

Magnitude and Frequency of Floods in the United States

Part 4. St. Lawrence River Basin

By S. W. WIITALA

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1677



UNITED STATES DEPARTMENT OF THE INTERIOR

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Library of Congress catalog-card No. GS 64-192

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MAGNITUDE AND FREQUENCY OF FLOODS IN THE UNITED STATES

PART 4. ST. LAWRENCE RIVER BASIN

By S. W. WITTALA

ABSTRACT

Flood magnitude-frequency relations applicable to streams in the St. Lawrence River basin in the United States are presented in this report. For the most part, the relations are based on flood data collected at gaging stations having 5 or more years of record unaffected by regulation. For sites on most streams, the magnitude of a flood of a given frequency can be determined from two curves—one expressing the relation between the mean annual flood and size of drainage basin and the other expressing the relation between ratio to mean annual flood and recurrence interval. In Minnesota and selected areas of Wisconsin and Michigan, the procedure is modified by an adjustment based upon the percentage of lake and pond area in a basin. Special treatment is accorded the main stems of several streams where the frequency relations do not conform with those for other streams in the same general area or region. Extrapolation of the curves is not recommended because of the lack of definitive data beyond the limits shown.

The report contains lists of flood stages and discharges for all gaging stations having 5 or more years of record. Included also are tables giving information for maximum known floods at these stations and for unusual floods at miscellaneous sites and short-term gaging stations.

INTRODUCTION

PURPOSE AND SCOPE

The purpose of this report is twofold—(1) to provide a means for estimating the magnitude and frequency of floods for most natural streams in the area and (2) to make basic data for floods available in a readily usable form.

The relation between the magnitude and probable frequency of occurrence of floods is subject to recurrent change as additional flood data are accumulated and as new and improved methods of analysis are developed. The relations presented in this report should be exposed to periodic review incorporating new data and methods as they become available.

The magnitude of floods in the frequency relations is given in terms of flood discharge or rate of flow. It is recognized that in many investigations the flood stage, or elevation of the water surface at the

flood crest, is as important as the discharge, or more so. However, acceptable methods for relating flood stages directly with frequency of occurrence have not yet been developed. An investigator interested in flood stages must convert discharge to stage by application of the appropriate stage-discharge relation for the site under consideration.

In general, the flood-frequency relations given are based on flood data for all gaging stations where 5 or more years of record are available and where the flood discharges are not significantly affected by manmade changes. Lack of data and uncertainty regarding the nature of flood-frequency relations on small streams for the most part limit the use and reliability of the relations presented to streams having drainage areas greater than 20 square miles.

ACKNOWLEDGMENTS

Most of the peak data listed in this report have been abstracted from reports on surface-water supplies published by the U.S. Geological Survey. The records were collected by the Geological Survey with the assistance of many other Federal and State agencies, counties, municipalities, corporations, and private individuals, credit for which is given in the previously published reports. If records were completely furnished by another agency, this fact is noted in the individual station description.

This report was prepared under the general direction of Tate Dalrymple, chief, Floods Section, Washington, D.C. Technical guidance and review were provided by A. Rice Green, hydraulic engineer, Floods Section, Washington, D.C. Special credit is due L. E. Stoimenoff and J. B. Miller, hydraulic engineers, and other personnel of the Lansing, Mich., office for much of the work in assembling the flood data and in computing the flood-frequency relations.

The individual station data were compiled and prepared for publication in the various district offices of the Geological Survey under the supervision of the following district engineers:

Arlington D. Ash.....	Lansing, Mich.
Donald F. Dougherty.....	Albany, N.Y.
Malcolm D. Hale.....	Indianapolis, Ind.
Charles E. Knox.....	Boston, Mass.
William D. Mitchell.....	Champaign, Ill.
John J. Molloy.....	Columbus, Ohio
Leon R. Sawyer succeeded by David B. Anderson.....	St. Paul, Minn.
Robert E. Steacy.....	Harrisburg, Pa.
Kenneth B. Young.....	Madison, Wis.

REPORT AREA

The area covered by this report is the St. Lawrence River basin in the United States (fig. 1). It extends from the Atlantic Ocean to the middle of the North American continent. All of it is in the zone

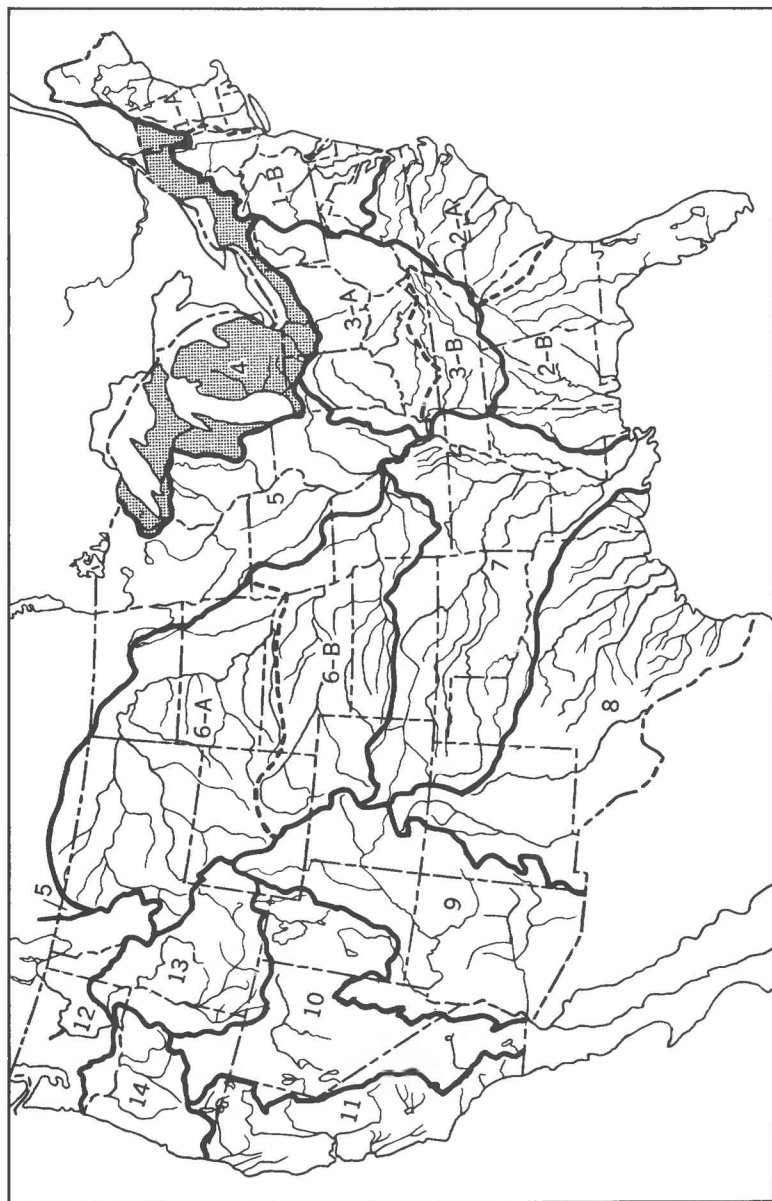


FIGURE 1.—The conterminous United States showing area covered by this report (shaded).

once covered by the glaciers that invaded the continent. It thus contains a great variety of surface formations and landforms, typical of glaciated areas. Transitions from one type of surface formation to another can be very abrupt. For example, lake plains composed of tight impervious clays may adjoin highly porous and absorptive outwash deposits. Land altitudes range from near sea level to more than 5,000 feet above mean sea level.

The climate is also diverse, though modified by the presence of the Great Lakes. The Great Lakes basin lies in the path of the cyclonic storms that travel generally eastward across the continent at more or less regular intervals. In addition, the southern part can be frequented by storms originating in the Gulf of Mexico and traveling north and east up the Mississippi and Ohio valleys and the eastern part can be affected by the coastal hurricane storms. Mean annual precipitation ranges between 24 and 50 inches. The heaviest snow belts east of the Rocky Mountains lie on the uplands along the leeward sides of the Great Lakes, notably in the Upper Peninsula of Michigan near Lake Superior, in the northern part of the Lower Peninsula of Michigan near Lake Michigan, and in western New York. Seasonal snowfalls in excess of 200 inches are not uncommon.

The five Great Lakes provide a unique hydrologic setting for the area. These lakes, representing a total water surface area of about 95,000 square miles, have a dominant influence upon the hydrology of the region. Because the local drainage is into one of the Great Lakes, this major drainage basin is characterized by a proliferation of small streams. The largest tributary stream in the basin in terms of drainage area is the Richelieu River which drains an area of about 9,000 square miles.

PREVIOUS STUDIES

Reports on the magnitude and frequency of floods covering parts of this report area have been published for all the States except Michigan (Benson, 1962; Busch and Shaw, 1960; Cross and Webber, 1959; Ericson, 1961; Green and Hoggatt, 1960; Mitchell, 1954; Prior and Hess, 1961; and Robison, 1961). Except for Benson's report which covered all New England, each of these reports covered a single State. The treatment of the flood data and consequently the application of the relations defined differed considerably among these reports.

In this report, an attempt has been made to use a single, simple method of flood-data analysis for the entire area. A few modifications were necessary, however. Wherever possible, an effort was made to incorporate the previous analyses into those of this report so that there might be more consistency in the results reported by these overlapping studies. Prior's curves for the Minnesota part of the area and Robison's curves for the New York part were extracted, virtually

unchanged, from their respective reports for inclusion in this report. More divergence in results may be expected in those States—Ohio, Vermont, and Wisconsin—where somewhat different methods of analysis were used.

It should not be construed that the methods used and the results obtained in this study are better or more precise than those of the previous studies. The differences that exist are probably well within the expected range of variability of flood-frequency data. The need for consistency of approach to avoid a multiplicity of methods of analysis in a single river basin, and simplicity of application prompted the treatment described in this report.

FLOOD-FREQUENCY ANALYSIS

Floods are caused by runoff from rainfall and snowmelt, dam failures, and channel obstructions such as ice and debris jams. In this report, only the rainfall and snowmelt floods are considered. Floods resulting from the other causes are so capricious as to defy rational analysis.

Many methods have been suggested for determining flood frequency by using statistical analysis. The methods used in this report, described by Dalrymple (1960), have been developed largely in the Water Resources Division of the Geological Survey. They involve the definition of individual flood-frequency relations at specific points and the combination of a number of these to derive relations applicable over relatively broad areas. They permit determination of flood-frequency estimates for ungaged as well as for gaged sites.

The following sections of this report describe the analyses and methods used to derive the flood-frequency relations. Readers interested primarily in the application of the relations contained herein may refer directly to the sections headed, "Special treatment for selected areas and streams" (p. 13) and "Application of methods used" (p. 19).

FLOOD FREQUENCY AT A GAGING STATION

In this report, flood data at a gaging station were analyzed as an annual flood series in which the highest momentary peak discharge for each water year (October 1 to September 30) was used. For some stations the annual maximum daily discharge was used. The frequency estimates were then made by ranking the floods in order of magnitude, computing the recurrence interval, and plotting the flood magnitude versus recurrence interval on suitable graph paper. In the annual flood series, the recurrence interval is interpreted as the average time interval, in years, within which a given flood will be equaled or exceeded once as an annual maximum.

Flood data can also be analyzed as a partial-duration series in which all floods above a selected base discharge are used. In the partial-duration series, the recurrence interval is the average time interval between floods of a given size regardless of their relation to the year or any other period of time.

Langbein (1949) showed the theoretical relation between the two series to be as follows:

<i>Annual flood series</i>	<i>Recurrence interval, in years</i>	<i>Partial-duration series</i>
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

The table indicates that the two series give virtually the same results for recurrence intervals greater than about 10 years. Because the interest in flood frequencies is most frequently in the range above the 10-year frequency and because of its relative simplicity, the annual flood series was used in this report. The relations given in the preceding table can be used to convert from one series to the other.

RECORDS USED

It has been stated previously that, in general, stations having 5 or more years of record were used in the flood-frequency analyses. The one exception to this statement applies to the flood-frequency relations for Minnesota which were based on stations having 10 or more years of record. The locations of the gaging stations for which data are contained in the report are shown in plate 1. A distinction is made thereon between the stations used in defining the flood-frequency relations and those not used. The latter preponderantly are the stations affected by regulation or diversion.

STATION FREQUENCY CURVES

Plotting positions for the array of flood peaks at a gaging station were computed using the formula, $T = (n + 1)/m$, where T is the recurrence interval in years, n is the number of years of record, and m is the rank of the floods in descending order of magnitude. The points computed were plotted on a special graph paper devised by Powell (1943) to fit the statistical theory of extreme values as developed by Gumbel (1941). On this paper the frequency data for many stations tend to define a straight line. Usually, however, the frequency curve was drawn as the line of best visual fit. In drawing the curve, little weight was given the highest flood because its true

recurrence interval is uncertain. For example, probability considerations indicate that there is about 1 chance in 4 that a 100-year flood will occur in a 30-year record and about 1 chance in 35 that a 1,000-year flood will occur in the same period.

The recurrence interval is the average time between flood events in which the flood associated with the given recurrence interval is equaled or exceeded. Thus, a 20-year flood can be expected to be equaled or exceeded five times in 100 years but not at regular intervals of exactly 20 years. The reciprocal of the recurrence interval in the annual flood series defines the probability of the event occurring in any one year. A 20-year flood, for example, has 1 chance in 20, or a 5-percent chance of occurring in any one year.

Examples of station flood-frequency curves are those for the Fox River (figs. 9 and 10) and for the St. Lawrence River main stem stations (figs. 12-14).

REGIONAL FLOOD FREQUENCY

At any point in time, floods result, to a great extent, from a random combination of various factors. When the passage of time is imposed on this system, obviously the various possibilities for the occurrence of floods become practically boundless. Thus, the flood experience at one gaging station is but a sample, at one point in space and over a relatively infinitesimal span of time, from an infinite population of possible floods. The shortness of most flood records causes the sampling errors to be correspondingly large. In this report area, most records are less than 30 years in length. Benson (1960) in a study of a theoretical 1,000-year flood record, found that, to be right 19 times out of 20 on an average, 31 years of record were needed to define the 25-year flood within 25 percent and 105 years of record were needed to define the same flood within 10 percent.

In addition to the inadequacies of the time sampling, there are those associated with the areal sampling. Obviously, flood records cannot be collected on all streams. Therefore, flood records are combined to reduce the time and areal sampling errors and to provide a means for defining flood frequencies at ungaged sites.

In the method used in this report the flood records have been combined by computing an index value for each record and reducing the records to dimensionless form. Combined records should cover a common period of time and represent areas having similar flood-frequency characteristics.

BASE PERIODS

Several base periods were used in analyzing the records for this report. There is little justification, for example, in trying to relate the flood records in Vermont and Minnesota to a common period.

The one area is so far removed from the other in both distance and hydrologic rapport that interest in the frequency relations between them would be only general or academic. Furthermore, the beginning of stream-gaging programs in the various States composing the area did not coincide; so there is considerable variation in the periods of available records by States. These factors prompted the analysis of flood records by relatively broad, though not all-inclusive, regions, the limits of which in many places coincided with State boundaries. The longest period for which there were records at several representative stations within a region was generally selected as the base period for that region.

Sometimes two base periods were used for a region, the shorter period finally being adjusted to represent the long period. In the Lower Peninsula of Michigan, for example, base periods covering 1946-60 and 1931-60 were used. All records in the region were used to define a flood-frequency curve for the 1946-60 period. This curve was adjusted to represent the 1931-60 period on the basis of the relation shown between curves for the two periods for stations for which both curves could be determined. When records for a station did not exactly coincide with a base period, annual peaks were estimated by correlation with peaks for nearby stations to produce a complete record for one or the other of the base periods. The adjustment and correlation techniques are fully described by Dalrymple (1960).

The base periods used for the analyses made for this report are as follows:

<i>Base period</i>	<i>Applicable to areas in</i>
1913-58 -----	New York.
1914-61 -----	Wisconsin.
1922-61 -----	Ohio.
1929-60 -----	Vermont.
1930-58 -----	Minnesota.
1930-60 -----	Indiana, area near head of Lake Michigan in Illinois, Lower Peninsula of Michigan.
1938-61 -----	Upper Peninsula of Michigan.

MEAN ANNUAL FLOOD

The index flood used for each record is the mean annual flood. According to the theory of extreme values (Gumbel, 1945, and confirmed by Benson, 1960), the mean of all the floods in a population has a value corresponding to the flood of 2.33-year recurrence interval. For each station used in the frequency analyses, the value of the mean annual flood was determined from the station frequency curve at the abscissa representing the 2.33-year recurrence interval. If necessary, it was adjusted to the base period for the region in which the station is located.

HYDROLOGIC AREAS

In order to determine the mean annual flood at ungaged sites, some other measurable characteristic(s) of the stream or drainage basin must be related to the mean annual flood. The most obvious characteristic is size of drainage basin. It is the principal parameter affecting the value of the mean annual flood in this report area. Many other physical factors are recognized as affecting the magnitude of the mean annual flood. Some of these factors are slope of basin and stream channel, altitude, available storage volume, drainage pattern, stream density, basin orientation, surface and bedrock geology, soil depth, and kind and state of cultivation of basin cover. Other investigators have used one or more of these parameters in addition to size of drainage basin; but many of these are difficult to measure, lack specific definition, and are not interregionally significant. Most importantly, development and application of methods using them would require a mass of supplemental data which are not available or readily obtainable at this time. Using only drainage basin size has the virtue of simplicity.

Plotting of the mean annual flood versus size of drainage basin suggested groupings by geographic area. On this basis, 16 "hydrologic" areas were delineated. These hydrologic areas are shown on plate 1 and the curves defining the relations between size of drainage basin and the magnitude of the mean annual flood for each of these areas are shown in figures 2-4. In many places, surface geology seemed to be highly correlated with the hydrologic areas. For that reason, it was given considerable weight in drawing the boundaries of hydrologic areas, especially in places where there were few gaging stations. Records for stations on the main stem of some of the larger rivers reflect an integration of the flood-producing characteristics of the subbasins making up the larger basin. The main stem of these rivers was included in the hydrologic area seeming to have the dominant effect. In general, however, the boundaries of the hydrologic areas were drawn to coincide with drainage divides. The hydrologic areas in Minnesota and New York are the same as those defined in the flood-frequency reports for those States (Prior and Hess, 1961, and Robison, 1961).

Curves for the hydrologic areas in Minnesota and New York, as taken from the State reports, extend to a lower limit of 10 square miles. For the same hydrologic areas outside of these two States, the curves are somewhat deceptive in that the flood data in these areas do not warrant extension of the curves down to 10 square miles.

A lower limit of 30 square miles would be more realistic in these instances. In applying the curves in areas outside of Minnesota and New York, the user is cautioned to check on the probable lower limit of definition in his area of interest. Curves for hydrologic areas else-

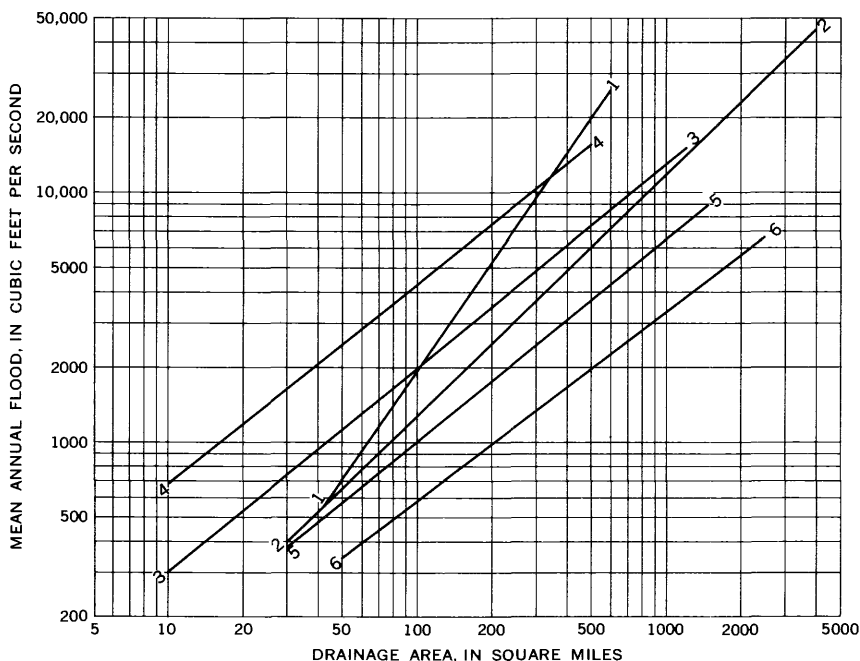


FIGURE 2.—Variation of mean annual flood with drainage area in hydrologic areas 1-6. Use figure 8 for main stem of Menominee River. Use figures 9 and 10 for main stem of Fox River (see text p. 16). Use factor from figure 7 in hydrologic areas 1 and 2, and in the Upper Peninsula of Michigan to adjust for percentage of lake and pond area.

where were drawn to varying lower limits as indicated by the available data.

COMPOSITE FREQUENCY CURVES

The flood-frequency curve can be reduced to dimensionless form by dividing the ordinates by the mean annual flood. Station frequency curves plotted in this way exhibit similarity in shape and slope over relatively large areas. This similarity is interpreted as evidence of homogeneity in flood characteristics and constitutes the basis for combining many station curves to produce one curve representative of a broad region.

As a first step in defining the composite curves, the station frequency curves were subjected to a homogeneity test. This statistical test involves an analysis of the slopes of the individual station frequency curves to determine if differences among them are greater than can be attributed to chance alone. In general, this procedure provided the basis for grouping of stations into homogeneous flood-frequency regions. The homogeneity test, however, is not very restrictive. It was noted that in some areas, within the regions defined by the homogeneity test, the slopes of the individual frequency curves tended to

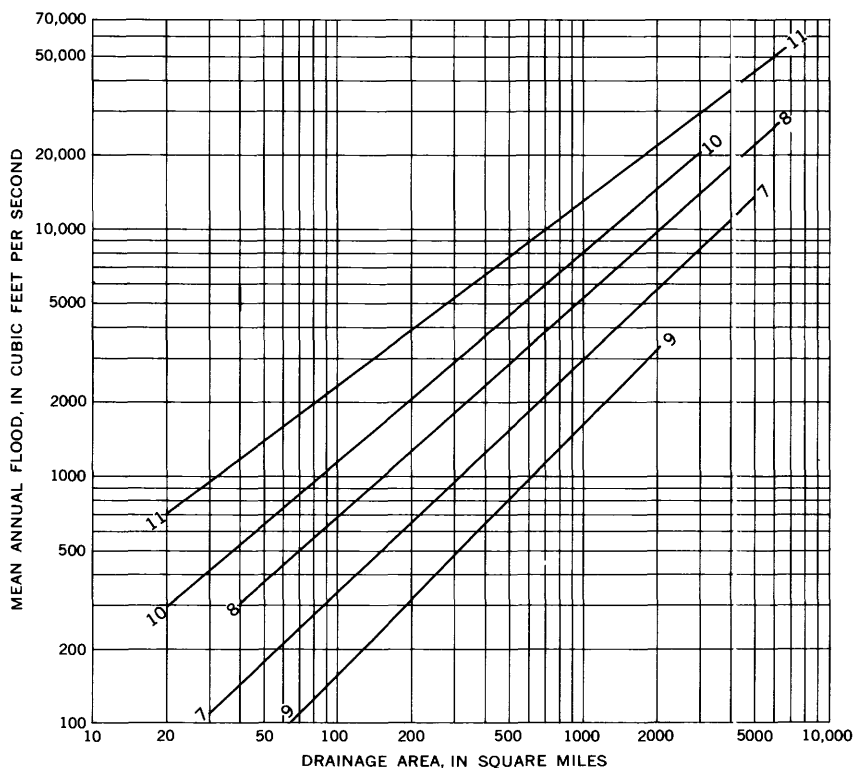


FIGURE 3.—Variation of mean annual flood with drainage area in hydrologic areas 7–11.

be similar. These were considered in the final determination of the boundaries for the flood-frequency regions.

The composite frequency curve representing a region was determined by taking the median of the ratios to mean annual flood at selected recurrence intervals computed for all of the stations included in the region. A smooth curve was drawn upon the basis of the medians so determined. Where two base periods were used, the short-term curve was adjusted to represent the long period as discussed in the section on base periods. Curves for eight flood-frequency regions are shown in figures 5 and 6.

FLOOD-FREQUENCY REGIONS

The eight flood-frequency regions, designated by letters A to H, are shown on plate 1. For the most part, flood records were analyzed for smaller regions than those shown, as discussed in the section on base periods. When the curves for two or more regions, as originally analyzed, were in close agreement, they were combined into one curve, and the regions affected were given one designation. Consequently, the identities of the original regions were lost, and the final curves

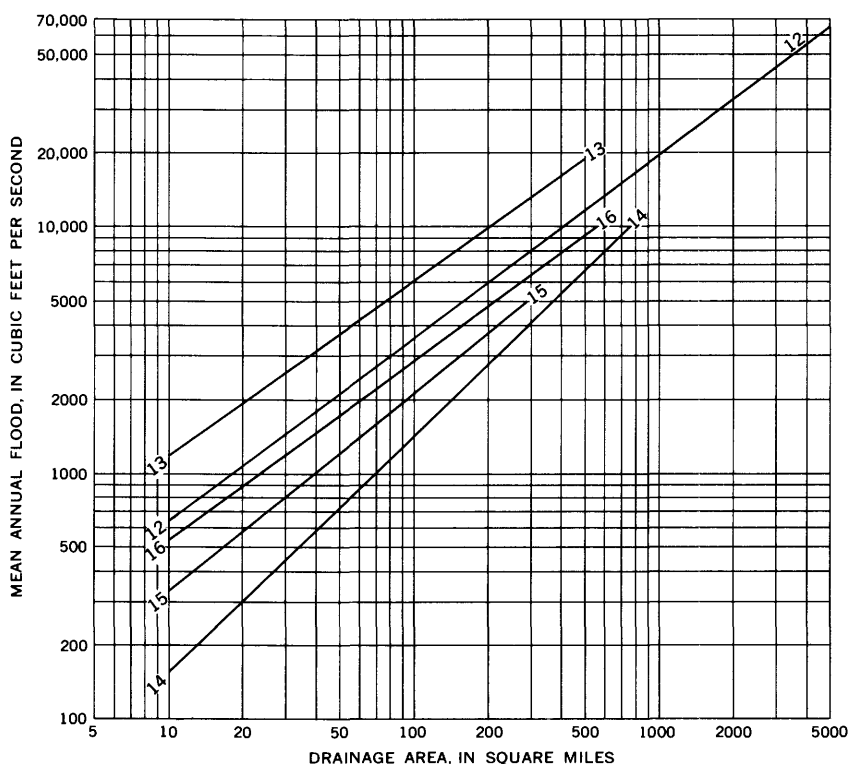


FIGURE 4.—Variation of mean annual flood with drainage area in hydrologic areas 12–16. Use adjustment factor from figure 11 for main stem of Otter Creek, Vt.

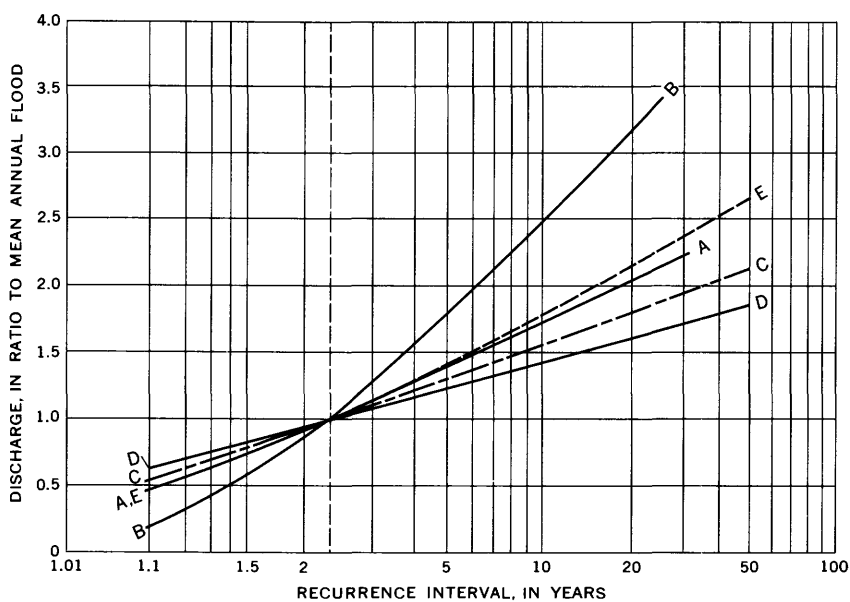


FIGURE 5.—Frequency of annual floods, flood-frequency regions A–E.

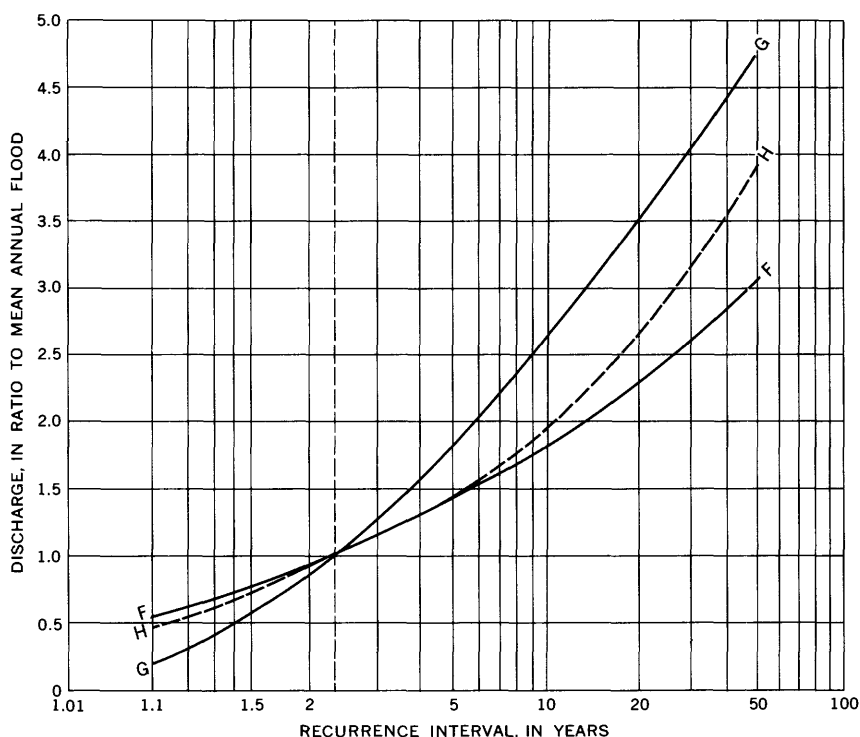


FIGURE 6.—Frequency of annual floods, flood-frequency regions F-H.

and regions shown represent an integration of the various analyses made. Though some may be based on varying base periods, in general, the curves reflect the most up-to-date analyses upon which flood-magnitude-frequency estimates can be made.

The preceding remarks also apply to the hydrologic areas. When the curves for two or more hydrologic areas were in close agreement, they were combined into one curve, and the areas affected were given one designation.

SPECIAL TREATMENT FOR SELECTED AREAS AND STREAMS

The preceding sections describe the methods used to define the flood-magnitude-frequency relations in most of the area covered by this report. Departures from these methods were necessary to derive the relations for certain selected areas and streams. In Minnesota and in the Upper Peninsula of Michigan, the area of lakes and ponds was used as an additional parameter to define the frequency relations. The main stems of some streams indicated flood characteristics unlike those of adjacent or nearby streams and likewise had to be given special treatment. Exceptions to the general relations are discussed briefly in the following paragraphs.

MINNESOTA AND THE UPPER PENINSULA OF MICHIGAN

For hydrologic areas 1 and 2 in Minnesota, Prior and Hess (1961) defined a family of curves using percentage of lake and pond area in a basin as an additional parameter in the relation between size of drainage basin and the magnitude of the mean annual flood. The same relations were retained, but the method of presentation and application has been changed for this report. Instead of using a family of curves for each of the two hydrologic areas, the mean annual flood is adjusted by a factor based upon the percentage of lake and pond area in a basin (fig. 7).

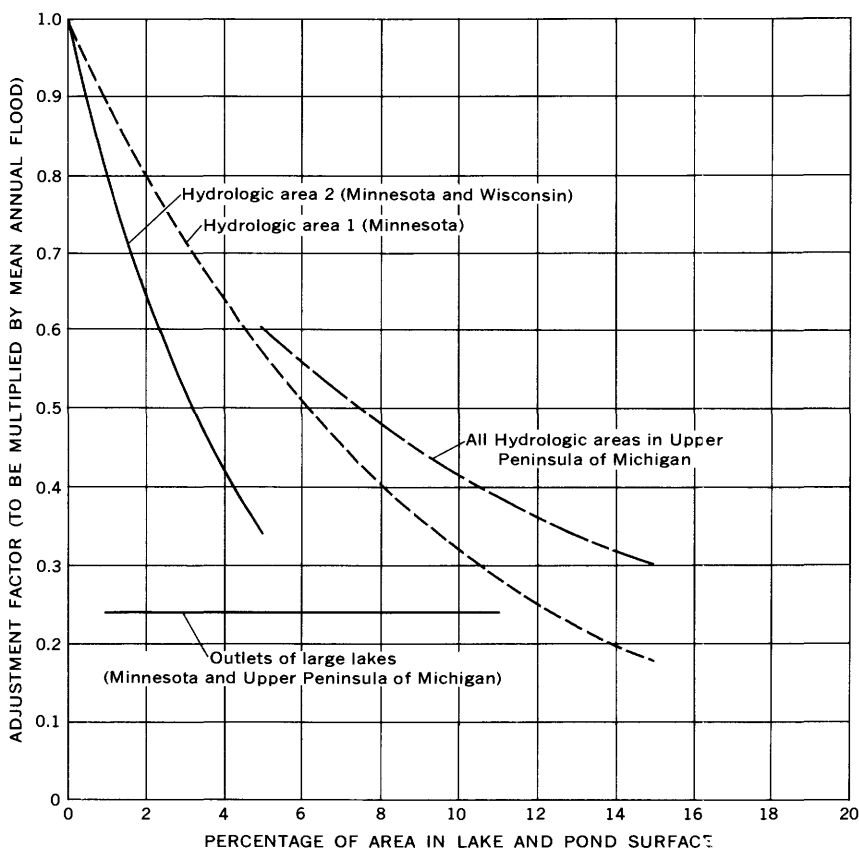


FIGURE 7.—Factor to adjust mean annual flood for percentage of lake and pond area. Applicable only to indicated areas in Minnesota, Wisconsin, and the Upper Peninsula of Michigan.

Analysis of flood data for the Upper Peninsula of Michigan indicated a similar adjustment to the mean annual flood whenever the percentage of lake and pond area in a basin was 5 percent or more.

The adjustment factor curve applicable to the Upper Peninsula is also shown on figure 7.

Available data for gaging stations at the outlets of large lakes in Minnesota and the Upper Peninsula of Michigan indicated a constant adjustment factor of 0.24 to the mean annual flood, shown by the horizontal line in figure 7. Definition of a large lake is not specific but should be considered in relative terms. That is, the size of the drainage basin containing the lake and the normal magnitude of its flood season outflow must be considered in the classification. A lake would be considered large if the change in the lake stage during a period of flood runoff represented a large volume of water in relation to the outflow volume during the same period.

MENOMINEE RIVER, MICHIGAN AND WISCONSIN

Flood peaks on Menominee River can be affected by the operation of powerplants and storage reservoirs. The flood data for it do not represent true random sampling and are not, therefore, subject to analysis by the methods used for regional flood frequency. The data have been used, however, to define the relations shown in figure 8 which is applicable only to the main stem of the stream. The relations are identical to those defined by Ericson (1961).

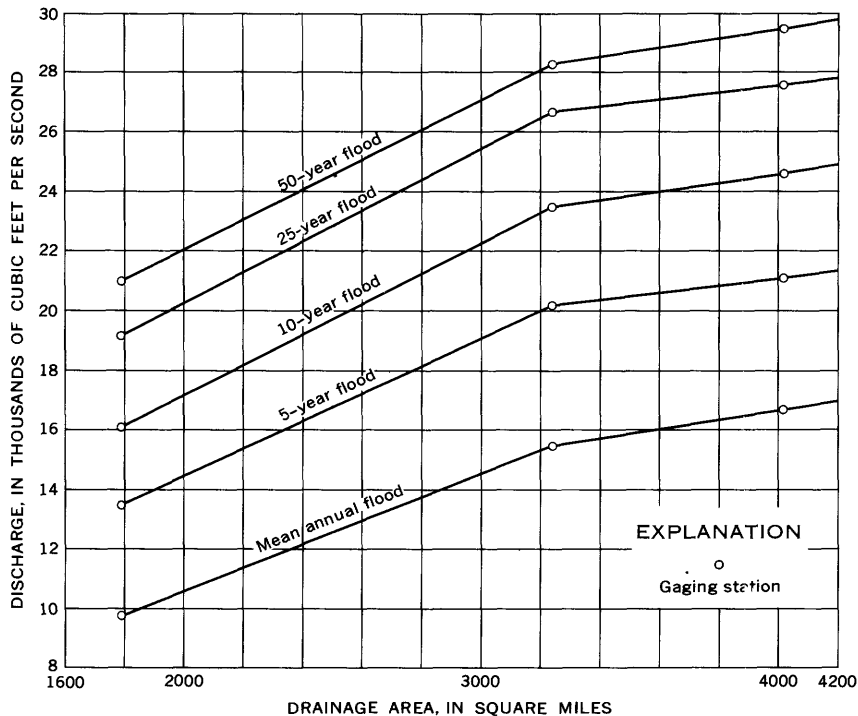


FIGURE 8.—Variation of floods of selected recurrence intervals with drainage area for main stem of the Menominee River, Michigan and Wisconsin.

FOX RIVER, WISCONSIN

Flood data for the two gaging stations on the Fox River did not correlate well with data for other streams in the same general area. For the main stem of the Fox River between the Puchyan and the Wolf Rivers, the frequency curve for the gaging station at Berlin, Wis. (fig. 9), adjusted by the ratio of the drainage areas to the 0.8 power, should be used for determining flood frequencies. From Puchyan River to Buffalo Lake, the flood-frequency relations are undefined for the main stem. Above Buffalo Lake the regional curves apply.

For the main stem of the Fox River downstream from Lake Winnebago, the frequency curve for the gaging station at Rapide Croche Dam, near Wrightstown, Wis. (fig. 10), should be used without adjustment.

OTTER CREEK, VERMONT

A unique characteristic of Otter Creek is the vast amount of valley storage along the main stem that serves to attenuate flood peaks as they pass downstream. The discharge of a specific flood actually decreases as the flood proceeds down the valley. The mean annual flood for points along the main stem downstream from the mouth of Mill River should be adjusted by a factor determined from the curve in figure 11. Upstream from Mill River, the regional curves apply.

ST. LAWRENCE RIVER MAIN STEM

The flow in the St. Lawrence River and in the channels connecting the Great Lakes is remarkably uniform, being moderated by the enormous amount of storage available in the lakes. Figures 12-14 show

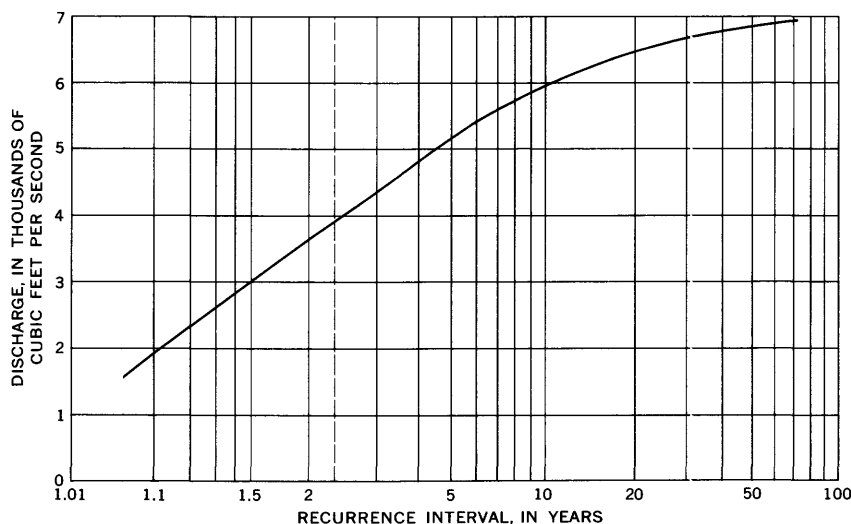


FIGURE 9.—Frequency of annual floods, Fox River at Berlin, Wis., 1898-1961.

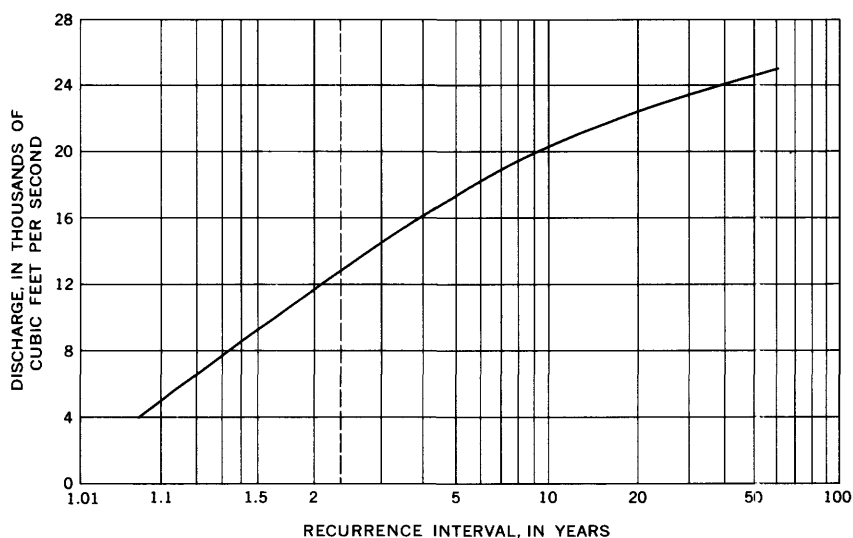


FIGURE 10.—Frequency of annual floods, Fox River at Rapide Croche Dam, near Wrightstown, Wis., 1896-1961.

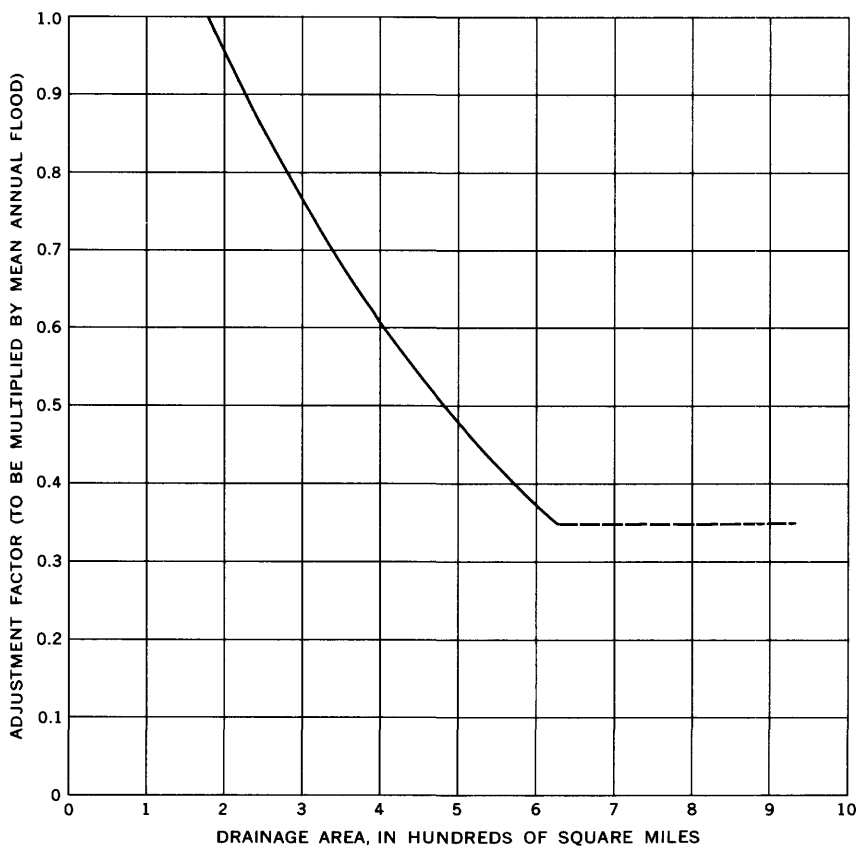
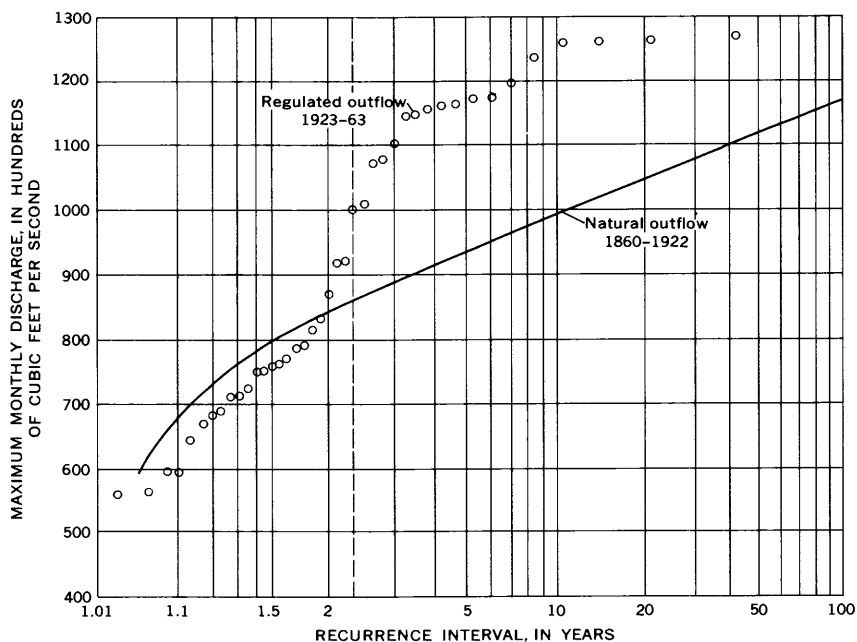


FIGURE 11.—Factor to adjust mean annual flood for main stem of Otter Creek, Vt., downstream from mouth of Mill River near Clarendon, Vt.



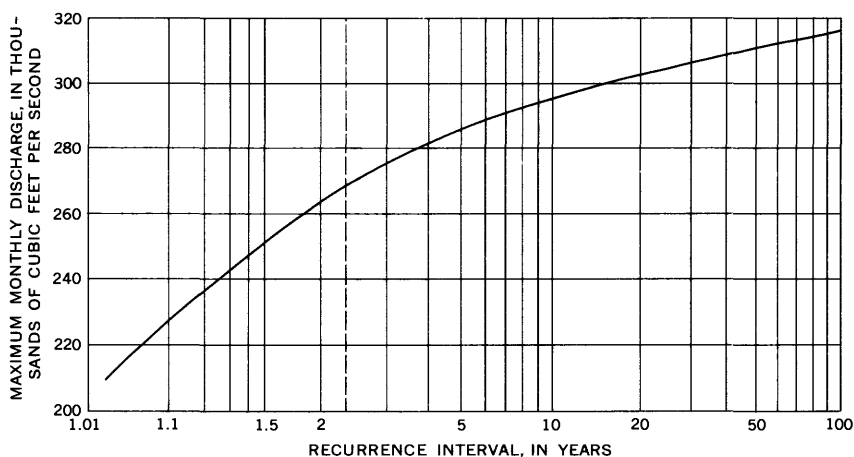


FIGURE 14.—Frequency of annual maximum monthly discharge, St. Lawrence River at Ogdensburg, N.Y., 1860–1963.

the frequency of annual maximum monthly discharges in these channels based upon records dating back to 1860 furnished by the U.S. Lake Survey, Corps of Engineers. The outflow from Lake Superior has been completely regulated since 1922 so that two frequency plots are shown for the St. Marys River at Sault Ste. Marie, Mich. One represents the natural flow prior to 1923, and the other represents the regulated outflow thereafter. For the latter period, only the plotting positions are shown on the illustration. For example, the monthly discharge of the Detroit River that has a recurrence interval of 100 years is only 18 percent greater than the mean annual maximum monthly discharge. The maximum mean monthly flows are generally within 10 percent of the annual maximum daily flows in these channels.

APPLICATION OF METHODS USED

In general, the magnitude of a flood of given recurrence interval at a site unaffected by regulation can be estimated in the following manner:

1. Determine the drainage area of the stream at the selected site.
2. Determine, from plate 1, the hydrologic area and flood-frequency region in which the site is located.
3. Determine, from the appropriate curve in figures 2–4, the magnitude of the mean annual flood for the given size of drainage basin.
4. Determine, from the appropriate curve in figures 5 and 6, the ratio to the mean annual flood for the flood of the selected recurrence interval.
5. Multiply the ratio (step 4) by the mean annual flood (step 3) to obtain the magnitude of the flood corresponding to the selected

recurrence interval. The procedure can be repeated for other recurrence intervals to define a flood-frequency curve for the selected site.

The principal modification of the above procedure involves an adjustment for percentage of lake and pond area in a basin. In an applicable situation, (1) determine the percentage of lake and pond area by planimetering on the best available maps, preferably on topographic maps, (2) determine the adjustment factor from the appropriate curve in figure 7, and (3) multiply the mean annual flood (step 3, preceding paragraph) by the adjustment factor to obtain an adjusted mean annual flood and, using this adjusted figure, proceed to steps 4 and 5 given in the preceding paragraph.

Other exceptions involve flood frequencies for specific streams for which the flood data could not be analyzed by the methods used for regional flood frequency. These exceptions are discussed in the section on special treatment of selected areas and streams (p. 13).

LIMITATIONS AND DISCUSSION

In the preceding sections methods have been presented that will permit estimation of flood magnitude-frequency relations for most streams in the area covered by this report. The methods are applicable to streams not affected by regulation and within the limits of drainage-basin size and flood magnitude defined by the data. Extrapolation beyond these limits is not recommended.

Flood data are characteristically variable, largely because even the longest records are but small samples in time and space from an infinite population of flood events. Sampling errors are therefore correspondingly large. Disregarding the highest flood in a given record tends to halve the effective length of record. Yet, because of the large sampling error that is possible, analyses giving full weight to the highest flood may be more tenuous than those based upon the general trend indicated by the intermediate floods. In the present state of hydrological science, flood data are not amenable to rigorous analytical treatment. Probably no two investigators would obtain identical results. The methods used here really amount to a process of averaging which, in the long run, should provide results consistent with accumulated flood experience.

The curves presented in this report are weakest in providing reasonably accurate results for small streams (generally, drainage areas less than 50 sq. mi.). Analyses of available records on small streams indicate wide scatter about the curves shown or possible extensions thereof. Until better methods for analyzing the flood records on small streams become available, a large margin of possible error must be accepted and provided for in the design of works upon such streams.

The curves presented also do not apply to urbanized areas where a significant part of the natural basin cover has been replaced by impervious areas of pavements and roofs. Nor do they apply to those basins in urban areas where the natural watercourses have been replaced by drains and storm sewers. Data for such areas are too few to afford a basis for analysis. A study covering a small basin near Detroit, Mich. (Wiitala, 1961), indicated that the effect of urban development was to increase the magnitude of the mean annual flood 2 to 3 times. Though it has been postulated that urban development does not change the slope of the frequency curve appreciably, to date no studies have been made of this problem. Flood frequencies for urbanized basins must also await development of new methods of analysis. Streams in the several urban complexes—such as Chicago, Detroit, Cleveland, and others—contained in the report area are therefore excluded from consideration in the application of the analyses contained in this report.

In the Lower Peninsula of Michigan the frequency curves are for a 30-year period, 1931–60. There is evidence, however, that the curves for this region are truly appropriate for a longer period. Flood data for the period 1901–60 were analyzed for six stations in southern Michigan, and the median curve for this period was almost identical with the frequency curve as given for 1931–60. Because these long-term records were all on the larger streams, a 1901–60 base period for southern Michigan was not adopted because of inadequate size sampling.

The user of this report should understand that the curves presented provide one possible answer to a specific problem. Other methods of flood-frequency analysis have been devised that could give a somewhat different answer. Hydrologists and engineers are not yet in complete agreement as to what methods of analysis are best. Sometimes a user may feel compelled to extrapolate the curves presented even though the practice is not recommended. In that event, he should certainly also seek alternative solutions before reaching a final decision. In the design of important engineering works, an investigator would be derelict in his duties if he did not assemble all available data that are pertinent and consider all solutions that are possible. Where failure of a structure may cause loss of human lives, careful attention should be given the extreme flood events that are possible and sometimes do occur.

MAXIMUM KNOWN FLOODS

The maximum known flood stages and discharges and other pertinent data for flood records in Part 4 are contained in tables 1 and 2. The stations are listed in downstream order corresponding to that currently used in surface-water reports of the U.S. Geological Survey.

Table 1 contains the maximum known flood data for gaging stations having 5 or more years of flood records. No distinction is made between crest-stage partial-record stations and the continuous-record stations. Data for stage stations are not included. The stations are identified by permanent numbers that have been used in reports on surface-water supply since 1957. The approximate location of each gaging station, identified by station number, can be determined from plate 1. The period of known floods shows the period during which the peak is known to be the maximum and does not necessarily indicate that the record is complete for that period. The outlets of large lakes and the percentage of lake and pond area in a basin are noted by an appropriate parenthetical entry in the drainage area column for stations where consideration of these factors is required. The hydrologic area and flood-frequency region (pl. 1) in which the station is located are noted. The areal mean annual flood computed from the appropriate hydrologic area curve is shown. Where special treatment of flood data is necessary, reference is made to the figure containing the appropriate flood-frequency relations. Maximum discharge is listed in cubic feet per second and in cubic feet per second per square mile of effective drainage area. The computed recurrence interval for the maximum discharge is shown in the last column. When the computed recurrence interval is beyond the limits of the applicable curve, the ratio of the peak discharge to the discharge of the 25- or 50-year flood, as appropriate, is shown. The maximum stage is listed as a separate entry when it is not coincident with maximum discharge.

Table 2 contains similar data for peak-flow determinations at miscellaneous sites and for unusual floods at short-term gaging stations. Reference to the mean annual flood and recurrence interval of the peak discharge have been omitted from this table. Most of the data in the table apply to outstanding flood events for which the true recurrence interval cannot be reliably determined.

FLOOD RECORDS AT GAGING STATIONS

Following the tables of maximum known floods are flood data for 440 streamflow and selected stage stations. Most of these data were compiled from records collected by the U.S. Geological Survey in cooperation with other Federal agencies, States, and local units of government. Some records of stage only, collected by the U.S. Weather Bureau, are included, as well as some that were collected by private individuals or corporations. The agency or individual furnishing such records is given proper credit in the station description.

A station identification number has been assigned to each of these stations including those not operated by the Geological Survey. The

number appears in the station title and on plate 1 showing the approximate location.

A station description precedes the table of peak stages, discharges, or both. The station description gives the location, drainage area, type of gage, how and over what range of discharges the stage-discharge relation is defined, bankfull stage if known, historical data if available, and a statement on general remarks.

The area of lakes and ponds in a basin is given in the drainage area paragraph for those stations where it is used as a factor in determining the mean annual flood.

Bankfull stage is not subject to precise definition. In general, it is the gage height at which substantial overflow on one or both banks occurs. At some stations the flood stage as reported by the U.S. Weather Bureau is given. The Weather Bureau defines flood stage as the gage height at which flood damage begins.

The "Remarks" paragraph contains a statement that indicates whether annual peaks, peaks above a base, or both were used in the compilation. The base discharge is given for those stations where peaks above a base are compiled. Credit for furnished records, and a statement on regulation as it may affect flood peaks is given in the "Remarks" for some stations.

The table of flood data for most stations contains a list of peak stages and discharges compiled, for the most part, in accordance with the practice used in the reports on the surface-water supply of the United States. Unless otherwise noted, peak discharges listed are the instantaneous peaks. If the peak stage and discharge for a particular flood do not coincide, that fact is indicated by footnote.

At many stations, especially in the northern part of the area, peak stages often occur when the stage-discharge relation is affected by ice. Sometimes a relatively small discharge is associated with an ice-affected flood peak. In order to give the user some idea of the possible magnitude of the ice effect on flood peaks, the backwater associated with ice-affected peaks is given for selected stations where it could be readily determined.

Except for the stations on the main stem of the St. Lawrence River, the peaks are arranged by water year, which extends from October 1 through September 30 and is designated by the calendar year in which it ends. Peaks are listed for all gaging stations for which record is available for 5 or more years through the 1962 water year.

Underlines in the tabular data have the following significance:

1. A horizontal line in "Water year" column means discontinuous record.
2. Line beginning at "Date" column and extending through "Discharge" column means change in site and datum, continuous record.

3. Line in "Gage height" column means change in datum.
4. Line in "Date" and "Discharge" columns means significant change in site but no change in datum.
5. No underlines are used if changes in site and datum have been adjusted to present conditions.

Table 1.--Maximum stages and discharges at gaging stations

Station No.	Gaging station	Drainage area (sq mi.)	Period of known floods (water years)	Flood region and hydrologic area	Areal Q ₂ , 33 (cfs)	Maximum stage and discharge				
						Date	Gage height (feet)	Discharge		
								Cfs	Recur- rence interval (years)	
Streams tributary to Lake Superior										
105	Pigeon River at Middle Falls, below International Bridge, Minn.	600 (15.1)	1924-62	A1	4,550	May 5, 1934	7.6	11,000	18.3	11.13
125	Poplar River at Iatsen, Minn.	114 (8.1)	1913-17, 1928-47, 1953-81	A1	940	May 1, 1954	6.23	1,880	16.5	13
145	Baptism River near Beaver Bay, Minn.	140 (0.4)	1930-62	A1	3,070	Aug. 9, 1939	8.11	9,350	66.8	11.41
155	Second Creek near Aurora, Minn.	26.3	1956-62	A2	-	Apr. 22, 1961	5.64	213	8.10	-
160	Partridge River near Aurora, Minn.	156 (2.2)	1956-62	A2	1,220	Mar. 28, 1957	5.75	-	-	-
165	St. Louis River near Aurora, Minn.	312 (3.1)	1943-62	A2	2,030	May 14, 1950	8.37	5,380	17.2	11.23
170	Embarrass River at Embarrass, Minn.	93.8 (3.3)	1943-62	A2	605	May 9, 1950	10.92	1,740	18.6	11.33
180	Embarrass River near McKinley, Minn.	171 (3.5)	1954-62	A2	1,040	Apr. 20, 1954	11.72	1,690	9.88	12
190	West Two River near Iron Junction, Minn.	88.4 (0.7)	1954-62	A2	770	Apr. 17, 1954	9.85	916	13.4	3.3
195	East Swan River near Toivola, Minn.	112 (0.4)	1954-62	A2	1,300	Apr. 15, 1956	17.94	1,690	15.1	4.1
200	Swan River near Toivola, Minn.	254 (0.4)	1953-61	A2	2,910	Apr. 13, 1954	17.17	2,980	11.7	2.4
210	Whiteface River below Meadowlands, Minn.*	453	1909-17	A2	-	Apr. 21, 1916	12.10	5,960	13.2	-
230	Cloquet River at Independence, Minn.*	750	1910-17	A2	750	Apr. 30, 1916	9.4	5,460	7.28	-
240	St. Louis River at Scanlon, Minn.	3,430	1908-62	A2	22,600	May 9, 1950	15.8	a 37,900	11.0	9.0
255	Bois Brule River at Brule, Wis.	113 (2.8)	1943-62	A2	800	June 5, 1944	5.2	1,520	13.5	15
265	Bad River at Mellen, Wis.	101	1949-55	B3	2,000	July 4, 1949	14.0	4,340	43.0	7.3
270	Bad River near Odenah, Wis.	611	1946-55	B3	8,700	June 24, 1946	18.6	27,700	45.3	20
275	White River near Ashland, Wis.	269	1949-62	B3	4,400	June 24, 1946	22.2	6,270	23.3	3.4
280	Montreal River at Ironwood, Mich.	63.0	1918-22, 1925, 1950-62	A3	1,370	July 1, 1953	7.90	b 3,400	54.0	11.15
290	West Branch Montreal River at Galle, Wis.*	78	1918-22, 1925, 1950-54	A3	-	Apr. 19, 1952	5.10	-	-	-
300	Montreal River near Saxon, Wis.*	262	1919-25, 1943-47, 1939-62	A3	-	Apr. 21, 1923	7.3	1,550	19.9	-
						Apr. 24, 1960	7.50	1,650	6.3	-

[Figure shown in parentheses in drainage area column denotes percent of area in lakes and ponds. LL in parentheses denotes outlets of large lakes]

Station	Name	County	Elevation feet	Gage height feet	Date	Stage feet	Discharge cfs	Velocity ft/sec	Remarks
310	Black River near Bessemer, Mich.	200	1955-62	A3	3,450	Apr. 24, 1960	14.27	14,800	74.0
315	Presque Isle River at Marquette, Mich.	171 (8.5)	1945-62	A3	1,400	Apr. 25, 1960	11.25	3,520	20.6
320	Presque Isle River near Tula, Mich.	261 (5.8)	1945-62	A3	2,450	Apr. 25, 1960	14.04	4,640	17.8
325	Iron River near White Pine, Mich.	98.1 (5.0)	1945-62	A4	4,250	Apr. 19, 1952	7.27	7,900	80.5
330	Middle Branch Ontonagon River near Paulding, Mich.	164 (5.0)	1943-62	A2	1,230	Apr. 30, 1951	10.0	2,050	12.5
345	Middle Branch Ontonagon River near Trout Creek, Mich.*	203	1943-62	A2	-	Nov. 7, 1951	5.05	1,750	8.61
350	East Branch Ontonagon River near Mass, Mich.	272	1943-62	A2	3,400	July 1, 1953	10.57	4,590	16.9
355	Middle Branch Ontonagon River near Rock-land, Mich.	671 c 481	1942-62	A3	7,100	Apr. 24, 1960	10.85	-	-
360	West Branch Ontonagon River near Bergland, Mich.	162 (LL)	1943-62	A3	700	Aug. 22, 1942	21.2	27,000	56.0
375	Cisco Branch Ontonagon River at Cisco Lake Outlet, Mich.	50.7 (LL)	1945-62	A2	160	May 2, 1951	2.10	1,400	8.64
395	South Branch Ontonagon River at Ewen, Mich.	348 c 1,150	1939-62	A2	4,300	Apr. 24, 1960	22.07	13,500	39.8
400	Ontonagon River near Rockland, Mich.	1,150	1942-62	A3	14,600	Aug. 22, 1942	28.6	42,000	36.5
405	Sturgeon River near Sidnaw, Mich.	171	1913-15, 1943-62	A2	2,150	Apr. 24, 1960	11.63	4,630	27.1
410	Perch River near Sidnaw, Mich.*	63.1	1913-15, 1957-62	A2	830	Apr. 24, 1960	11.07	1,100	17.4
415	Sturgeon River near Aiston, Mich.	346	1932-62	A2	4,250	Apr. 24, 1960	53.09	7,360	21.3
420	Sturgeon River near Baraga, Mich.*	379	1928-31, 1943-47	A2	4,600	May 7, 1943	14.87	d 4,830	12.7
425	Sturgeon River near Pelkie, Mich.*	506	1958-62	A2	6,200	Apr. 25, 1960	12.40	8,600	17.0
430	Otte River near Elo, Mich.	187	1943-62	A3	3,000	Apr. 19, 1952	11.52	4,540	27.2
435	Sturgeon River near Arnhem, Mich.	705	1943-62	A2	8,450	Apr. 20, 1952	14.57	15,500	22.0
445	Tahquamenon River near Tahquamenon Para-dise, Mich.	790	1954-62	A5	5,350	May 10, 1960	10.26	6,990	8.84
455									
St. Lawrence River main stem									
456	St. Marys River at Sault Ste. Marie, Mich.	80,000	1860-1963	Fig. 12	-	August 1943	-	e 127,100	1.59
Streams tributary to Lake Michigan									
460	Black River near Garnet, Mich.	28	1932-62	A5	360	May 7, 1960	8.35	860	30.7
475	Manistique River near Germfask, Mich.	120 (LL)	1942-50	A5	280	June 29, 1943	5.76	446	3.72
495	Manistique River at Germfask, Mich.	341 (8.5)	1938-62	A5	1,280	May 10, 1960	8.64	2,250	6.60
490	Driggs River near Seney, Mich.*	70	1938-42	A5	240	Apr. 26, 1939	11.2	531	7.59
525	Walsh Creek near Seney, Mich.*	12	1938-42	A5	-	Apr. 25, 1939	7.5	618	51.5
535	Marsh Creek near Shingletton, Mich.*	20	1938-42	A5	940	Mar. 31, 1933	4.20	268	13.4
545	Duck Creek near Blaney, Mich.	92	1938-54	A5	4,300	Apr. 26, 1933	11.70	1,740	18.9
550	Manistique River near Blaney, Mich.	704	1938-62	A5	4,300	Apr. 26, 1933	13.42	3,300	13.2
555	Creighton River near Shingletton, Mich.	59	1938-62	A5	4,700	Apr. 26, 1933	6.10	552	14.2
560	West Branch Manistique River near Manistique, Mich.	322	1938-56	A5	2,600	Apr. 29, 1939	12.9	5,300	16.5
565	Manistique River near Manistique, Mich.	1,100	1938-62	A5	7,000	May 11, 1960	12.85	16,900	15.4

See footnotes at end of table.

Table 1.--Maximum stages and discharges at gaging stations--Continued

Station No.	Gaging station	Drainage area (sq mi)	Period of known floods (water years)	Flood region and hydrologic area	Areal Q _{2.33} (cfs)	Maximum stage and discharge				
						Date	Gage height (feet)	Discharge		
								Cfs	Cfs per sq mi	Recur-rence interval (years)
Streams tributary to Lake Michigan--Continued										
570	Indian River near Manistique, Mich.....	302 (UL)	1939-62	A5	600	May 12, 1960	-	a 2,030	6.72	11.57
580	Middle Branch Escanaba River near Ishpe- ming, Mich.....	128	1955-62	A5	1,240	June 24, 1943	7.79	2,680	20.9	26
585	East Branch Escanaba River at Gwinn, Mich.....	124	1955-62	A5	1,200	Apr. 25, 1960	14.44	1,920	15.5	7.6
590	Escanaba River at Cornell, Mich.....	870	1904-12, 1951-62	A5	5,800	May 7, 1960	4.90	10,500	12.1	12
595	Ford River near Hyde, Mich.....	450	1955-62	A5	3,400	Apr. 7, 1956	5.72	7,590	16.9	30
605	Iron River at Caspian, Mich.....	92.1	1948-62	A6	550	May 7, 1960	8.27	1,430	15.5	11.21
610	Brule River near Florence, Wis.....	389	1914-15, 1945-62	A6	1,600	July 2, 1953	10.20	4,700	12.1	11.36
615	Paint River at Crystal Falls, Mich.....	597	1945-62	A5	4,300	Jan. 8, 1960	8.01	10,900	18.3	11.18
620	Paint River near Alpha, Mich.....	631	1953-62	A5	-	Apr. 25, 1960	9.82	10,900	12.8	-
625	Michigamme River near Crystal Falls, Mich.*	656	1945-62	A5	-	July 2, 1953	10.50	8,050	11.1	-
630	Menominee River near Florence, Wis.....	1,780	1915-62	Fig. 8	9,800	Apr. 28, 1960	10.73	7,260	10.9	25+
640	Pine River near Florence, Wis.....	500	1914-23	C6	1,950	Apr. 26, 1960	14.15	19,500	9.14	11.11
645	Pine River at Pine River powerplant, near Florence, Wis.....	528	1924-62	C6	2,000	Apr. 23, 1916	9.3	4,570	8.30	11.04
650	Menominee River near Iron Mountain, Mich.*	2,420	1899, 1903-14	Fig. 8	12,400	Apr. 9, 1929	-	a 4,580	6.28	4.5
655	Sturgeon River near Foster City, Mich.....	3,237	1955-62	A6	1,100	Apr. 21, 1906	14.4	15,200	10.8	11.09
660	Menominee River near Fennimore, Wis.....	3,249	1950-62	Fig. 8	15,500	May 8, 1960	10.35	26,900	8.50	28+
665	Pike River at Amberg, Wis.....	3,753	1914-62	C6	1,180	May 10, 1960	7.8	2,800	11.1	11.12
670	Menominee River below Koss, Mich.....	3,790	1908, 1914-62	Fig. 8	16,400	Apr. 10, 1960	-	a 33,000	8.71	11.13
675	Menominee River near McAllister, Wis.....	4,020	1945-61	Fig. 8	16,700	May 9, 1960	20.0	32,500	8.09	11.10
680	Peshtigo River at High Falls, near Crivitz, Wis.....	554	1915-56	C6	2,100	Apr. 11, 1922	-	a 3,670	6.63	17
695	Peshtigo River at Peshtigo, Wis.....	1,124	1954-62	C6	3,630	May 9, 1960	11.59	9,790	8.70	11.26
710	Oconto River near Gillett, Wis.....	678	1907-8, 1914-62	C6	2,450	Apr. 10, 1922	11.2	8,400	12.4	11.62
735	Fox River at Berlin, Wis.....	1,430	1888-1962	Fig. 9	5,900	Mar. 17, 1946	15.5	6,900	4.83	60
747	Hunting River near Elcho, Wis.*.....	6.0	1958-62	C6	-	Sept. 28, 1959	12.98	200	33.4	-
755	Wolf River above West Branch Wolf River, Wis.....	633	1928-62	C6	2,820	May 8, 1960	6.60	3,120	4.93	5.5
770	Wolf River at Keshena Falls, Wis.....	812	1908, 1911-62	C6	2,820	May 7, 1960	9.67	4,490	5.95	16
785	Embarrass River near Embarrass, Wis.....	395	1920-62	C5	3,050	Nov. 17, 1943	13.83	-	-	-
790	Wolf River at New London, Wis.....	2,240	1889-1962	C6	6,200	Apr. 10, 1922	11.6	6,920	17.5	11.07
800	Little Wolf River at Royalton, Wis.....	514	1914-62	C5	3,600	Apr. 13, 1922	11.4	a 15,500	6.92	11.18
810	Waupaca River near Waupaca, Wis.....	272	1917-62	C6	1,830	Apr. 16, 1960	11.6	6,950	13.5	30
						Mar. 30, 1943	8.00	2,520	9.26	27
						Mar. 28, 1950	11.95	-	-	-
						Mar. 20, 1948	6.90	-	-	-
						Mar. 28, 1950	8.06	-	-	-

Table 1.--Maximum stages and discharges at gaging stations--Continued

Station No.	Gaging station	Drainage area (sq mi)	Period of known floods (water years)	Flood region and hydrologic area	Areal Q _{2.33} (cfs)	Date	Maximum stage and discharge			
							Gage height (feet)	Cfs	Cfs per sq mi	Recur-rence interval (years)
Streams tributary to Lake Michigan--Continued										
1010	St. Joseph River at Elkhart, Ind.*	3,339	1888-1962	C7	9,300	Mar. 8, 1908	-	26,000	7.79	1.33
1015	St. Joseph River at Niles, Mich.	3,620	1931-62	C7	10,000	Apr. 5, 1950	13.10	20,200	5.58	38
1020	St. Joseph River at Berrien Springs, Mich.*	4,081	1902-6, 1909-31, 1951-56	C7	11,200	Mar. 27, 1904	-	a 18,600	4.55	13
1025	Paw Paw River at Riverside, Mich.	391	1952-62	C7	1,220	Jan. 23, 1952	8.72	1,650	4.22	5.5
1035	Kalamazoo River at Marshall, Mich.	449	1948-62	C7	1,400	Apr. 2, 1950	8.91	-	-	-
1040	Battle Creek at Charlotte, Mich.	67	1948-54	E8	480	Mar. 29, 1950	8.20	2,130	4.74	9.0
1045	Battle Creek at Bellevue, Mich.	178	1948-53	E8	1,130	Mar. 20, 1948	7.64	722	10.8	6.0
1050	Battle Creek at Battle Creek, Mich.	241	1931-62	E8	1,500	Apr. 7, 1947	6.1	2,190	12.3	14
1055	Kalamazoo River near Battle Creek, Mich.	824	1938-62	E7	2,470	Apr. 7, 1947	4.48	3,640	15.1	33
1060	Kalamazoo River at Comstock, Mich.	1,010	1933-62	E7	3,000	Apr. 8, 1947	7.94	7,290	8.85	1.11
1065	Portage Creek at Kalamazoo, Mich.	48	1948-58	E7	170	July 1954	5.25	6,910	6.85	26
1080	Kalamazoo River near Allegan, Mich.*	1,470	1903-7	E7	4,200	Mar. 28, 1904	-	a 10,260	12.1	1.28
1085	Kalamazoo River near Fennville, Mich.	1,600	1929-62	E7	4,600	Apr. 11, 1947	606.76	17,500	6.97	34
1090	Grand River at Jackson, Mich.	1,174	1936-62	C7	580	June 25, 1937	13.50	1,070	10.9	22
1095	Portage River below Little Portage Lake, near Munith, Mich.	55	1945-56	C8	400	Apr. 6, 7, 1947	13.0	800	14.5	36
1100	Orchard Creek at Munith, Mich.	49	1945-56	E8	370	Apr. 5, 1947	14.88	1,470	30.0	1.50
1108	Grand River at Eaton Rapids, Mich.	584	1904-62	E8	3,300	Mar. 26, 1904	9.2	-	-	-
1110	Grand River near Eaton Rapids, Mich.	661	1949-62	E8	3,650	Apr. 4, 1950	8.15	3,860	5.83	2.6
1110.2	Grand River at Dimondale, Mich.	728	1919-62	E8	4,000	Apr. 6, 1947	8.0	-	-	-
1115	Deer Creek near Dansville, Mich.*	16.3	1955-62	E8	-	May 13, 1956	8.83	570	35.0	-
1116	Cedar River at Williamston, Mich.	250	1919-62	E8	1,540	Apr. 6, 1947	12.0	-	-	-
1120	Sloan Creek near Williamston, Mich.*	9.34	1955-62	E8	-	July 11, 1957	7.35	685	73.3	-
1125	Cedar River at East Lansing, Mich.	355	1903-4, 1911-62	E8	2,100	Mar. 24, 1904	13.4	8,000	22.5	1.43
1130	Grand River at Lansing, Mich.	1,230	1901-62	E8	6,400	Mar. 26, 1904	18.6	24,500	19.9	1.44
1132	Grand River at Grand ledge, Mich.	1,280	1904-62	E8	6,600	Mar. 26, 1904	14.0	-	-	-
1138	Grand River at Portland, Mich.*	1,585	1953-62	E8	7,000	May 13, 1956	11.51	9,100	6.57	4.0
1145	Lookingglass River near Eagle, Mich.	281	1904-62	E8	1,700	Mar. 15, 1920	15.2	2,860	10.2	8.3
1150	Maple River at Maple Rapids, Mich.	434	1945-62	E8	2,550	Mar. 7, 1956	9.9	a 6,500	15.0	42
1160	Grand River at Ionia, Mich.	2,840	1904, 1945-62	E8	13,300	Mar. 20, 1904	11.22	21,500	7.57	7.5
1165	Flat River at Smyrna, Mich.	528	1949-62	E8	3,000	Apr. 1, 1960	23.43	2,500	4.73	1.7
1166	Grand River at Lowell, Mich.	3,640	1904-62	E8	16,800	Apr. 4, 1959	6.74	-	-	-
1170	Quaker Brook near Nashville, Mich.*	7.60	1955-62	E8	-	Apr. 1, 1960	6.81	-	-	-
1175	Thornapple River near Hastings, Mich.	385	1945-62	E8	2,250	Oct. 4, 1954	5.47	294	38.7	-
						Apr. 7, 1947	10.20	6,810	17.7	1.14

1180	Thornapple River near Caledonia, Mich.....	773	1931-38, 1952-62	E8	4,200	May	10, 1956	10.79	6,290	8.14	5.7
1185	Rogue River near Rockford, Mich.....	234	1931-38, 1947-62	E8	1,450	Mar. 7, 1947	14.4	14.4	-	-	-
1190	Grand River at Grand Rapids, Mich.....	4,900	1952-62	E8	22,000	Mar. 28, 1960	8.59	8.59	2,640	11.3	11
1205	Higgins Lake Outlet near Roscommon, Mich.*	58	1901-62	D9	-	Mar. 28, 1904	19.5	19.5	54,000	11.0	35
1210	Muskegon River near Merritt, Mich.....	309	1943-50	D8	980	June 28, 1943	8.3	8.3	1,340	2.38	8.0
1215	Muskegon River at Ewart, Mich.....	1,450	1947-62	D7	-	Apr. 8, 1959	8.16	8.16	-	4.34	-
1220	Muskegon River at Newaygo, Mich.....	2,350	1931, 1934-62	D7	4,200	July 11, 1957	8.25	8.25	7,950	5.34	46
1225	Pine River near Whitehall, Mich.....	7,710	1909-19, 1931-62	D7	6,700	Apr. 9, 1959	14.42	14.42	a 14,750	6.36	11.20
1230	Pere Marquette River at Scottville, Mich.....	709	1958-62	D7	1,200	Mar. 25, 1913	6.06	6.06	1,910	5.02	18
1235	Big Sable River near Friesland, Mich.....	127	1940-62	D7	2,130	Apr. 4, 1959	5.84	5.84	2,740	3.86	6.0
1240	Manistee River near Grayling, Mich.....	159	1943-62	D9	420	Apr. 7, 1959	3.4	3.4	555	4.37	6.5
1245	Manistee River near Sherman, Mich.....	900	1943-62	D9	255	Apr. 18, 1960	1.88	1.88	368	2.44	14
1250	Manistee River near Sherman, Mich.....	900	1904-16, 1931, 1934-62	D7	2,700	Jan. 18, 1962	7.1	7.1	3,570	3.96	6.5
1255	East Branch Pine River near Tustin, Mich.....	63	1953-62	D8	460	Aug. 4, 1956	6.23	6.23	1,410	22.4	1.65
1260	Pine River near LeRoy, Mich.....	118	1953-62	D8	800	Aug. 4, 1956	10.02	10.02	1,550	13.1	11.04
1265	Pine River near Hoxeyville, Mich.....	251	1953-62	D8	1,530	Aug. 6, 1956	6.82	6.82	2,440	9.72	16
1270	Manistee River near Manistee, Mich.....	1,780	1952-62	D7	5,100	Apr. 9, 1954	8.16	8.16	6,800	3.62	7.0
1280	Little Manistee River near Friesland, Mich.*	200	1957-62	D7	650	Feb. 12, 1955	9.15	9.15	-	-	-
1285	Boardman River near Mayfield, Mich.....	223	1953-62	D7	720	Apr. 6, 1959	3.70	3.70	575	2.98	1.6
1290	Sturgeon River near Wolverine, Mich.....	170	1943-62	D7	580	Sept. 14, 1961	4.48	4.48	1,180	6.93	1.13
1295	Indian River at Indian River, Mich.....	583	1945-62	D9	940	May 22, 23, 1960	-	-	a 1,140	1.96	4.5
1300	Pigeon River at Arton, Mich.....	63	1951-62	D7	220	May 15, 1957	a 5.58	a 5.58	e 1,500	23.8	1.19
1305	Pigeon River at Arton, Mich.....	159	1943-62	D7	530	Apr. 17, 1960	6.80	6.80	1,170	7.36	1.19
1310	Cheboygan River near Cheboygan, Mich.....	865	1943-62	D9	1,400	Mar. 31, 1943	10.5	10.5	-	1.90	4.0
1315	Black River near Tower, Mich.....	313	1943-62	D7	1,000	May 13, 14, 1960	a 3.27	a 3.27	a 1,640	-	-
1320	Rainy River near Onaway, Mich.....	79	1942-52	D7	275	Apr. 17, 1960	7.13	7.13	2,340	7.48	1.26
1325	Rainy River near Ocqueoc, Mich.....	85	1953-62	E7	290	Apr. 1, 1943	5.55	5.55	668	8.46	34
1330	Black River near Cheboygan, Mich.....	597	1943-62	D7	1,800	Apr. 18, 1960	6.33	6.33	946	11.1	1.23
1335	Thunder Bay River near Hillman, Mich.....	232	1943-62	D7	750	Apr. 20, 1960	a 5.74	a 5.74	a 2,500	4.18	8.5
1340	Upper South Branch Thunder Bay River near Lachine, Mich.*	171	1946-53	D7	-	Apr. 12, 1947	8.86	8.86	1,380	5.94	46
1345	Thunder Bay River near Bolton, Mich.*	588	1946-62	E7	-	May 27, 1947	4.19	4.19	490	2.86	-
1350	North Branch Thunder Bay River near Bolton, Mich.	194	1946-62	E8	1,180	Apr. 12, 1947	4.60	4.60	3,350	5.70	-
1355	Lower South Branch Thunder Bay River near Hubbard Lake, Mich.*	146	1946-62	E8	-	Apr. 7, 1959	9.12	9.12	2,330	12.7	14
1360	Thunder Bay River near Alpena, Mich.*	1,260	1902-8	E7	3,700	Mar. 30, 1962	9.98	9.98	660	4.52	-
1365	Au Sable River at Grayling, Mich.*	110	1943-62	D9	175	Apr. 13, 1947	7.00	7.00	-	-	-
1370	Au Sable River near Lovells, Mich.*	1,000	1909-16	D9	3,000	Mar. 31, 1950	7.98	7.98	-	-	-
1375	Au Sable River at Mio, Mich.*	1,100	1953-62	D9	-	Apr. 18, 1952	6.08	6.08	-	-	-
1380	See footnotes at end of table.										

