

DATA FOR FLOODS OF MAY 1978
IN NORTHEASTERN WYOMING
AND SOUTHEASTERN MONTANA

U.S. GEOLOGICAL SURVEY

Open-File Report 78-985



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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AND SOUTHEASTERN MONTANA

By Charles Parrett, D. D. Carlson, Gordon S. Craig, Jr., and J. A. Hull

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CONTENTS

	Page
Factors for converting inch-pound units to metric units.	IV
Introduction	1
References	7
Data	8

ILLUSTRATIONS

Figure 1. Map showing locations of flood-discharge-determination sites.	2
2. Flood hydrograph for the Little Bighorn River near Hardin, Montana, May 17-22, 1978.	4
3. Flood hydrograph for Lance Creek near Spencer, Wyoming, May 17-22, 1978	4
4. Photograph showing aerial view of the Little Bighorn River near Crow Agency, Montana, looking south and upstream, May 19, 1978	5
5. Photograph showing aerial view of a flooded portion of Lodge Grass, Montana, looking southeast, May 19, 1978. .	6

TABLE

Table 1. Summary of peak stages and discharges for the floods of May 1978.	8
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FACTORS FOR CONVERTING INCH-POUND UNITS TO METRIC UNITS

For use of those readers who may prefer to use metric units rather than inch-pound units, the conversion factors for the terms used in this report are listed below:

<u>Multiply inch-pound units</u>	<u>By</u>	<u>To obtain metric units</u>
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
square mile (mi ²)	2.590	square kilometer (km ²)
cubic foot per second (ft ³ /s)	.02832	cubic meter per second (m ³ /s)
cubic foot per second per square mile [(ft ³ /s)/mi ²]	.01093	cubic meter per second per square kilometer [(m ³ /s)/km ²]

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INTRODUCTION

Severe flooding occurred in northeastern Wyoming and southeastern Montana (fig. 1) in May 1978, as a result of heavy rainfall. Precipitation in early May was above average at nearly all precipitation stations in the flooded area. Runoff from rainfall combined with runoff from snowmelt produced streamflows by the middle of May that were generally above average. Heavy precipitation during May 16-19 and the above-average runoff from the earlier rains produced high peak flows during May 16-22. In many instances, the peak flows exceeded the previous peak of record and also exceeded the computed 100-year frequency flood. The purpose of this report is to present the magnitudes of peak flows determined in the flooded areas.

Peak discharges were determined at 162 selected sites; thirty of these were indirect measurements made at miscellaneous, discontinued, or otherwise unrated sites. At most active sites, peak flows were determined from existing stage-discharge relationship curves; logarithmic extensions were used where needed. Figure 1 shows the locations of the sites and the drainage system. Peak stages, discharges, and recurrence intervals of the May peaks are summarized in table 1. The data are provisional and may be changed after further review. Previously known peak stages and discharges are shown where gaging-station records are available.

