

FLOODS IN NEW JERSEY MAGNITUDE AND FREQUENCY

WATER RESOURCES CIRCULAR 13



STATE OF NEW JERSEY
DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT
DIVISION OF WATER POLICY
AND SUPPLY

Prepared in cooperation with
United States Department of the Interior
Geological Survey

1964

COVER PICTURE

Within a few blocks of the State Capitol Building in Trenton, rescue workers transport a woman from her flooded home.

Trenton Times Photograph
August 20, 1955

MEMORANDUM

TO Mr. Frank S. ParkerFROM Mr. Edwin W. DaytonSUBJECT FHWA Transmittal
Standard Improved Culvert InletsDATE January 11, 1977

Reference is made to your referral of January 3, 1977, pertaining to the above subject.

A review of the transmitted material indicated several items that were in conflict with information presented in Hydraulic Engineering Circular No. 13, Hydraulic Design of Improved Inlets for Culverts. These items appear on the sheet entitled "Special Details Special Slope Tapered Inlet" prepared by the State of Nevada, Department of Highways.

The following items were found to be in conflict:

1. The height of the opening should be equivalent to the height of the culvert and measured perpendicular to the slope through the throat section.
2. The end of the throat section should be perpendicular to the slope of the throat and not the slope of the culvert.
3. There is no apparent need for the 11 inch step at the entrance.
4. The leading top edge is not beveled.

The first three of these conflicts were discussed with Mr. Clinton Jones of the Federal Highway Administration who indicated that it was not the intention of the FHWA to change the design criteria presented in Circular No. 13, and that if the Department wished to prepare details for the improved inlet the design should be based on Circular No. 13.

Attached for your information is a copy of the design as presented in Circular No. 13.

Edwin W. Dayton
Edwin W. Dayton

Chief, Bureau of Surface Design

Att.

EWD:LTC:ms

cc: Mr. Clinton Jones (FHWA)
Mr. Edward Baker ✓
Mr. Louis Pace

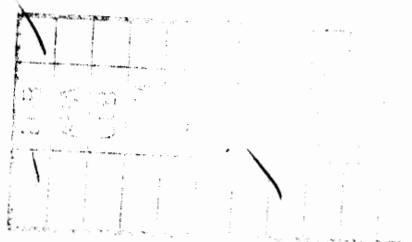
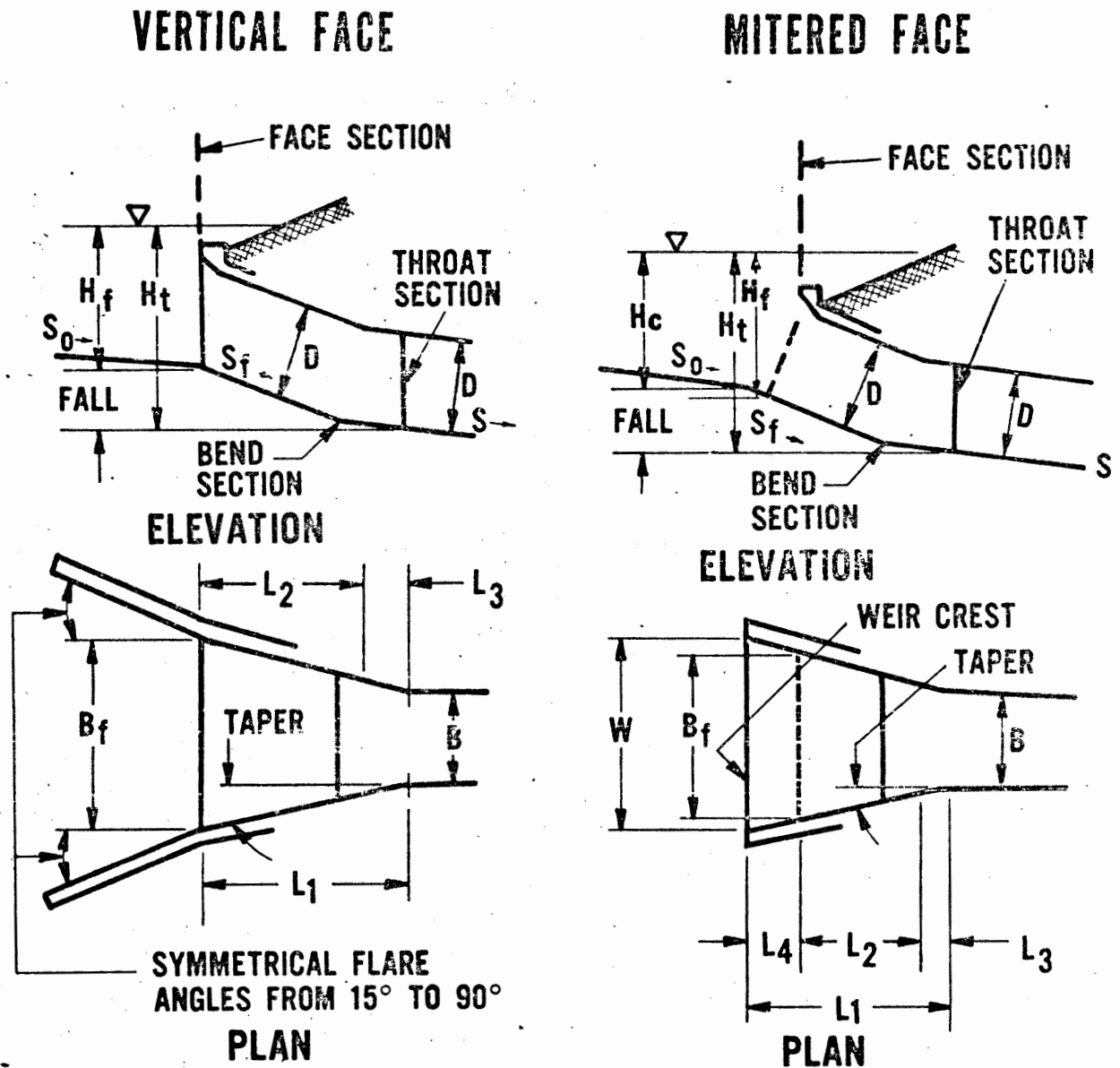


Figure 13



IMPROVED INLETS SLOPE-TAPERED

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FLOODS IN NEW JERSEY
MAGNITUDE AND FREQUENCY

WATER RESOURCES CIRCULAR 13

By

D. M. Thomas
Hydraulic Engineer
U.S. Geological Survey

New Jersey State Library

Prepared by the U.S. Geological Survey
in cooperation with the
State of New Jersey
Department of Conservation and Economic Development
Division of Water Policy and Supply

1964

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Floods in New Jersey, Magnitude and Frequency

by D. M. Thomas

INTRODUCTION

Engineers, designers, contractors, and planners often need information about flood magnitudes. Occasionally they need to know the largest flood discharge that is likely to occur because any flooding of a contemplated structure or project may cause loss of life. More often they need information about the magnitude and frequency of expected floods so that they can design on sound economic principles the bridges, diking systems, buildings and other structures along streams and rivers. Only by use of flood-frequency information can they compare costs of alternate designs or land use plans with expected occasional flood damage costs. This comparison leads to the most economical and practicable schemes for their projects.

Textbooks, handbooks, and technical journals present many formulas and procedures for estimating future flood discharges. However, many of these methods were developed from flood data obtained in other areas and their applicability to New Jersey streams is questionable. Some of the methods, particularly the simpler ones, require the user to estimate hydrologic variables while other methods are complicated and readily usable only by specialists.

A procedure for estimating peak discharges of future floods is presented in this report. This relatively simple procedure requires a minimum of hydrologic experience or judgment for successful use, and was developed from a regional analysis of flood records on rivers and streams in New Jersey and nearby areas of adjoining States. It can be used at any site on New Jersey streams where the drainage area above the site is larger than four square miles, and where flood flow is not significantly affected by upstream reservoir operation, by runoff from extensive urban areas, or by other manmade factors. Basic flood information used in the analysis is presented in two appendices.

Tice (1958) analyzed Delaware River basin flood records, including part of the New Jersey records, using the same regional analysis methods used for this report. Relationships developed by Tice are presented in this report, although some were revised where new or additional flood records showed that the accuracy could be improved.

Only flood peak discharges are considered in this report. Many people, especially engineers, municipal planners, contractors, and home builders are also interested in the height of floods. A procedure for estimating flood heights has been developed in another study published as Water Resources Circular 14 of this publication series.

This flood-frequency study was a part of a broad-scale water resources investigation program undertaken cooperatively by the U.S. Geological Survey and the New Jersey Department of Conservation and Economic Development. George R. Shanklin, chief engineer and acting director of the Division of Water Policy and Supply, has guided and coordinated the cooperative program. This report was prepared in the Trenton District office of the Geological Survey under the general direction of John E. McCall, district engineer, and with the technical guidance of Richard H. Tice, hydraulic engineer.

HYDROLOGIC DEFINITIONS

Hydrologists use terms and concepts that often are unfamiliar to others. A few used in this report are defined in this section.

Annual flood series.--A list of the highest peak discharge in each water year of record. A water year is the 12-month period October 1 through September 30 and is designated by the calendar year in which it ends.

Partial-duration flood series.--A list of all peak discharges that exceed a chosen base discharge, regardless of the number of peaks occurring in a year.

Recurrence interval.--The average interval of time within which a given flood will be equaled or exceeded once. Recurrence intervals determined from an annual flood series differ from those determined from a partial-duration flood series. Langbein (1949) determined the relation between recurrence intervals from the two series as shown in table 1.

Table 1.--Comparative values of recurrence intervals from annual flood series and from partial-duration flood series.

Recurrence intervals, in years	
Annual flood series	Partial-duration series
1.16	0.5
1.58	1.0
2.00	1.45
2.54	2.0
5.52	5.0
10.5	10
20.5	20
50.5	50
100.5	100

Flood-frequency curve.--A graph showing the relation between recurrence interval plotted as abscissa, and flood-peak discharge plotted as ordinate.

Mean annual flood.--A flood discharge equal to the mean of the discharges in an annual flood series. In this report the mean annual flood is determined as the 2.33-year flood from a flood-frequency curve.

REGIONAL ANALYSIS

Many engineers and others contributed to the development of regional flood analysis methods used. Dalrymple (1960) reported in detail the theory and step-by-step procedures of the analysis. Only a brief summary is presented in this report.

Statisticians consider the average of several measurements of an item more reliable than any individual measurement. Regional analysis uses this strength of an average. It averages the past flood experience in a region of similar flood-frequency characteristics to provide the best possible estimate of future floods in the region.

Regional flood-frequency analysis consists of three basic parts. The first processes usable flood records. The second defines regions of similar flood-frequency characteristics and determines the average flood-frequency relation for each region. The third defines the average relation between mean annual floods and drainage basin characteristics.

Processing flood records

This analysis used flood records from 75 gaging stations in New Jersey and 13 gaging stations in nearby areas of adjacent states. Each record included 6 or more years of annual floods during the water years 1922-60, and each was judged to represent natural flood flows. Only those New Jersey flood records less than 6 years long or those affected by manmade factors were excluded. Figure 1 shows the New Jersey gaging-station locations and table 2 lists for each station the name and data used in the analysis.

An annual series flood-frequency curve representing the period 1922-60 was drawn for each of the 88 gaging stations. The first step in defining this curve was to estimate from correlations with nearby flood records figures representing annual floods for years of no record during the period 1922-60. A recurrence interval (T) was then computed for each annual flood by the formula $T = (n + 1)/m$, where n is number of years of record (39), and m is a flood's rank when the series is arranged in descending order of magnitude. Each flood discharge was then plotted on graph paper against its recurrence interval and, finally, a smooth curve was drawn through the plotted points.

For use in the analysis, indexes representing the slope of each flood-frequency curve were computed. These indexes, called the ratios to mean annual flood (or the flood ratios), were computed by dividing the discharges at several selected frequencies (1.1, 1.5, 5, 10, 15, 25, and 50-year) by the mean annual flood discharge.

Regional Frequency

Regions of similar flood-frequency characteristics were defined by

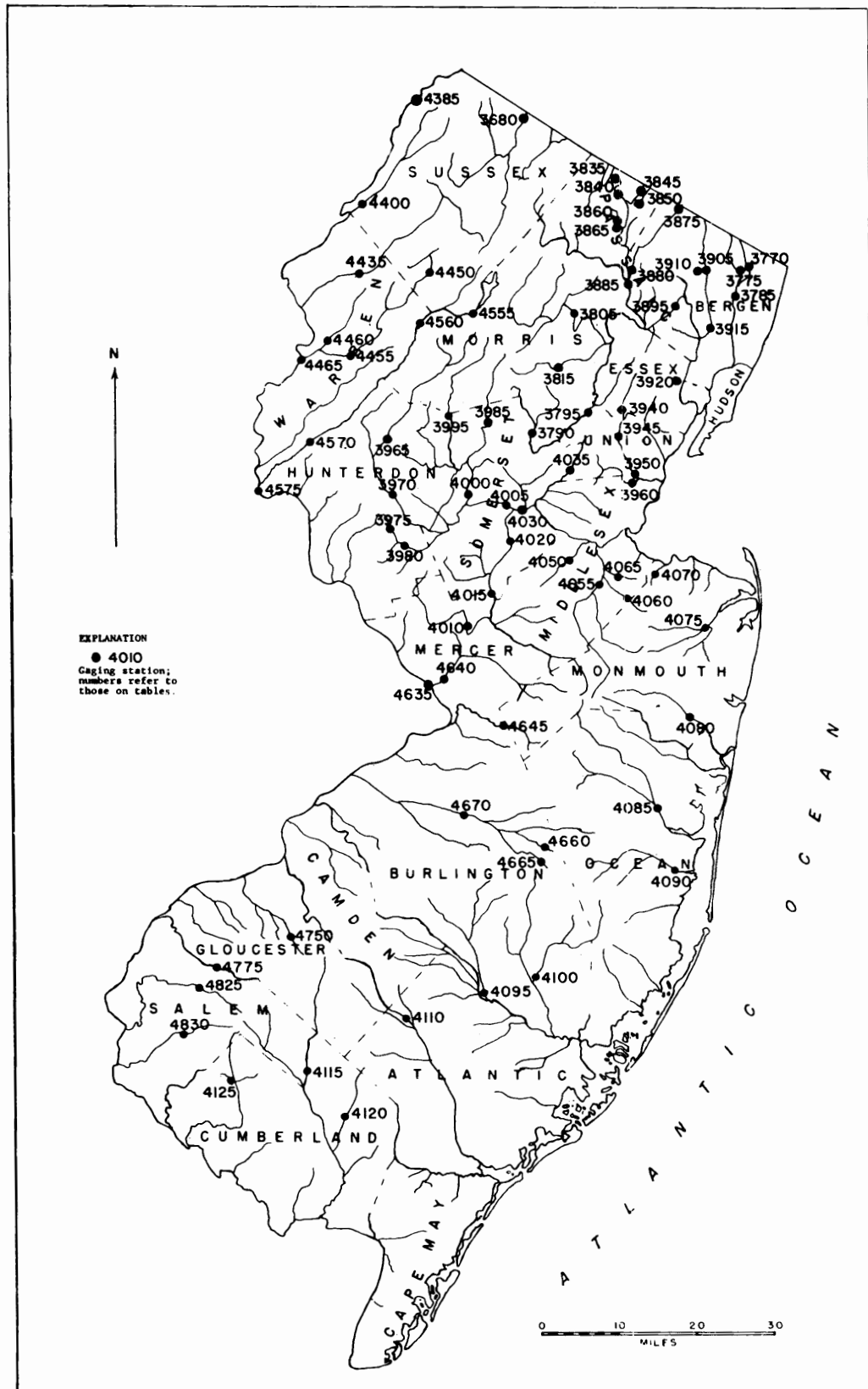


Figure 1.--Map showing locations of New Jersey gaging stations used in analysis.

TABLE 2. - Gaging-station data used in regional analysis.

Station no.	Name	Mean annual flood (cfs)	Drainage area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydrologic area
3680.0	Wallkill R. nr Unionville, N. Y.	1,750	144	4.3	A	1
3685.0	Rutgers Cr. at Gardnerville, N. Y.	1,840	59.7	-	A	-
3690.0	Pochuck Cr. nr Pine Island, N. Y.	1,160	98.0	-	A	-
3695.0	Quaker Cr. at Florida, N. Y.	355	9.74	-	A	-
3765.0	Sawmill Cr. at Yonkers, N. Y.	395	25.6	-	A	-
3770.0	Hackensack R. at Rivervale, N. J.	750	58.0	4.1	B	3
3775.0	Pascack Br. at Westwood, N. J.	680	29.6	2.7	B	3
3785.0	Hackensack R. at New Milford, N. J.	1,800	113	4.1	B	3
3790.0	Passaic R. at Millington, N. J.	740	55.4	18.1	B	2
3795.0	Passaic R. nr Chatham, N. J.	1,170	100	11.2	B	2
3805.0	Rockaway R. above Reservoir at Boonton, N. J.	1,850	116	6.7	B	2
3815.0	Whippany R. at Morristown, N. J.	880	29.4	1.0	B	2
3835.0	Wanaque R. at Awosting, N. J.	400	27.1	13.3	A	2
3840.0	Wanaque R. at Monks, N. J.	1,000	40.4	9.2	A	2

TABLE 2. - Gaging-station data used in regional analysis--Continued.

Station no.	Name	Mean annual flood (cfs)	Drainage area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydrologic area
3845.0	Ringwood Cr. nr Wanaque, N. J.	520	16.9	7.1	A	2
3850.0	Cupsaw Br. nr Wanaque, N. J.	160	4.38	6.8	A	2
3860.0	West Br. nr Wanaque, N. J.	570	11.8	3.4	A	2
3865.0	Blue Mine Br. nr Wanaque, N. J.	116	1.71	.1	A	2
3875.0	Ramapo R. nr Mahwah, N. J.	2,700	118	4.6	A	2
3880.0	Ramapo R. at Pompton Lakes, N. J.	3,400	160	4.8	A	2
3885.0	Pompton R. at Pompton Plains, N. J.	5,000	355	6.4	A	2
3895.0	Passaic R. at Paterson, N. J.	6,800	785	8.6	A-B	2
3905.0	Saddle R. at Ridgewood, N. J.	880	21.6	4.6	B	2
3910.0	Hohokus Br. at Hohokus, N. J.	710	16.4	5.5	A	2
3915.0	Saddle R. at Lodi, N. J.	1,160	54.6	4.0	B-A	2-3
3920.0	Weasel Br. at Clifton, N. J.	290	4.45	.1	B	3
3940.0	West Br. Rahway R. at Millburn, N.J.	460	7.1	.2	B	3
3945.0	Rahway R. nr Springfield, N. J.	900	25.5	.4	B	3

TABLE 2. - Gaging-station data used in regional analysis--Continued.

Station no.	Name	Mean annual flood (cfs)	Drainage area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydrologic area
3950.0	Rahway R. at Rahway, N. J.	1,200	40.9	.5	B	3
3960.0	Robinsons Br. Rahway R. at Rahway, N. J.	890	21.6	5.6	B	2
3965.0	So. Br. Raritan R. nr High Bridge, N. J.	1,850	65.3	1.7	C	1
3970.0	So. Br. Raritan R. at Stanton, N.J.	5,000	147	.8	C	2-1
3975.0	Walnut Br. at Flemington, N. J.	190	2.24	.1	C	2
3980.0	Neshanic R. at Reaville, N. J.	2,850	25.7	.1	C	2
3985.0	No. Br. Raritan R. nr Far Hills, N. J.	1,320	26.2	.8	C	2
3995.0	Lamington R. nr Pottersville, N. J.	800	32.8	4.8	C	2
4000.0	No. Br. Raritan R. nr Raritan, N.J.	8,800	190	1.0	C	2
4005.0	Raritan R. at Manville, N. J.	16,200	490	.7	C	2
4010.0	Stony Br. at Princeton, N. J.	3,550	44.5	.2	B	2
4015.0	Millstone R. nr Kingston, N. J.	4,500	171	2.6	B	2-3
4020.0	Millstone R. at Blackwells Mills, N. J.	6,200	258	1.9	B	2-3

TABLE 2. - Gaging-station data used in regional analysis--Continued.

∞

Station no.	Name	Mean annual flood (cfs)	Drainage area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydrologic area
4030.0	Raritan R. at Bound Brook, N. J.	19,300	779	1.1	B	2
4035.0	Green Br. at Plainfield, N. J.	600	9.75	1.0	B	2
4050.0	Lawrence Br. at Farrington Dam, N.J.	890	34.4	4.8	C	2
4055.0	South R. at Old Bridge, N. J.	1,200	94.6	5.1	C	3
4060.0	Deep Run at Browntown, N. J.	388	8.07	.1	C	3
4065.0	Tennant Br. nr Browntown, N. J.	117	5.25	3.8	C	3
4070.0	Matawan Cr. at Matawan, N. J.	470	6.11	3.3	C	3
4075.0	Swimming R. nr Red Bank, N. J.	1,200	48.5	1.4	C	3
4080.0	Manasquan R. at Squankum, N. J.	950	43.4	1.2	C	3
4085.0	Toms R. nr Toms River, N. J.	720	124	13.6	C	3
4090.0	Cedar Cr. at Lanoka Harbor, N. J.	410	56.0	12.3	C	3
4095.0	Batsto R. at Batsto, N. J.	540	70.5	18.3	A	3
4100.0	Oswego R. at Harrisville, N. J.	350	64.0	14.8	A	3
4110.0	Great Egg Harbor R. at Folsom, N.J.	250	56.3	13.9	D	4

TABLE 2. - Gaging-station data used in regional analysis--Continued.

Station no.	Name	Mean annual flood (cfs)	Drainage area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydrologic area
4115.0	Maurice R. at Norma, N. J.	490	113	8.9	D	4
4120.0	Manantico Cr. nr Millville, N. J.	180	22.3	7.2	D	4
4125.0	W. Br. Cohansey R. at Seeley, N. J.	92	2.55	.1	D	4
4385.0	Delaware R. at Montague, N. J.	78,000	3,480	2.2	Del.	Del.
4395.0	Bush Kill at Shoemaker, Pa.	2,100	117	7.5	C	1
4400.0	Flat Br. at Flatbrookville, N. J.	1,800	65.1	1.5	C	1
4410.0	McMichaels Cr. at Stroudsburg, Pa.	1,750	65.3	7.5	C	1
4435.0	Paulins Kill at Blairstown, N. J.	1,950	126	5.9	C	1
4450.0	Pequest R. at Huntsville, N. J.	240	31.4	4.1	C	1
4455.0	Pequest R. at Pequest, N. J.	730	108	5.0	C	1
4460.0	Beaver Br. at Belvidere, N. J.	580	36.2	3.0	C	1
4465.0	Delaware R. at Belvidere, N. J.	93,000	4,535	2.5	Del.	Del.
4520.0	Jordan Cr. at Allentown, Pa.	2,800	75.8	.1	C	1
4555.0	Musconetcong R. at Lk. Hopatcong, N. J.	250	25.6	19.2	C	1

TABLE 2. - Gaging-station data used in regional analysis--Continued.

Station no.	Name	Mean annual flood (cfs)	Drainage area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydrologic area
4560.0	Musconetcong R. at Hackettstown, N. J.	680	70.0	10.3	C	1
4570.0	Musconetcong R. nr Bloomsbury, N. J.	1,850	143	5.1	C	1
4575.0	Delaware R. at Riegelsville, N. J.	111,000	6,338	2.3	Del.	Del.
4595.0	Tohicon Cr. at Pipersville, Pa.	6,550	97.4	.2	C	2
4635.0	Delaware R. at Trenton, N. J.	115,000	6,780	2.1	Del.	Del.
4640.0	Assunpink Cr. at Trenton, N. J.	1,480	89.4	2.6	C	3-2
4645.0	Crosswicks Cr. at Extonville, N. J.	1,460	83.6	7.3	C	3
4655.0	Neshaminy Cr. nr Langhorne, Pa.	10,700	210	.2	C	2
4660.0	Middle Branch Mt. Misery Br., in Lebanon State Forest, N. J.	10.9	2.73	9.2	C	3
4665.0	McDonalds Branch in Lebanon State Forest, N. J.	8.5	2.31	6.1	C	3
4670.0	No. Branch Rancocas Cr. at Pemberton, N. J.	740	111	14.0	C	3

TABLE 2. - Gaging-station data used in regional analysis--Continued.

Station no.	Name	Mean annual flood (cfs)	Drain-age area (sq mi)	Area of lakes and swamps (percent)	Flood-frequency region	Hydro-logic area
4750.0	Mantua Cr. at Pitman, N. J.	102	6.75	2.2	D	4
4765.0	Ridley Cr. at Moylan, Pa.	1,240	31.9	.2	D	3
4770.0	Chester Cr. nr Chester, Pa.	2,850	61.1	.5	D	3
4775.0	Oldmans Cr. nr Woodstown, N. J.	480	19.3	.9	D	3
4790.0	White Clay Cr. nr Newark, Del.	3,800	87.8	.1	C	3
4810.0	Brandywine Cr. at Chadds Ford, Pa.	6,850	287	.2	C	3
4825.0	Salem Cr. at Woodstown, N. J.	820	14.6	1.3	D	3
4830.0	Alloway Cr. at Alloway, N. J.	437	21.9	3.1	D	3

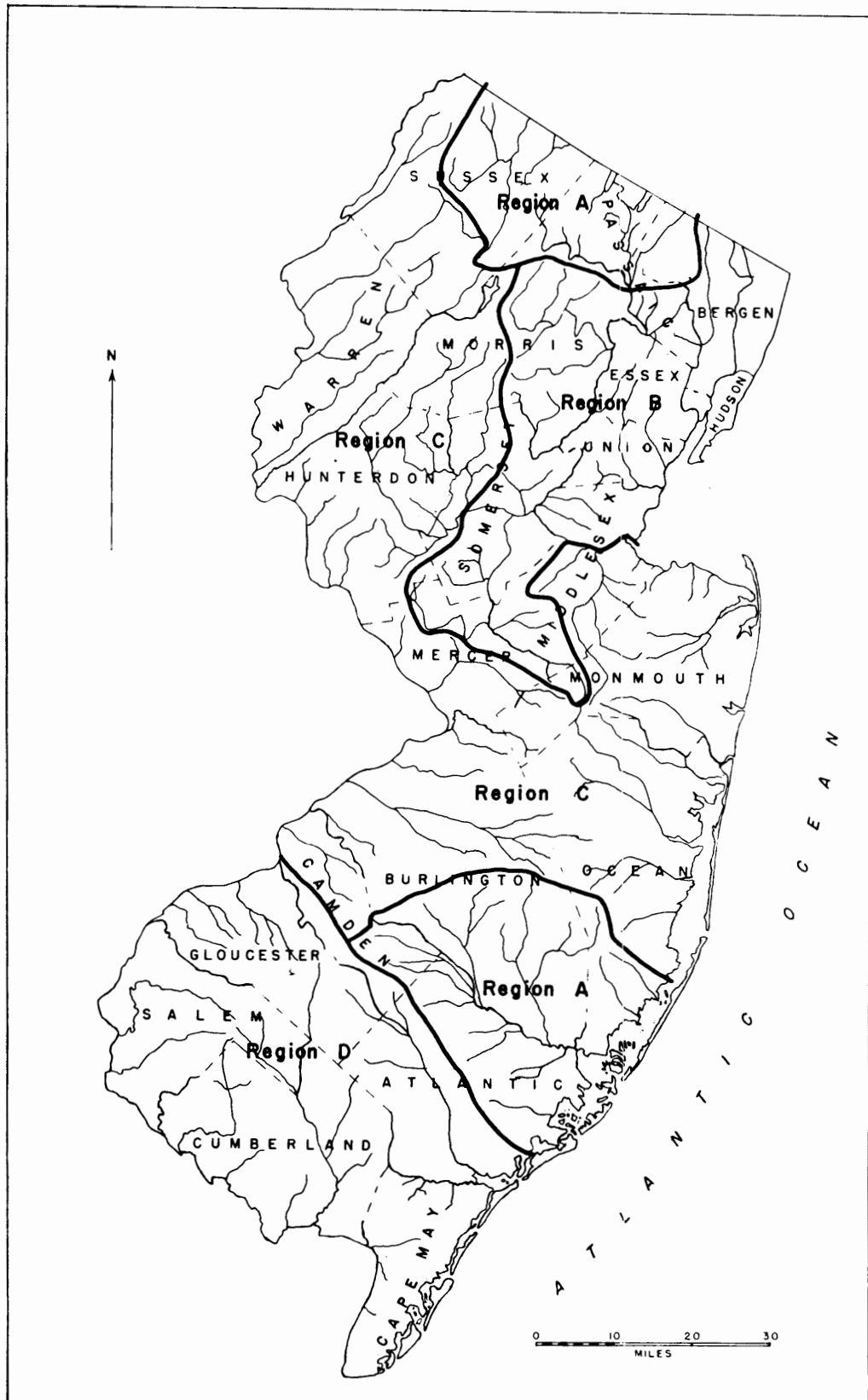


Figure 2.--Map showing flood-frequency regions.

areally grouping gaging-station frequency curves of about the same slope. In general, boundaries around the flood-frequency regions were drawn to follow drainage basin divides. Statistical tests indicated that the variation of slopes within each defined region was less than expected by chance. The regions are shown in figure 2.

The average flood-frequency curve for each region was computed from median values of the flood ratios. The median ratios were plotted on graph paper and a smooth curve was drawn through them, resulting in the dimensionless average frequency curves shown in figure 3. Use of the curve requires determination of the mean annual flood for the selected site.

Mean Annual Flood Relations

Graphical-multiple-regression techniques defined relations between mean annual flood discharge and topographic characteristics of the drainage basin. Data from only 84 gaging stations were used, because topographic information was not available for four New York stations. Variables found to significantly affect the mean annual flood were size of drainage basin, and percent of drainage area occupied by lakes and swamps.

Figure 4 shows the State divided into areas of similar hydrologic characteristics. These hydrologic areas were determined by areally grouping comparable deviations from a statewide average relation between mean annual flood

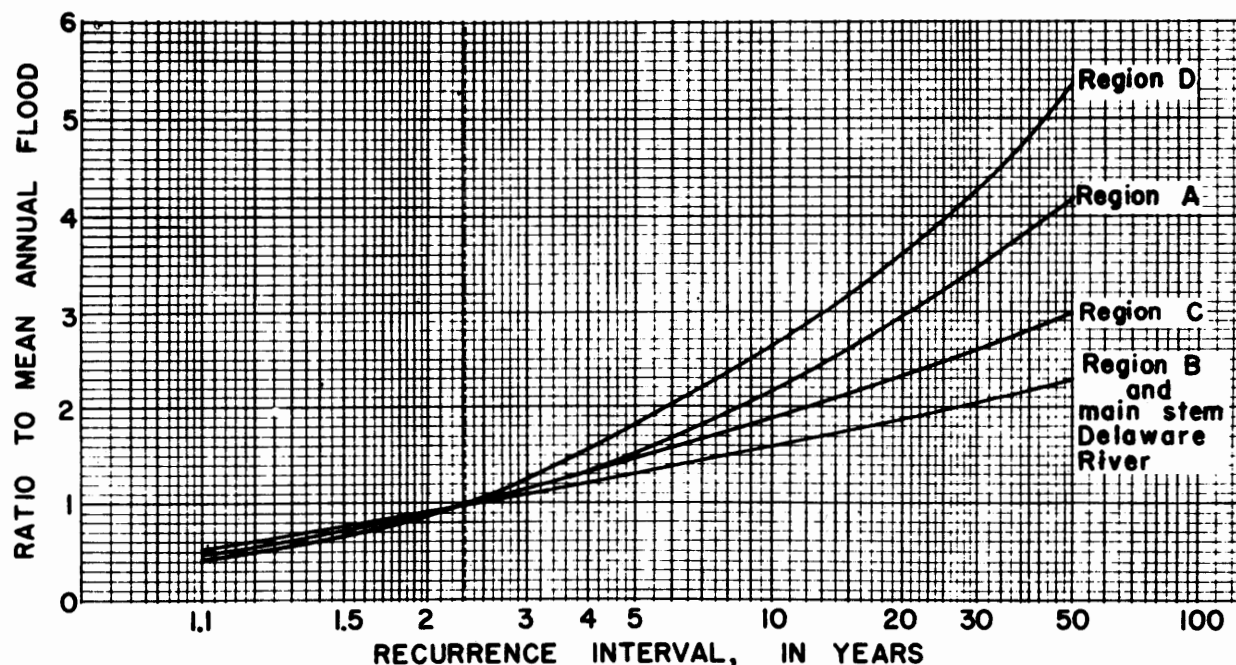


Figure 3.--Average frequency curves.

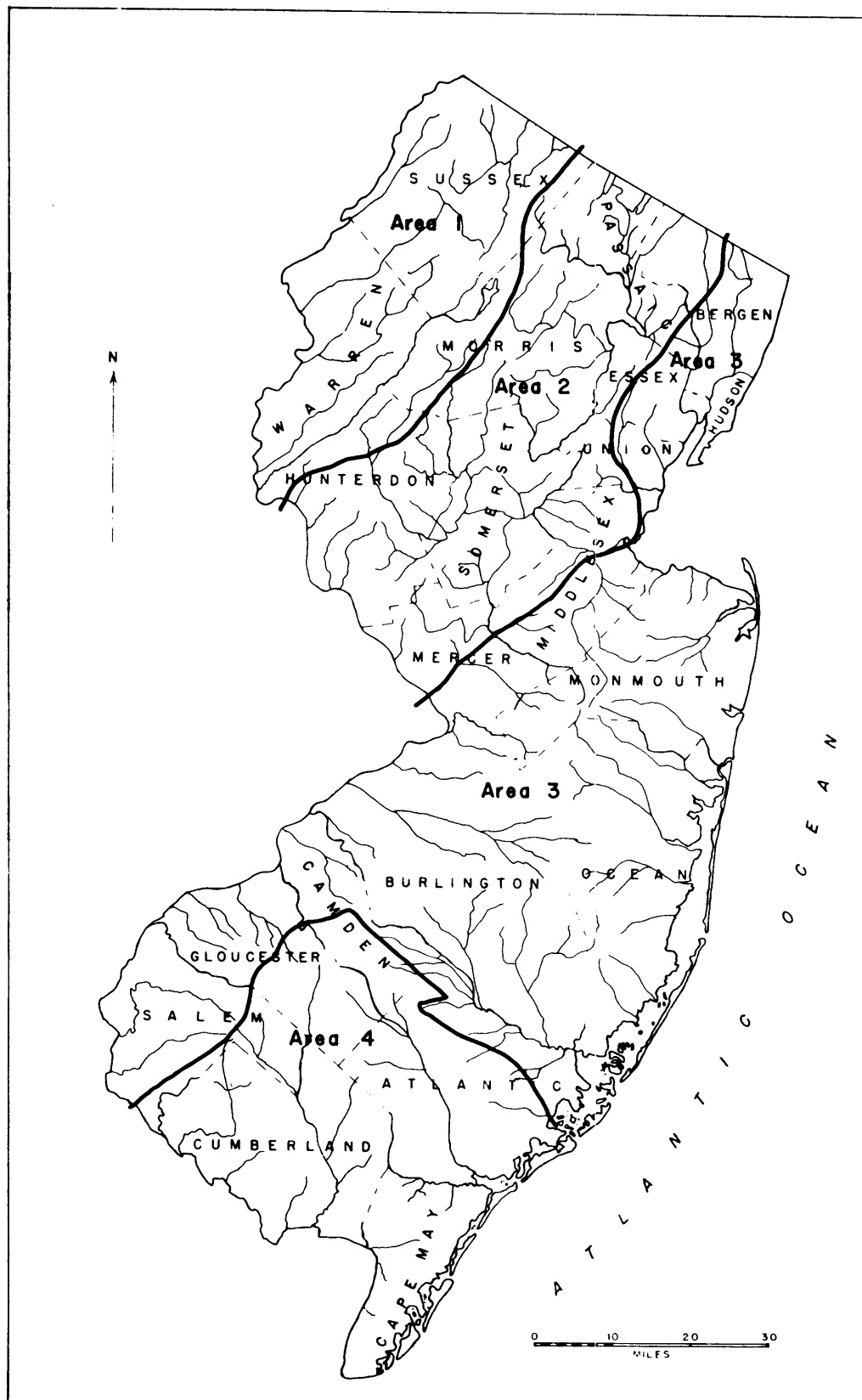


Figure 4.--Map showing hydrologic areas.

as the dependent variable, and drainage area and percent of drainage area in lakes and swamps as independent variables. Where possible, the boundaries of the hydrologic areas were drawn to follow soils map and geologic map boundaries, but in some places were arbitrarily drawn to follow drainage basin divides.

Figure 5 shows for each hydrologic area the relation between mean annual flood and drainage area for basins having 2 percent of the surface area in lakes and swamps. Data for some drainage basins smaller than four square miles were used to define the relation; however, the relation is not considered applicable for these small drainage basins because the plotted data showed significantly greater scatter than those for larger basins.

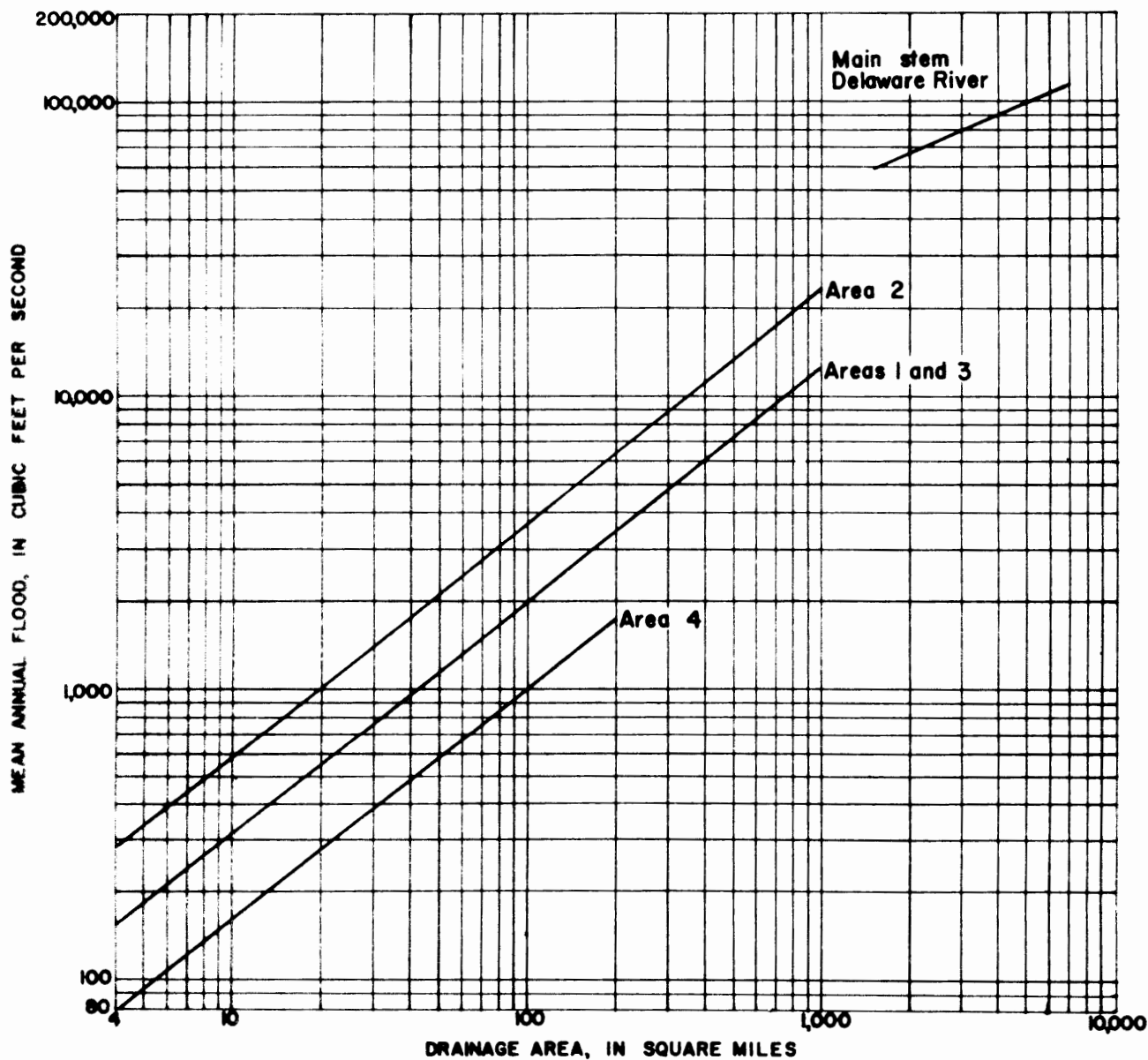


Figure 5.--Variation of mean annual flood with drainage area for basins containing 2 percent lakes and swamps.

Figure 6 shows the effects of storage in lakes and swamps on mean annual flood. A minimum value of 0.1 percent lake and swamp area was used to define the curve.

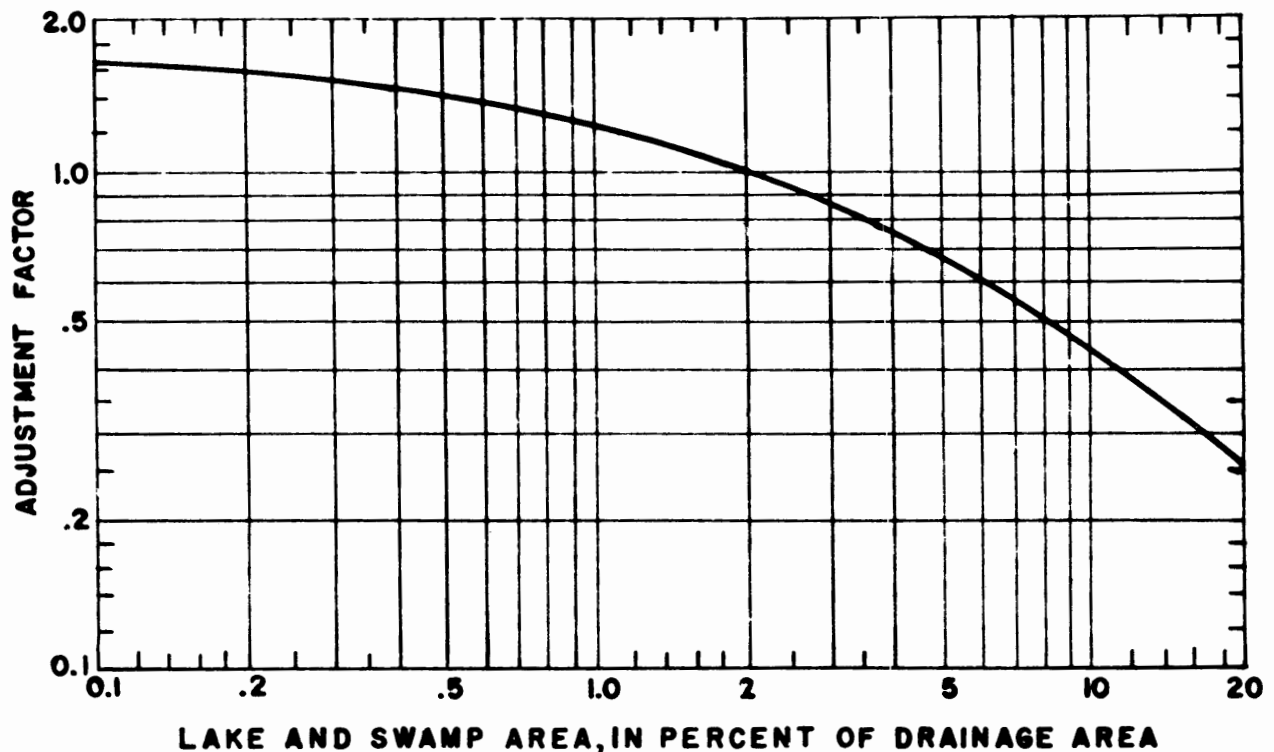


Figure 6.--Adjustment factor for effect of lakes and swamps.

Accuracy

The accuracy of relations and boundaries shown in figures 2 - 4 depend to a large extent upon the spatial density of flood records. The more dense the gaging stations, the more confidently the boundaries of flood-frequency regions and hydrologic areas can be defined, and the more accurately the average regional flood-frequency curves can be determined. A study of figure 1 will indicate the relative areal accuracies.

The accuracy of mean annual flood relations in figures 5 and 6 depends largely upon the range of hydrologic characteristics sampled in the gaging-station data used. Inspection of data in table 1 shows that the relations should be most accurate for drainage basins of 10 to 200 square miles having lake and swamp areas of 1.0 to 10 percent.

A measure of the overall accuracy of the defined relations was obtained by comparing discharges obtained from the regional curves to discharges

obtained from the gaging-station frequency curves. Two out of three times these comparisons were within ± 22 percent for the mean annual flood, within ± 26 percent for the 10-year flood, and within ± 33 percent for the 50-year flood. This range of accuracy compares favorably with theoretical forecast accuracies determined in a statistical study by Benson (in Dalrymple, 1960).

URBAN EFFECTS

Urban and suburban development can significantly affect flood magnitudes. Wiitala (1961) determined that urban development of a small drainage basin might double or triple flood peak discharges, and Carter (1961) found that modern-type, suburban development might increase mean annual flood discharges by as much as 80 percent. Two New Jersey gaging stations, Elizabeth River at Elizabeth, and Second River at Belleville, provide flood records from drainage basins that have been highly urbanized for the period of flood records. At these two sites the mean annual flood discharges are, respectively, 2.0 and 2.7 times as large as the mean annual floods estimated from the regional relations.

In New Jersey many drainage basins contain some urban or suburban development (hereafter called urbanization). To determine guidelines for the applicability of the regional flood relations on partially urbanized drainage basins, measured flood discharges from drainage basins urbanized to varying degrees were compared to flood discharges estimated by the regional relationships. The degree of urbanization was evaluated by estimating from available maps the percentage of total drainage area covered by a relatively dense road grid.

From this comparison it was concluded that the regional relations are applicable for drainage basins urbanized less than 25 percent. Although the regional relations provided reasonable discharge estimates for one 50 percent urbanized drainage basin (Rahway River near Springfield), estimates for other 30 percent to 50 percent urbanized basins were from 20 percent to 40 percent low. Flood discharges estimated by the regional relations for drainage basins urbanized more than 80 percent may be as much as 100 percent to 200 percent low.

Except in the northeastern part of the State, few drainage basins larger than four square miles are more than 25 percent urbanized. The regional relations are therefore considered applicable to most sites, but possible effects of upstream urbanization or development should always be considered before using the estimates.

ESTIMATING A FLOOD DISCHARGE

For sites in New Jersey above which the drainage area exceeds 4 square miles and the flood flow is not significantly affected by manmade factors, figures 2 - 6 and topographic maps can be used to estimate flood discharge for any selected recurrence interval between 1.1 and 50 years. Estimates

are made by the following 7-step procedure.

1. - Determine from topographic maps the drainage area above the site and the area of lakes and swamps in the drainage basin. For consistency with the data used in the analysis, the use of U.S. Geological Survey 7½ minute quadrangle maps is recommended.
2. - From figure 4, determine the hydrologic area in which the drainage basin lies.
3. - Determine from the appropriate curve in figure 5 the mean annual flood for a comparable size drainage basin having 2 percent area of lakes and swamps.
4. - Adjust the mean annual flood value from step 3 for lake and swamp effects by the factor indicated in figure 6. Use a factor of 1.65 for drainage basins having less than 0.1 percent lake and swamp area.
5. - From figure 2, determine the flood-frequency region in which the drainage basin lies.
6. - Determine the ratio to mean annual flood for the flood of the selected frequency from the appropriate curve in figure 3.
7. - Multiply the flood ratio from step 6 by the mean annual flood value from step 4 to obtain the selected flood discharge. A complete flood-frequency curve for the site can be obtained by repeating steps 6 and 7 for several recurrence intervals.

The recurrence intervals in figure 3 are determined from the annual flood series. Users desiring flood-discharge estimates based on the partial-duration series should use the conversion values shown in table 1 before starting step 6.

The procedure outlined in this section estimates a flood discharge that has a 50-50 chance of being either high or low. Users may wish to reduce the chance of estimating discharge too low. On the basis of the determined accuracy of the relations, the chance of estimating too low can be reduced to about 1 in 6 if estimates are increased by an amount ranging from 25 percent for a mean annual flood to 35 percent for a 50-year flood.

SUMMARY

Future flood discharges having recurrence intervals ranging from 1.1 to 50 years can be estimated using information obtained from this report and from topographic maps. Because the estimates are based on a region-wide average of

past flood experience, they are considered more reliable than estimates from any single record of past flood events. Estimates can be made for any site on New Jersey streams above which the drainage area exceeds four square miles, and where flood flow is not significantly affected by manmade factors. It is believed that proper use of flood-frequency estimates will facilitate the economical development of New Jersey's streams and adjoining lands.

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APPENDIX

Maximum known floods

Occasionally, designers and planners need information on the maximum floods expected to occur. To aid in such determinations, this appendix presents a list of maximum known discharges on New Jersey streams (table 3). The list includes the highest known discharge at each gaging-station site as well as discharges determined for unusual floods at miscellaneous sites. The sites are listed in a downstream order corresponding to that used in U.S. Geological Survey water-supply papers and in Special Reports of the State of New Jersey.

A plot of maximum known flood discharges expressed as cubic feet per second per square mile against drainage area is shown in figure 7. No attempt was made to relate these extreme flood discharges to drainage basin characteristics other than drainage area. The solid line in figure 7 represents an approximate enveloping curve at a slope recommended by Jarvis^{1/} and the broken line indicates the discharge equal to 50 percent of the enveloping curve.

^{1/} Jarvis, C. S., 1926, Flood flow characteristics: Am. Soc. Civil Engineers Trans., v. 89, p. 985-1032.

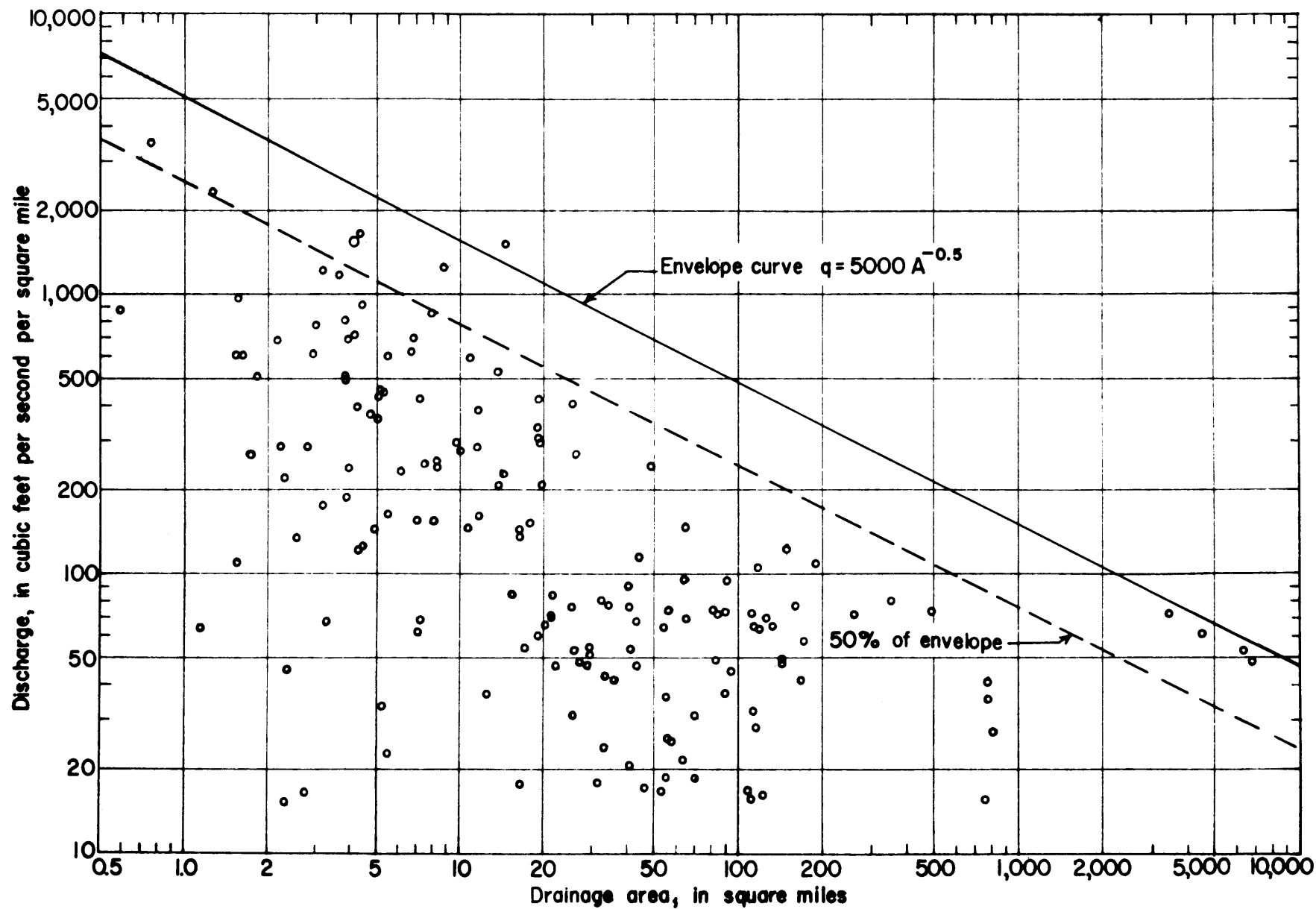


Figure 7.--Maximum known floods in New Jersey.

TABLE 3. - Maximum known discharges.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
-	Clove River at Clove Acres Lake outlet, at Sussex, N. J.	19.7	-	Aug. 19, 1955	5,780	293
3680.0	Wallkill River nr Unionville, N. Y.	144	1937-62	Aug. 19, 1955	6,880	47.8
3770.0	Hackensack River at Rivervale, N. J.	58.0	1941-62	Oct. 17, 1955	1,450	25.0
-	Pascack Brook at Silver Lake Dam in Park Ridge, N. J.	15.3	-	July 23, 1945	1,300	85.0
3774.5	Pascack Brook at Woodcliff Lake Dam in Hillsdale, N. J.	20.2	-	July 23, 1945	1,320	65.3
3775.0	Pascack Brook at Westwood, N. J.	29.6	1934-62	July 23, 1945	1,610	54.4
3785.0	Hackensack River at New Milford, N. J.	113	1921-62	Mar. 31, 1951	3,660	32.4
3790.0	Passaic River nr Millington, N. J.	55.4	1903-06, 1921-62	Jan. 9, 1905	2,000	36.1
3795.0	Passaic River nr Chatham, N. J.	100	1903-11, 1937-62	Jan. 9, 1905	3,000	30.0
3800.0	Beaver Brook at outlet of Splitrock Pond, N. J.	5.50	1926-46	Mar. 12, 1936	126	22.9
3805.0	Rockaway River above Reservoir at Boonton, N. J.	116	1937-62	June 2, 1952	3,250	28.0
3810.0	Rockaway River below Reservoir at Boonton, N. J.	119	1903-04, 1906-62	Oct. 10, 1903	a7,560	63.5

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
-	Whippany River at Pocahontas Dam at Morristown, N. J.	26	-	Mar. 12, 1936	1,380	53.1
3815.0	Whippany River at Morristown, N. J.	29.4	1921-62	Aug. 26, 1928	2,000	51.0
3825.0	Pequannock River at Macopin Intake Dam, N. J.	63.7	1903-04, 1936-62	Oct. 10, 1903	b6,100	95.8
3835.0	Wanaque River at Awosting, N. J.	27.1	1919-62	Oct. 16, 1955	1,300	48.0
3840.0	Wanaque River at Monks, N. J.	40.4	1935-62	Aug. 19, 1955	3,640	90.1
3845.0	Ringwood Creek nr Wanaque, N. J.	19.1	1935-62	Mar. 30, 1951	1,150	60.2
3850.0	Cupsaw Brook nr Wanaque, N. J.	4.38	1935-62	Mar. 11, 1936	536	122
3855.0	Erschine Brook nr Wanaque, N. J.	1.14	1934-38	Mar. 12, 1936	73	64.0
3860.0	West Brook nr Wanaque, N. J.	11.8	1935-62	Mar. 30, 1951	1,900	161
3865.0	Blue Mine Brook nr Wanaque, N. J.	1.71	1935-58	Mar. 30, 1951	458	268
3870.0	Wanaque River at Wanaque, N. J.	90.4	1912-15, 1919-62	Mar. 31, 1951	8,470	93.7
-	Ramapo River at Ramapo Dam, at Ramapo, N. Y.	85	-	Mar. 12, 1936	6,100	71.8
-	Ramapo River at Power Co. Dam, at Hillburn, N. Y.	90	-	Mar. 12, 1936	6,600	73.3

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
3875.0	Ramapo River nr Mahwah, N. J.	118	1903-06, 1922-62	Oct. 9, 1903	12,400	105
-	Ramapo River at Chapman Dam, at Darlington, N. J.	132	-	Mar. 12, 1936	8,500	64.4
3880.0	Ramapo River at Pompton Lakes, N. J.	160	1921-62	Mar. 12, 1936	12,300	76.9
3885.0	Pompton River at Pompton Plains, N. J.	355	1904, 1941-62	Oct. 10, 1903	28,340	79.8
3895.0	Passaic River at Little Falls, N. J.	762	1951-62	June 3, 1952	11,800	15.5
-	Slippery Rock Brook at Barbours Pond, West Paterson, N. J.	0.59	-	July 23, 1945	515	875
-	Slippery Rock Brook at Highland Lake, West Paterson, N. J.	0.75	-	July 23, 1945	2,600	3,460
-	Peckman Brook at Verona Lake in Verona, N. J.	2.17	-	July 23, 1945	1,490	687
-	Peckman Brook at Bradford Ave., in Cedar Grove, N. J.	4.48	-	July 23, 1945	4,100	915
-	Mollyann Brook at Haledon Upper Reservoir, North Haledon, N. J.	1.53	-	July 23, 1945	930	606

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
-	Mollyann Brook at Haledon Lower Reservoir, North Haledon, N. J.	1.61	-	July 23, 1945	975	605
-	Mollyann Brook at Sicomoc Road Dam, North Haledon, N. J.	1.82	-	July 23, 1945	912	502
-	Mollyann Brook at Squaw Lake Dam, North Haledon, N. J.	3.84	-	July 23, 1945	3,100	807
-	Mollyann Brook at Oldham Pond Dam, North Haledon, N. J.	5.16	-	July 23, 1945	2,370	459
-	Mollyann Brook below Redwood Ave., Paterson, N. J.	6.87	-	July 23, 1945	4,800	699
3898	Passaic River at Paterson, N. J.	785	1898-1955	Oct. 10, 1903	a28,000	35.7
-	Goffle Brook at Rambeau Pond, at Wortendyke, N. J.	1.55	-	July 23, 1945	170	110
-	Goffle Brook at Maple Lake, at Wortendyke, N. J.	2.30	-	July 23, 1945	507	220
-	Goffle Brook at Wortendyke Pond below Irving St., Wortendyke, N. J.	3.20	-	July 23, 1945	560	175
-	Goffle Brook at KeNihers Dam above Goffle Rd., Midland Park, N. J.	3.89	-	July 23, 1945	730	187

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
-	Goffle Brook at Oriental Rug Dam, Midland Park, N. J.	3.95	-	July 23, 1945	945	239
-	Goffle Brook at Arnold Dam, VanWinkle Ave., Hawthorne, N. J.	7.20	-	July 23, 1945	2,970	412
-	Passaic River at Dundee Dam, in Clifton, N. J.	810	-	July 23, 1945	22,000	27.2
-	Saddle River nr north boundary of Hohokus, N. J.	19.1	-	July 23, 1945	6,400	335
3905.0	Saddle River at Ridgewood, N. J.	21.6	1955-62	Aug. 19, 1955	1,510	69.9
-	Hohokus Brook at Cooks Lake Dam in Hawthorne, N. J.	4.27	-	July 23, 1945	1,700	397
-	Hohokus Brook at Whites Lake Dam, Waldwick, N. J.	15.1	-	July 23, 1945	3,010	198
3910.0	Hohokus Brook at Hohokus, N. J.	16.4	1955-62	Aug. 19, 1955	2,350	143
-	Hohokus Brook at Coles Pond, Hohokus, N. J.	16.5	-	July 23, 1945	2,240	136
-	Hohokus Brook below Spring Ave., Ridgewood, N. J.	19.1	-	July 23, 1945	5,800	304
3915.0	Saddle River at Lodi, N. J.	54.6	1923-62	July 23, 1945	3,500	64.1

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
3920.0	Weasel Brook at Clifton, N. J.	4.45	1937-62	Mar. 12, 1962	556	125
-	Second River at Brighton Ave., East Orange, N. J.	5.03	-	July 23, 1938	1,800	358
-	Second River at Bloomfield Ave., Bloomfield, N. J.	10.1	-	July 23, 1938	2,800	276
3925.0	Second River at Belleville, N. J.	11.6	1937-62	July 23, 1938	3,300	284
-	Second River at Newark Pipe Line, Belleville, N. J.	14.5	-	July 23, 1938	3,300	228
3930.0	Elizabeth River at Irvington, N. J.	2.91	1930-38	July 23, 1938	1,750	601
-	Elizabeth River at Nye Ave., Irvington, N. J.	3.83	-	July 23, 1938	1,945	508
-	Elizabeth River at Lyons Ave., Irvington, N. J.	3.87	-	July 23, 1938	1,910	494
-	Elizabeth River at Yale Ave., Irvington, N. J.	5.02	-	July 23, 1938	2,200	438
-	Elizabeth River at Chancellor Ave., Irvington, N. J.	5.14	-	July 23, 1938	2,300	447
3935	Elizabeth River at Elizabeth, N. J.	c18.0	1921-62	July 23, 1938	2,720	151

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
3940.0	West Branch Rahway River at Millburn, N. J.	7.1	1938-50	July 23, 1945	1,090	154
3945.0	Rahway River nr Springfield, N. J.	25.5	1938-62	July 23, 1938	1,940	76.1
3950.0	Rahway River at Rahway, N. J.	40.9	1921-62	July 24, 1938	3,140	76.8
3955.0	Robinsons Branch Rahway River at Goodmans, N. J.	12.7	1921-24	Apr. 7, 1924	470	37.0
3960.0	Robinsons Branch Rahway River at Rahway, N. J.	21.6	1939-62	Mar. 13, 1953	1,490	69.0
3965.0	South Branch Raritan River nr High Bridge, N. J.	65.3	1918-62	Mar. 15, 1940	5,160	69.0
3968.0	Spruce Run at Clinton, N. J.	41.3	1959-62	Sept. 12, 1960	2,220	53.8
-	South Branch Raritan River at Clinton, N. J.	112	1936, 55	Aug. 19, 1955	8,080	72.1
3969.0	Cakepoulin Creek at Lansdowne, N. J.	13.7	-	Aug. 18, 1955	7,230	528
3970.0	South Branch Raritan River at Stanton, N. J.	147	1903-06, 1919-62	Aug. 19, 1955	18,000	122
-	Prescott Brook nr Stanton, N. J.	8.37	-	Aug. 18, 1955	2,010	240

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
3975.0	Walnut Brook nr Flemington, N. J.	2.24	1936-61	July 18, 1945	645	288
-	South Branch Raritan River at Flemington Junction, N. J.	167	-	Mar. 12, 1936	6,980	41.8
3980	Neshanic River at Reaville, N. J.	25.7	1930-62	July 18, 1945	10,300	401
3985.0	North Branch Raritan River nr Far Hills, N. J.	26.2	1919, 1922-62	July 23, 1919	7,000	267
3995.0	Lamington River nr Pottersville, N. J.	32.8	1921-62	Mar. 15, 1940	2,630	80.1
4000.0	North Branch Raritan River nr Raritan, N. J.	190	1923-62	Aug. 19, 1955	20,700	109
4005.0	Raritan River at Manville, N. J.	490	1903-07, 1921-62	Sept. 22, 1938	36,100	73.7
4010.0	Stony Brook at Princeton, N. J.	44.5	1953-62	Aug. 13, 1955	5,130	115
4015.0	Millstone River nr Kingston, N. J.	171	1933-49	Sept. 21, 1938	9,820	57.4
4020.0	Millstone River at Blackwells Mills, N. J.	258	1921-62	Sept. 21, 1938	18,300	70.9
4030.0	Raritan River at Bound Brook, N. J.	779	1903-09, 1936-39, 1942, 1945-62	Oct. 10, 1903	32,100	41.2

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
4035.0	Green Brook at Plainfield, N. J.	9.75	1938-62	July 23, 1938	d2,890	296
4045	Lawrence Brook at Patricks Corner, N. J.	29	1922-26	Apr. 7, 1924	1,370	47.2
4050	Lawrence Brook at Farrington Dam, N. J.	34.4	1927-62	Sept.21, 1938	2,660	77.3
4053.0	Matchaponix Brook at Spotswood, N. J.	43.9	1957-62	Sept.13, 1960	2,050	46.7
4054.0	Manalapan Brook at Spotswood, N. J.	40.7	1957-62	Sept.13, 1960	860	21.1
4055.0	South River at Old Bridge, N. J.	94.6	1939-62	Sept.15, 1944	4,250	44.9
4060.0	Deep Run nr Browntown, N. J.	8.07	1932-40	Sept.21, 1938	1,240	154
4065.0	Tennent Brook nr Browntown, N. J.	5.25	1932-41	Sept.21, 1938	177	33.7
4070.0	Matawan Creek at Matawan, N. J.	6.11	1932-55	Aug. 13, 1955	1,420	232
4075.0	Swimming River nr Red Bank, N. J.	48.5	1919, 1922-62	July -, 1919	b11,800	243
4080.0	Manasquan River at Squankum, N. J.	43.4	1931-62	Sept.21, 1938	2,940	67.7
4085.0	Toms River nr Toms River, N. J.	124	1929-62	Sept.23, 1938	2,000	16.1
4090.0	Cedar Creek at Lanoka Harbor, N. J.	56.0	1932-58	Oct. 28, 1943	1,050	18.8
4094.0	Mullica River nr Batsto, N. J.	46.1	1957-62	Aug. 27, 1958	783	17.0

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
4095.0	Batsto River nr Batsto, N. J.	70.5	1927-62	Aug. 24, 1933	1,310	18.6
4100	Oswego River at Harrisville, N. J.	64.0	1930-62	Aug. 20, 1939	1,390	21.7
4105	Absecon Creek at Absecon, N. J.	16.6	1924-29, 1933-39, 1946-62	Sept. 6, 1935	a295	17.8
4110	Great Egg Harbor River at Folsom, N. J.	56.3	1925-62	Sept. 3, 1940	1,440	25.6
4115	Maurice River at Norma, N. J.	113	1932-62	Sept. 2, 1940	7,360	65.1
4120	Manantico Creek nr Millville, N. J.	22.3	1931-57	Aug. 20, 1939	1,050	47.1
-	Cohansey Creek at Bostwick Dam, at Beals Mills, N. J.	8.3	-	Sept. 1, 1940	2,100	253
4125	West Branch Cohansey River at Seeley, N. J.	2.55	1951-62	Aug. 6, 1952	342	134
4130	Loper Run nr Bridgeton, N. J.	2.34	1937-59	Aug. 25, 1958	a106	45.3
-	Barrett Run at Mary Elmer Dam, Bridgeton, N. J.	7.5	-	Sept. 1, 1940	1,850	247
4385	Delaware River at Montague, N. J.	3,480	1940-62	Aug. 19, 1955	250,000	71.9
-	Big Flat Brook nr Hainesville, N. J.	19.9	-	Aug. 19, 1955	4,140	208

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
4400	Flat Brook nr Flatbrookville, N. J.	65.1	1923-62	Aug. 19, 1955	9,560	147
4433	Paulins Kill at Lafayette, N. J.	33.6	-	Aug. 19, 1955	1,440	42.9
-	Culvers Creek at Culvers Pond nr Branchville, N. J.	7.12	-	Aug. 19, 1955	444	62.4
-	Culvers Creek at Branchville, N. J.	10.7	-	Aug. 19, 1955	1,560	146
-	Dry Brook at Branchville, N. J.	4.80	-	Aug. 19, 1955	1,790	373
-	Paulins Kill at Paulins Kill Lake nr Newton, N. J.	81	-	Aug. 19, 1955	6,020	74.3
-	Trout Brook at Middleville, N. J.	5.50	-	Aug. 19, 1955	899	163
4435	Paulins Kill at Blairstown, N. J.	126	1921-62	Aug. 19, 1955	8,750	69.4
4450	Pequest River at Huntsville, N. J.	31.4	1939-62	Aug. 19, 1955	560	17.8
4455	Pequest River at Pequest, N. J.	108	1921-62	Mar. 14, 1936	1,810	16.8
4460	Beaver Brook nr Belvidere, N. J.	36.2	1922-61	Mar. 12, 1936	1,510	41.7
4465	Delaware River at Belvidere, N. J.	4,535	1922-62	Aug. 19, 1955	273,000	60.2
-	Buckhorn Creek at Hutchinson, N. J.	11.7	-	July 9, 1945	4,500	385

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
-	Lopahannock Creek at Roxburg, N. J.	1.56	-	July 9, 1945	1,500	962
-	Lopatcong Creek at Lower Harmony, N. J.	4.12	-	July 9, 1945	6,400	1,550
-	Lopatcong Creek nr Stewartsville, N. J.	8.00	-	July 9, 1945	6,800	850
-	Merrill Brook at Ingersoll-Rand Dam, Phillipsburg, N. J.	3.0	-	July 9, 1945	2,320	772
4552.0	Pohatcong Creek at New Village, N. J.	33.4	1959-62	Sept. 12, 1960	798	23.9
-	Pohatcong Creek at Springtown, N. J.	55.4	-	July 9, 1945	4,000	72.2
-	Pohatcong Creek at Carpentersville, N. J.	56.6	-	July 9, 1945	4,200	74.2
4555.0	Musconetcong River at outlet of Lake Hopatcong, N. J.	25.6	1928-62	Aug. 20, 1955	795	31.1
4560.0	Musconetcong River nr Hackettstown, N. J.	70.0	1921-62	Aug. 19, 1955	2,170	31.0
4570.0	Musconetcong River nr Bloomsbury, N. J.	143	1903-07, 1921-62	Oct. 10, 1903	6,960	48.7

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
4575.0	Delaware River at Riegelsville, N. J.	6,328	1903, 1906-62	Aug. 19, 1955	340,000	53.7
4581.0	Hakihokake Creek at Milford, N. J.	17.2	-	July 18, 1945	930	54.1
4586.0	Nishisakawick Creek at Frenchtown, N. J.	10.9	-	July 18, 1945	6,500	596
4587.0	Little Nishisakawick Creek at Trenton Ave., Frenchtown, N. J.	3.64	-	July 18, 1945	4,300	1,180
-	Unnamed Trib. to Delaware River at Byram, N. J.	1.25	-	July 9, 1945	2,900	2,320
4635.0	Delaware River at Trenton, N. J.	6,780	1912-62	Aug. 20, 1955	329,000	48.5
4640.0	Assunpink Creek at Trenton, N. J.	89.4	1923-62	Sept. 22, 1938	3,320	37.1
4645.0	Crosswicks Creek at Extonville, N. J.	83.6	1938, 1940-51, 1952-62	Sept. 22, 1938	4,100	49.0
4658	So. Branch Rancocas Creek at Vincentown, N. J.	53.3	1961-62	Aug. 28, 1962	890	16.7
-	Haynes Creek at Medford Lake, N. J.	3.3	-	Sept. 1, 1940	223	67.5
-	Kettle Run at Taunton, N. J.	7.3	-	Sept. 1, 1940	500	68.5
-	Sharps Run at Medford, N. J.	4.9	-	Sept. 1, 1940	700	143

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
4660.0	Middle Branch Mt. Misery Brook in Lebanon State Forest, N. J.	2.73	1952-62	Aug. 25, 1958	45	16.5
4665.0	McDonalds Branch in Lebanon State Forest, N. J.	2.31	1953-62	Aug. 25, 1958	35	15.2
4670.0	No. Branch Rancocas Creek at Pemberton, N. J.	111	1921-62	Aug. 21, 1939	1,730	15.6
-	Big Timber Creek at Clementon Park Dam, Clementon, N. J.	2.8	-	Sept. 1, 1940	800	286
4750.0	Mantua Creek at Pitman, N. J.	6.75	1940-62	Sept. 1, 1940	4,200	622
4766.0	Still Run nr Mickleton, N. J.	3.95	1957-62	Sept. 12, 1960	275	69.6
-	Raccoon Creek at Mullica Hill, N. J.	14.0	-	Sept. 1, 1940	2,900	207
-	Oldmans Creek at Jessups Mills, N. J.	4.15	-	Sept. 1, 1940	2,950	710
4775.0	Oldmans Creek nr Woodstown, N. J.	19.3	1931-40	Sept. 1, 1940	8,100	420
-	Salem Creek at Woods Mill, N. J.	4.3	-	Sept. 1, 1940	7,090	1,650
-	Branch of Salem Creek nr Woodstown, N. J.	3.2	-	Sept. 1, 1940	3,880	1,210

TABLE 3. - Maximum known discharges--Continued.