See footnotes at end of table.

1495	Flint River near Alicia, Mich.	-	1949-62	E8	-	2,500	Apr. 3, 1960	13.70	-	19.7	15
1500	East Branch Cass River near Cass City, Mich.	251	1949-62	E10	-	-	Mar. 28, 1950	23.07	-	4,940	33
1505	Cass River at Cass City, Mich.	370	1948-62	E10	-	3,500	Mar. 20, 1948	15.80	8,460	22.9	41
1510	Cass River at Vassar, Mich.	700	1948-62	E10	-	6,000	Mar. 20, 1948	20.8	18,000	25.7	15
1515	Cass River at Frankenmuth, Mich.	848	1904, 1910-62	E10	-	7,000	Mar. 18, 1942	20.8	17,700	20.9	15
1520	Cass River at Bridgeport, Mich.	985	1940-62	E10	-	-	Mar. 17, 1954	22.44	-	-	15
1525	Tobacco River at Beaverton, Mich.	1250	1904-28	E10	-	8,000	March	20.7	7,680	15.8	9.5
1535	Salt River near North Bradley, Mich.	437	1948-62	E10	-	4,400	July 9, 1957	12.95	8,200	59.4	17.1
1540	Chippewa River near Mount Pleasant, Mich.	416	1935-62	E11	-	3,000	Mar. 20, 1948	14.95	4,960	11.9	17.1
1545	Chippewa River near Midland, Mich.	597	1931-62	E8	-	2,400	Mar. 8, 1904	12.78	16,000	28.8	41.83
1550	Pine River at Alma, Mich.	288	1904-62	E8	-	3,300	March	15.65	4,400	15.3	40
1555	Pine River near Midland, Mich.	330	1920-62	E8	-	1,750	Mar. 19, 1948	10.81	6,360	16.3	1.05
1560	Tittabawassee River at Midland, Mich.	2,400	1948-62	E10	-	2,280	Mar. 1, 1951	11.20	34,800	14.5	17
1565	Tittabawassee River at Freeland, Mich.*	2,530	1907-62	E10	-	17,000	Mar. 28, 1916	19.7	25,400	10.0	5.0
1567	Tittabawassee River at ShIELDS, Mich.	2,610	1931-36	E10	-	18,000	May 3, 1933	15.2	-	-	-
1570	Saginaw River at Saginaw, Mich.	6,060	1904-28	E10	-	18,500	Mar. 27, 1904	18.25	-	-	-
1575	Sebewaing River (State drain) near Sebewaing, Mich.	62	1904-54	E11	-	26,000	March 1904	20.5	69,000	11.2	46
1580	East Fork Sebewaing River (Columbia drain) near Sebewaing, Mich.	38	1940-54	E11	-	1,630	Mar. 16, 1942	10.36	2,660	42.9	7.5
1585	Pigeon River near Owendale, Mich.	55	1953-62	E11	-	1,120	Mar. 9, 1942	12.8	1,720	45.3	6.4
1590	Pigeon River near Pigeon, Mich.	86	1947-52	E11	-	1,500	Mar. 16, 1943	9.70	2,550	46.4	8.6
1595	Black River near Fargo, Mich.	475	1944-62	E11	-	2,100	Mar. 25, 1950	13.95	3,700	43.0	8.6
1600	Mill Creek near Abbottsford, Mich.	208	1948-62	E10	-	-	Mar. 28, 1950	14.30	-	-	-
1605	Black River near Port Huron, Mich.	634	1933-43	E11	-	9,200	May 12, 1943	24.2	13,600	21.5	5.6
1610	Clinton River at Auburn Heights, Mich.	119	1936-40, 1957-62	E8	-	820	Feb. 12, 1938	8.50	716	6.02	1.8
1615	Paired Creek near Lake Orion, Mich.	38.9	1956-62	E8	-	300	June 18, 1956	3.60	340	8.74	2.9
1620	Red Run near Royal Oak, Mich.*	36.5	1955-62	E11	-	780	Apr. 29, 1956	14.86	4,600	126	4.4
1625	Big Beaver Creek near Warren, Mich.	23.5	1954-62	E11	-	780	Apr. 29, 1956	13.9	1,060	45.1	3.7
1635	Flum Brook near Utica, Mich.	22.9	1954-62	E11	-	4,050	Apr. 5 or 6, 1947	8.60	9,000	20.2	18
1640	Clinton River near Fraser, Mich.	445	1947-62	E10	-	-	-	-	-	-	-
1645	North Branch Clinton River near Mount Clemens, Mich.	199	1948-62	E11	-	3,900	Apr. 30, 1956	16.87	5,830	29.3	5.5
1655	Clinton River at Mount Clemens, Mich.	734	1935-62	E10	-	6,200	Apr. 5 or 6, 1947	20.0	-	-	1.11
1660	Clinton River at Mount Clemens, Mich.	-	1935-62	E10	-	-	Apr. 6, 1947	23.55	21,200	28.9	1.11

See footnotes at end of table.

Table 1.--Maximum stages and discharges at gaging stations--Continued

Station No.	Gaging station	Drainage area (sq mi.)	Period of known floods (water years)	Flood region and hydrologic area	Areal (cfs)	Date	Maximum stage and discharge		
							Gage height (feet)	Cfs	Recur-rence interval (years)
St. Lawrence River main stem									
1656	Detroit River at Detroit, Mich.....	227,920	1860-1963	Ft.13	-	June	-	e 242,000	1.06
Streams tributary to Detroit River									
1660	River Rouge at Birmingham, Mich.....	36.9	1951-62	F10	500	Apr. 29, 1956	5.38	700	19.0
1665	River Rouge at Detroit, Mich.....	185	1931-62	F11	3,660	Mar. 12, 1962	5.60	-	-
1670	Middle River Rouge near Garden City, Mich..	104	1931-33,1948-62	F10	1,200	Apr. 5, 1947	23.0	13,000	70.3
1680	Lower River Rouge at Inkster, Mich.....	82.9	1931-33,1948-62	F11	2,000	Apr. 6, 1947	23.0	2,150	20.7
						May 10, 1948	10.50	2,150	20.7
						Apr. 4, 1950	12.42	3,120	37.6
Streams tributary to Lake Erie									
1690	Hayes Creek at Commerce, Mich.*.....	8	1947-51	F7	-	Apr. 7, 1947	4.25	154	19.3
1695	Huron River at Commerce, Mich.....	51	1946-62	F7	180	Apr. 7, 1947	2.98	266	5.21
1700	Huron River at Milford, Mich.....	125	1949-62	F7	420	May 12, 1948	3.10	-	-
1705	Huron River near New Hudson, Mich.*.....	143	1949-62	F7	115	Apr. 5, 1950	8.25	645	5.16
1715	Ore Creek near Brighton, Mich.....	31	1952-62	F7	950	Dec. 29, 1950	5.05	1,080	7.56
1720	Huron River near Hamburg, Mich.....	299	1945-62	F7	270	May 13, 1956	16.50	1,93	6.22
1725	Portage Creek near Pinckney, Mich.....	79	1945-62	F7	1,450	May 15, 1956	8.35	1,560	5.21
1730	Huron River near Dexter, Mich.....	506	1946-62	F7	890	Apr. 9, 1947	5.72	529	6.70
1735	Mill Creek near Dexter, Mich.....	134	1952-61	F8	890	Apr. 9, 1947	8.17	3,120	6.16
1740	Huron River at Dexter, Mich.....	666	1905-16	F7	2,020	Apr. 29, 1956	12.2	1,300	9.70
1745	Huron River at Ann Arbor, Mich.....	711	1902, 1904, 1906-62	F7	2,150	Mar. 7, 1908	5.00	-	-
1755	Huron River at Flat Rock, Mich.*.....	851	1905-11	F7	2,550	March 1908	-	a 5,840	8.21
1757	River Raisin near Tecumseh, Mich.*.....	266	1957-62	F8	1,620	May 13, 1962	10.66	4,600	5.40
1760	River Raisin near Adrian, Mich.....	455	1931-38, 1954-62	F8	2,600	Apr. 30, 1956	14.87	5,580	5.38
1765	River Raisin near Monroe, Mich.....	1,034	1938-62	F8	5,400	May 19, 1945	10.1	12,900	12.3
1769	Hill ditch at Richards, Ohio*.....	3.23	1947-62	C10	-	Mar. 23, 1949	10.7	-	-
1770	Temple Creek at Toledo, Ohio.....	158	1943-50	C10	-	Feb. 1, 1949	13.50	172	53.3
1774	Eagle Creek tributary near Montpelier, Ohio.*	1.56	1950-61	C10	1,700	Feb. 14, 1950	11.4	3,400	36
1775	St. Joseph River near Blakeslee, Ohio*.....	369	1947-61	C10	3,500	June 1, 1943	12.54	195	21.5
1780	St. Joseph River near Newville, Ind.....	614	1947-62	C10	5,300	May 4, 1956	16.20	-	-
1790	St. Joseph River at Cedarville, Ind.....	783	1932,1956-62	C10	6,800	Dec. 1, 1927	14.60	5,460	14.8
1795	Cedar Creek at Auburn, Ind.....	93	1943-62	C10	1,080	Apr. 6, 1950	17.05	9,710	10
1800	Cedar Creek near Cedarville, Ind.....	279	1947-62	C10	2,700	May 1, 1956	18.07	10,100	22
1805	St. Joseph River near Fort Wayne, Ind.....	1,060	1891-1955	C10	8,500	Apr. 5, 1950	9.90	1,870	17.5
1810	St. Marys River near Willshire, Ohio.....	355	1926-32	C10	3,300	Apr. 5, 1950	11.67	4,870	20
1815						March 1913	22	16,500	15.6
1816						Jan. 15, 1930	16.65	4,260	12.0

FLOOD RECORDS AT GAGING STATIONS

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1815	St. Marys River at Decatur, Ind.....	615	1932-62	C10	5,400	Feb. 10, 1959	11,300	18.4	46
1820	St. Marys River near Fort Wayne, Ind.....	753	1931-62	C10	6,400	Feb. 10, 1959	24.22	-	-
1830	Maumee River at New Haven, Ind.....	1,940	1947-62	C10	14,200	Feb. 16, 1950	13,600	18.1	50
1835	Maumee River at Antwerp, Ohio.....	2,049	1907-62	C10	15,000	Mar. 26, 1913	19,100	9.85	5.3
1845	Bean Creek at Powers, Ohio.....	236	1912-63	C10	2,400	May 20, 1943	26,200	12.8	17
1850	Tiffin River at Stryker, Ohio.....	441	1941-62	C10	4,100	Mar. 27, 1913	40,000	19.5	1.26
1855	Tiffin River near Brunswick, Ohio*.....	766	1913, 1922-28, 1937, 1941-62	C10	4,100	Apr. 29, 1956	4,250	17.9	18
1865	Auglaize River near Port Jennings, Ohio.....	333	1929-35	C10	6,500	Jan. 14, 1930	9,930	13.0	9.0
1875	Auglaize River at Allentown, Ohio.....	168	1922-36, 1941-62	C11	5,700	Jan. 23, 1959	12,000	36.0	48
1880	Ottawa River at Kalida, Ohio*.....	315	1924-62	C11	3,400	Jan. 22, 1959	7,740	46.1	1.08
1885	Eagle Creek near Findlay, Ohio.....	46.5	1931-35	C11	5,500	Jan. 1, 1933	13,900	1.4	1.06
1890	Blanchard River near Findlay, Ohio.....	343	1947-57	C11	1,500	June 7, 1947	2,920	62.8	-
1891	Tidderish Creek near Jenera, Ohio*.....	4.65	1913, 1924-36, 1941-62	C11	5,800	March	22,000	64.1	1.80
1895	Blanchard River at Glandorf, Ohio.....	643	1947-62	C11	-	Feb. 10, 1959	480	103	-
1900	Roller Creek at Ohio City, Ohio*.....	749	1922-28, 1947-51	C11	9,300	Feb. 15, 1950	15,800	24.6	15
1905	Town Creek near Van Wert, Ohio.....	20.4	1923-35	C11	10,400	Jan. 15, 1930	16,800	22.4	12
1910	Auglaize River near Defiance, Ohio.....	2,329	1947-62	C11	-	Feb. 10, 1959	890	180	-
1915	Maumee River near Defiance, Ohio.....	5,530	1946-53	C11	720	Mar. 21, 1948	935	45.8	4.8
1925	Maumee River at Waterville, Ohio.....	6,314	1913, 1916-62 1925-36, 1939-62	C11	24,500	March	120,000	51.5	23.32
1935	Swan Creek at Toledo, Ohio*.....	185	1900-1901, 1913, 1922-36, 1939-62	C10	47,000	Feb. 16, 1950	87,100	15.8	23
1940	South Branch Portage River near Pembervill, Ohio*.....	334	1945-48, 1950	C10	1,930	Apr. 25, 1950	7,140	38.5	1.75
1950	North Branch Portage River near Bowling Green, Ohio.....	54.0	1931-35	E11	5,700	Mar. 14, 1933	7,350	22.0	3.9
1955	Portage River at Woodville, Ohio.....	433	1924-32	E11	1,480	Jan. 10, 1930	962	17.8	1.3
1960	Sandusky River near Bucyrus, Ohio.....	89.8	1913, 1929-35, 1940-62	E11	7,000	March	17,000	39.3	33
1965	St. James Run near Upper Sandusky, Ohio*.....	292	1926-35, 1939-51	E11	2,150	Dec. 14, 1927	5,800	64.6	1.02
1970	Sandusky River at Havens, Ohio*.....	776	1922-36, 1938-62	E11	5,300	Jan. 22, 1959	10,000	35.4	13
1975	Sandusky River near Fremont, Ohio.....	4.28	1922-37, 1939-62	E11	10,800	June 21, 1959	19,000	24.5	10
1980	North Branch Huron River near Norwalk, Ohio.....	1,243	1922-37, 1939-62	E11	15,300	May 12, 1956	312	72.9	11
1985	East Branch Huron River near Norwalk, Ohio.....	84.92	1947-61	E12	-	May 12, 1956	28,000	22.4	-
1990	Vermillion River near Vermillion, Ohio.....	260	1924-35, 1939-62	E12	3,130	May 12, 1956	1,060	21.8	-
2000	East Branch Black River at Elyria, Ohio.....	211	1924-35	E12	9,500	Feb. 26, 1929	4,700	55.4	6.0
2001	Plum Creek at Oberlin, Ohio*.....	4.83	1951-62	E12	7,200	Jan. 22, 1959	20,500	71.1	1.05
2005	Rocky River near Berea, Ohio.....	392	1923-35	E12	6,000	Jan. 21, 1959	13,800	78.8	1.07
2015	Rocky River near Berea, Ohio.....	269	1947-61	E12	-	Mar. 14, 1933	11,400	54.0	13
2015	Rocky River near Berea, Ohio.....	269	1945-62	E12	9,800	Jan. 21, 1959	24,000	61.2	35
2015	Rocky River near Berea, Ohio.....	269	1924-35, 1944-62 1913-62	E12	7,400	Jan. 22, 1959	21,400	73.6	1.09

See footnotes at end of table.

Streams tributary to Lake Ontario										
		22.0	1913-62 1945-62	C12 C12	1,140 5,300	Mar. 7, 1956 Mar. 31, 1960 March	16.04 12.70 14.5	2,700 7,200	123 41.9	.1,28 5.7
2165	Little Tonawanda Creek at Linden, N.Y.....									
2170	Tonawanda Creek at Batavia, N.Y.....	172	1956-62	C12	8,200	Jan. 22, 1959	10.83	19,500	63.1	27
2175	Tonawanda Creek near Alabama, N.Y.*.....	230	1956-62	C12	6,600	Jan. 23, 1959	15.95	9,000	39.1	5.7
2180	Tonawanda Creek at Rapids, N.Y.*.....	358	1956-62	C12	9,100	Apr. 1, 1960	16.96	6,280	17.5	1.3
2185	Ellicott Creek at Williamsville, N.Y.*.....	76.3	1956-62	C12	2,900	Mar. 31, 1960	8.99	5,960	78.1	43
						Mar. 7, 1956	10.44			-
2202.5	West Creek near Hilton, N.Y.*.....	31.0	1958-62	C12	1,480	Mar. 30, 1960	10.67	1,480	47.7	2.3
2205	Dyke Creek at Wellsville, N.Y.*.....	71.4	1956-60	C12	2,750	June 15, 1960	16.10	5,230	73.2	27
2215	Genesee River at Scio, N.Y.*.....	309	1917-62	C12	8,200	Jan. 22, 1959	10.83	19,500	63.1	.1,13
2220	Caneadea Creek at Caneadea, N.Y.*.....	61.5	1950-62	C12	-	Nov. 25, 1950	11.22	-	-	-
2230	Genesee River at Portageville, N.Y.*.....	982	1909-62	C12	19,500	June 15, 1960	10.74	9,600	156	24
2250	Canaseraga Creek near Dansville, N.Y.*.....	153	1911-12, 1916-62	C12	4,900	May 17, 1956	12.81	44,400	45.2	.1,07
2255	Canaseraga Creek at Groveland, N.Y.*.....	181	1916-20, 1956-62	C12	5,500	July 22, 1949	9.93	9,110	59.5	24
2260	Kehequa Creek at Craig Colony, Sonyea, N.Y.*	69.1	1912, 1918-32	C12	2,700	May 22, 1919	18.05	4,380	24.2	1.5
2275	Genesee River at Jones Bridge, near Mount Morris, N.Y.	1,419	1904-62	C12	25,500	Mar. 14, 1918,	5.9	5,940	86.0	.1,04
2280	Conesus Creek near Lakeville, N.Y.*.....	72.0	1920-34	C12	-	May 17, 1916	25.44	55,100	38.8	.1,02
2285	Genesee River at Avon, N.Y.*.....	1,666	1956-62	C12	-	Dec. 1, 1958	3.6	625	8.68	-
2295	Honeoye Creek at Honeoye Falls, N.Y.*.....	187	1946-62	C12	-	Mar. 7, 1956	37.20	15,600	9.36	-
2305	Oatka Creek at Garbutt, N.Y.*.....	208	1946-62	C14	2,900	Mar. 28, 1950	6.42	4,630	23.5	-
2310	Black Creek at Churchville, N.Y.*.....	123	1946-62	C14	1,700	Mar. 31, 1960	8.64	6,920	33.3	.1,13
2315	Genesee River at Rochester, N.Y.*.....	2,450	1904-18	C12	-	Mar. 31, 1960	9.44	4,880	39.7	.1,36
2320	Genesee River at Driving Park Avenue, Rochester, N.Y.*	2,467	1865-1962	C12	-	Mar. 30, 1916	12.3	48,300	19.7	-
2321	Sterling Creek at Sterling, N.Y.*.....	44.4	1920-62	C12	-	Mar. 18, 1865	-	54,000	21.9	-
2330	Cayuga Inlet near Ithaca, N.Y.*.....	36.7	1958-62	C12	1,920	Apr. 2, 1940	17.08	-	-	-
2340	Fall Creek near Ithaca, N.Y.*.....	124	1926-62	C12	1,670	Apr. 4, 1960	5.13	1,490	33.6	1.5
2350	Canandaigua Lake Outlet at Chapin, N.Y.*.....	199	1940-62	C12	4,200	Aug. 13, 1942	7.58	4,110	112	.1,16
2355	Owasco Lake Outlet near Auburn, N.Y.*.....	208	1913-62	C12	-	July 8, 1935	9.52	15,500	125	.1,75
					-	Mar. 17, 1942	4.64	1,100	10.0	-
					-	Mar. 19, 1936,	4.88	2,090	-	-
					-	Apr. 9, 1940	-	-	-	-
					-	Apr. 4, 1950	-	2,090	-	-
2375	Seneca River at Baldwinsville, N.Y.*.....	3,130	1950-62	C12	-	Apr. 4, 1960	9.21	a 17,200	5.50	-
2390	Onondaga Creek at Dorwin Avenue, Syracuse, N.Y.*	88.9	1952-62	C12	-	Mar. 31, 1960	5.06	2,130	24.0	-
2395	Onondaga Creek at Syracuse, N.Y.*.....	98.2	1940-49	C12	-	Feb. 25, 1961	5.11	-	-	-
2415	East Branch Fish Creek at Fish Creek, near Constableville, N.Y.*	75	1924-32	G4	3,400	Dec. 30, 1942	9.58	3,980	40.5	-
2425	East Branch Fish Creek at Taberg, N.Y.*.....	189	1924-62	G4	7,100	Apr. 6, 1928	8.3	5,520	73.6	4.2
2435	Oneida Creek at Oneida, N.Y.	112	1950-62	C12	3,900	Mar. 28, 1950	10.90	13,600	72.0	5.5
					-	Jan. 22, 1959	13.78	7,440	66.4	27
					-	Jan. 22, 1959	14.30	-	-	-
2440	Chittenango Creek near Chittenango, N.Y.*.....	67.7	1950-62	C12	2,650	Mar. 29, 1956	6.8	2,760	40.8	2.5
2445	Chittenango Creek at Chittenango, N.Y.*.....	76.0	1902-6	C12	2,900	Apr. 4, 1956	7.18	4,700	61.8	12
2450	Limestone Creek at Fayetteville, N.Y.*.....	85.7	1940-62	C12	3,200	Dec. 15, 1901	7.0	7,010	81.8	.1,04
2465	Oneida River at Caughdenoy, N.Y.*.....	1,377	1948-62	C12	-	Mar. 29, 1950	7.78	a 9,160	6.65	-

See footnotes at end of table.

Table 1.--Maximum stages and discharges at gaging stations--Continued

Station No.	Gaging station	Drainage area (sq mi)	Period of known floods (water years)	Flood region and hydrologic area	Areal Q _{2.33} (cfs)	Date	Maximum stage and discharge			
							Gage height (feet)	Cfs	Discharge	
									Cfs per sq mi	Recurrence interval (years)
Streams tributary to Lake Ontario--Continued										
2490	Oswego River at lock 7, Oswego, N.Y.*.....	5,121	1901-61, 1934-62	C12	-	Mar. 28, 1936	13.10	37,500	7.32	-
2500	Orwell Brook near Altmar, N.Y.*.....	22.3	1934-62	C12	-	Apr. 10, 1940	13.46	-	-	-
2507.5	Sandy Creek near Adams, N.Y.*.....	128	1912-16	C12	1,150	Apr. 7, 1912	5.5	610	27.4	1.1
2525	Black River near Boonville, N.Y.*.....	295	1959-62	C12	4,200	Apr. 2, 1959	9.40	6,100	47.7	7.0
2525	Sugar River at Talcottville, N.Y.*.....	42	1911-62	C12	7,900	Mar. 28, 1913	12.5	12,400	42.0	10
2530	Middle Branch Moose River at Old Forge, N.Y.*.....	52.1	1927-32	G4	2,150	Jan. 8, 1930	5.3	2,800	66.7	3.0
2535	N.Y.*		1912-62	C12	-	Mar. 23, 1921	-	a 862	16.5	-
2540	Middle Branch Moose River near McKeever, N.Y.*	148	1926-62	C12	-	Apr. 27, 1926	6.6	2,100	14.2	-
2545	Moose River at McKeever, N.Y.*.....	365	1901-62	C12	9,200	Dec. 22, 1958	7.51	-	-	-
2550	Otter Creek near Glenfield, N.Y.*.....	64.3	1925-33	C15	1,500	June 3, 1947	17.45	f18,700	51.2	40
2555	Independence River at Sperryville, N.Y.*.....	85	1928-42	C15	1,850	Apr. 8, 1928	7.1	2,130	33.1	6.7
2560	Independence River at Donnattsburg, N.Y.*.....	91.7	1943-62	C15	1,970	Oct. 6, 1932	9.2	4,700	55.3	41.20
2570	Beaver River below Stillwater Dam, near Beaver River, N.Y.*	172	1909-62	C12	-	Oct. 2, 1945	8.8	3,410	37.2	16
2580	Beaver River at Croghan, N.Y.*.....	294	1931-62	C12	-	May 3, 1926	-	3,700	21.5	-
2585	Deer River at Copenhagen, N.Y.*.....	89	1930-56	G4	3,900	May 13, 1943	6.47	4,310	14.7	23
2587	Deer River at Deer River, N.Y.*.....	98.1	1957-62	G4	4,250	Sept. 1, 1941	12.08	14,400	162	-
2595	Black River at Black River, N.Y.*.....	1,853	1897-1920	C12	31,000	Jan. 31, 1947	13.18	-	-	4.8
2605	Black River at Watertown, N.Y.*.....	1,876	1869-1962	C12	31,000	Dec. 21, 1957	6.10	7,460	76.0	-
Streams tributary to St. Lawrence River										
2610	Oswegatchie River at Cranberry Lake, N.Y.*.	144	1924-62	C14	-	Jan. 23, 1957	9.20	-	-	-
2615	Oswegatchie River at Newton Falls, N.Y.*.	171	1913-22	C14	-	Mar. 28, 1913	7.70	1,940	13.5	-
2620	Oswegatchie River near Oswegatchie, N.Y.*.	263	1925-62	C14	-	Apr. 12, 1947	6.98	4,790	12.3	-
2625	West Branch Oswegatchie River near Harrisville, N.Y.	258	1917-62	C14	3,500	Apr. 6, 1928	7.1	6,920	15.6	-
2630	Oswegatchie River near Heuvelton, N.Y.*.....	973	1917-62	C14	-	Jan. 9, 1930	9.6	13,600	26.8	34
2635	Oswegatchie River near Ogdensburg, N.Y.*.....	1,580	1904-16	C14	-	Apr. 6, 1960	10.36	19,600	20.1	-
St. Lawrence River main stem										
2640	St. Lawrence River at Ogdensburg, N.Y.*.....	295,200	1918-62	Fig. 14	-	Mar. 31, 1905	10.15	15,800	10.1	-
			1861-1962			May	-	a 315,000 e 314,000	1.07 1.06	-
Streams tributary to St. Lawrence River										
2645	North Branch Grass River near South Colton, N.Y.*	25.6	1925-32	C14	380	Apr. 25, 1926	4.3	700	27.1	22

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2650	Grass River at Pyrites, N.Y.*.....	335	1925-62	C14	4,500	Nov. 18, 1927	13.0	8,300	24.8	22
2655	Raquette River at Pierceland, N.Y.*.....	722	1909-62	C14	-	May 16, 1943	12.09	8,240	11.4	-
2675	Raquette River at South Colton, N.Y.*.....	939	1953-62	C14	-	Apr. 22, 1954	9.07	9,330	8.87	-
2680	Raquette River at Raymondville, N.Y.*.....	1,131	1944-62	C14	-	Apr. 17, 1954	7.60	11,000	9.73	-
2685	Raquette River at Massena Springs, N.Y.*...	1,197	1906-16	C14	-	Feb. 22, 1954	9.24	-	13.8	-
2690	St. Regis River at Brasher Center, N.Y.*...	616	1911-62	C14	8,000	Apr. 6, 1937	12.82	16,500	27.3	48
2695	Deer River at Brasher Iron Works, N.Y.*.....	189	1913-16, 1959-62	C14	2,600	Apr. 6, 1937	15.3	-	-	-
2700	Salmon River at Chasm Falls, N.Y.*.....	132	1926-62	C14	1,800	Jan. 17, 1913	9.3	9,700	51.3	11.77
2705	Chateaugay River near Chateaugay, N.Y.*.....	112	1927-62	C14	-	Apr. 8, 1928	5.0	2,890	21.9	12
2715	Great Chazy River at Perry Mills, N.Y.*.....	247	1929-62	C14	3,350	Apr. 7, 1937	7.3	2,060	18.4	19
2730	Saranac River at Saranac, N.Y.*.....	521	1931-47	C14	-	Mar. 9, 1946	11.5	-	24.3	-
2735	Saranac River at Plattsburgh, N.Y.*.....	608	1904-62	C14	-	July 13, 1947	9.15	9,000	17.3	-
2740	West Branch Ausable River near Lake Placid, N.Y.	116	1920-62	C12	3,900	Dec. 2, 1936	12.74	-	18.9	-
2745	Black Brook at Black Brook, N.Y.*.....	49.4	1925-62	C12	-	Apr. 8, 1928	-	11,500	93.1	11.31
2750	East Branch Ausable River at Au Sable Forks, N.Y.	198	1925-62	C12	5,900	Sept. 22, 1938	12.20	10,800	102	-
2755	Ausable River near Au Sable Forks, N.Y.*...	448	1911-62	C12	10,800	Sept. 22, 1938	11.65	1,050	54.0	11.06
2762	Bouquet River at New Russia, N.Y.*.....	37.6	1949, 1951, 1953, 1956-62	C15	960	Mar. 27, 1934	14.0	-	119	11.62
2765	Bouquet River at Willsboro, N.Y.*.....	275	1924-62	C15	4,800	Dec. 21, 1957	13.5	4,480	-	11.17
2790	Lake George Outlet at Ticonderoga, N.Y.*...	234	1943-62	C12	-	Oct. 1, 1924	10.85	11,900	42.9	-
2800	Poultney River below Fair Haven, Vt.*.....	197	1929-62	H16	4,500	June 5, 1947	-	a 1,290	5.51	-
2815	East Creek at Rutland, Vt.*.....	51.1	1941-62	C12	-	July 20, 1945	24.36	14,900	79.1	33
2820	Otter Creek at Center Rutland, Vt.*.....	307	1929-62	C12	6,230	June 3, 1947	20.3	f 36,500	714	-
2825	Otter Creek at Middlebury, Vt.*.....	629	1904-6, 1911-19, 1929-62	P1g, 11	4,900	Sept. 22, 1938	12.45	13,700	44.6	11.04
2840	Jail Branch at East Barre, Vt.*.....	40.4	1921-62	C12	-	Nov. 4, 1927	13.3	n 13,600	21.7	11.32
2855	North Branch Winooski River at Wrights-ville, Vt.*	69.2	1929-62	C12	-	November 1927	-	11,500	295	-
2860	Winooski River at Montpelier, Vt.*.....	397	1910-23, 1928-62	C12	-	Nov. 3, 1927	27.1	n 57,000	144	-
2865	Dog River at Northfield, Vt.*.....	52	1910-20, 1928-34	C12	2,200	Nov. 3, 1927	10.9	n 9,000	154	11.72
2870	Dog River at Northfield Falls, Vt.*.....	76.1	1935-62	C12	2,900	Sept. 21, 1938	11.53	9,750	128	11.59
2890	Mad River near Morstow, Vt.*.....	139	1928-62	C12	4,600	Nov. 3, 1927	19.4	n 23,000	165	12.37
2890	Little River near Waterbury, Vt.*.....	111	1936-62	C12	-	Mar. 19, 1936	19.38	6,520	158.7	-
2905	Winooski River near Essex Junction, Vt.*...	1,044	1928-62	C12	20,500	Nov. 4, 1927	50.4	112,000	108	12.60
2910	Green River at Garfield, Vt.*.....	18	1915-20, 1923-52	C12	990	Nov. 3, 1927	7.6	2,000	111	40

Table 1.--Maximum stages and discharges at gaging stations--Continued

Station No.	Gaging station	Drainage area (sq mi)	Period of known floods (water years)	Flood region and hydrologic area	Areal Q _{2.33} (cfs)	Maximum stage and discharge				
						Date	Gage height (feet)	Discharge		Recurrence interval (years)
								Cfs	cfs per sq mi	
Streams tributary to St. Lawrence River--Continued										
2915	Lamolle River at Cadys Falls, Vt.*	268	1914-23	C12	7,400	Oct. 1, 1920	11.63	8,730	32.6	3.5
2920	Lamolle River at Johnson, Vt.	310	1911-13, 1929-62	C12	8,200	November 1927	-	n 36,600	137	2.35
2925	Lamolle River at East Georgia, Vt.	686	1930-62	C12	14,800	Mar. 18, 1936	16.48	13,000	41.9	11
2930	Missisquoi River near North Troy, Vt.	131	1932-62	C12	4,300	Mar. 19, 1936	12.52	23,200	33.8	10
2935	Missisquoi River near Richford, Vt.	479	1912-23, 1928-62	C12	11,500	Apr. 3, 1939	18.81	-	-	-
2960	Black River at Coventry, Vt.	122	1952-62	C15	2,500	May 3, 1940	12.87	7,980	60.9	24
						November 1927	23.1	45,000	93.9	21.89
2965	Clyde River at Newport, Vt.*	142	1910-24, 1929-36, 1939-62	C15	-	Nov. 28 or 29, 1959	7.20	3,010	24.7	3.8
						Mar. 20, 1936	5.76	3,900	27.5	-

* Not used in flood-frequency analysis.

† Ratio of peak discharge to that of 25-year flood.

‡ Ratio of peak discharge to that of 50-year flood.

a Maximum daily.

b Computed estimate at site 2 miles downstream.

c Effective area for most floods.

d May have been greater in May 1928.

e Maximum monthly.

f Caused by failure of dam.

§ Maximum observed.

h Occurred when earthfill wall near powerplant was dynamited to relieve pressure on dam; after flow stabilized, maximum discharge was 4,430 cfs, May 8, 1960.

i Maximum known, from information by Corps of Engineers.

j Estimated.

k Maximum known, from records of city of Batavia, N.Y.

m Maximum known, from New York State Museum Bulletin 85.

n Maximum known.

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and place of determination	Drainage area (sq mi.)	Flood region and hydrologic area	Areal Q2.33 (cfs)	Date	Maximum flood			Recurrence interval (years)
							Gage height (feet)	Cfs	Cfs per sq mi.	
Streams tributary to Lake Erie--Continued										
34	-	Blanchard River near Forest, Ohio.....	82.5	C11	2,000	Jan. 21, 1959	-	12,300	149	*2.93
35	-	Swan Creek near Swanton, Ohio.....	(e)	C10	-	Apr. 25, 1950	-	1,690	-	-
36	-	Blystone ditch at Monclova, Ohio.....	6.36	C10	-	Apr. 25, 1950	-	432	67.8	-
37	-	Swan Creek at Johnston Corners, Ohio.....	176	C10	1,850	Apr. 25, 1950	-	7,140	40.6	*1.84
38	-	Sandusky River at Tiffin, Ohio.....	965	E11	12,800	Feb. 16, 1950	-	15,000	15.5	3
39	-	Spencer Creek near Tiffin, Ohio.....	7.09	E11	-	Jan. 21, 1959	-	1,110	157	-
40	-	Wolf Creek near Westport, Ohio.....	5.74	E11	-	Sept. 5, 1947	-	631	110	-
41	-	Wolf Creek tributary near Westport, Ohio.....	1.54	E11	-	Sept. 5, 1947	-	248	161	-
42	-	Wolf Creek tributary near Bascom, Ohio.....	5.70	E11	-	Sept. 5, 1947	-	785	138	-
43	-	Raccoon Creek at Clyde, Ohio.....	12.4	E11	-	May 12, 1956	-	1,290	104	-
44	-	Mill Creek at Warrensville Heights, Ohio.....	3.04	E12	-	June 1, 1959	-	1,710	562	-
45	-	Big Creek at Cleveland Zoo, Ohio.....	37.5	E12	1,700	Jan. 22, 1959	-	46,000	160	*1.33
46	-	Don Brook at Cleveland, Ohio.....	8.60	E12	-	June 1, 1959	-	2,860	333	-
47	-	Euclid Creek tributary at South Euclid, Ohio.....	2.19	E12	-	June 1, 1959	-	1,200	548	-
48	-	Mill Creek at Erie, Pa.....	12.8	E12	770	Aug. 3, 1915	-	13,500	806	*6.38
49	-	Mill Creek at Erie, Pa.....	12.8	E12	760	Mar. 16, 1942	-	9,710	771	*4.83
50	-	Sixteenmile Creek at North East, Pa.....	12.8	E12	-	Mar. 25, 1954	-	1,180	203	-
51	-	Goose Creek at Dunkirk, N.Y.....	84	C12	-	June 11, 1940	-	1,480	421	-
52	-	Upper Brook at Forestville, N.Y.....	2.6	C12	900	June 11, 1940	-	5,700	365	*3.02
53	-	Silver Creek at Smith Mills, N.Y.....	15.7	C12	-	June 24, 1940	-	4,540	-	-
54	-	Cattaraugus Creek at Springville, N.Y.....	63.1	C13	4,400	June 19, 1940	-	2,100	752	1
55	-	South Branch Cattaraugus Creek at Otto, N.Y.....	2.06	C13	-	Sept. 12, 1953	-	1,580	818	-
56	-	Grannis Brook at Gowanda, N.Y.....	2.08	C13	-	May 26, 1953	-	2,520	179	13
57	-	Smoke Creek near Orchard Park, N.Y.....	3.08	C13	1,400	Mar. 1, 1955	-	2,350	156	8
58	-	Smoke Creek at Lackawanna, N.Y.....	13.0	C13	-	Mar. 1, 1955	-	2,120	156	8
59	-	South Branch Smoke Creek at Lackawanna, N.Y.....	13.6	C13	1,450	Mar. 1, 1955	-	6,770	48.7	2
60	-	Buffalo Creek at Blossom, N.Y.....	139	C13	7,600	May 26, 1953	-	1,310	530	-
61	-	West Branch Cazenovia Creek tributary near East Aurora, N.Y.....	2.47	C13	-	May 26, 1953	-	-	-	-
Streams tributary to Niagara River										
62	-	Buffalo River near Buffalo, N.Y.....	420	C13	17,000	Mar. 1, 1902	-	23,000	54.8	6
63	-	Erie Forge Canal at 10th St., Macedon, N.Y.....	12.5	C12	750	Dec. 3, 1954	-	e 762	70.8	4
64	-	Bull Creek near North Tonawanda, N.Y.....	610	C12	13,500	Feb. 17, 1954	-	885	17.4	2
65	-	Tonawanda Creek at State Dam, at Tonawanda, N.Y.....	9.09	C12	-	Mar. 30, 1896	-	10,600	118	-
66	-	Bergholtz Creek at Bergholtz, N.Y.....	-	C12	-	Feb. 17, 1954	-	1,070	-	-
Streams tributary to Lake Ontario										
67	-	East Branch Eighteenmile Creek near Lockport, N.Y.	41.5	C12	1,820	Feb. 17, 1954	-	2,180	52.5	4
68	-	Branch Oak Orchard Creek at Langton Corners, near Elba, N.Y.	3.19	C12	-	July 4, 1949	-	216	67.7	-
69	2210	Genesee River at Wellsville, N.Y.....	288	C12	7,800	Mar. 8, 1956	-	15,800	54.9	40

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and place of determination	Drainage area (sq mi.)	Flood region and hydrologic area	Areal Q _{2.33} (cfs)	Date	Maximum Flood				Recur- rence interval (years)
							gage height (feet)	Cfs	Cfs per sq mi.	Discharge	
Streams tributary to Lake Ontario--Continued											
118	-	Canaseraga Creek near Chittenango, N.Y.	11.1	C12	700	Aug. 3, 1957	-	929	83.7	5	
119	-	Cowasselon Creek at Merrillville, N.Y.	9.24	C12	-	Aug. 4, 1957	-	2,740	297	-	
120	-	Clockville Creek at Lenox Furnace, N.Y.	11.1	C12	700	Aug. 4, 1957	-	488	44.0	1	
121	2448	Butternut Creek near Jamesville, N.Y.	32.7	C12	1,550	Mar. 30, 1960	-	1,200	36.7	1	
122	2455	Chittenango Creek at Bridgeport, N.Y.	311	C12	8,200	-	-	e 4,100	13.2	-	
123	2470	Onida River at Oak Orchard, near Euclid, N.Y.	1,433	C12	25,300	Mar. 25-27, 1903	-	e 13,800	9.63	-	
124	2475	Oswego River at Fulton, N.Y.	5,043	C12	65,000	Mar. 27, 1936	-	e 35,100	6.96	-	
125	-	Oswego River at Battle Island, above Minetto, N.Y.	5,111	C12	66,000	Apr. 2, 1904	-	22,000	4.30	-	
126	-	Salmon River at Stillwater Bridge, near Redfield, N.Y.	188	04	7,000	Mar. 27, 1913	-	10,000	53.2	3	
127	-	Beaverdam Creek near Altmar, N.Y.	21.0	C12	1,100	-	-	2,300	110	46	
128	-	Salmon River at Pineville, N.Y.	239	C12	6,800	Dec. 11, 1952	-	18,200	76.2	*1.28	
129	2505	Salmon River near Pulaski, N.Y.	257	C12	7,050	Mar. 27, 1913	8.2	13,300	51.8	26	
130	-	Trout Brook near Richland, N.Y.	14.4	C12	840	Dec. 11, 1952	-	1,020	70.8	4	
131	-	Trout Brook at Centerville, N.Y.	23.0	C12	1,190	-	-	1,170	50.9	2	
132	-	Skinner Creek at Mannsville, N.Y.	6	C12	-	1891	-	790	132	-	
133	-	South Branch Sandy Creek at Allendale, N.Y.	68.0	C12	2,650	1890-91	-	6,000	88.2	*1.08	
134	-	North Branch Sandy Creek at Adams, N.Y.	110	C12	3,800	1897	-	7,410	67.4	30	
135	-	Black River at Enos, N.Y.	71.3	C12	2,730	Dec. 11, 1952	-	2,870	40.3	3	
136	-	Woodhull Creek at Hill Tannery, N.Y.	108	C12	3,700	April 2, 1869	-	4,040	37.4	3	
137	-	Black River at Forestport, N.Y.	247	C12	6,900	Oct. 2, 1945	-	9,260	37.5	5	
138	-	Black River near Port Leyden, N.Y.	435	C12	10,400	Mar. 25, 1953	-	11,300	26.0	3	
139	-	South Branch Moose River near McKeever, N.Y.	184	C12	5,600	Oct. 2, 1945	-	11,700	63.6	50	
140	-	Moose River at Agers Paper Mill, N.Y.	407	C12	10,000	April 2, 1869	-	12,600	31.0	4	
141	-	Moose River at Goulds Mill, N.Y.	429	C12	10,300	Dec. 12, 1952	-	13,000	30.3	4	
142	-	Mill Creek at Turin, N.Y.	7.03	04	-	Dec. 11, 1952	-	1,170	166	-	
143	-	Roaring Brook at Martinsburg, N.Y.	21.8	04	1,250	Dec. 11, 1952	-	2,030	93.1	4	
144	-	Independence River at Chardells Paper Mills, N.Y.	93.0	C12	3,350	Apr. 11, 1869	-	6,200	66.7	26	
145	2575	Beaver River at Eagle Falls, near Number Four, N.Y.	227	C12	6,450	Apr. 13, 1922	-	4,980	21.9	1	
146	-	Beaver River at Beaver Falls, N.Y.	322	C12	8,400	April 1869	-	5,380	16.7	1	
147	-	Kelly Corners Creek at Watertown, N.Y.	1.02	C12	-	Aug. 18, 1949	-	180	176	-	
148	-	Horse Creek near Depauville, N.Y.	4.1	C12	-	July 7-8, 1935	-	1,950	476	-	
149	-	Chaumont River at Depauville, N.Y.	22.7	C12	1,190	July 7-8, 1935	-	4,500	198	*1.79	
Streams tributary to St. Lawrence River											
150	2642	Little Sucker Brook at Waddington, N.Y.	19.9	C14	300	Apr. 13, 1960	-	553	27.8	22	
151	2643	Brandy Brook near Waddington, N.Y.	27.0	C14	400	Apr. 4, 1960	-	736	27.3	22	
152	2644	Middle Branch Grass River near Clare, N.Y.	63.6	C14	910	Apr. 4, 1960	-	1,300	20.4	7	
153	2647	North Branch Grass River near Clare, N.Y.	46.3	C14	660	Apr. 5, 1960	-	800	17.3	4	

154	2648	Plumb Brook at Russell, N.Y.	35.2	C14	510	Apr.	4, 1960	992	28.2	30
155	2651	Elm Creek near Hermon, N.Y.	33.0	C14	480	June	2, 1960	1,030	33.0	30
156	2652	Tanner Creek at Stellaville, N.Y.	32.3	C14	470	June	2, 1960	1,580	48.9	*1.60
157	2653	Little River near Canton, N.Y.	42.4	C14	620	Aug.	3, 1959	3,110	73.3	*2.39
158	2654	Granitis Brook at Crary Mills, N.Y.	20.6	C14	300	Apr.	4, 1960	755	36.7	*1.20
159	2655	Raquette River near Corey's, N.Y.	41.9	C14	5,600	Apr.	24, 1912	e 4,740	11.3	-
160	2660	Bog River near Upper Lake, N.Y.	132	C14	1,820	Apr.	16, 1910	e 1,690	12.8	-
161	2677	Parkhurst Brook near Potsdam, N.Y.	17.8	C14	270	Apr.	4, 1960	463	26.0	15
162	2678	Trout Brook at Allen Corners, N.Y.	56.2	C14	800	Sept.	3, 1959	1,010	18.0	4
163	2682	Plum Brook at Grantville, N.Y.	37.6	C14	580	Apr.	4, 1960	1,180	31.4	50
164	2683	Squeak Brook near Massena, N.Y.	42.3	C14	610	Apr.	6, 1959	543	12.8	2
165	2686	East Branch St. Regis River near Meacham Lake, N.Y.	49.4	C14	710	Apr.	19, 1960	762	15.4	3
166	2687	St. Regis River at St. Regis Falls, N.Y.	230	C14	3,150	Apr.	18, 1960	3,330	14.5	3
167	2688	West Branch St. Regis River at Parishville, N.Y.	172	C14	2,400	Apr.	16, 1960	2,990	17.4	4
168	2689	Trout Brook at Stockholm Center, N.Y.	44.9	C14	650	Apr.	4, 1960	900	20.0	6
169	2691	Lawrence Brook near Moira, N.Y.	28.0	C14	410	Apr.	4, 1960	907	32.4	*1.05
170	2702	Little Salmon River at Bombay, N.Y.	93.6	C14	1,330	Apr.	4, 1960	1,800	19.2	6
171	2707	Trout River at Trout River, N.Y.	107	C14	1,500	Apr.	4, 1960	4,110	38.4	*1.30
172	2708	English River near Moores Forks, N.Y.	40.8	C14	600	Apr.	3, 1960	1,750	42.9	*1.39
173	-	True Brook at Morfittville, N.Y.	22.7	C14	340	July 13,	1947	6,140	27.0	*9.58
174	-	Behan Brook near Picketts Corners, N.Y.	9.92	C14	150	July 13,	1947	852	85.9	*2.71
175	-	Saranac River at Kent Falls, N.Y.	567	C14	7,600	Mar.	20, 1936	4,610	16.3	1
176	2737	Salmon River at South Plattsburgh, N.Y.	61.9	C14	890	Apr.	3, 1960	1,010	16.3	3
177	-	Chubb River at Lake Placid, N.Y.	20	C12	1,080	Sept.	1938	1,670	33.5	1
178	-	West Branch Ausable River at Wilmington, N.Y.	140	C12	4,550	Sept.	22, 1938	13,000	92.9	*1.36
179	-	West Branch Ausable River at Ausable Forks, N.Y.	236	C12	6,700	Sept.	22, 1938	10,300	43.2	9
180	-	East Branch Ausable River at Keene Valley, N.Y.	49.2	C12	2,100	Dec.	31, 1948	5,330	108	*1.21
181	-	Tohna Brook at Keene Valley, N.Y.	16.2	C12	920	Dec.	31, 1948	4,060	251	*2.10
182	-	East Branch Ausable River at Keene, N.Y.	90.0	C12	3,300	Sept.	22, 1938	12,000	133	*1.73
183	2760	Ausable River at Keeseville, N.Y.	508	C12	11,300	Sept.	22, 1938	25,300	182.9	*1.07
184	-	Ausable River at Ausable Chasm, N.Y.	47.8	C12	11,900	Sept.	22, 1938	25,300	51.4	*1.03
185	-	Bouquet River at New Russia, N.Y.	97.6	C15	970	March	21, 1957	4,480	119	*2.19
186	-	Castleton River at Fair Haven, Vt.	97.8	H16	2,800	March	21, 1957	2,210	122.6	2
187	-	Ball's River at East Clarendon, Vt.	67.0	C12	2,600	Sept.	21, 1938	18,900	231	*3.45
188	-	Hewitt Brook near Chittenden, Vt.	2.0	C12	-	June	3, 1947	380	130	-
189	-	Hardwell Brook near Chittenden, Vt.	2.0	C12	-	June	3, 1947	21	156.2	-
190	-	Tenney Brook, Dunklee Pond Dam, near Rutland, Vt.	5.2	C12	-	November	1937	900	178	-
191	-	Other Creek at Proctor, Vt.	363	C12	9,200	March	1938	10,500	28.9	3
192	-	Middlebury River above Ripon, Vt.	16.2	C12	950	Sept.	21, 1938	3,700	273	*2.34
193	-	North Branch Middlebury River near Ripon, Vt.	21.2	C12	1,100	Sept.	21, 1938	7,990	484	*3.20
194	-	New Haven River above Lincoln, Vt.	17.3	C12	1,850	Sept.	21, 1938	2,680	347	*1.54
195	-	Baldwin Creek near Bristol, Vt.	59.1	C12	2,700	March	1938	4,840	157	19
196	-	New Haven River at New Haven Mills, Vt.	93.1	C12	3,200	Sept.	21, 1938	15,300	70.0	*2.39
197	-	Other Creek at Huntington Falls, above Weybridge, Vt.	f 739	C12	15,600	November	1927	18,900	26.3	4
198	-	Lewis Creek above Starkboro, Vt.	8.1	C12	-	Sept.	21, 1938	4,440	548	-

* Ratio of peak discharge to that of 50-year flood.

e Maximum daily.

f Effective drainage area, 714 sq mi.

Table 2.--Peak discharges at miscellaneous sites and unusual floods at short-term gaging stations--Continued

Site No.	Station No.	Stream and place of determination	Drainage area (sq mi.)	Flood region and hydrologic area	Areal Q2.33 (cfs)	Date	Gage height (feet)	Maximum flood			Recur- rence interval (years)
								Cfs	Cfs per sq mi	Discharge	
Streams tributary to St. Lawrence River--Continued											
201	2830	Mollys Brook near Marshfield, Vt.....	24	C12	1,220	Oct. 1, 1920	-	840	35.0	1	*1.81
202	-	Dog River at dam of Cross Bros. plant, Northfield, Vt.....	60.5	C12	2,400	November 1927	-	9,160	151		
203	-	Waterbury River at dam in Moscow, Vt.....	65.8	C12	2,800	March 1936	-	3,440	52.3	5	
204	-	Huntington River above Hanksville, Vt.....	14.0	C12	820	Sept. 21, 1938	-	4,860	347		*2.82
205	-	Huntington River at Huntington, Vt.....	45.3	C12	1,960	Sept. 21, 1938	-	10,600	234		*2.57
206	-	Gihon River at Stearns Dam, at Johnson, Vt.....	64.4	C12	2,580	March 1936	-	2,500	38.8		
207	-	Lamoille River at Fairfax Falls, Vt.....	559	C12	12,800	Nov. 4, 1927	-	66,900	120		*2.49
208	-	Missisquoi River at Sheldon Springs, Vt.....	809	C12	16,800	November 1927	-	62,900	77.8		*1.78
209	-	Missisquoi River at Hygate Falls, Vt.....	826	C12	17,000	March 1936	-	23,800	28.8		
210	-	Tomifobia River at Derby Lane, Vt.....	58	C15	1,580	November 1927	-	8,700	150		*3.00

* Ratio of peak discharge to that of 50-year flood.

105. Pigeon River at Middle Falls, below International Bridge, Minn.
(International gaging station)

Location.--Lat 48°00'44", long 89°36'53", in NE $\frac{1}{4}$ sec.24, T.64 N., R.6 E., on right bank 400 ft upstream from Middle Falls, 3 $\frac{1}{2}$ miles upstream from mouth, and 5 $\frac{1}{4}$ miles downstream from International Bridge.

Drainage area.--600 sq mi.

Gage.--Nonrecording at International Bridge 5 $\frac{3}{4}$ miles upstream at datum 100.24 ft higher prior to Oct. 1, 1940; recording thereafter. Datum of gage is 789.58 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs and extended above.

Remarks.--Base for partial-duration series, 3,000 cfs. Only annual peaks are shown prior to 1941 water year. This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1924	May 19, 1924	4.40	-	3,470	1946	Mar. 29, 1946	6.4	-	3,320
1925	Apr. 24, 1925	5.85	-	5,320					
1926	Apr. 21, 1926	6.3	1.8	3,620	1947	Oct. 11, 1946	6.17	-	3,090
1927	Apr. 19, 1927	6.6	-	7,370		May 3, 1947	7.53	-	4,500
1928	Apr. 4, 1928	6.2	-	6,200		May 13, 1947	7.85	-	4,900
						June 4, 1947	6.62	-	3,520
						June 12, 1947	8.7	-	6,500
1930	May 21, 1930	5.10	-	3,860	1948	Apr. 27, 1948	10.31	-	10,000
1931	Nov. 21, 1930	6.7	-	7,600	1949	Apr. 11, 1949	7.05	3.00	-
1932	Apr. 22, 1932	4.70	-	3,300		Apr. 14, 1949	6.39	-	3,320
1933	Apr. 19, 1933	5.4	-	4,350		Apr. 22, 1949	6.16	-	3,120
1934	May 5, 1934	7.6	-	11,000	1950	May 11, 1950	9.25	-	7,380
1935	Apr. 28, 1935	5.9	-	5,340		Aug. 2, 1950	6.69	-	3,620
1936	May 7, 1936	6.6	-	7,390	1951	May 2, 1951	9.32	-	7,490
1937	Apr. 26, 1937	5.25	-	5,750	1952	Apr. 19, 1952	7.82	-	4,900
1938	Mar. 26, 1938	5.65	4.2	-	1953	May 21, 1953	6.72	-	3,640
	Apr. 29, 1938	4.7	-	4,790		May 31, 1953	7.22	-	4,160
1939	Apr. 22, 1939	6.18	4.3	-					
	Apr. 30, 1939	4.85	3.3	4,600	1954	May 1, 1954	10.03	-	9,250
1940	May 20, 1940	6.64	-	3,630		May 11, 1954	6.44	-	3,250
1941	Apr. 14, 1941	8.41	-	5,840	1955	Apr. 11, 1955	8.21	2.60	-
1942	Apr. 16, 1942	7.17	-	4,140		Apr. 20, 1955	6.39	-	3,180
	May 2, 1942	6.80	-	3,720	1956	May 14, 1956	7.24	-	4,200
	May 15, 1942	6.15	-	3,120	1957	Apr. 25, 1957	8.28	-	5,580
1943	Apr. 24, 1943	6.68	-	3,620	1958	Apr. 16, 1958	3.04	-	793
	May 7, 1943	6.38	-	3,320	1959	May 7, 1959	5.19	-	2,160
	May 16, 1943	6.08	-	3,020	1960	Apr. 25, 1960	6.35	-	3,140
	June 4, 1943	6.39	-	3,320	1961	Apr. 21, 1961	6.69	-	3,540
1944	Apr. 24, 1944	6.42	-	3,150	1962	Apr. 29, 1962	4.43	-	1,580
	May 4, 1944	7.55	-	4,430					
	May 13, 1944	7.57	-	4,430					
	June 5, 1944	7.66	-	4,540					
1945	Mar. 25, 1945	8.95	2.77	-					
	Mar. 28, 1945	8.65	-	6,340					
	Apr. 12, 1945	6.92	-	3,840					

125. Poplar River at Lutsen, Minn.

Location.--Lat 47°38', long 90°42', in sec.33, T.60 N., R.3 W., on right bank 350 ft upstream from concrete bridge on U.S. Highway 61 at Lutsen, and 1,650 ft upstream from mouth.

Drainage area.--114 sq mi.

Gage.--Nonrecording prior to Mar. 31, 1937; recording and concrete control thereafter. Oct. 1, 1912, to Sept. 30, 1917, at site 900 ft downstream at different datum. July 17, 1928, to Mar. 30, 1937, at site 150 ft downstream at datum 6.90 ft lower. Datum of gage is 697.89 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs and extended above on basis of logarithmic plotting.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown prior to 1938 water year.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1913	Apr. 25, 1913	3.08	-	462	1944	June 28, 1944	4.32	-	580
1914	Aug. 11, 1914	3.75	-	773					
1915	June 13, 1915	2.95	-	412	1945	Dec. 23, 1944	5.64	2.9	-
						Mar. 28, 1945	4.97	-	1,220
1916	Apr. 25, 1916	4.7	-	1,390		Apr. 12, 1945	4.54	-	935
1917	June 19, 1917	3.72	-	756					
1930	May 9, 1930	8.0	-	850	1946	Dec. 18, 1945	5.59	.30	-
						(c)	3.79	-	505
1931	Nov. 21, 1930	7.55	-	760	1947	May 3, 1947	-	-	1,200
1932	May 10, 1932	6.35	-	521		May 13, 1947	4.42	-	946
						May 22, 1947	4.04	-	680
1934	May 7, 1934	8.32	-	914		June 11, 1947	4.39	-	925
1935	Apr. 30, 1935	8.02	-	854					
1936	May 7, 1936	7.96	-	842	1953	Dec. 27, 1952	4.86	2.1	-
1937	May 1, 1937	10.02	-	1,250		May 31, 1953	4.35	-	548
					1954	Apr. 26, 1954	4.96	-	847
1938	Dec. 6, 1937	5.55	3.2	-		May 1, 1954	6.23	-	1,880
	(b)	5.05	-	795					
	Apr. 29, 1938	5.25	-	908	1955	Dec. 8, 1954	4.89	2.1	-
	Aug. 20, 1938	4.37	-	523		Apr. 21, 1955	4.49	-	564
1939	Mar. 28, 1939	5.90	3.0	-	1956	May 14, 1956	5.55	-	1,290
	May 1, 1939	5.36	-	1,090		May 27, 1956	4.83	-	742
	May 22, 1939	4.44	-	630					
	June 30, 1939	4.19	-	520	1957	Apr. 25, 1957	5.48	-	1,170
1940	Jan. 1, 1940	4.52	2.4	-		May 22, 1957	4.58	-	503
	Apr. 30, 1940	4.10	-	461		May 26, 1957	4.59	-	508
						June 22, 1957	5.12	-	885
1941	Jan. 5, 1941	6.07	3.3	-	1958	Dec. 12, 1957	5.44	2.6	-
	Apr. 14, 1941	4.94	.06	850		June 5, 1958	3.84	-	238
1942	May 2, 1942	4.79	-	810	1959	Dec. 9, 1958	6.12	3.09	-
	May 15, 1942	4.84	-	835		Aug. 26, 1959	4.70	-	742
1943	May 6, 1943	4.75	-	785	1960	Jan. 4, 1960	5.86	3.31	-
	June 3, 1943	5.44	-	1,150		Apr. 25, 1960	5.24	-	1,050
	June 15, 1943	4.67	-	735		May 5, 1960	5.17	-	998
1944	Dec. 16, 1943	6.14	3.5	-	1961	Jan. 21, 1961	5.68	3.34	-
	May 4, 1944	5.05	-	935		Apr. 21, 1961	5.56	-	1,300
	May 13, 1944	4.36	-	588		May 15, 1961	4.64	-	751
	June 5, 1944	5.31	-	1,060					

a Former site and datum.

b Occurred during period Mar. 26 to Apr. 1, 1938.

c Occurred during period Mar. 26 to Apr. 1, 1946.

145. Baptism River near Beaver Bay, Minn.

Location.--Lat 47°20'15", long 91°12'00", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.15, T.56 N., R.7 W., on right bank 260 ft upstream from bridge on U.S. Highway 61, 0.2 mile upstream from mouth, 4 miles northeast of Silver Bay, and 7 miles northeast of village of Beaver Bay.

Drainage area.--140 sq mi.

Gage.--Nonrecording prior to Oct. 5, 1934; recording thereafter. Datum of gage is 609.97 ft above mean sea level (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs and extended above.

Remarks.--Base for partial-duration series, 1,300 cfs. Only annual peaks are shown prior to 1935 water year.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1930	May 8, 1930	4.6	-	1,480	1945	Mar. 26, 1945	6.76	-	5,180
1931	Nov. 21, 1930	4.6	-	1,480	1946	May 24, 1946	4.52	-	1,240
1932	Aug. 30, 1932	4.6	-	1,560					
1933	Nov. 10, 1932	6.1	0.10	3,500	1947	May 3, 1947	5.96	-	3,960
1934	May 1, 1934	4.4	-	1,200		June 11, 1947	5.59	-	3,250
1935	Apr. 14, 1935	4.41	-	1,540	1950	Oct. 10, 1949	4.36	-	1,340
	Apr. 27, 1935	4.30	-	1,390		May 5, 1950	6.02	-	3,710
1936	Apr. 19, 1936	4.65	-	1,880		May 11, 1950	6.97	-	5,320
	May 1, 1936	5.52	-	3,120		May 14, 1950	7.27	-	6,060
1937	Jan. 1, 1937	6.09	2.8	-	1951	Oct. 2, 1950	5.50	-	2,910
	Apr. 25, 1937	5.20	-	2,660		Apr. 29, 1951	5.32	-	2,590
	May 1, 1937	5.67	-	3,790		June 20, 1951	5.01	-	2,120
1938	Mar. 30, 1938	5.46	-	3,360	1952	Apr. 19, 1952	5.42	-	2,790
	Apr. 29, 1938	4.85	-	2,190	1953	May 21, 1953	4.47	-	1,340
	May 6, 1938	4.39	-	1,450		May 30, 1953	4.66	-	1,610
1939	Apr. 30, 1939	5.66	-	3,290	1954	Apr. 17, 1954	4.89	-	1,960
	Aug. 9, 1939	8.11	-	9,350		Apr. 26, 1954	5.22	-	2,460
1940	Apr. 30, 1940	4.51	-	1,520		May 1, 1954	5.87	-	3,500
	May 19, 1940	4.54	-	1,570	1955	Apr. 11, 1955	4.69	-	1,660
1941	Nov. 11, 1940	4.44	-	1,390	1956	May 6, 1956	4.68	-	1,640
	Apr. 13, 1941	8.01	-	9,080		May 14, 1956	5.34	-	2,650
	Sept. 14, 1941	5.93	-	4,130	1957	Apr. 24, 1957	5.24	-	2,940
1942	Apr. 16, 1942	5.00	-	2,320		June 23, 1957	5.12	-	2,700
	May 1, 1942	4.81	-	1,970	1958	Sept. 6, 1958	4.14	-	928
	May 14, 1942	4.51	-	1,720	1959	Nov. 18, 1958	4.38	-	1,220
1943	Apr. 25, 1943	5.19	-	2,760	1960	Apr. 14, 1960	4.29	-	1,340
	Apr. 30, 1943	5.12	-	2,580		Apr. 24, 1960	5.43	-	3,040
	June 3, 1943	5.31	-	2,940		May 5, 1960	4.79	-	1,860
	June 14, 1943	4.70	-	1,890	1961	Apr. 21, 1961	5.26	-	2,980
1944	Nov. 8, 1943	6.36	3.30	-	1962	Apr. 28, 1962	4.47	-	1,440
	Apr. 25, 1944	4.40	-	1,480		May 24, 1962	4.41	-	1,350
	May 4, 1944	5.35	-	3,130					
	May 12, 1944	4.79	-	2,140					
	June 5, 1944	4.51	-	1,670					
	June 27, 1944	4.36	-	1,410					

155. Second Creek near Aurora, Minn.

Location--Lat 47°31'25", long 92°11'35", in SW $\frac{1}{4}$ sec.12, T.58 N., R.15 W., on left bank 0.1 mile downstream from First Creek, 0.4 mile upstream from mouth, and 2.1 miles east of Aurora.

Drainage area--26.3 sq mi.

Gage--Recording. Datum of gage is 1,410.36 ft above mean sea level, datum of 1929 (levels by Erie Mining Co.).

Stage-discharge relation--Defined by current-meter measurements below 175 cfs and extended above.

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

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1955	Apr. 12, 1955	4.97	-	130	1959	Mar. 22, 1959	4.81	1.51	-
1956	Apr. 5, 1956	5.00	0.37	-		June 11, 1959	4.43	-	74
	Apr. 6, 1956	4.97	.29	99		July 8, 1959	4.50	-	81
	Apr. 13, 1956	4.76	-	107	1960	Mar. 26, 1960	4.96	1.42	-
	Apr. 17, 1956	4.75	-	106		Apr. 15, 1960	4.77	-	109
	Apr. 21, 1956	4.68	-	89		Apr. 25, 1960	4.94	-	129
	May 3, 1956	4.50	-	81		May 5, 1960	4.74	-	105
1957	Mar. 28, 1957	5.75	1.88	-		May 30, 1960	4.57	-	88
	Apr. 2, 1957	5.60	-	208	1961	Apr. 22, 1961	5.64	-	213
	June 24, 1957	4.66	-	97		May 16, 1961	4.72	-	103
1958	Mar. 2, 1958	4.88	1.30	-		Sept. 11, 1961	4.87	-	120
	June 7, 1958	4.51	-	82	1962	Apr. 28, 1962	4.42	-	74
	July 1, 1958	4.77	-	109		May 15, 1962	4.42	-	75
	July 27, 1958	4.28	-	60		May 24, 1962	4.67	-	99
	Sept. 3, 1958	4.33	-	65		July 10, 1962	4.46	-	78

a Annual peak only.

160. Partridge River near Aurora, Minn.

Location--Lat 47°31'02", long 92°11'24", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.12, T.58 N., R.15 W., on right bank at upstream side of highway bridge, 1,000 ft downstream from Second Creek, 2 $\frac{1}{2}$ miles east of Aurora, and 2 $\frac{1}{2}$ miles upstream from mouth.

Drainage area--156 sq mi.

Gage--Nonrecording prior to Aug. 26, 1944; recording thereafter. Datum of gage is 1,402.30 ft above mean sea level, datum of 1929.

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

Remarks--Flow regulated at times since Apr. 9, 1955, by storage in off-channel Partridge Reservoir, formerly known as Whitewater Lake. 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)
1943	June 16-18, 1943	4.44	680	1949	Apr. 15, 1949	4.28	533
1944	June 6, 1944	7.51	2,930		July 8, 9, 1949	5.06	950
1945	Mar. 29, 1945	5.72	1,560	1950	Oct. 12, 13, 1949	5.36	1,140
	Apr. 14, 1945	4.34	666		May 10, 1950	7.86	3,230
1946	Mar. 29, 1946	4.49	764	1951	May 1, 1951	5.56	1,360
	Apr. 26, 1946	4.44	751	1952	Apr. 23, 1952	5.31	1,190
	June 19, 1946	4.03	500		June 28, 1952	4.37	575
1947	Oct. 10, 1946	4.64	861	1953	June 2, 1953	4.61	711
	May 4, 1947	6.36	1,980	1954	Apr. 18, 1954	6.56	2,150
	June 12, 1947	4.82	910		May 3, 1954	5.72	1,480
1948	Apr. 22, 1948	7.36	2,660		June 21, 1954	4.24	512

Peak stages and discharges of Partridge River near Aurora, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Apr. 12, 1955	3.25	174	1959	June 14, 1959	4.12	463
1956	May 7, 1956	4.79	784	1960	Apr. 29, 1960	4.79	823
1957	Apr. 24, 1957	5.97	1,630		May 8, 1960	4.69	754
	June 27, 1957	4.44	598	1961	May 18, 1961	4.59	694
1958	Sept. 28, 1958	3.68	300	1962	May 26, 1962	4.58	670
					July 12, 1962	4.60	680

165. St. Louis River near Aurora, Minn.

Location.--Lat 47°29'30", long 92°14'20", in SW $\frac{1}{4}$ sec. 22, T. 58 N., R. 15 W., on left bank at upstream side of highway bridge, three-quarters of a mile downstream from Partridge River and $1\frac{1}{2}$ miles south of Aurora.

Drainage area.--312 sq mi.

Gage.--Nonrecording prior to Aug. 26, 1944; recording thereafter. Datum of gage is 1,371.24 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs and extended above.

Remarks.--Flow regulated at times since Apr. 9, 1955, by storage in off-channel Partridge Reservoir, formerly known as Whitewater Lake. Base for partial-duration series, 600 cfs. Only annual peaks are shown prior to 1945 water year.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 16, 1943	4.03	1,090	1953	Apr. 11, 1953	3.14	713
1944	June 6, 1944	7.30	3,960		Apr. 27, 1953	3.03	675
1945	Mar. 28, 1945	5.12	2,030		May 14, 1953	2.95	637
	Apr. 13, 1945	4.00	1,160		June 1, 1953	4.00	1,240
1946	Mar. 22, 1946	4.29	-		June 21, 1953	3.24	779
	Mar. 29, 1946	3.60	886		Aug. 11, 1953	3.49	914
	Apr. 16, 1946	3.43	830		Sept. 6, 1953	3.01	666
	Apr. 25, 1946	3.82	1,040	1954	Apr. 17, 1954	6.04	2,770
	May 27, 1946	3.07	628		May 3, 1954	6.01	2,740
	June 18, 1946	3.24	725		June 20, 1954	3.45	862
	June 26, 1946	3.38	802	1955	July 31, 1955	3.02	637
1947	Oct. 11, 1946	4.03	1,200	1956	May 8, 1956	4.13	1,290
	May 4, 1947	5.70	2,510	1957	Apr. 24, 1957	5.11	2,090
	June 14, 1947	4.02	1,170		June 24, 1957	3.60	960
1948	Apr. 21, 1948	7.08	3,760	1958	June 9, 1958	2.97	592
1949	Apr. 14, 1949	3.14	690	1959	May 23, 1959	3.30	810
	May 9, 1949	3.17	690		June 14, 1959	3.03	675
	June 4, 1949	3.12	665	1960	Apr. 29, 1960	3.90	1,170
	July 8, 1949	4.08	1,240		May 6, 1960	4.15	1,340
1950	Oct. 12, 1949	4.35	1,480		May 31, 1960	3.18	748
	May 14, 1950	8.37	5,380	1961	Apr. 22, 1961	3.80	1,070
1951	May 1, 1951	4.84	1,880		Apr. 29, 1961	3.13	707
	June 1, 1951	2.97	625		May 18, 1961	3.73	1,030
	Sept. 30, 1951	2.97	625	1962	May 25, 1962	4.09	1,270
1952	Apr. 23, 1952	4.55	1,640		July 12, 1962	3.31	780
	June 28, 1952	3.13	707				

a Backwater from ice, 1.48 ft.

b Backwater from ice, 0.05 ft.

170. Embarrass River at Embarrass, Minn.

Location.--Lat 47°39'24", long 92°11'51", in NW $\frac{1}{4}$ sec.25, T.60 N., R.15 W., on left bank at Embarrass, 30 ft upstream from highway bridge and 100 ft upstream from railway bridge.

Drainage area.--93.8 sq mi.

Gage.--Nonrecording prior to Aug. 28, 1944; recording thereafter. Datum of gage is 1,410.36 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above.

Remarks.--Base for partial-duration series, 280 cfs. Only annual peaks are shown prior to 1945 water year.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 17, 1943	6.29	423	1952	Aug. 10, 1952	4.90	287
1944	June 6, 1944	9.69	1,160	1953	Sept. 5, 1953	7.96	619
1945	Mar. 28, 1945	8.60	774	1954	Apr. 17, 1954	10.23	1,260
	Apr. 13, 1945	6.18	388		May 3, 1954	8.43	883
1946	Mar. 30, 1946	5.24	292		May 12, 1954	7.96	800
	Apr. 26, 1946	5.08	284	1955	Apr. 15, 1955	5.88	360
	June 18, 1946	5.34	300		Apr. 22, 1956	8.77	440
1947	Oct. 8, 1946	6.95	464	1956	May 5, 1956	6.58	420
	May 3, 1947	9.66	1,120		Apr. 22, 1957	9.40	930
	Sept. 12, 1947	9.09	831	1957	June 25, 1957	5.97	368
1948	Apr. 21, 1948	10.44	1,490		July 2, 1958	3.62	199
1949	Apr. 15, 1949	5.12	297	1958	May 23, 1959	3.97	224
	July 7, 1949	4.93	283	1960	Apr. 28, 1960	5.76	351
1950	Oct. 12, 1949	6.34	401		May 7, 1960	6.07	376
	Apr. 26, 1950	8.12	448	1961	Apr. 23, 1961	9.01	724
	May 9, 1950	10.92	1,740		May 18, 1961	6.77	405
	May 23, 1950	7.94	616	1962	May 26, 1962	8.83	326
1951	Apr. 30, 1951	8.86	828		July 11, 1962	8.15	572
1952	Apr. 23, 1952	7.63	566				
	July 21, 1952	8.81	803				

a Backwater from ice, 1.39 ft.

180. Embarrass River near McKinley, Minn.

Location.--Lat 47°27'10", long 92°23'00", in NW $\frac{1}{4}$ sec.4, T.57 N., R.16 W., on left bank 40 ft upstream from highway bridge, 0.9 mile downstream from outlet of Esquagama Lake, and 4 $\frac{1}{4}$ miles southeast of McKinley.

Drainage area.--171 sq mi.

Gage.--Recording. Datum of gage is 1,338.65 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended above.

Remarks.--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)
1954	Apr. 20, 1954	11.72	1,690	1957	Apr. 26, 1957	10.82	1,240
	May 5, 1954	10.15	978	1958	June 29, 1957	7.17	431
	June 27, 1954	6.28	333		July 20, 1957	5.53	251
1955	Apr. 18, 1955	8.37	575		Oct. 6, 1957	5.97	305
	May 1, 1955	6.19	329	1958	June 8, 1958	6.33	344
	June 16, 1955	5.50	253		July 1, 1958	6.29	340
1956	Apr. 27, 1956	9.16	704		Sept. 6, 1958	5.86	293

Peak stages and discharges of Embarrass River near McKinley, Minn.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	May 27, 1959	6.42	354	1961	Apr. 27, 1961	9.76	842
	Sept. 7, 1959	5.71	276		May 22, 1961	8.03	493
1960					June 13, 1961	5.52	257
	Oct. 2, 1959	5.77	283	1962	Oct. 10, 1961	6.08	317
	May 5, 1960	8.42	580		May 7, 1962	6.86	403
	May 31, 1960	7.42	464		May 25, 1962	8.28	562
					July 17, 1962	7.95	522
1961	Oct. 31, 1960	6.04	312				

190. West Two River near Iron Junction, Minn.

Location.--Lat 47°24'05", long 92°42'10", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.24, T.57 N., R.19 W., on right bank 40 ft upstream from bridge on State Highway 216, 5 miles southwest of Iron Junction, and 9 $\frac{1}{4}$ miles upstream from St. Louis River.

Drainage area.--68.4 sq mi.

Gage.--Recording. Datum of gage is 1,322.05 ft above mean sea level, datum of 1929 (Minnesota Highway Department bench mark).

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

Remarks.--Base for partial-duration series, 325 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Apr. 17, 1954	9.85	916	1958	July 3, 1958	6.58	326
	May 3, 1954	8.08	499				
	May 11, 1954	6.78	343	1959	May 21, 1959	7.14	385
1955	Apr. 11, 1955	8.88	683				
	July 24, 1955	8.98	705		Apr. 15, 1960	8.01	532
1956				1960	Apr. 26, 1960	7.85	508
	Apr. 12, 1956	8.89	-		June 1, 1960	7.14	404
	Apr. 15, 1956	8.47	626	1961	Apr. 22, 1961	9.61	856
1957	Apr. 22, 1957	9.37	797		May 16, 1961	7.92	518
	July 22, 1957	8.50	601				
				1962	Apr. 30, 1962	7.08	395
1958	June 10, 1958	6.60	328		May 25, 1962	7.09	397

a Backwater from ice, 0.89 ft.

195. East Swan River near Toivola, Minn.

Location.--Lat 47°16'55", long 92°50'05", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.2, T.55 N., R.20 W., on left bank 350 ft downstream from bridge on St. Louis County Road 442, 4.8 miles upstream from confluence with West Swan River, 8 miles northwest of Toivola, and 8 $\frac{3}{4}$ miles upstream from St. Louis River.

Drainage area.--112 sq mi.

Gage.--Recording. Datum of gage is 1,260.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,340 cfs and extended above.

Historical data.--Flood in May 1950 reached a stage of about 20.0 ft, from information by local residents.

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

STREAMS TRIBUTARY TO LAKE SUPERIOR

Peak stages and discharges of East Swan River near Toivola, Minn.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Apr. 12, 1954	a18.45	-	1958	July 28, 1958	13.44	814
	Apr. 13, 1954	17.44	1,510	1959	Nov. 19, 1958	10.4	490
	Apr. 27, 1954	12.94	754		May 6, 1959	10.37	487
	May 2, 1954	14.64	976		May 20, 1959	13.34	802
1955	Apr. 10, 1955	16.27	1,260		May 31, 1959	10.86	534
	May 3, 1955	11.89	637	1960	Apr. 15, 1960	13.81	910
	July 3, 1955	9.44	404		Apr. 25, 1960	13.40	857
	July 23, 1955	13.22	787		May 5, 1960	11.81	669
	July 31, 1955	13.28	795		May 30, 1960	14.11	949
1956	Apr. 15, 1956	17.94	1,690	1961	Apr. 21, 1961	15.67	1,150
1957	Apr. 21, 1957	16.52	1,370		May 16, 1961	14.25	894
	June 24, 1957	10.31	511	1962	Apr. 29, 1962	9.57	461
	July 13, 1957	10.43	523		May 16, 1962	9.47	436
	July 22, 1957	15.32	1,070		May 24, 1962	13.14	807
1958	July 2, 1958	12.34	685				

a Backwater from ice, 2.70 ft.

200. Swan River near Toivola, Minn.

Location.--Lat 47°15'02", long 92°48'36", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.13, T.55 N., R.20 W., on left bank at upstream side of bridge on St. Louis County Highway 5, 0.4 mile downstream from confluence of East Swan and West Swan Rivers, $\frac{3}{2}$ miles upstream from St. Louis River, and $\frac{5}{4}$ miles north of Toivola.

Drainage area.--254 sq mi.

Gage.--Recording. Datum of gage is 1,251.78 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Apr. 11, 1953	9.35	1,060	1956	Apr. 15, 1956	15.95	2,700
	May 12, 1953 ^a	8.68	921	1957	Apr. 22, 1957	15.39	2,540
	May 22, 1953	8.92	969		July 22, 1957	11.70	1,580
	May 30, 1953	11.83	1,610	1958	July 2, 1958	9.64	1,120
	July 4, 1953	14.92	2,410		July 28, 1958	13.64	2,070
	July 27, 1953	11.26	1,480	1959	May 6, 1959	8.84	953
	Aug. 12, 1953	9.58	1,110		May 20, 1959	10.93	1,400
	Sept. 5, 1953	12.90	1,880		June 1, 1959	9.58	1,110
1954	Apr. 13, 1954	b17.17	2,980	1960	Apr. 15, 1960	10.40	1,290
	Apr. 27, 1954	10.73	1,360		Apr. 26, 1960	11.00	1,420
	May 3, 1954	13.12	1,740		May 5, 1960	9.75	1,140
1955	Apr. 10, 1955	c14.00	-		May 30, 1960	11.81	1,610
	Apr. 11, 1955	13.58	2,050	1961	Apr. 21, 1961	12.61	1,800
	May 3, 1955	9.77	1,150		May 16, 1961	11.61	1,560
	July 23, 1955	9.98	1,200				
	July 31, 1955	11.12	1,450				

a Corrected.

b Backwater from ice, 0.27 ft.

c Backwater from ice, 0.53 ft.

