793	953	1120	1280	1500
15910200	695	1090	1320	1560	1670	1790	1910	2030
15999900	20800	30600	37000	45100	50900	56700	62300	69700
15999900	16200	23000	27100	32200	35300	38400	40800	44400
15999900	20100	29400	35400	43000	47300	52400	57200	63700
FLOOD-FREQUENCY AREA 4 -- SOUTHEAST								
15024200	14600	16900	18200	19700	20700	21700	22600	23800
15024200	15200	18800	20900	23800	25500	27400	29000	31200
15024200	14600	17100	18400	20200	21200	22500	23500	24800

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 4 -- SOUTHEAST--Continued								
15024300	60200	72100	79100	87300	92900	98300	103000	110000
15024300	67200	81600	89600	100000	107000	114000	119000	128000
15024300	60500	72800	79800	88600	94300	100000	105000	112000
15024400	4290	5550	6470	7720	8730	9800	11000	12600
15024400	4040	5420	6220	7270	7920	8610	9200	10000
15024400	4260	5520	6420	7600	8500	9390	10400	11700
15024500	13000	18100	21300	25200	28000	30800	33500	37100
15024500	8930	11700	13300	15400	16700	18100	19200	20900
15024500	12800	17500	20500	23800	26400	28500	30800	34100
15024600	83300	102000	113000	125000	134000	142000	149000	159000
15024600	71000	84000	90800	100000	105000	111000	115000	122000
15024600	82900	101000	111000	122000	131000	138000	145000	154000
15024640	108000	129000	141000	155000	164000	173000	181000	192000
15024640	96400	112000	121000	134000	140000	147000	153000	162000
15024640	107000	127000	138000	151000	159000	166000	174000	184000
15024670	2230	2650	2860	3090	3240	3370	3480	3620
15024670	2740	3540	4020	4660	5050	5470	5820	6290
15024670	2250	2720	2950	3260	3430	3650	3790	3970
15024684	11400	16000	19400	24100	27900	32000	36400	42800
15024684	9400	12300	14400	17400	19500	21800	24000	27000
15024684	11200	15400	18500	22500	25800	28900	32600	37900
15024690	6150	7250	7890	8650	9170	9660	10100	10700
15024690	6500	9500	11800	15200	17800	20700	23500	27600
15024690	6170	7520	8330	9610	10400	11600	12300	13400
15024695	51100	65200	74900	87600	97400	108000	118000	133000
15024695	52200	67800	78300	93400	104000	115000	125000	140000
15024695	51200	65500	75300	88400	98400	109000	119000	134000
15024700	78100	113000	143000	191000	234000	286000	348000	447000
15024700	75600	97200	112000	134000	148000	164000	179000	200000
15024700	78000	112000	141000	184000	223000	266000	318000	402000
15024800	206000	238000	258000	282000	300000	317000	334000	356000
15024800	210000	240000	258000	285000	300000	318000	332000	353000
15024800	206000	238000	258000	283000	300000	317000	334000	355000
15041000	1860	2460	2940	3630	4210	4860	5590	6670
15041000	1820	2350	2680	3140	3430	3740	4010	4380
15041000	1860	2450	2920	3570	4110	4680	5320	6270

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 4 -- SOUTHEAST--Continued								
15041100	49200	60000	66700	74800	80700	86400	92000	99400
15041100	47400	58900	65600	74700	80000	85900	90900	97900
15041100	49100	59900	66600	74800	80600	86300	91900	99200
15120600	32600	38300	41800	46100	49200	52200	55200	59200
15120600	38100	43600	46600	51000	53200	55800	57800	60600
15120600	33200	39300	42700	47400	50300	53400	56100	59700
15120720	1620	2140	2490	2960	3330	3710	4100	4650
15120720	1320	1780	2070	2440	2680	2940	3160	3460
15120720	1590	2080	2410	2830	3170	3470	3810	4270
FLOOD-FREQUENCY AREA 4 -- YUKON								
15304600	7730	9020	9780	10700	11300	11900	12400	13100
15304600	10900	13700	15300	17500	18700	20000	21100	22700
15304600	7800	9230	10000	11100	11800	12600	13100	13900
15304650	1230	1530	1740	2000	2200	2410	2620	2900
15304650	1290	1610	1820	2120	2300	2510	2680	2910
15304650	1230	1540	1750	2010	2210	2420	2630	2900
15304700	3720	4740	5510	6600	7490	8460	9520	11100
15304700	3750	4660	5250	6090	6620	7190	7680	83600
15304700	3720	4730	5490	6550	7400	8280	9260	10700
15304750	2230	2750	3090	3520	3840	4160	4490	4920
15304750	2070	2630	2980	3440	3730	4040	4290	4640
15304750	2220	2740	3080	3510	3830	4140	4460	4880
15304800	1770	2580	3330	4590	5820	7340	9220	12400
15304800	1700	2220	2580	3080	3420	3780	4110	4560
15304800	1770	2560	3280	4430	5550	6790	8380	11000
15304850	1870	2330	2610	2960	3210	3450	3690	4000
15304850	1670	2140	2400	2730	2920	3130	3300	3520
15304850	1860	2320	2590	2940	3180	3410	3640	3930
15304855	1070	1490	1750	2060	2280	2480	2680	2940
15304855	2020	2690	3070	3560	3840	4140	4400	4740
15304855	1150	1680	1960	2390	2630	2940	3160	3450
15305500	9860	11300	12000	12800	13200	13600	13900	14300
15305500	6360	7560	8190	9020	9430	9900	10200	10700
15305500	9730	11000	11700	12400	12800	13100	13400	13800

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 4 -- YUKON--Continued								
15305540	30100	34800	37600	40700	42800	44900	46800	49200
15305540	37300	41600	44400	48700	51000	53700	55900	59000
15305540	30800	35900	38800	42600	44700	47400	49400	52000
15305545	279	556	809	1220	1610	2060	2600	3470
15305545	280	451	568	728	841	963	1080	1240
15305545	279	535	759	1070	1370	1630	1980	2530
FLOOD-FREQUENCY AREA 5 -- SOUTHEAST								
15120500	5550	7520	8790	10400	11500	12600	13800	15300
15120500	5170	7010	7590	9680	10800	11900	13200	14800
15120500	Presently regulated							
FLOOD-FREQUENCY AREA 5 -- YUKON								
15304520	355	502	599	722	813	905	996	1120
15304520	1000	1360	1480	1910	2130	2350	2580	2890
15304520	371	524	646	783	913	980	1120	1300
15304950	1820	2530	3020	3670	4180	4710	5250	6010
15304950	1670	2480	2830	3810	4420	5010	5680	6590
15304950	1820	2530	3010	3680	4200	4730	5290	6080
15305000	18300	20500	21700	23100	24100	24900	25800	26800
15305000	23200	28400	28900	35000	37400	39500	41600	44100
15305000	18400	20700	22000	23600	24800	25400	26700	28000
15305030	6880	8280	9120	10100	10800	11500	12100	13000
15305030	7000	8830	9060	11100	11900	12700	13500	14500
15305030	6880	8300	9120	10200	10900	11600	12200	13200
15305040	392	570	694	855	979	1110	1240	1420
15305040	641	954	1080	1440	1660	1870	2090	2390
15305040	412	600	752	940	1120	1220	1410	1670
15305050	7680	9610	10900	12700	14000	15400	16900	18900
15305050	7670	10000	10500	13200	14400	15600	16900	18600
15305050	7680	9620	10900	12700	14000	15400	16900	18900
15305100	24300	27000	28400	29900	30900	31800	32600	33500
15305100	34200	41900	42800	52000	55800	59200	62900	67200
15305100	24600	27400	29100	30900	32600	33000	34500	36300
15305150	8700	10900	12400	14400	15800	17300	18800	20900
15305150	9430	12200	12900	16000	17500	18900	20500	22400
15305150	8730	10900	12400	14500	16000	17400	19000	21100

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued								
15305200	2050	2650	3030	3480	3800	4110	4410	4800
15305200	1400	1940	2100	2730	3070	3380	3720	4170
15305200	2020	2620	2950	3420	3720	4050	4330	4710
15305250	36500	45700	51700	59200	64800	70400	76000	83500
15305250	28100	35800	37600	46700	51300	55600	60400	66500
15305250	36300	45400	50900	58500	63700	69600	74700	81700
15305260	40900	51600	58500	67000	73300	79600	85800	94100
15305260	28400	36600	38700	48300	53300	58100	63600	70600
15305260	40100	50700	56100	64800	70000	77100	82200	89300
15305300	11500	14800	17200	20400	22900	25500	28300	32200
15305300	10000	13200	14200	17900	19900	21900	24100	26900
15305300	11400	14700	17000	20200	22600	25200	27800	31400
15305350	65200	81500	92300	106000	116000	127000	137000	152000
15305350	84400	102000	104000	125000	134000	143000	153000	165000
15305350	65700	82000	92900	107000	117000	128000	138000	153000
15305360	3700	5660	7090	9040	10600	12200	13900	16300
15305360	1890	3000	3500	4940	5860	6790	7860	9350
15305360	3460	5310	6240	8100	9140	11000	12100	13700
15305380	440	564	654	775	873	975	1080	1240
15305380	330	448	505	626	703	773	853	955
15305380	426	550	621	743	823	931	1010	1140
15305385	252	335	385	441	480	517	551	594
15305385	348	490	562	713	811	904	1010	1150
15305385	260	347	410	478	542	567	634	717
15305390	14600	18500	21000	24300	26800	29300	31900	35500
15305390	17700	20700	22100	24900	26700	28300	30200	32600
15305390	14700	18600	21100	24300	26800	29200	31700	35000
15305400	37800	49600	57700	68100	76100	84200	92500	104000
15305400	28800	35300	37400	44500	48400	52100	56400	61800
15305400	37300	48800	55400	65400	71500	80400	86500	95000
15305405	126	220	294	400	488	583	686	834
15305405	153	245	286	406	481	554	637	750
15305405	129	223	292	401	486	577	672	805
15305406	34900	41600	45900	51300	55400	59400	63400	68900
15305406	33700	43200	46400	57000	63000	68800	75500	84200
15305406	34800	41700	46000	52100	56800	60700	65700	72400

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued								
15305411	855	1210	1460	1800	2060	2340	2620	3020
15305411	1250	1670	1800	2240	2480	2690	2930	3240
15305411	885	1250	1510	1870	2150	2400	2690	3080
15305412	4080	4730	5170	5720	6150	6580	7020	7620
15305412	3350	4280	4540	5570	6090	6550	7070	7710
15305412	4010	4690	5060	5700	6140	6580	7030	7650
15305420	67900	92200	110000	135000	154000	175000	198000	230000
15305420	53200	67400	71400	88100	96800	105000	115000	127000
15305420	67400	91300	107000	132000	148000	170000	189000	215000
15305450	127000	167000	196000	236000	268000	303000	341000	395000
15305450	133000	160000	164000	197000	213000	227000	244000	264000
15305450	127000	167000	194000	233000	262000	297000	330000	375000
15305590	79500	103000	118000	134000	145000	156000	166000	179000
15305590	45000	59200	61500	76400	83200	8950Q	96500	105000
15305590	78100	101000	113000	129000	138000	151000	158000	168000
15305620	88500	112000	127000	148000	164000	180000	196000	219000
15305620	52800	66800	69600	86500	94300	102000	110000	119000
15305620	85300	108000	117000	138000	148000	167000	176000	190000
15305650	82500	112000	134000	164000	190000	217000	247000	291000
15305650	71800	93600	99000	125000	139000	151000	166000	184000
15305650	82000	111000	131000	160000	183000	210000	235000	270000
15305670	242000	306000	350000	409000	455000	503000	554000	624000
15305670	276000	328000	335000	400000	429000	457000	489000	528000
15305670	243000	307000	349000	408000	452000	499000	546000	609000
15305673	1690	2420	2920	3570	4070	4570	5080	5770
15305673	1970	2900	3330	4370	5000	5600	6280	7150
15305673	1720	2470	3000	3720	4310	4760	5380	6200
15305692	230	330	402	500	577	658	744	865
15305692	201	287	315	403	449	491	537	596
15305692	227	325	383	479	539	621	681	764
15305693	510	752	920	1140	1310	1480	1650	1890
15305693	311	424	456	567	620	666	715	776
15305693	483	706	800	991	1070	1260	1310	1410
15305695	3430	4430	5130	6050	6760	7500	8280	9350
15305695	3850	5530	6220	8080	9190	10300	11500	13100
15305695	3470	4520	5300	6350	7260	7910	8930	10300

Table 3. T-year peak discharge at gaging stations and partial record sites in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{200}	Q_{500}
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued								
15305698	13600	16700	18700	21100	22800	24500	26200	28400
15305698	18600	26200	29500	38000	43300	28500	54500	62500
15305698	13800	17100	19600	22400	25000	24900	29100	32800
15305700	255000	319000	364000	424000	471000	521000	573000	647000
15305700	272000	326000	334000	401000	431000	461000	494000	536000
15305700	255000	319000	362000	423000	468000	517000	566000	634000
15305900	27	45	60	84	104	127	153	194
15305900	23	39	48	69	84	98	114	135
15305900	27	45	60	83	102	125	149	185
15305920	31	55	74	101	124	149	177	218
15305920	25	40	47	63	73	82	93	106
15305920	31	54	70	96	115	140	161	191
15305950	141	303	464	746	1030	1380	1810	2560
15305950	255	430	528	751	901	1050	1220	1440
15305950	144	307	469	746	1020	1350	1730	2360
15344000	55	94	126	172	210	253	299	367
15344000	49	86	109	158	192	226	264	315
15344000	55	94	124	170	207	250	293	356
15348000	35000	46300	54900	67100	77100	88100	100000	118000
15348000	19300	25400	27500	34200	37700	41000	44500	48900
15348000	33000	43600	48400	59400	64500	76700	81700	90000
15356000	287000	358000	407000	472000	523000	575000	630000	706000
15356000	375000	471000	495000	609000	668000	725000	791000	876000
15356000	289000	360000	411000	477000	531000	581000	639000	719000
15388944	122000	147000	164000	183000	198000	212000	225000	244000
15388944	110000	144000	163000	192000	212000	230000	250000	274000
15388944	121000	147000	164000	185000	201000	215000	231000	253000
15388948	28200	38400	46100	56900	65800	75500	86000	101000
15388948	23600	33000	38200	45900	50600	54800	58800	63300
15388948	27600	37800	44400	54500	61300	70800	77500	86400
15388950	141000	190000	219000	253000	276000	298000	318000	343000
15388950	140000	186000	212000	253000	280000	306000	335000	371000
15388950	141000	190000	219000	253000	276000	299000	320000	346000
15389000	160000	230000	278000	339000	385000	431000	478000	540000
15389000	162000	222000	254000	314000	352000	390000	431000	483000
15389000	160000	229000	275000	336000	379000	426000	470000	527000
15389500	45000	58500	66300	75200	81200	86800	92000	98400
15389500	89400	115000	121000	148000	160000	171000	183000	198000
15389500	47600	61900	72700	83500	93900	96300	107000	119000

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada

[mi, mile; ft/mi, foot per mile; ft, foot; in., inch; °F, degree Fahrenheit]

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 1--SOUTHEAST											
15010000	55°45'00"	130°12'00"	80.0	197	14.5	3,400	0.0	26	11	175	27
15011500	55°08'29"	130°31'50"	45.3	80.0	11.7	1,700	1.0	64	0	200	28
15012000	55°24'59"	130°52'03"	15.5	130	7.6	1,730	5.0	84	0	160	28
15015590	56°21'05"	130°41'30"	571	70.1	39.9	3,880	4.0	28	40	100	25
15022000	56°12'48"	131°38'12"	67.4	85.7	18.8	2,400	1.0	40	9	175	26
15024750	56°39'40"	131°58'14"	17.3	252	8.5	2,560	6.0	31	5	175	25
15026000	57°00'21"	132°46'45"	23.0	180	9.8	3,160	4.0	22	13	175	24
15028300	57°10'24"	133°06'36"	151	63.7	29.3	2,540	5.0	37	26	175	24
15031000	58°10'56"	133°53'06"	8.29	1,110	3.0	3,020	0.0	3	39	175	20
15034000	58°10'00"	133°41'50"	32.5	130	11.1	2,400	9.0	15	22	180	20
15036000	58°12'10"	133°36'40"	226	148	17.0	3,100	1.0	5	25	175	20
15038000	58°08'15"	133°46'15"	11.4	248	5.0	2,590	7.0	4	28	175	20
15040000	58°13'40"	134°02'25"	15.2	234	8.5	3,100	12.0	13	16	150	20
15044000	58°19'00"	134°10'15"	24.3	219	8.5	2,200	0.0	68	10	200	22
15048000	58°16'30"	134°18'50"	4.57	540	3.4	1,900	0.0	44	2	150	22
15050000	58°18'25"	134°24'05"	9.76	541	4.9	2,400	0.0	29	8	150	22
15052000	58°23'30"	134°25'15"	12.1	500	5.3	3,430	0.0	4	67	180	22
15052500	58°25'47"	134°34'22"	85.1	292	18.3	3,260	3.0	8	66	180	22
15052800	58°23'53"	134°36'34"	15.5	264	7.6	1,500	0.0	64	3	100	22
15053800	58°23'40"	134°37'50"	2.50	555	3.6	1,170	0.0	70	0	80	22
15054000	58°22'56"	134°38'10"	3.96	430	4.4	1,160	8.0	68	0	80	22
15054500	58°35'30"	134°54'00"	1.35	1,000	2.8	1,100	0.0	99	0	80	22
15056100	59°28'02"	135°17'00"	145	192	19.0	3,900	0.0	11	17	100	0
15056200	59°31'35"	135°21'10"	43.2	439	12.1	3,400	0.0	18	26	100	0
15056210	59°30'43"	135°20'40"	179	210	23.8	3,400	0.0	20	33	90	0

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 1--SOUTHEAST--Continued											
15056560	59°24'50"	136°00'07"	284	90.7	31.6	3,480	0.0	24	15	80	0
15057500	58°44'46"	135°14'25"	1.58	2,000	1.8	1,720	0.0	42	0	110	21
15058000	55°06'00"	131°26'00"	6.67	1.00	4.2	860	20.0	62	0	150	30
15059500	55°26'30"	131°47'38"	5.29	220	3.9	880	0.0	99	0	125	29
15060000	55°24'40"	131°40'05"	2.81	540	2.0	1,340	11.0	87	0	190	29
15067900	55°24'50"	131°33'16"	2.03	384	2.2	2,500	6.0	0	0	200	29
15068000	55°25'34"	131°30'40"	5.70	770	4.2	1,680	8.0	40	0	200	29
15070000	55°36'54"	131°20'14"	36.5	51.0	12.3	1,800	5.0	61	0	200	28
15072000	55°23'31"	131°11'38"	32.1	40.6	16.3	1,300	14.0	72	0	180	28
15074000	55°30'20"	131°01'25"	19.7	160	8.1	900	16.0	66	0	175	28
15076000	55°36'00"	130°59'00"	33.9	140	10.7	1,300	9.0	68	0	200	27
15078000	55°39'28"	130°58'14"	30.2	133	13.0	1,500	9.0	67	0	200	27
15081490	55°53'57"	133°08'42"	5.8	78.4	3.4	390	2.0	98	0	100	29
15081500	55°48'57"	133°07'58"	51.6	37.0	12.6	850	0.0	95	0	100	29
15081580	55°33'25"	132°52'33"	1.82	497	2.2	2,300	17.0	0	0	100	30
15081890	55°17'18"	132°49'18"	9.10	186	4.6	1,030	0.0	84	0	140	31
15083500	54°56'48"	132°10'15"	3.38	150	3.0	730	0.0	81	0	150	32
15085100	55°23'44"	132°24'25"	5.90	460	4.5	1,000	4.0	85	0	100	30
15085600	55°26'58"	132°41'41"	8.82	292	5.4	1,000	0.0	77	0	100	30
15085700	55°27'47"	132°42'11"	28.7	51.0	13.1	1,400	0.0	84	0	120	30
15085800	55°29'26"	132°40'31"	15.1	125	6.4	1,120	0.0	88	0	120	30
15086600	56°07'54"	133°08'56"	11.2	135	5.3	680	5.0	90	0	110	28
15086900	56°15'36"	133°19'34"	11.2	260	4.7	980	6.0	88	0	125	28
15087250	56°43'13"	132°55'33"	3.01	429	3.0	1,110	0.0	96	0	100	25
15087570	56°52'21"	133°40'30"	65.0	17.4	19.8	493	0.0	91	0	70	26
15087585	56°58'07"	133°04'05"	9.39	240	6.5	960	1.0	80	1	120	25
15087590	56°37'10"	133°44'10"	2.72	176	3.0	358	2.0	98	0	100	27
15087690	57°04'01"	135°17'42"	10.1	387	4.5	1,340	0.0	79	0	140	28
15088000	57°03'05"	135°13'40"	39.0	130	11.2	2,400	3.0	23	3	150	28
15093400	56°22'32"	134°39'40"	3.72	229	3.7	1,130	7.0	21	0	300	30