Site no.	Site	Drainage area (sq mi)	Period of known floods	Known maximum		
				Date	Discharge	
					cfs	cfsm
4825.0	Salem Creek at Woodstown, N. J.	14.6	1940, 1941-62	Sept. 1, 1940	22,000	1,510
-	Unnamed Branch of Alloway Creek 1½ mi. N.E. of Alloway, N. J.	8.7	-	Sept. 1, 1940	10,800	1,240
-	Unnamed Branch of Alloway Creek at Alloway, N. J.	5.5	-	Sept. 1, 1940	3,300	600
4830.0	Alloway Creek at Alloway, N. J.	21.9	1952-62	Sept.12, 1960	1,860	84.9

a - Daily mean discharge

b - About

c - Contributing area

d - Flow past gage only

Gaging-Station Flood Records

This section contains a compilation of flood records for all New Jersey gaging stations that had 5 or more years of flood record prior to 1963. The records of gaging stations located in adjacent States and used in the regional frequency analysis are also included.

A brief description including pertinent flood information is given for each station. A partial-duration series is given whenever the data are available and the flood flow was not materially affected by regulation; otherwise only annual peaks are given. Underlines in the tabular data have the following meanings:

1. Line in water year column means a break in continuous record.
2. Line from date column through discharge column means change in site and datum with no break in record.
3. Line in gage-height column only means change in datum only.
4. Line in date and discharge columns means change in site but no change in datum.

HUDSON RIVER BASIN

3680. Wallkill River near Unionville, N.Y.

Location.--Lat 41°15'35", long 74°32'55", on right bank at downstream side of highway bridge on the Quarryville-Milton road, 1 mile upstream from small tributary, 2 miles south of the New York-New Jersey State line, and 3 miles south of Unionville, Orange County.

Drainage area.--144 sq mi.

Gage.--Nonrecording prior to Nov. 16, 1949; recording thereafter. Altitude of gage is 390 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sept. 22, 1938	11.2	3,120	1951	Nov. 26, 1950	10.20	2,210
1939	Dec. 7, 1938	10.55	1,960	1952	June 2, 1952	10.24	2,250
1940	Apr. 1, 1940	10.1	1,550	1953	Jan. 25, 1953	9.83	1,890
				1954	Dec. 9, 1953	8.28	1,200
1941	Nov. 16, 1940	-	a1,040	1955	Aug. 19, 1955	13.35	6,880
1942	Aug. 18, 1942	10.0	a1,300				
1943	Nov. 26, 1942	10.0	a1,850	1956	Oct. 16, 1955	11.01	2,730
1944	Nov. 10, 1943	b9.2	a1,240	1957	Apr. 7, 1957	9.38	1,590
	Apr. 26, 1944			1958	Mar. 1, 1958	9.20	1,650
1945	July 20, 1945	10.8	3,000	1959	Mar. 8, 1959	c8.03	978
				1960	Sept. 14, 1960	9.72	2,230
1946	Jan. 9, 1946	9.1	1,300				
1947	Mar. 15, 1947	9.4	2,180	1961	Feb. 27, 1961	10.46	2,770
1948	Mar. 18, 1948	9.7	2,000				
1949	Dec. 31, 1948	11.4	5,000				
1950	Mar. 10, 1950	8.62	1,160				

a Daily mean discharge.

b Occurred Nov. 10, 1943.

c Occurred Jan. 23, 1959; backwater from ice.

3685. Rutgers Creek at Gardnerville, N.Y.

Location.--Lat 41°20'40", long 74°29'10", on left bank 30 ft upstream from highway bridge at Gardnerville, Orange County, 1.7 miles southeast of Johnson, and 2.2 miles upstream from mouth.

Drainage area.--59.7 sq mi.

Gage.--Nonrecording prior to June 22, 1948; recording thereafter. Datum of gage is 404.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,200 cfs and extended above on basis of flow-over-dam measurement at gage height 8.88 ft and slope-area measurement at gage height 12.38 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Nov. 9, 1943	6.6	1,940	1953	Jan. 24, 1953	7.69	2,760
1945	July 19, 1945	5.6	1,290	1954	Dec. 7, 1953	6.19	1,720
				1955	Aug. 19, 1955	12.38	8,490
1946	May 28, 1946	5.8	1,460				
1947	Apr. 5, 1947	6.1	1,640	1956	Oct. 16, 1955	9.91	4,780
1948	Mar. 17, 1948	a8.1	1,850	1957	Apr. 6, 1957	5.72	1,420
1949	Dec. 31, 1948	8.88	3,600	1958	Dec. 21, 1957	6.37	1,840
1950	Mar. 8, 1950	5.22	1,170	1959	Jan. 22, 1959	a5.83	1,140
				1960	Sept. 13, 1960	5.77	1,500
1951	Mar. 31, 1951	6.40	1,880				
1952	June 1, 1952	8.26	3,160	1961	Feb. 26, 1961	a5.99	1,550

a Backwater from ice.

HUDSON RIVER BASIN

3690. Pochuck Creek near Pine Island, N.Y.

Location.--Lat 41°16'30", long 74°28'20", on right bank 15 ft downstream from highway bridge at Newport, 2.3 miles south of Pine Island, Orange County, 3 miles west of Edenville, and 4 miles upstream from mouth.

Drainage area.--98.0 sq mi.

Gage.--Recording. Datum of gage is 382.39 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sept. 22, 1938	7.80	2,070	1951	Apr. 1, 1951	6.60	1,280
1939	Dec. 7, 1938	6.25	1,010	1952	June 3, 1952	7.39	1,590
1940	Apr. 1, 1940	6.49	1,230	1953	Jan. 26, 1953	5.89	1,040
				1954	Mar. 5, 1954	4.34	619
1941	Feb. 9, 1941	5.81	955	1955	Aug. 20, 1955	8.43	2,870
1942	Aug. 18, 1942	6.76	900				
1943	Nov. 27, 1942	6.53	1,340	1956	Oct. 16, 1955	8.62	3,090
1944	Apr. 26, 1944	5.18	771	1957	Apr. 8, 1957	5.45	988
1945	July 21, 1945	a6.82	1,130	1958	Apr. 8, 1958	6.16	1,290
				1959	Mar. 7, 1959	3.94	623
1946	Jan. 8, 1946	5.78	973	1960	Apr. 6, 1960	5.88	1,500
1947	Apr. 7, 1947	5.58	1,090				
1948	Mar. 18, 1948	b6.03	1,060	1961	Feb. 27, 1961	6.79	1,800
1949	Jan. 1, 1949	7.28	1,770				
1950	Mar. 10, 1950	5.05	806				

a Occurred Feb. 28, 1945; backwater from ice.

b Occurred Feb. 21, 1948; backwater from ice.

3695. Quaker Creek at Florida, N.Y.

Location.--Lat 41°20'20", long 74°21'45", on right bank at downstream side of farm bridge, a quarter of a mile north of railroad station at Florida, Orange County, and 5 miles southwest of Goshen.

Drainage area.--9.74 sq mi.

Gage.--Nonrecording prior to Dec. 12, 1949; recording thereafter. Altitude of gage is 390 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 210 cfs and extended above on basis of contracted-opening measurement at gage height 5.8 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Sept. 21, 1938	6.0	1,050	1951	Mar. 30, 1951	5.04	536
1939	Dec. 6, 1938	4.1	279	1952	June 1, 1952	5.31	634
1940	Mar. 15, 1940	4.2	327	1953	Jan. 24, 1953	4.37	356
				1954	Dec. 14, 1953	3.34	188
1941	Dec. 28, 1940	3.2	182	1955	Aug. 19, 1955	5.27	619
1942	Aug. 16, 1942	5.8	900				
1943	Nov. 25, 1942	5.5	714	1956	Oct. 15, 1955	5.29	626
1944	Nov. 9, 1943	4.2	303	1957	Apr. 6, 1957	3.43	200
1945	Mar. 4, 1945	3.8	257	1958	Feb. 28, 1958	4.50	395
				1959	Jan. 21, 1959	3.96	290
1946	Mar. 3, 1946	3.6	222	1960	Aug. 19, 1960	5.01	655
1947	Apr. 5, 1947	4.4	362				
1948	Mar. 16, 1948	4.3	341	1961	Feb. 26, 1961	4.00	377
1949	Dec. 30, 1948	4.7	432				
1950	Mar. 8, 1950	4.38	358				

HUDSON RIVER BASIN

3765. Saw Mill River at Yonkers, N.Y.

Location.--Lat 40°56'20", long 73°53'05", on left bank in Yonkers, Westchester County, just upstream from Old Croton aqueduct, near intersection of Nepperhan Avenue and Center Street, 1.2 miles upstream from mouth.

Drainage area.--25.6 sq mi.

Gage.--Recording. Datum of gage is 90.99 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	June 21, 1945	3.05	330	1954	Sept. 11, 1954	3.35	412
				1955	Aug. 13, 1955	3.26	390
1946	May 26, 1946	3.90	577				
1947	Apr. 5, 1947	2.99	319	1956	Oct. 16, 1955	5.34	890
1948	Aug. 12, 1948	3.02	332	1957	Nov. 1, 1956	3.34	405
1949	Jan. 1, 1949	2.98	322	1958	Mar. 1, 1958	3.66	486
1950	July 10, 1950	2.72	265	1959	Mar. 7, 1959	-	330
				1960	Sept. 12, 1960	-	a340
1951	Mar. 31, 1951	4.21	578				
1952	June 1, 1952	3.69	460	1961	July 20, 1961	3.17	374
1953	Mar. 14, 1953	4.11	555				

a Daily mean discharge.

HACKENSACK RIVER BASIN

3770. Hackensack River at Rivervale, N.J.

Location.--Lat 40°59'55", long 73°59'27", on right bank at Leslie Avenue, Rivervale, Bergen County, 1½ miles upstream from Pascack Brook, 4.6 miles upstream from Oradell Dam, and 27.2 miles upstream from mouth.

Drainage area.--58.0 sq mi. Area of swamps, lakes, and reservoirs, 2.4 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 22.51 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Flow regulated after February 1956 at DeForest Lake about 11 miles upstream, capacity, 5,638,000,000 gal at top of Bascule gates. Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Mar. 22, 1942	3.32	519	1948	Mar. 18, 1948	3.38	546
	Aug. 17, 1942	3.44	575		Apr. 1, 1948	3.31	514
					May 15, 1948	3.32	519
1943	Dec. 31, 1942	4.05	820				
1944	Nov. 11, 1943	3.46	582	1949	Jan. 1, 1949	3.83	737
	Mar. 13, 1944	3.30	510		Jan. 8, 1949	3.28	501
	Apr. 25, 1944	3.66	667	1950	July 12, 1950	2.93	334
1945	Feb. 28, 1945	3.29	505	1951	Feb. 22, 1951	3.49	609
	Mar. 7, 1945	3.35	532		Apr. 1, 1951	5.70	1,350
	July 19, 1945	5.28	1,250				
	July 23, 1945	5.26	1,250	1952	Nov. 8, 1951	3.40	569
1946	Dec. 28, 1945	3.31	514		Dec. 21, 1951	3.67	681
	May 28, 1946	3.61	644		Mar. 13, 1952	3.27	507
	June 3, 1946	3.41	560		Apr. 7, 1952	4.02	811
	July 23, 1946	3.92	772		Apr. 28, 1952	3.69	689
	Aug. 14, 1946	3.56	624		June 2, 1952	4.75	1,060
1947	Apr. 6, 1947	3.48	595	1953	Jan. 25, 1953	3.36	550
1948	Nov. 12, 1947	3.28	501		Mar. 13, 1953	4.95	1,120
					Mar. 26, 1953	3.84	746
					Apr. 9, 1953	3.46	595

HACKENSACK RIVER BASIN

Peak stages and discharges of Hackensack River at Rivervale, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Sept. 11, 1954	3.84	746	1958	Feb. 28, 1958	4.11	844
1955	Aug. 13, 1955	3.73	708		Apr. 7, 1958	3.52	621
	Aug. 19, 1955	4.28	903	1959	May 8, 1959	3.05	398
1956	Oct. 17, 1955	6.03	1,450	1960	Aug. 19, 1960	3.63	666
1957	Apr. 6, 1957	3.68	685		Sept. 13, 1960	3.60	654
1958	Jan. 22, 1958	3.61	658	1961	Feb. 27, 1961	3.74	708
	Jan. 26, 1958	3.57	642		Apr. 19, 1961	3.56	638

3775. Pascack Brook at Westwood, N.J.

Location.--Lat 40°59'33", long 74°01'19", on right bank 75 ft upstream from Harrington Avenue in Westwood, Bergen County, 500 ft downstream from Musquapsink Creek, and 2.3 miles upstream from mouth.

Drainage area.--29.6 sq mi. Area of lakes, ponds, and swamps, 0.9 sq mi.

Gage.--Recording. Datum of gage is 28.62 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements; shifts in relation occur.

Bankfull stage.--5 ft.

Remarks.--Flow regulated by Woodcliff Lake 3 miles above station, capacity at spillway level, 835,000,000 gal. Base for partial-duration series 330 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Oct. 5, 1934	2.78	216	1945	July 23, 1945	6.76	1,610
1936	Mar. 12, 1936	5.53	1,190	1946	Dec. 26, 1945	3.88	462
	Mar. 19, 1936	3.49	414		May 18, 1946	3.49	361
	Apr. 6, 1936	3.40	386		May 28, 1946	4.63	693
1937	Dec. 20, 1936	3.46	405		June 3, 1946	3.95	482
	May 15, 1937	3.92	547		July 23, 1946	4.98	813
	Sept. 14, 1937	3.88	540	1947	Mar. 15, 1947	3.39	338
1938	Nov. 29, 1937	3.42	392		Apr. 6, 1947	3.84	451
	Jan. 25, 1938	4.14	636	1948	Nov. 12, 1947	3.46	354
	June 28, 1938	3.50	417		Apr. 2, 1948	3.52	368
	July 24, 1938	4.05	600		May 14, 1948	3.39	338
	Sept. 22, 1938	5.37	1,120	1949	Jan. 6, 1949	3.67	405
1939	Dec. 6, 1938	3.77	496	1950	Mar. 23, 1950	3.03	266
	Feb. 4, 1939	3.27	347	1951	Feb. 8, 1951	3.50	363
	Apr. 7, 1939	3.23	336		Feb. 22, 1951	3.73	421
1940	Jan. 15, 1940	3.23	336		Mar. 31, 1951	6.50	1,470
	Mar. 15, 1940	4.81	893		Apr. 3, 1951	3.83	448
	Apr. 9, 1940	4.12	625		Aug. 13, 1951	4.04	509
	June 1, 1940	3.91	550	1952	Nov. 3, 1951	3.40	340
1941	Feb. 8, 1941	3.90	547		Nov. 8, 1951	3.82	446
1942	Mar. 22, 1942	3.48	344		Dec. 21, 1951	4.26	575
	Aug. 9, 1942	3.55	364		Mar. 12, 1952	4.20	556
	Aug. 10, 1942	3.59	377		Apr. 6, 1952	4.78	743
	Aug. 17, 1942	4.28	613		Apr. 28, 1952	3.84	451
1943	Dec. 31, 1942	4.30	620		May 26, 1952	3.86	457
1944	Oct. 27, 1943	3.82	452		June 1, 1952	5.75	1,120
	Nov. 9, 1943	4.11	553		Sept. 2, 1952	3.56	377
	Mar. 13, 1944	3.52	355	1953	Dec. 6, 1952	3.79	437
	Apr. 25, 1944	4.16	571		Dec. 12, 1952	3.80	440
	Sept. 15, 1944	3.54	361		Jan. 25, 1953	4.03	506
1945	July 19-20, 1945	6.06	1,250		Mar. 13, 1953	5.90	1,180
					Mar. 25, 1953	4.47	640
					Apr. 8, 1953	4.47	640

HACKENSACK RIVER BASIN

Peak stages and discharges of Pascack Brook at Westwood, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	July 23, 1953	3.62	392	1958	Feb. 28, 1958	5.37	1,120
1954	Sept. 12, 1954	4.15	535		Apr. 6, 1958	4.29	697
1955	Nov. 21, 1954	4.10	455		Apr. 12, 1958	3.09	352
	Aug. 13, 1955	5.62	998	1959	Mar. 7, 1959	3.20	390
	Aug. 19, 1955	6.06	1,190	1960	Jan. 3, 1960	3.20	365
1956	Oct. 16, 1955	6.45	1,330		July 30, 1960	3.76	520
	Oct. 31, 1955	4.04	350		Aug. 19, 1960	4.94	918
1957	Apr. 6, 1957	3.72	410		Sept. 12, 1960	5.09	976
1958	Dec. 21, 1957	3.72	410	1961	Feb. 26, 1961	4.11	619
	Jan. 22, 1958	4.55	665		Mar. 14, 1961	3.40	415
	Jan. 26, 1958	4.00	490		Apr. 16, 1961	4.17	638
					Apr. 19, 1961	3.19	357

3785. Hackensack River at New Milford, N.J.
(Published as "at Oradell" 1908-13)

Location.--Lat 40°56'52", long 74°01'34", on right bank upstream from two masonry dams and two lift gates at pumping plant of Hackensack Water Co., New Milford, Bergen County, 0.6 mile downstream from Oradell Dam, 4.0 miles downstream from Pascack Brook, and 21.8 miles upstream from mouth.

Drainage area.--113 sq mi. Area of swamps, lakes, and reservoirs, 4.6 sq mi.

Gage.--Nonrecording prior to Nov. 23, 1923; recording thereafter. At same site above south dam at datum 0.05 ft lower prior to Sept. 25, 1934. Datum of gage is 6.25 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Flow regulated by Oradell Reservoir 1 mile above station, Woodcliff Lake 9 miles above station, and DeForest Lake (since February 1956) 17 miles above station (combined capacity of reservoirs, 9,320,000,000 gal). Water diverted at gage and at West Nyack, N.Y., for municipal supply, averaging about 90 cfs in 1958. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 9, 1922	3.32	1,230	1942	Aug. 9, 1942	3.58	1,560
1923	Mar. 17, 1923	3.60	1,450	1943	Dec. 31, 1942	3.79	1,740
1924	Apr. 7, 1924	4.05	1,880	1944	Apr. 25, 1944	3.70	1,660
1925	Feb. 12, 1925	3.86	1,760	1945	July 19, 1945	4.91	2,670
1926	Mar. 8, 1926	2.94	970	1946	July 23, 1946	4.90	2,660
1927	Sept. 2, 1927	4.58	2,500	1947	Apr. 5, 1947	3.42	1,430
1928	July 6, 1928	4.55	2,500	1948	Aug. 12, 1948	3.63	1,600
1929	Feb. 7, 1929	3.60	1,520	1949	Dec. 31, 1948	3.49	1,480
1930	Mar. 8, 1930	2.79	857	1950	July 11, 1950	2.74	874
1931	June 17, 1931	3.25	1,220	1951	Mar. 31, 1951	6.14	3,660
1932	Mar. 28, 1932	3.60	1,520	1952	June 1, 1952	4.94	2,390
1933	Sept. 15, 1933	3.81	1,700	1953	Mar. 13, 1953	5.00	2,740
1934	Sept. 30, 1934	3.83	1,840	1954	Sept. 11, 1954	3.48	1,490
1935	Feb. 15, 1935	3.03	1,130	1955	Aug. 19, 1955	4.40	2,260
1936	Mar. 12, 1936	5.08	2,800	1956	Oct. 16, 1955	5.89	3,460
1937	Dec. 21, 1936	a3.29	1,200	1957	Apr. 6, 1957	3.59	1,580
1938	July 24, 1938	b4.72	2,350	1958	(e)	3.68	1,650
1939	-	c3.14	d1,200	1959	Mar. 6, 1959	3.45	1,470
1940	Mar. 16, 1940	4.01	1,930	1960	Sept. 12, 1960	5.24	2,930
1941	Feb. 8, 1941	3.43	1,430	1961	Apr. 16, 1961	3.84	1,780

a Occurred May 15, 1937, when waste gate channel closed.

b Occurred Sept. 21, 1938.

c Occurred Feb. 3, 28, 1939.

d Occurred Dec. 6, 1938, Feb. 3, 28, 1939.

e Occurred Jan. 22 and Mar. 1, 1958.

PASSAIC RIVER BASIN

3790. Passaic River near Millington, N.J.
(Published as "at Millington" 1903-6)

Location.--Lat 40°40'48", long 74°31'45", on right bank 200 ft downstream from Davis Bridge, in Somerset County, 0.7 mile northwest of Millington, Morris County, and 1.8 miles downstream from Black Brook.

Drainage area.--55.4 sq mi. At site used Nov. 25, 1903, to July 15, 1906, 57 sq mi, approximately. Area of lakes, ponds, and swamps, 10.0 sq mi.

Gage.--Nonrecording prior to July 3, 1925; recording thereafter. At site 0.7 mile downstream at different datum prior to July 15, 1906; and at site 200 ft downstream at present datum Nov. 10, 1921, to Sept. 1, 1923. Datum of gage is 215.60 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--For 1903-6 defined by current-meter measurements below 140 cfs and extended above on basis of area-velocity study. Since 1921, defined by current-meter measurements below 1,400 cfs and by slope-area measurement of 1,480 cfs.

Remarks.--Only annual peaks, from graph of twice-daily gage readings, are shown prior to 1926. Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 8, 1904	7.6	1,920	1938	June 29, 1938	6.60	521
1905	Jan. 9, 1905	7.8	2,000		July 24, 1938	7.21	719
					Sept. 22, 1938	8.11	1,040
1906	Mar. 4, 1906	6.1	1,320	1939	Dec. 6, 1938	6.72	553
1922	Mar. 7, 1922	6.50	548		Feb. 4, 1939	6.79	585
1923	Mar. 17-18, 1923	6.6	700		Mar. 1, 1939	6.57	506
1924	Apr. 7, 1924	8.00	1,100	1940	Mar. 15, 1940	7.82	938
1925	Feb. 25, 1925	6.95	718		Apr. 9, 1940	6.94	634
1926	Dec. 6, 1925	6.36	511	1941	Feb. 8, 1941	6.51	493
	Feb. 26, 1926	6.81	668				
	Mar. 8, 1926	6.50	565	1942	Aug. 14, 1942	8.57	1,360
1927	Feb. 26, 1927	6.30	490	1943	Nov. 26, 1942	6.57	525
1928	Oct. 20, 1927	6.81	668		Dec. 31, 1942	7.59	916
	Dec. 8, 1927	6.44	541	1944	Mar. 14, 1944	6.63	546
	Feb. 24, 1928	6.93	700		Mar. 24, 1944	6.55	518
	Apr. 24, 1928	6.48	557		Apr. 25, 1944	6.71	574
	July 6, 1928	6.72	637	1945	Feb. 27, 1945	7.17	748
	Aug. 28, 1928	6.90	700	1946	Nov. 30, 1945	6.67	588
1929	Feb. 28, 1929	7.03	735		May 18, 1946	7.11	748
	Mar. 6, 1929	6.43	537		June 3, 1946	7.25	800
	Apr. 17, 1929	6.36	511		July 24, 1946	6.64	577
	Apr. 26, 1929	6.97	724	1947	Mar. 15, 1947	6.44	508
1930	Mar. 8, 1930	6.54	565		Apr. 6, 1947	6.56	549
1931	Mar. 30, 1931	6.22	460	1948	Nov. 9, 1947	7.15	762
1932	Mar. 28, 29, 1932	6.81	665		Nov. 12, 1947	7.03	718
1933	Nov. 10, 1932	7.49	860		Feb. 20, 1948	(a)	(a)
	Nov. 20, 1932	7.38	824		Mar. 17, 1948	6.88	528
	Mar. 22, 1933	6.55	536		Apr. 2, 1948	6.83	549
	Aug. 24, 25, 1933	6.46	504		May 14, 1948	7.37	722
	Sept. 16, 17, 1933	7.73	934	1949	Dec. 31, 1948	8.71	1,300
1934	Jan. 8, 1934	6.57	536		Jan. 6, 1949	7.17	715
	Mar. 5-6, 1934	7.79	972	1950	Mar. 24, 1950	6.20	395
	Apr. 1, 1934	6.58	552	1951	Nov. 26, 1950	6.69	549
1935	Feb. 17, 1935	6.44	504		Dec. 9, 1950	6.75	569
1936	Jan. 3, 1936	6.88	651		Feb. 22, 1951	6.79	583
	Jan. 10, 1936	6.43	504		Mar. 31, 1951	7.24	740
	Mar. 12, 1936	9.18	1,480	1952	Nov. 8, 1951	6.69	549
	Mar. 19, 1936	6.84	634		Dec. 21, 1951	6.98	648
	Apr. 6, 1936	6.95	668		Mar. 12, 1952	7.00	655
1937	Dec. 20, 1936	6.73	602		June 2, 1952	7.44	813
1938	Jan. 25, 1938	6.83	602	1953	Nov. 23, 1952	6.80	585
					Jan. 25, 1953	6.89	616

a Unknown.

PASSAIC RIVER BASIN

Peak stages and discharges of Passaic River near Millington, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 16, 1953	7.21	728	1958	Mar. 1, 1958	7.20	725
	Apr. 8, 1953	7.06	676		Apr. 7, 1958	6.72	561
1954	Dec. 15, 1953	5.95	335	1959	Oct. 27, 1958	6.33	439
1955	Nov. 22, 1954	6.68	548	1960	Apr. 5, 1960	6.98	682
	Aug. 14, 1955	6.90	620		Sept. 13, 1960	6.82	558
	Aug. 19, 1955	7.88	977	1961	Feb. 26, 1961	7.77	990
1956	Oct. 16, 1955	7.14	704		Mar. 24, 1961	6.68	586
					Apr. 14, 1961	6.88	642
1957	Apr. 7, 1957	7.14	704	1962	Jan. 7, 1962	6.54	506
1958	Dec. 21, 1957	6.93	630		Mar. 1, 1962	6.78	602
	Jan. 26, 1958	6.68	548		Mar. 13, 1962	7.72	972

3795. Passaic River near Chatham, N.J.

Location.--Lat 40°43'31", long 74°23'23", on left bank 150 ft downstream from Stanley Avenue Bridge in Chatham, Morris County, and 3 miles upstream from Canoe Brook.

Drainage area.--100 sq mi. Area of lakes, ponds, and swamps, 11.2 sq mi.

Gage.--Nonrecording 1904-11; recording since Dec. 15, 1937. On Stanley Avenue Bridge 150 ft upstream at different datum 1904-11. Concrete control since Sept. 19, 1938. Datum of gage is 193.51 ft above mean sea level, datum of 1929.

Stage-discharge relation.--For 1904-11 well defined by current-meter measurements below 600 cfs, but considered only approximate above 750 cfs. Since 1937, defined by current-meter measurements.

Bankfull stage.--8 ft.

Remarks.--Only maximum observed peaks are shown 1904-11. Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 11, 1903	7.2	2,310	1944	Jan. 6, 1944	5.57	936
1905	Jan. 9, 1905	8.3	3,000		Mar. 13, 1944	5.57	936
					Mar. 25, 1944	5.48	875
					Apr. 26, 1944	5.61	964
1906	Apr. 16, 1906	5.3	1,190	1945	Feb. 27, 1945	a6.67	-
1907	Mar. 18, 1907	8.0	2,860		July 23, 1945	5.49	881
1908	Feb. 28, 1908	5.9	1,600		Sept. 19, 1945	5.71	1,040
1909	Feb. 25, 1909	5.5	1,360	1946	Dec. 1, 1945	5.43	841
1910	Mar. 4, 1910	7.0	2,260		June 4, 1946	5.71	1,040
					July 23, 1946	5.51	895
1911	Nov. 5, 1910	3.9	525	1947	Apr. 5, 1947	5.47	869
					May 4, 1947	5.46	862
1938	Jan. 25, 1938	4.85	1,060	1948	Nov. 8, 1947	6.05	1,220
	July 23, 1938	6.51	1,840		Nov. 12, 1947	6.35	1,410
	Sept. 21, 1938	6.86	1,910		Feb. 20, 1948	a6.30	b1,000
1939	Dec. 7, 1938	5.41	828		Feb. 24, 1948	a6.65	-
	Feb. 5, 1939	5.62	972		Mar. 1, 1948	5.37	801
1940	Mar. 15, 1940	5.79	1,090		May 15, 1948	5.60	950
	Apr. 10, 1940	5.69	1,020		June 25, 1948	5.44	849
	May 31, 1940	5.69	1,020	1949	Jan. 1, 1949	6.78	1,710
1941	Feb. 9, 1941	5.30	756		Jan. 28, 1949	5.40	821
	Aug. 9, 1942	6.31	1,470	1950	May 23, 1950	5.17	670
	Aug. 16, 1942	7.32	2,020	1951	Dec. 8, 1950	5.71	1,010
1942	Sept. 20, 1942	5.67	1,010		Feb. 22, 1951	5.46	862
					Apr. 3, 1951	5.72	1,010
1943	Nov. 26, 1942	5.52	902				
	Dec. 31, 1942	6.21	1,420				
	May 28, 1943	5.48	875				
1944	Nov. 10, 1943	5.41	828				

a Backwater from ice.

b Estimated daily mean discharge.

PASSAIC RIVER BASIN

Peak stages and discharges of Passaic River near Chatham, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Nov. 7, 1951	5.59	944	1957	Apr. 7, 1957	5.86	1,100
	Dec. 23, 1951	5.73	1,020	1958	Dec. 21, 1957	5.69	995
	Jan. 28, 1952	5.40	821		Dec. 26, 1957	5.45	860
	Mar. 13, 1952	5.62	960		Jan. 27, 1958	5.55	920
	May 25, 1952	5.44	849		Mar. 2, 1958	5.94	1,140
	June 1, 1952	6.17	1,290		Mar. 27, 1958	5.52	902
1953	Jan. 26, 1953	5.58	938		Apr. 8, 1958	5.54	914
	Mar. 16, 1953	5.95	1,150		Apr. 30, 1958	5.49	884
	Apr. 9, 1953	5.77	1,040	1959	Oct. 26, 1958	5.30	770
1954	Dec. 14, 1953	5.13	651	1960	Apr. 6, 1960	5.71	1,010
1955	Nov. 23, 1954	5.49	884	1960	Sept. 12, 1960	5.88	1,110
	Aug. 14, 1955	6.30	1,380				
	Aug. 19, 1955	6.31	1,390	1961	Feb. 22, 1961	a6.59	-
1956	Oct. 16, 1955	5.95	1,150	1961	Feb. 27, 1961	6.17	1,290
	Apr. 8, 1956	5.44	854		Mar. 23, 1961	5.46	866
					Apr. 16, 1961	5.87	1,100

a Backwater from ice.

3800. Beaver Brook at outlet of Splitrock Reservoir, N.J.
(Published as "at outlet of Splitrock Pond")

Location.--Lat 40°57'38", long 74°27'43", on left bank 50 ft downstream from Splitrock Dam, 2 miles northeast of Hibernia, Morris County, and 3½ miles upstream from Hibernia Brook.

Drainage area.--5.50 sq mi.

Gage.--Recording gage and wooden weir. Altitude of gage is 790 ft (from topographic map).

Stage-discharge relation.--Defined by weir formula and verified by current-meter measurements below 40 cfs.

Remarks.--Some flood peaks affected by regulation of Splitrock Reservoir (capacity at spillway level, 3,310,000,000 gal). Base for partial-duration series, 50 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Nov. 18, 1925	-	53	1937	Jan. 3-6, 1937	1.39	25
	Dec. 7, 1925	-	52	1938	Jan. 26, 1938	1.94	60
1927	Oct. 27, 1926	-	50		July 24, 1938	2.37	95
	Nov. 18, 1926	1.99	64		Sept. 22-23, 1938	2.12	75
	Aug. 31, 1927	-	50	1939	Dec. 6, 1938	2.30	89
1928	Oct. 21, 1927	-	89	1940	Jan. 15-16, 1940	2.34	93
	Nov. 20, 1927	-	56		Apr. 25, 1940	1.94	60
	Apr. 29, 1928	-	55		June 5, 1940	2.28	87
	Aug. 28, 1928	2.08	71	1941	Apr. 7, 1941	1.74	46
1929	Apr. 26, 1929	1.96	62	1942	Nov. 3, 1941	2.11	74
1930	Mar. 9-12, 1930	1.58	36		Aug. 11, 1942	2.13	75
1931	June 9, 1931	1.84	53		Aug. 18, 1942	2.11	74
	Sept. 15, 1931	2.02	65		Sept. 28, 1942	2.42	100
1932	Apr. 1, 1932	1.69	43	1943	Nov. 25, 1942	1.91	58
1933	Nov. 20, 1932	2.50	107	1944	Apr. 25, 1944	1.91	58
1934	Sept. 17-18, 1934	1.84	53	1945	Mar. 7, 1945	2.00	65
1935	Dec. 1, 1934	1.98	63		July 20, 1945	2.01	66
	May 11, 1935	1.87	56	1946	May 28, 1946	1.79	50
1936	Mar. 12, 1936	2.70	126		July 24, 1946	1.87	56
	Mar. 20, 1936	2.06	70				

PASSAIC RIVER BASIN

3805. Rockaway River above reservoir, at Boonton, N.J.

Location.--Lat 40°54'06", long 74°24'40", on right bank at Morris Avenue, Boonton, Morris County, 1.8 miles upstream from Boonton Dam.

Drainage area.--116 sq mi. Area of lakes, ponds, and swamps, 7.8 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 364.47 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 2,400 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 950 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Nov. 14, 1937	5.13	1,900	1951	Dec. 8, 1950	5.06	1,980
	Jan. 25, 1938	5.15	1,900		Feb. 8, 1951	3.83	984
	June 28, 1938	3.99	1,010		Mar. 20, 1951	3.92	1,060
	July 24, 1938	5.43	2,120		Mar. 31, 1951	5.59	2,460
	Sept. 22, 1938	5.55	2,260		July 29, 1951	3.97	1,100
1939	Dec. 6, 1938	4.38	1,310	1952	Nov. 8, 1951	4.73	1,700
	Mar. 1, 1939	4.20	1,160		Dec. 21, 1951	5.07	1,990
	Apr. 7, 1939	3.98	1,000		Jan. 23, 1952	4.02	1,060
	Apr. 20, 1939	4.38	1,310		Jan. 27, 1952	4.10	1,120
1940	Mar. 15, 1940	5.76	2,390		Feb. 5, 1952	3.93	988
	Mar. 31, 1940	4.00	1,030		Mar. 12, 1952	5.83	2,540
	Apr. 9, 1940	4.42	1,330		Apr. 6, 1952	4.45	1,380
	Apr. 21, 1940	4.00	1,030		Apr. 28, 1952	4.18	1,180
	June 2, 1940	3.95	995		May 26, 1952	4.15	1,160
	Sept. 2, 1940	3.89	954		June 2, 1952	6.62	3,250
1941	Feb. 8, 1941	3.82	908		July 10, 1952	4.58	1,480
					Sept. 2, 1952	4.86	1,710
1942	Mar. 4, 1942	4.01	1,030	1953	Nov. 22, 1952	5.28	2,050
	Aug. 11, 1942	4.11	1,100		Dec. 6, 1952	4.37	1,300
	Sept. 28, 1942	4.25	1,200		Dec. 12, 1952	3.98	996
1943	Nov. 26, 1942	4.56	1,440		Jan. 25, 1953	5.10	1,890
	Dec. 31, 1943	4.80	1,620		Mar. 13, 1953	4.30	1,240
1944	Mar. 7, 1944	3.95	982		Mar. 16, 1953	4.13	1,110
	Mar. 13, 1944	4.00	1,020		Mar. 25, 1953	4.02	1,030
	Mar. 24, 1944	4.03	1,040		Apr. 8, 1953	4.83	1,660
	Apr. 25, 1944	4.57	1,450		Apr. 17, 1953	3.97	989
1945	Mar. 7, 1945	4.21	1,170	1954	Mar. 4, 1954	3.55	705
	July 21, 1945	4.69	1,540				
	Sept. 19, 1945	4.01	1,030	1955	Nov. 22, 1954	4.52	1,420
1946	Nov. 23, 1945	4.07	1,070		Aug. 13, 1955	4.64	1,510
	Dec. 26, 1945	4.19	1,150	1956	Aug. 19, 1955	5.43	2,190
	June 3, 1946	4.14	1,120		Oct. 16, 1955	5.15	1,940
	July 24, 1946	4.56	1,440	1957	Apr. 6, 1957	4.43	1,340
1947	Mar. 15, 1947	4.60	1,470				
	Apr. 6, 1947	4.46	1,360	1958	Dec. 21, 1957	5.31	2,080
	May 26, 1947	4.28	1,220		Dec. 27, 1957	4.42	1,340
					Jan. 22, 1958	3.95	975
1948	Nov. 9, 1947	5.01	1,790		Feb. 28, 1958	4.82	1,660
	Nov. 12, 1947	4.37	1,290		Apr. 7, 1958	4.61	1,490
	Mar. 17, 1948	4.37	1,290		Apr. 12, 1958	4.02	1,030
	Apr. 2, 1948	4.15	1,120	1959	Mar. 7, 1959	4.22	1,170
	May 14, 1948	4.02	1,030				
1949	Dec. 31, 1948	6.30	2,860		Dec. 13, 1959	4.03	1,020
	Jan. 6, 1949	4.93	1,720		Dec. 29, 1959	3.93	951
1950	Mar. 23, 1950	3.96	991		Jan. 3, 1960	4.38	1,290
					Apr. 5, 1960	4.87	1,690
1951	Nov. 26, 1950	5.07	1,990	1960	Sept. 13, 1960	4.88	1,690
	Dec. 5, 1950	4.02	1,130				
					Feb. 26, 1961	4.92	1,730
					Apr. 14, 1961	4.00	1,000
					Apr. 17, 1961	4.41	1,320

PASSAIC RIVER BASIN

3810. Rockaway River below reservoir, at Boonton, N.J.
 (Published as "Rockaway River near Boonton" 1903-4,
 and as "Rockaway River at Boonton" 1906-37)

Location.--Lat 40°53'47", long 74°23'36", on right bank 2,000 ft downstream from dam of Boonton Reservoir, Boonton, Morris County.

Drainage area.--119 sq mi. At site used in 1904, 121 sq mi. Area of lakes, ponds, and swamps, 9.0 sq mi.

Gage.--Nonrecording prior to Sept. 30, 1924, recording thereafter. During 1904, at site 1.9 miles downstream at different datum; 1913-24, on Boonton Reservoir 2,000 ft upstream at datum 305.25 ft above mean sea level. Concrete control completed Nov. 5, 1936. Datum of gage is 195.68 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--For 1904, defined by current-meter measurements below 900 cfs and extended above by logarithmic plotting; 1912-24, defined by weir formula; 1925-61, defined by current-meter measurements below 1,400 cfs and extended above by logarithmic plotting.

Remarks.--Flow regulated by Boonton and Splitrock Reservoirs. Prior to 1926 gage height and discharge are mean for day. Only annual peaks are shown.

Peak stages and discharges a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	7.8	7,560	1937	May 16, 1937	4.46	914
1913	Jan. 4, 1913	1.55	1,560	1938	Sept. 22, 1938	6.06	1,860
1914	Mar. 29, 1914	1.29	1,200	1939	Dec. 7, 1938	4.60	993
1915	Jan. 14, Feb. 2, 1915	1.49	1,480	1940	Apr. 9, 1940	4.64	1,010
1916	Feb. 26, 1916	1.20	1,060	1941	Feb. 8-9, 1941	3.93	652
1917	Mar. 29, 1917	.91	698	1942	Aug. 10, 1942	4.62	1,000
1918	Feb. 21, 27, 1918	1.21	1,060	1943	Dec. 31, 1942	5.11	1,270
1919	July 24, 1919	3.84	2,670	1944	Apr. 25, 1944	4.86	1,130
1920	Mar. 14, 1920	1.92	2,120	1945	July 21, 1945	5.06	1,270
1921	Jan. 16, 1921	1.15	993	1946	July 24, 1946	4.78	1,110
1922	Mar. 9, 1922	1.73	1,870	1947	Mar. 15, 1947	4.83	1,140
1923	Mar. 18, 19, 1923	bl. 15	994	1948	Mar. 17, 1948	4.73	1,080
1924	Apr. 8, 1924	1.79	1,950	1949	Dec. 31, 1948	6.76	2,360
1925	Feb. 15, 16, 1925	c3.64	684	1950	Mar. 24, 1950	4.08	756
1926	Feb. 26, 1926	3.49	688	1951	Mar. 31, 1951	6.07	1,910
1927	Aug. 29, 1927	3.70	759	1952	June 2, 1952	7.18	2,670
1928	Aug. 27, 1928	4.64	1,110	1953	Jan. 25, 1953	5.56	1,590
1929	Apr. 26, 1929	3.66	759	1954	May 9, 1954	3.37	418
1930	Mar. 9, 1930	3.38	659	1955	Aug. 21, 1955	6.03	1,870
1931	July 11, 1931	4.36	1,000	1956	Oct. 16, 17, 1955	5.94	1,810
1932	Mar. 29, 1932	4.11	900	1957	Apr. 6, 1957	4.68	1,060
1933	Nov. 20, 1932	5.46	2,150	1958	Apr. 7, 1958	4.99	1,230
1934	Sept. 30, 1934	4.37	1,460	1959	Mar. 7, 1959	4.41	924
1935	July 11, 1935	4.91	1,790	1960	Sept. 13, 1960	5.82	1,730
1936	Mar. 12, 1936	8.03	3,750	1961	Feb. 26, 1961	5.44	1,500

a Prior to 1926 gage height and discharge are mean for day.

b Occurred Mar. 19, 1923.

c Occurred Feb. 16, 1925.

PASSAIC RIVER BASIN

3815. Whippany River at Morristown, N.J.

Location.--Lat 40°48'21", long 74°27'22", on left bank at Morristown sewage-disposal plant, three-quarters of a mile downstream from Morristown, Morris County, and 9 miles upstream from mouth.

Drainage area.--29.4 sq mi. Area of lakes, ponds, and swamps, 0.3 sq mi.

Gage.--Nonrecording prior to July 16, 1930; recording thereafter. Concrete control since July 1, 1936. Datum of gage is 260.01 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 430 cfs and extended above on basis of slope-area and flow-over-dam measurement of 1,500 cfs.

Bankfull stage.--3 ft.

Remarks.--Regulation by Pocahontas Lake 2.5 miles above station may occasionally affect peaks. Only annual peaks from graph of twice-daily gage readings are shown prior to 1931. Base for partial-duration series, 450 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	July 1, 1922	5.40	1,020	1944	Mar. 13, 1944	4.02	501
1923	Mar. 16-17, 1923	4.90	815		Mar. 24, 1944	3.94	474
1924	Apr. 7, 1924	6.50	1,530				
1925	Aug. 1, 1925	5.30	975	1945	Jan. 1-2, 1945	3.90	460
					Sept. 18, 1945	3.90	460
1926	Feb. 25, 1926	4.82	783				
1927	Nov. 16, 1926	3.80	450	1946	May 13, 1946	5.30	1,020
1928	Aug. 26, 1928	7.30	2,000		May 17, 1946	4.04	508
1929	Feb. 7, 1929	6.00	1,290		June 2, 1946	4.11	533
1930	Mar. 8, 1930	4.2	570		July 23, 1946	4.31	606
1931	July 11, 1931	4.14	552	1947	Mar. 14, 1947	3.97	484
					Apr. 5, 1947	3.93	470
1932	Mar. 28, 1932	4.31	604		May 26, 1947	4.27	591
1933	Nov. 19, 1932	7.00	1,820	1948	Nov. 8, 1947	4.87	829
	Apr. 12, 1933	4.21	573		Nov. 12, 1947	3.92	467
	Aug. 24, 1933	4.84	791		Apr. 1, 1948	3.88	453
	Sept. 15, 1933	5.95	1,260		May 13, 1948	4.12	536
					June 7, 1948	3.93	470
1934	Oct. 1, 1933	4.47	660		Aug. 20, 1948	3.96	480
	Mar. 5, 1934	4.93	847				
	Sept. 30, 1934	4.92	823	1949	Dec. 31, 1948	6.00	1,350
					Jan. 6, 1949	4.88	834
1935	Oct. 6, 1934	3.70	467				
				1950	Mar. 23, 1950	3.63	375
1936	Oct. 31, 1935	3.79	496				
	Jan. 3, 1936	5.40	1,080	1951	Nov. 26, 1950	4.58	711
	Mar. 12, 1936	6.29	1,500		Dec. 8, 1950	4.14	543
	Mar. 18, 1936	3.78	496		Mar. 31, 1951	5.14	938
	Apr. 6, 1936	5.26	1,020		July 28, 1951	4.12	536
1937	Dec. 20, 1936	4.08	491	1952	Nov. 7, 1951	4.33	613
					Dec. 21, 1951	4.84	817
1938	Nov. 13, 1937	4.56	699		Mar. 11, 1952	5.57	1,140
	Jan. 25, 1938	4.41	640		May 25, 1952	4.42	648
	Sept. 22, 1938	5.62	1,170		June 1, 1952	6.02	1,360
					July 10, 1952	4.08	522
1939	Mar. 8, 1939	3.97	477		Sept. 1, 1952	4.21	569
	Apr. 19, 1939	4.12	529				
				1953	Nov. 22, 1952	4.74	775
1940	Mar. 15, 1940	6.33	1,500		Dec. 6, 1952	3.93	470
	Apr. 8, 1940	4.09	526		Jan. 24, 1953	4.81	804
					Mar. 13, 1953	4.18	558
1941	Feb. 8, 1941	4.50	679		Apr. 7, 1953	4.70	759
	July 12, 1941	4.05	502				
				1954	Sept. 11, 1954	3.29	282
1942	July 18, 1942	3.87	450				
	Aug. 9, 1942	4.55	699	1955	Nov. 21, 1954	4.82	788
	Aug. 11, 1942	5.66	1,190		Feb. 7, 1955	4.11	518
	Aug. 14, 1942	5.71	1,220		Aug. 13, 1955	5.23	962
					Aug. 19, 1955	5.65	1,160
1943	Nov. 25, 1942	3.91	463				
	Dec. 30, 31, 1942	4.13	540	1956	Oct. 15, 1955	5.10	900
					Sept. 6, 1956	4.57	688
1944	Mar. 7, 1944	4.40	640				

PASSAIC RIVER BASIN

Peak stages and discharges of Whippany River at Morristown, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 14, 1957	4.38	613	1960	Apr. 4, 1960	4.18	543
1958	Dec. 21, 1957	5.05	880		July 27, 1960	4.40	620
	Jan. 22, 1958	3.90	452		Aug. 19, 1960	4.03	494
	Feb. 28, 1958	5.15	925		Sept. 12, 1960	4.56	684
	Apr. 6, 1958	4.11	518	1961	Feb. 26, 1961	3.97	475
1959	Aug. 9, 1959	4.08	509				

3835. Wanaque River at Awosting, N.J.
(Published as "at Greenwood Lake" prior to 1941)

Location.--Lat 41°09'31", long 74°20'00", on right bank 700 ft downstream from dam at outlet of Greenwood Lake at Awosting, Passaic County.

Drainage area.--27.1 sq mi. Area of lakes, ponds, and swamps, 3.6 sq mi.

Gage.--Nonrecording prior to Apr. 1, 1926; recording thereafter. Prior to Oct. 31, 1938, at site 100 ft upstream at same datum. Concrete control since Oct. 31, 1938. Datum of gage is 601.32 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Prior to Oct. 31, 1938, defined by current-meter measurements below 290 cfs and extended on basis of flow-over-dam measurement of 914 cfs. Since 1938, defined by current-meter measurements below 310 cfs and extended above by logarithmic plotting.

Bankfull stage.--3 ft.

Remarks.--Regulation by Greenwood Lake could affect some flood peaks. Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1919a/	July 28, 1919	2.3	201	1933	Nov. 20, 1932	3.3	413
1920	Mar. 14, 1920	3.3	440		Mar. 22, 1933	2.40	224
1921	Oct. 2, 1920	2.6	261		Apr. 18, 1933	3.00	341
	Mar. 10, 1921	2.7	284		Aug. 24, 1933	4.45	851
1922	Mar. 9, 1922	2.4	220		Sept. 17, 1933	2.82	336
	May 21, 1922	2.38	220	1934	Apr. 1, 1934	2.36	226
1923	Mar. 18, 1923	2.54	248		Sept. 18, 1934	2.53	261
1924	Jan. 17, 1924	2.56	252	1935	Dec. 2, 1934	2.32	217
	Apr. 7, 1924	3.72	600	1936	Nov. 29, 1935	2.24	205
1925	Feb. 16, 1925	2.57	261		Mar. 12, 1936	4.82	914
1926	Dec. 6-7, 1925	2.22	187		Mar. 19, 1936	3.60	537
1927	Sept. 2, 1927	3.25	384		Apr. 8, 1936	2.25	206
1928	Nov. 6, 1927	2.31	206	1937	Dec. 21, 1936	3.23	440
	Feb. 16, 1928	2.33	215		Feb. 22, 1937	2.90	350
	May 10, 1928	2.49	242	1938	Nov. 14, 1937	2.92	355
	July 7, 1928	2.84	310		Jan. 26, 1938	3.20	445
	Aug. 28, 1928	2.82	300		June 28, 1938	3.67	570
1929	Jan. 7, 1929	2.71	280		July 23, 1938	3.33	486
	Mar. 6, 1929	2.64	270		Sept. 22, 1938	3.90	642
	Mar. 16, 1929	2.40	224	1939	Dec. 6, 1938	3.65	344
	Apr. 17, 1929	2.40	224		Mar. 1, 1939	3.24	225
1930	Mar. 9, 1930	2.30	206	1940	Mar. 16, 1940	3.51	301
1931	Apr. 1, 1931	2.30	206		Apr. 1, 1940	3.87	413
	June 17, 1931	2.52	242		Apr. 9, 1940	3.50	298
1932	Apr. 1, 1932	2.77	290		Apr. 22, 1940	3.41	272
1933	Nov. 2, 1932	2.56	252		Sept. 2, 1940	3.88	417
	Nov. 11, 1932	2.97	330	1941	Nov. 16, 1940	3.11	192
				1942	Aug. 18, 1942	3.41	270
					Sept. 28, 1942	3.74	370
				1943	Nov. 26, 1942	3.75	373
					Dec. 31, 1942	3.68	351

a Period May 13 to Sept. 30, 1919.

PASSAIC RIVER BASIN

Peak stages and discharges of Wanaque River at Awosting, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Nov. 10, 1943	3.25	227	1953	Dec. 12, 1952	3.57	333
	Apr. 25, 1944	3.32	245		Jan. 25, 1953	3.75	389
1945	Mar. 7, 1945	3.38	262		Mar. 16, 1953	3.28	250
	May 19, 1945	3.19	212		Mar. 26, 1953	3.31	258
	July 20, 1945	4.05	473		Apr. 8, 1953	3.24	239
	Sept. 20, 1945	3.18	209	1954	Dec. 15, 1953	3.16	212
1946	Nov. 23, 1945	3.48	290		Mar. 4, 1954	3.25	236
	Nov. 30, 1945	3.32	245		May 10, 1954	3.18	217
	Dec. 27, 1945	3.17	207	1955	Nov. 22, 1954	3.27	242
	May 28, 1946	3.56	314		Aug. 13, 1955	4.95	855
	June 3, 1946	3.29	237		Aug. 19, 1955	5.58	1,160
	July 24, 1946	3.16	204	1956	Oct. 16, 1955	5.85	1,300
1947	Mar. 15, 1947	3.56	314		Oct. 31, 1955	3.43	289
	Apr. 6, 1947	3.53	305		Apr. 8, 1956	3.43	289
1948	Nov. 12, 1947	3.20	214		Apr. 30, 1956	3.53	319
	Mar. 18, 1948	3.56	314	1957	Dec. 16, 1956	3.22	228
1949	Dec. 31, 1948	4.70	709		Apr. 7, 1957	3.92	446
	Jan. 6, 1949	3.85	405	1958	Dec. 21, 1957	4.52	668
1950	Mar. 24, 1950	3.37	280		Dec. 27, 1957	3.60	340
1951	Nov. 26, 1950	3.97	506		Jan. 27, 1958	3.42	286
	Dec. 9, 1950	3.95	498		Mar. 1, 1958	3.45	295
	Jan. 25, 1951	3.15	214		Apr. 2, 1958	3.32	256
	Feb. 8, 1951	3.20	228		Apr. 8, 1958	3.75	385
	Feb. 22, 1951	3.11	203		May 8, 1958	3.23	230
	Mar. 31, 1951	5.44	1,190	1959	Mar. 7, 1959	3.19	219
	July 29, 1951	3.10	200	1960	Oct. 25, 1959	3.66	358
	Aug. 17, 1951	3.17	220		Jan. 4, 1960	3.19	219
1952	Nov. 8, 1951	3.65	358		Feb. 12, 1960	3.23	230
	Dec. 22, 1951	3.63	351		Apr. 1, 1960	3.47	301
	Mar. 12, 1952	4.23	558		Apr. 5, 1960	4.07	498
	Apr. 6, 1952	3.99	470		July 31, 1960	3.16	212
	Apr. 29, 1952	3.45	298		Aug. 20, 1960	3.14	206
	June 2, 1952	4.97	868		Sept. 13, 1960	3.98	464
	Aug. 17, 1952	3.16	219	1961	Feb. 26, 1961	4.12	516
	Sept. 2, 1952	3.63	351		Mar. 6, 1961	3.34	262
1953	Nov. 23, 1952	4.00	474		Apr. 17, 1961	3.27	242

3840. Wanaque River at Monks, N.J.

Location.--Lat 41°07'14", long 74°17'41", on left bank just upstream from Wanaque Reservoir, at Monks, Passaic County.

Drainage area.--40.4 sq mi. Area of lakes, ponds, and swamps, 3.7 sq mi.

Gage.--Recording gage and concrete dam. Datum of gage is 303.17 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935a	Jan. 10, 1935	1.28	312	1937	Apr. 6, 1937	1.51	440
	Feb. 2, 1935	1.58	-		May 15, 1937	1.46	410
1936	Jan. 3, 1936	b1.84	-	1938	Nov. 13, 1937	2.62	1,320
	Feb. 15, 1936	b1.50	-		Jan. 25, 1938	2.59	1,320
	Mar. 12, 1936	3.15	1,920		June 27, 1938	2.71	1,420
	Mar. 18, 1936	2.40	1,130		July 23, 1938	2.10	870
	Apr. 6, 1936	1.68	551		Sept. 21, 1938	3.50	2,330
1937	Dec. 20, 1936	2.36	1,090	1939	Dec. 5 or 6, 1938	2.25	999
	Jan. 25, 1937	1.52	448		Feb. 28, 1939	1.56	473
	Feb. 22, 1937	2.25	998				

a Period Jan. 1 to Sept. 30, 1935. Maximum for year probably occurred Dec. 2, 1934.

b Backwater from ice.

PASSAIC RIVER BASIN

Peak stages and discharges of Wanaque River at Monks, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Apr. 2, 1939	1.61	505	1951	Apr. 13, 1951	1.45	434
	Apr. 6, 1939	1.54	460		July 28, 1951	1.42	415
	Apr. 19, 1939	1.53	454		Aug. 10, 1951	1.52	478
1940					Aug. 17, 1951	1.68	586
	Feb. 15, 1940	bl.92	-	1952	Nov. 7, 1951	1.71	607
	Mar. 15, 1940	2.11	880		Dec. 21, 1951	2.18	954
	Mar. 31, 1940	1.92	728		Mar. 11, 1952	3.56	2,300
	Apr. 8, 1940	1.93	734		Apr. 5, 1952	2.58	1,300
	Sept. 1, 1940	1.89	726		Apr. 28, 1952	1.55	498
1941	Nov. 15, 1940	1.42	387		June 1, 1952	2.73	1,440
					July 10, 1952	1.44	428
1942	Mar. 22, 1942	1.46	410		Aug. 17, 1952	1.97	789
	Aug. 17, 1942	1.60	497		Sept. 1, 1952	2.19	962
	Sept. 27, 1942	2.21	964	1953	Nov. 22, 1952	2.12	908
1943	Nov. 25, 1942	2.37	1,100		Dec. 5, 1952	1.55	470
	Dec. 2, 1942	1.54	459		Dec. 11, 1952	1.86	688
	Dec. 30, 1942	2.05	829		Jan. 24, 1953	2.23	1,010
1944	Nov. 9, 1943	1.77	633		Mar. 13, 1953	1.58	488
	Apr. 24, 1944	1.65	546		Mar. 16, 1953	1.52	452
1945	Mar. 3, 1945	1.49	441		Mar. 24, 1953	1.68	556
	Mar. 6, 1945	1.55	480		Apr. 7, 1953	1.50	440
	May 18, 1945	1.44	411	1954	Dec. 14, 1953	1.60	500
	July 19, 1945	2.74	1,500		Mar. 3, 1954	1.54	464
	July 23, 1945	1.64	540	1955	Nov. 21, 1954	1.86	688
	Sept. 19, 1945	1.66	554		Aug. 13, 1955	2.90	1,720
1946	Nov. 22, 1945	2.13	925		Aug. 19, 1955	4.15	3,640
	Dec. 26, 1945	bl.87	-	1956	Oct. 15, 1955	3.78	3,010
	May 27, 1946	1.79	648		Oct. 30, 1955	2.12	908
	June 2, 1946	1.64	540		Nov. 16, 1955	1.64	528
	July 23, 1946	1.94	764		Apr. 10, 1956	1.46	416
					Apr. 30, 1956	1.46	416
1947	Mar. 14, 1947	1.88	717	1957	Dec. 16, 1956	1.45	410
	Apr. 5, 1947	2.18	969		Apr. 6, 1957	1.83	664
	May 1, 1947	1.55	480	1958	Dec. 21, 1957	2.84	1,020
	July 22, 1947	1.45	417		Dec. 26, 1957	2.29	712
1948	Nov. 8, 1947	1.71	589		Jan. 26, 1958	1.78	464
	Nov. 12, 1947	1.56	486		Feb. 28, 1958	2.53	784
	Mar. 17, 1948	1.79	648		Apr. 6, 1958	2.34	712
	May 30, 1948	1.45	417	1959	Mar. 6, 1959	1.66	535
1949	Dec. 30-31, 1948	3.16	1,950				
	Jan. 6, 1949	2.22	1,000	1960	Oct. 24, 1959	2.19	962
1950	Mar. 23, 1950	1.70	582		Jan. 3, 1960	1.57	476
					Feb. 11, 1960	1.47	416
1951	Nov. 26, 1950	1.82	684		Apr. 5, 1960	1.92	728
	Dec. 4, 1950	1.64	558		July 30, 1960	1.86	680
	Dec. 8, 1950	2.02	826		Sept. 12, 1960	2.35	1,110
	Jan. 24, 1951	1.58	517	1961	Feb. 26, 1961	2.36	1,130
	Feb. 7, 1951	1.79	663		Apr. 16, 1961	1.64	528
	Mar. 31, 1951	3.85	2,660				

b Backwater from ice.