210. Whiteface River below Meadowlands, Minn.
(Published as "at Meadowlands" prior to 1912)

Location.--Lat 47°03', long 92°43', in NW $\frac{1}{4}$ sec.26, T.53 N., R.19 W., $1\frac{1}{4}$ miles south of Meadowlands, $1\frac{1}{4}$ miles downstream from unnamed tributary entering from the right, $1\frac{1}{2}$ miles downstream from Duluth, Missabe & Iron Range Railway bridge, and 4 miles downstream from Little Whiteface River.

Drainage area.--453 sq mi.

Gage.--Nonrecording. Prior to Apr. 28, 1912, at site $2\frac{1}{2}$ miles upstream at different datum. Apr. 28, 1912, to Nov. 7, 1914, at site 300 ft upstream at different datum. Datum of gage is 1,246.6 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,200 cfs and extended above on basis of logarithmic plotting.

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)
1909	Aug. 11, 1909	12.55	3,480	1914	May 5, 1914	6.85	2,560
1910	May 24, 1910	8.30	1,420	1915	June 17, 1915	7.45	2,530
1911	May 17, 20, 1911	10.80	2,420	1916	Apr. 21, 1916	12.10	5,960
1912	May 28, 1912	5.50	1,530	1917	Apr. 30, 1917	4.35	755
1913	June 10, 1913	6.55	2,320				

230. Cloquet River at Independence, Minn.

Location.--Lat 46°57'19", long 92°27'42", in SW $\frac{1}{4}$ sec.26, T.52 N., R.17 W., on left bank 1,000 ft downstream from bridge on U.S. Highway 53 at Independence and 0.6 mile downstream from Hellwig Creek.

Drainage area.--750 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,280 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)
1910	Oct. 28, 1909	8.4	4,070	1914	June 2, 1914	8.95	4,600
				1915	July 14, 1915	9.0	4,690
1911	Apr. 24, 1911	8.25	3,830				
1912	July 16, 1912	8.30	3,910	1916	Apr. 30, 1916	9.4	5,460
1913	Oct. 20, 1912	8.0	3,430	1917	Oct. 19, 1916	8.6	3,980

240. St. Louis River at Scanlon, Minn.
(Published as "near Thomson," 1908-50)

Location.--Lat 46°42'12", long 92°25'07", in NW $\frac{1}{4}$ sec.30, T.49 N., R.16 W., on right bank 25 ft downstream from lower bridge on U.S. Highway 61 at Scanlon, 0.6 mile downstream from Minnesota Power & Light Co. powerplant, 3 miles upstream from Thomson Reservoir, and 3.2 miles upstream from Midway River.

Drainage area.--3,430 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 6, 1914; powerplant record Sept. 7, 1914, to Aug. 4, 1953; recording thereafter. Oct. 5, 1909, to Sept. 5, 1914, at site 3 miles downstream at datum about 420 ft lower. Datum of present gage is 1,101.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Powerplant record 1908-9, 1915-53; defined by current-meter measurements thereafter.

Remarks.--Flow regulated by Whiteface Reservoir and Boulder, Island, Rice and Fish Lakes (combined capacity, 332,160 acre-ft). Maximum daily discharges shown prior to 1953 water year; only annual peaks thereafter.

Peak stages and discharges a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	June 12, 1908	-	27,000	1936	Apr. 18, 1936	-	21,700
1909	Aug. 15, 1909	-	17,200	1937	Apr. 21, 1937	-	15,400
1910	Apr. 22, 1910	3.83	4,790	1938	May 7, 1938	-	26,000
1911	May 18, 1911	5.78	9,250	1939	Apr. 21, 1939	-	11,000
1912	May 7, 1912	7.0	15,200	1940	May 3, 1940	-	9,770
1913	May 23, 1913	5.9	10,200	1941	Apr. 15, 1941	-	22,300
1914	June 9, 1914	7.3	14,000	1942	May 15, 1942	-	18,800
1915	June 17, 1915	-	9,660	1943	June 15, 1943	-	14,500
1916	Apr. 25, 1916	-	26,700	1944	June 5, 1944	-	25,500
1917	Apr. 22, 1917	-	4,390	1945	Mar. 25, 1945	-	14,200
1918	June 1, 1918	-	7,360	1946	June 25, 1946	-	23,200
1919	Apr. 15, 1919	-	9,970	1947	June 12, 1947	-	12,900
1920	June 29, 1920	-	20,600	1948	Apr. 21, 1948	-	25,400
1921	June 8, 1921	-	22,600	1949	July 8, 1949	-	14,300
1922	Apr. 12, 1922	-	14,900	1950	May 9, 1950	-	37,900
1923	Apr. 27, 1923	-	10,900	1951	Apr. 15, 1951	-	18,200
1924	Sept. 30, 1924	-	3,460	1952	Apr. 17, 1952	-	12,500
1925	June 7, 1925	-	53,090	1953	Aug. 7, 1953	10.98	22,100
1926	June 24, 1926	-	4,690	1954	Apr. 16, 1954	11.78	25,100
1927	Apr. 24, 1927	-	20,300	1955	Apr. 11, 1955	9.97	18,500
1928	May 4, 1928	-	15,900	1956	Apr. 15, 1956	10.79	21,400
1929	Oct. 17, 1928	-	11,100	1957	Apr. 22, 1957	9.85	18,100
1930	May 14, 1930	-	16,200	1958	July 1, 1958	9.34	16,300
1931	June 14, 1931	-	12,900	1959	June 1, 1959	8.84	14,600
1932	May 9, 1932	-	12,400	1960	Apr. 26, 1960	9.41	16,500
1933	Nov. 11, 1932	-	7,020	1961	Apr. 21, 1961	10.20	19,300
1934	Apr. 12, 1934	-	10,700	1962	May 24, 1962	8.67	14,000
1935	Apr. 30, 1935	-	11,200				

a Maximum daily discharges are given prior to 1953 water year.

b Maximum independent daily discharge; maximum daily during the year 3,230 cfs Oct. 1, 1924, stage falling.

255. Bois Brule River at Brule, Wis.

Location.--Lat 46°32'15", long 91°35'45", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.23, T.47 N., R.10 W., on right bank 1.4 miles southwest of Brule Post Office, 1.4 miles downstream from Nebagamon Creek, and 1.7 miles upstream from Little Brule River.

Drainage area.--113 sq mi.

Gage.--Nonrecording. Datum of gage is 948.49 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 770 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Bois Brule River at Brule, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 14, 1943	3.1	450	1953	June 20, 1953	4.78	1,320
1944	June 5, 1944	5.2	1,520	1954	May 1, 1954	4.4	1,120
1945	Mar. 27, 1945	3.1	501	1955	July 30, 1955	2.65	394
1946	Mar. 21, 1946	2.7	415	1956	Apr. 16, 1956	2.93	482
1947	Apr. 23, 1947	2.7	387	1957	Apr. 20, 1957	3.02	513
1948	Apr. 11, 1948	2.9	565	1958	July 1, 1958	3.8	832
1949	May 6, 1949	3.9	870	1959	June 29, 1959	2.46	339
1950	May 6, 1950	4.7	1,270	1960	Apr. 23, 1960	4.20	1,020
1951	June 24, 1951	3.66	779	1961	May 15, 1961	4.00	923
1952	July 18, 1952	4.22	1,020	1962	May 15, 1962	3.68	779

265. Bad River at Mellen, Wis.

Location.--Lat 46°19'30", long 90°39'35", in sec.6, T.44 N., R.2 W., on upstream side of bridge on U.S. Highway 13 in Mellen, 0.4 mile upstream from Devils Creek, and 3.1 miles downstream from Rocky Run.

Drainage area.--101 sq mi.

Gage.--Nonrecording. Datum of gage is 1,217.49 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,800 cfs.

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)
1946	June 24, 1946	18.6	-	1952	Apr. 19, 1952	9.5C	2,270
1949	July 4, 1949	14.0	4,340	1953	July 1, 1953	8.11	1,650
1950	May 6, 1950	10.12	2,540	1954	May 1, 1954	11.3C	3,050
				1955	Apr. 10, 1955	7.0C	1,180
1951	Apr. 28, 1951	12.00	3,400				

a From floodmarks indicated by local residents.

270. Bad River near Odanah, Wis.

Location.--Lat 46°29'15", long 90°41'45", in SE¹ sec.2, T.46 N., R.3 W., at Elm Hoist Bridge, 5.0 miles downstream from Potato River and 8.5 miles south of Odanah.

Drainage area.--611 sq mi. Prior to Nov. 11, 1922, 618 sq mi.

Gage.--Recording. Altitude of gage is 680 ft (from river-profile map). Prior to Nov. 11, 1922, at site 2 miles downstream at different datum.

Stage-discharge relation.--Defined by current-meter measurements below 15,700 cfs.

Remarks.--Only annual peaks are shown prior to 1948. Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	May 16, 1915	-	3,900	1946	June 24, 1946	22.2	-
1916	Apr. 22, 1916	6.66	12,200	1949	May 6, 1949	-	5,510
1917	Apr. 21, 1917	4.05	4,060		July 4, 1949	-	16,500
1918	June 1, 1918	5.61	8,590				
1919	Apr. 10, 1919	5.01	6,680	1950	Apr. 22, 1950	-	6,190
1920	Mar. 24, 1920	5.5	8,230		May 6, 1950	14.0	11,700
					May 10, 1950	-	8,230
1921	Apr. 28, 1921	5.43	8,010				

a At least (top of bridge was submerged), from information by Indian Service.

STREAMS TRIBUTARY TO LAKE SUPERIOR

Peak stages and discharges of Bad River near Odanah, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Apr. 29, 1951	14.30	12,200	1955	Apr. 3, 1955	-	b4,500
	May 28, 1951	13.90	11,500		Apr. 10, 1955	10.18	6,770
	June 3, 1951	9.85	6,310		Apr. 14, 1955	8.85	5,240
	June 25, 1951	9.90	6,550		July 31, 1955	10.00	6,550
	July 5, 1951	8.90	5,400		Aug. 7, 1955	8.33	4,660
1952	Nov. 12, 1951	10.27	6,910	1956	Apr. 4, 1956	8.81	5,190
	Nov. 14, 1951	9.10	5,510		Apr. 7, 1956	8.37	4,490
	Apr. 19, 1952	13.90	11,500		Apr. 12, 1956	8.15	4,240
	June 16, 1952	8.50	4,850		May 14, 1956	9.29	5,500
	June 25, 1952	12.00	9,000	1957	Apr. 20, 1957	9.55	5,930
	June 29, 1952	8.40	4,740		July 2, 1958	10.00	6,410
	July 17, 1952	9.00	5,400	1959	June 1, 1959	7.24	3,480
	July 21, 1952	11.20	7,990		June 1, 1959	7.24	3,480
1953	Mar. 23, 1953	11.75	8,740	1960	Apr. 14, 1960	-	b5,000
	Apr. 10, 1953	7.80	4,080		Apr. 24, 1960	21.7	27,700
	May 1, 1953	7.81	4,080		Sept. 3, 1960	-	b4,220
	May 22, 1953	10.53	7,150	1961	Dec. 7, 1960	8.85	5,580
	May 31, 1953	8.73	5,070		Mar. 28, 1961	9.50	5,960
	June 20, 1953	12.40	9,520		May 16, 1961	9.7	6,670
	July 1, 1953	15.50	13,800	1962	May 14, 1962	8.34	4,970
1954	Apr. 16, 1954	11.12	7,890		May 21, 1962	7.56	4,030
	Apr. 27, 1954	11.85	8,800				
	May 1, 1954	16.05	14,600				

b Daily mean discharge.

275. White River near Ashland, Wis.

Location.--Lat 46°29'50", long 90°54'15", in sec.6, T.46 N., R.4 W., at power-plant of Lake Superior District Power Co., 0.3 mile downstream from bridge on State highway over dam, and 4.5 miles south of Ashland city limits.

Drainage area.--269 sq mi.

Gage.--Nonrecording. Datum of gage is 660.15 ft above mean sea level, datum of 1929 (Lake Superior District Power Co. bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs.

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)
1949	May 5, 1949	5.53	3,720	1957	Mar. 30, 1957	2.66	1,010
1950	Apr. 17, 1950	5.26	3,480	1958	July 1, 1958	3.2	1,430
1951	July 4, 1951	5.29	3,480	1959	June 28, 1959	2.56	940
1952	June 24, 1952	7.10	5,390	1960	Apr. 24, 1960	6.40	4,630
1953	July 1, 1953	7.90	6,270	1961	May 15, 1961	3.73	1,900
1954	May 1, 1954	5.60	3,800	1962	May 23, 1962	4.70	2,860
1955	Apr. 1, 1955	3.80	2,200	1963	Mar. 29, 1963	4.50	2,660
1956	Apr. 3, 1956	3.90	2,060				

280. Montreal River at Ironwood, Mich.

Location.--Lat 46°27'00", long 90°10'40", in sec.24, T.46 N., R.2 E., at downstream side of main highway bridge on State line between Hurley, Wis., and Ironwood, Mich., 8 miles upstream from West Branch Montreal River.

Drainage area.--63.0 sq mi.

Gage.--Nonrecording. Datum of gage is 1,464.13 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs.

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)
1918	June 2, 1918	3.2	610	1950	May 6, 1950	4.7	1,490
1919	Apr. 12, 1919	3.2	610				
1920	June 30, 1920	3.9	960	1951	June 25, 1951	4.20	1,110
				1952	Apr. 19, 1952	5.10	1,810
1921	Apr. 5, 1921	3.9	960	1953	May 21, 1953	4.16	1,110
1922	Apr. 10, 1922	3.8	910	1954	May 2, 1954	4.15	1,080
1925	Apr. 23, 1925	2.4	255	1960	Apr. 24, 1960	-	a3,400

a Computed estimate at site 2 miles downstream.

290. West Branch Montreal River at Gile, Wis.

Location.--Lat 46°25'35", long 90°13'35", in sec.34, T.46 N., R.2 E., immediately below outlet structure of Gile Reservoir at Gile and 4 miles upstream from mouth.

Drainage area.--78 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 1,468.0 ft above mean sea level, by Lake Superior Power Co. levels. Prior to Nov. 30, 1925, site 1,600 ft downstream at different datum.

Stage-discharge relation.--Defined by current-meter measurements below 710 cfs.

Remarks.--Flow completely regulated by Gile Reservoir since 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1919	Apr. 12, 1919	6.2	780	1925	Mar. 27, 1925	4.9	270
1920	Mar. 27, 1920	6.3	850				
				1943	Apr. 22, 1943	5.7	1,030
1921	Apr. 6, 1921	-	900	1944	June 7, 1944	6.4	1,220
1922	Apr. 10, 1922	6.9	1,270	1945	June 14, 1945	5.58	1,000
1923	Apr. 21, 1923	7.3	1,550	1946	June 28, 1946	-	975
1924	Apr. 18, 1924	6.5	990	1947	June 15, 1947	-	553

STREAMS TRIBUTARY TO LAKE SUPERIOR

300. Montreal River near Saxon, Wis.

Location.--Lat 46°32'45", long 90°24'05", in NW $\frac{1}{4}$ sec.23, T.48 N., R.49 W., on right bank 2 miles upstream from mouth and 3.5 miles north of Saxon.

Drainage area.--262 sq mi.

Gage.--Recording. Altitude of gage is 760 ft (from data of power company).

Stage-discharge relation.--Defined by current-meter measurements below 4,400 cfs.

Remarks.--Flow regulated by Gile Reservoir on West Branch Montreal River (capacity, 1,290,000,000 cu ft) since Apr. 1, 1941. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Mar. 26, 1939	6.48	1.4	-	1952	Apr. 20, 1952	6.25	-	4,650
	Apr. 26, 1939	-	-	4,200	1953	June 21, 1953	6.07	-	4,500
1940	May 20, 1940	6.24	-	4,650	1954	May 1, 1954	6.10	-	4,500
					1955	Apr. 1, 1955	5.5f	2.0	-
1941	Aug. 31, 1941	6.25	-	4,650		May 2, 1955	-	-	3,100
1942	July 18, 1942	6.93	-	5,700					
1943	Oct. 3, 1942	5.54	-	a3,680	1956	Dec. 18, 1955	5.3f	3.0	-
1944	June 5, 1944	5.60	-	3,750		Apr. 20, 1956	5.2C	-	3,160
1945	Mar. 18, 1945	4.94	-	2,800	1957	Apr. 20, 1957	5.03	-	2,920
					1958	Apr. 15, 1958	5.27	-	3,260
1946	June 25, 1946	6.62	-	5,250	1959	Apr. 8, 1959	4.1f	-	1,700
1947	Dec. 28, 1946	4.85	2.5	-	1960	Apr. 24, 1960	7.5C	-	6,600
	Apr. 23, 1947	-	-	2,140					
1948	Mar. 26, 1948	-	-	2,300	1961	Nov. 2, 1960	4.74	-	2,490
	Apr. 5, 1948	5.13	1.0	-		Dec. 23, 1960	b5.07	-	-
1949	July 6, 1949	5.41	-	3,460	1962	Mar. 30, 1962	b5.00	-	-
1950	May 6, 1950	5.42	-	3,460		May 15, 1962	-	-	1,650
					1963	Mar. 30, 1963	b6.86	-	-
1951	Apr. 29, 1951	6.53	-	5,100		Apr. 3, 1963	-	-	2,970

a Result of regulation.

b Backwater from ice.

310. Black River near Bessemer, Mich.

Location.--Lat 46°30'55", long 90°04'10", in SE $\frac{1}{4}$ sec.32, T.48 N., R.46 W., on right bank 450 ft downstream from bridge on county highway, 500 ft downstream from Powder Mill Creek, and 2 $\frac{1}{2}$ miles north of Bessemer.

Drainage area.--200 sq mi.

Gage.--Recording. Altitude of gage is 1,150 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 4,700 cfs and extended above on basis of slope-area measurement at 14,800 cfs.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 15, 1954	6.58	2,350	1959	Apr. 7, 1959	6.00	2,020
	Apr. 4, 1955	-	1,600		Apr. 18, 1959	5.24	1,630
	Apr. 11, 1955	8.59	3,620		May 31, 1959	5.45	1,740
	Apr. 14, 1955	6.98	2,580				
	Apr. 19, 1955	5.02	1,510	1960	Apr. 15, 1960	8.35	3,650
	May 2, 1955	7.83	3,060		Apr. 24, 1960	14.27	14,800
	July 31, 1955	5.50	1,760				
1956	Apr. 5, 1956	5.31	1,660	1961	Mar. 27, 1961	6.11	2,080
	Apr. 12, 1956	6.36	2,240		Apr. 21, 1961	6.40	2,240
	May 14, 1956	5.82	1,910		May 15, 1961	6.25	2,160
	May 31, 1956	5.51	1,760	1962	Apr. 23, 1962	5.91	1,970
1957	Apr. 20, 1957	9.76	5,420		May 13, 1962	5.47	1,730
					May 15, 1962	5.23	1,600
1958	Apr. 15, 1958	6.13	2,090		May 24, 1962	5.04	1,500

315. Presque Isle River at Marenisco, Mich.

Location.--Lat 46°22', long 89°41', in NW¹ sec.21, T.46 N., R.43 W., on left bank a quarter of a mile upstream from highway bridge in Marenisco and 2½ miles downstream from confluence of East and West Branches of Presque Isle River.

Drainage area.--171 sq mi. Area of lakes and ponds, 14.5 sq mi.

Gage.--Nonrecording February 1945 to May 1949; recording thereafter. At site a quarter of a mile downstream at different datum prior to May 27, 1949. Datum of gage is 1,489.30 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 2,400 cfs and extended on basis of contracted-opening measurement at 3,£20 cfs.

Bankfull stage.--6 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)
1945	Mar. 27, 1945	7.34	1,140	1954	Apr. 28, 1954	8.29	1,680
				1955	Apr. 11, 1955	7.32	1,060
1946	June 26, 1946	9.4	1,860	1956	Apr. 12, 1956	6.35	648
1947	Apr. 13, 1947	a7.27	1,030	1957	Apr. 21, 1957	8.17	1,540
1948	Apr. 12, 1948	5.86	518	1958	July 3, 1958	7.00	762
1949	May 7, 1949	7.77	1,350	1959	Sept.23, 1959	b6.70	559
1950	May 7, 1950	8.45	1,750	1960	Apr. 25, 1960	11.25	3,520
1951	Apr. 29, 1951	9.84	2,600				
1952	Apr. 21, 1952	9.90	2,670	1961	Apr. 22, 1961	7.37	1,040
1953	June 21, 1953	7.50	1,230	1962	May 25, 1962	6.58	662

a Backwater from ice.

b Occurred Nov. 27, 1958 (backwater from ice).

320. Presque Isle River near Tula, Mich.

Location.--Lat 46°33', long 89°46', in sec.23, T.48 N., R.44 W., on downstream handrail of bridge on State Highway 28, 2 miles east of Tula, 5 miles downstream from Little Presque Isle River, and 7 miles southwest of Marriweather.

Drainage area.--261 sq mi. Area of lakes and ponds, 15 sq mi.

Gage.--Nonrecording; and since 1954, crest-stage gage. Datum of gage is 1,299.66 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--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)
1945	Mar. 26, 1945	11.74	2,530	1954	Apr. 16, 1954	12.09	2,870
				1955	Apr. 11, 1955	11.58	2,610
1946	June 25, 1946	12.45	3,170	1956	Apr. 12, 1956	9.75	1,600
1947	Apr. 25, 1947	a10.45	1,940	1957	Apr. 21, 1957	12.77	3,430
1948	Apr. 12, 1948	8.82	1,030	1958	Apr. 16, 1958	9.83	1,660
1949	May 7, 1949	11.82	2,600	1959	Apr. 18, 1959	8.88	1,200
1950	May 7, 1950	12.17	3,260	1960	Apr. 25, 1960	14.04	4,640
1951	Apr. 30, 1951	13.55	4,200				
1952	Apr. 22, 1952	13.63	4,130	1961	Apr. 22, 1961	10.24	1,820
1953	June 22, 1953	10.06	1,700	1962	Apr. 23, 1962	9.£2	1,510

a occurred Apr. 18, 1947 (backwater from ice).

325. Iron River near White Pine, Mich.

Location.--Lat 46°46'25", long 89°34'55", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.51 N., R.42 W., on right bank 30 ft downstream from logging bridge, 1 $\frac{1}{4}$ miles north of White Pine, 3 miles downstream from West Branch Iron River, and 4 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--98.1 sq mi (revised).

Gage.--Recording. Datum of gage is 730.52 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 3,900 cfs and extended by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 19, 1952	7.27	7,900	1955	Oct. 15, 1954	5.59	3,600
	May 12, 1952	4.78	2,060		Apr. 2, 1955	a6.05	1,550
	June 25, 1952	5.54	3,500		Apr. 9, 1955	5.43	3,300
1953	Apr. 23, 1953	4.84	1,660		Apr. 14, 1955	4.97	2,370
	May 21, 1953	5.93	4,300		Apr. 18, 1955	4.56	1,700
	May 31, 1953	4.83	2,150		May 2, 1955	5.10	2,640
	June 20, 1953	5.62	3,600		Aug. 3, 1955	5.51	3,040
	July 1, 1953	6.04	4,520	1956	Sept. 17, 1955	5.83	3,770
	July 13, 1953	4.47	1,550		Oct. 29, 1955	5.20	2,480
	Aug. 4, 1953	5.75	3,900		Apr. 4, 1956	4.72	1,670
1954	Apr. 15, 1954	5.33	3,100		Apr. 12, 1956	4.92	1,990
	Apr. 26, 1954	5.63	3,700		May 14, 1956	5.29	2,660
	May 1, 1954	5.35	3,100	1957	Apr. 21, 1957	5.83	4,810
	May 31, 1954	4.86	2,210				

a Occurred on preceding day (ice jam).

330. Middle Branch Ontonagon River near Paulding, Mich.

Location.--Lat 46°21'30", long 89°04'40", in sec.29, T.46 N., R.38 W., on right bank 25 ft downstream from highway bridge, 2 $\frac{1}{4}$ miles upstream from Bond Falls Reservoir, and 5 $\frac{1}{4}$ miles southeast of Paulding.

Drainage area.--164 sq mi. Area of lakes and ponds, 8.1 sq mi.

Gage.--Recording. Datum of gage is 1,485.66 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

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)
1943	Apr. 26, 1943	8.08	1,040	1953	July 2, 1953	9.42	1,640
1944	June 6, 1944	9.15	1,320	1954	Apr. 28, 1954	8.00	1,120
1945	May 23, 1945	7.37	872	1955	Oct. 16, 1954	8.00	1,120
1946	June 25, 1946	8.13	1,160	1956	May 31, 1956	6.08	572
1947	Apr. 24, 1947	6.56	728	1957	Apr. 21, 1957	8.02	1,080
1948	Apr. 28, 1948	a5.49	343	1958	July 2, 1958	6.67	698
1949	May 6, 1949	6.16	596	1959	Apr. 18, 1959	6.18	579
1950	May 7, 1950	9.09	1,400	1960	Apr. 25, 1960	10.07	1,700
1951	Apr. 30, 1951	10.0	2,050	1961	Apr. 22, 1961	6.84	742
1952	Apr. 21, 1952	8.84	1,480	1962	Apr. 23, 1962	6.06	550

a Occurred Mar. 27, 1948 (ice jam).

345. Middle Branch Ontonagon River near Trout Creek, Mich.

Location.--Lat 46°28'45", long 89°05'25", in sec.8, T.47 N., R.38 W., on right bank 0.1 mile upstream from State Highway 28, 3 $\frac{1}{2}$ miles west of village of Trout Creek, and 6 $\frac{1}{2}$ miles downstream from Bond Falls Reservoir.

Drainage area.--203 sq mi.

Gage.--Recording. Datum of gage is 1,132.03 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Flow regulated by Bond Falls Reservoir (usable capacity, 1,730,000,000 cu ft). Diversion to South Branch Ontonagon River above station. 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)
1943	June 17, 1943	4.27	1,010	1953	July 5, 1953	4.94	1,660
1944	June 7, 1944	4.53	1,170	1954	May 4, 1954	4.50	1,090
1945	June 1, 1945	3.73	760	1955	Apr. 18, 1955	3.67	638
1946	June 26, 1946	4.27	1,060	1956	July 8, 1956	b2.28	162
1947	June 9, 1947	3.85	815	1957	Apr. 19, 1957	c2.23	136
1948	Apr. 4, 1948	a2.22	75	1958	July 10, 1958	2.35	198
1949	July 6, 1949	2.14	144	1959	June 26, 1959	d2.87	205
1950	May 14, 1950	3.70	740	1960	May 11, 1960	3.78	782
1951	May 2, 1951	4.87	1,590	1961	May 18, 1961	3.79	787
1952	Nov. 7, 1951	5.05	1,750	1962	July 22, 1962	1.85	88

a Occurred on Jan. 31, 1948 (ice jam). b Occurred on Nov. 28, 1955 (ice jam).
c Occurred on Jan. 26, 1957 (backwater from ice). d Occurred on Jan. 5, 1959 (ice jam).

350. East Branch Ontonagon River near Mass, Mich.

Location.--Lat 46°41'20", long 89°04'20", on line between secs. 32 and 33, T.50 N., R.38 W., on right bank 700 ft downstream from highway bridge, 1,000 ft downstream from Adventure Creek, 5 miles south of Mass, and 6 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--272 sq mi.

Gage.--Nonrecording at site 700 ft upstream prior to Oct. 1, 1949; recording thereafter. Datum of gage is 873.55 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 1,400 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 6, 1943	9.36	2,610	1950	Apr. 25, 1950	7.25	1,620
1944	June 5, 1944	10.19	3,330	May 6, 1950	9.47	3,430	
1945	Mar. 26, 1945	a8.68	1,780	May 9, 1950	8.2	2,300	
1946	June 25, 1946	10.25	3,060	1951	Apr. 10, 1951	8.5	2,540
1947	Apr. 23, 1947	9.04	2,230	Apr. 28, 1951	9.62	3,530	
1948	Apr. 28, 1948	7.42	1,340	June 24, 1951	9.3	3,230	
				Aug. 31, 1951	8.8	2,780	
1949	May 6, 1949	9.4	2,480	1952	Nov. 13, 1951	7.47	1,760
	July 4, 1949	11.5	4,160	Apr. 18, 1952	10.32	4,260	
	July 6, 1949	11.2	3,890	July 23, 1952	7.15	1,560	
1950	Apr. 18, 1950	-	(b)	1953	Mar. 23, 1953	7.51	1,800
	Apr. 22, 1950	7.3	1,660				

a Maximum observed; occurred on Mar. 17, 1945 (ice jam).

b Unknown; greater than 1,400 cfs.

Peak stages and discharges of East Branch Ontonagon River near Mass, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	May 21, 1953	7.97	2,150	1957	Apr. 20, 1957	9.58	3,380
	May 30, 1953	7.61	1,870				
	June 20, 1953	8.30	2,380	1958	June 26, 1958	6.75	1,300
	July 1, 1953	10.57	4,590				
	Aug. 4, 1953	9.90	3,830	1959	Apr. 7, 1959	7.68	1,890
1954	Apr. 8, 1954	7.67	1,900		Apr. 18, 1959	7.07	1,480
	Apr. 11, 1954	7.97	2,110		Sept. 27, 1959	7.38	1,680
	Apr. 15, 1954	10.21	3,960	1960	Oct. 25, 1959	7.53	1,780
	Apr. 26, 1954	10.33	4,060		Apr. 14, 1960	8.95	2,840
	May 1, 1954	7.87	2,040		Apr. 24, 1960	10.65	4,410
1955	Oct. 15, 1954	9.04	2,880	1961	Mar. 27, 1961	7.81	2,070
	Apr. 9, 1955	8.05	2,110		Apr. 17, 1961	7.24	1,670
	Apr. 14, 1955	7.47	1,760		Apr. 21, 1961	6.88	1,460
	Sept. 17, 1955	8.80	2,720		May 15, 1961	8.26	2,380
1956	Apr. 4, 1956	7.75	1,970	1962	Apr. 22, 1962	6.67	1,330
	May 14, 1956	7.31	1,640				

355. Middle Branch Ontonagon River near Rockland, Mich.

Location.--Lat 46°41'57", long 89°09'36", in SE $\frac{1}{4}$ sec. 27, T.50 N., R.39 W., on downstream side of bridge on U.S. Highway 45, 700 ft downstream from East Branch, and 2.8 miles southeast of Rockland.

Drainage area.--671 sq mi, of which 481 sq mi contributes to flood runoff.

Gage.--Nonrecording. At site 400 ft upstream prior to Apr. 1, 1959. Datum of gage is 661.1 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-water measurements below 7,500 cfs and extended above on basis of slope-area measurement at 27,000 cfs.

Bankfull stage.--16 ft.

Remarks.--Flow regulated by Bond Falls Reservoir (usable capacity, 1,730,000,000 cu ft). Diversion to South Branch Ontonagon River by Bond Falls Canal. 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)
1942	Aug. 22, 1942	21.2	27,000	1953	Aug. 4, 1953	14.50	13,700
1943	May 6, 1943	11.39	7,580	1954	Apr. 26, 1954	13.40	11,500
1944	June 5, 1944	10.68	6,780	1955	Oct. 15, 1954	11.93	8,720
1945	May 22, 1945	11.6	7,920	1956	Apr. 4, 1956	b10.08	6,020
1946	June 24, 1946	13.59	11,500		Apr. 20, 1957	11.60	8,270
1947	Apr. 6, 1947	a10.39	5,850		Apr. 5, 1958	c9.17	3,200
1948	Apr. 28, 1948	7.90	3,030		Sept. 27, 1959	8.65	5,050
1949	July 6, 1949	13.1	11,000		Apr. 24, 1960	15.44	16,100
1950	May 6, 1950	10.7	6,920	1961	Mar. 28, 1961	8.79	5,250
1951	June 24, 1951	14.00	12,900		Apr. 22, 1962	7.07	3,220
1952	Apr. 18, 1952	b11.08	7,560				

a Backwater from ice.

b Maximum observed.

c Occurred on June 26, 1958.

360. West Branch Ontonagon River near Bergland, Mich.

Location.--Lat 46°35'30", long 89°32'20", in sec.3, T.48 N., R.42 W., on right bank a quarter of a mile downstream from dam at outlet of Gogebic Lake and $1\frac{1}{4}$ miles east of Bergland.

Drainage area.--162 sq mi.

Gage.--Recording. Datum of gage is 1,290.81 ft above mean sea level, datum of 1929.

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

Bankfull stage.--8 ft.

Remarks.--Flow regulated by Gogebic Lake (usable capacity, about 35,000 acre-ft). 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)
1943	May 6, 1943	5.41	1,100	1953	June 20, 1953	5.35	1,220
1944	May 3, 1944	4.98	940	1954	May 3, 1954	5.53	1,300
1945	Mar. 28, 1945	4.77	840	1955	Apr. 20, 1955	5.07	980
1946	June 27, 1946	5.28	1,080	1956	May 18, 1956	4.35	700
1947	May 1, 1947	5.17	1,040	1957	Apr. 24, 1957	5.02	968
1948	May 20, 1948	3.42	366	1958	Apr. 17, 1958	3.63	436
1949	July 7, 1949	4.34	700	1959	July 23, 1959	4.17	628
1950	May 12, 1950	5.59	1,220	1960	Apr. 26, 1960	5.98	1,400
1951	May 2, 1951	5.73	1,270	1961	May 17, 1961	4.58	792
1952	July 25, 1952	5.42	1,250	1962	May 14, 1962	4.66	824

375. Cisco Branch Ontonagon River at Cisco Lake Outlet, Mich.

Location.--Lat 46°15', long 89°27', in sec.32, T.45 N., R.41 W., on right bank 80 ft downstream from Cisco Lake Dam, $2\frac{1}{2}$ miles upstream from Langford Lake Outlet, $4\frac{3}{4}$ miles upstream from U.S. Highway 2, and 13 miles southwest of Watersmeet.

Drainage area.--50.7 sq mi.

Gage.--Nonrecording. Datum of gage is 1,676.69 ft above mean sea level, datum of 1929.

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

Bankfull stage.--2 ft.

Remarks.--Flow regulated by Cisco Lake (usable capacity, about 15,600 acre-ft). 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	July 6, 1945	1.64	174	1954	May 4, 1954	1.97	245
1946	June 25, 1946	1.88	229	1955	Oct. 16, 1954	1.83	228
1947	June 12, 1947	1.60	169	1956	June 2, 1956	1.62	178
1948	Nov. 27, 1947	1.30	115	1957	Apr. 24, 1957	1.34	118
1949	July 7, 1949	1.74	198	1958	July 6, 1958	1.50	150
1950	May 13, 1950	1.64	158	1959	Sept. 28, 1959	1.91	255
				1960	Apr. 28, 1960	1.86	235
1951	May 2, 1951	2.10	288				
1952	July 22, 1952	2.00	260	1961	May 21, 1961	1.68	191
1953	July 7, 1953	1.84	220	1962	Aug. 26, 1962	1.56	155

395. South Branch Ontonagon River at Ewen, Mich.

Location.--Lat 46°32'05", long 89°16'30", in sec.26, T.48 N., R.40 W., on left bank on piers of old State Highway M28 bridge in Ewen.

Drainage area.--348 sq mi.

Gage.--Nonrecording, and since Oct. 21, 1953, crest-stage gage. Datum of gage is 1,113.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,400 cfs and extended above on basis of contracted-opening measurement at 13,500 cfs. Discharge adjusted for rate of change of stage above 10.8 ft.

Bankfull stage.--11 ft.

Remarks.--Some diversion from Middle Branch Ontonagon River by Bond Falls Canal. The effect of this diversion on flood peaks is usually less than 10 percent. Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	June 12, 1939	15.5	3,980	1953	July 2, 1953	a15.75	4,580
1940	May 21, 1940	16.5	4,520		Aug. 6, 1953	11.30	2,420
1941	Sept. 16, 1941	12.5	2,730	1954	Apr. 12, 1954	14.33	3,390
1942	Aug. 23, 1942	a16.88	4,840		Apr. 27, 1954	17.16	5,000
1943	Apr. 25, 1943	12.90	2,770		May 2, 1954	11.86	2,440
1944	June 6, 1944	14.10	3,380		June 12, 1954	10.76	2,120
1945	May 23, 1945	b15.86	3,460		June 26, 1954	12.32	2,580
1946	June 25, 1946	a18.86	6,640	1955	Oct. 16, 1954	15.69	4,090
1947	Apr. 24, 1947	a12.91	2,930		Apr. 5, 1955	11.53	2,320
1948	Apr. 6, 1948	8.26	1,320		Apr. 10, 1955	14.29	3,390
1949	May 7, 1949	a15.97	3,860		May 3, 1955	12.02	2,480
	July 6, 1949	11.00	2,130	1956	Apr. 5, 1956	13.00	2,980
1950	Apr. 20, 1950	14.40	3,540	1957	Apr. 21, 1957	15.72	4,480
	May 7, 1950	a16.57	4,670	1958	Apr. 6, 1958	9.72	1,900
1951	Apr. 11, 1951	a15.30	3,920	1959	Apr. 9, 1959	10.10	2,010
	Apr. 29, 1951	a18.60	6,240		Sept. 28, 1959	10.87	2,250
	June 25, 1951	a16.70	4,760	1960	Oct. 26, 1959	10.57	2,070
	Sept. 2, 1951	10.90	2,210		Apr. 15, 1960	16.16	4,460
1952	Oct. 5, 1951	10.08	2,010		Apr. 24, 1960	22.07	13,500
	Nov. 15, 1951	14.00	3,690		May 1, 1960	10.46	2,040
	Apr. 19, 1952	18.70	6,710		May 11, 1960	10.43	2,030
	July 23, 1952	16.90	5,240	1961	Mar. 28, 1961	11.39	2,440
	Aug. 6, 1952	10.72	2,200		Apr. 22, 1961	10.40	2,100
1953	Mar. 24, 1953	a12.90	4,000		May 16, 1961	10.70	2,200
	May 22, 1953	a14.75	4,120	1962	Apr. 24, 1962	9.54	1,890
	June 21, 1953	14.96	4,100				

a Occurred at different time than peak discharge.

b Maximum observed; occurred on Mar. 19, 1945 (ice jam).

400. Ontonagon River near Rockland, Mich.

Location.--Lat 46°43'15", long 89°12'25", in sec.20, T.50 N., R.39 W., in downstream end of left pier of bridge on highway between Rockland and Victoria, 1 $\frac{1}{4}$ miles southwest of Rockland, and 2.4 miles downstream from confluence of Middle and West Branches.

Drainage area.--1,340 sq mi, of which 1,150 sq mi normally contributes to flood runoff.

Gage.--Nonrecording prior to Nov. 23, 1943; recording thereafter. Datum of gage is 638.87 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 14,000 cfs and extended above on basis of slope-area measurement at 42,000 cfs.

Bankfull stage.--22 ft.

Remarks.--Flow regulated by Victoria powerplant on West Branch 5 miles above station, by Bond Falls Reservoir, and by Gogebic and Cisco Lakes (combined usable capacity, about 50,600 acre-ft). Base for partial-duration series, 9,000 cfs. Only annual peak shown for 1942.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Aug. 22, 1942	28.6	42,000	1952	Apr. 19, 1952	18.78	18,400
1943	Apr. 2, 1943	a20.0	-		July 23, 1952	14.67	11,300
	Apr. 23, 1943	13.75	9,350	1953	Mar. 23, 1953	13.89	10,000
	May 6, 1943	15.70	12,600		May 22, 1953	15.56	12,800
1944	Apr. 24, 1944	13.68	9,240		June 20, 1953	15.98	13,400
	June 5, 1944	15.69	12,600		July 2, 1953	15.85	13,100
1945	Mar. 16, 1945	16.30	-		Aug. 4, 1953	19.38	19,500
	Mar. 18, 1945	15.47	12,300	1954	Apr. 8, 1954	14.42	10,800
	Mar. 25, 1945	13.95	9,820		Apr. 15, 1954	16.58	14,500
	Apr. 23, 1945	13.80	9,600		Apr. 26, 1954	17.65	16,300
	May 22, 1945	15.80	12,800		May 1, 1954	14.85	11,400
1946	June 24, 1946	18.48	17,600	1955	Oct. 15, 1954	16.30	14,000
1947	Apr. 6, 1947	a20.84	(b)		Apr. 2, 1955	a18.0 ^c	-
	Apr. 23, 1947	14.04	9,900		Apr. 3, 1955	13.8 ^c	10,000
1948	Mar. 26, 1948	a13.11	-		Apr. 9, 1955	14.62	11,100
	Apr. 11, 1948	11.85	6,600		Apr. 14, 1955	13.46	9,370
1949	May 6, 1949	16.37	14,100		Sept. 17, 1955	16.50	14,300
	July 4, 1949	14.5	11,000	1956	Apr. 4, 1956	-	c12,000
	July 6, 1949	18.52	17,900	1957	Apr. 20, 1957	16.49	14,300
1950	Apr. 17, 1950	a20.11	-	1958	Apr. 14, 1958	13.56	9,460
	Apr. 19, 1950	14.5	11,000	1959	Apr. 8, 1959	13.14	8,830
	Apr. 25, 1950	13.6	9,520	1960	Apr. 14, 1960	16.93	15,200
	May 6, 1950	16.73	14,700		Apr. 24, 1960	20.82	22,400
	May 9, 1950	14.2	10,500	1961	Mar. 27, 1961	a19.48	-
1951	Apr. 12, 1951	14.52	11,000		Mar. 28, 1961	14.80	11,800
	Apr. 28, 1951	17.54	16,200		Apr. 17, 1961	13.90	10,300
	June 24, 1951	17.72	16,500		May 16, 1961	14.27	10,900
	Aug. 31, 1951	15.09	11,900	1962	Mar. 29, 1962	a13.87	-
1952	Nov. 14, 1951	13.80	9,840		May 2, 1962	12.11	7,520

a Ice jam.

b Peak discharge not determined; greater than 9,000 cfs.

c Maximum daily.

405. Sturgeon River near Sidnaw, Mich.

Location.--Lat 46°35', long 88°35', in sec.5, T.48 N., R.34 W., on right bank 40 ft downstream from highway bridge, 2 miles downstream from Rock River, 3½ miles northwest of Covington, 4 miles upstream from Perch River, and 9 miles northeast of Sidnaw.

Drainage area.--171 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1946; recording thereafter. At site 200 ft upstream at different datum 1913-15. Datum of gage is 1,214.40 ft above mean sea level, datum of 1929.

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

Bankfull stage.--11 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)
1913	Apr. 24, 1913	-	a3,180	1952	Apr. 20, 1952	10.03	3,260
1914	Apr. 29, 1914	-	a3,050	1953	July 2, 1953	8.41	1,960
1915	Apr. 17, 1915	-	a1,410	1954	Apr. 16, 1954	9.73	2,960
				1955	Apr. 14, 1955	9.22	2,500
1943	May 7, 1943	10.15	3,280	1956	Apr. 12, 1956	7.24	1,170
1944	June 6, 1944	10.18	3,160	1957	Apr. 21, 1957	10.40	3,670
1945	Mar. 27, 1945	9.22	2,190	1958	Apr. 17, 1958	7.89	1,630
1946	Mar. 23, 1946	7.45	1,040	1959	Apr. 18, 1959	8.68	2,120
1947	May 1, 1947	9.31	2,430	1960	Apr. 24, 1960	11.63	4,630
1948	Apr. 28, 1948	7.16	975				
1949	May 7, 1949	9.28	2,430	1961	Apr. 22, 1961	8.63	2,080
1950	May 10, 1950	9.49	2,520	1962	Apr. 26, 1962	7.48	1,330
1951	Apr. 30, 1951	10.35	3,670				

a Maximum daily discharge.

410. Perch River near Sidnaw, Mich.

Location.--Lat 46°31', long 88°40', in NE¼ sec.34, T.48 N., R.35 W., at bridge on State Highway 28, 2½ miles east of Sidnaw.

Drainage area.--63.1 sq mi.

Gage.--Nonrecording 1913-15 at site a quarter of a mile upstream at different datum; crest-stage gage thereafter. Altitude of gage is 1,330 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 430 cfs.

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)
1913	Apr. 24, 25, 1913	-	a500	1959	Apr. 18, 1959	-	500
1914	Apr. 29, 1914	-	a500	1960	Apr. 24, 1960	11.07	1,100
1915	Apr. 18, 1915	-	a226				
1957	Apr. 21, 1957	9.47	470	1961	Apr. 22, 1961	9.25	340
1958	Apr. 16, 1958	9.09	347	1962	Apr. 22, 1962	8.96	268

a Maximum daily discharge.

415. Sturgeon River near Alston, Mich.

Location.--Lat 46°44', long 88°40', in SE $\frac{1}{4}$ sec.15, T.50 N., R.35 W., on right bank in powerhouse of Upper Peninsula Power Co. at Prickett Dam, 3 miles upstream from Clear Creek, and 5 miles southeast of Alston.

Drainage area.--346 sq mi.

Gage.--Recording. Datum of gage is 670.3 ft above mean tide at New York City (levels by Corps of Engineers).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Flow regulated by powerplant at station. Only annual peaks are shown. Records prior to 1942 computed by Corps of Engineers from powerplant records furnished by Barage Light and Power Co. From Oct. 1, 1941, to Jan. 4, 1948, discharge computed by Geological Survey from powerplant records furnished by Houghton County Electric Light Co. and Upper Peninsula Power Co. Listed figures prior to 1948 are maximum daily discharges.

Peak stages and discharges a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Apr. 21, 1932	-	1,858	1948	Apr. 28, 1948	48.63	2,810
1933	Apr. 21, 1933	-	3,200	1949	May 6, 1949	49.44	3,470
1934	May 3, 1934	-	4,270	1950	May 6, 1950	50.83	4,730
1935	Apr. 15, 1935	-	1,599	1951	Apr. 29, 1951	51.12	5,000
1936	May 2, 1936	-	2,778	1952	Apr. 20, 1952	50.47	4,460
1937	Apr. 26, 1937	-	2,790	1953	Aug. 4, 1953	50.06	4,100
1938	Apr. 1, 1938	-	3,141	1954	Apr. 26, 1954	50.26	4,480
1939	Apr. 26, 1939	-	4,121	1955	Apr. 14, 1955	49.43	3,600
1940	May 20, 1940	-	3,764	1956	May 14, 1956	47.68	2,330
1941	Apr. 14, 1941	-	3,436	1957	Apr. 22, 1957	50.57	4,750
1942	Apr. 17, 1942	-	2,770	1958	Apr. 19, 1958	48.24	2,650
1943	May 7, 1943	-	4,280	1959	Apr. 18, 1959	49.18	3,660
1944	June 6, 1944	-	3,830	1960	Apr. 24, 1960	53.08	7,360
1945	Mar. 26, 1945	-	3,630	1961	Apr. 22, 1961	48.67	2,840
1946	Mar. 22, 1946	-	1,640	1962	Apr. 22, 1962	47.71	2,070
1947	Apr. 30, 1947	-	2,760				

a Maximum daily discharges are shown prior to 1948.

420. Sturgeon River near Baraga, Mich.

Location.--Lat 46°47', long 88°37', in sec.28, T.51 N., R.34 W., on downstream side of bridge on State Highway 35, 6 miles west of Baraga, and 6 miles downstream from Prickett powerplant.

Drainage area.--379 sq mi.

Gage.--Nonrecording. At different datum 1928-31. Datum of gage is 660.00 ft above mean tide at New York City (Corps of Engineers bench mark).

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

Remarks.--Some regulation by Prickett powerplant after December 1931. Records for 1928-31 contained in Corps of Engineers unpublished report on Sturgeon River, Mich., and tributaries, dated September 1943. Those prior to August 1928 furnished by Milwaukee Electric Railway and Light Co; those for period Aug. 1, 1928, to Sept. 30, 1931, computed by Corps of Engineers. 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)
1928	May 5, 1928	-	a4,690	1944	June 7, 1944	b13.91	4,320
1929	Apr. 8, 1929	-	a2,607	1945	May 22, 1945	12.3C	3,280
1930	June 14, 1930	-	a2,040	1946	Mar. 22, 1946	9.5C	1,830
1931	Apr. 14, 1931	-	a1,260	1947	May 1, 1947	11.84	3,150
1943	Apr. 14, 1943	14.87	4,830				

a Maximum daily discharge.

b Maximum observed.

423. Sturgeon River near Pelkie, Mich.

Location.--Lat 46°50'15", long 88°35'25", on line between secs. 2 and 11, T.51 N., R.34 W., $2\frac{1}{4}$ miles northeast of Pelkie.

Drainage area.--506 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 640 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 6,700 cfs.

Bankfull stage.--12 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)
1958	Apr. 17, 1958	10.80	2,440	1961	May 17, 1961	11.99	4,260
1959	Apr. 18, 1959	12.02	4,280	1962	Apr. 23, 1962	11.40	3,020
1960	Apr. 25, 1960	12.40	8,600				

425. Otter River near Elo, Mich.

Location.--Lat 46°52', long 88°37', in sec.34, T.52 N., R.34 W., on downstream side of highway bridge, $1\frac{1}{4}$ miles southeast of old Elo school, and 3 miles upstream from Otter Lake.

Drainage area.--167 sq mi.

Gage.--Nonrecording; and since Nov. 13, 1953, crest-stage gage. Datum of gage is 617.88 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 1,300 cfs. Only annual peaks are shown prior to 1948.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 24, 1943	12.27	3,490	1953	July 1, 1953	13.01	4,040
1944	Apr. 24, 1944	13.30	4,300				
1945	Mar. 27, 1945	11.85	2,840	1954	Apr. 16, 1954	12.87	3,940
					Apr. 27, 1954	13.33	4,340
1946	Mar. 22, 1946	8.92	1,340		May 1, 1954	8.98	1,460
1947	Apr. 30, 1947	11.47	2,710		May 3, 1954	11.05	2,390
1948	Apr. 20, 1948	10.76	2,030	1955	Apr. 11, 1955	11.02	2,300
	Apr. 24, 1948	9.5	1,540		Apr. 19, 1955	9.40	1,560
					Aug. 3, 1955	11.33	2,480
1949	Apr. 13, 1949	10.0	1,720				
	May 6, 1949	10.35	1,870	1956	Apr. 12, 1956	8.56	1,320
	July 6, 1949	9.1	1,400				
				1957	Apr. 21, 1957	13.01	4,030
1950	Apr. 19, 1950	9.9	1,760				
	Apr. 25, 1950	9.6	1,640	1958	Apr. 16, 1958	9.18	1,520
	May 7, 1950	12.2	3,270				
	May 10, 1950	13.30	4,340	1959	Apr. 8, 1959	8.86	1,410
					Apr. 18, 1959	10.11	1,920
1951	Apr. 10, 1951	11.02	2,390				
	Apr. 29, 1951	12.98	4,040	1960	Apr. 16, 1960	11.65	2,820
	May 2, 1951	11.42	2,640		Apr. 24, 1960	12.08	3,160
	June 24, 1951	12.50	3,540				
				1961	Apr. 17, 1961	10.73	2,240
1952	Nov. 14, 1951	10.33	2,020		Apr. 21, 1961	10.59	2,160
	Apr. 19, 1952	13.52	4,540		May 16, 1961	11.67	2,830
1953	Apr. 11, 1953	8.61	1,320	1962	Apr. 22, 1962	8.96	1,450
	May 22, 1953	9.44	1,600		Apr. 28, 1962	8.52	1,300
	May 31, 1953	9.76	1,770				

430. Sturgeon River near Arnheim, Mich.

Location.--Lat 46°56', long 88°33', in SE $\frac{1}{4}$ sec.1, T.52 N., R.34 W., on right bank a quarter of a mile downstream from Otter Lake, 3 miles northwest of Arnheim, and 8 $\frac{1}{2}$ miles northeast of Pelkie.

Drainage area.--705 sq mi.

Gage.--Nonrecording. Datum of gage is 605.98 ft above mean tide at New York City (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs. Discharge adjusted for rate of change of stage above 5 ft.

Bankfull stage.--12 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)
1943	Apr. 26, 1943	13.93	8,240	1953	July 3, 1953	b11.00	3,880
1944	Apr. 25, 1944	13.88	7,860	1954	Apr. 16, 1954	14.21	10,800
1945	Mar. 28, 1945	13.72	6,820	1955	Apr. 12, 1955	13.18	5,160
1946	Mar. 22, 1946	a11.19	4,070	1956	Apr. 13, 1956	9.95	3,600
1947	May 1, 1947	12.88	5,100	1957	Apr. 22, 1957	14.00	8,900
1948	Apr. 21, 1948	a10.07	3,510	1958	Apr. 17, 1958	9.80	3,460
1949	May 8, 1949	b11.30	4,000	1959	Apr. 19, 1959	b11.40	4,380
1950	May 10, 1950	14.30	11,800	1960	Apr. 25, 1960	13.87	12,200
1951	Apr. 30, 1951	14.05	9,250	1961	May 17, 1961	11.60	4,800
1952	Apr. 20, 1952	14.57	15,500	1962	Apr. 25, 1962	9.16	3,370

a Occurred at different time than peak discharge.

b Occurred on following day.

455. Tahquamenon River near Tahquamenon Paradise, Mich.

Location.--Lat 46°34'30", long 85°16'10", in NE $\frac{1}{4}$ sec.11, T.48 N., R.8 W., on left bank 0.7 mile upstream from Tahquamenon (Big) Falls, 11.5 miles west of Tahquamenon Paradise, and 19 miles northeast of Newberry.

Drainage area.--790 sq mi.

Gage.--Recording. Altitude of gage is 697 ft (from river-profile map).

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

Bankfull stage.--Not subject to overflow.

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)
1954	Apr. 29, 1954	8.70	4,850	1959	Apr. 22, 1959	8.59	4,520
1955	Apr. 17, 1955	8.71	4,850	1960	May 10, 1960	10.26	6,990
1956	Apr. 17, 1956	7.65	3,340	1961	Apr. 22, 1961	7.05	2,680
1957	Apr. 26, 1957	9.43	5,740	1962	Apr. 30, 1962	8.64	4,590
1958	Nov. 22, 1957	-	2,770				

456. St. Marys River at Sault Ste. Marie, Mich.

Location.--Lat 46°30', long 84°20', at Sault Ste. Marie, Mich.

Drainage area.--80,000 sq mi.

Gage.--Discharge determined by computation of flow through powerplant and through compensating works.

Remarks.--Records furnished by U.S. Lake Survey, Corps of Engineers (May 1964).

Since 1922, discharge from Lake Superior has been completely controlled under supervision of the International Joint Commission through the International Lake Superior Board of Control. Diversions into Lake Superior from the Albany River basin through the Long Lake and Ogoki projects began in 1939 and 1943, respectively. Since 1945, the sum of these diversions has averaged about 5,000 cfs. Only annual maximum monthly discharges are shown.

Maximum monthly mean discharges

Calendar year	Date	Gage height (feet)	Discharge (cfs)	Calendar year	Date	Gage height (feet)	Discharge (cfs)
1860	September	-	87,800	1912	October	-	70,900
1861	June	-	92,100	1913	October	-	79,500
1862	October	-	83,700	1914	October	-	86,900
1863	November	-	77,200	1915	November	-	76,100
1864	September	-	71,800	1916	October	-	118,500
1865	July, August	-	82,700	1917	June	-	90,700
1866	October	-	78,800	1918	October	-	76,100
1867	August	-	81,200	1919	December	-	59,400
1868	September, October	-	75,700	1920	August	-	99,400
1869	September, October	-	88,400	1921	August, September	-	60,900
1870	September	-	91,900	1922	December	-	51,000
1871	September	-	89,100	1923	May	-	59,800
1872	September	-	94,800	1924	April	-	56,200
1873	September	-	104,300	1925	October	-	77,200
1874	October	-	101,100	1926	May	-	59,600
1875	September	-	102,700	1927	November	-	81,600
1876	August	-	118,200	1928	November	-	116,600
1877	August	-	94,000	1929	April	-	100,600
1878	July	-	82,600	1930	August	-	92,200
1879	March	-	72,800	1931	November	-	56,700
1880	July	-	88,200	1932	September	-	79,100
1881	October	-	98,200	1933	November	-	75,200
1882	August, September	-	88,200	1934	August	-	101,000
1883	August	-	83,500	1935	October	-	110,500
1884	October	-	87,400	1936	June	-	87,000
1885	August	-	90,100	1937	June	-	75,900
1886	October	-	78,300	1938	July	-	125,900
1887	August	-	81,400	1939	August	-	126,100
1888	July	-	87,100	1940	February	-	64,700
1889	August	-	83,300	1941	November	-	108,100
1890	July	-	82,500	1942	July	-	91,900
1891	August	-	68,200	1943	August	-	127,100
1892	July	-	68,800	1944	October	-	114,700
1893	August	-	75,700	1945	May	-	107,500
1894	August	-	84,400	1946	October	-	78,800
1895	October	-	87,300	1947	July	-	116,600
1896	July, August	-	87,400	1948	January	-	75,500
1897	August	-	89,300	1949	November	-	72,400
1898	September	-	82,200	1950	August	-	126,600
1899	September	-	96,500	1951	September, October	-	123,800
1900	November	-	94,000	1952	August	-	117,300
1901	July, August	-	86,000	1953	August	-	119,900
1902	September	-	77,400	1954	August	-	115,800
1903	October	-	80,700	1955	November	-	83,500
1904	October	-	89,900	1956	April	-	76,400
1905	October	-	92,900	1957	January	-	67,000
1906	August	-	89,100	1958	January	-	71,300
1907	September	-	90,900	1959	November	-	117,600
1908	August	-	87,700	1960	July	-	114,800
1909	September	-	76,000	1961	June	-	69,000
1910	August	-	69,800	1962	November	-	68,400
1911	August	-	62,600	1963	September	-	71,600

460. Black River near Garnet, Mich.

Location.--Lat 46°07'05", long 85°21'55", in SE $\frac{1}{4}$ sec.13, T.43 N., R.9 W., on right bank 10 ft upstream from highway bridge, 15 ft downstream from unnamed tributary entering from right, 3 $\frac{1}{2}$ miles upstream from Lake Michigan, and 4 miles southwest of Garnet.

Drainage area.--28 sq mi, approximately.

Gage.--Recording. Datum of gage is 629.7 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 350 cfs and extended above by logarithmic plotting.

Bankfull stage.--Not subject to overflow.

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)
1952	Apr. 18, 1952	5.19	171	1958	Nov. 19, 1957	4.48	148
1953	Mar. 24, 1953	5.60	234	1959	Apr. 16, 1959	5.37	239
1954	Apr. 16, 1954	5.66	252	1960	May 7, 1960	8.55	860
1955	Apr. 14, 1955	5.16	203	1961	June 23, 1961	4.23	151
1956	Apr. 9, 1956	-	250	1962	Apr. 28, 1962	4.64	195
1957	Apr. 20, 1957	7.95	690				

475. Manistique River near Germfask, Mich.

Location.--Lat 46°15'25", long 85°52'20", in sec.36, T.45 N., R.13 W., on right bank at bridge on State Highway 98, half a mile upstream from Fox River, 2 miles downstream from Manistique Lake, and 2 $\frac{1}{2}$ miles east of Germfask.

Drainage area.--120 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 682 ft (estimated from level of Manistique Lake). Auxiliary nonrecording gage on Manistique Lake at outlet from South Manistique Lake prior to Apr. 15, 1943; recording thereafter. Datum of auxiliary gage is 683.08 ft above mean sea level (levels by Michigan Department of Conservation).

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

Remarks.--After July 2, 1948, Manistique Lake regulated by dam half a mile below gage. Backwater from Fox River most of time; discharge computed using fall as a factor. During high stages of Fox River the flow at this station is reversed. 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)
1942	Apr. 28, 1942	a4.02	190	1947	June 2, 1947	f4.40	242
1943	June 29, 1943	b5.70	446	1948	May 7, 1948	g3.6C	216
1944	May 20, 1944	c3.96	219	1949	July 4, 1949	h4.24	189
1945	May 8, 1945	d4.84	267	1950	May 25, 1950	i5.58	427
1946	Apr. 3, 1946	e4.04	194				

a Occurred on Apr. 6, 1942. b Occurred on June 22, 25, 1943. c Occurred on Apr. 28, 1944. d Occurred on Mar. 28, 1945. e Occurred on Mar. 20, 1946. f Maximum observed; occurred on May 6, 1947. g Maximum observed; occurred on Apr. 13, 1948. h Maximum observed; occurred on July 29, 30, 1949. i Maximum observed; occurred on May 6, 7, 8, 1950.

495. Manistique River at Germfask, Mich.

Location.--Lat 46°14'00", long 85°55'40", in SE $\frac{1}{4}$ sec.4, T.44 N., R.13 W., on left bank 600 ft upstream from bridge on State Highway 77, 1 mile south Germfask, $1\frac{1}{2}$ miles upstream from Grays Creek, and at mile 62.5.

Drainage area.--341 sq mi.

Gage.--Nonrecording at site 600 ft downstream at different datum prior to Dec. 29, 1938; recording thereafter. Datum of gage is 662.40 ft above mean sea level (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

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	Apr. 1, 1938	8.50	2,130	1951	Apr. 11, 1951	6.60	1,560
1939	Apr. 26, 1939	7.85	1,910	1952	Apr. 19, 1952	5.18	1,170
1940	Apr. 25, 1940	5.33	1,200	1953	Apr. 13, 1953	5.03	1,110
				1954	Apr. 29, 1954	5.68	1,310
1941	Apr. 17, 1941	a4.53	868	1955	Apr. 14, 1955	4.83	1,110
1942	Apr. 6, 1942	b5.95	1,110				
1943	June 25, 1943	6.29	1,480	1956	Apr. 12, 1956	4.53	1,020
1944	Apr. 26, 1944	4.62	1,000	1957	Apr. 22, 1957	6.94	1,740
1945	Mar. 28, 1945	5.89	1,370	1958	Nov. 20, 1957	e5.41	861
				1959	Apr. 19, 1959	5.27	1,240
1946	Mar. 20, 1946	c5.10	1,060	1960	May 10, 1960	8.64	2,250
1947	Apr. 12, 1947	5.15	1,170				
1948	Apr. 13, 1948	4.32	916	1961	Apr. 17, 1961	f5.45	902
1949	Apr. 6, June 28, 1949	d4.94	916	1962	Apr. 29, 1962	g5.34	1,160
1950	Apr. 26, 1950	6.37	1,510				

a Occurred on Dec. 12, 1940 (backwater from ice). b Occurred on Jan. 5, 1942 (backwater from ice). c Occurred on Jan. 27, 1946 (backwater from ice). d Occurred on Jan. 3, 1949 (backwater from ice). e Occurred on Feb. 9, 1958 (backwater from ice). f Occurred on Jan. 1, 1961 (backwater from ice). g Occurred on Jan. 7, 1962 (backwater from ice).

520. Driggs River near Seney, Mich.

Location.--Lat 46°20'45", long 86°07'30", in N $\frac{1}{2}$ sec.36, T.46 N., R.15 W., 2 miles upstream from Walsh Creek and $8\frac{1}{2}$ miles west of Seney.

Drainage area.--70 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 760 ft (from survey level line in vicinity).

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

Bankfull stage.--Not subject to overflow.

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	Mar. 31, 1938	10.5	419	1941	Apr. 15, 1941	8.78	221
1939	Apr. 26, 1939	11.2	531	1942	Apr. 5, 1942	8.70	199
1940	May 2, 1940	9.08	239				

525. Walsh Creek near Seney, Mich.

Location.--Lat 46°20'45", long 86°10'40", in NW $\frac{1}{4}$ sec.34, T.46 N., R.15 W.,
3 $\frac{1}{2}$ miles upstream from mouth and 11 miles west of Seney.

Drainage area.--About 12 sq mi (watershed indeterminate because of swamps).

Gage.--Nonrecording. Altitude of gage is 775 ft (from survey level line in vicinity).

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	Mar. 31, 1938	7.2	558	1941	Apr. 10, 1941	4.8	174
1939	Apr. 25, 1939	7.5	618	1942	Apr. 5, 1942	5.55	246
1940	Apr. 24, 1940	6.1	327				

535. Marsh Creek near Shingleton, Mich.

Location.--Lat 46°20'45", long 86°14'20", in NW $\frac{1}{4}$ sec.31, T.46 N., R.15 W.,
11 miles east of Shingleton.

Drainage area.--About 20 sq mi (watershed indeterminate because of swamps).

Gage.--Nonrecording. Altitude of gage is 790 ft (from survey level line in vicinity).

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	Mar. 31, 1938	4.20	268	1941	Apr. 15, 1941	3.60	122
1939	Apr. 24, 1939	4.10	240	1942	Apr. 3, 1942	3.68	135
1940	Apr. 20, 1940	3.95	152				

545. Duck Creek near Blaney, Mich.

Location.--Lat 46°06'40", long 86°04'35", in NE $\frac{1}{4}$ sec.20, T.43 N., R.14 W., on
right bank 3 miles upstream from mouth, and 7 miles west of Blaney.

Drainage area.--92 sq mi, approximately, including area from which flow is diverted to Duck Creek from Walsh and Marsh Creeks (watershed indeterminate because of swamps).

Gage.--Nonrecording at site 2 $\frac{1}{2}$ miles downstream at different datum prior to May 9, 1939; recording thereafter. Datum of gage is 630.83 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--11 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Duck Creek near Blaney, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Apr. 1, 1938	a10.27	1,300	1947	Apr. 12, 1947	10.13	1,030
1939	Apr. 26, 1939	11.70	1,740	1948	Apr. 13, 1948	6.6	454
1940	Apr. 23, 1940	10.78	1,420	1949	Apr. 6, 1949	7.91	614
				1950	Apr. 25, 1950	c11.32	1,100
1941	Apr. 12, 1941	7.15	528				
1942	Apr. 5, 1942	10.41	1,190	1951	Apr. 9, 1951	9.95	970
1943	Apr. 14, 1943	9.28	798	1952	Apr. 10, 1952	8.54	692
1944	Apr. 25, 1944	7.67	586	1953	Mar. 26, 1953	8.92	746
1945	Mar. 23, 1945	b11.30	1,130	1954	Apr. 16, 1954	9.10	922
1946	Mar. 18, 1946	9.4	826				

a Occurred on Mar. 28, 1938 (backwater from ice).

b Occurred on Mar. 20, 1945 (backwater from ice).

c Occurred on Apr. 21, 1950 (backwater from ice).

550. Manistique River near Blaney, Mich.

Location.--Lat 46°05'05", long 86°03'35", in SE $\frac{1}{4}$ sec.28, T.43 N., R.14 W., on left bank 40 ft downstream from logging bridge, half a mile downstream from Duck Creek, 7 miles southwest of Blaney, and at mile 34.5.

Drainage area.--704 sq mi.

Gage.--Nonrecording prior to July 24, 1939; recording thereafter. Datum of gage is 612.55 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--16 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	Apr. 1, 1938	19.42	9,300	1951	Apr. 12, 1951	17.88	4,890
1939	Apr. 27, 1939	18.89	6,850	1952	Apr. 11, 1952	16.53	3,100
1940	Apr. 24, 1940	17.55	4,160	1953	Mar. 26, 1953	17.33	3,600
				1954	Apr. 17, 1954	17.50	4,200
1941	Apr. 11, 1941	13.18	2,210	1955	Apr. 15, 1955	15.71	2,830
1942	Apr. 6, 1942	17.57	4,160				
1943	Apr.13, June 23, 1943	17.32	3,910	1956	Apr. 10, 1956	c16.90	3,240
1944	Apr. 28, 1944	14.58	2,570	1957	Apr. 24, 1957	17.01	3,690
1945	Mar. 23, 1945	a19.23	4,720	1958	Nov. 21, 1957	13.35	1,980
				1959	Apr. 20, 1959	16.90	3,480
1946	Mar. 20, 1946	16.9	3,650	1960	May 10, 1960	19.04	8,610
1947	Apr. 13, 1947	17.69	4,260				
1948	Apr. 13, 1948	14.33	2,470	1961	Apr. 18, 1961	14.69	2,340
1949	Apr. 6, 1949	b16.02	2,700	1962	Apr. 25, 1962	16.04	2,920
1950	Apr. 26, 1950	18.20	5,690				

a Occurred on Mar. 21, 1945 (backwater from ice).

b Occurred on Mar. 31, 1949 (backwater from ice).

c Occurred on Apr. 9, 1956 (backwater from ice).

555. Creighton River near Shingleton, Mich.

Location.--Lat 46°20'45", long 86°16'35", in NW $\frac{1}{4}$ sec.35, T.46 N., R.16 W., 8 miles upstream from mouth, and 9 $\frac{1}{2}$ miles east of Shingleton.

Drainage area.--39 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 795 ft (from survey level line in vicinity).

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

Bankfull stage.--5 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	Mar. 31, 1938	5.92	498	1941	Apr. 15, 1941	5.76	378
1939	Apr. 26, 1939	6.10	552	1942	Apr. 18, 1942	5.60	310
1940	May 2, 1940	5.95	452				

560. West Branch Manistique River near Manistique, Mich.

Location.--Lat 46°05'20", long 86°09'40", in SE $\frac{1}{4}$ sec.27, T.43 N., R.15 W., on left bank 300 ft downstream from Stutts Creek, and 10 miles northeast of Manistique.

Drainage area.--322 sq mi.

Gage.--Nonrecording at site 300 ft upstream at different datum prior to Apr. 14, 1939; recording thereafter. Altitude of gage is 628 ft (from river-profile map).

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

Bankfull stage.--12 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	Apr. 2, 1938	13.0	4,300	1947	May 5, 1947	9.10	2,240
1939	Apr. 29, 1939	12.9	5,500	1948	Apr. 15, 1948	6.67	1,320
1940	Apr. 27, May 3, 1940	10.00	2,800	1949	Apr. 9, 1949	6.98	1,400
				1950	May 8, 1950	11.74	3,940
1941	Apr. 18, 1941	8.08	1,850	1951	Apr. 14, 1951	11.89	4,130
1942	Apr. 7, 1942	8.27	1,930	1952	Apr. 22, 1952	9.30	2,390
1943	June 23, 1943	11.43	3,670	1953	Apr. 13, 1953	9.83	2,640
1944	Apr. 27, 1944	9.27	2,350	1954	Apr. 29, 1954	10.07	3,180
1945	Mar. 29, 1945	9.77	2,600	1955	Apr. 16, 1955	8.46	2,350
1946	Mar. 21, 1946	8.42	2,080	1956	Apr. 12, 1956	8.26	2,250

565. Manistique River near Manistique, Mich.

Location.--Lat 46°01'50", long 86°09'40", in SE $\frac{1}{4}$ sec.15, T.42 N., R.15 W., on left bank 1 mile downstream from West Branch, 6 miles northeast of Manistique, and at mile 19.5.

Drainage area.--1,100 sq mi, approximately.

Gage.--Nonrecording prior to July 15, 1939; recording thereafter. Altitude of gage is 608 ft (from river-profile map). At site 1,600 ft upstream at different datum prior to July 15, 1939; gage heights converted to present site and datum.

Stage-discharge relation.--Defined by current-meter measurements below 14,500 cfs.

Bankfull stage.--9 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	Apr. 2, 1938	12.52	15,000	1951	Apr. 14, 1951	11.50	9,980
1939	Apr. 27, 1939	12.59	15,400	1952	Apr. 20, 1952	10.01	5,890
1940	Apr. 26, 1940	10.72	7,540	1953	Mar. 28, 1953	10.29	6,520
				1954	Apr. 18, 1954	10.88	8,120
1941	Apr. 18, 1941	8.31	4,210	1955	Apr. 17, 1955	9.86	5,720
1942	Apr. 7, 1942	10.54	7,000				
1943	June 23, 1943	11.13	8,740	1956	Apr. 10, 1956	10.14	6,080
1944	Apr. 28, 1944	9.43	5,000	1957	Apr. 24, 1957	10.63	7,350
1945	Mar. 24, 1945	11.97	9,050	1958	Apr. 25, 1958	8.12	3,700
				1959	Apr. 20, 1959	10.43	6,820
1946	Mar. 20, 1946	10.02	5,900	1960	May 11, 1960	12.85	16,900
1947	Apr. 13, 1947	10.44	6,530				
1948	Apr. 14, 1948	8.38	3,930	1961	Apr. 19, 1961	9.05	4,540
1949	Apr. 7, 1949	10.59	4,210	1962	Apr. 30, 1962	9.94	5,780
1950	Apr. 27, 1950	11.30	9,360				

a Occurred on Mar. 22, 1945 (backwater from ice).

b Occurred on Apr. 1, 1949 (backwater from ice).

570. Indian River near Manistique, Mich.

Location.--Lat 45°59'30", long 86°17'15", in NE $\frac{1}{4}$ sec.34, T.42 N., R.16 W., on shore on Indian Lake just upstream from highway bridge over outlet of Indian Lake, and 2 miles northwest of Manistique.

Drainage area.--302 sq mi.

Gage.--Nonrecording prior to July 9, 1942; recording thereafter. Datum of gage is 608.66 ft above mean sea level (levels by Michigan Department of Conservation). Since Jan. 18, 1944, auxiliary nonrecording gage 1 $\frac{1}{2}$ miles downstream at same datum.

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

Remarks.--Flow regulated by Indian Lake. 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	Apr. 5, 1938	5.92	767	1951	Apr. 17, 1951	8.16	996
1939	Apr. 30, 1939	6.48	1,000	1952	Apr. 23, 1952	5.60	796
1940	May 6, 27, 1940	5.37	721	1953	May 6, 1953	5.71	938
				1954	May 5, 1954	5.83	c886
1941	Nov. 19-30, 1940	4.83	576	1955	Apr. 21, 1955	4.94	c611
1942	Apr. 12-21, 1942	5.31	618				
1943	June 24, 1943	7.79	1,550	1956	Apr. 18, 1956	4.91	c633
1944	May 4, 1944	a5.00	596	1957	Apr. 27, 1957	5.20	c691
1945	Apr. 4, 1945	5.75	626	1958	Nov. 27, 1957	d5.18	c623
				1959	May 13, 1959	e5.44	c746
1946	Apr. 2, 1946	5.07	659	1960	May 12, 1960	f7.56	c2,030
1947	May 7, 1947	5.47	759				
1948	Apr. 30, 1948	4.57	507	1961	Apr. 26, 1961	4.90	c633
1949	July 3, 1949	4.87	595	1962	May 2, 1962	g5.10	c752
1950	May 10, 1950	6.32	985				

a Occurred on June 27, 1944.

b Occurred on Apr. 16, 1953.

c Maximum daily.

d Occurred on Nov. 22, 1957.

e Occurred on May 12, 1959.

f Occurred on May 11, 1960.

g Occurred on Apr. 28, 1962.

580. Middle Branch Escanaba River near Ishpeming, Mich.

Location.--Lat 46°23'40", long 87°45'30", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.12, T.46 N., R.28 W., on left bank half a mile downstream from County Highway 581, 6 miles southwest of Ishpeming, and 10 miles east of Republic.

Drainage area.--128 sq mi.

Gage.--Recording. Datum of gage is 1,389.02 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs.

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)
1955	Apr. 15, 1955	9.56	1,510	1959	Apr. 19, 1959	7.76	1,030
1956	July 11, 1956	5.84	673	1960	Apr. 25, 1960	12.55	2,680
1957	Apr. 22, 1957	9.36	1,440	1961	Apr. 23, 1961	8.08	1,090
1958	Apr. 18, 1958	6.04	714	1962	Apr. 24, 1962	5.99	698

585. East Branch Escanaba River at Gwinn, Mich.

Location.--Lat 46°17'10", long 87°26'00", in NE $\frac{1}{4}$ sec.21, T.45 N., R.25 W., on right bank in county park at Gwinn, 1 mile upstream from mouth.

Drainage area.--124 sq mi.

Gage.--Recording. Datum of gage is 1,079.2 ft above mean sea level, datum of 1929.

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

Bankfull stage.--Not subject to overflow.

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)
1955	Apr. 15, 1955	12.01	1,030	1959	Apr. 19, 1959	10.86	734
1956	Apr. 12, 1956	10.11	560	1960	Apr. 25, 1960	14.44	1,920
1957	Apr. 21, 1957	-	a648	1961	Apr. 18, 1961	11.97	1,020
1958	Apr. 17, 1958	10.97	761	1962	Apr. 23, 1962	10.43	633

a Maximum daily discharge.

590. Escanaba River at Cornell, Mich.
(Published as "near Escanaba" prior to 1951)

Location.--Lat 45°54'40", long 87°12'50", in sec.32, T.41 N., R.24 W., on right bank 50 ft downstream from highway bridge, half a mile downstream from Bobs Creek, three-quarters of a mile northeast of Cornell, and 15 miles upstream from mouth.

Drainage area.--870 sq mi.

Gage.--Nonrecording at site 11 miles downstream at different datum prior to 1951; recording thereafter. Datum of gage is 749.26 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Peak stages and discharges of Escanaba River at Cornell, Mich.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1906	Apr. 21, 1906	6.9	-	9,720	1956	Apr. 7, 1956	5.72	3.3	-
1907	May 16, 1907	6.7	-	8,580		Apr. 15, 1956	-	-	4,560
1908	Apr. 30, 1908	6.2	-	7,180	1957	Dec. 11, 1956	5.39	3.8	-
						Apr. 22, 1957	-	-	5,780
1911	Apr. 16, 1911	6.8	-	8,870	1958	Dec. 29, 1957	4.18	2.5	-
1912	Apr. 9, 1912	5.6	-	5,610		Apr. 18, 1958	-	-	4,510
					1959	Mar. 31, 1959	4.26	2.6	-
1951	Apr. 6, 1951	5.07	1.2	-		Apr. 19, 1959	-	-	4,840
	Apr. 13, 1951	-	-	9,250	1960	May 7, 1960	4.90	-	10,500
1952	Apr. 15, 1952	5.19	1.1	-					
	Apr. 19, 1952	-	-	10,000	1961	Mar. 27, 1961	4.05	2.0	-
1953	Mar. 24, 1953	4.93	1.8	-		Apr. 19, 1961	-	-	5,820
	July 3, 1953	-	-	6,770	1962	Dec. 29, 1961	4.24	2.6	-
1954	Apr. 28, 1954	4.10	-	6,770		Apr. 23, 1962	-	-	4,640
1955	Apr. 5, 1955	4.38	1.4	-					
	Apr. 14, 1955	-	-	7,520					

595. Ford River near Hyde, Mich.

Location.--Lat 45°45'20", long 87°12'05", in SW $\frac{1}{4}$ sec.19, T.39 N., R.23 W., on right bank 40 ft downstream from county highway bridge, 1.4 miles downstream from Tenmile Creek, and $1\frac{1}{2}$ miles north of Hyde.

Drainage area.--450 sq mi.

Gage.--Recording. Datum of gage is 677.9 ft above mean sea level, datum of 1929.

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

Bankfull stage.--7 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)
1955	Apr. 15, 1955	5.89	3,120	1959	Apr. 19, 1959	b4.84	1,800
1956	Apr. 10, 1956	a5.82	2,330	1960	May 7, 1960	8.27	7,590
1957	Apr. 21, 1957	5.58	2,860	1961	Apr. 17, 1961	5.14	2,320
1958	July 5, 1958	4.95	2,150	1962	Apr. 26, 1962	5.19	2,370

a Occurred on Apr. 6, 1956 (backwater from ice).

b Occurred on Apr. 7, 1959 (backwater from ice).

605. Iron River at Caspian, Mich.

Location.--Lat 46°03'31", long 88°37'38", on line between SE $\frac{1}{4}$ and SW $\frac{1}{4}$ sec.1, T.42 N., R.35 W., on downstream side of highway bridge in Caspian, $5\frac{1}{4}$ miles upstream from mouth.

Drainage area.--92.1 sq mi.

Gage.--Nonrecording; and since Oct. 7, 1953, crest-stage gage. Datum of gage is 1,438.78 ft above mean sea level, datum of 1929.

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

Bankfull stage.--6 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Iron River at Caspian, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Apr. 25, 1948	4.85	153	1956	July 13, 1956	5.84	238
1949	May 7, 1949	5.72	245	1957	June 18, 1957	5.63	212
1950	May 6, 1950	8.02	680	1958	July 1, 1958	6.53	294
				1959	Sept. 28, 1959	7.40	410
1951	Apr. 8, 1951	8.03	695	1960	Apr. 24, 1960	9.24	1,040
1952	July 23, 1952	8.59	695				
1953	July 2, 1953	10.20	1,430	1961	Mar. 27, 1961	8.07	621
1954	Apr. 27, 1954	8.54	845	1962	Apr. 23, 1962	6.95	382
1955	Apr. 10, 1955	7.24	478				

610. Brule River near Florence, Wis.

Location.--Lat 45°57'30", long 88°15'55", in SE $\frac{1}{4}$ sec. 11, T. 41 N., R. 32 W., Michigan meridian, on left bank 40 ft upstream from highway bridge, 1 mile upstream from Paint River, 3 $\frac{1}{2}$ miles north of Florence, and 6 miles upstream from confluence with Michigamme River.

