UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Water Resources Division

A SUMMARY OF PEAK STAGES AND DISCHARGES IN MARYLAND, DELAWARE, AND DISTRICT OF COLUMBIA FOR FLOOD OF JUNE 1972

by

Kenneth R. Taylor

Open-File Report

Parkville, Maryland

1972

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Intense rainfall associated with tropical storm Agnes caused devastating flooding in several states along the Atlantic Seaboard during late June 1972. Storm-related deaths were widespread from Florida to New York, and public and private property damage has been estimated in the billions of dollars.

The purpose of this report is to make available to the public as quickly as possible peak-stage and peak-discharge data for streams and rivers in Maryland, Delaware, and the District of Columbia. Detailed analyses of precipitation, flood damages, stage hydrographs, discharge hydrographs, and frequency relations will be presented in a subsequent report.

Although the center of the storm passed just offshore from Maryland and Delaware, the most intense rainfall occurred in the Washington, D. C., area and in a band across the central part of Maryland (figure 1). Precipitation totals exceeding 10 inches during the June 21-23 period were recorded in Baltimore, Carroll, Cecil, Frederick, Harford, Howard, Kent, Montgomery, and Prince Georges Counties, Md., and in the District of Columbia. Storm totals of more than 14 inches were recorded in Baltimore and Carroll Counties. At most stations more than 75 percent of the storm rainfall occurred on the afternoon and night of June 21 and the morning of June 22 (figure 2).

Peak discharges at many gaging stations on streams and rivers in central Maryland, northern Delaware, and the District of Columbia (figure 3) far exceeded the previous maximum flows recorded at these stations (table 1). Record peak flows occurred on long-term stations (more than 20 years of record) as far west as Conococheague Creek in Washington County and as far east as Morgan Creek in Kent County, Md. Five stations (Nos. 19, 38, 46, 50, and 93) with more than 20 years of record had peak flows that were more than 4 times greater than previously recorded peaks. Western Run at Western Run (No. 38) and North Branch Patapsco River at Cedarhurst (No. 46) had peak flows that were 6½ times greater than any previous peak flow during more than 25 years of record. Peak stages at these stations exceeded the previous record stages by 15.2 feet and 10.4 feet, respectively. At Conococheague Creek at Fairview (No. 75) and Monocacy River at Jug Bridge near Frederick (No. 94) peak flows exceeded the record 1889 peak flows by nearly 50 percent.

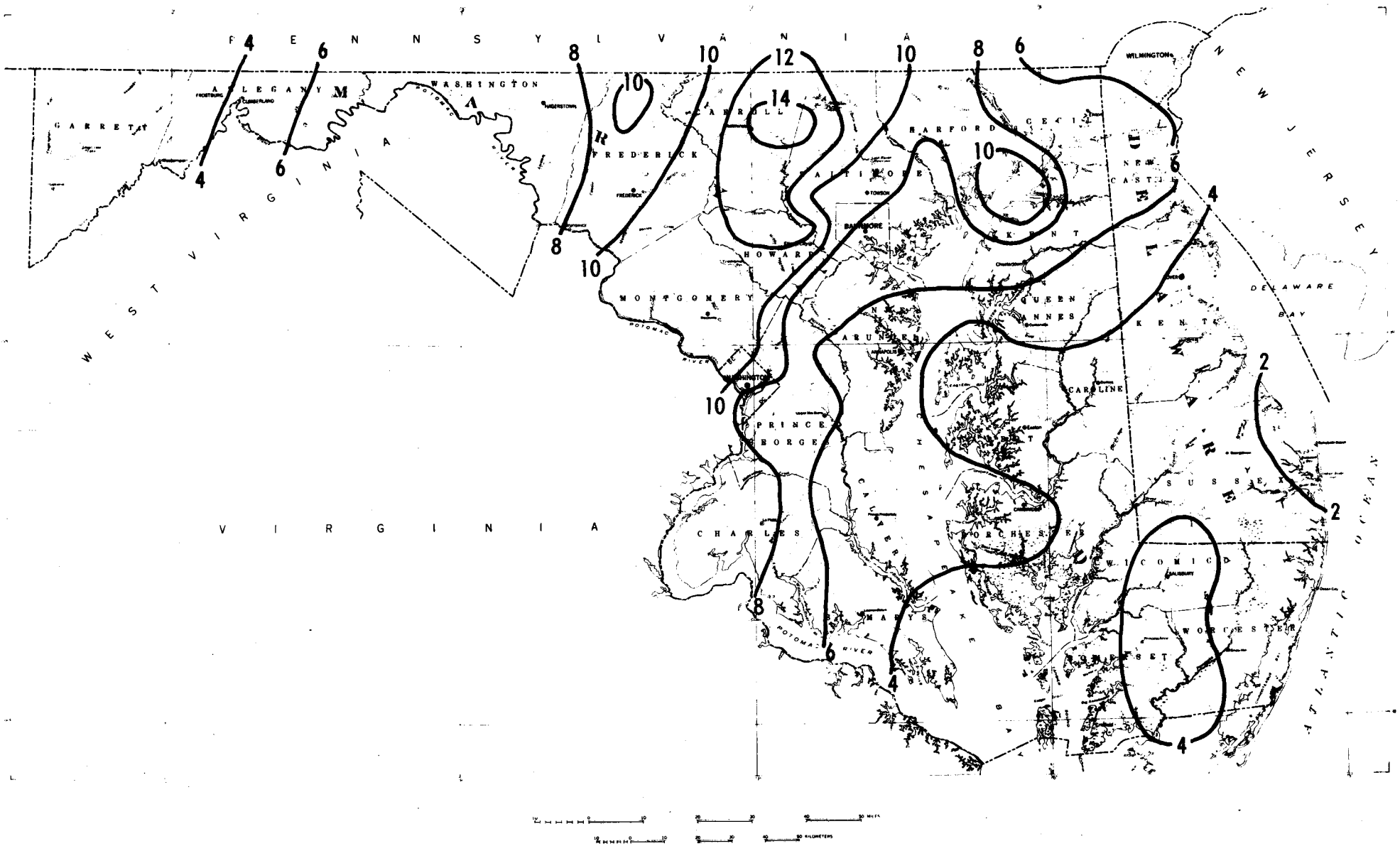

Figure 1–Rainfall (in inches) during period June 21-23,1972. (Adapted from CLIMATOLOGICAL DATA, MARYLAND AND DELAWARE, U.S. Department of Commerce)