3845. Ringwood Creek near Wanaque, N.J.

Location--Lat 41°07'36", long 74°15'52", on right bank 500 ft upstream from Wanaque Reservoir, 0.7 mile downstream from Ringwood Mill Pond, and 6½ miles north of Wanaque, Passaic County.

Drainage area--19.1 sq mi. Area of lakes, ponds, and swamps, 1.2 sq mi.

Gage--Recording gage and concrete control. Datum of gage is 302.67 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation--Defined by current-meter measurements below 240 cfs and extended above on basis of laboratory rating and approximate discharge at gage height 3.18 ft.

Bankfull stage--2.5 ft.

Remarks--Base for partial-duration series, 230 cfs.

PASSAIC RIVER BASIN

Peak stages and discharges of Ringwood Creek near Wanaque, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935a/	Jan. 10, 1935	1.51	173	1950	Mar. 23, 1950	1.90	298
1936	Mar. 12, 1936	3.40	864	1951	Nov. 25, 1950	2.30	430
	Mar. 18, 1936	2.51	479		Dec. 8, 1950	2.65	562
	Mar. 21, 1936	2.04	317		Feb. 7, 1951	1.99	326
	Apr. 6, 1936	2.10	336		Mar. 30, 1951	b3.74	1,150
1937	Dec. 20, 1936	2.58	505		Apr. 3, 1951	2.10	361
	Feb. 22, 1937	2.84	610		Apr. 13, 1951	1.73	248
1938	Nov. 13, 1937	2.77	581		Aug. 10, 1951	2.74	598
	Jan. 25, 1938	2.79	589		Aug. 17, 1951	1.86	286
	June 27, 1938	2.38	431	1952	Nov. 7, 1951	2.19	392
	July 23, 1938	1.89	272		Dec. 21, 1951	2.66	566
	Sept. 21, 1938	3.33	830		Mar. 11, 1952	3.34	868
1939	Nov. 25, 1938	2.00	305		Apr. 5, 1952	c2.84	c640
	Dec. 6, 1938	2.44	453		June 1, 1952	2.98	701
	Apr. 19, 1939	1.91	278		Aug. 17, 1952	1.96	317
1940	Mar. 15, 1940	2.18	362	1953	Sept. 1, 1952	2.41	470
	Mar. 31, 1940	2.12	343		Nov. 22, 1952	2.33	450
	Apr. 8, 1940	2.31	406		Dec. 11, 1952	1.95	325
1941	Feb. 8, 1941	1.52	176		Jan. 24, 1953	2.73	590
1942	Mar. 3, 1942	1.78	242		Mar. 13, 1953	2.18	398
	Sept. 28, 1942	2.32	410		Mar. 16, 1953	1.63	234
1943	Nov. 25, 1942	2.34	444		Mar. 24, 1953	2.19	402
	Dec. 30, 1942	2.29	426		Apr. 7, 1953	1.70	255
1944	Nov. 9, 1943	2.48	496	1954	May 10, 1954	1.47	192
	Apr. 24, 1944	1.87	289	1955	Nov. 21, 1954	1.67	246
1945	Mar. 6, 1945	1.75	254		Aug. 13, 1955	3.15	740
	July 19, 1945	b3.40	897		Aug. 19, 1955	3.61	924
	July 23, 1945	2.55	522		Aug. 21, 1955	1.94	322
	Sept. 19, 1945	1.87	289	1956	Oct. 15, 1955	-	c1,000
1946	Nov. 22, 1945	1.79	265		Oct. 30, 1955	1.97	331
	Nov. 29, 1945	1.72	246		Apr. 30, 1956	1.65	240
	Dec. 26, 1945	1.79	265		July 9, 1956	1.86	298
	May 27, 1946	1.94	310	1957	Apr. 6, 1957	2.26	426
	June 2, 1946	1.84	280	1958	Dec. 21, 1957	3.26	784
	July 23, 1946	2.26	416		Dec. 26, 1957	2.09	367
1947	Mar. 14, 1947	2.27	419		Feb. 28, 1958	2.58	538
	Apr. 5, 1947	2.41	470		Apr. 6, 1958	2.22	412
1948	Mar. 16, 1948	2.13	371	1959	Mar. 6, 1959	1.54	210
	Mar. 20, 1948	1.81	271	1960	Oct. 24, 1959	2.34	454
1949	Dec. 31, 1948	3.00	710		Jan. 3, 1960	1.64	237
	Jan. 6, 1949	2.46	488		Apr. 5, 1960	1.92	316
					July 30, 1960	2.55	528
					Sept. 12, 1960	2.75	598
				1961	Feb. 26, 1961	2.74	594

a Period Dec. 27, 1934, to Sept. 30, 1935. Maximum for year may have occurred on Oct. 7 or Dec. 2, 1934. b From floodmark. c About.

3850. Cupsaw Brook near Wanaque, N.J.

Location.--Lat 41°06'32", long 74°15'16", on left bank just upstream from Wanaque Reservoir, 0.3 mile downstream from Cupsaw Lake, and 5 miles north of Wanaque, Passaic County.

Drainage area.--4.38 sq mi. Area of lakes, ponds, and swamps, 0.3 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 304.52 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 200 cfs and extended above on basis of laboratory rating.

Remarks.--Regulation at Cupsaw Lake (capacity, 227,000,000 gal) may affect some flood peaks. Base for partial-duration series, 70 cfs.

PASSAIC RIVER BASIN

Peak stages and discharges of Cupsaw Brook near Wanaque, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935 ^a	Jan. 10, 1935	0.73	53	1947	May 26, 1947	0.97	99
					July 22, 1947	1.00	104
1936	Jan. 3, 1936	1.02	101				
	Mar. 11, 1936	2.94	536	1948	Mar. 16, 1948	1.09	120
	Mar. 18, 1936	1.23	142		Apr. 14, 1948	.79	70
	Mar. 21, 1936	.89	77		May 13, 1948	.89	85
	Apr. 6, 1936	1.20	136				
1937	Dec. 20, 1936	1.64	226	1949	Dec. 30, 1948	1.55	218
	Jan. 8, 1937	1.04	105		Jan. 6, 1949	1.18	138
	Jan. 10-11, 1937	.92	83				
	Feb. 22, 1937	2.12	329	1950	Mar. 23, 1950	1.09	118
	May 15, 1937	.85	71				
	Sept. 13, 1937	.88	76	1951	Nov. 25, 1950	1.17	134
					Dec. 4, 1950	.89	83
1938	Nov. 13, 1937	1.92	288		Dec. 8, 1950	1.60	227
	Nov. 28, 1937	1.00	97		Jan. 24, 1951	.84	75
	Jan. 25, 1938	1.66	231		Feb. 7, 1951	.93	90
	June 28, 1938	1.09	114		Mar. 30, 1951	2.64	521
	July 21, 1938	.85	71		Apr. 3, 1951	.84	75
	July 23, 1938	1.04	105		Apr. 13, 1951	.89	83
	Sept. 21, 1938	2.18	352		June 5, 1951	.88	82
					Aug. 11, 1951	1.09	118
1939	Apr. 2, 1939	.98	93				
	Apr. 19, 1939	1.05	106	1952	Nov. 19, 1951	.84	75
					Dec. 21, 1951	1.39	180
1940	Mar. 15, 1940	1.15	128		Jan. 23, 1952	.82	72
	Mar. 31, 1940	1.07	114		Mar. 11, 1952	2.28	405
	Apr. 8, 1940	1.28	154		Apr. 5, 1952	1.78	270
	May 31, 1940	1.04	108		June 1, 1952	1.92	305
					July 10, 1952	.82	72
1941	Apr. 2, 1941	.94	91		Sept. 1, 1952	1.19	138
1942	Mar. 22, 1942	.82	71	1953	Dec. 5, 1952	.91	87
	Sept. 27, 1942	1.04	108		Dec. 11, 1952	1.02	106
					Jan. 24, 1953	1.41	184
1943	Sept. 24, 1943	.76	65		Mar. 13, 1953	1.24	148
					Mar. 16, 1953	.81	71
1944	Oct. 28, 1943	.85	79		Mar. 24, 1953	.98	99
	Mar. 13, 1944	.86	81		Apr. 7, 1953	.92	88
	Apr. 25, 1944	.89	85	1954	May 10, 1954	.82	72
	May 8, 1944	.87	82				
				1955	Nov. 21, 1954	1.09	118
1945	Nov. 6, 1944	.84	77		Aug. 13, 1955	1.62	232
	July 19, 1945	1.99	326		Aug. 19, 1955	2.40	442
	July 23, 1945	2.16	373				
	Sept. 19, 1945	1.34	171	1956	Oct. 16, 1955	2.18	375
					Apr. 30, 1956	.88	82
1946	Oct. 1-2, 1945	.87	82				
	Nov. 16, 1945	.86	81	1957	Nov. 2, 1956	.98	99
	Nov. 19, 1945	.82	74		Dec. 14, 1956	.87	80
	May 27, 1946	1.06	115		Apr. 6, 1957	1.15	130
	June 2, 1946	.90	87				
	July 23, 1946	.94	94	1958	Dec. 21, 1957	1.89	298
	Sept. 24, 1946	1.21	144		Dec. 26, 1957	1.07	115
					Jan. 22, 1958	.95	94
1947	Mar. 14, 1947	1.14	130		Feb. 28, 1958	1.76	266
	Apr. 5, 1947	1.20	142		Apr. 6, 1958	1.10	120

^a Period Dec. 27, 1934, to Sept. 30, 1935.

3860. West Brook near Wanaque, N.J.

Location.--Lat 41°04'16", long 74°18'45", on right bank just upstream from Wanaque Reservoir, 2½ miles northwest of Wanaque, Passaic County.

Drainage area.--11.8 sq mi. Area of lakes, ponds, and swamps, 0.4 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 326.79 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 700 cfs and extended above by logarithmic plotting.

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series, 400 cfs.

PASSAIC RIVER BASIN

Peak stages and discharges of West Brook near Wanaque, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935a/	Jan. 10, 1935	1.68	211	1948	Nov. 12, 1947	2.75	438
1936	Jan. 3, 1936	2.95	484		Mar. 16, 1948	2.59	406
	Mar. 11, 1936	5.80	1,450	1949	Dec. 31, 1948	b2.65	388
	Mar. 18, 1936	3.41	591		Jan. 6, 1949	(c)	(c)
	Apr. 6, 1936	3.26	555	1950	Mar. 23, 1950	2.49	386
1937	Dec. 20, 1936	4.00	750	1951	Dec. 8, 1950	3.25	548
	Feb. 22, 1937	3.58	636		Mar. 30, 1951	6.6	1,900
1938	Nov. 13, 1937	4.60	897		July 27, 1951	4.2	775
	Jan. 25, 1938	4.44	855	1952	Mar. 11, 1952	4.42	835
	June 27, 1938	3.80	691		June 1, 1952	(c)	(c)
	Sept. 21, 1938	4.70	924	1953	Nov. 22, 1952	3.17	529
1939	Dec. 6, 1938	3.18	543		Jan. 24, 1953	3.68	647
1940	Mar. 15, 1940	4.02	746		Mar. 13, 1953	2.56	400
	Mar. 31, 1940	2.70	430	1954	Dec. 14, 1953	1.72	238
	Apr. 8, 1940	2.80	450	1955	Nov. 21, 1954	3.56	619
1941	Feb. 7, 1941	1.58	191		Aug. 19, 1955	5.73	1,200
1942	Sept. 27, 1942	3.46	596	1956	Oct. 15, 1955	5.68	1,180
1943	Nov. 25, 1942	3.44	591		Oct. 30, 1955	3.22	541
	Dec. 30, 1942	3.15	525	1957	Apr. 6, 1957	2.56	400
1944	Nov. 9, 1943	2.71	430	1958	Dec. 20, 1957	3.80	676
1945	July 19, 1945	3.82	681		Feb. 28, 1958	2.74	436
	Sept. 19, 1945	2.60	408	1959	Mar. 6, 1959	2.52	392
1946	Nov. 22, 1945	3.36	573	1960	Oct. 24, 1959	3.12	518
	May 27, 1946	3.06	505		July 30, 1960	-	650
1947	Mar. 14, 1947	2.8	449		Sept. 12, 1960	3.87	693
	Apr. 5, 1947	3.42	587	1961	Feb. 25, 1961	3.10	514
1948	Nov. 8, 1947	4.43	838				

a Period Jan. 1 to Sept. 30, 1935.

b Occurred Dec. 30, backwater from ice.

c Unknown, may have been maximum for year.

3865. Blue Mine Brook near Wanaque, N.J.

Location.--Lat 41°03'04", long 74°19'10", on left bank 0.2 mile upstream from Wanaque Reservoir, 1.8 miles northwest of Wanaque, Passaic County.

Drainage area.--1.71 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 319.94 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 80 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 60 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935a/	Jan. 10, 1935	0.52	17	1938	July 23, 1938	1.10	81
1936	Mar. 12, 1936	1.63	219		Sept. 21, 1938	1.66	229
	Mar. 18, 1936	.98	61	1939	Dec. 6, 1938	1.04	71
	Apr. 6, 1936	1.15	91	1940	Mar. 15, 1940	1.50	178
1937	Dec. 20, 1936	1.30	124	1941	Feb. 7, 1941	.77	36
	Feb. 22, 1937	1.05	72	1942	Sept. 27, 1942	1.13	98
	Aug. 23, 1937	1.01	66	1943	Nov. 25, 1942	1.11	94
1938	Nov. 13, 1937	1.56	197		Dec. 30, 1942	1.06	85
	Jan. 25, 1938	1.38	145				
	June 27, 1938	1.22	106				

a Period Dec. 27, 1934, to Sept. 30, 1935; maximum for year probably occurred about Dec. 2, 1934.

PASSAIC RIVER BASIN

Peak stages and discharges of Blue Mine Brook near Wanaque, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Nov. 9, 1943	1.05	83	1952	Nov. 7, 1951	1.19	111
1945	Jan. 1, 1945	.94	64		Dec. 21, 1951	1.24	122
	July 19, 1945	1.09	90		Mar. 11, 1952	1.71	254
	July 23, 1945	1.14	100		Apr. 5, 1952	1.27	129
	Sept. 18, 1945	.94	64		June 1, 1952	1.70	251
					Sept. 1, 1952	1.34	146
1946	Nov. 22, 1945	1.06	85	1953	Nov. 22, 1952	1.06	85
	Dec. 26, 1945	1.11	94		Dec. 5, 1952	.98	71
	May 27, 1946	.98	71		Jan. 24, 1953	1.24	122
	Sept. 24, 1946	1.28	131		Mar. 13, 1953	1.42	167
1947	Mar. 14, 1947	.97	69		Apr. 7, 1953	.96	68
	Apr. 5, 1947	1.19	111	1954	Dec. 14, 1953	.81	46
1948	Nov. 8, 1947	1.32	141	1955	Nov. 21, 1954	1.04	81
	Nov. 12, 1947	1.00	74		Aug. 13, 1955	1.29	134
1949	Dec. 30, 1948	1.28	131		Aug. 19, 1955	1.38	156
	Jan. 6, 1949	.93	63	1956	Oct. 14, 1955	1.21	115
1950	Mar. 23, 1950	.84	50		Oct. 15, 1955	1.11	94
					Oct. 30, 1955	1.09	90
1951	Nov. 25, 1950	1.32	141	1957	Apr. 6, 1957	.88	55
	Dec. 8, 1950	.95	66				
	Mar. 30, 1951	2.15	458	1958	Dec. 21, 1957	1.66	238
	July 27, 1951	1.13	98		Feb. 28, 1958	1.23	120

3870. Wanaque River at Wanaque, N.J.

Location.--Lat 41°02'33", long 74°17'36", on left bank 750 ft downstream from Raymond Dam in Wanaque, Passaic County, 50 ft upstream from bridge on State Highway 511.

Drainage area.--90.4 sq mi (excludes above 4 sq mi on Post Brook above diversion to Wanaque Reservoir). Area of lakes, ponds, and swamps, 9.0 sq mi.

Gage.--Nonrecording prior to Apr. 1, 1922; recording thereafter. Prior to Apr. 1, 1922, at site 200 ft downstream at different datum, and Apr. 1, 1922, to Mar. 14, 1931, at site 400 ft downstream at present datum. Datum of gage is 210.00 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Prior to Mar. 14, 1931, defined by current-meter measurements. Since 1931, defined by current-meter measurements below 4,300 cfs and extended above by logarithmic plotting; shifts in relation occur.

Remarks.--Regulation by Greenwood Lake and since 1928 by Wanaque Reservoir affects flood peaks. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	Mar. 27, 1913	a6.73	a1,340	1933	Apr. 18, 1933	5.85	1,830
1914	Mar. 28, 1914	a6.80	a1,380	1934	Apr. 2, 1934	3.33	628
1915	Jan. 13, 1915	a7.45	a1,610	1935	Dec. 1, 1934	3.79	795
1919	July 23, 1919	a7.55	a1,690	1936	Mar. 19, 1936	6.07	1,940
1920	Mar. 14, 1920	a7.10	a1,490	1937	May 15, 1937	3.63	778
1921	Oct. 1, 1920	7.50	1,650	1938	Jan. 25, 1938	6.17	2,020
1922	Mar. 8, 1922	7.65	1,690	1939	Apr. 20, 1939	4.05	920
1923	Mar. 17, 1923	4.17	1,220	1940	June 2, 1940	3.72	802
1924	Apr. 7, 1924	8.01	5,050	1941	Mar. 30, 1941	2.52	231
1925	Feb. 12, 1925	5.57	2,040	1942	Apr. 2, 1942	1.65	46
1926	Nov. 13, 1925	4.00	1,030	1943	Mar. 18-20, 1943	2.86	376
1927	Sept. 2, 1927	6.90	3,390	1944	June 19, 1944	1.59	40
1928	Nov. 4, 1927	4.91	1,610	1945	July 23, 1945	6.37	1,690
1929	Mar. 6, 1929	3.78	1,040	1946	June 3, 1946	4.41	898
1930	Mar. 9, 1930	3.36	855	1947	May 30, 1947	2.97	415
1931	June 17, 1931	4.69	1,210	1948	May 14, 1948	3.60	665
1932	Apr. 1, 1932	3.91	835	1949	July 30, 1949	1.58	38

a Daily mean.

PASSAIC RIVER BASIN

Peak stages and discharges of Wanaque River at Wanaque, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	June 27, Aug. 29, 1950	1.57	37	1956	Oct. 17, 1955	5.96	1,740
				1957	Apr. 21, 1957	2.36	144
1951	Mar. 31, 1951	9.12	8,470	1958	Apr. 7, 1958	5.62	1,480
1952	June 1, 1952	7.62	3,940	1959	Aug. 31, 1959	1.57	35
1953	Jan. 25, 1953	6.00	1,770	1960	Apr. 5, 1960	5.67	1,520
1954	July 25, 1954	1.59	38				
1955	Aug. 19, 1955	1.77	53	1961	Apr. 17, 1961	4.44	887

3875. Ramapo River near Mahwah, N.J.

Location.--Lat 41°05'51", long 74°09'48", on left bank 350 ft downstream from State Highway 17, 0.6 mile downstream from Mahwah River, and 1.0 mile west of Mahwah, Bergen County.

Drainage area.--118 sq mi. Area of lakes, ponds, and swamps, 5.4 sq mi.

Gage.--Nonrecording prior to July 31, 1914; recording since Sept. 1, 1922. At site on former bridge 250 ft downstream at different datum prior to July 31, 1914, and just downstream from former bridge at present datum from Sept. 1, 1922, to Dec. 23, 1936. Datum of gage is 253.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--For 1903-14, defined by current-meter measurements below 1,400 cfs and extended above by logarithmic plotting and shape of subsequent relations. For 1923-61, defined by current-meter measurements below 6,500 cfs and extended above by logarithmic plotting; shifts in relation occur.

Bankfull stage.--7 ft.

Remarks.--Gage-height record 1903-14, obtained by U.S. Weather Bureau. Only annual peaks as determined from graph of once-daily gage readings are shown 1903-14. Base for partial-duration series, 1,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903a/	Apr. 15, 1903	7.4	3,360	1931	Mar. 9, 1931	5.65	1,040
1904	Oct. 9, 1903	11.0	12,400				
1905	Oct. 22, 1904	7.0	2,300	1932	Mar. 28, 1932	6.30	1,420
1906	Mar. 4, 1906	6.95	2,220	1933	Nov. 2, 1932	6.40	1,490
1907	Mar. 18, 1907	7.30	2,810		Nov. 10-11, 1932	6.76	1,740
1908	Oct. 30, 1907	7.50	3,250		Nov. 19, 1932	7.75	3,720
1909	Feb. 20, 1909	7.60	3,450		Aug. 24, 1933	8.40	5,650
1910	Jan. 22, 1910	8.40	5,200		Sept. 17, 1933	6.33	1,500
1911	Aug. 29, 1911	7.70	3,650	1934	Mar. 5, 1934	6.94	1,930
1912	Mar. 13, 1912	7.60	3,450		Apr. 1, 1934	6.85	1,860
1913	Mar. 27, 1913	7.30	2,810	1935	Dec. 1, 1934	6.18	1,400
1914	Oct. 25, 1913	7.50	3,250				
1923	Mar. 17, 1923	6.47	1,520	1936	Mar. 12, 1936	9.00	7,780
1924	Oct. 25, 1923	6.45	1,510		Mar. 19, 1936	7.64	3,320
	Dec. 7, 1923	6.35	1,450		Apr. 6, 1936	7.09	2,000
	Jan. 17, 1924	6.35	1,450	1937	Dec. 20, 1936	7.69	3,450
	Apr. 7, 1924	7.90	4,150		Feb. 22, 1937	8.05	2,500
	May 13, 1924	6.60	1,590		May 15, 1937	6.94	1,450
	Sept. 30, 1924	6.83	1,730	1938	Nov. 14, 1937	7.92	2,340
1925	Feb. 12, 1925	7.22	2,410		Nov. 29, 1937	6.88	1,450
1926	Feb. 26, 1926	6.40	1,490		Jan. 25, 1938	8.15	2,620
1927	Sept. 2, 1927	8.23	5,140		June 28, 1938	7.21	1,710
1928	Oct. 19, 1927	6.92	1,830		July 23, 1938	7.83	2,240
	Nov. 4, 1927	7.50	3,100		Sept. 22, 1938	10.40	6,720
	Dec. 8, 1927	6.59	1,600	1939	Dec. 6, 1938	8.06	2,480
1929	Mar. 6, 1929	6.47	1,560		Apr. 20, 1939	7.24	1,740
1930	Mar. 9, 1930	6.27	1,390	1940	Mar. 15, 1940	7.50	1,960
a Period Feb. 10 to Sept. 30, 1903; maximum for year probably occurred in December 1902.					Mar. 31, 1940	7.58	2,030
					Apr. 9, 1940	7.58	2,030
					Apr. 22, 1940	6.87	1,480

PASSAIC RIVER BASIN

Peak stages and discharges of Ramapo River near Mahwah, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	May 31, 1940	7.07	1,620	1952	Apr. 5, 1952	8.09	2,550
1941	Feb. 8, 1941	6.99	1,560		Apr. 28, 1952	7.02	1,530
1942	Mar. 3, 1942	6.85	1,480		June 2, 1952	9.05	3,940
	Aug. 18, 1942	7.24	1,590		Aug. 17, 1952	7.11	1,600
	Sept. 28, 1942	7.02	1,580		Sept. 2, 1952	7.48	1,880
1943	Nov. 26, 1942	7.28	1,780	1953	Nov. 23, 1952	8.00	2,440
	Dec. 31, 1942	7.64	2,090		Dec. 12, 1952	7.98	2,420
1944	Oct. 27, 1943	7.35	1,760		Jan. 25, 1953	8.07	2,520
	Nov. 9, 1943	7.48	1,880		Mar. 13, 1953	7.85	2,260
	Apr. 25, 1944	6.87	1,410		Mar. 25, 1953	7.28	1,720
1945	July 19, 1945	8.67	3,350	1954	Dec. 15, 1953	6.49	1,260
	July 23, 1945	9.25	4,330	1955	Nov. 21, 1954	6.91	1,470
	Sept. 19, 1945	7.10	1,580		Aug. 13, 1955	9.53	4,740
1946	Nov. 30, 1945	6.98	1,510		Aug. 19, 1955	11.35	8,580
	Dec. 26, 1945	7.07	1,560	1956	Oct. 16, 1955	12.53	10,900
	May 28, 1946	7.52	1,920		Oct. 31, 1955	7.56	1,640
1947	Mar. 15, 1947	7.65	2,050	1957	Apr. 6, 1957	7.83	1,950
	Apr. 6, 1947	7.34	1,760	1958	Dec. 21, 1957	9.33	3,800
1948	Mar. 17, 1948	7.42	1,830		Dec. 27, 1957	7.93	2,040
1949	Dec. 31, 1948	9.18	4,200		Jan. 26, 1958	7.80	1,920
	Jan. 6, 1949	7.85	2,260		Feb. 28, 1958	8.39	2,510
1950	Mar. 23, 1950	6.54	1,290		Apr. 7, 1958	8.14	2,240
1951	Nov. 26, 1950	7.43	1,840	1959	Mar. 6, 1959	7.43	1,620
	Dec. 8, 1950	7.86	2,280	1960	Jan. 4, 1960	7.20	1,470
	Mar. 31, 1951	10.67	6,940		Apr. 1, 1960	7.51	1,690
	Apr. 3, 1951	7.16	1,630		Apr. 5, 1960	8.07	2,170
1952	Nov. 8, 1951	6.92	1,470		July 31, 1960	7.93	2,040
	Dec. 21, 1951	8.14	2,610		Aug. 20, 1960	9.10	3,450
	Mar. 12, 1952	9.18	4,150		Sept. 13, 1960	8.48	2,620
				1961	Feb. 26, 1961	8.87	3,120
					Apr. 17, 1961	7.11	1,420

3880. Ramapo River at Pompton Lakes, N.J.

Location.--Lat 40°59'33", long 74°16'44", on right end of dam at pumping station in borough of Pompton Lakes, Passaic County, 2.0 miles upstream from mouth.

Drainage area.--160 sq mi. Area of lakes, ponds, and swamps, 7.7 sq mi.

Gage.--Recording gage and concrete dam. Datum of gage is 201.08 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Prior to August 1939 discharge was obtained by adding flow through turbines and through waste gates to flow over spillway. Powerplant not operated since August 1939. Alterations to gage well in July 1938 resulted in changed stage-discharge relation for spillway. Prior to July 1938, spillway rating defined by current-meter measurements below 2,000 cfs and extended above by weir formula. Since July 1938, spillway rating defined by current-meter measurements.

Remarks.--Prior to August 1939 minor effect on peak flows by powerplant operations. Base for partial-duration series, 1,600 cfs. Only annual peaks are shown prior to 1940, except 1938 water year.

PASSAIC RIVER BASIN

Peak stages and discharges of Ramapo River at Pompton Lakes, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 7, 1922	2.37	5,900	1947	May 26, 1947	1.33	1,780
1923	Mar. 18, 1923	1.37	2,270				
1924	Apr. 7, 1924	2.58	6,800	1948	Nov. 12, 1947	1.29	1,690
1925	Feb. 12, 1925	1.88	3,200		Mar. 18, 1948	1.58	2,360
1926	Feb. 27, 1926	1.28	2,020	1949	Dec. 31, 1948	2.65	5,520
1927	Sept. 2, 1927	2.68	7,220		June 6, 1949	1.82	2,980
1928	Nov. 4, 1927	1.90	3,930				
1929	Mar. 6, 1929	1.24	2,040	1950	Mar. 24, 1950	1.32	1,780
1930	Mar. 9, 1930	1.13	1,720				
				1951	Nov. 26, 1950	1.50	2,180
1931	May 9, 1931	.97	1,420		Dec. 5, 1950	1.31	1,740
1932	Mar. 29, 1932	1.25	1,870		Dec. 8, 1950	1.86	3,080
1933	Aug. 24, 1933	2.33	5,680		Feb. 8, 1951	1.26	1,640
1934	Mar. 6, 1934	1.44	2,650		Mar. 31, 1951	3.55	8,520
1935	Dec. 1, 1934	1.14	1,840				
				1952	Nov. 7, 1951	1.47	1,900
1936	Mar. 12, 1936	3.56	12,300		Dec. 22, 1951	1.93	3,000
1937	Feb. 22, 1937	1.78	3,510		Mar. 12, 1952	2.50	4,680
					Apr. 6, 1952	2.00	3,190
1938	Nov. 14, 1937	1.67	3,140		Apr. 29, 1952	1.42	1,790
	Nov. 29, 1937	1.19	1,870		June 2, 1952	2.53	4,780
	Jan. 26, 1938	1.81	3,620		Aug. 17, 1952	1.39	1,730
	June 28, 1938	1.33	2,100		Sept. 2, 1952	1.51	1,980
	July 23, 1938	1.76	2,820	1953	Nov. 23, 1952	1.74	2,510
	Sept. 22, 1938	3.13	6,620		Dec. 12, 1952	1.76	2,560
1939	Dec. 6, 1938	1.93	3,260		Jan. 25, 1953	2.00	3,190
					Mar. 14, 1953	1.90	2,920
1940	Mar. 15, 1940	1.72	2,700		Mar. 25, 1953	1.50	1,960
	Apr. 1, 1940	1.67	2,570		Apr. 8, 1953	1.35	1,650
	Apr. 9, 1940	1.81	2,940	1954	Dec. 15, 1953	1.17	1,360
	Apr. 22, 1940	1.41	1,950				
	June 1, 1940	1.41	1,950	1955	Nov. 21, 1954	1.52	2,100
1941	Feb. 8, 1941	1.37	1,860		Aug. 14, 1955	2.41	4,480
					Aug. 19, 1955	3.58	8,570
1942	Mar. 4, 1942	1.31	1,720	1956	Oct. 16, 1955	4.40	12,000
	Mar. 22, 1942	1.28	1,670		Oct. 31, 1955	1.48	2,010
	Aug. 18, 1942	1.41	1,960	1957	Apr. 6, 1957	1.71	2,540
	Sept. 28, 1942	1.26	1,630				
1943	Nov. 26, 1942	1.43	2,010	1958	Dec. 21, 1957	2.50	4,750
	Dec. 31, 1942	1.73	2,740		Dec. 27, 1957	1.60	2,280
1944	Oct. 27, 1943	1.30	1,710		Jan. 26, 1958	1.51	2,070
	Nov. 10, 1943	1.51	2,200		Feb. 28, 1958	2.09	3,550
	Apr. 25, 1944	1.43	2,010		Apr. 7, 1958	1.81	2,800
1945	Mar. 7, 1945	1.29	1,690	1959	Mar. 7, 1959	1.31	1,640
	July 20, 1945	2.14	3,890				
	July 23, 1945	3.45	8,560	1960	Jan. 4, 1960	1.30	1,620
	Sept. 19, 1945	1.43	2,020		Apr. 1, 1960	1.44	1,920
1946	Nov. 30, 1945	1.36	1,860		Apr. 6, 1960	1.70	2,520
	Dec. 26, 1945	1.43	1,990		July 31, 1960	1.51	2,070
	May 28, 1946	1.64	2,520		Aug. 20, 1960	2.09	3,550
	June 3, 1946	1.34	1,810		Sept. 13, 1960	1.86	2,930
1947	Mar. 15, 1947	1.65	2,540	1961	Feb. 26, 1961	2.23	3,950
	Apr. 6, 1947	1.61	2,440		Apr. 17, 1961	1.37	1,770

PASSAIC RIVER BASIN

3885. Pompton River at Pompton Plains, N.J.

Location.--Lat 40°56'46", long 74°16'44", 250 ft upstream from State Highway 23, three-quarters of a mile east of Pequannock, Morris County, 9,300 ft downstream from two gages used to determine low-flow records, and $4\frac{1}{4}$ miles upstream from mouth.

Drainage area.--358 sq mi. Area of lakes, ponds, and swamps, 22.6 sq mi.

Gage.--Nonrecording 1903-4; recording since Nov. 4, 1940. At site about 9,000 ft upstream at different datum 1903-4. Datum of gage is 160.00 ft above mean sea level, datum of 1929. Two additional recorders 9,300 ft upstream are used to obtain low-flow records.

Stage-discharge relation.--For 1903-4, poorly defined by current-meter measurements and computation of flow over dam based on laboratory experiments. Since November 1940, defined by current-meter measurements below 13,000 cfs and extended above by logarithmic plotting; shifts in relation occur.

Remarks.--Regulation by Oak Ridge, Canistear, Clinton, Echo Lake, and Wanaque Reservoirs (combined capacity, 46,273,000,000 gal) may affect peak flows. Base for partial-duration series, 2,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903a/	Apr. 16, 1903	b6.7	b4,300	1952	Jan. 27, 1952	9.01	2,700
1904	Oct. 10, 1903	b14.3	b28,340		Feb. 5, 1952	8.74	2,570
1905c/	Oct. 22, 1904	b5.7	b2,330		Mar. 12, 1952	15.00	7,890
					Mar. 24, 1952	8.24	2,330
1940d/	June 2, 1940	-	e3,100		Apr. 6, 1952	13.79	6,230
1941	Feb. 8, 1941	8.50	2,440		Apr. 16, 1952	8.20	2,310
1942	Mar. 3, 1942	8.26	2,340		Apr. 29, 1952	10.87	3,590
	Mar. 22, 1942	8.50	2,460		May 26, 1952	8.92	2,580
	Aug. 18, 1942	9.64	2,840		June 2, 1952	16.37	9,790
	Sept. 28, 1942	9.28	2,840		Aug. 17, 1952	8.66	2,520
1943	Nov. 26, 1942	10.61	3,600	1953	Sept. 2, 1952	10.63	3,440
	Dec. 31, 1942	11.51	4,310		Nov. 23, 1952	11.11	3,840
1944	Nov. 10, 1943	8.98	2,710		Dec. 6, 1952	9.03	2,760
	Apr. 25, 1944	9.84	3,100		Dec. 12, 1952	10.53	3,530
1945	Mar. 7, 1945	8.74	2,420		Jan. 25, 1953	13.62	5,980
	May 5, 1945	8.48	2,370		Mar. 14, 1953	12.03	4,360
	July 20, 1945	13.60	5,970		Mar. 25, 1953	10.61	3,580
	July 23, 1945	16.29	9,690		Apr. 8, 1953	11.00	3,780
	Sept. 19, 1945	9.27	2,910		Apr. 14, 1953	8.60	2,550
1946	Nov. 30, 1945	10.50	3,360	1954	Dec. 15, 1953	7.01	1,790
	Dec. 27, 1945	10.40	3,300	1955	Nov. 21, 1954	9.15	3,480
	Jan. 8, 1946	8.96	2,560		Aug. 14, 1955	11.83	6,310
	May 28, 1946	10.86	3,590		Aug. 20, 1955	15.69	12,900
	June 3, 1946	10.71	3,500	1956	Oct. 16, 1955	17.06	15,800
	July 23, 1946	8.61	2,400		Oct. 31, 1955	10.57	4,630
	Sept. 24, 1946	9.24	2,690		Nov. 17, 1955	8.29	2,930
1947	Mar. 15, 1947	10.38	3,290		Apr. 8, 1956	8.20	2,880
	Apr. 6, 1947	11.0	3,750		Apr. 17, 1956	7.52	2,470
	May 26, 1947	9.21	2,670		May 1, 1956	8.12	2,830
1948	Nov. 8, 1947	8.28	2,250	1957	Apr. 6, 1957	9.99	4,050
	Nov. 12, 1947	8.76	2,490	1958	Dec. 21, 1957	12.61	6,650
	Mar. 17-18, 1948	10.02	3,100		Dec. 27, 1957	8.92	3,180
	May 14, 1948	9.34	2,690		Jan. 26, 1958	8.19	2,740
1949	Dec. 31, 1948	14.14	6,780		Feb. 28, 1958	11.43	5,140
	Jan. 6, 1949	11.18	3,800		Mar. 4, 1958	8.21	2,760
1950	Mar. 23, 1950	8.65	2,480		Apr. 1, 1958	8.29	2,800
1951	Nov. 26, 1950	10.00	3,080		Apr. 7, 1958	12.07	5,940
	Dec. 8, 1950	11.72	4,180		Apr. 12, 1958	9.02	3,240
	Feb. 8, 1951	8.55	2,380		May 8, 1958	8.39	2,860
	Feb. 22, 1951	9.92	3,030	1959	Mar. 7, 1959	7.32	2,260
	Mar. 20, 1951	8.65	2,420	1960	Apr. 1, 1960	8.37	2,850
	Mar. 31, 1951	18.75	13,100		Apr. 6, 1960	11.93	5,740
1952	Nov. 7, 1951	10.31	3,250		July 31, 1960	7.23	2,210
	Dec. 22, 1951	31.06	5,340		Aug. 20, 1960	9.98	3,850
	Jan. 23, 1952	8.21	2,290		Sept. 13, 1960	11.37	5,070
				1961	Feb. 26, 1961	11.55	5,240
					Apr. 17, 1961	9.65	3,760

a Period Mar. 7 to Sept. 30, 1903. b Maximum observed. c Period Oct. 1 to Dec. 31, 1904. d Period May 21 to Sept. 30, 1940. e Obtained from two upstream gages.

PASSAIC RIVER BASIN

3895. Passaic River at Little Falls, N.J.
(Published as "at Paterson, N.J." prior to October 1955)

Location.--Lat 40°53'05", long 74°13'35", on left bank 0.6 mile downstream from Beatties Dam in Little Falls, Passaic County, and 1 mile upstream from Peckman River. From 1898 to 1955, lat 40°54'50", long 74°10'51", on right bank 3 ft upstream from Spruce Street Bridge in Paterson, Passaic County, about 250 ft upstream from dam at hydroelectric plant of Plant Management Commission, and 500 ft upstream from Passaic Falls.

Drainage area.--762 sq mi. Area of lakes, ponds, and swamps, 67.1 sq mi. At site used prior to October 1955, drainage area was 785 sq mi.

Gage.--Nonrecording prior to Jan. 8, 1933; recording thereafter. Prior to Sept. 30, 1955, at site 3.7 miles upstream at mean sea level datum (New Jersey Geological Survey bench mark). Datum of present gage is 120.00 ft above mean sea level (Passaic Valley Water Commission bench mark).

Stage-discharge relation.--Prior to October 1955, discharge was sum of flow over dam computed from theoretical rating checked by current-meter measurements, computed flow through powerplant, metered flow through Dyers' pipe (prior to 1931), and estimated flow through raceway. Since October 1955, stage-discharge relation defined by current-meter measurements.

Bankfull stage.--5 ft.

Remarks.--Discharge records provided by Society for Establishing Useful Manufactures prior to 1933. Regulation by reservoirs in Rockaway, Pequannock, and Wanaque River basins affects flood flow. Discharge at site used prior to 1955 is considered equivalent to discharge at present site. Only maximum daily discharges are shown prior to 1933 and only annual peaks are shown 1933-45. Base for partial-duration series, 4,500 cfs.

Peak stages and discharges a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1898	Feb. 22, 1898	-	9,500	1934	Apr. 2, 1934	118.03	5,660
1899	Mar. 6, 1899	-	7,830	1935	Dec. 2, 1934	117.34	3,950
1900	Feb. 14, 1900	-	9,430				
				1936	Mar. 13, 1936	121.04	19,200
1901	Apr. 23, 1901	-	9,270	1937	Feb. 23, 1937	117.96	5,400
1902	Mar. 2, 1902	-	21,400	1938	Sept. 23, 1938	119.22	9,350
1903	Dec. 23, 1902	-	11,000	1939	Dec. 7, 1938	118.07	5,670
1904	Oct. 10, 1903	-	28,000	1940	Apr. 9, 10, 1940	117.92	5,620
1905	Mar. 22, 1905	-	8,760				
				1941	Feb. 8, 1941	117.23	5,070
1906	Mar. 5, 1906	-	6,110	1942	Aug. 18, 1942	118.46	7,050
1907	Mar. 19, 1907	-	8,100	1943	Jan. 1, 1943	118.47	7,490
1908	Nov. 8, 1907	-	9,190	1944	Apr. 25, 26, 1944	117.70	5,080
1909	Feb. 25, 1909	-	6,490	1945	July 23, 1945	112.05	19,500
1910	Apr. 27, 1910	-	8,980				
				1946	Nov. 30, 1945	117.85	5,080
1911	Apr. 6, 1911	-	3,370		Dec. 27, 1945	117.99	7,090
1912	Mar. 16, 17, 1912	-	10,400		May 29, 1946	117.94	5,390
1913	Mar. 29, 1913	-	7,450		June 3, 1946	117.85	5,180
1914	Mar. 29, 1914	-	7,980				
1915	Jan. 14, 1915	-	7,800	1947	Mar. 15, 1947	117.67	4,600
					Apr. 6, 1947	117.90	5,490
1916	Apr. 1, 1916	-	6,130				
1917	Mar. 28, 1917	-	4,530	1948	Nov. 8, 1947	118.08	5,220
1918	Feb. 28, 1918	-	6,490		Nov. 13, 1947	117.87	5,030
1919	July 24, 1919	-	8,630		Mar. 22, 1948	117.11	4,780
1920	Mar. 18, 1920	-	11,600		May 17, 1948	117.58	4,920
1921	Mar. 4, 1921	-	6,244	1949	Jan. 1, 1949	118.97	8,960
1922	Mar. 9, 1922	-	6,563		Jan. 7, 1949	118.53	7,570
1923	Mar. 18, 1923	-	7,675				
1924	Apr. 8, 1924	-	10,787	1950	Mar. 24, 1950	117.32	4,320
1925	Feb. 16, 1925	-	6,036				
				1951	Dec. 9, 1950	117.96	6,480
1926	Feb. 26, 1926	-	5,519		Feb. 23, 1951	117.65	4,600
1927	Sept. 3, 1927	-	8,707		Apr. 1, 1951	120.17	12,400
1928	Oct. 21, 1927	-	5,965				
1929	Mar. 7, 1929	-	5,116	1952	Nov. 7, 1951	117.81	4,800
1930	Mar. 9, 1930	-	3,614		Dec. 23, 1951	118.36	6,980
					Jan. 28, 29, 1952	117.65	5,260
1931	June 18, 1931	-	3,953		Feb. 5, 1952	117.36	4,520
1932	Apr. 2, 1932	-	4,650		Mar. 13, 1952	119.02	8,800
1933	Nov. 21, 1932	119.0	8,480		Apr. 7, 1952	118.31	6,940

a Discharges prior to 1933 are maximum daily means.

b Occurred Mar. 15-16, 1940.

c Occurred Apr. 7, 1941.

PASSAIC RIVER BASIN

Peak stages and discharges of Passaic River at Little Falls, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 30, 1952	117.87	5,700	1957	Apr. 9, 1957	6.23	5,270
	June 3, 1952	119.92	12,000	1958	Dec. 22, 1957	6.65	5,970
1953	Nov. 23, 1952	117.95	4,990		Dec. 27, 1957	5.92	4,770
	Dec. 13, 1952	117.80	4,920		Jan. 27, 1958	5.74	4,520
	Jan. 26, 1953	118.69	7,430		Mar. 1, 1958	6.45	5,620
	Mar. 17, 1953	118.58	7,070		Apr. 8, 1958	6.85	6,330
	Mar. 26, 27, 1953	118.11	5,790		May 8, 1958	5.74	4,520
	Apr. 11, 1953	118.13	5,810	1959	Mar. 7, 1959	5.00	3,600
1954	May 11, 1954	116.94	2,970		Apr. 7, 1960	7.15	7,140
1955	Nov. 22, 1954	117.73	4,580	1960	Sept. 14, 1960	6.15	5,340
	Aug. 14, 1955	117.98	5,470		Feb. 27, 1961	7.40	7,610
	Aug. 20, 1955	119.38	9,850	1961	Apr. 17, 1961	6.56	6,060
1956	Oct. 18, 1955	9.45	11,600				

3905. Saddle River at Ridgewood, N.J.

Location.--Lat 40°59'05", long 74°05'30", on left bank 15 ft upstream from bridge on State Highway 17 at Ridgewood, Bergen County, and 2¼ miles upstream from Hohokus Brook.

Drainage area.--21.6 sq mi. Area of lakes, ponds, and swamps, 1.0 sq mi.

Gage.--Recording. Datum of gage is 71.74 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above by logarithmic plotting; shifts in relation occur.

Remarks.--Base for partial-duration series, 380 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Aug. 13, 1955	7.80	1,120	1958	Jan. 26, 1958	6.16	400
	Aug. 19, 1955	8.88	1,510		Feb. 28, 1958	8.04	922
	Aug. 22, 1955	5.67	478		Apr. 6, 1958	6.92	595
1956	Oct. 14, 1955	5.69	482	1959	Nov. 29, 1958	6.32	502
	Oct. 16, 1955	7.25	925		Mar. 6, 1959	6.33	505
	Oct. 30, 1955	5.65	472	1960	Jan. 3, 1960	5.46	395
	Sept. 6, 1956	5.26	377		July 30, 1960	6.04	572
1957	Nov. 2, 1956	5.75	498		Aug. 19, 1960	7.22	916
	Apr. 6, 1957	5.52	440		Sept. 12, 1960	7.26	730
1958	Dec. 21, 1957	6.48	480	1961	Feb. 26, 1961	6.54	709
	Jan. 22, 1958	6.80	560		Apr. 16, 1961	5.97	542

PASSAIC RIVER BASIN

3910. Hohokus Brook at Hohokus, N.J.

Location.--Lat 40°59'52", long 74°06'48", on left bank 500 ft upstream from Maple Avenue Bridge in Hohokus Borough, Bergen County, and 3.5 miles up from Saddle River.

Drainage area.--16.4 sq mi. Area of lakes, ponds, and swamps, 0.9 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 120.09 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 750 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 450 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954a/	Sept. 11, 1954	3.08	854	1958	Jan. 22, 1958	2.64	518
1955	Nov. 21, 1954	2.60	490		Feb. 28, 1958	3.24	996
	Aug. 13, 1955	3.30	1,050		Apr. 6, 1958	2.64	518
	Aug. 19, 1955	4.50	2,350	1959	Mar. 6, 1959	2.58	476
1956	Oct. 15, 1955	2.90	710	1960	July 30, 1960	2.95	750
	Oct. 30, 1955	2.62	504		Aug. 19, 1960	2.69	553
	Sept. 6, 1956	2.63	511		Sept. 12, 1960	2.68	546
1957	Nov. 2, 1956	2.71	567	1961	Feb. 25, 1961	2.66	532
1958	Dec. 21, 1957	2.61	497		Apr. 16, 1961	2.58	476
	Dec. 26, 1957	2.56	462		July 20, 1961	2.95	750

a Period Apr. 1 to Sept. 30.

3915. Saddle River at Lodi, N.J.

Location.--Lat 40°53'25", long 74°04'51", on left bank 560 ft upstream from Outwater Lane Bridge in Lodi, Bergen County, and 3.2 miles upstream from mouth.

Drainage area.--54.6 sq mi. Area of lakes, ponds, and swamps, 2.2 sq mi.

Gage.--Recording. At site 560 ft downstream at datum 2.54 ft lower, prior to Nov. 2, 1938. Datum of gage is 25.00 ft above mean sea level, datum of 1929. Concrete control since Nov. 2, 1938.

Stage-discharge relation.--Prior to Nov. 2, 1938, defined by current-meter measurements below 980 cfs and extended above on basis of shape of subsequent rating; shifts in relation occurred. Since 1938, defined by current-meter measurements below 2,600 cfs and extended above on basis of slope-area measurement of 3,480 cfs.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Jan. 17, 1924	4.10	653	1928	July 7, 1928	4.83	829
	Apr. 7, 1924	5.44	1,280	1929	Feb. 8, 1929	5.00	903
	Apr. 19, 1924	5.04	1,080				
	May 10, 1924	4.30	735	1930	Apr. 8, 1930	3.66	418
	May 13, 1924	4.24	711				
1925	Feb. 12, 1925	4.94	980	1931	Apr. 24, 1931	4.08	549
	Mar. 2, 1925	4.75	897	1932	Mar. 29, 1932	4.50	686
1926	Feb. 26, 1926	4.38	741	1933	Nov. 20, 1932	5.30	1,320
	Mar. 8, 1926	4.35	727		Apr. 13, 1933	4.00	671
1927	July 24, 1927	4.20	616		Apr. 18, 1933	4.55	939
	Sept. 2, 1927	6.82	1,630		July 2, 1933	4.05	694
					Aug. 24, 1933	5.16	1,240
1928	Oct. 19, 1927	4.65	775		Sept. 16, 1933	4.95	1,140
	Nov. 4, 1927	4.68	793	1934	Mar. 6, 1934	4.41	850
	Feb. 15, 1928	4.34	668		Apr. 1, 1934	4.12	706
	Feb. 24, 1928	4.60	757				

PASSAIC RIVER BASIN

Peak stages and discharges of Saddle River at Lodi, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	June 20, 1934	4.14	730	1949	Jan. 6, 1949	3.94	771
1935	Oct. 1, 1934	4.13	614	1950	Mar. 24, 1950	3.31	452
1936	Jan. 4, 1936	3.96	637	1951	Dec. 9, 1950	3.76	675
	Mar. 12, 1936	6.27	1,720		Feb. 8, 1951	3.73	660
	Mar. 19, 1936	4.31	808		Feb. 22, 1951	3.80	696
	Mar. 12, 1936	4.05	684		Mar. 31, 1951	7.27	2,530
	Apr. 7, 1936	5.16	1,300		Apr. 4, 1951	3.98	792
1937	Dec. 21, 1936	4.54	942	1952	Aug. 14, 1951	3.82	707
	Feb. 23, 1937	4.22	757		Nov. 8, 1951	4.08	847
	May 15, 1937	4.86	1,060		Dec. 21, 1951	4.52	1,090
1938	Nov. 14, 1937	4.18	708		Mar. 12, 1952	4.53	1,100
	Nov. 29, 1937	3.93	614		Apr. 6, 1952	5.13	1,470
	Jan. 26, 1938	5.19	1,340		Apr. 28, 1952	3.69	639
	June 29, 1938	4.25	782		May 26, 1952	4.18	902
	July 24, 1938	4.75	1,060		June 2, 1952	5.59	1,740
	Sept. 22, 1938	6.21	1,680		Sept. 2, 1952	4.05	830
				1953	Nov. 23, 1952	3.66	624
1939	Dec. 6, 1938	3.90	760		Dec. 6, 1952	4.06	836
	Feb. 4, 1939	3.67	631		Dec. 12, 1952	3.77	680
1940	Mar. 15, 1940	4.98	1,380		Jan. 25, 1953	4.05	830
	Apr. 9, 1940	4.40	1,090		Mar. 14, 1953	5.80	1,860
	June 1, 1940	4.38	1,080		Mar. 16, 1953	4.11	863
1941	Feb. 8, 1941	4.32	1,030		Mar. 25, 1953	4.34	993
					Apr. 8, 1953	4.51	1,090
1942	Mar. 4, 1942	3.72	658	1954	Sept. 12, 1954	4.82	1,270
	Mar. 22, 1942	3.90	760				
	Aug. 10, 1942	4.00	820	1955	Nov. 22, 1954	3.87	732
	Aug. 17, 1942	3.82	714		Aug. 14, 1955	5.44	1,660
1943	Dec. 31, 1942	4.30	1,020		Aug. 19, 1955	6.47	2,200
				1956	Oct. 16, 1955	5.23	1,530
1944	Oct. 27, 1943	4.24	977		Oct. 31, 1955	4.01	806
	Nov. 10, 1943	4.23	970	1957	Nov. 2, 1956	3.99	795
	Mar. 14, 1944	3.86	737		Apr. 6, 1957	3.99	795
	Apr. 16, 1944	3.67	631	1958	Dec. 21, 1957	4.26	946
	Apr. 25, 1944	4.27	998		Dec. 27, 1957	3.83	708
1945	July 20, 1945	5.15	1,480		Jan. 15, 1958	3.72	650
	July 23, 1945	10.00	3,500		Jan. 22, 1958	4.29	964
	Sept. 19, 1945	4.08	847		Feb. 28, 1958	5.63	1,760
1946	Dec. 26, 1945	4.16	891		Apr. 7, 1958	4.54	1,100
	May 18, 1946	3.63	608		Apr. 12, 1958	3.62	600
	May 28, 1946	4.54	1,100	1959	Nov. 29, 1958	3.93	765
	June 3, 1946	4.22	924		Mar. 7, 1959	4.01	806
	July 24, 1946	4.37	1,010	1960	July 31, 1960	4.07	842
1947	Mar. 15, 1947	3.62	603		Aug. 20, 1960	4.07	842
	Apr. 6, 1947	4.36	1,010		Sept. 13, 1960	4.69	1,190
1948	Nov. 9, 1947	4.05	830	1961	Feb. 26, 1961	4.27	952
	Nov. 13, 1947	3.85	722		Mar. 15, 1961	3.67	625
	Apr. 2, 1948	3.79	691		Apr. 17, 1961	4.12	870
	May 14, 1948	3.63	608				
1949	Dec. 31, 1948	4.41	1,030				

PASSAIC RIVER BASIN

3920. Weasel Brook at Clifton, N.J.

Location.--Lat 40°52'12", long 74°08'47", at right end of masonry dam at Jewett Street in Clifton, Passaic County.

Drainage area.--4.45 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording gage above masonry dam. Datum of gage is 68.52 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 120 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 140 cfs to Sept. 30, 1956, and 200 cfs thereafter.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	July 23, 1938	2.33	147	1952	Sept. 1, 1952	2.64	217
	Sept. 21, 1938	2.93	301				
1939	Feb. 3, 1939	2.10	99	1953	Nov. 22, 1952	2.51	184
					Dec. 5, 1952	2.72	239
1940	Jan. 14, 1940	2.52	191		Dec. 11, 1952	2.40	158
	Mar. 15, 1940	2.78	259		Jan. 24, 1953	2.80	261
	Apr. 8, 1940	2.33	147		Mar. 4, 1953	2.42	163
					Mar. 13, 1953	3.35	450
1941	Feb. 7, 1941	2.73	245		Mar. 15, 1953	2.40	165
	Aug. 25, 1941	2.40	162		Mar. 24, 1953	2.76	258
					Apr. 7, 1953	2.71	243
1942	July 27, 1942	2.54	196		Apr. 16, 1953	2.42	170
	Aug. 9, 1942	2.69	234		July 6, 1953	2.45	178
	Aug. 10, 1942	2.67	229		July 23, 1953	2.48	185
	Aug. 16, 1942	2.78	259	1954	Dec. 14, 1953	2.46	180
1943	Dec. 30, 1942	2.44	172		May 8, 1954	2.31	153
	July 5, 1943	2.38	158		May 10, 1954	2.40	170
					Sept. 11, 1954	3.33	426
1944	Oct. 27, 1943	3.02	327	1955	Aug. 13, 1955	2.99	317
	Nov. 9, 1943	2.45	174		Aug. 19, 1955	2.62	212
	Mar. 13, 1944	2.32	144	1956	Oct. 14, 1955	2.90	290
	Sept. 14, 1944	2.39	160		Oct. 15, 1955	2.55	194
1945	July 18, 1945	2.38	158		Oct. 16, 1955	2.60	207
	July 23, 1945	3.36	438		Oct. 30, 1955	2.48	177
	Sept. 19, 1945	2.57	204		Nov. 16, 1955	2.46	172
					Feb. 18, 1956	2.40	158
1946	Dec. 25, 1945	2.40	162		June 2, 1956	2.44	168
	May 17, 1946	2.84	275		July 9, 1956	2.35	147
	May 27, 1946	2.35	151		Sept. 6, 1956	2.44	168
	June 2, 1946	2.34	149	1957	Nov. 2, 1956	2.98	330
	June 11, 1946	2.30	140		Feb. 26, 1957	2.62	212
	July 23, 1946	2.76	253		May 14, 1957	3.02	362
	Aug. 3, 1946	2.44	172		Aug. 25, 1957	2.59	228
	Sept. 24, 1946	2.60	211	1958	Dec. 21, 1957	2.59	228
1947	Apr. 5, 1947	2.44	162		Dec. 26, 1957	2.66	248
1948	Nov. 8, 1947	3.08	335		Jan. 22, 1958	3.11	394
	Nov. 12, 1947	2.62	206		Feb. 28, 1958	2.98	348
	Apr. 1, 1948	2.39	156		Apr. 6, 1958	2.50	205
	May 30, 1948	2.43	165		July 29, 1958	2.55	218
	June 7, 1948	2.78	255	1959	Nov. 28, 1958	2.73	241
	June 24, 1948	2.53	190		Jan. 2, 1959	2.66	223
	Aug. 12, 1948	2.33	143		Mar. 6, 1959	2.62	212
1949	Apr. 6, 1949	2.44	168		Aug. 9, 1959	2.96	308
1950	July 10, 1950	2.69	230		Aug. 31, 1959	2.61	210
					Sept. 1, 1959	2.72	239
1951	Feb. 7, 1951	2.37	151	1960	Sept. 12, 1960	3.53	a496
	Mar. 20, 1951	2.45	170				
	Mar. 30, 1951	3.04	332	1961	Oct. 16, 1960	2.60	207
1952	Oct. 7, 1951	2.57	200		Apr. 10, 1961	2.79	258
	Nov. 7, 1951	2.89	287		Apr. 16, 1961	3.47	474
	Dec. 21, 1951	3.02	326		July 15, 1961	2.85	276
	Mar. 11, 1952	2.60	207		July 20, 1961	3.24	396
	Apr. 5, 1952	2.32	140		July 24, 1961	3.48	478
	Apr. 14, 1952	2.50	182		July 31, 1961	2.63	215
	May 25, 1952	2.52	187		Aug. 3, 1961	2.83	270
	June 1, 1952	2.66	223		Aug. 26, 1961	3.23	393
	July 10, 1952	2.34	145		Sept. 14, 1961	2.66	223

a Annual peak only.

PASSAIC RIVER BASIN

3925. Second River at Belleville, N.J.

Location.--Lat 40°47'17", long 74°10'19", on right bank at Belleville, Essex County, 300 ft downstream from Hendricks Brook, 360 ft downstream from Franklin Avenue, 1,100 ft downstream from Hendricks Pond Dam, and 1.4 miles upstream from mouth.

Drainage area.--11.6 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 62.6 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurement below 480 cfs and extended above on basis of critical-depth and contracted-opening measurements of 1,150 cfs and 3,300 cfs.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 950 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937 ^a	June 21, 1937	4.84	1,480	1949	Aug. 29, 1949	4.64	1,340
	Aug. 22, 1937	4.23	1,100				
1938	Oct. 20, 1937	4.42	1,190	1950	July 10, 1950	4.32	1,130
	June 7, 1938	4.09	994		Aug. 19, 1950	4.65	1,340
	July 11, 1938	4.77	1,430		Aug. 29, 1950	6.15	2,500
	July 23, 1938	7.05	3,300	1951	Oct. 10, 1950	4.14	1,020
	Aug. 6, 1938	4.72	1,390		Nov. 25, 1950	4.31	1,130
	Aug. 8, 1938	5.47	1,950		Mar. 30, 1951	4.50	1,250
	Sept. 21, 1938	4.99	1,580				
1939	Aug. 19, 1939	5.11	1,670	1952	Nov. 7, 1951	3.80	825
1940	May 31, 1940	5.53	1,990	1953	Mar. 24, 1953	4.20	1,050
	June 26, 1940	4.64	1,340		May 23, 1953	4.09	984
	July 11, 1940	5.65	2,090		June 28, 1953	4.43	1,190
1941	Feb. 7, 1941	4.64	1,340		July 20, 1953	4.07	972
	Aug. 25, 1941	5.27	1,790		July 23, 1953	5.03	1,590
1942	Dec. 13, 1941	4.50	1,250	1954	Sept. 11, 1954	5.74	2,140
	May 7, 1942	4.35	1,150	1955	May 31, 1955	4.18	1,040
	July 18, 1942	4.05	970		Aug. 7, 1955	4.05	960
	July 27, 1942	4.03	958		Aug. 13, 1955	4.65	1,330
	Aug. 13, 1942	4.62	1,320	1956	Nov. 16, 1955	4.27	1,090
	Aug. 16, 1942	5.77	2,190		Sept. 6, 1956	5.80	2,190
1943	Dec. 30, 1942	4.21	1,070	1957	Nov. 2, 1956	4.38	1,160
1944	June 24, 1944	4.06	976		May 14, 1957	4.97	1,570
	Aug. 16, 1944	4.82	1,460		Aug. 25, 1957	5.68	2,110
	Sept. 12, 1944	4.67	1,360	1958	Jan. 22, 1958	4.56	1,270
	Sept. 13 or 14, 1944	5.55	2,010		Feb. 28, 1958	4.36	1,150
1945	June 13, 1945	4.17	1,040		July 12, 1958	4.47	1,210
	June 19, 1945	4.41	1,190		July 31, 1958	5.39	1,860
	July 18, 1945	4.56	1,290	1959	July 20, 1959	4.50	1,230
	July 23, 1945	4.75	1,410		July 23, 1959	4.72	1,370
	July 31, 1945	5.55	2,010		Aug. 9, 1959	5.87	2,250
	Sept. 14, 1945	5.54	2,000		Aug. 31, 1959	4.10	990
	Sept. 18, 1945	4.86	1,490		Sept. 1, 1959	5.54	1,980
1946	Dec. 25, 1945	4.27	1,100	1960	Oct. 9, 1959	4.22	1,060
	July 2, 1946	4.15	1,030		Oct. 24, 1959	4.50	1,230
	Sept. 24, 1946	4.62	1,320		Apr. 3, 1960	4.04	964
1947	July 22, 1947	4.02	952		July 3, 1960	4.70	1,380
	Aug. 16, 1947	4.36	1,150		July 27, 1960	4.10	1,000
1948	Apr. 1, 1948	4.03	958		July 30, 1960	6.54	2,840
	June 19, 1948	4.14	1,020		Aug. 19, 1960	4.09	994
	June 24, 1948	5.55	2,010		Sept. 12, 1960	4.92	1,530
	June 27, 1948	4.78	1,440	1961	Apr. 16, 1961	5.36	1,860
	July 13, 1948	4.67	1,360		July 15, 1961	4.20	1,060
	July 21, 1948	4.76	1,420		Aug. 26, 1961	4.81	1,460

^a For period May 26 to Sept. 30, 1937.

ELIZABETH RIVER BASIN

3930. Elizabeth River at Irvington, N.J.

Location.--Lat 40°44'10", long 74°13'46", on right bank 135 ft downstream from Valley Avenue Bridge in Irvington, Essex County.

Drainage area.--2.91 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording. Altitude of gage is 132 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 190 cfs and extended above on basis of index velocities at gage height 6.90 ft and by logarithmic plotting. Shifts in relation occurred after 1933, due to debris in channel.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	June 7, 1931	5.23	456	1935	July 22, 1935	10.22	1,360
1932	June 27, 1932	9.67	1,300	1936	June 13, 1936	9.87	1,250
	Aug. 6, 1932	10.52	1,460		June 18, 1936	9.18	1,120
1933	Nov. 18, 1932	7.58	885		June 21, 1936	9.30	1,140
	May 20, 1933	7.70	904		Aug. 23, 1936	9.90	1,200
	June 6, 1933	8.13	980	1937	May 14, 1937	9.73	1,300
	June 10, 1933	8.32	1,020		June 21, 1937	9.73	1,300
	July 1, 1933	10.21	1,400		June 30, 1937	7.27	809
1934	Mar. 4, 1934	7.26	828		Aug. 12, 1937	7.91	923
	July 7, 1934	9.37	1,240	1938	July 23, 1938	12.1	1,750
	Sept. 8, 1934	8.57	1,080		Aug. 8, 1938	8.15	1,000
1935	June 27, 1935	7.41	847		Sept. 21, 1938	8.97	1,060

3935. Elizabeth River at Elizabeth, N.J.

Location.--Lat 40°40'03", long 74°13'09", on left bank 85 ft upstream from Westfield Avenue Bridge in Elizabeth, Union County, and 3.3 miles upstream from mouth.