Drainage area.--389 sq mi.

Gage.--Nonrecording prior to Aug. 29, 1944; recording thereafter. Altitude of gage is 1,210 ft (from topographic map).

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

Bankfull stage.--7 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1914	May 1, 1914	4.6	-	2,050	1953	Dec. 20, 1952	7.02	4.9	-
1915	Jan. 10, 11, 29, 30, 1915	4.6	2.6	-		July 2, 1953	-	-	4,700
	May 9, 1915	-	-	1,150	1954	Apr. 5, 1954	7.70	5.5	-
						Apr. 28, 1954	-	-	2,510
1945	Mar. 20, 1945	7.25	4.5	-	1955	Dec. 7, 1954	7.45	5.2	-
	Apr. 25, 1945	-	-	1,260		Apr. 11, 1955	-	-	1,490
1946	Nov. 27, 1945	6.40	4.1	-	1956	Nov. 22, 1955	5.94	3.8	-
	June 26, 1946	-	-	2,480		July 9, 1956	-	-	1,150
1947	Dec. 15, 1946	5.60	3.4	-	1957	Dec. 14, 1956	7.66	5.6	-
	Apr. 25, 1947	-	-	1,270		Apr. 21, 1957	-	-	881
1948	Nov. 14, 1947	5.87	3.7	-	1958	Nov. 28, 1957	6.82	4.9	-
	Apr. 25, 1948	-	-	712		July 2, 1958	-	-	1,360
1949	Dec. 14, 1948	5.88	4.0	-	1959	Nov. 26, 1958	4.91	2.9	-
	May 7, 1949	-	-	811		Sept. 29, 1959	-	-	1,580
1950	April 1, 1950	6.11	-	-	1960	Jan. 8, 1960	8.01	6.0	-
	May 7, 1950	-	-	2,290		Apr. 26, 1960	-	-	2,470
1951	Nov. 13, 1950	6.61	4.6	-	1961	Dec. 14, 1960	7.53	5.3	-
	Apr. 13, 1951	-	-	2,290		Mar. 28, 1961	-	-	61,200
1952	Nov. 20, 1951	7.1	4.6	-	1962	Dec. 10, 1961	6.34	4.2	-
	July 24, 1952	-	-	2,110		Apr. 24, 1962	-	-	1,190

a From recorded range in stage during period of no gage-height record Apr. 7-19, 1950.
b Maximum daily discharge.

615. Paint River at Crystal Falls, Mich.

Location.--Lat 46°06'20", long 88°20'05", in SE $\frac{1}{4}$ sec.20, T.43 N., R.32 W., on right bank 150 ft downstream from municipal powerplant at Crystal Falls, and 13 miles upstream from mouth.

Drainage area.--597 sq mi.

Gage.--Recording. Datum of gage is 1,306.1 ft above mean sea level (Wisconsin-Michigan Power Co. bench mark).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Occasional regulation by powerplant at station. Listed peaks are natural unless noted otherwise. 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	Mar. 29, 1945	5.35	3,610	1953	July 2, 1953	9.45	10,200
	Mar. 29, 1945	a5.58	4,160		July 2, 1953	a9.70	10,700
1946	Mar. 21, 1946	a5.57	4,050	1954	Apr. 28, 1954	7.35	6,170
	June 25, 1946	5.34	3,590		Apr. 28, 1954	a7.45	6,260
1947	Apr. 25, 1947	5.40	3,720	1955	Apr. 15, 1955	6.88	5,420
	Sept. 16, 1947	a5.61	4,160				
1948	Oct. 8, 1947	a4.81	2,610	1956	Apr. 13, 1956	4.65	2,240
	Apr. 28, 1948	4.50	2,220		May 4, 1956	a5.02	2,650
1949	July 7, 1949	a5.63	4,400	1957	Apr. 22, 1957	6.05	4,060
	July 7, 1949	4.80	2,730		July 2, 1958	a5.17	2,860
1950	May 7, 1950	7.94	7,130	1958	July 2, 1958	5.08	2,750
	May 7, 1950	a8.10	7,400		Apr. 19, 1959	a5.58	3,390
1951	Apr. 11, 1951	a7.85	6,900	1959	Sept. 28, 1959	5.55	3,360
	Apr. 30, 1951	6.80	5,360		Apr. 25, 1960	9.82	10,900
1952	Apr. 20, 1952	7.10	5,810	1960			
	Apr. 20, 1952	a7.21	5,960		May 16, 1961	5.34	3,180
				1961	Apr. 23, 1962	5.00	2,740
					May 11, 1962	a5.11	2,880

a Regulated.

620. Paint River near Alpha, Mich.

Location.--Lat 46°00'40", long 88°15'30", in NW $\frac{1}{4}$ sec.25, T.42 N., R.32 W., on right bank 0.6 mile downstream from Lower Paint Dam, 5 $\frac{1}{2}$ miles upstream from confluence with Brule River, and 6 miles southeast of Alpha.

Drainage area.--631 sq mi.

Gage.--Recording. Altitude of gage is 1,260 ft (from topographic map).

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

Bankfull stage.--11 ft.

Remarks.--Flow regulated by powerplant and by diversion to Michigamme River via Paint River diversion canal at Lower Paint Dam. 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)
1953	July 2, 1953	10.50	8,050	1958	July 2, 1958	5.84	2,080
1954	Apr. 28, 1954	9.54	6,590	1959	Sept. 28, 1959	5.56	1,800
1955	Apr. 15, 1955	6.86	3,190	1960	Apr. 25, 1960	10.36	8,010
1956	May 17, 1956	4.62	1,060	1961	May 16, 1961	6.11	2,340
1957	Apr. 22, 1957	4.89	1,270	1962	Apr. 24, 1962	a4.07	395

a Occurred on Apr. 2, 1962 (backwater from ice).

625. Michigamme River near Crystal Falls, Mich.

Location.--Lat 46°06'50", long 88°12'55", in NW $\frac{1}{4}$ sec.20, T.43 N., R.31 W., on right bank 400 ft upstream from highway bridge, 4 $\frac{1}{2}$ miles downstream from Michigamme Reservoir, 6 miles east of Crystal Falls, and 16 miles upstream from confluence with Brule River.

Drainage area.--656 sq mi.

Gage.--Recording. Altitude of gage is 1,300 ft (from topographic map).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Flow regulated by powerplants and by Michigamme Reservoir (capacity, 119,950 acre-ft) 4.5 miles above station. 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	Apr. 11, 1945	7.34	2,930	1954	May 3, 1954	10.11	6,340
				1955	May 4, 1955	8.57	4,380
1946	June 25, 1946	5.47	1,440				
1947	May 19, 1947	6.66	2,390	1956	July 13, 1956	6.00	1,850
1948	May 1, 1948	6.21	1,620	1957	June 10, 1957	64.95	1,180
1949	July 7, 1949	7.26	3,020	1958	July 2, 1958	9.14	5,500
1950	May 13, 1950	9.40	5,590	1959	Sept. 24, 1959	6.17	2,030
				1960	Apr. 28, 1960	10.73	7,260
1951	May 5, 1951	9.45	5,590				
1952	Oct. 3, 1951	6.49	2,230	1961	May 16, 1961	8.00	3,760
1953	July 4, 1953	9.32	5,440	1962	May 25, 1962	5.52	1,540

a Occurred on Feb. 3 and Mar. 25, 1948 (ice jams).

b Occurred on Feb. 22, 1957.

630. Menominee River near Florence, Wis.

(Published as "at Twin Falls, near Iron Mountain, Mich." prior to July 1950)

Location.--Lat 45°57'04", long 88°11'13", in NE $\frac{1}{4}$ sec.16, T.41 N., R.31 W., Michigan meridian, on left bank half a mile downstream from confluence of Brule and Michigamme Rivers, 3 $\frac{1}{2}$ miles northeast of Florence, and at mile 117.

Drainage area.--1,780 sq mi, approximately.

Gage.--Recording. Altitude of gage is 1,120 ft (from topographic map). Prior to 1950, headwater and tailwater gages and generation data entered hourly in daily log sheet by company employees at the Twin Falls powerplant of Wisconsin-Michigan Power Co., 10.4 miles downstream.

Stage-discharge relation.--Defined by current-meter measurements. Prior to 1950, discharge computed from daily log sheets.

Bankfull stage.--9 ft.

Remarks.--Prior to 1950, records of daily discharge furnished by Wisconsin-Michigan Power Co. Flow regulated by powerplants, and by Michigamme Reservoir (capacity, 119,950 acre-ft) since 1940 and Peavy Pond (capacity, 33,860 acre-ft) since 1943 on Michigamme River, and by many smaller reservoirs above station. Only annual peaks are shown; figures shown prior to 1950 are maximum daily discharges.

Peak stages and discharges of Menominee River near Florence, Wis.^a

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1915	May 11, 1915	-	4,290	1939	Apr. 28, 1939	-	10,600
1916	Apr. 23, 24, 1916	-	16,700	1940	May 2, 1940	-	9,630
1917	Apr. 22, 1917	-	8,740	1941	Apr. 15, 1941	-	4,100
1918	June 2, 1918	-	5,230	1942	June 7, 1942	-	5,460
1919	Apr. 13, 1919	-	7,080	1943	June 18, 1943	-	10,100
1920	Mar. 28, 1920	-	7,920	1944	June 7, 1944	-	6,090
				1945	May 24, 1945	-	6,540
1921	Apr. 29, 1921	-	13,100				
1922	Apr. 11, 1922	-	9,560	1946	June 26, 1946	-	7,950
1923	Apr. 23, 1923	-	10,000	1947	Apr. 25, 1947	-	5,320
1924	May 17, 1924	-	5,050	1948	Apr. 29, 1948	-	4,590
1925	Apr. 25, 1925	-	3,500	1949	July 8, 1949	-	6,630
				1950	May 8, 1950	611.52	14,300
1926	Apr. 23, 1926	-	7,280				
1927	Mar. 19, 1927	-	7,400	1951	Apr. 13, 1951	10.46	12,100
1928	May 6, 1928	-	10,600	1952	Apr. 21, 1952	9.77	10,400
1929	Apr. 9, 1929	-	13,500	1953	July 2, 1953	13.81	18,800
1930	May 8, 1930	-	7,290	1954	Apr. 28, 1954	10.92	12,900
				1955	Apr. 16, 1955	9.44	9,520
1931	Apr. 23, 25, 1931	-	2,270				
1932	Aug. 31, 1932	-	5,380	1956	July 11, 1956	7.67	6,350
1933	Apr. 21, 1933	-	11,200	1957	Apr. 22, 1957	6.33	4,240
1934	May 3, 4, 1934	-	10,000	1958	July 1, 1958	10.12	11,100
1935	Apr. 28, 1935	-	5,600	1959	Sept. 29, 1959	8.57	7,860
				1960	Apr. 26, 1960	14.15	19,500
1936	May 4, 1936	-	7,770				
1937	Apr. 27, 1937	-	8,530	1961	May 15, 1961	8.84	8,480
1938	Apr. 1, 1938	-	11,900	1962	Apr. 30, 1962	6.10	4,050

^a Figures given for water years 1915 to 1949 are maximum daily discharges.

^b From floodmarks.

640. Pine River near Florence, Wis.

Location.--Lat 45°50'20", long 88°20'20", in sec.23, T.39 N., R.17 E., at highway bridge 200 ft downstream from Popple River, 8 miles southwest of Florence, and 12 miles upstream from mouth.

Drainage area.--500 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,200 ft (from dam elevation 4 miles downstream).

Stage-discharge relation.--Defined by current-meter measurement below 1,600 cfs.

Remarks.--Powerplant 4 miles downstream was put in operation in February 1922. 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)
1916	Apr. 23, 1916	9.3	4,570	1921	Apr. 28, 1921	7.5	3,000
1917	June 8, 1917	7.0	2,540	1922	Apr. 9, 1922	7.3	2,840
1918	May 31, 1918	6.0	1,840	1923	Apr. 23, 1923	-	a2,220
1919	Apr. 13, 1919	5.17	1,530				
1920	Mar. 28, 1920	7.1	2,690				

^a Maximum daily discharge.

645. Pine River at Pine River powerplant, near Florence, Wis.

Location.--Lat 45°49'40", long 88°14'55", in sec.28, T.39 N., R.18 E., at powerplant of Wisconsin-Michigan Power Co., 5 miles downstream from Popple River, and 6½ miles south of Florence.

Drainage area.--528 sq mi.

Remarks.--Discharge determined from powerplant records. Flow regulated by powerplant at station, but pondage is small. Records furnished by Wisconsin-Michigan Power Co. Only annual maximum daily discharges are shown.

Maximum daily discharge of Pine River at Pine River powerplant, near Florence, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	May 11, 1924	-	1,870	1944	May 15, 1944	-	1,460
1925	June 5, 1925	-	1,320	1945	Mar. 28, 1945	-	1,680
1926	May 3, 1926	-	1,840	1946	June 27, 1946	-	1,830
1927	Mar. 18, 1927	-	1,740	1947	May 3, 1947	-	1,440
1928	May 5, 1928	-	2,730	1948	Apr. 28, 1948	-	866
1929	Apr. 9, 1929	-	4,380	1949	July 7, 1949	-	1,460
1930	Apr. 19, 1930	-	1,220	1950	May 9, 1950	-	2,900
1931	Sept. 28, 1931	-	819	1951	Apr. 13, 1951	-	3,440
1932	May 11, 1932	-	1,380	1952	Apr. 21, 1952	-	2,440
1933	May 19, 1933	-	2,070	1953	July 2, 1953	-	2,090
1934	May 3, 1934	-	1,600	1954	Apr. 28, 1954	-	2,420
1935	June 21, 1935	-	1,490	1955	Apr. 14, 1955	-	2,340
1936	May 8, 1936	-	1,960	1956	July 9, 1956	-	1,340
1937	Apr. 27, 1937	-	2,110	1957	Apr. 21, 1957	-	1,440
1938	Mar. 31, 1938	-	2,590	1958	July 5, 1958	-	1,600
1939	Apr. 26, 1939	-	2,380	1959	Sept. 30, 1959	-	1,760
1940	May 22, 1940	-	1,910	1960	May 7, 1960	-	3,220
1941	Sept. 1, 1941	-	2,160	1961	May 16, 1961	-	1,720
1942	July 18, 1942	-	3,230	1962	Apr. 28, 1962	-	1,730
1943	June 18, 1943	-	2,410				

650. Menominee River near Iron Mountain, Mich.
(Published as "at Lower Quinnesec Falls" prior to 1902)

Location.--Lat 45°47'10", long 88°05'00", in NE $\frac{1}{4}$ sec. 11, T.38 N., R.19 E., Wisconsin meridian, at Homestead highway bridge, 3 $\frac{1}{2}$ miles south of Iron Mountain, and 5 miles downstream from Pine River.

Drainage area.--2,420 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,040 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs.

Remarks.--No large reservoirs above station, but occasionally extreme regulation occurred from operation of logging dams upstream. 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)
1903	May 29, 1903	12.9	13,000	1909	July 25, 1909	9.9	8,950
1904	May 10, 1904	12.3	12,200	1910	May 22, 1910	7.7	6,400
1905	June 19, 1905	11.7	11,400				
1906	Apr. 21, 1906	14.4	15,200	1911	May 23, 1911	11.5	10,900
1907	May 17, 1907	14.8	15,100	1912	May 7, 1912	11.1	10,400
1908	Apr. 28, 1908	13.0	12,800	1913	Mar. 24, 1913	12.4	12,000
				1914	May 2, 1914	12.4	11,800

655. Sturgeon River near Foster City, Mich.

Location.--Lat 45°54'30", long 87°45'15", in NW $\frac{1}{4}$ sec.36, T.41 N., R.28 W., on left bank 30 ft downstream from bridge on County Highway 569, $1\frac{1}{4}$ miles downstream from confluence of East and West Branches, and 4 miles south of Foster City.

Drainage area.--237 sq mi.

Gage.--Recording. Datum of gage is 966.6 ft above mean sea level, datum of 1929.

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

Bankfull stage.--7 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)
1955	Apr. 15, 1955	-	al,400	1959	Sept.24, 1959	6.72	877
1956	Apr. 10, 1956	b6.54	690	1960	May 8, 1960	10.35	2,570
1957	Apr. 22, 1957	7.06	1,020	1961	Apr. 19, 1961	6.69	914
1958	July 6, 1958	6.91	927	1962	Apr. 26, 1962	6.87	958

a Maximum daily mean discharge.

b Occurred on Apr. 8, 1956 (ice jam).

660. Menominee River near Pembine, Wis.

Location.--Lat 45°35'25", long 87°46'35", in sec.21, T.37 N., R.28 W., Michigan meridian, 700 ft upstream from Pemene Creek, 4 miles west of Nathan, Mich., 15 miles southeast of Pembine, and at mile 65.3.

Drainage area.--3,240 sq mi, approximately.

Gage.--Recording. Altitude of gage is 745 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 22,000 cfs.

Remarks.--Flow regulated by powerplants, by Michigamme Reservoir (capacity, 119,950 acre-ft), Peavy Pond (capacity, 33,000 acre-ft), and by other reservoirs upstream. 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)
1950	May 10, 1950	11.60	20,500	1957	Apr. 23, 1957	-	9,110
1951	Apr. 14, 1951	11.84	21,100	1958	Jan. 9, 1958	b9.61	-
1952	Dec. 23, 1951	all.52	-		July 2, 1958	-	13,200
	Apr. 22, 1952	-	17,100	1959	Dec. 19, 1958	b9.74	-
1953	July 3, 1953	13.06	25,500		Sept.30, 1959	-	9,720
1954	Apr. 29, 1954	11.36	19,800	1960	May 8, 1960	13.90	26,900
1955	Apr. 17, 1955	9.82	15,100	1961	Dec. 29, 1960	t10.47	-
1956	July 12, 1956	6.68	7,840		May 16, 1961	-	12,200
1957	Jan. 13, 1957	b8.65	-	1962	Dec. 15, 1961	b8.50	-
					May 1, 1962	-	8,160

a Backwater from ice, 7.5 ft.

b Backwater from ice.

665. Pike River at Amberg, Wis.

Location.--Lat 45°29'50", long 87°59'40", in SW $\frac{1}{4}$ sec.15, T.35 N., R.20 E., 500 ft upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 0.2 mile south of Amberg, and 1.2 miles downstream from confluence of North and South Branches.

Drainage area.--253 sq mi.

Gage.--Nonrecording prior to Oct. 7, 1946; recording thereafter. At railroad bridge 500 ft downstream at datum 1 ft higher prior to May 23, 1931. At highway bridge three-quarters of a mile downstream at different datums May 23, 1931, to Aug. 4, 1934. Altitude of gage is 865 ft (from survey level line along railroad).

Stage-discharge relation.--Defined by current-meter measurements below 1,440 cfs and extended above by logarithmic plotting.

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)
1914	July 14, 1914	4.7	1,220	1940	May 21, 1940	3.9	763
1915	Apr. 11, 1915	5.7	778	1941	Sept. 1, 1941	4.5	1,010
1916	June 3, 1916	4.7	1,200	1942	Apr. 6, 1942	4.2	875
1917	June 8, 1917	4.6	1,160	1943	Apr. 10, 1943	4.1	837
1918	May 28, 1918	5.9	862	1944	Apr. 25, 1944	3.7	691
1919	Apr. 12, 1919	4.3	1,040	1945	Mar. 20, 1945	4.6	1,060
1920	Mar. 27, 1920	5.2	1,450	1946	Mar. 17, 1946	4.1	837
1921	Mar. 21, 1921	5.8	1,750	1947	Apr. 7, 1947	4.79	1,160
1922	Apr. 10, 1922	7.8	2,800	1948	Mar. 24, 1948	44.40	-
1923	Apr. 21, 1923	6.2	1,950		Mar. 26, 1948	-	619
1924	May 11, 1924	4.8	1,250	1949	July 5, 1949	4.10	800
1925	Apr. 24, 1925	3.2	582	1950	Apr. 19, 1950	5.51	1,450
1926	Apr. 23, 1926	3.7	778	1951	Apr. 9, 1951	6.50	1,980
1927	Mar. 18, 1927	4.3	1,040	1952	July 22, 1952	4.77	1,080
1928	Apr. 5, 1928	4.1	947	1953	Mar. 23, 1953	44.40	-
1929	Apr. 8, 1929	4.8	1,250		Mar. 25, 1953	4.25	860
1930	Apr. 19, 1930	3.2	582	1954	Apr. 28, 1954	4.85	1,120
1931	May 11, 1931	2.6	376	1955	Apr. 15, 1955	4.23	852
1932	Apr. 10, 1932	6.2	1,410	1956	Aug. 5, 1956	4.24	856
1933	June 7, 1933	6.4	1,480	1957	Apr. 21, 1957	4.75	1,080
1934	Apr. 10, 1934	5.5	1,160	1958	July 6, 1958	4.27	788
1935	Mar. 25, 1935	4.2	920	1959	Sept. 23, 1959	3.73	664
1936	Apr. 15, 1936	3.9	785	1960	May 7, 1960	7.00	2,290
1937	Apr. 26, 1937	4.3	970	1961	May 9, 1961	3.83	687
1938	Mar. 31, 1938	5.8	1,600	1962	May 15, 1962	5.06	1,230
1939	June 13, 1939	5.7	1,730				

a Backwater from ice, 1.2 ft.

b Backwater from ice, 0.8 ft.

670. Menominee River below Koss, Mich.
(Published as "at Koss" prior to 1913)

Location.--Lat 45°21'50", long 87°39'20", in sec.9, T.34 N., R.27 W., Michigan meridian, at powerplant of Wisconsin Public Service Corp., 0.5 mile upstream from Little Cedar River, and 3.6 miles southeast from Koss.

Drainage area.--3,790 sq mi, approximately.

Gage.--Nonrecording at site 4 miles upstream prior to June 1913; thereafter, headwater and tailwater gage readings and generation data entered hourly in daily log sheet by company employees.

Stage-discharge relation.--Powerplant rating.

Remarks.--Flow regulated by powerplants, by Michigamme Reservoir (capacity, 119,950 acre-ft) since 1940, by Peavy Pond (capacity, 33,000 acre-ft) since 1943, and by smaller reservoirs upstream. Records of daily discharge furnished by Wisconsin Public Service Corp. since July 1, 1913. Only annual maximum daily discharges are shown.

Maximum daily discharges of Menominee River below Koss, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 1, 1908	-	14,600	1938	Apr. 2, 1938	-	20,700
1914	May 3, 1914	-	20,800	1939	May 30, 1939	-	16,900
1915	Apr. 13, 1915	-	8,650	1940	May 24, 1940	-	13,700
1916	Apr. 23, 1916	-	23,200	1941	Sept. 2, 1941	-	9,180
1917	Apr. 24, 1917	-	13,800	1942	Apr. 18, 1942	-	10,800
1918	May 30, 1918	-	15,000	1943	June 20, 1943	-	18,900
1919	Apr. 14, 1919	-	14,100	1944	May 16, 1944	-	8,580
1920	Mar. 29, 1920	-	21,800	1945	Mar. 23, 1945	-	10,800
1921	Apr. 30, 1921	-	20,300	1946	Mar. 19, 1946	-	10,900
1922	Apr. 12, 1922	-	20,500	1947	May 4, 1947	-	8,370
1923	Apr. 23, 1923	-	18,700	1948	Mar. 30, 1948	-	6,720
1924	May 11, 1924	-	11,800	1949	July 10, 1949	-	8,420
1925	Apr. 29, 1925	-	4,510	1950	May 11, 1950	-	16,900
1926	Apr. 27, 1926	-	10,900	1951	Apr. 15, 1951	-	19,000
1927	Mar. 20, 1927	-	13,500	1952	Apr. 21, 1952	-	14,700
1928	May 8, 1928	-	16,900	1953	July 5, 1953	-	19,500
1929	Apr. 11, 1929	-	19,700	1954	Apr. 30, 1954	-	16,700
1930	Apr. 21, 1930	-	9,380	1955	Apr. 18, 1955	-	14,800
1931	Apr. 25, 1931	-	4,060	1956	Apr. 10, 1956	-	7,560
1932	Apr. 12, 1932	-	11,100	1957	Apr. 24, 1957	-	8,570
1933	Apr. 23, 1933	-	14,700	1958	July 3, 1958	-	10,700
1934	Apr. 11, 1934	-	13,400	1959	Sept. 30, 1959	-	9,650
1935	Mar. 28, 1935	-	13,600	1960	May 10, 1960	-	33,000
1936	May 9, 1936	-	13,000	1961	May 17, 1961	-	11,400
1937	Apr. 29, 1937	-	13,800	1962	May 2, 1962	-	9,370

675. Menominee River near McAllister, Wis.

Location.--Lat 45°19'20", long 87°39'40", in sec.17, T.33 N., R.23 E., on right bank 400 ft above highway bridge, 2½ miles downstream from Little Cedar River, 2.9 miles east of McAllister, 14.5 miles east of Wausaukee, and at mile 22.3.

Drainage area.--4,020 sq mi, approximately.

Gage.--Nonrecording prior to May 15, 1945; recording May 15, 1945, to Sept. 30, 1961; crest-stage gage thereafter. Altitude of gage is 630 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 24,000 cfs.

Remarks.--Flow regulated by powerplants, by Michigamme Reservoir (capacity, 119,950 acre-ft), by Peavy Pond (capacity, 33,860 acre-ft), and by other reservoirs upstream. 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 4, 1945	13.82	11,700	1954	Apr. 30, 1954	16.77	21,900
1946	June 28, 1946	14.33	12,800	1955	Apr. 18, 1955	15.24	16,700
1947	Apr. 7, 1947	13.71	11,400	1956	Apr. 10, 1956	13.35	10,800
1948	Apr. 29, 1948	12.66	9,240	1957	Apr. 24, 1957	13.39	11,000
1949	July 8, 1949	13.42	10,800	1958	July 4, 1958	13.84	12,300
1950	May 11, 1950	16.70	21,600	1959	Sept. 27, 1959	13.68	11,800
1951	Apr. 15, 1951	17.83	25,700	1960	May 9, 1960	20.0	32,500
1952	Apr. 23, 1952	15.98	19,300	1961	May 18, 1961	14.0	13,300
1953	July 5, 1953	17.43	24,200	1962	May 13, 1962	13.91	13,000

680. Peshtigo River at High Falls, near Crivitz, Wis.

Location.--Lat 45°16'50", long 88°12'00", in sec.1, T.32 N., R.18 E., at High Falls powerhouse of Wisconsin Public Service Corp., 1 mile above Thunder River and 10 miles west of Crivitz.

Drainage area.--554 sq mi.

Gage.--Recording at site half a mile downstream at different datum prior to Sept. 30, 1922; thereafter, headwater and tailwater gage readings and generation data entered hourly in daily log sheet by company employees. Altitude of tailwater gage is 810 ft (from river-profile map).

Stage-discharge relation.--Powerplant rating.

Remarks.--Flow regulated by storage in High Falls service pond, which has an area of 1,750 acres, and by Caldron Falls service pond, which has an area of 1,212 acres. Records of daily discharge furnished by Wisconsin Public Service Corp. since 1923. 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)
1913	Apr. 21, 1913	-	2,480	1936	May 9, 1936	-	1,550
1914	May 2, 1914	-	2,070	1937	Apr. 26, 1937	-	2,500
1915	Apr. 12, 1915	-	1,310	1938	Mar. 31, 1938	-	3,430
				1939	May 29, 1939	-	2,520
1916	June 5, 1916	-	2,850	1940	June 11, 1940	-	1,760
1917	June 9, 1917	-	2,590				
1918	May 31, 1918	-	2,140	1941	Apr. 17, 1941	-	2,030
1919	Apr. 12, 1919	-	2,290	1942	Apr. 6, 1942	-	2,060
1920	Apr. 3, 1920	-	1,830	1943	June 20, 1943	-	2,160
				1944	May 16, 1944	-	1,720
1921	Apr. 29, 1921	-	3,430	1945	Mar. 24, 1945	-	2,190
1922	Apr. 11, 1922	-	3,670				
1923	Apr. 26, 1923	-	2,330	1946	Mar. 20, 1946	-	2,280
1924	May 15, 1924	-	2,430	1947	Apr. 12, 1947	-	1,690
1925	Apr. 28, May 6, 1925	-	1,200	1948	Mar. 27, 1948	-	1,550
				1949	July 8, 1949	-	1,820
				1950	May 8, 1950	-	2,850
1926	Apr. 27, 1926	-	1,980				
1927	Mar. 21, 1927	-	1,790	1951	Apr. 14, 1951	-	3,280
1928	Sept. 15, 1928	-	2,510	1952	Apr. 23, 1952	-	2,120
1929	Apr. 9, 1929	-	3,380	1953	Mar. 28, 1953	-	1,610
1930	Aug. 20, 1930	-	1,440	1954	Apr. 30, Sept. 21, 1954	-	1,610
1931	Nov. 20, 1930	-	905	1955	Apr. 22, 1955	-	1,720
1932	Apr. 12, 13, 1932	-	1,270				
1933	Apr. 21, 1933	-	1,470	1956	Apr. 8, 1956	-	1,470
1934	Apr. 16, 1934	-	1,320				
1935	Apr. 1, 1935	-	1,410				

695. Peshtigo River at Peshtigo, Wis.

Location.--Lat 45°02'50", long 87°44'40", in NE $\frac{1}{4}$ sec.30, T.30 N., R.22 E., on left bank 75 ft downstream from Chicago and Northwestern Railway bridge, 0.5 mile downstream from Wisconsin Public Service Corp. powerplant in Peshtigo, and 11 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--1,124 sq mi.

Gage.--Recording. Datum of gage is 584.64 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,400 cfs.

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)
1954	May 3, 1954	7.78	4,380	1959	Sept. 24, 1959	7.90	4,400
1955	Apr. 1, 1955	6.73	3,360	1960	May 9, 1960	11.59	9,790
1956	Apr. 8, 1956	7.32	3,920	1961	Mar. 29, 1961	7.50	3,750
1957	Apr. 20, 1957	7.07	3,680	1962	Apr. 9, 1962	8.00	4,020
1958	Apr. 8, 1958	6.66	3,290				

710. Oconto River near Gillett, Wis.

Location.--Lat 44°52', long 88°18', in sec.34, T.28 N., R.18 E., on left bank just upstream from highway bridge, 2 miles upstream from Christy Brook, 2 miles south of Gillett, and at mile 29.

Drainage area.--678 sq mi.

Gage.--Nonrecording prior to Aug. 25, 1938; recording thereafter. At datum 4.0 ft lower prior to March 1909. Altitude of gage is 735 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 6,300 cfs.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1907	May 26, 1907	8.2	-	2,570	1929	Mar. 24, 1929	6.8	-	4,400
1908	May 1, 1908	8.7	-	2,700		Apr. 9, 1929	6.9	-	4,490
1914	May 1, 1914	3.9	-	2,090	1930	Apr. 18, 1930	2.3	-	975
1915	Apr. 14, June 21, 1915	3.5	-	1,790	1931	Oct. 9, 1930	1.9	-	761
	May 13, 1915	3.4	-	1,720	1932	Apr. 10, 1932	3.8	-	1,870
	June 21, 1915	3.5	-	1,790	1933	Apr. 1, 1933	3.4	-	1,600
1916	Apr. 4, 1916	a8.0	-	2,550	1934	Apr. 5, 1934	a7.0	-	3,000
	Apr. 25, 1916	5.4	-	3,310		Mar. 22, 1935	a7.2	-	3,400
	June 9, 1916	4.9	-	2,870	1935	Mar. 22, 1935	a7.2	-	3,400
1917	Apr. 2, 1917	a5.9	-	3,000	1936	Mar. 29, 1936	a4.0	-	2,100
	May 3, 1917	5.3	-	1,646		May 10, 1936	3.7	-	2,010
	June 11, 1917	4.3	-	2,390	1937	Oct. 22, 1936	5.0	-	3,180
	July 2, 1917	4.8	-	2,790		Apr. 28, 1937	4.4	-	2,640
1918	Mar. 24, 1918	a5.4	-	2,470	1938	Mar. 24, 1938	a4.1	-	1,370
	May 13, 1918	3.9	-	3,090		Apr. 2, 1938	4.9	-	3,090
	May 30, 1918	4.5	-	2,550		Apr. 18, 1938	3.8	-	2,100
1919	Mar. 20, 1919	a5.2	-	2,320		May 5, 1938	3.6	-	1,920
	Apr. 13, 1919	4.3	-	2,390	1939	Mar. 26, 1939	9.31	4.0	-
	May 7, 1919	3.5	-	1,790		Mar. 28, 1939	a7.8	-	4,200
	June 27, 1919	3.6	-	1,860		Apr. 23, 1939	3.35	-	1,700
1920	Nov. 15, 1919	3.5	-	1,790		June 15, 1939	4.05	-	2,180
	Nov. 21, 1919	5.3	-	3,220	1940	Dec. 30, 1939	3.45	2.5	-
	Mar. 28, 1920	5.4	-	3,310		June 10, 1940	3.17	-	1,540
	Apr. 26, 1920	3.2	-	1,570	1941	Apr. 4, 1941	4.95	2.0	-
1921	Mar. 22, 1921	4.6	-	2,730		Apr. 18, 1941	3.64	-	1,900
	Apr. 18, 1921	3.6	-	1,930		Sept. 7, 8, 9, 1941	3.45	-	1,760
	Apr. 29, 1921	4.9	-	2,970	1942	Oct. 10, 1941	3.15	-	1,540
1922	Apr. 10, 1922	11.2	-	8,400		Nov. 4, 1941	3.41	-	1,740
	June 21, 1922	3.0	-	1,450		Jan. 7, 1942	5.85	4.2	-
	July 13, 1922	4.5	-	2,650		Apr. 6, 7, 1942	4.16	-	2,340
1923	Apr. 27, 1923	6.2	-	4,010		June 3, 1942	3.15	-	1,540
	June 20, 1923	4.3	-	2,490	1943	Mar. 31, 1943	8.22	2.0	-
1924	Apr. 19, 1924	5.6	-	3,440		Apr. 1, 1943	6.30	-	4,020
	May 15, 1924	5.1	-	3,040		June 4, 1943	3.75	-	1,980
	May 27, 1924	3.6	-	1,850		June 20, 1943	3.44	-	1,760
	June 2, 1924	3.4	-	1,710	1944	June 18, 1944	2.65	-	1,200
1925	June 24, 1925	3.3	-	1,640	1945	Mar. 19, 1945	7.74	3.6	-
1926	Apr. 15, 1926	4.3	-	2,400		Mar. 20, 1945	a5.00	-	2,300
	Apr. 27, 1926	4.1	-	2,240		June 5, 1945	2.96	-	1,410
	Sept. 2, 1926	3.2	-	1,570	1946	Nov. 16, 1945	3.04	-	1,480
1927	Mar. 16, 1927	4.3	-	2,400		Mar. 17, 1946	6.80	-	4,420
1928	Mar. 25, 1928	5.7	-	3,520	1947	Apr. 8, 1947	3.30	-	1,660
	Aug. 24, 1928	3.4	-	1,710	1948	Mar. 25, 1948	4.95	-	2,980
	Sept. 16, 1928	4.9	-	2,880	1949	Dec. 8, 1948	3.21	2.0	-
1929	Oct. 8, 1928	3.8	-	2,000		Mar. 29, 1949	2.58	-	1,150

a Backwater from ice.

Peak stages and discharges of Oconto River near Gillett, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1950	Apr. 12, 1950	6.04	2.5	-	1956	Apr. 8, 1956	(a)	-	3,000
	Apr. 21, 1950	3.87	-	2,060	1957	Nov. 22, 1956	a3.08	-	-
1951	Apr. 3, 1951	6.08	1.0	-		Apr. 23, 1957	3.05	-	1,480
	Apr. 3, 1951	a6.08	-	3,000	1958	Dec. 5, 1957	4.27	2.9	-
	Apr. 14, 1951	6.02	-	4,050		Apr. 10, 1958	3.08	-	1,500
1952	Apr. 2, 1952	a9.95	-	4,000	1959	Apr. 7, 1959	a6.06	-	-
1953	Mar. 23, 1953	8.39	.8	-		Apr. 7, 1959	5.31	-	3,400
	Mar. 23, 1953	7.75	-	5,630	1960	Apr. 8, 1960	(a)	-	2,000
	Apr. 13, 1953	3.14	-	1,550		Apr. 17, 1960	4.60	-	2,750
	Apr. 18, 1953	3.20	-	1,590		May 10, 1960	6.37	-	4,340
1954	May 1, 1954	3.11	-	1,520		May 22, 1960	4.32	-	2,500
	Mar. 27, 1954	a3.12	-	-	1961	Nov. 4, 1960	3.11	-	1,520
1955	Jan. 17, 1955	5.51	4.5	-		Mar. 30, 1961	a7.69	-	3,000
	Apr. 15, 1955	3.18	-	1,570	1962	Apr. 11, 1962	3.75	-	2,030
1956	Apr. 6, 1956	8.73	4.0	-		May 17, 1962	3.23	-	1,610

a Backwater from ice.

735. Fox River at Berlin, Wis.

Location.--Lat 43°57'15", long 88°57'30", in sec.16, T.17 N., R.13 E., at Government lock and dam, 1.1 miles south of bridge in Berlin, 2½ miles upstream from Barnes Creek, and at mile 33.0.

Drainage area.--1,430 sq mi, approximately.

Gage.--Nonrecording at site 0.3 mile upstream at same datum prior to Oct. 7, 1954; recording thereafter. Datum of gage is 744.52 ft above mean tide at New York City (by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 5,100 cfs.

Historical data.--The flood of Mar. 17-18, 1946, was the highest since 1888, according to the Berlin Journal-Courant. The Corps of Engineers lists the maximum stage as 16.2 ft in 1881.

Remarks.--Only annual maximum daily discharges are shown prior to 1942; daily stages and discharges 1942-49, 1951-55, and momentary peaks 1950, 1956-62. Records computed by Corps of Engineers and reviewed by Geological Survey 1898 to 1939.

Maximum stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1898	Mar. 16, 1898	-	2,730	1917	Mar. 27, 1917	-	5,650
1899	Apr. 9, 11, 1899	-	2,800	1918	Mar. 21-23, 1918	-	6,050
1900	Apr. 2, 1900	-	2,830	1919	Mar. 20-21, 1919	-	2,670
				1920	Mar. 29, 1920	-	5,150
1901	Mar. 29, 1901	-	4,800	1921	May 1, 2, 1921	-	2,450
1902	May 25, 1902	-	2,450	1922	Mar. 16, 1922	-	5,920
1903	Mar. 24, 25, 1903	-	2,670	1923	Apr. 12, 1923	-	6,050
1904	Mar. 27, 1904	-	5,400	1924	Apr. 9, 10, 1924	-	4,020
1905	June 10, 11, 1905	-	5,920	1925	Mar. 23, 25, 1925	-	2,520
1906	Mar. 30, 1906	-	4,450	1926	Apr. 1, 2, 1926	-	3,440
1907	Mar. 28-31, 1907	-	2,520	1927	Mar. 16, 1927	-	3,170
1908	Mar. 14, 15, 1908	-	4,020	1928	Mar. 23, 24, 1928	-	5,920
1909	May 3-6, 1909	-	2,910	1929	Mar. 21, 23, 1929	-	6,620
1910	Mar. 17, 1910	-	3,080	1930	Mar. 5, 1930	-	3,000
1911	Feb. 26, 27, 1911	-	2,600	1931	Apr. 5, 8, 1931	-	1,140
1912	Mar. 31, Apr. 1, 1912	-	4,100	1932	Jan. 23, 1932	-	1,910
1913	Mar. 31, 1913	-	4,340	1933	Apr. 11, 1933	-	2,600
1914	June 11, 12, 1914	-	2,750	1934	Apr. 6-8, 1934	-	1,910
1915	Mar. 18, 1915	-	3,000	1935	Mar. 21, 22, 1935	-	4,340
1916	Mar. 28, 30, 1916	-	6,400	1936	Mar. 27, 1936	-	4,340

Maximum stages and discharges of Fox River at Berlin, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1937	Mar. 20, 1937	-	3,260	1951	Apr. 10, 11, 13-16, 1951	13.1	4,020
1938	Sept. 21-23, 1938	-	6,190	1952	Apr. 4-6, 1952	14.1	4,900
1939	Mar. 26, 1939	-	4,910	1953	Mar. 20, 1953	13.4	4,100
1940	June 28, 1940	-	4,720	1954	May 3-7, 1954	10.4	1,870
1941	Apr. 3-6, 1941	-	3,540	1955	Oct. 10-12, 1954	12.20	3,020
1942	Mar. 20, 21, 1942	11.8	2,740	1956	Apr. 4, 1956	13.47	4,000
1943	Mar. 31, Apr. 1, -1943	14.7	5,080	1957	June 18-19, 1957	10.24	1,690
1944	Apr. 23, 23, 1944	11.1	2,290	1958	Mar. 16, 1958	9.68	-
1945	Mar. 18, 19, 1945	12.8	3,460	1959	Apr. 10, 1958	-	1,380
1946	Mar. 17, 18, 1946	15.5	6,900	1959	Apr. 12, 1959	13.06	3,870
1947	Apr. 12, 1947	12.2	3,160	1960	May 10, 1960	13.60	4,100
1948	Mar. 22, 1948	13.7	4,540	1961	Mar. 6, 1961	11.70	-
1949	Apr. 4, 1949	11.6	2,600	1961	Apr. 1, 1961	-	2,210
1950	Mar. 28, 1950	13.85	4,780	1962	Mar. 30, 1962	14.21	5,160

a Backwater from ice.

Note.--Annual maximum daily discharges are shown prior to 1942; daily stages and discharges are shown for 1942-49, 1951-55, momentary peaks for 1950, 1956-62.

747. Hunting River near Elcho, Wis.

Location--Lat 45°25'10", long 89°11'15", in N $\frac{1}{2}$ sec. 24, T. 34 N., R. 10 E., at twin culverts on U.S. Highway 45 and State Highway 47, 1 $\frac{1}{2}$ miles south of Elcho, and 3 miles north of Summit Lake.

Drainage area--6.0 sq mi, approximately.

Gage--Crest-stage gage.

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)
1958	July 2, 1958	11.58	50	1961	Mar. 28, 1961	11.94	80
1959	Sept. 28, 1959	12.98	200	1962	May 13, 1962	12.30	110
1960	May 8, 1960	12.41	120				

755. Wolf River above West Branch Wolf River, Wis.

Location--Lat 44°55', long 88°39', in E $\frac{1}{2}$ sec. 3, T. 28 N., R. 15 E., at highway bridge half a mile upstream from West Branch Wolf River, 4 miles north of Keshena, and at mile 140.1.

Drainage area--633 sq mi.

Gage--Nonrecording. Datum of gage is 856.57 ft above mean sea level (levels by Wisconsin Power and Light Co.).

Stage-discharge relation--Defined by current-meter measurements below 2,300 cfs.

Remarks--Only annual peaks are shown.

Peak stages and discharges of Wolf River above West Branch Wolf River, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Mar. 29, 1928	4.67	1,740	1946	Mar. 19, 1946	5.7	2,330
1929	Apr. 8, 1929	6.2	2,640	1947	Apr. 7, 1947	4.4	1,540
1930	Apr. 19, 1930	3.8	1,240	1948	Mar. 27, 1948	4.3	1,480
				1949	July 5, 1949	4.3	1,480
1931	June 14, 1931	4.00	1,350	1950	Apr. 26, 1950	4.7	1,710
1932	Apr. 10, 1932	4.44	1,570				
1933	May 2, 1933	3.90	1,290	1951	Apr. 13, 1951	5.65	2,440
1934	Apr. 10, 1934	4.6	1,680	1952	Apr. 19-22, 1952	4.40	1,590
1935	Mar. 25, 1935	6.1	1,960	1953	Mar. 24, 1953	5.74	2,540
				1954	Apr. 28, 1954	4.40	1,580
1936	May 7, 1936	4.52	1,620	1955	Apr. 15, 1955	4.18	1,450
1937	May 1, 1937	5.07	1,960				
1938	Mar. 31, 1938	5.56	2,260	1956	Apr. 7, 1956	4.60	1,680
1939	Mar. 31, 1939	5.4	2,140	1957	Apr. 21, 1957	4.35	1,520
1940	June 9, 1940	4.44	1,540	1958	July 6, 1958	3.97	1,200
				1959	Sept. 30, 1959	4.74	1,760
1941	Apr. 16, 1941	5.8	2,390	1960	May 8, 1960	6.60	3,120
1942	Apr. 6, 1942	4.57	1,660				
1943	June 19, 1943	4.90	1,830	1961	Mar. 30, Apr. 22, 1961	-	al, 400
1944	May 13, 1944	4.6	1,660				
1945	Mar. 23, 1945	4.9	1,830	1962	May 15, 1962	5.00	2,000

a Daily mean discharge.

770. Wolf River at Keshena Falls, Wis.
(Published as "at Keshena" prior to April 1928)

Location.--Lat 44°53', long 88°39', in E $\frac{1}{2}$ sec. 22, T. 28 N., R. 15 E., on right bank 500 ft downstream from Keshena Falls, 1.7 miles upstream from Keshena, 3.1 miles downstream from West Branch Wolf River, and at mile 136.4.

Drainage area.--812 sq mi.

Gage.--Nonrecording at site 1.7 miles downstream at datum 4.03 ft lower prior to April 1928; recording thereafter. Datum of gage is 820.0 ft above mean sea level (levels by Wisconsin Power and Light Co.).

Stage-discharge relation.--Defined by current-meter measurements below 3,300 cfs.

Historical data.--The flood of Apr. 10, 1922, was the highest in many years, according to the Shawano County Advocate.

Remarks.--Only annual peaks are shown prior to 1948. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	Apr. 28, 1908	6.2	3,520	1932	Apr. 9, 1932	7.45	2,110
1912	Sept. 2, 1912	6.9	4,070	1933	May 2, 1933	7.04	1,710
1913	Sept. 6, 1913	4.7	2,400	1934	Apr. 10, 1934	7.02	2,120
1914	Apr. 30, 1914	4.2	2,060	1935	Mar. 28, 1935	7.48	2,160
1915	June 19, 1915	3.7	1,720	1936	May 8, 1936	7.65	2,320
1916	Apr. 21, 1916	6.0	3,370	1937	May 2, 1937	8.25	2,940
1917	June 8, 1917	4.5	2,260	1938	Mar. 31, 1938	8.62	3,330
1918	May 28, 1918	5.0	2,620	1939	May 29, 1939	7.73	2,640
1919	Apr. 15, 1919	4.6	2,470	1940	June 9, 1940	7.50	2,250
1920	Apr. 2, 1920	4.89	2,550	1941	Sept. 1, 1941	8.50	3,400
1921	Apr. 29, 1921	6.5	3,760	1942	Nov. 2, 1942	7.51	2,250
1922	Apr. 10, 1922	7.30	4,390	1943	June 1, 1943	8.11	2,920
1923	Apr. 21, 1923	5.7	3,260	1944	May 14, 1944	7.12	1,840
1924	May 15, 1924	5.78	3,320	1945	Mar. 24, 1945	7.65	2,420
1925	June 14, 1925	3.4	1,510	1946	Mar. 18, 1946	7.67	2,420
1926	Apr. 25, 1926	5.2	2,850	1947	Apr. 6, 1947	7.43	2,200
1927	May 18, 1927	4.40	2,210				
1928	Sept. 15, 1928	8.15	2,940	1948	Mar. 27, 1948	7.23	1,990
1929	Apr. 8, 1929	-	4,100				
1930	Apr. 19, 1930	-	1,620	1949	Mar. 30, 1949	6.73	1,540
					July 6, 1949	7.23	1,990
1931	June 15, 1931	6.90	1,530	1950	Apr. 18, 1950	7.77	-

a Backwater from ice.

Peak stages and discharges of Wolf River at Keshena Falls, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Apr. 26, 1950	-	2,250	1958	Jan. 3, 1958	a7.10	-
	May 6, 1950	7.56	2,300		Apr. 6, 1958	6.94	1,600
1951	Apr. 13, 1951	8.76	3,590		July 6, 1958	6.89	1,520
	July 5, 1951	6.90	1,560	1959	Sept. 30, 1959	7.26	1,990
1952	Nov. 15, 1951	6.83	1,520	1960	Oct. 26, 1959	7.24	1,980
	Apr. 20, 1952	7.46	2,080		Apr. 15, 1960	7.65	2,420
	July 4, 1952	6.99	1,600		May 7, 1960	9.67	b4,830
1953	Mar. 24, 1953	7.84	2,500		May 20, 1960	7.87	2,660
	Mar. 30, 1953	7.05	1,700	1961	Nov. 2, 1960	7.21	1,950
	Apr. 11, 1953	7.05	1,700		Mar. 29, 1961	8.17	2,100
	Apr. 16, 1953	6.97	1,600		Apr. 22, 1961	7.10	1,800
1954	Apr. 29, 1954	7.26	1,890		May 16, 1961	7.05	1,750
	June 27, 1954	6.98	1,630	1962	Dec. 16, 1961	a7.51	-
1955	Apr. 7, 1955	7.29	1,920		Apr. 10, 1962	6.86	1,610
1956	Apr. 10, 1956	7.09	1,730		Apr. 24, 1962	7.22	1,960
1957	Apr. 21, 1957	7.44	2,070		May 15, 1962	7.50	2,250
					Sept. 1, 1962	6.73	1,500

a Backwater from ice.

b Result of release when part of dam was dynamited.

785. Embarrass River near Embarrass, Wis.

Location.--Lat 44°43', long 88°44', in sec.18, T.26 N., R.15 E., on left bank 10 ft downstream from bridge, three-quarters of a mile downstream from Mill Creek, and 4 miles northwest of Embarrass.

Drainage area.--395 sq mi.

Gage.--Nonrecording prior to Aug. 23, 1938; recording thereafter. Altitude of gage is 800 ft (from survey level line in vicinity).

Stage-discharge relation.--Defined by current-meter measurements below 2,800 cfs.

Remarks.--Only annual peaks are shown prior to 1948. 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)
1920	Mar. 27, 1920	7.7	2,800	1942	May 31, 1942	6.84	2,310
1921	Mar. 21, 1921	8.4	3,600	1943	June 1, 1943	9.35	4,560
1922	Apr. 10, 1922	11.6	6,920	1944	June 14, 1944	6.95	2,460
1923	Apr. 22, 1923	8.8	3,970	1945	Mar. 18, 1945	7.38	2,760
1924	Apr. 18, 1924	7.3	2,570	1946	Mar. 16, 1946	7.55	2,920
1925	June 15, 1925	5.3	1,290	1947	Apr. 5, 1947	6.94	2,390
1926	Aug. 23, 1926	5.9	1,650	1948	Mar. 20, 1948	b6.10	-
1927	Mar. 15, 1927	5.8	1,590		Mar. 24, 1948	5.65	1,580
1928	Sept. 16, 1928	7.8	2,930		Mar. 27, 1948	5.30	1,360
1929	Apr. 8, 1929	8.5	3,480	1949	Mar. 24, 1949	5.36	1,390
1930	Apr. 18, 1930	4.6	890		Mar. 29, 1949	5.23	1,320
1931	June 24, 1931	4.50	800		July 6, 1949	4.98	1,140
1932	Apr. 9, 1932	5.70	1,510	1950	Mar. 27, 1950	c11.05	d1,200
1933	Mar. 31, 1933	5.8	1,570		Apr. 12, 1950	5.64	1,490
1934	Apr. 5, 1934	6.9	2,310	1951	Mar. 30, 1951	5.10	1,160
1935	Mar. 24, 1935	6.10	1,810		Apr. 9, 1951	7.80	3,070
1936	Mar. 25, 1936	6.0	1,610		Apr. 13, 1951	7.34	2,660
1937	Apr. 25, 1937	6.0	1,740	1952	Apr. 2, 1952	e.02	4,170
1938	Mar. 22, 1938	8.1	3,130		July 4, 1952	7.90	3,150
1939	Mar. 26, 1939	a9.64	-	1953	Mar. 23, 1953	f.79	3,970
1940	Mar. 27, 1939	-	3,970		July 29, 1953	f.33	1,500
	June 30, 1940	6.82	2,310				
1941	May 31, 1941	6.38	2,030				

a Backwater from ice, 1.5 ft.
ice.

d Daily mean discharge.

b Backwater from ice, 1.0 ft.

c Backwater from

Peak stages and discharges of Embarrass River near Embarrass, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Apr. 28, 1954	5.02	1,120	1960	Oct. 25, 1959	5.24	1,240
1955	Apr. 1, 1955	5.40	1,340		Dec. 28, 1959	5.78	1,570
	Apr. 6, 1955	5.30	1,280		Apr. 16, 1960	5.26	1,260
	June 11, 1955	4.98	1,100		May 1, 1960	5.34	1,300
1956					May 7, 1960	9.72	4,890
	Apr. 5, 1956	c8.0	3,000		May 19, 1960	5.00	1,110
					Aug. 30, 1960	5.00	1,110
1957	Apr. 21, 1957	5.35	1,310	1961	Nov. 2, 1960	5.25	1,250
1958	Apr. 8, 1958	5.10	1,160		Mar. 28, 1961	8.50	3,690
				1962	Apr. 9, 1962	5.77	1,560
1959	Mar. 31, 1959	c7.75	d1,100				
	Apr. 5, 1959	6.86	2,320				

c Backwater from ice.

d Daily mean discharge.

790. Wolf River at New London, Wis.

Location--Lat 44°23', long 88°44', in sec.12, T.22 N., R.14 E., on right bank 15 ft downstream from Pearl Street bridge in New London, 0.2 mile downstream from Embarrass River, and at mile 56.3.

Drainage area--2,240 sq mi, approximately.

Gage--Nonrecording prior to Oct. 4, 1951; recording thereafter. Datum of gage is 749.37 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation--Defined by current-meter measurements below 11,600 cfs.

Historical data--The flood of Apr. 13, 1922, was the highest since Apr. 16, 1888, according to the New London newspaper. The Corps of Engineers reported the gage height of the Apr. 16, 1888, flood as 11.6 ft.

Remarks--Annual daily maximums are listed prior to Oct. 4, 1951; momentary maximums thereafter. Records for 1896-1913 computed by Corps of Engineers.

Maximum stages and discharges a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1888	Apr. 16, 1888	11.6	-	1920	Mar. 28, 1920	10.3	10,800
1896	May 7-9, 1896	-	3,420	1921	May 3, 1921	8.8	6,560
1897	Mar. 27, 1897	-	4,390	1922	Apr. 13, 1922	11.4	15,500
1898	Apr. 1-4, 26-28, 1898	-	2,865	1923	Apr. 24, 1923	10.2	10,100
1899	May 5, 6, 1899	-	5,430	1924	May 16-18, 1924	9.3	7,280
1900	July 26, 27, 1900	-	2,750	1925	June 19, 20, 1925	7.4	4,270
1901				1926	May 1-3, 1926	7.6	4,470
	Apr. 1, 1901	-	6,230	1927	Mar. 16-19, 1927	8.9	6,340
	May 13, 28, 1902	-	3,050	1928	Mar. 26, 27, 1928	9.5	7,810
1903	Mar. 26, 27, 1903	-	5,100	1929	Mar. 21, 22, 1929	11.0	11,300
1904	June 1-4, 1904	-	5,160	1930	Mar. 18-21, 1930	5.6	2,900
1905	Apr. 1, 1905	-	6,470	1931	June 25, 26, 1931	4.3	2,160
1906	Apr. 1-6, 1906	-	7,250		Apr. 15, 1932	7.4	4,260
1907	Mar. 30, 31, 1907	-	5,100		Apr. 5, 6, 1933	7.9	5,320
1908	Mar. 18, 19, 1908	-	4,350	1934	Apr. 8, 9, 1934	8.4	6,000
1909	May 16, 17, 22-24, 1909	-	3,420	1935	Mar. 25, 26, 1935	9.6	9,570
1910	May 1-4, 1910	-	3,500	1936	Mar. 28, 1936	8.8	7,450
1911	May 25, 26, 1911	-	3,120	1937	May 1-3, 1937	8.3	6,360
1912	July 29, 30, 1912	-	9,180	1938	Mar. 23-25, 1938	9.8	11,500
1913	Mar. 19, 1913	-	8,170	1939	Mar. 29, 30, 1939	9.8	11,100
1914	June 9, 10, 1914	9.9	8,490	1940	July 1, 2, 1940	7.2	4,880
1915	Mar. 27, 1915	7.6	4,260	1941	Apr. 6-8, 1941	8.6	7,140
1916				1942	June 5, 7, 1942	9.0	7,940
	Apr. 4, June 12, 13, 1916	9.7	8,960	1943	Apr. 2, 3, 1943	9.9	11,700
1917	Apr. 1, 1917	9.45	8,060	1944	June 22, 1944	8.3	6,080
1918	May 30, 31, 1918	9.5	7,270	1945	Mar. 23, 1945	8.4	7,600
1919	Apr. 14, 15, 1919	8.7	6,350	1946	Mar. 18, 1946	9.6	10,300

a Maximum daily means are listed prior to Oct. 4, 1951; momentary peak stages and discharges thereafter.

Maximum stages and discharges of Wolf River at New London, Wis.--Continued a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 12, 1947	8.1	5,970	1955	Apr. 9, 1955	8.21	5,830
1948	Mar. 23, 24, 1948	7.8	5,460	1956	Apr. 9, 1956	8.86	7,470
1949	Mar. 31, Apr. 1, 7, 9, 1949	6.8	4,020	1957	Apr. 28, 1957	6.11	3,320
1950	Mar. 31, 1950	69.6	7,000	1958	Apr. 14, 1958	5.78	3,210
1951	Apr. 14, 1951	9.82	10,500	1959	Apr. 8, 1959	9.00	7,840
1952	Apr. 5, 1952	11.0	15,200	1960	May 12, 1960	10.52	13,300
1953	Mar. 26, 1953	9.80	10,400	1961	Apr. 1, 1961	8.92	7,430
1954	May 6, 1954	6.61	3,980	1962	Apr. 2, 1962	9.26	8,490

a Annual daily maximums are listed prior to Oct. 4, 1951; momentary peak stages and discharges thereafter.

b Backwater from ice.

800. Little Wolf River at Royalton, Wis.

Location.--Lat 44°24', long 88°51', in sec. 1, T. 22 N., R. 13 E., on right bank 50 ft upstream from highway bridge in Royalton, and 6 miles upstream from mouth.

Drainage area.--514 sq mi.

Gage.--Nonrecording prior to Apr. 24, 1934; recording thereafter. At datum 0.75 ft lower prior to Aug. 20, 1915. Datum of gage is 774.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs.

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)
1914	June 7, 1914	7.6	5,470	1926	Sept. 25, 1926	3.53	1,670
1915	Apr. 8, 1915	3.3	1,300	1927	Mar. 11, 1927	3.9	1,970
1916	Mar. 30, 1916	10.0	6,000	1928	Mar. 24, 1928	10.0	4,000
	Apr. 23, 1916	4.4	2,510		Apr. 30, 1928	4.1	2,180
	June 10, 1916	5.1	3,340		Sept. 16, 1928	4.1	2,180
1917	Mar. 26, 1917	8.5	4,600	1929	Mar. 18, 1929	7.0	5,900
	June 8, 1917	3.4	1,380		Apr. 7, 1929	4.5	2,620
1918	Mar. 24, 1918	10.9	2,200	1930	Feb. 23, 1930	10.5	1,600
	May 12, 1918	3.52	1,570	1931	June 22, 1931	2.3	670
	May 19, 1918	4.8	2,980	1932	Apr. 9, 1932	7.1	1,250
	May 27, 1918	4.7	2,860	1933	Apr. 2, 1933	4.5	2,660
1919	Mar. 16, 1919	10.9	3,100	1934	Apr. 4, 1934	7.2	3,500
	Apr. 10, 1919	3.6	1,670	1935	Mar. 22, 1935	10.82	3,500
	May 8, 1919	3.8	1,670	1936	Mar. 25, 1936	7.00	3,420
	June 12, 1919	3.5	1,570	1937	Mar. 7, 1937	10.90	2,500
1920	Mar. 26, 1920	5.6	3,950		May 1, 1937	3.23	1,650
1921	Apr. 28, 1921	4.1	2,180	1938	Mar. 19, 1938	10.50	-
1922	Apr. 11, 1922	7.0	5,900		Mar. 21, 1938	5.51	4,020
	June 12, 1922	5.0	3,220		Apr. 1, 1938	3.46	1,720
1923	Apr. 15, 1923	5.5	3,820		July 3, 1938	3.29	1,580
1924	Apr. 9, 1924	5.2	3,460		Sept. 11, 1938	5.75	4,380
	May 10, 1924	3.8	1,670		Sept. 20, 1938	4.48	2,830
	Aug. 6, 1924	3.5	1,570	1939	Mar. 25, 1939	10.33	-
	Aug. 22, 1924	6.1	4,600		Mar. 25, 1939	10.32	6,500
1925	June 15, 1925	4.1	2,180	1940	June 26, 1940	4.14	2,500
1926	Apr. 11, 1926	3.6	1,670				
	June 15, 1926	3.5	1,570				
	Aug. 24, 1926	3.5	1,570				

a Backwater from ice.

Peak stages and discharges of Little Wolf River at Royalton, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Apr. 2, 1941	a6.55	-	1951	Apr. 14, 1951	4.43	2,640
	Apr. 3, 1941	4.04	2,390				
	June 2, 1941	3.68	1,730	1952	Apr. 2, 1952	7.07	5,690
1942	May 14, 1942	3.40	1,640	1953	Mar. 23, 1953	6.23	4,840
	June 1, 1942	4.47	2,810				
	June 29, 1942	3.90	2,190	1954	Mar. 15, 1954	2.62	1,010
1943	Mar. 30, 1943	a8.00	6,950	1955	Oct. 3, 1954	4.67	2,890
	June 2, 1943	4.74	2,970				
1944	June 15, 1944	4.16	2,380	1956	Apr. 4, 1956	a8.83	-
	June 20, 1944	4.55	2,860		Apr. 5, 1956	(a)	6,000
1945	Mar. 17, 1945	6.5	5,080	1957	Dec. 9, 1956	a2.83	-
	June 3, 1945	4.57	2,860		Apr. 21, 1957	2.71	1,080
1946	Mar. 15, 1946	a9.21	-	1958	Sept. 6, 1958	2.81	1,150
	Mar. 15, 1946	a8.7	5,900	1959	Apr. 5, 1959	a9.10	4,000
1947	Apr. 7, 1947	4.6	2,860	1960	Dec. 28, 1959	4.50	2,750
1948	Mar. 21, 1948	a7.93	5,000		Mar. 31, 1960	a6.00	-
1949	Mar. 22, 1949	3.21	1,480		Mar. 31, 1960	(a)	2,500
					May 8, 1960	5.82	4,260
1950	Mar. 28, 1950	a11.95	6,800	1961	Mar. 28, 1961	4.13	2,890
	Apr. 11, 1950	3.60	1,840	1962	Mar. 29, 1962	3.97	2,380
1951	Apr. 9, 1951	4.61	2,860		Apr. 9, 1962	3.67	2,080

a Backwater from ice.

810. Waupaca River near Waupaca, Wis.

(Published as "near Weyauwega," June 28, 1916, to Oct. 18, 1917)

Location--Lat 44°19'50", long 88°59'45", near north line of sec. 1, T.21 N., R.12 E., on right bank 10 ft downstream from highway bridge, 1½ miles downstream from Crystal River, and 4 miles downstream from Waupaca.

Drainage area--272 sq mi.

Gage--Nonrecording prior to Nov. 24, 1938; recording thereafter. At site 1 mile downstream at different datum prior to Oct. 19, 1917. Altitude of gage is 780 ft (from survey level line along railroad).

Stage-discharge relation--Defined by current-meter measurements below 2,000 cfs.

Remarks--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1917	Mar. 25, 1917	5.8	-	1,000	1935	June 19, 1935	3.1	-	710
1918	Mar. 19, 1918	6.2	-	1,400					
1919	Mar. 17, 1919	5.7	-	1,900	1936	Mar. 25, 1936	3.9	-	980
1920	Mar. 26, 1920	3.7	-	1,080	1937	Mar. 25, 1937	3.3	-	758
					1938	Sept. 10, 1938	4.7	-	1,440
1921	Apr. 27, 1921	3.3	-	900	1939	Mar. 23, 1939	5.52	-	1,660
1922	Apr. 11, 1922	4.7	-	1,440	1940	June 24, 1940	5.69	-	1,900
1923	Apr. 13, 1923	5.5	-	1,800					
1924	Aug. 22, 1924	4.7	-	1,440	1941	Jan. 6, 1941	3.72	2.0	-
1925	July 9, 1925	3.2	-	784		Apr. 3, 1941	-	-	665
1926	Mar. 24, 1926	5.1	1.3	1,100	1942	Jan. 3, 1942	4.17	2.5	-
1927	May 10, 1927	2.7	-	521		June 7, 1942	3.49	-	960
1928	Mar. 23, 1928	5.0	-	1,490	1943	Mar. 26, 1943	5.00	-	1,570
1929	Mar. 16, 1929	a6.1	-	bl, 590	1944	Mar. 12, 1944	3.98	-	1,160
1930	Feb. 25, 1930	3.5	-	876	1945	Mar. 14, 1945	3.76	1.2	-
						Mar. 16, 1945	3.60	-	1,000
1931	Oct. 8, 1930	2.1	-	322	1946	Mar. 7, 1946	5.70	2.0	-
1932	May 7, 1932	2.55	-	488		Mar. 14, 1946	4.48	-	1,360
1933	Apr. 2, 1933	4.9	-	1,490	1947	Dec. 4, 1946	3.76	1.5	-
1934	Apr. 4, 1934	5.9	-	2,040		Apr. 6, 1947	3.45	-	855

a Backwater from ice.

b Daily mean discharge.

Peak stages and discharges of Waupaca River near Waupaca, Wis.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1948	Mar. 20, 1948	6.90	-	2,520	1955	Oct. 4, 1954	3.52	-	950
1949	Dec. 9, 1948	3.50	1.5	-		Mar. 12, 22, 1955	4.45	1.5	-
	Mar. 15, 1949	3.90	-	1,120					
1950	Mar. 28, 1950	8.06	2.5	-	1956	Apr. 5, 1956	5.18	-	1,650
	Mar. 28, 1950	7.92	1.9	2,100	1957	Apr. 21, 1957	1.96	-	353
					1958	Apr. 6, 1958	2.02	-	375
1951	Mar. 19, 1951	3.23	1.0	-	1959	Apr. 1, 1959	4.92	-	1,250
	Apr. 8, 1951	2.96	-	740	1960	Dec. 28, 1959	4.04	-	1,180
1952	Apr. 2, 1952	4.67	-	1,440					
1953	Mar. 23, 1953	5.19	-	1,660	1961	Mar. 27, 1961	3.78	-	1,070
1954	Mar. 14, 1954	3.08	1.0	-	1962	Apr. 8, 1962	2.65	-	620
	June 1, 1954	2.25	-	455					

a Backwater from ice.

830. West Branch Fond du Lac River at Fond du Lac, Wis.

Location.--Lat 43°45'45", long 88°29'00", on line between secs. 17 and 20, T.15 N., R.17 E., on left bank 25 ft upstream from highway bridge, 0.7 mile west of Fond du Lac, and 2.5 miles upstream from confluence with East Branch.

Drainage area.--84.5 sq mi.

Gage.--Recording. Datum of gage is 766.78 ft above mean sea level (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 870 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Mar. 25, 1939	3.79	-	602	1948	Mar. 15, 1948	3.98	2.0	-
1940	June 22, 1940	5.28	-	1,000		Mar. 21, 1948	-	-	457
1941	Mar. 27, 1941	5.29	-	1,000	1949	Mar. 14, 1949	4.48	3.0	-
1942	May 31, 1942	6.16	-	1,320		Mar. 27, 1949	-	-	501
1943	Mar. 27, 1943	(a)	-	bl,390	1950	Mar. 25, 1950	5.41	2.5	-
1944	Mar. 23, 1944	2.70	1.5	-		Mar. 27, 1950	-	-	642
	June 23, 1944	2.02	-	202	1951	May 3, 1951	4.28	-	741
1945	June 1, 1945	4.31	-	686	1952	Mar. 21, 1952	5.60	1.5	-
						Mar. 24, 1952	-	-	894
1946	Mar. 14, 1946	5.78	-	1,210	1953	Mar. 17, 1953	5.10	-	1,040
1947	June 13, 1947	4.42	-	770	1954	Apr. 24, 1954	1.12	-	56

a Backwater from ice.

b Daily mean discharge.

835. East Branch Fond du Lac River at Fond du Lac, Wis.

Location.--Lat 43°45'15", long 88°27'10", in sec.22, T.15 N., R.17 E., on left bank at highway bridge, 0.1 mile west of U.S. Highway 41, 0.5 mile south of Fond du Lac, and 2.5 miles upstream from confluence with West Branch.

Drainage area.--77.9 sq mi.

Gage.--Recording. Datum of gage is 762.82 ft above mean sea level (Corps of Engineers bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 1,800 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Mar. 17, 1939	4.93	3.0	-	1948	Mar. 15, 1948	5.23	C.8	1,100
	Mar. 25, 1939	-	-	397	1949	Mar. 6, 1949	5.85	3.5	-
1940	June 23, 1940	5.87	-	2,140		Mar. 27, 1949	-	-	403
					1950	Mar. 26, 1950	6.40	1.9	1,100
1941	Mar. 23, 1941	-	-	1,090					
	Mar. 26, 1941	6.13	2.5	-	1951	Mar. 6, 1951	5.46	2.0	-
1942	May 31, 1942	4.12	-	920		Apr. 26, 1951	-	-	899
1943	Mar. 16, 1943	10.74	5.7	1,500	1952	Mar. 19, 1952	5.85	2.5	-
1944	Feb. 23, 1944	(a)	-	6170		Mar. 21, 1952	4.21	-	964
1945	Mar. 14, 1945	8.21	3.0	1,600	1953	Feb. 20, 1953	5.25	2.0	-
						Mar. 15, 1953	-	-	745
1946	Mar. 13, 1946	4.72	-	1,460	1954	Feb. 16, 1954	2.30	.8	-
1947	June 13, 1947	4.65	-	1,220		July 7, 1954	-	-	110

a Backwater from ice.

b Daily mean discharge.

845. Fox River at Rapide Croche Dam, near Wrightstown, Wis.

Location.--Lat 44°19', long 88°12', in sec.4, T.21 N., R.19 E., at Rapide Croche Dam, 2 miles upstream from Wrightstown, and 18 miles upstream from mouth.

Drainage area.--6,150 sq mi, approximately.

Gage.--Recording headwater and tailwater gages, and since 1925, electric generation data taken each half hour are used to compute discharge records.

Remarks.--Flow regulated by storage in Lake Winnebago pool, area 263 sq mi at elevation of Menasha Dam crest. Figures of daily discharge furnished by Corps of Engineers.

Maximum daily discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1918	May 25, 1918	-	16,300	1941	Apr. 20, 1941	-	16,800
1919	Apr. 18, 1919	-	13,100	1942	June 2, 1942	-	19,800
1920	Apr. 10, 1920	-	16,600	1943	June 6, 1943	-	21,300
				1944	June 23, 1944	-	10,800
1921	Apr. 28, 1921	-	14,200	1945	June 6, 1945	-	15,800
1922	Apr. 23, 1922	-	20,100				
1923	May 1-3, 1923	-	13,700	1946	Mar. 27, 1946	-	21,300
1924	May 13, 1924	-	15,500	1947	June 16, 1947	-	11,000
1925	July 9, 1925	-	8,340	1948	Apr. 3, 1948	-	10,300
				1949	Apr. 26, 1949	-	6,360
1926	June 17, 1926	-	9,060	1950	Apr. 18, 1950	-	10,900
1927	Mar. 30, 1927	-	13,300				
1928	Apr. 11, 1928	-	15,100	1951	Apr. 26, 1951	-	20,400
1929	Apr. 4, 1929	-	20,600	1952	Apr. 18, 1952	-	24,000
1930	Mar. 8, 1930	-	6,600	1953	Apr. 22, 1953	-	12,000
				1954	June 28, 1954	-	5,530
1931	Dec. 2, 1930	-	3,100	1955	Oct. 8, 1954	-	12,800
1932	Mar. 4, 1932	-	9,900				
1933	May 19, 1933	-	8,900	1956	May 14, 1956	-	10,900
1934	Apr. 3, 1934	-	6,650	1957	May 29, 1957	-	5,830
1935	Apr. 4, 1935	-	11,100	1958	Jan. 3, 1958	-	4,220
				1959	May 1, 1959	-	11,600
1936	Apr. 4, 1936	-	6,290	1960	May 18, 1960	-	23,600
1937	May 4, 1937	-	13,500				
1938	Mar. 30, 1938	-	all 500				
1939	Oct. 1, 1938	-	18,200	1961	Apr. 20, 1961	-	9,950
1940	June 26, 1940	-	17,500	1962	Apr. 17, 1962	-	15,400

a Discharge of 18,000 cfs Sept. 22, 1938, occurred as part of flood event which did not peak until Oct. 1, 1938.

860. Sheboygan River at Sheboygan, Wis.
(Published as "near Sheboygan," June 1916 to September 1924)

Location.--Lat 43°44'25", long 87°45'35", in E½ sec.29, T.15 N., R.23 E., on left bank near State Highway 28, 0.7 mile west of bridge over Sheboygan River on State Highway 28, and 4.2 miles upstream from mouth.

Drainage area.--432 sq mi.

Gage.--Nonrecording prior to July 1951; recording thereafter. At site 0.7 mile downstream at different datum prior to November 1950. At site 0.3 mile downstream at datum 3.15 ft lower November 1950 to June 1951. Datum of gage is 584.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,300 cfs.

Remarks.--Only annual peaks are shown prior to 1951. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1917	June 3, 1917	5.7	2,080	1954	June 22, 1954	5.39	1,320
1918	Mar. 20, 1918	8.9	6,340	1955	Oct. 4, 1954	8.04	a3,210
1919	Mar. 16, 1919	7.1	3,670		Apr. 25, 1955	8.92	a4,010
1920	Mar. 26, 1920	9.4	7,140	1956	Apr. 2, 1956	6.83	a2,200
1921	Apr. 26, 1921	8.1	5,140		May 6, 1956	7.66	a2,870
1922	Mar. 27, 1922	7.2	3,500	1957	Apr. 7, 1957	4.26	694
1923	Apr. 6, 1923	7.9	4,200	1958	Apr. 7, 1958	3.43	379
1951	Mar. 7, 1951	5.75	2,070	1959	Apr. 3, 1959	9.48	4,790
	Mar. 30, 1951	8.20	a4,310	1960	Dec. 28, 1959	9.82	5,230
	Apr. 8, 1951	7.80	3,870		Mar. 30, 1960	10.65	6,300
	Apr. 14, 1951	6.20	2,380		Apr. 30, 1960	6.05	1,660
	Apr. 25, 1951	6.70	2,790		May 7, 1960	8.48	3,640
1952	Oct. 24, 1951	6.02	1,630	1961	Mar. 22, 1961	6.35	1,860
	Nov. 13, 1951	7.57	a2,800		Sept.30, 1961	6.53	1,990
	Mar. 19, 1952	8.21	a3,360	1962	Nov. 16, 1961	6.62	2,050
	Mar. 31, 1952	6.63	2,060		Mar. 26, 1962	9.11	4,340
	Apr. 13, 1952	7.84	a3,030				
	July 20, 1952	8.61	a3,780				
1953	Mar. 13, 1953	6.26	1,830				
	May 3, 1953	5.86	1,520				

a Revised.

865. Cedar Creek near Cedarburg, Wis.

Location.--Lat 43°19'25", long 87°58'50", on line between secs. 14 and 23, T.10 N., R.21 E., on upstream side of highway bridge, 2 miles north of Cedarburg and 6 miles upstream from mouth.

Drainage area.--121 sq mi.

Gage.--Nonrecording. Altitude of gage is 790 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 3,200 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Cedar Creek near Cedarburg, Wis.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	June 23, 1931	5.9	177	1947	Mar. 25, 1947	8.2	580
1932	Nov. 25, 1931	6.7	450	1948	Mar. 19, 1948	9.0	1,610
1933	Apr. 1, 1933	9.0	1,470	1949	Apr. 1, 1949	6.7	386
1934	Apr. 4, 1934	6.5	352	1950	Mar. 27, 1950	11.10	3,230
1935	Mar. 6, 1935	9.8	1,100				
				1951	Mar. 30, 1951	8.80	1,470
1936	Mar. 14, 1936	9.0	710	1952	Mar. 20, 1952	11.40	3,500
1937	Apr. 22, 1937	8.8	1,350	1953	June 6, 1953	8.86	1,540
1938	Sept. 19, 1938	9.1	1,520	1954	June 23, 1954	8.2	1,000
1939	Mar. 24, 1939	7.4	702	1955	Oct. 4, 1954	9.45	1,920
1940	June 23, 1940	11.05	3,180				
				1956	July 13, 1956	6.85	433
1941	Mar. 24, 1941	8.9	410	1957	May 31, 1957	6.40	275
1942	June 13, 1942	7.9	850	1958	Mar. 1, 1958	ae.55	180
1943	Mar. 25, 1943	8.9	1,100	1959	Apr. 1, 1959	all.7	3,400
1944	Mar. 16, 1944	8.2	440	1960	Mar. 30, 1960	ai2.25	3,600
1945	Mar. 15, 1945	6.8	406				
				1961	Mar. 22, 1961	7.14	525
1946	Mar. 7, 1946	11.0	3,140	1962	Mar. 28, 1962	10.30	2,550

a Backwater from ice.

870. Milwaukee River at Milwaukee, Wis.
(Published as "near Milwaukee" prior to 1936)

Location.--Lat 43°06'00", long 87°54'30", in NE¹ sec.5, T.7 N., R.22 E., on left bank near north limits of Milwaukee, 2,000 ft downstream from Port Washington Road Bridge, and 6 miles upstream from mouth.

Drainage area.--686 sq mi.

Gage.--Nonrecording prior to Jan. 9, 1934; recording thereafter. At site near present gage at different datum prior to Apr. 6, 1929. At site half a mile upstream at different datum Apr. 6, 1929, to Jan. 8, 1934. Datum of gage is 607.23 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 9,200 cfs.