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 1--SOUTHEAST--Continued											
15094000	56°31'10"	134°40'10"	7.41	33.7	5.4	1,300	26.0	38	1	300	28
15098000	57°05'15"	134°50'30"	32.0	93.8	12.1	2,000	9.0	60	14	180	27
15100000	57°08'35"	134°51'50"	17.5	446	7.4	2,180	5.0	43	13	180	27
15101500	58°05'18"	134°44'49"	22.8	184	10.0	1,800	1.0	64	0	80	22
15102000	57°39'40"	134°14'55"	56.2	128	12.5	1,200	11.0	68	1	100	24
15106920	57°39'46"	135°11'06"	10.2	49.7	4.8	1,020	0.0	94	0	100	26
15106940	57°40'39"	135°07'42"	4.48	440	3.4	1,260	0.0	99	0	100	26
15106960	57°40'22"	135°10'40"	8.00	230	5.2	1,160	0.0	99	0	100	26
15106980	57°40'42"	135°13'17"	14.5	150	8.3	950	0.0	88	0	100	26
15107000	57°41'43"	135°12'59"	37.7	48.0	7.2	970	0.0	93	0	100	26
15108000	57°50'30"	135°02'09"	24.3	110	9.7	920	1.0	90	0	100	24
15108250	58°03'02"	135°29'21"	42.8	59.0	13.1	1,100	0.0	80	0	80	24
15109000	58°19'50"	134°35'20"	13.6	289	6.9	1,600	0.0	72	0	80	24
FLOOD-FREQUENCY AREA 1--SOUTH-CENTRAL											
15195000	60°20'32"	144°18'10"	7.95	202	3.6	890	0.0	63	0	200	16
15216000	60°35'14"	145°37'05"	20.5	219	11.0	2,000	0.0	29	27	160	16
15219000	60°45'41"	146°10'20"	4.78	396	3.8	1,400	0.0	43	0	120	16
15219100	60°45'00"	146°14'00"	4.22	381	2.8	1,200	0.0	48	0	120	16
15236200	60°46'35"	148°43'35"	1.61	1,100	2.9	1,580	0.0	0	50	180	13
15236900	60°22'14"	148°53'48"	9.51	682	4.7	3,730	0.0	0	72	160	13
15237400	60°13'10"	147°13'30"	6.32	531	3.6	1,230	0.0	11	42	200	20
15238600	60°04'10"	149°27'08"	9.26	507	5.5	1,990	0.0	22	8	120	12
15238820	59°28'50"	151°38'42"	20.7	122	9.8	1,610	0.0	6	0	70	20
15239050	59°46'42"	150°45'15"	9.25	503	5.0	3,920	1.0	0	28	70	16
15295600	57°39'05"	153°01'46"	15.0	126	8.9	2,300	3.0	8	1	130	22
15296000	57°41'06"	153°25'10"	123	31.2	23.0	1,830	2.0	13	0	75	21
15297200	57°36'12"	152°24'12"	4.74	105	5.1	700	0.0	0	0	130	24
15297475	57°49'00"	152°37'20"	1.51	443	2.7	720	0.0	0	0	120	24

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL											
15239500	59°42'30"	151°20'35"	10.4	150	9.8	880	0.0	68	0	25	16
15239800	59°40'10"	151°40'00"	5.35	142	4.7	890	0.0	37	0	25	16
15239900	59°44'50"	151°45'11"	137	45.8	26.2	1,120	0.0	60	0	25	14
15240000	59°46'21"	151°50'05"	224	51.0	28.0	970	0.0	53	0	25	14
15240500	59°58'45"	151°43'20"	5.19	21.0	4.1	175	0.0	60	0	20	13
15241600	60°02'56"	151°39'48"	131	12.7	21.0	670	1.0	95	0	20	11
15242000	60°19'05"	151°15'35"	738	68.3	55.0	1,810	15.0	39	28	50	10
15243950	60°20'30"	149°22'15"	16.8	316	7.4	2,300	0.0	34	5	80	10
15244000	60°24'20"	149°21'45"	32.6	220	14.6	2,800	6.0	46	12	90	10
15246000	60°27'25"	149°21'15"	44.2	150	12.8	2,900	10.0	20	18	90	10
15248000	60°26'01"	149°22'19"	181	89.0	28.0	2,470	2.0	9	11	90	10
15250000	60°25'50"	149°22'10"	11.8	477	8.1	3,480	0.0	19	6	80	10
15251800	60°35'45"	149°32'35"	9.41	263	6.6	3,260	0.0	11	0	60	10
15254000	60°29'49"	149°40'38"	31.7	136	14.7	2,700	13.0	38	0	50	8
15260000	60°26'00"	149°49'15"	31.8	194	9.9	2,400	16.0	44	6	60	8
15266300	60°28'39"	151°04'46"	2,010	10.7	118	1,750	5.0	29	11	50	8
15266500	60°33'50"	151°07'03"	51.0	4.75	13.5	140	15.0	67	0	20	6
15267900	60°53'40"	149°38'13"	149	126	19.8	2,750	0.0	24	0	30	6
15269500	60°43'40"	149°17'00"	28.2	236	9.6	2,220	0.0	36	7	70	10
15270400	60°45'40"	149°27'20"	4.07	696	3.6	2,580	0.0	31	0	40	10
15271000	60°49'15"	149°25'31"	234	60.8	20.6	2,460	1.0	31	3	60	8
15271900	60°52'12"	149°26'02"	1.80	1,460	2.8	2,670	0.0	11	0	40	8
15272530	60°57'45"	149°08'23"	7.19	745	5.9	2,480	0.0	36	4	70	8
15272550	60°56'29"	149°09'44"	58.2	455	11.0	2,610	0.0	28	11	70	10
15273900	61°08'52"	149°43'12"	25.2	255	9.2	2,760	1.0	8	0	25	6
15274000	61°09'57"	149°46'15"	30.4	246	11.5	2,530	1.0	26	0	22	6
15274300	61°10'10"	149°45'43"	13.4	389	10.6	2,670	2.0	30	0	22	6
15276000	61°13'32"	149°38'06"	90.5	119	19.0	3,100	1.0	13	0	30	6
15277100	61°18'28"	149°33'32"	192	112	33.5	3,120	0.5	15	13	40	6
15277200	61°19'14"	149°32'11"	7.43	533	7.5	2,980	0.0	20	0	20	6

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued											
15277410	61°25'08"	149°29'20"	87.8	133	21.0	3,150	0.0	23	2	35	6
15280000	61°24'15"	149°08'30"	119	265	18.0	3,700	3.0	7	17	50	7
15281000	61°30'18"	149°01'50"	1,180	183	43.0	4,000	4.0	11	54	100	9
15282000	61°48'12"	147°40'57"	289	91.1	30.0	4,190	0.0	10	0	25	2
15282400	61°48'42"	148°08'01"	8.51	679	3.7	3,000	1.0	45	0	25	3
15283500	61°43'44"	148°54'31"	13.4	486	8.0	2,560	0.0	50	2	30	4
15284000	61°36'34"	149°04'16"	2,070	79.7	77.0	4,000	0.0	14	12	35	4
15285000	61°38'47"	149°11'45"	16.8	192	9.8	1,530	0.0	67	0	25	6
15290000	61°42'32"	149°13'36"	61.9	187	14.9	3,700	0.0	16	5	50	4
15290200	61°41'17"	149°57'58"	8.00	75.7	7.0	550	2.3	68	0	20	2
15291000	63°06'14"	147°30'57"	950	56.6	51.0	4,510	1.0	1	25	50	-6
15291100	63°03'04"	147°16'22"	4.33	617	4.0	4,700	0.0	12	0	30	-6
15291200	63°07'10"	146°31'45"	280	133	23.0	4,520	1.0	0	19	50	-6
15291500	62°41'55"	147°32'42"	4,140	10.0	107	3,560	2.0	5	7	30	-6
15292000	62°46'04"	149°41'28"	6,160	10.2	189	3,420	1.0	7	5	30	-5
15292392	62°42'33"	150°11'30"	50.2	59.3	25.6	1,830	3.0	51	0	38	-4
15292400	62°33'31"	150°14'02"	2,570	23.0	87.0	3,760	1.0	22	27	55	-5
15292700	62°20'49"	150°01'01"	2,006	35.0	90.3	3,630	0.0	25	7	35	-2
15292800	62°06'32"	150°03'12"	164	114	25.0	1,930	3.0	54	0	30	0
15293000	61°56'55"	150°03'14"	19.6	53.8	12.3	400	3.0	72	0	25	0
15293700	61°48'37"	150°05'42"	155	86.2	37.9	1,840	1.0	46	0	30	2
15294005	61°46'51"	149°53'04"	166	100	28.0	2,890	1.0	24	0	30	2
15294010	61°44'52"	149°56'14"	48.0	96.1	21.2	1,310	2.0	76	0	30	2
15294025	62°19'00"	150°26'30"	52.3	22.1	14.5	800	9.0	77	0	35	-3
15294100	61°46'05"	150°20'13"	592	10.6	86.6	492	5.0	56	0	25	-2
15294300	61°52'23"	151°22'01"	2,250	30.6	98.0	2,810	5.0	34	11	45	-5
15294350	61°32'41"	150°30'45"	19,400	11.0	289	3,200	2.0	21	11	35	0
15294450	61°06'31"	151°15'07"	131	53.7	31.5	1,120	2.0	44	0	45	2

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conteminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (^oF)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 2 -- SOUTHWEST											
15297900	58°41'08"	156°40'08"	16.1	18.2	7.3	140	5.0	14	0	20	8
15300000	59°51'34"	154°52'24"	3,478	5.70	106	2,160	6.0	46	8	40	8
15300200	59°45'26"	154°50'49"	20.8	154	6.5	321	7.0	69	0	30	8
15300500	59°19'44"	155°53'57"	6,500	6.50	174	1,790	20.0	64	6	40	8
15302000	59°56'08"	158°11'16"	1,490	12.5	76.0	1,100	14.0	14	0	60	4
15302500	59°20'57"	157°28'23"	9,850	3.12	199	988	4.0	36	1	30	4
15302900	59°16'34"	158°35'42"	1.28	347	2.0	480	3.0	78	0	40	8
15303000	59°16'30"	158°35'37"	1,110	1.40	92.0	690	22.0	26	0	60	5
15303010	59°13'34"	158°40'21"	4.46	28.6	3.6	380	2.0	78	0	40	8
15303150	59°08'54"	158°53'14"	113	18.0	26.0	540	28.0	40	0	50	6
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL											
15198500	62°55'56"	143°40'06"	15.3	281	7.0	3,370	0.0	29	0	30	-16
15199000	62°43'03"	144°14'21"	4.32	504	3.7	3,370	0.0	29	0	22	-17
15200000	62°18'06"	145°18'20"	620	35.9	78.0	3,030	8.0	18	8	25	-9
15200270	62°31'46"	145°30'52"	68.0	22.6	31.2	2,290	12.0	26	0	17	-10
15200280	62°31'15"	145°31'51"	1,770	33.3	68.0	2,780	15.0	24	0	18	-6
15201000	62°08'49"	145°28'31"	11.4	28.0	14.2	1,700	1.0	81	0	10	-12
15201100	61°59'17"	147°00'34"	7.81	185	7.2	2,940	0.0	99	0	15	0
15201900	62°06'32'	145°30'57"	7.12	31.2	8.6	1,600	4.0	49	0	10	-12
15206000	61°57'10"	145°18'20"	880	16.1	62.0	3,500	4.0	36	11	30	-7
15208000	61°39'41"	145°11'02"	420	71.0	46.0	3,600	4.0	27	11	30	-2
15208100	61°40'05"	145°10'26"	70.5	119	17.9	3,100	4.0	58	0	15	-10
15208200	61°45'32"	145°09'14"	14.3	129	8.0	2,680	1.0	70	0	15	-10
15209000	61°22'12"	142°40'50"	30.9	305	13.0	4,150	0.0	28	3	30	0
15209100	61°20'42"	142°41'49"	10.4	429	7.0	2,450	0.0	92	0	20	0
15211700	61°30'40"	144°04'00"	23.8	264	11.4	3,350	0.0	31	0	25	-8

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL--Continued											
15211900	61°28'59"	144°27'23"	44.8	282	14.2	4,120	0.0	18	0	30	-6
15212000	61°27'56"	144°27'21"	20,600	14.4	178	3,620	3.0	22	17	25	-7
15212500	61°20'08"	145°18'26"	9.80	538	4.7	4,300	0.0	3	0	40	0
15213400	61°15'32"	145°16'54"	37.4	225	13.9	4,060	3.0	13	13	80	3
FLOOD-FREQUENCY AREA 3 -- SOUTHWEST											
15303600	62°57'10"	155°35'11"	11,700	2.39	251	1,850	4.0	57	0	23	-12
15304000	61°52'16"	158°06'03"	31,100	1.14	456	1,480	3.0	44	1	22	-12
15304200	60°21'10"	159°55'00"	270	20.3	31.4	2,130	5.0	0	0	50	2
FLOOD-FREQUENCY AREA 3 -- YUKON											
15438500	65°33'28"	145°05'26"	9.94	478	5.8	2,910	0.0	50	0	15	-24
15439800	65°34'05"	144°53'13"	31.3	154	12.4	2,570	0.0	73	0	15	-24
15442500	65°37'09"	144°28'55"	17.2	96.0	8.5	1,270	0.0	98	0	15	-24
15453481	66°17'53"	150°23'10"	4.18	250	3.2	1,970	0.0	73	0	15	-16
15453500	65°52'32"	149°43'04"	196,300	2.02	1,100	2,830	3.0	70	2	15	-21
15453610	65°56'57"	150°55'00"	8.00	333	5.2	1,500	0.0	88	0	10	-16
15457700	65°34'30"	148°56'18"	26.3	108	8.0	1,500	0.0	99	0	15	-16
15457800	65°39'55"	149°05'47"	662	23.8	44.8	1,400	0.0	49	0	15	-16
15468000	65°30'25"	150°10'15"	199,400	2.10	1,160	2,810	3.0	69	2	15	-21
15469900	62°59'01"	141°40'07"	11.7	305	4.8	2,400	1.0	98	0	10	-24
15470000	63°00'23"	141°48'17"	3,280	25.4	121	3,730	2.0	50	5	20	-23
15470300	62°32'47"	143°19'30"	6.73	344	6.6	4,680	1.0	30	0	30	-20
15470330	62°30'19"	143°09'24"	14.8	198	8.9	3,960	3.0	73	0	30	-20
15470340	62°27'52"	143°06'18"	115	91.0	23.1	4,340	1.0	41	1	30	-20
15471000	63°09'38"	142°05'20"	15.4	123	5.4	2,430	0.0	99	0	10	-24

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conteminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued											
15471500	63°16'45"	142°30'27"	2.43	428	2.8	2,600	0.0	100	0	10	-24
15473600	63°01'48"	143°20'36"	10.7	543	5.4	3,730	0.0	58	0	20	-16
15473950	63°10'19"	143°12'03"	36.4	225	12.6	4,300	0.0	31	0	20	-20
15476000	63°23'18"	143°44'47"	8,550	8.93	230	3,860	2.0	45	7	18	-22
15476049	63°24'24"	143°48'28"	3.09	830	3.9	3,400	0.0	62	0	15	-15
15476050	63°24'27"	143°47'54"	3.32	828	4.2	3,300	0.0	63	0	15	-15
15476200	63°41'40"	144°17'40"	11.0	169	7.1	2,000	1.0	82	0	15	-15
15476300	63°41'23"	144°21'47"	65.1	223	19.1	3,200	1.0	40	5	18	-14
15476400	63°41'32"	144°34'16"	57.6	185	12.9	3,100	1.0	35	0	18	-13
15478000	64°09'20"	145°51'00"	13,500	3.86	346	3,440	2.0	50	6	22	-14
15478010	63°04'16"	146°06'17"	50.3	74.0	12.8	4,200	7.0	0	0	30	-6
15478040	63°14'27"	145°28'03"	12.2	552	4.6	5,800	0.0	0	69	80	-7
15478050	63°13'27"	145°38'56"	15.5	356	9.0	4,880	0.0	0	19	60	-7
15478500	63°37'52"	145°53'03"	5.32	351	5.7	3,300	0.0	12	0	30	-8
15480000	64°17'24"	146°20'56"	20.2	217	8.0	1,730	0.0	95	0	10	-16
15484000	64°28'22"	146°55'26"	2,170	19.4	124	2,520	0.0	59	0	15	-19
15490000	65°03'17"	146°03'05"	26.7	192	10.4	2,660	0.0	44	0	16	-20
15493000	64°53'55"	146°24'42"	941	23.4	63.0	2,270	0.0	58	0	16	-19
15493500	64°47'47"	147°11'56"	1,430	14.5	108	1,930	0.0	58	0	15	-20
15511000	64°53'10"	147°14'50"	372	17.0	55.0	1,480	0.0	94	0	15	-18
15514000	64°50'45"	147°42'04"	1,995	12.6	119	1,770	2.0	80	0	15	-18
15514500	64°26'06"	148°12'46"	855	39.8	83.0	2,720	0.0	28	2	15	-12
15515500	64°33'55"	149°05'30"	25,600	4.12	489	3,920	4.0	56	6	16	-15
15515800	63°19'32"	148°14'49"	36.2	169	10.2	3,400	2.0	6	0	20	-6
15515900	63°19'54"	148°16'16"	5.63	397	5.7	3,590	0.0	13	0	20	-6
15516000	63°27'28"	148°48'11"	710	48.7	52.0	3,470	2.0	5	2	30	-7
15516050	63°23'41"	148°55'13"	325	62.2	29.9	3,670	1.0	18	1	30	-5
15516200	63°30'34"	148°48'39"	6.90	586	5.8	3,950	0.0	4	0	30	-8
15518000	63°50'43"	148°56'37"	1,910	21.2	88.0	3,500	1.0	8	4	25	-8
15518100	63°56'05"	149°06'00"	3.44	222	3.3	1,960	0.0	36	0	25	-10

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued											
15518200	64°01'56"	149°08'40"	8.17	337	7.5	2,450	0.0	40	0	25	-12
15518250	64°10'35"	149°17'26"	4.10	200	5.0	1,490	0.0	100	0	20	-14
15518350	63°55'14"	149°29'51"	490	490	36.7	3,420	0.0	65	2	25	-8
15519000	65°27'52"	148°15'13"	12.6	88.0	5.9	1,000	0.0	14	0	15	-16
15519200	65°23'02"	148°56'12"	7.81	230	5.5	1,410	0.0	98	0	10	-16
15520000	65°21'13"	146°09'33"	5.31	333	4.0	2,920	0.0	28	0	18	-20
15530000	65°17'32"	146°22'48"	61.1	95.2	16.8	2,800	0.0	48	0	18	-20
15535000	65°09'00"	147°33'05"	9.19	229	3.5	1,640	0.0	97	0	15	-18
15541600	65°17'08"	148°07'56"	23.0	127	7.5	1,590	0.0	90	0	15	-16
15541650	65°16'31"	148°06'58"	9.01	356	6.0	1,710	0.0	100	0	15	-16
15541800	65°09'04"	147°55'22"	46.7	58.0	13.8	1,500	0.0	94	0	15	-16
15564600	64°47'34"	155°33'39"	2,693	2.90	184	1,410	2.0	57	0	15	-17
15564800	64°44'28"	155°29'22"	259,000	1.80	1,350	2,640	4.0	62	1	15	-19
15564868	67°44'16"	149°45'10"	16.7	381	7.0	3,620	0.0	4	0	28	-18
15564872	67°29'25"	149°52'20"	9.47	480	6.8	3,040	0.0	16	0	25	-18
15564875	67°26'18"	150°04'30"	1,200	41.2	55.0	3,390	0.6	4	0	25	-16
15564877	67°24'38"	150°06'21"	49.2	171	14.0	2,930	0.0	3	0	25	-17
15564884	66°46'56"	150°41'06"	110	35.5	23.4	1,780	0.0	48	0	18	-18
15564885	66°47'10"	150°52'23"	465	38.7	44.0	2,080	0.0	10	0	18	-16
15564887	66°36'52"	150°41'24"	11.7	162	4.9	1,670	0.0	89	0	20	-18
15564900	66°02'51"	154°15'30"	18,700	18.8	262	2,200	1.0	36	0	16	-17
15565200	64°19'40"	158°43'10"	296,000	1.70	1,476	2,490	4.0	59	1	15	-18
15565447	61°56'04"	162°52'50"	321,000	1.35	1,838	2,340	4.0	57	1	16	-17
FLOOD-FREQUENCY AREA 3 -- NORTHWEST											
15585000	64°26'03"	165°02'46"	1.55	106	2.2	300	0.0	0	0	15	-2
15619000	64°35'11"	165°16'39"	2.99	152	2.7	512	0.0	0	0	22	-2
15621000	64°33'51"	165°30'26"	85.7	19.6	19.5	632	0.0	4	0	30	-2
15624998	64°38'16"	165°42'42"	1.13	542	1.4	784	0.0	0	0	25	-3
15625000	64°38'15"	165°42'46"	1.76	429	1.4	820	0.0	2	0	25	-3