Drainage area.--20.2 sq mi, of which 2.2 sq mi contributes to a storm sewer which has bypassed the station since December 1928. Area of lakes, ponds, and swamps, 0.1 sq mi.

Gage.--Nonrecording prior to May 18, 1923; recording thereafter. At datum 4.14 ft higher prior to Oct. 1, 1922. Datum of gage is 5.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Altered by changes in channel in February 1941. Prior to February 1941, defined by current-meter measurements below 1,100 cfs and extended above on basis of contracted-opening measurement of 2,720 cfs. Since February 1941, defined by current-meter measurements below 920 cfs and extended above on basis of culvert measurements of 2,230, 2,280 and 2,460 cfs.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 700 cfs prior to Sept. 1, 1956, and 850 cfs thereafter.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Feb. 2, 1922	2.51	380	1925	Mar. 1, 1925	7.59	860
1923	Mar. 16, 1923	6.94	510		July 31, 1925	8.18	1,260
	Mar. 23, 1923	6.94	510	1926	July 25, 1926	7.79	980
1924	Jan. 16, 1924	7.33	718		Sept. 6, 1926	8.06	1,170
	Apr. 7, 1924	8.15	1,240	1927	July 23, 1927	7.96	1,130
	May 9, 1924	7.39	745		Aug. 1, 1927	9.48	1,830
	July 8, 1924	8.16	1,250		Aug. 9, 1927	8.94	1,690
	Sept. 30, 1924	7.40	745		Aug. 14, 1927	7.44	772

ELIZABETH RIVER BASIN

Peak stages and discharges of Elizabeth River at Elizabeth, N. J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Sept. 1, 1927	9.71	1,890	1950	July 11, 1950	6.5	970
1928	Oct. 18, 1927	7.63	860	1951	Nov. 5, 1950	6.60	1,000
	Feb. 23, 1928	8.07	1,200		Nov. 25, 1950	6.25	890
	July 6, 1928	8.82	1,610		Mar. 30, 1951	6.09	836
	July 10, 1928	7.44	772		July 28, 1951	6.99	1,130
	Aug. 27, 1928	7.63	860	1952	Oct. 8, 1951	6.05	820
1929	Feb. 7, 1929	8.11	1,200		Nov. 7, 1951	7.12	1,170
	Feb. 26, 1929	7.88	1,060		Dec. 21, 1951	6.90	1,100
1930	Mar. 8, 1930	7.57	860		Mar. 11, 1952	5.98	792
					May 25, 1952	6.62	1,010
1931	Mar. 8, 1931	7.19	635		June 1, 1952	9.46	1,830
					Aug. 6, 1952	11.48	2,000
1932	Mar. 28, 1932	7.80	990		Aug. 30, 1952	7.83	1,380
					Sept. 1, 1952	7.52	1,290
1933	Nov. 7, 1932	7.87	1,060	1953	Nov. 20, 1952	5.78	710
	Nov. 10, 1932	7.77	990		Dec. 5, 1952	5.87	748
	Nov. 19, 1932	9.73	1,900		Jan. 24, 1953	6.66	1,030
	Sept. 15, 1933	7.73	920		Mar. 13, 1953	10.97	1,920
1934	Mar. 5, 1934	7.43	772		Mar. 16, 1953	6.21	884
	Sept. 8, 1934	7.21	1,190		Mar. 24, 1953	6.19	876
1935	Oct. 6, 1934	5.96	678		Apr. 7, 1953	6.21	884
					May 23, 1953	6.15	860
1936	Jan. 3, 1936	6.04	722		July 23, 1953	7.50	1,280
	June 13, 1936	6.02	700	1954	Dec. 14, 1953	6.33	929
1937	Aug. 11, 1937	6.00	700		Aug. 9, 1954	6.02	808
					Sept. 11, 1954	15.02	2,600
1938	July 23, 1938	13.05	2,720	1955	Feb. 7, 1955	5.78	710
	Sept. 21, 1938	9.25	1,780		May 31, 1955	6.12	848
1939	Dec. 5, 1938	5.75	700		Aug. 7, 1955	13.88	2,440
	Feb. 3, 1939	5.82	728		Aug. 13, 1955	13.19	2,230
	Aug. 20, 1939	5.92	768		Aug. 19, 1955	7.52	1,290
1940	Apr. 8, 1940	5.87	748	1956	Oct. 14, 1955	-	2,000
	May 31, 1940	11.40	2,320		Feb. 18, 1956	5.81	724
	July 11, 1940	6.00	800		July 21, 1956	6.00	800
					Sept. 6, 1956	6.65	1,020
1941	Feb. 7, 1941	7.34	1,230	1957	Nov. 2, 1956	6.54	992
	Aug. 25, 1941	7.30	1,220		Feb. 26, 1957	6.18	872
	Aug. 26, 1941	6.16	858		Aug. 26, 1957	8.49	1,500
1942					Sept. 10, 1957	6.14	856
	Dec. 13, 1941	6.06	824	1958	Dec. 21, 1957	6.34	932
	Aug. 9, 1942	11.28	1,970		Dec. 26, 1957	7.03	1,140
	Aug. 16, 1942	6.89	1,100		Jan. 14, 1958	6.48	974
	Aug. 18, 1942	6.05	820		Jan. 22, 1958	7.23	1,200
1943	Mar. 6, 1943	6.14	852		Feb. 28, 1958	8.49	1,500
	May 12, 1943	6.61	1,000		Apr. 6, 1958	7.98	1,390
1944	Oct. 27, 1943	11.84	2,040		Apr. 28, 1958	7.16	1,180
	Jan. 6, 1944	6.47	961		July 21, 1958	6.67	1,030
	Mar. 13, 1944	6.61	1,000	1959	Oct. 23, 1958	8.31	1,460
	Apr. 24, 1944	6.46	958		Nov. 28, 1958	6.41	953
	Aug. 7, 1944	5.89	756		Jan. 2, 1959	7.10	1,160
	Sept. 13, 1944	10.5	1,850		July 20, 1959	7.30	1,220
	Sept. 14, 1944	13.00	2,220		Aug. 9, 1959	13.36	2,260
1945	July 18, 1945	6.91	1,100		Aug. 29, 1959	7.83	1,350
	Sept. 14, 1945	7.92	1,410		Sept. 1, 1959	12.50	2,140
	Sept. 19, 1945	9.88	1,760	1960	Oct. 24, 1959	9.96	1,770
1946	Dec. 26, 1945	5.94	776		Jan. 3, 1960	6.21	884
	May 15, 1946	5.85	740		Apr. 4, 1960	6.15	860
	May 21, 1946	5.80	720		July 30, 1960	12.37	2,120
	June 2, 1946	6.70	1,040		Aug. 19, 1960	7.38	1,240
1947	Apr. 5, 1947	5.62	645		Sept. 12, 1960	12.42	2,130
					Sept. 19, 1960	6.31	923
1948	Nov. 8, 1947	11.98	2,070	1961	Oct. 20, 1960	7.75	1,330
	Nov. 12, 1947	7.23	1,200		Jan. 1, 1961	6.44	962
	May 25, 1948	6.30	910		Mar. 14, 1961	6.84	1,080
	June 24, 1948	7.22	1,200		Mar. 23, 1961	7.44	1,250
	July 13, 1948	7.06	1,150		Apr. 10, 1961	7.32	1,220
	July 22, 1948	10.17	1,800		Apr. 16, 1961	8.22	1,440
					July 15, 1961	7.02	1,140
1949	Jan. 5, 1949	5.75	700		July 20, 1961	11.71	2,030
					July 24, 1961	6.44	962
					July 31, 1961	8.84	1,570

RAHWAY RIVER BASIN

3940. West Branch Rahway River at Millburn, N.J.

Location.--Lat 40°43'51", long 74°18'26", on left bank 100 ft upstream from Diamond Mill Pond Dam, 1,000 ft upstream from Glen Avenue in Millburn, Essex County, and 1.9 miles upstream from confluence with East Branch.

Drainage area.--7.1 sq mi.

Gage.--Recording gage above masonry dam. Datum of gage is 173.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by laboratory rating and verified by current-meter measurements below 100 cfs and by flow-over-dam measurement of 965 cfs.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	July 23, 1938	a3.07	a965	1945	Feb. 27, 1945	1.91	234
1940	Mar. 15, 1940	2.15	338		May 10, 1945	1.90	229
	Apr. 8, 1940	2.05	287		July 18, 1945	2.35	478
	May 31, 1940	2.46	517		July 23, 1945	3.19	1,090
					Sept. 19, 1945	3.07	996
1941	Feb. 7, 1941	1.96	258	1946	Nov. 29, 1945	1.87	215
1942	Mar. 22, 1942	1.90	229		Dec. 26, 1945	1.98	268
	July 27, 1942	2.12	342		June 2, 1946	2.26	422
	Aug. 9, 1942	3.15	1,060		July 23, 1946	2.12	342
	Aug. 13, 1942	2.51	577	1947	Apr. 5, 1947	2.03	294
	Aug. 16, 1942	2.21	393		July 22, 1947	1.93	244
1943	Dec. 30, 1942	2.09	326	1948	Nov. 8, 1947	2.85	820
	May 12, 1943	1.97	263		Nov. 12, 1947	2.32	459
	May 20, 1943	1.91	234		Apr. 1, 1948	2.05	304
1944	Oct. 27, 1943	1.84	202		May 13, 1948	1.93	244
	Nov. 9, 1943	1.93	244		May 25, 1948	2.09	326
	Mar. 13, 1944	2.20	387		June 24, 1948	2.48	558
	Mar. 23, 24, 1944	1.90	229	1949	Dec. 31, 1948	2.09	326
	Apr. 24, 1944	2.05	304		Jan. 6, 1949	2.08	320
	Sept. 14, 1944	1.97	263				
				1950	Mar. 23, 1950	1.68	136
1945	Jan. 1, 1945	1.89	224				

a Annual maximum only.

3945. Rahway River near Springfield, N.J.

Location.--Lat 40°41'11", long 74°18'44", on left bank 50 ft downstream from bridge on U.S. Highway 22 (formerly State Highway 29), 100 ft downstream from Pope Brook, and 1½ miles south of Springfield, Union County.

Drainage area.--25.5 sq mi. Area of lakes, ponds, and swamps, 0.1 sq mi.

Gage.--Recording gage above concrete control. Datum of gage is 66.17 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 900 cfs and extended above on basis of contracted-opening measurement of 1,880 cfs.

Remarks.--Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938a/	July 23, 1938	7.41	1,940	1941	Feb. 7, 1941	4.90	885
	Sept. 21, 1938	6.70	1,590	1942	Mar. 22, 1942	3.75	538
1939	Feb. 3, 1939	4.32	699		July 27, 1942	3.83	559
					Aug. 9, 1942	6.07	1,320
1940	Mar. 15, 1940	4.84	865		Aug. 11, 1942	3.92	584
	Apr. 9, 1940	4.09	631		Aug. 14, 1942	4.64	799
	May 31, 1940	5.60	1,140				

a Period July 7 to Sept. 30, 1938.

RAHWAY RIVER BASIN

Peak stages and discharges of Rahway River near Springfield, N. J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Dec. 30, 1942	4.20	663	1952	Sept. 1, 1952	4.87	875
	May 12, 1943	3.94	589				
1944	Oct. 27, 1943	4.45	738	1953	Dec. 5, 1952	4.01	609
	Jan. 6, 1944	4.58	780		Jan. 24, 1953	4.76	838
	Mar. 13, 1944	4.69	815		Mar. 4, 1953	3.96	595
	Apr. 25, 1944	4.23	672		Mar. 13, 1953	6.10	1,330
	Sept. 15, 1944	4.68	812		Mar. 16, 1953	4.14	646
1945	Nov. 21, 1944	3.84	562		Mar. 24, 1953	4.39	720
	July 18, 1945	4.72	825		Apr. 7, 1953	4.97	909
	July 23, 1945	4.69	815	1954	Dec. 14, 1953	3.74	535
	Sept. 19, 1945	6.20	1,370		Sept. 11, 1954	5.08	947
1946	Dec. 26, 1945	4.23	672	1955	Nov. 21, 1954	3.67	516
	June 2, 1946	5.16	975		Aug. 13, 1955	5.95	1,270
	July 23, 1946	4.61	789		Aug. 19, 1955	5.41	1,060
1947	Apr. 5, 1947	4.14	646	1956	Oct. 14, 1955	4.13	643
1948	Nov. 4, 1947	4.25	678		Feb. 18, 1956	3.68	519
	Nov. 8, 1947	5.98	1,280		Sept. 6, 1956	3.80	551
	Nov. 12, 1947	4.96	905	1957	Apr. 5, 1957	3.75	538
	Apr. 1, 1948	4.27	684	1958	Dec. 21, 1957	3.92	584
	May 13, 1948	3.73	532		Dec. 26, 1957	4.22	669
	May 25, 1948	5.04	933		Jan. 15, 1958	4.42	729
	June 25, 1948	4.66	805		Jan. 22, 1958	4.37	714
	July 13, 1948	3.65	511		Feb. 28, 1958	4.78	844
	July 22, 1948	4.41	726		Apr. 6, 1958	4.22	669
1949	Dec. 31, 1948	4.68	812		Apr. 28, 1958	4.09	631
	Jan. 6, 1949	4.75	834	1959	Oct. 23, 1958	3.91	581
	Jan. 28, 1949	3.64	508		July 20, 1959	3.95	592
1950	Mar. 23, 1950	3.61	501		Aug. 9, 1959	4.90	885
1951	Nov. 26, 1950	4.06	623		Sept. 1, 1959	4.59	783
	Feb. 22, 1951	4.05	620	1960	Apr. 4, 1960	3.83	525
	Mar. 30, 1951	5.10	954		July 30, 1960	4.24	622
	July 28, 1951	4.12	640		Aug. 31, 1960	3.77	511
1952	Nov. 7, 1951	4.45	738		Sept. 12, 1960	5.27	911
	Dec. 21, 1951	5.12	961	1961	Mar. 14, 1961	3.66	503
	Mar. 11, 1952	4.87	875		Mar. 23, 1961	4.17	654
	May 25, 1952	4.48	748		Apr. 13, 1961	4.17	654
	June 1, 1952	5.97	1,280		Apr. 16, 1961	4.35	708
	Aug. 6, 1952	4.22	669		July 20, 1961	4.09	630

3950. Rahway River at Rahway, N.J.

Location.--Lat 40°37'05", long 74°17'00", on left bank 100 ft upstream from St. Georges Avenue Bridge in Rahway, Union County, and 0.9 mile upstream from Robinsons Branch.

Drainage area.--40.9 sq mi. Area of lakes, ponds, and swamps, 0.2 sq mi.

Gage.--Nonrecording prior to Aug. 25, 1934; recording thereafter. At site 1,500 ft downstream at datum 2.77 ft lower prior to Aug. 25, 1934. Datum of gage is 8.77 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Prior to August 1934, defined by current-meter measurements below 970 cfs and extended above by logarithmic plotting. Since August 1934, defined by current-meter measurements below 770 cfs and extended above by logarithmic plotting.

Remarks.--Prior to 1935, only annual peaks as determined from graph of twice-daily gage readings are shown. Base for partial-duration series, 600 cfs.

RAHWAY RIVER BASIN

Peak stages and discharges of Rahway River at Rahway, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	May 19, 1922	3.32	642	1948	Nov. 4, 1947	3.64	841
1923	Mar. 17, 1923	3.75	811		Nov. 9, 1947	4.40	1,350
1924	Apr. 7, 1924	5.10	1,350		Nov. 12, 1947	3.74	902
1925	Feb. 12, 1925	4.25	1,000		Apr. 2, 1948	3.29	643
					May 26, 1948	3.81	945
1926	Sept. 7, 1926	4.22	984		May 30, 1948	3.29	643
1927	Aug. 2, 1927	6.00	1,740		June 25, 1948	3.30	648
1928	July 6, 1928	5.05	1,310	1949	Dec. 31, 1948	4.40	1,350
1929	Feb. 27, 1929	3.48	755		Jan. 6, 1949	3.70	877
1930	Mar. 8, 1930	3.10	569	1950	Mar. 23, 1950	3.03	510
1931	Mar. 29, 1931	2.90	500	1951	Nov. 25, 1950	3.22	606
1932	Mar. 28, 1932	4.00	905		Feb. 22, 1951	3.27	632
1933	Sept. 6, 1933	5.64	1,560		Mar. 31, 1951	3.93	1,020
1934	Mar. 5, 1934	3.43	722		July 28, 1951	3.40	703
1935	Oct. 6, 1934	3.37	660	1952	Nov. 8, 1951	3.23	611
1936	Jan. 3, 1936	3.57	778		Dec. 21, 1951	3.92	1,010
	Mar. 12, 1936	4.12	1,120		Mar. 12, 1952	3.71	888
	Apr. 7, 1936	3.39	695		May 26, 1952	3.54	782
1937	Dec. 20, 1936	3.31	640		June 1, 1952	4.87	1,720
1938	Jan. 25, 1938	3.35	676		Sept. 2, 1952	3.40	703
	July 24, 1938	6.35	3,140	1953	Jan. 25, 1953	3.64	854
	Sept. 22, 1938	4.94	1,780		Mar. 13, 1953	4.68	1,590
1939	Feb. 3, 1939	3.67	847		Mar. 16, 1953	3.36	686
1940	Mar. 15, 1940	3.58	805		Mar. 25, 1953	3.31	656
	Apr. 9, 1940	3.28	637		Apr. 8, 1953	3.80	950
	May 31, 1940	4.68	1,560	1954	Sept. 11, 1954	4.41	1,380
1941	Feb. 7, 1941	3.86	976	1955	Nov. 21, 1954	3.28	640
1942	Aug. 9, 1942	4.52	1,440		Aug. 7, 1955	3.89	1,010
	Aug. 14, 1942	3.84	963		Aug. 13, 1955	5.63	2,440
	Aug. 17, 1942	3.96	1,040		Aug. 19, 1955	3.97	1,070
1943	Dec. 30, 1942	3.65	847	1956	Apr. 8, 1956	3.20	600
	Mar. 6, 1943	3.25	622	1957	Apr. 6, 1957	3.50	770
	May 12, 1943	3.59	811	1958	Dec. 21, 1957	3.39	704
	May 26, 1943	3.32	659		Dec. 27, 1957	3.23	615
1944	Oct. 27, 1943	3.99	1,060		Jan. 15, 1958	3.67	872
	Jan. 6, 1944	3.91	1,010		Jan. 22, 1958	3.47	752
	Mar. 13, 1944	3.81	945		Feb. 28, 1958	4.12	1,170
	Apr. 24, 1944	3.75	908		Apr. 6, 1958	3.44	734
	Sept. 13, 1944	4.17	1,190	1959	Oct. 23, 1958	4.01	1,100
	Sept. 14, 1944	4.58	1,340		Oct. 26, 1958	3.23	615
1945	Nov. 21, 1944	3.21	600		Aug. 9, 1959	4.66	1,580
	Feb. 27, 1945	3.25	622		Sept. 1, 1959	3.94	1,050
	July 18, 1945	3.65	847	1960	July 30, 1960	3.72	902
	July 24, 1945	3.44	725		Sept. 12, 1960	4.99	1,850
	Sept. 19, 1945	4.69	1,570	1961	Mar. 23, 1961	3.68	878
1946	Dec. 26, 1945	3.47	742		Apr. 13, 1961	3.66	866
	June 3, 1946	4.05	1,100		Apr. 16, 1961	3.56	806
	July 23, 1946	4.10	1,140		July 20, 1961	3.52	782
1947	Apr. 5, 1947	3.25	622		July 31, 1961	3.58	818

RAHWAY RIVER BASIN

3960. Robinsons Branch Rahway River at Rahway, N.J.

Location.--Lat 40°36'20", long 74°17'57", on right bank 200 ft upstream from Milton Lake Dam, 2,000 ft upstream from Madison Avenue in Rahway, Union County, 3,200 ft downstream from Middlesex Reservoir Dam, and 1.6 miles upstream from mouth.

Drainage area.--21.6 sq mi. Area of lakes, ponds, and swamps, 1.2 sq mi.

Gage.--Recording above Milton Lake Dam. Datum of gage is 19.99 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 250 cfs and extended above on basis of laboratory rating.

Remarks.--Possibly some effect on flood peaks from Middlesex Reservoir, capacity, 300,000,000 gal. Base for partial-duration series, 450 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 4, 1940	4.70	526	1951	Mar. 30, 1951	4.90	789
	Mar. 15, 1940	4.66	485	1952	Dec. 21, 1951	4.87	741
	Apr. 8-9, 1940	4.68	505		Feb. 4, 1952	4.69	525
	May 31, 1940	5.35	1,400		Mar. 11, 1952	4.77	617
1941	Feb. 7, 1941	4.96	832		Apr. 28, 1952	4.70	536
					May 25, 1952	4.75	594
1942	Mar. 3, 1942	4.64	472		June 1, 1952	5.26	1,300
	Aug. 3, 1942	5.25	1,240	1953	Jan. 24, 1953	4.84	702
	Aug. 9, 1942	4.72	548		Mar. 13, 1953	5.36	1,490
1943	Dec. 30, 1942	4.72	548		Mar. 16, 1953	4.71	552
	Mar. 7, 1943	4.70	526		Apr. 7, 1953	4.80	638
	May 12, 1943	4.83	673	1954	Dec. 14, 1953	4.56	387
	May 27, 1943	4.65	474				
1944	Oct. 27, 1943	4.68	505	1955	Nov. 21, 1954	4.63	462
	Jan. 6, 1944	4.95	819		Mar. 22, 1955	4.62	451
	Mar. 13, 1944	4.88	732		Aug. 13, 1955	5.06	1,000
	Apr. 24, 1944	4.84	685	1956	Apr. 8, 1956	4.68	515
	Sept. 15, 1944	4.88	732				
1945	Nov. 21, 1944	4.76	593	1957	Apr. 5, 1957	4.71	557
	May 10, 1945	4.66	498	1958	Dec. 21, 1957	4.73	561
	July 18, 1945	4.76	611		Dec. 26, 1957	4.64	464
	Sept. 19, 1945	5.06	1,010		Jan. 15, 1958	4.85	700
1946	June 2, 1946	5.01	932		Jan. 22, 1958	4.63	454
	July 23, 1946	4.93	830		Feb. 28, 1958	5.14	1,110
1947	Apr. 5, 1947	4.69	535		Apr. 6, 1958	4.73	561
1948					Apr. 28, 1958	4.66	486
	Nov. 4, 1947	4.98	885	1959	Oct. 23, 1958	5.11	1,060
	Nov. 8, 1947	5.11	1,070		Oct. 26, 1958	4.70	528
	Nov. 12, 1947	4.80	654		Mar. 6, 1959	4.66	486
	Apr. 1, 1948	4.64	472		Aug. 9, 1959	5.12	1,080
	May 13, 1948	4.70	537	1960	Feb. 19, 1960	4.64	464
1949	May 25, 1948	4.77	619		July 30, 1960	4.90	764
	Dec. 31, 1948	4.99	899		Sept. 12, 1960	5.20	1,190
	Jan. 6, 1949	4.74	584	1961	Mar. 14, 1961	4.64	464
	Jan. 22, 1949	4.62	450		Mar. 23, 1961	4.98	868
1950	Mar. 23, 1950	4.67	512		Apr. 13, 1961	4.87	726
1951	Nov. 25, 1950	4.80	663		Apr. 16, 1961	4.67	496
	Dec. 8, 1950	4.63	468		July 20, 1961	4.68	510
	Feb. 22, 1951	4.74	593		July 31, 1961	4.65	478

RARITAN RIVER BASIN

3965. South Branch Raritan River near High Bridge, N.J.

Location.--Lat 40°40'40", long 74°52'45", on left bank 1.0 mile northeast of High Bridge, Hunterdon County, and 4.4 miles upstream from Spruce Run.

Drainage area.--65.3 sq mi. Area of lakes, ponds, and swamps, 1.1 sq mi.

Gage.--Nonrecording prior to Sept. 30, 1921; recording thereafter. Datum of gage is 282.10 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1896	Feb. 6, 1896	-	7,560	1936	Oct. 31, 1935	8.95	1,380
					Jan. 3, 1936	10.00	2,450
1902	February 1902	-	3,840		Mar. 11, 1936	10.51	3,080
					Mar. 18, 1936	8.90	1,340
1904	October 1903	-	2,670		Apr. 6, 1936	9.55	1,960
1919	July 23, 1919	10.0	a2,580	1937	Dec. 20, 1936	8.98	1,430
1920	Sept. 30, 1920	9.2	a1,820		Feb. 22, 1937	8.63	1,140
1921	Dec. 14, 1920	8.7	a1,410	1938	Nov. 13, 1937	8.95	1,380
1922	Feb. 2, 1922	10.97	3,600		Jan. 25, 1938	9.74	2,180
	Mar. 8, 1922	9.09	1,730		July 24, 1938	9.69	2,120
	July 1, 1922	9.40	2,000		Sept. 21, 1938	10.17	2,650
	July 3, 1922	8.40	1,190	1939	Dec. 6, 1938	8.90	1,340
	Sept. 4, 1922	9.38	2,000		Feb. 28, 1939	8.50	1,030
1923	Jan. 1, 1923	8.82	1,510		Apr. 20, 1939	8.50	1,030
	Mar. 16, 1923	8.80	1,490	1940	Jan. 15, 1940	10.00	-
1924	Jan. 17, 1924	9.00	1,340		Mar. 15, 1940	11.78	5,160
	Apr. 6, 1924	9.91	2,230		Apr. 9, 1940	8.78	1,240
1925	Oct. 1, 1924	8.37	1,010		May 21, 1940	9.11	1,530
	Feb. 8-13, 1925	(b)	(b)		June 2, 1940	9.33	1,740
1926	Feb. 26, 1926	8.55	1,120	1941	Feb. 7, 1941	8.60	1,100
	Mar. 7, 1926	8.62	1,120	1942	Aug. 1, 1942	8.46	1,000
1927	Nov. 16, 1926	8.55	1,120		Aug. 9, 1942	8.83	1,280
1928	Nov. 3, 1927	9.58	1,890		Aug. 11, 1942	9.85	2,280
	Nov. 18, 1927	9.93	2,250		Sept. 28, 1942	9.09	1,510
	Dec. 8, 1927	8.86	1,280	1943	Nov. 25, 1942	8.90	1,340
	Feb. 23, 1928	8.70	1,170		Dec. 30, 1942	9.27	1,680
	July 6, 1928	8.72	1,170		May 26, 1943	8.70	1,180
	July 14, 1928	8.45	1,010	1944	Nov. 9, 1943	8.51	1,040
	July 28, 1928	9.05	1,340		Feb. 15, 1944	10.39	-
	Aug. 22, 1928	8.57	1,120		Mar. 7, 1944	8.88	1,320
1929	Feb. 7, 1929	8.75	1,230		Mar. 13, 1944	9.10	1,520
	Apr. 26, 1929	8.38	1,010		Mar. 24, 1944	8.52	1,040
1930	June 10, 1930	7.94	765		Apr. 24, 1944	8.57	1,080
1931	June 17, 1931	8.83	1,240	1945	Jan. 1, 1945	8.80	1,260
	July 11, 1931	9.36	1,580		Feb. 27, 1945	8.78	1,240
1932	Mar. 28, 1932	8.48	1,020		July 19, 1945	9.05	1,480
1933	Nov. 10, 1932	8.48	1,020		July 21, 1945	8.94	1,380
	Nov. 19, 1932	9.22	1,480		July 22, 1945	9.90	2,340
	Aug. 24, 1933	8.79	1,210	1946	Nov. 22, 1945	9.18	1,590
	Sept. 15, 1933	8.70	1,150		Dec. 25, 1945	9.75	-
1934	Mar. 5, 1934	(c)	(c)		June 2, 1946	8.77	1,240
	Sept. 30, 1934	9.99	2,320		July 23, 1946	8.70	1,180
1935	July 9, 1935	9.35	1,580	1947	Mar. 14, 1947	8.72	1,200
					May 1, 1947	8.58	1,090
					May 5, 1947	8.61	1,110
					May 25, 1947	8.52	1,040
				1948	Nov. 8, 1947	9.02	1,450
					Apr. 1, 1948	8.62	1,120

a Annual peak only, from graph of gage readings.

b Unknown, believed maximum for year.

c Unknown, believed to have exceeded base.

d Backwater from ice.

RARITAN RIVER BASIN

Peak stages and discharges of South Branch Raritan River near
High Bridge, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	May 13, 1948	9.06	1,480	1953	Apr. 7, 1953	8.73	1,150
1949	Dec. 30, 1948	9.80	2,230	1954	Jan. 21, 1954	8.97	-
	Jan. 6, 1949	9.44	1,850		Mar. 4, 1954	8.13	775
1950	Mar. 23, 1950	8.42	976	1955	Nov. 21, 1954	8.53	1,010
1951	Nov. 26, 1950	9.47	1,880		Aug. 13, 1955	9.49	1,770
	Dec. 8, 1950	9.14	1,560		Aug. 19, 1955	10.46	2,760
	Jan. 5, 1951	8.55	1,060	1956	Oct. 15, 1955	9.81	2,070
	Feb. 7, 1951	9.09	1,510	1957	Dec. 14, 1956	8.60	1,060
	Mar. 31, 1951	10.19	2,680		Apr. 6, 1957	8.60	1,060
	July 28, 1951	10.29	2,800	1958	Dec. 21, 1957	9.66	1,970
1952	Nov. 7, 1951	9.92	2,360		Dec. 26, 1957	9.14	1,480
	Dec. 21, 1951	9.47	1,880		Jan. 22, 1958	8.90	1,280
	Jan. 26, 1952	8.73	1,200		Feb. 28, 1958	9.04	1,390
	Mar. 11, 1952	10.49	3,060		Apr. 6, 1958	8.88	1,260
	Apr. 5, 1952	9.23	1,640	1959	Mar. 6, 1959	8.95	1,320
	May 25, 1952	8.48	1,020	1960	Jan. 3, 1960	8.83	1,220
	June 1, 1952	8.58	1,090		Apr. 5, 1960	8.57	1,040
	July 10, 1952	8.46	1,000		July 30, 1960	8.52	1,000
	Sept. 1, 1952	9.39	1,800		Sept. 13, 1960	9.06	1,410
1953	Nov. 22, 1952	9.70	1,960	1961	Feb. 26, 1961	8.85	1,240
	Dec. 5, 1952	8.95	1,320				
	Dec. 11, 1952	9.17	1,490				
	Jan. 24, 1953	9.62	1,890				

d Backwater from ice.

3970. South Branch Raritan River at Stanton, N.J.

Location--Lat 40°34'21", long 74°52'10", on right bank at downstream side of highway bridge at Stanton railroad station, Readington Township, Hunterdon County, 0.4 mile upstream from Prescott Brook.

Drainage area--147 sq mi. Area of lakes, ponds, and swamps, 1.2 sq mi.

Gage--Nonrecording prior to Aug. 17, 1925, recording thereafter. Datum of gage is 125.01 ft above mean sea level, datum of 1929.

Stage-discharge relation--Defined by current-meter measurements below 6,400 cfs and extended to 8,100 cfs on basis of flow-over-dam measurement at site 6.5 miles upstream, and to 18,000 cfs on basis of slope-area measurement 0.4 mile downstream, and contracted-opening measurement 1.7 miles downstream (discharges adjusted to gaging site).

Bankfull stage--8 ft.

Remarks--Base for partial-duration series, 2,600 cfs. Only annual peaks from graph of twice-daily gage readings are shown prior to 1926.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 9, 1903	a11.2	9,020	1926	Feb. 19, 1926	b9.52	-
1905	Jan. 7, 1905	b12.5	6,840		Feb. 25, 1926	8.05	4,220
					Mar. 7, 1926	7.60	3,690
1906	Mar. 3, 1906	8.8	5,000	1927	Jan. 21, 1927	b8.01	-
1919	July 21, 1919	10.0	6,840		Feb. 26, 1927	6.60	2,590
1920	Mar. 17, 1920	c11.5	2,860	1928	Oct. 18, 1927	8.00	3,730
1921	Jan. 15, 1921	7.2	3,060		Nov. 3, 1927	8.10	3,840
1922	Feb. 2, 1922	9.0	4,330		Nov. 18, 1927	8.05	3,730
1923	Mar. 16, 1923	8.5	4,590		Dec. 8, 1927	7.50	3,220
1924	Apr. 7, 1924	10.0	6,840		Feb. 8, 1928	7.20	2,920
1925	Feb. 12, 1925	9.8	3,200		Feb. 15, 1928	8.57	4,720

a Occurred Mar. 7, 1904, backwater from ice.

b Backwater from ice.

c Occurred Mar. 5, 1920, backwater from ice.

RARITAN RIVER BASIN

Peak stages and discharges of South Branch Raritan River at Stanton, N. J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Feb. 23, 1928	7.30	3,020	1945	Jan. 1, 1945	7.93	3,880
	July 14, 1928	7.60	3,320		Feb. 22, 1945	b7.73	-
1929	Feb. 7, 1929	9.34	5,790		July 19, 1945	12.22	10,900
	Feb. 26, 1929	8.42	4,490		July 21, 1945	6.98	2,870
	Apr. 26, 1929	7.00	2,800		July 23, 1945	7.12	3,010
1930	Mar. 8, 1930	6.80	2,630	1946	Nov. 22, 1945	7.21	3,110
1931	July 10, 1931	6.76	2,630		Dec. 26, 1945	b9.06	-
1932	Mar. 28, 1932	6.57	2,470		June 2, 1946	9.03	5,320
1933	Nov. 10, 1932	9.25	5,660		July 23, 1946	8.61	4,740
	Nov. 19, 1932	8.10	3,800	1947	May 5, 1947	6.11	2,180
	Aug. 23, 1933	10.46	7,640	1948	Feb. 19, 1948	b8.54	-
	Sept. 15, 1933	7.60	3,340		May 13, 1948	8.66	4,810
1934	Mar. 4, 1934	b10.05	d2,980		June 28, 1948	7.70	3,620
	Sept. 30, 1934	9.22	5,610	1949	Dec. 30, 1948	9.85	6,580
1935	Feb. 15, 1935	b7.92	-		Jan. 6, 1949	8.54	4,650
	July 9, 1935	10.80	8,260	1950	Mar. 23, 1950	6.30	2,320
1936	Jan. 3, 1936	(e)	(e)	1951	Nov. 25, 1950	10.00	6,840
	Jan. 9, 1936	7.40	3,290		Dec. 8, 1950	8.35	4,400
	Mar. 12, 1936	9.37	5,800		Jan. 15, 1951	6.78	2,700
	Mar. 18, 1936	7.64	3,500		Feb. 7, 1951	7.98	3,950
	Apr. 6, 1936	8.38	4,460		Mar. 30, 1951	8.76	4,940
1937	Dec. 20, 1936	7.66	3,610		July 28, 1951	8.83	4,930
	Feb. 22, 1937	7.24	3,090	1952	Nov. 7, 1951	12.01	10,600
	Aug. 23, 1937	6.80	2,710		Dec. 21, 1951	8.38	4,440
1938	Nov. 13, 1937	7.61	3,500		Mar. 11, 1952	8.43	4,510
	Jan. 25, 1938	7.61	3,500		Apr. 5, 1952	8.03	4,010
	July 23, 1938	8.51	4,600		Apr. 15, 1952	6.72	2,650
	Sept. 21, 1938	10.72	8,130		May 25, 1952	6.86	2,770
1939	Dec. 6, 1938	8.08	4,080	1953	Nov. 22, 1952	8.29	4,330
	Jan. 30, 1939	b7.32	-		Dec. 5, 1952	6.68	2,610
	Feb. 3, 1939	7.64	3,500		Dec. 11, 1952	7.63	3,540
	Feb. 28, 1939	7.01	2,900		Jan. 24, 1953	8.47	4,560
	Apr. 6, 1939	6.78	2,690		Apr. 7, 1953	6.77	2,690
1940	Jan. 15, 1940	b7.91	-		May 23, 1953	6.67	2,610
	Feb. 11, 1940	b8.00	-	1954	May 4, 1954	6.07	2,060
	Mar. 15, 1940	12.19	10,900	1955	Feb. 7, 1955	(e)	(e)
	Apr. 9, 1940	7.16	3,050		Aug. 13, 1955	10.29	7,330
	May 21, 1940	9.35	5,780		Aug. 19, 1955	15.22	18,000
	June 2, 1940	8.40	4,460	1956	Oct. 14, 1955	12.55	11,700
1941	Feb. 7, 1941	8.00	3,960		Feb. 6, 1956	6.78	2,650
1942	Aug. 9, 1942	8.92	5,160	1957	Dec. 15, 1956	6.50	2,400
	Aug. 14, 1942	7.30	3,190		Jan. 23, 1957	b6.74	-
	Aug. 18, 1942	6.79	2,700	1958	Dec. 21, 1957	8.29	4,320
	Sept. 28, 1942	7.03	2,920		Jan. 22, 1958	7.08	2,940
1943	Dec. 30, 1942	7.40	3,290		Feb. 28, 1958	9.04	5,340
	Feb. 11, 1943	6.90	2,800		Apr. 6, 1958	7.15	3,010
	May 26, 1943	6.80	2,710	1959	Jan. 2, 1959	b7.59	2,310
1944	Nov. 9, 1943	6.71	2,630	1960	Dec. 29, 1959	6.94	2,800
	Jan. 6, 1944	7.86	3,790		Jan. 3, 1960	7.03	2,890
	Mar. 7, 1944	6.86	2,760		Sept. 12, 1960	8.12	4,100
	Mar. 13, 1944	8.46	4,540	1961	Feb. 19, 1961	b7.28	-
	Apr. 24, 1944	8.15	4,140		Feb. 26, 1961	6.95	2,810

b Backwater from ice.

d Daily mean discharge.

e Unknown, believed to have exceeded base.

RARITAN RIVER BASIN

3975. Walnut Brook near Flemington, N.J.

Location.--Lat 40°30'55", long 74°52'52", on right bank 1.2 miles northwest of Flemington, Hunterdon County, and 2.3 miles upstream from mouth.

Drainage area.--2.24 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording gage above concrete control. Datum of gage is 267.33 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 120 cfs and extended above by logarithmic plotting.

Bankfull stage.--3 ft.

Remarks.--Base for partial-duration series, 100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936a/	Apr. 11, 1936	1.81	26	1947	May 5, 1947	2.41	141
1937	Dec. 20, 1936	2.37	130	1948	Apr. 1, 1948	2.29	109
	Feb. 22, 1937	2.44	165		May 13, 1948	2.31	114
1938	Oct. 23, 1937	2.22	102		June 28, 1948	2.36	127
	Nov. 13, 1937	2.43	161	1949	Dec. 30, 1948	2.35	124
	Jan. 25, 1938	2.34	134	1950	Mar. 23, 1950	2.20	88
	July 20, 1938	2.25	110	1951	Nov. 25, 1950	2.74	286
	July 21, 1938	2.29	168		Dec. 8, 1950	2.44	165
	July 22, 1938	2.34	134		Feb. 21, 1951	2.26	112
	July 23, 1938	2.39	148		Mar. 30, 1951	2.56	208
	Sept. 20, 1938	2.33	131	1952	Nov. 7, 1951	2.74	286
	Sept. 21, 1938	2.82	326		Dec. 21, 1951	2.42	158
1939	Dec. 6, 1938	2.28	131		Dec. 21, 1951	2.42	158
	Feb. 3, 1939	2.54	225		Feb. 4, 1952	2.30	122
	Feb. 28, 1939	2.31	140		Mar. 11, 1952	2.36	139
	Apr. 6, 1939	2.46	193		Apr. 28, 1952	2.51	189
	Apr. 19, 1939	2.40	170		May 25, 1952	2.34	134
	May 21, 1939	2.36	157		June 1, 1952	2.22	102
1940	Mar. 15, 1940	2.72	311	1953	Nov. 22, 1952	2.24	102
	Apr. 8, 1940	2.70	300		Dec. 5, 1952	2.35	124
	Apr. 20, 1940	2.24	120		Dec. 11, 1952	2.32	116
1941	Dec. 16, 1940	2.22	115		Jan. 24, 1953	2.53	180
	Dec. 28, 1940	2.18	104		Mar. 4, 1953	2.39	135
	Feb. 7, 1941	2.40	170		Mar. 13, 1953	2.43	147
1942	Dec. 13, 1941	2.49	182		Mar. 15, 1953	2.40	138
	Mar. 22, 1942	2.25	123		Apr. 7, 1953	2.50	169
	Aug. 9, 1942	2.83	331		May 23, 1953	2.25	100
	Aug. 13, 1942	2.33	147	1954	Mar. 20, 1954	2.24	97
	Sept. 27, 1942	2.18	104	1955	Aug. 13, 1955	2.85	314
1943	Feb. 11, 1943	2.32	128		Aug. 18, 1955	3.02	410
	May 20, 1943	2.30	122	1956	Oct. 14, 1955	3.03	416
	May 26, 1943	2.26	112	1957	Apr. 5, 1957	2.34	134
	June 26, 1943	2.45	168	1958	Dec. 20, 1957	2.47	175
1944	Nov. 9, 1943	2.27	114		Feb. 28, 1958	2.56	208
	Jan. 6, 1944	2.55	204		Apr. 6, 1958	2.25	109
	Mar. 7, 1944	2.24	107	1959	Oct. 26, 1958	2.28	117
	Mar. 13, 1944	2.28	117		Mar. 6, 1959	2.29	119
	Apr. 24, 1944	2.29	119	1960	Apr. 3, 1960	2.24	106
1945	July 18, 1945	3.30	645		Sept. 12, 1960	2.30	133
1946	Nov. 29, 1945	2.25	100	1961	Mar. 23, 1961	2.22	112
	Dec. 26, 1945	b2.32	-				
	June 2, 1946	2.35	124				
1947	May 1, 1947	2.29	109				

a For period Apr. 8 to Sept. 30, 1936.

b Backwater from ice.

RARITAN RIVER BASIN

3980. Neshanic River at Reaville, N.J.

Location.--Lat 40°28'18", long 74°49'42", on left bank 50 ft downstream from highway bridge, 0.6 mile southwest of Reaville, Hunterdon County, 1.5 miles downstream from Third Neshanic River, and 2.2 miles upstream from Back Brook.

Drainage area.--25.7 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording. Datum of gage is 109.46 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 1,700 cfs and extended to 8,830 cfs on basis of slope-area measurement 0.7 mile downstream (adjusted to gaging site).

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 1,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Feb. 17, 1931	6.07	1,100	1946	July 22, 1946	7.34	1,760
1932	Mar. 28, 1932	8.75	2,730		July 23, 1946	8.28	2,360
1933	Nov. 7, 1932	9.48	3,800	1947	May 5, 1947	6.43	1,240
	Nov. 10, 1932	9.62	4,000	1948	Nov. 8, 1947	8.05	2,200
	Nov. 19, 1932	9.44	3,750		Nov. 12, 1947	7.60	1,920
	Aug. 23, 1933	10.80	5,970		Feb. 18, or 19 1948	8.30	2,370
1934	Mar. 5, 1934	9.35	3,640		June 20, 1948	8.82	2,730
1935	Feb. 14, 1935	7.17	1,680		June 28, 1948	8.16	2,280
	July 9, 1935	8.67	2,660	1949	Dec. 30, 1948	8.22	2,310
1936	Jan. 3, 1936	9.12	3,340		Jan. 5, 1949	7.76	2,020
	Jan. 9, 1936	8.79	2,710	1950	Mar. 23, 1950	7.77	2,020
	Mar. 11, 1936	7.91	2,110	1951	Nov. 25, 1950	10.40	5,220
	Apr. 6, 1936	7.56	1,900		Dec. 8, 1950	8.10	2,240
1937	Dec. 20, 1936	8.50	2,510		Feb. 7, 1951	7.80	2,040
	Feb. 22, 1937	7.51	1,870		Mar. 30, 1951	8.39	2,430
	Aug. 11, 1937	7.69	1,970	1952	Nov. 7, 1951	10.37	5,170
1938	Nov. 13, 1937	8.60	2,580		Dec. 21, 1951	8.79	2,710
	July 20, 1938	9.00	3,200		Feb. 4, 1952	7.26	1,690
	July 23, 1938	9.12	3,340		Mar. 11, 1952	8.04	2,190
	Sept. 21, 1938	10.74	5,850		Apr. 28, 1952	8.68	2,640
	Sept. 27, 1938	7.66	1,960		May 25, 1952	7.84	2,050
1939	Dec. 6, 1938	7.31	1,740		June 1, 1952	7.19	1,640
	Feb. 3, 1939	8.62	2,580	1953	Nov. 22, 1952	8.67	2,630
	Feb. 28, 1939	8.11	2,240		Dec. 11, 1952	8.13	2,250
	Apr. 6, 1939	7.33	1,740		Jan. 24, 1953	8.43	2,460
	Apr. 19, 1939	8.42	2,440		Mar. 13, 1953	7.70	1,960
1940	Mar. 15, 1940	9.04	3,250		Mar. 15, 1953	8.45	2,480
	Apr. 8, 1940	8.76	2,690		Apr. 7, 1953	8.32	2,380
1941	Feb. 7, 1941	8.39	2,430	1954	Dec. 14, 1953	7.26	1,690
1942	Dec. 14, 1941	7.30	1,740	1955	Nov. 21, 1954	7.36	1,750
	Aug. 9, 1942	12.00	9,150		Mar. 22, 1955	7.32	1,720
	Aug. 13, 1942	8.73	2,670		Aug. 13, 1955	9.20	3,440
1943	Dec. 30, 1942	7.52	1,870		Aug. 19, 1955	11.90	8,830
	Feb. 11, 1943	7.62	1,930	1956	Oct. 14, 1955	10.81	5,990
1944	Jan. 6, 1944	8.51	2,520	1957	Apr. 6, 1957	7.49	1,830
	Mar. 13, 1944	7.63	1,940	1958	Dec. 20, 1957	8.49	2,660
	Apr. 24, 1944	7.15	1,650		Jan. 22, 1958	7.78	2,040
1945	Jan. 1, 1945	7.29	1,730		Feb. 28, 1958	9.21	3,450
	Feb. 22, 1945	a8.43	-		Apr. 6, 1958	8.60	2,770
	July 18, 1945	12.33	10,300	1959	Jan. 2, 1959	7.37	1,750
	Aug. 1, 1945	7.55	1,890	1960	Apr. 4, 1960	7.13	1,610
	Sept. 11, 1945	7.51	1,750		Sept. 12, 1960	8.15	2,340
1946	Nov. 29, 1945	7.20	1,680	1961	Jan. 1, 1961	a7.07	-
	June 2, 1946	10.03	4,610		Mar. 23, 1961	6.99	1,540

a Backwater from ice.

RARITAN RIVER BASIN

3985. North Branch Raritan River near Far Hills, N.J.

Location.--Lat 40°42'30", long 74°38'11", on left bank 75 ft upstream from Ravine Lake Dam, 1.6 miles north of Far Hills, Somerset County, and 2.3 miles upstream from Peapack Brook.

Drainage area.--26.2 sq mi. Area of lakes, ponds, and swamps, 0.2 sq mi.

Gage.--Nonrecording prior to June 18, 1925; recording thereafter at sites above masonry dam. Datum of gage is 224.49 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 500 cfs and extended above on basis of weir formula.

Remarks.--Only annual peaks are shown prior to 1926. Base for partial-duration series, 700 cfs.

Peak stages and discharges							
Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1919	July 23, 1919	7.6	7,000	1943	Dec. 30, 1942	3.63	870
					May 26, 1943	3.57	819
1922	Mar. 7, 1922	5.1	2,450				
1923	Mar. 16, 1923	4.0	1,220	1944	Mar. 7, 1944	3.93	1,140
1924	Apr. 6, 1924	4.1	1,320		Mar. 13, 1944	3.85	1,060
1925	July 31, 1925	3.7	947		Mar. 23, 1944	3.47	737
					Apr. 24, 1944	3.60	845
1926	Jan. 18, 1926	4.01	1,230				
1927	July 23, 1927	3.62	857	1945	Jan. 1, 1945	4.06	1,260
1928	Nov. 18, 1927	4.64	1,850	1946	Dec. 26, 1945	3.45	720
	Feb. 15, 1928	3.77	1,010		May 12, 1946	4.23	1,430
	Feb. 23, 1928	3.50	772		June 2, 1946	3.61	854
	July 5, 1928	4.49	1,750		July 23, 1946	3.97	1,170
				1947	Mar. 14, 1947	3.49	753
1929	Feb. 7, 1929	3.80	1,040				
	Feb. 26, 1929	3.60	857	1948	Nov. 8, 1947	4.21	1,420
	Apr. 26, 1929	3.75	994		Nov. 12, 1947	3.62	869
					Apr. 1, 1948	3.60	852
1930	Mar. 8, 1930	3.29	615				
1931	July 10, 1931	4.10	1,320	1949	Dec. 30, 1948	4.31	1,520
1932	Mar. 28, 1932	3.76	1,000		Jan. 6, 1949	3.90	1,120
				1950	Mar. 23, 1950	3.08	448
1933	Nov. 1, 1932	3.95	1,180				
	Nov. 10, 1932	3.84	1,080	1951	Nov. 25, 1950	4.13	1,340
	Nov. 19, 1932	4.26	1,480		Feb. 7, 1951	3.67	913
	Aug. 24, 1933	3.50	772		Mar. 30, 1951	4.10	1,310
	Sept. 15, 1933	3.88	1,110		July 28, 1951	4.10	1,310
					Aug. 12, 1951	3.99	1,210
1934	Mar. 5, 1934	4.37	1,580	1952	Nov. 7, 1951	4.76	2,010
	June 19, 1934	3.50	772		Dec. 21, 1951	3.84	1,060
	Sept. 30, 1934	5.24	2,630		Mar. 11, 1952	4.09	1,290
1935	Oct. 6, 1934	3.44	724		May 25, 1952	3.94	1,150
					June 1, 1952	3.81	1,030
1936	Jan. 3, 1936	a4.81	-		Sept. 1, 1952	3.94	1,150
	Mar. 11, 1936	4.60	1,860	1953	Nov. 22, 1952	4.07	1,270
	Apr. 5, 1936	4.24	1,480		Jan. 24, 1953	4.18	1,380
1937	Dec. 20, 1936	3.91	1,140		Mar. 13, 1953	3.50	759
	Feb. 22, 1937	4.07	1,270		Apr. 7, 1953	3.67	903
				1954	Aug. 31, 1954	3.18	513
1938	Nov. 13, 1937	3.71	956				
	Jan. 25, 1938	3.80	1,040	1955	Nov. 21, 1954	3.77	993
	July 23, 1938	3.69	938		Feb. 7, 1955	4.12	1,320
	Aug. 6, 1938	4.09	1,290		Aug. 13, 1955	4.34	1,550
	Sept. 21, 1938	5.31	2,700		Aug. 19, 1955	4.99	2,280
1939	Feb. 3, 1939	3.37	657	1956	Oct. 14, 1955	5.33	2,710
1940	Jan. 15, 1940	3.44	703				
	Mar. 15, 1940	5.85	3,410	1957	Apr. 6, 1957	3.19	518
	Apr. 8, 1940	3.60	835				
	June 1, 1940	3.47	728	1958	Dec. 21, 1957	3.79	1,010
1941	Feb. 7, 1941	4.05	1,240		Jan. 22, 1958	3.67	903
					Feb. 28, 1958	4.00	1,200
1942	Mar. 3, 1942	3.46	729		Apr. 6, 1958	3.62	860
	Aug. 10, 1942	5.75	3,280	1959	Nov. 29, 1958	3.44	710
	Aug. 14, 1942	4.09	1,290				
	Sept. 27, 1942	3.69	921	1960	Aug. 19, 1960	b4.29	750
					Sept. 12, 1960	3.78	1,000
1943	Nov. 25, 1942	3.65	887	1961	Feb. 26, 1961	3.41	686

a Backwater from ice.

b Backwater from debris.

RARITAN RIVER BASIN

3995. Lamington (Black) River near Pottersville, N.J.
(Published as "Black River" prior to October 1952)

Location.--Lat 40°43'39", long 74°43'50", on right bank 1.1 miles upstream from bridge on State Highway 512, 1.2 miles northwest of Pottersville, Somerset County, and 5.5 miles upstream from Cold Brook.

Drainage area.--32.8 sq mi. Area of lakes, ponds, and swamps, 1.6 sq mi.

Gage.--Nonrecording prior to July 1, 1922; recording thereafter. Concrete control since July 1, 1937. On downstream side of highway bridge at Pottersville, 1.1 miles downstream, at different datum prior to July 1, 1922. Datum of gage is 284.14 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 760 cfs prior to July 1937, and below 380 cfs thereafter. Both relations extended on basis of slope-area measurement of 1,700 cfs.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 380 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1896	Feb. 6, 1896	-	2,600	1936	Mar. 12, 1936	3.55	818
1922	Feb. 2, 1922	3.20	390		Mar. 18, 1936	2.86	408
	July 1, 1922	3.76	970		Apr. 6, 1936	3.38	704
	July 3, 1922	3.25	624	1937	Feb. 22, 1937	2.92	438
	Sept. 4, 1922	3.04	502	1938	Jan. 25, 1938	3.39	574
1923	Jan. 1, 1923	2.92	438		July 23, 1938	3.12	420
	Mar. 16, 1923	3.00	450		Sept. 21, 1938	3.97	996
1924	Jan. 16, 1924	3.33	673	1939	Apr. 19, 1939	3.13	425
	Apr. 6, 1924	3.54	811	1940	Jan. 15, 1940	a3.54	-
	Sept. 30, 1924	3.00	480		Mar. 15, 1940	5.34	2,630
1925	Feb. 10, 1925	3.35	686		June 1, 1940	3.13	425
	July 31, 1925	3.45	750		July 11, 1940	3.27	502
1926	Jan. 18, 1926	3.49	776	1941	Feb. 7, 1941	3.65	745
	Feb. 25, 1926	2.91	433	1942	Aug. 9, 1942	3.28	508
1927	Jan. 20, 1927	a2.83	-		Aug. 10, 1942	4.13	1,140
	July 23, 1927	3.15	564		Aug. 14, 1942	4.60	1,640
1928	Nov. 3, 1927	3.37	698		Sept. 18, 1942	3.84	892
	Nov. 17, 1927	4.75	1,800		Sept. 27, 1942	3.51	526
	Feb. 14, 1928	3.70	925	1943	Dec. 22, 1942	a3.00	-
	Feb. 23, 1928	3.05	508		Dec. 30, 1942	3.30	520
	July 11, 1928	3.31	660		May 26, 1943	3.17	445
1929	Feb. 7, 1929	3.80	1,000	1944	Mar. 7, 1944	3.37	562
	Feb. 26, 1929	3.28	590		Mar. 13, 1944	3.49	634
1930	June 10, 1930	2.78	355		Apr. 24, 1944	3.38	568
1931	Nov. 17, 1930	2.94	449	1945	Jan. 1, 1945	3.63	731
	July 10, 1931	3.35	686		July 22, 1945	4.20	1,200
1932	Mar. 28, 1932	2.83	375	1946	Nov. 22, 1945	3.34	544
1933	Nov. 1, 1932	3.14	558		Dec. 25, 1945	a3.66	450
	Nov. 10, 1932	3.10	535		May 12, 1946	3.86	908
	Nov. 19, 1932	4.14	1,270		July 23, 1946	3.66	752
	Aug. 23, 1933	3.09	530	1947	May 5, 1947	3.15	410
	Sept. 15, 1933	3.34	679		July 22, 1947	3.34	544
1934	Mar. 3, 1934	a3.33	-	1948	Nov. 8, 1947	3.55	675
	Mar. 4, 1934	a3.51	-		Nov. 12, 1947	3.09	385
	Mar. 5, 1934	4.28	1,390		Apr. 1, 1948	3.40	580
1935	Feb. 14, 1935	3.45	750	1949	Dec. 30, 1948	3.60	710
	July 8, 1935	3.50	783		Jan. 5, 1949	3.40	580
	July 9, 1935	3.35	686	1950	June 1, 1950	2.73	242
1936	Oct. 30, 1935	3.36	692	1951	Nov. 25, 1950	3.36	556
	Jan. 3, 1936	a4.19	780		Feb. 7, 1951	3.59	703
	Jan. 9, 1936	2.92	438		Mar. 30, 1951	3.71	788

a Backwater from ice.

RARITAN RIVER BASIN

Peak stages and discharges of Lamington (Black) River near Pottersville, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	July 28, 1951	3.90	940	1956	Oct. 14, 1955	4.41	1,420
1952	Nov. 7, 1951	3.93	964		July 27, 1956	3.29	514
	Dec. 21, 1951	3.35	550		Sept. 6, 1956	3.48	628
	Mar. 11, 1952	3.47	622	1957	Apr. 6, 1957	2.88	307
	May 25, 1952	3.40	580	1958	Jan. 22, 1958	3.62	724
	Sept. 1, 1952	4.54	1,570		Apr. 6, 1958	3.09	405
1953	Nov. 22, 1952	3.24	444	1959	Jan. 21, 1959	a3.64	-
	Dec. 11, 1952	3.12	392		Mar. 6, 1959	2.99	341
	Jan. 24, 1953	3.35	550	1960	July 30, 1960	3.11	400
	Apr. 7, 1953	3.19	422		Aug. 19, 1960	3.11	400
1954	Aug. 31, 1954	2.80	275		Sept. 12, 1960	3.19	440
1955	Feb. 6, 1955	4.14	1,150	1961	Feb. 25, 1961	3.01	350
	Aug. 13, 1955	5.24	2,480				
	Aug. 18, 1955	4.71	1,770				

a Backwater from ice.

4000. North Branch Raritan River near Raritan, N.J.
(Published as "at Milltown" prior to 1944)

Location--Lat 40°34'10", long 74°40'45", on right bank 400 ft upstream from U.S. Highway 202, 1.4 miles upstream from confluence with South Branch, and 2 miles west of Raritan, Somerset County.

Drainage area--190 sq mi. Area of lakes, ponds, and swamps, 1.9 sq mi.

Gage--Nonrecording prior to Oct. 17, 1936; recording thereafter. Datum of gage is 50.43 ft above mean sea level, datum of 1929.

Stage-discharge relation--Defined by current-meter measurements below 6,000 cfs and extended above on basis of slope-area measurements of 11,900 and 16,500 cfs, and contracted-opening measurement of 20,700 cfs.

Remarks--Only annual peaks are shown prior to Oct. 1, 1936. Base for partial-duration series, 5,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1896	Feb. 6, 1896	-	19,000	1941	Dec. 28, 1940	7.57	5,140
					Feb. 8, 1941	9.10	8,310
1924	Apr. 7, 1924	9.5	9,260	1942	Aug. 9, 1942	11.78	15,500
1925	Mar. 19, 1925	a9.0	5,570		Aug. 14, 1942	11.33	14,200
1926	Mar. 7, 1926	8.8	7,630		Aug. 16, 1942	8.95	7,960
1927	Aug. 1, 1927	8.4	6,770		Sept. 19, 1942	9.75	9,860
1928	Nov. 3, 1927	10.0	10,500		Sept. 28, 1942	8.01	5,980
1929	Feb. 7, 1929	9.4	9,020	1943	Nov. 25, 1942	7.53	5,060
1930	Mar. 8, 1930	8.4	6,770		Dec. 30, 1942	8.11	6,180
1931	Mar. 29, 1931	8.0	5,960		May 27, 1943	8.94	7,940
1932	Mar. 28, 1932	9.9	10,300	1944	Nov. 9, 1943	7.96	5,880
1933	Sept. 15, 1933	10.0	10,500		Jan. 6, 1944	8.63	7,260
1934	Sept. 30, 1934	10.6	12,200		Mar. 7, 1944	8.00	5,960
1935	Oct. 6, 1934	8.4	6,770		Apr. 25, 1944	8.60	7,190
1936	Jan. 3, 1936	11.35	14,400		Mar. 13, 1944	8.50	6,980
1937	Dec. 20, 1936	8.60	7,190		Mar. 24, 1944	7.64	5,270
	Feb. 22, 1937	7.85	5,660		Apr. 25, 1944	8.60	7,190
1938	Jan. 25, 1938	8.34	6,560	1945	Jan. 1, 1945	9.22	8,590
	July 23, 1938	8.92	7,900	1946	Dec. 26, 1945	7.87	5,700
	Aug. 6, 1938	8.00	5,960		May 18, 1946	7.98	5,920
	Sept. 21, 1938	12.16	16,500		June 2, 1946	10.18	11,000
1939	Feb. 3, 1939	8.67	7,410		July 23, 1946	9.09	8,290
	Feb. 28, 1939	7.56	5,120	1947	Apr. 5, 1947	7.86	5,680
	Apr. 19, 1939	7.76	5,490	1948	Nov. 8, 1947	8.88	7,810
1940	Mar. 15, 1940	11.62	15,100		Nov. 12, 1947	8.50	6,980
	Apr. 9, 1940	8.72	7,450		Feb. 20, 1948	b9.39	-
	June 2, 1940	8.07	6,100		May 13, 1948	8.38	6,730

a Occurred Feb. 12, 1925, backwater from ice.

b Backwater from ice.

RARITAN RIVER BASIN

Peak stages and discharges of North Branch Raritan River near Raritan, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Dec. 30, 1948	11.25	14,000	1954	Dec. 14, 1953	7.57	4,590
	Jan. 6, 1949	8.55	7,080	1955	Nov. 21, 1954	8.71	5,320
1950	Mar. 23, 1950	6.56	3,660		Feb. 7, 1955	-	(c)
1951	Nov. 26, 1950	9.66	9,640		Aug. 13, 1955	12.70	17,400
	Dec. 8, 1950	8.21	6,380		Aug. 19, 1955	13.59	20,700
	Feb. 7, 1951	8.17	6,300	1956	Oct. 15, 1955	12.68	17,300
	Mar. 31, 1951	8.99	8,060		Sept. 7, 1956	8.38	5,710
	July 28, 1951	7.92	5,800	1957	Apr. 5, 1957	7.65	4,680
1952	Nov. 7, 1951	10.63	10,900	1958	Dec. 21, 1957	8.58	6,060
	Dec. 21, 1951	9.66	8,470		Jan. 22, 1958	8.07	5,220
	Mar. 11, 1952	9.12	7,240		Feb. 28, 1958	8.67	6,240
	May 25, 1952	9.00	6,980		Apr. 6, 1958	8.27	5,520
	June 1, 1952	8.80	6,550	1959	Nov. 29, 1958	8.30	5,570
	Sept. 1, 1952	9.37	7,800	1960	Sept. 12, 1960	8.57	6,050
1953	Nov. 22, 1952	8.30	5,600	1961	Mar. 23, 1961	8.42	5,780
	Dec. 11, 1952	8.08	5,260				
	Jan. 24, 1953	9.14	7,290				
	Mar. 13, 1953	8.45	5,860				
	Apr. 7, 1953	9.27	7,570				

c Unknown, may have exceeded base.

4005. Raritan River at Manville, N.J.
(Published as "at Finderne" 1903-7)

Location--Lat 40°33'18", long 74°35'02", on left bank at downstream end of highway bridge at Manville, Somerset County, 1.4 miles upstream from Millstone River.

Drainage area--490 sq mi. Area of lakes, ponds, and swamps, 3.2 sq mi.

Gage--Nonrecording prior to Aug. 15, 1923; recording thereafter. Datum of gage is 20.61 ft above mean sea level, datum of 1929.

Stage-discharge relation--Often affected by backwater from Millstone River. Prior to 1945, relation defined by current-meter measurements below 14,000 cfs and extended above on basis of slope-area measurements of 17,700 and 36,100 cfs. Since 1945, measured fall to station at Bound Brook used as a factor in computing discharge; relation defined by current-meter measurements below 18,000 cfs and extended above on basis of contracted-opening measurements of 27,100 cfs and 33,300 cfs.

Bankfull stage--11 ft.

Remarks--Only annual peaks are shown prior to 1924. Base for partial-duration series, 10,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	18.5	28,600	1926	Sept. 7, 1926	12.25	11,200
1905	Jan. 7, 1905	15.4	18,600	1927	Aug. 1, 1927	12.60	12,100
1906	Mar. 4, 1906	13.3	13,600	1928	Oct. 19, 1927	14.1	15,600
1907a/	Mar. 15, 1907	12.5	11,900		Nov. 4, 1927	11.58	10,000
1909	Feb. 24, 1909	14.0	15,300		Nov. 18, 1927	12.89	12,700
1910	Jan. 22, 1910	15.5	18,900		Dec. 8, 1927	12.64	12,100
1911	Sept. 1, 1911	12.0	10,800		Feb. 8, 1928	11.94	10,600
1912	Mar. 13, 1912	16.0	20,400		Feb. 23, 1928	11.97	10,800
1913	Dec. 31, 1912	13.5	14,100	1929	Feb. 7, 1929	11.63	10,000
1914	Mar. 18, 1914	14.0	15,300		Feb. 27, 1929	13.34	13,600
1915	Feb. 2, 1915	17.5	25,200	1930	Mar. 8, 1930	11.93	11,300
1922	Feb. 2, 1922	13.0	13,000	1931	July 11, 1931	11.30	9,690
1923	Mar. 16, 1923	13.5	14,100	1932	Mar. 28, 1932	13.76	14,800
1924	Jan. 17, 1924	11.7	10,200	1933	Nov. 7, 1932	13.47	14,100
	Apr. 7, 1924	15.00	17,500		Nov. 10, 1932	14.53	16,600
1925	Feb. 12, 1925	13.36	15,000		Nov. 20, 1932	14.92	17,300
1926	Feb. 26, 1926	13.0	13,000		Apr. 12, 1933	11.56	10,000

a Period Oct. 1, 1906, to Mar. 31, 1907.