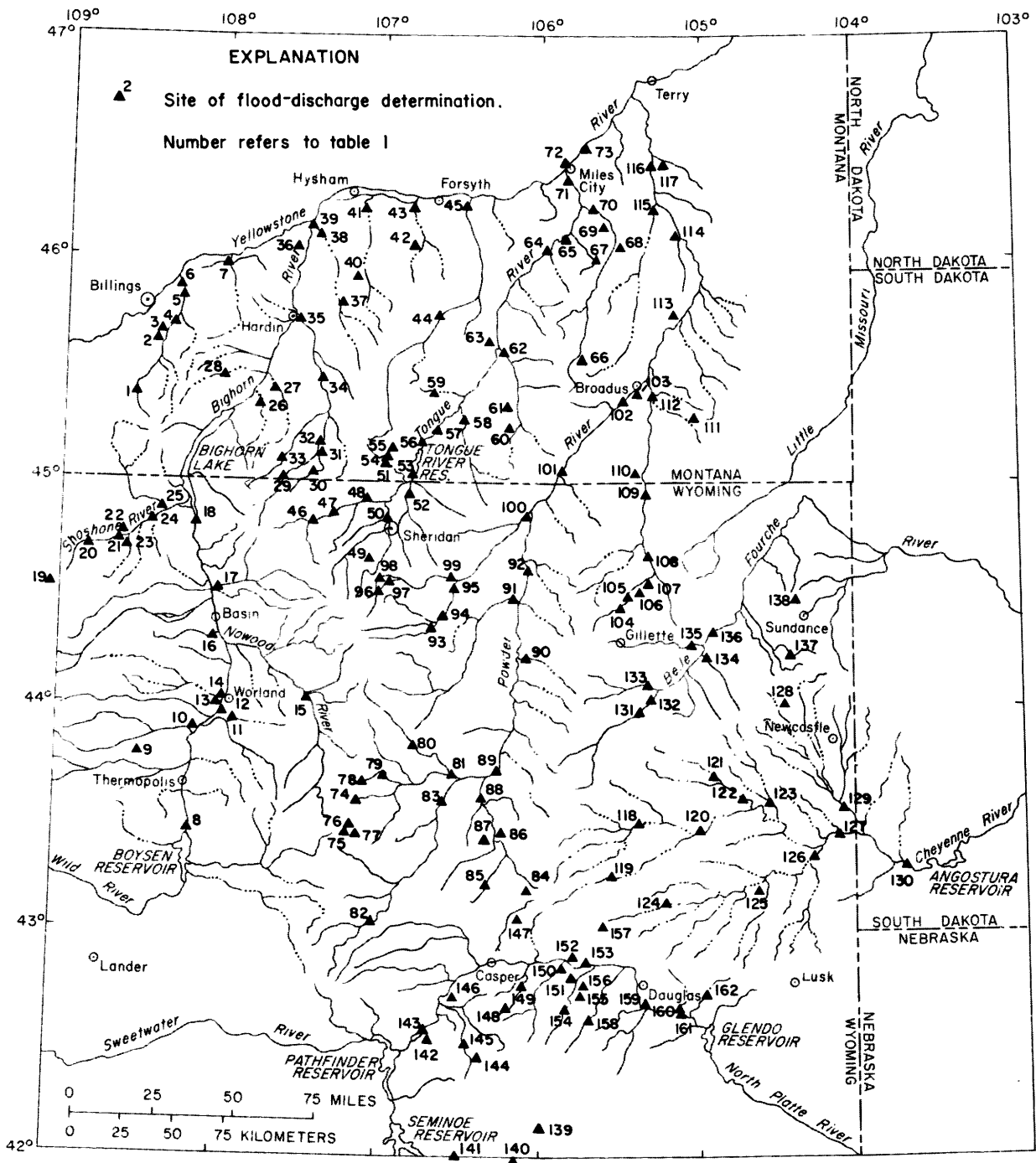


Figure 1.--Locations of flood-discharge-determination sites.

Frequencies of flood discharges are estimated for recurrence intervals of 100 years or less (table 1). Discharges having longer recurrence intervals are noted only as "greater than 100 years." The recurrence intervals were determined on the basis of guidelines provided by the U.S. Water Resources Council (1977) for stations with 10 or more years of record. Recurrence intervals for stations in Montana having less than 10 years of record were obtained from a frequency study by Johnson and Omang (1976).

Figures 2 and 3 are flood hydrographs for the Little Bighorn River near Hardin, Montana (station 06294000) and for Lance Creek near Spencer, Wyoming (station 06386000). These hydrographs, which are typical of the larger streams in the flood area, exhibit the sharp, rapidly rising peaks normally associated with rainfall floods.

Damage to agriculture, transportation, and private structures was severe. Figures 4 and 5 illustrate the wide extent of flooding and the resultant scope of flood damage experienced along some of the streams.

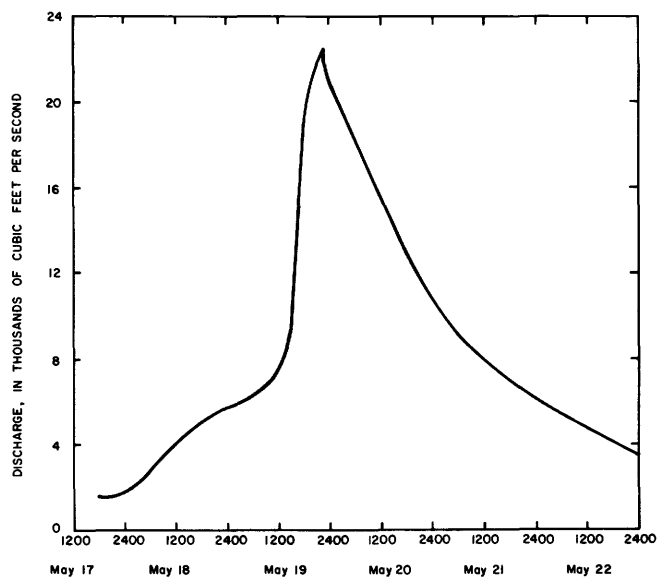


Figure 2.--Flood hydrograph for the Little Bighorn River near Hardin, Montana, May 17-22, 1978.