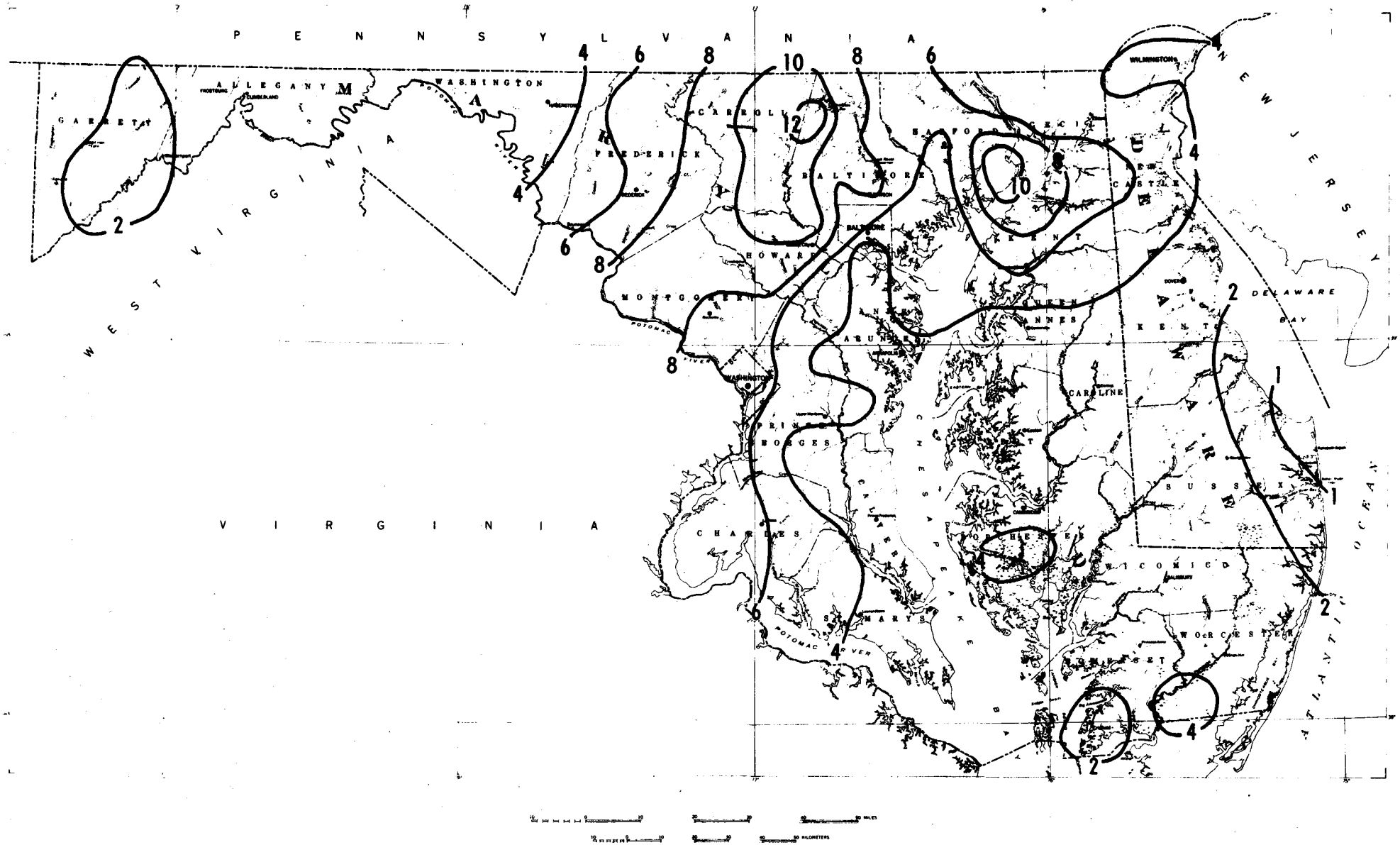

Figure 2–Greatest day rainfall (in inches) during period, June 21-23,1972 (Adapted from CLIMATOLOGICAL DATA, MARYLAND AND DELAWARE U.S. Department of Commerce)