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 3 -- NORTHWEST--Continued											
15633000	64°42'52"	165°49'13"	6.34	121	4.3	860	0.0	3	0	25	-3
15668100	64°55'40"	164°57'39"	3.78	522	3.7	1,500	0.0	1	0	30	-4
15668200	64°55'48"	164°52'12"	21.9	145	9.2	1,620	1.0	3	0	35	-4
15744000	67°05'13"	157°50'51"	6,570	4.96	188	1,610	1.0	34	0	25	-16
15744500	66°58'25"	160°07'51"	9,520	2.40	282	1,450	1.0	32	0	25	-16
FLOOD-FREQUENCY AREA 3 -- ARCTIC											
15798700	71°15'35"	156°46'57"	2.79	13.0	2.5	40	22.0	0	0	5	-23
15896000	70°16'54"	148°57'35"	3,130	12.0	180	900	2.0	0	0	9	-18
15896700	70°16'03"	148°37'41"	176	1.31	20.4	135	8.0	0	0	8	-18
15904900	68°22'25"	149°18'48"	32.6	210	10.2	5,100	0.0	0	4	25	-16
15906000	68°41'13"	149°05'42"	28.4	44.0	12.8	2,870	4.0	0	0	20	-16
15908000	69°00'54"	148°49'02"	1,860	26.5	76.9	3,580	1.0	0	1	22	-16
15910000	69°05'24"	148°45'34"	2,208	30.4	79.0	3,220	0.0	0	0	22	-16
15910200	69°08'50"	148°49'50"	34.5	59.2	19.5	1,510	2.0	0	0	10	-16
15999900	69°19'00"	139°34'00"	2,200	19.5	123	2,630	0.0	0	0	18	-22
FLOOD-FREQUENCY AREA 4 -- SOUTHEAST											
15024200	57°54'00"	129°42'14"	1,370	13.0	72.0	4,800	0.0	60	2	25	4
15024300	58°02'38"	129°56'45"	7,260	5.60	166	4,300	0.0	60	0	24	-6
15024400	58°17'37"	130°30'44"	618	63.0	49.0	3,900	1.0	70	0	16	-6
15024500	58°04'20"	130°49'27"	1,390	28.0	98.0	3,800	1.0	83	0	17	-8
15024600	57°54'03"	131°09'16"	11,300	15.5	224	4,200	1.0	65	0	21	-6
15024640	57°29'10"	131°45'00"	13,900	15.0	264	4,250	1.0	50	5	24	8
15024670	57°32'00"	130°12'28"	483	32.5	32.0	4,000	5.0	50	0	20	4
15024684	57°02'27"	130°24'05"	326	222	9.0	4,270	1.0	29	40	80	20
15024690	56°54'56"	130°43'15"	120	812	4.6	3,540	0.0	19	64	110	24
15024695	56°41'55"	130°52'23"	2,790	25.0	108	3,500	1.0	35	6	60	16

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 4 -- SOUTHEAST--Continued											
15024700	56°44'20"	131°40'25"	3610	22.7	140	3,500	1.0	35	6	70	18
15024800	56°42'29"	132°07'49"	19,920	11.6	369	4,310	1.0	42	10	40	14
15041000	59°06'20"	133°39'40"	165	69.4	58.0	4,800	2.0	3	44	30	2
15041100	58°38'20"	133°32'25"	6,000	15.8	155	3,800	1.0	40	4	25	5
15120600	60°07'09"	137°58'27"	6,250	11.9	168	4,630	3.0	40	13	25	-12
15120720	60°05'50"	136°55'00"	147	155	16.8	4,430	1.0	53	0	20	-6
FLOOD-FREQUENCY AREA 4 -- YUKON											
15304600	59°35'57"	133°48'48"	2,630	7.50	70.0	3,500	9.0	62	4	20	-8
15304650	59°25'55"	134°12'20"	104	71.5	9.3	5,310	4.0	31	6	40	0
15304700	59°35'40"	134°23'26"	277	130	23.3	5,030	2.0	21	20	40	-6
15304750	59°56'48"	134°19'29"	320	5.52	43.5	4,290	7.0	43	0	25	-9
15304800	59°50'12"	135°00'44"	92.7	85.3	15.8	4,840	2.0	22	8	50	-5
15304850	60°08'05"	134°53'45"	338	28.6	46.6	4,620	2.0	27	1	13	-10
15304855	60°13'00"	134°43'50"	444	23.9	64.3	4,000	2.0	60	0	12	-12
15305500	61°25'37"	139°02'56"	1,910	66.0	52.8	4,390	8.0	35	4	15	-20
15305540	61°58'41"	140°33'10"	2,410	64.8	82.3	6,180	0.0	19	28	40	-18
15305545	62°10'00"	140°40'00"	42.3	31.8	8.4	2,730	3.0	92	0	15	-30
FLOOD-FREQUENCY AREA 5 -- SOUTHEAST											
15120500	60°44'54"	137°30'19"	3,280	4.01	101	3,870	5.0	50	0	10	-17
FLOOD-FREQUENCY AREA 5 -- YUKON											
15304520	60°04'52"	133°51'30"	683	18.0	73.0	4,190	6.0	84	0	12	-14
15304950	60°36'45"	134°27'27"	656	33.0	40.4	3,560	1.0	81	0	12	-17
15305000	60°42'50"	135°02'35"	7,490	1.81	112	3,680	8.0	57	5	22	-10
15305030	60°36'46"	136°07'26"	1,570	16.0	66.8	4,540	5.0	23	6	17	-11
15305040	60°47'00"	136°17'00"	302	18.6	35.7	3,340	4.0	56	0	10	-18

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conteminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued											
15305050	60°51'08"	135°44'21"	2,700	6.60	101	4,270	4.0	36	3	14	-13
15305100	61°26'04"	135°11'18"	11,900	0.70	252	3,800	6.0	57	4	20	-12
15305150	59°55'50"	131°46'04"	1,280	42.9	31.1	4,230	1.0	49	0	24	-16
15305200	59°54'20"	132°54'50"	737	7.80	49.0	4,000	5.0	57	0	12	-12
15305250	60°29'07"	133°18'04"	11,700	10.5	127	3,920	3.0	69	0	16	-16
15305260	61°29'25"	134°46'35"	14,100	2.13	225	3,880	3.0	70	0	14	-17
15305300	61°52'22"	134°50'00"	2,610	22.6	148	4,140	1.0	73	0	17	-20
15305350	62°05'45"	136°16'18"	31,600	1.80	364	4,000	4.0	57	1	18	-16
15305360	62°34'07"	137°00'58"	676	35.7	56.0	3,340	0.0	88	0	12	-12
15305380	62°41'00"	131°07'00"	21.0	241	8.7	4,360	0.0	79	0	24	-28
15305385	62°18'00"	131°41'00"	32.1	149	8.0	4,000	0.0	98	0	20	-28
15305390	61°59'40"	132°22'40"	2,800	8.02	166	3,590	3.0	89	0	19	-30
15305400	61°59'12"	132°26'54"	7,100	8.08	165	3,870	2.0	83	0	18	-26
15305405	62°14'00"	133°23'00"	35.2	225	12.4	4,030	0.0	83	0	15	-8
15305406	62°13'20"	133°22'40"	8,530	8.61	2.3	3,780	1.0	79	0	17	-24
15305411	63°06'00"	130°12'00"	70.5	88.5	21.8	5,040	0.0	29	0	25	-21
15305412	62°55'20"	130°32'00"	385	31.8	42.0	4,540	1.0	57	1	25	-21
15305420	62°49'47"	136°34'50"	18,900	10.2	196	3,660	2.0	82	0	17	-20
15305450	63°05'02"	139°29'40"	57,900	3.78	440	3,770	4.0	67	1	17	-18
15305590	63°35'26"	135°53'48"	12,200	5.54	241	3,780	2.0	74	0	23	-12
15305620	63°22'56"	135°40'59"	13,500	2.41	277	3,660	2.0	73	0	23	-12
15305650	63°16'55"	139°14'56"	19,700	4.50	420	3,600	1.0	73	0	20	-13
15305670	63°18'42"	139°25'43"	96,900	2.95	452	3,640	3.0	72	2	20	-18
15305673	63°59'00"	140°48'00"	174	54.2	29.5	3,140	0.0	58	0	20	-24
15305692	64°24'00"	138°18'00"	13.2	290	6.2	4,880	1.0	11	0	16	-19
15305693	64°22'00"	138°23'00"	22.4	241	9.9	4,620	3.0	9	0	16	-20
15305695	64°01'16"	138°34'58"	425	52.0	51.0	3,730	0.0	34	0	16	-22
15305698	64°02'34"	139°24'28"	3,010	16.9	118	3,230	0.0	62	0	16	-24
15305700	64°04'12"	139°25'30"	102,000	1.70	511	3,590	3.0	72	1	19	-18
15305900	63°25'24"	142°29'00"	2.93	187	2.1	3,000	0.0	97	0	15	-22

Table 5. Basin characteristics of gaging stations and crest-stage partial record sites in Alaska and conterminous basins of Canada--Continued

Station number	Location		Drainage area (mi^2)	Main channel slope (ft/mi)	Main channel length (mi)	Mean basin elevation (ft)	Area of lakes and ponds (percent)	Area of forest (percent)	Area of glaciers (percent)	Mean annual precipitation (in.)	Mean minimum January temperature (°F)
	Latitude	Longitude									
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued											
15305920	63°40'03"	142°16'00"	1.02	1,160	1.6	4,240	0.0	12	0	15	-22
15305950	63°54'27"	142°12'58"	38.4	298	9.4	2,500	0.0	99	0	15	-22
15344000	64°23'38"	141°24'43"	5.87	303	4.4	2,390	0.0	94	0	15	-22
15348000	64°18'33"	141°24'08"	5,880	7.81	128	2,940	4.0	77	0	17	-22
15356000	64°47'22"	141°11'52"	113,500	2.40	690	3,340	1.0	78	3	19	-19
15388944	67°26'25"	137°47'01"	13,900	2.40	235	1,900	3.0	55	0	16	-30
15388948	67°38'04"	139°41'47"	5,370	0.59	226	1,200	30.0	30	0	10	-30
15388950	67°33'50"	139°53'00"	21,400	2.35	312	1,810	3.0	55	0	14	-30
15389000	66°59'26"	143°08'16"	29,500	3.30	440	1,800	2.0	65	0	14	-29
15389500	67°05'49"	147°11'04"	9,330	9.90	208	3,160	2.0	17	0	20	-18

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984

[AK, Alaska; BC, British Columbia, Canada; YT, Yukon Territory, Canada;
mi^2, square mile; ft, foot; ft^3/s, cubic foot per second; $(ft^3/s)/mi^2$, cubic foot per second per square mile;
>, greater than; ----, site of miscellaneous flood data; -- no data available. (Footnotes at end of table on p. 122)]

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST									
15008000	Salmon River near Hyder AK	56°01'34"	130°03'55"	94.0	1963-73	Aug. 30, 1971	a28.9	a140,000	--
15010000	Davis River near Hyder AK	55°45'00"	130°12'00"	80.0	1930-40	Nov. 12, 1936	13.30	19,500	244
15010500	Halibut Bay tributary near Hyder AK	55°15'00"	130°06'00"	8.58	1963-70	Oct. 19, 1964	14.48	3,400	396
15011500	Red River near Metlakatla AK	55°08'29"	130°31'50"	45.3	1963-78	Nov. 3, 1976	10.79	12,400	258
15011870	White Creek near Ketchikan AK	55°24'51"	130°27'38"	2.70	1977-84	Nov. 5, 1981	3.72	570	211
15011880	Keta River near Ketchikan AK	55°21'13"	130°26'56"	74.2	1977-84	Oct. 31, 1978	8.80	30,300	408
15011894	Blossom River near Ketchikan AK	55°25'34"	130°33'40"	68.1	1981-84	Oct. 9, 1982	21.47	10,600	155
15011900	Cabin Creek near Ketchikan AK	55°19'19"	130°47'00"	8.80	1964-71	Sept. 23, 1967	11.41	1,400	159
15012000	Winstanley Creek near Ketchikan AK	55°24'59"	130°52'03"	15.5	1936-38, 1948-75	Jan. 30, 1962	6.65	4,120	266
15014000	Punchbowl Lake outlet near Ketchikan AK	55°31'00"	130°44'00"	12.0	1923-30	Dec. 7, 1925	--	b710	--
15015590	Unuk River near Stewart BC	56°21'05"	130°41'30"	571	1967-84	Oct. 9, 1979	--	43,400	76.0
15015600	Klahini River near Bell Island AK	56°03'15"	131°02'55"	58.0	1967-73	Nov. 1, 1969	8.95	12,400	214
15016000	Short Creek near Bell Island AK	56°01'00"	131°32'00"	20.0	1922-25	Sept. 5, 1924	3.10	1,000	50.0
15018000	Shelokum Lake outlet near Bell Island AK	55°59'00"	131°39'00"	15.6	1915-25	Dec. 18, 1919	7.23	3,100	199
15019000	Black Bear Creek near Meyers Chuck AK	55°43'30"	132°09'48"	16.5	1963-71	Mar. 29, 1966	16.76	3,470	210
15019990	Tyee Lake outlet near Wrangell AK	56°12'00"	131°30'24"	14.7	1979-81	Oct. 7, 1980	12.72	1,910	130
15020000	Tyee Creek near Wrangell AK	56°12'00"	131°31'00"	--	1921-22, 1924-27	Oct. 5, 1926	6.35	1,060	--
15020100	Tyee Creek at mouth near Wrangell AK	56°12'54"	131°30'25"	16.1	1927, 1963-69	Oct. 23, 1965	4.46	2,440	152
15020500	East Fork Bradfield River near Wrangell AK	56°14'30"	131°15'12"	63.3	1979-81	Oct. 7, 1980	8.11	8,140	129
15022000	Harding River near Wrangell AK	56°12'48"	131°38'12"	67.4	1951-90	Oct. 14, 1961	16.22	15,000	223
15024000	Mill Creek near Wrangell AK	56°28'00"	132°12'00"	37.0	1915-17, 1923-25, 1927-28	Oct. 16, 1915	8.0	3,310	89.4

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [(ft^3/s)/mi^2]
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued									
15024750	Goat Creek near Wrangell AK	56°39'40"	131°58'14"	17.3	1976-86	Sept. 11, 1981	7.04	7,020	406
15026000	Cascade Creek near Petersburg AK	57°00'21"	132°46'45"	23.0	1917-20, 1923-28, 1946-73	Sept. 11, 1947	10.0	3,280	143
15028000	Scenery Creek near Petersburg AK	57°05'00"	132°47'00"	30.0	1949-52, 1953-54	Sept. 23, 1949	5.28	4,300	143
15028300	Farragut River near Petersburg AK	57°10'24"	133°06'36"	151	1977-90	Sept. 1, 1988	13.33	17,400	109
15030000	Sweetheart Falls Creek near Juneau AK	57°56'35"	133°40'55"	36.3	1915-17, 1918-27	Sept. 26, 1918	7.15	2,880	79.3
15031000	Long River above Long Lake near Juneau AK	58°10'56"	133°53'06"	8.29	1965-75	Sept. 28, 1968	15.05	3,530	426
15032000	Long Lake outlet near Juneau AK	58°10'07"	133°43'30"	30.2	1913-15	Oct. 20, 1913	--	b4,250	--
15034000	Long River near Juneau AK	58°10'00"	133°41'50"	32.5	1916-22, 1927-31, 1952-73	Sept. 10, 1927	10.2	6,000	185
15036000	Speel River near Juneau AK	58°12'10"	133°36'40"	226	1917-18, 1961-75	Sept. 27, 1918	--	35,600	158
15038000	Crater Creek near Juneau AK	58°08'15"	133°46'15"	11.4	1915, 1917-18, 1920, 1927-32	Sept. 9, 1927	8.25	3,100	272
15039900	Dorothy Lake outlet near Juneau AK	58°14'56"	133°58'54"	11.0	1986-90	Oct. 2, 1987	12.73	869	79.0
15040000	Dorothy Creek near Juneau AK	58°13'40"	134°02'25"	15.2	1930-67	Nov. 3, 1949	5.85	1,780	117
15042000	Carlson Creek at Sunny Cove near Juneau AK	58°19'00"	134°11'00"	22.3	1916-20	Sept. 26, 1918	8.10	6,200	278
15044000	Carlson Creek near Juneau AK	58°19'00"	134°10'15"	24.3	1951-61	Aug. 12, 1961	10.5	5,100	210
15046000	Grindstone Creek near Juneau AK	58°12'31"	134°10'34"	3.77	1917-20	Sept. 26, 1918	6.00	700	186
15048000	Sheep Creek near Juneau AK	58°16'30"	134°18'50"	4.57	1918-20, 1947-73	Sept. 8, 1948	3.60	840	184
15049900	Gold Creek near Juneau AK	58°18'26"	134°23'12"	8.41	1984-90	Oct. 8, 1990	7.37	4,480	533
15050000	Gold Creek at Juneau AK	58°18'25"	134°24'05"	9.76	1917-20, 1947-48, 1949-82	Sept. 6, 1981	6.53	2,700	277

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued									
15051008	Salmon Creek above canyon mouth near Juneau AK	58°19'59"	134°27'22"	9.50	1982-90	Nov. 30, 1988	7.09	c1,100	116
15052000	Lemon Creek near Juneau AK	58°23'30"	134°25'15"	12.1	1952-73	Aug. 13, 1961	5.31	3,370	279
15052009	Lemon Creek near mouth near Juneau AK	58°21'57"	134°28'41"	22.9	1982-84	Aug. 23, 1983	16.12	4,510	197
15052500	Mendenhall River near Auke Bay AK	58°25'47"	134°34'22"	85.1	1966-90	Sept. 8, 1981	10.91	17,000	199
15052800	Montana Creek near Auke Bay AK	58°23'53"	134°36'34"	15.5	1966-75, 1983-87	Aug. 23, 1966	16.77	1,920	124
15053800	Lake Creek at Auke Bay AK	58°23'40"	134°37'50"	2.50	1964-73	Aug. 23, 1966	5.20	980	391
15054000	Auke Creek at Auke Bay AK	58°22'56"	134°38'10"	3.96	1948-50, 1964-75	Nov. 2, 1949	4.85	348	92.7
15054200	Herbert River near Auke Bay AK	58°31'26"	134°47'40"	56.9	1966-71	Sept. 18, 1967	22.40	6,280	110
15054500	Bessie Creek near Auke Bay AK	58°35'30"	134°54'00"	1.35	1967-79	Nov. 1, 1978	14.58	310	230
15054600	Bridget Cove tributary near Auke Bay AK	58°37'14"	134°56'08"	0.95	1970-73	May 20, 1972	2.97	108	114
15054990	Davies Creek near Auke Bay AK	58°39'06"	134°53'07"	15.2	1969-72	Aug. 8, 1972	7.85	1,560	103
15056000	Sherman River at Comet AK	58°52'05"	135°07'05"	3.65	1914-16	Oct. 15, 1915	2.0	208	57.0
15056070	Dayebas Creek near Haines AK	59°17'51"	135°19'54"	9.33	1980-81	Oct. 17, 1980	13.29	1,070	115
15056100	Skagway River at Skagway AK	59°28'02"	135°17'00"	145	1964-86	Sept. 7, 1981	19.25	16,400	113
15056200	West Creek near Skagway AK	59°31'35"	135°21'10"	43.2	1962-77	Sept. 15, 1967	7.75	9,800	226
15056210	Taiya River near Skagway AK	59°30'43"	135°20'40"	179	1967-77	Sept. -- 1967	--	a25,000	--
15056400	Chilkat River at gorge near Klukwan AK	59°37'40"	135°55'55"	190	1962-68	Sept. 15, 1967	14.59	22,000	116
15056500	Chilkat River near Klukwan AK	59°24'55"	135°55'45"	760	1959-61	Aug. 14, 1961	27.40	20,600	27.1
15056560	Klehini River near Klukwan AK	59°24'50"	136°00'07"	284	1981-90	Oct. 15, 1981	--	b9,000	36.7
15057500	William Henry Creek near Auke Bay AK	58°44'46"	135°14'25"	1.58	1967-76	Sept. 15, 1967	13.70	663	419
15058000	Purple Lake outlet near Metlakatla AK	55°06'00"	131°26'00"	6.67	1947-56	Apr. 27, 1949	5.15	716	107
15059500	Whipple Creek near Ward Cove AK	55°26'30"	131°47'38"	5.29	1968-80	Nov. 19, 1968	8.73	2,830	535
15060000	Perseverance Creek near Wacker AK	55°24'40"	131°40'05"	2.81	1932, 1938-39, 1946-69	Oct. 18, 1964	5.68	682	243
15062000	Ward Creek near Wacker AK	55°25'50"	131°40'00"	14.0	1948-58	Apr. 16, 1952	6.83	2,600	186