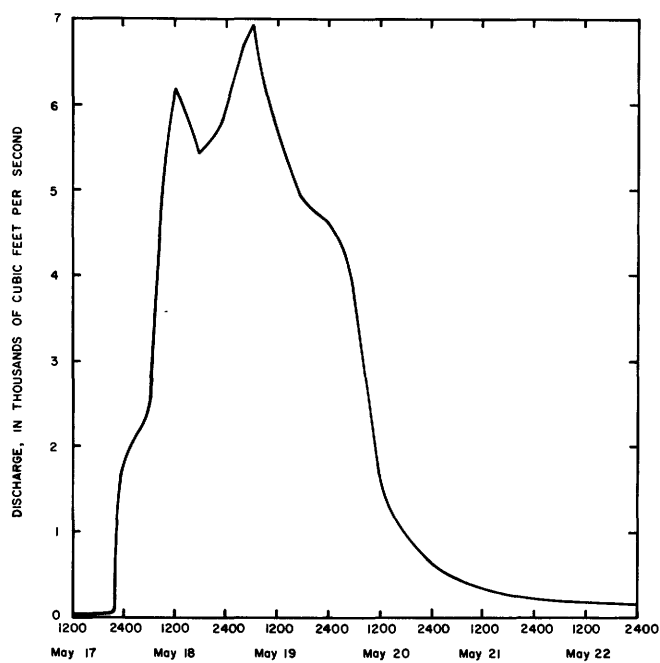


Figure 3. --Flood hydrograph for Lance Creek near Spencer, Wyoming, May 17-22, 1978.



Figure 4.--Aerial view of the Little Bighorn River near Crow Agency, Montana, looking south and upstream, May 19, 1978.
Photograph by U.S. Bureau of Reclamation.



Figure 5.--Aerial view of a flooded portion of Lodge Grass,
Montana, looking southeast, May 19, 1978.
Photograph by U.S. Bureau of Reclamation.

REFERENCES

- Johnson, M. V., and Omang, R. J., 1976, A method for estimating magnitude and frequency of floods in Montana: U.S. Geological Survey Open-File Report 76-650, 35 p.
- Omang, R. J., and Hull, J. A., 1978, Annual peak discharges from small drainage areas in Montana through September 1977: U.S. Geological Survey Open-File Report 78-219, 204 p.
- U.S. Water Resources Council, 1977, Guidelines for determining flood flow frequencies: U.S. Water Resources Council Bulletin 17A, 26 p.

Table 1.--Summary of peak stages and discharges for the floods of May 1978

Map station number	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^a	Maximum flood previously known			Maximum flood of May 1978			Reurrence interval (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
1	06216000	Pryor Creek at Pryor, Mont.	117	1921-24; 1966-P	6-26-69	6.13	468	19	8.88	2,280	>100
2	06216200	West Wets Creek near Billings, Mont.	8.80	1955-P	4-26-64	6.90	565	19	6.81	545	90
3	06216300	West Buckeye Creek near Billings, Mont.	2.64	1955-73	7-18-69	5.05	924	19	3.68	240	4
4	06216500	Pryor Creek near Billings, Mont.	440	1911-24; 1938-53; 1953-73	4-26-64	15.04	3,720	19	18.90	14,900 ^b	>100
5	---	Pryor Creek at I-94 crossing near Huntley, Mont.	606	---	---	---	---	19	---	18,200	>100
6	---	Pryor Creek at Huntley, Mont.	606	---	---	---	---	19	---	9,000 ^c	---
7	06217750	Fly Creek at Pompeys Pillar, Mont.	285	1968-P	2-14-71	9.23	2,680	19	15.94	10,300	>100
8	06259000	Wind River below Boysen Reservoir, Wyo.	7,701	1951-P	7-07-67	13.35	13,500	---	---	1,200 ^d	---
9	06265200	Sand Draw near Thermopolis, Wyo.	6.33	1960-P	6-09-60	22.58 ^e	2,490	19	4.49	130	<2
10	06265600	Tie Down Gulch near Worland, Wyo.	1.78	1961-P	8-31-63	8.62	328	19	6.11	118	2
11	06267260	North Prong East Fork Nowater Creek near Worland, Wyo.	3.77	1964-P	9-18-67	5.47	394	18	5.29	330	9
12	06267400	East Fork Nowater Creek near Colter, Wyo.	149	1971-P	7-06-75	3.68	1,270	18	6.65	3,580 ^f	(f)
13	06268500	Fifteenmile Creek near Worland, Wyo.	518	1951-P	5-22-52	85.77	3,300	18	10.58	4,270	50
14	06268600	Bighorn River at Worland, Wyo.	10,810	1965-69	6-23-67	13.69	15,900	19	14.45	17,500	13
15	06270000	Nowood River near Tensleep, Wyo.	803	1938-43; 1950-55; 1972-P	6-16-55	812.30	3,330	19	12.85	3,330	20
16	06274250	Elk Creek near Basin, Wyo.	96.9	1959-P	6-06-67	10.91	4,260	19	9.30	2,900	9
17	06279090	Shell Creek near Greybull, Wyo.	560	1951, 1965-P	---	---	---	19	7.82	2,150	---
18	06279500	Bighorn River near Kane, Wyo.	15,765	1928-P	6-16-35	11.10 ^g	25,200	20	9.95	20,500	7
19	06282000	Shoshone River below Buffalo Bill Reservoir, Wyo.	1,538	1921-P	5-28-28	10.62 ^g	14,700	---	---	1,100 ^d	---
20	06284200	Shoshone River near Willwood, Wyo.	1,980	1974-P	6-20-74	10.43	12,100	19	7.93	4,960 ^f	(f)