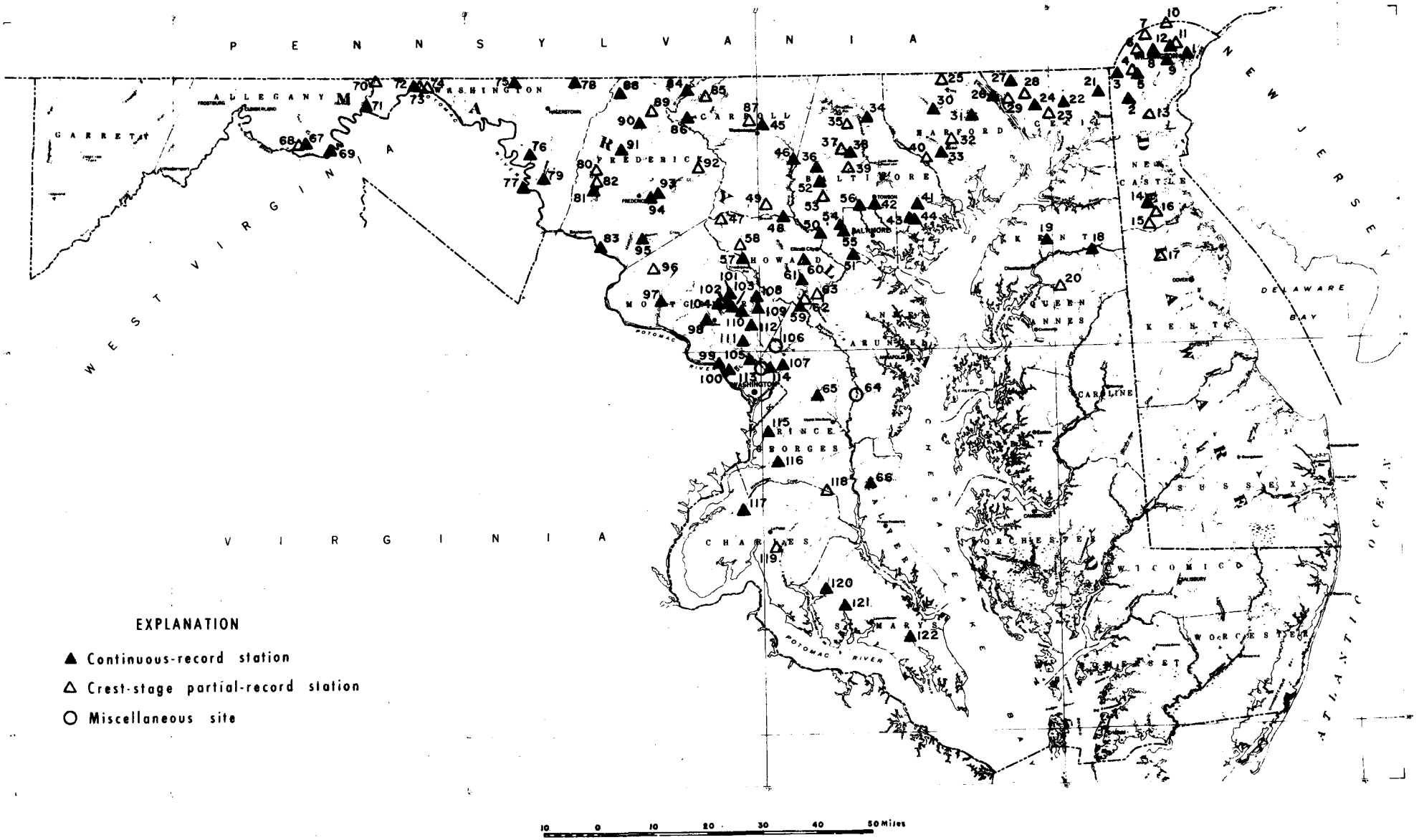

Figure 3–Location of flood–measurement sites

Table 1.--Summary of flood stages and discharges

No.	Station number	Stream and place of determination	Drainage area (sq mi)	Period of known floods	Maximum flood previously known				Maximum during June 1972 floods				
					Date	Gage height (feet)	Discharge		Day	Time	Gage height	Discharge	
							cfs	*cfsm				cfs	*cfsm
		DELAWARE RIVER BASIN											
1	01477800	Shellpot Creek at Wilmington, Del.	7.46	1946-71	9-13-71	11.91	6,850	918	22	1100	6.66	2,240	300
2	01478000	Christina River at Coochs Bridge, Del.	20.5	1943-71	5-1-47	12.41	2,660	130	22	1815	11.35	1,990	97
3	01478500	White Clay Creek above Newark, Del.	66.7	1952-59, 1963-71	8-10-67	9.97	4,540	68	22	1745	a13.77	10,200	153
4	01478950	Pike Creek near Newark, Del.	6.04	1969-71	7-28-69	9.15	2,550	422	22	1300	6.78	942	156
5	01479000	White Clay Creek near Newark, Del.	87.8	1932-35, 1944-56, 1960-71	8-10-67	16.41	6,640	76	22	2030	17.74	9,080	103
6	01479200	Mill Creek at Hockessin, Del.	4.19	1966-71	7-28-69	11.29	2,100	501	22	c	7.98	687	164
7	01479950	Red Clay Creek tributary near Yorklyn, Del.	0.38	1966-71	7-28-69	6.53	200	526	22	c	5.29	56	147
8	01480000	Red Clay Creek at Wooddale, Del.	47.0	1944-71	9-12-60	9.93	4,780	102	22	1800	8.96	4,120	88
9	01480100	Little Mill Creek at Elsmere, Del.	6.70	1964-71	8-10-67	8.58	3,960	591	22	1300	5.85	1,130	169
10	01481200	Brandywine Creek tributary near Centerville, Del.	0.97	1966-71	9-13-71	9.35	405	418	22	c	5.92	170	175
11	01481450	Willow Run at Rockland, Del.	0.37	1966-71	9-13-71	12.70	620	1,680	22	c	6.77	178	481
12	01481500	Brandywine Creek at Wilmington, Del.	314	1947-71	9-13-71	13.83	21,300	68	23	0500	15.49	29,000	92
13	01482310	Doll Run at Red Lion, Del.	1.2	1966-71	8-27-71	4.71	140	117	22	c	5.59	215	179
14	01483200	Blackbird Creek at Blackbird, Del.	3.85	1953-71	9-12-60	4.10	510	132	22	1630	5.04	715	186
15	01483290	Paw Paw Branch tributary near Clayton, Del.	1.3	1966-71	7-28-69	8.13	350	269	22	1030	8.43	760	585
16	01483400	Sawmill Branch tributary near Blackbird, Del.	0.6	1966-71	7-28-69	4.88	39	65	22	c	4.82	37	62
17	01483500	Leipsic River near Cheswold, Del.	9.35	1944-71	9-12-60	6.45	1,340	143	22	1415	5.53	785	84
		CHESTER RIVER BASIN											
18	01493000	Unicorn Branch near Millington, Md.	22.3	1948-71	9-12-60	7.17	1,060	48	22	1930	7.00	1,010	45
19	01493500	Morgan Creek near Kennedyville, Md.	10.5	1952-71	9-12-60	8.88	1,530	146	22	1100	13.07	7,500	714
20	01494020	Brown Branch tributary near Church Hill, Md.	1.7	1971	9-11-71	12.3	890	524	22	c	10.95	450	265

See footnotes at end of table.

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							cfs	*cfsm				cfs	*cfsm
		ELK RIVER BASIN											
21	01495000	Big Elk Creek at Elk Mills, Md.	52.6	1933-71	7-5-37	14.5	10,600	202	22	1700	13.46	8,720	166
		NORTHEAST RIVER BASIN											
22	01496000	Northeast Creek at Leslie, Md.	24.3	1949-71	8-10-67	7.74	4,060	167	22	1700	8.36	4,750	195
23	01496080	Northeast River tributary near Charlestown, Md.	1.7	1967-71	4-2-70	5.08	210	124	22	c	5.82	615	362
		PRINCIPIO CREEK BASIN											
24	01496200	Principio Creek near Principio Furnace, Md.	9.03	1968-71	8-4-69	9.26	7,060	782	22	0800	8.47	2,840	315
		SUSQUEHANNA RIVER BASIN											
25	01577940	Broad Creek tributary at Whiteford, Md.	0.77	1971	8-28-71	6.62	156	203	22	c	9.65	310	403
26	01578310	Susquehanna River at Conowingo, Md.	27,100	1967-71	2-4-70	26.40	434,000	16	24	0545	36.83	1,130,000	42
27	01578500	Octoraro Creek near Rising Sun, Md.	193	1933-58, 1963-71	8-9-42 1884	17.57 b24.3	35,000	181	22	1700	18.64	29,000	150
28	01578800	Basin Run at West Nottingham, Md.	1.3	1967-71	8-9-67	13.60	825	635	22	c	11.80	640	492
29	01579000	Basin Run at Liberty Grove, Md.	5.31	1949-58, 1965-71	8-9-67	7.66	3,000	565	22	c	6.92	2,500	471
30	01580000	Deer Creek at Rocks, Md.	94.4	1927-71	8-23-33	17.7	13,600	144	22	1200	17.09	12,200	129
31	01580200	Deer Creek near Kalmia, Md.	125	1968-71	8-27-67	10.45	6,130	49	22	1500	16.08	18,700	150
		BUSH RIVER BASIN											
32	01581500	Bynum Run at Bel Air, Md.	8.52	1945-50, 1956-71	7-19-45	6.25	3,620	425	22	c	8.32	4,650	546
33	01581700	Winters Run near Benson, Md.	34.8	1968-71	9-11-71	8.96	5,350	154	22	0545	11.60	7,600	218
		GUNPOWDER RIVER BASIN											
34	01582000	Little Falls at Blue Mount, Md.	52.9	1945-71	9-10-50	13.32	5,730	108	22	0800	18.54	8,280	157
35	01582510	Piney Creek near Hereford, Md.	1.5	1966-71	9-11-71	13.27	790	527	22	c	19.4	1,370	913
36	01583000	Slade Run near Glyndon, Md.	2.09	1948-71	6-21-56	4.68	485	232	22	0030	4.80	515	246

See footnotes at end of table.