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued					
15064000	Ketchikan Creek at Ketchikan AK	55°20'40"	131°38'05"	13.5	1911-12, 1916-19, 1964-67	Nov. 18, 1917	8.3	4,400	325
15066000	Beaver Falls Creek near Ketchikan AK	55°22'55"	131°28'25"	5.80	1928-32	Nov. 7, 1929	7.37	2,180	376
15067900	Upper Mahoney Lake outlet near Ketchikan AK	55°24'50"	131°33'16"	2.03	1977-89	Oct. 29, 1983	8.10	965	475
15068000	Mahoney Creek near Ketchikan AK	55°25'34"	131°30'40"	5.70	1923, 1927-33, 1948-58, 1980-81	Feb. 2, 1954	4.66	2,530	444
15070000	Falls Creek near Ketchikan AK	55°36'54"	131°20'14"	36.5	1917-23, 1927-32, 1947-58	Nov. 1, 1917	--	5,500	150
15072000	Fish Creek near Ketchikan AK	55°23'31"	131°11'38"	32.1	1915-35, 1939-90	Oct. 15, 1961	8.85	5,400	168
15072200	Sea Level Creek near Ketchikan AK	55°22'05"	131°11'03"	18.6	1963-71	Oct. 19, 1964	13.50	4,000	215
15074000	Ella Creek near Ketchikan AK	55°30'20"	131°01'25"	19.7	1928-38, 1947-58	Dec. 7, 1930	5.60	1,720	87.3
15076000	Manzanita Creek near Ketchikan AK	55°36'00"	130°59'00"	33.9	1927-37, 1948-67	Oct. 14, 1961	10.27	5,820	171
15078000	Grace Creek near Ketchikan AK	55°39'28"	130°58'14"	30.2	1927-36, 1963-68	Sept. 4, 1966	6.22	3,990	132
15079800	Klu Creek near Bell Island AK	55°50'30"	131°25'20"	5.97	1963-68	Feb. 18, 1965	13.28	1,180	198
15080000	Orchard Creek near Bell Island AK	55°50'00"	131°27'00"	59.0	1915-28	Nov. 1, 1917	--	7,100	120
15080500	Traitors River near Bell Island AK	55°43'59"	131°30'00"	20.8	1964-68	Oct. 18, 1964	6.10	2,280	110
15081490	Yatuk Creek near Klawock AK	55°53'57"	133°08'42"	5.80	1971-79	Oct. -- 1979	19.06	1,000	172
15081497	Staney Creek near Klawock AK	55°49'05"	133°06'31"	50.6	1990	Dec. 6, 1990	--	18,000	356
15081500	Staney Creek near Craig AK	55°48'57"	133°07'58"	51.6	1964-81	Oct. 18, 1964	13.10	15,600	302
15081510	Bonnie Creek near Klawock AK	55°44'45"	133°14'42"	2.72	1980-81	Oct. 2, 1980	--	b115	--
15081580	Black Bear Lake outlet near Klawock AK	55°33'25"	132°52'33"	1.82	1980-90	Nov. 5, 1981	7.13	413	227
15081800	North Branch Trocadero Creek near Hydaburg AK	55°21'41"	132°52'20"	17.4	1967-73	Sept. 29, 1972	7.75	5,900	339

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued									
15081890	Natzuhini Creek near Hydaburg AK	55°17'18"	132°49'18"	9.10	1971-79	Aug. 19, 1971	21.17	2,520	277
15081995	Reynolds Creek below Lake Mellen near Hydaburg AK	55°13'04"	132°35'00"	5.20	1982-85	Aug. 28, 1983	5.09	351	67.5
15082000	Reynolds Creek near Hydaburg AK	55°12'50"	132°36'10"	5.70	1951-56	Feb. 2, 1954	3.35	475	83.4
15083500	Perkins Creek near Metlakatla AK	54°56'48"	132°10'15"	3.38	1976-90	Oct. 6, 1984	5.66	2,900	858
15084000	Myrtle Creek at Niblack AK	55°04'00"	132°08'00"	--	1917-21	Nov. 14, 1917	4.40	387	--
15085000	Saltery Creek near Kasaan AK	55°24'00"	132°18'48"	5.53	1962-64	Oct. 31, 1963	4.07	1,220	220
15085100	Old Tom Creek near Kasaan AK	55°23'44"	132°24'25"	5.90	1949-90	Apr. 16, 1952	6.96	1,490	252
15085200	Dog Salmon Creek near Hollis AK	55°20'42"	132°30'24"	16.8	1963-70	Oct. 19, 1964	17.14	2,680	159
15085300	Cabin Creek near Kasaan AK	55°25'20"	132°28'40"	8.83	1962-64	Jan. 6, 1963	5.39	1,530	173
15085400	Virginia Creek near Kasaan AK	55°25'50"	132°25'55"	3.08	1962-64	Sept. 29, 1962	4.50	300	97.5
15085600	Indian Creek near Hollis AK	55°26'58"	132°41'41"	8.82	1949-63	Oct. 13, 1961	8.08	6,000	680
15085700	Harris Creek near Hollis AK	55°27'47"	132°42'11"	28.7	1949-64	Dec. 5, 1959	10.03	8,810	307
15085800	Maybeso Creek at Hollis AK	55°29'26"	132°40'31"	15.1	1949-62	Oct. 14, 1961	9.39	3,760	249
15086000	Karta River near Kasaan AK	55°33'50"	132°35'00"	49.5	1915-22	Nov. 1, 1917	5.15	5,070	102
15086500	Neck Creek near Point Baker AK	56°05'55"	133°08'20"	17.0	1960-67	Oct. 3, 1961	4.62	2,280	134
15086600	Big Creek near Point Baker AK	56°07'54"	133°08'56"	11.2	1963-81	Sept. 3, 1966	5.28	1,450	130
15086900	Red Creek near Point Baker AK	56°15'36"	133°19'34"	11.2	1971-80	Jan. 31, 1976	19.39	1,530	137
15086960	Sunrise Lake outlet near Wrangell AK	56°24'44"	132°29'30"	1.17	1978-80	Oct. 9, 1979	4.60	474	405
15087200	Hammer Slough at Petersburg AK	56°48'27"	132°57'10"	1.46	1964-67	Oct. 22, 1965	3.07	602	412
15087250	Twin Creek near Petersburg AK	56°43'13"	132°55'33"	3.01	1966-80	Nov. 18, 1971	11.43	800	266
15087545	Municipal Watershed Creek near Petersburg AK	56°46'40"	132°55'07"	2.20	1978-88	Oct. 14, 1986	7.83	1,090	495
15087560	No Name Creek near Petersburg AK	56°47'31"	132°54'33"	3.17	1970-73	Oct. 5, 1972	6.23	348	110
15087570	Hamilton Creeek near Kake AK	56°52'21"	133°40'30"	65.0	1971-86 1988-89	Jan. 30, 1976	14.97	15,600	240
15087585	Twelvemile Creek near Petersburg AK	56°58'07"	133°04'05"	9.39	1973-82	Oct. 18, 1978	13.03	1,460	155
15087590	Rocky Pass Creek near Point Baker AK	56°37'10"	133°44'10"	2.72	1976-88	Oct. 9, 1979	6.15	1,190	438
15087595	Kadake Creek near Kake AK	56°46'45"	134°00'42"	43.6	1972-82	Oct. -- 1979	104.16	12,700	291
15087610	Nakwasina River near Sitka AK	57°15'37"	135°19'54"	31.9	1976-82	Oct. 9, 1979	8.81	6,300	197
15087690	Indian River near Sitka AK	57°04'01"	135°17'42"	10.1	1980-90	Sept. 4, 1990	13.51	5,710	565
15088000	Sawmill Creek near Sitka AK	57°03'05"	135°13'40"	39.0	1928-42, 1945-57	Sept. 8, 1948	10.20	7,100	182

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued					
15090000	Green Lake outlet near Sitka AK	56°59'14"	135°06'37"	28.8	1915-25	Sept. 26, 1918	13.0	3,300	106
15092000	Maksoutof River near Port Alexander AK	56°30'00"	134°58'00"	26.0	1951-56	Oct. 22, 1953	8.02	2,820	108
15093200	Betty Lake outlet near Port Armstrong AK	56°17'55"	134°40'50"	2.66	1978-81	Nov. 14, 1979	10.95	368	138
15093400	Sashin Creek near Big Port Walter AK	56°22'32"	134°39'40"	3.72	1965-80	Nov. 2, 1976	5.30	2,650	712
15094000	Deer Lake outlet near Port Alexander AK	56°31'10"	134°40'10"	7.41	1951-67	Dec. 14, 1962	3.80	1,120	151
15096000	Coal Creek near Baranof AK	57°01'00"	134°47'00"	28.5	1922-26	Sept. 30, 1923	7.6	4,800	168
15098000	Baranof River at Baranof AK	57°05'15"	134°50'30"	32.0	1915-27, 1958-74	Oct. 6, 1972	13.5	9,000	281
15100000	Takatz Creek near Baranof AK	57°08'35"	134°51'50"	17.5	1951-69	Sept. 28, 1968	5.84	1,750	100
15101200	Kalinin Bay tributary near Sitka AK	57°18'14"	135°46'35"	2.28	1976-80	Oct. 9, 1979	4.50	945	414
15101490	Greens Creek at Greens Creek Mine near Juneau AK	58°05'00"	134°37'54"	8.62	1990	Oct. 8, 1990	13.62	525	60.9
15101500	Greens Creek near Juneau AK	58°05'18"	134°44'49"	22.8	1978-90	Dec. 6, 1990	15.95	3,430	150
15101600	Wheeler Creek near Douglas AK	58°01'49"	134°46'08"	57.1	1971-77	Oct. 30, 1972	23.93	3,400	59.5
15101800	Fishery Creek near Angoon AK	57°45'45"	134°42'21"	54.3	1967-78	Oct. 26, 1976	29.87	7,970	147
15102000	Hasselborg Creek near Angoon AK	57°39'40"	134°14'55"	56.2	1952-68	Oct. 23, 1953	3.78	2,400	42.7
15102350	North Arm Creek near Angoon AK	57°23'48"	134°19'24"	8.64	1970-78	Nov. 18, 1971	18.94	1,170	135
15104000	Porcupine River near Chichagof AK	57°50'05"	136°20'25"	7.12	1918-20	Jan. 7, 1920	4.25	1,180	166
15106000	Falls Creek near Chichagof AK	57°48'10"	136°18'10"	6.48	1918-20	Sept. 26, 1918	3.45	665	103
15106100	Black River near Pelican AK	57°42'19"	136°05'34"	24.7	1977-82	Oct. 9, 1979	13.00	5,620	228
15106920	Kadashan River above Hook Creek near Tenakee AK	57°39'46"	135°11'06"	10.2	1968-90	Oct. 8, 1990	5.83	1,970	193
15106940	Hook Creek above tributary near Tenakee AK	57°40'39"	135°07'42"	4.48	1968-80	Sept. 15, 1976	3.79	1,290	288
15106960	Hook Creek near Tenakee AK	57°40'22"	135°10'40"	8.00	1968-80	Oct. 5, 1979	5.04	1,520	190
15106980	Tonalite Creek near Tenakee AK	57°40'42"	135°13'17"	14.5	1968-88,	Oct. 9, 1979	9.72	3,610	249
15107000	Kadashan River near Tenakee AK	57°41'43"	135°12'59"	37.7	1964-80	Oct. 9, 1979	11.42	8,100	215
15107910	West Fork Indian River near Tenakee AK	57°51'58"	135°19'31"	3.02	1979-81	Oct. 9, 1979	3.12	326	108
15107920	Indian River near Tenakee AK	57°49'50"	135°16'00"	12.9	1976-82	Sept. 15, 1976	8.03	1,900	147

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 1 -- SOUTHEAST--Continued									
15108000	Pavlof River near Tenakee AK	57°50'30"	135°02'09"	24.3	1957-81	Oct. 30, 1978	9.28	4,620	190
15108250	Game Creek near Hoonah AK	58°03'02"	135°29'21"	42.8	1970-80	Nov. 1, 1978	15.25	17,000	396
15108290	Gos Creek near Elfin Cove AK	58°11'49"	136°03'07"	16.7	1973-80	Sept. 24, 1980	48.41	7,620	456
15108600	Hilda Creek near Douglas AK	58°13'38"	134°29'50"	2.62	1966-71	Nov. 21, 1967	4.60	400	153
15108800	Lawson Creek at Douglas AK	58°17'05"	134°24'40"	2.98	1966-71	Sept. 5, 1968	4.30	565	190
15109000	Fish Creek near Auke Bay AK	58°19'50"	134°35'20"	13.6	1958-78	Oct. 2, 1961	5.05	2,120	156
15129500	Situk River near Yakutat AK	59°35'00"	139°29'31"	36.0	1988-90	Dec. 15, 1988	72.21	3,250	90.3
FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL									
15195000	Dick Creek near Cordova AK	60°20'32"	144°18'10"	7.95	1971-81	Aug. 7, 1981	9.25	2,600	327
15216000	Power Creek near Cordova AK	60°35'14"	145°37'05"	20.5	1948-90	Sept. 4, 1987	7.04	5,760	281
15216100	Humpback Creek near Cordova AK	61°36'41"	145°40'36"	4.37	1974-75	Sept. 11, 1975	2.53	638	146
15219000	West Fork Olsen Bay Creek near Cordova AK	60°45'41"	146°10'20"	4.78	1964-80	Sept. 12, 1972	5.30	1,030	215
15219100	Control Creek near Cordova AK	60°45'00"	146°14'00"	4.22	1964-74	Sept. 12, 1972	12.43	1,280	303
15223900	Duck River at Silver Lake outlet near Valdez AK	60°56'59"	146°31'38"	25.1	1982-84	Sept. 19, 1982	--	3,000	120
15224000	Duck River near tidewater near Valdez AK	60°56'40"	146°33'40"	26.7	1982-84	Sept. 19, 1982	8.56	3,440	129
15225945	Allison Creek above mouth near Valdez AK	61°04'54"	146°21'06"	7.50	1981-85	Sept. 16, 1982	--	617	82.3
15226000	Solomon Gulch near Valdez AK	61°05'02"	146°18'13"	19.7	1950-56	Sept. 4, 1951	6.50	2,420	127
----	Sheep Creek near Valdez AK	61°07'03"	145°48'48"	31.9	Max. evident	--	--	a9,500	--
15226500	Lowe River near Valdez AK	61°05'49"	145°51'32"	201	1972-74	Aug. 30, 1974	9.61	12,200	60.7
15226600	Lowe River in Keystone Canyon near Valdez AK	61°05'24"	145°53'15"	222	1975-76, 1981	Aug. 8, 1981	--	25,000	113
15227500	Mineral Creek at Valdez AK	61°08'30"	146°21'42"	44.0	1976-81, 90	June -- 1976	90.81	5,570	126
15236200	Shakespeare Creek at Whittier AK	60°46'35"	148°43'35"	1.61	1969-80, 1984-90	Sept. 13, 1979	12.81	620	385
15236900	Wolverine Creek near Lawing AK	60°22'14"	148°53'48"	9.51	1967-78, 1981	Aug. 21, 1981	6.28	1,810	190
15237000	Nellie Juan River near Hunter AK	60°25'20"	148°43'30"	133	1961-65	Sept. 12, 1961	11.33	9,820	78.5
15237020	Main Bay Creek near Port Nellie Juan AK	61°31'08"	148°05'32"	5.93	1981-84	Aug. 20, 1981	3.12	645	109

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL--Continued									
15237360	San Juan River near Seward AK	59°49'05"	147°53'00"	12.4	1986-90	Aug. 26, 1989	8.79	2,290	185
15237400	Chalmers River near Cordova AK	60°13'10"	147°13'30"	6.32	1967-80	Aug. 15, 1979	12.65	3,380	535
----	Godwin Creek near Seward AK	60°06'06"	149°17'46"	13.8	1986	Oct. 11, 1986	d44.10	e30,000	--
15237550	Mount Alice Creek near Seward AK	60°07'19"	149°21'33"	2.12	1986, 90-91	Oct. 11, 1986	18.77	1,340	632
----	Sawmill Creek near Seward AK	60°08'19"	149°21'41"	7.85	1986	Oct. 11, 1986	d51.30	2,900	369
----	Sawmill Creek at Nash Road near Seward AK	60°07'39"	149°22'18"	10.6	1986	Oct. 11, 1986	d29.99	4,000	388
15237700	Resurrection River at Seward AK	60°08'30"	149°25'00"	169	1965-67, 1986	Oct. 11, 1986	31.02	19,000	112
15237800	Bear Creek tributary near Seward AK	60°11'35"	149°20'20"	1.63	1967-68	Sept. 7, 1967	4.11	134	82.2
15237900	Glacier Creek near Seward AK	60°10'56"	149°22'05"	7.10	1986, 88-90	Oct. 11, 1986	d50.03	4,200	592
15238000	Lost Creek near Seward AK	60°11'50"	149°22'30"	8.42	1948-50, 1963-72, 1976, 86	Oct. 11, 1986	--	e14,000	--
----	Grouse Creek near Seward AK	60°13'17"	149°21'56"	4.78	1986	Oct. 11, 1986	d84.65	1,890	395
15238010	Salmon Creek at highway bridge near Seward AK	60°10'45"	149°23'35"	23.6	1986	Oct. 11, 1986	d143.00	e8,500	360
----	Clear Creek near Seward AK	60°09'08"	149°25'06"	--	1986	Oct. 11, 1986	d43.01	f2,800	--
----	Salmon Creek near Seward AK	60°08'27"	149°23'58"	36.0	1986	Oct. 11, 1986	d23.44	f10,300	--
15238400	Rudolph Creek near Seward AK	60°07'24"	149°26'43"	1.00	1986, 90	Oct. 11, 1986	--	1,020	1,020
15238500	Lowell Creek at Seward AK	60°05'55"	149°26'35"	4.02	1965-68	Aug. 21, 1966	--	1,200	298
----	Spruce Creek near Seward AK	60°04'02"	149°27'30"	8.98	1986	Oct. 11, 1986	--	5,420	608
15238600	Spruce Creek near Seward AK	60°04'10"	149°27'08"	9.26	1966-90	Oct. 11, 1986	--	e13,600	--
15238648	Upper Nuka River near Homer AK	59°41'04"	150°42'12"	g3.00	1985-90	Aug. 25, 1989	5.47	1,630	--
15238653	Nuka River near tidewater near Homer AK	59°35'59"	150°40'40"	g38.0	1984-85	Sept. 15, 1984	10.91	16,600	--
15238795	Seldovia River near Seldovia AK	59°23'16"	151°40'31"	26.2	1979-80	Oct. 23, 1978	10.70	2,110	80.5
15238820	Barabara Creek near Seldovia AK	59°28'50"	151°38'42"	20.7	1972-90	Nov. 29, 1983	6.08	2,050	99.0
15238860	Tutka Lagoon Creek near Homer AK	59°29'59"	151°24'36"	10.8	1974-76	Sept. 17, 1976	7.61	3,020	280
15238990	Upper Bradley River near Homer AK	59°42'15"	150°42'15"	g10.1	1980-90	Oct. 10, 1986	9.86	2,530	--
15239000	Bradley River near Homer AK	59°45'20"	150°51'00"	g56.1	1958-90	Oct. 10, 1986	10.90	8,800	157
15239050	Middle Fork Bradley River tributary near Homer AK	59°46'42"	150°45'15"	9.25	1979-89	Oct. 10, 1986	8.53	1,120	121
15239070	Bradley River near tidewater near Homer AK	59°48'06"	150°52'58"	82.0	1984-90	Oct. 11, 1986	13.73	11,000	134