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)
1915	Oct. 17, 1914	5.3	4,860	1923	Mar. 5, 1923	3.8	2,980
	Feb. 24, 1915	5.7	5,460		Apr. 7, 1923	5.8	7,060
	Mar. 15, 1915	3.5	2,380		Apr. 17, 1923	3.5	2,540
	May 29, 1915	4.7	3,990				
	Sept. 16, 1915	3.4	2,260	1924	Mar. 29, 1924	4.6	4,880
1916	Jan. 28, 1916	4.9	4,270		Apr. 8, 1924	3.7	2,870
	Mar. 29, 1916	5.0	4,410		May 9, 1924	4.3	4,080
	Apr. 20, 1916	3.8	2,760		Aug. 6, 1924	9.0	15,100
	June 8, 1916	3.8	2,760				
1917	Mar. 25, 1917	5.6	5,310	1925	Feb. 11, 1925	3.4	3,350
	May 1, 1917	3.4	2,260		Apr. 24, 1925	3.1	2,790
	June 23, 1917	3.55	2,500	1926	Mar. 25, 1926	4.1	4,740
	June 29, 1917	3.3	2,140		Apr. 10, 1926	3.2	2,970
					May 27, 1926	2.7	2,080
1918	Mar. 20, 1918	9.0	15,100	1927	Feb. 6, 1927	2.8	2,250
1919	Mar. 18, 1919	5.6	5,310		Feb. 25, 1927	2.9	2,430
	May 4, 1919	3.2	2,040		Mar. 13, 1927	3.7	3,940
					Apr. 21, 1927	2.9	2,450
1920	Mar. 16, 1920	4.8	4,130	1928	Oct. 7, 1927	3.4	3,350
	Mar. 27, 1920	5.6	5,310		Dec. 27, 1927	3.1	2,790
	June 17, 1920	6.6	7,050		Mar. 15, 1928	4.4	5,350
1921	Apr. 23, 1921	4.8	4,470		Apr. 7, 1928	3.6	3,740
1922	Feb. 24, 1922	4.7	4,310	1929	Nov. 19, 1928	3.4	3,350
	Mar. 8, 1922	4.3	3,690		Dec. 14, 1928	3.5	3,540
	Apr. 12, 1922	3.9	3,100		Mar. 15, 1929	7.1	11,000
					Apr. 7, 1929	4.1	4,810

STREAMS TRIBUTARY TO LAKE MICHIGAN

Peak stages and discharges of Milwaukee River at Milwaukee, Wis.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Apr. 28, 1929	2.9	2,380	1951	Mar. 30, 1951	6.54	5,740
1930	Feb. 26, 1930	3.8	4,180		Apr. 9, 1951	5.51	3,970
	May 3, 1930	3.0	2,570		Apr. 26, 1951	5.08	3,160
1931	Apr. 7, 1931	2.0	945	1952	Oct. 24, 1951	4.70	2,450
1932	Nov. 24, 1931	2.8	2,200		Nov. 14, 1951	5.80	4,350
1933	Apr. 2, 1933	4.5	6,370		Jan. 19, 1952	4.85	2,680
	May 8, 1933	3.3	3,100		Mar. 12, 1952	4.90	2,760
	May 20, 1933	3.6	3,790		Mar. 22, 1952	7.13	7,010
	June 7, 1933	2.8	2,110		Apr. 2, 1952	5.39	3,590
1934	Apr. 4, 1934	5.46	2,260		Apr. 13, 1952	5.79	4,350
1935	Mar. 17, 1935	5.60	3,300		May 8, 1952	5.06	3,000
1936	Mar. 24, 1936	4.62	2,990		June 13, 1952	4.51	2,150
1937	Feb. 21, 1937	5.93	6,640		July 18, 1952	6.35	5,440
	Apr. 21, 1937	5.05	4,120	1953	Mar. 15, 1953	4.95	2,840
	May 1, 1937	4.57	2,880		May 3, 1953	5.71	4,160
1938	Feb. 12, 1938	6.19	7,360		June 5, 1953	6.89	6,580
	Mar. 19, 1938	4.57	2,880	1954	June 3, 1954	5.35	3,660
	Sept. 18, 1938	6.02	6,780		June 22, 1954	5.62	4,030
1939	Mar. 26, 1939	4.83	2,440		July 7, 1954	4.56	2,340
1940	Apr. 1, 1940	6.07	4,360	1955	Oct. 4, 1954	5.92	4,590
	June 24, 1940	7.10	6,570		Apr. 25, 1955	5.91	4,570
1941	Mar. 27, 1941	4.85	2,500		May 12, 1955	5.73	4,230
1942	Mar. 17, 1942	4.74	2,360	1956	Apr. 29, 1956	5.02	2,880
1943	Dec. 28, 1942	5.45	3,400		May 7, 1956	4.72	2,430
	Feb. 24, 1943	5.86	4,020		May 10, 1956	5.65	3,940
	Mar. 16, 1943	6.81	5,860		July 13, 1956	4.99	2,980
1944	Feb. 27, 1944	4.52	2,030	1957	May 13, 1957	4.34	2,040
1945	Mar. 16, 1945	4.33	1,840	1958	Sept. 24, 1958	4.63	2,440
1946	Jan. 8, 1946	5.66	3,700	1959	Apr. 3, 1959	7.92	8,780
	Mar. 7, 1946	6.18	4,620		Apr. 28, 1959	4.37	2,080
	Mar. 15, 1946	7.00	6,330		Sept. 28, 1959	5.33	3,640
1947	Mar. 25, 1947	4.80	2,500	1960	Oct. 5, 1959	5.13	3,250
1948	Feb. 28, 1948	4.82	2,600		Dec. 29, 1959	4.86	2,820
	Mar. 19, 1948	7.55	8,080		Jan. 13, 1960	4.98	3,010
1949	July 28, 1949	4.10	1,620		Mar. 31, 1960	8.05	9,300
1950	Mar. 8, 1950	4.78	2,600		Apr. 16, 1960	4.95	2,960
	Mar. 28, 1950	6.42	5,540		Apr. 22, 1960	4.79	2,700
	July 19, 1950	4.92	2,760		Apr. 30, 1960	4.86	2,820
1951	Mar. 3, 1951	4.76	2,520		May 6, 1960	6.04	4,920
	Mar. 7, 1951	5.44	3,680		May 16, 1960	4.85	2,800
					May 21, 1960	4.54	2,340
					July 11, 1960	4.47	2,240
					Aug. 3, 1960	5.12	3,230
					Sept. 20, 1960	4.45	2,210
					Sept. 25, 1960	4.33	2,050
				1961	Nov. 15, 1960	4.58	2,390
					Mar. 24, 1961	4.53	2,320
					Sept. 13, 1961	5.41	3,740
				1962	Mar. 28, 1962	6.28	5,400
					July 2, 1962	4.40	2,140
					Aug. 24, 1962	5.34	3,610

872. Oak Creek near South Milwaukee, Wis.

Location.--Lat 42°52'58", long 87°53'31", on common boundary of secs. 21 and 22, T.5 N., R.22 E., at bridge on West Nicholson Road, three-quarters of a mile north of State Highway 100, and 3 miles southwest of Rawson Park in South Milwaukee.

Drainage area.--13.9 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 660 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)
1958	June 1, 1958	11.11	57	1961	Sept. 22, 1961	12.60	85
1959	Apr. 1, 1959	15.25	170	1962	Mar. 25, 1962	15.46	185
1960	Mar. 30, 1960	17.49	1,100				

a Revised.

873. Lake Michigan tributary at Winthrop Harbor, Ill.

Location.--Lat 42°29'10", long 87°49'20", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.46 N., R.12 E., at culvert on State Highway 42, a quarter of a mile north of center of Winthrop Harbor.

Drainage area.--1.72 sq mi. Mean altitude of basin, 680 ft.

Gage.--Crest-stage gage. Altitude of gage is 600 ft (from topographic map).

Stage-discharge relation.--Not determined.

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)
1956	Mar. 19, 1956	11.99	-	1960	Apr. 17, 1960	12.85	-
1957	Feb. 25, 1957	11.59	-				
1958	Feb. 22, 1958	11.94	-	1961	Mar. 13, 1961	11.44	-
1959	Apr. 28, 1959	11.96	-	1962	May 26, 1962	12.21	-

875. Hart ditch at Munster, Ind.

Location.--Lat 41°33'40", long 87°28'50", in N $\frac{1}{2}$ sec.20, T.36 N., R.9 W., on left bank at city limits of Munster, a quarter of a mile downstream from U.S. Highway 41, and 0.4 mile upstream from mouth.

Drainage area.--69.2 sq mi.

Gage.--Recording. Datum of gage is 591.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Dredging operations, assumed to have occurred between April 1944 and April 1945, and subsequent filling have affected high-water rating. Backwater from Little Calumet River and possibly from overbank return affects stage at gage at times during periods of extremely high flow.

Bankfull stage.--7 ft.

Remarks.--Hart ditch is tributary to Little Calumet River. At this point low flow of Little Calumet River runs west into Calumet Sag Channel or into Lake Michigan through Grand Calumet River; floodflow at times runs east into channel storage or through Burns ditch to Lake Michigan. Base for partial-duration series, 800 cfs.

Peak stages and discharges of Hart ditch at Munster, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Dec. 28, 1942	6.57	2,100	1950	Apr. 25, 1950	4.35	1,420
	Feb. 6, 1943	4.70	1,250		June 3, 1950	3.05	875
	Mar. 16, 1943	6.95	2,280	1951	Feb. 19, 1951	3.87	1,020
	Apr. 27, 1943	4.70	1,250		May 11, 1951	5.01	1,430
	May 11, 1943	6.58	2,100	1952	Nov. 14, 1951	3.81	960
	May 21, 1943	6.06	1,860		June 14, 1952	4.39	1,190
1944	Mar. 15, 1944	7.23	2,420	1953	Mar. 15, 1953	3.84	960
	Apr. 12, 1944	4.17	1,130	1954	Mar. 25, 1954	4.25	1,110
1945	May 8, 1945	3.73	1,270	1955	Oct. 11, 1954	a7.83	2,600
	May 15, 1945	3.14	918		Jan. 6, 1955	3.73	925
1946	Jan. 6, 1946	2.88	780	1956	Apr. 29, 1956	4.72	1,310
	Apr. 6, 1947	6.17	2,490		May 11, 1956	5.27	1,550
1947	Apr. 11, 1947	3.16	925	1957	July 14, 1957	a7.60	2,060
	Apr. 21, 1947	3.82	1,210		June 10, 1958	3.76	960
	June 2, 1947	3.81	1,210	1958	Aug. 15, 1958	3.35	820
	Feb. 28, 1948	3.66	1,170	1959	Apr. 28, 1959	7.61	2,670
1948	Mar. 20, 1948	4.72	1,530		May 21, 1959	4.90	1,390
	May 11, 1948	5.60	1,950	1960	Jan. 13, 1960	3.50	855
1949	Feb. 13, 1949	3.00	850		Apr. 26, 1961	3.82	960
	Mar. 31, 1949	2.90	800	1961	Sept. 25, 1961	4.38	960
1950	Dec. 22, 1949	4.83	1,570	1962	Mar. 12, 1962	3.10	715
	Jan. 14, 1950	3.02	850				
	Jan. 26, 1950	2.90	800				
	Mar. 6, 1950	3.51	1,080				
	Mar. 27, 1950	3.15	925				
	Apr. 4, 1950	4.04	1,280				
	Apr. 10, 1950	2.92	800				

a Affected by backwater due to ponding downstream.

877. Little Calumet River at Calumet City, Ill.

Location.--Lat 41°35'08", long 87°31'46", in ~~N1NE1~~ sec.29, T.36 N., R.15 E., at Wentworth Avenue Bridge at south edge of Calumet City.

Drainage area.--Indeterminate.

Gage.--Crest-stage gage. Datum of gage is 581.1 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not determined.

Remarks.--Unknown and variable portions of floodflows from upper Little Calumet River basin are diverted to Lake Michigan by Burns ditch (see p.). Unknown amount of floodflow passing station diverted through Calumet Sag Channel to Upper Mississippi River basin. 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)
1954	Mar. 26, 1954	9.88	-	1959	Apr. 29, 1959	12.16	-
1955	Oct. 11, 1954	14.34	-	1960	Feb. 11, 1960	9.74	-
1956	Apr. 30, 1956	10.60	-	1961	Sept. 26, 1961	12.41	-
1957	July 14, 1957	(a)	-	1962	Mar. 12, 1962	8.80	-
1958	June 10, 1958	9.36	-				

a Unknown; greater than 15 ft.

880. Thorn Creek at Glenwood, Ill.

Location.--Lat 41°31'50", long 87°36'20", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.9, T.35 N., R.14 E., on right bank 20 ft downstream from Baltimore & Ohio Chicago Terminal Railroad bridge, 0.7 mile north of Chicago Heights, 0.8 mile south of Glenwood, and 1 mile upstream from Deer Creek.

Drainage area.--24.6 sq mi.

Gage.--Recording. Datum of gage is 610.97 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs.

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)
1950	Dec. 22, 1949	9.11	780	1956	May 10, 1956	9.15	830
	Jan. 13, 1950	7.2	464		May 14, 1957	7.99	593
	Apr. 4, 1950	8.4	661	1957	June 28, 1957	9.28	865
	Apr. 25, 1950	9.0	763		July 13, 1957	11.14	2,460
1951	Feb. 19, 1951	7.56	528	1958	June 10, 1958	8.14	610
	May 10, 1951	9.35	831		June 13, 1958	7.95	593
1952	Nov. 14, 1951	8.44	661		Aug. 15, 1958	9.52	950
	Dec. 31, 1951	7.62	528	1959	Mar. 26, 1959	7.51	512
	Apr. 15, 1952	7.17	464		Apr. 28, 1959	9.71	1,060
	June 14, 1952	9.12	780		May 20, 1959	9.46	928
1953	Feb. 21, 1953	7.23	464		July 19, 1959	8.05	593
	Mar. 12, 1953	7.32	480	1960	Jan. 12, 1960	8.44	661
	Mar. 15, 1953	8.32	610		Feb. 10, 1960	7.65	528
	June 10, 1953	9.63	848		Apr. 17, 1960	7.61	528
1954	Mar. 25, 1954	8.83	729		June 14, 1960	7.94	576
	Apr. 22, 1954	7.41	496	1961	July 3, 1960	7.82	560
	Apr. 25, 1954	8.05	593		Apr. 25, 1961	9.30	865
	July 7, 1954	7.97	593		June 7, 1961	7.34	480
1955	Oct. 10, 1954	9.88	1,180		Sept. 14, 1961	8.81	735
	Jan. 5, 1955	7.49	512		Sept. 23, 1961	9.97	1,220
	Aug. 30, 1955	7.16	464	1962	Feb. 4, 1962	7.32	480
1956	Feb. 24, 1956	7.80	560		May 7, 1962	8.13	610
	Apr. 27, 1956	7.30	480		June 23, 1962	7.60	528
	Apr. 29, 1956	9.21	830				

885. Deer Creek near Chicago Heights, Ill.

Location.--Lat 41°31'15", long 87°35'25", 0.1 mile west of center of sec.14, T.35 N., R.14 E., on left bank at downstream side of bridge on Joe Orr Road, 0.4 mile east of Cottage Grove Avenue, 1 mile north of U.S. Highway 30, and 1.5 miles northeast of Chicago Heights.

Drainage area.--23.2 sq mi.

Gage.--Nonrecording prior to Jan. 11, 1949; recording Jan. 11, 1949, to Oct. 9, 1956; nonrecording Oct. 10, 1956, to Aug. 12, 1958; recording thereafter. At site 250 ft downstream Oct. 10, 1956, to Sept. 24, 1957. Datum of gage is 615.95 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 250 cfs.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Peak stages and discharges of Deer Creek near Chicago Heights, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 19, 1948	10.65	472	1955	Jan. 6, 1955	8.83	254
	May 10, 1948	11.52	663				
1949	Feb. 13, 1949	10.00	376	1956	Feb. 25, 1956	9.71	347
					Apr. 29, 1956	10.46	467
1950	Dec. 22, 1949	10.38	438		May 10, 1956	10.32	433
	Jan. 14, 1950	9.2	280	1957	Apr. 27, 1957	8.87	263
	Mar. 6, 1950	9.4	301		May 14, 1957	8.78	254
	Mar. 26, 1950	9.2	280		June 28, 1957	9.07	281
	Apr. 4, 1950	10.1	390		June 13, 1957	11.75	1,380
	Apr. 25, 1950	10.3	422				
1951	Jan. 3, 1951	8.69	255	1958	June 10, 1958	10.50	471
	Feb. 16, 1951	8.67	255		June 13, 1958	8.90	263
	Feb. 19, 1951	10.18	435		Aug. 15, 1958	10.42	453
	May 11, 1951	10.44	467	1959	Apr. 28, 1959	11.22	850
					May 21, 1959	11.01	720
1952	Nov. 14, 1951	10.21	419	1960	Jan. 13, 1960	10.26	430
	Jan. 1, 1952	8.78	264		Feb. 11, 1960	10.21	420
	Apr. 13, 1952	8.76	264		Mar. 30, 1960	9.50	301
	June 14, 1952	9.75	377		Apr. 17, 1960	9.60	312
1953	Mar. 15, 1953	9.54	339	1961	Apr. 25, 1961	-	356
	June 10, 1953	10.15	435		Sept. 26, 1961	10.51	510
1954	Mar. 25, 1954	10.15	417	1962	Mar. 12, 1962	9.17	250
	July 7, 1954	8.68	254				
1955	Oct. 11, 1954	11.19	637				

890. Butterfield Creek at Flossmoor, Ill.

Location.--Lat 41°32'25", long 87°38'55", in NE¹/₄ sec. 8, T.35 N., R.14 E., on left bank at downstream side of Reigle Road Bridge at Homewood city limits, 0.1 mile north of Holbrook Road, and three-quarters of a mile east of Flossmoor.

Drainage area.--23.4 sq mi.

Gage.--Nonrecording prior to Sept. 9, 1948; recording thereafter. Datum of gage is 616.80 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,200 cfs.

Remarks.--Base for partial-duration series, 240 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 19, 1948	10.29	970	1955	Oct. 10, 1954	10.92	1,480
	May 10, 1948	10.28	970		Jan. 5, 1955	7.73	297
1949	Feb. 13, 1949	8.89	465		Feb. 20, 1955	7.35	242
	May 19, 1949	8.8	450	1956	Feb. 25, 1956	7.98	332
1950	Dec. 22, 1949	9.1	495		Apr. 29, 1956	9.15	510
	Jan. 13, 1950	7.9	318		May 10, 1956	8.97	480
	Jan. 25, 1950	8.4	390	1957	Apr. 27, 1957	7.47	255
	Mar. 6, 1950	8.15	353		May 13, 1957	7.38	248
	Apr. 4, 1950	9.0	480		June 28, 1957	8.55	420
	Apr. 25, 1950	9.49	555		July 13, 1957	11.78	2,550
1951	Feb. 19, 1951	8.72	435	1958	June 9, 1958	7.82	304
	May 11, 1951	9.33	525		June 13, 1958	7.86	311
	July 27, 1951	7.41	248		Aug. 15, 1958	7.80	304
1952	Nov. 13, 1951	8.04	339	1959	Apr. 28, 1959	8.34	375
	Jan. 20, 1952	7.66	283				
	Apr. 13, 1952	7.39	248	1960	Jan. 12, 1960	7.92	318
	June 14, 1952	8.00	325		Mar. 28, 1960	7.43	255
1953	Mar. 15, 1953	8.31	390		Apr. 17, 1960	7.52	262
	June 10, 1953	10.05	810	1961	Apr. 25, 1961	8.00	332
1954	Mar. 25, 1954	8.75	450		Sept. 23, 1961	10.26	935
	Apr. 22, 1954	7.88	318	1962	Mar. 12, 1962	7.75	297
	Apr. 25, 1954	8.67	435		Mar. 19, 1962	7.46	255
	July 7, 1954	7.41	248				

895. Lansing ditch near Lansing, Ill.

Location.--Lat 41°31'40", long 87°31'45", at north boundary of sec.17, T.35 N., R.15 E., on right bank at upstream side of bridge on farm road, 0.2 mile west of Indiana State line, 0.5 mile east of Burnham Avenue, and 2 miles south of Lansing.

Drainage area.--8.7 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 20, 1948; recording thereafter. Datum of gage is 607.16 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 380 cfs. Extensive shifts in the rating have occurred.

Remarks.--Base for partial-duration series, 140 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 20, 1948	8.55	346	1954	Mar. 25, 1954	8.30	308
	May 10 or 11, 1948	9.24	461		Apr. 22, 1954	7.18	191
					Apr. 25, 1954	8.63	362
					July 7, 1954	8.42	323
1949	Feb. 13, 1949	8.68	371				
	Mar. 31, 1949	6.75	243	1955	Oct. 11, 1954	10.18	302
	May 19, 1949	6.0	178		Jan. 6, 1955	7.48	217
1950	Dec. 22, 1949	7.75	258	1956	Feb. 25, 1956	8.07	275
	Jan. 26, 1950	6.45	145		Apr. 27, 1956	6.69	177
	Mar. 5, 1950	6.85	166		Apr. 29, 1956	8.08	320
	Mar. 26, 1950	7.1	180		May 10, 1956	6.72	177
	Apr. 25, 1950	8.39	301				
	June 2, 1950	6.85	151	1957	July 13, 1957	8.85	240
1951	Jan. 3, 1951	8.15	264	1958	June 8, 1958	7.02	150
	Feb. 19, 1951	-	a200				
	Apr. 11, 1951	6.43	142	1959	Apr. 28, 1959	7.26	155
	May 11, 1951	9.01	425		May 21, 1959	7.21	150
1952	Nov. 14, 1951	8.07	275	1960	Jan. 12, 1960	6.97	186
	Jan. 1, 1952	8.42	323		Feb. 10, 1960	6.51	149
	Jan. 19, 1952	6.69	157		Mar. 27, 1960	6.46	145
	Apr. 13, 1952	7.44	212		June 14, 1960	7.13	204
	June 14, 1952	6.69	157				
1953	Feb. 21, 1953	6.92	169	1961	Sept. 25, 1961	7.66	126
	Mar. 13, 1953	6.55	148	1962	Mar. 12, 1962	6.23	77
	Mar. 15, 1953	7.98	269				
	June 10, 1953	8.60	354				

a Estimated.

900. North Creek near Lansing, Ill.

Location.--Lat 41°32'45", long 87°33'30", in SE¹/₄SE¹/₄ sec.1, T.35 N., R.14 E., on right bank at downstream side of Torrence Avenue Bridge, 1.1 miles south of Lansing and 2.7 miles north of U.S. Highway 30.

Drainage area.--16.7 sq mi.

Gage.--Nonrecording prior to Dec. 16, 1948; recording thereafter. Datum of gage is 599.29 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Considerable shifting occurs.

Remarks.--Base for partial-duration series, 210 cfs.

Peak stages and discharges of North Creek near Lansing, Ill.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 20, 1948	8.51	730	1953	Mar. 13, 1953	7.32	288
	May 11, 1948	8.35	649		Mar. 15, 1953	8.12	531
1949	Jan. 28, 1949	6.95	241		June 10, 1953	7.84	435
	Feb. 13, 1949	8.08	531	1954	Mar. 25, 1954	8.05	510
	Mar. 31, 1949	7.45	332		Apr. 22, 1954	7.47	323
	May 19, 1949	7.2	286		Apr. 25, 1954	8.31	623
1950	Dec. 22, 1949	7.8	418		July 7, 1954	8.01	490
	Jan. 13, 1950	7.3	288	1955	Oct. 10, 1954	8.96	692
	Jan. 26, 1950	7.18	262		Jan. 5, 1955	7.49	232
	Feb. 14, 1950	7.13	251	1956	Feb. 25, 1956	7.69	269
	Mar. 5, 1950	7.55	348		Apr. 29, 1956	8.04	348
	Mar. 26, 1950	7.45	323		May 10, 1956	7.86	300
	Apr. 4, 1950	8.0	490	1957	July 13, 1957	8.85	515
	Apr. 11, 1950	7.2	266	1958	June 9, 1958	7.69	269
	Apr. 25, 1950	8.18	575		June 13, 1958	7.52	232
	June 3, 1950	7.4	311	1959	Apr. 28, 1959	8.02	255
1951	Jan. 3, 1951	6.99	224		May 21, 1959	8.33	328
	Feb. 19, 1951	-	a300	1960	June 14, 1960	8.17	285
	May 11, 1951	8.35	649	1961	Apr. 25, 1961	7.92	235
1952	Nov. 14, 1951	7.82	418		Sept. 25, 1961	8.23	305
	Jan. 1, 1952	7.85	435	1962	Mar. 12, 1962	7.54	185
	Jan. 19, 1952	7.26	279				
	Apr. 13, 1952	7.60	360				
	June 14, 1952	7.10	245				
1953	Feb. 21, 1953	7.25	277				

a Estimated.

905. Thorn Creek at Thornton, Ill.

Location.--Lat 41°34'05", long 87°36'30", near center of N $\frac{1}{2}$ sec.34, T.36 N., R.14 E., on right bank at downstream side of Ridge Road Bridge in Thornton, 1 mile downstream from North Creek and 1 $\frac{1}{2}$ miles upstream from Grand Trunk Railway.

Drainage area.--104 sq mi.

Gage.--Nonrecording prior to Dec. 18, 1948; recording thereafter. Datum of gage is 586.43 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Considerable shifting occurs.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 5, 1947	14.34	a4,200	1952	June 14, 1952	9.77	1,270
1948	Mar. 20, 1948	14.08	4,040	1953	Mar. 15, 1953	10.42	1,520
	May 10, 1948	12.8	3,090		June 11, 1953	11.72	2,280
1949	Feb. 13, 1949	9.81	1,320	1954	Mar. 25, 1954	11.10	1,890
	Mar. 31, 1949	8.9	1,020		Apr. 22, 1954	9.22	1,080
	May 20, 1949	9.2	1,100		Apr. 25, 1954	10.29	1,480
1950	Dec. 22, 1949	11.3	2,010		July 7, 1954	9.59	1,200
	Jan. 14, 1950	9.2	1,080	1955	Oct. 11, 1954	14.70	3,370
	Jan. 26, 1950	9.2	1,080		Jan. 6, 1955	9.72	1,240
	Mar. 6, 1950	9.4	1,140	1956	Feb. 25, 1956	9.47	1,160
	Mar. 27, 1950	8.8	975		Apr. 29, 1956	11.66	2,280
	Apr. 25, 1950	11.30	2,010		May 11, 1956	11.45	2,080
1951	Feb. 19, 1951	10.76	1,720	1957	Apr. 28, 1957	9.02	900
	May 11, 1951	12.26	2,720		June 29, 1957	12.20	1,130
1952	Nov. 14, 1951	10.53	1,570		July 13, 1957	16.00	4,700
	Jan. 1, 1952	9.28	1,100	1958	June 10, 1958	11.27	1,460
	Jan. 20, 1952	8.92	1,000		June 14, 1958	9.81	1,040
	Apr. 13, 1952	9.34	1,080				

a Annual peak only.

Peak stages and discharges of Thorn Creek at Thornton, Ill.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Aug. 16, 1958	12.12	1,560	1960	June 15, 1960	8.94	990
1959	Feb. 23, 1959	-	b900	1961	Apr. 25, 1961	10.68	1,610
	Apr. 28, 1959	11.92	1,780		Sept. 24, 1961	12.94	2,420
	May 21, 1959	10.74	1,350	1962	Mar. 12, 1962	8.77	1,100
1960	Jan. 13, 1960	9.90	1,220		Mar. 20, 1962	8.10	955
	Feb. 11, 1960	9.08	1,030				

b Estimated.

907. Thorn Creek near Lansing, Ill.

Location.--Lat 41°34'46", long 87°34'20", in W $\frac{1}{2}$ sec.25, T.36 N., R.14 E., at end of Bernice Road, half a mile south of 167th Street, and 1 mile northwest of Lansing.

Drainage area.--106 sq mi.

Gage.--Crest-stage gage. Datum of gage is 584.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not determined.

Remarks.--Only annual peak stages are shown, except for 1955.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 25, 1954	5.50	-	1959	May 21, 1959	6.75	-
1955	Oct. 11, 1954	11.14	3,430	1960	Jan. 13, 1960	5.38	-
1956	Apr. 29, 1956	7.44	-	1961	Sept. 24, 1961	9.59	-
1957	July 12, 1957	11.54	-	1962	Mar. 12, 1962	5.45	-
1958	June 10, 1958	6.94	-				

910. Little Calumet River at South Holland, Ill.

Location.--Lat 41°36'05", long 87°34'38", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.13, T.36 N., R.14 E., on right bank at downstream side of bridge on U.S. Highway 6, 0.6 mile downstream from Thorn Creek, and 1.6 miles east of South Holland.

Drainage area.--Indeterminate.

Gage.--Nonrecording prior to Oct. 27, 1947; recording thereafter. Datum of gage is 575.00 ft above mean sea level. Auxiliary gage: Nonrecording prior to Nov. 17, 1947, and recording thereafter, at Dixmoor, 6.1 miles downstream.

Stage-discharge relation.--Defined by current-meter measurements. Fall between reference gage and auxiliary gage used as a factor in computing discharge.

Remarks.--Unknown and variable portions of floodflows from upper Little Calumet River basin are diverted to Lake Michigan by Burns ditch (see station 935). Unknown amount of floodflow passing station diverted through Calumet Sag Channel to upper Mississippi River basin. 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)
1947	Apr. 6, 1947	19.24	4,760	1956	July 14, 1956	15.22	2,420
1948	May 11, 1948	17.33	3,810	1957	July 14, 1957	20.11	4,440
1949	Feb. 14, 1949	13.04	1,580	1958	June 10, 1958	13.79	1,930
1950	Apr. 26, 1950	15.20	2,780	1959	Apr. 29, 1959	16.32	2,820
				1960	Jan. 13, 1960	13.64	1,860
1951	May 11, 1951	16.52	3,360				
1952	Nov. 14, 1951	13.91	2,480	1961	Sept. 26, 1961	16.72	2,410
1953	June 11, 1953	14.42	2,420	1962	Mar. 12, 1962	12.55	1,280
1954	Mar. 26, 1954	14.41	2,100				
1955	Oct. 11, 1954	19.39	4,210				

915. Little Calumet River at Harvey, Ill.

Location.--Lat 41°37'35", long 87°38'05", in W $\frac{1}{2}$ NW $\frac{1}{4}$ sec.9, T.36 N., R.14 E., at Illinois Central Railroad bridge, 800 ft north of 147th Street in Harvey and 11 miles upstream from mouth.

Drainage area.--570 sq mi, approximately, of which about 330 sq mi was usually noncontributing subsequent to 1925. Latter value varies according to relative stages in eastern and western portions of Little Calumet River basin.

Gage.--Nonrecording. Altitude of gage is 580 ft (from topographic map).

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

Remarks.--Burns ditch (see station 935) was completed in summer of 1925, thereafter diverting flow from eastern part of Little Calumet River basin directly to Lake Michigan (refer to drainage area paragraph above). Starting in August 1922, an unknown amount of floodflow passing station was diverted through Calumet Sag Channel to upper Mississippi River basin. 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)
1908	Mar. 6, 1908	13.4	-	1925	Mar. 20, 1925	5.23	763
1917	Mar. 14, 1917	6.20	1,170	1926	Apr. 9, 1926	8.35	2,460
1918	Feb. 15, 1918	8.87	2,750	1927	May 24, 1927	9.70	3,310
1919	Mar. 18, 1919	10.28	3,750	1928	Nov. 29, 1927	7.52	1,860
1920	Mar. 26, 1920	7.90	2,140	1929	Mar. 16, 1929	9.10	2,890
				1930	Apr. 1, 1930	6.90	1,500
1921	Apr. 23, 1921	5.48	905				
1922	Apr. 11, 1922	10.20	3,690	1931	May 20, 1931	5.80	940
1923	Sept. 3, 1923	7.50	1,900	1932	Feb. 12, 1932	6.45	1,230
1924	Mar. 29, 1924	8.67	2,650	1933	Apr. 1, 1933	8.72	2,610

919. Midlothian Creek near Tinley Park, Ill.

Location.--Lat 41°35'18", long 87°44'52", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.36 N., R.13 E., at bridge on 167th Street, 0.6 mile west of State Highway 50, and 2 miles northeast of Tinley Park.

Drainage area.--Not determined.

Gage.--Crest-stage gage. Datum of gage is 659.19 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Not determined.

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 25, 1954	5.32	-	1959	Apr. 28, 1959	6.24	-
1955	Jan. 1, 1955	8.42	-	1960	Mar. 27, 1960	5.92	-
1956	Apr. 29, 1956	10.12	-	1961	Sept. 24, 1961	6.07	-
1957	July 13, 1957	(a)	-	1962	Mar. 19, 1962	5.19	-
1958	June 13, 1958	5.12	-				

a Unknown; greater than 11 ft.

920. Midlothian Creek at Oak Forest, Ill.

Location.--Lat 41°36'51", long 87°43'46", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.15, T.36 N., R.13 E., on right bank at downstream side of Kilbourn Avenue Bridge in Oak Forest, 4.4 miles upstream from mouth.

Drainage area.--14.0 sq mi.

Gage.--Recording. Datum of gage is 620.41 ft above mean sea level, datum of 1929 (Cook County Highway Department bench mark).

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

Remarks.--Base for partial-duration series, 220 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 19, 1951	5.58	316	1957	Apr. 25, 1957	4.82	230
	May 10, 1951	5.67	324		June 28, 1957	5.47	270
	Sept. 22, 1951	5.31	290		July 13, 1957	9.00	550
	Sept. 26, 1951	6.32	375				
1952	Nov. 14, 1951	4.91	256	1958	June 13, 1958	4.01	168
1953	Mar. 15, 1953	4.62	248	1959	Apr. 28, 1959	4.77	228
	June 10, 1953	6.58	384	1960	Mar. 27, 1960	3.95	210
1954	Mar. 25, 1954	4.81	248	1961	Sept. 24, 1961	6.36	328
1955	Oct. 10, 1954	8.49	569	1962	Mar. 19, 1962	3.97	210
	Jan. 5, 1955	5.10	273				
1956	May 10, 1956	4.56	204				

a Occurred Apr. 29, 1956.

930. Deep River at Lake George Outlet, at Hobart, Ind.

Location.--Lat 41°32'10", long 87°15'25", in NW $\frac{1}{4}$ sec.32, T.36 N., R.7 W., on left bank at upstream side of highway bridge, 300 ft upstream from Duck Creek, and 400 ft downstream from Lake George Dam.

Drainage area.--125 sq mi.

Gage.--Nonrecording Apr. 4, 1947, to July 29, 1952; recording thereafter. At site 400 ft upstream at datum 11.80 ft higher prior to July 21, 1955. Datum of gage is 588.17 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

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

Remarks.--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)
1947	Apr. 6, 1947	5.41	a2,410	1955	Oct. 11, 1954	7.68	3,880
1948	Feb. 28, 1948	4.24	1,200		Jan. 6, 1955	3.87	919
	Mar. 20, 1948	4.10	1,070	1956	Feb. 25, 1956	9.11	845
	May 11, 1948	5.86	2,740		Apr. 30, 1956	10.49	1,260
1949	Feb. 14, 1949	3.50	620		May 11, 1956	11.15	1,320
1950	Dec. 22, 1949	5.35	2,390	1957	Apr. 28, 1957	10.35	1,230
	Jan. 14, 1950	4.24	1,200		July 14, 1957	12.35	1,650
	Jan. 26, 1950	4.32	1,250	1958	June 10, 1958	8.61	720
	Feb. 15, 1950	3.73	781	1959	Feb. 15, 1959	10.75	1,320
	Mar. 7, 1950	4.28	1,250		Feb. 24, 1959	9.36	920
	Apr. 4, 1950	4.81	1,740		Apr. 29, 1959	10.17	1,140
	Apr. 11, 1950	4.00	990		July 24, 1959	12.75	1,970
	Apr. 26, 1950	4.43	1,130		July 31, 1959	8.55	720
	June 4, 1950	3.80	830	1960	Jan. 13, 1960	9.80	1,020
1951	Feb. 20, 1951	3.94	942		Feb. 11, 1960	10.65	1,260
	May 11, 1951	4.52	1,440		Mar. 30, 1960	9.17	870
1952	Nov. 14, 1951	4.41	1,340		Apr. 18, 1960	8.55	720
	Jan. 2, 1952	3.99	982		June 14, 1960	8.81	770
	Jan. 20, 1952	3.71	767	1961	Apr. 26, 1961	10.64	1,150
	Apr. 14, 1952	-	b900		Sept. 26, 1961	10.80	1,200
	June 15, 1952	-	b1,200	1962	Mar. 13, 1962	9.63	900
1953	Mar. 16, 1953	3.86	912		Mar. 22, 1962	8.78	720
1954	Mar. 26, 1954	4.55	1,440				
	Apr. 26, 1954	3.95	975				

a Annual peak only.

b Daily mean discharge, estimated.

935. Burns ditch at Gary, Ind.

Location.--Lat 41°34'30", long 87°17'20", in N $\frac{1}{2}$ sec.13, T.36 N., R.8 W., on left bank on downstream side of bridge on Central Avenue, 0.4 mile east of Gary, and 0.4 mile downstream from confluence of Deep River and Little Calumet River.

Drainage area.--About 160 sq mi.

Gage.--Nonrecording prior to July 28, 1955; recording thereafter. Datum of gage is 577.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements. Occasional dredging operations downstream affect the rating. Backwater from overbank return has some effect during periods of extremely high flow.

Remarks.--Burns ditch is an artificial channel which reverses the direction of flow of part of Little Calumet River and flows into Lake Michigan at Wickliffe. Base for partial-duration series, 800 cfs.

Peak stages and discharges of Burns ditch at Gary, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Mar. 15, 1944	a16.44	b2,000	1952	Nov. 15, 1951	10.52	1,420
	Mar. 30, 1944	12.0	1,100		Jan. 2, 1952	8.95	1,020
	Apr. 13, 1944	13.7	1,300		Jan. 20, 1952	8.3	850
	Apr. 25, 1944	12.1	1,110		Apr. 14, 1952	8.82	970
					June 15, 1952	9.98	1,270
1945	May 5, 1945	10.9	846	1953	Mar. 16, 1953	8.74	946
	May 9, 1945	12.3	1,060				
	May 18, 1945	12.90	1,110	1954	Mar. 26, 1954	10.49	1,420
1946	Jan. 10, 1946	8.5	874		Apr. 26, 1954	10.0	1,270
	June 13, 1946	8.95	1,020				
	June 20, 1946	8.6	922	1955	Oct. 11, 1954	c15.90	3,430
1947	Apr. 6, 1947	13.00	2,340		Jan. 6, 1955	9.0	1,020
	Apr. 12, 1947	9.5	1,140	1956	Feb. 26, 1956	8.82	970
	Apr. 21, 1947	10.5	1,420		Apr. 30, 1956	10.63	1,450
	May 1, 1947	9.8	1,220		May 11, 1956	11.35	1,690
	June 3, 1947	9.8	1,220	1957	Apr. 28, 1957	10.23	1,330
1948	Feb. 29, 1948	9.5	1,140		July 14, 1957	d11.90	1,640
	Mar. 20, 1948	10.3	1,360	1958	June 11, 1958	7.88	755
	May 11, 1948	13.82	2,660	1959	Feb. 15, 1959	10.81	1,510
1949	Jan. 30, 1949	7.75	732		Feb. 24, 1959	8.93	995
1950	Dec. 23, 1949	11.5	1,720		Apr. 29, 1959	10.32	1,360
	Jan. 14, 1950	9.3	1,100		July 25, 1959	11.90	1,880
	Jan. 26, 1950	10.0	1,270	1960	Jan. 14, 1960	9.47	1,170
	Feb. 16, 1950	8.4	874		Feb. 12, 1960	10.40	1,420
	Mar. 8, 1950	10.0	1,270		Mar. 31, 1960	8.90	1,020
	Mar. 28, 1950	8.3	850		Apr. 18, 1960	8.24	874
	Apr. 5, 1950	11.60	1,760		June 15, 1960	8.32	850
	Apr. 12, 1950	9.1	1,040	1961	Apr. 26, 1961	10.66	1,480
	Apr. 26, 1950	10.0	1,270		Sept. 26, 1961	11.16	1,390
	June 4, 1950	8.4	874	1962	Mar. 13, 1962	e16.44	3,430
1951	Feb. 20, 1951	8.55	922				
	May 12, 1951	10.93	1,540				

a Occurred Mar. 16, 1944.

b About.

c Occurred Oct. 12, 1954.

d Affected

by backwater.

e Occurred Mar. 16, 1962.

940. Little Calumet River at Porter, Ind.

Location.--Lat 41°37'18", long 87°05'13", in NE $\frac{1}{4}$ sec.34, T.37 N., R.6 W., near center of span on downstream side of highway bridge, three-quarters of a mile northwest of Porter, and 4.5 miles upstream from Salt Creek.

Drainage area.--62.9 sq mi.

Gage.--Nonrecording May 5, 1945, to June 25, 1952; recording thereafter. Datum of gage is 603.48 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,500 cfs. Rating subject to changes throughout range of stage.

Bankfull stage.--7 ft.

Remarks.--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)
1945	June 28, 1945	9.88	a2,440	1949	May 20, 1949	6.88	690
1946	June 13, 1946	6.99	715	1950	Dec. 22, 1949	8.72	1,720
1947	Apr. 5, 1947	9.42	2,140		Jan. 14, 1950	7.55	1,040
	June 1, 1947	7.15	810		Mar. 27, 1950	7.08	765
1948	Feb. 29, 1948	-	b700		Apr. 4, 1950	8.40	1,540
	Mar. 20, 1948	7.35	918		Apr. 25, 1950	7.30	885
	May 11, 1948	9.10	1,960		June 3, 1950	8.03	1,340
				1951	Jan. 3, 1951	7.34	915

a Annual peak only.

b Daily mean discharge, estimated.

Peak stages and discharges of Little Calumet River at Porter, Ind.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	May 11, 1951	8.11	1,360	1957	Apr. 27, 1957	7.65	848
	Sept. 27, 1951	7.40	945	1958	Feb. 28, 1958	6.82	490
1952	Nov. 14, 1951	7.92	1,060	1959	Apr. 28, 1959	8.80	1,420
	Jan. 2, 1952	7.35	795		July 24, 1959	8.15	1,120
1953	May 23, 1953	6.64	521	1960	Feb. 11, 1960	8.18	1,120
1954	Mar. 25, 1954	8.09	1,070		Jan. 13, 1960	7.73	870
	Apr. 26, 1954	8.32	1,170		June 14, 1960	7.34	710
1955	Oct. 4, 1954	9.03	1,540	1961	Apr. 23, 1961	7.54	790
	Oct. 10, 1954	11.66	3,110		Apr. 25, 1961	8.02	1,020
	Oct. 16, 1954	8.17	1,110	1962	Mar. 12, 1962	7.28	710
1956	Apr. 29, 1956	8.67	1,370				

945. Salt Creek near McCool, Ind.

Location.--Lat 41°35'48", long 87°08'40", in SE $\frac{1}{4}$ sec.6, T.36 N., R.6 W., on left bank on downstream side of highway bridge, 50 ft downstream from New York Central Railroad bridge, $1\frac{1}{2}$ miles north of McCool, and 1.5 miles upstream from Little Calumet River.

Drainage area.--78.7 sq mi.

Gage.--Nonrecording May 5, 1945, to July 24, 1955; recording thereafter. Datum of gage is 594.10 ft above mean sea level, datum of 1929 (levels by Indiana Flood Control and Water Resources Commission).

Stage-discharge relation.--Defined by current-meter measurements below 2,300 cfs.

Bankfull stage.--10 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)
1945	June 29, 1945	10.88	a990	1953	Mar. 16, 1953	8.16	454
1946	June 13, 1946	11.27	1,280	1954	Mar. 26, 1954	10.48	910
1947	Apr. 5, 1947	11.83	1,580		Apr. 26, 1954	9.60	680
	Apr. 21, 1947	10.36	808	1955	Oct. 11, 1954	14.12	3,180
	June 2, 1947	10.05	710				
1948	Feb. 18, 1948	10.66	912	1956	Feb. 25, 1956	9.18	605
	Feb. 28, 1948	11.07	1,080		Apr. 29, 1956	11.26	1,280
	Mar. 20, 1948	10.50	860		May 11, 1956	9.58	680
	May 11, 1948	12.3	1,910	1957	Apr. 27, 1957	9.81	725
					July 14, 1957	9.24	605
1949	Feb. 14, 1949	9.28	525	1958	Nov. 15, 1957	7.44	456
1950	Dec. 22, 1949	12.02	1,700	1959	Feb. 15, 1959	8.87	720
	Jan. 14, 1950	10.38	830		Apr. 28, 1959	10.79	1,200
	Mar. 26, 1950	10.10	750		July 24, 1959	10.50	1,100
	Apr. 4, 1950	11.10	1,100	1960	Jan. 13, 1960	9.28	760
	Apr. 25, 1950	9.70	673		Feb. 11, 1960	-	980
	June 3, 1950	9.98	730		June 14, 1960	8.77	664
1951	Jan. 4, 1951	9.50	642	1961	Apr. 23, 1961	8.79	664
	May 11, 1951	10.78	970		Apr. 25, 1961	9.42	780
1952	Nov. 14, 1951	10.63	912	1962	Mar. 12, 1962	8.32	578
	Jan. 1, 1952	10.20	775				

a Annual peak only.

965. East Branch Coldwater River at Coldwater, Mich.

Location.--Lat 41°56'25", long 85°01'00", in NW $\frac{1}{4}$ sec.21, T.6 S., R.6 W., on downstream side of Jay Street Bridge at Coldwater, 1 mile upstream from mouth.

Drainage area.--About 60 sq mi.

Gage.--Nonrecording and, since Feb. 2, 1954, crest-stage gage. At site 400 ft downstream at same datum prior to Oct. 1, 1947. Datum of gage is 930.72 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 340 cfs and extended on basis of slope-area measurement at 680 cfs at site in use 1938-47; defined by current-meter measurements at present site.

Bankfull stage.--Not subject to overflow.

Remarks.--Peaks are slightly affected by variable contribution from Coldwater Lake. 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	May 20, 1938	2.30	229	1951	Apr. 29, 1951	5.60	285
1939	Feb. 20, 1939	2.90	410	1952	Nov. 14, 1951	a6.07	428
1940	June 25, 1940	1.90	79	1953	Apr. 30, 1953	4.65	44
				1954	Apr. 26, 1954	5.55	187
1941	Jan. 4, 1941	1.98	89	1955	Mar. 4, 1955	5.65	215
1942	Mar. 17, 1942	3.16	264				
1943	May 25, 1943	3.65	490	1956	Apr. 29, 1956	6.10	332
1944	Apr. 24, 1944	2.37	178	1957	Apr. 27, 1957	b5.55	59
1945	May 18, 1945	2.65	195	1958	Dec. 20, 1957	5.08	99
				1959	Feb. 23, 1959	5.69	230
1946	Mar. 9, 1946	2.02	109	1960	Jan. 13, 1960	5.87	236
1947	Apr. 5, 1947	4.51	680				
1948	Mar. 20, 1948	5.54	388	1961	Apr. 25, 1961	6.62	474
1949	Feb. 16, 1949	5.26	269	1962	Mar. 22, 1962	5.95	297
1950	Apr. 24, 1950	6.60	735				

a Occurred Jan. 20, 1952 (backwater from ice).

b Occurred sometime during February or March 1957 (backwater from ice).

975. St. Joseph River at Three Rivers, Mich.

Location.--Lat 41°56'25", long 85°38'00", in S $\frac{1}{2}$ sec.18, T.6 S., R.11 W., on right bank in Scidmore Park at Three Rivers, 250 ft downstream from Rocky River, and at mile 112.

Drainage area.--1,320 sq mi, approximately.

Gage.--Nonrecording prior to May 9, 1953; recording thereafter. Datum of gage is 781.34 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--10 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)
1950	Apr. 27, 1950	10.6	a8,260	1957	Apr. 30, 1957	5.52	2,320
				1958	Mar. 4, 5, 1958	5.54	2,330
1952	Jan. 20, 1952	8.2	4,800	1959	Apr. 6, 1959	7.24	3,690
1953	Mar. 17, 1953	5.2	2,000	1960	Jan. 17, 1960	7.56	3,970
1954	Mar. 29, 1954	6.7	3,200				
1955	Mar. 25, 1955	5.91	2,620	1961	Apr. 27, 1961	7.62	4,030
				1962	Mar. 24, 1962	7.78	4,200
1956	May 12, 1956	7.34	3,740				

a Discharge measurement made near peak at site half a mile downstream; probably maximum flood since at least 1918.

985. Pawn River near White Pigeon, Mich.

Location.--Lat 41°47'00", long 85°35'00", in SW $\frac{1}{4}$ sec.10, T.8 S., R.11 W., on right bank a quarter of a mile downstream from bridge on county highway, 3.1 miles east of White Pigeon, and 3 $\frac{1}{2}$ miles upstream from outlet of Klinger Lake.

Drainage area.--191 sq mi.

Gage.--Nonrecording 1903-4; recording thereafter. Datum of gage is 805.4 ft above mean sea level, datum of 1929. At different site and datum 1903-4.

Stage-discharge relation.--Defined only approximately by five current-meter measurements made below 535 cfs at site used 1903-4; defined by current-meter measurements at present site.

Bankfull stage.--4 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)
1904	Mar. 15, 1904	a4.30	b750	1960	June 18, 1960	3.70	346
1958	Feb. 28, 1958	c3.37	230	1961	Apr. 28, 1961	4.31	474
1959	Apr. 6, 1959	-	d410	1962	Mar. 15, 1962	4.37	488

a Maximum daily mean gage height. b Maximum daily estimated from approximate rating curve defined by five current-meter measurements. c Occurred Jan. 8, 1958 (backwater from ice). d Occurred during period of no gage-height record; estimated on basis of records for nearby stations.

990. St. Joseph River at Mottville, Mich.

Location.--Lat 41°48'05", long 85°45'15", in SW $\frac{1}{4}$ sec.6, T.8 S., R.12 W., Michigan meridian, on right bank 500 ft upstream from bridge on U.S. Highway 112 at Mottville, 0.4 mile downstream from Michigan Gas and Electric Co. hydro-electric plant, 4 miles upstream from Pigeon River, and at mile 96.

Drainage area.--1,860 sq mi, approximately.

Gage.--Nonrecording read hourly prior to Oct. 1, 1951; recording thereafter.

Datum of gage is 755.3 ft above mean sea level (Michigan Gas and Electric Co. bench mark). At site 0.4 mile upstream at datum 4.2 ft higher prior to Oct. 1, 1951.

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

Bankfull stage.--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)
1924	Mar. 31, 1924	2.8	4,960	1937	June 28, 1937	-	b7,300
1925	Mar. 23, 1925	2.3	4,170	1938	May 31, 1938	2.94	5,180
				1939	Mar. 17, 1939	2.92	5,180
1926	Apr. 20, 1926	4.4	a8,250	1940	Sept. 3, 1940	c1.80	3,220
1927	Apr. 23, 1927	2.7	5,040				
1928	Dec. 14, 1927	3.6	6,690	1941	Apr. 24, 1941	d1.93	2,960
1929	May 5, 1929	3.4	6,310	1942	Mar. 20, 1942	3.24	5,480
1930	Feb. 24, 1930	3.14	6,020	1943	May 24, 1943	4.70	7,490
				1944	Mar. 20, 1944	3.00	5,160
1931	June 8, 1931	.90	2,420	1945	May 21, 1945	3.10	4,780
1932	Mar. 31, 1932	2.00	4,250				
1933	Dec. 27, 1932	2.40	4,700	1946	Mar. 9, 1946	2.13	3,480
1934	Apr. 9, 1934	2.00	4,400	1947	Apr. 9, 1947	5.34	8,480
1935	May 30, 1935	1.90	3,950	1948	Mar. 24, 1948	5.09	8,050
				1949	Feb. 16-18, 1949	-	4,300
1936	Mar. 9, 1936	2.30	4,550	1950	Apr. 27, 1950	6.56	10,700

a Caused by unusual regulation for a very short period. A peak of 6,830 cfs on Apr. 11, 1926, more nearly represents natural maximum. b Daily mean discharge. c Occurred Jan. 31, 1940 (backwater from ice). d Occurred July 8, 1941.

Peak stages and discharges of St. Joseph River at Mottville, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 25, 1951	2.80	4,280	1957	May 1, 1957	-	3,300
1952	May 28, 1952	7.14	5,470	1958	Mar. 5, 1958	5.13	3,050
1953	May 12, 1953	4.78	2,540	1959	Apr. 6, 1959	6.50	4,830
1954	Mar. 29, 1954	6.11	4,130	1960	Apr. 3, 1960	6.48	4,800
1955	Mar. 7, 1955	5.52	3,410				
1956	May 12, 1956	6.99	5,300	1961	Mar. 18, 1961	7.27	5,680
				1962	Mar. 24, 1962	6.87	5,120

e Occurred Aug. 7, 1953.

f Caused by momentary gate opening.

995. Pigeon Creek at Hogback Lake Outlet, near Angola, Ind.
(Published as "near Flint" prior to October 1947)

Location--Lat 41°37'24", long 85°05'44", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.37 N., R.12 E., on right bank 200 ft north of lake outlet, 2 miles southeast of Flint, and 5.1 miles west of Angola.

Drainage area--102 sq mi; 105 sq mi prior to October 1947.

Gage--Nonrecording prior to Aug. 3, 1953; recording thereafter. At site $\frac{1}{2}$ miles downstream at different datum prior to Oct. 1, 1947. At site 600 ft downstream at present datum Oct. 1, 1947, to Aug. 3, 1953. Datum of gage is 940.00 ft above mean sea level, datum of 1929.

Stage-discharge relation--Defined by current-meter measurements below 240 cfs at former site and by current-meter measurements at present site.

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)
1946	Feb. 19, 1946	-	a220	1952	May 29, 1952	11.51	340
1947	Apr. 8, 1947	9.75	350	1953	Mar. 19, 1953	9.30	122
	Apr. 24, 1947	10.71	458				
	May 23, 1947	9.26	200	1954	Mar. 30, 1954	11.31	317
	June 4, 1947	9.45	253		Apr. 29, 1954	10.95	284
1948	Feb. 23, 1948	11.17	289	1955	Oct. 17, 1954	11.54	339
	Mar. 2, 1948	11.79	355		Jan. 9, 1955	11.21	306
	Mar. 25, 1948	11.43	311		Mar. 4, 1955	11.03	295
	May 15, 1948	11.38	311				
1949	Jan. 23, 1949	10.42	205	1956	Mar. 10, 1956	12.25	416
	Feb. 19, 1949	11.93	366		May 4, 1956	13.39	548
					May 16, 1956	13.24	526
1950	Jan. 17, 1950	11.64	336	1957	Apr. 14, 1957	11.23	317
	Jan. 29, 1950	12.12	391		Apr. 30, 1957	11.18	306
	Feb. 18, 1950	11.18	292				
	Mar. 12, 1950	11.97	580	1958	Dec. 24, 1957	10.82	252
	Apr. 8, 1950	14.95	744		Sept. 21, 1958	11.04	274
	Apr. 28, 1950	12.92	484				
1951	Dec. 10, 1950	11.82	358	1959	Feb. 17, 1959	12.41	442
	Jan. 7, 1951	11.26	303		Apr. 6, 1959	12.13	406
	Feb. 24, 1951	12.50	448		May 3, 1959	10.77	252
	Mar. 18, 1951	10.48	240	1960	Jan. 18, 1960	11.77	339
	Apr. 15, 1951	10.35	225		Feb. 14, 1960	11.37	303
	May 3, 1951	11.46	340		Apr. 3, 1960	11.54	291
	May 14, 1951	10.71	260		Apr. 21, 1960	11.55	303
	July 14, 1951	11.11	300		June 19, 1960	11.77	315
1952	Jan. 5, 1952	10.61	250	1961	Mar. 17, 1961	11.01	232
	Jan. 21, 1952	11.85	370		Apr. 29, 1961	13.16	502
	Feb. 7, 1952	10.84	270				
	Mar. 15, 1952	10.66	260	1962	Mar. 24, 1962	12.46	b411
	Apr. 17, 1952	11.27	320				

a Daily mean discharge, estimated.

b Annual peak only.

1000. Christiana Creek at Elkhart, Ind.

Location.--Lat 41°41'45", long 85°58'35", in NE $\frac{1}{4}$ sec.5, T.37 N., R.5 E., at Elkhart Water Works pumping plant, three-eighths of a mile upstream from mouth.

Drainage area.--119 sq mi.

Gage.--Nonrecording. At site 700 ft downstream prior to Oct. 1, 1948. Datum of gage is 730.00 ft above mean sea level, datum of 1929.

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

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 220 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 8, 1947	2.19	452	1950	Apr. 5, 1950	9.40	326
	June 4, 1947	1.69	290		Apr. 27, 1950	9.75	424
1948	Mar. 22, 1948	1.86	325	1951	June 5, 1950	9.20	282
	Feb. 17, 1949	9.08	240		Jan. 7, 1951	9.06	247
1950	Dec. 26, 1949	9.03	228	1952	Nov. 16, 1951	9.03	222
	Jan. 26, 1950	9.02	225		Jan. 3, 1952	9.03	222
	Mar. 10, 1950	9.15	258		Jan. 23, 1952	9.25	278
					May 27, 1952	9.18	260

1002.2. North Branch Elkhart River near Cosperville, Ind.
(Published as lake stage station known as Waldron Lake near Cosperville, Ind., prior to October 1950)

Location.--Lat 41°29'32", long 85°26'54", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.14, T.35 N., R.9 E., at downstream side of county road bridge over outlet of Waldron Lake, at extreme west end of lake, 1.5 miles northeast of Cosperville, and 6.6 miles northwest of Albion.

Drainage area.--133 sq mi.

Gage.--Nonrecording. Datum of gage is 880.00 ft above mean sea level, datum of 1929.

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

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)
1948	Mar. 2, 1948	7.57	447	1956	May 13, 1956	8.78	717
1949	Feb. 17, 1949	7.58	447	1957	Apr. 13, 1957	7.42	406
1950	Apr. 5, 1950	9.47	889	1958	Sept. 20, 1958	7.97	494
				1959	Feb. 16, 1959	8.38	574
1951	Feb. 23, 1951	7.80	623	1960	June 20, 1960	7.99	476
1952	Jan. 21, 1952	-	330				
	Apr. 16, 1952	7.46	330	1961	Apr. 28, 1961	7.98	476
1953	Mar. 16, 1953	5.84	139	1962	Mar. 21, 1962	8.09	494
1954	Apr. 28, 1954	7.12	293				
1955	Oct. 17, 1954	8.32	601				

1005. Elkhart River at Goshen, Ind.

Location.--Lat 41°35', long 85°50', near line between secs. 8 and 9, T.36 N., R.6 E., on right bank 20 ft downstream from River Avenue Bridge at Goshen and half a mile upstream from Rock Run.

Drainage area.--580 sq mi.

Gage.--Nonrecording prior to Nov. 20, 1931; recording thereafter. Datum of gage is 769.43 ft above mean sea level, datum of 1929.

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

Bankfull stage.--7 ft.

Remarks.--Gage heights for 1925-28 furnished by Indiana Department of Conservation. Figures in parentheses are approximate values considered accurate within 15 percent. Base for partial-duration series, 1,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Mar. 20, 1925	5.8	(2,000)	1947	Apr. 6, 1947	5.58	1,880
1926	Feb. 27, 1926	6.7	(2,580)	1948	Apr. 21, 1947	7.56	3,360
	Apr. 1, 1926	6.0	(2,120)		Feb. 29, 1948	6.72	2,590
	Apr. 8, 1926	6.6	(2,510)		Mar. 20, 1948	6.03	2,120
1927	Apr. 20, 1927	6.5	(2,440)	1949	Jan. 20, 1949	6.15	2,240
	May 26, 1927	5.9	(2,060)		Jan. 29, 1949	5.55	1,880
1928	Dec. 14, 1927	9.3	a(4,660)		Feb. 15, 1949	6.64	2,510
1932	Feb. 12, 1932	6.54	2,660	1950	Dec. 23, 1949	6.00	2,120
	July 8, 1932	6.30	2,300		Jan. 5, 1950	6.28	2,300
1933	Dec. 24, 1932	6.50	2,440		Jan. 14, 1950	7.12	2,900
	Mar. 14, 1933	6.83	2,660		Jan. 27, 1950	7.30	3,060
	Mar. 21, 1933	5.95	2,120		Feb. 16, 1950	6.32	2,300
	Apr. 16, 1933	7.05	3,060		Mar. 8, 1950	7.20	2,980
	May 9, 1933	5.48	1,820		Mar. 28, 1950	6.70	4,180
1934	Apr. 2, 1934	4.41	1,220		Apr. 4, 1950	10.15	5,440
1935	May 14, 1935	4.52	1,310		Apr. 11, 1950	8.13	3,700
1936	Feb. 25, 1936	6.78	2,820	1951	Jan. 4, 1951	6.73	2,580
	Mar. 4, 1936	5.82	2,000		Feb. 22, 1951	6.88	2,740
1937	Jan. 15, 1937	5.07	1,580		July 10, 1951	10.33	5,260
1938	Apr. 10, 1938	6.16	2,380	1952	Jan. 2, 1952	6.40	2,310
1939	Feb. 20, 1939	7.85	3,460	1954	Jan. 16, 1952	5.64	1,880
	Mar. 13, 1939	8.45	3,940		Jan. 20, 1952	6.15	2,240
	Apr. 18, 1939	6.28	2,300	1953	Feb. 5, 1952	6.26	2,500
	Aug. 20, 1939	5.51	1,830		Mar. 16, 1953	4.23	1,160
1940	May 2, 1940	6.91	2,770	1954	Mar. 26, 1954	5.95	2,100
1941	Apr. 3, 1941	3.36	701	1955	Apr. 26, 1954	8.14	3,480
					Oct. 11, 1954	10.27	5,260
1942	Mar. 9, 1942	5.60	1,880		Jan. 6, 1955	6.48	2,440
	Mar. 17, 1942	7.15	2,820	1956	Feb. 25, 1956	8.53	3,780
1943	Dec. 28, 1942	6.96	2,830		Mar. 7, 1956	6.16	2,200
	Feb. 7, 1943	5.48	1,830		Apr. 30, 1956	9.25	4,320
	Mar. 17, 1943	6.95	2,830		May 12, 1956	9.07	4,240
	May 12, 1943	9.38	5,030	1957	Apr. 12, 1957	5.52	1,820
	May 25, 1943	9.46	5,090		Dec. 21, 1957	5.22	1,660
1944	July 7, 1943	5.52	1,830	1959	Feb. 14, 1959	7.34	2,910
	Mar. 16, 1944	7.66	3,450		Feb. 24, 1959	7.18	2,840
	Apr. 12, 1944	7.04	2,830		Mar. 28, 1959	7.12	2,770
1945	Apr. 23, 1944	6.98	2,830		Apr. 3, 1959	6.25	2,200
	Apr. 3, 1945	5.94	2,060	1960	Jan. 14, 1960	6.43	2,320
1946	May 18, 1945	6.41	2,300		Feb. 11, 1960	6.52	2,380
	Oct. 2, 1945	7.55	3,360		Mar. 30, 1960	5.92	2,040
					Apr. 18, 1960	7.29	2,910
				1961	Apr. 23, 1961	7.57	3,120
				1962	Mar. 12, 1962	7.90	3,330

a Daily mean discharge, estimated.

1010. St. Joseph River at Elkhart, Ind.

Location.--Lat 41°41'30", long 85°58'25", in NE $\frac{1}{4}$ sec.5, T.37 N., R.5 E., on left bank 100 ft downstream from Elkhart River, 200 ft upstream from Main Street Bridge in Elkhart, and 1,900 ft downstream from Christiana Creek.

Drainage area.--3,339 sq mi.

Gage.--Recording. Datum of gage is 700.00 ft above mean sea level, datum of 1929.

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

Bankfull stage.--26 ft.

Historical data.--The "308 Report" of the Corps of Engineers states that major floods in the basin occurred in 1876, 1887, 1892, 1903, 1904, and 1908; the 1887 flood was the greatest in the history of the stream. According to information by the Indiana and Michigan Electric Co., the floods of Sept. 16-17, 1866, and Mar. 8, 1908, crested at about 30,000 cfs at South Bend, 19 miles downstream.

Remarks.--Discharges for 1903-27 were furnished by the Indiana and Michigan Electric Co. for their Twin Branch plant located approximately 11 miles downstream and are on a calendar year basis. Only annual peaks are shown. Peak discharges for this station combined with those for station at Niles for flood-frequency analysis. Only annual peaks are shown.

Peak stages and discharges

Year	Date	Gage height (feet)	Discharge (cfs)	Year	Date	Gage height (feet)	Discharge (cfs)
1903	Mar. 9, 1903	-	11,500	1925	Mar. 21, 1925	-	7,050
1904	Mar. 27, 1904	-	18,600	1926	Apr. 8, 1926	-	11,400
1905	May 16, 1905	-	8,250	1927	Apr. 20, 1927	-	7,250
1906	Jan. 21, 1906	-	5,250	1943	May 25-26, 1943	a26.65	16,000
1907	Jan. 21, 1907	-	7,500				
1908	Mar. 8, 1908	-	26,000	1948	Mar. 22, 1948	23.92	12,800
1909	June 5, 1909	-	10,500	1949	Feb. 17, 1949	23.12	9,200
1910	Mar. 8, 1910	-	13,600	1950	Apr. 5, 1950	27.82	18,400
1911	Feb. 6, 1911	-	5,500	1951	Feb. 22, 1951	23.25	9,380
1912	Apr. 6, 1912	-	12,200	1952	Jan. 21, 1952	23.52	9,920
1913	Mar. 25, 1913	-	11,400	1953	Mar. 16, 1953	27.89	5,240
1914	May 15, 1914	-	9,600	1954	Apr. 26, 1954	23.33	9,560
1915	Feb. 15, 1915	-	5,000	1955	Oct. 12, 1954	-	b9,000
1916	May 16, 1916	-	10,500	1956	May 12, 1956	25.56	14,000
1917	Apr. 9, 1917	-	10,500	1957	Nov. 6, 1956	21.25	5,480
1918	Feb. 24, 1918	-	13,500	1958	Mar. 4, 1958	c20.94	5,160
1919	Apr. 4, 1919	-	10,100	1959	Apr. 8, 1959	23.36	9,600
1920	Apr. 20, 1920	-	11,300	1960	Jan. 18, Apr. 18, 1960	22.88	8,600
1921	Mar. 14, 1921	-	8,200	1961			
1922	Apr. 18, 1922	-	12,400				
1923	Mar. 17, 1923	-	7,100		Apr. 28, 1961	24.51	11,800
1924	Mar. 30, 1924	-	9,300	1962	Mar. 23, 1962	23.48	9,920

a From tailwater readings by Indiana and Michigan Electric Co.

b Daily mean discharge, estimated.

c Occurred on Dec. 20, 1957, and Sept. 22, 1958.

Note.--Figures shown prior to 1943 are for calendar years; those for 1943 and 1948-62 are for water years.

1015. St. Joseph River at Niles, Mich.

Location.--Lat 41°49'45", long 86°15'35", in SW $\frac{1}{4}$ sec.26, T.7 S., R.17 W., on right bank 100 ft upstream from Main Street Bridge at Niles, 0.6 mile downstream from dam of French Paper Co., 1 mile upstream from Dowagiac River, and at mile 44.

Drainage area.--3,620 sq mi, approximately.

Gage.--Nonrecording prior to July 1, 1931; recording thereafter. Datum of gage is 635.02 ft above mean sea level, datum of 1929. Since Oct. 1, 1943, auxiliary gage is headwater gage at hydroelectric plant at Buchanan Dam, 8 miles downstream.

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

Bankfull stage.--Not subject to overflow.

Remarks.--Gage-height record at auxiliary gage furnished by Indiana and Michigan Electric Co. 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)
1931	Mar. 30, 1931	3.64	3,220	1947	Apr. 21, 1947	9.80	13,600
1932	Feb. 13, 1932	6.28	6,830	1948	Mar. 22, 1948	9.78	13,600
1933	Apr. 18, 1933	7.53	10,000	1949	Feb. 16, 1949	8.28	10,300
1934	Apr. 5, 1934	6.68	6,340	1950	Apr. 5, 1950	13.10	20,200
1935	May 31, 1935	5.89	7,120	1951	Jan. 4, 1951	8.30	10,600
1936	Mar. 23, 1936	7.49	9,600	1952	Jan. 21, 1952	9.00	11,800
1937	June 29, 1937	8.46	11,500	1953	Mar. 26, 1953	as 7.0	5,700
1938	May 31, 1938	7.34	9,440	1954	Apr. 26, 1954	8.94	11,600
1939	Mar. 13, 1939	9.28	13,500	1955	Oct. 12, 1954	9.09	12,000
1940	May 2, 1940	7.37	8,680	1956	May 13, 1956	10.45	14,500
1941	Apr. 25, 1941	5.15	5,610	1957	Apr. 27, 1957	6.18	6,500
1942	Mar. 18, 1942	9.03	12,700	1958	Dec. 20, 1957	as 5.81	5,780
1943	May 26, 1943	11.78	17,300	1959	Apr. 3, 1959	7.64	9,470
1944	Mar. 16, 1944	9.12	12,100	1960	Jan. 13, 1960	7.94	9,980
1945	May 18, 1945	8.21	10,100	1961	Apr. 26, 1961	8.46	10,900
1946	Mar. 8, 1946	6.56	7,080	1962	Mar. 13, 1962	8.33	10,600

a Occurred Mar. 16, 1953.

b Occurred at different time than peak discharge.

1020. St. Joseph River at Berrien Springs, Mich.
(Published as "at Buchanan," 1901-2 and "near Buchanan," 1903-7)

Location.--Lat 41°56'55", long 86°20'00", in SW $\frac{1}{4}$ sec.18, T.6 S., R.17 W., on right bank 30 ft upstream from bridge on U.S. Highway 31 at Berrien Springs, and at mile 24.

Drainage area.--4,081 sq mi.

Gage.--Recording. Datum of gage is 594.38 ft above mean sea level (Indiana and Michigan Electric Co. bench mark). Daily discharge determined by computation of flow over dam and through turbines at Buchanan powerplant 10.6 miles upstream 1902-6, and at Berrien Springs powerplant 0.6 mile upstream 1909-31.

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

Bankfull stage.--10 ft.

Remarks.--Records furnished by Indiana and Michigan Electric Co. prior to 1951, and are maximum daily discharges. Records for 1909-31 are in House Document No. 94, 73d Congress, 1st session. Flow regulated by powerplants above station. Only annual peaks are shown subsequent to 1931. Peak discharges for this station combined with those for station at Niles for flood-frequency analysis.

Peak stages and discharges of St. Joseph River at Berrien Springs, Mich. a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	Mar. 13, 14, 1902	-	6,545	1921	-	-	8,100
1903	Mar. 9, 1903	-	11,470	1922	-	-	13,200
1904	Mar. 27, 1904	-	18,600	1923	-	-	8,900
1905	May 16, 1905	-	10,260	1924	-	-	12,800
				1925	-	-	7,800
1906	Jan. 24, 1906	-	8,650				
				1926	-	-	11,900
1909	-	-	12,250	1927	-	-	16,600
1910	-	-	17,500	1928	-	-	9,250
				1929	-	-	15,391
1911	-	-	5,750	1930	-	-	11,612
1912	-	-	12,225				
1913	-	-	12,200	1931	-	-	3,572
1914	-	-	13,420				
1915	-	-	7,500	1951	July 11, 1951	10.47	11,900
				1952	Jan. 21, 1952	11.23	13,200
1916	-	-	14,750	1953	Mar. 17, 1953	7.76	7,140
1917	-	-	12,100	1954	Apr. 26, 1954	11.32	13,400
1918	-	-	13,500	1955	Oct. 16, 1954	11.70	14,200
1919	-	-	15,300				
1920	-	-	13,800	1956	May 13, 1956	12.40	15,600

a Maximum daily mean discharges shown prior to 1951.

1025. Paw Paw River at Riverside, Mich.

Location.--Lat 42°11'10", long 86°22'05", in SE $\frac{1}{4}$ sec.23, T.3 S., R.18 W., on left bank at upstream side of county highway bridge, three-quarters of a mile east of Riverside.

Drainage area.--391 sq mi.

Gage.--Recording. Datum of gage is 588.80 ft above mean sea level, datum of 1929.

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

Bankfull stage.--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)
1952	Jan. 23, 1952	8.72	1,650	1958	Mar. 5, 1958	8.20	1,080
1953	May 2, 1953	7.67	825	1959	Mar. 21, 1959	7.75	875
1954	Apr. 26, 1954	8.14	1,120	1960	Apr. 2, 1960	8.91	1,620
1955	Oct. 18, 1954	8.69	1,570				
1956	May 3, 1956	8.60	1,480	1961	Apr. 26, 1961	8.05	980
1957	Apr. 28, 1957	7.73	815	1962	Mar. 20, 1962	8.25	985

1035. Kalamazoo River at Marshall, Mich.

Location.--Lat 42°15'55", long 84°57'55", on line between secs. 25 and 26, T.2 S., R.6 W., on left bank at upstream side of bridge on U.S. Highway 27 at Marshall.

Drainage area.--449 sq mi.

Gage.--Nonrecording prior to Nov. 11, 1948; recording thereafter. Datum of gage is 877.09 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Kalamazoo River at Marshall, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 22, 1948	7.85	1,960	1956	May 1, 1956	6.73	1,300
1949	Feb. 16, 1949	7.41	1,600	1957	Apr. 28, 1957	5.53	724
1950	Mar. 29, 1950	8.20	2,130	1958	Mar. 1, 1958	5.48	701
				1959	Apr. 3, 1959	6.17	1,040
1951	Feb. 21, 1951	6.38	1,030	1960	Apr. 1, 1960	6.32	1,110
1952	Apr. 16, 1952	6.72	1,180				
1953	Mar. 5, 1953	5.43	638	1961	Apr. 26, 1961	6.04	970
1954	Mar. 27, 1954	6.22	940	1962	Mar. 22, 1962	5.83	920
1955	Oct. 14, 1954	6.12	872				

1040. Battle Creek at Charlotte, Mich.

Location.--Lat 42°32'20", long 84°50'55", in SW $\frac{1}{4}$ sec.24, T.2 N., R.5 W., on left bank at upstream side of highway bridge, 1 mile southwest of Charlotte.

Drainage area.--67 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 869.36 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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)
1948	Mar. 20, 1948	7.64	722	1952	Apr. 14, 1952	5.15	336
1949	Feb. 13, 1949	5.50	376	1953	June 7, 1953	5.2	326
1950	Mar. 28, 1950	6.46	518	1954	Mar. 27, 1954	5.5	376
1951	Feb. 20, 1951	5.72	336				

a Maximum observed (ice jam); occurred Jan. 4, 1951.

1045. Battle Creek at Bellevue, Mich.

Location.--Lat 42°26'35", long 85°02'00", in W $\frac{1}{2}$ sec.28, T.1 N., R.6 W., on right bank at downstream side of bridge on State Highway 78, 0.8 mile west of Bellevue.

Drainage area.--178 sq mi.

Gage.--Nonrecording. Datum of gage is 838.51 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--4 ft.

Remarks.--Gage heights furnished by city of Battle Creek. 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)
1948	Mar. 20, 1948	6.1	2,190	1951	Jan. 5, 1951	5.4	1,450
1949	Feb. 16, 1949	5.59	1,600	1952	Apr. 14, 1952	4.73	900
1950	Mar. 9, 1950	5.66	1,660	1953	June 7, 1953	4.46	550

1050. Battle Creek at Battle Creek, Mich.

Location.--Lat 42°19'55", long 85°09'15", in sec.5, T.2 S., R.7 W., on right bank 350 ft upstream from Emmett Street Bridge at Battle Creek, and 3 miles upstream from mouth.

Drainage area.--241 sq mi.

Gage.--Nonrecording prior to May 14, 1951; recording thereafter. Datum of gage is 823.24 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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)
1931	June 7, 1931	1.24	339	1947	Apr. 7, 1947	4.48	3,640
1933	May 12, 1933	1.78	695	1948	Mar. 21, 1948	4.19	3,300
1934	Apr. 6, 1934	2.48	1,300	1949	Feb. 15, 1949	2.42	1,270
1935	Mar. 13, 1935	2.18	1,020	1950	Mar. 29, 1950	3.10	2,060
1936	Feb. 29, 1936	2.11	890	1951	Jan. 6, 1951	2.65	1,560
1937	June 28, 1937	2.96	1,920	1952	Jan. 18, 1952	2.42	1,300
1938	Feb. 9, 1938	2.20	1,030	1953	June 8, 1953	2.01	919
1939	Feb. 22, 1939	2.40	1,230	1954	Mar. 27, 1954	2.36	1,260
1940	Aug. 31, 1940	2.08	938	1955	Feb. 23, 1955	1.99	901
1941	Mar. 7, 1941	1.80	688	1956	May 1, 1956	2.91	1,840
1942	Mar. 18, 1942	3.51	2,460	1957	May 22, 1957	2.10	1,000
1943	June 3, 1943	3.52	2,580	1958	Mar. 2, 1958	1.81	739
1944	Feb. 28, 1944	2.55	1,470	1959	Mar. 18, 1959	2.12	1,020
1945	May 18, 1945	2.64	1,470	1960	Apr. 1, 1960	3.07	1,970
1946	Mar. 7, 1946	2.86	1,780	1961	Apr. 28, 1961	2.08	982
				1962	Mar. 22, 1962	2.37	1,240

1055. Kalamazoo River near Battle Creek, Mich.

Location.--Lat 42°19'26", long 85°11'51", in SW¹ sec.1, T.2 S., P.8 W., on left bank 20 ft upstream from bridge on Kendall Street in Battle Creek.

Drainage area.--824 sq mi.

Gage.--Recording at site 4.7 miles downstream at datum 796.49 ft above mean sea level, datum of 1929, prior to Oct. 1, 1957. Nonrecording at bridge 1,800 ft upstream at different datum Oct. 1, 1957, to June 15, 1959, and at present site and datum June 16, 1959, to Oct. 13, 1960; recording thereafter. Altitude of gage is 815 ft (from topographic map).

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

Bankfull stage.--5 ft at site used prior to 1958; not subject to overflow at present site.

Remarks.--Diurnal fluctuation below 1,500 cfs caused by powerplants above station. 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	May 31, 1938	6.49	2,450	1946	Mar. 8, 1946	7.14	2,940
1939	Feb. 23, 1939	6.73	2,720	1947	Apr. 7, 1947	9.13	7,290
1940	Apr. 2, 1940	6.23	1,600	1948	Mar. 22, 1948	8.52	5,650
1941	Apr. 22, 1941	5.08	1,520	1949	Feb. 16, 1949	7.53	3,510
1942	Mar. 19, 1942	7.64	3,500	1950	Mar. 29, 1950	8.25	4,910
1943	June 4, 1943	8.00	4,020	1951	Jan. 6, 1951	6.97	2,850
1944	Feb. 28, 1944	6.98	2,840	1952	Apr. 16, 1952	6.69	2,560
1945	May 18, 1945	7.34	3,150	1953	June 9, 1953	4.84	1,320

a Occurred Sept. 1, 1940.

Peak stages and discharges of Kalamazoo River near Battle Creek, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Mar. 28, 1954	6.48	2,380	1959	Apr. 5, 1959	-	c2,300
1955	Jan. 8, 1955	b5.63	1,650	1960	Apr. 1, 1960	6.38	3,200
1956	May 2, 1956	7.50	3,510	1961	Apr. 28, 1961	5.20	1,970
1957	Apr. 30, 1957	5.16	1,530	1962	Mar. 23, 1962	5.52	2,290
1958	Mar. 2, 1958	3.0	1,400				

b Occurred Oct. 15, 1954.

c Computed on basis of records for nearby stations.

1060. Kalamazoo River at Comstock, Mich.

Location.--Lat 42°17'05", long 85°30'50", in NE $\frac{1}{4}$ sec.19, T.2 S., R.1C W., on left bank at downstream side of bridge on River Street, in Comstock, a quarter of a mile downstream from Comstock Creek.

Drainage area.--1,010 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 24, 1945; recording thereafter. Datum of gage is 759.12 ft above mean sea level, datum of 1929.

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

Bankfull stage.--5 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)
1933	May 9, 1933	a3.10	1,930	1948	Mar. 22, 1948	7.15	5,980
1934	Apr. 8, 1934	4.40	2,830	1949	Feb. 18, 1949	5.12	3,640
1935	Mar. 14, 1935	3.02	1,840	1950	Mar. 30, 1950	6.65	5,260
1936	Mar. 2, 1936	4.28	2,750	1951	Jan. 7, 1951	4.3C	2,940
1937	June 28, 1937	5.98	3,720	1952	Jan. 19, 1952	4.47	3,120
1938	June 2, 1938	4.16	2,500	1953	June 10, 1953	2.52	1,480
1939	Apr. 22, 1939	4.32	2,640	1954	Mar. 29, 1954	3.66	2,480
1940	Sept. 2, 1940	3.80	2,080	1955	Mar. 4, 1955	3.14	2,000
1941	Apr. 23, 1941	2.74	1,590	1956	May 3, 1956	5.02	3,560
1942	Mar. 19, 1942	5.60	3,960	1957	Apr. 30, 1957	2.8C	1,780
1943	June 5, 1943	6.41	4,770	1958	Mar. 4, 1958	2.7C	1,780
1944	Feb. 29, 1944	4.95	3,400	1959	Apr. 6, 1959	3.46	2,290
1945	May 20, 1945	5.17	3,580	1960	Apr. 2, 1960	5.36	3,780
1946	Mar. 9, 1946	4.96	3,400	1961	Apr. 28, 1961	3.57	2,370
1947	Apr. 8, 1947	7.94	6,910	1962	Mar. 24, 1962	4.06	2,710

a Occurred Feb. 10, 1933 (backwater from ice).

1065. Portage Creek at Kalamazoo, Mich.

Location.--Lat 42°16'30", long 85°34'35", on line between secs. 22 and 27, T.2 S., R.11 W., on upstream side of Reed Street Bridge at Kalamazoo, 1½ miles upstream from mouth.