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							cfs	*cfsm				cfs	*cfsm
		GUNPOWDER RIVER BASIN											
37	01583495	Western Run tributary at Western Run, Md.	0.26	1966-71	8-27-67	8.11	236	908	22	c	-	515	1,980
38	01583500	Western Run at Western Run, Md.	59.8	1945-71	6-21-56	10.84	5,590	94	22	d0430	a26.0	38,000	635
39	01583580	Baisman Run at Broadmoor, Md.	1.47	1965-69	9-10-68	5.43	490	333	22	0315	6.08	692	471
40	01584500	Little Gunpowder Falls at Laurel Brook, Md.	36.1	1927-70	8-23-33	10.3	9,200	255	22	c	10.18	9,030	250
41	01585100	Whitemarsh Run at White Marsh, Md.	7.61	1960-71	8-1-71	14.05	8,000	1,050	22	0645	10.04	2,150	283
		BACK RIVER BASIN											
42	01585200	West Branch Herring Run at Idlewylde, Md.	2.13	1958-64, 1966-71	9-11-71	6.80	1,740	817	22	0330	5.30	920	432
43	01585300	Stemmers Run at Rossville, Md.	4.94	1959-71	8-1-71	11.34	5,950	1,200	22	0445	7.55	1,530	310
44	01585400	Brien Run at Stemmers Run, Md.	1.97	1959-71	8-1-71	10.75	d3,500	1,780	22	1100	5.66	632	321
		PATAPSCO RIVER BASIN											
45	01585500	Cranberry Branch near Westminster, Md.	3.29	1950-71	7-9-70	5.54	1,070	325	22	0300	5.85	1,510	459
46	01586000	North Branch Patapsco River at Cedarhurst, Md.	56.6	1946-71	8-13-55	10.38	4,130	73	22	d0300	a20.79	27,800	491
47	01587050	Haymeadow Branch tributary at Popular Springs, Md.	0.54	1966-71	9-11-71	10.55	630	1,170	22	c	8.58	420	778
48	01587500	South Branch Patapsco River at Henryton, Md.	64.4	1949-71	7-21-56	19.40	12,100	188	22	d0100	a28.14	26,900	418
49	01588000	Piney Run near Sykesville, Md.	11.4	1932-71	7-20-56	12.0	7,380	647	22	c	11.0	9,700	851
50	01589000	Patapsco River at Hollofield, Md.	285	1945-71	7-21-56	15.88	19,000	67	22	d0900	a31.3	80,600	283
51	01589100	East Branch Herbert Run at Arbutus, Md.	2.47	1958-71	9-11-71	5.94	1,180	478	22	0115	6.35	1,340	543
52	01589200	Gwynns Falls near Owings Mills, Md.	4.90	1959-71	8-27-67	5.06	1,330	271	22	0200		5,500	1,120
53	01589240	Gwynns Falls at McDonogh, Md.	19.3	1958-71	8-27-67	8.81	e		22	c	18.8	14,700	762
54	01589300	Gwynns Falls at Villa Nova, Md.	32.5	1958-71	9-10-68	10.70	2,850	88	22	d0400	a21.5	16,200	498
55	01589330	Dead Run at Franklintown, Md.	5.52	1960-71	9-10-68	10.22	2,750	498	22	d0200	a12.5	7,400	1,340

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							cfs	*cfsm				cfs	*cfsm
		PATAPSCO RIVER BASIN											
56	01589440	Jones Falls at Sorrento, Md.	25.2	1959-71	9-10-68	11.30	2,160	86	22	d0400	a18.11	13,800	548
		PATUXENT RIVER BASIN											
57	01591000	Patuxent River near Unity, Md.	34.8	1945-71	9-13-71	18.60	21,800	626	22	c	16.1	14,500	417
58	01591500	Cattail Creek at Roxbury Mills, Md.	27.7	1945-56	7-21-56	14.19	10,100	365	22	c	16.4	d12,000	433
59	01592500	Patuxent River near Laurel, Md.	132	1945-71	9-13-71	d18.6	11,800	89	22	0700	d25	d26,000	197
60	01593350	Little Patuxent River tributary at Guilford Downs, Md.	0.95	1966-71	8-16-68	8.53	e	-	22	c	10.28	620	653
61	01593500	Little Patuxent River at Guilford, Md.	38.0	1933-71	9-1-52	13.26	5,300	139	22	d0630	a18.38	12,400	326
62	01594000	Little Patuxent River at Savage, Md.	98.4	1940-58, 1959-66, 1968, 1971	9-1-52 Aug. 1933	13.15 17.5	6,280 e	64 -	22	c	25.4	35,400	360
63	01594400	Dorsey Run near Jessup, Md.	11.6	1949-68	8-13-55	12.77	1,400	121	22	c	14.0	d1,700	147
64		Patuxent River at U.S. 50	348						22	c	26.4	31,100	89
65	01594500	Western Branch near Largo, Md.	30.2	1950-71	8-27-71	8.97	1,760	58	22	0700	8.54	1,540	51
66	01594600	Cocktown Creek near Huntingtown, Md.	3.85	1957-71	6-14-60	7.96	1,120	291	22	0915	5.63	165	43
		POTOMAC RIVER BASIN											
67	01609000	Town Creek near Oldtown, Md.	148	1929-34, 1968-71	10-23-29	14.08	9,700	66	22	1545	14.13	11,700	79
68	01609500	Sawpit Run near Oldtown, Md.	5.08	1948-58 1963-71	10-15-54	4.72	770	152	22	0600	4.33	600	118
69	01610000	Potomac River at Paw Paw, W. Va.	3,109	1939-71	10-16-42 3-18-36	38.36 b54.0	111,000 240,000	36	23	2130	28.87	64,600	21
70	01610150	Bear Creek at Forest Park, Md.	10.4	1965-69, 1971	2-13-72	6.01	460	44	22	c	11.74	1,450	139
71	01610155	Sideling Hill Creek near Bellegrove, Md.	102	1968-71	4-2-70	8.18	5,750	56	22	0915	12.54	13,500	132
72	01613000	Potomac River at Hancock, Md.	4,073	1933-71	3-18-36	47.6	340,000	84	23	0800	30.79	111,600	27

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		POTOMAC RIVER BASIN											
73	01613150	Ditch Run near Hancock, Md.	4.8	1965-71	11-13-70	7.69	400	83	22	c	9.07	555	116
74	01613160	Potomac River tributary near Hancock, Md.	1.2	1965-71	2-13-66	4.90	98	82	22	c	5.79	174	145
75	01614500	Conocheague Creek at Fairview, Md.	494	1929-71	11-22-52 1889	15.16 d16.5	17,100 d22,000	35	23	c	24.5	32,400	66
76	01617800	Marsh Run at Grimes, Md.	18.9	1964-71	1-9-64	2.42	105	6	22	0800	3.44	268	14
77	01618000	Potomac River at Shepherdstown, W. Va.	5,936	1929-52, 1955-71	3-19-36	42.1	335,000	56	23	2330	31.58	187,000	32
78	01619000	Antietam Creek near Waynesboro, Pa.	93.5	1949-50, 1966-71	7-29-70	7.87	2,040	22	22	2100	12.33	5,400	58
79	01619500	Antietam Creek near Sharpsburg, Md.	281	1898-1904, 1929-71	7-20-56	16.73	12,600	45	23	1415	14.30	9,880	35
80	01637000	Little Catoctin Creek at Harmony, Md.	8.83	1948-57, 1968-71	8-20-52	8.49	5,400	612	21	2000	6.34	1,960	222
81	01637500	Catoctin Creek near Middletown, Md.	66.9	1948-71	6-18-49	11.18	7,760	116	22	0230	12.28	11,200	167
82	01637600	Hollow Road Creek near Middletown, Md.	2.3	1965-71	10-25-71	6.28	450	196	22	c	8.75	815	354
83	01638500	Potomac River at Point of Rocks, Md.	9,651	1896-1971	3-19-36	41.03	480,000	50	23	2330	37.43	347,000	36
84	01639000	Monocacy River at Bridgeport, Md.	173	1943-71	5-21-43 8-24-33	20.53 b25	15,000	87	22	1530	24.05	21,000	121
85	01639095	Piney Creek tributary at Taneytown, Md.	0.62	1967-71	9-3-69	10.22	210	339	22	c	11.64	245	395
86	01639500	Big Pipe Creek at Bruceville, Md.	102	1948-71	7-12-49	11.92	9,500	93	22	0830	17.86	22,800	224
87	01640000	Little Pipe Creek at Avondale, Md.	8.1	1948-56, 1959-64, 1967-71	7-4-56	8.47	1,880	232	22	c	10.45	2,400	296
88	01640500	Owens Creek at Lantz, Md.	5.93	1932-71	12-1-34	8.4	3,270	551	22	0200	5.14	940	159
89	01640700	Owens Creek tributary near Rocky Ridge, Md.	1.2	1967-71	7-9-70	13.40	383	319	22	c	12.29	363	302
90	01641000	Hunting Creek at Jimtown, Md.	18.4	1950-71	9-1-52	4.94	1,170	64	22	0330	5.26	1,300	71