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 1 -- SOUTH-CENTRAL--Continued									
15294900	Paint River near Kamishak AK	55°09'14"	154°15'32"	205	1983-85	Nov. 29, 1983	12.86	12,800	62.4
15295500	Little Kitoi Creek near Afognak AK	58°11'45"	152°21'55"	2.63	1960-61	Jan. 20, 1961	2.64	42	16.0
15295600	Terror River near Kodiak AK	57°39'05"	153°01'46"	15.0	1962-68, 1978-82	Oct. 21, 1980	7.87	3,400	227
15295700	Terror River at mouth near Kodiak AK	57°41'49"	153°09'20"	45.7	1964-68, 1981-82	Sept. 26, 1966	6.48	3,820	83.6
15296000	Uganik River near Kodiak AK	57°41'06"	153°25'10"	123	1952-78	Oct. 3, 1952	10.65	13,700	111
15296300	Spiridon Lake outlet near Larsen Bay AK	57°40'40"	153°39'00"	23.3	1962-65	Mar. 27, 1964	1.72	189	8.1
15296480	Larsen Bay Creek near Larsen Bay AK	57°30'57"	153°59'08"	3.92	1980-84	Oct. 21, 1980	4.92	60	15.3
15296500	Falls Creek near Larsen Bay AK	57°16'30"	153°59'03"	5.67	1974-75	Sept. 25, 1974	2.73	174	30.7
15296520	Canyon Creek near Larsen Bay AK	57°17'00"	153°58'52"	8.82	1974-76	Sept. 17, 1976	2.31	450	51.0
15296550	Upper Thumb River near Larsen Bay AK	57°21'03"	153°58'04"	18.8	1974-82	Oct. 21, 1980	3.64	988	52.6
15296600	Karluk River at outlet near Larsen Bay AK	57°26'37"	154°06'41"	100	1975-76, 1979-82	Nov. 11, 1979	2.33	1,760	17.6
15296950	Akalura Creek at Olga Bay AK	57°10'00"	154°13'35"	18.4	1975-76	Sept. 22, 1975	1.72	166	9.0
15297000	Dog Salmon Creek near Ayakulik AK	57°12'30"	154°04'15"	72.9	1960-61	Sept. 24, 1961	2.08	777	10.6
15297100	Hidden Basin Creek near Port Lions AK	57°35'42"	153°00'45"	3.01	1982-84	Sept. 17, 1982	3.40	555	184
15297110	Hidden Basin Creek near mouth near Kodiak AK	57°33'48"	152°57'33"	11.9	1983-84	Nov. 30, 1983	5.27	578	48.6
15297200	Myrtle Creek near Kodiak AK	57°36'12"	152°24'12"	4.74	1963-90	Jan. 3, 1977	6.93	1,350	285
15297300	Kalsin Bay tributary near Kodiak AK	57°35'25"	152°25'55"	2.35	1963-69	Sept. 14, 1969	13.20	250	106
15297450	Middle Fork Pillar Creek near Kodiak AK	57°47'58"	152°27'00"	2.02	1968-70	June 8, 1969	2.14	364	180
15297470	Monashka Creek near Kodiak AK	57°50'34"	152°26'44"	5.51	1972-76	Aug. 3, 1972	9.84	562	102
15297475	Red Cloud Creek tributary near Kodiak AK	57°49'00"	152°37'20"	1.51	1963-90	June 8, 1969	12.52	690	457
15297482	Falls Creek near Port Lions AK	57°40'08"	152°56'00"	4.30	1980-83	Sept. 14, 1981	6.20	858	200
15297485	Kizhuyak River near Port Lions AK	57°42'38"	152°52'06"	47.5	1980-84	Sept. 26, 1980	10.65	5,430	197

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD FREQUENCY AREA 1 -- SOUTHWEST									
15297602	Whiskey Bills Creek near Sand Point AK	55°18'57"	160°30'36"	0.30	1983-84	Dec. 21, 1983	0.63	6.1	23.3
15297603	Humboldt Creek at Sand Point AK	55°20'33"	160°29'03"	5.20	1983-84	Nov. 27, 1983	2.94	157	30.3
15297610	Russell Creek near Cold Bay AK	55°10'50"	162°41'08"	25.0	1981-86	Oct. 22, 1981	11.19	6,000	240
15297640	Limpet Creek on Amchitka Island AK	51°31'31"	-178°58'23"	1.69	1967-72	Mar. 18, 1971	3.86	93	55.0
15297650	Falls Creek on Amchitka Island AK	51°30'00"	-179°01'00"	0.86	1969-71	Jan.11,Aug.26,1969	1.52	24	27.9
15297655	Clevenger Creek on Amchitka Island AK	51°24'34"	-179°11'00"	0.28	1969-74	Aug. 10, 1969	4.19	18	64.3
15297680	Bridge Creek on Amchitka Island AK	51°26'54"	-179°10'57"	3.03	1968-74	July 27, 1974	5.31	84	27.7
15297690	White Alice Creek on Amchitka Island AK	51°28'39"	-179°07'29"	0.79	1969-74	Aug. 5, 1970	2.80	96	122
15297767	Lake Creek at Shemya Air Force Base AK	52°42'56"	-174°05'39"	1.00	1971-72	Mar. 6, 1971	1.24	10	10.2
15297773	Gallery Creek at Shemya Air Force Base AK	52°42'42"	-174°07'18"	1.00	1971-72	Aug. 20, 1971	1.65	12	12.1
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL									
15239500	Fritz Creek near Homer AK	59°42'30"	151°20'35"	10.4	1963-90	Oct. 22, 1980	18.53	852	81.9
15239800	Diamond Creek near Homer AK	59°40'10"	151°40'00"	5.35	1963-81	Oct. 22, 1980	13.96	255	47.7
15239880	Twitter Creek near Homer AK	59°42'54"	151°37'46"	16.1	1971-73	May 15, 1973	4.14	536	33.3
15239900	Anchor River near Anchor Point AK	59°44'50"	151°45'11"	137	1966-74, 1979-87	Nov. 29, 1983	7.42	6,050	44.2
15240000	Anchor River at Anchor Point AK	59°46'21"	151°50'05"	224	1954-66, 1984-90	Nov. 30, 1983	8.51	11,000	49.1
15240500	Cook Inlet tributary near Ninilchik AK	59°58'45"	151°43'20"	5.19	1966-81	May 13, 1976	13.86	140	27.0
15241600	Ninilchik River at Ninilchik AK	60°02'56"	151°39'48"	131	1963-85	Apr. 24, 1974	6.04	1,240	9.5
15242000	Kasilof River near Kasilof AK	60°19'05"	151°15'35"	738	1950-77	Aug. 24, 1977	8.06	13,000	17.6
15243500	Snow River near Divide AK	60°18'05"	149°14'10"	99.8	1960-65	Sept. 30, 1961	a10.3	a25,000	--
15243900	Snow River near Seward AK	60°17'11"	149°20'19"	128	1967, 70, 1974, 77, 1985-86	Aug. 31, 1967	a42.6	a55,000	--

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued					
----	Sixteen Mile Creek near Seward AK	60°18'39"	149°21'28"	3.19	1986	Oct. 11, 1986	21.44	2,550	799
----	Snow River near Seward AK	60°20'03"	149°20'57"	165	1970,74,77, 1985-86	Sept. 20, 1974	--	a28,300	--
15243950	Porcupine Creek near Primrose AK	60°20'24"	149°22'30"	16.8	1963-89	Oct. 11, 1986	13.03	4,000	298
15244000	Ptarmigan Creek at Lawing AK	60°24'20"	149°21'45"	32.6	1948-58	June 29, 1953	3.28	980	30.0
15246000	Grant Creek near Moose Pass AK	60°27'25"	149°21'15"	44.2	1948-58	June 28, 1953	4.46	2,230	50.5
15248000	Trail River near Lawing AK	60°26'01"	149°22'19"	181	1948-77, 1986	Sept. 18, 1967	11.93	7,800	41.3
15250000	Falls Creek near Lawing AK	60°25'50"	149°22'10"	11.8	1963-70, 1976	Sept. 15, 1966	13.86	693	58.7
15251800	Quartz Creek at Gilpatricks AK	60°35'45"	149°32'35"	9.41	1963-70, 1976, 86	Oct. 11, 1986	17.29	897	95.3
15253000	Crescent Creek near Moose Pass AK	60°28'45"	149°34'25"	21.4	1957-60	May 25, 1960	2.81	262	12.2
15254000	Crescent Creek near Cooper Landing AK	60°29'49"	149°40'38"	31.7	1949-83, 1986	Oct. 9, 1969	12.43	1,500	47.3
----	Quartz Creek near Cooper Landing AK	60°28'50"	149°43'05"	111	1986	Oct. 11, 1986	--	2,400	21.6
15258000	Kenai River at Cooper Landing AK	60°29'34"	149°48'28"	634	1947-90	Sept. 21, 1974	a17.18	a23,100	--
15260000	Cooper Creek near Cooper Landing AK	60°26'00"	149°49'15"	31.8	1950-59	June 29, 1953	4.02	729	22.9
15260500	Stetson Creek near Cooper Landing AK	60°26'30"	149°51'05"	8.6	1958-63	Sept. 12, 1961	3.00	291	33.8
15261000	Cooper Creek at mouth near Cooper Landing AK	60°28'30"	149°52'30"	48.0	1957-64	Sept. 21, 1961	2.11	h841	--
15264000	Russian River near Cooper Landing AK	60°27'10"	149°59'05"	61.8	1947-54	Nov. 24, 1952	4.75	1,280	20.7
15266300	Kenai River at Soldotna AK	60°28'39"	151°04'46"	2,010	1965-90	Sept. 9, 1977	13.45	33,700	16.8
15266500	Beaver Creek near Kenai AK	60°33'50"	151°07'03"	51.0	1968-90	Oct. 11, 1986	9.43	700	13.7
15267000	Bishop Creek near Kenai AK	60°46'35"	151°05'45"	24.2	1977-79	Apr. 29, 1979	--	b150	--
15267900	Resurrection Creek near Hope AK	60°53'40"	149°38'13"	149	1967-85	July 12, 1980	8.71	3,380	22.7
15268000	Resurrection Creek at Hope AK	60°55'15"	149°38'40"	162	1949-51	June 20, 1950	2.80	2,140	13.2
15269500	Granite Creek near Portage AK	60°43'40"	149°17'00"	28.2	1967-80	Oct. 6, 1969	12.46	2,040	72.3
15270100	Fresno Creek near Sunrise AK	60°40'15"	149°28'35"	6.03	1963-70	June -- 1969	10.58	1,358	22.4
15270400	Donaldson Creek near Wibel AK	60°45'40"	149°27'20"	4.07	1963-72	Sept. -- 1970	10.46	170	41.8
15271000	Sixmile Creek near Hope AK	60°49'15"	149°25'31"	234	1969, 1980-90	July 12, 1980	13.22	8,070	34.5

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued									
15271900	Cub Creek near Hope AK	60°52'12"	149°26'02"	1.80	1965-79	Sept. -- 1967	12.09	54	30.0
15272280	Portage Creek at lake outlet near Whittier	60°47'07"	148°50'20"	40.5	1984, 1989-90	Aug. 19, 1984	d97.05	12,500	309
15272500	Turnagain Arm tributary near Girdwood AK	60°55'21"	149°07'51"	0.44	1965-67	Sept. 18, 1967	13.14	69	157
15272530	California Creek at Girdwood AK	60°57'45"	149°08'23"	7.19	1967-84, 1986-90	Oct. 6, 1969	20.20	600	83.4
15272550	Glacier Creek at Girdwood AK	60°56'29"	149°09'44"	58.2	1966-78	Sept. 18, 1967	7.90	7,710	132
15272800	Rainbow Creek near Anchorage AK	61°00'03"	149°38'57"	4.18	1965-67	Sept. -- 1967	12.13	130	31.1
----	Rabbit Creek near Anchorage AK	61°03'12"	149°37'21"	2.13	1977	June 23, 1977	--	j398	--
15273050	Rabbit Creek at Anchorage AK	61°04'54"	149°49'30"	15.0	1979-80 1983-85	Aug. 25, 1984	18.29	234	15.6
15273095	Little Rabbit Creek above Goldenview Drive at Anchorage AK	61°04'58"	149°45'41"	5.06	1980-85	Nov. 10, 1981	2.09	202	39.9
15273102	Little Rabbit Creek at Anchorage AK	61°04'37"	149°48'47"	5.94	1979-80	June 26, 1979	1.00	62	10.4
15273105	Rabbit Creek at New Seward Highway at Anchorage AK	61°04'35"	149°49'37"	24.5	1983-85	Oct. 10, 1983	--	b130	--
15273900	South Fork Campbell Creek at canyon mouth near Anchorage AK	61°08'52"	149°43'12"	25.2	1967-79, 1981, 89	Aug. 28, 1989	4.35	550	21.8
15274000	South Fork Campbell Creek near Anchorage AK	61°09'57"	149°46'15"	30.4	1948-72	June 21, 1949	3.30	891	29.3
15274300	North Fork Campbell Creek near Anchorage AK	61°10'10"	149°45'43"	13.4	1967-84 1989	Aug. 28, 1989	--	115	8.6
15274550	Little Campbell Creek at Nathan Drive near Anchorage AK	61°09'13"	149°52'18"	15.0	1981, 1986-90	Aug. 26, 1989	11.98	139	9.3
15274600	Campbell Creek near Spenard AK	61°08'22"	149°55'24"	69.7	1966-90	Aug. 26, 1989	23.04	1,510	21.7
15274798	South Branch of South Fork Chester Creek near East 20th Avenue at Anchorage AK	61°12'21"	149°42'55"	9.39	1980-84	Sept. 20, 1982	4.98	24	2.6
15274800	South Branch of South Fork Chester Creek near Anchorage AK	61°12'37"	149°43'57"	10.8	1967-78	Aug. 9, 1971	11.29	44	4.1
15275000	Chester Creek at Anchorage AK	61°11'59"	149°50'07"	20.0	1958-76	Apr. 29, 1963	2.40	95	4.8
15275100	Chester Creek at Arctic Boulevard at Anchorage AK	61°12'19"	149°53'43"	27.2	1966-90	Aug. 26, 1989	5.56	421	15.5

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued									
15276000	Ship Creek near Anchorage AK	61°13'32"	149°38'06"	90.5	1947-90	Aug. 27, 1989	6.38	2,100	23.2
15276500	Ship Creek at Elmendorf Air Force Base AK	61°14'20"	149°47'24"	113	1963-71	Aug. 9, 1971	4.89	1,610	14.2
15276570	Ship Creek below powerplant at Elmendorf Air Force Base AK	61°13'29"	149°50'39"	115	1970-81	Aug. 9, 1971	--	1,600	13.9
15277100	Eagle River at Eagle River AK	61°18'28"	149°33'32"	192	1966-80	Sept. 18, 1967	9.49	6,240	32.5
15277200	Meadow Creek at Eagle River AK	61°19'14"	149°32'11"	7.43	1965-74	Aug. 9, 1971	12.66	184	24.8
15277400	Peters Creek near Chugiak AK	61°24'18"	149°27'25"	83.3	1971	Aug. 9, 1971	--	1,990	23.9
					1988-89				
15277410	Peters Creek near Birchwood AK	61°25'08"	149°29'20"	87.8	1974-83	Sept. 16, 1980	5.73	1,200	13.7
15277600	East Fork Eklutna Creek near Palmer AK	61°18'44"	148°57'12"	38.2	1961-62, 1985-88	Oct. 11, 1986	9.19	1,500	39.3
15277800	West Fork Eklutna Creek near Palmer AK	61°17'54"	148°58'25"	25.4	1961-62, 1985-88	Aug. 29, 1962	3.84	1,470	57.9
15280000	Eklutna Creek near Palmer AK	61°24'15"	149°08'30"	119	1947-54	Sept. 18, 1951	8.06	2,530	21.2
15281000	Knik River near Palmer AK	61°30'18"	149°01'50"	1,180	1948-66	July 18, 1958	a25.30	a359,000	--
					1967-89	Aug. 27, 1989	15.16	84,000	71.2
15281500	Camp Creek near Sheep Mountain Lodge AK	61°50'20"	147°24'31"	1.09	1968-71, 1989-90	Aug. 10, 1971	10.54	30	27.5
15282000	Caribou Creek near Sutton AK	61°48'12"	147°40'57"	289	1955-78	June 15, 1973	7.18	8,720	30.2
15282200	Hicks Creek near Sutton AK	61°47'40"	147°56'00"	47.7	1963-65	June -- 1964	13.30	1,200	25.2
15282300	Pinochle Creek near Sutton AK	61°47'37"	147°55'46"	7.99	1965-71	Aug. -- 1971	8.90	20	2.5
15282400	Purinton Creek near Sutton AK	61°48'42"	148°08'01"	8.51	1963-81	Aug. 17, 1979	7.60	100	11.8
					1988-90				
----	Kings River near Sutton AK	61°43'58"	148°44'52"	151	1971	Aug. 10, 1971	--	9,800	64.9
----	Granite Creek near Sutton AK	61°46'46"	148°50'12"	52.5	1971	Aug. 10, 1971	--	j58,600	--
15283500	Eska Creek near Sutton AK	61°43'44"	148°54'31"	13.4	1966, 1971-90	Aug. 10, 1971	26.82	1,680	125
----	Moose Creek near Sutton AK	61°43'32"	149°03'00"	40.7	1971	Aug. 10, 1971	--	18,000	442
15284000	Matanuska River at Palmer AK	61°36'34"	149°04'16"	2,070	1949-74	Aug. 10, 1971	13.60	j82,100	--
					1985-86	Aug. 10, 1971	11.86	47,500	22.9
15285000	Wasilla Creek near Palmer AK	61°38'47"	149°11'45"	16.8	1971, 1976-90	Aug. 10, 1971	17.74	700	36.3
15285200	Wasilla Creek near Wasilla AK	61°34'09"	149°18'50"	39.5	1980-87	Sept. 16, 1980	3.46	243	6.2
15286000	Cottonwood Creek near Wasilla AK	61°34'30"	149°24'35"	28.5	1949-54	July 5,6, 1949	--	b55	--

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued									
15289800	Fishhook Creek near Palmer AK	61°45'02"	149°13'40"	8.52	1963-66	Aug. 23, 1963	12.97	960	113
15290000	Little Susitna River near Palmer AK	61°42'32"	149°13'36"	61.9	1949-90	Aug. 10, 1971	7.84	7,840	127
15290100	Little Susitna River near Houston AK	61°37'36"	149°48'03"	168	1980-81, 1984-88	Oct. 12, 1986	15.30	3,600	21.4
15290200	Nancy Lake tributary near Willow AK	61°41'17"	149°57'58"	8.00	1980, 1983-90	Oct. 11, 1986	13.21	465	58.1
15291000	Susitna River near Denali AK	63°06'14"	147°30'57"	950	1957-67, 1969-85	Aug. 10, 1971	13.32	38,200	40.2
15291100	Raft Creek near Denali AK	63°03'04"	147°16'22"	4.33	1963-90	June -- 1964	11.72	133	30.7
15291200	Maclaren River near Paxson AK	63°07'10"	146°31'45"	280	1958-85	Aug. 11, 1971	8.24	9,260	33.1
15291500	Susitna River near Cantwell AK	62°41'55"	147°32'42"	4,140	1961-72, 1980-85	Aug. 10, 1971	--	b55,000	--
15292000	Susitna River at Gold Creek AK	62°46'04"	149°41'28"	6,160	1949-90	June 7, 1964	16.58	90,700	14.7
15292392	Byers Creek near Talkeetna AK	62°42'33"	150°11'30"	50.2	1972-81	Aug. -- 1972	79.44	1,325	26.4
15292397	Troublesome Creek near Talkeetna AK	62°37'37"	150°13'26"	38.8	1978-81	July -- 1981	87.43	1,610	41.5
15292400	Chulitna River near Talkeetna AK	62°33'31"	150°14'02"	2,570	1958-77, 1979-87	July 20, 1967	22.48	75,900	29.5
15292700	Talkeetna River near Talkeetna AK	62°20'49"	150°01'01"	2,006	1964-90	Oct. 11, 1986	17.38	75,700	37.7
15292780	Susitna River at Sunshine AK	62°10'42"	150°10'30"	11,100	1971, 1981-87	Aug. 10, 1971	62.0	200,000	18.0
----	Rabideux Creek near Sunshine AK	62°11'29"	150°12'26"	27.0	1986	Oct. 11, 1986	19.13	2,700	100
15292800	Montana Creek near Montana AK	62°06'32"	150°03'12"	164	1963-72, 1986	Oct. 11, 1986	--	15,300	93.3
15292900	Goose Creek near Montana AK	62°03'42"	150°03'20"	(k)	1963-71, 1984-86	Oct. 11, 1986	5.80	7,000	--
15292990	Sheep Creek near Willow AK	61°59'45"	150°02'43"	(k)	1984-86	Oct. 11, 1986	5.39	6,200	--
15293000	Caswell Creek near Caswell AK	61°56'55"	150°03'14"	19.6	1963-87	Oct. 11, 1986	19.00	960	49.0
15293700	Little Willow Creek near Kashwitna AK	61°48'37"	150°05'42	155	1980-87	Oct. 11, 1986	--	6,500	41.9
15294005	Willow Creek near Willow AK	61°46'51"	149°53'04"	166	1979-90	Oct. 11, 1986	9.01	12,000	72.3
15294010	Deception Creek near Willow AK	61°44'52"	149°56'14"	48.0	1978-87	Oct. 11, 1986	15.25	900	18.8
15294025	Moose Creek near Talkeetna AK	62°19'00"	150°26'30"	52.3	1972-90	Oct. 11, 1986	31.80	5,790	111
15294100	Deshka River near Willow AK	61°46'05"	150°20'13"	592	1979-87	Oct. 12, 1986	13.5	48,000	81.1