Drainage area.--48 sq mi, approximately.

Gage.--Nonrecording prior to Dec. 8, 1955, supplemented by crest-stage gage after Feb. 4, 1954; recording thereafter. Datum of gage is 761.50 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 165 cfs and extended above by logarithmic plotting.

Remarks.--Flow regulated by St. Regis Paper Co. ponds above station. 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)
1948	Mar. 19, 1948	4.20	285	1954	July 1954	15.25	580
1949	Mar. 31, 1949	3.82	221	1955	Dec. 6, 1954	a2.76	80
1950	Apr. 25, 1950	3.98	248				
1951	July 22, 1951	a4.14	272	1956	Apr. 28, 1956	3.76	208
1952	May 24, 1952	a3.67	195	1957	July 8, 1957	3.89	230
1953	Oct. 9, 1952	a3.18	129	1958	July 2, 1958	3.81	221

a Maximum observed, affected by regulation.

b Result of unusual regulation; date unknown.

1080. Kalamazoo River near Allegan, Mich.

Location.--Lat 42°29'00", long 85°47'50", in SW¼ sec.12, T.1 N., R.13 W., at Trowbridge dam and powerplant, 4 miles southeast and 6 miles upstream from Allegan.

Drainage area.--1,470 sq mi, approximately.

Gage.--Nonrecording.

Stage-discharge relation.--Daily discharge determined by computation of flow over dam and through turbines.

Remarks.--Flow regulated by powerplants at and above station. Only annual maximum daily discharges are shown.

Maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Mar. 11, 1903	-	4,378	1906	Jan. 26, 1906	-	3,560
1904	Mar. 28, 1904	-	10,260	1907	Jan. 20, Apr. 1, 1907	-	3,520
1905	Mar. 24, 1905	-	5,219				

1085. Kalamazoo River near Fennville, Mich.
(Published as "near Allegan" prior to 1933; as "at Calkins Bridge, near Allegan," 1933-38; and as "at Calkins Dam, near Allegan," 1939-50)

Location.--Lat 42°36', long 85°59', in NE $\frac{1}{4}$ sec.5, T.2 N., R.14 W., on left bank 40 ft upstream from bridge on State Highway 89, 2 miles downstream from Swan Creek, $\frac{3}{2}$ miles downstream from Calkins Dam, and 6 $\frac{1}{2}$ miles east of Fennville.

Drainage area.--1,600 sq mi, approximately.

Gage.--Recording. At site $3\frac{1}{2}$ miles upstream at mean sea level datum prior to Oct. 1, 1950. Datum of gage is 586.51 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 8,700 cfs and extended above on basis of computation of peak flow (17,500 cfs) from powerplant records at site in use prior to 1951; defined by current-meter measurements at present site.

Bankfull stage.--602 ft at site used prior to 1933; 11 ft at present site.

Remarks.--Regulation by powerplants above station. Only annual peaks are shown, except for 1938-50, which are maximum daily mean discharges.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	May 4, 1929	603.69	4,250	1947	Apr. 6, 1947	-	ab10,800
				1948	Mar. 20, 1948	-	a7,980
1931	June 7, 1931	601.25	2,140	1949	Feb. 19, 1949	-	a4,230
1932	Apr. 1, 1932	602.50	2,630	1950	Apr. 1, 1950	-	a6,220
1933	May 10, 1933	602.70	2,800				
1934	Apr. 10, 1934	603.50	3,970	1951	Jan. 7, 1951	-	ca4,700
1935	Mar. 12, 1935	602.94	3,180	1952	Jan. 19, 1952	12.52	5,000
				1953	Mar. 16, 1953	11.05	2,450
1936	Feb. 28, 1936	603.50	3,970	1954	Mar. 26, 1954	11.87	3,320
				1955	Oct. 12, 1954	12.87	5,420
1938	Feb. 6, 1938	-	a3,000				
1939	Apr. 23, 1939	-	a4,250	1956	Mar. 7, 1956	12.60	5,280
1940	Aug. 27, 1940	-	a5,000	1957	May 20, 1957	11.48	2,830
				1958	Mar. 1, 1958	11.62	3,400
1941	Mar. 9, 1941	-	a2,900	1959	Mar. 21, 1959	11.90	3,590
1942	Mar. 17, 1942	-	a7,470	1960	Mar. 31, 1960	12.85	5,280
1943	Mar. 16, 1943	-	a7,020				
1944	Mar. 1, 1944	-	a3,600	1961	Apr. 26, 1961	11.37	2,900
1945	May 21, 1945	-	a4,010	1962	Mar. 21, 1962	11.85	3,860
1946	Mar. 9, 1946	-	a5,240				

a Maximum daily mean.

b Peak discharge for flood of April 1947 was 17,500 cfs on Apr. 11, 1947 (gage height, 606.76 ft), computed from powerplant records.

c Computed on basis of records from station at Comstock.

1090. Grand River at Jackson, Mich.

Location.--Lat 42°17'05", long 84°24'30", in sec.22, T.2 S., R.1 W., on left bank at sewage-treatment plant, 1 mile north of Jackson, 2 $\frac{1}{2}$ miles upstream from Portage River, and at mile 216.

Drainage area.--174 sq mi.

Gage.--Recording. Datum of gage is 900.00 ft above mean sea level (Fargo Engineering Co. bench mark).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Annual maximum instantaneous, and annual maximum daily discharges are shown; the instantaneous maxima are affected by urban runoff from Jackson and the maximum dailies are more nearly representative of the natural flood peaks for the drainage basin.

STREAMS TRIBUTARY TO LAKE MICHIGAN

Peak stages and discharges of Grand River at Jackson, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Mar. 4, 1936	10.78	497	1950	Apr. 1, 1950	113.18	894
	Mar. 4, 1936	-	303				
1937	June 25, 1937	13.50	1,070	1951	Feb. 23, 1951	-	477
	June 27, 1937	-	926		July 22, 1951	12.93	914
1938	Feb. 14, 1938	-	366	1952	Apr. 13, 1952	11.76	626
	June 7, 1938	11.11	513		Apr. 14, 1952	-	489
1939	Apr. 17, 1939	11.53	646	1953	May 7, 1953	-	248
	Apr. 19, 1939	-	534		June 5, 1953	10.77	430
1940	Mar. 4, 1940	-	a600	1954	Feb. 16, 1954	11.22	537
					Mar. 27, 1954	-	376
1941	Jan. 4, 1941	-	306	1955	Oct. 14, 1954	11.61	600
	May 31, 1941	11.01	442		Oct. 14, 1954	-	386
1942	Mar. 17, 1942	-	465				
	Aug. 27, 1942	12.90	830	1956	Apr. 29, 1956	12.36	805
1943	June 3, 1943	13.20	995		May 10, 1956	-	
	June 3, 1943	-	971	1957	Apr. 7, 1957	-	269
1944	June 23, 1944	12.30	736		July 8, 1957	11.68	603
	June 23, 1944	-	411	1958	Dec. 21, 1957	-	337
1945	May 17, 1945	11.73	645		Aug. 21, 1958	12.5	736
	May 20, 21, 1945	-	623	1959	Mar. 6, 1959	11.86	681
					Mar. 6, 1959	-	527
1946	Mar. 6, 1946	10.53	396	1960	Mar. 31, 1960	11.6	621
	Mar. 6-8, 1946	-	336		Mar. 31, 1960	-	600
1947	Apr. 5, 1947	b12.21	796				
	Apr. 11, 1947	-	665	1961	Apr. 25, 1961	11.20	529
1948	Mar. 24, 1948	11.67	c652		Apr. 28, 1961	-	506
1949	Feb. 15, 1949	11.20	537	1962	Mar. 21, 1962	-	390
	Feb. 18, 19, 1949	-	477		Aug. 6, 1962	11.92	621
1950	Mar. 31, 1950	-	886				

a Peak discharge same as maximum daily; computed on basis of records for nearby stations. b Occurred on Apr. 10, 1947. c Peak discharge same as maximum daily. d Occurred on Apr. 4, 1950.

1095. Portage River below Little Portage Lake, near Munith, Mich.

Location.--Lat 42°20'55", long 84°13'45", in NW $\frac{1}{4}$ sec. 32, T.1 S., R.2 E., on upstream side of highway bridge on Portage Lake Road, 0.3 mile downstream from Little Portage Lake, and $3\frac{1}{4}$ miles southeast of Munith.

Drainage area.--55 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 900.00 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--10 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)
1945	May 19, 1945	12.1	364	1951	Feb. 22, 1951	11.29	260
				1952	Apr. 16, 1952	11.06	227
1946	Mar. 8, 1946	11.7	290	1953	Mar. 18, 1953	9.77	113
1947	Apr. 6, 1947	13.0	800	1954	June 22, 1954	11.5	215
1948	Mar. 22, 1948	12.1	390	1955	Oct. 17, 1954	10.42	156
1949	Apr. 3, 1949	11.34	242				
1950	Mar. 28, 1950	-	a440	1956	May 1, 1956	11.58	314

a Occurred during period of doubtful gage-height record; computed on basis of records for nearby stations.

1100. Orchard Creek at Munith, Mich.

Location.--Lat 42°23'35", long 84°15'50", on line between secs. 12 and 13, T.1 S., R.1 E., on left upstream wingwall of bridge on State Highway 106, half a mile west of Munith, and 3 miles upstream from mouth.

Drainage area.--49 sq mi, approximately.

Gage.--Nonrecording and, since February 1954, crest-stage gage. Datum of gage is 900.00 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

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	May 18, 1945	12.29	551	1952	Apr. 14, 1952	12.00	440
1946	Mar. 5, 1946	10.40	281	1953	June 6, 1953	9.9	147
1947	Apr. 5, 1947	14.88	1,470	1954	Mar. 26, 1954	a13.3	438
1948	May 10, 1948	13.25	725	1955	Oct. 4, 1954, Jan. 6, 1955	b10.71	201
1949	Feb. 15, 1949	12.20	536				
1950	Apr. 4, 1950	13.22	597	1956	Apr. 30, 1956	14.25	785
1951	Jan. 4, 1951	11.2	385				

a Occurred June 21, 1954.

b Occurred Feb. 21, 1955 (ice jam).

1108. Grand River at Eaton Rapids, Mich.

Location.--Lat 42°30'45", long 84°39'15", in SW $\frac{1}{4}$ sec. 34, T.2 N., R.3 W., at Hamlin Street Bridge in Eaton Rapids and 1,000 ft upstream from Spring Brook.

Drainage area.--584 sq mi.

Gage.--Nonrecording. At East Knight Street Bridge 500 ft downstream prior to 1934. Datum of gage is 858.2 ft above mean sea level, unadjusted, prior to 1923, and 859.1 ft above mean sea level, unadjusted, thereafter.

Bankfull stage.--5 ft.

Remarks.--Records furnished by U.S. Weather Bureau. For many years records are for flood season only. Only annual peak stages recorded are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 26, 1904	9.2	-	1925	Mar. 22, 1925	4.9	-
1905	Mar. 21, 1905	4.9	-				
				1926	Mar. 22, 26, 1926	5.7	-
1906	Jan. 24, 1906	4.9	-		Mar. 17, 1927	4.9	-
1907	Mar. 29, 1907	4.9	-	1928	Apr. 8, 1928	5.1	-
1908	Mar. 9, 1908	8.4	-	1929	Mar. 1, 1929	5.4	-
1909	May 1, 1909	5.7	-	1930	Feb. 22, 1930	5.4	-
1910	Mar. 6, 1910	5.8	-				
				1931	Mar. 27-31, 1931	4.1	-
1911	Feb. 18, 1911	4.6	-	1932	Mar. 29, 1932	4.8	-
1912	Apr. 2, 1912	6.6	-	1933	Apr. 3, 1933	5.0	-
1913	Apr. 4, 1913	5.9	-				
1914	May 14, 1914	5.8	-	1937	June 27, 1937	7.1	-
1915	Feb. 15, 1915	5.5	-	1938	Feb. 13, 1938	4.7	-
				1939	Apr. 19, 1939	5.5	-
1916	Mar. 28, 1916	6.5	-	1940	Apr. 2, 1940	4.7	-
1917	Apr. 7, 1917	5.1	-				
1918	Mar. 14, 1918	8.8	-	1941	Mar. 5, 1941	4.6	-
1919	Apr. 18, 1919	5.4	-	1942	Mar. 17, 1942	5.8	-
1920	Mar. 12, 1920	6.4	-	1943	Jan. 22, 1943	4.6	-
				1944	Feb. 26, 1944	5.5	-
1921	Mar. 27, 1921	4.8	-	1945	May 18-20, 1945	5.8	-
1922	Apr. 13, 1922	5.4	-				
1923	Mar. 16, 1923	5.1	-	1946	Mar. 9, 1946	6.0	-
1924	Mar. 6, 1924	5.2	-	1947	Apr. 6, 1947	9.1	-

STREAMS TRIBUTARY TO LAKE MICHIGAN

Peak stages and discharges of Grand River at Eaton Rapids, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 20, 1948	6.5	-	1956	May 1, 1956	6.2	-
1949	Jan. 1, 1949	5.5	-	1957	Apr. 28, 1957	4.4	-
1950	Apr. 5, 1950	7.0	-	1958	Feb. 28, 1958	4.7	-
				1959	Mar. 6-9, 1959	5.3	-
1951	Feb. 21, 1951	5.6	-	1960	Mar. 31, 1960	5.7	-
1952	Apr. 16, 1952	5.8	-				
1953	June 6, 1953	4.7	-	1961	Apr. 28, 1961	5.0	-
1954	Mar. 27, 1954	5.2	-	1962	Mar. 14-16, 19-21, 1962	4.9	-
1955	Mar. 1-8, 1955	4.8	-				

1110. Grand River near Eaton Rapids, Mich.

Location.--Lat 42°32'05", long 84°37'25", in NE $\frac{1}{4}$ sec.26, T.2 N., R.3 W., on right bank 400 ft upstream from bridge on Petrieville Highway, 2 miles north-east of Eaton Rapids, 2 $\frac{1}{2}$ miles downstream from Spring Brook, $\frac{1}{2}$ miles upstream from Cedar River, and at mile 178.

Drainage area.--661 sq mi.

Gage.--Nonrecording prior to October 1950; recording thereafter. Datum of gage is 852.68 ft above sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--9 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)
1949	Feb. 15, 1949	7.25	3,110	1956	May 1, 1956	7.65	3,360
1950	Apr. 4, 1950	8.15	3,860	1957	Apr. 27, 1957	4.27	1,290
				1958	Dec. 23, 1957	a4.19	1,200
1951	Feb. 20, 1951	6.37	2,430	1959	Mar. 6, 1959	b7.51	2,500
1952	Apr. 15, 1952	6.96	2,910	1960	Mar. 31, 1960	7.17	3,060
1953	June 6, 1953	4.05	1,100				
1954	Mar. 27, 1954	5.84	2,160	1961	Apr. 27, 1961	5.50	1,890
1955	Feb. 21, 1955	5.03	1,660	1962	Mar. 14, 1962	5.71	2,020

a Occurred Jan. 9, 1958 (backwater from ice).

b Backwater from ice.

1110.2. Grand River at Dimondale, Mich.

Location.--Lat 42°38'40", long 84°39'00", in SE $\frac{1}{4}$ sec.15, T.3 N., R.3 W., on highway bridge at Dimondale.

Drainage area.--728 sq mi.

Gage.--Nonrecording. Datum of gage is 836.37 ft above mean sea level, unadjusted. At datum 2.00 ft higher prior to Nov. 3, 1945.

Bankfull stage.--7 ft.

Remarks.--Records furnished by U.S. Weather Bureau. For most years records are for flood seasons only. Only annual peak stages recorded are shown.

Peak stages and discharges of Grand River at Dimondale, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1919	Mar. 18, 1919	4.5	-	1942	Mar. 18, 1942	4.2	-
1920	Mar. 13, 1920	4.5	-	1943	June 3, 1943	4.9	-
1921	Apr. 24, 1921	3.4	-	1946	Mar. 9, 1946	5.5	-
1922	Apr. 13, 1922	4.3	-	1947	Apr. 6, 1947	8.0	-
1923	Mar. 17, 1923	3.9	-	1948	Mar. 20, 1948	6.6	-
1924	Mar. 7, 1924	3.9	-	1949	Feb. 15, 1949	5.7	-
1925	Mar. 22, 1925	4.0	-	1950	Mar. 10, 1950	6.9	-
1926	Mar. 23, 1926	4.8	-	1951	Feb. 27, 1951	5.3	-
1927	May 28, 1927	3.6	-	1952	Apr. 15, 1952	5.8	-
1928	Apr. 9, 1928	3.8	-	1953	Apr. 11, 1953	4.5	-
1929	Mar. 6, 1929	4.1	-	1954	Mar. 30, 1954	5.2	-
1930	Feb. 23, 1930	4.3	-	1955	Mar. 5, 1955	4.9	-
1931	Mar. 31, 1931	2.9	-	1956	Mar. 7, 1956	6.0	-
1933	Apr. 5, 1933	4.0	-	1957	Apr. 28, 1957	6.2	-
1938	Feb. 13, 1938	3.6	-	1958	Mar. 3, 1958	5.2	-
1939	Apr. 21, 1939	4.0	-	1959	Mar. 8, 1959	5.9	-
1940	Apr. 1, 1940	3.3	-	1960	Apr. 1, 1960	6.3	-
1941	Apr. 22, 1941	3.2	-	1961	Apr. 28, 1961	5.3	-
				1962	Mar. 19, 1962	5.7	-

1115. Deer Creek near Dansville, Mich.

Location.--Lat 42°36'30", long 84°19'15", in E $\frac{1}{2}$ sec.33, T $\frac{1}{2}$ S., R.1 E., on right bank 15 ft upstream from bridge on Clark Road, $\frac{3}{2}$ miles north of Dansville, and $7\frac{1}{4}$ miles upstream from mouth.

Drainage area.--16.3 sq mi.

Gage.--Recording. Datum of gage is 889.08 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--8 ft.

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

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1955	Jan. 5, 1955	4.90	-	155	1959	Mar. 3, 1959	6.0	1.6	120
	Feb. 20, 1955	6.50	1.6	150		Mar. 6, 1959	6.65	-	299
	Feb. 27, 1955	4.88	-	155		Mar. 15, 1959	6.25	-	261
1956	Mar. 2, 1956	-	-	250		Mar. 19, 1959	4.51	-	126
	Mar. 7, 1956	6.50	-	303		Apr. 2, 1959	5.29	-	174
	Apr. 29, 1956	7.95	-	474		July 30, 1959	4.81	-	142
	May 10, 1956	7.90	-	462	1960	Oct. 6, 1959	8.54	-	437
	May 13, 1956	8.83	-	570		Nov. 14, 1959	4.89	-	146
1957	Feb. 9, 1957	-	-	100		Jan. 13, 1960	5.08	-	158
	May 19, 1957	6.03	-	254		Mar. 28, 1960	6.45	-	280
	July 4, 1957	4.40	-	120		June 17, 1960	4.75	-	138
	July 8, 1957	5.00	-	152	1961	Apr. 25, 1961	4.77	-	140
	July 12, 1957	7.67	-	345	1962	Mar. 12, 1962	6.65	.25	275
1958	Dec. 20, 1957	4.36	-	117					
	July 4, 1958	4.61	-	131					

1116. Cedar River at Williamston, Mich.

Location.--Lat 42°41'15", long 84°17'25", in SW $\frac{1}{4}$ sec.35, T.4 N., R.1 E., on downstream side of bridge on U.S. Highway 16 at mouth of Deer Creek in Williamston.

Drainage area.--250 sq mi.

Gage.--Nonrecording. At Bridge Street Bridge 1,500 ft upstream end at datum 852.6 ft above mean sea level, unadjusted, prior to Mar. 1, 1924. Datum of gage is 850.84 ft above mean sea level, unadjusted.

Bankfull stage.--6 ft.

Remarks.--Records furnished by U.S. Weather Bureau. Records for flood seasons only. Only annual peak stages recorded are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1919	Apr. 17, 1919	10.5	-	1943	Mar. 17, 1943	7.9	-
1920	Mar. 12, 1920	10.6	-	1944	Feb. 27, 1944	7.5	-
				1945	May 18, 1945	8.7	-
1921	Mar. 26, 1921	9.4	-	1946	Mar. 6, 1946	7.2	-
1922	Apr. 12, 1922	10.0	-	1947	Apr. 6, 1947	12.0	-
1923	Mar. 4, 1923	9.7	-	1948	Mar. 20, 1948	10.7	-
1924	Mar. 6, 1924	6.5	-	1949	Feb. 15, 1949	8.3	-
1925	Mar. 22, 1925	3.2	-	1950	Apr. 5, 1950	8.9	-
1926	Mar. 20, 1926	8.5	-	1951	Feb. 19, 1951	7.8	-
1927	Mar. 14, 1927	4.1	-	1952	Apr. 14, 1952	8.1	-
1928	Apr. 9, 1928	5.0	-	1953	Mar. 5, 1953	5.1	-
1929	Mar. 1, 1929	7.1	-	1954	Feb. 17, 1954	7.9	-
1930	Feb. 21, 1930	7.0	-	1955	Feb. 21, 1955	6.8	-
1931	Mar. 30, 1931	.8	-	1956	Apr. 30, 1956	8.7	-
1932	May 12, 1932	5.5	-	1957	May 20, 1957	7.4	-
1933	Apr. 2, 1933	7.5	-	1958	Feb. 27, 1958	4.6	-
1938	Feb. 13, 1938	9.3	-	1959	Mar. 7, 1959	8.2	-
1939	Apr. 19, 1939	7.1	-	1960	Mar. 31, 1960	9.4	-
1940	Mar. 30, 1940	7.2	-	1961	Apr. 27, 1961	6.4	-
1941	Apr. 20, 1941	5.6	-	1962	Mar. 31, 1962	8.7	-
1942	Mar. 17, 1942	8.3	-				

1120. Sloan Creek near Williamston, Mich.

Location.--Lat 42°40'30", long 84°21'50", in E $\frac{1}{2}$ sec.1, T.3 N., R.1 W., on left bank 30 ft downstream from bridge on Meridian Road, 2 miles upstream from mouth, and 4 $\frac{1}{4}$ miles west of Williamston.

Drainage area.--9.34 sq mi.

Gage.--Recording. Datum of gage is 862.12 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--10 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)
1955	Jan. 5, 1955	3.48	91	1956	May 13, 1956	4.90	329
	Feb. 20, 1955	3.70	159		Aug. 9, 1956	3.68	130
	Feb. 27, 1955	3.40	74				
	Mar. 3, 1955	3.78	186	1957	Feb. 9, 1957	3.30	65
1956	Mar. 1, 1956	4.30	245		Apr. 5, 1957	3.41	78
	Mar. 6, 1956	4.26	238		Apr. 27, 1957	3.88	137
	Apr. 29, 1956	4.85	322		May 15, 1957	3.42	79
	May 6, 1956	3.25	95		May 19, 1957	4.57	236
	May 9, 1956	4.60	285		July 4, 1957	3.51	90
					July 8, 1957	3.26	61

Peak stages and discharges of Sloan Creek near Williamston, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	July 11, 1957	7.35	685	1960	Nov. 4, 1959	3.26	61
1958	Dec. 20, 1957	3.60	101		Nov. 14, 1959	3.77	123
	Feb. 25, 1958	3.28	63		Dec. 12, 1959	3.39	76
1959	Mar. 3, 1959	3.25	60		Jan. 12, 1960	3.50	89
	Mar. 6, 1959	3.92	143		Feb. 6, 1960	3.36	72
	Mar. 15, 1959	3.83	131	1961	Apr. 25, 1961	3.96	148
	Mar. 19, 1959	3.48	87		Aug. 19, 1961	4.59	238
	Apr. 2, 1959	3.56	96	1962	Mar. 12, 1962	4.07	163
1960	Oct. 6, 1959	6.19	486		Mar. 18, 1962	3.49	88

1125. Cedar River at East Lansing, Mich.

(Published as Red Cedar River at Agricultural College, 1902-3)

Location.--Lat 42°43'40", long 84°28'40", in SW $\frac{1}{4}$ sec.18, T.4 N., R.1 W., in left downstream bridge abutment of Farm Lane Bridge on Michigan State University Campus in East Lansing, 3 miles upstream from Sycamore Creek and 4 miles upstream from mouth.

Drainage area.--355 sq mi.

Gage.--Nonrecording prior to March 1931; recording thereafter. At site three-quarters of a mile downstream at different datum August 1902 to December 1903. U.S. Weather Bureau gages in vicinity at different datum 1904, 1911 to March 1931; gage heights given herein converted to present site and datum. Datum of gage is 824.39 ft above mean sea level, datum of 1929.

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

Bankfull stage.--7 ft (U.S. Weather Bureau flood stage).

Remarks.--Gage heights for 1911-19, 1929-30, and for flood seasons only 1920-28 furnished by U.S. Weather Bureau. Base for partial-duration series, 1,100 cfs. Only annual peaks are shown prior to 1931.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Apr. 15, 1903	-	a2,700	1934	Apr. 4, 1934	5.55	1,340
1904	Mar. 24, 1904	13.4	b8,000	1935	Mar. 5, 1935	6.18	1,800
1911	Feb. 18, 1911	5.5	990		Mar. 11, 1935	5.76	1,520
1912	Apr. 3, 1912	9.5	4,100	1936	Feb. 27, 1936	5.37	1,020
1913	Apr. 5, 1913	7.9	2,740	1937	Apr. 18, 1937	7.12	2,330
1914	May 14, 1914	7.8	2,660		Apr. 22, 1937	6.24	1,700
1915	Feb. 16, 1915	8.1	2,920		June 22, 1937	5.65	1,280
1916	Mar. 27, 1916	10.2	4,700		June 26, 1937	6.54	1,880
1917	Apr. 7, 1917	7.6	2,490	1938	Feb. 7, 1938	5.82	1,280
1918	Mar. 15, 1918	10.7	5,130		Feb. 14, 1938	9.20	4,020
1919	Mar. 17, 1919	8.3	3,080		Feb. 19, 1938	6.55	1,880
1920	Mar. 13, 1920	9.0	3,680		Mar. 17, 1938	5.64	1,180
1921	Mar. 26, 1921	5.7	1,110	1939	Feb. 20, 1939	5.90	1,360
1922	Apr. 13, 1922	7.2	2,160		Apr. 19, 1939	6.72	1,760
1923	Mar. 5, 1923	6.9	1,920	1940	Mar. 30, 1940	7.05	1,970
1924	Mar. 7, 1924	6.7	1,760		June 13, 1940	5.70	1,110
1925	Mar. 21, 1925	5.5	990	1941	Jan. 3, 1941	c5.64	1,020
1926	Mar. 20, 1926	7.8	2,660	1942	Mar. 9, 1942	6.81	1,840
1927	Mar. 15, 1927	5.2	824		Mar. 18, 1942	7.83	2,660
1928	Apr. 8, 1928	6.0	1,290	1943	Dec. 29, 1942	7.60	2,490
1929	Mar. 1, 1929	6.8	1,840		Feb. 12, 1943	6.0	1,290
1930	Feb. 22, 1930	7.2	2,160		Feb. 24, 1943	6.37	1,520
1931	June 30, 1931	3.40	222		Mar. 17, 1943	7.57	2,490
1932	Sept. 5, 1932	6.14	1,610				
1933	Apr. 2, 1933	7.11	2,310				

a Maximum daily.

b About.

c Occurred Apr. 21, 1941.

Peak stages and discharges of Cedar River at East Lansing, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 12, 1943	6.92	1,920	1952	Mar. 12, 1952	6.39	1,550
	May 22, 1943	6.75	1,800		Apr. 11, 1952	6.19	1,420
	May 26, 1943	7.23	2,160		Apr. 15, 1952	7.87	2,740
	June 1, 1943	6.65	1,730				
1944	Feb. 27, 1944	7.42	2,320	1953	Mar. 5, 1953	5.30	878
1945	May 19, 1945	8.10	2,930	1954	Feb. 17, 1954	7.58	2,490
1946	Oct. 3, 1945	5.73	1,140		Mar. 26, 1954	6.68	1,690
	Mar. 4, 1946	7.35	2,320		June 23, 1954	6.18	1,410
1947	Apr. 7, 1947	11.58	5,920	1955	Jan. 7, 1955	5.75	1,140
	May 3, 1947	6.25	1,420		Feb. 22, 1955	6.07	1,320
1948	Feb. 29, 1948	8.16	3,000		Feb. 28, 1955	5.87	1,170
	Mar. 17, 1948	6.66	1,750		Mar. 4, 1955	6.27	1,440
	Mar. 20, 1948	10.47	4,960	1956	Mar. 7, 1956	8.37	3,130
	Apr. 12, 1948	5.76	1,140		Apr. 30, 1956	8.37	3,130
	Apr. 29, 1948	5.76	1,140		May 11, 1956	8.28	3,040
	May 11, 1948	10.02	4,530		May 14, 1956	8.62	3,310
1949	Feb. 16, 1949	7.68	2,580	1957	May 20, 1957	6.93	1,940
	Apr. 1, 1949	6.50	1,620		July 13, 1957	7.49	2,400
1950	Dec. 23, 1949	5.78	1,170	1958	Dec. 21, 1957	5.33	895
	Jan. 5, 1950	5.83	1,200	1959	Mar. 7, 1959	6.99	1,950
	Jan. 15, 1950	5.79	1,170		Mar. 17, 1959	6.57	1,620
	Jan. 27, 1950	5.99	1,290		Mar. 21, 1959	6.37	1,480
	Feb. 16, 1950	5.84	1,200		Apr. 4, 1959	6.49	1,560
	Mar. 8, 1950	7.24	2,160	1960	Oct. 8, 1959	7.44	2,310
	Mar. 29, 1950	8.37	3,170		Jan. 14, 1960	5.88	1,180
	Apr. 5, 1950	8.27	3,080		Mar. 31, 1960	9.18	3,580
	Apr. 26, 1950	6.83	1,880	1961	Apr. 26, 1961	5.86	1,170
1951	Jan. 4, 1951	7.27	2,240	1962	Mar. 13, 1962	7.49	2,300
	Feb. 21, 1951	7.12	2,080		Mar. 20, 1962	6.56	1,640
1952	Jan. 16, 1952	6.45	1,590				

1130. Grand River at Lansing, Mich.
(Published as "at North Lansing," 1901-6)

Location.--Lat 42°45'05", long 84°33'20", in NW¹/₄ sec.9, T.4 N., P.2 W., on right bank 30 ft upstream from bridge on North Grand River Avenue in Lansing, 2 miles downstream from Cedar River, and at mile 152.

Drainage area.--1,230 sq mi, approximately.

Gage.--Nonrecording at different datum prior to August 1906; recording after June 2, 1949. U.S. Weather Bureau nonrecording gage at present site and datum 1907-34; gage heights have been adjusted to site and datum used 1935-49. Recording gage at site $1\frac{3}{4}$ miles downstream at datum 2.42 ft lower November 1934 to June 1949. Datum of present gage is 805.53 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 14,100 cfs and extended above by logarithmic plotting.

Bankfull stage.--11 ft (U.S. Weather Bureau flood stage).

Remarks.--Gage-height records for 1907-19, 1931-34 and for flood seasons only 1920-30 furnished by U.S. Weather Bureau; peaks for these years are annual observed maximums. Base for partial-duration series, 2,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1901	Mar. 20, 1901	11.5	8,650	1903	Apr. 15, 1903	11.44	8,490
	July 6, 1901	7.00	3,170	1904	Mar. 10, 1904	12.60	10,500
1902	May 8, 1902	6.80	3,010		Mar. 26, 1904	18.60	24,500
	July 5, 1902	10.00	6,700	1905	Mar. 21, 1905	7.9	4,100
1903	Mar. 8, 1903	10.43	7,600		June 7, 1905	13.5	12,800

Peak stages and discharge of Grand River at Lansing, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	Jan. 24, 1906	9.40	5,970	1946	Mar. 7, 1946	8.74	5,120
	Mar. 29, 1906	7.50	3,450	1947	Mar. 25, 1947	6.64	3,050
	Apr. 16, 1906	6.90	3,090		Apr. 7, 1947	15.59	16,400
	June 10, 1906	10.1	6,900		Apr. 21, 1947	7.84	4,180
1907	Mar. 30, 1907	8.0	4,380		May 3, 1947	7.97	4,380
1908	Mar. 14, 1908	13.53	12,200		May 22, 1947	7.08	3,500
1909	May 2, 1909	11.43	8,540		June 3, 1947	7.30	3,680
1910	Mar. 6, 1910	9.9	6,450		June 9, 1947	7.29	3,680
1911	Feb. 18, 1911	6.92	3,340	1948	Feb. 29, 1948	9.78	6,330
	Apr. 5, 1912	11.9	9,290		Mar. 17, 1948	8.00	4,380
	Apr. 5, 1913	10.17	6,770		Mar. 21, 1948	13.40	12,000
	May 17, 1914	10.16	6,760		Apr. 12, 1948	6.92	3,320
	Feb. 16, 1915	8.41	4,800		May 12, 1948	11.78	9,130
1916	Mar. 29, 1916	12.95	11,100	1949	Feb. 16, 1949	9.44	5,890
1917	Apr. 7, 1917	9.2	5,670		Apr. 2, 1949	8.05	4,380
1918	Mar. 15, 1918	15.34	15,800	1950	Dec. 23, 1949	7.40	3,210
1919	Mar. 17, 1919	10.88	7,700		Jan. 5, 1950	7.08	3,000
1920	Mar. 13, 1920	10.25	6,870		Jan. 15, 1950	7.32	3,140
1921	Apr. 24, 1921	5.5	2,190		Jan. 27, 1950	7.72	3,420
	Apr. 13, 1922	8.6	5,010		Feb. 17, 1950	7.10	3,000
	Mar. 17, 1923	7.5	3,880		Mar. 8, 1950	10.41	5,660
	Mar. 7, 1924	7.74	4,120		Mar. 29, 1950	12.36	8,000
	Mar. 21, 1925	5.31	2,060		Apr. 5, 1950	12.66	8,280
1926	Mar. 22, 1926	10.25	6,870		Apr. 26, 1950	10.60	5,930
1927	May 28, 1927	5.58	2,250	1951	Jan. 4, 1951	9.18	4,610
1928	Apr. 9, 1928	6.67	3,110		Feb. 21, 1951	9.43	4,770
1929	Mar. 1, 1929	7.6	3,980	1952	Jan. 3, 1952	6.92	2,860
1930	Feb. 22, 1930	8.1	4,480		Jan. 17, 1952	9.10	4,530
1931	June 8, 1931	4.65	1,610		Mar. 12, 1952	8.03	3,650
1932	Feb. 13, Mar. 28, 1932	6.16	2,690		Mar. 23, 1952	6.97	2,930
1933	Apr. 3, 1933	8.09	4,470		Apr. 15, 1952	11.02	6,200
1934	Apr. 5, 1934	7.81	4,190		May 26, 1952	7.26	3,140
1935	Mar. 12, 1935	7.57	4,020	1953	June 8, 1953	6.04	2,260
1936	Mar. 12, 1936	5.85	2,490	1954	Feb. 17, 1954	9.50	4,850
					Mar. 26, 1954	8.76	4,290
1937	Apr. 18, 1937	9.46	6,000		June 23, 1954	7.70	3,420
	June 27, 1937	10.47	7,170	1955	Jan. 7, 1955	7.00	2,930
1938	Feb. 14, 1938	10.36	7,050		Feb. 22, 1955	7.08	3,000
	Mar. 18, 1938	6.82	3,300		Feb. 28, 1955	7.11	3,000
1939	Feb. 22, 1939	6.45	2,970		Mar. 3, 1955	7.49	3,280
	Apr. 19, 1939	8.95	5,450	1956	Mar. 7, 1956	11.44	7,100
1940	Mar. 31, 1940	7.79	4,180		May 1, 1956	11.72	7,700
					May 14, 1956	11.59	7,500
1941	Jan. 3, 1941	6.46	2,960	1957	May 20, 1957	8.56	4,100
1942	Mar. 18, 1942	10.81	7,530		July 11, 1957	7.49	3,270
1943	Dec. 30, 1942	9.58	6,110	1958	Mar. 1, 1958	6.20	2,380
	Feb. 12, 1943	7.11	3,500	1959	Mar. 8, 1959	9.25	4,650
	Feb. 24, 1943	7.72	4,080		Mar. 17, 1959	8.81	4,300
	Mar. 17, 1943	10.21	6,810		Mar. 21, 1959	7.95	3,610
	May 13, 1943	8.80	5,230		Apr. 4, 1959	8.72	4,230
	May 22, 1943	9.88	6,450	1960	Oct. 8, 1959	8.48	4,030
	May 26, 1943	10.06	6,690		Jan. 15, 1960	7.95	3,610
	June 3, 1943	11.26	8,130		Apr. 1, 1960	12.08	8,070
					June 18, 1960	6.93	2,880
1944	Feb. 27, 1944	9.67	6,220	1961	Apr. 27, 1961	8.51	3,780
	Mar. 17, 1944	6.37	2,880	1962	Mar. 14, 1962	9.09	4,520
	Apr. 13, 1944	6.62	3,050		Mar. 19, 1962	8.94	4,400
1945	May 19, 1945	10.68	7,410				

1132. Grand River at Grand Ledge, Mich.

Location.--Lat 42°45'15", long 84°44'40", in NE $\frac{1}{4}$ sec.11, T.4 N., R.4 W., on downstream side of bridge on Bridge Street, in Grand Ledge.

Drainage area.--1,280 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 782.85 ft above mean sea level, unadjusted.

Bankfull stage.--11 ft (U.S. Weather Bureau flood stage).

Remarks.--Records furnished by U.S. Weather Bureau. Only annual peak stages for flood seasons are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 26, 1904	14.0	-	1933	Mar. 16, Apr 3, 1933	8.7	-
1905	June 8, 1905	8.8	-				
1906	Jan. 24, 1906	6.5	-	1936	Mar. 4, 1936	6.0	-
1907	Jan. 21, 1907	6.5	-	1937	June 27, 1937	8.1	-
1908	Mar. 13, 1908	10.1	-	1938	Feb. 14, 1938	8.3	-
1909	May 2, 1909	8.7	-	1939	Apr. 20, 1939	7.3	-
1910	Mar. 4, 1910	8.0	-	1940	Mar. 31, 1940	7.0	-
1911	Feb. 18, 1911	4.4	-	1941	Apr. 21, 1941	6.2	-
1912	Apr. 5, 1912	8.8	-	1942	Mar. 18, 1942	8.8	-
1913	Apr. 5, 1913	7.2	-	1943	June 3, 1943	9.2	-
1914	May 15, 1914	7.2	-	1944	Feb. 27, 1944	8.0	-
1915	Feb. 16, 1915	8.0	-	1945	May 19, 1945	8.6	-
1916	Mar. 28, 1916	9.5	-	1946	Mar. 7, 1946	8.0	-
1917	Apr. 7, 1917	7.0	-	1947	Apr. 7, 1947	12.0	-
1918	Feb. 16, 1918	11.9	-				
1919	Mar. 17, 1919	7.8	-	1949	Apr. 2, 1949	7.3	-
1920	Mar. 14, 1920	11.4	-	1950	Apr. 5, 1950	9.7	-
1921	Mar. 28, 1921,	4.0	-	1951	Feb. 23, 1951	8.3	-
	Apr. 25, 30, 1921			1952	Apr. 15, 1952	8.8	-
1922	Apr. 15, 19, 1922	7.3	-	1953	Mar. 19, 1953	5.6	-
1923	Mar. 17, 1923	6.6	-	1954	Feb. 17, 1954	7.7	-
1924	Mar. 7, 1924	7.2	-	1955	Mar. 5, 1955	6.5	-
1925	Mar. 1-7, 1925	6.5	-				
1926	Mar. 21, 1926	9.0	-	1956	Mar. 7, 1956	8.7	-
1927	May 28, 1927	6.4	-	1957	May 21, 1957	7.0	-
1928	Apr. 9, 1928	6.5	-	1958	Mar. 1, 1958	6.0	-
1929	Feb. 28, 1929	8.0	-	1959	Apr. 3, 1959	8.9	-
1930	Feb. 24, 1930	8.2	-	1960	Apr. 1, 1960	9.6	-
1931	Mar. 12-15, 1931	6.5	-	1961	Apr. 26, 1961	7.0	-
1932	Mar. 27-31, 1932	8.5	-	1962	Mar. 14, 1962	7.2	-

1140. Grand River at Portland, Mich.

Location.--Lat 42°51'20", long 84°54'45", in NW $\frac{1}{4}$ sec.4, T.5 N., R.5 W., on left bank at downstream side of bridge on Kent Street, 1.0 mile south of Portland, 1.9 miles upstream from Lookingglass River, and at mile 115.

Drainage area.--1,385 sq mi.

Gage.--Nonrecording Weather Bureau gage 1.8 miles downstream at datum 698.6 ft above mean sea level, unadjusted, prior to Aug. 20, 1952. Nonrecording at present site and datum Aug. 20, 1952, to July 6, 1953; recording thereafter. Datum of gage is 705.00 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements for present site.

Bankfull stage.--11 ft; 12 ft at U.S. Weather Bureau gage.

Remarks.--Only annual peaks are shown. Records for flood seasons only prior to Aug. 20, 1952, furnished by U.S. Weather Bureau; peaks for this period are observed maximums.

Peak stages and discharges of Grand River at Portland, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 26, 1904	14.4	-	1933	Feb. 26, 1933	a12.0	-
1905	June 6, 1905	11.1	-	1936	Feb. 28, 1936	a9.0	-
1906	Feb. 28, 1906	9.1	-	1937	Apr. 18, 1937	7.3	-
1907	Jan. 22, 1907	a13.8	-	1938	Feb. 6, 1938	11.0	-
1908	Mar. 12, 1908	11.8	-	1939	Feb. 22, 1939	14.0	-
1909	May 1, 1909	10.1	-	1940	Mar. 24, 1940	9.0	-
1910	Mar. 5, 1910	10.3	-	1941	Mar. 5, 1941	8.1	-
1911	Feb. 21, 1911	11.6	-	1942	Mar. 7, 1942	11.4	-
1912	Apr. 5, 1912	10.5	-	1943	Mar. 13, 1943	10.0	-
1913	Mar. 14, 1913	12.3	-	1944	Feb. 25, 1944	10.6	-
1914	Mar. 17, 1914	7.8	-	1945	May 19, 1945	8.0	-
1915	Feb. 16, 1915	9.3	-	1946	Mar. 4, 1946	10.0	-
1916	Jan. 26, 1916	a13.2	-	1947	Apr. 7, 1947	11.3	-
1917	Apr. 7, 1917	7.6	-	1948	Mar. 3, 1948	12.0	-
1918	Feb. 8, 1918	12.4	-	1949	Feb. 13, 1949	10.0	-
1919	Mar. 17, 1919	9.6	-	1950	Mar. 7, 1950	9.7	-
1920	Mar. 15, 1920	a15.2	-	1951	Feb. 20, 1951	a14.0	-
1921	Feb. 1-3, 1921	a5.2	-	1952	Apr. 15, 1952	8.0	-
1922	Apr. 13, 1922	7.1	-	1953	June 9, 1953	8.0	3,040
1923	Mar. 5, 1923	a9.7	-	1954	Feb. 18, 1954	9.69	5,350
1924	Mar. 7, 1924	a9.0	-	1955	Mar. 4, 1955	b9.51	4,370
1925	Feb. 27, 1925	a9.9	-	1956	May 13, 1956	11.51	9,100
1926	Mar. 21, 1926	a9.8	-	1957	May 21, 1957	9.65	5,370
1927	Feb. 8, 1927	a7.7	-	1958	Mar. 1, 1958	c9.53	2,810
1928	Feb. 17, 1928	a7.5	-	1959	Mar. 8, 1959	9.58	5,260
1929	Mar. 3, 1929	a13.0	-	1960	Mar. 31, 1960	11.56	8,710
1930	Feb. 22, 1930	8.3	-	1961	Apr. 27, 1961	9.15	4,600
1931	Apr. 5, 1931	2.9	-	1962	Mar. 21, 1962	9.74	5,480
1932	Feb. 2, 1932	a7.0	-				

a Affected by ice.

b Occurred Feb. 21, 1955 (backwater from ice).

c Occurred Jan. 4, 1958 (backwater from ice).

1145. Lookingglass River near Eagle, Mich.

Location.--Lat 42°49'45", long 84°46'40", in sec.10, T.5 N., R.4 W., on up-stream side of highway bridge, 1½ miles northeast of Eagle, and 10 miles up-stream from mouth.

Drainage area.--281 sq mi.

Gage.--Nonrecording. Datum of gage is 747.09 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 1,900 cfs and extended above on basis of logarithmic plotting.

Bankfull stage.--6 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	May 23, 1945	4.70	-	920	1954	Mar. 25, 1954	-	-	935
1946	Mar. 5, 1946	7.11	1.3	-	1955	Feb. 20, 1955	5.54	2.9	-
	Mar. 6, 1946	-	-	1,700		Mar. 4, 1955	-	-	790
1947	Apr. 5, 1947	7.70	-	2,860	1956	Mar. 7, 1956	9.9	4.0	-
1948	Mar. 19, 1948	6.90	-	2,300		May 10, 1956	-	-	1,700
1949	Feb. 13, 1949	6.55	2.4	-	1957	July 12, 1957	5.4	-	1,340
	Feb. 15, 1949	-	-	1,080	1958	Mar. 1, 1958	-	-	600
1950	Mar. 10, 1950	7.54	2.2	-		Mar. 5, 1958	4.54	1.2	-
	Apr. 4, 1950	-	-	2,020	1959	Mar. 16, 1959	-	-	1,100
						Mar. 16, 1959	5.20	-	-
1951	Feb. 21, 1951	-	-	1,600	1960	Mar. 30, 1960	5.27	-	1,260
	Feb. 23, 1951	7.51	2.0	-					
1952	Apr. 14, 1952	5.11	-	1,180	1961	Apr. 25, 1961	4.25	-	750
1953	Jan. 27, 1953	3.5	1.0	-	1962	Mar. 19, 1962	6.35	1.5	-
	May 3, 1953	-	-	357		Mar. 20, 1962	-	-	1,100
1954	Feb. 16, 1954	7.8	3.2	-					

1150. Maple River at Maple Rapids, Mich.

Location.--Lat 43°06'35", long 84°41'35", in sec.5, T.8 N., R.3 W., on upstream side of highway bridge at Maple Rapids, 30 ft downstream from Pine Creek, and three-quarters of a mile upstream from Hayworth Creek.

Drainage area.--434 sq mi.

Gage.--Nonrecording. Datum of gage is 642.58 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 5,000 cfs.

Bankfull stage.--7 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)
1904	March 1904	a13.8	-	1953	Mar. 20, 1953	7.66	770
				1954	Feb. 22, 1954	7.98	940
1945	May 19, 1945	8.66	1,680	1955	Mar. 6, 1955	8.0	1,120
1946	Mar. 8, 1946	9.70	3,280	1956	May 10, 1956	9.93	4,740
1947	Apr. 6, 1947	9.97	4,810	1957	July 15, 1957	d8.36	1,190
1948	Mar. 20, 1948	b11.22	c6,500	1958	Mar. 4, 1958	8.48	1,250
1949	Feb. 19, 1949	8.75	1,430	1959	Mar. 24, 1959	9.29	2,830
1950	Apr. 4, 1950	9.58	3,000	1960	Mar. 31, 1960	10.22	5,550
1951	Feb. 23, 1951	9.29	2,380	1961	Apr. 27, 1961	8.32	1,240
1952	Jan. 20, 1952	-	2,000	1962	Mar. 21, 1962	9.56	3,570

a From information by local resident.

b Backwater from ice.

c Maximum daily.

d Occurred May 23, 1957.

1160. Grand River at Ionia, Mich.

Location.--Lat 42°58'20", long 85°04'10", in NW $\frac{1}{4}$ sec.30, T.7 N., R.6 W., on left bank 15 ft downstream from bridge on State Highway 66 at Ionia, 2.7 miles downstream from Prairie Creek, and at mile 87.

Drainage area.--2,840 sq mi, approximately.

Gage.--Nonrecording prior to July 1951; recording thereafter. Datum of gage is 615.38 ft above mean sea level, datum of 1929.

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

Bankfull stage.--16 ft; U.S. Weather Bureau flood stage, 21 ft.

Remarks.--Gage heights for flood seasons only prior to Dec. 23, 1948, furnished by U.S. Weather Bureau. Only recorded 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	Mar. 26, 1904	27.6	-	1919	Mar. 18, 1919	23.4	-
1905	June 7, 1905	26.0	-	1920	Mar. 17, 1920	21.6	-
1906	Jan. 24, 1906	19.7	-	1921	Apr. 28, 1921	16.6	-
1907	Jan. 21, 1907	19.7	-	1922	Apr. 13, 1922	18.4	-
1908	Mar. 14, 1908	22.7	-	1923	Mar. 6, 1923	a18.1	-
1909	May 2, 1909	22.4	-	1924	Mar. 8, 1924	a17.2	-
1910	Mar. 7, 1910	20.7	-	1925	Feb. 25, 1925	16.7	-
1911	Feb. 19, 1911	16.3	-	1926	Mar. 23, 1926	20.5	-
1912	Apr. 6, 1912	23.3	-	1927	Feb. 18, 1927	16.0	-
1913	Apr. 6, 1913	20.5	-	1928	Apr. 5, 1928	18.5	-
1914	May 16, 1914	16.9	-	1929	Mar. 6, 1929	19.8	-
1915	Feb. 18, 1915	18.9	-	1930	Feb. 27, 1930	20.1	-
1916	Mar. 29, 1916	23.5	-	1931	Mar. 29, 1931	9.7	-
1917	Apr. 8, 1917	19.0	-	1932	Feb. 13, 1932	15.2	-
1918	Mar. 17, 1918	24.1	-	1933	Apr. 4, 1933	16.5	-

a Affected by ice.

Peak stages and discharges of Grand River at Ionia, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Mar. 13, 1936	a18.2	-	1950	Mar. 29, 1950	21.78	20,700
1937	Apr. 23, 1937	18.1	-	1951	Feb. 21, 1951	a19.93	13,000
1938	Feb. 14, 1938	21.5	-	1952	Apr. 15, 1952	19.78	14,000
1939	Apr. 20, 1939	18.8	-	1953	Mar. 17, 1953	13.18	4,360
1940	Apr. 1, 1940	16.7	-	1954	Mar. 28, 1954	17.01	7,700
1941	Mar. 6, 1941	15.3	-	1955	Mar. 5, 1955	b17.20	7,700
1942	Mar. 18, 1942	23.1	-	1956	May 11, 1956	21.87	19,000
1943	Mar. 17, 1943	22.4	-	1957	May 22, 1957	18.53	9,840
1944	Feb. 28, 1944	18.5	-	1958	Mar. 2, 1958	a16.89	6,100
1945	May 19, 1945	18.6	-	1959	Apr. 4, 1959	19.64	11,200
1946	Mar. 8, 1946	20.7	-	1960	Apr. 1, 1960	23.43	21,500
1947	Apr. 6, 1947	23.6	-	1961	Apr. 28, 1961	16.77	6,840
1948	Mar. 21, 1948	24.3	-	1962	Mar. 21, 1962	20.67	14,600
1949	Feb. 16, 1949	19.5	13,100				

a Affected by ice.

b Occurred Feb. 23, 1955 (ice jam).

1165. Flat River at Smyrna, Mich.

Location--Lat 43°03'10", long 85°15'50", in NW¼ sec.28, T.8 N., R.8 W., on right bank at downstream side of highway bridge, 600 ft downstream from dam and inactive powerplant, and half a mile south of Smyrna.

Drainage area--528 sq mi.

Gage--Recording. Datum of gage is 729.53 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage--Not subject to overflow.

Remarks--Many peaks affected by operation of powerplant or spill gates at dam just above station. Power generation was discontinued in June 1956 but manipulation of gates at dam has continued to affect peaks. Regulated and natural annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 23, 1951	5.82	a1,600	1958	Oct. 24, 1957	5.99	a1,830
	Feb. 23, 1951	5.55	b1,390		Nov. 16, 1957	5.25	b1,110
1952	Mar. 21, 1952	6.20	b1,600	1959	Apr. 4, 1959	6.74	a2,500
1953	Mar. 15, 1953	5.57	b1,300		Apr. 6, 1959	6.5	b2,100
1954	Apr. 28, 1954	5.69	b1,410	1960	Apr. 1, 1960	6.81	a2,480
1955	Oct. 3, 1954	5.90	a1,560		Apr. 2, 1960	6.55	b2,200
	Mar. 15, 1955	5.42	b1,200	1961	Dec. 5, 1960	5.88	a1,540
1956	May 9, 1956	6.75	a2,380		Sept. 27, 1961	5.15	b1,050
	May 10, 1956	6.5	b2,100	1962	Mar. 27, 1962	6.52	a2,130
1957	Feb. 27, 1957	5.3	b1,140		Mar. 27, 1962	5.6	b1,340
	July 22, 1957	6.65	a1,830				

a Regulated.

b Natural peak.

1166. Grand River at Lowell, Mich.

Location.--Lat 42°55'28", long 85°20'33", in NW $\frac{1}{4}$ sec.11, T.6 N., R.9 W., on downstream side of bridge on State Highway 91, a quarter of a mile downstream from Flat River, 0.7 mile south of Lowell, and at mile 70.

Drainage area.--3,640 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 611.6 ft above mean sea level, datum of 1929.

Bankfull stage.--15 ft.

Remarks.--Records for flood seasons only furnished by U.S. Weather Bureau. Only recorded annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 28, 1904	22.1	-	1933	Apr. 5, 1933	9.9	-
1906	Jan. 25, 1906	14.3	-	1936	Mar. 13, 1936	11.9	-
1907	Jan. 23, 1907	12.7	-	1937	Apr. 24, 1937	12.1	-
1908	Mar. 15, 1908	17.5	-	1938	Feb. 15, 1938	16.1	-
1909	May 3, 1909	17.2	-	1939	Apr. 23, 1939	12.1	-
1910	Mar. 8, 1910	14.8	-	1940	Apr. 1, 1940	10.0	-
1911	Feb. 19, 1911	10.0	-	1941	Mar. 6, 1941	8.9	-
1912	Apr. 7, 1912	18.1	-	1942	Mar. 19, 1942	17.8	-
1913	Apr. 6, 1913	14.6	-	1943	Mar. 18, 1943	16.8	-
1914	May 17, 1914	9.6	-	1944	Feb. 29, 1944	11.7	-
1915	Feb. 18, 1915	12.3	-	1945	May 20, 1945	12.4	-
1916	Mar. 30, 1916	18.3	-	1946	Mar. 9, 1946	15.5	-
1917	Apr. 9, 1917	11.6	-	1947	Apr. 8, 1947	18.5	-
1918	Mar. 17, 1918	18.1	-	1948	Mar. 22, 1948	19.0	-
1919	Mar. 19, 1919	18.3	-	1949	Feb. 17, 1949	13.0	-
1920	Mar. 17, 1920	16.5	-	1950	Apr. 6, 1950	16.4	-
1921	Apr. 28, 1921	10.4	-	1951	Feb. 22, 1951	13.5	-
1922	Dec. 20, 1921	12.9	-	1952	Apr. 16, 1952	14.0	-
1923	Mar. 7, 1923	12.1	-	1953	Mar. 16, 1953	7.8	-
1924	Mar. 10, 1924	10.7	-	1954	Mar. 29, 1954	10.26	-
1925	Feb. 28, 1925	10.8	-	1955	Feb. 25, 1955	10.05	-
1926	Mar. 24, 1926	15.0	-	1956	May 12, 1956	16.12	-
1927	Feb. 18, 1927	9.3	-	1957	May 23, 1957	11.68	-
1928	Apr. 9, 1928	13.1	-	1958	Mar. 3, 1958	10.16	-
1929	Mar. 5, 1929	14.5	-	1959	Apr. 4, 1959	13.65	-
1930	Feb. 27, 1930	15.1	-	1960	Apr. 2, 1960	17.38	-
1931	Apr. 1, 1931	4.8	-	1961	Apr. 29, 1961	9.86	-
1932	Mar. 30, 1932	8.6	-	1962	Mar. 22, 1962	14.08	-

1170. Quaker Brook near Nashville, Mich.

Location.--Lat 42°33'57", long 85°05'37", in NW $\frac{1}{4}$ sec.13, T.2 N., R.7 W., on left bank 150 ft upstream from culvert on county road, 500 ft upstream from small tributary, and 2 $\frac{1}{2}$ miles south of Nashville.

Drainage area.--7.60 sq mi.

Gage.--Recording. Datum of gage is 821.89 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 140 cfs.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 50 cfs.

Peak stages and discharges of Quaker Brook near Nashville, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 4, 1954	5.47	294	1958	Aug. 6, 1958	3.00	70
	Oct. 11, 1954	2.65	51	1959	Mar. 15, 1959	3.16	84
	Jan. 6, 1955	2.65	51		Oct. 6, 1959	3.00	68
	Feb. 20, 1955	3.52	125		Jan. 12, 1960	3.46	104
1956	Mar. 1, 1956	4.72	212		Mar. 29, 1960	4.87	176
	Mar. 7, 1956	4.91	232	1960	May 20, 1960	2.84	55
	Apr. 29, 1956	3.50	125		June 16, 1960	3.03	71
	May 9, 1956	2.80	66		Apr. 25, 1961	2.61	35
	May 13, 1956	2.65	51	1962	May 5, 1962	2.82	54
1957	Apr. 27, 1957	2.65	51				
	May 19, 1957	3.31	113				
	July 8, 1957	3.39	103				

1175. Thornapple River near Hastings, Mich.

Location.--Lat 42°36'55", long 85°14'15", in sec.27, T.3 N., R.8 W., on downstream side of highway bridge, half a mile downstream from Cedar Creek, 2 miles downstream from Thornapple Lake, and 3½ miles southeast of Hastings.

Drainage area.--385 sq mi.

Gage.--Nonrecording. Datum of gage is 786.71 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

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	May 18, 1945	6.85	2,360	1954	Mar. 28, 1954	6.1	1,810
1946	Mar. 7, 1946	7.92	3,290	1955	Jan. 7, 1955	as.86	1,520
1947	Apr. 7, 1947	10.2	6,810	1956	Mar. 7, 1956	8.1	3,680
1948	Mar. 21, 1948	9.02	4,890	1957	May 22, 1957	6.75	2,350
1949	Feb. 15, 1949	6.68	2,300	1958	Mar. 2, 1958	5.47	1,360
1950	Mar. 29, 1950	7.65	3,140	1959	Mar. 21, 1959	6.05	1,770
	Apr. 5, 27, 1950			1960	Apr. 1, 1960	8.75	3,880
1951	Jan. 6, 1951	6.06	1,760	1961	Apr. 28, 1961	5.17	1,090
1952	Apr. 15, 1952	6.45	2,090	1962	Mar. 22, 1962	6.43	1,960
1953	Apr. 12, 1953	4.48	723				

a Occurred Feb. 22, 1955 (backwater from ice).

1180. Thornapple River near Caledonia, Mich.

Location.--Lat 42°48'40", long 85°29'00", in NW¼ sec.22, T.5 N., R.10 W., on right bank 200 ft downstream from La Barge powerplant, 2.3 miles northeast of Caledonia, and 3.3 miles downstream from Coldwater River.

Drainage area.--773 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1938, at mean sea level datum, unadjusted; recording after Sept. 30, 1951. Datum of gage is 676.31 ft above mean sea level, unadjusted (Consumers Power Co. bench mark).

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

Remarks.--Only annual peaks are shown; gage heights and discharges for 1931-38 are daily means.

Peak stages and discharges of Thornapple River near Caledonia, Mich. a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	June 7, 1931	681.5	865	1952	Apr. 13, 1952	8.96	3,700
1932	Mar. 30, 1932	682.7	1,840	1953	Mar. 16, 1953	5.36	1,190
1933	Apr. 6, 1933,	682.6	1,750	1954	Mar. 26, 1954	7.62	2,710
	May 21, 1933			1955	Oct. 6, 1954	7.44	c2,570
1934	Apr. 5, 1934	682.6	1,750	1956	May 10, 1956	10.79	6,290
1935	Mar. 6, 1935	683.5	2,580	1957	May 22, 1957	8.35	3,480
				1958	Mar. 3, 1958	6.41	1,930
1936	Feb. 28, 1936	683.5	2,680	1959	Mar. 21, 1959	8.27	3,410
1937	Apr. 22, 1937	684.7	3,780	1960	Apr. 2, 1960	10.6	5,920
1938	Feb. 14, 1938	685.1	4,220				
1947	Apr. 7, 1947	bl4.4	-	1961	Apr. 28, 1961	5.97	1,630
				1962	Mar. 22, 1962	8.28	3,420

a Gage heights and discharges 1931-38 are daily means.

b From information by powerplant operator.

c Regulated; the natural peak of 2,150 cfs (6.82 ft) occurred Jan. 7, 1955.

1185. Rogue River near Rockford, Mich.

Location.--Lat 43°05'00", long 85°35'30", in NE $\frac{1}{4}$ sec.15, T.8 N., R.11 W., on left bank at downstream side of highway bridge, 2.2 miles upstream from mouth, and 3.0 miles southwest of Rockford.

Drainage area.--234 sq mi.

Gage.--Nonrecording prior to Aug. 30, 1952; recording thereafter. Datum of gage is 625.2 ft above mean sea level (levels by Blass Survey Co.).

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

Bankfull stage.--7 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)
1952	Apr. 14, 1952	7.10	1,220	1958	Aug. 20, 1958	6.40	911
1953	Feb. 23, 1953	7.06	1,190	1959	Apr. 3, 1959	7.52	1,640
1954	Apr. 22, 1954	6.49	900	1960	Mar. 31, 1960	8.59	2,640
1955	Oct. 3, 1954	7.85	1,640				
1956	May 7, 1956	7.77	1,820	1961	Sept.25, 1961	7.27	1,390
1957	Feb. 26, 1957	6.60	1,080	1962	Mar. 23, 1962	6.70	1,050

1190. Grand River at Grand Rapids, Mich.

Location.--Lat 42°57'50", long 85°40'35", in NE $\frac{1}{4}$ sec.25, T.7 N., R.12 W., on right bank 500 ft upstream from bridge on Fulton Street, 1.7 miles upstream from Plaster Creek, and at mile 41.

Drainage area.--4,900 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 1, 1930; recording thereafter. At upstream side Fulton Street Bridge 1901-18; at downstream side Pearl Street Bridge 500 ft upstream 1919-30; at sewage pumping station 1 mile downstream Oct. 1, 1930, to Oct. 26, 1953. Datum of present gage is 585.7 ft above mean sea level, datum of 1929 (levels by city of Grand Rapids); datum of gages used prior to Oct. 26, 1953, 3.0 ft higher.

Stage-discharge relation.--Defined by current-meter measurements below 43,000 cfs.

Bankfull stage.--18 ft.

Historical data.--U.S. Weather Bureau report, Daily River Stages, Volume X, states that peak of March 1904 was said to have been exceeded by that of February 1838.

Remarks.--Gage heights 1901-18 furnished by city engineer of Grand Rapids; those for 1919-30 furnished by U.S. Weather Bureau. Gage heights for 1906-30 are maximum observed, discharges for which have been computed on basis of gage relationships and rating curves for gages used after 1930. 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)
1901	Mar. 28, 1901	13.9	30,000	1932	Mar. 31, 1932	5.66	8,820
1902	July 9, 1902	7.45	11,200	1933	Apr. 11, 1933	7.13	11,500
1903	Apr. 18, 1903	11.2	20,600	1934	Apr. 7, 1934	6.04	9,450
1904	Mar. 28, 1904	19.5	54,000	1935	Mar. 7, 1935	10.87	19,200
1905	June 9, 1905	18.6	50,200	1936	Mar. 12, 1936	9.68	15,900
1906	Jan. 26, 1906	11.65	18,500	1937	Apr. 25, 1937	9.59	16,400
1907	Jan. 24, 1907	15.1	18,000	1938	Feb. 16, 1938	13.27	28,300
1908	Mar. 15, 1908	15.3	28,800	1939	Apr. 23, 1939	9.00	16,200
1909	May 4, 1909	14.85	27,600	1940	Apr. 2, 1940	6.49	11,600
1910	Mar. 8, 1910	12.42	21,000	1941	Jan. 5, 1941	5.43	9,920
1911	Feb. 18, 1911	7.98	11,800	1942	Mar. 20, 1942	15.13	34,000
1912	Apr. 7, 1912	16.0	30,600	1943	Mar. 19, 1943	14.07	29,200
1913	Apr. 7, 1913	11.7	19,000	1944	Mar. 1, 1944	8.48	14,200
1914	May 18, 1914	6.1	9,800	1945	May 21, 1945	9.47	16,100
1915	Feb. 22, 1915	9.6	14,800	1946	Mar. 9, 1946	13.52	26,800
1916	Mar. 30, 1916	15.8	30,600	1947	Apr. 9, 1947	16.43	38,600
1917	Apr. 10, 1917	8.8	13,000	1948	Mar. 23, 1948	17.03	42,200
1918	Mar. 18, 1918	16.4	32,400	1949	Feb. 19, 1949	10.60	18,000
1919	Mar. 20, 1919	16.4	32,400	1950	Apr. 7, 1950	13.92	27,200
1920	Mar. 17, 1920	14.9	28,000	1951	Feb. 23, 1951	11.36	19,800
1921	Apr. 29, 1921	8.2	12,000	1952	Apr. 17, 1952	11.07	19,000
1922	Dec. 21, 1921	11.2	17,800	1953	Mar. 17, 1953	4.52	8,090
1923	Mar. 7, 1923	-	15,000	1954	Mar. 29, 1954	10.92	11,500
1924	Apr. 2, 1924	7.5	11,000	1955	Mar. 1, 1955	10.44	10,900
1925	Mar. 23, 1925	5.7	8,500	1956	May 13, 1956	17.70	26,000
1926	Mar. 25, 1926	13.3	23,000	1957	May 24, 1957	12.35	13,800
1927	Mar. 16, 1927	6.6	9,800	1958	Mar. 4, 1958	11.15	11,900
1928	Apr. 8, 1928	11.4	18,300	1959	Mar. 25, 1959	14.41	18,100
1929	Mar. 5, 1929	-	21,400	1960	Apr. 3, 1960	19.25	31,800
1930	Feb. 28, 1930	13.3	23,000	1961	Apr. 29, 1961	10.00	10,400
1931	Mar. 31, 1931	0.00	3,200	1962	Mar. 23, 1962	15.47	20,500

a Ice jam. U.S. Weather Bureau record shows peak of 17.0 ft for this flood.

b Estimated on basis of U.S. Weather Bureau gage-height record for Grand River at Lowell, Mich.

1205. Higgins Lake Outlet near Roscommon, Mich.

Location.--Lat 44°25'50", long 84°40'10", in sec.34, T.24 N., R.3 W., on upstream side of highway bridge, 3 miles southwest of Roscommon and 8 miles upstream from Backus Creek.

Drainage area.--58 sq mi, approximately.

Gage.--Nonrecording. At site 500 ft upstream prior to Dec. 27, 1943. Datum of gage is 1,150.88 ft above mean sea level (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 90 cfs.

Remarks.--Peak discharges affected by natural storage in Higgins Lake (9,600 acres). 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)
1943	June 28, 1943	3.15	138	1947	May 29, 1947	2.50	89
1944	June 19, 1944	2.47	83	1948	June 29, 1948	2.20	74
1945	June 3, 1945	2.56	89	1949	June 29, 1949	2.20	68
1946	Apr. 2, 1946	2.29	73	1950	Apr. 5, 1950	2.41	84

1210. Muskegon River near Merritt, Mich.

Location.--Lat 44°20'10", long 84°53'25", in NW $\frac{1}{4}$ sec.2, T.22 N., R.5 W., on right bank 35 ft upstream from bridge on State Highway 55, 0.7 mile upstream from West Branch, 2.7 miles east of Merritt, 4.3 miles downstream from Reedsburg Dam, and at mile 210.8.

Drainage area.--309 sq mi.

Gage.--Nonrecording prior to July 13, 1949; recording thereafter. Datum of gage is 1,117.82 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs.

Bankfull stage.--7 ft.

Remarks.--Some regulation from Reedsburg Dam. 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)
1947	Apr. 17, 1947	7.61	904	1956	Apr. 9, 1956	a7.76	930
1948	Mar. 30, 1948	7.10	704	1957	July 11, 1957	8.25	962
1949	Apr. 2, 1949	6.82	584	1958	Apr. 11, 1958	6.64	480
1950	Apr. 28, 1950	7.20	744	1959	Apr. 8, 1959	8.16	1,340
				1960	Apr. 18, 1960	7.71	995
1951	Apr. 13, 1951	7.65	985				
1952	Apr. 3, 1952	7.48	890	1961	Apr. 19, 1961	6.62	475
1953	Mar. 31, 1953	7.77	1,050	1962	Mar. 31, 1962	7.62	950
1954	Apr. 13, 1954	7.28	796				
1955	Apr. 5, 1955	6.98	664				

a Occurred Apr. 4, 1956 (backwater from ice).

1215. Muskegon River at Evart, Mich.

Location.--Lat 43°53'55", long 85°15'20", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.3, T.17 N., R.8 W., on right bank 500 ft downstream from bridge on U.S. Highway 10 at Evart, 0.4 mile upstream from Twin Creek, and at mile 123.9.

Drainage area.--1,450 sq mi, approximately.

Gage.--Nonrecording at sites 400 and 500 ft upstream prior to Nov. 8, 1956; recording thereafter. Datum of gage is 977.72 ft above mean sea level, datum of 1929.

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

Bankfull stage.--12 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)
1931	May 11, 1931	8.91	1,680	1948	Mar. 22, 1948	12.86	6,040
1934	Apr. 6, 1934	10.78	3,010	1949	Mar. 30, 1949	10.32	3,100
1935	Mar. 24, 1935	11.60	3,910	1950	Apr. 4, 1950	12.05	4,960
1936	Mar. 27, 1936	9.92	2,440	1951	Apr. 28, 1951	11.13	3,970
1937	Apr. 28, 1937	10.20	3,030	1952	Apr. 4, 1952	12.28	5,320
1938	Mar. 26, 1938	12.12	5,110	1953	Mar. 25, 1953	11.70	4,630
1939	Mar. 29, 1939	10.73	3,570	1954	June 22, 1954	10.82	3,660
1940	Apr. 11, 1940	10.01	2,720	1955	Mar. 24, 1955	10.58	3,200
1941	Apr. 10, 1941	10.87	3,750	1956	Apr. 9, 1956	11.83	4,740
1942	Apr. 30, 1942	11.37	4,310	1957	July 12, 1957	14.13	7,320
1943	Mar. 31, 1943	13.30	6,140	1958	Apr. 9, 1958	9.57	2,400
1944	Apr. 11, 1944	9.11	1,940	1959	Apr. 9, 1959	14.42	7,750
1945	June 3, 1945	13.68	7,000	1960	Apr. 6, 1960	12.27	4,920
1946	Mar. 18, 1946	13.00	5,780	1961	Apr. 18, 1961	9.09	2,180
1947	Apr. 12, 1947	12.46	5,560	1962	Apr. 1, 1962	12.28	5,290

a Occurred on Jan. 2, 1940 (backwater from ice). b Occurred on Mar. 15, 1955 (backwater from ice). c Occurred on Jan. 4, 1958 (backwater from ice). d Occurred on Jan. 25, 1960 (backwater from ice).

1220. Muskegon River at Newaygo, Mich.

(Published as "at Croton Power Plant, near Newaygo," 1908-1919)

Location.--Lat 43°25'20", long 85°48'05", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.24, T.12 N., R.13 W., on left bank in tailrace of powerplant operated by Consumers Power Co. at Newaygo, 600 ft downstream from Penoyer Creek, and at mile 39.1.

Drainage area.--2,350 sq mi, approximately. Prior to Oct. 1, 1980, 2,282 sq mi.

Gage.--Nonrecording prior to Jan. 31, 1939; recording thereafter. At Croton powerplant $1\frac{1}{2}$ miles upstream July 1908 to December 1919. Datum of gage is 585.83 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs.

Bankfull stage.--51 ft.

Remarks.--Records furnished by Consumers Power Co. 1908-16 and by Fargo Engineering Co. 1917-19 published in House Document 143, 72d Congress, 1st session; daily discharges determined by computation of flow through turbines and sluice gates. Flow regulated by powerplants above station, the largest of which are Croton, Hardy (since 1931), and Rogers (dam built 1901, powerhouse installed 1922). Flood peaks probably not grossly affected by the regulation. Except the peak stage and discharge for 1931, figures shown prior to 1939 are maximum dailies; only annual peaks thereafter.

Peak stages and discharges of Muskegon River at Newaygo, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Mar. 24, 1910	-	a4,520	1942	Mar. 31, 1942	50.22	5,780
1911	Apr. 14, 1911	-	a5,900	1943	Apr. 2, 1943	51.99	8,940
1912	May 22, 1912	-	a13,400	1944	Apr. 25, 1944	48.92	3,650
1913	Mar. 25, 1913	-	a14,950	1945	June 2, 1945	53.76	11,600
1914	Mar. 30, 1914	-	a5,250	1946	Mar. 18, 1946	-	a9,400
1915	Feb. 24, 1915	-	a6,100	1947	Apr. 12, 1947	50.55	6,390
1917	Mar. 28, 1917	-	a7,800	1948	Mar. 21, 1948	51.63	8,070
1919	Mar. 22, 1919	-	a9,880	1949	Apr. 5, 1949	50.14	5,670
1931	May 28, 1931	48.6	2,830	1950	Apr. 4, 1950	52.70	9,830
1932	Nov. 23, 1931	a50.2	a5,800	1951	May 1, 1951	50.08	5,670
1933	May 3, 1933	a50.7	a6,610	1952	Apr. 13, 1952	50.86	6,950
1934	Dec. 5-7, 1933	a49.0	a3,840	1953	May 5, 1953	50.41	6,150
1935	Mar. 28, 1935	a50.1	a5,590	1954	June 23, 1954	50.41	6,150
1936	Mar. 27, 1936	a48.8	a3,390	1955	Mar. 26, 1955	49.70	5,030
1937	Dec. 28, 30, 31, 1936	a50.0	a5,420	1956	Apr. 9, 1956	-	b7,600
1938	Feb. 14, 1938	a51.9	a8,760	1957	July 12, 1957	52.83	10,000
1939	Apr. 27, 1939	48.88	4,210	1958	Oct. 25, 1957	49.28	4,360
1940	Mar. 31, 1940	48.52	3,530	1959	Apr. 10, 1959	52.65	9,750
1941	Apr. 21, 1941	48.93	3,760	1960	Apr. 17, 1960	50.70	6,630
				1961	Mar. 26, 1961	49.55	4,680
				1962	Mar. 30, 1962	50.41	6,170

a Maximum daily.

b Estimated on basis of records for station at Evart.

1222. White River near Whitehall, Mich.

Location.--Lat 43°27'50", long 86°13'55", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.4, T.12 N., R.16 W., on right bank 30 ft downstream from bridge on Fruitvale Road, 6.3 miles downstream from North Branch, and 6.9 miles northeast of Whitehall.

Drainage area.--380 sq mi, approximately.

Gage.--Recording. Datum of gage is 594.1 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs.

Bankfull stage.--6 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)
1958	Nov. 17, 1957	a5.02	600	1961	Nov. 17, 1960	5.06	1,070
1959	Apr. 4, 1959	5.94	1,790	1962	Mar. 26, 1962	5.00	1,030
1960	Mar. 31, 1960	6.06	1,910				

a Occurred on Mar. 1, 1958 (backwater from ice).

1225. Pere Marquette River at Scottville, Mich.
(Published as "at Custer" prior to 1943)

Location.--Lat 43°56'40", long 86°16'45", in NW $\frac{1}{4}$ sec.19, T.18 N., R.16 W., on right bank 20 ft upstream from highway bridge at south edge of Scottville, and $5\frac{1}{2}$ miles downstream from South Branch.

Drainage area.--709 sq mi.

Gage.--Nonrecording prior to June 12, 1943; recording thereafter. At site $4\frac{1}{4}$ miles upstream at different datum prior to June 12, 1943. Datum of gage is 597.66 ft above mean sea level, datum of 1929.

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

Bankfull stage.--4 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Jan. 3, 1940	4.78	1.7	-	1952	Jan. 24, 1952	5.71	1.9	-
	Apr. 5, 1940	-	-	1,140		Apr. 3, 1952	-	-	1,470
1941	Feb. 22, 1941	5.54	2.0	-	1953	Feb. 24, 1953	4.54	.7	-
	Apr. 21, 1941	-	-	1,260		May 5, 1953	-	-	1,320
1942	Mar. 19, 1942	5.96	-	1,900	1954	Dec. 19, 1953	4.30	1.6	-
1943	Mar. 20, 1943	6.40	1.5	-		June 25, 1954	-	-	1,190
	Mar. 27, 1943	-	-	1,960	1955	Oct. 6, 1954	4.60	-	1,410
1944	Dec. 19, 1943	4.52	1.7	-	1956	Apr. 6, 1956	6.00	-	2,550
	Mar. 1, 1944	-	-	1,080	1957	Jan. 24, 1957	4.07	1.1	-
1945	June 5, 1945	5.84	-	2,400		Mar. 17, 1957	-	-	825
1946	Mar. 9, 1946	6.35	1.3	1,700	1958	Jan. 7, 1958	4.40	2.0	-
1947	Apr. 8, 1947	5.50	-	2,030		Mar. 3, 1958	-	-	785
1948	Mar. 22, 1948	5.79	-	2,300	1959	Apr. 4, 1959	5.84	-	2,740
1949	Dec. 30, 1948	4.51	1.5	-	1960	Apr. 2, 1960	5.47	-	2,300
	Mar. 31, 1949	-	-	1,150	1961	Nov. 19, 1960	4.31	-	1,340
1950	Apr. 4, 1950	5.58	-	2,170	1962	Apr. 1, 1962	4.82	-	1,640
1951	Apr. 28, 1951	4.74	-	1,480					

1230. Big Sable River near Freesoil, Mich.

Location.--Lat 44°07'15", long 86°16'50", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.24, T.20 N., R.17 W., near center of span on downstream side of bridge on U.S. Highway 31, 3.4 miles northwest of Freesoil, and 7 miles upstream from Hamlin Lake.

Drainage area.--127 sq mi.

Gage.--Nonrecording. Datum of gage is 615.32 ft above mean sea level, datum of 1929(levels by Michigan Department of Conservation).

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

Bankfull stage.--3 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Jan. 20, 1943	3.26	1.7	-	1950	Jan. 18, 1950	3.14	0.9	-
	Mar. 27, 1943	-	-	419		Apr. 5, 1950	-	-	342
1944	Dec. 15, 1943	2.87	1.4	-					
	Apr. 25, 1944	-	-	207	1951	Jan. 30, 1951	2.98	1.7	-
1945	June 3, 1945	3.15	-	309		Mar. 31, Apr. 27, 1951	-	-	342
1946	Mar. 8, 1946	3.20	-	495	1952	Apr. 2, 1952	2.85	-	371
1947	Apr. 7, 1947	3.16	-	479	1953	May 4, 1953	2.29	-	264
1948	Jan. 16, 1948	2.96	1.8	-	1954	June 5, 1954	2.40	-	285
	Mar. 22, 1948	-	-	381	1955	Mar. 22, 1955	3.22	1.0	-
1949	Jan. 30, 1949	2.62	1.1	-		Mar. 24, 1955	-	-	300
	Mar. 31, 1949	-	-	323					

Peak stages and discharges of Big Sable River near Freesoil, Mich.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 5, 1956	2.80	-	336	1961	Dec. 23, 1960	3.23	1.5	-
1957	Mar. 15, 1957	1.76	-	176		Sept. 14, 1961	-	-	317
1958	Apr. 9, 1958	-	-	170	1962	Feb. 7, 1962	3.21	1.9	-
1959	Apr. 7, 1959	3.4	-	555		Mar. 30, 1962	-	-	360
1960	Apr. 3, 1960	-	-	410					

1235. Manistee River near Grayling, Mich.

Location--Lat 44°41'35", long 84°50'50", in NW $\frac{1}{4}$ sec. 31, T. 27 N., R. 4 W., on right bank 25 ft upstream from bridge on State Highway 72, 2 $\frac{1}{2}$ miles downstream from Goose Creek, and 6 $\frac{1}{2}$ miles northwest of Grayling.

Drainage area--159 sq mi.