RARITAN RIVER BASIN

Peak stages and discharges of Raritan River at Manville, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Aug. 24, 1933	16.22	21,000	1948	Nov. 12, 1947	13.23	11,000
	Sept. 15, 1933	13.18	13,400		May 14, 1948	13.42	11,600
1934	Mar. 5, 1934	14.52	16,600	1949	Dec. 31, 1948	19.8	22,100
1935	Feb. 15, 1935	11.60	10,500		Jan. 6, 1949	14.30	12,600
1936	Jan. 3, 1936	16.10	20,600	1950	Mar. 23, 1950	11.59	8,660
	Jan. 10, 1936	13.04	13,000	1951	Nov. 26, 1950	16.17	18,200
	Mar. 12, 1936	14.85	17,000		Dec. 8, 1950	14.41	13,400
	Mar. 18, 1936	11.60	10,000		Feb. 8, 1951	12.51	10,200
	Apr. 6, 1936	12.78	12,500		Mar. 31, 1951	14.74	13,700
1937	Dec. 20, 1936	14.23	15,800	1952	Nov. 7, 1951	17.17	20,400
1938	Nov. 14, 1937	12.77	12,500		Dec. 21, 1951	16.70	17,100
	Jan. 25, 1938	13.55	14,300		Mar. 11, 1952	15.09	14,300
	July 23, 1938	17.75	26,000		Apr. 28, 1952	12.81	10,500
	Sept. 22, 1938	20.42	36,100		May 25, 1952	13.10	11,700
1939	Jan. 31, 1939	11.70	10,200		June 2, 1952	13.78	12,300
	Feb. 4, 1939	14.99	17,500		Sept. 2, 1952	12.59	10,300
	Feb. 28, 1939	12.08	11,000	1953	Nov. 22, 1952	13.5	12,700
	Apr. 7, 1939	12.25	11,200		Dec. 6, 1952	12.2	10,000
	Apr. 20, 1939	12.53	11,900		Dec. 11, 1952	12.6	10,500
1940	Mar. 4, 1940	11.60	10,000		Jan. 24, 1953	14.7	15,200
	Mar. 15, 1940	18.15	27,400		Mar. 13, 1953	13.3	11,400
	Apr. 9, 1940	14.80	17,000		Mar. 16, 1953	13.1	11,200
1941	Feb. 8, 1941	15.00	17,500	1954	Apr. 7, 1953	14.7	15,400
1942	Aug. 9, 1942	19.70	33,200		Dec. 14, 1953	12.1	9,820
	Aug. 14, 1942	16.67	22,500	1955	Nov. 21, 1954	14.8	14,600
1943	Dec. 31, 1942	13.73	14,500		Aug. 13, 1955	19.9	26,600
1944	Nov. 9, 1943	12.80	12,600	1956	Aug. 19, 1955	b22.1	34,600
	Jan. 6, 1944	15.09	18,000		Oct. 15, 1955	b19.6	26,200
	Mar. 7, 1944	12.36	11,600	1957	Apr. 5, 1957	13.1	10,800
	Mar. 13, 1944	13.82	15,100	1958	Dec. 21, 1957	14.1	13,000
	Apr. 25, 1944	13.98	15,500		Dec. 26, 1957	13.4	12,400
1945	Jan. 2, 1945	14.4	13,800		Jan. 15, 1958	12.2	10,300
	Feb. 27, 1945	11.89	9,050		Jan. 22, 1958	13.1	11,400
	July 20, 1945	12.63	10,400		Feb. 28, 1958	16.1	16,500
1946	June 2, 1946	17.76	19,900	1959	Apr. 7, 1958	13.5	11,500
	July 24, 1946	13.60	11,800		Oct. 26, 1958	11.96	9,200
1947	Apr. 5, 1947	10.89	7,480	1960	Dec. 29, 1959	12.3	10,100
1948	Nov. 9, 1947	13.57	11,900		Apr. 4, 1960	12.5	10,100
					Sept. 13, 1960	15.3	14,700
				1961	Mar. 24, 1961	13.55	11,500

b Occurred at different time than peak discharge.

4010. Stony Brook at Princeton, N.J.

Location.--Lat 40°19'59", long 74°40'56", on right bank 12 ft downstream from bridge on U.S. Highway 206, 1.6 miles southwest of Princeton, Mercer County, and 4 miles upstream from Lake Carnegie.

Drainage area.--44.5 sq mi.

Gage.--Recording. Datum of gage is 63.30 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 3,100 cfs and extended above by logarithmic plotting.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 1,800 cfs.

RARITAN RIVER BASIN

Peak stages and discharges of Stony Brook at Princeton, N. J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Dec. 14, 1953	8.66	3,000	1958	Jan. 22, 1958	7.57	2,360
	Mar. 3, 1954	7.10	2,120		Jan. 25, 1958	7.06	2,100
1955	Nov. 21, 1954	8.55	2,930		Feb. 28, 1958	10.46	4,150
	Feb. 7, 1955	7.28	2,210		Aug. 6, 1958	8.94	3,160
	Mar. 22, 1955	6.57	1,840		July 6, 1958	6.72	1,920
	Aug. 13, 1955	11.90	5,130	1959	Nov. 29, 1958	7.62	2,390
	Aug. 19, 1955	11.42	4,790		Jan. 2, 1959	6.53	1,820
	Aug. 22, 1955	7.22	2,180		Mar. 6, 1959	7.73	2,460
1956	Oct. 15, 1955	9.35	3,420	1960	July 30, 1960	8.65	2,990
	Feb. 18, 1956	7.14	2,140		Sept. 12, 1960	10.85	4,400
	Mar. 14, 1956	7.61	2,390	1961	Jan. 1, 1961	7.33	2,240
1957	Apr. 5, 1957	7.37	2,260		Feb. 19, 1961	7.72	2,450
					Mar. 23, 1961	8.83	3,100
1958	Dec. 21, 1957	7.53	2,340		Apr. 13, 1961	7.35	2,250
	Dec. 26, 1957	6.66	1,890		July 29, 1961	9.44	3,480

4015. Millstone River near Kingston, N.J.

Location.--Lat 40°23'05", long 74°37'29", on left bank at Princeton sewage-disposal plant, 0.8 mile north of Kingston, Middlesex County, 0.8 mile downstream from Heathcote Brook, and 1.1 miles downstream from Lake Carnegie Dam.

Drainage area.--171 sq mi. Area of lakes, ponds, and swamps, 4.5 sq mi.

Gage.--Recording. Datum of gage is 38.00 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 4,100 cfs and extended above by logarithmic plotting.

Bankfull stage.--5 ft.

Remarks.--Possible diversion to or inflow from Delaware and Raritan Canal above station. Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933a/	Aug. 24, 1933	10.60	4,950	1943	Mar. 7, 1943	8.17	2,880
1934	Mar. 5, 1934	8.85	3,270		May 20, 1943	7.33	2,230
	Sept. 18, 1934	7.25	2,100	1944	Nov. 9, 1943	7.82	2,600
1935	Sept. 6, 1935	6.84	1,820		Jan. 5, 1944	8.47	3,130
					Jan. 6, 1944	11.03	5,830
1936	Jan. 3, 1936	-	4,500		Mar. 13, 1944	10.35	5,010
	Jan. 10, 1936	9.43	4,050		Apr. 25, 1944	9.50	4,100
	Mar. 12, 1936	9.09	3,710		Sept. 15, 1944	11.39	6,300
1937	Dec. 20, 1936	8.77	3,440	1945	Nov. 28, 1944	8.13	2,840
					Jan. 2, 1945	8.20	2,900
1938	Jan. 25, 1938	7.82	2,380		Feb. 23, 1945	7.89	2,650
	June 28, 1938	8.11	2,580		July 20, 1945	8.22	2,530
	July 23, 1938	13.37	8,600		July 23, 1945	9.28	3,340
	Sept. 21, 1938	14.12	9,820		Sept. 12, 1945	8.28	2,580
1939	Jan. 31, 1939	8.61	2,990		Sept. 19, 1945	7.81	2,250
	Feb. 4, 1939	10.90	5,260	1946	Nov. 29, 1945	9.02	3,140
	Apr. 7, 1939	8.96	3,280		Dec. 26, 1945	8.17	2,500
1940	Mar. 4, 1940	8.27	2,960		Mar. 27, 1946	8.16	2,490
	Mar. 15, 1940	9.68	4,280		June 2, 1946	12.79	7,080
	Apr. 9, 1940	10.50	5,190		July 23, 1946	9.14	3,230
	May 31, 1940	7.40	2,280	1947	Apr. 5, 1947	6.25	1,320
1941	Feb. 8, 1941	9.37	3,970				
1942	Aug. 9, 1942	10.10	4,730	1948	Nov. 9, 1947	8.38	2,580
					Nov. 12, 1947	9.09	3,230
1943	Dec. 30, 1942	8.58	3,220		Apr. 1, 1948	8.35	2,660
	Feb. 11, 1943	7.07	2,050	1949	Dec. 30, 1948	12.86	7,230
					Jan. 6, 1949	7.57	2,130

a Period May 24 to Sept. 30, 1933.

RARITAN RIVER BASIN

4020. Millstone River at Blackwells Mills, N.J.

Location.--Lat 40°28'30", long 74°34'34", on left bank 30 ft downstream from highway bridge at Blackwells Mills, Somerset County, 0.3 mile downstream from Six Mile Run.

Drainage area.--258 sq mi. Area of lakes, ponds, and swamps, 4.9 sq mi.

Gage.--Nonrecording prior to Aug. 17, 1928; recording thereafter. Datum of gage is 26.97 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,900 cfs and extended above on basis of slope-area measurement of 18,300 cfs.

Bankfull stage.--6 ft.

Remarks.--Possible diversion to or inflow from Delaware & Raritan Canal above station. Only annual peaks, from graph of twice-daily gage readings, prior to 1929. Base for partial-duration series, 3,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Aug. 8, 1921	8.55	4,190	1945	Nov. 22, 1944	7.19	3,060
1922	Mar. 8, 1922	7.50	3,420		Nov. 28, 1944	7.61	3,420
1923	Mar. 17, 1923	8.2	3,840		Jan. 2, 1945	7.39	3,220
1924	Apr. 7, 1924	11.0	7,900		Feb. 23, 1945	7.38	3,210
1925	Feb. 12, 1925	10.05	6,340		Feb. 27, 1945	7.28	3,130
					Sept. 19, 1945	7.32	3,170
1926	Sept. 7, 1926	11.0	7,900	1946	Nov. 29, 1945	8.91	4,790
1927	July 23, 1927	10.8	7,540		Dec. 26, 1945	8.68	4,520
1928	Oct. 18, 1927	10.4	7,000		Jan. 1, 1946	7.17	3,050
					Mar. 27, 1946	7.22	3,090
1929	Feb. 27, 1929	8.22	4,000		June 3, 1946	12.37	10,500
	Mar. 6, 1929	7.45	3,280		July 24, 1946	8.15	3,950
1930	Mar. 8, 1930	7.3	3,140	1947	Apr. 6, 1947	5.79	2,130
1931	June 17, 1931	6.94	2,810	1948	Nov. 9, 1947	7.93	3,730
1932	Mar. 28, 1932	10.25	6,650		Nov. 12, 1947	8.17	3,970
1933	Nov. 10, 1932	9.22	5,200		Feb. 18, 1948	a8.38	3,100
	Nov. 19, 1932	10.21	6,650		Apr. 2, 1948	7.51	3,330
	Mar. 21, 1933	7.44	3,270		June 20, 1948	7.23	3,090
	Aug. 24, 1933	9.77	5,980	1949	Dec. 31, 1948	13.84	14,000
1934	Mar. 5, 1934	9.32	5,300		Jan. 6, 1949	7.88	3,680
1935	Feb. 16, 1935	6.91	2,810	1950	Feb. 15, 1950	7.70	3,500
					Mar. 23, 1950	7.62	3,430
1936	Jan. 3, 1936	10.05	6,330	1951	Nov. 26, 1950	9.21	5,180
	Jan. 10, 1936	8.08	3,880		Dec. 8, 1950	7.83	3,630
	Mar. 12, 1936	9.27	5,260		Feb. 22, 1951	8.29	4,090
1937	Dec. 20, 1936	7.97	3,800		Mar. 31, 1951	8.01	3,810
					Aug. 13, 1951	7.96	3,760
1938	Jan. 25, 1938	8.00	3,800	1952	Nov. 8, 1951	8.87	4,740
	June 29, 1938	7.20	3,050		Dec. 21, 1951	11.53	8,870
	July 23, 1938	13.22	12,400		Mar. 12, 1952	9.57	5,670
	Sept. 21, 1938	15.29	18,300		Apr. 28, 1952	10.21	6,580
1939	Jan. 31, 1939	a8.38	3,600		May 26, 1952	8.09	3,890
	Feb. 4, 1939	10.04	6,270		June 2, 1952	7.54	3,360
	Mar. 1, 1939	7.22	3,050	1953	Nov. 23, 1952	7.21	3,060
	Apr. 7, 1939	7.84	3,600		Jan. 25, 1953	9.38	5,400
1940	Mar. 4, 1940	8.07	3,870		Mar. 13, 1953	9.56	5,650
	Mar. 15, 1940	9.41	5,440		Mar. 16, 1953	8.15	3,950
	Apr. 9, 1940	9.15	5,100		Apr. 8, 1953	8.81	4,670
	May 31, 1940	7.37	3,200	1954	Dec. 15, 1953	7.12	2,980
1941	Feb. 8, 1941	8.88	4,760	1955	Nov. 22, 1954	8.93	4,820
1942	Aug. 9, 1942	11.57	8,940		Mar. 23, 1955	7.76	3,560
1943	Dec. 30, 1942	8.90	4,780		Aug. 14, 1955	b12.42	-
	Mar. 7, 1943	7.25	3,100		Aug. 19, 1955	b12.12	-
1944	Jan. 6, 1944	10.05	6,340	1956	Oct. 15, 1955	b11.57	-
	Mar. 13, 1944	9.07	5,000		Apr. 9, 1956	7.20	3,050
	Apr. 25, 1944	8.80	4,660	1957	Apr. 6, 1957	8.43	4,240
	Sept. 15, 1944	9.92	6,160	1958	Dec. 21, 1957	8.00	3,800

a Backwater from ice.

b Backwater from Raritan River.

RARITAN RIVER BASIN

Peak stages and discharges of Millstone River at Blackwells Mills, N. J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Feb. 28, 1958	11.05	7,990	1960	Sept. 13, 1960	11.07	8,030
	Apr. 7, 1958	8.44	4,250	1961	Jan. 2, 1961	7.40	3,060
1959	Oct. 26, 1958	7.55	3,360		Feb. 20, 1961	8.15	3,720
	Aug. 9, 1959	7.67	3,460		Mar. 24, 1961	9.07	4,670
					Apr. 14, 1961	9.03	4,630
1960	Apr. 5, 1960	7.68	3,480		July 30, 1961	7.74	3,350
	July 31, 1960	8.77	4,620				

4030. Raritan River at Bound Brook, N.J.

Location.--Lat 40°33'00", long 74°33'05", on left bank 120 ft upstream from Calco Dam and Cuckold Brook, 1.0 mile downstream from Millstone River, and 1.3 miles southwest of borough of Bound Brook, Somerset County.

Drainage area.--779 sq mi. At site used 1904-9, 800 sq mi. Area of lakes, ponds, and swamps, 8.3 sq mi.

Gage.--Nonrecording prior to Jan. 1, 1945; recording thereafter. At site 1.4 miles downstream on highway bridge at different datum 1904-9. Datum of gage is 18.06 ft above mean sea level, datum of 1929.

Stage-discharge relation.--For 1904-9, defined by current-meter measurements below 6,000 cfs and extended above on basis of area-velocity study. Since 1945, defined by current-meter measurements below 17,000 cfs and extended above on basis of slope-area measurement of 30,800 cfs.

Bankfull stage.--4 ft.

Historical data.--Flood of Feb. 6, 1896, stage 18.3 ft (present datum), is highest since before 1800. Stage for this flood was determined by American Cyanamid Co. from surveys to mark in old barn near present gage site. At Fieldville Dam, 3 miles downstream, the highest floods of 1300-1900 (from information in Annual Report of the State Geologist for the years 1894 and 1896) are: Feb. 6, 1896, 32.2 ft; Sept. 24, 1882, 31.2 ft; Nov. 24, 1810, 8 inches to 3 ft lower than 1882; and July 17, 1865, somewhat lower than 1810. For comparison, more recent stages at Fieldville Dam are: Sept. 22, 1938, 27.4 ft; and Aug. 19, 1955, 26.4 ft.

Remarks.--Only annual peaks are shown prior to 1945. Peaks of 1904-9 determined from graph of twice-daily gage readings, and discharge is considered equivalent to present site. Peak stages 1936-42 determined by American Cyanamid Co. and discharge obtained by applying stage-discharge relation determined since 1945. Base for partial-duration series, 12,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	15.0	32,100	1948	Nov. 9, 1947	9.20	15,000
1905	Jan. 7, 1905	12.4	24,200		Nov. 12, 1947	9.06	14,600
					May 14, 1948	8.84	14,100
1906	Mar. 4, 1906	10.0	17,800	1949	Dec. 31, 1948	16.14	30,600
1907	Sept. 29, 1907	9.3	16,100		Jan. 6, 1949	10.14	17,600
1908	Jan. 12, Feb. 26, 1908	9.0	15,400	1950	Mar. 23, 1950	7.80	11,600
1909	Feb. 25, 1909	8.4	14,100	1951	Nov. 26, 1950	11.03	20,200
1936	Mar. 12, 1936	12.0	21,300		Dec. 8, 1950	9.58	16,000
1937	Dec. 20, 1936	10.0	16,600		Feb. 8, 1951	8.12	12,300
1938	Sept. 22, 1938	16.3	31,000		Mar. 31, 1951	10.13	17,600
1939	Feb. 4, 1939	11.2	19,500	1952	Nov. 8, 1951	11.89	21,100
1942	Aug. 9, 1942	14.2	26,200		Dec. 21, 1951	12.53	22,500
1945	Jan. 2, 1945	9.30	15,800		Mar. 12, 1952	10.79	19,500
	Feb. 27, 1945	8.10	12,200		Apr. 28, 1952	9.54	15,900
	July 20, 1945	8.21	12,500		May 26, 1952	8.73	13,800
1946					June 2, 1952	9.26	15,200
	Nov. 29, 1945	8.02	12,100	1953	Nov. 22, 1952	8.61	13,300
	Dec. 26, 1945	8.20	12,500		Dec. 6, 1952	8.06	12,100
	June 3, 1946	13.55	24,800		Dec. 11, 1952	8.18	12,400
	July 24, 1946	9.18	14,900		Jan. 25, 1953	10.30	17,300
1947	Apr. 5, 1947	7.40	10,700		Mar. 13, 1953	9.72	15,900

RARITAN RIVER BASIN

Peak stages and discharges of Raritan River at Bound Brook, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 16, 1953	9.06	14,300	1958	Dec. 27, 1957	8.13	12,300
	Apr. 8, 1953	10.21	17,100		Jan. 22, 1958	8.54	13,200
1954	Dec. 14, 1953	7.76	11,500		Feb. 28, 1958	12.09	21,500
					Apr. 7, 1958	9.32	15,000
1955	Nov. 22, 1954	10.07	16,700	1959	Oct. 26, 1958	8.13	12,300
	Feb. 7, 1955	8.15	12,300		Mar. 6, 1959	8.15	12,200
	Aug. 13, 1955	14.68	27,300	1960	Apr. 4, 1960	8.15	12,300
	Aug. 19, 1955	16.20	30,800		Sept. 13, 1960	11.08	19,200
1956	Oct. 15, 1955	14.38	26,700	1961	Mar. 24, 1961	9.59	15,600
1957	Apr. 6, 1957	9.51	15,400		Apr. 14, 1961	9.10	14,400
1958	Dec. 21, 1957	9.40	15,200				

4035. Green Brook at Plainfield, N.J.

Location.--Lat 40°36'53", long 74°25'55", on left bank 20 ft downstream from Sycamore Avenue Bridge in Plainfield, Union County, and 1.0 mile upstream from Stony Brook.

Drainage area.--9.75 sq mi. Area of lakes, ponds, and swamps, 0.1 sq mi.

Gage.--Recording. Datum of gage is 70.37 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and extended above on basis of contracted-opening measurement of 2,890 cfs.

Bankfull stage.--4 ft.

Historical data.--Flood of July 23, 1938, was largest since, and probably exceeded flood of Oct. 9, 1903. Flood of July 26, 1916 (estimated as 2,100 cfs at gage site and 2,200 cfs bypassing gage site) is believed the third largest, and flood of Sept. 21, 1938, is believed the fourth largest flood since at least 1896. This data obtained from a 1944 study by New Jersey Department of Conservation and Economic Development.

Remarks.--During extreme floods considerable flow bypasses gage by overflow from Green Brook basin to adjacent Cedar Brook basin. The overflow returns via Bound Brook to Green Brook 5.1 miles downstream from gage. Only data on flow at gage is shown in table. Estimates of overflow made by New Jersey Department of Conservation and Economic Development are based on flow-over-dam measurements at Lower Seely Dam 4.4 miles upstream from gage. Base for partial-duration series, 380 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938a/	July 23, 1938	5.82	b2,890	1944	Mar. 13, 1944	3.12	560
	Sept.21, 1938	4.89	c1,750		Apr. 24, 1944	3.00	507
1939	Feb. 3, 1939	2.86	422		Sept.14, 1944	2.80	425
				1945	Sept.19, 1945	2.91	469
1940	Mar. 15, 1940	3.36	639		1946	Dec. 26, 1945	3.05
	Apr. 8, 1940	3.09	516	May 15, 1946		3.03	520
	May 31, 1940	3.92	950	June 2, 1946		3.08	542
	July 27, 1940	2.86	422	July 23, 1946		2.83	437
1941	Feb. 7, 1941	2.88	430	1947	Apr. 5, 1947	2.76	410
	July 12, 1941	2.76	384				
1942	July 27, 1942	2.83	411	1948	Nov. 8, 1947	3.87	955
	Aug. 9, 1942	4.65	d1,500		Nov. 12, 1947	3.26	625
	Aug. 13, 1942	3.45	684		Apr. 1, 1948	3.24	616
	Aug. 16, 1942	3.36	639		Aug. 20, 1948	2.79	421
1943	Dec. 30, 1942	2.80	399	1949	Dec. 30, 1948	3.41	698
	May 12, 1943	3.23	578		1950	Mar. 23, 1950	2.47
	May 26, 1943	2.85	418				
1944	Jan. 6, 1944	2.89	461	1951	Nov. 25, 1950	3.14	569

a Period May 15 to Sept. 30, 1938. b Estimated peak overflow bypassing gage, about 4,400 cfs. c Estimated peak overflow bypassing gage, about 2,200 cfs. d Estimated peak overflow bypassing gage, about 500 cfs.

RARITAN RIVER BASIN

Peak stages and discharges of Green Brook at Plainfield, N. J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Dec. 8, 1950	2.77	414	1955	Aug. 19, 1955	3.29	639
	Mar. 30, 1951	2.90	465	1956	Oct. 14, 1955	3.29	639
	July 28, 1951	2.94	482				
1952	Nov. 7, 1951	2.80	425	1957	Apr. 5, 1957	2.41	285
	Dec. 21, 1951	3.07	538	1958	Dec. 21, 1957	3.12	560
	Mar. 11, 1952	3.02	516		Jan. 22, 1958	2.92	473
	May 25, 1952	3.39	688		Feb. 28, 1958	3.21	602
	June 1, 1952	3.89	968		Apr. 6, 1958	3.03	520
	Aug. 21, 1952	2.74	402		Apr. 28, 1958	2.72	395
	Sept. 1, 1952	3.10	551	1959	Nov. 28, 1958	2.67	376
1953	Dec. 5, 1952	2.92	473		Aug. 9, 1959	3.53	760
	Jan. 24, 1953	3.08	542		Sept. 1, 1959	3.33	659
	Mar. 4, 1953	2.69	383	1960	Aug. 31, 1960	2.71	391
	Mar. 13, 1953	4.06	888			3.55	770
	Mar. 16, 1953	2.92	395	1961	Mar. 23, 1961	3.05	529
	Apr. 7, 1953	3.58	654				
1954	Sept. 11, 1954	2.75	406				
1955	Aug. 13, 1955	4.32	1,270				

4045. Lawrence Brook at Patricks Corner, N.J.

Location.--Lat 40°25'20", long 74°28'45", on right bank 150 ft upstream from Church Lane Bridge at Patricks Corner, Middlesex County, 0.4 mile downstream from Ireland Brook, 2.5 miles upstream from Farrington Dam, and 2.9 miles southwest of Milltown.

Drainage area.--29 sq mi, approximately.

Gage.--Recording. Altitude of gage is 50 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 500 cfs and extended above by logarithmic plotting.

Remarks.--Records not equivalent with station at Farrington Dam, N. J. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922a/	July 24, 1922	4.78	230	1926	Sept. 7, 1926	8.40	1,280
1923	Jan. 1, 1923	6.67	784	1927b/	Oct. 31, 1926	4.55	292
1924	Apr. 7, 1924	8.70	1,370				
1925	Feb. 11, 1925	6.57	751				

a Period June 21 to Sept. 30, 1922; peak for year probably occurred prior to July 24.

b Period Oct. 1 to Dec. 31, 1926; peak for year probably occurred after Dec. 31.

4050. Lawrence Brook at Farrington Dam, N.J.

Location.--Lat 40°27'00", long 74°27'05", on left bank 300 ft upstream from Farrington Dam, 0.7 mile southwest of Milltown, Middlesex County, and 5.4 miles upstream from mouth.

Drainage area.--34.4 sq mi. Area of lakes, ponds, and swamps, 1.6 sq mi.

Gage.--Recording gage above concrete dam. Datum of gage is 25.73 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Altered when dam spillway was raised in October 1938. Prior to October 1938, defined by current-meter measurements below 510 cfs and extended above on basis of weir formula. Since October 1938, defined by current-meter measurements below 1,100 cfs and extended above on basis of weir formula.

Remarks.--Minor effect from regulation of Farrington Dam blowoff gates. Base for partial-duration series, 450 cfs.

RARITAN RIVER BASIN

Peak stages and discharges of Lawrence Brook at Farrington Dam, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927a/	July 17, 1927	25.76	1,720	1945	Sept. 19, 1945	25.40	749
	Aug. 9, 1927	25.37	1,000	1946	Nov. 29, 1945	25.37	702
1928	Oct. 13, 1927	25.00	454		Dec. 26, 1945	25.23	492
	Oct. 18, 1927	25.81	1,830		Mar. 27, 1946	25.42	783
	Dec. 5, 1927	25.12	620		May 15, 1946	25.22	478
	Apr. 24, 1928	25.06	535		June 2, 1946	25.69	1,280
	July 6, 1928	25.84	1,900		July 23, 1946	25.57	1,050
	July 13, 1928	25.10	590	1947	May 4, 1947	25.20	457
1929	Apr. 16, 1929	25.18	705	1948	Nov. 12, 1947	25.34	664
	May 19, 1929	25.08	560		Apr. 1, 1948	25.23	500
1930	Feb. 14, 1930	25.04	505		June 20, 1948	25.24	515
	Mar. 8, 1930	25.00	454	1949	Dec. 31, 1948	25.51	944
1931	Mar. 29, 1931	24.98	429		Jan. 6, 1949	25.22	486
1932	Mar. 28, 1932	25.39	1,040		Jan. 22, 1949	25.23	500
1933	Nov. 10, 1932	25.20	735	1950	Feb. 15, 1950	25.20	457
	Nov. 19, 1932	25.24	795		July 10, 1950	25.48	884
	Mar. 20, 1933	25.02	480	1951	Nov. 25, 1950	25.36	686
	Apr. 12, 1933	25.01	467		Feb. 22, 1951	25.26	535
	Aug. 24, 1933	24.98	429	1952	Dec. 21, 1951	25.48	808
1934	Mar. 5, 1934	25.06	535		Mar. 11, 1952	25.36	623
1935	Oct. 6, 1934	25.14	645		Apr. 28, 1952	25.46	776
	Sept. 6, 1935	25.16	675		May 25, 1952	25.29	524
1936	Oct. 31, 1935	25.08	560		June 1, 1952	25.55	925
	Jan. 3, 1936	25.26	825		June 5, 1952	25.24	460
	Jan. 9, 1936	25.06	535		Sept. 1, 1952	25.27	498
	Mar. 12, 1936	25.13	630	1953	Jan. 24, 1953	25.30	550
1937	Dec. 20, 1936	25.04	505		Mar. 13, 1953	25.62	1,110
1938	Jan. 25, 1938	24.99	441		Mar. 16, 1953	25.28	522
	July 21, 1938	24.99	441	1954	Sept. 11, 1954	25.36	643
	July 23, 1938	25.40	1,050	1955	Nov. 21, 1954	25.25	480
	Sept. 21, 1938	26.18	2,660		Mar. 22, 1955	25.30	550
1939	Feb. 3, 1939	25.42	885		Aug. 13, 1955	25.78	1,450
	Apr. 7, 1939	25.42	749		Aug. 19, 1955	25.31	566
1940	Mar. 4, 1940	25.27	521	1956	Oct. 16, 1955	25.37	658
	Apr. 9, 1940	25.31	577		Feb. 18, 1956	25.24	466
	May 17, 1940	25.23	465		Mar. 14, 1956	25.25	480
	May 31, 1940	25.70	1,260		Apr. 8, 1956	25.24	466
1941	Feb. 8, 1941	25.46	816	1957	Apr. 5, 1957	25.31	567
1942	Aug. 9, 1942	25.39	700	1958	Dec. 21, 1957	25.35	629
1943	Dec. 30, 1942	25.29	548		Jan. 15, 1958	25.30	550
	Mar. 7, 1943	25.41	732		Jan. 25, 1958	25.27	508
	May 20, 1943	25.24	479		Feb. 28, 1958	25.56	994
1944	Jan. 4, 1944	25.29	587		Apr. 6, 1958	25.57	1,010
	Jan. 6, 1944	25.43	809	1959	Oct. 26, 1958	25.29	536
	Mar. 13, 1944	25.57	1,050		July 24, 1959	25.85	1,610
	Apr. 25, 1944	25.43	809		Aug. 9, 1959	25.25	480
	Sept. 15, 1944	26.12	2,220	1960	Feb. 19, 1960	25.31	566
1945	Nov. 21, 1944	25.28	563		July 30, 1960	25.57	1,010
	Nov. 27, 1944	25.30	592		Sept. 12, 1960	25.76	1,400
	Jan. 1, 1945	25.21	463	1961	Feb. 19, 1961	25.29	536
	May 11, 1945	25.24	506		Mar. 23, 1961	25.47	828
					Apr. 13, 1961	25.45	792

a Period May 6 to Sept. 30, 1927; peak of July 17, 1927, believed maximum for year.

RARITAN RIVER BASIN

4055. South River at Old Bridge, N.J.

Location.--Lat 40°24'22", long 74°22'08", on right abutment of Duhernal Dam, 0.6 mile south of Old Bridge, Middlesex County, 2.3 miles upstream from Deep Run, and 9.1 miles upstream from mouth.

Drainage area.--94.6 sq mi. Area of lakes, ponds, and swamps, 4.8 sq mi.

Gage.--Recorder above concrete dam. Datum of gage is at mean sea level, datum of 1929.

Stage-discharge relation.--Discharge is flow over spillway plus occasional flow through floodgates. Stage-discharge relation for spillway defined by current-meter measurements below 770 cfs and extended above on basis of laboratory rating. Discharge through floodgates computed from rate of change of stage of lake.

Remarks.--Flood peaks occasionally affected by operation of floodgates of Duhernal Dam. Capacity of Duhernal Lake, 138,000,000 gal. Base for partial-duration series, 700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Feb.20,21, 1940	10.51	741	1950	Aug. 4, 1950	10.51	745
	Mar. 5, 1940	10.54	797	1951	Nov. 27, 1950	10.53	782
	Apr.9,10,1940	10.51	741		Feb. 23, 1951	10.59	895
	Apr. 21, 1940	10.63	973		Mar.31, Apr. 1, 1951	10.69	1,100
	June 1, 1940	10.73	1,190		Apr. 4, 1951	10.49	710
	Sept. 2, 1940	10.67	1,060	1952	Nov. 4, 1951	10.58	876
1941	Feb. 8, 1941	10.80	1,350		Dec. 22, 1951	10.70	1,120
	Mar. 13, 1941	10.53	778		Feb. 5, 1952	10.51	745
	July 5, 1941	10.81	1,380		Mar. 12, 1952	10.58	876
	July 9, 1941	10.77	1,280		Apr. 29, 1952	10.80	1,730
1942	Feb. 8, 1942	10.47	673	1953	June 2, 1952	10.97	2,360
1943	Nov. 26, 1942	10.56	835		Jan. 10, 1953	10.51	745
	Dec. 31, 1942	10.61	931		Mar. 14, 1953	11.06	2,030
	Mar. 8, 1943	10.52	760	1954	Dec. 15, 1953	10.51	749
1944	Oct. 28, 1943	10.60	910		Sept.12, 1954	11.04	1,970
	Jan.6-7, 1944	10.82	1,400	1955	Mar. 23, 1955	10.64	998
	Mar. 14, 1944	10.80	1,350		Aug. 13, 1955	11.27	2,650
	Apr.25,26,1944	10.71	1,140	1956	Oct. 16, 1955	10.66	1,040
	June 12, 1944	10.63	973		Feb. 19, 1956	10.54	801
	Sept.15, 1944	11.71	4,250		Apr. 9, 1956	10.67	1,060
1945	Nov. 22, 1944	10.76	1,260	1957	Apr. 6, 1957	10.54	801
	Nov. 29, 1944	10.57	858	1958	Jan. 16, 1958	10.78	1,670
	Feb. 24, 1945	10.59	895		Jan. 26, 1958	10.69	1,100
	July 19, 1945	11.40	3,200		Feb. 9, 1958	10.51	745
	July 24, 1945	10.59	1,340		Mar. 1, 1958	10.79	1,670
	Sept.19, 1945	10.69	1,100		Mar. 25, 1958	10.51	745
1946	Nov. 30, 1945	11.01	1,890		Apr. 7, 1958	10.58	1,070
	Dec. 27, 1945	10.75	1,240		May 8, 1958	10.50	726
	Dec.30,31, 1945	10.66	1,040	1959	Oct. 27, 1958	10.73	1,520
	June 3, 1946	11.04	2,320		July 24, 1959	10.83	1,750
	July 23, 1946	11.08	2,430		Aug. 9, 1959	10.51	745
1947	May 5, 1947	10.37	809	1960	Feb. 20, 1960	10.49	710
1948	Nov. 13, 1947	10.51	745		July 31, 1960	10.66	1,040
	Feb. 18, 1948	10.59	895		Sept.13, 1960	11.20	2,430
	Apr. 2, 1948	10.62	956	1961	Jan. 2, 1961	10.60	914
	July 24, 1948	10.67	1,060		Feb. 20, 1961	10.77	al,620
	Aug. 6, 1948	10.52	764		Mar. 10, 1961	10.50	726
	Aug. 21, 1948	11.29	3,030		Mar. 15, 1961	10.52	764
1949	Dec. 31, 1948	10.91	2,060		Mar. 24, 1961	10.74	al,380
	Jan. 6, 1949	10.52	764		Apr. 14, 1961	10.79	al,500
	Jan. 29, 1949	10.50	726		July 30, 1961	10.78	al,640
1950	Feb. 16, 1950	10.51	745				
	July 17, 1950	10.58	876				

a Waste gate open.

RARITAN RIVER BASIN

4060. Deep Run near Browntown, N.J.

Location.--Lat 40°22'30", long 74°18'14", on right bank 5 ft upstream from highway bridge, 0.7 mile downstream from Middlesex-Monmouth County line, and 1.8 miles south of Browntown, Middlesex County.

Drainage area.--8.07 sq mi. Area of lakes, ponds, and swamps, 0 sq mi.

Gage.--Recording. Altitude of gage is 50 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 400 cfs and extended above arithmetically.

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series, 150 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Nov. 10, 1932	5.65	310	1936	Sept. 19, 1936	6.39	452
	Nov. 19, 1932	5.26	254		Dec. 20, 1936	5.57	294
	Mar. 21, 1933	4.80	202		Apr. 27, 1937	5.18	247
	Apr. 13, 1933	4.77	197		May 15, 1937	4.35	156
	June 6, 1933	5.69	318		Aug. 23, 1937	4.28	152
1934	Jan. 6, 1934	4.62	183	1938	Nov. 13, 1937	4.74	196
	Mar. 5, 1934	5.06	229		June 27, 1938	1.47	710
	Apr. 1, 1934	4.60	183		July 20, 1938	6.79	543
	July 29, 1934	4.47	170		July 24, 1938	5.83	340
	Sept. 9, 1934	8.27	917		Sept. 21, 1938	9.61	1,240
	Sept. 17, 1934	7.21	642	1939	Nov. 20, 1938	5.88	353
1935	Feb. 15, 1935	4.24	154		Jan. 6, 1939	5.02	223
	Apr. 9, 1935	4.82	202		Jan. 30, 1939	5.57	294
1936	Oct. 31, 1935	4.25	154		Feb. 3, 1939	6.02	371
	Nov. 29, 1935	5.09	235		Feb. 28, 1939	4.53	178
	Jan. 3, 1936	6.16	400		Apr. 7, 1939	5.37	266
	Jan. 9, 1936	4.98	223	1940	Feb. 19, 1940	5.04	229
	Feb. 25, 1936	4.65	185		May 31, 1940	5.94	360
	Mar. 11, 1936	5.23	254				

4065. Tennent Brook near Browntown, N.J.

Location.--Lat 40°24'57", long 74°19'08", on right bank 1.2 miles northwest of Browntown, Middlesex County, 1.5 miles upstream from Tennent Pond Dam, and 2.6 miles upstream from mouth.

Drainage area.--5.25 sq mi. Area of lakes, ponds, and swamps, 0.2 sq mi.

Gage.--Recording. Datum of gage is 10.00 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 60 cfs and extended above by logarithmic plotting; shifts in relation occur.

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 60 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Nov. 10, 1932	8.64	83	1935	Feb. 15, 1935	8.20	64
	Nov. 19, 1932	8.82	90		Apr. 9, 1935	8.53	78
	Mar. 21, 1933	8.74	88	1936	Nov. 29, 1935	8.90	95
	Apr. 12, 1933	8.66	83		Jan. 3, 1936	9.18	110
	June 6, 1933	8.95	96		Jan. 9, 1936	8.82	73
1934	Jan. 6, 1934	8.60	81		Mar. 4, 1936	8.61	64
	Mar. 5, 1934	8.73	88		Mar. 11, 1936	8.92	78
	Apr. 1, 1934	8.68	85	1937	Dec. 20, 1936	8.95	80
	July 28, 1934	9.45	122		Apr. 27, 1937	8.82	73
	Sept. 8, 1934	10.17	166	1938	June 28, 1938	9.12	87
	Sept. 17, 1934	9.13	108		July 23, 1938	9.18	92
	Sept. 30, 1934	8.72	85		Sept. 21, 1938	10.69	177
1935	Oct. 6, 1934	8.59	81				

RARITAN RIVER BASIN

Peak stages and discharges of Tennent Brook near Browntown, N. J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Jan. 6, 1939	8.66	66	1940	Apr. 9, 1940	8.71	108
	Jan. 30, 1939	8.83	76		Apr. 21, 1940	8.36	92
	Feb. 3, 1939	9.49	107		May 31, 1940	9.40	143
	Feb. 28, 1939	8.75	71		Sept. 1, 1940	8.68	107
	Apr. 6, 1939	9.40	102	1941	Jan. 25, 1941	7.77	69
1940	Feb. 19, 1940	8.38	93		Feb. 7, 1941	9.59	152
	Mar. 4, 1940	8.34	92		Apr. 6, 1941	7.56	60
	Mar. 15, 1940	8.26	88		July 4, 1941	8.11	82

MATAWAN CREEK BASIN

4070. Matawan Creek at Matawan, N.J.

Location.--Lat 40°24'53", long 74°14'00", on right bank of Lake Lefferts, Ravine Drive, in Matawan, Monmouth County.

Drainage area.--6.11 sq mi. Area of lakes, ponds, and swamps, 0.2 sq mi.

Gage.--Recording gage above concrete dam. Datum of gage is 13.98 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Discharge is sum of flow over dam and flow through waste gates. Dam crest altered in August 1937. Prior to August 1937, stage-discharge relation for flow over dam defined by current-meter measurements below 160 cfs and extended above by logarithmic plotting. Since 1937, relation for flow over dam defined by current-meter measurements below 32 cfs and extended above on basis of computation of flow over dam, over road, and through waste gates totaling 1,000 cfs. Discharge through waste gates computed on basis of rate of change of storage in Lake Lefferts.

Remarks.--Peak flows sometimes affected by operation of waste gates in dam on Lake Lefferts. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	June 6, 1933	3.11	494	1944	Sept. 14, 1944	b4.01	1,190
1934	Sept. 8, 1934	4.40	1,070	1945	July 19, 1945	3.79	965
1935	Apr. 9, 1935	2.18	216	1946	July 23, 1946	2.75	503
1936	Sept. 18, 1936	2.90	347	1947	Dec. 21, 1946	c1.98	181
1937	Dec. 20, 1936	2.77	293	1948	Aug. 22, 1948	(d)	(d)
1938	Sept. 21, 1938	4.34	1,390	1949	Dec. 31, 1948	e2.13	285
1939	Feb. 3, 1939	2.26	372	1950	Aug. 3, 1950	2.09	357
1940	May 31, 1940	2.47	403	1951	Nov. 25, 1950	2.24	376
1941	Feb. 7, 1941	2.67	462	1952	Apr. 28, 1952	2.82	511
1942	Mar. 9, 1942	a2.04	284	1953	Mar. 13, 1953	3.63	856
1943	Nov. 25, Dec. 30, 1942	2.61	385	1954	Sept. 11, 1954	3.74	732
				1955	Aug. 13, 1955	4.25	1,420

a Occurred July 2, 1942.

b Occurred Oct. 27, 1943.

c Occurred Mar. 3, 1947.

d Unknown, believed to have exceeded July 23, 1948, gage height of 2.86 ft and discharge of 474 cfs.

e Occurred Dec. 30, 1948.

NAVESINK RIVER BASIN

4075. Swimming River near Red Bank, N.J.

Location.--Lat 40°19'03", long 74°06'57", on right bank of Swimming River Reservoir, 3.4 miles southwest of Red Bank, Monmouth County, and 4.9 miles upstream from mouth.

Drainage area.--48.5 sq mi. Area of lakes, ponds, and swamps, 0.7 sq mi.

Gage.--Recording, above dam. Datum of gage is 12.33 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Changes in dam crest in October 1926, September to November 1938, and June 1956, plus changes in flashboards since 1956, have altered relation. Relations defined by current-meter measurements below 400 to 600 cfs and extended above by weir formula or logarithmic plotting. Sluice gate in dam is occasionally open and discharge through gate, computed from theoretical rating, is added to discharge over dam to obtain total discharge.

Remarks.--Base for partial-duration series, 600 cfs.

NAVESINK RIVER BASIN

Peak stages and discharges of Swimming River near Red Bank, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1919	July 1919	7.84	all,800	1943	Nov. 25, 1942	4.17	761
					Dec. 30, 1942	4.02	639
1923	Jan. 1, 1923	2.57	1,350		Mar. 7, 1943	4.03	647
	Mar. 17, 1923	1.81	603	1944	Oct. 27, 1943	8.96	8,910
1924	Feb. 6, 1924	2.03	744		Jan. 4, 1944	4.96	1,570
	Feb. 20, 1924	3.05	2,000		Jan. 6, 1944	5.00	1,620
	Apr. 7, 1924	2.13	843		Feb. 15, 1944	4.10	702
	Apr. 19, 1924	1.89	611		Mar. 13, 1944	4.37	940
1925	Feb. 10, 1925	1.87	600		Apr. 25, 1944	4.22	804
					June 11, 1944	4.15	743
1926	Feb. 19, 1926	2.12	810		Sept.15, 1944	7.05	4,780
	Feb. 25, 1926	3.42	2,590	1945	Nov. 22, 1944	4.01	631
1927	Dec. 29, 1926	4.08	1,060		July 20, 1945	4.32	896
	July 23, 1927	4.75	1,770	1946	Nov. 29, 1945	4.59	1,160
	Aug. 9, 1927	4.02	1,010		Dec. 26, 1945	4.25	832
1928	Oct. 18, 1927	4.04	1,000		Dec.29-30, 1945	4.12	719
	Apr. 28, 1928	3.72	728		June 2, 1946	4.58	1,150
	July 6, 1928	3.75	755		July 24, 1946	4.27	850
1929	Feb. 7, 1929	3.58	630	1947	Dec. 21, 1946	3.70	414
	Feb. 27, 1929	3.92	890	1948	Nov. 4, 1947	4.47	1,040
	Apr. 16, 1929	4.34	1,320		Nov. 9, 1947	4.27	848
1930	Feb. 13, 1930	3.83	845		Nov. 12, 1947	4.22	806
1931	Mar. 8, 1931	3.40	475		Apr. 1, 1948	4.01	632
					May 26, 1948	4.28	858
1932	Mar. 28, 1932	3.91	900		Aug. 23, 1948	4.06	673
1933	Nov. 10, 1932	3.69	702	1949	Dec. 31, 1948	4.11	711
	Apr. 13, 1933	3.62	646	1950	July 16, 1950	4.20	788
	June 6, 1933	3.86	854	1951	Nov. 26, 1950	4.26	840
1934	Sept. 9, 1934	5.65	2,930		Feb. 22, 1951	3.83	617
	Sept.17, 1934	4.13	1,110		Mar. 31, 1951	4.24	822
1935	Apr. 9, 1935	3.68	694	1952	Nov. 3, 1951	4.00	624
	Sept. 6, 1935	3.62	646		Nov. 7, 1951	4.05	664
1936	Jan. 3, 1936	4.64	1,640		Dec. 21, 1951	4.23	815
	Jan. 9, 1936	3.90	890		Mar. 11, 1952	4.12	721
	Feb. 29, 1936	3.75	755		Apr. 28, 1952	4.50	1,070
	Mar. 12, 1936	3.69	702		June 1, 1952	4.08	690
	Sept.19, 1936	3.85	845	1953	Mar. 13, 1953	4.81	1,400
1937	Oct. 17, 1936	4.17	1,150	1954	Sept.11, 1954	5.58	2,370
	Dec. 20, 1936	3.93	920	1955	Feb. 7, 1955	3.99	607
	Apr. 27, 1937	3.91	901		Aug. 13, 1955	6.56	3,900
	Aug. 23, 1937	3.67	690	1956	Feb. 18, 1956	4.01	622
1938	Oct. 20, 1937	3.88	881		July 21, 1956	b6.01	-
	Nov. 13, 1937	3.65	674	1957	Apr. 5, 1957	4.44	478
	June 28, 1938	4.60	1,610		Apr. 29, 1957	c5.62	-
	July 20, 1938	4.49	1,500		Sept.30, 1957	4.83	d764
	July 24, 1938	4.34	1,340	1958	Jan. 15, 1958	5.72	1,570
	Aug. 8, 1938	4.03	1,020		Jan. 25, 1958	4.88	804
	Sept.21, 1938	6.96	7,370		Feb. 28, 1958	5.65	1,500
1939	Nov. 20, 1938	4.29	964		Apr. 7, 1958	4.94	852
	Jan. 30, 1939	4.40	968		May 26, 1958	c6.31	-
	Feb. 3, 1939	4.86	1,460		Sept.30, 1958	5.50	d1,350
	Apr. 7, 1939	4.20	785	1959	Oct. 26, 1958	5.11	989
	Aug. 20, 1939	4.46	1,030		July 23, 1959	c6.24	-
1940	Feb. 20, 1940	4.58	1,150		Sept.30, 1959	5.22	d1,090
	Mar. 4, 1940	4.23	811	1960	Sept.12, 1960	8.46	a5,700
	May 31, 1940	4.39	958	1961	July 29, 1961	9.13	a3,630
1941	Jan. 25, 1941	4.09	692				
	Feb. 8, 1941	5.43	2,160				
	July 9, 1941	4.48	1,050				
1942	Feb. 7, 1942	3.90	549				

a Annual peak only.

b Backwater from construction on dam crest.

c Backwater from flashboards on dam crest.

d Approximate discharge caused by removal of flashboards.

MANASQUAN RIVER BASIN

4080. Manasquan River at Squankum, N.J.

Location.--Lat 40°09'47", long 74°09'21", on right bank 20 ft downstream from bridge on State Highway 547 (Squankum Park Road) in Squankum, Monmouth County, 0.4 mile downstream from Marsh Bog Brook.

Drainage area.--43.4 sq mi. Area of lakes, ponds, and swamps, 0.5 sq mi.

Gage.--Recording. Prior to Aug. 13, 1940, at site 80 ft upstream at same datum. Datum of gage is 18.82 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Prior to August 1940, defined by current-meter measurements below 720 cfs and extended above on basis of contracted-opening measurement of 2,940 cfs. Since August 1940, defined by current-meter measurements below 1,200 cfs and extended by logarithmic plotting; shifts in relation occur due to backwater from debris.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Mar. 28, 1932	8.16	796	1945	July 24, 1945	d9.1	1,860
1933	Nov. 10, 1932	8.24	819	1946	Nov. 29, 1945	7.99	1,390
	Nov. 20, 1932	7.52	636		Dec. 26, 1945	6.51	864
					Dec. 30, 1945	6.51	864
1934	Mar. 15, 1934	7.38	607		June 2, 1946	b6.9	991
	Sept. 9, 1934	8.60	932		July 24, 1946	d6.6	890
1935	Feb. 15, 1935	7.50	632	1947	Dec. 21, 1946	4.55	382
	Apr. 9, 1935	7.36	603				
1936	Jan. 3, 1936	9.22	1,160	1948	Nov. 4, 1947	6.44	688
	Jan. 9, 1936	8.52	906		Nov. 9, 1947	6.42	683
	Mar. 12, 1936	7.79	699		Nov. 12, 1947	6.87	799
	Sept. 19, 1936	(a)	(a)		Feb. 15, 1948	7.26	907
					May 26, 1948	6.93	815
1937	Oct. 18, 1936	7.69	679		May 31, 1948	6.67	746
	Dec. 20, 1936	8.40	840		Aug. 21, 1948	6.27	647
	Apr. 27, 1937	7.85	714	1949	Dec. 31, 1948	6.98	829
1938	Oct. 20, 1937	8.11	782	1950	Aug. 21, 1950	5.22	428
	Nov. 29, 1937	7.63	654				
	June 28, 1938	10.09	1,550	1951	Feb. 22, 1951	6.58	723
	July 20, 1938	9.96	1,480		Mar. 31, 1951	6.58	723
	July 24, 1938	9.06	1,100				
	Aug. 8, 1938	8.15	807	1952	Dec. 21, 1951	6.97	826
	Sept. 21, 1938	b12.45	2,940		Mar. 12, 1952	6.37	671
					Apr. 28, 1952	7.90	1,100
1939	Jan. 31, 1939	8.20	807		May 26, 1952	6.71	757
	Feb. 4, 1939	8.14	779		June 1, 1952	6.59	726
	Mar. 1, 1939	7.39	609	1953	Mar. 13, 1953	8.06	1,160
	Apr. 7, 1939	8.10	779				
1940	Feb. 20, 1940	8.21	810	1954	Sept. 11, 1954	7.05	848
	Mar. 4, 1940	7.70	677				
	May 31, 1940	8.42	873	1955	Aug. 13, 1955	8.56	1,330
1941	Jan. 25, 1941	5.57	690	1956	Feb. 18, 1956	6.22	658
	Feb. 8, 1941	7.60	1,210				
	Mar. 12, 1941	5.33	632	1957	Mar. 16, 1957	5.62	540
	July 1, 1941	5.95	781				
1942	Feb. 7, 1942	5.54	683	1958	Jan. 15, 1958	8.22	1,210
					Jan. 26, 1958	6.87	810
1943	Nov. 25, 1942	5.98	788		Feb. 28, 1958	7.87	1,090
	Dec. 31, 1942	5.68	716	1959	Oct. 26, 1958	7.34	933
	Mar. 7, 1943	c5.65	c709		July 24, 1959	6.08	629
1944	Oct. 27, 1943	10.15	2,360	1960	Feb. 19, 1960	6.13	639
	Jan. 4, 1944	6.38	805		Feb. 26, 1960	6.95	830
	Jan. 6, 1944	6.64	845		Sept. 13, 1960	10.13	2,040
	Mar. 13, 1944	6.37	777				
	Apr. 25, 1944	5.70	612	1961	Jan. 2, 1961	7.29	919
	Sept. 15, 1944	10.15	2,360		Feb. 20, 1961	7.16	884
1945	Nov. 22, 1944	6.15	760		Mar. 24, 1961	6.98	837
	Nov. 28, 1944	6.12	751		Apr. 14, 1961	6.89	814
	Feb. 23, 1945	5.70	639		July 30, 1961	8.29	1,240

a Unknown, may have exceeded base. b From floodmark. c About. d Estimated from graph based on partial gage-height record.

TOMS RIVER BASIN

4085. Toms River near Toms River, N.J.

Location.--Lat 39°59'10", long 74°13'29", on left bank 1.9 miles downstream from Union Branch and 2.6 miles northwest of village of Toms River, Ocean County.

Drainage area.--124 sq mi. Area of lakes, ponds, and swamps, 16.9 sq mi.

Gage.--Recording. Datum of gage is 8.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs and extended above by logarithmic plotting; shifts in relation occur.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 450 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929a/	Mar. 1, 1929	7.05	550	1944	Apr. 19, 1944	6.50	472
	Mar. 7, 1929	7.65	640		Apr. 27, 1944	6.99	541
	Apr. 18, 1929	8.95	851		Sept. 17, 1944	10.58	1,140
1930	Mar. 11, 1930	6.31	443	1945	Nov. 24, 1944	7.41	640
1931	Apr. 1, 1931	5.72	362		Nov. 30, 1944	7.85	710
1932	Mar. 9, 1932	6.54	477		Dec. 14, 1944	7.99	732
	Mar. 30, 1932	7.79	661		Feb. 25, 1945	6.41	486
	Apr. 14, 1932	7.88	678		July 21, 1945	7.43	643
1933	Nov. 12, 1932	7.28	587	1946	Dec. 1, 1945	8.82	873
	Nov. 22, 1932	6.52	475		Dec. 31, 1945	8.17	763
	Mar. 23, 1933	6.74	500		June 5, 1946	7.34	628
	Aug. 26, 1933	8.86	835		July 26, 1946	6.95	568
1934	Mar. 8, 1934	6.73	500	1947	May 24, 1947	6.39	484
	May 6, 1934	6.70	500	1948	Nov. 14, 1947	6.92	563
1935	Feb. 18, 1935	7.10	557		Jan. 5, 1948	6.20	455
	Sept. 8, 1935	8.65	787		Feb. 17, 1948	6.39	484
1936	Nov. 3, 1935	6.77	514		Apr. 4, 1948	6.85	552
	Jan. 6, 1936	7.76	660		May 8, 1948	6.62	518
	Mar. 14, 1936	8.30	739		May 14, 1948	7.17	602
	May 6, 1936	6.50	472		June 2, 1948	8.05	742
	Sept. 21, 1936	7.55	632		Aug. 6, 1948	6.54	506
1937	Dec. 22, 1936	6.87	528		Aug. 23, 1948	6.57	510
	Jan. 24, 1937	6.68	500	1949	Jan. 2, 1949	8.48	816
	Apr. 29, 1937	7.29	587		Jan. 30, 1949	6.86	554
1938	Oct. 23, 1937	6.57	486		Feb. 25, 1949	6.84	551
	Oct. 31, 1937	6.76	514		Apr. 9, 1949	6.24	461
	Nov. 16, 1937	6.65	493	1950	Feb. 17, 1950	5.90	411
	Dec. 1, 1937	7.37	602	1951	Feb. 24, 1951	6.58	515
	June 29, 1938	11.1	1,440		Apr. 2, 1951	6.95	574
	July 26, 1938	10.15	1,060		May 27, 1951	6.46	496
	Aug. 9, 1938	7.81	662	1952	Dec. 23, 1951	8.37	818
	Sept. 23, 1938	12.50	2,000		Jan. 30, 1952	6.58	516
1939	Feb. 5, 1939	8.73	808		Feb. 7, 1952	6.20	461
	Mar. 3, 1939	7.11	557		Mar. 13, 1952	7.24	621
	Mar. 18, 1939	6.83	518		Mar. 26, 1952	6.27	471
	Apr. 1, 1939	7.37	602		Apr. 29, 1952	10.53	1,250
	Apr. 9, 1939	7.46	617		May 15, 1952	6.52	507
	Apr. 29, 1939	6.96	536		May 28, 1952	7.55	672
	Aug. 22, 1939	9.32	902		June 3, 1952	8.72	882
1940	Mar. 7, 1940	6.38	455		Aug. 12, 1952	7.08	595
	Apr. 23, 1940	7.76	656		Sept. 4, 1952	6.45	496
	May 19, 1940	6.88	525	1953	Nov. 24, 1952	6.46	498
	June 2, 1940	7.50	617		Jan. 12, 1953	6.94	572
1941	July 11, 1941	6.34	450		Feb. 18, 1953	6.43	494
1942	July 5, 1942	5.93	393		Mar. 15, 1953	8.70	878
1943	Jan. 1, 1943	6.61	487		Apr. 21, 1953	6.92	569
1944	Oct. 29, 1943	7.81	664		May 20, 1953	6.57	514
	Jan. 7, 1944	7.09	556		July 24, 1953	6.21	462
	Mar. 16, 1944	6.75	507	1954	Dec. 7, 1953	6.29	474
					Apr. 26, 1954	6.12	450
					May 11, 1954	6.47	500
					May 23, 1954	7.06	592
					Sept. 13, 1954	7.83	719

a Period Dec. 28, 1928, to Sept. 30, 1929; peak of Apr. 18, 1929, believed maximum for year.

TOMS RIVER BASIN

Peak stages and discharges of Toms River near Toms River, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Aug. 15, 1955	8.86	909	1958	Apr. 9, 1958	6.85	558
1956	Oct. 17, 1955	7.42	650		May 1, 1958	7.35	639
	Feb. 21, 1956	6.34	481		May 8, 1958	8.15	776
	Apr. 10, 1956	7.44	654		Aug. 27, 1958	8.15	776
	July 23, 1956	7.48	661	1959	Oct. 28, 1958	9.03	941
					July 17, 1959	6.88	563
1957	Dec. 18, 1956	6.46	498		July 26, 1959	7.64	687
	Apr. 7, 1957	6.33	479		July 31, 1959	6.31	476
1958	Jan. 17, 1958	7.91	734	1960	Sept. 14, 1960	10.57	b1,370
	Jan. 27, 1958	7.78	711	1961			
	Feb. 2, 1958	10.09	1,160		Apr. 15, 1961	8.95	b938
	Mar. 24, 1958	7.89	730				

b Annual peak only.

CEDAR CREEK BASIN

4090. Cedar Creek at Lanoka Harbor, N.J.

Location.--Lat 39°52'05", long 74°10'06", on right bank 20 ft upstream from bridge on U.S. Highway 9 at village of Lanoka Harbor, Ocean County.

Drainage area.--56.0 sq mi. Area of lakes, ponds, and swamps, 6.9 sq mi.

Gage.--Recording. Prior to Oct. 14, 1933, at site 70 ft downstream. Datum of gage is at mean sea level, datum of 1929.

Stage-discharge relation.--Prior to 1938, defined by current-meter measurements below 380 cfs and extended above by logarithmic plotting. Since channel improvements in 1938 and 1939, defined by current-meter measurements below 410 cfs and extended above by logarithmic plotting. Relation occasionally affected by tides, and channel shifting.

Remarks.--Peak flows often affected by regulation of cranberry bogs. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932a/	Aug. 2, 1932	2.83	176	1946	June 13, 1946	f3.67	496
1933	Aug. 24, 1933	4.68	508	1947	Aug. 21, 1947	3.46	491
1934	May 4, 1934	4.75	510	1948	May 11, 1948	3.64	590
1935	Apr. 10, 1935	4.44	422	1949	May 14, 1949	3.15	340
				1950	Apr. 30, 1950	3.18	354
1936	Feb. 16, 1936	b6.45	(c)				
1937	June 12, 1937	d3.69	276	1951	Apr. 29, 1951	g5.09	252
1938	Sept. 23, 1938	5.55	786	1952	Apr. 30, 1952	3.57	440
1939	Aug. 21, 1939	4.07	842	1953	Mar. 17, 1953	3.49	409
1940	Apr. 24, June 8, 1940	3.35	435	1954	Nov. 7, 1953	3.55	434
				1955	Feb. 10, 1955	h3.66	367
1941	June 8, 1941	3.03	289	1956	Mar. 23, 1956	j3.71	341
1942	Aug. 12, 1942	3.16	345	1957	Apr. 12, 1957	3.27	396
1943	Apr. 27, 1943	3.07	305	1958	Aug. 27, 1958	3.66	601
1944	Oct. 28, 1943	4.50	1,050				
1945	June 9, 1945	e3.17	340				

a Period July 1 to Sept. 30, 1932. b Backwater from ice and tide. c Not determined, exceeded 321 cfs. d Occurred Aug. 25, 1937, backwater from tide. e Occurred Nov. 30, 1944, backwater from tide. f Occurred Nov. 29, 1945, backwater from tide. g Occurred Nov. 25, 1950, backwater from tide. h Occurred Aug. 13, 1955, backwater from tide. j Occurred Oct. 15, 1955, backwater from tide.

MULLICA RIVER BASIN

4095. Batsto River at Batsto, N.J.

Location.--Lat 39°38'33", long 74°39'00", on right bank 30 ft downstream from highway bridge at Batsto, Burlington County, and 1 mile upstream from mouth.

Drainage area.--70.5 sq mi. Area of swamps, lakes, and bogs, 12.9 sq mi.

Gage.--Recording. Datum of gage is 1.4 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 930 cfs and extended above by logarithmic plotting. Tides cause backwater at times.

Bankfull stage.--3 ft.

Remarks.--Some flood peaks affected by regulation at pond 300 ft upstream, capacity, about 90 cfs-days. Because of regulation and effect of tides, only annual maximum stage and annual maximum daily discharge are shown.

Annual maximum stages and maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Apr. 29, 1928	a4.45	361	1946	Dec. 31, 1945	4.82	644
1929	Feb. 28, 1929	4.66	441	1947	May 7, 1947	3.87	382
1930	May 19, 1930	b4.22	238	1948	Aug. 24, 1948	h5.52	833
				1949	Jan. 2, 1949	j4.40	563
1931	June 19, 1931	3.6	303	1950	Mar. 25, 1950	k2.97	233
1932	Mar. 30, 1932	c4.27	385				
1933	Aug. 24, 1933	7.25	1,310	1951	Nov. 25, 1950	6.03	567
1934	Mar. 6, 1934	4.33	380	1952	Apr. 29, 1952	6.27	1,130
1935	Sept. 7, 8, 1935	6.02	618	1953	Mar. 15, 1953	m4.77	721
				1954	Sept. 13, 1954	4.36	573
1936	Nov. 2, 1935	4.52	474	1955	Nov. 23, 1954	6.14	393
1937	May 17, 18, 1937	4.29	336				
1938	Sept. 23, 1938	6.5	1,060	1956	Oct. 17, 1955	4.12	528
1939	Aug. 20, 1939	8.7	-	1957	Nov. 3, 1956	3.86	412
1940	Sept. 3, 1940	d5.64	924	1958	Aug. 26, 1958	7.10	1,100
				1959	Oct. 27, 1958	4.36	516
1941	June 16, 1941	3.49	291	1960	Sept. 14, 1960	6.08	1,060
1942	May 13, 1942	e3.66	226				
1943	Feb. 8, 1943	f3.47	274	1961	Mar. 25, 1961	n4.43	521
1944	Sept. 16, 1944	g4.88	601				
1945	July 21, 1945	4.47	636				

a Occurred on Oct. 20, 1927. b Occurred on June 9, 1930. c Occurred on Mar. 29, 1932. d Occurred on May 18, 1940. e Occurred on Jan. 31, 1942. f Occurred on July 9, 1943. g Occurred on Sept. 14, 1944. h Occurred on June 1, 1948. j Occurred on Jan. 29, 1949. k Occurred on Mar. 26, 1950. m Occurred on Mar. 14, 1953. n Occurred on Feb. 21, 1961.

4100. Oswego River at Harrisville, N.J.
(Published as East Branch Wading River 1931-55)

Location.--Lat 39°39'47", long 74°31'26", 50 ft downstream from highway bridge at Harrisville, Burlington County, and half a mile upstream from confluence with West Branch.

Drainage area.--64.0 sq mi. Area of swamps, lakes, and bogs, 9.5 sq mi.

Gage.--Recording. Datum of gage is 4.62 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 640 cfs and extended above by logarithmic plotting.