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 2 -- SOUTH-CENTRAL--Continued									
15294300	Skwentna River near Skwentna AK	61°52'23"	151°22'01"	2,250	1960-82, 1986	Oct. 11, 1986	17.30	69,000	30.7
15294345	Yentna River near Susitna Station AK	61°41'55"	150°39'02"	6,180	1981-86	Oct. 12, 1986	19.21	130,000	21.0
15294350	Susitna River at Susitna Station AK	61°32'41"	150°30'45"	19,400	1975-90	Oct. 12, 1986	22.58	312,000	16.1
FLOOD-FREQUENCY AREA 2 -- SOUTHWEST									
15294410	Capps Creek below North Capps Creek near Tyonek AK	61°19'45"	151°39'56"	10.5	1980-86	Oct. 10, 1986	11.30	>1,200	114
15294450	Chuitna River near Tyonek AK	61°06'31"	151°15'07"	131	1976-86	Oct. 10, 1986	16.46	>10,000	76.3
15294500	Chakachatna River near Tyonek AK	61°12'44"	152°21'26"	1,120	1959-72	Aug. 11, 1971	--	a470,000	--
15297900	Eskimo Creek at King Salmon AK	58°41'08"	156°40'08"	16.1	1965-84	June -- 1967	8.51	227	14.1
15298000	Tanalian River near Port Alsworth AK	60°11'20"	154°15'30"	200	1951-56	June 28, 1953	5.17	4,720	23.6
15299900	Tazimina River near Nondalton AK	59°55'05"	154°39'34"	327	1982-86	Sept. 30, 1985	8.23	5,560	17.0
15300000	Newhalen River near Iliamna AK	59°51'34"	154°52'24"	3,478	1951-77, 1982-86	Aug. 16, 1971	10.68	44,200	12.7
15300100	Bear Creek near Iliamna AK	59°49'28"	154°52'56"	2.59	1965-68	May -- 1965	10.90	58	22.4
15330200	Roadhouse Creek near Iliamna AK	59°45'26"	154°50'49"	20.8	1973-83	Aug. -- 1980	12.38	280	13.5
15300500	Kvichak River at Igiugig AK	59°19'44"	155°53'57"	6,500	1967-87	Sept. 12, 1980	23.64	48,700	7.5
15301500	Allen River near Aleknagik AK	60°09'00"	158°44'00"	270	1964-66	Sept. 16, 1965	15.79	7,930	28.5
15302000	Nuyakuk River near Dillingham AK	59°56'08"	158°11'16"	1,490	1954-90	July 2, 1977	10.49	32,200	21.6
15302500	Nushagak River at Ekwok AK	59°20'57"	157°28'23"	9,850	1977-90	May 22, 1990	14.49	117,000	11.9
15302800	Grant Lake outlet near Aleknagik AK	59°47'43"	158°33'07"	34.3	1960-63, 1965	June 1, 1965	--	b960	--
15302840	Elva Lake outlet near Aleknagik AK	59°36'15"	159°06'50"	9.00	1980-82	June 5, 1980	5.40	360	40.0
15302900	Moody Creek at Aleknagik AK	59°16'34"	158°35'42"	1.28	1969-90	June 7, 1971	19.60	55	43.0
15303000	Wood River near Aleknagik AK	59°16'30"	158°35'37"	1,110	1958-70, 1972	June -- 1972	13.83	25,000	22.5
15303010	Silver Salmon Creek near Aleknagik AK	59°13'34"	158°40'21"	4.46	1965-88	June 12, 1967	11.85	340	76.2
15303011	Wood River tributary near Aleknagik AK	59°12'26"	158°40'02"	3.35	1985-90	June 4, 1989	7.91	220	65.7

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 2 -- SOUTHWEST --Continued									
15303100	East Creek near Dillingham AK	59°11'32"	158°49'53"	2.12	1973-75	Sept. 17, 1975	5.94	41	19.3
15303150	Snake River near Dillingham AK	59°08'54"	158°53'14"	113	1974-83	June 17, 1977	6.81	2,470	21.9
----	Izavieknik River at outlet of Upper Togiak Lake near Togiak AK	59°48'22"	159°29'30"	62.0	Max. evident	-- -- --	--	3,100	50.0
----	Trail Creek above mouth near Togiak AK	59°47'27"	159°30'30"	227	Max. evident	-- -- --	--	9,300	45.8
----	Bruin Creek near Togiak AK	59°35'24"	159°36'49"	12.0	Max. evident	-- -- --	--	298	24.8
----	Togiak River at Togiak Lake outlet near Togiak AK	59°31'57"	159°41'39"	515	Max. evident	-- -- --	--	8,990	17.5
----	Togiak River below Ongivinuck River near Togiak AK	59°23'48"	159°50'42"	829	Max. evident	-- -- --	--	13,500	18.6
----	Narogurum River near Togiak AK	59°22'36"	160°00'24"	259	Max. evident	-- -- --	--	6,920	26.7
----	Togiak River above Pungokepuk Creek near Togiak AK	59°16'44"	160°11'48"	1,408	Max. evident	-- -- --	--	18,300	13.0
----	Pungokepuk Creek above Togiak River near Togiak AK	59°15'33"	160°11'24"	99.0	Max. evident	-- -- --	--	1,280	12.9
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL									
----	Slana River near Mentasta AK	62°51'30"	143°41'35"	310	1971	Aug. 11, 1971	--	5,440	17.5
15198500	Station Creek near Mentasta AK	62°55'56"	143°40'06"	15.3	1970-90	July 30, 1985	14.32	770	50.5
15199000	Copper River tributary near Slana AK	62°43'03"	144°14'21"	4.32	1963-90	June -- 1980	14.24	205	47.5
----	Chistochina River at Sinona Lodge AK	62°36'10"	144°38'15"	610	1971	Aug. -- 1971	--	40,000	65.6
15200000	Gakona River at Gakona AK	62°18'06"	145°18'20"	620	1950-74	Aug. 10, 1971	8.10	10,500	16.9
15200270	Sourdough Creek at Sourdough AK	62°31'46"	145°30'52"	68.0	1970-81	May -- 1979	78.46	1,270	18.7
15200280	Gulkana River at Sourdough AK	62°31'15"	145°31'51"	1,770	1973-78, 1989-90	Sept. 12, 1990	11.26	12,700	7.2
					Max. evident	-- -- --	--	16,000	9.0
15201000	Dry Creek near Glennallen AK	62°08'49"	145°28'31"	11.4	1963-90	May -- 1972	25.88	546	47.9
15201100	Little Nelchina River tributary near Eureka Lodge AK	61°59'17"	147°00'34"	7.81	1964-89	May 29, 1977	13.30	127	16.3

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- SOUTH-CENTRAL--Continued									
15201900	Moose Creek tributary at Glennallen AK	62°06'32"	145°30'57"	7.11	1963-74	May -- 1972	22.03	250	35.2
15202000	Tazlina River near Glennallen AK	62°03'20"	145°25'34"	2,670	1950, 1952-72, 1974	Aug. 14, 1962	13.19	a60,700	--
15206000	Klutina River at Copper Center AK	61°57'10"	145°18'20"	880	1949-66, 1988	June 29, 1953	9.24	9,040	10.3
15207800	Little Tonsina River near Tonsina AK	61°28'49"	145°09'05"	22.7	1973-78	July 20, 1977	7.34	214	9.4
15208000	Tonsina River at Tonsina AK	61°39'41"	145°11'02"	420	1950-54, 1956-82	June 17, 1962	4.91	8,490	20.2
15208100	Squirrel Creek at Tonsina AK	61°40'05"	145°10'26"	70.5	1964-82	June -- 1964	12.64	1,200	17.0
15208200	Rock Creek near Tonsina AK	61°45'32"	145°09'14"	14.3	1966-90	May 29, 1989	6.26	225	15.7
15208500	Fivemile Creek near Chitina AK	61°34'55"	144°26'10"	13.2	1964-68	June -- 1965	13.49	412	31.2
15209000	Chititu Creek near May Creek AK	61°22'12"	142°40'50"	30.9	1973-83	Aug. 7, 1981	6.22	970	31.4
15209100	May Creek near May Creek AK	61°20'42"	142°41'49"	10.4	1973-83	Aug. 7, 1981	6.87	168	16.2
----	McCarthy Creek above East Fork McCarthy Creek AK	61°28'02"	142°46'48"	36.6	Max. evident	Sept. 13, 1980	--	2,730	75.0
15210000	McCarthy Creek near McCarthy AK	61°25'42"	142°54'18"	76.4	1975	July 1, 1975	--	2,080	27.2
----	McCarthy Creek at McCarthy AK	61°25'55"	142°55'27"	76.8	Max. evident	Sept. 13, 1980	63.70	4,500	58.6
15211500	Tebay River near Chitina AK	61°13'55"	144°11'50"	55.4	1963-65	June 9, 1964	3.84	946	17.1
15211700	Strelna Creek near Chitina AK	61°30'40"	144°04'00"	23.8	1971-90	Aug. 12, 1985	26.57	670	28.2
15211900	O'Brien Creek near Chitina AK	61°28'59"	144°27'23"	44.8	1970-90	June 6, 1990	2.70	1,950	43.5
15212000	Copper River near Chitina AK	61°27'56"	144°27'21"	20,600	1951-52, 1956-90	Aug. 8, 1981	37.30	380,000	18.4
15212500	Boulder Creek near Tiekel AK	61°20'08"	145°18'26"	9.80	1963-90	Aug. 7, 1981	11.72	1,330	136
----	Tiekel River at Tiekel AK	61°19'12"	145°18'33"	93.6	Max. evident	-- -- --	--	3,400	36.3
15212600	Tiekel River near Tiekel AK	61°16'56"	145°16'23"	115	1978-81	Aug. 7, 1981	20.26	4,880	42.4
----	Tsina River near Ptarmigan AK	61°12'21"	145°13'00"	120	Max. evident	-- -- --	--	a20,000	--
15212800	Ptarmigan Creek tributary near near Valdez AK	61°08'13"	145°44'30"	0.72	1965-70	Sept. -- 1965	10.82	85	118
15213400	Stuart Creek near Tiekel AK	61°15'32"	145°16'54"	37.4	1972-81	Aug. 7, 1981	28.37	2,690	71.9

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- SOUTHWEST									
15303600	Kuskokwim River at McGrath AK	62°57'10"	155°35'11"	11,700	1963-73	June 6, 1964	--	b70,000	6.0
15303660	Gold Creek at Takotna AK	62°59'20"	156°04'08"	6.31	1987-90	May 9, 1990	2.20	50	7.9
15303700	Tatalina River near Takotna AK	62°53'06"	155°56'22"	76.9	1987-90	May 12, 1990	9.95	950	12.4
15304000	Kuskokwim River at Crooked Creek AK	61°52'16"	158°06'03"	31,100	1952-90	June 5, 1964	25.74	392,000	12.6
15304200	Kisarlik River near Akiak AK	60°21'10"	159°55'00"	265	1980-87	June 28, 1982	9.44	5,520	20.8
15304293	Browns Creek near Bethel AK	60°48'20"	161°49'22"	4.79	1985-90	Apr. 27, 1990	19.14	122	25.5
15304296	Browns Creek tributary near Bethel AK	60°47'33"	161°49'40"	0.28	1985-86	May 6, 1985	--	4.7	16.8
15304298	Browns Creek at Bethel AK	60°47'56"	161°46'25"	10.5	1985-90	May 7, 1985	37.81	351	33.4
----	Arthur Dall Creek at Bethel AK	60°47'55"	161°46'17"	--	1985	May 7, 1985	--	25	--
FLOOD-FREQUENCY AREA 3 -- YUKON									
15393900	North Fork Twelvemile Creek near Miller House AK	65°24'03"	145°44'18"	23.2	1966-67	Aug. 13, 1967	14.48	1,710	73.7
15438500	Bedrock Creek near Central AK	65°33'28"	145°05'26"	9.94	1964-74 1989	June 25, 1989	--	800	85.1
15439800	Boulder Creek near Central AK	65°34'05"	144°53'13"	31.3	1963-90	June 25, 1989	10.01	1,460	46.6
----	Big Mosquito Creek near Central AK	65°36'10"	144°34'10"	3.51	1967	Aug. 13, 1967	--	142	40.5
15442500	Quartz Creek near Central AK	65°37'09"	144°28'55"	17.2	1967, 1969-79 1989-90	Aug. -- 1976	22.06	500	29.1
15446000	Birch Creek near Circle AK	65°42'40"	144°20'00"	2,150	1967	Aug. 14, 1967	--	84,000	39.1
15453481	West Fork Dall River tributary near Stevens Village AK	66°17'53"	150°23'10"	4.18	1982-90	June 25, 1987	13.77	153	36.6
15453500	Yukon River near Stevens Village AK	65°52'32"	149°43'04"	196,300	1976-90	June 9, 1977	54.49	670,000	3.4
15453610	Ray River tributary near Stevens Village AK	65°56'57"	150°55'00"	8.00	1977-90	May -- 1979	20.36	220	27.5
15457700	Erickson Creek near Livengood AK	65°34'30"	148°56'18"	26.3	1973-90	May 31, 1977	21.10	860	32.7
15457800	Hess Creek near Livengood AK	65°39'55"	149°05'47"	662	1971-78, 1983-86	May 13, 1975	66.78	10,000	15.1
15468000	Yukon River at Rampart AK	65°30'25"	150°10'15"	199,400	1956-67	June 15, 1964	49.98	950,000	4.8

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued									
15469900	Silver Creek near Northway Junction AK	62°59'01"	141°40'07"	11.7	1963-72	July 11, 1964	16.25	355	30.3
15470000	Chisana River at Northway Junction AK	63°00'23"	141°48'17"	3,280	1950-71	June 28, 1964	13.18	12,000	3.7
15470300	Little Jack Creek near Nabesna AK	62°32'47"	143°19'30"	6.73	1975-90	July 31, 1985	18.53	239	35.5
15470330	Chalk Creek near Nabesna AK	62°30'19"	143°09'24"	14.8	1975-90	Aug. 10, 1978	18.00	360	24.3
15470340	Jack Creek near Nabesna AK	62°27'52"	143°06'18"	115	1975-83	Sept. 11, 1975	21.60	2,440	21.2
15471000	Bitters Creek near Northway Junction AK	63°09'38"	142°05'20"	15.4	1964-86, 1989-90	June -- 1964	17.54	1,010	65.6
15471500	Tanana River tributary near Tetlin Junction AK	63°16'45"	142°30'27"	2.43	1965-90	May -- 1988	13.52	58	23.9
15472000	Tanana River near Tok Junction AK	63°19'00"	142°38'30"	6,800	1951-53	Aug. 7, 1953	9.00	35,700	5.2
15473000	Bartell Creek near Mentasta AK	62°55'45"	143°34'30"	12.0	1965-66	June -- 1966	--	88	7.3
15473600	Log Cabin Creek near Log Cabin Inn AK	63°01'48"	143°20'36"	10.7	1965-90	Aug. -- 1981	12.10	350	32.7
15473603	Little Tok River tributary near Log Cabin Inn AK	63°02'20"	143°21'15"	3.92	1985	July 30, 1985	--	107	27.3
15473920	Tok River tributary near Tok AK	63°08'27"	143°15'15"	10.6	1985	July 30, 1985	--	630	59.4
15473950	Clearwater Creek near Tok AK	63°10'19"	143°12'03"	36.4	1964-80 1985	July 30, 1985	--	1,680	46.2
15474000	Tok River near Tok Junction AK	63°19'30"	142°50'05"	930	1952-54	June 16, 1952	6.83	3,830	4.1
15475997	Cathedral Rapids Creek No 1 near Cathedral Rapids AK	63°22'45"	143°44'00"	8.83	1985	July 30, 1985	--	2,100	238
15476000	Tanana River near Tanacross AK	63°23'18"	143°44'47"	8,550	1953-90	July 25, 1988	12.91	49,100	5.7
15476049	Tanana River tributary near Cathedral Rapids AK	63°24'24"	143°48'28"	3.09	1970, 1973-90	July 7, 1970	15.38	332	107
15476050	Tanana River tributary near Tanacross AK	63°24'27"	143°47'54"	3.32	1964-72	July 7, 1970	12.69	297	89.5
15476200	Tanana River tributary near Dot Lake AK	63°41'40"	144°17'40"	11.0	1964-80	July -- 1964	12.70	146	13.3
15476300	Berry Creek near Dot Lake AK	63°41'23"	144°21'47"	65.1	1964-90	July 19, 1964	15.49	2,800	43.0
15476400	Dry Creek near Dot Lake AK	63°41'32"	144°34'16"	57.6	1964-90	July 10, 1964	16.20	2,200	38.2
----	Granite Creek near Donnelly AK	63°47'42"	145°34'57"	33.6	1987	July 14, 1987	4.10	2,900	86.3
----	Rhoads Creek near Delta Junction AK	63°55'35"	145°20'24"	60.0	1987	July 14, 1987	--	300	5.0

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 3 -- YUKON--Continued					
15477500	Clearwater Creek near Delta Junction AK	64°03'22"	145°26'16"	--	1978-79	Aug. 30, 1979	12.28	830	--
15478000	Tanana River at Big Delta AK	64°09'20"	145°51'00"	13,500	1949-57	July 29, 1949	23.57	62,800	4.6
15478010	Rock Creek near Paxson AK	63°04'16"	146°06'17"	50.3	1963-87	June -- 1977	12.68	1,800	35.8
15478040	Phelan Creek near Paxson AK	63°14'27"	145°28'03"	12.2	1967-78, 84-85, 90	Aug. 13, 1967	11.51	2,320	190
15478050	McCallum Creek near Paxson AK	63°13'27"	145°38'56"	15.5	1967-90	Aug. 13, 1967	12.12	1,010	65.2
----	Flood Creek near Black Rapids AK	63°27'00"	145°47'12"	3.07	1987	July 14, 1987	--	3,650	1,190
----	Suzy Q Creek near Black Rapids AK	63°29'44"	145°50'54"	1.22	1987	July 14, 1987	--	1,070	877
15478093	Suzy Q Creek near Pump Station 10 AK	63°29'43"	145°51'27"	1.29	1987, 1989-90	July 14, 1987	33.83	1,070	877
----	Camp Terry Creek near Black Rapids AK	63°31'17"	145°51'09"	1.39	1987	July 14, 1987	--	913	656
----	Bear Creek near Donnelly AK	63°36'33"	145°50'28"	6.60	1987	July 14, 1987	--	3,260	494
15478499	Ruby Creek above Richardson Highway near Donnelly AK	63°37'54"	145°52'14"	4.89	1987-90	July 14, 1987	--	1,660	339
15478500	Ruby Creek near Donnelly AK	63°37'52"	145°53'03"	5.32	1963-79	June 18, 1977	13.26	400	75.2
15480000	Banner Creek at Richardson AK	64°17'24"	146°20'56"	20.2	1964-90	June 26, 1989	16.38	950	47.0
15484000	Salcha River near Salchaket AK	64°28'22"	146°55'26"	2,170	1909-10, 1949-90	Aug. 14, 1967	21.78	97,000	44.7
----	Little Salcha River near Salchaket AK	64°30'50"	146°58'10"	67.4	1967	Aug. 13, 1967	--	1,900	28.2
15485000	Moose Creek at Eielson Air Force Base AK	64°42'50"	147°06'45"	136	1964-65	June 14, 1965	7.88	370	2.7
15485200	Garrison Slough at Eielson Air Force Base AK	64°42'15"	147°70'05"	6.24	1964-65	Apr. 18, 1965	4.45	51	8.2
15485500	Tanana River at Fairbanks AK	64°47'34"	147°50'20"	--	1967, 1973-90	Aug. 16, 1967	34.40	125,000	--
15490000	Monument Creek at Chena Hot Springs AK	65°03'17"	146°03'05"	26.7	1967, 1970-90	Aug. 13, 1967	29.10	1,490	55.1
15493000	Chena River near Two Rivers AK	64°53'55"	146°24'42"	941	1967-90	May 12, 1975	21.05	16,800	17.9
----	Potlatch Creek near Two Rivers AK	64°52'14"	147°03'00"	3.49	1967	Aug. 12, 1967	--	40	11.5
----	Chena River above Little Chena River near Eielson Air Force Base AK	64°50'45"	146°57'55"	1,370	1967	Aug.13,14,1967	--	105,000	76.6
15493500	Chena River near North Pole AK	64°47'47"	147°11'56"	1,440	1972-80	May 14, 1975	14.18	12,300	8.5