Gage--Recording. Datum of gage is 1,120.64 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage--Not subject to overflow.

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)
1943	June 2, 1943	1.66	330	1953	Mar. 24, 1953	1.51	310
1944	Nov. 8, 1943	1.72	298	1954	Apr. 8, 1954	1.64	341
1945	Sept. 25, 1945	1.78	333	1955	Apr. 16, 1955	1.29	284
1946	Mar. 15, 1946	1.52	292	1956	Apr. 4, 1956	1.32	294
1947	Apr. 12, 1947	a1.94	354	1957	Apr. 26, 1957	1.07	244
1948	Mar. 22, 1948	1.39	284	1958	Sept. 7, 1958	c1.07	258
1949	Mar. 28, 1949	1.26	264	1959	Aug. 23, 1959	1.56	330
1950	Apr. 19, 1950	1.11	248	1960	Apr. 18, 1960	1.88	388
1951	Apr. 9, 1951	b2.00	278	1961	Sept. 15, 1961	1.77	326
1952	July 23, 1952	1.40	284	1962	Oct. 2, 1961	d2.27	264

a Occurred Feb. 6, 1947 (backwater from ice).

b Occurred Feb. 9, 1951 (ice jam).

c Occurred Nov. 15, 1957.

d Occurred Jan. 18, 1962 (backwater from ice).

1240. Manistee River near Sherman, Mich.

Location--Lat 44°26'10", long 85°41'55", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 36, T. 24 N., R. 12 W., near center span on downstream side of bridge on State Highway 37, 150 ft upstream from Wheeler Creek, 0.9 mile north of Sherman, and at mile 60.8.

Drainage area--900 sq mi.

Gage--Nonrecording. At various datums prior to Apr. 13, 1934. Altitude of gage is 804 ft (from river-profile map).

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

Bankfull stage--14 ft.

Remarks--Only annual peaks are shown.

Peak stages and discharges of Manistee River near Sherman, Mich.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1904	Apr. 10, 1904	6.26	-	2,820	1941	Apr. 11, 1941	12.95	-	2,460
1905	Apr. 1, 1905	6.42	-	2,900	1942	Apr. 7, 1942	12.93	-	2,190
					1943	Apr. 3, 1943	14.08	-	2,840
1906	Apr. 12, 1906	5.2	-	2,260	1944	Nov. 10, 1943	-	-	1,840
1907	Mar. 27, 1907	5.15	-	2,240		Feb. 13, 1944	12.59	2.0	-
1908	Apr. 11, 1908	4.5	-	1,910	1945	June 3, 1945	13.34	-	2,380
1909	Apr. 14, 1909	5.95	-	2,650					
1910	Mar. 26, 1910	4.4	-	1,870	1946	Mar. 17, 1946	13.32	-	2,340
					1947	Apr. 12, 1947	14.21	-	2,870
1911	May 24, 1911	5.7	-	2,520	1948	Mar. 22, 1948	12.90	-	1,980
1912	May 29, 1912	6.5	-	2,960	1949	Mar. 30, 1949	12.97	-	2,070
1913	Mar. 25, 1913	7.1	-	3,570	1950	Jan. 27, 1950	13.20	1.5	-
1914	Mar. 30, 1914	4.7	-	2,120		Mar. 29, 1950	-	-	2,170
1915	Apr. 12, 1915	4.22	-	1,860					
					1951	Apr. 10, 1951	13.92	-	2,510
1916	Apr. 2, 1916	6.4	-	3,130	1952	Apr. 14, 1952	13.61	-	2,360
					1953	Mar. 26, 1953	13.78	-	2,410
1931	Apr. 11, 1931	10.28	-	1,590	1954	Apr. 9, 1954	14.85	-	3,370
					1955	Oct. 4, 1954	14.33	-	2,870
1934	Apr. 12, 1934	12.61	-	2,550					
1935	Mar. 24, 1935	12.21	-	2,290	1956	Dec. 19, 1955	14.46	4.0	-
						Apr. 9, 1956	-	-	2,480
1936	Mar. 25, 1936	11.55	-	1,930	1957	July 10, 1957	15.01	-	2,900
1937	Dec. 28, 1936	-	-	1,850	1958	Jan. 1, 1958	13.12	2.4	-
	Feb. 22, 1937	12.31	1.9	-		Apr. 7, 1958	-	-	1,770
1938	Mar. 24, 1938	13.65	-	3,060	1959	Apr. 8, 1959	14.87	-	2,860
1939	Feb. 24, 1939	13.34	3.6	-	1960	Apr. 18, 1960	15.39	-	3,260
	Mar. 27, 1939	-	-	1,830					
1940	Dec. 29, 1939	11.86	1.7	-	1961	Sept. 15, 1961	14.28	-	2,340
	Apr. 9, 1940	-	-	1,600	1962	May 4, 1962	14.02	-	2,330

1245. East Branch Pine River near Tustin, Mich.

Location.--Lat 44°06'10", long 85°31'00", in NE1/4 sec. 28, T. 20 N., R. 10 W., on left bank 75 ft downstream from highway bridge, 1.6 miles upstream from North Branch, 3.0 miles west of Tustin, and 5.5 miles northwest of LeRoy.

Drainage area.--63 sq mi, approximately.

Gage.--Recording. Datum of gage is 1,077.65 ft above mean sea level, unadjusted (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 450 cfs and extended above by logarithmic plotting.

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

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Feb. 21, 1953	3.39	151	1958	Apr. 6, 1958	4.13	309
	Mar. 23, 1953	4.16	251				
	May 2, 1953	3.70	170	1959	Nov. 18, 1958	3.87	242
1954	Mar. 25, 1954	3.32	131		Apr. 7, 1959	5.19	715
	Apr. 8, 1954	4.06	239		Apr. 18, 1959	3.34	141
	June 4, 1954	3.50	155	1960	Oct. 24, 1959	3.62	189
	June 22, 1954	3.69	182		Mar. 30, 1960	4.24	342
1955	Oct. 3, 1954	3.37	137		Apr. 3, 1960	4.79	536
	Oct. 15, 1954	3.58	166		Apr. 14, 1960	4.37	381
	Mar. 15, 1955	3.67	180		Apr. 17, 1960	4.17	321
	Mar. 22, 1955	3.65	176		Apr. 25, 1960	3.48	162
1956	Apr. 4, 1956	4.88	580		May 17, 1960	3.63	191
	May 6, 1956	3.64	193		May 20, 1960	3.46	159
	Aug. 4, 1956	6.23	1,410	1961	Mar. 28, 1961	3.35	142
1957	Mar. 15, 1957	3.48	171		Apr. 16, 1961	3.37	145
	July 8, 1957	3.65	195	1962	Mar. 30, 1962	4.58	402

1250. Pine River near Le Roy, Mich.

Location.--Lat 44°03'50", long 85°32'55", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.19 N., R.10 W., on right bank 15 ft downstream from highway bridge, 5.0 miles northwest of Le Roy, 5.1 miles downstream from East Branch, and 5.3 miles southwest of Tustin.

Drainage area.--118 sq mi.

Gage.--Recording. Altitude of gage is 1,040 ft (by barometer).

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

Bankfull stage.--6 ft.

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)
1953	Feb. 21, 1953	4.84	421	1959	Nov. 18, 1958	5.53	505
	Mar. 23, 1953	5.77	582		Apr. 3, 1959	6.90	760
	May 2, 1953	4.95	453		Apr. 7, 1959	7.66	925
1954	Apr. 8, 1954	5.90	535	1960	Oct. 24, 1959	5.35	476
	June 22, 1954	5.07	414		Mar. 31, 1960	6.49	678
1955	Mar. 22, 1955	a5.13	398		Apr. 3, 1960	6.51	682
					Apr. 14, 1960	6.18	622
1956	Apr. 4, 1956	7.14	802		May 17, 1960	5.19	454
	May 6, 1956	5.22	452	1961	Apr. 16, 1961	4.73	380
	Aug. 4, 1956	10.02	1,550				
1957	July 9, 1957	5.15	444	1962	Mar. 30, 1962	6.42	594
1958	Apr. 6, 1958	5.90	572				

a occurred Oct. 4, 1954.

1255. Pine River near Hoxeyville, Mich.

Location.--Lat 44°12'10", long 85°48'00", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.20, T.21 N., R.12 W., on right bank 500 ft upstream from bridge on State Highway 37, 4.2 miles northwest of Hoxeyville, 8.0 miles east of Wellston, and 8 miles upstream from mouth.

Drainage area.--251 sq mi.

Gage.--Recording. Altitude of gage is 775 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs and extended above by logarithmic plotting.

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)	
1953	Feb. 22, 1953	4.22	760	1957	July 9, 1957	3.90	620	
	Mar. 19, 1953	4.21	760					
	Mar. 24, 1953	4.70	1,040	1958	Apr. 7, 1958	4.26	764	
	May 3, 1953	4.38	860					
1954	Apr. 9, 1954	4.39	860	1959	Nov. 19, 1958	4.37	815	
	Apr. 27, 1954	4.04	685		Apr. 4, 1959	5.39	1,260	
	June 5, 1954	4.01	660		Apr. 8, 1959	5.57	1,380	
	June 22, 1954	4.35	835		Apr. 18, 1959	3.90	655	
1955	Oct. 4, 1954	4.12	710	1960	Oct. 24, 1959	4.14	716	
	Oct. 17, 1954	4.14	735		Mar. 31, 1960	5.16	1,140	
	Mar. 12, 1955	4.20	760		Apr. 18, 1960	4.70	950	
	Mar. 23, 1955	4.20	760		May 18, 1960	4.08	718	
			760		May 20, 1960	3.98	683	
1956	Apr. 5, 1956	5.35	1,350	1961	Apr. 17, 1961	5.92	658	
	May 7, 1956	4.27	760					
	Aug. 6, 1956	6.82	2,440	1962	Mar. 31, 1962	4.70	950	

a Occurred Sept. 14, 1961.

1260. Manistee River near Manistee, Mich.

Location.--Lat 44°16'15", long 86°11'55", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.22 N., R.16 W., on right bank 6.4 miles northeast of Manistee, 6.4 miles south of Onekama, 7.8 miles upstream from Manistee Lake, and at mile 10.8.

Drainage area.--1,780 sq mi, approximately.

Gage.--Recording. Altitude of gage is 585 ft (from river-profile map).

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

Bankfull stage.--7 ft.

Remarks.--Some regulation by Tippy and Hodenpyle powerplants at miles 32 and 49, respectively. Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1952	Dec. 22, 1951	8.29	1.5	-	1957	Apr. 28, 1957	-	-	3,460
	Apr. 11, 1952	-	-	5,450	1958	Feb. 27, 1958	8.05	2.0	-
1953	Feb. 3, 1953	8.84	2.5	-		Apr. 9, 1958	-	-	3,310
	Mar. 25, 1953	-	-	4,200	1959	Mar. 7, 1959	8.38	2.8	-
1954	Jan. 14, 1954	8.18	2.2	-		Apr. 7, 1959	-	-	6,500
	Apr. 9, 1954	-	-	6,800	1960	Feb. 10, 1960	8.12	2.5	-
1955	Oct. 5, 1954	-	-	5,000		Apr. 19, 1960	-	-	6,080
	Feb. 12, 1955	9.15	4.1	-	1961	Dec. 24, 1960	8.17	3.2	-
1956	Apr. 7, 1956	7.90	-	5,450		Apr. 1, 1961	-	-	3,380
1957	Jan. 25, 1957	7.96	1.3	-	1962	Mar. 31, 1962	8.02	-	5,990

1262. Little Manistee River near Freesoil, Mich.

Location.--Lat 44°11'00", long 86°10'00", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.31, T.21 N., R.15 W., on right bank 25 ft upstream from Sixmile Bridge, 5.8 miles north of Freesoil, 7.4 miles upstream from mouth, and 9.0 miles southeast of Manistee.

Drainage area.--200 sq mi.

Gage.--Recording. Altitude of gage is 610 ft (from survey level line in vicinity).

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)
1957	May 23, 1957	2.22	214	1961	Sept. 14, 1961	2.61	306
1958	July 1, 1958	2.12	212	1962	Mar. 30, 1962	3.09	409
1959	Apr. 6, 1959	3.70	575				
1960	Apr. 2, 1960	3.42	486				

1270. Boardman River near Mayfield, Mich.

Location.--Lat 44°38'20", long 85°31'10", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.26 N., R.10 W., on right bank 25 ft downstream from Brown's Bridge, 300 ft downstream from East Creek, 0.9 mile downstream from Brown's Bridge Dam, 1.0 mile northeast of Mayfield, and 9.6 miles southeast of Traverse City.

Drainage area.--223 sq mi.

Gage.--Recording. Altitude of gage is 760 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 1,000 cfs.

Bankfull stage.--5 ft.

Remarks.--Flow regulated by powerplant 0.9 mile upstream. 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)
1953	Mar. 22, 1953	4.90	495	1958	Dec. 30, 1957	4.37	387
1954	Apr. 8, 1954	5.93	915	1959	Apr. 18, 1959	5.15	604
1955	Apr. 14, 1955	4.96	525	1960	Apr. 18, 1960	5.86	725
1956	July 2, 1956	5.72	810	1961	Sept. 14, 1961	6.90	1,220
1957	July 8, 1957	6.23	980	1962	Oct. 1, 1961	5.00	559

STREAMS TRIBUTARY TO LAKE HURON

1280. Sturgeon River near Wolverine, Mich.

Location.--Lat 45°17'55", long 84°36'40", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.36, T.34 N., R.3 W., on left bank 1.8 miles north of Wolverine, 2.8 miles downstream from West Branch, and 9 miles upstream from mouth.

Drainage area.--170 sq mi, approximately.

Gage.--Nonrecording at site 0.7 mile upstream at different datum prior to Oct. 1, 1958; recording thereafter. Altitude of gage is 740 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 730 cfs at both sites.

Bankfull stage.--4 ft at site used prior to October 1958; 4 $\frac{1}{2}$ ft at present site.

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)
1943	Apr. 1, 1943	5.45	919	1952	Apr. 14, 1952	3.88	620
1944	Nov. 7, 1943	3.68	494	1953	Mar. 24, 1953	3.95	638
1945	Mar. 17, 1945	4.24	652	1954	Apr. 27, 1954	4.43	812
				1955	Oct. 16, 1954	3.95	638
1946	Nov. 3, 1945,	3.90	558				
	Mar. 7, 1946			1956	Apr. 3, 1956	4.20	725
1947	Apr. 12, May 5, 1947	3.89	558	1957	Apr. 25, 1957	-	b390
				1958	Nov. 16, 1957	-	b310
1948	Mar. 22, 1948	4.30	760	1959	Apr. 19, 1959	3.59	771
1949	Mar. 28, 1949	a3.98	b550	1960	Apr. 18, 1960	3.86	1,010
1950	Mar. 28, 1950	3.53	498				
				1961	Sept. 14, 1961	4.48	1,180
1951	Apr. 26, 1951	3.80	585	1962	Oct. 1, 1961	3.37	575

a Backwater from ice.

b Maximum daily.

1285. Indian River at Indian River, Mich.

Location.--Lat 45°24'40", long 84°37'10", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.24, T.35 N., R.3 W., on left bank at Indian River, 500 ft downstream from Burt Lake and 2.3 miles upstream from Mullett Lake.

Drainage area.--583 sq mi.

Gage.--Nonrecording prior to Nov. 12, 1942; recording thereafter. Datum of gage is 590.21 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements; subject to frequent shifts.

Bankfull stage.--Not subject to overflow.

Remarks.--Flow affected by natural storage in Burt Lake 500 ft upstream. Only annual peak gage heights and maximum daily mean discharges are shown.

Peak stages and maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Apr. 18, 1942	5.40	920	1952	Apr.23-26, 1952	-	1,040
1943	Apr. 25, 1943	5.65	1,010	1953	May 2, 1953	5.03	-
1944	Apr. 27,28, May 6, 1944	-	670		May 4-6, 1953	-	912
	May 14, 1944	4.88	-	1954	May 2, 1954	-	777
1945	Apr. 17, 1945	5.02	-		May 5, 1954	4.68	-
	Apr. 18, 1945	-	774	1955	Apr. 20, 1955	-	759
					Apr. 25, 1955	4.53	-
1946	Mar. 29, 1946	-	860	1956	Apr.18,19, 1956	-	675
	Apr. 2, 1946	5.19	-		Apr. 21, 1956	4.28	-
1947	May 7, 1947	5.40	886	1957	May 27, 1957	4.39	612
1948	Apr.16,19, 28, 1948	a5.32	-	1958	Dec. 16, 1957	-	639
	May 7, 1948	-	913	1959	Sept. 8, 1958	a3.91	-
1949	Apr. 15, 1949	4.52	663		May 7, 1959	5.02	1,030
1950	May 1, 1950	-	872	1960	May 17, 1960	5.61	-
	May 6, 1950	5.07	-		May 22,23, 1960	-	1,140
1951	Apr. 29, 1951	a5.22	-	1961	Apr. 24, 1961	-	696
	May 2,3, 1951	-	910	1962	Sept.22, 1961	4.72	-
1952	Apr. 22, 1952	5.32	-		May 6, 1962	a4.92	910

a Maximum daily.

1290. Pigeon River near Vanderbilt, Mich.

Location.--Lat 45°10'15", long 84°26'20", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.9, T.32 N., R.1 W., on right bank at Pigeon River Fisheries Experiment Station and 11.1 miles east of Vanderbilt.

Drainage area.--63 sq mi, approximately.

Gage.--Recording. Datum of gage is 886.24 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 500 cfs.

Bankfull stage.--4 ft.

Remarks.--Except for period May 16, 1957, to Apr. 22, 1958, most peaks affected by regulation from Lansing Club Dam 3.5 miles upstream. 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)
1951	July 4, 1951	4.41	345	1957	May 15, 1957	6.80	a1,500
1952	Nov. 14, 1951	4.42	345	1958	Nov. 15, 1957	3.33	174
1953	Mar. 24, 1953	4.08	270	1959	Apr. 19, 1959	5.36	530
1954	Apr. 8, 1954	4.42	345	1960	Apr. 17, 1960	5.18	602
1955	Oct. 18, 1954	4.10	270				
1956	Apr. 4, 1956	4.43	345	1961	Sept.15, 1961	6.23	1,140
				1962	May 3, 1962	4.61	424

a Result of failure of Lansing Club Dam 3.5 miles upstream.

1295. Pigeon River at Afton, Mich.

Location.--Lat 45°22'25", long 84°30'55", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.2, T.34 N., R.2 W., on upstream side of right abutment of bridge on State Highway 68, 0.9 mile west of Afton, 2.2 miles downstream from Wilkes Creek, and 7 miles upstream from Mullett Lake.

Drainage area.--159 sq mi.

Gage.--Nonrecording. Altitude of gage is 675 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 810 cfs.

Bankfull stage.--7 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1943	Mar. 31, 1943	10.5	3.6	1,100	1953	Mar. 23, 1953	5.77	-	834
1944	Nov. 9, 1943	5.07	-	382	1954	Apr. 28, 1954	5.97	-	752
1945	Mar. 18, 1945	5.60	.3	-	1955	Oct. 17, 1954	-	-	463
	Mar. 19, 20, 1945	-	-	615		Mar. 13, 1955	5.93	0.6	-
1946	Mar. 15, 1946	6.44	.8	560	1956	Apr. 5, 1956	5.82	.1	600
1947	Apr. 8, 1947	5.70	-	595	1957	May 16, 1957	6.02	-	804
1948	Mar. 20, 1948	6.66	1.3	-	1958	Jan. 10, 1958	5.86	1.3	-
	Mar. 23, 1948	-	-	829		Sept. 7, 1958	-	-	265
1949	Mar. 29, 1949	5.48	-	474	1959	Mar. 27, 1959	6.80	1.9	-
1950	Mar. 28, 1950	-	-	4450		Apr. 19, 1959	-	-	756
					1960	Apr. 17, 1960	6.80	-	1,170
1951	Feb. 28, 1951	5.96	1.2	-	1961	Sept. 15, 1961	6.52	-	954
	Apr. 13, 1951	-	-	578	1962	May 3, 1962	5.90	-	570
1952	Apr. 2, 1952	5.70	-	730					

a Maximum daily.

1300. Cheboygan River near Cheboygan, Mich.

Location.--Lat 45°34'40", long 84°29'15", in SW $\frac{1}{4}$ sec.19, T.37 N., R.1 W., 300 ft downstream from Mullett Lake, 2 $\frac{1}{2}$ miles upstream from Black River, and 5 miles south of Cheboygan.

Drainage area.--865 sq mi.

Gage.--Recording. Datum of gage is 591.21 ft above mean sea level, datum of 1929. Auxiliary nonrecording gage at Cheboygan powerplant 5.2 miles downstream at datum 1.21 ft lower.

Stage-discharge relation.--Defined by current-meter measurements. Stage-discharge relation affected by variable backwater, corrections for which are based on fall to auxiliary gage.

Bankfull stage.--Not subject to overflow.

Remarks.--Flow affected by natural storage in Burt and Mullett Lakes. Gage-height record at auxiliary gage furnished by Consumers Power Co. Only annual maximum daily mean discharges and gage heights are shown.

Maximum daily mean stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 16, 1943	-	1,590	1947	May 31, 1947	-	1,500
	June 22, 1943	3.04	-	1948	Apr. 11, 1948	3.13	-
1944	Dec. 11, 1943	-	1,160		Apr. 30, 1948	-	1,500
	May 14, 1944	-	-	1949	Mar. 12-14, 1949	-	1,200
	May 4, 9, 13, 1944	2.83	-		June 26, 1949	2.76	-
1945	Apr. 17, 1945	3.13	-	1950	May 6, 1950	2.75	-
	Apr. 22, 1945	-	1,260		May 7, 1950	-	1,500
1946	Nov. 9, 1945	2.96	-	1951	Apr. 23, 26, 28, 1951	2.78	-
	Mar. 27, 28, 1946	-	1,290		Apr. 28, 29, 1951	-	1,550
1947	Apr. 15, 16, 1947	3.09	-	1952	Apr. 22, 1952	2.68	1,550

Maximum daily mean stages and discharges of Cheboygan River near Cheboygan, Mich.--Con.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 29, 1953	-	1,350	1958	Nov. 13, 22, 1957	-	1,030
	May 3, 1953	2.78	-		May 18, 1958	2.54	-
1954	June 6, 1954	2.69	-	1959	May 7, 1959	2.73	-
	June 15, 1954	-	1,200		May 8, 1959	-	1,640
1955	June 8, 10, 1955	-	1,200	1960	May 13, 14, 1960	3.27	1,560
	July 21, 1955	2.39	-				
1956	Apr. 18, 1956	-	1,040	1961	Sept. 16, 1961	-	1,310
	June 10, 1956	2.38	-		Sept. 17, 1961	2.79	-
1957	July 13, 1957	2.54	-	1962	May 6, 1962	2.91	-
	July 17, 1957	-	1,160		May 15, 1962	-	1,480

1305. Black River near Tower, Mich.

Location.--Lat 45°23'35", long 84°20'00", in SE¹NE¹ sec. 29, T. 35 N., R. 1 E., on right bank 400 ft downstream from Kleber Dam, 1,000 ft upstream from Milligan Creek, 3.0 miles northwest of Tower, and 10.8 miles upstream from Black Lake.

Drainage area.--313 sq mi.

Gage.--Recording. At site 1 mile upstream at different datum prior to Aug. 1, 1949. Datum of gage is 658.00 ft above mean sea level (Stanley Engineering Co. bench mark).

Stage-discharge relation.--Defined by current-meter measurements at site used prior to August 1949; defined by current-meter measurements below 1,600 cfs at present site.

Bankfull stage.--5 ft at site used prior to August 1949; 6 ft at present site.

Remarks.--Peak discharges occasionally affected by regulation from powerplant 400 ft upstream since Aug. 1, 1949. 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)
1943	Apr. 1, 1943	5.30	1,660	1953	Dec. 18, 1952	5.48	11,280
1944	Apr. 25, 1944	a4.09	671	1954	Apr. 11, 1954	4.63	868
1945	Mar. 20, 1945	b5.16	1,260	1955	Oct. 17, 1954	4.56	1,000
1946	Mar. 15, 1946	4.60	1,150	1956	Apr. 7, 1956	4.89	980
1947	Apr. 14, 1947	4.64	1,180	1957	May 22, 1957	4.59	g1,020
1948	Mar. 23, 1948	c5.16	1,180	1958	Apr. 2, 1958	3.78	h508
1949	Mar. 29, 1949	d4.42	675	1959	Apr. 19, 1959	5.64	1,350
1950	Aug. 30, 1950	4.60	e830	1960	Apr. 17, 1960	7.13	12,340
1951	Apr. 13, 1951	5.91	1,500	1961	Sept. 17, 1961	4.83	1,080
1952	Apr. 19, 1952	5.34	1,200	1962	May 3, 1962	4.81	1,120

a Occurred Dec. 31, 1943 (backwater from ice). b Occurred Mar. 9, 1945 (backwater from ice). c Result of ice jam, occurred before peak discharge. d Occurred Feb. 13, 1949 (backwater from ice). e Result of unusual regulation; maximum daily for year, 725 cfs Apr. 21, 1950. f Result of unusual regulation; maximum daily for year, 921 cfs Mar. 27, 1953. g Regulated; maximum daily for year, 948 cfs Apr. 27, 1957. h Regulated; maximum daily for year, 432 cfs Apr. 26, 1958. i Regulated; maximum daily for year, 1,860 cfs Apr. 17, 1960.

1310. Rainy River near Onaway, Mich.

Location.--Lat 45°21'25", long 84°10'00", in SW $\frac{1}{4}$ sec.2, T.34 N., R.2 E., on left bank 500 ft upstream from bridge on State Highway 68, 1 $\frac{1}{2}$ miles downstream from Little Rainy River, and 3 miles east of Onaway.

Drainage area.--79 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 747.77 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--5 ft.

Remarks.--Only annual peaks are shown. Peak discharges for this station combined with those for station near Ocqueoc in flood-frequency analysis.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Apr. 5, 1942	5.32	580	1948	Mar. 22, 1948	4.82	388
1943	Apr. 1, 1943	5.55	668	1949	Mar. 29, 1949	3.62	121
1944	Apr. 25, 1944	3.39	100	1950	Mar. 28, 1950	4.46	302
1945	Mar. 20, 1945	a4.40	223				
				1951	Apr. 13, 1951	4.54	324
1946	Mar. 15, 1946	4.53	346	1952	Apr. 18, 1952	4.80	388
1947	Apr. 12, 1947	4.77	365				

a Occurred Mar. 16, 1945 (backwater from ice).

1315. Rainy River near Ocqueoc, Mich.

Location.--Lat 45°24'30", long 84°10'45", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.22, T.35 N., R.2 E., on upstream side of highway bridge, 4.4 miles west of Ocqueoc and 5 miles upstream from Black Lake.

Drainage area.--85 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 674.85 ft above mean sea level, unadjusted.

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

Bankfull stage.--6 ft.

Remarks.--Base for partial-duration series, 110 cfs. Peak discharges for this station combined with those for station near Onaway in flood-frequency analysis.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 24, 1953	4.51	400	1957	July 14, 1957	3.38	202
	Apr. 28, 1953	3.10	156	1958	Apr. 25, 1958	2.79	108
1954	Apr. 9, 1954	3.79	278	1959	Apr. 7, 1959	4.63	489
	Apr. 28, 1954	4.16	362		May 5, 1959	4.75	525
1955	Oct. 17, 1954	3.62	240	1960	Apr. 18, 1960	6.33	946
	Mar. 25, 1955	2.90	126		May 10, 1960	-	600
	Apr. 4, 1955	3.92	305				
	Apr. 15, 1955	3.20	172	1961	Mar. 29, 1961	3.57	242
1956	Apr. 5, 1956	a3.91	280		Sept. 14, 1961	4.00	322
1957	Apr. 28, 1957	5.00	600	1962	Mar. 30, 1962	4.21	369
	May 15, 1957	3.47	219		Apr. 9, 1962	3.81	282
	May 24, 1957	3.12	159		May 4, 1962	5.41	668
	July 3, 1957	3.74	268				

a Backwater from ice.

1320. Black River near Cheboygan, Mich.

Location.--Lat 45°30'00", long 84°19'35", in NW¹/₄ NW¹/₄ sec.21, T.36 N., R.1 E., on left bank 0.3 mile downstream from Black Lake, 5.3 miles upstream from Alverno Dam, and 12.6 miles southeast of Cheboygan.

Drainage area.--597 sq mi.

Gage.--Recording. Datum of gage is 609.26 ft above mean sea level, datum of 1929. Auxiliary recording gage 3 miles downstream at same datum.

Stage-discharge relation.--Defined by current-meter measurements below 2,300 cfs. Stage-discharge relation affected by variable backwater, corrections for which are based on fall to auxiliary gage.

Bankfull stage.--5 ft.

Remarks.--Flow affected by natural storage in Black Lake 0.3 mile upstream. Only annual maximum daily mean discharges and gage heights are shown.

Maximum daily mean stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Apr. 12, 1943	a5.28	2,070	1953	Mar. 29, 1953	3.76	1,580
1944	Oct. 13, 1943	b3.92	784	1954	May 2, 1954	3.65	1,410
1945	Apr. 5, 1945	c4.07	868	1955	Apr. 19, 1955	f3.43	1,210
1946	Mar. 21, 1946	4.37	1,410	1956	Apr. 15, 1956	3.53	1,240
1947	Apr. 20, 1947	d4.62	1,660	1957	May 1, 1957	4.05	1,900
1948	Apr. 2, 1948	3.97	1,470	1958	Nov. 20, 1957	g3.26	1,080
1949	July 2, 1949	e4.10	886	1959	Apr. 21, 1959	4.52	1,840
1950	Apr. 22, 1950	3.83	1,300	1960	Apr. 20, 1960	5.74	2,500
1951	Apr. 16, 1951	4.61	1,920	1961	Sept. 19, 1961	4.08	1,400
1952	Apr. 19, 1952	4.79	2,260	1962	May 7, 1962	4.04	1,600

a Occurred Apr. 7, 1943.

b Occurred Nov. 15, 1943.

c Occurred Mar. 27, 1945.

d Occurred Apr. 17, 18, 1947.

e Occurred June 28, 1949.

f Occurred June 8,

1955.

g Occurred May 17, 1958.

1325. Thunder Bay River near Hillman, Mich.

Location.--Lat 45°00'30", long 83°58'20", in NE¹/₄ SE¹/₄ sec.8, T.30 N., R.4 E., on left bank 25 ft upstream from bridge on State Highway 32, 0.4 mile downstream from Miller Creek, and 5.2 miles southwest of Hillman.

Drainage area.--232 sq mi.

Gage.--Recording. Altitude of gage is 760 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 830 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)
1946	Mar. 9, 1946	a8.46	600	1951	Apr. 26, 1951	7.60	692
	Mar. 14, 1946	8.08	920	1952	Apr. 2, 1952	7.80	822
1947	Apr. 12, 1947	8.86	1,380		Apr. 10, 1952	7.40	617
	May 5, 1947	7.91	822		Apr. 14, 1952	8.11	1,140
1948	Mar. 22, 1948	b8.58	830		July 21, 1952	7.64	799
	Apr. 28, 1948	7.39	617	1953	Mar. 24, 1953	7.52	659
1949	Mar. 28, 1949	7.51	653	1954	Apr. 8, 1954	8.46	1,110
1950	Mar. 28, 1950	c7.72	500	1955	Apr. 21, 1955	e7.37	592
1951	Mar. 31, 1951	d7.84	692	1956	Apr. 4, 1956	8.25	998
	Apr. 8, 1951	7.34	600	1957	Apr. 25, 1957	8.69	1,250
	Apr. 13, 1951	7.79	776				

a Backwater from ice.

b Occurred Mar. 21, 1948 (backwater from ice).

c Occurred Jan. 26, 1950 (backwater from ice).

d Occurred Mar. 1, 1951 (backwater from ice).

e Occurred Mar. 11, 1955 (backwater from ice).

Peak stages and discharges of Thunder Bay River near Hillman, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	May 22, 1957	7.58	687	1960	Apr. 18, 1960	8.41	940
	June 18, 1957	7.45	641		May 10, 1960	8.72	1,270
	June 29, 1957	7.80	776	1961	Mar. 28, 1961	-	710
1958	Nov. 19, 1957	f6.61	318		Sept. 15, 1961	7.39	638
1959	Apr. 6, 1959	8.21	976	1962	Mar. 30, 1962	8.15	945
1960	Mar. 31, 1960	7.51	662		May 3, 1962	8.16	950
	Apr. 15, 1960	8.41	1,070		May 20, 1962	8.37	1,060

f Occurred Mar. 3, 1958 (backwater from ice).

1330. Upper South Branch Thunder Bay River near Lachine, Mich.

Location.--Lat 45°03'30", long 83°47'00", on line between secs. 23 and 26, T.31 N., R.5 E., on left bank 50 ft upstream from bridge on State Highway 32, 1 mile upstream from mouth, 3½ miles downstream from Fletcher Pond, and 3½ miles southwest of Lachine.

Drainage area.--171 sq mi.

Gage.--Recording. Datum of gage is 711.80 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 270 cfs.

Remarks.--Flow regulated by Fletcher Pond (usable capacity, 40,170 acre-ft). 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)
1946	Mar. 15, 1946	a4.48	b450	1951	Mar. 9, 1951	-	446
1947	Apr. 12, 1947	a4.60	-	1952	Apr. 15, 1952	a4.35	-
	May 27, 1947	-	490		Sept. 10-12, 1952	(a)	b400
1948	Apr. 29, 1948	4.03	457	1953	Apr. 28, 29, 1953	a4.20	-
1949	June 14, 1949	(a)	b300		June 6, 1953	(a)	b330
	June 15, 1949	a3.84	-				
1950	Aug. 25, 1950	a3.62	b250				

a Affected by backwater from Thunder Bay River.

b Maximum daily.

1335. Thunder Bay River near Bolton, Mich.

Location.--Lat 45°07'40", long 83°38'30", in NE¼ sec. 36, T.32 N., R.6 E., on left bank half a mile upstream from Orchard Hill Bridge, 4 miles upstream from North Branch, 5 miles southwest of Bolton, and 11 miles northwest of Alpena.

Drainage area.--588 sq mi.

Gage.--Recording. Datum of gage is 671.96 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 2,700 cfs.

Bankfull stage.--Not subject to overflow.

Remarks.--Flow regulated by Fletcher Pond on Upper South Branch Thunder Bay River (usable capacity, 40,170 acre-ft). Only annual peaks are shown.

Peak stages and discharges of Thunder Bay River near Bolton, Mich.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Mar. 15, 1946	8.78	-	3,090	1955	Apr. 21, 1955	7.02	-	1,860
1947	Apr. 8, 1947	9.02	1.4	-	1956	Apr. 6, 1956	7.39	-	2,100
	Apr. 12, 1947	-	-	3,410	1957	May 24, 1957	7.61	-	2,240
1948	Mar. 21, 1948	9.08	2.3	-	1958	Jan. 13, 1958	5.95	1.7	-
	Mar. 23, 1948	-	-	1,890		Mar. 29, 1958	-	-	671
1949	Mar. 29, 1949	5.96	-	1,220	1959	Apr. 7, 1959	9.12	-	3,350
1950	Mar. 29, 1950	-	-	2,300	1960	May 11, 1960	8.48	-	2,840
	Mar. 31, 1950	9.07	2.0	-					
1951	Apr. 1, 1951	7.38	-	2,000	1961	Dec. 24, 1960	6.13	2.2	-
1952	Apr. 15, 1952	8.27	-	2,710		Mar. 28, 1961	-	-	1,320
1953	Mar. 20, 1953	6.90	-	1,800	1962	Mar. 30, 1962	9.98	1.4	-
1954	Apr. 9, 1954	7.71	-	2,300		Mar. 31, 1962	-	-	3,300

1340. North Branch Thunder Bay River near Bolton, Mich.

Location.--Lat 45°08'55", long 83°36'35', in sec.29, T.32 N., R.7 E., on left bank $1\frac{1}{2}$ miles upstream from mouth, $2\frac{1}{2}$ miles south of Bolton, and 9 miles northwest of Alpena.

Drainage area.--184 sq mi.

Gage.--Recording. Datum of gage is 675.52 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 1,700 cfs.

Bankfull stage.--6 ft.

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)
1946	Mar. 15, 1946	6.79	1,950	1954	June 6, 1954	5.05	712
1947	Apr. 13, 1947	7.00	2,330	1955	Oct. 18, 1954	5.18	801
	May 5, 1947	5.30	915		Apr. 3, 1955	5.43	992
1948	Mar. 23, 1948	a7.70	1,220		Apr. 22, 1955	4.92	641
	Apr. 30, 1948	4.75	528	1956	Apr. 6, 1956	6.37	1,740
1949	Mar. 29, 1949	5.19	808	1957	Apr. 27, 1957	5.52	1,040
1950	Mar. 31, 1950	7.98	b1,300		May 17, 1957	5.17	790
	Apr. 20, 1950	4.96	654		May 25, 1957	4.87	614
1951	Apr. 1, 1951	5.81	1,260		July 6, 1957	5.20	810
	Apr. 14, 1951	5.68	1,180	1958	Mar. 31, 1958	c5.23	402
1952	Oct. 11, 1951	4.87	597	1959	Apr. 7, 1959	6.71	2,020
	Oct. 27, 1951	4.75	528		May 6, 1959	5.31	747
	Nov. 16, 1951	5.48	1,020	1960	Apr. 6, 1960	6.06	1,370
	Apr. 4, 1952	6.01	1,440		Apr. 15, 1960	6.67	1,980
	Apr. 16, 1952	6.07	1,520		Apr. 27, 1960	4.74	540
1953	Mar. 24, 1953	5.63	1,140		May 12, 1960	6.19	1,590
	June 1, 1953	5.29	878	1961	Mar. 28, 1961	5.24	808
1954	Apr. 9, 1954	5.94	1,390	1962	Apr. 1, 1962	6.36	1,670
	Apr. 29, 1954	5.26	857		May 5, 1962	5.71	1,050

a Occurred Mar. 22, 1948 (backwater from ice).

b Maximum daily.

c Occurred Jan. 2, 1958 (backwater from ice).

1345. Lower South Branch Thunder Bay River near Hubbard Lake, Mich.

Location.--Lat 44°51'35", long 83°35'40", in NE $\frac{1}{4}$ sec.4, T.28 N., R.7 E., on right bank 50 ft downstream from Hubbard Lake, 1 mile south of town of Hubbard Lake, and $\frac{8}{2}$ miles upstream from Wolf Creek.

Drainage area.--146 sq mi.

Gage.--Recording. Datum of gage is 701.08 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 520 cfs.

Remarks.--Flow regulated by Hubbard Lake (usable capacity, 30,070 acre-ft). 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)
1946	Mar. 19, 1946	5.43	445	1951	Apr. 28, 1951	5.63	d425
1947	May 8, 1947	5.54	530	1952	Apr. 18, 1952	6.08	d660
1948	June 14, 1948	a4.96	260	1953	May 2, 1953	5.81	d500
1949	June 15, 1949	b4.87	182				
1950	Apr. 27, 1950	c5.00	217				

a Occurred Mar. 16, 1948.

b Occurred Jan. 28, 1949 (backwater from ice).

c Occurred Dec. 6, 1949.

d Maximum daily.

1350. Thunder Bay River near Alpena, Mich.

Location.--Lat 45°05'35", long 83°30'00", in S $\frac{1}{2}$ sec.7, T.31 N., R.8 E., at dam and powerplant of the Fletcher Paper Co., 3 miles downstream from Lower South Branch Thunder Bay River and 3 miles northwest of Alpena.

Drainage area.--1,260 sq mi, approximately.

Remarks.--Records for Jan. 1, 1906, to Dec. 31, 1908, furnished by D. W. Mead. Flow regulated by powerplant and by log-driving operations. Daily discharge computed by computation of flow over dam and logways and through turbines. Only annual maximum daily discharges are shown.

Maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	Mar. 15, 1902	-	3,798	1906	Mar. 10, 1906	-	5,849
1903	Mar. 22, 1903	-	4,864	1907	Mar. 29, 1907	-	4,989
1904	Apr. 9, 1904	-	7,275	1908	Apr. 16, 1908	-	4,648
1905	Mar. 31, 1905	-	6,326				

1355. Au Sable River at Grayling, Mich.

(Published as "Middle Branch Au Sable River" prior to 1955)

Location.--Lat 44°39'35", long 84°42'45", in SE $\frac{1}{4}$ sec.7, T.26 N., R.3 W., on right bank 65 ft upstream from bridge on U.S. Highway 27 at Grayling and three-quarters of a mile upstream from East Branch.

Drainage area.--110 sq mi.

Gage.--Recording. Datum of gage is 1,123.49 ft above mean sea level, datum of 1929.

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

Bankfull stage.--Not subject to overflow.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Au Sable River at Grayling, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 2, 1943	3.00	274	1953	Mar. 25, 1953	2.28	176
1944	Nov. 9, 1943	2.42	194	1954	Apr. 9, 1954	2.39	189
1945	May 28, 1945	2.65	222	1955	Apr. 6, 1955	1.92	128
1946	Mar. 16, 1946	2.34	183	1956	Apr. 8, 1956	2.12	146
1947	Apr. 12, 1947	2.81	241	1957	July 9, 1957	1.78	113
1948	Mar. 22, 1948	2.37	183	1958	Nov. 16, 1957	1.60	93
1949	Mar. 30, 1949	2.22	165	1959	Apr. 19, 1959	2.19	156
1950	Apr. 19, 1950	2.12	153	1960	Apr. 18, 1960	2.38	186
1951	Apr. 10, 1951	2.39	189	1961	Sept. 16, 1961	2.32	179
1952	Apr. 14, 1952	2.39	189	1962	Oct. 2, 1961	1.95	132

1360. Au Sable River near Lovells, Mich.
(Published as "near Red Oak," 1931)

Location.--Lat 44°40', long 84°23', in SE¹ sec.1, T.26 N., R.1 W., 900 ft downstream from North Branch Au Sable River, 8 miles southwest of Red Oak, and 11 miles southeast of Lovells.

Drainage area.--1,000 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 1,004.69 ft above mean sea level (levels by Fargo Engineering Co.).

Stage-discharge relation.--Defined by current-meter measurements below 2,100 cfs.

Remarks.--Records for period Oct. 1, 1914, to May 31, 1916, were furnished by Fargo Engineering Co. Only annual maximum daily discharges are shown.

Maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	Apr. 13, 1909	-	2,060	1914	Apr. 1, 2, 1914	-	1,640
1910	Mar. 24, 25, 1910	-	1,770	1915	Apr. 12, 1915	-	1,840
1911	Apr. 14, 15, 1911	-	2,250	1916	Apr. 2, 1916	-	2,730
1912	May 29, 1912	4.7	2,850				
1913	Mar. 24, Apr. 4, 5, 1913	-	2,370				

1365. Au Sable River at Mio, Mich.

Location.--Lat 44°39'35", long 84°07'30", on line between sec.7, T.26 N., R.3 E., and sec.12, T.26 N., R.2 E., on right bank 150 ft upstream from bridge on State Highway 33 at Mio and 10 miles downstream from Big Creek.

Drainage area.--1,100 sq mi, approximately.

Gage.--Recording. Datum of gage is 929.60 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,800 cfs.

Bankfull stage.--Not subject to overflow.

Remarks.--Most peaks affected by regulation from powerplant 500 ft upstream. 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)
1953	Mar. 23, 1953	4.93	2,740	1958	Oct. 7, 1957	5.02	2,820
1954	July 28, 1954	5.12	2,920	1959	Oct. 1, 1958	4.91	2,690
1955	Nov. 16, 1954	4.98	2,800	1960	Apr. 18, 1960	5.38	3,260
1956	Nov. 6, 1955	4.98	2,800	1961	Sept. 15, 1961	4.93	2,720
1957	Aug. 9, 1957	5.06	2,870	1962	Oct. 3, 1961	5.52	3,450

1370. Au Sable River at Bamfield, Mich.

Location.--Lat 44°34', long 83°48', in NW $\frac{1}{4}$ sec.14, T.25 N., R.5 E., about 600 ft upstream from Bamfield Creek, three-quarters of a mile southwest of Bamfield, and 4 miles west of Glennie.

Drainage area.--1,420 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 787.79 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs.

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)
1903	Mar. 21, 1903	3.3	2,570	1909	Apr. 14, 1909	4.5	3,480
1904	Apr. 13, 26, 1904	4.6	3,650	1910	Mar. 24, 1910	3.7	2,810
1905	Mar. 27-30, 1905	3.5	2,730	1911	Apr. 15, 1911	5.2	4,120
1906	Apr. 11, 1906	3.9	3,050	1912	May 30, 1912	5.5	4,750
1907	Mar. 29, 1907	5.2	4,220	1913	Mar. 24, 1913	6.4	4,800
1908	Apr. 11, 1908	4.1	3,220				

1380. East Branch Au Gres River at McIvor, Mich.

Location.--Lat 44°14'20", long 83°41'50", on line between secs. 3 and 10, T.21 N., R.6 E., on right bank 25 ft downstream from highway bridge at McIvor, 1.1 miles east of National City, and 9 miles southwest of Tawas City.

Drainage area.--84 sq mi, approximately.

Gage.--Nonrecording prior to Aug. 30, 1951; recording thereafter. Datum of gage is 646.58 ft above mean sea level, datum of 1929.

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

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

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 30, 1951	4.96	372	1956	Apr. 4, 1956	5.96	545
	Apr. 27, 1951	6.17	581		Apr. 8, 1956	4.86	355
1952	Mar. 22, 1952	5.91	527	1957	Apr. 26, 1957	cf.09	358
	Apr. 1, 1952	5.87	527	1958	Nov. 14, 1957	3.97	244
	Apr. 9, 1952	4.71	339	1959	Apr. 3, 1959	7.28	781
	Apr. 14, 1952	7.67	865		May 20, 1959	8.88	1,310
1953	Feb. 21, 1953	a5.68	308	1960	Dec. 28, 1959	6.01	449
	Mar. 16, 1953	4.50	313		Apr. 4, 1960	6.29	499
	May 2, 1953	4.82	352		Apr. 12, 1960	5.48	367
	May 31, 1953	4.46	306		Apr. 18, 1960	5.55	377
1954	Mar. 26, 1954	6.06	563	1961	Mar. 25, 1961	d7.44	336
	June 26, 1954	7.09	747	1962	Mar. 30, 1962	7.38	754
1955	Oct. 3, 1954	5.47	425		May 3, 1962	5.80	414
	Mar. 15, 1955	b5.38	372				
	Mar. 22, 1955	6.45	617				
	May 25, 1955	4.85	355				

a Occurred at different time than peak discharge (ice jam). b Backwater from ice.
c Occurred on Jan. 23, 1957 (backwater from ice). d Occurred on Feb. 24, 1961 (backwater from ice).

1385. Au Gres River near National City, Mich.

Location.--Lat 44°10'45", long 83°44'15", in NW $\frac{1}{4}$ sec. 32, T.21 N., R.6 E., on left bank 20 ft downstream from highway bridge, 1 $\frac{1}{2}$ miles upstream from Elm Creek, 4 miles southwest of National City, 12 $\frac{1}{2}$ miles southwest of Tawas City, and 15 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--169 sq mi.

Gage.--Nonrecording at site 1.7 miles upstream at different datum prior to Oct. 1, 1951; recording thereafter. Altitude of gage is 710 ft (ty barometer).

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

Bankfull stage.--8 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)
1951	Dec. 8, 1950	6.68	775	1957	Mar. 12, 1957	a6.30	700
	Mar. 30, 1951	7.16	1,050		Apr. 6, 1957	4.67	712
	Apr. 26, 1951	7.67	1,500		Apr. 26, 1957	4.81	748
1952	Mar. 22, 1952	a9.7	1,000		June 23, 1957	4.44	655
	Mar. 31, 1952	-	b1,350		June 29, 1957	4.25	608
	Apr. 8, 1952	5.17	650	1958	Nov. 15, 1957	4.16	600
	Apr. 14, 1952	-	b1,600	1959	Apr. 4, 1959	f8.85	1,970
1953	Mar. 13, 1953	c10.5	639		May 21, 1959	5.62	1,170
	May 3, 1953	6.53	1,040	1960	Dec. 28, 1959	a5.9	900
1954	Mar. 26, 1954	(a)	616		Mar. 31, 1960	a9.04	1,400
	June 26, 1954	5.60	790		Apr. 4, 1960	a6.59	1,300
1955	Oct. 3, 1954	6.39	1,010		Apr. 13, 1960	4.15	718
	Oct. 15, 1954	5.96	890		Apr. 18, 1960	4.77	891
	Mar. 14, 1955	d8.63	950		May 10, 1960	3.54	602
	Mar. 22, 1955	7.55	1,490		June 24, 1960	4.71	873
	May 25, 1955	4.63	625		June 28, 1960	4.26	745
1956	Apr. 4, 1956	e6.63	920	1961	Mar. 25, 1961	-	b600
	Apr. 8, 1956	4.83	745	1962	Mar. 29, 1962	7.50	1,820
	May 31, 1956	4.34	620		May 2, 1962	4.75	855
1957	Jan. 23, 1957	a8.37	650				

a Backwater from ice.

b Maximum daily.

c Occurred on Feb. 21, 1953 (backwater from ice).

d Occurred at different time than peak discharge (backwater from ice).

e Occurred on Apr. 2, 1956 (backwater from ice).

f Occurred Apr. 2, 1959 (backwater from ice).

1386. Gamble Creek at Lupton, Mich.

Location.--Lat 44°25'30", long 84°01'25", in SW $\frac{1}{4}$ sec. 36, T.24 N., R.3 E., 10 ft upstream from culvert on county highway, a quarter of a mile south of Lupton.

Drainage area.--8.86 sq mi.

Gage.--Crest-stage gage. At site a quarter of a mile downstream at different datum 1953-56. Altitude of gage is 900 ft.

Stage-discharge relation.--Defined by current-meter measurements below 72 cfs at site used 1953-56; defined by current-meter measurements below 70 cfs and by flow-through-culvert measurement of 223 cfs at present site.

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)
1953	June 1953	1.72	80	1959	May 20, 1959	7.00	223
1954	June 1954	1.83	88				
1955	Mar. 14, 1955	2.52	130	1961	Mar. 24, 1961	3.62	60
1956	Apr. 4, 1956	3.01	168	1962	Mar. 30, 1962	5.12	126

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1387. Bixby Creek near Rose City, Mich.

Location.--Lat 44°26'05", long 84°07'05", in NW $\frac{1}{4}$ sec.31, T.24 N., R.3 E., on left upstream wingwall of culvert on State Highway 33, 1 mile north of Rose City.

Drainage area.--3.20 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 980 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 75 cfs and by flow-through-culvert measurement at 423 cfs.

Bankfull stage.--3 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)
1953	June 1953	2.94	99	1958	Apr. 6, 1958	2.11	58
1954	June 1954	2.88	96	1959	May 20, 1959	6.55	423
1955	Mar. 14, 1955	2.71	86	1960	Mar. 31, 1960	2.48	58
1956	Apr. 4, 1956	4.76	234	1961	Mar. 24, 1961	2.81	70
1957	Apr. 6, 1957	1.88	46	1962	May 2, 1962	3.43	103

1388. Houghton Creek at Rose City, Mich.

Location.--Lat 44°25'15", long 84°06'25", in NE $\frac{1}{4}$ sec.6, T.23 N., R.3 E., on right downstream wingwall of highway bridge, a quarter of a mile east of Rose City.

Drainage area.--11.2 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 940 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 220 cfs and by slope-area measurement at 1,090 cfs.

Bankfull stage.--4 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)
1953	July 2, 1953	1.48	147	1958	Apr. 6, 1958	1.28	127
1954	June 1954	3.23	542	1959	May 20, 1959	4.34	1,090
1955	Mar. 14, 1955	2.03	222	1960	Mar. 31, 1960	1.77	150
1956	Apr. 4, 1956	3.64	720	1961	Mar. 24, 1961	2.08	192
1957	Apr. 6, 1957	1.13	110	1962	May 2, 1962	2.68	352

1389. Wilkins Creek near Rose City, Mich.

Location.--Lat 44°24'25", long 84°06'50", in NE $\frac{1}{4}$ sec.7, T.23 N., R.3 E., on right upstream headwall of culvert on State Highway 33, 1 mile south of Rose City.

Drainage area.--8.22 sq mi.

Gage.--Crest-stage gage. Datum of gage is 907.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 140 cfs and by flow-through-culvert measurement at 748 cfs.

Bankfull stage.--3 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)
1953	June 1953	1.54	49	1958	Apr. 6, 1958	2.02	103
1954	June 1954	2.60	190	1959	May 20, 1959	4.68	748
1955	Aug. 30, 1955	2.08	112	1960	Mar. 31, 1960	2.10	115
1956	Apr. 4, 1956	2.95	255	1961	Mar. 24, 1961	2.26	139
1957	Apr. 6, 1957	1.94	91	1962	Mar. 30, 1962	2.53	180

1390. Houghton Creek near Lupton, Mich.

Location.--Lat 44°23'50", long 84°02'55", in SE $\frac{1}{4}$ sec.10, T.23 N., R.3 E., on right bank half a mile upstream from mouth, 3 miles downstream from Wilkins Creek, and 3 miles southwest of Lupton.

Drainage area.--27 sq mi, approximately.

Gage.--Recording.. Altitude of gage is 860 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 400 cfs and extended above on basis of slope-area measurement at 955 cfs.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 180 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 30, 1951	4.81	263	1956	Apr. 8, 1956	4.48	226
	Apr. 13, 1951	3.98	184		July 21, 1956	4.15	200
	Apr. 26, 1951	5.62	400	1957	Apr. 6, 1957	4.02	186
	July 4, 1951	4.58	239		Apr. 25, 1957	4.58	199
1952	Nov. 14, 1951	4.28	211	1958	Nov. 15, 1957	4.07	190
	Mar. 22, 1952	4.32	215				
	Apr. 1, 1952	5.16	302	1959	Apr. 3, 1959	5.60	400
	Apr. 14, 1952	5.82	460		Apr. 6, 1959	5.30	330
1953	Mar. 19, 1953	4.42	224		May 20, 1959	7.15	955
	Mar. 24, 1953	4.19	203	1960	Dec. 28, 1959	4.15	195
	May 31, 1953	4.52	231		Mar. 31, 1960	4.68	248
1954	Apr. 8, 1954	5.11	296		Apr. 4, 1960	4.34	214
	Apr. 16, 1954	4.15	200		Apr. 13, 1960	4.21	201
	May 29, 1954	4.12	193		Apr. 17, 1960	4.58	238
	June 1, 1954	4.47	228		May 10, 1960	4.02	182
	June 22, 1954	4.09	190	1961	Mar. 25, 1961	4.61	236
	June 26, 1954	5.68	430		Apr. 17, 1961	4.10	186
1955	Oct. 3, 1954	4.56	236	1962	Mar. 30, 1962	5.86	465
	Mar. 22, 1955	5.02	281		May 3, 1962	5.38	342
1956	Apr. 4, 1956	6.31	575				

a Occurred Jan. 22, 1957 (backwater from ice).

1395. Rifle River at "The Ranch" near Lupton, Mich.

Location.--Lat 44°23'35", long 84°02'15", in SW $\frac{1}{4}$ sec.11, T.23 N., R.3 E., on left bank a quarter of a mile downstream from Houghton Creek and 3 miles southwest of Lupton.

Drainage area.--54 sq mi, approximately.

Gage.--Recording. Altitude of gage is 850 ft (by barometer).

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

Bankfull stage.--9 ft.

Remarks.--Base for partial-duration series, 270 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 31, 1951	9.40	425	1953	Mar. 19, 1953	9.08	340
	Apr. 26, 1951	9.62	510		Mar. 24, 1953	9.08	340
	Apr. 28, 1951	9.00	315		May 31, 1953	9.31	395
	July 5, 1951	9.36	408	1954	Mar. 26, 1954	8.70	272
1952	Nov. 14, 1951	8.82	286		Apr. 8, 1954	9.47	455
	Mar. 22, 1952	8.81	286		Apr. 16, 1954	8.90	302
	Apr. 2, 1952	9.49	475		June 1, 1954	9.06	330
	Apr. 14, 1952	9.67	550		June 26, 1954	9.86	658

Peak stages and discharges of Rifle River at "The Ranch" near Lupton, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Oct. 3, 1954	9.15	352	1959	May 20, 1959	10.10	1,330
	Mar. 22, 1955	9.33	415				
1956	Apr. 4, 1956	9.90	750	1960	Mar. 31, 1960	8.94	333
	Apr. 8, 1956	9.28	395		Apr. 4, 1960	8.95	335
	July 21, 1956	8.90	302		Apr. 14, 1960	8.87	319
Apr. 18, 1960					9.10	370	
1957	Apr. 26, 1957	9.00	320	1961	Mar. 25, 1961	8.98	341
1958	Nov. 15, 1957	8.77	282		Apr. 17, 1961	8.58	273
					1962	Mar. 30, 1962	9.70
1959	Apr. 4, 1959	9.68	670			May 3, 1962	9.45

1397. Prior Creek near Rose City, Mich.

Location.--Lat 44°22'25", long 84°06'45", in NE $\frac{1}{4}$ sec.19, T.23 N., R.3 E., on left downstream end of culvert on State Highway 33, 3 $\frac{1}{4}$ miles south of Rose City.

Drainage area.--5.22 sq mi.

Gage.--Crest-stage gage. Datum of gage is 916.46 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 170 cfs and by flow-through-culvert measurement at 910 cfs.

Bankfull stage.--3 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)
1953	June 1953	1.73	53	1958	Apr. 6, 1958	1.55	44
1954	June 1954	2.33	108	1959	May 20, 1959	3.44	910
1955	Aug. 30, 1955	1.94	69	1960	Mar. 31, 1960	1.54	44
1956	Apr. 4, 1956	2.44	123	1961	Mar. 24, 1961	2.12	77
1957	Apr. 6, 1957	1.54	44				

1399. Ammond Creek near Selkirk, Mich.

Location.--Lat 44°20'50", long 84°06'10", in NW $\frac{1}{4}$ sec.32, T.23 N., R.3 E., on left downstream wingwall of highway culvert, 3 miles northwest of Selkirk.

Drainage area.--3.05 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 870 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 130 cfs.

Bankfull stage.--3 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)
1953	Mar. 24, 1953	2.50	140	1958	Apr. 6, 1958	2.10	115
1954	June 1954	3.04	255	1959	May 20, 1959	-	a2,000
1955	Mar. 14, 1955	2.64	187	1960	Mar. 31, 1960	2.42	156
1956	Apr. 4, 1956	3.06	258	1961	Mar. 24, 1961	2.51	168
1957	Apr. 6, 1957	2.62	184	1962	Mar. 30, 1962	2.72	199

a Estimated on basis of computed peak flows on North and South Branches Ammond Creek and on Prior Creek.

1400. Prior Creek near Selkirk, Mich.

Location--Lat 44°20'10", long 84°04'00", in SE $\frac{1}{4}$ sec.33, T.23 N., R.3 E., on right bank a quarter of a mile upstream from mouth, half a mile downstream from Ammond Creek, and $1\frac{1}{2}$ miles north of Selkirk.

Drainage area--19 sq mi, approximately.

Gage--Recording. Altitude of gage is 840 ft (by barometer).

Stage-discharge relation--Defined by current-meter measurements below 380 cfs.

Bankfull stage--4 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)
1951	Feb. 27, 1951	4.17	103	1956	Apr. 8, 1956	4.37	147
	Mar. 7, 1951	4.13	101		Aug. 29, 1956	4.12	141
	Mar. 29, 1951	4.49	130	1957	Apr. 6, 1957	b5.05	128
	Apr. 26, 1951	4.92	145		May 15, 1957	4.06	125
	July 5, 1951	4.17	111	1958	Apr. 6, 1958	4.12	125
1952	Nov. 14, 1951	4.16	110		Apr. 3, 1959	5.17	314
	Mar. 22, 1952	4.9	150	1959	Apr. 8, 1959	4.41	126
	Apr. 1, 1952	4.78	144		May 20, 1959	5.64	584
	Apr. 13, 1952	4.97	155	1960	Dec. 28, 1959	4.79	203
1953	Mar. 13, 1953	3.84	100		Mar. 31, 1960	5.19	325
	Mar. 19, 1953	4.51	130		Apr. 4, 1960	4.55	164
	May 2, 1953	4.17	115		Apr. 13, 1960	3.97	116
1954	May 29, 1954	3.65	111		Apr. 17, 1960	4.34	143
	May 31, 1954	4.74	174		May 10, 1960	4.12	129
	June 26, 1954	4.59	167	1961	Mar. 25, 1961	4.73	191
1955	Oct. 3, 1954	4.48	156		Apr. 17, 1961	4.18	126
	Mar. 15, 1955	a5.08	120	1962	Mar. 30, 1962	5.28	259
	Mar. 22, 1955	4.88	186		May 2, 1962	4.80	205
1956	Apr. 4, 1956	5.23	186				

a Occurred Mar. 12, 1955 (backwater from ice).

b Occurred Feb. 26, 1957 (backwater from ice).

1402. Klacking Creek near Selkirk, Mich.

Location.--Lat 44°21'05", long 84°08'35", in NE $\frac{1}{4}$ sec.2, T.22 N., R.2 E., on left upstream wingwall of highway culvert, $3\frac{1}{2}$ miles northwest of Selkirk.

Drainage area.--7.42 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 950 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 120 cfs and by measurement of flow through culvert at 738 cfs.

Bankfull stage.--3 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)
1953	June 1953	1.37	49	1958	Apr. 6, 1958	1.65	72
1954	June 1954	2.13	102	1959	May 20, 1959	6.59	738
1955	Aug. 30, 1955	1.64	70	1960	June 23, 1960	1.72	96
1956	Apr. 4, 1956	2.70	155	1961	Mar. 24, 1961	1.62	88
1957	Apr. 6, 1957	1.90	84	1962	Mar. 30, 1962	2.05	122

1405. Rifle River at Selkirk, Mich.

Location.--Lat 44°18'50", long 84°04'00", in NE $\frac{1}{4}$ sec.9, T.22 N., R.3 E., on left bank at upstream side of highway bridge at Selkirk, $1\frac{1}{2}$ miles downstream from Prior Creek.

Drainage area.--110 sq mi.

Gage.--Recording. Datum of gage is 828.47 ft above mean sea level, datum of 1929.

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

Bankfull stage.--5 ft.

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)
1951	Mar. 30, 1951	3.77	860	1956	Apr. 4, 1956	4.94	1,680
	Apr. 26, 1951	4.02	1,020		Apr. 8, 1956	3.59	770
	July 5, 1951	3.42	670				
1952	Nov. 14, 1951	3.03	512	1957	Apr. 6, 1957	a4.23	512
	Mar. 21, 1952	3.25	600		Apr. 26, 1957	3.02	508
	Apr. 1, 1952	4.33	1,260	1958	Apr. 7, 1958	b3.62	439
	Apr. 14, 1952	4.54	1,400				
1953	Mar. 19, 1953	3.57	745	1959	Apr. 4, 1959	4.76	1,420
	Mar. 23, 1953	3.38	660		May 20, 1959	6.76	2,760
	May 2, 1953	3.18	572				
	May 31, 1953	3.32	630	1960	Mar. 31, 1960	3.27	608
1954	Apr. 8, 1954	3.17	568		Apr. 4, 1960	3.45	695
	June 1, 1954	3.72	830		Apr. 13, 1960	3.24	596
	June 26, 1954	3.99	1,020		Apr. 18, 1960	3.42	680
1955	Oct. 4, 1954	3.05	520	1961	Mar. 25, 1961	3.61	775
	Mar. 15, 1955	3.21	595		Apr. 17, 1961	3.14	548
	Mar. 23, 1955	3.66	800	1962	Mar. 30, 1962	4.71	1,390
					May 3, 1962	3.62	780

a Occurred Jan. 22, 1957 (backwater from ice).

b Occurred Jan. 10, 1958 (backwater from ice).

Location.--Lat 44°18'25", long 84°05'10", in SE $\frac{1}{4}$ sec.8, T.22 N., R.3 E., on right bank 200 ft upstream from mouth and 1 mile southwest of Selkirk.

Remarks.--Base for partial-duration series, 10 cfs.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)		
1952	Oct. 25, 1951	-	a24	1956	May 30, 1956	3.62	77		
	Nov. 13, 1951	2.7	17		1957	May 15, 1957	c3.82	14	
	Mar. 20, 1952	3.36	53	1958		Apr. 6, 1958	2.61	16	
	Mar. 30, 1952	3.35	52			1959	Apr. 3, 1959	3.62	77
	Apr. 7, 1952	2.47	11				May 20, 1959	3.99	125
	Apr. 13, 1952	4.00	126	1960	Dec. 27, 1959		2.8	20	
1953	Jan. 15, 1953	2.99	28		Mar. 30, 1960	3.48	63		
	Feb. 21, 1953	b3.98	20		Apr. 3, 1960	2.76	19		
	Mar. 13, 1953	2.91	24		Apr. 11, 1960	2.44	11		
	Mar. 19, 1953	3.05	29		Apr. 17, 1960	3.23	43		
	May 2, 1953	2.74	18		May 10, 1960	2.45	12		
	1954	Feb. 20, 1954	b3.01	24	1961	Feb. 23, 1961	3.48	63	
Mar. 18, 1954		3.02	30	Mar. 6, 1961		2.86	23		
Mar. 23, 1954		2.51	12	Mar. 24, 1961		3.85	106		
Apr. 27, 1954		2.80	20	Apr. 16, 1961		2.58	15		
May 31, 1954		2.96	27	Aug. 5, 1961		2.93	26		
June 25, 1954		3.59	74	Aug. 10, 1961		2.99	28		
1955	Oct. 3, 1954	3.88	110	1962	Mar. 29, 1962	3.96	121		
	Mar. 14, 1955	2.98	26		May 2, 1962	3.19	40		
	Mar. 22, 1955	3.58	73						
	1956	Apr. 3, 1956	4.42		181				
Apr. 7, 1956		2.77	19						

c Occurred Jan. 22, 1957 (backwater from ice).

Location.--Lat 44°18'25", long 84°05'00", in SE $\frac{1}{4}$ sec.8, T.22 N., R.3 E., on left upstream wingwall of highway culvert, 1 mile southwest of Selkirk.

Remarks.--Only annual peaks are shown.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 24, 1953	3.10	45	1958	Apr. 6, 1958	2.99	42
1954	June 1954	3.79	88	1959	May 20, 1959	4.57	726
1955	Mar. 14, 1955	3.94	107	1960	Mar. 31, 1960	4.26	206
1956	Apr. 4, 1956	4.46	454	1961	Mar. 24, 1961	4.28	218
1957	Apr. 6, 1957	4.05	128	1962	Mar. 30, 1962	4.13	149

1415. West Branch Rifle River near Selkirk, Mich.

Location.--Lat 44°15'40", long 84°06'30", in NE $\frac{1}{4}$ sec.31, T.22 N., R.3 E., on left bank half a mile downstream from Campbell Creek, 3 $\frac{1}{2}$ miles upstream from mouth, 4 miles southwest of Selkirk, and 6 $\frac{1}{2}$ miles southeast of town of West Branch.

Drainage area.--52 sq mi, approximately.

Gage.--Recording. Altitude of gage is 796 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 660 cfs.

Bankfull stage.--8 ft.

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

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 21, 1952	7.43	810	1957	Apr. 6, 1957	5.81	388
	Mar. 29, 1952	7.14	732		May 15, 1957	5.36	339
	Mar. 31, 1952	6.54	568	1958	Nov. 15, 1957	5.30	330
	Apr. 14, 1952	-	800		Apr. 6, 1958	6.09	468
1953	Mar. 19, 1953	a7.30	480	1959	Apr. 3, 1959	8.77	1,150
	Mar. 23, 1953	5.38	342		Apr. 7, 1959	6.48	546
	May 2, 1953	5.23	320		Apr. 29, 1959	5.35	338
1954	Mar. 25, 1954	5.78	406		May 20, 1959	8.39	884
	May 29, 1954	6.08	470	1960	Oct. 24, 1959	5.55	368
	June 1, 1954	5.22	318		Dec. 28, 1959	7.06	662
1955	Oct. 3, 1954	7.73	905		Mar. 31, 1960	-	600
	Mar. 11, 1955	6.47	542		Apr. 4, 1960	-	480
	Mar. 14, 1955	6.28	510		Apr. 13, 1960	-	440
	Mar. 22, 1955	7.18	750		Apr. 18, 1960	6.10	470
	May 25, 1955	6.27	500	1961	Feb. 23, 1961	b8.93	400
1956	Apr. 4, 1956	8.80	1,160		Mar. 24, 1961	7.17	594
	Apr. 8, 1956	6.38	510		Apr. 16, 1961	6.36	443
	May 30, 1956	6.20	490		Sept. 14, 1961	5.46	307
1957	Jan. 22, 1957	b8.80	330	1962	Mar. 30, 1962	8.36	854
	Mar. 13, 1957	-	310		May 3, 1962	6.37	470

a Occurred Feb. 21, 1953 (backwater from ice).

b Backwater from ice.

1420. Rifle River near Sterling, Mich.

(Published as "at Michigan Highway 70, near Sterling," 1937-61)

Location.--Lat 44°04', long 84°02', in SW $\frac{1}{4}$ sec.5, T.19 N., R.4 E., on left bank 30 ft downstream from bridge on county highway, 3 miles north of Sterling, and 18 miles upstream from mouth.

Drainage area.--320 sq mi, approximately.

Gage.--Nonrecording prior to Jan. 11, 1939; recording thereafter. At site 300 ft downstream at different datum 1906-8. Altitude of gage is 641 ft (by barometer).

Stage-discharge relation.--Defined by current-meter measurements below 3,800 cfs.

Bankfull stage.--11 ft.

Remarks.--Only annual peaks are shown prior to 1940. Base for partial-duration series, 1,600 cfs.

Peak stages and discharges of Rifle River near Sterling, Mich.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1906	Mar. 31, 1906	a7.20	-	-	1951	Feb. 27, 1951	7.8	1.2	1,650
1907	Jan. 20, 1907	b7.25	-	-		Apr. 26, 1951	8.28	-	2,410
1908	Mar. 24, 1908	b5.35	-	-		July 4, 1951	7.36	-	1,970
1937	Apr. 27, 1937	7.6	-	2,100	1952	Mar. 22, 1952	7.93	-	2,260
1938	Mar. 17, 1938	8.95	3.0	-		Apr. 1, 1952	8.41	-	2,480
	Mar. 21, 1938	-	-	2,140		Apr. 14, 1952	9.39	-	2,960
1939	Mar. 25, 1939	12.07	4.7	2,000		July 23, 1952	6.80	-	1,730
1940	Mar. 31, 1940	10.65	2.8	2,200	1953	Feb. 21, 1953	7.48	2.9	-
1941	Apr. 3, 1941	6.58	-	1,680		Mar. 19, 1953	6.95	-	1,810
1942	Mar. 18, 1942	8.76	-	2,660		May 3, 1953	6.91	-	1,770
1943	Feb. 24, 1943	7.30	.8	1,600	1954	Mar. 26, 1954	6.67	-	1,690
	Mar. 17, 1943	7.0	.3	1,700	1955	Mar. 14, 1955	8.7	.8	2,210
	Mar. 25, 1943	13.90	7.5	-		Mar. 15, 1955	9.50	2.1	-
	Mar. 27, 1943	9.2	1.5	2,100		Mar. 22, 1955	8.03	-	2,260
	Apr. 1, 1943	7.11	-	1,850		May 25, 1955	6.75	-	1,730
	June 2, 1943	10.70	-	3,610	1956	Apr. 4, 1956	10.01	-	3,260
1944	Mar. 13, 1944	7.32	3.0	-		Apr. 8, 1956	6.89	-	1,770
	Apr. 25, 1944	5.09	-	1,080	1957	Mar. 15, 1957	6.24	.3	-
1945	May 29, 1945	7.39	-	1,970		Apr. 26, 1957	6.00	-	1,470
	June 3, 1945	10.59	-	3,560	1958	Dec. 19, 1957	6.93	2.2	-
	June 16, 1945	7.96	-	2,260		Apr. 7, 1958	5.77	-	1,330
1946	Mar. 7, 1946	11.57	4.9	1,700	1959	Apr. 4, 1959	10.21	-	3,360
	Mar. 15, 1946	8.38	-	2,460		May 21, 1959	10.99	-	3,760
1957	Apr. 6, 1947	9.21	-	2,860	1960	Dec. 28, 1959	6.99	-	1,810
	Apr. 12, 1947	7.96	-	2,260		Mar. 31, 1960	7.89	-	2,200
1948	Mar. 20, 1948	13.53	3.8	-		Apr. 4, 1960	7.76	-	2,140
	Mar. 21, 1948	12.62	-	4,680		Apr. 18, 1960	6.95	-	1,790
1949	Feb. 25, 1949	6.24	1.1	-	1961	Feb. 24, 1961	7.22	2.0	-
	Mar. 28, 1949	5.19	-	1,110		Mar. 25, 1961	6.93	-	1,780
1950	Jan. 26, 1950	11.8	3.3	2,500	1962	Mar. 30, 1962	10.67	-	3,340
	Mar. 28, 1950	13.74	-	5,340		May 3, 1962	7.37	-	1,860
	Apr. 2, 1950	9.28	-	2,910					

a Maximum daily.

b Maximum daily (backwater from ice).

1435. North Branch Kawkawlin River near Kawkawlin, Mich.

Location.--Lat 43°40'05", long 83°58'15", in SE $\frac{1}{4}$ sec.27, T.15 N., R.4 E., on left bank 50 ft upstream from bridge on Beaver Road, $1\frac{3}{4}$ miles northwest of Kawkawlin, and $2\frac{1}{2}$ miles upstream from mouth.

Drainage area.--101 sq mi.

Gage.--Nonrecording prior to Sept. 27, 1951; recording thereafter. At datum 2.00 ft higher prior to Oct. 1, 1960. Datum of gage is 584.00 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--7 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)
1951	Apr. 27, 1951	5.56	520	1957	Apr. 8, 1957	a5.28	415
1952	Apr. 15, 1952	6.62	990	1958	May 6, 1958	6.14	714
1953	May 4, 1953	5.50	506	1959	Apr. 3, 1959	7.60	1,220
1954	June 22, 1954	7.67	1,090	1960	Apr. 1, 1960	8.32	1,540
1955	Mar. 13, 1955	7.06	1,100				
1956	May 8, 1956	6.51	855	1961	Mar. 27, 1961	7.05	390
				1962	May 4, 1962	8.97	1,120

a Occurred July 13, 1957.

1440. Shiawassee River at Byron, Mich.

Location.--Lat 42°49'25", long 83°56'45", on line between secs.14 and 23,T.5 N., R.4 E., on upstream side of highway bridge at Byron, a quarter of a mile downstream from milldam which is just upstream from South Branch Shiawassee River.

Drainage area.--368 sq mi.

Gage.--Nonrecording and crest-stage gages prior to Oct. 17, 1960; recording thereafter. Datum of gage is 811.54 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--9 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)
1948	May 13, 1948	12.51	2,860	1956	May 15, 1956	12.58	2,480
1949	Feb. 17, 1949	11.39	2,270	1957	July 15, 1957	10.21	1,410
1950	Apr. 6, 1950	11.31	2,220	1958	Dec. 22, 1957	7.85	848
				1959	Mar. 18, 1959	9.95	1,550
1951	Feb. 21, 1951	11.38	2,270	1960	Apr. 1, 1960	12.58	2,900
1952	Apr. 15, 1952	9.99	1,580				
1953	Mar. 6, 1953	7.9	860	1961	Apr. 28, 1961	8.41	955
1954	Feb. 18, 1954	10.1	1,620	1962	Mar. 15, 1962	11.58	2,360
1955	Mar. 6, 1955	9.62	1,290				

a Occurred Feb. 24, 1955 (backwater from ice).

b Occurred Mar. 9, 1959 (backwater from ice).

1445. Shiawassee River at Owosso, Mich.

Location.--Lat 43°00'54", long 84°10'52", in SW $\frac{1}{4}$ sec.12, T.7 N., R.2 E., on right bank on grounds of sewage-treatment plant, $1\frac{1}{2}$ miles north of Owosso.

Drainage area.--538 sq mi.

Gage.--Nonrecording prior to March 1931; recording thereafter. At Main Street Bridge $1\frac{1}{2}$ miles upstream at datum 717.2 ft above mean sea level, unadjusted, prior to March 1931; at Shiawassee Street Bridge $1\frac{1}{2}$ miles upstream at datum 5.46 ft higher than present datum March 1931 to Oct. 14, 1933. Datum of gage is 707.25 ft above mean sea level, datum of 1929.

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

Bankfull stage.--7 ft.

Remarks.--Gage heights prior to March 1931 (for flood seasons only) furnished by U.S. Weather Bureau; only recorded annual peak stages are shown. Base for partial-duration series, used after 1931, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	March 1904	8.3	-	1922	Apr. 17, 1922	3.8	-
				1923	Mar. 16, 1923	4.9	-
1910	Mar. 2, 1910	5.8	-	1924	Mar. 9, 1924	3.6	-
				1925	Mar. 21, 1925	3.6	-
1911	Feb. 1, 1911	4.6	-				
1912	Apr. 4, 1912	8.0	-	1926	Mar. 23, 1926	6.5	-
1913	Apr. 4-5, 1913	5.4	-	1927	Mar. 14, 1927	2.7	-
1914	May 16, 1914	4.4	-	1928	Apr. 9, 1928	3.6	-
1915	Feb. 25, 1915	4.4	-	1929	Feb. 28, 1929	4.6	-
				1930	Feb. 27, 1930	5.0	-
1916	Mar. 29, 1916	8.3	-				
1917	Apr. 6-8, 1917	4.8	-	1931	Mar. 31, 1931	4.10	294
1918	Feb. 18, 20, 1918	8.6	-				
1919	Mar. 17, 1919	6.0	-	1932	May 8, 1932	6.39	1,570
1920	Mar. 16, 1920	6.6	-		May 12, 1932	6.51	1,630
1921	Mar. 9, 1921	4.2	-	1933	Apr. 1, 1933	7.30	1,400

Peak stages and discharges of Shiawassee River at Owosso, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Apr. 4, 1934	5.16	1,440	1950	Jan. 4, 1950	5.65	1,780
1935	Mar. 6, 1935	5.73	1,830		Jan. 14, 1950	5.44	1,650
	Mar. 11, 1935	5.98	1,960		Jan. 26, 1950	6.06	2,080
1936	Mar. 12, 1936	a7.97	1,110		Feb. 15, 1950	5.57	1,720
1937	Apr. 18, 1937	5.64	1,710		Mar. 8, 1950	7.43	3,230
	Apr. 22, 1937	6.46	2,310		Mar. 28, 1950	7.27	3,140
	Apr. 25, 1937	6.02	1,960		Apr. 4, 1950	8.28	4,100
1938	Feb. 7, 1938	5.83	1,760	1951	Apr. 25, 1950	6.05	2,000
	Feb. 18, 1938	8.10	3,670		June 3, 1950	5.92	1,920
1939	Apr. 17, 1939	5.72	1,720		Dec. 3, 1950	6.25	2,160
1940	Mar. 30, 1940	b6.70	2,300		Dec. 8, 1950	5.85	1,880
1941	Jan. 3, 1941	5.77	1,760		Jan. 5, 1951	6.67	2,580
1942	Mar. 9, 1942	6.90	2,670		Feb. 19, 1951	7.48	3,320
	Mar. 12, 1942	7.04	2,750		Feb. 22, 1951	6.98	2,850
	Mar. 17, 1942	8.74	4,230		Mar. 4, 1951	5.50	1,650
1943	Dec. 28, 1942	7.22	2,910	1952	Mar. 30, 1951	5.50	1,650
	Feb. 12, 1943	5.48	1,580		Jan. 2, 1952	5.41	1,580
	Feb. 24, 1943	6.08	2,030		Jan. 17, 1952	6.34	2,240
	Mar. 16, 1943	7.67	3,310		Feb. 4, 1952	5.52	1,650
	May 12, 1943	6.62	2,430		Mar. 11, 1952	6.73	2,580
	May 16, 1943	6.39	2,270	1953	Apr. 9, 1952	6.14	2,080
	May 21, 1943	6.57	2,430		Apr. 13, 1952	6.96	2,850
	May 25, 1943	6.95	2,750		Mar. 4, 1953	5.20	1,460
	June 2, 1943	8.35	3,940	1954	Feb. 17, 1954	7.00	2,850
1944	Feb. 27, 1944	6.98	2,750		Mar. 25, 1954	5.77	1,820
	May 22, 1944	6.38	2,270	1955	Jan. 6, 1955	5.45	1,620
1945	May 18, 1945	8.06	3,670		Feb. 23, 1955	b5.86	1,700
1946	Oct. 2, 1945	6.14	2,060		Mar. 4, 1955	5.83	1,680
	Jan. 10, 1946	5.33	1,550	1956	Mar. 2, 1956	6.08	2,080
	Mar. 6, 1946	7.45	3,070		Mar. 7, 1956	7.82	3,610
1947	Apr. 6, 1947	10.35	6,240		Apr. 30, 1956	6.26	2,240
	Apr. 21, 1947	5.63	1,720		May 3, 1956	6.38	2,320
	June 1, 1947	5.62	1,720		May 6, 1956	7.15	3,040
1948	Feb. 20, 1948	5.94	1,920	1957	May 10, 1956	7.68	3,520
	Feb. 28, 1948	7.21	3,040		May 14, 1956	8.27	4,100
	Mar. 16, 1948	6.13	2,080		Apr. 27, 1957	5.44	1,610
	Mar. 20, 1948	10.27	6,150		May 20, 1957	6.71	2,490
	May 10, 1948	7.95	3,800		July 12, 1957	6.82	2,550
	May 13, 1948	7.60	3,420	1958	Dec. 21, 1957	4.43	1,030
	June 26, 1948	5.70	1,780	1959	Mar. 23, 1959	c7.48	1,900
1949	Feb. 14, 1949	6.60	2,580		Apr. 4, 1959	6.36	2,190
	Feb. 17, 1949	-	4,000	1960	Oct. 9, 1959	5.53	1,610
	Mar. 31, 1949	5.60	1,720		Apr. 1, 1960	8.41	4,210
1950	Dec. 22, 1949	5.74	1,780	1961	Apr. 25, 1961	5.77	1,740
				1962	Mar. 13, 1962	7.65	3,450
					Mar. 18, 1962	6.79	2,630

a Occurred Mar. 4, 1936 (backwater from ice).

b Backwater from ice.

c Occurred Mar. 20, 1959 (backwater from ice).