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map number	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^{a/}	Maximum flood previously known			Maximum flood of May 1978			Reurrence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
21	06284400	Shoshone River near Garland, Wyo.	2,036	1958-P	7-01-67	8 8.76	13,300	19	7.62	4,710	2
22	06284500	Bitter Creek near Garland, Wyo.	80.5	1950-53; 1957-60; 1968-P	7-04-75	4.74	1,230	17	3.04	563	2
23	06284800	Whistle Creek near Garland, Wyo.	101	1958-60 1968-P	7-03-75	12.44	4,780	18	6.76	2,070	8
24	06285100	Shoshone River near Lovell, Wyo.	2,350	1966-P	7-01-67	6.49	13,400	18	6.00	8,200	3
25	06285400	Sage Creek at Sidon Canal near Deaver, Wyo.	341	1958-60; 1968-P	6-08-58	9.22	2,250	19	5.34	518	3
26	06287500	Soap Creek near St. Xavier, Mont.	98.3	1911-12; 1913; 1939-53; 1963; 1967-72	4-28-63	14.96	4,170	19	16.95	7,810	> 100
27	06288000	Rottengrass Creek near St. Xavier, Mont.	147	1913-19; 1919- 22; 1967-72	2-28-72	9.16	900	19	13.60	9,740	> 100
28	06288200	Beauvais Creek near St. Xavier, Mont.	100	1967-P	6-09-68	8.00	1,600	19	9.54	7,350	> 100
29	06289000	Little Bighorn River at Stateline near Wyola, Mont.	193	1939-P	6-03-44	4.87	2,730	25	3.37	980	< 2
30	06290000	Pass Creek near Wyola, Mont.	111	1935-56	6-04-44	4.82	1,150	19	10.90	5,310	> 100
31	06290200	Little Bighorn River tributary near Wyola, Mont.	4.43	1973-P	6-10-77	3.79	201	19	3.39	64	--
32	06290500	Little Bighorn River below Pass Creek near Wyola, Mont.	428	1939-75; 1977-P	6-14-63	7.43	3,630	19	10.02	8,010	> 100
33	06291500	Lodgegrass Creek above Willow Creek diversion near Wyola, Mont.	80.7	1939-74	6-09-64	6.14	1,130	19	6.27	992	50
34	06293300	Long Otter Creek near Lodgegrass, Mont.	11.7	1973-P	4-04-75	4.60	h76	19	8.04	298	10
35	06294000	Little Bighorn River near Hardin, Mont.	1,294	1953-P	4-02-65	---	4,520	19	11.19	22,500	> 100
36	06294400	Andresen Coulee near Guster, Mont.	2.35	1963-P	6-04-63	1.57	40	18	.49	5	< 2
37	06294600	Tullock Creek tributary near Hardin, Mont.	8.63	1973-P	3-03-75	3.38	171	18	1.67	60	3
38	06294690	Tullock Creek near Bighorn, Mont.	446	1974-P	3-02-76	7.40	1,960	18	6.39	1,220	4
39	06294700	Bighorn River at Bighorn, Mont.	22,885	1945-P	6-24-47	8.79	26,200	20	14.00	56,400	> 100
40	06294930	Sarpy Creek tributary near Colstrip, Mont.	4.44	1972-P	1972	4.33	194	18	4.77	488	> 100