Bankfull stage.--4.5 ft.

Remarks.--Some flood peaks affected by regulation at pond 200 ft upstream (capacity, 50 cfs-days), and by ponds and bogs 5 to 10 miles upstream. Base for partial-duration series, 230 cfs.

MULLICA RIVER BASIN

Peak stages and discharges of Oswego River at Harrisville, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Apr. 2-3, 1931	2.95	179	1948	May 7, 1948	3.74	237
1932	Mar. 23, 1932	3.48	250		May 14, 1948	4.63	374
	Mar. 29, 1932	3.92	309		May 22, 1948	3.80	251
	Apr. 12, 1932	3.84	301		May 25, 1948	4.29	321
1933	Nov. 11, 1932	3.58	263		June 1, 1948	3.85	258
	Mar. 22, 1933	3.31	225		Aug. 6, 1948	4.28	320
	Aug. 24, 1933	6.96	859		Aug. 21, 1948	5.47	519
1934	Mar. 5, 1934	3.77	272	1949	Nov. 30, 1948	3.93	270
	Sept. 10, 1934	4.27	354		Dec. 5, 1948	3.74	237
1935	Feb. 16, 1935	4.09	330		Jan. 1, 1949	4.02	283
	Sept. 7, 1935	5.95	516		Jan. 29, 1949	4.23	312
1936	Nov. 19, 1935	4.60	400		Mar. 2, 1949	3.78	246
	Jan. 5, 1936	4.46	386		Apr. 7, 1949	3.77	244
	Jan. 21, 1936	4.00	316	1950	Mar. 24, 1950	3.57	187
	Feb. 18, 1936	4.21	344	1951	Feb. 22, 23, 1951	3.94	244
	Mar. 30, 1936	3.47	240		Apr. 4, 1951	3.84	231
	Sept. 20, 1936	3.84	295	1952	Dec. 22, 1951	4.12	269
1937	Dec. 22, 1936	3.80	288		Apr. 29, 1952	5.30	454
	Jan. 22, 1937	3.68	274		May 27, 1952	3.83	230
	Mar. 17, 1937	3.48	246		June 2, 1952	4.37	304
	Apr. 28, 1937	4.03	323		Aug. 11, 1952	5.07	414
	Aug. 28, 1937	4.22	344	1953	Nov. 23, 1952	3.97	248
1938	Oct. 21, 1937	4.69	391		Dec. 23, 1952	3.97	248
	Nov. 30, 1937	4.42	346		Jan. 11, 1953	3.99	251
	June 29, 1938	3.98	273		Mar. 14, 1953	4.61	340
	July 21, 1938	5.58	513		Apr. 17, 1953	3.84	231
	July 24, 1938	5.55	513	1954	Nov. 8, 1953	4.67	346
	Sept. 21, 1938	8.18	988		May 22, 1954	3.88	239
1939 ^a	Aug. 20, 1939	9.54	1,390		Sept. 12, 1954	4.00	256
	Aug. 31, 1939	4.19	263	1955	July 11, 1955	4.23	286
1940	Apr. 22, 1940	4.05	244		Aug. 14, 1955	4.05	263
	June 1, 1940	4.05	244	1956	July 22, 1956	3.91	243
1941	May 15, 1941	4.05	244		Sept. 3, 1956	4.54	328
	June 16, 1941	4.89	365	1957	Mar. 2, 1957	3.74	216
1942	Apr. 29, 1942	4.22	267	1958	Jan. 16, 1958	4.20	282
1943	Dec. 30, 1942	3.63	206		Jan. 27, 1958	4.20	282
1944	Oct. 28, 1943	4.59	367		Mar. 1, 1958	5.32	454
	Nov. 3, 1943	3.72	233		Mar. 23, 1958	4.65	344
	Jan. 7, 1944	3.96	274		Apr. 12, 1958	3.83	231
	Mar. 14, 1944	4.00	280		Apr. 30, 1958	4.14	275
	Apr. 26, 1944	4.33	328		May 8, 1958	4.51	323
	Aug. 3, 1944	3.72	233		July 28, 1958	4.02	259
	Sept. 16, 1944	4.75	355		Aug. 26, 1958	5.90	553
1945	Nov. 22, 1944	3.80	251		Sept. 29, 1958	4.08	267
	Nov. 29, 1944	4.50	353	1959	Oct. 3, 1958	4.30	295
1946	Nov. 30, 1945	3.81	252		Oct. 27, 1958	5.33	456
	Dec. 30, 1945	4.25	315		July 11, 1959	3.96	247
	July 24, 1946	3.89	264		July 16, 1959	4.79	372
1947	May 5-6, 1947	3.75	239		July 24, 1959	5.36	464
	May 23, 1947	3.71	230	1960	Sept. 13, 1960	b5.24	400
1948	Feb. 15, 1948	3.91	267	1961	Jan. 1, 1961	3.77	234
	Apr. 2, 1948	3.81	252		Feb. 26, 1961	3.84	254
	Apr. 15, 1948	3.82	254		Mar. 10, 1961	3.85	257
					Mar. 25, 1961	4.24	331
					Apr. 14, 1961	3.92	276
					June 16, 1961	3.78	236

a Period June 23 to Sept. 30, 1939; peak of Aug. 20, 1939, believed maximum for year.

b Backwater from West Branch Wading River.

ABSECON CREEK BASIN

4105. Absecon Creek at Absecon, N.J.

Location.--Lat 39°25'45", long 74°31'16", on right bank 30 ft downstream from Doughty Pond of Atlantic City Water Department, 1 mile west of Absecon, Atlantic County, and 3.4 miles upstream from mouth.

Drainage area.--16.6 sq mi.

Gage.--Recording above artificial control. Prior to May 1946, at same site at datum 0.16 ft lower. Datum of gage is at mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 100 cfs and extended above by logarithmic plotting. Relation is affected by tides.

Remarks.--Flow regulated by Doughty Pond (capacity, 245,000,000 gal) for period of record, and since 1936 by Kuehnle Reservoir, 1½ miles above station (capacity 250,000,000 gal). Only annual maximum daily discharges are shown.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Oct. 1, 1924	-	33	1950	Nov. 2, 1949	-	61
1926	Oct. 26, 1925	-	19.7	1951	Nov. 26, 1950	-	85
1927	Nov. 20, 1926	-	39.3	1952	Apr. 28, 1952	-	139
1928	Sept. 20, 1928	-	58	1953	Aug. 15, 1953	-	108
				1954	Nov. 8, 1953	-	123
1934	Nov. 7, 1933	-	155	1955	Apr. 22, 1955	-	93
1935	Sept. 6, 1935	-	295				
1936	Feb. 15, 1936	-	112	1956	June 7, 1956	-	74
1937	Nov. 25, 1936	-	63	1957	Nov. 1, 1956	-	63
1938	Sept. 22, 1938	-	94	1958	Aug. 26, 1958	-	186
				1959	July 11, 1959	-	176
1947	Nov. 22, 1946	-	42	1960	Nov. 25, 1959	-	90
1948	Aug. 21, 1948	-	162	1961	Apr. 6, 1961	-	80
1949	Feb. 5, 1949	-	96				

GREAT EGG HARBOR RIVER BASIN

4110. Great Egg Harbor River at Folsom, N.J.
(Published as Great Egg River 1925-47)

Location.--Lat 39°35'42", long 74°51'06", on left bank 25 ft upstream from bridge on State Highway 54, 1 mile south of Folsom, Atlantic County, and 2 miles upstream from Pennypot Stream.

Drainage area.--56.3 sq mi. Area of swamps, lakes, or bogs, 7.8 sq mi.

Gage.--Recording, except nonrecording Mar. 6 to Oct. 5, 1941. Prior to Mar. 6, 1941, at site 100 ft downstream at present datum and Mar. 6 to Oct. 5, 1941, at site 145 ft downstream at datum 0.25 ft higher. Datum of gage is 53.32 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Shifts in relation have occurred due to construction and channel improvements.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Feb. 22, 1926	4.56	150	1931	Apr. 3, 1931	4.19	127
1927	Aug. 21, 1927	4.81	160	1932	Mar. 31-Apr. 1, 1932	5.16	216
1928	Dec. 9, 1927	5.03	204				
	Apr. 29-30, 1928	5.07	210	1933	Nov. 12, 1932	5.42	260
					Aug. 25, 1933	7.56	700
1929	Mar. 1-2, 1929	5.22	208	1934	Mar. 7-8, 1934	5.11	203
	Apr. 19-20, 1929	5.28	229		Aug. 18, 1934	5.11	203
1930	Mar. 11, 1930	4.60	160				

GREAT EGG HARBOR RIVER BASIN

Peak stages and discharges of Great Egg Harbor River at Folsom, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Feb. 18, 1935	5.07	277	1948	Feb. 18, 1948	4.67	215
	Apr. 12, 1935	4.88	248		Apr. 4, 1948	4.83	241
	Sept. 8, 1935	6.18	599		May 16, 1948	4.82	239
1936	Nov. 2, 1935	4.68	231		June 1, 1948	5.68	392
	Nov. 20, 1935	4.53	201		Aug. 5-6, 1948	4.72	223
	Jan. 6, 1936	5.30	368	1949	Jan. 2, 1949	5.34	327
	Jan. 20, 1936	4.99	300		Jan. 29, 1949	5.01	270
	Feb. 16, 1936	5.08	322		May 4-5, 1949	4.94	258
	Mar. 14, 1936	4.91	278	1950	Mar. 25-26, 1950	4.60	203
1937	Jan. 22-23, 1937	4.53	206	1951	Nov. 28, 1950	4.78	233
	Apr. 30, 1937	4.52	204		Apr. 5, 1951	4.65	212
1938	June 30, 1938	5.72	478	1952	Dec. 23, 1951	5.70	381
	July 25, 1938	5.92	530		Jan. 29, 1952	4.87	238
	Aug. 10, 1938	5.23	366		Feb. 7, 1952	4.65	203
	Sept. 23, 1938	6.59	718		Mar. 14, 1952	5.04	265
1939	Oct. 2, 1938	5.08	330		Apr. 30, 1952	6.10	461
	Dec. 8, 1938	4.65	230		May 28, 1952	4.78	224
	Feb. 6, 1939	5.20	354		June 3, 1952	5.70	381
	Feb. 12, 1939	4.93	292		Aug. 11, 1952	5.26	302
	Mar. 2, 1939	4.70	241	1953	Nov. 24, 1952	4.95	251
	Mar. 17, 1939	4.79	261		Jan. 12, 1953	4.90	243
	Apr. 1, 1939	4.87	278		Feb. 18, 1953	4.71	213
	Apr. 10, 1939	4.73	248		Mar. 17, 1953	5.56	355
	Apr. 20, 1939	4.51	202		Apr. 17, 1953	4.79	225
	Apr. 29, 1939	4.62	224		May 9, 1953	4.70	211
	Aug. 22, 1939	5.93	543		May 29, 1953	4.80	227
1940	Mar. 7, 1940	4.55	210	1954	Dec. 17, 1953	4.63	200
	Apr. 23, 1940	4.76	254		Aug. 16, 1955	4.89	241
	May 24, 1940	5.40	402	1956	Oct. 18, 1955	4.85	235
	June 1, 1940	4.97	300		Mar. 18, 1956	4.82	230
	Sept. 3, 1940	9.09	1,440		July 24, 1956	4.93	246
1941	Mar. 13, 1941	3.92	211	1957	Nov. 4-5, 1956	5.16	285
1942	Feb. 10, 1942	4.22	133		Dec. 17-18, 1956	4.67	206
1943	Jan. 1, 1943	4.51	198	1958	Jan. 17-18, 1958	4.65	203
1944	Jan. 7, 1944	4.82	244		Jan. 27, 1958	4.91	245
	Mar. 16, 1944	4.60	203		Mar. 1-2, 1958	5.90	420
	Apr. 28, 1944	4.82	244		Mar. 28, 1958	5.47	339
1945	Dec. 1, 1944	4.70	221		May 7-8, 1958	5.82	404
	July 20, 1945	4.66	214		July 27, 1958	4.66	205
1946	Dec. 2, 1945	4.78	233		Aug. 18-19, 1958	5.00	259
	Jan. 1, 1946	5.44	346		Aug. 27, 1958	6.63	577
	May 19, 1946	4.67	215	1959	Oct. 2, 1958	5.17	287
	May 30, 1946	4.78	233		Jan. 6, 1959	a 4.72	-
	June 16, 1946	4.67	215		Sept. 4, 1959	4.72	214
	July 25-26, 1946	5.68	392	1960	Sept. 15, 1960	6.97	655
1947	May 26-27, 1947	4.49	184	1961	Apr. 16, 1961	5.15	b 284
1948	Jan. 5, 1948	4.58	200				

a Backwater from ice.

b Annual peak only.

MAURICE RIVER BASIN

4115. Maurice River at Norma, N.J.

Location.--Lat 39°29'42", long 75°04'38", on right bank just upstream from Almond Road Bridge at Norma, Salem County, three-quarters of a mile downstream from Blackwater Branch.

Drainage area.--113 sq mi. Area of lakes, ponds, and swamps, 10.0 sq mi.

Gage.--Recording. Datum of gage is 46.94 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs and extended above by logarithmic plotting; channel improvements in 1939 and 1940 altered relation.

Bankfull stage.--3.5 ft.

Remarks.--Base for partial-duration series, 380 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Nov. 14, 1932	3.61	394	1947	May 26, 1947	3.26	311
	Mar. 24, 1933	3.56	384	1948	May 14, 1948	3.71	537
	Apr. 15, 1933	3.68	412		May 17, 1948	3.49	420
	Aug. 26, 1933	5.14	880		June 3, 1948	3.72	542
1934	Aug. 4, 1934	3.76	404		June 22, 1948	3.42	386
					Aug. 4, 1948	3.90	645
1935	Feb. 18, 1935	3.86	490	1949	Jan. 4, 1949	3.61	482
	Apr. 14, 1935	3.48	391		Feb. 1, 1949	3.82	599
	Sept. 8, 1935	5.30	1,090		May 6, 1949	3.55	451
1936	Jan. 6, 1936	4.60	754	1950	Sept. 12, 1950	3.48	415
	Jan. 22, 1936	4.22	605				
	Jan. 25, 1936	a4.01	-				
	Feb. 16, 1936	4.63	774	1951	Nov. 29, 1950	3.51	430
	Mar. 15, 1936	3.89	506		Apr. 4, 1951	3.51	430
	Mar. 31, 1936	3.66	432		July 6, 1951	3.44	396
	Apr. 11-13, 1936	3.48	391	1952	Dec. 23, 1951	4.08	752
	Sept. 21, 1936	3.55	404		Jan. 28, 1952	3.56	456
1937	Jan. 25, 1937	3.58	418		Mar. 14-15, 1952	3.49	420
1938	July 1, 1938	3.77	552		Apr. 29, 1952	3.90	645
	July 25, 1938	4.47	878		June 2, 1952	3.51	430
	Aug. 10, 1938	3.75	543		Aug. 7, 1952	4.12	776
	Sept. 23, 1938	4.81	1,060		Aug. 13, 1952	3.76	565
	Sept. 30, 1938	3.49	420	1953	Nov. 23, 1952	3.70	531
1939	Oct. 4, 1938	3.54	445		Mar. 16, 1953	3.83	604
	Feb. 4, 1939	3.80	587		Apr. 11, 1953	3.54	446
	Feb. 13, 1939	3.72	542		Apr. 19, 1953	3.58	467
	Mar. 2, 1939	3.68	520		May 28, 1953	3.58	467
	Mar. 16, 1939	3.65	504	1954	Dec. 15, 1953	3.47	410
	Apr. 1, 1939	3.72	542				
	Apr. 9, 1939	3.57	461	1955	Aug. 14, 1955	3.80	580
	Apr. 29, 1939	3.54	446				
	Aug. 21, 1939	3.94	669	1956	Mar. 19, 1956	3.33	326
1940	Apr. 23, 1940	3.52	435				
	May 17, 1940	3.51	430	1957	Nov. 6, 1956	3.58	458
	Sept. 2, 1940	8.72	7,360				
	Sept. 20, 1940	3.52	435	1958	Mar. 3, 1958	3.85	610
1941	Mar. 13, 1941	3.33	343		Mar. 24, 1958	3.81	586
					May 7, 1958	3.92	652
1942	Aug. 20, 1942	3.23	298		July 26, 1958	3.67	505
					July 28, 1958	3.50	410
1943	Feb. 16, 1943	3.35	352		Aug. 27, 1958	4.80	1,200
					Sept. 29, 1958	4.30	800
1944	Apr. 25, 1944	3.65	504	1959	July 16, 1959	3.89	634
	Apr. 28, 1944	3.54	446				
	Sept. 15, 1944	3.65	504	1960	Sept. 14, 1960	5.03	1,370
1945	July 21, 1945	3.34	348				
				1961	Jan. 3, 1961	3.53	428
1946	Dec. 31, 1945	3.96	680		Feb. 22, 1961	3.71	526
	May 29, 1946	3.50	425		Mar. 26, 1961	3.67	505
	July 26, 1946	3.82	599		Apr. 16, 1961	3.79	574

a Backwater from ice.

MAURICE RIVER BASIN

4120. Manantico Creek near Millville, N.J.

Location.--Lat 39°25'12", long 74°58'00", on right bank at upstream side of Millville-Milmay highway bridge, 4 miles northeast of Millville, Cumberland County, and 7 miles upstream from mouth.

Drainage area.--22.3 sq mi. Area of swamps, lakes, and bogs, 1.6 sq mi.

Gage.--Recording. Datum of gage is 36.63 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 300 cfs and extended above by logarithmic plotting. Relation altered by channel improvements in 1936.

Remarks.--At times regulation on lake above station affects peak flow. Base for partial-duration series, 125 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Mar. 30, 1932	2.34	77	1946	Nov. 30, 1945	2.66	155
1933	Aug. 24, 1933	5.22	379		Dec. 26, 1945	2.46	128
1934	Mar. 5, 1934	3.52	185		Dec. 30, 1945	2.58	144
	Aug. 4, 1934	3.14	160		July 24, 1946	2.62	150
	Aug. 17, 1934	2.82	125		Aug. 19, 1946	2.57	143
1935	Feb. 16, 1935	3.16	160	1947	May 23, 1947	2.36	115
	Sept. 7, 1935	5.72	566	1948	Jan. 2, 1948	2.44	125
1936	Oct. 31, 1935	2.99	129		Jan. 28, 1948	2.44	125
	Jan. 4, 1936	3.93	259		Feb. 15, 1948	2.99	206
	Jan. 20, 1936	2.98	129		May 15, 1948	2.57	143
	Feb. 15, 1936	4.83	413		May 18, 1948	2.60	147
	June 13, 1936	3.75	228		May 31, 1948	2.46	128
1937	May 16, 1937	2.59	128		Aug. 21, 1948	4.58	545
1938	Nov. 29, 1937	2.58	127	1949	Nov. 30, 1948	2.54	139
	July 24, 1938	4.46	474		Dec. 5, 1948	2.44	125
	July 31, 1938	2.61	130		Jan. 1, 1949	2.63	151
	Aug. 9, 1938	3.35	239		Jan. 28, 1949	2.47	129
	Sept. 22, 1938	4.19	413	1950	Aug. 10, 1950	2.44	125
1939	Jan. 31, 1939	2.71	142	1951	Nov. 26, 1950	2.67	157
	Feb. 4, 1939	2.57	125	1952	Dec. 22, 1951	3.18	238
	Feb. 12, 1939	2.57	125		Mar. 6, 1952	2.46	128
	Mar. 2, 1939	2.61	130		Apr. 29, 1952	2.89	190
	Aug. 20, 1939	6.21	1,050		June 2, 1952	3.20	241
1940	Apr. 21, 1940	2.51	129		July 10, 1952	2.49	132
	May 17, 1940	3.50	286		July 20, 1952	2.82	179
	Sept. 2, 1940	3.88	363		Aug. 7, 1952	4.15	432
1941	Mar. 7, 1941	2.55	134	1953	Nov. 23, 1952	2.66	164
1942	Sept. 19, 1942	2.91	186		Jan. 9, 1953	2.38	125
1943	Jan. 24, 1943	2.36	110		Feb. 16, 1953	2.49	138
1944	Apr. 25, 1944	3.64	313		Mar. 14, 1953	3.07	227
	June 19, 1944	2.62	144		July 7, 1953	2.91	204
	Sept. 15, 1944	3.77	340	1954	Oct. 29, 1953	2.41	131
1945	Aug. 4, 1945	2.39	119	1955	Aug. 14, 1955	2.72	176
	Aug. 8, 1945	2.39	119	1956	Oct. 15, 1955	2.37	126
				1957	June 27, 1957	2.24	109

COHANSEY RIVER BASIN

4125. West Branch Cohansey River at Seeley, N.J.

Location.--Lat 39°29'06", long 75°15'33", on right bank 15 ft upstream from County Bridge H-31 at Seeley, Cumberland County, 450 ft upstream from mouth, and 4.1 miles northwest of Bridgeton.

Drainage area.--2.55 sq mi.

Gage.--Recording above concrete control. Datum of gage is 42.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 30 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 25 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951a/	July 5, 1951	2.17	56	1957	Nov. 1, 1956	2.81	105
1952	Dec. 18, 1951	1.66	26		Sept. 8, 1957	-	74
	Dec. 21, 1951	2.51	81	1958	Jan. 14, 1958	-	33
	Feb. 4, 1952	1.68	27		Feb. 28, 1958	-	31
	Aug. 6, 1952	5.72	342		Aug. 25, 1958	3.87	173
1953	Feb. 15, 1953	1.69	28		Sept. 27, 1958	2.71	97
	Mar. 13, 1953	1.65	26	1959	Oct. 1, 1958	1.98	44
	July 20, 1953	2.37	70		June 3, 1959	2.05	48
	July 23, 1953	3.38	136		July 1, 1959	1.86	37
1954	Dec. 15, 1953	-	31		July 14, 1959	2.11	52
	Aug. 9, 1954	1.93	41		Aug. 8, 1959	1.90	39
1955	Aug. 12, 1955	1.54	20	1960	July 30, 1960	3.54	147
1956	July 27, 1956	1.88	38		Aug. 6, 1960	1.74	31
	July 28, 1956	1.81	34		Sept. 12, 1960	4.38	215
	Sept. 6, 1956	-	145	1961	Jan. 1, 1961	-	35
					Apr. 13, 1961	1.76	32

a Period May 1 to Sept. 30, 1951.

4130. Loper Run near Bridgeton, N.J.

Location.--Lat 39°28'20", long 75°14'55", on right bank of Silver Lake, 0.4 mile upstream from mouth and 4 miles northwest of Bridgeton, Cumberland County.

Drainage area.--2.34 sq mi.

Gage.--Recording above dam with two concrete siphon spillways. Datum of gage is 47.10 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by laboratory study of full size model.

Remarks.--Maximum instantaneous discharge was 140 cfs each year except 1940 when both siphons were in operation and maximum instantaneous discharge was 280 cfs. Only maximum daily discharges are shown.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	July 24, 1938	-	39	1950	Sept. 11, 1950	-	58
1939	Aug. 19, 1939	-	66	1951	Nov. 25, 1950	-	88
1940	Sept. 11, 1940	-	94	1952	Dec. 21, 1951	-	40
1941	July 18, 1941	-	31	1953	July 23, 1953	-	17
1942	Sept. 19, 1942	-	29	1954	Dec. 14, 1953	-	12
1943	Oct. 16, 1942	-	19.8	1955	Nov. 21, 1954	-	18
1944	Sept. 14, 1944	-	30	1956	July 21, Sept. 6, 1956	-	12
1945	July 18, 1945	-	29	1957	Nov. 2, 1956	-	67
1946	Oct. 23, 1945	-	12.6	1958	Aug. 25, 1958	-	106
1947	May 26, 1947	-	14.1	1959	July 14, 1959	-	47
1948	Feb. 14, 1948	-	52				
1949	May 3, 1949	-	13.6				

DELAWARE RIVER BASIN

4385. Delaware River at Montague, N.J.
(Published as "at Milford, Pa." 1936-39)

Location.--Lat 41°18'30", long 74°47'50", on right bank at downstream side of old bridge pier and 0.4 mile upstream from toll bridge at Montague, Sussex County, three-quarters of a mile downstream from Saw Kill.

Drainage area.--3,480 sq mi. Area of lakes, ponds, and swamps, 74.4 sq mi.

Gage.--Nonrecording prior to Feb. 9, 1940; recording thereafter. On upstream side of left span of bridge at datum 70 ft lower prior to Feb. 9, 1940. Datum of gage is 369.93 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 90,000 cfs and extended above on basis of flood-routing study.

Remarks.--Some effect on flood peaks from regulation by Lake Wallenpaupack, Toronto Reservoir, Swinging Bridge Reservoir, Cliff Lake Reservoir since 1940, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Only annual maximum observed data is shown for 1936-40. Base for partial-duration series, 34,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	a35.5	-	1950	Dec. 13, 1949	13.63	36,500
1936	Mar. 18, 1936	98.45	164,500		Mar. 9, 1950	14.91	44,600
1937	Feb. 22, 1937	86.65	56,600		Mar. 29, 1950	16.46	55,200
1938	Sept. 22, 1938	92.35	104,400		Apr. 5, 1950	17.81	65,500
1939	Dec. 6, 1938	87.35	61,900	1951	Nov. 26, 1950	21.04	92,500
1940	Apr. 1, 1940	24.33	123,100		Dec. 5, 1950	19.46	78,900
	Apr. 9, 1940	19.87	82,300		Dec. 8, 1950	13.79	37,400
	Apr. 22, 1940	14.48	41,800		Feb. 2, 1951	14.06	39,100
1941	Dec. 30, 1940	14.88	44,400		Mar. 31, 1951	22.66	107,200
	Apr. 6, 1941	13.80	37,600	1952	Nov. 8, 1951	14.79	43,700
1942	Mar. 10, 1942	17.19	60,600		Jan. 27, 1952	13.83	37,700
	May 23, 1942	25.70	136,500		Mar. 12, 1952	15.22	46,600
	Sept. 28, 1942	18.76	73,100		Apr. 6, 1952	15.60	49,200
1943	Nov. 26, 1942	13.32	34,800		Apr. 16, 1952	14.90	44,500
	Dec. 31, 1942	21.54	97,000		July 10, 1952	20.07	84,000
	Feb. 25, 1943	14.41	41,400	1953	Dec. 12, 1952	22.62	108,000
	Mar. 18, 1943	16.00	52,000		Jan. 25, 1953	17.82	65,700
	May 22, 1943	13.42	35,400	1954	Feb. 18, 1954	13.20	34,600
1944	Nov. 9, 1943	16.12	52,800	1955	Aug. 19, 1955	35.15	250,000
	Mar. 18, 1944	14.30	40,700	1956	Oct. 16, 1955	19.68	80,800
1945	Feb. 28, 1945	b15.42	-		Oct. 31, 1955	13.98	38,000
	Mar. 4, 1945	b17.54	-		Mar. 9, 1956	13.79	37,700
	Mar. 18, 1945	17.06	59,700		Apr. 6, 1956	14.98	44,900
	July 20, 1945	15.32	47,200		Apr. 17, 1956	13.67	37,000
	July 30, 1945	15.00	45,100	1957	Apr. 7, 1957	14.80	43,800
1946	Dec. 27, 1945	b14.70	-	1958	Dec. 21, 1957	18.47	70,800
	Jan. 7, 1946	13.31	34,600		Apr. 7, 1958	16.91	58,800
	Mar. 10, 1946	15.79	50,500	1959	Jan. 22, 1959	18.41	70,300
	May 28, 1946	16.51	55,600		Apr. 3, 1959	15.05	45,400
1947	Jan. 22, 1947	13.22	34,000	1960	Nov. 29, 1959	17.05	59,800
	Mar. 15, 1947	15.72	50,000		Jan. 4, 1960	13.68	36,200
	Apr. 6, 1947	19.14	76,200		Feb. 12, 1960	16.23	52,600
	July 22, 1947	14.00	38,700		Apr. 1, 1960	17.58	62,800
1948	Feb. 21, 1948	b17.88	-		Apr. 5, 1960	19.09	74,900
	Mar. 17, 1948	16.22	53,500		Sept. 13, 1960	14.50	41,100
	Mar. 22, 1948	22.90	109,500		Sept. 20, 1960	15.21	45,500
	Apr. 15, 1948	15.07	45,600	1961	Feb. 26, 1961	18.14	67,300
1949	Dec. 31, 1948	21.75	98,800		Apr. 11, 1961	16.85	58,400
	Jan. 6, 1949	17.63	64,000				

a Present datum, from floodmark on left bank.

b Backwater from ice.

DELAWARE RIVER BASIN

4390. Delaware River at Dingmans Ferry, Pa.

Location.--Lat 41°13'12", long 74°51'40", on bridge at Dingmans Ferry, Pike County, and 103.1 miles upstream from Calhoun Street Bridge in Trenton, N.J.

Drainage area.--3,542 sq mi.

Gage.--Nonrecording. Datum of gage is 286.06 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	98.3	-	1943	Dec. 31, 1942	85.95	-
				1944	Nov. 9, 1943	80.80	-
1936	Mar. 19, 1936	93.5	-	1945	Mar. 18, 1945	82.25	-
1937	Feb. 22, 1937	82.05	-				
1938	Sept. 22, 1938	86.80	-	1946	May 29, 1946	81.65	-
1939	Dec. 7, 1938	82.70	-	1947	Apr. 6, 1947	84.00	-
1940	Mar. 31, 1940	88.70	-	1948	Mar. 22, 1948	87.00	-
1941	Dec. 31, 1940	80.25	-	1955	Aug. 19, 1955	97.3	-
1942	May 23, 1942	89.45	-				

4395. Bush Kill at Shoemakers, Pa.

Location.--Lat 41°05'15", long 75°02'20", at highway bridge, 0.1 mile downstream from Saw Creek, 0.7 mile northwest of Shoemakers, Monroe County, and 2 miles southwest of Bush Kill.

Drainage area.--117 sq mi.

Gage.--Nonrecording prior to Aug. 12, 1938; recording thereafter. Datum of gage is 421.13 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 2,600 cfs and extended by logarithmic plotting.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 1,100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Feb. 17, 1909	3.9	1,270	1918	Feb. 20, 1918	4.10	1,430
	Feb. 20, 1909	5.0	2,270		Feb. 26, 1918	4.70	1,970
	Feb. 24, 1909	4.1	1,430		Apr. 22, 1918	3.80	1,190
	May 2, 1909	3.8	1,190				
1910	Mar. 7, 1910	3.8	1,190	1919	Mar. 10, 1919	4.10	1,430
					July 22, 1919	5.10	2,380
1911	June 14, 1911	3.7	1,120	1920	Mar. 13, 1920	4.50	1,780
					Mar. 27, 1920	4.40	1,690
1912	Mar. 15, 1912	3.8	1,190		July 24, 1920	7.20	5,250
1913	Mar. 28, 1913	4.0	1,350	1921	Oct. 1, 1920	3.7	1,120
					Mar. 10, 1921	4.50	1,780
1914	Mar. 29, 1914	4.0	1,350				
				1922	Mar. 8, 1922	4.50	1,780
1915	Feb. 24, 1915	4.75	2,070				
				1923	Mar. 24, 1923	3.90	1,270
1916	Apr. 2, 1916	4.10	1,430				
	Apr. 14, 1916	3.70	1,120	1924	Jan. 11, 1924	4.10	1,430
	July 27, 1916	4.00	1,350		Jan. 17, 1924	3.90	1,270
					Apr. 6, 1924	5.20	2,490
1917	Mar. 27, 1917	4.20	1,510		May 13, 1924	3.90	1,270

DELAWARE RIVER BASIN

Peak stages and discharges of Bush Kill at Shoemakers, Pa.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Sept. 30, 1924	5.50	2,830	1942	May 25, 1942	4.18	1,660
1925	Feb. 12, 1925	4.09	1,430		Aug. 16, 1942	4.55	2,020
1926	Nov. 13, 1925	4.80	2,070		Sept. 28, 1942	5.28	2,920
	Nov. 16, 1925	5.10	2,380	1943	Nov. 25, 1942	3.84	1,340
	Dec. 6, 1925	3.70	1,120		Dec. 30, 1942	4.33	1,710
	Feb. 25, 1926	3.90	1,270	1944	Nov. 9, 1943	3.63	1,170
1927	Nov. 16, 1926	5.50	2,830		Apr. 25, 1944	4.10	1,500
	Mar. 15, 1927	3.70	1,120	1945	Mar. 18, 1945	3.78	1,290
1928	Oct. 19, 1927	4.70	1,970		July 19, 1945	5.99	3,900
	Nov. 4, 1927	4.20	1,510		July 29, 1945	4.30	1,760
	Nov. 18, 1927	4.50	1,780	1946	Dec. 26, 1945	a5.67	-
	Dec. 8, 1927	4.70	1,970		May 28, 1946	4.58	2,080
	June 30, 1928	4.40	1,690		June 2, 1946	3.93	1,420
	July 5, 1928	4.40	1,690	1947	Mar. 14, 1947	3.94	1,420
	July 14, 1928	3.80	1,190		Apr. 6, 1947	4.19	1,580
	Aug. 27, 1928	3.80	1,190		May 26, 1947	3.93	1,420
	Sept. 3, 1928	4.00	1,350	1948	Mar. 21, 1948	4.59	2,080
1929	Mar. 15, 1929	3.83	1,190		Apr. 15, 1948	3.67	1,170
1930	Nov. 18, 1929	3.75	1,150	1949	Dec. 31, 1948	4.46	1,780
1931	Mar. 29, 1931	3.70	1,080		Jan. 6, 1949	4.10	1,560
1932	Apr. 1, 1932	4.10	1,430	1950	Mar. 29, 1950	4.17	1,540
1933	Oct. 6, 1932	4.5	1,780	1951	Nov. 26, 1950	4.07	1,500
	Nov. 1, 1932	3.8	1,190		Dec. 5, 1950	4.25	1,960
	Nov. 10, 1932	4.0	1,350		Dec. 8, 1950	4.47	1,900
	Nov. 19, 1932	4.2	1,510		Jan. 24, 1951	3.82	1,280
	Apr. 18, 1933	4.1	1,430		Mar. 31, 1951	5.62	2,860
	Aug. 24, 1933	5.04	2,270	1952	Nov. 8, 1951	5.37	2,980
	Sept. 4, 1933	3.9	1,270		Mar. 11, 1952	4.58	2,070
	Sept. 16, 1933	5.7	3,070		Apr. 5, 1952	4.59	2,070
1934	Apr. 12, 1934	3.62	1,040		Apr. 15, 1952	4.19	1,650
1935	Dec. 1, 1934	4.7	1,970		Apr. 28, 1952	3.78	1,280
	July 10, 1935	5.9	3,330		May 26, 1952	3.67	1,160
1936	Nov. 29, 1935	4.7	1,970	1953	Nov. 22, 1952	4.76	2,240
	Mar. 12, 1936	6.1	3,590		Dec. 11, 1952	6.50	4,680
	Mar. 18, 1936	6.92	4,770		Jan. 25, 1953	5.10	2,660
	Apr. 6, 1936	4.00	1,350	1954	Dec. 7, 1953	3.35	928
1937	Apr. 6, 1937	3.90	1,240	1955	Mar. 23, 1955	4.04	1,500
1938	Oct. 24, 1937	3.70	1,110		Aug. 19, 1955	13.95	23,400
	Dec. 18, 1937	a3.66	-	1956	Oct. 16, 1955	5.96	3,680
	Jan. 25, 1938	4.80	2,070		Oct. 31, 1955	4.08	1,450
	June 27, 1938	4.26	1,600		Nov. 16, 1955	3.71	1,110
	July 23, 1938	4.10	1,430		Apr. 30, 1956	3.92	1,270
	Sept. 21, 1938	4.47	1,780	1957	Apr. 6, 1957	4.08	1,460
1939	Dec. 6, 1938	4.99	2,540		Apr. 9, 1957	3.85	1,260
	Feb. 16, 1939	3.58	1,110	1958	Dec. 21, 1957	5.50	3,050
1940	Mar. 15, 1940	a4.10	-		Dec. 26, 1957	4.00	1,380
	Mar. 31, 1940	5.22	2,790		Apr. 7, 1958	4.90	2,290
	Apr. 1, 1940	5.22	2,790	1959	Mar. 6, 1959	3.80	1,260
	Apr. 9, 1940	4.34	1,810	1960	Feb. 11, 1960	4.05	1,540
	Apr. 22, 1940	3.54	1,090		Apr. 1, 1960	3.80	1,360
	Sept. 1, 1940	5.05	2,600		Apr. 5, 1960	4.41	1,800
1941	Apr. 6, 1941	3.74	1,220		Sept. 13, 1960	3.45	1,140
	July 8, 1941	3.56	1,090	1960	Feb. 26, 1961	4.05	1,890
1942	Mar. 9, 1942	4.37	1,810		Apr. 17, 1961	3.32	1,220

a Backwater from ice.

DELAWARE RIVER BASIN

4400. Flat Brook near Flatbrookville, N.J.

Location.--Lat 41°06'24", long 74°57'09", on right bank 1 mile upstream from Flatbrookville, Sussex County, and 1½ miles upstream from mouth.

Drainage area.--65.1 sq mi. Area of lakes, ponds, and swamps, 1.0 sq mi.

Gage.--Nonrecording prior to Jan. 6, 1926; recording thereafter. Datum of gage is 347.73 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above on basis of slope-area measurements of 2,780 and 9,550 cfs.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 650 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Apr. 7, 1924	7.1	a3,040	1938	Nov. 14, 1937	4.11	850
1925	Feb. 11, 1925	7.10	a3,040		Jan. 25, 1938	5.62	1,890
1926	Feb. 26, 1926	3.50	575		June 28, 1938	5.22	1,560
1927	Nov. 17, 1926	3.93	755		July 24, 1938	6.14	2,400
	Aug. 28, 1927	3.82	710		Sept. 22, 1938	7.03	2,980
	Sept. 2, 1927	3.88	746	1939	Dec. 6, 1938	6.37	2,400
1928	Oct. 20, 1927	4.59	1,110		Feb. 16, 1939	4.23	930
	Nov. 4, 1927	5.05	1,420		Mar. 1, 1939	3.81	720
	Nov. 18, 1927	4.33	958		Apr. 2, 1939	4.03	825
	Dec. 8, 1927	5.86	2,000	1940	Jan. 15, 1940	b5.47	-
	Feb. 24, 1928	3.83	724		Mar. 15, 1940	4.47	1,060
	June 30, 1928	4.72	1,200		Mar. 31, 1940	5.57	1,860
	July 8, 1928	5.80	1,950		Apr. 9, 1940	4.30	960
	July 14, 1928	5.36	1,630		Apr. 22, 1940	4.06	830
	Aug. 18, 1928	3.78	701		May 17, 1940	3.76	697
	Aug. 27, 1928	4.07	805	1941	Nov. 15, 1940	4.00	800
1929	Mar. 6, 1929	3.82	719	1942	Mar. 9, 1942	4.73	1,220
	Apr. 13, 1929	3.93	787		Aug. 10, 1942	3.71	668
1930	June 10, 1930	3.68	595		Aug. 17, 1942	4.19	895
1931	Mar. 29, 1931	3.68	605		Sept. 28, 1942	4.46	1,060
1932	Feb. 11, 1932	3.92	722	1943	Oct. 27, 1942	3.70	662
	Apr. 1, 1932	4.15	916		Nov. 26, 1942	5.86	2,120
1933	Oct. 7, 1932	3.95	740		Dec. 2, 1942	4.08	840
	Nov. 2, 1932	4.40	1,000		Dec. 31, 1942	4.69	1,190
	Nov. 10, 1932	4.24	904		May 27, 1943	4.53	1,100
	Nov. 20, 1932	4.82	1,260	1944	Nov. 9, 1943	4.93	1,360
	Mar. 21, 1933	4.09	815		Apr. 25, 1944	4.56	1,120
	June 6, 1933	3.80	660	1945	Mar. 7, 1945	3.76	697
	Aug. 24, 1933	5.17	1,500		July 19, 1945	4.00	800
	Sept. 4, 1933	4.40	1,000		July 29, 1945	3.95	780
	Sept. 17, 1933	5.13	1,470		Aug. 25, 1945	3.98	792
1934	Mar. 5, 1934	b6.40	700	1946	Jan. 8, 1946	4.12	860
	Apr. 12, 1934	3.77	644		May 28, 1946	4.75	1,240
1935	Dec. 2, 1934	4.10	820		June 3, 1946	4.01	805
	July 9, 1935	5.04	1,440	1947	Mar. 15, 1947	5.06	1,450
1936	Oct. 31, 1935	6.66	2,640		Apr. 6, 1947	5.78	2,050
	Nov. 29, 1935	4.85	1,280		May 6, 1947	3.85	740
	Jan. 3, 1936	3.97	752		May 28, 1947	4.80	1,270
	Mar. 12, 1936	6.50	2,500	1948	Nov. 9, 1947	4.58	1,130
	Mar. 18, 1936	5.47	1,710		Nov. 12, 1947	3.79	714
	Apr. 7, 1936	4.71	1,200		Feb. 21, 1948	4.50	800
1937	Feb. 22, 1937	4.04	790		Mar. 17, 1948	5.02	1,420
	May 15, 1937	4.10	850		Mar. 20, 1948	4.09	845
					Apr. 15, 1948	4.03	815
					May 14, 1948	3.98	792

a Annual maximum only.

b Backwater from ice.

DELAWARE RIVER BASIN

Peak stages and discharges of Flat Brook near Flatbrookville, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Dec. 31, 1948	6.94	2,900	1954	Dec. 7, 1953	6.32	2,360
	Jan. 6, 1949	4.83	1,290		Dec. 14, 1953	3.82	670
1950	Mar. 9, 1950	4.45	1,050	1955	Nov. 22, 1954	3.92	722
	Mar. 29, 1950	4.20	900		Mar. 23, 1955	3.90	710
	June 2, 1950	4.63	1,160		Aug. 13, 1955	4.37	982
1951					Aug. 19, 1955	12.58	9,560
	Nov. 26, 1950	6.11	2,370	1956	Oct. 16, 1955	(c)	(c)
	Dec. 5, 1950	4.44	1,040		Nov. 17, 1955	3.94	734
	Dec. 8, 1950	3.84	730		Apr. 30, 1956	3.86	690
	Feb. 8, 1951	3.84	730	1957	Apr. 6, 1957	4.97	1,370
	Mar. 20, 1951	3.88	750				
1952	Mar. 31, 1951	5.45	1,760	1958	Dec. 21, 1957	5.86	2,000
	Nov. 8, 1951	4.37	1,040		Dec. 27, 1957	4.37	982
	Dec. 21, 1951	4.38	1,050		Apr. 7, 1958	5.56	1,770
	Jan. 23, 1952	3.75	673	1959	Apr. 3, 1959	4.14	844
	Jan. 27, 1952	3.79	695				
	Feb. 4, 1952	3.74	667	1960	Jan. 3, 1960	4.63	1,140
	Mar. 12, 1952	5.32	1,730		Feb. 11, 1960	4.36	988
	Apr. 6, 1952	7.24	3,170		Mar. 31, 1960	4.25	928
	Apr. 15, 1952	4.30	996		Apr. 5, 1960	4.81	1,240
	Apr. 29, 1952	4.03	834		Aug. 20, 1960	5.47	1,620
	May 26, 1952	4.03	834		Sept. 13, 1960	7.05	2,720
	June 2, 1952	5.83	2,180		Sept. 20, 1960	4.17	884
	July 10, 1952	4.32	1,010	1961	Feb. 20, 1961	b5.67	-
	Sept. 2, 1952	5.37	1,770		Feb. 26, 1961	5.37	1,560
1953	Nov. 22, 1952	4.64	1,210		Apr. 17, 1961	3.90	735
	Dec. 11, 1952	5.78	2,130				
	Jan. 25, 1953	6.72	2,700				
	Mar. 16, 1953	3.76	653				
	Apr. 8, 1953	4.42	1,060				

b Backwater from ice.

c Unknown, believed maximum for year.

4410. McMichaels Creek at Stroudsburg, Pa.

Location.--Lat 40°58'45", long 75°12'05", at dismantled railroad bridge, 0.25 mile upstream from Little Pocono Creek and three-quarters of a mile southwest of Stroudsburg, Monroe County.

Drainage area.--65.3 sq mi.

Gage.--Nonrecording. Datum of gage is 403.93 ft above mean sea level (preliminary levels of 1912).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs and extended above by contracted-opening measurement.

Remarks.--Base for partial-duration series, 930 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1911	Aug. 31, 1911	5.85	980	1916	July 27, 1916	8.00	2,080
1912	Feb. 22, 1912	6.00	1,080	1917	Jan. 14, 1917	7.05	1,580
	Mar. 13, 1912	8.15	2,180				
1913	Mar. 14, 1913	6.0	1,080	1918	Feb. 20, 1918	8.80	2,480
	Mar. 27, 1913	8.20	2,180		Feb. 26, 1918	7.40	1,780
	Apr. 28, 1913	5.70	930	1919	May 10, 1919	6.00	1,080
	Aug. 1, 1913	6.25	1,180		July 21, 1919	7.00	1,580
1914	Nov. 9, 1913	6.80	1,480	1920	Mar. 13, 1920	8.00	2,080
	Jan. 31, 1914	7.20	1,680		Mar. 17, 1920	5.90	1,030
	Mar. 17, 1914	5.66	930	1921	Mar. 25, 1921	5.40	795
1915	Jan. 7, 1915	9.00	2,580				
	Jan. 13, 1915	8.00	2,080	1922	Mar. 7, 1922	7.40	1,780
	Feb. 1, 1915	7.30	1,730				
	Feb. 24, 1915	6.60	1,380	1923	Jan. 1, 1923	6.00	1,080
	Aug. 4, 1915	7.00	1,580		Jan. 16, 1923	5.7	930

DELAWARE RIVER BASIN

Peak stages and discharges of McMichaels Creek at Stroudsburg, Pa.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Jan. 17, 1924	6.00	1,080	1933	Nov. 19, 1932	6.2	1,180
	Apr. 6, 1924	7.20	1,680		Apr. 17, 1933	6.2	1,180
	Sept. 30, 1924	7.40	1,780		Aug. 24, 1933	8.7	2,430
1925	Mar. 19, 1925	6.00	1,080		Sept. 4, 1933	9.4	2,820
					Sept. 16, 1933	7.9	2,030
1926	Nov. 16, 1925	5.90	1,030	1934	June 19, 1934	5.61	888
	Feb. 25, 1926	5.80	980				
1927	Nov. 16, 1926	7.40	1,780	1935	Dec. 1, 1934	7.1	1,630
					July 10, 1935	8.5	2,330
1928	Dec. 8, 1927	7.50	1,830	1936	Nov. 29, 1935	5.76	980
	Jan. 25, 1928	5.8	980		Jan. 3, 1936	6.00	1,080
	July 23, 1928	6.6	1,380		Mar. 12, 1936	10.5	3,480
					Mar. 18, 1936	9.0	2,580
1929	Jan. 6, 1929	6.1	1,130		Apr. 6, 1936	6.8	1,480
	Feb. 27, 1929	5.9	1,030				
	Mar. 6, 1929	5.7	930	1937	Dec. 20, 1936	6.19	1,180
1930	Oct. 2, 1929	6.1	1,130		Feb. 22, 1937	6.3	1,230
1931	Mar. 8, 1931	4.9	580	1938	Nov. 13, 1937	5.8	980
					Jan. 25, 1938	7.0	1,580
1932	Mar. 28, 1932	5.66	930		June 28, 1938	6.2	1,180
					July 23, 1938	6.1	1,130
1933	Nov. 1, 1932	7.5	1,830		Sept. 21, 1938	6.6	1,380
	Nov. 10, 1932	6.4	1,280	1955	Aug. 18, 1955	14.1	5,740

4430. Delaware River at Portland, Pa.

Location.--Lat 40°55'30", long 75°05'55", on highway bridge at Portland, Northampton County, and 72.5 miles upstream from Trenton, N.J.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 199.53 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Only annual maximums of hourly gage readings by Delaware River Joint Toll Bridge Commission are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	96.6	-	1946	May 29, 1946	80.62	-
				1947	Apr. 6, 1947	82.60	-
1936	Mar. 19, 1936	92.90	-	1948	Mar. 23, 1948	86.38	-
1937	Feb. 23, 1937	80.50	-	1949	Dec. 31, 1948	85.80	-
1938	Sept. 22, 1938	85.75	-	1950	Apr. 5, 1950	81.66	-
1939	Dec. 7, 1938	81.60	-				
1940	Apr. 1, 1940	88.04	-	1951	Mar. 31, 1951	86.20	-
				1952	July 10, 1952	83.50	-
1941	Dec. 30, 1940	78.70	-	1953	Dec. 12, 1952	87.00	-
1942	May 23, 1942	88.03	-	1954	Feb. 18, 1954	78.55	-
1943	Dec. 31, 1942	85.00	-	1955	Aug. 19, 1955	98.87	-
1944	Nov. 10, 1943	80.00	-				
1945	Mar. 18, 1945	80.70	-				

DELAWARE RIVER BASIN

4435. Paulins Kill at Blairstown, N.J.

Location.--Lat 40°58'44", long 74°57'15", on right bank 1,200 ft upstream from bridge on State Highway 94 in Blairstown, Warren County, 1,400 ft upstream from Blairs Creek, and 10 miles upstream from mouth.

Drainage area.--126 sq mi. At site used prior to Aug. 1, 1931, 128 sq mi. Area of lakes, ponds, and swamps, 7.4 sq mi.

Gage.--Recording. Prior to June 24, 1931, 1,300 ft downstream at different datum. Since Aug. 1, 1931, at various sites up to 280 ft downstream at same datum. Datum of gage is 335.86 ft above mean sea level, datum of 1929.

Stage-discharge relation.--For 1922-31, defined by current-meter measurements below 1,300 cfs and extended above by logarithmic plotting. For 1931-61, defined by current-meter measurement below 6,100 cfs and extended above on basis of slope-area measurement at 8,750 cfs.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 8, 1922	7.0	1,800	1939	Feb. 16, 1939	4.75	1,410
1923	Mar. 17, 1923	6.93	1,750		Mar. 1, 1939	4.27	1,150
1924	Mar. 14, 1924	6.1	1,320		Apr. 2, 1939	3.89	1,010
	Apr. 7, 1924	6.83	1,680	1940	Mar. 15, 1940	5.49	1,910
	May 12, 1924	5.66	1,140		Mar. 21, 1940	3.91	1,010
1925	Feb. 12, 1925	7.05	1,800		Mar. 31, 1940	5.10	1,630
1926	Feb. 26, 1926	5.76	1,170		Apr. 9, 1940	4.40	1,220
	Mar. 8, 1926	5.70	1,140		Apr. 22, 1940	4.59	1,320
1927	Aug. 29, 1927	5.52	925		Sept. 1, 1940	4.00	1,050
1928	Oct. 20, 1927	6.68	1,470	1941	Nov. 15, 1940	4.26	1,150
	Nov. 4, 1927	6.37	1,310	1942	Aug. 14, 1942	4.74	1,210
	Nov. 18, 1927	5.84	1,040		Aug. 17, 1942	5.78	1,860
	Dec. 8, 1927	6.30	1,260	1943	Nov. 26, 1942	6.04	2,070
	July 15, 1928	6.94	1,590		Dec. 31, 1942	5.81	1,890
	Aug. 18, 1928	5.77	1,040	1944	Nov. 9, 1943	5.89	1,950
1929	Feb. 7, 1929	5.94	1,080		Apr. 25, 1944	4.86	1,270
	Feb. 27, 1929	6.05	1,120		June 20, 1944	4.35	1,030
	Mar. 6, 1929	6.4	1,310	1945	Feb. 28, 1945	4.67	1,180
1930	Mar. 9, 1930	4.80	700		Mar. 7, 1945	4.84	1,260
1931	July 10, 1931	-	-		July 20, 1945	6.65	2,680
1932	Mar. 29, 1932	4.04	1,070	1946	Jan. 8, 1946	4.92	1,470
	Apr. 1, 1932	3.84	1,020		May 28, 1946	4.31	1,160
1933	Nov. 10, 1932	4.09	1,110		June 3, 1946	4.23	1,120
	Nov. 20, 1932	5.09	1,620	1947	Mar. 14, 1947	6.16	2,380
	Mar. 21, 1933	5.23	1,680		Apr. 6, 1947	5.48	1,800
	Apr. 13, 1933	4.05	1,050		May 1, 1947	3.96	1,000
	Aug. 24, 1933	-	2,300		May 6, 1947	4.08	1,060
	Sept. 4, 1933	6.14	2,260		May 26, 1947	5.52	1,820
	Sept. 17, 1933	5.73	1,990	1948	Mar. 17, 1948	5.71	1,970
1934	Mar. 6, 1934	4.53	1,280		May 14, 1948	4.02	1,030
1935	July 10, 1935	5.76	2,060	1949	Dec. 31, 1948	7.02	2,970
1936	Oct. 31, 1935	5.37	1,800		Jan. 6, 1949	6.04	2,260
	Nov. 29, 1935	5.00	1,560	1950	Mar. 9, 1950	5.55	1,840
	Jan. 3, 1936	4.00	1,050		Mar. 23, 1950	4.32	1,170
	Mar. 12, 1936	6.92	3,480		June 2, 1950	4.25	1,140
	Mar. 19, 1936	5.60	2,000	1951	Nov. 26, 1950	6.45	2,680
	Apr. 6, 1936	5.36	1,800		Dec. 5, 1950	4.61	1,320
1937	Jan. 26, 1937	4.04	1,070		Feb. 8, 1951	4.69	1,360
1938	Jan. 26, 1938	4.80	1,440		Feb. 22, 1951	4.28	1,150
	June 28, 1938	7.08	3,700		Mar. 31, 1951	5.33	1,710
	July 24, 1938	6.16	2,540	1952	Nov. 8, 1951	5.74	1,990
	Sept. 22, 1938	7.56	4,480		Dec. 22, 1951	4.05	1,040
1939	Dec. 6, 1938	6.63	3,120		Jan. 27, 1952	4.55	1,280
					Feb. 5, 1952	4.13	1,080
					Mar. 12, 1952	5.45	1,780
					Apr. 6, 1952	7.12	3,070
					Apr. 16, 1952	5.31	1,700

DELAWARE RIVER BASIN

Peak stages and discharges of Paulins Kill at Blairstown, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 28, 1952	4.49	1,260	1956	Apr. 30, 1956	5.84	2,040
	May 26, 1952	4.65	1,340		July 9-10, 1956	5.40	1,750
	June 2, 1952	5.94	2,170	1957	Apr. 6, 1957	5.62	1,880
	July 10, 1952	4.46	1,240		Dec. 21, 1957	4.77	1,400
	Aug. 17, 1952	5.10	1,570	1958	Feb. 28, 1958	4.52	1,270
	Sept. 2, 1952	5.36	1,730		Apr. 7, 1958	4.37	1,200
1953	Dec. 12, 1952	5.30	1,690	1959	Jan. 22, 1959	4.20	1,110
	Jan. 25, 1953	7.01	2,960		Jan. 3, 1960	4.45	1,240
	Mar. 16, 1953	4.15	1,090	1960	Apr. 5, 1960	5.30	1,690
	Apr. 8, 1953	4.94	1,480		Aug. 20, 1960	4.71	1,360
1954	Dec. 7, 1953	4.79	1,400		Sept. 13, 1960	6.44	2,470
	Dec. 15, 1953	4.16	1,090		Feb. 26, 1961	5.92	2,060
1955	Aug. 19, 1955	11.2	8,750				
1956	Oct. 16, 1955	7.76	3,740				

4445. Delaware River at Delaware, N.J.

Location.--Lat 40°53'55", long 75°04'40", on highway bridge at Delaware, Warren County, 70.4 miles upstream from Calhoun Street Bridge in Trenton.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 200.00 ft above mean sea level (Pennsylvania Railroad bench mark).

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Mar. 19, 1936	82.61	-	1946	May 29, 1946	69.81	-
1937	Feb. 23, 1937	69.97	-	1947	Apr. 6, 1947	72.73	-
1938	Sept. 22, 1938	76.11	-	1948	Mar. 23, 1948	76.33	-
1939	Dec. 7, 1938	71.59	-	1949	Dec. 31, 1948	76.14	-
1940	Apr. 1, 1940	78.32	-	1950	Apr. 5, 1950	71.95	-
1941	Dec. 30, 1940	67.52	-	1951	Mar. 31, 1951	77.60	-
1942	May 23, 1942	78.28	-	1952	July 10, 1952	73.75	-
1943	Dec. 31, 1942	74.95	-	1953	Dec. 12, 1952	77.92	-
1944	Nov. 10, 1943	69.20	-	1954	Feb. 18, 1954	65.73	-
1945	Mar. 18, 1945	70.00	-				

4450. Pequest River at Huntsville, N.J.

Location.--Lat 40°58'49", long 74°46'38", on right bank 20 ft upstream from highway bridge in Huntsville, Sussex County, and three-eighths of a mile downstream from East Branch.

Drainage area.--31.4 sq mi. Area of lakes, swamps, and ponds, 1.3 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 553.81 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series, 130 cfs.

DELAWARE RIVER BASIN

Peak stages and discharges of Pequest River at Huntsville, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 15, 1940	3.81	278	1951	Nov. 26, 1950	3.76	287
	Mar. 31, 1940	3.51	193		Dec. 5, 1950	3.44	180
	Apr. 9, 1940	3.50	190		Dec. 8-9, 1950	3.51	201
	Apr. 13, 1940	3.50	190		Jan. 25, 1951	3.30	141
	Apr. 22, 1940	3.59	214		Feb. 7, 1951	3.51	201
	May 22, 1940	3.53	198		Feb. 22, 1951	3.37	160
	June 2, 1940	3.31	142		Mar. 31, 1951	3.60	230
1941	Dec. 29, 1940	-	(a)	1952	Nov. 8, 1951	3.51	201
	Mar. 8, 1941	b3.25	-		Dec. 22, 1951	3.33	149
1942	Sept. 28, 1942	3.21	119		Jan. 27-28, 1952	3.46	186
1943	Nov. 26, 1942	3.69	242		Feb. 5, 1952	3.39	165
	Dec. 3, 1942	3.35	152		Mar. 12, 1952	3.64	244
	Dec. 31, 1942	3.80	275		Apr. 6, 1952	3.78	295
	Jan. 5, 1943	b3.32	-		Apr. 16, 1952	3.48	192
	Feb. 20, 1943	3.50	190		Apr. 28, 1952	3.59	227
	Feb. 25, 1943	3.33	147		June 2, 1952	3.87	330
	May 20, 1943	3.30	140		July 10, 1952	3.49	201
	May 27, 1943	3.35	152		Aug. 17, 1952	3.50	208
1944	Nov. 10, 1943	3.35	152	1953	Sept. 2, 1952	3.44	192
	Mar. 7, 1944	3.27	133		Nov. 23, 1952	3.40	169
	Mar. 13-14, 1944	3.46	180		Dec. 12, 1952	3.51	201
	Mar. 18, 1944	3.29	138		Jan. 25, 1953	3.82	310
	Mar. 24, 1944	3.31	142		Mar. 16, 1953	3.29	141
	Apr. 25, 1944	3.46	180		Apr. 8, 1953	3.40	169
1945	Jan. 2, 1945	3.26	131	1954	Mar. 4, 1954	3.23	124
	Mar. 7, 1945	3.69	242	1955	Aug. 19, 1955	5.05	560
	May 29, 1945	3.28	135	1956	Oct. 17, 1955	3.97	328
	June 23, 1945	3.29	138		Apr. 10, 1956	3.32	147
	July 20, 1945	4.68	486		Apr. 30, 1956	3.26	132
	Aug. 7, 1945	3.38	159		July 10, 1956	4.44	438
	Sept. 16, 1945	3.27	133	1957	Dec. 16, 1956	3.36	158
1946	Dec. 26, 1945	3.32	145		Apr. 7, 1957	3.68	254
	Jan. 1, 1946	3.27	133	1958	Jan. 26, 1958	3.26	132
	Jan. 8, 1946	3.33	147		Feb. 28, 1958	3.37	161
	Mar. 10, 1946	3.26	131		Apr. 7, 1958	3.58	224
	May 28, 1946	3.28	135		Apr. 12, 1958	3.55	214
	June 3, 1946	3.43	172		Apr. 30, 1958	3.38	164
1947	Mar. 15, 1947	3.57	220	1959	Mar. 7, 1959	3.43	178
	Apr. 6, 1947	3.57	220	1960	Jan. 4, 1960	3.41	172
	May 2, 1947	3.51	201		Apr. 1, 1960	3.28	137
	May 6, 1947	3.53	208		Apr. 6, 1960	3.67	251
1948	Mar. 18, 1948	3.67	254		Aug. 20, 1960	3.50	198
	Mar. 28, 1948	3.38	163		Aug. 31, 1960	3.34	153
	Apr. 2, 1948	3.36	157		Sept. 13, 1960	3.92	315
	Apr. 15, 1948	3.38	163		Sept. 21, 1960	3.52	204
1949	Dec. 31, 1948	4.13	368	1961	Feb. 27, 1961	3.80	285
	Jan. 6-7, 1949	3.76	287		Mar. 14, 1961	3.42	175
1950	Mar. 9, 1950	3.40	168		Mar. 24, 1961	3.38	164
	Mar. 24, 1950	3.35	154		Apr. 17, 1961	3.36	156
	July 14, 1950	3.27	134		Apr. 26, 1961	3.32	145
					May 16, 1961	3.28	134

a Unknown; believed to have exceeded base.

b Backwater from ice.

DELAWARE RIVER BASIN

4455. Pequest River at Pequest, N.J.

Location.--Lat 40°49'43", long 74°58'45", on right bank at Pequest, Warren County, 100 ft upstream from Lehigh and Hudson River Railway bridge and 300 ft downstream from Furnace Brook.

Drainage area.--108 sq mi. Area of lakes, swamps, and ponds, 5.4 sq mi.

Gage.--Nonrecording prior to June 22, 1926; recording thereafter. Concrete control since Sept. 29, 1929. Datum of gage is 398.78 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Prior to Sept. 29, 1929, defined by current-meter measurements. Since 1929, defined by current-meter measurements below 1,200 cfs and extended above by logarithmic plotting.

Bankfull stage.--4 ft.

Remarks.--Only annual peaks are shown prior to 1927. Base for partial-duration series, 500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Mar. 8, 1922	2.5	527	1940	Mar. 15, 1940	4.17	1,330
1923	Mar. 19, 1923	2.91	694		Apr. 9, 1940	2.95	562
1924	Apr. 7, 1924	2.67	593		Apr. 22, 1940	3.08	629
1925	Feb. 18, 1925	2.91	694		May 21, 1940	3.30	752
1926	Feb. 28, 1926	2.78	637	1941	Dec. 17, 1940	2.73	457
1927	Feb. 26, 1927	2.38	489	1942	Aug. 18, 1942	3.12	651
1928	Nov. 4, 1927	2.69	601		Sept. 28, 1942	2.87	523
	Nov. 18, 1927	2.54	542	1943	Nov. 26, 1942	2.98	577
	Dec. 8, 1927	2.66	589		Dec. 30-31, 1942	3.34	776
	Feb. 15, 1928	2.50	527		Feb. 11, 1943	2.90	537
	Feb. 23, 1928	2.63	577		Feb. 21, 1943	3.11	646
	July 14, 1928	2.67	593		May 27, 1943	3.09	635
	Aug. 6, 1928	2.70	605	1944	Nov. 9, 1943	2.92	547
	Aug. 18, 1928	2.62	573		Mar. 7, 1944	2.98	577
	Aug. 27, 1928	3.04	735		Mar. 13, 1944	3.15	668
1929	Feb. 7, 1929	2.68	597		Mar. 24, 1944	2.95	562
	Feb. 27, 1929	2.69	605		Apr. 25, 1944	2.98	577
	Apr. 26, 1929	2.48	542	1945	Feb. 27, 1945	3.34	776
1930	Mar. 9, 1930	2.75	463		July 10, 1945	2.98	577
1931	July 10, 1931	3.59	830		July 16, 1945	3.01	592
1932	Mar. 28, 1932	2.81	454		July 23, 1945	4.18	1,340
1933	Mar. 21, 1933	3.29	680		Aug. 2, 1945	2.89	532
	Apr. 17, 1933	3.07	568		Aug. 7, 1945	2.90	537
	Sept. 19, 1933	3.42	730	1946	May 28, 1946	2.87	523
1934	Mar. 6, 1934	3.26	655		June 2-3, 1946	3.00	587
1935	July 10, 1935	3.42	730	1947	Mar. 14-15, 1947	3.01	592
1936	Oct. 31, 1935	3.00	536		Apr. 6, 1947	2.94	557
	Nov. 29, 1935	3.30	678		May 1, 1947	2.91	542
	Jan. 3, 1936	3.49	780		May 6, 1947	2.92	547
	Mar. 14, 1936	4.97	1,810		June 15, 1947	2.89	532
	Apr. 6, 1936	3.48	780	1948	Mar. 21, 1948	2.91	542
1937	Feb. 22, 1937	3.13	596		Apr. 1, 1948	2.88	527
1938	Nov. 14, 1937	3.03	550		Apr. 15, 1948	2.97	572
	Jan. 25, 1938	3.16	610		May 14, 1948	3.19	690
	June 28, 1938	3.28	678	1949	Dec. 31, 1948	3.47	854
	July 24, 1938	3.34	703		Jan. 6, 1949	3.50	872
	Sept. 22, 1938	3.82	948	1950	Mar. 23-24, 1950	2.73	457
1939	Dec. 5-9, 1938	3.36	787	1951	Feb. 7, 1951	3.23	712
	Feb. 4, 1939	3.06	619		Mar. 31, 1951	3.06	619
	Feb. 16, 1939	2.98	577		July 28, 1951	3.20	695
	Mar. 1, 1939	3.07	624		Aug. 16, 1951	2.90	537
	Mar. 17, 1939	2.93	552	1952	Nov. 7, 1951	3.45	842
	Apr. 2, 1939	2.88	527		Dec. 21, 1951	2.90	537
	Apr. 7, 1939	3.10	640		Jan. 27, 1952	2.91	542
					Feb. 5, 1952	2.88	527
					Mar. 11, 1952	3.16	673

DELAWARE RIVER BASIN

Peak stages and discharges of Pequest River at Pequest, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 6, 1952	3.25	724	1958	Dec. 26, 1957	3.04	608
	Apr. 15, 1952	3.25	724		Jan. 22, 1958	3.14	662
	Apr. 28, 1952	3.28	741		Jan. 26, 1958	2.86	518
	June 2, 1952	2.91	542		Feb. 28, 1958	3.51	878
	July 10, 1952	2.97	572		Mar. 2, 1958	a3.61	-
	Sept. 2, 1952	2.91	542		Mar. 26, 1958	3.14	662
1953	Nov. 22, 1952	3.15	668	1959	Apr. 7, 1958	3.22	706
	Dec. 11, 1952	3.08	629		Apr. 30, 1958	3.20	695
	Jan. 25, 1953	3.19	690		May 7, 1958	2.93	552
	Apr. 8, 1953	2.96	567		Nov. 28, 1958	3.03	603
1954	May 4, 1954	2.89	532	1960	Jan. 22, 1959	a3.53	640
					Mar. 6, 1959	3.83	1,090
1955	Aug. 14, 1955	2.96	567	1961	Dec. 13, 1959	2.95	548
	Aug. 19, 1955	3.87	1,110		Jan. 3, 1960	3.40	750
1956	Oct. 15, 1955	3.25	724		Apr. 5, 1960	3.68	890
	July 14, 1956	2.90	537		Sept. 13, 1960	4.44	1,290
					Sept. 20, 1960	3.04	588
1957	Dec. 15, 1956	3.08	629	1961	Feb. 26, 1961	4.18	1,150
	Apr. 6, 1957	3.74	1,030		Mar. 14, 1961	3.26	687
1958					Mar. 24, 1961	3.02	579
	Dec. 21, 1957	3.20	695		Apr. 14, 1961	2.99	566

a Backwater from ice.