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued									
15493700	Chena River below Moose Creek Dam AK	64°48'03"	147°13'40"	1,460	1980-90	June 27, 1989	c44.95	c7,950	--
15511000	Little Chena River near Fairbanks AK	64°53'10"	147°14'50"	372	1967-90	Aug. 13, 1967	31.95	17,000	45.7
15511500	Steele Creek near Fairbanks AK	64°53'36"	147°29'12"	10.7	1967, 1970-74	Aug. 12, 1967	11.23	340	31.8
15514000	Chena River at Fairbanks AK	64°50'45"	147°42'04"	1,980	1947-90	Aug. 15, 1967	18.82	74,400	37.6
15514005	Isabella Creek near Fairbanks AK	64°53'10"	147°40'30"	4.56	1967	Aug. 12, 1967	--	160	35.1
15514500	Wood River near Fairbanks AK	64°26'06"	148°12'46"	855	1969-78	Aug. 13, 1976	8.98	5,510	6.4
15515500	Tanana River at Nenana AK	64°33'55"	149°05'30"	25,600	1948, 1962-90	Aug. 18, 1967	18.90	186,000	7.3
15515799	Brushkana Creek near Cantwell AK	63°17'16"	148°03'48"	115	1974-81	-- -- 1975	10.33	2,750	23.9
15515800	Seattle Creek near Cantwell AK	63°19'32"	148°14'49"	36.2	1964-89	June -- 1964	13.43	3,100	85.6
15515900	Lily Creek near Cantwell AK	63°19'54"	148°16'16"	5.63	1966-81	June -- 1966	12.08	191	33.9
15516000	Nenana River near Windy AK	63°27'28"	148°48'11"	710	1951-56, 1959-81	June 15, 1962	9.84	11,900	16.8
15516010	Fish Creek near Cantwell AK	63°22'53"	148°44'17"	18.2	1978-81	-- -- 1979	--	205	11.3
15516050	Jack River near Cantwell AK	63°23'41"	148°55'13"	325	1973-81	-- -- 1977	15.69	4,870	15.0
15516100	Nenana River tributary near Cantwell AK	63°27'50"	148°48'25"	1.62	1966-68	July -- 1967	--	20	12.3
15516198	Slime Creek at intertie near Cantwell AK	63°30'25"	148°48'27"	6.70	1990	July 12, 1990	5.72	222	33.1
15516200	Slime Creek near Cantwell AK	63°30'34"	148°48'39"	6.90	1966-90	July -- 1967	14.52	685	99.3
15518000	Nenana River near Healy AK	63°50'43"	148°56'37"	1,910	1951-79	July 25, 1967	13.40	46,800	24.5
15518040	Nenana River at Healy AK	63°51'15"	148°57'20"	2,100	1990	Sept. 15, 1990	14.40	31,200	14.9
15518080	Lignite Creek above mouth near Healy AK	63°54'17"	148°59'01"	48.1	1986-90	Aug. 21, 1986	11.05	2,400	50.0
15518100	Little Panguingue Creek near Lignite AK	63°56'05"	149°06'00"	3.44	1965-74	Aug. 12, 1967	14.13	151	43.9
15518200	Rock Creek near Ferry AK	64°01'56"	149°08'40"	8.17	1965-80	June 18, 1980	13.90	938	115
15518250	Birch Creek near Rex AK	64°10'35"	149°17'26"	4.10	1965-90	Aug. 12, 1967	14.74	464	113
15518300	Nenana River near Rex AK	64°13'05"	149°16'40"	2,450	1965-68	July 25, 1967	14.85	63,000	25.7
15518350	Teklanika River near Lignite AK	63°55'14"	149°29'51"	490	1965-74	July 25, 1967	12.51	33,100	67.6
15518400	Tanana River tributary near Nenana AK	64°38'27"	149°00'34"	0.58	1966-67	May -- 1967	12.01	18	31.0

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued									
----	Tolovana River near Livengood AK	65°28'20"	148°15'50"	140	1967	Aug.12,13,1967	--	12,000	85.7
15519000	Bridge Creek near Livengood AK	65°27'52"	148°15'13"	12.6	1963-72	Aug. -- 1964	17.60	1,070	85.0
----	West Fork Tolovana River near Livengood AK	65°28'05"	148°38'35"	291	1967	Aug. 13, 1967	--	2,290	7.9
15519200	Brooks Creek tributary near Livengood AK	65°23'02"	148°56'12"	7.81	1964-90	May -- 1975	13.27	168	21.5
15520000	Idaho Creek near Miller House AK	65°21'13"	146°09'33"	5.31	1963-90	July -- 1964	16.00	813	15.3
15530000	Faith Creek near Chena Hot Springs AK	65°17'32"	146°22'48	61.1	1963-72,	Aug. 14, 1967	15.15	4,950	81.0
----	Chatanika River near Chatanika AK	65°14'00"	146°52'00"	244	1967	Aug. 13, 1967	--	19,600	80.3
15534900	Poker Creek near Chatanika AK	65°09'32"	147°28'49"	23.1	1972-78	May 12, 1975	9.30	240	10.4
15535000	Caribou Creek near Chatanika AK	65°09'00"	147°33'05"	9.19	1970-86	June 16, 1984	3.64	184	20.0
----	Chatanika River near Olnes AK	65°05'20"	147°43'00"	528	1967	Aug.13,14,1967	--	25,000	47.3
----	Rose Creek near Fox AK	64°58'23"	147°30'50"	2.00	1967	Aug. 13, 1967	--	104	52.0
----	Little Goldstream Creek near Nenana AK	64°40'00"	148°56'40"	40.8	1967, 1974-78, 1980-81	Aug.12-14,1967	--	1,490	36.5
----	Tatalina River near Livengood AK	65°19'45"	148°18'25"	80.8	1967	Aug.12-14,1967	--	3,560	44.1
15541600	Globe Creek near Livengood AK	65°17'08"	148°07'56"	23.0	1964-90	Aug. 12, 1967	17.05	1,240	53.9
15541650	Globe Creek tributary near Livengood AK	65°16'31"	148°06'58"	9.01	1963-72	Aug. 12, 1967	15.35	490	54.4
15541800	Washington Creek near Fox AK	65°09'04"	147°55'22"	46.7	1963-72	Aug. 14, 1967	18.29	2,500	53.5
15564500	New York Creek near Ruby AK	64°34'45"	155°26'00"	6.99	1965-67	Sept. -- 1965	10.84	72	10.3
15564600	Melozitna River near Ruby AK	64°47'34"	155°33'39"	2,693	1962-73	Sept. 3, 1962	9.40	28,200	10.5
15564800	Yukon River at Ruby AK	64°44'28"	155°29'22"	259,000	1957-78	June 20, 1964	35.40	970,000	3.7
----	Snowden Creek near Dietrich Camp AK	67°44'20"	149°45'00"	15.6	Max. evident	-- -- --	--	1,200	71.9
15564868	Snowden Creek near Wiseman AK	67°44'16"	149°45'10"	16.7	1977-90	Aug. 13, 1989	22.51	500	29.9
----	Dietrich River at Bettles River AK	67°38'40"	149°42'50"	349	Max. evident	-- -- --	--	6,400	18.3
----	Hammond River near Wiseman AK	67°27'50"	150°01'40"	244	Max. evident	-- -- --	--	5,400	22.1
15564872	Nugget Creek near Wiseman AK	67°29'25"	149°52'20"	9.47	1975-90	Aug. 13, 1989	19.00	--	--
15564875	Middle Fork Koyukuk River near Wiseman AK	67°26'18"	150°04'30"	1,200	Max. evident	-- -- --	11.1	33,000	27.5
					1968, 1971-80, 1984-87	May 31, 1977	10.66	19,100	15.9

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- YUKON--Continued									
15564877	Wiseman Creek at Wiseman AK	67°24'38"	150°06'21"	49.2	1971-79	June 6, 1976	5.16	686	13.9
15564879	Slate Creek at Coldfoot AK	67°15'17"	150°10'24"	73.4	1981-90	June 1, 1989	20.17	3,900	53.1
15564884	Prospect Creek near Prospect Camp AK	66°46'56"	150°41'06"	110	1968, 1975-90	-- -- 1968	--	6,800	61.8
----	Jim River at Bridge No. 3 AK	66°53'05"	150°31'18"	223	Max. evident	-- -- --	--	13,000	58.3
15564885	Jim River near Bettles AK	66°47'10"	150°52'23	465	Max. evident	-- -- 1967	--	21,000	45.2
					1971-77	June 1, 1977	--	12,800	27.5
15564887	Bonanza Creek tributary near Prospect Camp AK	66°36'52"	150°41'24"	11.7	1975-90	June 26, 1987	19.55	253	21.6
15564900	Koyukuk River at Hughes AK	66°02'51"	154°15'30"	18,700	1961-82	June 6, 1964	31.09	266,000	14.2
15565200	Yukon River near Kaltag AK	64°19'40"	158°43'10"	296,000	1957-66	June 22, 1964	26.44	1,030,000	3.5
15565235	Ophir Creek near Takotna AK	63°08'42"	156°31'15"	6.19	1976-80	May 18, 1977	4.70	360	58.2
15565447	Yukon River at Pilot Station AK	61°56'04"	162°52'50"	321,000	1976-90	June 5-8, 1985	--	1,100,000	3.4
FLOOD-FREQUENCY AREA 3 -- NORTHWEST									
15585000	Goldengate Creek near Nome AK	64°26'03"	165°02'46"	1.55	1965, 1977-90	Sept. 8, 1965	11.70	63	40.6
15619000	Dexter Creek near Nome AK	64°35'11"	165°16'39"	2.99	1978-89	June 14, 1989	14.12	135	45.2
15621000	Snake River near Nome AK	64°33'51"	165°30'26"	85.7	1965-90	June 2, 1966	11.90	4,200	49.0
15624998	Arctic Creek above tributary near Nome AK	64°38'16"	165°42'42"	1.13	1975, 1979-90	Aug. 25, 1990	18.78	129	114
15625000	Arctic Creek near Nome AK	64°38'15"	165°42'46"	1.76	1969-78	July 10, 1975	--	199	113
15633000	Washington Creek near Nome AK	64°42'52"	165°49'13"	6.34	1964-90	July 10, 1975	19.35	620	97.8
15635000	Eldorado Creek near Teller AK	64°57'38"	166°11'59"	5.83	1986-90	Sept. 4, 1986	9.42	600	103
15637000	Gold Run Creek near Teller AK	65°02'30"	166°10'06"	24.2	1986-90	Sept. 4, 1986	5.68	1,500	62.0
15668000	Kruzgamepa River near Iron Creek AK	64°55'00"	164°57'20"	84.0	1906-10	Sept. 8, 1910	--	4,300	51.2
15668100	Star Creek near Nome AK	64°55'40"	164°57'39"	3.78	1964-89	Sept. 4, 1986	12.25	179	47.4
15668200	Crater Creek near Nome AK	64°55'48"	164°52'12"	21.9	1964-89	July 10, 1975	19.71	2,540	116
15712000	Kuzitrin River near Nome AK	65°13'17"	164°37'15"	1,720	1910, 63, 1966-73	June 3, 1971	--	b40,000	23.3
15743000	June Creek near Kotzebue AK	66°51'37"	162°36'13"	10.9	1966-67	June 8, 1966	6.72	209	19.2
----	Kobuk River above Walker Lake outlet near Kobuk AK	67°01'37"	154°20'36"	285	Max. evident	-- -- --	--	m22,600	79.3

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 3 -- NORTHWEST--Continued					
----	Walker Lake outlet near Kobuk AK	67°03'29"	154°18'49"	178	Max. evident	-- -- --	--	5,000	28.1
----	Reed River near mouth near Kobuk AK	66°49'25"	154°57'31"	364	Max. evident	-- -- --	--	m9,500	26.1
----	Kobuk River above Sulakpoatokvik Creek near Kobuk AK	66°46'36"	155°10'18"	1,560	Max. evident	-- -- --	--	m36,600	23.5
----	Lake Selby outlet near Kobuk AK	66°51'04"	155°41'04"	113	Max. evident	-- -- --	--	2,000	17.7
----	Kobuk River below Selby River near Kobuk AK	66°46'18"	155°50'00"	2,000	Max. evident	-- -- --	--	31,300	15.7
----	Pah River near mouth near Kobuk AK	66°44'30"	156°03'48"	956	Max. evident	-- -- --	--	8,500	8.9
----	Mauneluk River near mouth near Kobuk AK	66°52'40"	156°16'45"	573	Max. evident	-- -- --	--	34,400	60.0
----	Kogoluktuk River near mouth near Kobuk AK	66°56'42"	156°45'06"	626	Max. evident	-- -- --	--	m35,000	55.9
----	Kobuk River above Kobuk AK	66°54'12"	156°53'06"	4,170	Max. evident	-- -- --	--	m71,700	17.2
15743850	Dahl Creek near Kobuk AK	66°56'47"	156°54'32"	11.0	1986-90	May 18, 1990	6.60	538	48.9
----	Ruby Creek at Bornite near Kobuk AK	67°04'36"	156°56'12"	13.0	Max. evident	-- -- --	--	690	53.1
----	Shungnak River near mouth near Kobuk AK	66°56'47"	157°19'03"	213	Max. evident	-- -- --	--	8,900	41.8
----	Ambler River above Redstone River near Ambler AK	67°09'18"	157°32'23"	716	Max. evident	-- -- --	--	30,000	41.9
----	Redstone River near Ambler AK	67°12'01"	157°36'05"	211	Max. evident	-- -- --	--	m3,300	15.6
15744000	Kobuk River at Ambler AK	67°05'13"	157°50'51"	6,570	1966-78	May 29, 1971	--	b95,000	14.6
----	Akillik River above Hunt River near Ambler AK	67°14'22"	158°28'05"	303	Max. evident	-- -- --	--	12,600	41.6
----	Salmon River above Kitlik River near Kiana AK	67°15'12"	159°38'58"	515	Max. evident	-- -- --	--	19,900	38.6
----	Kitlik River near Kiana AK	67°14'30"	159°40'06"	98.0	Max. evident	-- -- --	--	2,600	26.5
15744500	Kobuk River near Kiana AK	66°58'25"	160°07'51"	9,520	1976-90	June 7, 1982	59.46	152,000	16.0
----	Squirrel River near Kiana AK	67°02'00"	160°24'30"	1,725	Max. evident	-- -- --	--	46,200	26.8
----	Noatak River below Ipnelivik River near Noatak AK	67°44'16"	156°13'30"	1,030	Max. evident	-- -- --	--	36,000	35.0
----	Midas Creek at mouth near Noatak AK	67°51'15"	156°25'27"	204	Max. evident	-- -- --	--	8,800	43.1
----	Noatak River above Cutler River near Noatak AK	67°51'50"	158°13'40"	3,420	Max. evident	-- -- --	--	36,000	10.5

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
					FLOOD-FREQUENCY AREA 3 -- NORTHWEST--Continued				
----	Cutler River at mouth near Noatak AK	67°50'54"	158°19'20"	1,100	Max. evident	-- -- --	--	42,000	38.2
----	Makpik Creek at mouth near Noatak AK	68°01'39"	158°38'04"	273	Max. evident	-- -- --	--	1,200	4.4
----	Noatak River above Anisak River near Noatak AK	68°01'40"	158°55'35"	4,960	Max. evident	-- -- --	--	70,000	14.1
----	Anisak River at mouth near Noatak AK	68°02'40"	158°57'00"	805	Max. evident	-- -- --	--	10,000	12.4
----	Noatak River below Nimiuktuk River near Noatak AK	68°00'24"	160°11'00"	6,750	Max. evident	-- -- --	--	120,000	17.8
----	Noatak River in Grand Canyon near Noatak AK	67°55'23"	160°56'10"	7,800	Max. evident	-- -- --	--	160,000	20.5
----	Noatak River in Noatak Canyon near Noatak AK	67°57'54"	161°36'40"	8,460	Max. evident	-- -- --	--	120,000	14.2
----	Kugururok River near Noatak AK	68°01'24"	161°50'08"	859	Max. evident	-- -- --	--	11,600	13.5
----	Noatak River above Noatak AK	67°49'13"	162°41'50"	10,500	Max. evident	-- -- --	--	160,000	15.2
15746000	Noatak River at Noatak AK	67°34'18"	162°56'38"	12,000	1965-71	June 14, 1968	28.7	242,000	20.2
----	Noatak River near Noatak AK	67°15'24"	162°35'09"	12,400	Max. evident	-- -- --	--	m460,000	37.1
15747000	Wulik River below Tutak Creek near Kivalina AK	67°52'34"	163°40'28"	705	1985-90	Aug. 6, 1989	11.50	31,400	44.5
----	Wulik River near Kivalina AK	67°49'54"	163°58'00"	822	Max. evident	-- -- --	--	39,000	47.4
----	Kivalina River near Kivalina AK	68°48'42"	164°30'42"	740	Max. evident	-- -- --	--	11,300	15.3
15748000	Ogotoruk River near Point Hope AK	68°06'40"	165°45'10"	35.0	1959-62	Sept. 4, 1961	4.36	1,450	41.4
----	Ipewik River near Kukpuk AK	68°25'30"	165°29'00"	1,070	Max. evident	-- -- --	--	35,000	43.9
----	Kukpuk River near Kukpuk AK	68°24'24"	165°56'40"	2,180	Max. evident	-- -- --	--	83,500	38.3
					FLOOD-FREQUENCY AREA 3 -- ARCTIC				
----	Pitmegea River near Cape Lisburne AK	68°51'15"	164°25'36"	480	Max. evident	-- -- --	--	25,000	52.1
----	Kukpowruk River near Point Lay AK	69°29'50"	162°42'30"	1,690	Max. evident	-- -- --	--	33,000	19.5
----	Kokolik River near Point Lay AK	69°45'39"	162°31'00"	2,270	Max. evident	-- -- --	--	44,000	19.4
----	Utukok River near Point Lay AK	69°57'48"	162°03'12"	2,765	Max. evident	-- -- --	--	62,000	22.4
----	Avalik River below Oyagaruk Creek near Wainwright AK	70°07'30"	159°25'12"	1,130	Max. evident	-- -- --	--	91,000	80.5
----	Kuk River near Wainwright AK	70°08'06"	159°40'42"	3,690	Max. evident	-- -- --	--	61,000	16.6

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 3 -- ARCTIC--Continued					
15798700	Nunavak Creek near Barrow AK	71°15'35"	156°46'57"	2.79	1972-90	June 10, 1980	4.86	131	47.0
15799000	Esatkuat Creek near Barrow AK	71°16'30"	156°43'44"	1.46	1972-73	June 13, 1972	2.90	67	45.9
15799300	Esatkuat Lagoon outlet at Barrow AK	71°17'40"	156°46'06"	3.52	1972-73	June 12, 1973	1.46	101	28.7
15803000	Meade River at Atkasuk AK	70°29'20"	157°24'40"	1,800	Max. evident	-- -- --	--	105,000	58.4
					1977	June 9, 1977	28.0	24,500	13.6
----	Ikpikpuk River near Lonely AK	70°08'12"	154°38'30"	3,980	Max. evident	-- -- --	--	77,000	19.3
15830000	Miguakiak River near Teshekpuk Lake near Lonely AK	70°40'13"	154°19'20"	1,460	1977	Aug. 10, 1977	12.12	1,590	1.1
----	Fish Creek above Tingmeachs River near Nuiqsut AK	70°19'00"	151°28'36"	1,700	Max. evident	-- -- --	--	12,000	7.1
----	Etivluk River near Umiat AK	68°56'42"	155°57'42"	2,260	Max. evident	-- -- --	--	49,000	21.6
----	Colville River at Killik River near Umiat AK	69°00'12"	153°54'36"	8,070	Max. evident	-- -- --	--	236,000	29.2
----	Killik River near Umiat AK	69°00'30"	153°52'42"	2,770	Max. evident	-- -- --	--	30,000	10.8
15880000	Colville River near Nuiqsut AK	70°09'56"	150°55'00"	20,670	Max. evident	-- -- --	--	600,000	29.0
----	Colville River at mouth AK	70°30'00"	150°30'00"	23,300	1962	June 14, 1962	--	216,000	9.3
15896000	Kuparuk River near Deadhorse AK	70°16'54"	148°57'35"	3,130	1971-90	June 7, 1978	37.6	118,000	37.7
15896700	Putuligayuk River near Deadhorse AK	70°16'03"	148°37'41"	176	1970-90	June 12, 1980	22.6	5,800	33.0
----	Atigun River near Galbraith Lake AK	68°22'08"	149°20'12"	173	Max. evident	-- -- --	--	12,000	69.4
15904900	Atigun River tributary near Pump Station 4 AK	68°22'25"	149°18'48"	32.6	1976-90	July 29, 1976	14.5	1,000	30.7
15905000	Galbraith Lake tributary near Galbraith Camp AK	68°29'30"	149°30'36"	7.55	1975-79	July 27, 1979	30.2	46	6.1
15906000	Sagavanirktok River tributary near Pump Station 3 AK	68°41'13"	149°05'42"	28.4	1979-90	June -- 1979	19.99	700	24.6
15908000	Sagavanirktok River near Pump Station 3 AK	69°00'54"	148°49'02"	1,860	1982-90	June 1, 1983	21.07	23,000	12.4
15910000	Sagavanirktok River near Sagwon AK	69°05'24"	148°45'34"	2,208	Max. evident	-- -- --	--	62,000	28.1
					1969-79	Aug. -- 1969	18.4	34,900	15.8
15910200	Happy Creek at Happy Valley Camp near Sagwon AK	69°08'50"	148°49'50"	34.5	1972-90	June 6, 1976	18.51	1,390	40.3