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^a	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
41	06294940	Sarpy Creek near Hysham, Mont.	453	1973-P	3-04-75	12.43	428	21	11.63	382	<2
42	06294985	East Fork Armells Creek tributary near Colstrip, Mont.	1.87	1973-P	1-21-75	2.72	50	18	3.59	--	--
43	06294995	Armells Creek near Forsyth, Mont.	370	1974-P	1-21-75	4.80	ⁱ 500	20	4.87	687	2
44	06295250	Rosebud Creek near Colstrip, Mont.	799	1974-P	5-17-75	6.92	406	21	9.02	605	5
45	06296003	Rosebud Creek at mouth, near Rosebud, Mont.	1,302	1974-P	2-26-75	5.78	ⁱ 1,200	19	6.78	3,350	>100
46	06297480	Tongue River at Tongue River Camp- ground near Dayton, Wyo.	202	1974-P	5-10-77	4.30	ⁱ 2,750	18	3.38	649	(f)
47	06298000	Tongue River near Dayton, Wyo.	204	1918-29; 1940-P	6-03-44	6.45	3,400	18	3.29	651	<2
48	06299900	Slater Creek near Monarch, Wyo.	18.0	1967-P	6-15-67	61.30	1,700	18	59.97	ⁱ 1,100	9
49	---	Jackson Creek near Big Horn, Wyo.	7.44	---	---	---	---	18	---	810	--
50	06305500	Goose Creek below Sheridan, Wyo.	392	1941-P	6-16-63	7.82	5,450	18	8.33	5,460	60
51	06306100	Squirrel Creek near Decker, Mont.	33.6	1975-P	May 1975	2.33	12	18	7.36	600	25
52	06306250	Prairie Dog Creek near Acme, Wyo.	358	1970-P	3-05-75	6.01	738	19	12.60	4,180	95
53	06306300	Tongue River at State line, near Decker, Mont.	1,477	1960-P	6-15-67	10.86	7,480	19	14.25	19,000	>100
54	06306900	Spring Creek near Decker, Mont.	34.7	1958-P	2-14-71	6.50	1,400	18	2.79	225	3
55	06306950	Leaf Rock Creek near Kirby, Mont.	6.14	1958-P	6-15-63	6.77	222	19	.90	22	<2
56	06307500	Tongue River at Tongue River dam, near Decker, Mont.	1,770	1939-P	6-15-67	8.20	7,340	20	10.00	10,600	--
57	06307520	Canyon Creek near Birney, Mont.	50.2	1972-P	6-14-76	2.28	182	18	.93	74	<2
58	06307600	Hanging Woman Creek near Birney, Mont.	470	1973-P	3-04-75	9.77	986	19	11.56	2,060	9
59	06307620	Tie Creek near Birney, Mont.	18.7	1973-P	3-03-75	2.36	9	19	1.40	7	<2
60	06307700	Cow Creek near Fort Howes ranger station, near Otter, Mont.	8.37	1972-P	1972	2.39	43	18	1.65	8	<2

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi. ²)	Period of record ^a	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
61	06307720	Brian Creek near Ashland, Mont.	8.03	1973-P	3-01-75	3.75	93	19	1.94	25	2
62	06307740	Otter Creek near Ashland, Mont.	707	1972-P	3-06-75	7.05	341	21	7.33	393	<2
63	06307780	Stebbins Creek at mouth, near Ashland, Mont.	19.9	1963-P	3-19-69	4.45	570	19	3.46	203	4
64	06307830	Tongue River below Brandenberg bridge, near Ashland, Mont.	4,062	1973-P	6-18-67	--	^f 5,740	22	9.96	8,280	9
65	06307930	Jack Creek near Volborg, Mont.	5.47	1973-P	5-05-75	4.56	271	18	5.62	512	25
66	06308100	Sixmile Creek tributary near Epsie, Mont.	0.24	1973-P	6-18-73	3.18	74	18	4.30	92	45
67	06308200	Basin Creek tributary near Volborg, Mont.	.14	1955-P	7-02-58	6.96	390	18	1.31	16	<2
68	06308330	Deer Creek tributary near Volborg, Mont.	1.65	1973-P	1973	11.55	1,170	18	4.26	75	5
69	06308340	LaGrange Creek near Volborg, Mont.	3.66	1973-P	5-06-75	7.62	378	18	5.17	182	6
70	06308400	Pumpkin Creek near Miles City, Mont.	697	1972-P	5-06-75	12.27	2,890	19	11.19	2,430	2
71	06308500	Tongue River at Miles City, Mont.	5,379	1938-42; 1947-P	6-15-62	12.33	13,300	23	10.18	8,650	6
72	06309000	Yellowstone River at Miles City, Mont.	48,253	1922-23; 1928-P	6-19-44	12.74	96,300	22	16.50	103,600	>100
73	06309080	Deep Creek near Kinsey, Mont.	11.5	1962-P	6-09-72	16.78	2,430	18	<4.70	<400	<2
74	06309200	Middle Fork Powder River near Barnum, Wyo.	45.2	1961-P	6-15-63	^g 12.60	7,110	16	3.88	530	2
75	06309260	Buffalo Creek above North Fork Buffalo Creek near Armito, Wyo.	8.80	1974-P	6-18-75	2.02	117	16	2.05	85	(f)
76	06309270	North Fork Buffalo Creek near Armito, Wyo.	8.10	1974-P	6-18-75	2.64	201	16	2.06	75	(f)
77	06309280	Buffalo Creek below North Fork Buffalo Creek near Armito, Wyo.	18.6	1974-P	6-18-75	2.16	295	16	1.91	146	(f)
78	06309450	Beaver Creek below Bayer Creek near Barnum, Wyo.	10.9	1974-P	8-04-76	2.19	148	16	2.80	180	(f)
79	06309460	Beaver Creek above White Panther Ditch near Barnum, Wyo.	24.2	1974-P	6-18-75	2.00	222	17	2.57	220	(f)
80	06311400	North Fork Powder River below Pass Creek near Mayoworth, Wyo.	100	1940-P	8-11-41	7.64	1,270	18	5.22	313	<2