4460. Beaver Brook near Belvidere, N.J.

Location.--Lat 40°50'40", long 75°02'48", on right bank 2,000 ft upstream from mouth and 2 miles east of Belvidere, Warren County.

Drainage area.--36.2 sq mi. Area of lakes, ponds, and swamps, 1.1 sq mi.

Gage.--Recording. Datum of gage is 303.36 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 990 cfs and extended above on basis of slope-area and contracted-opening measurements at 1,510 cfs.

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series 230 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Mar. 17, 1923	3.83	656	1928	July 23, 1928	3.68	602
1924	Jan. 23, 1924	a3.05	-	1928	July 29, 1928	2.96	261
	Jan. 28, 1924	a3.00	-		Aug. 18, 1928	3.20	368
	Apr. 7, 1924	3.46	512		Aug. 23, 1928	3.02	285
					Aug. 28, 1928	3.60	604
1925	Dec. 27, 1924	a3.03	-	1929	Feb. 7, 1929	3.27	395
	Feb. 12, 1925	a4.09	600		Feb. 27, 1929	3.19	363
	Feb. 24, 1925	a3.03	-		Mar. 6, 1929	3.25	394
	Feb. 27, 1925	a2.96	-	1930	Jan. 27, 1930	a3.10	-
1926	Feb. 26, 1926	3.63	623		Mar. 9, 1930	2.84	218
	Mar. 8, 1926	2.94	254	1931	July 11, 1931	3.80	645
1927	Nov. 17, 1926	3.06	298	1932	Mar. 29, 1932	2.77	195
	Jan. 16, 1927	a3.03	-	1933	Nov. 10, 1932	2.99	273
1928	Oct. 20, 1927	3.45	500		Nov. 20, 1932	3.09	316
	Nov. 4, 1927	3.21	368		Dec. 19, 1932	a2.94	-
	Dec. 9, 1927	3.23	384		Mar. 22, 1933	3.58	593
	Dec. 14, 1927	3.04	298		Apr. 13, 1933	2.89	235
	Jan. 3, 1928	a3.29	-		Aug. 25, 1933	2.90	238
	Jan. 22, 1928	a3.09	-		Sept. 5, 1933	2.97	265
	Feb. 24, 1928	3.09	319		Sept. 16, 1933	3.45	500
	July 15, 1928	3.92	687				

a Backwater from ice.

DELAWARE RIVER BASIN

Peak stages and discharges of Beaver Brook near Belvidere, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Jan. 31, 1934	a3.04	-	1945	July 9, 1945	3.43	374
	Mar. 3, 1934	a3.30	-		July 21, 1945	4.30	760
	Mar. 5, 1934	3.21	373	1946	Dec. 26, 1945	a4.00	-
1935	July 10, 1935	4.20	760		June 3, 1946	3.20	271
1936	Nov. 29, 1935	3.11	325	1947	Mar. 15, 1947	3.53	373
	Jan. 3, 1936	a3.24	-		Apr. 6, 1947	3.21	274
	Jan. 21, 1936	a3.10	-		May 1, 1947	3.09	240
	Jan. 26, 1936	a3.68	-		May 6, 1947	3.09	240
	Mar. 12, 1936	5.76	1,510		May 26, 1947	3.06	233
	Mar. 18, 1936	3.44	495	1948	Mar. 17, 1948	3.32	306
	Apr. 6, 1936	3.48	515		Apr. 2, 1948	3.06	233
1937	Jan. 26, 1937	3.19	234		June 14, 1948	3.11	246
	June 22, 1937	3.15	306	1949	Dec. 31, 1948	4.26	661
	Aug. 24, 1937	2.98	246		Jan. 6, 1949	4.11	594
1938	Jan. 25, 1938	3.04	267	1950	Mar. 9, 1950	3.35	316
	Jan. 28, 1938	a3.05	-		Mar. 24, 1950	3.08	238
	Jan. 29, 1938	a3.12	-	1951	Feb. 22, 1951	3.05	230
	June 28, 1938	3.11	292		Mar. 31, 1951	3.85	488
	July 23, 1938	3.32	371		July 29, 1951	3.82	477
	Sept. 22, 1938	3.81	586	1952	Nov. 8, 1951	4.01	552
1939	Dec. 6, 1938	-	700		Dec. 22, 1951	3.09	240
	Mar. 1, 1939	2.96	264		Jan. 27, 1952	3.22	276
	Apr. 7, 1939	3.01	280		Apr. 6, 1952	3.73	443
1940	Mar. 15, 1940	4.80	1,020		Apr. 16, 1952	3.91	512
	Apr. 9, 1940	3.11	260		Apr. 29, 1952	3.41	334
	Apr. 13, 1940	3.04	238	1953	Nov. 23, 1952	3.11	241
	Apr. 22, 1940	3.31	329		Dec. 12, 1952	3.46	348
	June 9, 1940	3.04	238		Jan. 25, 1953	3.70	435
1941	Nov. 16, 1940	2.79	175	1954	Dec. 15, 1953	3.07	246
	July 28, 1942	3.31	332		Aug. 19, 1955	4.39	795
	July 31, 1942	3.02	240	1956	Oct. 15, 1955	3.83	528
	Aug. 12, 1942	3.31	332		Feb. 7, 1956	3.09	252
	Aug. 14, 1942	3.84	540		July 10, 1956	3.96	587
1943	Aug. 17, 1942	4.60	910	1957	Apr. 6, 1957	4.02	614
	Nov. 26, 1942	3.20	296		Jan. 22, 1958	3.25	302
	Dec. 4, 1942	a2.97	-	1958	Feb. 28, 1958	3.61	439
	Dec. 31, 1942	3.92	575		Mar. 27, 1958	3.09	252
	May 27, 1943	3.15	280		Apr. 7, 1958	3.03	234
1944	Nov. 9-10, 1943	3.31	332	1959	Jan. 22, 1959	3.18	279
	Jan. 10, 1944	a3.07	-	1960	Jan. 4, 1960	3.06	243
	Jan. 28, 1944	3.19	293		Apr. 5, 1960	3.82	524
	Feb. 15, 1944	a3.01	-		Sept. 13, 1960	3.58	427
	Mar. 7, 1944	3.14	277	1961	Feb. 26, 1961	4.20	700
	Mar. 13, 1944	3.36	349				
	Apr. 25, 1944	3.00	234				
1945	Jan. 4, 1945	a3.03	-				
	Jan. 18, 1945	a3.03	-				
	Jan. 20, 1945	a3.02	-				
	Mar. 7, 1945	3.85	468				

a Backwater from ice.

DELAWARE RIVER BASIN

4465. Delaware River at Belvidere, N.J.

Location.--Lat 40°49'36", long 75°05'02", on left bank at Belvidere, Warren County, 500 ft downstream from Pequest River.

Drainage area.--4,535 sq mi. Area of lakes, ponds, and swamps, 113 sq mi.

Gage.--Nonrecording prior to Jan. 1, 1929; recording thereafter. At site 200 ft upstream at same datum prior to Jan. 1, 1929. Datum of gage is 226.43 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 170,000 cfs and extended above on basis of flood-routing study.

Remarks.--Some effect on flood peaks from regulation by Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Only annual peaks are shown prior to 1929. Base for partial-duration series, 40,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	a28.6	220,000	1940	Apr. 22, 1940	13.02	54,100
1923	Mar. 24, 1923	15.70	77,000	1941	Dec. 31, 1940	12.65	50,900
1924	Apr. 7, 1924	19.0	114,000		Apr. 7, 1941	12.3	48,100
1925	Oct. 1, 1924	19.3	118,000	1942	Mar. 10, 1942	14.45	66,800
1926	Apr. 10, 1926	12.02	43,800		May 24, 1942	20.97	133,700
1927	Nov. 17, 1926	18.5	108,000		Sept. 28, 1942	16.14	83,300
1928	Oct. 20, 1927	16.80	84,400	1943	Nov. 26, 1942	12.10	46,500
1929	Mar. 15, 1929	15.90	79,000		Dec. 31, 1942	18.62	108,600
	Apr. 14, 1929	12.00	43,600		Feb. 25, 1943	12.43	49,100
	Apr. 22, 1929	13.68	57,900		Mar. 18, 1943	13.65	59,400
1930	Mar. 9, 1930	11.3	38,400		May 23, 1943	11.30	40,300
1931	Mar. 30, 1931	12.40	46,800	1944	Nov. 10, 1943	14.05	63,100
1932	Apr. 2, 1932	13.6	57,000		Mar. 18, 1944	12.05	46,100
1933	Oct. 8, 1932	15.0	70,000		Apr. 25, 1944	11.40	41,100
	Nov. 20, 1932	12.29	46,000	1945	Jan. 3, 1945	12.20	47,300
	Apr. 18, 1933	12.47	47,600		Mar. 4, 1945	13.73	60,300
	Aug. 25, 1933	19.90	122,000		Mar. 7, 1945	12.42	49,100
	Sept. 17, 1933	12.40	46,800		Mar. 18, 1945	14.65	68,700
1934	Mar. 6, 1934	17.22	92,900		July 20, 1945	14.29	65,300
1935	Dec. 2, 1934	15.03	70,900		July 30, 1945	12.82	52,400
	Jan. 10, 1935	12.87	52,000	1946	Mar. 10, 1946	13.45	57,800
	July 10, 1935	13.52	57,000		May 29, 1946	14.62	68,500
1936	Nov. 1, 1935	12.08	45,600	1947	Mar. 15, 1947	13.27	56,200
	Nov. 14, 1935	12.28	47,200		Apr. 6, 1947	16.93	91,200
	Nov. 30, 1935	11.65	42,200		July 23, 1947	11.42	40,900
	Mar. 12, 1936	22.22	148,000	1948	Mar. 18, 1948	14.54	67,700
	Mar. 19, 1936	25.00	179,000		Mar. 23, 1948	19.68	119,800
	Apr. 7, 1936	11.48	40,800		Apr. 15, 1948	13.35	56,800
1937	Jan. 26, 1937	11.88	44,000	1949	Dec. 31, 1948	19.48	117,700
	Feb. 23, 1937	14.50	67,200		Jan. 7, 1949	15.66	78,500
	Apr. 7, 1937	12.30	47,400	1950	Mar. 10, 1950	11.58	42,100
1938	Oct. 24, 1937	12.40	48,200		Mar. 29, 1950	14.80	70,200
	Jan. 26, 1938	14.88	71,000		Apr. 5, 1950	15.43	76,300
	July 23, 1938	13.00	53,500	1951	Nov. 26, 1950	18.10	103,200
	Aug. 12, 1938	14.50	67,200		Dec. 5, 1950	17.12	93,200
	Sept. 22, 1938	19.27	116,000		Dec. 9, 1950	12.50	49,600
1939	Dec. 7, 1938	15.88	81,000		Jan. 25, 1951	11.40	40,800
	Feb. 17, 1939	12.40	48,200		Feb. 3, 1951	11.55	41,900
	Feb. 21, 1939	13.17	55,300		Feb. 23, 1951	11.41	40,900
1940	Apr. 1, 1940	21.40	138,300		Mar. 31, 1951	19.75	120,600
	Apr. 9, 1940	17.38	95,800	1952	Nov. 9, 1951	13.40	57,300
					Jan. 28, 1952	12.65	50,900
					Mar. 12, 1952	13.80	60,900

a From J. W. Mangan, 1942, Elevations of Major Floods along Pennsylvania Rivers: Commonwealth of Pennsylvania, Department of Forests and Waters; mark converted to present datum.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Belvidere, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 6, 1952	14.65	68,800	1958	Dec. 22, 1957	15.69	70,300
	Apr. 16, 1952	13.79	60,800		Apr. 7, 1958	15.58	69,400
	May 26, 1952	11.78	43,700	1959	Jan. 23, 1959	17.48	86,800
	July 10, 1952	16.53	87,200		Apr. 3, 1959	13.06	49,400
1953	Nov. 23, 1952	11.70	43,100	1960	Nov. 29, 1959	14.32	59,100
	Dec. 12, 1952	20.00	122,000		Jan. 4, 1960	12.01	42,100
	Jan. 25, 1953	16.13	81,300		Feb. 12, 1960	14.18	57,900
1954	Feb. 18, 1954	11.00	38,000		Apr. 1, 1960	15.46	68,400
					Apr. 5, 1960	17.56	87,600
1955	Aug. 19, 1955	30.21	273,000		Sept. 13, 1960	12.82	47,700
					Sept. 21, 1960	12.88	48,200
1956	Oct. 16, 1955	18.13	93,300	1961	Feb. 26, 1961	16.40	76,600
	Oct. 31, 1955	11.90	41,300		Apr. 26, 1961	14.16	57,800
	Apr. 6, 1956	12.58	46,100				
1957	Apr. 7, 1957	13.90	55,700				

4470. Delaware River at Easton, Pa.

Location.--Lat 40°41'30", long 75°12'15", on lower highway bridge at Easton, Northampton County, and 48.9 miles upstream from Calhoun Street Bridge in Trenton, N.J.

Drainage area.--4,717 sq mi.

Gage.--Nonrecording. Datum of gage is 100.21 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Historical data.--The following data were compiled by B. F. Fackenthal, Jr., ScD., LL.D., and presented in a paper at a meeting of the Bucks County Historical Society on Sept. 10, 1927.

Date	Stage above low water		Source of data
	(feet)	(inches)	
Oct. 27, 1777	23	8	Weaver's Collections, p. 186.
May 9, 1781	26	0	Do.
Feb. 19, 1783	24	11	Do.
Mar. 17, 1784	26	6	Weaver's Collections, p. 71.
Mar. 17, 1785	27	5	Weaver's Collections, p. 186.
Oct. 6, 1786	25	8	Do.
Apr. 1, 1814	25	0	Weaver's Collections, pp. 71, 186.
1828	18	0	Weaver's Collections, p. 71.
April 1829	18	0	Hazards Register, vol. III, 256.
Mar. 13, 1832	21	0	Weaver's Collections, p. 71.
Apr. 9, 1836	25	0	Weaver's Collections, pp. 71, 100.
Jan. 8, 1841	35	0	Henry's Register of Lehigh Valley.
Oct. 13, 1845	23	2	Weaver's Collections, p. 186.
Mar. 15, 1846	27	6	Do.
June 6, 1862	32	0	Not given.
October 1869	23	0	Do.
Oct. 10, 1903	40	6	Do.

Remarks.--Some effect on flood peaks from regulation by Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peak stages are shown.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Easton, Pa.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	a93.3	-	1949	Dec. 31, 1948	79.10	-
				1950	Apr. 6, 1950	72.00	-
1936	Mar. 19, 1936	87.95	-	1951	Apr. 1, 1951	78.60	-
1937	Feb. 23, 1937	70.62	-	1952	July 11, 1952	75.06	-
1938	Sept. 22, 1938	77.50	-	1953	Dec. 12, 1952	80.60	-
1939	Dec. 7, 1938	74.20	-	1954	Dec. 8, 1953	66.65	-
1940	Apr. 1, 1940	81.23	-	1955	Aug. 19, 1955	a98.90	-
1941	Apr. 7, 1941	67.90	-	1956	Oct. 16, 1955	78.82	-
1942	May 24, 1942	83.00	-	1957	Apr. 7, 1957	71.59	-
1943	Dec. 31, 1942	77.50	-	1958	Dec. 22, 1957	76.85	-
1944	Nov. 10, 1943	71.75	-	1959	Jan. 23, 1959	75.40	-
1945	July 20, 1945	72.30	-	1960	Apr. 5, 1960	77.05	-
1946	May 29, 1946	72.35	-	1961	Feb. 27, 1961	74.45	-
1947	Apr. 6, 1947	74.03	-				
1948	Mar. 23, 1948	77.60	-				

a From floodmark.

4520. Jordan Creek at Allentown, Pa.

Location.--Lat 40°37'25", long 75°29'00", on right bank 200 ft upstream from bridge on State Highway 145, 0.5 mile northwest of city limit of Allentown, Lehigh County, and 2.5 miles upstream from mouth.

Drainage area.--75.8 sq mi.

Gage.--Recording gage and crest-stage indicator. Datum of gage is 259.82 ft above mean sea level, datum of 1929 (Pennsylvania State Highway bench mark).

Stage-discharge relation.--Defined by current-meter measurement below 1,900 cfs and extended on basis of slope-area measurement.

Bankfull stage.--6 ft.

Remarks.--Base for partial-duration series, 1,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Feb. 27, 1945	3.66	1,370	1953	Dec. 11, 1952	3.54	1,790
	Sept. 19, 1945	3.85	1,660		Jan. 24, 1953	3.28	1,370
1946	May 28, 1946	3.63	1,320		Mar. 26, 1953	3.62	1,930
	June 2, 1946	3.40	1,340	1954	Dec. 7, 1953	4.19	3,070
	July 2, 1946	3.39	1,330	1955	Feb. 7, 1955	3.60	1,840
1947	Jan. 20, 1947	3.66	1,810		Mar. 23, 1955	3.58	1,810
	Mar. 14, 1947	3.42	1,380		Aug. 14, 1955	3.34	1,410
	May 26, 1947	3.96	2,380		Aug. 19, 1955	8.00	9,520
1948	Feb. 20, 1948	a3.65	-	1956	Oct. 16, 1955	4.20	2,730
	Aug. 20, 1948	3.63	1,680		Feb. 7, 1956	3.86	2,130
1949	Dec. 31, 1948	3.93	2,320	1957	Dec. 15, 1956	3.52	1,450
	Jan. 6, 1949	3.63	1,750		Apr. 6, 1957	4.32	2,710
1950	Mar. 23, 1950	3.67	1,820	1958	Dec. 21, 1957	3.59	1,590
1951	Nov. 26, 1950	4.68	4,240		Jan. 22, 1959	4.50	2,040
	Dec. 5, 1950	3.56	1,630		Feb. 28, 1958	5.81	4,000
	Feb. 7, 1951	5.19	5,940		May 9, 1959	3.75	1,320
	July 28, 1951	3.99	2,440		Sept. 27, 1959	5.41	3,280
1952	Nov. 7, 1951	4.05	2,560	1959	Sept. 3, 1959	4.98	1,280
	Mar. 11, 1952	3.70	2,070	1960	Apr. 5, 1960	5.51	1,950
	Apr. 28, 1952	3.33	1,450		Aug. 31, 1960	5.35	1,740
	May 25, 1952	3.60	1,890		Sept. 13, 1960	6.07	2,820
	July 10, 1952	3.33	1,450	1961	Feb. 26, 1961	5.56	2,020
	Sept. 1, 1952	3.52	1,750				
1953	Nov. 22, 1952	4.42	3,520				

a Backwater from ice.

DELAWARE RIVER BASIN

4555. Musconetcong River at outlet of Lake Hopatcong, N.J.

Location.--Lat 40°55'00", long 74°39'55", on left bank at highway bridge, 300 ft downstream from Lake Hopatcong Dam in Landing, Morris County.

Drainage area.--25.6 sq mi. Area of lakes, ponds, and swamps, 4.9 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 904.99 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 340 cfs and extended above by logarithmic plotting. Gradual shift in relation has occurred.

Remarks.--Flow regulated by Lake Hopatcong, usable capacity below spillway crest, 7,459,000,000 gal. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928a/	Aug. 27, 1928	2.61	362	1944	Apr. 27, 1944	1.91	173
1929	Apr. 16, 1929	2.18	234	1945	July 23, 1945	2.13	233
1930	Feb. 22 to Mar. 6, 1930	1.29	62	1946	June 2, 1946	1.89	169
				1947	May 26, 1947	1.95	190
1931	July 11, 1931	2.53	330	1948	Sept. 24, 1948	2.64	308
1932	Apr. 4, 1932	1.76	139	1949	Oct. 4, 1948	2.46	263
1933	Sept. 17, 1933	2.30	260	1950	June 4, 1950	1.76	123
1934	Sept. 27, 30, 1934	2.08	206				
1935	Oct. 12, 1934	2.30	284	1951	Dec. 11, 1950	2.39	234
				1952	June 2, 1952	2.61	288
1936	Mar. 19, 1936	3.17	534	1953	Dec. 12, 1952	2.15	168
1937	Oct. 20, 1936	2.60	362	1954	May 10, 11, 1954	1.62	91
1938	July 24, 1938	2.46	326	1955	Aug. 20, 1955	3.85	795
1939	Sept. 23, 24, 26, 1939	2.17	246				
1940	June 2-3, 1940	1.99	194	1956	Oct. 3, 1955	2.79	357
				1957	Apr. 9, 1957	1.91	144
1941	Nov. 29 to Dec. 4, 1940	1.51	100	1958	Apr. 7, 1958	2.49	272
1942	Aug. 18, 1942	2.20	255	1959	Sept. 8, 1959	2.34	243
1943	Jan. 4, 6, 1943	1.59	106	1960	Oct. 31, 1959	2.39	255
				1961	Oct. 23, 1960	2.50	282

a Period July 1 to Sept. 30, 1928.

4560. Musconetcong River near Hackettstown, N.J.

Location.--Lat 40°53'10", long 74°48'00", on right bank 75 ft upstream from Saxton Falls Dam, half a mile upstream from Delaware, Lackawanna and Western Railroad bridge, and 3 miles northeast of Hackettstown, Warren County.

Drainage area.--70.0 sq mi. Area of lakes, ponds, and swamps, 7.2 sq mi.

Gage.--Nonrecording prior to Aug. 21, 1923, recording thereafter. At site 2,000 ft downstream at datum 26.97 ft lower prior to July 19, 1938. Datum of gage is 630.93 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Prior to July 19, 1938, relation was defined by current-meter measurements below 1,000 cfs and extended above by logarithmic plotting. Since 1938, defined by current-meter measurements below 600 cfs and extended above by logarithmic plotting.

Remarks.--Flood peaks may be affected by regulation of Lake Hopatcong, usable capacity below spillway crest, 7,459,000,000 gal. Base for partial-duration series, 350 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Sept. 5, 1922	4.2	a720	1924	May 12, 1924	3.86	560
1923	Mar. 17, 1923	3.75	a518	1925	Feb. 12, 1925	5.12	1,080
1924	Jan. 22, 1924	b3.44	-	1926	Feb. 26, 1926	3.32	363
	Apr. 7, 1924	4.34	750		Mar. 9, 1926	3.54	442
	Apr. 19, 1924	3.40	395				

a Annual peak only.

b Backwater from ice.

DELAWARE RIVER BASIN

Peak stages and discharges of Musconetcong River near Hackettstown, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Nov. 17, 1926	4.03	550	1944	Apr. 25, 1944	2.12	492
	May 27, 1927	3.35	360				
1928	Oct. 20, 1927	4.26	640	1945	Mar. 7, 1945	2.05	432
	Oct. 24, 1927	4.10	580		May 19, 1945	2.10	482
	Oct. 30, 1927	3.60	430		July 20, 1945	2.30	572
	Nov. 4, 1927	4.94	970		July 24, 1945	2.28	558
	Nov. 18, 1927	4.28	640	1946	Nov. 23, 1945	1.91	351
	Dec. 8, 1927	3.84	490		Dec. 1, 1945	1.89	351
	Dec. 12, 1927	3.80	490		Dec. 26, 1945	2.07	464
	Dec. 19, 1927	3.91	520		Jan. 8, 1946	1.91	363
	Feb. 9, 1928	3.36	360		May 28, 1946	2.01	416
	Feb. 15, 1928	3.87	520		June 3, 1946	2.13	494
	Feb. 24, 1928	3.72	460	1947	Mar. 15, 1947	2.13	506
	Apr. 28, 1928	3.70	460		Apr. 6, 1947	2.11	493
	July 6, 1928	3.42	373		May 6, 1947	2.14	513
	July 15, 1928	3.76	490		May 26, 1947	2.00	421
	July 28, 1928	3.95	550	1948	Nov. 9, 1947	1.95	391
	Aug. 6, 1928	3.76	460		Mar. 18, 1948	2.25	584
	Aug. 18, 1928	3.50	401		Apr. 15, 1948	2.03	440
	Aug. 28, 1928	4.37	675		May 14, 1948	2.08	472
1929	Feb. 7, 1929	4.65	-	1949	Dec. 31, 1948	2.86	1,080
	Mar. 6, 1929	3.54	416		Jan. 6, 1949	2.32	638
	Apr. 17, 1929	3.60	430	1950	Mar. 10, 1950	1.90	361
	Apr. 26, 1929	3.91	520	1951	Nov. 26, 1950	2.70	923
1930	Jan. 25, 1930	3.58	-		Dec. 5, 1950	2.23	603
	June 11, 1930	3.09	295		Dec. 8, 1950	2.62	859
1931	July 11, 1931	4.57	728		Feb. 8, 1951	2.06	442
1932	Mar. 29, 1932	3.46	387		Feb. 22, 1951	1.96	380
1933	Nov. 20, 1932	3.80	460		Mar. 31, 1951	2.57	810
	Apr. 13, 1933	3.72	460		July 29, 1951	2.11	472
	Apr. 18, 1933	3.82	490	1952	Nov. 4, 1951	2.02	415
	Aug. 24, 1933	4.23	550		Nov. 8, 1951	2.22	547
	Sept. 16, 1933	4.58	692		Dec. 6, 1951	1.95	374
1934	Mar. 5, 1934	3.45	376		Dec. 21, 1951	2.44	710
1935	July 10, 1935	5.55	1,290		Jan. 23, 1952	1.96	379
1936	Oct. 31, 1935	3.62	421		Jan. 27, 1952	2.14	494
	Nov. 29, 1935	3.38	362		Feb. 5, 1952	2.07	448
	Jan. 3, 1936	3.38	362		Mar. 12, 1952	2.74	954
	Jan. 25, 1936	4.18	-		Apr. 6, 1952	2.47	731
	Mar. 12, 1936	5.88	1,430		Apr. 15, 1952	1.96	378
1937	May 15, 1937	4.12	530		Apr. 28, 1952	1.99	397
1938	Jan. 25, 1938	3.90	487		June 2, 1952	2.51	766
	June 28, 1938	4.14	613	1953	July 10, 1952	2.13	489
	July 24, 1938	2.62	924		Sept. 2, 1952	2.30	608
	Sept. 22, 1938	2.96	1,260		Nov. 22, 1952	2.64	871
1939	Dec. 6, 1938	2.29	642		Dec. 6, 1952	2.02	418
	Dec. 28, 1938	1.88	354		Dec. 12, 1952	2.44	711
	Feb. 16, 1939	1.89	360		Jan. 25, 1953	2.55	797
	Mar. 1, 1939	2.00	431		Apr. 8, 1953	2.05	434
	Apr. 7, 1939	2.08	486		Apr. 17, 1953	2.00	406
	Apr. 20, 1939	2.10	500	1954	Mar. 4, 1954	1.84	310
1940	Mar. 15, 1940	2.25	611	1955	Nov. 22, 1954	1.96	370
	Mar. 31, 1940	1.95	399		Aug. 13, 1955	2.22	546
	Apr. 9, 1940	2.01	438		Aug. 19, 1955	3.97	2,170
	Apr. 13, 1940	1.89	360		Sept. 28, 1955	1.95	362
	Apr. 22, 1940	2.06	472	1956	Oct. 15, 1955	2.86	1,060
	May 21, 1940	2.22	588		Oct. 31, 1955	2.11	472
	June 2, 1940	2.08	486		Nov. 4, 1955	1.99	384
	Sept. 1, 1940	1.96	404		Nov. 17, 1955	2.00	392
1941	Dec. 31, 1940	1.78	294	1957	Apr. 9, 1957	2.20	554
1942	Aug. 11, 1942	2.16	493	1958	Dec. 21, 1957	2.61	851
	Aug. 19, 1942	2.09	459		Dec. 27, 1957	2.25	568
	Sept. 28, 1942	2.17	551		Jan. 22, 1958	2.07	442
1943	Nov. 26, 1942	2.30	626		Jan. 26, 1958	2.04	421
	Dec. 3, 1942	2.02	435		Feb. 28, 1958	2.07	442
	Dec. 31, 1942	2.34	656		Apr. 2, 1958	1.98	380
	Feb. 25, 1943	1.90	361	1959	Mar. 6, 1959	2.09	456
	May 27, 1943	2.00	422	1960	Sept. 13, 1960	2.63	b867
1944	Mar. 13, 1944	1.91	360	1961	Feb. 26, 1961	2.28	b589

b Backwater from ice.

c Backwater from unknown cause.

DELAWARE RIVER BASIN

4570. Musconetcong River near Bloomsbury, N.J.

Location.--Lat 40°40'20", long 75°03'40", just downstream from highway bridge 1½ miles upstream from Bloomsbury, Hunterdon County, and 9½ miles upstream from mouth.

Drainage area.--143 sq mi. Area of swamps, lakes, and ponds, 7.3 sq mi.

Gage.--Nonrecording at different datum prior to 1922; recording thereafter. Datum of gage is 274.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by discharge measurements below 1,800 cfs and extended above on basis of slope-area measurement at 4,430 cfs and by logarithmic plotting.

Bankfull stage.--4 ft.

Remarks.--Peak flows may be affected by regulation at Lake Hopatcong, usable capacity, 7,459,000,000 gal. Only annual peaks are shown prior to 1922. Base for partial-duration series, 1,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	8.00	6,960	1934	Mar. 5, 1934	5.24	2,050
1905	Jan. 7, 1905	5.65	2,440		Sept. 30, 1934	5.19	2,000
1906	Mar. 3, 1906	6.10	2,960	1935	Feb. 15, 1935	4.30	1,410
					July 10, 1935	4.50	1,530
1922	Feb. 2, 1922	4.93	1,800	1936	Jan. 3, 1936	5.35	2,140
	Feb. 20, 1922	3.92	1,190		Jan. 9, 1936	3.84	1,150
	Mar. 8, 1922	3.72	1,080		Mar. 11, 1936	5.67	2,460
	July 1, 1922	4.98	1,840		Mar. 21, 1936	4.80	1,720
	Sept. 4, 1922	4.02	1,250		Apr. 6, 1936	4.48	1,520
1923	Mar. 16, 1923	3.75	1,100		June 18, 1936	4.19	1,340
1924	Jan. 25, 1924	4.01	1,240	1937	Feb. 22, 1937	3.61	1,020
	Apr. 7, 1924	4.34	1,430		Aug. 23, 1937	3.61	1,020
	Sept. 30, 1924	3.72	1,080	1938	Jan. 25, 1938	3.69	1,070
1925	Feb. 11, 1925	5.90	2,710		July 23, 1938	5.12	1,900
					Sept. 21, 1938	5.14	1,910
1926	Jan. 18, 1926	4.02	1,250	1939	Dec. 6, 1938	4.25	1,350
	Feb. 19, 1926	4.03	1,260		Feb. 28, 1939	3.70	1,070
	Feb. 25, 1926	5.43	2,200		Apr. 6, 1939	3.64	1,040
	Mar. 7, 1926	4.58	1,580	1940	Mar. 4, 1940	3.91	1,180
1927	Nov. 16, 1926	3.57	1,000		Mar. 15, 1940	7.55	5,760
	Jan. 20, 1927	3.70	1,070		May 20, 1940	7.44	5,500
	Feb. 26, 1927	4.38	1,460		Sept. 1, 1940	3.64	1,040
	Aug. 1, 1927	4.46	1,510	1941	Feb. 7, 1941	4.75	1,680
1928	Oct. 19, 1927	4.29	1,400	1942	July 28, 1942	3.89	1,170
	Nov. 4, 1927	4.35	1,440		July 31, 1942	3.57	1,000
	Nov. 18, 1927	3.88	1,170		Aug. 9, 1942	4.17	1,330
	Dec. 8, 1927	4.42	1,480		Aug. 11, 1942	6.25	3,180
	Feb. 8, 1928	4.77	1,700		Aug. 17, 1942	4.92	1,780
	Feb. 15, 1928	5.13	1,950		Sept. 28, 1942	3.68	1,060
	Feb. 23, 1928	4.80	1,720	1943	Dec. 30, 1942	4.13	1,310
	July 14, 1928	4.47	1,510		Feb. 11, 1943	4.44	1,490
	July 28, 1928	4.21	1,360		Feb. 20, 1943	3.85	1,150
	Aug. 22, 1928	3.86	1,160		Feb. 21, 1943	4.03	1,250
	Aug. 27, 1928	3.97	1,220		May 26, 1943	3.74	1,090
1929	Feb. 7, 1929	6.05	2,900	1944	Jan. 3, 1944	3.83	1,140
	Feb. 26, 1929	4.48	1,520		Jan. 6, 1944	4.38	1,460
	Apr. 26, 1929	3.74	1,090		Feb. 15, 1944	3.78	1,110
	Sept. 7, 1929	5.12	1,950		Mar. 7, 1944	4.48	1,520
1930	Mar. 8, 1930	3.00	715		Mar. 13, 1944	5.29	2,090
1931	Nov. 18, 1930	5.45	2,240	1945	Jan. 1, 1945	4.08	1,280
	Feb. 18, 1931	3.67	1,060		Feb. 27, 1945	3.98	1,220
	July 11, 1931	4.52	1,540		July 19, 1945	5.50	2,290
1932	Apr. 1, 1932	2.73	615	1946	June 2, 1946	3.93	1,190
1933	Nov. 10, 1932	3.99	1,230	1947	Aug. 17, 1947	4.83	1,720
	Nov. 19, 1932	4.25	1,380				
	Aug. 23, 1933	4.04	1,260				
	Sept. 16, 1933	4.03	1,260				

DELAWARE RIVER BASIN

Peak stages and discharges of Musconetcong River near Bloomsbury, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Jan. 25, 1948	a3.64	-	1953	Jan. 24, 1953	4.43	1,490
	May 13, 1948	4.29	1,390	1954	May 4, 1954	2.95	692
1949	Dec. 31, 1948	4.64	1,600	1955	Feb. 7, 1955	3.84	1,150
	Jan. 6, 1949	4.55	1,550		Aug. 13, 1955	4.21	1,360
1950	Mar. 23, 1950	3.36	887		Aug. 19, 1955	6.95	4,430
1951	Nov. 25, 1950	5.15	1,980	1956	Oct. 14, 1955	5.70	2,490
	Dec. 8, 1950	4.05	1,300		Feb. 6, 1956	3.94	1,200
	Jan. 15, 1950	4.62	1,640	1957	Apr. 6, 1957	3.40	895
	Feb. 1, 1951	4.01	1,280	1958	Dec. 21, 1957	3.76	1,110
	Feb. 7, 1951	5.32	2,080		Jan. 22, 1958	4.03	1,260
	Mar. 31, 1951	4.53	1,590		Feb. 28, 1958	5.45	2,240
	July 28, 1951	5.63	2,420		Apr. 6, 1958	3.63	1,040
1952	Nov. 7, 1951	6.13	3,000	1959	Mar. 6, 1959	3.82	1,140
	Dec. 21, 1951	4.83	1,770	1960	Apr. 5, 1960	3.97	1,220
	Jan. 26, 1952	3.54	1,020		Sept. 12, 1960	4.52	1,540
	Mar. 11, 1952	4.26	1,430		Sept. 20, 1960	3.67	1,060
	Apr. 5, 1952	4.79	1,740	1961	Feb. 26, 1961	4.00	1,240
	Apr. 15, 1952	3.54	1,020				
1953	Nov. 22, 1952	4.27	1,390				
	Dec. 11, 1952	3.96	1,220				

a Backwater from ice

4575. Delaware River at Riegelsville, N.J.

Location.--Lat 40°35'36", long 75°11'17", on left bank 20 ft upstream from suspension bridge at Riegelsville, Warren County, and 600 ft upstream from Musconetcong River. Records prior to Oct. 1, 1931, do not include flow of Musconetcong River and those since do.

Drainage area.--6,238 sq mi since October 1931 (includes that of Musconetcong River). Area of lakes, ponds, and swamps, 143 sq mi. Prior to October 1931, 6,172 sq mi (does not include that of Musconetcong River).

Gage.--Nonrecording prior to Feb. 27, 1924; recording thereafter. Prior to Feb. 27, 1924, at site on bridge 20 ft downstream at same datum. Datum of gage is 125.12 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 160,000 cfs and extended above on basis of flood-routing studies and slope-area measurements of peaks on Mar. 19, 1936, and Aug. 19, 1955.

Bankfull stage.--26 ft.

Historical data.--Flood of 1841 believed largest for period 1692 to 1903, from information in Volume III, Final Report of the State Geologist, 1894, by Vermeule, and data for other sites. Major floods of the 1692 to 1894 period also occurred in 1786 or 1787, 1862, and 1869.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong since 1828, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Only annual peaks are shown prior to 1924. Base for partial-duration series, 48,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1841	Jan. 8, 1841	-	a250,000	1911	Mar. 28, 1911	16.0	72,600
1904	Oct. 10, 1903	35.9	275,000	1912	Mar. 17, 1912	18.2	89,000
				1913	Mar. 28, 1913	25.0	144,000
1907	Jan. 1, 1907	14.4	61,000	1914	Mar. 29, 1914	23.4	130,000
1908	Dec. 11, 1907	22.5	120,000	1915	Feb. 26, 1915	17.6	86,100
1909	Feb. 21, 1909	19.9	102,000	1916	Apr. 3, 1916	19.3	97,700
1910	Mar. 1, 1910	20.8	109,000	1917	Mar. 28, 1917	18.1	88,400

a Estimate for Center Bridge, 22.5 miles downstream.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Riegelsville, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	Oct. 31, 1917	18.4	90,700	1943	Nov. 26, 1942	13.60	53,000
1919	Mar. 11, 1919	11.1	38,700		Dec. 31, 1942	22.88	122,800
1920	Mar. 14, 1920	22.1	120,000		Feb. 26, 1943	13.95	55,200
					Mar. 18, 1943	15.25	63,800
1921	Mar. 10, 1921	21.0	111,000	1944	Nov. 10, 1943	17.58	80,300
1922	Nov. 29, 1921	20.4	106,000		Mar. 18, 1944	13.05	49,600
1923	Mar. 24, 1923	17.8	86,100		Apr. 26, 1944	13.45	52,100
1924	Jan. 12, 1924	17.0	74,200	1945	Mar. 4, 1945	15.29	64,100
	Apr. 8, 1924	23.1	122,000		Mar. 19, 1945	16.43	72,000
1925	Oct. 1, 1924	24.2	132,000		July 20, 1945	18.10	84,200
	Feb. 12, 1925	23.82	128,000		July 30, 1945	14.33	57,700
1926	Apr. 10, 1926	13.05	47,100	1946	Mar. 10, 1946	15.04	59,400
1927	Nov. 17, 1926	22.6	118,000		May 29, 1946	18.25	81,600
	Jan. 23, 1927	13.4	49,200		June 3, 1946	13.55	50,200
	Mar. 15, 1927	16.12	67,400	1947	Mar. 15, 1947	15.45	62,100
	Mar. 22, 1927	13.3	48,600		Apr. 6, 1947	20.05	95,100
1928	Oct. 20, 1927	21.3	107,000		May 26, 1947	14.07	53,300
	Nov. 5, 1927	15.7	64,500	1948	Mar. 18, 1948	17.17	73,800
	Nov. 19, 1927	17.6	78,000		Mar. 23, 1948	23.28	121,300
	Dec. 9, 1927	18.66	86,200		Apr. 15, 1948	16.05	66,100
	Dec. 15, 1927	13.6	50,500	1949	Dec. 31, 1948	24.50	131,900
	June 7, 1928	13.28	48,600		Jan. 7, 1949	19.73	92,600
	July 1, 1928	18.84	87,000	1950	Mar. 30, 1950	17.71	77,700
1929	Mar. 16, 1929	18.30	83,100		Apr. 6, 1950	18.04	80,100
	Apr. 22, 1929	15.52	63,100	1951	Nov. 27, 1950	22.50	114,700
1930	Mar. 9, 1930	12.4	43,300		Dec. 5, 1950	21.93	110,000
1931	Mar. 30, 1931	14.4	57,000		Dec. 9, 1950	15.52	62,500
1932	Apr. 2, 1932	15.76	66,600		Jan. 25, 1951	13.66	50,900
1933	Oct. 8, 1932	16.4	70,800		Feb. 8, 1951	13.58	50,400
	Nov. 21, 1932	15.38	57,000		Feb. 23, 1951	13.28	48,600
	Apr. 19, 1933	15.5	64,500		Apr. 1, 1951	24.03	127,800
	Aug. 25, 1933	25.0	141,000	1952	Nov. 8, 1951	16.53	69,400
	Sept. 4, 1933	13.58	51,900		Jan. 28, 1952	15.27	60,900
	Sept. 17, 1933	15.69	65,900		Mar. 12, 1952	17.19	73,900
1934	Mar. 6, 1934	18.20	84,100		Apr. 6, 1952	18.07	80,300
1935	Dec. 2, 1934	18.7	87,900		Apr. 16, 1952	17.10	73,300
	Jan. 10, 1935	14.2	55,700		May 26, 1952	14.31	54,800
	July 10, 1935	23.2	125,000		July 11, 1952	20.40	97,800
1936	Nov. 1, 1935	13.28	50,000	1953	Nov. 23, 1952	17.18	73,900
	Nov. 15, 1935	13.02	48,200		Dec. 12, 1952	25.40	140,000
	Nov. 30, 1935	13.60	51,900		Jan. 25, 1953	19.70	92,400
	Mar. 12, 1936	29.8	185,000		Mar. 27, 1953	13.33	48,900
	Mar. 19, 1936	32.45	237,000	1954	Dec. 8, 1953	12.80	46,800
	Apr. 7, 1936	13.93	53,800	1955	Aug. 19, 1955	38.85	340,000
1937	Jan. 26, 1937	13.70	53,600	1956	Oct. 16, 1955	23.80	133,000
	Feb. 23, 1937	16.50	72,500		Oct. 31, 1955	13.85	53,200
	Apr. 7, 1937	13.70	53,600		Apr. 8, 1956	14.18	55,400
1938	Oct. 25, 1937	14.56	56,200		May 1, 1956	13.17	49,000
	Jan. 26, 1938	17.7	81,200	1957	Apr. 7, 1957	17.42	76,900
	July 23, 1938	15.52	65,600	1958	Dec. 22, 1957	21.28	109,000
	Aug. 12, 1938	15.55	66,200		Dec. 28, 1957	13.27	49,600
	Sept. 23, 1938	23.0	123,000		Apr. 7, 1958	19.29	91,600
1939	Dec. 7, 1938	20.05	98,800	1959	Jan. 23, 1959	19.60	94,400
	Feb. 17, 1939	14.00	55,600		Apr. 4, 1959	14.81	59,400
	Feb. 21, 1939	14.62	59,500	1960	Nov. 29, 1959	16.70	71,900
1940	Mar. 15, 1940	16.33	71,100		Jan. 4, 1960	14.03	54,400
	Apr. 1, 1940	26.47	154,000		Feb. 12, 1960	16.91	73,400
	Apr. 10, 1940	21.26	109,000		Apr. 1, 1960	18.98	88,800
	Apr. 22, 1940	17.58	80,500		Apr. 5, 1960	22.60	121,000
1941	Dec. 31, 1940	13.80	54,300		Sept. 13, 1960	15.95	66,600
	Apr. 7, 1941	13.92	55,000		Sept. 21, 1960	14.90	59,900
1942	Mar. 10, 1942	16.30	71,100	1961	Feb. 27, 1961	20.27	101,000
	May 24, 1942	27.50	164,000		Apr. 26, 1961	16.13	67,900
	Sept. 28, 1942	19.67	96,200				

DELAWARE RIVER BASIN

4580. Delaware River at Milford, N.J.

Location.--Lat 40°34'00", long 75°05'55", on upstream side of bridge 120 ft from New Jersey end, at Milford, Hunterdon County, and 33.1 miles upstream from Calhoun Street Bridge in Trenton.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 99.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong since 1828, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Data prior to 1936 obtained from J. W. Mangan, 1942, Elevations of Major Floods along Pennsylvania Rivers: Commonwealth of Pennsylvania, Department of Forests and Waters. Since 1936, gage heights are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1841	Jan. 8, 1841	32.7	-	1941	Apr. 7, 1941	18.95	-
1857	May 1857	27.4	-	1942	May 24, 1942	29.36	-
1862	June 6, 1862	32.0	-	1943	Dec. 31, 1942	25.67	-
1865	March 1865	28.5	-	1944	Nov. 10, 1943	21.61	-
1879	Dec. 11, 1878	29.5	-	1945	July 20, 1945	22.04	-
1895	April 1895	29.3	-	1946	May 29, 1946	22.04	-
1902	Feb. 28, 1902	31.4	-	1947	Apr. 6, 1947	23.42	-
1904	Oct. 10, 1903	35.8	-	1948	Mar. 23, 1948	25.93	-
1936	Mar. 19, 1936	32.57	-	1949	Dec. 31, 1948	26.86	-
1937	Feb. 23, 1937	20.93	-	1950	Apr. 6, 1950	21.91	-
1938	Sept. 23, 1938	25.90	-	1951	Apr. 1, 1951	26.56	-
1939	Dec. 7, 1938	23.51	-	1952	July 11, 1952	23.71	-
1940	Apr. 1, 1940	28.30	-	1953	Dec. 12, 1952	27.45	-
				1954	Dec. 8, 1953	18.05	-
				1955	Aug. 20, 1955	40.25	-
				1956	Oct. 17, 1955	26.62	-

4585. Delaware River at Frenchtown, N.J.

Location.--Lat 40°31'40", long 75°04'00", on upstream side of bridge in third span from New Jersey end, at Frenchtown, Hunterdon County, and 29.7 miles upstream from Calhoun Street Bridge in Trenton.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 99.88 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong, Lake Wallenpaupack, Toronto Reservoir, Swinging Bridge Reservoir, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and several smaller reservoirs. Gage heights listed are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Frenchtown, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 10, 1903	24.4	-	1946	May 29, 1946	12.34	-
				1947	Apr. 6, 1947	13.53	-
1936	Mar. 19, 1936	21.93	-	1948	Mar. 23, 1948	15.67	-
1937	Feb. 23, 1937	11.35	-	1949	Dec. 31, 1948	16.68	-
1938	Sept. 23, 1938	15.69	-	1950	Apr. 6, 1950	12.23	-
1939	Dec. 7, 1938	13.66	-				
1940	Apr. 1, 1940	17.91	-	1951	Apr. 1, 1951	16.25	-
				1952	July 11, 1952	13.84	-
1941	Apr. 7, 1941	9.63	-	1953	Dec. 12, 1952	17.24	-
1942	May 24, 1942	18.60	-	1954	Dec. 8, 1953	8.84	-
1943	Dec. 31, 1942	15.45	-	1955	Aug. 20, 1955	27.79	-
1944	Nov. 10, 1943	11.97	-				
1945	July 20, 1945	12.34	-	1956	Oct. 17, 1955	16.37	-

4590. Delaware River at Point Pleasant, Pa.

Location.--Lat 40°25'25", long 75°03'50", on bridge at Point Pleasant, Bucks County, and 22.6 miles upstream from Calhoun Street Bridge in Trenton, N.J.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 0.48 ft below mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong, Lake Wallerpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights since 1936 are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 11, 1903	102.2	-	1946	May 29, 1946	86.81	-
				1947	Apr. 6, 1947	87.91	-
1936	Mar. 19, 1936	98.64	-	1948	Mar. 23, 1948	90.75	-
1937	Feb. 23, 1937	85.52	-	1949	Dec. 31, 1948	91.80	-
1938	Sept. 23, 1938	91.1	-	1950	Apr. 6, 1950	85.91	-
1939	Dec. 7, 1938	88.45	-				
1940	Apr. 1, 1940	94.04	-	1951	Apr. 1, 1951	91.93	-
				1952	July 11, 1952	88.75	-
1941	Apr. 7, 1941	83.44	-	1953	Dec. 12, 1952	94.37	-
1942	May 24, 1942	95.10	-	1954	Dec. 8, 1953	82.20	-
1943	Dec. 31, 1942	91.05	-	1955	Aug. 20, 1955	105.32	-
1944	Nov. 10, 1943	86.59	-				
1945	July 20, 1945	86.90	-				

4595. Tohickon Creek near Pipersville, Pa.

Location.--Lat 40°26'00", long 75°07'00", on right bank at highway bridge, 1.5 miles northeast of Pipersville, Bucks County, and 4.5 miles upstream from mouth.

Drainage area.--97.4 sq mi.

Gage.--Recording. Datum of gage is 258.96 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,600 cfs and extended on basis of slope-area measurement.

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series, 3,100 cfs.

DELAWARE RIVER BASIN

Peak stages and discharges of Tohickon Creek near Pipersville, Pa.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Oct. 31, 1935	7.43	6,210	1948	June 20, 1948	7.47	6,400
	Nov. 17, 1935	6.04	3,890	1949	Dec. 30, 1948	7.43	6,210
	Jan. 3, 1936	7.20	5,830		Jan. 6, 1949	6.54	4,610
	Mar. 11, 1936	7.22	5,830	1950	Dec. 27, 1949	5.82	3,510
	Mar. 18, 1936	6.59	4,780		Mar. 23, 1950	5.84	3,580
	Apr. 6, 1936	6.69	4,950	1951	Nov. 25, 1950	9.67	11,500
1937	June 13, 1936	7.60	6,600		Dec. 8, 1950	5.92	3,660
	Dec. 20, 1936	6.00	3,820		Jan. 15, 1951	6.30	4,290
1938	Feb. 22, 1937	5.65	3,290		Feb. 7, 1951	5.65	3,290
	Nov. 13, 1937	6.70	4,950		Mar. 30, 1951	6.19	4,130
	July 23, 1938	6.87	5,290	1952	Nov. 7, 1951	7.28	6,020
1939	Sept. 21, 1938	9.11	10,000		Dec. 21, 1951	7.74	6,800
	Dec. 6, 1938	7.12	5,650		Mar. 11, 1952	6.71	4,950
	Jan. 31, 1939	6.90	5,290		Apr. 5, 1952	7.12	5,650
	Feb. 3, 1939	6.75	5,120		Apr. 15, 1952	6.97	5,470
	Feb. 28, 1939	6.45	4,530		Apr. 28, 1952	6.63	4,780
	Apr. 6, 1939	6.39	4,450		May 26, 1952	5.67	3,290
	July 30, 1939	7.60	6,600		Sept. 1, 1952	5.70	3,360
1940	Mar. 4, 1940	6.78	5,120	1953	Nov. 22, 1952	7.45	6,210
	Mar. 15, 1940	7.64	6,600		Dec. 5, 1952	5.57	3,150
	Apr. 8, 1940	6.75	5,120		Dec. 11, 1952	7.19	5,830
	Apr. 20, 1940	5.96	3,740		Jan. 24, 1953	6.98	5,470
	May 20, 1940	7.48	6,400		Mar. 15, 1953	6.18	4,130
1941	Nov. 15, 1940	5.51	3,080	1954	Dec. 7, 1953	5.65	3,290
	Dec. 16, 1940	5.65	3,290		Dec. 14, 1953	6.05	3,890
	Dec. 28, 1940	5.42	2,940	1955	Nov. 21, 1954	5.91	3,660
	Feb. 7, 1941	5.50	3,080		Feb. 7, 1955	6.31	4,290
1942	July 27, 1942	6.25	4,210		Mar. 22, 1955	5.68	3,360
	July 31, 1942	6.29	4,290		Aug. 13, 1955	8.61	8,780
	Aug. 9, 1942	10.48	13,700		Aug. 18, 1955	11.26	16,000
	Aug. 13, 1942	6.60	4,780	1956	Oct. 15, 1955	8.90	9,500
1943	Dec. 30, 1942	7.06	5,650		Feb. 18, 1956	5.72	3,360
	May 20, 1943	7.34	6,020		Mar. 14, 1956	5.93	3,740
	May 26, 1943	6.73	4,950	1957	Dec. 14, 1956	6.16	4,050
1944	Nov. 9, 1943	5.92	3,660		Apr. 5, 1957	6.57	4,780
	Jan. 4, 1944	6.84	5,120	1958	Dec. 21, 1957	7.93	7,210
	Mar. 13, 1944	6.41	4,450		Feb. 28, 1958	8.22	7,850
	Apr. 24, 1944	7.49	6,400		Apr. 6, 1958	7.28	6,030
	Sept. 14, 1944	5.65	3,290	1959	Nov. 28, 1958	5.82	3,510
1945	Jan. 1, 1945	7.44	6,210		Dec. 12, 1959	6.53	4,560
	Feb. 27, 1945	6.10	3,970		Jan. 3, 1960	7.06	5,580
	July 19, 1945	9.52	11,000		Apr. 4, 1960	5.95	3,560
1946	Nov. 29, 1945	5.50	3,080		Aug. 31, 1960	7.42	6,170
	May 18, 1946	6.15	4,050		Sept. 12, 1960	11.07	15,500
	June 2, 1946	9.55	11,200		Sept. 20, 1960	6.53	4,560
	July 23, 1946	9.35	10,800	1961	Feb. 25, 1961	6.42	4,380
1947	Mar. 14, 1947	5.27	2,740		Apr. 13, 1961	5.77	3,270
1948	May 13, 1948	6.87	5,290				

DELAWARE RIVER BASIN

4610. Delaware River at Lumberville, Pa.

Location.--Lat 40°24'25", long 75°02'20", on bridge at Lumberville, Bucks County, 20.9 miles upstream from Calhoun Street Bridge in Trenton, N.J.

Drainage area.--6,598 sq mi.

Gage.--Nonrecording. Datum of gage is 0.15 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on peaks from regulation by Lake Hopatcong since 1828, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, and other smaller reservoirs. Gage heights listed prior to 1937 obtained from J.W. Mangan, 1942, Elevations of Major Floods along Pennsylvania Rivers, Commonwealth of Pennsylvania, Department of Forests and Waters, and were determined to mean sea level at Tinsmon's Lumber Mill, 0.2 mile upstream from gage. Gage heights since 1937 are maximum of hourly observations by Delaware River Toll Bridge Commission. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1862	June 1862	92.0	-	1936	Mar. 19, 1936	91.0	-
				1937	Feb. 23, 1937	78.10	-
1865	March 1865	88.1	-	1938	Sept. 23, 1938	83.05	-
				1939	Dec. 7, 1938	80.85	-
1870	October 1869	90.4	-	1940	Apr. 1, 1940	86.02	-
1879	December 1878	89.5	-	1941	Apr. 7, 1941	75.95	-
				1942	May 24, 1942	87.12	-
1895	April 1895	89.5	-	1943	Dec. 31, 1942	83.10	-
				1944	Nov. 10, 1943	78.85	-
1902	March 1902	92.0	-	1945	Mar. 19, 1945	77.79	-
1904	Oct. 11, 1903	96.1	-				

4615. Delaware River at Stockton, N.J.

Location.--Lat 40°24'10", long 74°58'50", on upstream side of bridge in third span from New Jersey end, at Stockton, Hunterdon County, and 17.5 miles upstream from Calhoun Street Bridge in Trenton.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 0.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Historical data.--J. W. Mangan, 1942, in Elevations of Major Floods along Pennsylvania Rivers, Commonwealth of Pennsylvania, Department of Forests and Waters, lists the following mean sea level elevations for peaks at Smiths Mill, 0.5 mile upstream from gage: Dec. 11, 1878, 77.7 ft; April 1895, 77.7 ft; Dec. 16, 1901, 79.2 ft; March 1902, 80.1 ft; Oct. 10, 1903, 84.2 ft; and Mar. 18-19, 1936, 79.7 ft.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong since 1828, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights since 1937 are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Stockton, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1841	Jan. 8, 1841	77.76	-	1943	Dec. 31, 1942	71.15	-
1862	June 6, 1862	75.8	-	1944	Nov. 10, 1943	66.90	-
1902	Feb. 28, 1902	76.79	-	1945	July 21, 1945	66.88	-
1904	Oct. 11, 1903	81.7	-	1946	May 29, 1946	67.32	-
1937	Feb. 23, 1937	66.20	-	1947	Apr. 6, 1947	68.80	-
1938	Sept. 23, 1938	70.4	-	1948	Mar. 23, 1948	71.30	-
1939	Dec. 7, 1938	68.02	-	1949	Jan. 1, 1949	72.50	-
1940	Apr. 1, 1940	72.96	-	1950	Apr. 6, 1950	67.05	-
1941	Apr. 7, 1941	63.18	-	1951	Apr. 1, 1951	72.05	-
1942	May 24, 1942	74.80	-	1952	July 11, 1952	68.90	-
				1953	Dec. 12, 1952	73.24	-
				1954	Dec. 8, 1953	62.85	-
				1955	Aug. 20, 1955	84.40	-

4620. Delaware River at Lambertville, N.J.

Location.--Lat 40°21'50", long 74°56'55", at bridge in Lambertville, Hunterdon County.

Drainage area.--6,680 sq mi. Area of lakes, ponds, and swamps, 144 sq mi.

Gage.--Nonrecording. Datum of gage from 1898 to 1908, 46.36 ft above mean sea level, datum of 1929; datum of gage since 1936, 0.11 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined for 1898-1907 by current-meter measurements below 120,000 cfs and extended above on basis of peak discharges in 1903, 1936, and 1955, at Riegelsville.

Remarks.--Gage heights prior to 1898 obtained from U.S Geological Survey WSP 799, and are referenced to mean sea level. Gage heights since 1936 are maximum of hourly observations by Delaware River Joint Toll Bridge Commission. Some effect on flood peaks from regulation by Lake Hopatecong since 1828, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1944, and other smaller reservoirs. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1787	Oct. 6, 1786	62.9	-	1937	Feb. 23, 1937	56.34	-
1801	-	60.9	-	1938	Sept. 23, 1938	60.30	-
1814	Apr. 1, 1814	60.9	-	1939	Dec. 7, 1938	58.53	-
1836	Apr. 9, 1836	61.4	-	1941	Apr. 7, 1941	55.19	-
1839	April 1839	61.4	-	1942	May 24, 1942	63.23	-
1841	Jan. 8, 1841	66.9	-	1943	Jan. 1, 1943	60.40	-
1844	Oct. 18, 1843	60.9	-	1944	Nov. 10, 1943	57.22	-
1846	Mar. 15, 1846	64.5	-	1945	July 20, 1945	57.77	-
1898	Dec. 16, 1897	10.4	72,800	1946	May 29, 1946	57.76	-
1899	Mar. 7, 1899	10.1	69,200	1947	Apr. 6, 1947	58.80	-
1900	Mar. 2, 1900	13.0	104,000	1948	Mar. 23, 1948	60.48	-
1901	Mar. 22, 1901	10.8	77,600	1949	Jan. 1, 1949	61.39	-
1902	Mar. 2, 1902	20.6	214,000	1950	Apr. 5, 1950	57.90	-
1903	Mar. 1, 1903	15.2	134,000	1951	Apr. 1, 1951	61.14	-
1904	Oct. 11, 1903	24.6	274,000	1952	July 11, 1952	58.65	-
1905	Mar. 28, 1905	12.1	88,500	1953	Dec. 12, 1952	62.08	-
1906	Apr. 16, 1906	13.7	112,000	1954	Dec. 8, 1953	(a)	-
1907	Jan. 2, 1907	10.2	60,000	1955	Aug. 20, 1955	73.27	-
1936	Mar. 19, 1936	67.00	-	1956	Oct. 16, 1955	61.04	-
				1957	Apr. 7, 1957	57.16	-
				1958	Dec. 22, 1957	59.37	-
				1959	Jan. 23, 1959	57.90	-
				1960	Apr. 5, 1960	60.42	-
				1961	Feb. 27, 1961	58.85	-

a Unknown.

DELAWARE RIVER BASIN

4625. Delaware River at Washington Crossing, N.J.

Location.--Lat 40°17'40", long 74°52'10", on upstream side of bridge on fourth span from New Jersey end, at Washington Crossing, Mercer County, 7.4 miles upstream from Calhoun Street Bridge in Trenton.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is 0.14 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights since 1936 are maximum of hourly readings by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 11, 1903	51.9	-	1949	Dec. 31, 1948	40.97	-
				1950	Apr. 6, 1950	36.25	-
1936	Mar. 19, 1936	47.30	-				
1937	Feb. 23, 1937	35.35	-	1951	Apr. 1, 1951	40.85	-
1938	Sept. 23, 1938	40.2	-	1952	July 11, 1952	37.80	-
1939	Dec. 7, 1938	37.95	-	1953	Dec. 12, 1952	41.85	-
1940	Apr. 1, 1940	42.52	-	1954	Dec. 8, 1953	32.48	-
				1955	Aug. 20, 1955	53.77	-
1941	Apr. 7, 1941	33.53	-				
1942	May 24, 1942	43.36	-	1956	Oct. 17, 1955	40.89	-
1943	Jan. 1, 1943	40.60	-	1957	Apr. 7, 1957	35.95	-
1944	Nov. 10, 1943	36.65	-	1958	Dec. 22, 1957	38.80	-
1945	July 20, 1945	36.56	-	1959	Jan. 23, 1959	37.30	-
				1960	Apr. 5, 1960	40.04	-
1946	May 29, 1946	36.40	-				
1947	Apr. 7, 1947	37.70	-	1961	Feb. 27, 1961	38.15	-
1948	Mar. 23, 1948	39.29	-				

4630. Delaware River at Yardley, Pa.

Location.--Lat 40°14'45", long 74°50'10", on upstream side of bridge at Yardley, Bucks County, and 3.5 miles upstream from Calhoun Street Bridge, Trenton, N.J.

Drainage area.--Not determined.

Gage.--Nonrecording. Datum of gage is at mean sea level, datum of 1929.

Stage-discharge relation.--Not defined.

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Gage heights since 1936 are maximum of hourly readings by Delaware River Joint Toll Bridge Commission. Only annual peaks are shown.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Yardley, Pa.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Oct. 11, 1903	39.1	-	1949	Jan. 1, 1949	30.55	-
1936	Mar. 19, 1936	35.90	-	1950	Apr. 6, 1950	26.85	-
1937	Feb. 23, 1937	25.54	-	1951	Apr. 1, 1951	28.35	-
1938	Sept. 23, 1938	29.8	-	1952	July 11, 1952	25.75	-
1939	Dec. 7, 1938	27.87	-	1953	Dec. 12, 1952	-	-
1940	Apr. 1, 1940	31.70	-	1954	Dec. 8, 1953	22.70	-
				1955	Aug. 20, 1955	41.49	-
1941	Apr. 7, 1941	23.94	-				
1942	May 24, 1942	32.45	-	1956	Oct. 17, 1955	-	-
1943	Jan. 1, 1943	29.65	-	1957	Apr. 7, 1957	26.08	-
1944	Nov. 10, 1943	26.19	-	1958	Dec. 22, 1957	28.75	-
1945	July 20, 1945	25.86	-	1959	Jan. 23, 1959	28.00	-
				1960	Apr. 5, 1960	29.34	-
1946	May 29, 1946	26.34	-				
1947	Apr. 7, 1947	27.45	-	1961	Feb. 27, 1961	29.20	-
1948	Mar. 23, 1948	29.65	-				

4635. Delaware River at Trenton, N.J.

Location.--Lat 40°13'18", long 74°46'38", on left bank 450 ft upstream from Calhoun Street Bridge at Trenton, Mercer County, and 0.5 mile upstream from Assunpink Creek.