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							cfs	*cfsm				cfs	*cfsm
		POTOMAC RIVER BASIN											
91	01641500	Fishing Creek near Lewistown, Md.	7.29	1948-71	7-12-49	3.73	500	69	21	2230	4.01	610	84
92	01642400	Dollyhyde Creek at Libertytown, Md.	2.7	1969-71	7-20-69	8.88	760	281	22	c	13.20	1,620	600
93	01642500	Linganore Creek near Frederick, Md.	82.3	1935-71	8-13-55 Aug. 1933	11.39 a10.5	4,130 2,920	50 36	22	d0400	a19.46	20,100	244
94	01643000	Monocacy River at Jug Bridge near Frederick, Md.	817	1930-71	8-24-33 June 1889	28.1 a30	51,000 56,000	62	23	0600	a36.1	82,400	101
95	01643500	Bennett Creek at Park Mills, Md.	62.8	1949-71	9-12-71	14.38	12,900	205	22	d0200	a22.1	32,200	513
96	01644420	Bucklodge Branch tributary near Barnesville, Md.	0.27	1967-71	9-3-69	11.60	155	574	22	c	13.75	396	1,470
97	01645000	Seneca Creek at Dawsonville, Md.	101	1931-71	9-13-71	16.3	25,900	256	22	0200	16.4	26,100	258
98	01645200	Watts Branch at Rockville, Md.	3.70	1958-71	8-14-70	6.55	2,200	595	21	2245	7.22	2,900	784
99	01646500	Potomac River near Washington, D. C.	11,560	1931-71	3-19-36	f28.1	484,000	42	24	0330	22.03	360,000	33
100	01646550	Little Falls Branch near Bethesda, Md.	4.1	1945-71	9-14-66	6.82	2,680	654	21	2300	6.62	2,540	620
101	01647685	Williamsburg Run near Olney, Md.	2.25	1967-71	8-3-71	5.88	1,140	507	21	2345	8.26	3,110	1,380
102	01647720	North Branch Rock Creek near Norbeck, Md.	9.73	1967-71	8-4-71	5.77	970	100	21	c	14.1	g10,100	1,040
103	01647725	Manor Run near Norbeck, Md.	1.01	1967-71	8-3-71	4.67	d520	515	21	2230	5.14	h909	900
104	01647740	North Branch Rock Creek near Rockville, Md.	12.5	1967-71	2-9-71	2.92	100	-	22	0700	6.10	i420	-
105	01648000	Rock Creek at Sherrill Drive, Washington, D. C.	62.2	1930-71	7-21-56	13.19	7,220	116	22	d0300	16.24	12,600	203
106		Paint Branch at Interstate 495	16.5						22	c	-	6,410	388
107	01649500	Northeast Branch Anacostia River at Riverdale, Md.	72.8	1939-71	8-10-69 8-23-33	7.28 b15.5	5,660 10,500	78 144	22	0530	9.52	10,600	146
108	01650050	Northwest Branch Anacostia River at Norwood, Md.	2.45	1967-71	8-3-71	5.40	1,500	612	21	2330	6.24	3,750	1,530
109	01650085	Nursery Run at Cloverly, Md.	0.35	1967-71	8-3-71	3.55	260	743	21	2315	4.85	695	1,990
110	01650450	Bel Pre Creek at Layhill, Md.	1.69	1967-71	8-3-71	8.49	1,030	609	21	2300	10.47	1,930	1,140
111	01650470	Lutes Run at Lutes, Md.	0.47	1967-69, 1971	8-3-71		e		21	2215	6.53	571	1,210

See footnotes at end of table.

Table 1.--Summary of flood stages and discharges

No.	Station number	Stream and place of determination	Drainage area (sq mi)	Period of known floods	Maximum flood previously known				Maximum during June 1972 floods				
					Date	Gage height (feet)	Discharge		Day	Time	Gage height	Discharge	
							cfs	*cfsm				cfs	*cfsm
112	01650500	Northwest Branch Anacostia River near Colesville, Md.	21.1	1924-71	8-8-53	10.99	4,910	233	22	d0100	16	j11,000	521
113		Sligo Creek at Green Meadows, Md.	d13						22	c	-	6,990	538
114	01651000	Northwest Branch Anacostia River near Hyattsville, Md.	49.4	1939-71	9-14-66	13.50	7,000	142	22	0130	14.47	16,600	336
115	01653500	Henson Creek at Oxon Hill, Md.	16.7	1949-71	8-4-71	7.63	d3,500	210	22	0245	6.89	2,450	147
116	01653600	Piscataway Creek at Piscataway, Md.	39.5	1966-71	8-27-71	7.19	1,550	39	22	1200	9.80	5,000	127
117	01658000	Mattawoman Creek near Pomonkey, Md.	57.7	1950-71	8-13-55	7.52	9,300	161	22	0100	7.10	7,350	127
118	01660900	Wolf Den Branch near Cedarville, Md.	2.3	1966-71	8-3-69	5.42	140	61	22	c	6.59	255	111
119	01660930	Clark Run near Bel Alton, Md.	10.4	1966-71	10-26-71	7.00	320	31	22	c	8.91	4,820	463
120	01661000	Chaptico Creek at Chaptico, Md.	10.7	1948-71	9-10-50	8.56	7,800	729	22	0600	6.63	1,600	150
121	01661050	St. Clement Creek near Clements, Md.	18.5	1969-71	7-23-69	5.55	1,060	57	22	0700	6.55	4,340	235
122	01661500	St. Marys River at Great Mills, Md.	24.0	1947-71	8-20-69	13.34	7,950	331	22	1230	9.75	1,890	79
		POTOMAC RIVER TIDAL STATIONS											
		Potomac River at Wisconsin Ave., Washington, D. C.		1936-71	10-17-42	k17.7			24	0900	k15.4		
		Potomac River at Alexandria, Va.		1941-71	10-15-54	k8.7			24	0600	k7.3		

* Cubic feet per second per square mile.
a From high-water mark.
b Maximum stage known.
c Time of peak unknown.
d About.
e Discharge not determined.
f At site 1 mile upstream.
g Inflow to Lake Frank.
h Estimated by slope-area methods.
i Outflow from Lake Frank.
j Estimated.
k Low-water datum District of Columbia.