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^{a/}	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
81	06312500	Powder River near Kaycee, Wyo.	980	1933-35; 1938-71	^k 8-11-41	12.57	5,230	--	11.32	ⁱ 4,200	25
82	06312700	South Fork Powder River near Powder River, Wyo.	262	1961-P	9-11-73	8.52	1,200	18	8.75	1,800	>100
83	06313000	South Fork Powder River near Kaycee, Wyo.	1,150	1911, 1938-40; 1950-69	5-22-62	14.43	35,500	18	^g 7.20	ⁱ 8,200	5
84	06313020	Bobcat Creek near Edgerton, Wyo.	8.29	1965-P	9-11-73	4.62	1,060	18	1.88	60	< 2
85	06313050	East Teapot Creek near Edgerton, Wyo.	5.44	1965-P	6-10-65	9.92	4,450	18	2.18	250	2
86	06313100	Coal Draw near Midwest, Wyo.	11.4	1961-P	6-22-64	13.40	2,620	18	6.93	300	< 2
87	06313180	Dugout Creek tributary near Midwest, Wyo.	0.8	1965-P	7-15-67	9.10	1,590	18	2.93	156	2
88	06313400	Salt Creek near Sussex, Wyo.	769	1976-P	5-31-76	6.43	3,480	18	9.88	10,200	(f)
89	06313500	Powder River at Sussex, Wyo.	3,090	1938-40; 1950-57; 1977-P	5-23-52	^g 12.60	32,500	19	15.14	24,000	20
90	06313700	Dead Horse Creek near Buffalo, Wyo.	151	1958-P	6-22-76	11.32	2,480	18	10.08	1,410	4
91	06316400	Crazy Woman Creek at upper station near Arvada, Wyo.	945	1963-70; 1977-P	6-15-65	16.02	15,800	20	10.00	2,200	(f)
92	06317000	Powder River at Arvada, Wyo.	6,050	1919-P	9-29-23	^g 23.70	ⁱ 100,000	20	16.90	ⁱ 32,500	25
93	06318500	Clear Creek near Buffalo, Wyo.	120	1894; 1896-99; 1917-27, 1938-P	6-15-63	6.19	3,420	18	3.70	600	< 2
94	06320200	Clear Creek below Rock Creek near Buffalo, Wyo.	322	1971-P	5-30-71	6.28	2,060	18	6.05	1,600	(f)
95	06320400	Clear Creek at Ucross, Wyo.	409	1976-P	5-11-77	7.46	1,280	19	9.07	1,750	(f)
96	06321000	South Piney Creek near Story, Wyo.	69.4	1951-P	6-15-63	4.37	2,090	18	2.97	190	< 2
97	06321100	South Piney Creek below Mead-Coffeen Ditch near Story, Wyo.	69.5	1974-P	5-10-77	3.32	524	18	2.73	213	(f)
98	06321500	North Piney Creek near Story, Wyo.	36.8	1951-P	6-15-63	5.04	1,820	18	---	1,373	--
99	06323500	Piney Creek at Ucross, Wyo.	267	1917-23; 1950-P	6-16-63	7.33	3,570	19	5.30	1,290	3

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^{a/}	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
100	06324000	Clear Creek near Arvada, Wyo.	1,110	1915-19; 1928-29; 1939-P	8-05-54	10.45	9,600	18	9.03	5,210	6
101	06324500	Powder River at Moorhead, Mont.	8,088	1929-72; 1974-P	6-17-62	12.77	23,000	20	15.22	32,900	>100
102	06324700	Sand Creek near Broadus, Mont.	10.6	1955-P	6-09-72	5.39	715	18	2.12	27	<2
103	06324710	Powder River at Broadus, Mont.	8,748	1975-P	6-24-76	6.19	6,740	21	12.96	31,500	>100
104	06324800	Little Powder River tributary near Gillette, Wyo.	0.81	1960-P	6-22-64	6.44	176	18	7.97	23	6
105	06324890	Little Powder River below Corral Creek near Weston, Wyo.	204	1977-P	---	--	---	18	9.61	2,120	(f)
106	06324900	Cedar Draw near Gillette, Wyo.	3.45	1959-P	6-22-64	9.75	758	18	6.87	220	4
107	06324910	Cow Creek tributary near Weston, Wyo.	0.72	1971-P	7-02-76	8.17	153	18	5.93	51	4
108	06324925	Little Powder River near Weston, Wyo.	540	1977-P	---	--	---	19	13.33	4,550	(f)
109	06324970	Little Powder River above Dry Creek near Weston, Wyo.	1,235	1972-P	1-17-74	8.05	1,000	19	11.67	5,400	(f)
110	06324995	Badger Creek at Biddle, Mont.	6.06	1972-P	6-23-76	7.97	414	18	2.48	54	3
111	06325400	East Fork Little Powder River near Hammond, Mont.	3.45	1974-P	6-23-76	6.18	155	18	5.69	60	4
112	06325500	Little Powder River near Broadus, Mont.	2,039	1947-53; 1957-61; 1962-72	1972	9.30	2,700	20	9.85	3,160	50
113	06325700	Powder River tributary near Powder- ville, Mont.	3.20	1973-P	1973	16.91	480	18	2.42	32	3
114	06325950	Cut Coulee near Mizpah, Mont.	2.23	1973-P	5-05-75	8.45	272	18	4.17	103	5
115	06326300	Mizpah Creek near Mizpah, Mont.	797	1974-P	5-06-75	9.80	1,920	19	7.04	1,030	<2
116	06326500	Powder River near Locate, Mont.	13,194	1938-P	2-19-43	11.23	31,000	23	11.59	28,500	15
117	06326510	Locate Creek tributary near Locate, Mont.	0.91	1973-P	1973	2.41	22	19	1.40	7	<2
118	06364700	Antelope Creek near Teckla, Wyo.	959	1977-P	---	--	---	19	8.83	6,600	(f)
119	06365300	Dry Fork Cheyenne River near Bill, Wyo.	128	1976-P	---	--	---	18	4.00	1,000	(f)