Drainage area.--6,780 sq mi. Area of lakes, ponds, and swamps, 144 sq mi.

Gage.--Nonrecording prior to Oct. 2, 1928; recording thereafter. Prior to Dec. 29, 1912, on upstream side near right bank end of Calhoun Street Bridge, and Dec. 29, 1912, to Oct. 2, 1928, on downstream side near left bank end of bridge at same datum. Datum of gage is 7.77 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 230,000 cfs and extended above by logarithmic plotting.

Historical data.--The flood of Feb. 27, 1692 (reported 12 ft above usual high-water mark) may have been as great or greater than that of August 1955. The flood of Jan. 8, 1841, was reported at that time to be greatest since 1692. The ice jam flood of Feb. 8, 1857, may have had a stage at Trenton equal to or higher than the ice jam flood of Mar. 8, 1904 (highest known stage at Trenton).

Remarks.--Some effect on flood peaks from regulation by Lake Hopatcong since 1828, Lake Wallenpaupack since 1925, Toronto Reservoir since 1926, Swinging Bridge Reservoir since 1930, Cliff Lake Reservoir since 1940, Wild Creek Reservoir since 1941, Neversink Reservoir since 1953, Pepacton Reservoir since 1954, and other smaller reservoirs. Peak stages 1904-28 obtained from graph of once-daily gage readings by U.S. Weather Bureau. Only annual peak data shown prior to 1929. Base for partial-duration series, 50,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	March 1902	15.8	-	1914	Mar. 29, 1914	12.4	143,000
				1915	Feb. 26, 1915	(b)	85,000
1904	Oct. 11, 1903	20.7	295,000	1916	Apr. 3, 1916	9.5	93,800
	Mar. 8, 1904	a22.8	-	1917	Mar. 29, 1917	9.2	90,600
1905	Dec. 31, 1904,	10.8	-	1918	Oct. 31, 1917	9.1	89,100
	Jan. 8, 1905			1919	July 22, 1919	7.8	69,200
1906	Apr. 16, 1906	9.6	-	1920	Mar. 14, 1920	11.2	121,000
1907	Jan. 26, 1907	a9.0	-				
1908	Dec. 12, 1907	10.6	-	1921	Mar. 11, 1921	10.4	108,000
1909	Feb. 21, 1909	9.9	-	1922	Nov. 30, 1921	10.2	105,000
1910	Apr. 23, 1910	10.7	-	1923	Mar. 24, 1923	8.2	74,800
				1924	Apr. 8, 1924	11.8	132,000
1911	Jan. 5, 1911	7.8	-	1925	Feb. 13, 1925	13.0	154,000
1912	Mar. 16, 1912	10.9	-				
1913	Mar. 28, 1913	13.3	160,000	1926	Apr. 10, 1926	6.20	48,100

a Backwater from ice.

b Unknown, probably exceeded the 7.8 ft gage height of Jan. 13, 1915.

DELAWARE RIVER BASIN

Peak stages and discharges of Delaware River at Trenton, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1927	Nov. 18, 1926	11.30	123,000	1945	Jan. 17, 1945	a8.72	-
1928	Oct. 20, 1927	10.91	116,000		Mar. 5, 1945	7.18	60,600
					Mar. 19, 1945	7.90	70,000
1929	Mar. 16, 1929	8.9	84,800		July 21, 1945	8.75	82,200
	Apr. 14, 1929	6.38	50,600		July 30, 1945	6.86	56,600
	Apr. 23, 1929	7.58	66,400	1946	Dec. 20, 1945	a8.67	-
1930	Jan. 26, 1930	a8.08	-		Dec. 26, 1945	all.01	-
	Mar. 10, 1930	6.08	47,400		Mar. 10, 1946	7.19	61,400
1931	Mar. 30, 1931	6.6	53,200		May 29, 1946	8.74	82,300
1932	Apr. 2, 1932	7.63	66,100		June 2, 1946	7.84	69,900
1933	Oct. 8, 1932	8.00	71,400	1947	Feb. 10, 1947	a7.90	-
	Nov. 21, 1932	7.05	58,400		Mar. 16, 1947	7.37	63,700
	Apr. 19, 1933	7.39	63,500		Apr. 7, 1947	9.60	98,500
	Feb. 13, 1933	a7.90	-		May 26, 1947	6.80	58,900
	Aug. 25, 1933	12.66	147,000		July 9, 1947	6.35	53,000
	Sept. 5, 1933	6.43	50,800	1948	Mar. 18, 1948	8.18	77,700
	Sept. 17, 1933	7.64	66,100		Mar. 23, 1948	11.29	125,600
					Apr. 16, 1948	7.69	70,900
1934	Jan. 4, 1934	all.83	-	1949	Jan. 1, 1949	12.06	139,100
	Mar. 5, 1934	a14.2	-		Jan. 7, 1949	9.49	96,800
	Mar. 6, 1934	8.65	80,000	1950	Mar. 30, 1950	8.45	77,600
1935	Dec. 3, 1934	9.09	87,500		Apr. 6, 1950	8.60	79,800
	Jan. 11, 1935	6.85	55,800	1951	Nov. 27, 1950	11.07	118,200
	Jan. 25, 1935	a7.12	-		Dec. 6, 1950	10.77	113,300
	July 10, 1935	11.74	129,000		Dec. 9, 1950	7.60	66,300
1936	Nov. 1, 1935	6.48	52,000		Jan. 25, 1951	6.48	51,900
	Nov. 30, 1935	6.66	54,500		Feb. 8, 1951	6.65	54,000
	Dec. 26, 1935	a6.57	-		Feb. 23, 1951	6.40	50,900
	Jan. 3, 1936	a16.12	-		Apr. 1, 1951	11.95	133,200
	Jan. 22, 1936	a10.20	-	1952	Nov. 8, 1951	8.00	71,800
	Mar. 13, 1936	15.34	199,000		Dec. 21, 1951	a9.48	-
	Mar. 19, 1936	16.66	227,000		Jan. 28, 1952	7.66	67,100
	Apr. 8, 1936	6.80	55,800		Mar. 13, 1952	8.32	76,300
1937	Jan. 27, 1937	6.78	55,800		Apr. 7, 1952	8.74	82,200
	Feb. 23, 1937	8.16	74,200		Apr. 16, 1952	8.30	76,000
	Apr. 8, 1937	6.73	54,500		Apr. 28, 1952	6.52	52,300
1938	Oct. 25, 1937	7.00	58,400		May 26, 1952	7.02	58,800
	Jan. 27, 1938	8.60	80,000		July 11, 1952	9.64	95,400
	July 23, 1938	8.73	81,500	1953	Nov. 23, 1952	8.52	79,100
	Aug. 12, 1938	7.38	63,500		Dec. 12, 1952	12.30	139,000
	Sept. 23, 1938	11.45	125,000		Jan. 26, 1953	9.37	91,400
1939	Dec. 7, 1938	9.86	99,500	1954	Dec. 8, 1953	6.02	46,300
	Jan. 30, 1939	a7.40	-	1955	Feb. 7, 1955	a7.27	-
	Feb. 17, 1939	6.73	54,500		Aug. 20, 1955	20.83	329,000
	Feb. 22, 1939	7.20	60,900	1956	Oct. 17, 1955	11.93	133,000
1940	Jan. 16, 1940	a8.12	-		Nov. 1, 1955	6.62	53,600
	Mar. 15, 1940	8.25	76,500		Apr. 8, 1956	7.11	59,900
	Apr. 1, 1940	12.85	151,600	1957	Apr. 7, 1957	8.41	77,500
	Apr. 10, 1940	10.25	106,700	1958	Dec. 22, 1957	10.47	108,000
	Apr. 22, 1940	7.50	66,400		Feb. 28, 1958	6.74	55,100
1941	Dec. 31, 1940	6.57	54,400		Apr. 7, 1958	9.50	93,300
	Apr. 7, 1941	6.75	56,800	1959	Jan. 23, 1959	8.93	84,800
1942	Feb. 4, 1942	a6.53	-		Apr. 4, 1959	7.15	60,400
	Mar. 10, 1942	7.66	68,500	1960	Nov. 29, 1959	7.89	70,300
	May 24, 1942	13.35	161,200		Jan. 5, 1960	6.65	54,000
	Aug. 9, 1942	6.19	50,000		Feb. 13, 1960	8.10	73,200
	Sept. 29, 1942	9.28	91,800		Apr. 1, 1960	9.11	87,400
1943	Nov. 26, 1942	6.43	52,800		Apr. 5, 1960	11.41	124,000
	Jan. 1, 1943	11.00	118,900		Sept. 13, 1960	7.82	69,300
	Feb. 16, 1943	a6.82	-		Sept. 21, 1960	7.15	60,400
	Feb. 20, 1943	a7.88	-	1961	Feb. 27, 1961	9.72	96,600
	Feb. 26, 1943	6.64	55,300		Apr. 26, 1961	7.61	66,400
	Mar. 18, 1943	7.31	63,900				
1944	Nov. 10, 1943	8.47	78,000				
	Apr. 26, 1944	6.66	54,000				
1945	Jan. 12, 1945	a8.24	-				

a Backwater from ice.

DELAWARE RIVER BASIN

4640. Assunpink Creek at Trenton, N.J.

Location.--Lat 40°13'27", long 74°44'58", on left bank at Chambers Street
Bridge in Trenton, Mercer County, 1½ miles upstream from mouth.

Drainage area.--89.4 sq mi. Area of swamps, lakes, and bogs, 2.3 sq mi.

Gage.--Recording. Datum of gage is 24.76 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,800 cfs and extended above by logarithmic plotting.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Jan. 17, 1924	4.82	950	1940	Apr. 20, 1940	5.19	877
	Mar. 12, 1924	4.86	995		May 31, 1940	5.40	966
	Apr. 7, 1924	7.85	2,400		Sept. 3, 1940	6.00	1,230
	Apr. 19, 1924	4.85	950	1941	Feb. 8, 1941	6.50	1,270
	May 12, 1924	4.73	905		July 4, 1941	6.03	1,090
	July 9, 1924	5.55	1,320	1942	Mar. 22, 1942	4.85	692
	Aug. 12, 1924	5.07	1,080				
1925	Feb. 11, 1925	6.89	1,900	1943	Dec. 30, 1942	5.84	1,020
					Mar. 7, 1943	5.87	1,030
1926	Feb. 25, 1926	5.45	982	1944	Jan. 5, 1944	5.52	909
	Aug. 13, 1926	4.97	815		Jan. 6, 1944	7.21	1,570
1927	Dec. 28, 1926	5.20	840		Mar. 13, 1944	6.98	1,470
	Aug. 9, 1927	4.85	825		Apr. 25, 1944	6.10	1,110
1928	Oct. 19, 1927	6.90	1,560		Apr. 27, 1944	5.37	859
	Dec. 5, 1927	5.10	850		Sept. 15, 1944	7.85	1,790
	Dec. 8, 1927	5.55	1,040	1945	Feb. 23, 1945	5.34	815
	Feb. 8, 1928	5.03	815		July 7, 1945	5.70	941
	Apr. 24, 1928	5.30	930	1946	Nov. 29, 1945	5.69	937
1929	Feb. 27, 1929	5.33	930		Dec. 31, 1945	5.31	804
1930	Feb. 13, 1930	5.18	815		June 2, 1946	7.91	1,820
1931	July 11, 1931	4.56	660		July 24-25, 1946	5.44	849
1932	Mar. 28, 1932	-	1,750	1947	May 4, 1947	5.20	767
1933	Nov. 10, 1932	7.30	1,890	1948	Nov. 12, 1947	5.65	923
	Nov. 19, 1932	6.49	1,500		Apr. 1, 1948	5.89	1,010
	Mar. 21, 1933	5.38	1,000		June 13, 1948	5.46	856
	Apr. 12, 1933	5.48	1,050	1949	Dec. 30, 1948	8.71	2,200
	Aug. 24, 1933	6.14	1,310		June 28, 1949	5.32	808
1934	Mar. 5, 1934	5.41	1,000		July 17, 1949	5.46	856
	Sept. 18, 1934	6.80	1,640	1950	July 10, 1950	5.52	803
1935	Sept. 6, 1935	5.41	1,000	1951	Aug. 3, 1950	8.12	1,850
1936	Jan. 3, 1936	7.30	1,890		Nov. 26, 1950	6.82	1,290
	Jan. 9, 1936	6.60	1,550	1952	Feb. 22, 1951	5.68	858
	Mar. 4, 1936	4.93	820		Dec. 21, 1951	7.96	1,770
	Mar. 12, 1936	5.57	1,090		Mar. 11, 1952	6.43	1,130
	Mar. 18, 1936	5.00	840		Apr. 28, 1952	7.83	1,720
1937	Dec. 20, 1936	5.02	840		Aug. 17, 1952	5.74	879
					Sept. 3, 1952	5.84	914
1938	June 28, 1938	6.86	1,420	1953	Nov. 22, 1952	6.32	1,110
	July 23, 1938	8.90	2,370		Jan. 24, 1953	7.48	1,560
	Sept. 22, 1938	10.74	3,320		Mar. 13, 1953	7.33	1,500
1939	Jan. 31, 1939	6.27	1,360		Mar. 16, 1953	6.00	990
	Feb. 4, 1939	7.59	2,000	1954	Dec. 14, 1953	5.60	850
	Feb. 28, 1939	5.53	1,020		Sept. 11, 1954	5.68	874
	Apr. 7, 1939	6.12	1,290	1955	Nov. 21, 1954	5.95	970
	June 30, 1939	5.34	940		Mar. 22, 1955	6.73	1,260
	Aug. 20, 1939	5.20	881		Aug. 7, 1955	6.77	1,270
					Aug. 13, 1955	9.29	2,400
					Aug. 19, 1955	7.27	1,480
1940	Mar. 4, 1940	5.41	970				
	Mar. 15, 1940	5.64	1,070				
	Apr. 9, 1940	6.33	1,380				

DELAWARE RIVER BASIN

Peak stages and discharges of Assunpink Creek at Trenton, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Oct. 15, 1955	7.75	1,680	1960	Feb. 19, 1960	6.03	959
	Feb. 18, 1956	5.55	835		Apr. 5, 1960	5.98	942
	Mar. 14, 1956	6.26	1,080		July 30, 1960	7.78	1,660
	Apr. 8, 1956	5.84	932		Sept. 12, 1960	8.39	1,620
1957	Apr. 6, 1957	5.73	859	1961	Jan. 1, 1961	7.45	1,050
1958	Jan. 25, 1958	5.69	846		Feb. 19, 1961	8.30	1,370
	Feb. 28, 1958	9.16	2,300		Mar. 23, 1961	8.36	1,750
	Apr. 6, 1958	8.58	2,030		Apr. 13, 1961	7.14	1,280
	Apr. 30, 1958	5.94	926		July 15, 1961	8.42	1,780
	May 7, 1958	5.76	868		July 29, 1961	7.61	1,460
					July 31, 1961	6.39	1,020
1959	Aug. 29, 1959	5.68	842				

4645. Crosswicks Creek at Extonville, N.J.

Location.--Lat 40°08'15", long 74°36'02", on right bank upstream from highway bridge at Extonville, Mercer County, half a mile upstream from Pleasant Run and 0.7 mile downstream from Mercer-Monmouth County line.

Drainage area.--83.6 sq mi. Area of swamps, lakes, and bogs, 6.1 sq mi.

Gage.--Recording. Datum of gage is 24.94 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 750 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Sept. 1, 1940	12.05	a3,360	1948	Apr. 2, 1948	7.18	907
1941	Jan. 25, 1941	6.26	802	1949	May 31, 1948	8.52	1,190
	Feb. 8, 1941	8.47	1,270		Dec. 31, 1948	8.95	1,300
	Mar. 12, 1941	6.22	794		Jan. 29, 1949	6.80	831
	July 9, 1941	7.42	1,040		Feb. 23, 1949	6.57	786
1942	Feb. 8, 1942	5.08	566	1950	Mar. 24, 1950	5.10	530
1943	Dec. 31, 1942	6.29	808	1951	Nov. 26, 1950	7.80	1,040
	July 8, 1943	9.10	1,460		Feb. 22, 1951	7.80	1,040
1944	Jan. 5, 1944	6.88	788		Mar. 31, 1951	8.03	1,090
	Mar. 14, 1944	8.03	1,030		Apr. 4, 1951	6.43	760
	Apr. 25, 1944	7.43	897	1953	Nov. 23, 1952	7.73	1,030
	Sept. 15, 1944	11.05	2,470		Jan. 10, 1953	6.55	782
1945	Nov. 22, 1944	7.23	917		Feb. 16, 1953	6.43	760
	Nov. 28, 1944	8.20	1,120		Mar. 13, 1953	9.92	1,840
	Dec. 13, 1944	7.18	907	1954	Dec. 15, 1953	6.99	869
	Feb. 23, 1945	7.32	936		May 22, 1954	6.88	847
	July 5, 1945	10.12	1,960		Sept. 12, 1954	9.26	1,460
	July 19, 1945	8.83	1,260	1955	Nov. 21, 1954	6.39	752
1946	July 24, 1945	6.41	756		Mar. 23, 1955	6.61	794
	Nov. 29, 1945	9.20	1,430		Aug. 13 or 14, 1955	10.10	1,950
	Dec. 26, 1945	8.51	1,180	1956	Oct. 15, 1955	8.79	1,250
	Dec. 30, 1945	7.98	1,080		Feb. 19, 1956	7.58	991
	June 3, 1946	7.41	955		Apr. 9, 1956	7.48	970
1947	July 24, 1946	9.10	1,370		July 14, 1956	9.07	1,360
	Aug. 9, 1947	6.31	737		July 22, 1956	7.86	1,050
1948	Nov. 9, 1947	6.56	784	1957	Dec. 17, 1956	7.27	926
	Nov. 13, 1947	7.49	972				
	Jan. 3, 1948	6.60	792	1958	Dec. 22, 1957	6.51	775
	Feb. 14, 1948	10.77	2,360				

a Annual peak only.

DELAWARE RIVER BASIN

Peak stages and discharges of Crosswicks Creek at Extonville, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Jan. 15, 1958	8.93	1,290	1960	Feb. 19, 1960	6.89	849
	Jan. 26, 1958	7.93	1,070		Feb. 27, 1960	6.89	849
	Feb. 28, 1958	10.40	2,130		July 31, 1960	8.47	1,170
	Mar. 26, 1958	7.34	940		Sept. 13, 1960	11.99	3,200
	Apr. 7, 1958	6.46	765	1961	Jan. 2, 1961	9.50	1,600
	May 7, 1958	6.78	827		Feb. 19, 1961	8.27	1,130
	Aug. 26, 1958	7.67	1,010		Mar. 9, 1961	6.90	851
1959	Oct. 26, 1958	6.68	807		Mar. 15, 1961	7.28	928
	Mar. 7, 1959	6.74	819		Mar. 23, 1961	9.52	1,610
	July 24, 1959	6.48	769		Apr. 14, 1961	8.92	1,290
1960	Dec. 30, 1959	6.40	754		July 30, 1961	7.15	901

4655. Neshaminy Creek near Langhorne, Pa.

Location.--Lat 40°10'25", long 75°57'30", on left bank at bridge on State Highway 213, 0.3 mile downstream from Mill Creek and 1.7 miles west of Langhorne, Bucks County.

Drainage area.--210 sq mi.

Gage.--Recording gage. Datum of gage is 40.57 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,700 cfs and extended on basis of contracted-opening and slope-area measurement.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 3,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Aug. 23, 1933	17.3	30,000	1940	Feb. 20, 1940	all.12	-
1935	Feb. 15, 1935	all.80	-	1940	Mar. 4, 1940	11.12	11,600
	Sept. 6, 1935	6.80	3,640		Mar. 15, 1940	11.45	12,200
1936	Nov. 17, 1935	8.98	7,230		Apr. 9, 1940	10.72	10,600
	Jan. 3, 1936	12.53	14,800		Apr. 20, 1940	9.58	8,350
	Jan. 9, 1936	10.88	11,100	1941	Nov. 15, 1940	7.22	4,390
	Feb. 27, 1936	a7.59	-		Dec. 17, 1940	6.56	3,640
	Mar. 12, 1936	11.00	11,300		Feb. 8, 1941	8.81	6,870
	Mar. 18, 1936	10.24	9,570		Apr. 6, 1941	6.96	4,130
	Apr. 6, 1936	8.14	5,710		July 13, 1941	8.42	6,190
1937	Dec. 17, 1936	7.43	4,670		July 30, 1941	9.52	8,160
	Dec. 20, 1936	9.09	7,410	1942	July 28, 1942	7.81	5,250
	Feb. 22, 1937	8.73	6,700		Aug. 9, 1942	9.49	8,160
	Apr. 27, 1937	8.14	5,710	1943	Dec. 28, 1942	7.52	4,810
1938	Nov. 13, 1937	10.26	9,780		Dec. 30, 1942	9.27	7,780
	Jan. 25, 1938	7.76	5,250		Feb. 11, 1943	8.20	5,870
	June 8, 1938	6.90	4,000		Mar. 7, 1943	7.59	4,950
	July 20, 1938	7.59	4,950		May 26, 1943	7.29	4,530
	July 22, 1938	9.73	8,550		June 18, 1943	8.03	5,550
	July 23, 1938	15.94	24,800	1944	Nov. 9, 1943	8.43	6,190
	Sept. 20, 1938	8.67	6,700		Dec. 27, 1943	a7.24	-
	Sept. 21, 1938	13.34	17,100		Jan. 4, 1944	9.88	8,950
1939	Dec. 4, 1938	7.54	4,810		Jan. 6, 1944	9.88	8,950
	Dec. 6, 1938	10.14	9,360		Mar. 7, 1944	7.41	4,670
	Jan. 30, 1939	9.98	9,150		Mar. 13, 1944	10.12	9,360
	Feb. 4, 1939	11.25	11,800		Mar. 24, 1944	7.08	4,260
	Feb. 16, 1939	6.75	3,880		Apr. 25, 1944	9.16	7,590
	Feb. 28, 1939	8.83	6,870		Apr. 27, 1944	6.82	3,880
	Apr. 7, 1939	10.41	9,990	1945	Nov. 28, 1944	9.00	7,230
1940	Apr. 19, 1939	7.97	5,550		Dec. 12, 1944	8.50	6,360
	Jan. 15, 1940	6.62	3,640		Jan. 2, 1945	10.2	9,570
	Jan. 15, 1940	a8.05	-		Feb. 22, 1945	8.00	5,550
					Feb. 27, 1945	7.85	5,250

a Backwater from ice.

DELAWARE RIVER BASIN

Peak stages and discharges of Neshaminy Creek near Langhorne, Pa.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	July 19, 1945	10.28	9,780	1953	Jan. 24, 1953	9.27	8,160
	July 23, 1945	8.84	6,870		Mar. 4, 1953	6.33	3,980
	Sept. 19, 1945	8.54	6,360		Mar. 13, 1953	6.97	4,790
1946	Nov. 22, 1945	6.95	4,130		Mar. 16, 1953	8.71	7,170
	Nov. 29, 1945	9.37	7,970		Apr. 7, 1953	8.08	6,260
	Dec. 26, 1945	8.04	5,550	1954	Dec. 14, 1953	8.38	6,710
	Mar. 27, 1946	6.94	4,000		Nov. 21, 1954	8.3	6,560
	June 2, 1946	14.54	20,500		Feb. 7, 1955	7.02	4,790
	July 22, 1946	7.96	5,550		Mar. 22, 1955	7.72	5,700
	July 24, 1946	10.48	10,200		Aug. 13, 1955	13.55	17,300
1947	May 22, 1947	6.25	3,210		Aug. 19, 1955	22.84	49,300
1948	Nov. 8, 1947	8.28	6,030	1956	Oct. 15, 1955	9.96	9,430
	Nov. 12, 1947	8.16	6,410		Feb. 3, 1956	8.17	6,410
	Feb. 18, 1948	6.62	4,310		Feb. 6, 1956	7.35	5,300
	Feb. 29, 1948	6.30	3,980		Feb. 18, 1956	7.37	5,300
	Apr. 1, 1948	6.47	4,200		Mar. 8, 1956	5.95	3,650
	May 5, 1948	6.12	3,760		Mar. 14, 1956	8.99	7,650
	May 13, 1948	-	(b)		May 7, 1956	6.83	4,550
1949	Dec. 30, 1948	11.77	13,200	1957	Nov. 2, 1956	8.48	6,860
	Jan. 6, 1949	8.86	7,490		Dec. 15, 1956	6.58	4,310
	Jan. 22, 1949	6.30	3,980		Apr. 6, 1957	7.76	5,840
	Jan. 28, 1949	6.99	4,790	1958	Dec. 21, 1957	9.05	7,650
	Mar. 23, 1949	6.10	3,760		Dec. 26, 1957	7.48	5,430
	July 13, 1949	6.02	3,650		Jan. 15, 1958	6.66	4,430
1950	Dec. 27, 1949	8.08	6,260		Jan. 22, 1958	7.32	5,170
	Mar. 23, 1950	8.63	7,010		Jan. 25, 1958	7.35	5,300
	Aug. 3, 1950	10.03	9,430		Feb. 28, 1958	11.13	11,700
1951	Nov. 26, 1950	14.92	21,700		Mar. 26, 1958	6.98	4,790
	Dec. 4, 1950	6.18	3,870		Apr. 7, 1958	9.09	7,820
	Dec. 8, 1950	8.12	6,260		Apr. 30, 1958	6.61	4,310
	Jan. 15, 1951	7.22	5,040	1959	Nov. 29, 1958	6.6	4,310
	Feb. 7, 1951	7.64	5,560		Jan. 2, 1959	a6.79	-
	Feb. 21, 1951	7.28	5,170		Mar. 6, 1959	6.5	4,200
	Mar. 31, 1951	7.81	5,840		Aug. 31, 1959	6.24	3,870
1952	Nov. 7, 1951	8.50	6,860	1960	Dec. 13, 1959	7.27	5,170
	Dec. 21, 1951	11.73	13,000		Dec. 29, 1959	7.34	5,170
	Jan. 26, 1952	6.23	3,870		Jan. 3, 1960	7.43	5,300
	Feb. 4, 1952	8.0	6,120		Feb. 19, 1960	7.27	5,170
	Mar. 11, 1952	10.60	10,600		Apr. 4, 1960	7.59	5,560
	Mar. 19, 1952	6.14	3,760		Sept. 13, 1960	14.36	19,400
	Apr. 5, 1952	8.30	6,560		Sept. 20, 1960	8.18	6,410
	Apr. 28, 1952	10.76	11,000	1961	Jan. 1, 1961	9.79	9,050
	May 25, 1952	7.78	5,840		Feb. 25, 1961	8.72	7,170
	June 1, 1952	8.36	6,710		Mar. 9, 1961	6.19	3,870
	Sept. 1, 1952	6.27	3,980		Mar. 10, 1961	6.43	4,090
1953	Nov. 22, 1952	9.59	8,690		Apr. 13, 1961	9.26	8,160
	Dec. 6, 1952	7.00	4,790		July 25, 1961	6.79	4,550
	Dec. 11, 1952	8.87	7,490		July 29, 1961	9.89	9,240
	Jan. 9, 1953	6.51	4,200				

a Backwater from ice.

b Annual maximum; discharge not determined.

4660. Middle Branch Mount Misery Brook in
Lebanon State Forest, N.J.

Location.--Lat 39°55'00", long 74°30'30", on right bank in Lebanon State Forest, Burlington County, 20 ft upstream from North Branch Road Bridge, 0.3 mile upstream from South Branch Mount Misery Brook, and 5.1 miles southeast of Browns Mills.

Drainage area.--2.73 sq mi.

Gage.--Recording gage above concrete control. Datum of gage is 99.71 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 9 cfs.

DELAWARE RIVER BASIN

Peak stages and discharges of Middle Branch Mount Misery Brook in
Lebanon State Forest, N.J.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 13, 1953	2.00	15	1958	May 26, 1958	1.85	9.3
	Apr. 16, 1953	1.84	9.0		July 25, 1958	1.96	13
	May 5, 1953	1.92	12		July 28, 1958	1.96	13
	May 23, 1953	1.89	10		Aug. 1, 1958	1.96	13
	June 13, 1953	1.84	9.0		Aug. 16, 1958	1.98	14
1954	Sept. 11, 1954	1.88	10		Aug. 25, 1958	2.47	45
1955	Aug. 13, 1955	1.88	10		Sept. 28, 1958	1.88	10
1956	Apr. 8, 1956	1.84	9.0	1959	Oct. 1, 1958	1.87	9.9
1957	Dec. 16, 1956	1.70	5.5	1959	Oct. 26, 1958	1.96	13
1958	Feb. 28, 1958	2.20	24		Sept. 12, 1960	1.95	13
	Mar. 27, 1958	1.93	12	1961	Feb. 23, 1961	1.85	9.5
	Apr. 7, 1958	1.89	10		Mar. 9, 1961	1.88	10
	Apr. 30, 1958	1.95	13		Mar. 14, 1961	1.84	9.2
	May 7, 1958	2.01	15		Mar. 23, 1961	1.99	15
					Apr. 13, 1961	2.01	16
					Aug. 23, 1961	1.91	12

4665. McDonald Branch in Lebanon State Forest, N.J.

Location.--Lat 39°53'05", long 74°30'20", on right bank in Lebanon State Forest, Burlington County, 25 ft upstream from Butterworth Road Bridge, 3.4 miles upstream from confluence with Cooper Branch, and 7 miles southeast of Browns Mills.

Drainage area.--2.31 sq mi.

Gage.--Recording gage above concrete control. Datum of gage is 117.73 ft above mean sea level (New Jersey Geological Survey bench mark).

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 70 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	May 22, 1954	1.66	7.1	1959	Oct. 1, 1958	1.77	9.8
	Sept. 11, 1954	1.70	8.0		Oct. 26, 1958	1.86	12
1955	Aug. 14, 1955	1.69	7.8	1960	Feb. 26, 1960	1.66	7.1
1956	Oct. 15, 1955	1.68	7.6		Sept. 13, 1960	1.90	14
	Apr. 8, 1956	1.66	7.1	1961	Feb. 19, 1961	1.73	8.8
1957	Nov. 1, 1956	1.60	5.9		Feb. 24, 1961	1.70	8.0
					Mar. 9, 1961	1.75	9.3
1958	July 29, 1958	1.72	8.5		Mar. 24, 1961	1.86	12
	Aug. 1, 1958	1.87	13		Apr. 13, 1961	1.85	12
	Aug. 18, 1958	1.77	9.8		May 17, 1961	1.74	9.0
	Aug. 25, 1958	2.33	35		May 27, 1961	1.68	7.6
	Sept. 28, 1958	1.78	10		Aug. 24, 1961	1.80	11

DELAWARE RIVER BASIN

4670. North Branch Rancocas Creek at Pemberton, N.J.

Location.--Lat 39°58'10", long 74°41'05", on right bank at downstream side of highway bridge at Pemberton, Burlington County, 12 miles upstream from confluence with South Branch.

Drainage area.--111 sq mi. Area of swamps, lakes, and bogs, 15.5 sq mi.

Gage.--Nonrecording prior to June 9, 1923; recording thereafter. Prior to Aug. 9, 1951, at site 600 ft downstream at datum 6.54 ft lower. Datum of gage is 31.19 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Prior to 1952, defined by current-meter measurements below 1,300 cfs and extended above by logarithmic plotting; shifts in relation occurred. Since 1952, defined by current-meter measurements.

Bankfull stage.--6 ft at site used 1923-51.

Remarks.--Prior to 1942, most peaks below 7 ft stage regulated by mill just above station. Base for partial-duration series, 600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Feb. 2, 1922	4.70	424	1939	Feb. 3, 1939	7.20	921
1923	Mar. 19, 1923	6.20	628		Apr. 7, 1939	6.08	653
1924	Mar. 13, 1924	6.84	790		Apr. 28, 1939	6.25	673
	Apr. 7-9, 1924	-	1,000		Aug. 21, 1939	10.77	1,730
	May 13, 1924	7.07	844	1940	Apr. 22, 1940	6.61	766
	June 21, 1924	5.95	660		May 18, 1940	6.27	688
1925	Aug. 1, 1925	4.52	398		May 24, 1940	6.48	734
1926	Feb. 25, 1926	5.98	600		May 31, 1940	7.19	918
1927	Aug. 19, 1927	6.67	788		Sept. 1, 1940	9.65	1,480
1928	Oct. 20, 1927	8.95	1,340	1941	Feb. 7, 1941	5.76	591
	Oct. 25, 1927	5.92	616	1942	July 3, 1942	4.89	462
	Dec. 8, 1927	5.96	634	1943	July 8, 1943	9.20	1,390
	Feb. 10, 1928	5.88	616	1944	Oct. 28, 1943	6.44	699
	Apr. 24, 1928	6.21	673		Mar. 13, 1944	6.13	638
	Apr. 29, 1928	6.33	694		Apr. 18, 1944	6.10	632
	July 6, 1928	6.16	673		Apr. 27, 1944	6.21	653
	Sept. 21, 1928	6.21	673		Sept. 16, 1944	7.29	855
1929	Feb. 28, 1929	6.47	705	1945	Nov. 28, 29, 30, 1944	7.15	785
	Mar. 6, 1929	6.68	735		Feb. 27, 1945	5.18	440
	Apr. 17, 1929	7.07	765		July 22, 1945	8.70	1,170
	Apr. 23, 1929	6.02	602		Aug. 4, 1945	6.25	611
1930	Mar. 8, 1930	6.15	669	1946	Nov. 30, 1945	7.00	773
	June 10, 1930	6.10	675		Dec. 31, 1945	6.90	746
1931	Apr. 1, 1931	5.45	574		July 24, 1946	7.29	855
1932	Mar. 28, 1932	6.73	698	1947	May 6, 1947	5.30	-
	Apr. 13, 1932	6.88	726		May 22, 1947	5.25	496
1933	Nov. 10, 1932	6.69	730	1948	Feb. 14, 1948	6.34	656
	Nov. 21, 1932	6.50	700		Apr. 2, 1948	6.03	611
	Apr. 13, 1933	6.06	656		May 15, 1948	6.02	610
	Aug. 24, 1933	8.51	1,230		June 1, 1948	6.84	743
1934	Mar. 5, 1934	5.77	600	1949	Dec. 31, 1948	7.04	694
	Sept. 17, 1934	5.87	628		Jan. 28, 1949	6.55	648
1935	Sept. 8, 1935	6.15	637	1950	Mar. 24, 1950	4.86	416
1936	Jan. 3, 1936	6.39	667	1951	Apr. 3, 1951	6.38	612
1937	Jan. 21, 1937	5.98	609	1952	Dec. 22, 1951	2.64	756
	May 14, 1937	5.96	604		Apr. 29, 1952	3.08	1,170
1938	June 29, 1938	8.78	1,300		May 27, 1952	2.46	610
	July 24, 1938	9.08	1,360		June 2, 1952	2.69	782
	Sept. 22, 1938	10.56	1,680		Aug. 11, 1952	2.60	722
1939	Feb. 1, 1939	6.28	694	1953	Aug. 17, 1952	2.63	823
					Nov. 22, 1952	2.56	690
					Mar. 14, 1953	2.72	825

DELAWARE RIVER BASIN

Peak stages and discharges of North Branch Rancocas Creek at Pemberton, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Sept. 12, 1954	2.56	690	1958	May 8, 1958	2.73	834
1955	Aug. 14, 1955	2.54	673		Aug. 2, 1958	2.52	657
					Aug. 27, 1958	3.61	1,420
1956	Feb. 19, 1956	2.36	535	1959	Oct. 27, 1958	2.57	698
	July 23, 1956	2.36	535				
1957	Dec. 17, 1956	2.22	436	1960	July 30, 1960	2.35	653
					Sept. 13, 1960	a3.81	1,420
1958	Jan. 15, 1958	2.46	610	1961	Jan. 2, 1961	2.46	610
	Mar. 1, 1958	2.84	934		Mar. 24, 1961	2.89	981
	Mar. 26, 1958	2.58	706		Apr. 14, 1961	2.59	824
	May 1, 1958	2.49	633				

a Backwater from debris.

4750. Mantua Creek at Pitman, N.J.

Location.--Lat 39°44'14", long 75°06'53", on left abutment of Wadsworth Dam, 0.9 mile east of Pitman, Gloucester County, and 2 miles upstream from Porch Branch.

Drainage area.--6.75 sq mi. Area of swamps, lakes, and bogs, 0.2 sq mi.

Gage.--Recording gage above concrete dam. Datum of gage is 68.51 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 63 cfs and extended above on basis of laboratory rating and flow-over-dam measurement of 4,200 cfs.

Remarks.--Base for partial-duration series, 50 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940a/	May 17, 1940	1.41	54	1951	June 23, 1951	1.46	63
	May 21, 1940	1.48	66				
	Aug. 28, 1940	1.40	52	1952	Dec. 21, 1951	1.90	169
	Sept. 1, 1940	6.64	4,200		Mar. 11, 1952	1.49	68
1941b/	July 7, 1941	1.54	78		Apr. 28, 1952	1.49	68
					June 1, 1952	1.44	59
1942	Dec. 13-14, 1941	1.40	52		Aug. 10, 1952	2.10	233
	July 11, 1942	1.42	56		Sept. 1, 1952	1.40	52
	July 27, 1942	1.43	57	1953	Nov. 22, 1952	1.46	63
	Aug. 12, 1942	1.47	65		Mar. 13, 1953	1.40	52
1943	Apr. 19, 1943	1.43	57		June 13, 1953	1.56	83
1944	Sept. 14-15, 1944	1.72	119	1954	Dec. 14, 1953	1.47	65
					Sept. 11, 1954	1.47	65
1945	Nov. 27, 1944	1.44	59	1955	Aug. 13, 1955	1.76	130
	July 17, 1945	1.68	109		Aug. 19, 1955	1.42	56
	July 19, 1945	1.63	97		Sept. 20, 1955	1.55	80
	Aug. 7, 1945	1.41	54	1956	Oct. 14, 1955	1.41	54
1946	Nov. 29, 1945	1.51	72				
	Dec. 26, 1945	1.42	56	1957	Nov. 2, 1956	1.62	96
	Dec. 29, 1945	1.44	59				
	June 12, 1946	1.46	63	1958	Feb. 28, 1958	1.44	59
	July 3, 1946	1.53	76		July 22, 1958	1.41	54
	July 22, 1946	1.70	114		July 24, 1958	1.51	72
1947	July 19, 1947	1.44	59		Aug. 1, 1958	1.46	63
1948	Feb. 14, 1948	1.66	104		Aug. 16, 1958	1.60	91
1949	May 3, 1949	1.37	47		Aug. 25, 1958	1.65	102
1950	July 6, 1950	1.45	61	1959	July 14, 1959	1.83	149
	July 10, 1950	1.98	194				
	Aug. 30, 1950	1.61	93	1960	July 30, 1960	1.67	107
	Sept. 13, 1950	1.59	89		Sept. 12, 1960	2.12	240
					Sept. 30, 1960	1.41	54
1951	Nov. 25, 1950	1.78	135	1961	Jan. 1, 1961	1.51	72
					Apr. 13, 1961	1.47	65
					July 29, 1961	1.45	61

a Period Apr. 5 to Sept. 1, 1940.

b Period May 19 to Sept. 30, 1941.

DELAWARE RIVER BASIN

4765. Ridley Creek at Moylan, Pa.

Location.--Lat 39°54'10", long 75°23'35", at Fox Bank Bridge at Moylan, Delaware County, and 1 mile south of Media.

Drainage area.--31.9 sq mi.

Gage.--Recording. Datum of gage is 87.36 ft above mean sea level (Pennsylvania Railroad bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs and extended on basis of contracted-opening measurement.

Remarks.--Base for partial-duration series, 750 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Mar. 28, 1932	4.60	891	1943	May 12, 1943	4.20	775
1933	May 24, 1933	4.55	866	1944	Jan. 6, 1944	4.30	865
	Aug. 23, 1933	7.36	2,680		Jan. 1, 1945	4.49	980
1934	Mar. 5, 1934	4.86	1,080	1945	July 5, 1945	4.36	842
	July 9, 1935	7.81	3,000		Aug. 1, 1945	4.39	920
1935	Sept. 4, 1935	5.46	1,330		Sept. 18, 1945	4.59	1,040
1936	Nov. 17, 1935	4.28	820	1946	Nov. 29, 1945	4.67	978
	Jan. 3, 1936	5.85	1,590		Dec. 26, 1945	4.72	1,000
	Jan. 9, 1936	5.26	1,280	1947	May 22, 1947	3.44	483
	Mar. 11, 1936	4.14	752		May 5, 1948	4.06	740
	Mar. 18, 1936	4.60	955	1948	Dec. 30, 1948	4.60	1,040
1937	Feb. 22, 1937	4.10	770		Aug. 3, 1950	5.85	1,590
1938	June 12, 1938	4.56	932	1950	Nov. 25, 1950	10.84	5,720
	July 27, 1938	4.66	978		Nov. 7, 1951	4.68	1,000
	July 23, 1938	8.16	3,320	1951	Dec. 21, 1951	5.23	1,280
	Aug. 7, 1938	4.18	775		Feb. 4, 1952	4.18	775
1939	Feb. 3, 1939	4.66	978		Mar. 11, 1952	5.60	1,490
	Aug. 19, 1939	4.62	955		Apr. 5, 1952	4.47	918
1940	Mar. 4, 1940	4.92	1,100		July 9, 1952	4.64	1,020
	Mar. 15, 1940	6.14	1,770	1952	Nov. 22, 1952	4.43	918
1941	Feb. 7, 1941	4.03	746		Dec. 11, 1952	4.15	782
	July 31, 1942	4.29	820		Jan. 24, 1953	4.32	850
1942	Aug. 9, 1942	4.55	932	1953	Dec. 14, 1953	3.89	670
	Aug. 13, 1942	4.68	1,000		Aug. 18, 1955	9.42	a4,390
	Dec. 30, 1942	4.48	980	1955			

a Annual peak only.

DELAWARE RIVER BASIN

4766. Still Run near Mickleton, N.J.

Location.--Lat 39°47'19", long 75°15'27", on left bank at downstream side of county highway bridge, 1 mile west of Mickleton, Gloucester County, and 3.4 miles upstream from confluence with Pargey Creek.

Drainage area.--3.95 sq mi.

Gage.--Recording. Altitude of gage is 5 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 210 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 65 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957 ^a	Aug. 26, 1957	3.33	105	1960	Sept. 12, 1960	4.80	275
1958	June 26, 1958	3.16	84	1961	Jan. 1, 1961	3.44	83
	July 24, 1958	3.11	76		Apr. 13, 1961	3.29	77
1959	Sept. 2, 1959	3.35	82		July 24, 1961	3.29	74
					July 29, 1961	3.22	68
1960	July 30, 1960	3.46	80				

^a Period Aug. 15 to Sept. 30, 1957.

4770. Chester Creek near Chester, Pa.

Location.--Lat 39°52'10", long 75°24'30", on right bank 10 ft upstream from Dutton Mill Bridge and 3 miles northwest of Chester, Delaware County.

Drainage area.--61.1 sq mi.

Gage.--Recording. Datum of gage is 23.41 ft above mean sea level (Pennsylvania Railroad bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 2,400 cfs and extended on basis of contracted-opening measurement.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 1,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Mar. 28, 1932	7.41	2,100	1939	Feb. 3, 1939	7.48	2,180
1933	Nov. 10, 1932	7.20	2,070		Apr. 6, 1939	6.95	1,740
	Apr. 12, 1933	6.20	1,500		Aug. 19, 1939	9.23	3,630
	Apr. 17, 1933	6.13	1,450	1940	Jan. 14, 1940	6.18	1,390
	Aug. 23, 1933	11.48	6,250		Mar. 4, 1940	7.91	2,420
					Mar. 15, 1940	10.26	4,770
1934	Mar. 5, 1934	7.83	2,480		Apr. 8, 1940	6.68	1,600
1935	July 9, 1935	7.78	2,480		Apr. 20, 1940	6.34	1,440
	Sept. 4, 1935	8.72	2,920		May 21, 1940	7.34	2,130
1936	Nov. 17, 1935	6.66	1,770	1941	Feb. 7, 1941	6.11	1,350
	Jan. 3, 1936	9.94	4,330		Mar. 11, 1941	6.08	1,350
	Jan. 9, 1936	10.50	5,000	1942	Aug. 13, 1942	7.80	2,360
	Feb. 25, 1936	6.82	1,830				
	Mar. 12, 1936	6.63	1,710	1943	Dec. 30, 1942	7.80	2,360
	Mar. 18, 1936	6.25	1,500		Mar. 6, 1943	6.76	1,650
	Apr. 6, 1936	6.36	1,600		Apr. 19, 1943	6.00	1,310
1937	Feb. 22, 1937	6.14	1,350		June 27, 1943	7.79	2,360
1938	Nov. 13, 1937	6.25	1,390	1944	Apr. 24, 1944	6.35	1,480
	June 27, 1938	8.22	2,600				
	July 23, 1938	10.57	5,120	1945	July 5, 1945	8.56	3,100
	July 25, 1938	6.88	1,690		Aug. 1, 1945	9.98	4,440
	Aug. 7, 1938	6.80	1,650		Sept. 18, 1945	7.34	2,130
	Sept. 21, 1938	6.53	1,520	1946	Nov. 29, 1945	8.23	2,600
					June 2, 1946	8.30	2,660
1939	Jan. 30, 1939	6.50	1,520		July 23, 1946	6.65	1,560

DELAWARE RIVER BASIN

Peak stages and discharges of Chester Creek near Chester, Pa.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	May 1, 1947	7.56	2,240	1954	Dec. 14, 1953	6.46	1,630
1948	Nov. 4, 1947	7.50	2,180	1955	Feb. 7, 1955	6.02	1,400
	Nov. 8, 1947	6.30	1,430		Aug. 13, 1955	8.28	2,840
	Nov. 12, 1947	7.90	2,420		Aug. 18, 1955	13.57	9,380
	May. 5, 1948	6.72	1,770	1956	June 1, 1956	6.75	1,830
	July 14, 1948	6.20	1,500		July 21, 1956	7.98	2,620
1949	Dec. 30, 1948	7.14	1,940	1957	Apr. 2, 1957	4.57	802
1950	Aug. 3, 1950	10.48	5,000	1958	Dec. 21, 1957	6.17	1,500
1951	Nov. 25, 1950	16.21	14,400		Jan. 22, 1958	6.41	1,600
	Mar. 20, 1951	6.34	1,530		Jan. 25, 1958	6.00	1,400
1952	Nov. 7, 1951	8.68	2,920		Feb. 27, 1958	6.60	1,710
	Dec. 21, 1951	9.11	3,200		Apr. 6, 1958	6.96	1,950
	Feb. 4, 1952	7.01	1,880		July 24, 1958	6.72	1,770
	Mar. 11, 1952	8.08	2,540		July 27, 1958	6.80	1,830
	Mar. 19, 1952	6.33	1,530		Aug. 25, 1958	6.00	1,400
	Apr. 5, 1952	6.55	1,680	1959	Jan. 2, 1959	7.20	2,070
	July 9, 1952	9.52	3,920	1960	Sept. 12, 1960	13.89	9,940
1953	Nov. 22, 1952	6.26	1,530	1961	Jan. 1, 1961	6.10	1,450
	Dec. 11, 1952	6.17	1,480		Apr. 13, 1961	7.87	2,550
	Jan. 24, 1953	6.73	1,730				

4775. Oldmans Creek near Woodstown, N.J.

Location.--Lat 39°41'27", long 75°19'09", on left bank at upstream side of Woodstown-Swedesboro highway bridge, 2 miles north of Woodstown, Salem County, and 16 miles upstream from mouth.

Drainage area.--19.3 sq mi. Area of swamps and lakes, 0.2 sq mi.

Gage.--Recording gage and concrete control. Altitude of gage is 13 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 400 cfs and extended above on basis of contracted-opening measurement at 8,100 cfs.

Bankfull stage.--3 ft.

Remarks.--Base for partial-duration series, 200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931a/	July 8, 1931	5.64	355	1936	June 18, 1936	5.52	325
1932	Mar. 28, 1932	5.54	330	1937	Aug. 22, 1937	4.70	251
	Aug. 7, 1932	4.84	201		Aug. 27, 1937	5.46	362
1933	Nov. 10, 1932	4.94	216	1938	June 27, 1938	9.08	2,000
	Nov. 19, 1932	5.05	232		July 24, 1938	4.47	222
	Apr. 12, 1933	5.04	231		Sept. 20, 1938	6.71	756
	Aug. 23, 1933	8.22	1,380	1939	Jan. 30, 1939	5.49	408
	Aug. 29, 1933	4.83	200		Feb. 3, 1939	4.93	323
1934	Mar. 3, 1934	4.95	218		Feb. 11, 1939	3.47	212
	July 13, 1934	5.72	375		Feb. 28, 1939	3.49	213
	Aug. 3, 1934	6.16	498		Apr. 19, 1939	3.53	216
	Sept. 8, 1934	5.54	330		Apr. 26, 1939	3.53	216
1935	Aug. 15, 1935	5.03	230		Aug. 19, 1939	4.32	273
	Sept. 6, 1935	7.57	1,040	1940	Mar. 4, 1940	3.91	245
1936	Nov. 29, 1935	5.89	418		Mar. 15, 1940	3.56	219
	Jan. 3, 1936	6.67	651		Apr. 9, 1940	3.53	216
	Feb. 14, 1936	5.44	308		Apr. 20, 1940	3.73	232
	Feb. 25, 1936	5.37	294		May 17, 1940	3.63	224
					Sept. 1, 1940	20.3	8,100

a Period June 20 to Sept. 30, 1931.

DELAWARE RIVER BASIN

4790. White Clay Creek near Newark, Del.

Location.--Lat 39°42'00", long 75°41'10", on left bank 300 ft upstream from Baltimore & Ohio Railroad bridge, 0.4 mile downstream from Pike Creek, and 3.5 miles east of Newark, New Castle County.

Drainage area.--87.8 sq mi.

Gage.--Recording. Datum of gage is 11.6 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements.

Remarks.--Base for partial-duration series, 2,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Mar. 28, 1932	11.45	3,030	1946	July 23, 1946	15.74	5,960
1933	Apr. 12, 1933	-	2,720	1947	May 1, 1947	12.23	3,170
	Apr. 17, 1933	-	3,100		July 8, 1947	-	2,250
	July 3, 1933	-	2,480	1948	Feb. 14, 1948	12.35	3,310
	Aug. 4, 1933	-	2,720		Dec. 30, 1948	11.73	2,850
	Aug. 23, 1933	16.05	6,230	1950	Mar. 23, 1950	-	2,160
	Sept. 15, 1933	-	2,300		Aug. 3, 1950	14.07	4,590
1934	Mar. 3, 1934	-	3,870	1951	Nov. 25, 1950	12.37	3,310
	Mar. 5, 1934	12.64	3,870		Feb. 7, 1951	11.29	2,610
1935	July 8, 1935	12.25	3,790	1952	Dec. 21, 1951	13.34	3,980
	Sept. 5, 1935	-	3,650		Feb. 4, 1952	11.18	2,540
1936	Nov. 17, 1935	-	3,230		Mar. 11, 1952	12.03	3,050
	Jan. 3, 1936	15.0	6,030		May 26, 1952	10.48	2,150
	Jan. 9, 1936	-	5,230		July 9, 1952	15.47	5,750
	Feb. 26, 1936	-	2,240	1953	Nov. 22, 1952	10.99	2,420
	Mar. 12, 1936	-	4,110		Dec. 11, 1952	11.41	2,680
	Mar. 18, 1936	-	2,740		Jan. 9, 1953	10.21	2,010
	Apr. 6, 1936	-	2,540		Jan. 24, 1953	11.99	3,020
1943a/	June 27, 1943	-	2,420	1954	Dec. 14, 1953	11.20	2,550
	July 11, 1943	11.06	3,020		Feb. 7, 1955	11.90	2,820
1944	Jan. 4, 1944	-	3,510	1955	Aug. 13, 1955	12.02	2,900
	Mar. 13, 1944	-	2,300		Aug. 18, 1955	15.76	6,010
	Apr. 24, 1944	-	2,060	1956	July 21, 1956	12.51	3,250
	Sept. 13, 1944	12.46	4,050		Nov. 2, 1956	13.21	3,800
1945	Jan. 1, 1945	-	3,230	1957	Sept. 12, 1960	16.11	6,340
	Apr. 26, 1945	-	2,240		Jan. 1, 1961	11.06	2,300
	July 18, 1945	-	3,100				
	July 27, 1945	-	2,430				
	Aug. 1, 1945	-	3,170				
	Sept. 19, 1945	13.20	3,870				
1946	June 2, 1946	-	3,100				

a Period June 3 to Sept. 30, 1943.

4810. Brandywine Creek at Chadds Ford, Pa.

Location.--Lat 39°52'10", long 75°35'35", on left bank 27 ft upstream from Pennsylvania Railroad bridge at Chadds Ford, Delaware County.

Drainage area.--287 sq mi.

Gage.--Nonrecording prior to May 21, 1927; recording thereafter. Datum of gage is 150.45 above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs and extended on basis of depth-area study.

Remarks.--Base for partial-duration series, 3,500 cfs.

DELAWARE RIVER BASIN

Peak stages and discharges of Brandywine Creek at Chadds Ford, Pa.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)			
1912	Feb. 21, 1912	12.00	10,600	1933	Nov. 10, 1932	7.68	3,810			
	Feb. 27, 1912	8.20	4,320		Nov. 19, 1932	7.41	3,540			
	Mar. 13, 1912	11.6	9,800		Mar. 21, 1933	8.02	4,100			
	Mar. 15, 1912	10.0	6,840		Apr. 12, 1933	8.55	4,790			
1913	Apr. 28, 1913	7.8	3,900		Apr. 17, 1933	8.37	4,550			
					Aug. 4, 1933	9.69	6,360			
					Aug. 24, 1933	14.01	14,800			
1914	Jan. 24, 1914	8.2	4,320	1934	Mar. 3, 1934	8.19	4,320			
	Apr. 16, 1914	7.7	3,810		Mar. 5, 1934	8.48	4,670			
	July 28, 1914	7.6	3,720							
1915	Jan. 7, 1915	10.4	7,520	1935	July 9, 1935	10.00	7,000			
	Jan. 12, 1915	11.0	8,620		Sept. 4, 1935	8.38	4,550			
	Feb. 2, 1915	11.3	9,200	1936	Nov. 18, 1935	9.51	6,050			
	Feb. 6, 1915	7.5	3,630		Jan. 3, 1936	11.21	9,000			
	Aug. 4, 1915	14.7	16,500		Jan. 9, 1936	10.08	7,010			
1916	June 16, 1916	8.6	4,790		Feb. 26, 1936	7.95	4,100			
					Feb. 29, 1936	7.45	3,540			
1917	Jan. 22, 1917	8.3	4,430	Mar. 12, 1936	9.46	6,050				
1918	Jan. 12, 1918	11.8	10,200	Mar. 18, 1936	8.54	4,670				
	Jan. 15, 1918	8.0	4,100	Apr. 6, 1936	8.03	4,100				
	Feb. 13, 1918	10.0	6,840	1937	Dec. 20, 1936	7.57	3,720			
	Feb. 16, 1918	9.3	5,750		Feb. 22, 1937	7.76	3,790			
	Feb. 20, 1918	8.8	5,050		Apr. 27, 1937	7.22	3,380			
	Mar. 26, 1918	9.0	5,320							
1919	July 22, 1919	10.25	7,180	1938	Oct. 23, 1937	7.40	3,540			
1920	Jan. 9, 1920	7.9	4,000		Nov. 13, 1937	8.00	4,100			
					Mar. 5, 1920	15.0	17,200	June 8, 1938	8.65	4,790
								June 12, 1938	7.33	3,460
1921	Dec. 1, 1920	6.0	2,560		June 27, 1938	11.37	9,400			
1922	Feb. 2, 1922	7.4	3,540	July 23, 1938	10.45	7,520				
	Feb. 20, 1922	8.0	4,100	Sept. 21, 1938	7.48	3,630				
	1923	Apr. 29, 1923	7.0	3,220	1939	Jan. 30, 1939	7.93	4,000		
Feb. 4, 1939						9.08	5,460			
Mar. 1, 1939						8.12	4,210			
Apr. 7, 1939						7.40	3,540			
1924	Jan. 17, 1924	10.0	6,840	June 14, 1939		8.05	4,210			
				Aug. 20, 1939	10.72	8,060				
				Mar. 4, 1940	9.13	5,460				
				Mar. 15, 1940	9.65	6,190				
				Apr. 9, 1940	8.88	5,180				
1925	Feb. 11, 1925	10.5	7,700	Apr. 20, 1940	8.15	4,320				
				Sept. 25, 1940	7.59	3,720				
1926	Jan. 18, 1926	7.6	3,720	1941	Feb. 8, 1941	8.92	5,060			
	Feb. 19, 1926	8.4	4,550		Mar. 11, 1941	7.84	3,900			
	Feb. 25, 1926	9.4	5,900	1942	Aug. 9, 1942	14.80	16,800			
	Mar. 6, 1926	7.5	3,630		Aug. 13, 1942	7.96	4,100			
1927	Nov. 16, 1926	7.4	3,540	1943	Oct. 26, 1942	7.52	3,630			
	Dec. 28, 1926	8.0	4,100		Dec. 30, 1942	9.08	5,360			
	July 23, 1927	8.2	4,320		Feb. 11, 1943	7.87	3,990			
	Sept. 19, 1927	10.1	7,010		Mar. 7, 1943	7.65	3,720			
1928	Oct. 13, 1927	8.79	5,050		Apr. 20, 1943	7.93	4,000			
				1944	Nov. 9, 1943	8.56	4,690			
					Dec. 27, 1943	7.66	3,810			
					Jan. 4, 1944	10.6	7,880			
					Mar. 13, 1944	8.77	4,930			
					Apr. 25, 1944	7.62	3,720			
					Sept. 14, 1944	8.43	4,550			
				1945	Jan. 2, 1945	9.10	4,360			
					July 5, 1945	8.50	4,430			
				1929	Feb. 7, 1929	7.62	3,720	July 18, 1945	7.73	3,630
					Feb. 27, 1929	9.77	6,520	Sept. 19, 1945	10.87	8,240
1930	Apr. 16, 1929	8.97	5,320	1946	Nov. 29, 1945	8.14	4,280			
	Oct. 2, 1929	8.47	4,670		Dec. 26, 1945	8.14	4,280			
May 17, 1946					7.61	3,720				
1931	July 10, 1931	10.80	8,240		June 2, 1946	10.02	7,110			
1932	Mar. 28, 1932	9.06	5,460	July 23, 1946	11.14	8,810				

DELAWARE RIVER BASIN

Peak stages and discharges of Brandywine Creek at Chadds Ford, Pa.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	July 8, 1947	6.00	2,500	1951	Feb. 8, 1951	9.67	6,360
1948	Nov. 4, 1947	8.31	4,380		Apr. 13, 1951	7.40	3,540
	Nov. 8, 1947	7.62	3,720	1952	Nov. 7, 1951	9.45	5,900
	Feb. 14, 1948	7.42	3,540		Dec. 21, 1951	9.49	6,050
	Feb. 18, 1948	7.98	4,080		Feb. 4, 1952	8.30	4,430
	May 5, 1948	7.72	3,810		Mar. 11, 1952	9.09	5,460
	Sept. 10, 1948	9.64	6,190		Apr. 28, 1952	9.04	5,320
1949	Dec. 30, 1948	9.10	5,360		May 26, 1952	8.81	5,050
	Jan. 6, 1949	7.96	4,080		June 1, 1952	7.83	3,900
1950	Mar. 23, 1950	8.08	4,180	1953	July 10, 1952	8.31	4,430
	Aug. 3, 1950	8.65	4,690		Nov. 22, 1952	9.55	6,200
1951	Nov. 25, 1950	12.54	11,600		Dec. 11, 1952	9.51	6,050
	Jan. 15, 1951	7.86	4,000		Jan. 24, 1953	9.63	6,200
					Mar. 16, 1953	7.92	4,000

4825. Salem River at Woodstown, N.J.
(Published as Salem Creek prior to 1953)

Location.--Lat 39°38'36", long 75°19'52", on right end of Memorial Lake Dam at Woodstown, Salem County, a quarter of a mile upstream from small brook and 0.3 mile downstream from Pennsylvania-Reading Seashore Lines bridge.

Drainage area.--14.6 sq mi. Area of swamps and lakes, 0.2 sq mi.

Gage.--Recording gage above concrete dam. Datum of gage is 29.49 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and extended above on basis of laboratory rating and slope-area measurement of 26,000 cfs at site half a mile downstream (adjusted to 22,000 cfs at gage site).

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series, 350 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940a/	Apr. 8, 1940	1.99	482	1946	Dec. 29, 1945	1.94	442
	Apr. 20, 1940	2.18	660		July 2, 1946	1.93	434
	May 17, 1940	2.15	630		July 22, 1946	2.16	640
	June 1, 1940	1.83	354		Sept. 24, 1946	2.11	590
	Aug. 17, 1940	2.32	802	1947	Dec. 21, 1946	1.74	287
	Aug. 28, 1940	1.97	466	1948	Jan. 1, 1948	1.94	442
	Sept. 1, 1940	7.98	22,000		Jan. 13, 1948	1.86	378
1941	July 7, 1941	2.88	61,480		Feb. 14, 1948	2.47	1,020
1942c/	July 31, 1942	2.13	610		June 19, 1948	1.86	380
	Aug. 18, 1942	2.39	879		Aug. 4, 1948	1.84	362
1943	Apr. 19, 1943	1.99	482	1949	Dec. 30, 1948	2.16	620
	May 21, 1943	1.94	442		Jan. 28, 1949	1.85	362
1944	Jan. 3, 1944	2.12	600	1950	July 6, 1950	2.42	912
	Mar. 7, 1944	2.00	490		Sept. 11, 1950	2.76	1,340
	Mar. 13, 1944	2.05	535	1951	Nov. 25, 1950	4.23	3,740
	Apr. 25, 1944	1.95	450		July 5, 1951	1.93	434
	June 19, 1944	2.22	700	1952	Dec. 21, 1951	2.57	1,130
	Sept. 14, 1944	2.35	835		Feb. 4, 1952	1.99	482
1945	Nov. 28, 1944	2.39	879		Mar. 11, 1952	2.00	490
	Feb. 22, 1945	1.89	402		Aug. 10, 1952	2.27	750
	Aug. 7, 1945	2.02	490	1953	Nov. 22, 1952	1.81	338
	Sept. 19, 1945	2.23	680	1954	Dec. 14, 1953	1.87	386
1946	Nov. 29, 1945	1.96	458				
	Dec. 26, 1945	2.02	508				

a Period Mar. 30 to Sept. 2, 1940.

b Annual peak only.

c Period Dec. 6, 1941, to Sept. 30, 1942.

DELAWARE RIVER BASIN

Peak stages and discharges of Salem River at Woodstown, N.J.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Aug. 13, 1955	2.33	860	1958	Aug. 25, 1958	2.39	934
1956	July 21, 1956	1.83	354	1959	Mar. 6, 1959	1.61	195
1957	Nov. 2, 1956	2.77	1,290	1960	Sept. 12, 1960	3.01	1,630
1958	July 22, 1958	2.01	499		Sept. 30, 1960	1.91	418
	July 24, 1958	1.97	466	1961	Jan. 1, 1961	2.11	590
	Aug. 1, 1958	1.89	402		Apr. 13, 1961	2.01	499

4830. Alloway Creek at Alloway, N.J.

Location.--Lat 39°33'55", long 75°21'35", on right bank at Alloway Lake Dam at Alloway, Salem County, 0.8 mile upstream from Deep Run.

Drainage area.--21.9 sq mi.

Gage.--Recording gage above concrete dam. Datum of gage is 13.96 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 600 cfs and extended above by logarithmic plotting.

Remarks.--Flood peaks occasionally affected by operation of Alloway Lake Dam. Base for partial-duration series, 250 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Nov. 22, 1952	2.13	307	1958	Jan. 25, 1958	1.91	265
	Jan. 9, 1953	2.16	319		July 22, 1958	2.12	282
	Jan. 24, 1953	2.06	255		Aug. 25, 1958	2.79	654
	Mar. 13, 1953	2.13	287	1959	July 14, 1959	2.06	255
	Mar. 16, 1953	2.13	287	1960	Apr. 5, 1960	2.15	296
	Apr. 7, 1953	2.10	273		July 30, 1960	2.09	268
1954	Dec. 14, 1953	2.19	315		Sept. 12, 1960	4.24	1,860
1955	Aug. 13, 1955	2.50	476		Sept. 30, 1960	2.31	374
	Aug. 19, 1955	2.16	301	1961	Jan. 1, 1961	2.48	550
1956	Mar. 14, 1956	2.15	296		Feb. 19, 1961	2.04	330
	July 21, 1956	2.03	242		Feb. 23, 1961	1.96	294
1957	Nov. 2, 1956	3.46	1,110		Apr. 10, 1961	2.10	273
					Apr. 13, 1961	2.62	633
1958	Jan. 15, 1958	2.17	356				

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