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

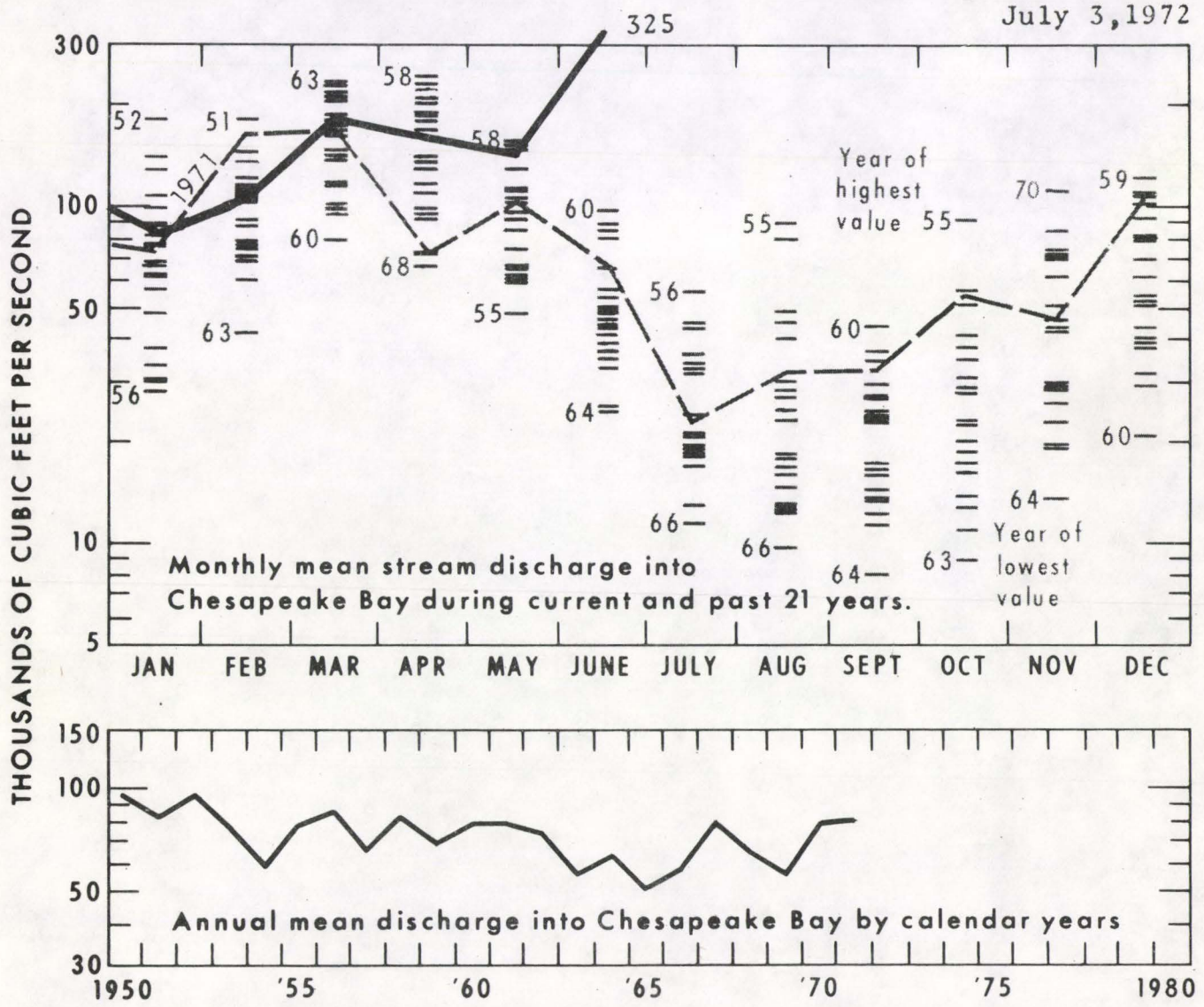
In Cooperation with

STATES OF MARYLAND, PENNSYLVANIA, AND VIRGINIA

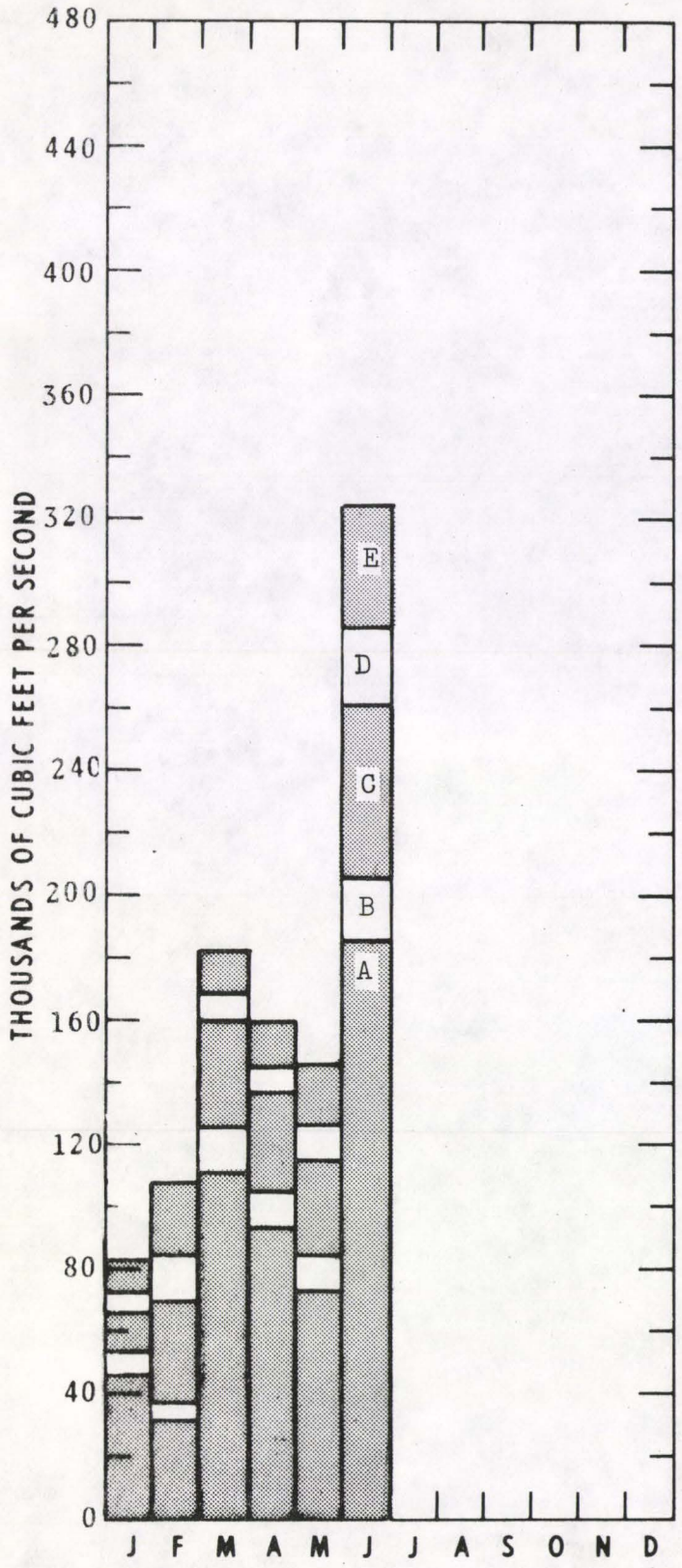
ESTIMATED STREAM DISCHARGE ENTERING CHESAPEAKE BAY

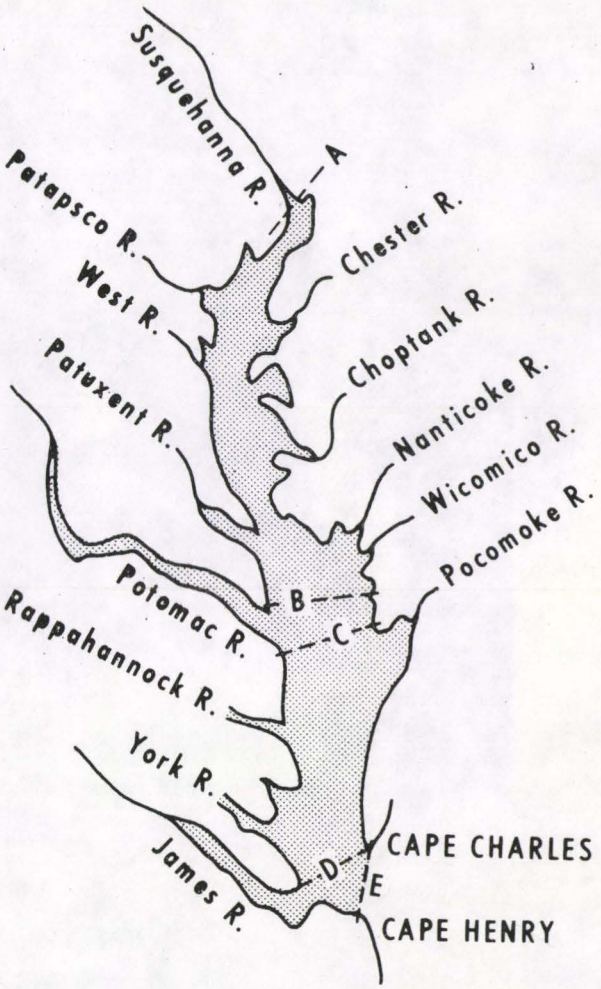
A monthly summary of stream discharges designed to aid those concerned with studying and managing the Chesapeake Bay's resources. For additional information, contact the District