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^a / 1959, 1961-P	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
120	06365900	Cheyenne River near Dull Center, Wyo.	1,527	1976-P	7-08-77	5.50	2,570	18	12.10	11,800	(f)
121	06375600	Little Thunder Creek near Hampshire, Wyo.	234	1977-P	---	--	---	18	9.00	3,280	(f)
122	06376300	Black Thunder Creek near Hampshire, Wyo.	535	1972-P	9-09-73	11.49	804	18	14.13	5,050	(f)
123	06378300	Lodgepole Creek near Hampshire, Wyo.	354	1977-P	---	--	---	18	4.09	168	(f)
124	06379600	Box Creek near Bill, Wyo.	112	1956-58; 1959, 1961-P	5-05-71	7.92	1,720	17	8.15	2,700	20
125	06382200	Pritchard Draw near Lance Creek, Wyo.	15.1	1964-P	9-03-68	13.29	4,050	18	4.78	360	<2
126	06386000	Lance Creek near Spencer, Wyo.	2,070	1948-54 1956-P	5-24-71	9.67	7,410	19	9.35	6,920	30
127	06386500	Cheyenne River near Spencer, Wyo.	5,270	1948-74	5-22-62	8.74	16,000	--	12.22 ¹	28,500	>100
128	06387500	Turner Creek near Osage, Wyo.	47.8	1959-P	6-15-62	16.72	3,000	18	15.58	2,450	8
129	06394000	Beaver Creek near Newcastle, Wyo.	1,320	1943-P	6-16-62	19.98	11,900	20	16.30	3,800	20
130	06395000	Cheyenne River near Edgemont, S. Dak.	7,143	1903-06; 1928-33; 1946-P	5-25-71	10.57	13,800	20	13.65 ¹	28,500	80
131	06425720	Belle Fourche River below Rattle- snake Creek near Piney, Wyo.	495	1975-P	6-13-77	5.86	489	18	11.33	4,100	(f)
132	06425780	Belle Fourche River above Dry Creek near Piney, Wyo.	594	1975-P	6-13-77	11.81	1,630	18	16.50	5,800	(f)
133	06425900	Caballo Creek at Mouth near Piney, Wyo.	260	1977-P	---	--	---	19	8.66	2,170	(f)
134	06425950	Raven Creek near Moorcroft, Wyo.	76	1977-P	---	--	---	19	5.55	236	(f)
135	06426400	Donkey Creek near Moorcroft, Wyo.	246	1977-P	---	--	---	19	14.61	3,240	(f)
136	06426500	Belle Fourche River below Moorcroft, Wyo.	1,670	1943-70; 1975-P	5-27-62	14.33	ⁿ 4,420	19	14.60	14,500	>100
137	06427700	Inyan Kara Creek near Upton, Wyo.	96.5	1959-P	7-01-59	12.99	4,660	18	6.36	92	<2
138	06429300	Ogden Creek near Sundance, Wyo.	8.42	1962-P	5-06-67	3.93	423	18	1.72	50	4
139	06634300	Sheep Creek near Medicine Bow, Wyo.	174	1961-P	7-07-61	11.48	1,900	17	9.76	1,700	15