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 3 -- ARCTIC--Continued									
15918200	Sagavanirktok River tributary near Deadhorse AK	69°57'14"	148°43'48"	12.0	1986, 1988-90	June 7, 1989	11.52	140	11.7
----	Kadleroshilik River near Deadhorse AK	69°56'06"	147°51'15"	451	Max. evident	-- -- --	--	23,000	51.0
----	Shaviovik River (upper site) AK	69°52'21"	147°38'44"	660	Max. evident	-- -- --	--	21,000	31.8
----	Shaviovik River near Deadhorse AK	70°05'07"	147°16'30"	1,580	Max. evident	-- -- --	--	22,000	13.9
----	Kavik River near Deadhorse AK	69°32'10"	146°39'44"	237	Max. evident	-- -- --	--	13,000	54.9
----	Marsh Fork Canning River near Arctic Village AK	69°09'53"	145°53'30"	588	Max. evident	-- -- --	--	18,000	30.6
----	Canning River above Eagle Creek near Arctic Village AK	69°21'10"	146°02'31"	1,330	Max. evident	-- -- --	--	22,000	16.6
----	Canning River near Deadhorse AK	69°50'38"	146°27'10"	1,870	Max. evident	-- -- --	--	53,000	28.3
----	Katakturuk River near Kaktovik AK	69°52'25"	145°12'00"	228	Max. evident	-- -- --	--	10,000	43.9
----	Marsh Creek near Kaktovik AK	69°47'32"	144°49'00"	261	Max. evident	-- -- --	--	500	1.9
15975000	Chamberlin Creek near Barter Island AK	69°17'30"	144°57'50"	1.46	1958	July 5, 1958	--	88	60.3
15976000	Neruokpukkoonga Creek near Barter Island AK	69°18'30"	145°01'30"	123	1958	June 23, 1958	--	706	5.7
----	Sadlerochit River near Kaktovik AK	69°39'13"	144°12'10"	529	Max. evident	-- -- --	--	11,000	20.8
----	Hulahula River near Kaktovik AK	69°41'47"	144°12'10"	682	Max. evident	-- -- --	--	10,000	14.7
----	Jago River near Kaktovik AK	69°37'02"	143°41'06"	321	Max. evident	-- -- --	--	14,000	43.6
----	Okerokovik River near Kaktovik AK	69°42'07"	143°14'23"	169	Max. evident	-- -- --	--	2,300	13.6
----	Aichilik River near Kaktovik AK	69°35'23"	142°58'03"	563	Max. evident	-- -- --	--	27,000	48.0
----	Egaksrak River near Kaktovik AK	69°32'05"	142°41'05"	215	Max. evident	-- -- --	--	9,000	41.9
----	Ekaluakat River near Kaktovik AK	69°34'35"	142°18'38"	146	Max. evident	-- -- --	--	27,000	185
----	Kongakut River near Kaktovik AK	69°30'54"	142°42'34"	1,240	Max. evident	-- -- --	--	98,000	79.0
----	Turner River near Kaktovik AK	69°35'56"	142°24'10"	51.0	Max. evident	-- -- --	--	1,500	29.4
15999900	Firth River near mouth near Herschel YT	69°19'00"	139°34'00"	2,200	1972-84	June 1, 1977	--	47,000	21.4
1599950	Babbage River below Caribou Creek near Herschel YT	68°50'22"	138°40'05"	583	1978-84	June 7, 1978	--	24,000	41.2

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 4 – SOUTHEAST					
15024098	Spatsizi River near mouth above Stikine River BC	57°40'13"	128°06'12"	1,310	1981-84	June 3, 1983	--	18,100	13.8
15024100	Stikine River below Spatsizi River BC	57°43'59"	128°06'30"	2,970	1981-84	June 2, 1983	--	37,800	12.7
15024120	Pitman River near mouth above Stikine River BC	57°58'55"	128°25'46"	1,050	1981-84	June 25, 1984	--	12,000	11.4
15024200	Klappan River near Telegraph Creek BC	57°54'00"	129°42'14"	1,370	1963-84	June 14, 1972	--	18,900	13.8
15024300	Stikine River above Grand Canyon near Telegraph Creek BC	58°02'38"	129°56'45"	7,260	1959, 1961-84	June 12, 1964	18.00	84,700	11.7
15024400	Tanzilla River near Telegraph Creek BC	58°17'37"	130°30'44"	618	1959-66	June 3, 1964	--	6,820	11.0
15024500	Tuya River near Telegraph Creek BC	58°04'20"	130°49'27"	1,390	1962-84	June 2, 1964	11.11	25,800	18.6
15024600	Stikine River at Telegraph Creek BC	57°54'03"	131°09'16"	11,300	1955-84	June 26, 1955	--	b120,000	10.6
15024640	Stikine River above Butterfly Creek BC	57°29'10"	131°45'00"	13,900	1972-84	June 15, 1972	--	147,000	10.6
15024670	Iskut River at outlet of Kinaskan Lake BC	57°32'00"	130°12'28"	483	1965-84	June 24, 1967	--	3,000	6.2
15024684	More Creek near mouth BC	57°02'27"	130°24'05"	326	1973-84	Oct. 8, 1974	--	21,300	65.3
15024690	Forrest Kerr Creek near Wrangell BC	56°54'56"	130°43'15"	120	1972-84	Sept. 8, 1981	--	9,250	77.0
15024695	Iskut River above Snippaker Creek BC	56°41'55"	130°52'23"	2,790	1967-84	Oct. 9, 1974	--	89,000	31.9
15024700	Iskut River below Johnson River BC	56°44'20"	131°40'25"	3,610	1959-84	Oct. 16, 1961	24.74	280,000	77.6
15024800	Stikine River near Wrangell AK	56°42'29"	132°07'49"	19,920	1977-90	Sept. 11, 1981	28.22	300,000	15.1
15041000	Sloko River near Atlin BC	59°06'20"	133°39'40"	165	1954-79	Aug. 14, 1961	10.43	4,900	29.7
15041100	Taku River near Tulsequah BC	58°38'20"	133°32'25"	6,000	1953-84	June 11, 1964	15.24	92,200	15.4
15041200	Taku River near Juneau AK	58°32'19"	132°42'00"	6,600	1987-90	Aug. 17, 1989	44.13	a102,000	15.4
15120200	Kathleen River near Haines Junction YT	60°35'35"	137°13'45"	248	1959-64	June 20, 1964	--	b2,300	9.3
15120600	Alsek River above Bates River near Haines Junction YT	60°07'09"	137°58'27"	6,250	1975-84	July 13, 1975	--	42,700	6.8
15120720	Takhanne River near Haines Junction YT	60°05'50"	136°55'00"	147	1975-84	June 2, 1977	--	2,740	18.6

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 4 -- YUKON									
15304600	Atlin River near Atlin BC	59°35'57"	133°48'48"	2,630	1950-84	Sept. 14, 1981	--	b10,900	4.1
15304650	Wann River near Atlin BC	59°25'55"	134°12'20"	104	1958-84	June 11, 1964	6.73	2,020	19.4
15304700	Fantail River at outlet of Fantail Lake near Atlin BC	59°35'40"	134°23'26"	277	1957-84	Sept. 16, 1967	8.70	8,050	29.1
15304750	Tutshi River at outlet of Tutshi Lake near Atlin BC	59°56'48"	134°19'29"	320	1958-84	June 14, 1964	6.32	3,700	11.6
15304800	Lindeman River near Bennett BC	59°50'12"	135°00'44"	92.7	1955-84	Sept. 15, 1967	10.56	9,140	98.6
15304850	Wheaton River near Carcross YT	60°08'05"	134°53'45"	338	1958-84	June 7, 1980	--	3,640	10.8
15304855	Watson River near Carcross YT	60°13'00"	134°43'50"	444	1966-73	May 24, 1968	--	1,730	3.9
15305500	Kluane River at outlet of Kluane Lake YT	61°25'37"	139°02'56"	1,910	1953-84	Aug. 15, 1971	--	13,600	7.1
15305502	Duke River near mouth near Burwash Landing YT	61°21'37"	139°09'23"	244	1981-83	July 20, 1983	--	3,420	14.0
15305540	White River at Alaska Highway near Koidern YT	61°58'41"	140°33'10"	2,410	1975-84	Aug. 2, 1976	--	39,900	16.6
15305545	Dry Creek No. 2 near Beaver Creek YT	62°10'00"	140°40'00"	59.0	1976-84	Aug. 2, 1983	--	1,000	16.9
FLOOD-FREQUENCY AREA 5 -- SOUTHEAST									
15119980	Sekulman River at outlet Sekulman Lake near Aishihik YT	61°33'50"	137°31'57"	483	1981-84	June 12, 1982	--	819	1.7
15119994	Giltana Creek near mouth near Aishihik YT	61°11'50"	136°58'42"	74.9	1980-84	June 2, 1982	--	323	4.3
15120000	Aishihik River near Whitehorse YT	60°51'40"	137°03'40"	1,660	1950-74	June 20, 1962	--	b5,050	3.0
15120500	Dezadeash River at Haines Junction YT	60°44'54"	137°30'19"	3,280	1953-73	June 28, 1961	13.53	10,100	3.1
					c1974-84	June 8, 1982	--	b24,700	7.5
FLOOD-FREQUENCY AREA 5 -- YUKON									
15304520	Lubbock River near Atlin BC	60°04'52"	133°51'30"	683	1960-84	June 4, 1972	--	833	1.2
15304550	Pine Creek near Atlin BC	59°33'40"	135°39'56"	269	1956-70	July 8,1956	--	b1,280	4.8
15304920	Tagish Creek near Carcross YT	60°17'32"	134°18'00"	29.7	1957-70	May 21, 1957	--	b144	4.8
15304950	Maclintock River near Whitehorse YT	60°36'45"	134°27'27"	656	1956-84	June 1, 1972	--	3,990	61.0

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued									
15305000	Yukon River at Whitehorse YT	60°42'50"	135°02'35"	7,490	c1944-84	Aug. 9, 1953	--	b22,800	3.0
15305030	Takhini River at Kusawa Lake at Whitehorse YT	60°36'46"	136°07'26"	1,570	1953-84	June 21, 1964	--	b9,890	6.3
15305040	Mendenhall River near Champagne YT	60°47'00"	136°17'00"	297	1976-84	June 3, 1977	--	749	2.5
15305050	Takhini River near Whitehorse YT	60°51'08"	135°44'21"	2,700	c1949-84	Sept. 2, 1949	--	b17,200	6.4
15305100	Yukon River above Frank Creek YT	61°26'04"	135°11'18"	11,900	1953, 1955-84	Aug. 29, 1961	11.67	29,200	2.5
15305150	Swift River near Swift River BC	59°55'50"	131°46'04"	1,280	1958-84	June 11, 1964	11.01	15,500	12.1
15305200	Gladys River at outlet of Gladys Lake near Atlin BC	59°54'20"	132°54'50"	737	1958-84	June 13, 1964	4.68	4,240	5.8
15305235	Sidney Creek at Canol Road near Johnsons Crossing YT	60°47'05"	130°03'15"	144	1982-84	June 1, 1983	--	2,320	16.1
15305240	Nisutlin River above Wolf River near Teslin BC	60°20'35"	132°32'41"	3,100	1979-84	June 5, 1983	--	24,200	7.8
15305250	Teslin River near Teslin YT	60°29'07"	133°18'04"	11,700	1944, 1948-84	June 27, 1962	--	b65,000	5.6
15305260	Teslin River near Whitehorse YT	60°29'21"	134°46'35"	14,100	1956-73	June 28, 1962	15.64	65,700	4.7
15305285	South Big Salmon River below Livingstone Creek YT	61°23'10"	134°22'15"	385	1983-84	June 1, 1983	--	3,030	7.9
15305300	Big Salmon River near Carmacks YT	61°52'22"	134°50'00"	2,610	1953, 1955-84	June 23, 1962	9.26	24,200	9.3
15305350	Yukon River at Carmacks YT	62°05'45"	136°16'18"	31,600	1952-84	June 24, 1962	--	b127,000	4.0
15305352	Nordenskiold River below Rawlinson Creek near Carmacks YT	62°03'00"	136°16'45"	2,460	1983-84	June 3, 1983	--	8,620	3.5
15305360	Big Creek near mouth near Minto YT	62°34'07"	137°00'58"	676	1976-84	July 15, 1976	--	7,630	11.3
15305380	Riddell Creek near Ross River YT	62°41'00"	131°07'00"	25.5	1975-82	June -- 1977	--	840	32.9
15305385	180 Mile Creek near Ross River YT	62°18'00"	131°41'00"	38.6	1975-84	May 31, 1983	--	329	8.5
15305390	Ross River at Ross River YT	61°59'40"	132°22'40"	2,800	1962-84	June 2, 1972	--	26,900	9.6
15305400	Pelly River at Ross River YT	61°59'12"	132°26'54"	7,100	1955-74	June 7, 1964	13.50	71,000	10.0
15305405	Vangorda Creek at Faro YT	62°14'00"	133°23'00"	28.6	1977-84	May 30, 1983	--	260	9.1
15305406	Pelly River at Faro YT	62°13'20"	133°22'40"	8,530	1973-84	June 5, 1983	--	50,800	6.0
15305411	South MacMillan River near Ross River YT	63°06'00"	130°12'00"	73.4	1975-84	June 1, 1983	--	1,830	24.9

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
FLOOD-FREQUENCY AREA 5 -- YUKON--Continued									
15305412	South MacMillan River at Canol Road near Ross River YT	62°55'20"	130°32'00"	385	1975-84	June 2, 1983	--	6,250	16.2
15305420	Pelly River at Pelly Crossing YT	62°49'47"	136°34'50"	18,900	1953-84	May 28, 1957	--	b152,000	8.0
15305450	Yukon River above White River near Dawson YT	63°05'02"	139°29'40"	52,900	1957-84	June 25, 1962	--	b272,000	5.1
15305520	Donjek River below Kluane Lake near Koidern YT	62°04'56"	139°51'35"	4,790	1981-84	July 6, 1983	--	33,700	7.0
15305560	Hess River above Emerald Creek near Mayo YT	63°19'50"	131°30'00"	1,870	1977-82	June 15, 1982	--	27,500	14.7
15305582	Stewart River above Fraser Falls near Mayo YT	63°29'17"	135°08'06"	11,810	1980-84	June 4, 1983	--	113,000	9.6
15305590	Stewart River at Mayo YT	63°35'26"	135°53'48"	12,200	1949-79	June 10, 1964	--	145,000	11.9
15305620	Stewart River at Stewart Crossing YT	63°22'56"	136°40'59"	13,500	1961-73	June 11, 1964	28.67	15,300	1.1
15305625	McQuesten Creek near mouth near McQuesten YT	63°36'40"	137°16'10"	1,110	1979-84	June 1, 1983	--	9,750	8.8
15305650	Stewart River at mouth YT	63°16'55"	139°14'56"	19,700	1964-84	June 13, 1964	--	19,900	1.0
15305670	Yukon River at Stewart YT	63°18'42"	139°25'43"	96,900	1957-65	June 12, 1964	23.31	470,000	4.8
15305673	Sixty Mile River near Dawson YT	63°59'00"	140°48'00"	174	1977-84	June 1, 1977	--	2,820	16.2
15305688	Little South Klondike River below Ross River near McQuesten YT	63°59'45"	139°34'20"	332	1983-84	May 31, 1983	--	5,835	17.5
15305692	Grizzly Creek near Dawson YT	64°24'00"	138°18'00"	13.2	1975-82	May -- 1980	--	391	29.2
15305693	Wolf Creek near Dawson YT	64°22'00"	138°23'00"	22.4	1975-82	-- -- 1981	--	978	43.7
15305695	North Klondike River near mouth near Dawson YT	64°01'16"	138°34'58"	425	1975-84	June 1, 1983	--	5,760	13.6
15305698	Klondike River above Bonanza Creek near Dawson YT	64°02'34"	139°24'28"	3,010	1966-84	May 29, 1972	--	b22,600	7.5
15305700	Yukon River at Dawson YT	64°04'12"	139°25'30"	102,000	1945-80	June 11, 1964	--	526,000	5.2
15305900	Dennison Fork near Tetlin Junction AK	63°25'24"	142°29'00"	2.93	1964-90	July -- 1964	16.29	128	43.7
15305920	West Fork tributary near Tetlin Junction AK	63°40'03"	142°16'00"	1.02	1967-84	July 13, 1973	14.02	102	100
15305950	Taylor Creek near Chicken AK	63°54'27"	142°12'58"	38.4	1967-90	June -- 1988	15.88	750	19.5
15341900	North Fork King Solomon Creek near Eagle AK	64°32'32"	141°15'00"	18.5	1963, 1978-80	May 22, 1980	20.63	250	13.5
15344000	King Creek near Dome Creek AK	64°23'38"	141°24'43"	5.87	1975-90	June -- 1982	13.44	163	27.8

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

Station number	Stream	Location		Drainage area (mi^2)	Period of record	Maximum known flood			
		Latitude	Longitude			Date	Gage height (ft)	Discharge (ft^3/s)	Unit runoff [$(ft^3/s)/mi^2$]
				FLOOD-FREQUENCY AREA 5 -- YUKON--Continued					
15348000	Fortymile River near Steele Creek AK	64°18'33"	141°24'08"	5,880	1911-12, 1964, 1976-82	June -- 1964	34.5	84,000	14.3
15355000	Fortymile River near mouth near Eagle YT	64°23'50"	140°36'40"	6,410	1982-84	June 16, 1982	--	50,800	7.9
15356000	Yukon River at Eagle AK	64°47'22"	141°11'52"	113,500	1911-12, 1950-90	June 12, 1964	33.85	545,000	4.8
15365000	Discovery Fork American Creek near Eagle AK	64°39'40"	141°18'00"	5.53	1963-73	July -- 1964	19.70	--	--
15367500	Bluff Creek near Eagle AK	64°45'08"	141°13'41"	3.38	1963-72	June -- 1970	11.68	41	12.1
15388930	Whitestone River near mouth at Whitestone Village YT	66°25'38"	138°24'10"	2,600	1979-83	May 27, 1982	--	37,800	14.5
15388935	Eagle River at Dempster Highway Bridge YT	66°26'30"	136°42'30"	664	1979-84	June 17, 1983	--	11,400	17.2
15388944	Porcupine River below Bell River YT	67°26'25"	137°47'01"	13,900	1975-84	May 19, 1977	--	182,000	13.1
15388948	Old Crow River near mouth near Old Crow YT	67°38'04"	139°41'47"	5,370	1976-84	June 4, 1977	--	60,400	11.2
----	Coleen River near Rampart House AK	67°53'46"	142°07'16"	1,700	Max. evident	-- -- --	--	20,000	11.8
----	Strangle Woman Creek near Rampart House AK	67°53'34"	141°51'06"	246	Max. evident	-- -- --	--	5,400	22.0
----	Monument Creek near Arctic Village AK	68°04'11"	143°50'36"	101	Max. evident	-- -- --	--	6,400	63.4
----	Sheenjek River near Arctic Village AK	67°57'15"	143°16'54"	2,230	Max. evident	-- -- --	--	18,000	8.1
15388950	Porcupine River at Old Crow YT	67°33'50"	139°53'00"	21,400	1962-89	June 4, 1964	--	b237,000	11.1
15388960	Porcupine River near International Boundary YT	67°25'27"	140°53'28"	23,100	1988-90	May 21, 1990	--	179,000	7.7
15389000	Porcupine River near Fort Yukon AK	66°59'26"	143°08'16"	29,500	1965-79	May 24, 1973	33.68	299,000	10.1
----	Cane Creek near mouth near Arctic Village AK	68°39'39"	144°54'11"	116	Max. evident	-- -- --	--	5,600	48.3
----	East Fork Chandalar River below Cane Creek near Arctic Village AK	68°37'09"	144°55'18"	627	Max. evident	-- -- --	--	27,000	43.1
15389500	Chandalar River near Venetie AK	67°05'49"	147°11'04"	9,330	1964-74	June 9, 1968	19.57	62,800	6.7

Table 6. Maximum known floods in Alaska through 1990 and conterminous basins of Canada through 1984--Continued

a Glacier-dammed lake breakout
b Maximum daily discharge
c Flood discharge affected by regulation
d Above National Geodetic Vertical Datum of 1929
e Flood discharge affected by failure of landslide dam
f Includes bypass flow from Box Canyon Creek
g Drainage area varies according to position of glacier terminus in headwaters
h Flood peak from release from logjam upstream
j Augmented by release of stored water from unnamed lake after embankment was breached
k Flood flows from Sheep Creek and Goose Creek can be combined for the total drainage area of 157 mi^2
m Ice flood evidence

Note: Longitudes -174, -178, and -179 are east of Greenwich