Chief, U.S. Geological Survey, 8809 Satyr Hill Road, Parkville, Maryland 21234, Phone 301-661-4664.

July 3,1972



ESTIMATED CUMULATIVE STREAM DISCHARGE ENTERING CHESAPEAKE BAY ABOVE INDICATED SECTIONS BY MONTHS, DURING 1972.





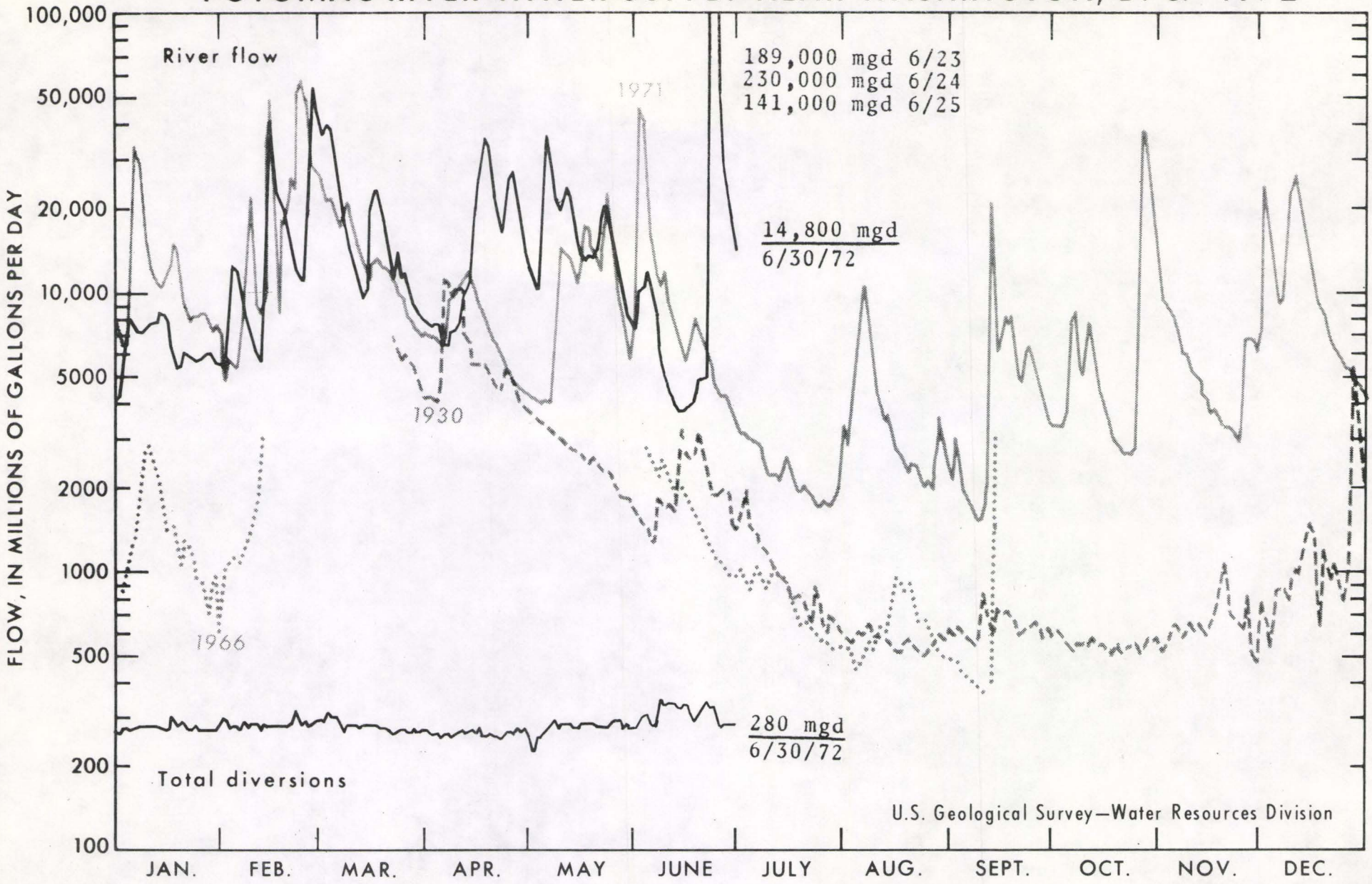
CUMULATIVE INFLOW TO CHESAPEAKE BAY AT INDICATED CROSS SECTIONS

- A Mouth of Susquehanna R.
- B Above mouth of Potomac R.
- C Below mouth of Potomac R.
- D Above mouth of James R.
- E Mouth of Chesapeake Bay