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^{a/}	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
140	06634600	Little Medicine Bow River near Medicine Bow, Wyo.	963	1973-P	4-17-75	9.05	3,060	17	14.10	¹ 9,500	(f)
141	06635000	Medicine Bow River above Seminole Reservoir near Hanna, Wyo.	2,338	1939-P	3-29-43	5.23	6,590	18	6.25	5,220	60
142	06641400	Bear Springs Creek near Alcova, Wyo.	9.33	1960-P	10-06-62	12.36	533	17	12.25	130	2
143	06642000	North Platte River at Alcova, Wyo.	10,812	1904-05; 1934-P	6-6,10, 11-1905	⁸ 11.50	13,400	17	1.68	430	<2
144	06642700	Lawn Creek near Alcova, Wyo.	11.5	1961-P	8-10-74	9.15	1,250	17	7.61	580	8
145	06642760	Stinking Creek near Alcova, Wyo.	117	1961-P	8-12-63	7.93	2,750	17	7.11	1,750	5
146	06643300	Coal Creek near Goose Egg, Wyo.	5.39	1960-P	6-12-70	8.72	514	17	6.46	59	<2
147	06644840	McKenzie Draw tributary near Casper, Wyo.	2.02	1965-P	9-11-73	7.03	970	18	1.47	12	<2
148	06645150	Smith Creek above Otter Creek near Casper, Wyo.	9.91	1974-P	5-13-75	3.40	40	20	1.98	42	(f)
149	06645160	Smith Creek at Otter Creek near Casper, Wyo.	10.9	1974-P	5-13-75	1.54	39	20	3.24	41	(f)
150	06646600	Deer Creek below Millar Wasteway at Glenrock, Wyo.	213	1961-P	6-12-70	9.45	14,200	17	8.70	5,500	30
151	06646700	East Fork Dry Creek tributary near Glenrock, Wyo.	2.60	1961-P	5-14-65	11.00	550	18	6.65	52	2
152	06646780	Sand Creek near Glenrock, Wyo.	79.9	1977-P	---	---	---	18	3.90	453	(f)
153	06646800	North Platte River near Glenrock, Wyo.	13,538	1959-P	5-14-65	7.10	16,000	17	4.71	6,030	3
154	06647500	Box Elder Creek at Box Elder, Wyo.	63.0	1946-51; 1961-67; 1971-P	5-14-65	⁸ 8.58	4,530	17	6.61	2,250	35
155	06647890	Little Box Elder Creek near Careyhurst, Wyo.	7.18	1974-P	6-18-75	1.31	21	18	1.69	51	(f)
156	06647900	Little Box Elder Creek at Little Box Elder Cave near Careyhurst, Wyo.	3.47	1974-P	9-13-75	1.30	23	13	2.07	43	(f)
157	06648780	Sage Creek tributary near Orpha, Wyo.	1.38	1965-P	7-25-65	2.00	229	18	.44	12	<2
158	06649000	LaPrele Creek near Douglas, Wyo.	135	1919-P	6-12-70	13.01	17,300	17	10.66	1,550	7

Table 1.--Summary of peak stages and discharges for the floods of May 1978--continued

Map num- ber	Permanent station number	Site of flood-discharge determination	Drainage area (mi ²)	Period of record ^{a/}	Maximum flood previously known			Maximum flood of May 1978			Recur- rence inter- val (years)
					Date	Gage height (ft)	Discharge (ft ³ /s)	Day	Gage height (ft)	Discharge (ft ³ /s)	
159	06649900	North Platte River tributary near Douglas, Wyo.	8.53	1961-P	5-22-61	11.32	1,400	18	4.97	91	<2
160	06651800	Sand Creek near Orin, Wyo.	27.8	1955, 1961-P	8-07-55	---	0 ^o 20,700	18	10.20 ⁱ	5,460	20
161	06652000	North Platte River at Orin, Wyo.	14,888	1895-99; 1917-18; 1924, 1958-P	5-15-65	10.00	23,800	17	7.76	12,700	7
162	06652400	Watson Draw near Lost Springs, Wyo.	6.95	1960-P	5-28-61	14.78	2,100	18	8.81	581	35

^a P, present.^b Estimated.^c Does not include bypass flow of about 9,200 ft³/s.^d Mean daily discharge for May 17-19, 1978.^e Affected by backwater.^f Less than 10 years of record.^g Site and datum then in use.^h Revised from Omang and Hull (1978).ⁱ About.^j Peak flow record prior to 1974 water year includes that for station number 06311500 (North Fork Powder River near Mayoworth).^k Flood of Sept. 30, 1923, reached a stage of 18.00 feet (discharge not determined).^l Mean daily discharge.^m Gage moved 125 feet upstream in 1969 (same datum).ⁿ Flood of Apr. 7, 1924, reached a stage of 12.60 feet at site of former gaging station, 4.2 miles upstream at different datum; discharge, 12,500 ft³/s. Flood in June 1908 reached a stage about 2.50 feet higher than that of Apr. 7, 1924.^o Outside period of record.