ESTIMATED CUMULATIVE STREAM DISCHARGE ENTERING CHESAPEAKE BAY

		Cubic feet per second at section				
YEAR	MONTH	A	B	C	D	E
1971	January	28,000	33,200	56,400	63,100	74,100
	February	74,000	85,100	124,100	138,500	163,000
	March	105,000	118,000	145,100	153,600	167,400
	April	32,600	38,100	52,500	60,400	73,300
	May	45,500	51,600	72,800	84,600	104,500
	June	15,100	19,400	39,200	50,000	68,000
	July	7,600	10,900	16,000	18,500	22,900
	August	13,900	18,000	26,500	28,600	32,400
	September	11,000	14,700	24,800	27,600	32,400
	October	11,000	14,700	31,700	40,400	54,500
	November	17,700	22,200	34,100	39,000	47,300
	December	60,500	69,600	91,400	98,000	108,800
	Mean	35,200	41,300	59,600	66,900	79,000
1972	January	47,500	54,000	67,000	72,800	82,300
	February	31,500	37,000	69,700	83,800	107,700
	March	112,000	126,000	160,100	169,000	183,500
	April	93,000	105,000	136,100	145,000	159,600
	May	73,000	84,000	115,300	126,500	145,300
	June	186,000	205,000	260,600	284,600	325,000
	July					
	August					
	September					
	October					
	November					
	December					
	Mean					

POTOMAC RIVER WATER SUPPLY NEAR WASHINGTON, D. C.—1972



The above shows the total flow of water from the non-tidal Potomac River and the total of diversions for water supply in the Washington metropolitan area. Total river flows for 1971 and for portions of 1930 and 1966 are included for comparison with current conditions.

The difference between river flow and total diversions represents the inflow to the head of the Potomac Estuary. Sediment discharge from the Potomac River basin above Washington was approximately 1,300,000 tons during June.

This report is issued monthly except during low-flow periods when more frequent release of information is justified for appraisal of water-supply conditions.

7/3/72

Total Inflow 6/26/72 P.M.

For Sat. June 24, 1972

Total Inflow - Chesapeake		1420	Billion G.D.
Susquehanna R.	—	710	Billion G/D
Potomac R.	—	220	Billion GD
James R.	—	190	Billion G/D
all oth	—	300	Billion G/D
Average total inflow (seasonal)	—	32	Billion G/D

Potomac

L. Falls — 370,000 cfs (22') ✓ June 24 2-5 PM

Pt. Rocks — ~~340,000~~ (324') June 23

MGS- Floods OEP Cost

IN REPLY REFER TO:
White

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
8809 Satyr Hill Road
Parkville, Maryland 21234

July 12, 1972

Dr. Kenneth N. Weaver, Director
Maryland Geological Survey
Latrobe Hall
The Johns Hopkins University
Baltimore, Maryland 21218

Dear Ken:

The recent floods associated with tropical storm Agnes inflicted severe damage to many of the stream-gaging stations operated in Maryland. Three stations were completely destroyed, and forty additional stations suffered various degrees of damage. All of the funds available to the USGS are being spent to survey, compute, and document the peak stage and discharge that occurred at gaging stations during this historic event and to obtain interim records of stage and flow pending restoration of fully operating stations. No funds are available to replace or repair the severe damage that resulted at the many gaging stations in the streamflow network.

It is our hope that you can secure through the Office of Emergency Preparedness the necessary funds to place the cooperative program network of gaging stations back into operating condition. A list of the damaged gages and preliminary estimates of the cost for replacement or rehabilitation is attached. Because of the limited manpower available and the size of this rehabilitation workload, some of the larger items have been estimated on the assumption that the work will be contracted out.

I hope this information is sufficient to initiate the request for these much-needed emergency funds. Even before the flood we knew that the District was in a severe financial bind for F. Y. 1973. Also, we have

July 12, 1972

been told that no request can be made for supplemental appropriations of Federal funds to the U.S. Geological Survey for the flood work.

Sincerely yours,

W. F. White
District Chief

Enclosure

(43)

Station number	Station name	Description of damage	Estimated cost of rehabilitation
01579000	Bunis Run at Liberty Grove, Md.	Badly scoured around gage house	$ 450
01580200	Deer Creek at Kalmia, Md.	Steps damaged - scour	200
01582510	Piney Creek nr. Hereford, Md.	Gage submerged	200
01583000	Slade Run nr. Glyndon, Md.	Control washed away	1,750
01583495	Western Run trib. at Western Run, Md.	Sediment over gage, - recorders submerged	400
01583500	Western Run at Western Run, Md.	Equipment submerged	400
01585400	Brien Run at Stemmers Run, Md.	Control damaged	750
01586000	N. Br. Patapsco R. at Cedarhurst, Md.	Equipment submerged, miscellaneous damage	1,100
01587050	Hay Meadow Br. trib. at Popular Springs, Md.	Sediment & gravel deposits	150
01587500	S. Br. Patapsco R. at Henryton, Md.	Equipment submerged	700
01589000	Patapsco R. at Hollofield, Md.	Gaging station destroyed	20,800
01589100	E. Br. Herbert Run at Arbutus, Md.	Gage damaged - control destroyed	4,300
01589200	Gwynns Falls nr. Owings Mills, Md.	Gage damaged beyond repair	5,200
01589300	Gwynns Falls at Villanova, Md.	Gage destroyed	6,800
01589330	Dead Run at Franklintown, Md.	Gage submerged - equipment damage	650
01589440	Jones Falls at Sorrento, Md.	Gage submerged - equipment damage	650
01591000	Patuxent R. near Unity, Md.	Weir destroyed	5,000
01592500	Patuxent R. near Laurel, Md.	Gage & equipment & control destroyed	20,000
01593350	Little Patuxent R. trib. at Guilford Downs, Md.	Gage destroyed	800

Station number	Station name	Description of damage	Estimated cost of rehabilitation
01610150	Bear Cr. at Forest Park, Md.	Gage destroyed	$ 800
01610155	Sideling Hill Cr. nr. Bellegrove, Md.	Headwall & orifice washed out - control damage	1,000
01613150	Ditch Run nr. Hancock, Md.	Heavy sediment on gage	150
01614500	Conococheague Cr. at Fairview, Md.	Walkway damaged - equipment submerged	1,700
01619500	Antietam Cr. nr. Sharpsburg, Md.	Steps washed away - scour	500
01639095	Piney Cr. trib. at Taneytown, Md.	Equipment submerged - culvert filled with debris	400
01640700	Owens Cr. trib. near Rocky Ridge, Md.	Equipment submerged	300
01642400	Dollyhyde Cr. at Libertytown, Md.	Equipment submerged	300
01642500	Linganore Cr. nr. Frederick, Md.	Measuring structure destroyed, equipment submerged	6,500
01643000	Monocacy R. at Jug Bridge nr. Frederick, Md.	Sediment equipment destroyed	750
01643000	Monocacy R. at Jug Bridge nr. Frederick, Md.	Equipment submerged, gage steps destroyed	925
01643500	Bennett Cr. at Park Mills, Md.	Equipment submerged, outside gage destroyed, control damaged	2,100
01644420	Bucklodge Br. trib. nr. Barnesville, Md.	Equipment damage	300
01645000	Seneca Cr. at Dawsonville, Md.	Equipment submerged	600
01647685	Williamsburg Run nr. Olney, Md.	Equipment submerged	300
01647720	N. Br. Rock Cr. nr. Norbeck, Md.	House destroyed, equipment submerged	3,590
01647725	Manor Run nr. Norbeck, Md.	Single stage sampler destroyed, meas. structure destroyed - scour	410
01649500	NE Br. Anacostia R. at Riverdale, Md.	Orifice pier & inclined gages damaged	500
01650050	NW Br. Anacostia R. at Norwood, Md.	Single stage sediment sampler destroyed	200