1448. Shiawassee River at Chesaning, Mich.

Location.--Lat 43°11'00", long 84°06'55", in NE $\frac{1}{4}$ sec.16, T.9 N., R.3 E., on downstream side of Broad Street Bridge in Chesaning.

Drainage area.--618 sq mi.

Gage.--Nonrecording. Datum of gage is 604.4 ft above mean sea level, unadjusted.

Bankfull stage.--13 ft; flood stage, 17 ft (U.S. Weather Bureau).

Remarks.--Records furnished by U.S. Weather Bureau. Only annual peak stages for flood seasons are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1910	Mar. 6, 1910	12.3	-	1938	Feb.14,18-19, 1938	12.3	-
1911	Apr.6-8, 1911	10.5	-	1939	Feb.19-20,1939	11.0	-
1912	Apr. 5, 1912	13.1	-	1940	Mar. 31, 1940	12.2	-
1913	Mar. 14, 1913	12.7	-	1941	Mar.4-5, 1941	10.8	-
1914	Mar.30,May 16, 1914	11.1	-	1942	Mar. 28, 1942	10.5	-
1915	Feb. 23, 1915	11.7	-	1944	Feb. 27, 1944	12.0	-
1916	Mar. 28, 1916	15.1	-	1945	May 18, 1945	12.6	-
1917	Apr. 6, 1917	11.9	-	1946	Mar. 4, 1946	12.8	-
1918	Mar. 18, 1918	14.6	-	1947	Apr. 6, 1947	13.8	-
1919	Mar. 16, 1919	13.2	-	1948	Mar. 20, 1948	13.8	-
1920	Mar. 16, 1920	13.4	-	1949	Feb.15-17,1949	11.9	-
1921	Apr. 22, 1921	11.2	-	1950	Apr. 4, 1950	13.0	-
1922	Apr. 12, 1922	11.8	-	1951	Feb. 20, 1951	12.1	-
1923	Mar. 16, 1923	all.7	-	1952	Mar. 11, 1952	11.9	-
1924	Mar. 10, 1924	all.1	-	1953	Mar. 19, 1953	10.7	-
1925	Mar. 21, 1925	10.9	-	1954	Feb. 17, 1954	11.6	-
1926	Mar. 23, 1926	17.3	-	1955	Mar. 4, 1955	11.3	-
1927	Mar. 14, 1927	10.3	-	1956	Mar. 7, 1956	13.4	-
1928	Apr. 3, 1928	11.4	-	1957	Apr. 28, 1957	11.8	-
1929	Apr. 1, 1929	12.2	-	1958	Mar. 1, 1958	11.2	-
1930	Feb. 25, 1930	12.2	-	1959	Mar. 20, 1959	12.8	-
1931	Mar.28-31,1931	10.0	-	1960	Mar. 31, 1960	13.4	-
1932	May 9-11, 1932	11.6	-	1961	Apr. 25, 1961	11.8	-
1933	Apr. 2, 1933	11.6	-	1962	Mar. 19, 1962	12.5	-
1934	Sept.12, 1934	9.7	-				
1935	Mar. 11, 1935	11.5	-				

a Backwater from ice.

1450. Shiawassee River near Fergus, Mich.

Location.--Lat 43°15'17", long 84°06'20", in sec.22, T.10 N., R.3 E., on downstream handrail of highway bridge, 1.2 miles east of Fergus and $1\frac{3}{4}$ miles upstream from Bear Creek.

Drainage area.--637 sq mi.

Gage.--Nonrecording. Datum of gage is 587.80 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,400 cfs; stage-discharge relation often indefinite at high stages because of variable overflow conditions.

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Shiawassee River near Fergus, Mich.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1940	Mar. 30, 1940	11.60	1.0	-	1952	Mar. 11, 1952	12.84	1.5	-
	Mar. 31, 1940	-	-	3,080		Apr. 14, 1952	-	-	3,870
1941	Jan. 3, 1941	10.25	-	2,270	1953	Mar. 4, 1953	10.1	.3	1,900
1942	Mar. 9, 1942	12.08	.9	-	1954	Feb. 19, 1954	11.8	-	3,710
	Mar. 17, 1942	-	-	5,400	1955	Mar. 5, 1955	11.07	.9	2,200
1943	Mar. 16, 1943	12.29	.5	-	1956	May 10, 1956	13.3	-	-
	June 2, 1943	-	-	5,100		May 14, 1956	-	-	5,200
1944	Feb. 27, 1944	11.55	-	3,850	1957	July 12, 1957	12.1	-	4,080
1945	May 18, 1945	11.88	-	4,600	1958	Dec. 21, 1957	-	-	1,380
						Mar. 2, 1958	9.48	1.5	-
1946	Mar. 4, 1946	12.17	1.3	-	1959	Mar. 21, 1959	13.35	2.8	-
	Mar. 6, 1946	(a)	-	3,900		Apr. 3, 1959	-	-	3,590
1947	Apr. 6, 1947	12.50	-	7,500	1960	Mar. 29, 1960	13.44	1.5	-
1948	Mar. 20, 1948	12.55	-	7,300		Mar. 30, 1960	-	-	5,390
1949	Feb. 16, 1949	12.00	-	4,900					
1950	Mar. 8, 1950	12.72	1.6	-	1961	Apr. 25, 1961	10.9	-	2,750
	Apr. 4, 1950	-	-	5,600	1962	Mar. 14, 1962	13.3	1.3	4,000
1951	Feb. 20, 1951	13.07	2.0	4,000					

a Backwater from ice.

1455. Bad River near Brant, Mich.

Location.--Lat 43°17'50", long 84°13'45", in NW $\frac{1}{4}$ sec.3, T.10 N., R.2 E., on downstream side of highway bridge, 2 $\frac{1}{2}$ miles north of Brant and 6 miles upstream from South Fork.

Drainage area.--89 sq mi, approximately.

Gage.--Nonrecording and, since Jan. 28, 1954, crest-stage gage; crest-stage gage only after Sept. 30, 1959. Datum of gage is 591.21 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 1,400 cfs and extended by logarithmic plotting.

Bankfull stage.--12 ft.

Remarks.--Only annual peaks are shown after 1959. Base for partial-duration series, 700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1949	Feb. 14, 1949	12.80	-	1,110	1955	Mar. 4, 1955	12.60	0.7	-
1950	Jan. 26, 1950	13.0	-	1,230		Mar. 11, 1955	12.36	-	850
	Mar. 8, 1950	13.72	2.5	-		Mar. 23, 1955	12.2	-	790
	Mar. 28, 1950	13.43	-	1,590		June 11, 1955	12.17	-	770
	Apr. 4, 1950	13.70	-	1,830	1956	Mar. 3, 1956	13.0	.2	1,100
1951	Dec. 4, 1950	12.0	-	710		Mar. 7, 1956	14.61	.4	2,300
	Feb. 20, 1951	13.92	.2	1,800		Apr. 3, 1956	-	-	(a)
	Feb. 27, 1951	12.1	-	750		Apr. 29, 1956	13.3	-	1,460
	Apr. 26, 1951	12.9	-	1,170		May 6, 1956	15.18	-	2,900
						May 10, 1956	13.72	-	1,740
1952	Oct. 25, 1951	12.6	-	990	1957	Feb. 26, 1957	13.5	1.8	-
	Nov. 14, 1951	13.75	-	1,880		July 9, 1957	13.3	-	1,390
	Jan. 18, 1952	13.81	-	1,930					
	Feb. 5, 1952	12.55	-	960	1958	Nov. 16, 1957	12.25	-	730
	Mar. 11, 1952	13.7	-	1,830		Mar. 2, 1958	12.66	1.6	-
	Apr. 14, 1952	12.8	-	1,110	1959	Mar. 21, 1959	13.93	2.2	-
1953	Mar. 16, 1953	12.0	-	710		Mar. 25, 1959	13.70	-	1,640
						Apr. 2, 1959	13.63	-	1,580
1954	Feb. 22, 1954	12.87	-	1,140	1960	Mar. 29, 1960	14.90	-	-
	Mar. 26, 1954	12.71	-	1,050					
	Apr. 27, 1954	12.82	-	1,110	1961	Apr. 25, 1961	12.01	-	650
1955	Jan. 7, 1955	12.0	-	710	1962	May 3, 1962	13.34	-	1,350

a Discharge not determined, but greater than 700 cfs.

b Backwater from ice; discharge not determined.

1460. Farmers Creek near Lapeer, Mich.

Location.--Lat 43°02', long 83°20', in sec.6, T.7 N., R.10 E., on left bank at sewage-treatment plant at Michigan Home and Training School, 2 miles west of Lapeer.

Drainage area.--57 sq mi, approximately.

Gage.--Nonrecording prior to May 25, 1954; recording thereafter. Datum of gage is 805.79 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 660 cfs and extended above on basis of contracted-opening measurement at 1,280 cfs.

Bankfull stage.--17 ft.

Remarks.--Only annual peaks are shown prior to 1955. Base for partial-duration series, 160 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	Apr. 3, 1933	16.91	186	1954	Feb. 18, 1954	18.46	635
1934	Apr. 5, 1934	17.19	226				
1935	Mar. 12, 1935	17.26	250	1955	Feb. 23, 1955	c16.90	185
					Mar. 5, 1955	c16.95	194
1936	Mar. 13, 1936	a17.34	130				
1937	Apr. 23, 1937	16.88	175	1956	Mar. 4, 1956	c17.74	200
1938	Feb. 15, 1938	18.27	550		Mar. 8, 1956	17.31	329
1939	Feb. 22, 1939	16.64	166		Apr. 30, 1956	17.18	301
1940	Mar. 31, 1940	17.88	475		May 7, 1956	17.53	388
					May 11, 1956	17.93	488
1941	Jan. 1, 1941	b16.68	134		May 14, 1956	18.07	515
1942	Mar. 18, 1942	18.50	650				
1943	June 3, 1943	19.74	1,220	1957	May 21, 1957	16.72	198
1944	Feb. 28, 1944	17.31	329				
1945	May 19, 1945	17.38	352	1958	Dec. 22, 1957	d16.56	106
1946	Mar. 4, 1946	18.07	515				
1947	Apr. 6, 1947	19.87	1,280	1959	Mar. 22, 1959	c18.09	200
1948	Mar. 20, 1948	18.10	550		Apr. 3, 1959	17.36	350
1949	Feb. 16, 1949	17.46	364	1960	Mar. 31, 1960	18.43	612
1950	Apr. 5, 1950	17.66	412				
				1961	Apr. 27, 1961	e16.36	115
1951	Jan. 4, 1951	17.54	388				
1952	Mar. 12, 1952	17.55	388	1962	Mar. 13, 1962	18.42	608
1953	Mar. 6, 1953	17.2	282		May 2, 1962	17.05	276

a Occurred Feb. 28, 1936 (backwater from ice).

b Occurred Mar. 6, 1941 (backwater from ice).

c Backwater from ice.

d Occurred Feb. 27, 1958 (backwater from ice).

e Occurred Feb. 3, 1961 (backwater from ice).

1465. Flint River at Columbiaville, Mich.

Location.--Lat 43°09'20", long 83°24'40", in sec.33, T.9 N., R.9 E., on downstream side of highway bridge at Columbiaville, 3 miles downstream from South Branch.

Drainage area.--486 sq mi.

Gage.--Nonrecording. At site a third of a mile upstream at datum 742.26 ft above mean sea level (levels by U.S. Weather Bureau) prior to 1948. Datum of gage is 736.26 ft above mean sea level, datum of 1929.

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

Bankfull stage.--14 ft; U.S. Weather Bureau reports 8 ft as flood stage at site used 1932-33.

Remarks.--Records prior to 1948 furnished by U.S. Weather Bureau. 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)
1932	Mar. 30, 1932	7.9	-	1950	Mar. 29, 1950	15.78	4,160
1933	Apr. 3, 1933	9.8	-				
1948	Mar. 21, 1948	17.10	6,690	1951	Feb. 21, 1951	15.38	3,600
1949	Feb. 16, 1949	15.34	3,400	1952	Mar. 13, 1952	14.84	2,780

1475. Flint River near Otisville, Mich.

Location.--Lat 43°06'40", long 83°31'10", in SE $\frac{1}{4}$ sec.9, T.8 N., R.8 E., on left bank 20 ft downstream from bridge on State Highway 15, 1 $\frac{1}{2}$ miles downstream from Holloway Reservoir, 3 $\frac{1}{2}$ miles upstream from Powers-Cullen drain, and 3 $\frac{1}{2}$ miles south of Otisville.

Drainage area.--547 sq mi.

Gage.--Recording. Datum of gage is 721.39 ft above mean sea level, datum of 1929.

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

Bankfull stage.--12 ft.

Remarks.--Flow regulated by Holloway Reservoir 1 $\frac{1}{2}$ miles above station; however, peak discharges probably not significantly affected in most years. Peak discharges for this station combined with those for station at Genesee for flood-frequency analysis. 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)
1953	Aug. 9, 1953	8.43	1,200	1958	Mar. 4, 1958	6.93	939
1954	Feb. 20, 1954	12.45	3,030	1959	Apr. 5, 1959	12.92	3,510
1955	Mar. 7, 1955	8.28	1,220	1960	Apr. 1, 1960	14.97	6,150
1956	May 13, 1956	13.78	4,500	1961	Apr. 30, 1961	7.30	959
1957	May 23, 1957	8.68	1,320	1962	Mar. 21, 1962	12.26	2,920

1480. Flint River at Genesee, Mich.

Location.--Lat 43°06'25", long 83°37'00", in sec.10, T.8 N., R.7 E., on downstream side of highway bridge in Genesee, three-quarters of a mile downstream from Bitternut Creek.

Drainage area.--593 sq mi, approximately.

Gage.--Nonrecording. At site 500 ft downstream at datum 0.52 ft lower prior to Oct. 19, 1932. Datum of gage is 695.27 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 7,200 cfs.

Bankfull stage.--22 ft.

Remarks.--Only annual peaks are shown. Peak discharges for this station combined with those for station near Otisville for flood-frequency analysis.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Mar. 31, 1931	14.87	302	1942	Mar. 19, 1942	24.60	5,540
1932	Jan. 17, 1932	18.44	1,250	1943	Mar. 18, 1943	b23.10	3,610
1933	Apr. 4, 1933	20.68	2,580	1944	Mar. 2, 1944	20.78	2,400
1934	Apr. 7, 1934	20.73	2,480	1945	May 19, 1945	22.06	3,170
1935	Mar. 8, 1935	22.54	3,380	1946	Mar. 6, 1946	23.94	4,880
1936	Mar. 15, 1936	19.16	1,730	1947	Apr. 8, 1947	27.06	8,650
1937	Apr. 25, 1937	18.56	1,460	1948	Mar. 21, 1948	24.60	5,540
1938	Feb. 9, 1938	22.62	3,600	1949	Feb. 17, 1949	22.60	3,440
1939	Feb. 20, 1939	18.19	1,310	1950	Mar. 29, 1950	23.34	4,120
1940	Apr. 3, 1940	21.43	2,880	1951	Feb. 22, 1951	23.30	4,120
1941	Jan. 3, 1941	a19.09	1,480	1952	Mar. 14, 1952	21.79	2,860

a Occurred Jan. 5, 1941 (backwater from ice).

b Occurred Feb. 25, 1943 (backwater from ice).

1482. Swartz Creek near Holly, Mich.

Location.--Lat 42°49'40", long 83°37'40", in SW $\frac{1}{4}$ sec.15, T.5 N., R.7 E., on right bank 25 ft downstream from bridge on Elliott Road, and 2 $\frac{1}{2}$ miles north of Holly.

Drainage area.--11.9 sq mi.

Gage.--Recording. Altitude of gage is 905 ft (from topographic map).

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

Bankfull stage.--4 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)
1956	May 13, 1956	3.40	77	1960	Mar. 31, 1960	3.30	74
1957	July 13, 1957	3.02	54				
1958	Mar. 1, 1958	-	32	1961	Mar. 14, 1961	2.67	38
1959	Apr. 3, 1959	a3.31	48	1962	Mar. 12, 1962	2.93	52

a Occurred Jan. 22, 1959 (backwater from ice).

1485. Flint River near Flint, Mich.

Location.--Lat 43°02'20", long 83°46'10", in SW $\frac{1}{4}$ sec.4, T.7 N., P.6 E., on left bank on grounds of sewage-treatment plant, 1 mile upstream from Pirnie Creek, 2 miles downstream from Flint, and 5 miles downstream from Swartz Creek.

Drainage area.--927 sq mi.

Gage.--Nonrecording prior to August 1932; recording thereafter. At Hamilton Avenue Bridge in Flint at datum 697.2 ft above mean sea level, unadjusted, prior to March 1920. At Stevenson Street Bridge in Flint at datum 690.0 ft above mean sea level, unadjusted, March 1920 to August 1932. Datum of gage is 678.80 ft above mean sea level (levels by U.S. Weather Bureau and city of Flint).

Stage-discharge relation.--Defined by current-meter measurements below 12,700 cfs.

Bankfull stage.--U.S. Weather Bureau flood stage, 11 ft at present site.

Remarks.--Records prior to 1933 furnished by U.S. Weather Bureau. Some regulation by reservoirs above station; effect on peak discharges probably slight. 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	Mar. 31, 1904	20.3	-	1927	Mar. 13, 1927	8.4	-
				1928	Apr. 8, 1928	9.1	-
1911	Feb. 21, 1911	12.7	-	1929	Apr. 8, 1929	12.3	-
1912	May 23, 1912	15.3	-	1930	Feb. 27, 1930	12.4	-
1913	Mar. 15, 1913	12.9	-				
1914	Mar. 20, 1914	12.0	-	1931	Mar. 28, 1931	5.3	-
1915	Feb. 24, 1915	12.3	-	1932	May 12, 1932	7.8	-
				1933	Apr. 1, 1933	9.05	4,740
1916	Mar. 29, 1916	18.5	-	1934	Apr. 4, 1934	8.13	3,850
1917	Apr. 9, 1917	12.5	-	1935	Mar. 11, 1935	9.28	5,040
1918	Mar. 17, 1918	14.7	-				
1919	Mar. 19, 1919	14.1	-	1936	Feb. 26, 1936	6.54	2,250
1920	Mar. 16, 1920	13.7	-	1937	Apr. 22, 1937	a9.10	3,750
				1938	Feb. 14, 1938	11.20	6,970
1921	Apr. 22, 1921	10.0	-	1939	Feb. 20, 1939	6.35	2,180
1922	Apr. 18, 1922	9.7	-	1940	Mar. 30, 1940	8.17	3,850
1923	Mar. 16, 1923	10.0	-				
1924	Apr. 1, 1924	8.3	-	1941	Jan. 3, 1941	7.28	2,950
1925	Mar. 22, 1925	8.9	-	1942	Mar. 17, 1942	12.93	8,700
				1943	June 2, 1943	12.95	8,810
1926	Mar. 25, 1926	13.9	-	1944	Feb. 27, 1944	8.53	4,100

a Occurred Aug. 10, 1937.

Peak stages and discharges of Flint River near Flint, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	May 18, 1945	10.42	5,940	1954	Feb. 16, 1954	9.39	4,940
				1955	Mar. 4, 1955	8.16	3,760
1946	Mar. 7, 1946	11.36	6,940				
1947	Apr. 6, 1947	16.35	14,900	1956	May 13, 1956	12.85	8,270
1948	Mar. 20, 1948	13.99	10,100	1957	May 20, 1957	8.53	3,960
1949	Feb. 15, 1949	9.37	4,940	1958	Dec. 20, 1957	6.10	1,820
1950	Apr. 4, 1950	11.12	6,640	1959	Apr. 3, 1959	9.88	5,310
				1960	Apr. 1, 1960	13.20	8,800
1951	Dec. 3, 1950	9.62	5,140				
1952	Apr. 14, 1952	9.14	4,640	1961	Aug. 19, 1961	8.31	3,490
1953	Mar. 4, 1953	7.77	3,400	1962	Mar. 13, 1962	11.05	6,480

1490. Flint River near Fosters, Mich.

Location.--Lat 43°17'56", long 83°55'58", on west line of sec.6, T.10 N., R.5 E., on downstream side of bridge on Sheridan Road, 1 mile west of Fosters, 1½ miles upstream from Birch Run, and 4 miles downstream from Silver Creek.

Drainage area.--1,120 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 582.22 ft above mean sea level, unadjusted (levels by U.S. Weather Bureau).

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs; complicated by variable overflow conditions above 4,000 cfs.

Bankfull stage.--16 ft.

Remarks.--Records prior to 1940 furnished by U.S. Weather Bureau. 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	March 1904	18.4	-	1940	Mar. 30, 1940	a17.64	5,100
1910	Mar. 7, 1910	16.9	-	1941	Jan. 3, 1941	15.56	4,260
1911	Feb. 19, 1911	15.0	-	1942	Mar. 17, 1942	b17.76	11,200
1912	Mar. 30, 1912	a17.1	-	1943	June 3, 1943	c17.80	10,000
1913	Apr. 4, 1913	16.8	-	1944	Feb. 27, 1944	17.23	5,300
1914	Mar. 17, 1914	16.5	-	1945	May 18, 1945	16.70	7,400
1915	Feb. 24, 1915	16.5	-				
1916	Mar. 29, 1916	18.0	-	1946	Mar. 6, 1946	16.96	8,400
1917	Apr. 6, 1917	16.8	-	1947	Apr. 7, 1947	d17.97	19,000
1918	Mar. 15, 1918	a18.0	-	1948	Mar. 20, 1948	17.60	11,500
1919	Mar. 16, 1919	17.9	-	1949	Feb. 16, 1949	17.13	5,500
1920	Mar. 12, 1920	17.9	-	1950	Apr. 4, 1950	e17.60	8,100
1922	Apr. 12, 1922	16.7	-	1951	Feb. 20, 1951	17.6	6,000
1923	Mar. 5, 1923	17.2	-	1952	Apr. 15, 1952	17.0	5,340
1924	Mar. 7, 1924	16.7	-	1953	Mar. 4, 1953	15.0	3,940
1925	Mar. 22, 1925	16.6	-	1954	Feb. 17, 1954	17.7	6,080
				1955	Mar. 4, 1955	f15.75	4,270
1926	Mar. 24, 1926	17.8	-	1956	May 13, 1956	g18.2	9,700
1927	Mar. 18, 1927	17.2	-	1957	July 9, 1957	17.0	5,400
				1958	Dec. 21, 1957	h13.95	2,520
1929	Apr. 2, 1929	17.5	-	1959	Apr. 4, 1959	17.1	6,700
1930	Feb. 26, 1930	17.9	-	1960	Mar. 31, 1960	17.92	9,200
1931	Mar. 29, 1931	8.0	-	1961	Apr. 26, 1961	15.4	4,000
1932	May 12, 1932	15.2	-	1962	Mar. 13, 1962	a18.5	7,600
1933	Apr. 2, 1933	16.8	-				

a Backwater from ice.

b Occurred Mar. 9, 1942.

c Occurred Mar. 16, 1943.

d Occurred Apr. 6, 1947.

e Occurred Mar. 8, 1950 (backwater from ice).

f Occurred Feb. 22, 1955 (backwater from ice).

g Occurred Mar. 7, 1956.

h Occurred Mar. 2, 1958 (backwater from ice).

1495. Flint River near Alicia, Mich.

Location.--Lat 43°18'40", long 84°02'00", in SE $\frac{1}{4}$ sec.31, T.11 N., R.4 E., on left bank 100 ft downstream from the Prairie Farms Association flood-pumping station, 2 $\frac{1}{4}$ miles north of Alicia, and 4 miles upstream from mouth.

Gage.--Recording. Datum of gage is 577.00 ft above mean sea level, datum of 1929.

Remarks.--Only annual maximum gage heights are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1949	Feb. 16, 1949	10.65	-	1956	May 12, 1956	12.75	-
1950	Apr. 6, 1950	13.65	-	1957	July 13, 1957	11.78	-
				1958	Mar. 2, 1958	10.11	-
1951	Feb. 22, 1951	11.41	-	1959	Apr. 4, 1959	12.86	-
1952	Apr. 15, 1952	11.41	-	1960	Apr. 3, 1960	13.70	-
1953	May 3, 1953	9.15	-				
1954	Feb. 18, 1954	10.44	-	1961	Apr. 26, 1961	10.35	-
1955	Feb. 22, 1955	10.30	-	1962	Mar. 22, 1962	12.07	-

1500. East Branch Cass River near Cass City, Mich.

Location.--Lat 43°34'10", long 83°06'30", in NW $\frac{1}{4}$ sec.7, T.13 N., R.12 E., on left bank 1 $\frac{1}{2}$ miles downstream from bridge on State Highway 53, 3 miles upstream from confluence with North Branch, and 4 miles southeast of Cass City.

Drainage area.--251 sq mi.

Gage.--Nonrecording at site 1 $\frac{3}{4}$ miles upstream at different datum prior to Nov. 8, 1952; recording thereafter. Datum of gage is 719.5 ft above mean sea level, datum of 1929.

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

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown prior to 1953. 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)
1949	Feb. 15, 1949	20.50	2,600	1956	Mar. 7, 1956	a10.25	2,650
1950	Mar. 28, 1950	23.07	4,940		Apr. 30, 1956	-	b2,100
					May 6, 1956	-	b2,500
1951	Feb. 26, 1951	20.93	2,920		May 10, 1956	9.24	2,610
1952	Mar. 12, 1952	20.5	2,600		May 13, 1956	8.83	2,370
1953	Mar. 4, 1953	a7.54	1,500	1957	Apr. 7, 1957	6.75	1,330
	Mar. 16, 1953	7.73	1,750				
	May 3, 1953	7.66	1,750	1958	Mar. 4, 1958	c6.74	d800
1954	Feb. 16, 1954	(a)	2,300	1959	Mar. 25, 1959	a10.17	2,200
	Feb. 21, 1954	9.60	2,850		Apr. 2, 1959	9.72	2,920
	Mar. 1, 1954	6.11	1,100				
	Mar. 20, 1954	7.27	1,550	1960	Dec. 12, 1959	6.57	1,190
	Mar. 26, 1954	9.77	2,970		Dec. 29, 1959	-	b1,780
	Apr. 27, 1954	6.97	1,430		Mar. 31, 1960	13.00	4,890
1955	Dec. 29, 1954	6.07	1,100	1961	Sept. 26, 1961	e7.61	1,190
	Jan. 6, 1955	6.86	1,390				
	Mar. 4, 1955	(a)	1,200	1962	Mar. 19, 1962	f10.94	2,690
	Mar. 11, 1955	8.45	2,130		May 3, 1962	7.86	1,830
	Mar. 22, 1955	6.24	1,110		June 15, 1962	6.89	1,160

a Backwater from ice.

b Occurred during period of no gage-height record.

c Occurred Mar. 2, 1958 (backwater from ice).

d Maximum daily.

e Occurred Feb. 24, 1961 (backwater from ice).

f Occurred Mar. 18, 1962 (backwater from ice).

1505. Cass River at Cass City, Mich.

Location.--Lat 43°35'10", long 83°10'35", in NE $\frac{1}{4}$ sec.4, T.13 N., R.11 E., on left bank 500 ft downstream from highway bridge, half a mile downstream from confluence of North Branch and East Branch, and 1 mile south of Cass City.

Drainage area.--370 sq mi, approximately.

Gage.--Nonrecording prior to Nov. 14, 1952; recording thereafter. At site 500 ft upstream prior to Nov. 14, 1952. Datum of gage is 697.92 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,500 cfs.

Bankfull stage.--12 ft.

Remarks.--Only annual peaks are shown prior to 1953. 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)
1948	Mar. 20, 1948	15.80	8,460	1956	Apr. 3, 1956	8.32	1,500
1949	Feb. 15, 1949	10.58	2,740		Apr. 30, 1956	10.13	2,830
1950	Mar. 28, 1950	14.31	7,250		May 6, 1956	10.71	3,310
					May 10, 1956	10.47	3,150
1951	Feb. 27, 1951	12.05	4,150		May 13, 1956	10.28	2,990
1952	Mar. 11, 1952	11.21	3,300				
1953	Mar. 4, 1953	a10.42	2,200	1957	Feb. 26, 1957	a9.87	1,400
	Mar. 16, 1953	9.62	2,430		Apr. 7, 1957	8.60	1,710
	May 3, 1953	9.71	2,510		Apr. 28, 1957	8.30	1,500
1954	Feb. 16, 1954	10.54	3,150	1958	Mar. 5, 1958	b9.02	1,260
	Feb. 21, 1954	11.23	3,710	1959	Mar. 26, 1959	a10.94	2,800
	Mar. 1, 1954	8.19	1,430		Apr. 4, 1959	11.58	3,900
	Mar. 20, 1954	9.08	2,060				
	Mar. 26, 1954	11.85	4,240	1960	Dec. 13, 1959	8.42	1,430
	Apr. 27, 1954	9.00	2,060		Dec. 29, 1959	9.6C	2,260
1955	Dec. 29, 1954	8.59	1,710		Mar. 31, 1960	14.41	6,810
	Jan. 6, 1955	8.95	1,990		May 31, 1960	8.34	1,420
	Feb. 23, 1955	a8.70	1,500	1961	Sept. 27, 1961	c9.0C	1,400
	Mar. 4, 1955	8.46	1,600				
	Mar. 11, 1955	10.29	2,990	1962	Mar. 18, 1962	11.67	3,980
	Mar. 22, 1955	8.21	1,430		May 3, 1962	9.22	1,990
1956	Mar. 7, 1956	11.19	3,710				

a Backwater from ice.

b Occurred Mar. 3, 1958 (backwater from ice).

c Occurred Feb. 24, 1961 (backwater from ice).

1510. Cass River at Vassar, Mich.

Location.--Lat 43°22'10", long 83°34'55", in SW $\frac{1}{4}$ sec.7, T. 11 N., R.8 E., on downstream side of bridge on State Highway 15 in Vassar, 1 $\frac{1}{4}$ miles upstream from Goodings Creek.

Drainage area.--700 sq mi, approximately.

Gage.--Nonrecording and, since Jan. 27, 1954, crest-stage gage. Datum of gage is 612.376 ft above mean sea level, datum of 1929 (levels by U.S. Weather Bureau).

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs.

Bankfull stage.--14 ft (U.S. Weather Bureau flood stage).

Remarks.--Gage heights prior to 1949 furnished by U.S. Weather Bureau. Only annual peaks are shown prior to 1949. Base for partial-duration series, 3,000 cfs.

Peak stages and discharges of Cass River at Vassar, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Apr. 1, 1904	19.0	-	1950	July 18, 1950	12.5	5,950
1910	Mar. 6, 1910	15.0	-	1951	Dec. 4, 1950	12.0	5,450
1911	Apr. 7, 1911	12.3	-		Dec. 8, 1950	11.1	4,560
1912	May 22, 1912	18.5	-		Jan. 4, 1951	10.8	4,340
1913	Mar. 15, 1913	14.7	-		Feb. 21, 1951	14.09	7,830
1914	Mar. 28, 1914	13.5	-		Feb. 27, 1951	13.1	6,620
1915	Feb. 25, 1915	12.9	-		Mar. 31, 1951	9.4	3,220
					Apr. 26, 1951	13.0	6,500
1916	Mar. 30, 1916	18.9	-	1952	Nov. 14, 1951	10.3	3,940
1917	Apr. 6, 1917	13.7	-		Jan. 17, 1952	9.6	3,380
1918	Mar. 21, 1918	17.0	-		Feb. 5, 1952	11.2	4,680
1919	Mar. 18, 1919	15.2	-		Mar. 12, 1952	12.60	6,060
1920	Mar. 17, 1920	12.8	-		Mar. 20, 1952	9.9	3,620
					Apr. 8, 1952	10.7	4,260
1921	Apr. 23, 1921	12.7	-		Apr. 14, 1952	12.2	5,650
1922	Apr. 12, 1922	13.6	-				
1923	May 18, 1923	15.2	-	1953	Mar. 5, 1953	10.5	4,100
1924	May 10, 1924	13.3	-		Mar. 16, 1953	11.0	4,500
1925	Mar. 22, 1925	12.8	-		May 3, 1953	11.7	5,150
					Aug. 9, 1953	9.4	3,220
1926	Mar. 24, 1926	15.6	-				
1927	Mar. 14, 1927	13.5	-	1954	Feb. 17, 1954	13.2	6,740
1928	Apr. 8, 1928	13.7	-		Feb. 22, 1954	12.4	5,850
1929	Apr. 6, 1929	18.5	-		Mar. 20, 1954	9.9	3,620
1930	Feb. 26, 1930	15.0	-		Mar. 26, 1954	13.54	7,100
					Apr. 28, 1954	10.6	4,180
1931	Mar. 29, 1931	10.4	-				
1932	Mar. 27, 1932	11.8	-	1955	Mar. 4, 1955	9.0	3,000
1933	Apr. 2, 1933	13.4	-		Mar. 12, 1955	10.80	4,340
1938	Feb. 7, 1938	16.8	-	1956	Mar. 8, 1956	13.10	6,620
1939	Apr. 19, 1939	11.2	-		Apr. 30, 1956	10.7	4,260
1940	Mar. 31, 1940	12.3	-		May 7, 1956	12.4	5,850
					May 11, 1956	11.6	5,050
1941	Mar. 15, 1941	9.4	-		May 13, 1956	11.49	4,950
1942	Mar. 18, 1942	19.0	-				
1943	Feb. 24, 1943	13.4	-	1957	Apr. 8, 1957	8.40	2,560
1944	Feb. 27, 1944	10.0	-				
1945	May 18, 1945	11.9	-	1958	Mar. 6, 1958	7.64	1,940
1946	Mar. 8, 1946	16.7	-	1959	Mar. 26, 1959	11.72	5,350
1947	Apr. 6, 1947	17.8	-		Apr. 4, 1959	13.75	7,400
1948	Mar. 20, 1948	20.8	18,000				
				1960	Dec. 29, 1959	10.25	4,090
1949	Feb. 16, 1949	11.64	4,930		Apr. 1, 1960	16.70	11,400
	Feb. 26, 1949	9.5	3,010				
				1961	Sept. 27, 1961	7.50	1,800
1950	Jan. 26, 1950	9.7	3,170				
	Mar. 9, 1950	10.9	4,220	1962	Mar. 20, 1962	12.88	6,480
	Mar. 28, 1950	16.60	11,500		May 3, 1962	9.32	3,830
	Apr. 5, 1950	16.3	10,800				

a Occurred preceding day (backwater from ice).

Note.--Readings from June 1, 1912, to Aug. 31, 1919, are probably about 2 ft too high.

1515. Cass River at Frankenmuth, Mich.

Location.--Lat 43°19'35", long 83°44'50", in sec. 27, T. 11 N., R. 6 E., on right bank half a mile west of Frankenmuth, 3.4 miles upstream from Dead Creek, and 5.4 miles downstream from Perry Creek.

Drainage area.--848 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1936; recording thereafter. At site half a mile upstream at datum 1.81 ft lower prior to March 1909. At site half a mile downstream at datum 0.04 ft higher July 18, 1935, to Sept. 30, 1936, and June 20, 1939, to Sept. 30, 1949. Datum of gage is 583.96 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 16,000 cfs prior to 1949 and below 12,000 cfs since 1950.

Bankfull stage.--17 ft.

Remarks.--Only annual peak shown for 1908. Base for partial-duration series, 3,500 cfs.

Peak stages and discharges of Cass River at Frankenmuth, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	Mar. 16, 1908	21.0	9,550	1951	Mar. 5, 1951	14.04	3,800
1936	Mar. 13, 1936	a16.05	3,200		Apr. 23, 1951	13.71	3,620
1940	Apr. 1, 1940	15.48	5,650		Apr. 26, 1951	15.02	4,400
1941	Dec. 30, 1940	11.13	2,600	1952	Jan. 18, 1952	a17.86	4,500
1942	Mar. 10, 1942	a20.91	12,000		Feb. 5, 1952	a20.29	5,500
	Mar. 18, 1942	20.88	17,700		Mar. 12, 1952	a20.03	7,100
1943	Dec. 28, 1942	-	4,200		Mar. 20, 1952	14.37	4,040
	Feb. 25, 1943	a18.52	4,700		Apr. 8, 1952	16.02	5,200
	Mar. 16, 1943	20.50	16,100		Apr. 14, 1952	17.15	6,500
	May 12, 1943	15.60	5,420	1953	Mar. 5, 1953	a15.70	4,100
	June 3, 1943	14.68	4,730		Mar. 16, 1953	14.90	4,340
1944	Feb. 28, 1944	15.34	5,180		May 3, 1953	16.70	5,900
1945	May 19, 1945	16.07	5,930	1954	Sept. 17, 1954	a22.44	7,500
	June 3, 1945	17.27	7,360		Feb. 22, 1954	17.63	7,100
	June 29, 1945	13.89	4,170		Mar. 20, 1954	14.04	3,800
1946	Oct. 2, 1945	13.05	3,580		Mar. 26, 1954	18.21	8,000
	Jan. 6, 1946	a15.34	4,200		Apr. 28, 1954	15.50	4,800
	Jan. 10, 1946	13.35	3,840	1955	Jan. 7, 1955	13.53	3,500
	Mar. 8, 1946	19.08	11,800		Mar. 4, 1955	13.80	3,680
1947	Apr. 6, 1947	20.23	15,400		Mar. 12, 1955	15.51	4,800
	May 14, 1947	13.91	4,170	1956	Mar. 8, 1956	a18.73	8,000
1948	Mar. 20, 1948	20.83	17,600		Apr. 30, 1956	16.04	5,200
	Apr. 1, 1948	13.53	3,900		May 7, 1956	17.90	7,550
1949	Feb. 16, 1949	15.22	5,290		May 11, 1956	17.22	6,500
1950	Jan. 26, 1950	14.18	3,920		May 13, 1956	17.38	6,800
	Mar. 9, 1950	16.40	5,600	1957	Feb. 27, 1957	b13.68	3,400
	Mar. 28, 1950	21.00	12,500		Mar. 5, 1958	c12.34	2,760
	Apr. 5, 1950	20.84	12,100	1959	Mar. 26, 1959	a17.52	6,000
	July 18, 1950	16.79	6,000		Apr. 3, 1959	18.77	8,560
1951	Dec. 4, 1950	16.44	5,600	1960	Dec. 29, 1959	14.86	4,320
	Dec. 8, 1950	15.30	4,640		Apr. 1, 1960	21.00	11,900
	Jan. 4, 1951	16.33	5,500	1961	Sept. 27, 1961	11.78	2,590
	Feb. 21, 1951	a18.98	8,000	1962	Mar. 20, 1962	19.64	8,870
	Feb. 27, 1951	a18.54	7,000		May 3, 1962	15.51	4,610

a Backwater from ice.

b Occurred Feb. 26, 1957 (backwater from ice).

c Occurred Mar. 1, 1958 (backwater from ice).

1520. Cass River at Bridgeport, Mich.

Location.--Lat 43°31'30", long 83°52'55", in NE $\frac{1}{4}$ sec.16, T.11 N., R.5 E., on downstream side of highway bridge in Bridgeport. and 7 miles upstream from mouth.

Drainage area.--985 sq mi.

Gage.--Nonrecording. Datum of gage is 576.1 ft above mean sea level, unadjusted. At different datum in 1908.

Bankfull stage.--15 ft; U.S. Weather Bureau flood stage, 18 ft.

Remarks.--Records for flood seasons only furnished by U.S. Weather Bureau except for 1908. Only annual peak gage heights are shown.

Peak stages and discharges of Cass River at Bridgeport, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	March 1904	20.7	-	1918	Mar. 21, 1918	16.9	-
1908	Mar. 16, 1908	10.9	-	1919	Mar. 19, 1919	15.8	-
				1920	Mar. 18, 1920	15.5	-
1910	Mar. 8, 1910	14.8	-	1921	Apr. 24, 1921	13.4	-
1911	Apr. 7, 1911	13.0	-	1922	Feb. 24, 1922	15.2	-
1912	May 23, 1912	18.9	-	1923	May 18, 1923	15.2	-
1913	Mar. 16, 1913	15.0	-	1924	May 11, 1924	13.3	-
1914	Mar. 18, 1914	11.6	-	1925	Mar. 22, 1925	13.2	-
1915	Feb. 25, 1915	11.8	-				
1916	Mar. 30, 1916	18.4	-	1926	Mar. 24, 1926	16.0	-
1917	Apr. 7, 1917	13.0	-	1927	Mar. 14, 1927	14.0	-
				1928	Apr. 9, 1928	14.6	-

1525. Tobacco River at Beaverton, Mich.

Location.--Lat 43°52'45", long 84°28'25", in sec. 7, T.17 N., R.1 W., on left bank 15 ft downstream from highway bridge, 1 mile downstream from dam at Beaverton, and 2 miles upstream from Venison Creek.

Drainage area.--487 sq mi.

Gage.--Recording. Datum of gage is 683.27 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 6,200 cfs.

Bankfull stage.--12 ft.

Remarks.--Regulation by powerplant 1 mile upstream prior to Feb. 21, 1961; occasional regulation caused by manipulation of spill gates thereafter. Annual peak discharges slightly affected by the regulation in most years. 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)
1948	Mar. 20, 1948	12.4	7,100	1956	Apr. 4, 1956	11.21	5,800
1949	Feb. 25, 1949	6.34	1,780	1957	July 9, 1957	12.95	7,680
1950	Mar. 28, 1950	11.58	6,200	1958	Apr. 7, 1958	7.31	2,420
				1959	Apr. 4, 1959	10.71	5,310
1951	Apr. 26, 1951	7.14	2,270	1960	Mar. 31, 1960	11.12	5,720
1952	Mar. 22, 1952	9.09	3,790				
1953	Feb. 21, 1953	9.14	3,790	1961	Apr. 17, 1961	7.58	2,610
1954	Apr. 28, 1954	7.50	2,550	1962	May 3, 1962	10.12	4,720
1955	Mar. 22, 1955	8.14	2,980				

1535. Salt River near North Bradley, Mich.

Location.--Lat 43°42'10", long 84°28'15", in SE $\frac{1}{4}$ sec. 7, T.15 N., R.1 W., on right bank 200 ft upstream from bridge on U.S. Highway 10, 0.5 mile upstream from Bluff Creek, and 1.1 miles southeast of North Bradley.

Drainage area.--138 sq mi.

Gage.--Nonrecording prior to July 8, 1954; recording thereafter. At datum 2.00 ft higher prior to Oct. 1, 1959. Datum of gage is 616.01 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 4,400 cfs.

Bankfull stage.--12 ft.

Remarks.--Base for partial-duration series, 800 cfs. Only annual peaks are shown prior to 1954.

Peak stages and discharges of Salt River near North Bradley, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1935	Mar. 17, 1935	a11.6	2,400	1955	Mar. 12, 1955	11.43	2,680
1936	Mar. 22, 1936	b6.80	910	1955	Mar. 23, 1955	10.51	2,070
1937	Apr. 27, 1937	7.5	1,090	1955	May 25, 1955	6.93	922
1938	Feb. 7, 1938	13.5	5,500	1956	Mar. 3, 1956	-	(h)
1939	Apr. 18, 1939	4.75	544	1956	Mar. 7, 1956	-	(h)
1940	Mar. 30, 1940	c9.87	1,300	1956	Apr. 4, 1956	7.55	1,070
1941	Mar. 24, 1941	c9.12	1,200	1956	Apr. 30, 1956	7.00	940
1942	Mar. 17, 1942	12.75	4,330	1956	May 7, 1956	11.90	3,160
1943	June 1, 1943	d11.91	2,960	1957	Feb. 26, 1957	c8.49	800
1944	Mar. 30, 1944	e8.60	480	1957	July 9, 1957	13.84	6,160
1945	June 2, 1945	12.00	3,410	1957	July 12, 1957	12.07	3,340
1946	Mar. 7, 1946	f14.92	7,970	1958	Nov. 15, 1957	17.92	729
1947	Apr. 25, 1947	10.39	2,180	1959	Apr. 3, 1959	11.61	2,870
1948	Mar. 20, 1948	14.95	8,200	1959	Apr. 29, 1959	6.76	897
1949	Feb. 25, 1949	o8.4	1,100	1960	Dec. 29, 1959	10.15	1,140
1950	Mar. 28, 1950	g12.54	2,300	1960	Mar. 31, 1960	14.98	4,590
1951	Feb. 27, 1951	10.48	2,240	1961	Mar. 24, 1961	9.15	956
1952	Mar. 20, 1952	11.13	2,630	1961	Apr. 25, 1961	8.52	848
1953	Feb. 21, 1953	11.60	3,030	1962	Mar. 25, 1962	12.71	2,090
1954	Feb. 22, 1954	9.52	1,650	1962	May 3, 1962	14.17	3,460
	Mar. 26, 1954	9.35	1,600				
	Apr. 28, 1954	10.0	1,850				
	June 25, 1954	9.78	1,770				

a Occurred Mar. 6, 1935 (backwater from ice). b Occurred Mar. 13, 1936 (backwater from ice).
 c Backwater from ice. d Occurred Mar. 17, 1943 (backwater from ice).
 e Occurred Feb. 27, 1944 (backwater from ice). f Maximum observed. g Occurred
 Jan. 26, 1950 (backwater from ice). h Above base; gage height and discharge unknown.
 i Occurred Mar. 4, 1958 (backwater from ice).

1540. Chippewa River near Mount Pleasant, Mich.

Location.--Lat 43°37'35", long 84°42'30", on line between secs. 7 and 8 T.14 N., R. 3 W., on right bank 12 ft downstream from highway bridge and 4 miles northeast of Mount Pleasant.

Drainage area.--416 sq mi (about 405 sq mi at U.S. Weather Bureau site).

Gage.--Nonrecording prior to Oct. 21, 1938; recording thereafter. At Bradley Bridge on Pickard Street in Mount Pleasant 7 miles upstream at datum 733.35 ft above mean sea level, unadjusted, prior to 1931 and for 1932. Datum of gage is 710.38 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--8 ft.

Remarks.--Gage heights for flood seasons only, 1910-30, 1932, furnished by U.S. Weather Bureau. Only annual peaks are shown prior to 1939. 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)
1900	Spring	14.8	-	1921	Apr. 26, 1921	12.6	-
1910	Mar. 9, 1910	9.3	-	1922	Feb. 24, 1922	11.5	-
1911	Feb. 19, 1911	10.1	-	1923	Mar. 5, 1923	10.9	-
1912	May 22, 1912	14.2	-	1924	Mar. 28, 1924	9.6	-
1913	Mar. 15, 1913	11.6	-	1925	Mar. 24-26, 1925	8.6	-
1914	Mar. 29-30, 1914	9.3	-	1926	Mar. 22, 1926	10.7	-
1915	Feb. 24, 1915	11.0	-	1927	Mar. 14-15, 1927	10.5	-
1916	Mar. 29, 1916	13.9	-	1928	Apr. 8, 1928	11.4	-
1917	Mar. 26, 1917	10.1	-	1929	Apr. 9, 1929	12.6	-
1918	Mar. 21-22, 1918	12.9	-	1930	Feb. 26, 1930	10.4	-
1919	Mar. 20, 1919	a11.5	-	1931	Mar. 29, 1931	4.38	500
1920	Mar. 12, 1920	13.2	-	1932	May 11-12, 1932	8.8	-
				1933	May 3, 1933	10.2	2,800

a Probably greater a few days before.

Peak stages and discharges of Chippewa River near Mount Pleasant, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1934	Mar. 18, 1934	b8.59	1,400	1951	Feb. 27, 1951	6.96	1,400
1935	Mar. 6, 1935	b11.06	2,800		Mar. 4, 1951	6.01	1,040
					Apr. 26, 1951	6.38	1,180
1936	Mar. 25, 1936	c6.63	1,010				
1937	Apr. 27, 1937	6.12	1,080	1952	Oct. 25, 1951	6.4	1,180
1938	Feb. 6, 1938	12.3	4,460		Nov. 14, 1951	7.3	1,500
					Jan. 18, 1952	6.45	1,180
1939	Mar. 27, 1939	d6.33	1,010		Mar. 21, 1952	7.67	1,640
					Apr. 2, 1952	6.45	1,180
1940	Mar. 30, 1940	6.21	1,130		Apr. 14, 1952	8.18	1,840
					July 24, 1952	9.22	2,160
1941	Sept. 11, 1941	e6.83	762				
1942	Mar. 17, 1942	8.35	1,950	1953	Feb. 21, 1953	9.30	2,300
					Mar. 13, 1953	7.70	1,640
1943	Dec. 29, 1942	b6.67	1,100		Mar. 16, 1953	7.48	1,570
	Feb. 25, 1943	b8.83	1,750		Mar. 19, 1953	6.07	1,080
	Mar. 17, 1943	b9.50	1,950		May 3, 1953	6.00	1,040
	Mar. 27, 1943	7.95	1,760				
	May 26, 1943	6.24	1,120	1954	Feb. 21, 1954	6.11	1,120
	June 3, 1943	8.78	2,110		Mar. 26, 1954	7.00	1,430
					Apr. 22, 1954	5.85	1,040
1944	Feb. 27, 1944	5.67	940		Apr. 28, 1954	7.04	1,460
1945	June 2, 1945	9.75	2,560	1955	Mar. 12, 1955	7.29	1,500
					Mar. 23, 1955	6.85	1,330
1946	Oct. 2, 1945	6.68	1,290	1956	Mar. 3, 1956	5.93	1,020
	Jan. 10, 1946	6.25	1,120		Mar. 7, 1956	6.56	1,260
	Mar. 8, 1946	12.78	4,960		Apr. 5, 1956	10.13	2,740
	Mar. 14, 1946	8.38	1,920		Apr. 30, 1956	5.88	1,020
					May 7, 1956	8.13	1,800
1947	Apr. 7, 1947	6.70	1,290		May 13, 1956	7.10	1,440
	Apr. 12, 1947	6.48	1,220				
	Apr. 26, 1947	7.72	1,640	1957	Feb. 26, 1957	6.32	1,160
	May 4, 1947	6.78	1,320		June 29, 1957	6.41	1,090
					July 9, 1957	9.92	2,480
1948	Mar. 20, 1948	12.3	4,460	1958	Nov. 15, 1957	g5.59	813
	June 23, 1948	6.15	1,120				
1949	Feb. 25, 1949	8.13	1,800	1959	Mar. 21, 1959	6.15	1,100
					Mar. 26, 1959	7.45	1,560
1950	Jan. 14, 1950	5.92	1,010		Apr. 3, 1959	10.40	2,920
	Jan. 26, 1950	11.42	3,630	1960	Dec. 29, 1959	6.09	1,080
	Mar. 28, 1950	8.09	1,800		Mar. 31, 1960	10.15	2,770
	Mar. 24, 1950	9.89	2,620				
	Mar. 28, 1950	10.76	3,180	1961	Mar. 24, 1961	5.91	1,090
	Apr. 4, 1950	9.34	2,300				
1951	Feb. 21, 1951	b8.34	f1,450	1962	Mar. 28, 1962	7.35	1,620
					May 3, 1962	7.14	1,500

b Backwater from ice.

c Occurred Mar. 13, 1936 (backwater from ice).

d Occurred Mar. 16, 1939 (backwater from ice).

e Occurred Feb. 4, 1941 (backwater from ice).

f Maximum daily.

g Occurred Jan. 9, 1958 (backwater from ice).

1545. Chippewa River near Midland, Mich.

Location.--Lat 43°35'40", long 84°22'10", on line between sec.24, T.14 N., R.1 W., and sec.28, T.14 N., R. 1 E., on upstream side of bridge on State Highway 30, 5 miles upstream from Pine River, and 6 miles southwest of Midland.

Drainage area.--597 sq mi.

Gage.--Nonrecording. Datum of gage is 612.35 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 8,600 cfs.

Bankfull stage.--7 ft.

Historical data.--The maximum stage known since at least 1904 is that of March 1904, from Michigan State Highway Department.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1904	March 1904	15.65	-	16,000	1955	Mar. 11, 1955	5.9	-	3,820
1948	Mar. 19, 1948	12.43	3.6	-	1956	May 7, 1956	6.10	-	4,080
	Mar. 20, 1948	-	-	8,510	1957	Feb. 27, 1957	7.30	3.3	-
1949	Feb. 26, 1949	6.66	1.8	2,700		July 9, 1957	-	-	4,700
1950	Mar. 24, 1950	10.82	5.1	-	1958	Nov. 20, 1957	-	-	1,570
	Mar. 28, 1950	-	-	5,100		Mar. 20, 1958	4.88	1.3	-
1951	Feb. 27, 1951	9.45	5.2	-	1959	Mar. 26, 1959	10.47	5.2	-
	Apr. 26, 1951	-	-	2,580		Apr. 3, 1959	-	-	5,990
1952	Nov. 14, 1951	5.99	-	3,960	1960	Mar. 31, 1960	7.74	-	6,030
1953	Feb. 22, 1953	9.12	3.4	3,600	1961	Mar. 25, 1961	-	-	22,000
1954	Feb. 22, 1954	5.54	1.4	-	1962	Mar. 22, 1962	7.27	3.6	-
	Apr. 28, 1954	-	-	2,710		Mar. 25, 1962	-	-	2,890

a Maximum daily.

1550. Pine River at Alma, Mich.

Location.--Lat 43°23', long 84°39', in SE $\frac{1}{4}$ sec.34, T.12 N., R. 3 W., on right bank 270 ft downstream from Superior Street Bridge on grounds of municipal waterworks at Alma.

Drainage area.--288 sq mi.

Gage.--Nonrecording prior to Oct. 26, 1938; recording thereafter. At bridge on Euclid Avenue 3,000 ft downstream at datum 712.2 ft above mean sea level, unadjusted, prior to July 1919 and at bridge on Superior Street at datum 717.7 ft above mean sea level, datum of 1929, July 1919 to September 1930. Datum of gage is 718.37 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs.

Bankfull stage.--6 ft.

Remarks.--Gage heights for flood seasons only 1910-30, furnished by U.S. Weather Bureau. Occasional regulation by dam half a mile upstream. 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)
1907	June 5, 1907	11.4	-	1916	Mar. 28, 1916	10.7	-
				1917	Mar. 24, 1917	4.8	-
1910	Mar. 7, 1910	6.5	-	1918	Mar. 21, 1918	8.9	-
				1919	Mar. 17, 1919	12.1	-
1911	Feb. 18, 1911	6.5	-	1920	Mar. 16, 1920	8.5	-
1912	May 21, 1912	9.1	-				
1913	Mar. 15, 1913	8.0	-	1921	Apr. 23, 1921	6.2	-
1914	Mar. 19, 1914	5.6	-	1922	Feb. 25, 1922	8.2	-
1915	Feb. 23, 1915	8.0	-	1923	May 17, 1923	7.7	-

Peak stages and discharges of Pine River at Alma, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Mar. 30, 1924	5.3	-	1944	Feb. 26, 1944	b5.36	960
1925	Mar. 21, Apr. 26, 1925	4.5	-	1945	June 4, 1945	7.29	1,840
1926	Mar. 23, 1926	7.5	-	1946	Mar. 8, 1946	10.02	3,650
1927	Mar. 16, 1927	5.9	-	1947	Apr. 6, 1947	7.25	1,820
1928	Apr. 7, 1928	8.0	-	1948	Mar. 19, 1948	10.81	4,400
1929	May 12, 1929	6.9	-	1949	Feb. 28, 1949	5.9	1,200
1930	Feb. 25, 1930	9.0	-	1950	Mar. 28, 1950	9.48	3,210
1931	Apr. 1, 1931	2.80	353	1951	Feb. 19, 1951	6.35	1,320
1932	Feb. 12, 1932	5.56	1,060	1952	Nov. 14, 1951	6.44	1,320
1933	May 2, 1933	6.35	1,400	1953	Apr. 13, 1952	6.44	1,320
1934	Mar. 17, 1934	a5.72	1,100	1954	Mar. 15, 1953	6.28	1,270
1935	Mar. 5, 1935	a9.50	3,560	1954	Apr. 27, 1954	7.26	1,750
1936	Mar. 18, 1936	5.08	965	1955	Mar. 11, 1955	6.01	1,150
1937	Apr. 28, 1937	4.51	720	1956	May 6, 1956	7.43	1,800
1938	Feb. 6, 1938	a10.43	4,070	1957	July 12, 1957	4.88	675
1939	Apr. 22, 1939	b4.23	660	1958	Nov. 19, 1957	4.84	723
1940	Mar. 30, 1940	b6.19	1,330	1959	Apr. 3, 1959	8.48	2,400
1941	Dec. 31, 1940	b4.73	772	1960	Mar. 31, 1960	8.60	2,480
1942	Mar. 17, 1942	7.64	2,210	1961	Mar. 27, 1961	4.57	658
1943	Mar. 16, 1943	7.89	2,450	1962	Mar. 21, 1962	6.15	1,210

a Maximum observed, probably regulated.

b Regulated.

1555. Pine River near Midland, Mich.

Location.--Lat 43°33'50", long 84°22'10", on line between sec.36, T.14 N., R.1 W., and sec.4, T.13 N., R.1 E., on left bank at downstream side of bridge on State Highway 30, 7 miles southwest of Midland and 8 miles upstream from mouth.

Drainage area.--390 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 22, 1949, and from May 30 to Dec. 13, 1951; recording remainder of time. At datum 5.48 ft lower prior to Oct. 1, 1938. Datum of gage is 623.87 ft above mean sea level (Michigan State Highway Department bench mark).

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

Bankfull stage.--8 ft.

Remarks.--Only annual peaks are shown prior to 1950. Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1935	Mar. 17, 1935	13.5	1.0	3,100	1951	Mar. 30, 1951	5.15	-	1,320
1936	Mar. 12, 1936	13.30	3.0	-		Apr. 26, 1951	5.44	-	1,540
	Mar. 18, 1936	12.3	1.6	1,600	1952	Jan. 19, 1952	9.09	3.0	2,000
1937	Feb. 9, 1937	12.40	2.6	-		Mar. 12, 1952	6.88	.8	2,000
	Apr. 25, 1937	10.7	-	1,460		Mar. 21, 1952	-	-	1,800
1938	Feb. 6, 1938	17.00	1.8	5,000		Apr. 6, 1952	5.15	-	1,290
						Apr. 9, 1952	5.20	-	1,320
1948	Mar. 20, 1948	10.00	-	6,360		Apr. 14, 1952	6.76	-	2,500
1949	Feb. 14, 1949	7.25	3.1	-	1953	Feb. 24, 1953	9.0	3.7	1,400
	Feb. 28, 1949	-	-	1,600		Mar. 16, 1953	5.62	-	1,550
1950	Jan. 25, 1950	7.54	1.4	2,000	1954	Feb. 21, 1954	7.80	2.0	1,800
	Jan. 28, 1950	5.50	-	1,570		Mar. 26, 1954	5.53	-	1,570
	Mar. 10, 1950	7.24	.7	2,400		Mar. 28, 1954	5.08	-	1,290
	Mar. 24, 1950	9.73	1.7	4,000		Apr. 27, 1954	7.04	-	2,900
	Mar. 28, 1950	8.22	-	4,140	1955	Mar. 11, 1955	6.47	-	2,360
	Apr. 4, 1950	7.93	-	3,810		Mar. 22, 1955	5.68	-	1,720
1951	Jan. 4, 1951	5.88	.3	1,600		May 25, 1955	5.68	-	1,510
	Feb. 20, 1951	8.20	2.2	2,000		June 12, 1955	6.01	-	1,590
	Mar. 1, 1951	11.20	5.3	1,900					

Peak stages and discharges of Pine River near Midland, Mich.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Mar. 3, 1956	6.58	1.5	1,300	1958	Mar. 6, 1958	6.15	1.2	-
	Mar. 7, 1956	8.13	2.3	1,800					
	Apr. 4, 1956	6.21	-	2,130	1959	Mar. 25, 1959	9.10	2.8	-
	Apr. 30, 1956	5.06	-	1,260		Mar. 26, 1959	7.44	-	3,340
	May 7, 1956	7.16	-	3,100		Apr. 4, 1959	7.54	-	3,440
	May 10, 1956	6.60	-	2,500	1960	Mar. 31, 1960	8.16	-	4,100
	May 13, 1956	6.97	-	2,900					
1957	Feb. 26, 1957	6.73	.9	1,800	1961	Apr. 26, 1961	4.58	-	1,050
	July 9, 1957	6.65	-	2,080					
	July 11, 1957	6.70	-	2,160	1962	Mar. 21, 1962	8.86	3.8	-
1958	Nov. 19, 1957	5.07	-	1,210		Mar. 25, 1962	5.82	-	2,000
						May 3, 1962	5.95	-	2,100

1560. Tittabawassee River at Midland, Mich.

Location.--Lat 43°36', long 84°15', in NE $\frac{1}{4}$ sec.28, T.14 N., R.2 E., on right bank half a mile downstream from Dow Chemical Co. powerplant in Midland, 1 mile downstream from Chippewa River, and 1 mile upstream from Black Creek.

Drainage area.--2,400 sq mi, approximately.

Gage.--Nonrecording prior to March 1936; recording thereafter. U.S. Weather Bureau gage at Benson Street Bridge 6,600 ft upstream for period 1910-35. At datum 10.00 ft higher than present datum prior to Oct. 1, 1955. Datum of gage is 580.28 ft above mean sea level, datum of 1929. All gage heights have been adjusted to present site.

Stage-discharge relation.--Defined by current-meter measurements below 28,400 cfs.

Bankfull stage.--24 ft (U.S. Weather Bureau flood stage, adjusted to present site).

Remarks.--Gage heights for flood seasons only prior to 1936 furnished by U.S. Weather Bureau. Discharges prior to 1936 obtained by application of adjusted gage heights to rating curve developed after 1936 and are less accurate than those for period after 1936. Only annual peaks are shown prior to 1936. Base for partial-duration series, 7,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1876	May 1876	18.5	30,000	1928	Apr. 8, 1928	16.3	21,800
				1929	Apr. 8, 1929	17.7	26,800
1907	Jan. 20, 1907	17.8	27,200	1930	Feb. 26, 1930	13.4	13,600
1910	Mar. 8, 1910	9.0	7,390	1931	May 23, 1931	-	2,200
1911	Feb. 19, 1911	6.2	4,720	1932	Feb. 12, 1932	10.0	8,200
1912	May 22, 1912	19.2	32,800	1933	May 3, 1933	16.8	23,600
1913	Mar. 15, 1913	12.8	12,400	1934	Apr. 5, 1934	-	6,400
1914	Mar. 17, 1914	7.1	5,530	1935	Mar. 18, 1935	14.2	15,600
1915	Feb. 25, 1915	12.2	11,500	1936	Mar. 23, 1936	-	5,700
1916	Mar. 28, 1916	19.7	34,800	1937	Apr. 28, 1937	12.23	11,600
1917	Mar. 24, 1917	7.4	5,800				
1918	Mar. 21, 1918	14.4	16,100	1938	Feb. 7, 1938	15.72	21,100
1919	Mar. 18, 1919	18.3	29,200		Feb. 14, 1938	15.30	18,800
1920	Mar. 17, 1920	12.4	11,800		Mar. 24, 1938	9.55	8,050
					Mar. 31, 1938	9.46	7,940
1921	Apr. 24, 1921	13.7	14,400	1939	Apr. 20, 1939	9.09	7,390
1922	Feb. 24, 1922	15.3	18,800				
1923	May 18, 1923	13.8	14,600	1940	Mar. 31, 1940	8.57	6,980
1924	Mar. 26, 1924	10.5	9,100				
1925	Apr. 21, 1925	5.9	4,450	1941	Mar. 24, 1941	7.48	5,880
1926	Mar. 23, 1926	12.2	11,500				
	Mar. 15, 1927	14.3	15,900	1942	Mar. 18, 1942	17.07	26,000

Peak stages and discharges of Tittabawassee River at Midland, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Dec. 30, 1942	10.14	8,620	1952	Jan. 19, 1952	9.47	8,840
	Feb. 25, 1943	13.63	14,100		Feb. 5, 1952	8.60	7,850
	Mar. 17, 1943	13.14	13,000		Mar. 13, 1952	9.42	8,730
	Mar. 26, 1943	13.60	14,100		Mar. 22, 1952	-	14,000
	Apr. 1, 1943	8.66	7,080		Apr. 1, 1952	9.68	9,060
	May 26, 1943	10.07	8,620		Apr. 14, 1952	14.07	15,400
	June 2, 1943	14.79	17,500		July 24, 1952	8.82	8,070
1944	Feb. 28, 1944	7.43	5,780	1953	Feb. 22, 1953	10.10	9,500
1945	May 29, 1945	9.68	8,160		Mar. 14, 1953	8.97	8,290
	June 3, 1945	18.01	28,000		Mar. 20, 1953	9.72	9,060
					May 3, 1953	11.56	11,200
1946	Oct. 2, 1945	9.82	8,270	1954	Mar. 26, 1954	8.90	8,180
	Jan. 7, 1946	10.43	8,980		Apr. 28, 1954	12.38	12,200
	Jan. 10, 1946	10.28	8,860		June 23, 1954	9.22	8,510
	Mar. 8, 1946	18.75	31,200	1955	Mar. 12, 1955	11.72	11,300
	Mar. 15, 1946	13.70	14,400		Mar. 23, 1955	12.71	12,700
1947	Apr. 7, 1947	12.67	12,200		May 26, 1955	10.50	9,940
	Apr. 12, 1947	11.67	10,800	1956	Mar. 7, 1956	18.31	7,520
	Apr. 25, 1947	10.90	9,620		Apr. 5, 1956	21.63	11,200
	May 3, 1947	12.70	12,200		Apr. 8, 1956	20.36	9,830
	May 22, 1947	8.80	7,180		May 1, 1956	19.16	8,510
1948	Mar. 21, 1948	19.50	34,000		May 7, 1956	24.28	16,000
1949	Feb. 26, 1949	7.86	6,250		May 14, 1956	22.57	12,600
1950	Jan. 27, 1950	14.30	15,800	1957	July 10, 1957	26.34	22,000
	Mar. 9, 1950	10.47	9,400	1958	Nov. 20, 1957	16.86	5,940
	Mar. 28, 1950	17.75	27,200	1959	Mar. 26, 1959	22.25	12,000
	Apr. 2, 1950	13.93	14,800		Apr. 4, 1959	27.82	27,300
	Apr. 5, 1950	15.81	20,300	1960	Dec. 29, 1959	18.07	7,270
1951	Feb. 22, 1951	10.44	9,280		Apr. 1, 1960	27.08	24,600
	Feb. 27, 1951	11.95	11,200	1961	Mar. 26, 1961	18.15	7,360
	Mar. 4, 1951	9.57	8,420	1962	Mar. 26, 1962	23.70	14,500
	Mar. 20, 1951	8.35	7,220		May 4, 1962	24.74	17,100
	Apr. 26, 1951	10.36	9,280				
1952	Nov. 15, 1951	10.34	9,720				

1565. Tittabawassee River at Freeland, Mich.

Location.--Lat 43°31', long 84°08', on line between secs. 16 and 21, T.13 N., R.3 E., at upstream side of highway bridge in Freeland.

Drainage area.--2,530 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 575 ft (from river-profile map).

Stage-discharge relation.--Defined by current-meter measurements below 15,000 cfs.

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)
1904	Mar. 27, 1904	abl8.25	-	1931	May 22, 1931	13.11	2,210
1905	Mar. 26, 1905	abl4.58	-	1932	Feb. 13, 1932	9.21	8,200
				1933	May 3, 1933	15.2	25,400
1906	Feb. 27, 1906	abl4.95	-	1934	Apr. 5, 1934	7.75	6,570
1907	Jan. 22, 1907	abl4.7	-	1935	Mar. 18, 1935	12.98	16,000
1908	Mar. 15, 1908	abl4.5	-				
1909	Apr. 21, 1909	abl4.00	-	1936	Mar. 23, 1936	6.80	5,820

a Maximum daily.

b Probably backwater from ice.

1567. Tittabawassee River at Shields, Mich.
(Published as "at Paines" prior to 1922 in
U.S. Weather Bureau reports).

Location.--Lat 43°24'55", long 84°02'40", in SW $\frac{1}{4}$ sec. 30, T.12 N., R.4 E., on downstream side of bridge on Gratiot Road, a quarter of a mile east of Shields and 5 miles upstream from mouth.

Drainage area.--2,610 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 576.3 ft above mean sea level, unadjusted.

Bankfull stage.--10 ft; flood stage, 16 ft (U.S. Weather Bureau).

Remarks.--Records furnished by U.S. Weather Bureau. Only observed peak stages for annual flood season are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	March 1904	20.5	-	1919	Mar. 18, 1919	19.8	-
1910	Mar. 10, 1910	12.3	-	1920	Mar. 18, 1920	15.5	-
1911	Feb. 20, 1911	11.0	-	1921	Apr. 25, 1921	14.5	-
1912	Mar. 22, 1912	18.6	-	1922	Feb. 25, 1922	15.1	-
1913	Mar. 16, 1913	15.6	-	1923	Mar. 26, 1923	14.5	-
1914	Mar. 19, 1914	11.3	-	1924	Mar. 27-29, 1924	11.8	-
1915	Feb. 26, 1915	15.9	-	1925	Mar. 23, 1925	9.1	-
1916	Mar. 29, 1916	20.2	-	1926	Mar. 24-25, 1926	13.9	-
1917	Mar. 25, 1917	12.4	-	1927	Mar. 15, 1927	15.0	-
1918	Mar. 21, 1918	18.7	-	1928	Apr. 8, 1928	17.4	-

1570. Saginaw River at Saginaw, Mich.

Location.--Lat 43°26'00", long 83°56'30", in sec. 24, T.12 N., R.4 E., on upstream end of right pier of Genesee Street Bridge in Saginaw, $\frac{3}{4}$ miles downstream from Tittabawassee River and 18.1 miles upstream from mouth.

Drainage area.--6,060 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 566.85 ft, U.S. Lake Survey datum (levels by U.S. Weather Bureau).

Stage-discharge relation.--Defined by current-meter measurements. Shifts in the relation occurred as the result of major channel improvements made in 1914-15 and again in 1931-32. Since 1932, some peaks, especially the lower ones, affected by level of Lake Huron. Fall to Lake Huron used as a factor in computing discharge after 1949.

Bankfull stage.--19 ft (U.S. Weather Bureau flood stage).

Remarks.--Records of gage height prior to 1904 furnished by Corps of Engineers; those for 1905-9 furnished by city of Saginaw; and those since 1909 furnished by city of Saginaw and U.S. Weather Bureau. Base for partial-duration series (used since 1904), 20,000 cfs; only the noteworthy floods of record are shown prior to 1904. Only the annual maximum observed gage heights are shown for years when peak discharge did not reach 20,000 cfs.

STREAMS TRIBUTARY TO LAKE HURON

Peak stages and discharges of Saginaw River at Saginaw, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1873	Apr. 14, 1873	23.35	50,000	1933	May 4, 1933	16.1	22,100
1876	Apr. 17, 1876	23.85	55,600	1934	Apr. 6, 1934	13.4	-
1884	Mar. 29, 1884	24.05	57,800	1935	Mar. 8, 1935 Mar. 19, 1935	17.8 15.6	29,200 20,100
1898	Mar. 19, 1898	22.65	42,600	1936	Mar. 14, 1936	14.1	-
1901	Mar. 30, 1901	21.85	36,200	1937	Apr. 29, 1937	15.1	-
1904	Mar. 29, 1904	24.9	68,000	1938	Feb. 9-10, 1938 Feb. 16, 1938	17.2 17.9	26,500 29,600
1905	Mar. 27, 1905 June 12, 1905	20.65 20.0	28,900 25,400	1939	Apr. 21, 1939	14.7	-
1906	Jan. 25, 1906	19.4	22,400	1940	Apr. 1, 1940	14.1	-
1907	Jan. 24, 1907 Mar. 28-31, 1907	20.4 19.3	27,400 21,900	1941	Jan. 6, 1941	14.9	-
1908	Mar. 16, 1908 Mar. 30, 1908 May 17, 1908	22.3 20.3 20.05	39,500 26,900 25,600	1942	Mar. 19, 1942	21.0	47,000
1909	Apr. 23, 1909 May 3, 1909	19.4 22.5	22,400 41,200	1943	Dec. 30, 1942 Feb. 26, 1943 Mar. 19, 1943 June 5, 1943	a16.3 a17.9 18.9 a17.5	a24,000 a24,000 33,300 a25,700
1910	Mar. 9-10, 1910	19.1	21,100	1944	Oct. 16, Nov. 11, 1943	15.6	-
1911	Feb. 21, 1911	17.0	-	1945	May 18, 1945 June 5, 1945	a16.2 18.5	a20,100 30,100
1912	Apr. 8, 1912 May 24, 1912	23.3 24.1	49,500 58,400	1946	Jan. 11, 1946 Mar. 9, 1946 Mar. 30, 1946	a16.23 20.82 16.4	a22,200 45,700 21,000
1913	Mar. 17, 1913 Apr. 6, 1913	21.4 20.6	33,400 28,600	1947	Apr. 8, 1947 June 4, 1947	19.9 a15.70	40,200 a20,500
1914	Mar. 20, 1914	17.1	-	1948	Mar. 22, 1948	22.14	53,400
1915	Feb. 27, 1915	19.0	22,600	1949	Apr. 15, 1949	14.4	-
1916	Mar. 31, 1916	24.3	60,800	1950	Jan. 28, 1950 Mar. 10, 1950 Apr. 6, 1950	a14.95 a15.7 20.6	a22,100 23,400 47,000
1917	Apr. 8-9, 1917	18.1	20,400	1951	Mar. 1, 1951	b16.70	24,500
1918	Mar. 2-3, 1918 Mar. 22, 1918	18.9 23.5	22,400 51,700	1952	Jan. 22, 1952 Mar. 14, 1952 Mar. 23, 1952 Apr. 15, 1952	c16.9 a17.3 d17.2 18.65	a23,100 a24,100 a24,600 29,600
1919	Mar. 20, 1919	23.1	47,300	1953	Nov. 22, 1952	16.5	-
1920	Mar. 18, 1920	20.2	26,700	1954	Feb. 23, 1954 Mar. 27, 1954 Apr. 29, 1954	15.9 a15.8 a16.24	22,700 a20,500 a20,800
1921	Apr. 26, 1921	18.3	20,800	1955	Apr. 26, 1955	16.4	-
1922	Feb. 26-27, 1922	18.4	21,100	1956	Mar. 9, 1956 May 15, 1956	a16.2 19.05	a22,600 36,500
1923	May 22, 1923	18.4	21,100	1957	July 13, 1957	17.15	27,800
1924	Mar. 30, 1924	16.3	-	1958	Oct. 24, 1957	14.3	-
1925	Mar. 23, 1925	14.9	-	1959	Apr. 5, 1959	19.08	40,400
1926	Mar. 26, 1926	20.1	26,300	1960	Apr. 3, 1960	20.60	45,900
1927	Mar. 16, 1927	17.9	-	1961	Oct. 24, 1960	14.89	-
1928	Apr. 9, 1928	20.0	25,900	1962	Mar. 22, 1962 May 5, 1962	17.6 a16.35	30,000 a23,800
1929	Mar. 9, 1929 Mar. 18, 1929 Apr. 10, 1929 May 6, 1929	18.8 19.3 22.4 19.0	22,100 23,500 40,200 22,600				
1930	Feb. 27, 1930	20.7	29,200				
1931	Oct. 14, Nov. 5, 1930	14.0	-				
1932	Feb. 14, 1932	14.6	-				

a Daily mean.

b Observed Feb. 28, 1951.

c Observed Jan. 21, 1952.

d Observed Mar. 22, 1952.

1575. Sebewaing River (State drain) near Sebewaing, Mich.

Location.--Lat 43°43', long 83°26', in sec.16, T.15 N., R.9 E., on right bank 60 ft downstream from highway bridge on Rescue Road, 1½ miles upstream from East Fork, and 1½ miles southeast of Sebewaing.

Drainage area.--62 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 9, 1941; recording thereafter. Datum of gage is 590.0 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,700 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)
1940	Mar. 29, 1940	8.10	1,740	1949	Feb. 19, 1949	6.10	770
1941	Dec. 29, 1940	4.8	542		Feb. 25, 1949	5.84	682
	Mar. 18, 1941	a6.3	-	1950	Jan. 26, 1950	6.33	858
1942	Mar. 9, 1942	a12.8	(b)		Mar. 8, 1950	c9.05	770
	Mar. 16, 1942	10.36	2,660		Mar. 25, 1950	5.45	555
	June 1, 1942	5.62	792		Mar. 27, 1950	7.72	1,390
	June 19, 1942	9.32	2,220		Apr. 1, 1950	6.00	735
1943	Dec. 28, 1942	a6.75	(b)		Apr. 4, 1950	8.07	1,550
	Feb. 24, 1943	a11.1	(b)		July 18, 1950	6.02	735
	Mar. 16, 1943	a12.52	2,400		Aug. 1, 1950	5.28	510
	May 11, 1943	5.89	860	1951	Dec. 3, 1950	(a)	1,100
	June 1, 1943	5.11	550		Dec. 7, 1950	6.13	788
	June 27, 1943	5.75	800		Jan. 4, 1951	(a)	550
1944	Feb. 26, 1944	8.12	1,740		Feb. 20, 1951	a11.32	d1,000
	Mar. 17, 1944	6.07	920		Feb. 26, 1951	(a)	900
	Mar. 23, 1944	5.00	515		Mar. 3, 1951	5.47	555
	Mar. 28, 1944	5.46	680		Mar. 30, 1951	5.55	585
1945	May 18, 1945	6.26	900		Apr. 22, 1951	5.58	600
	June 2, 1945	8.73	1,880		Apr. 25, 1951	6.95	1,110
	June 28, 1945	8.86	1,960	1952	Nov. 13, 1951	6.44	892
	Sept. 1, 1945	5.41	575		Jan. 1, 1952	8.39	1,670
1946	Oct. 1, 1945	7.85	1,520		Jan. 15, 1952	a10.53	1,000
	Jan. 5, 1946	a7.46	(b)		Feb. 1, 1952	a10.98	1,200
	Jan. 9, 1946	7.02	1,110		Mar. 11, 1952	8.80	1,850
	Mar. 4, 1946	a11.37	-		Mar. 19, 1952	5.57	585
	Mar. 6, 1946	9.47	2,160		Apr. 8, 1952	7.01	1,110
1947	Mar. 25, 1947	(a)	(b)		Apr. 13, 1952	7.42	1,270
	Apr. 5, 1947	(a)	2,200	1953	July 21, 1952	5.75	648
1948	Mar. 17, 1948	a11.43	(b)		Mar. 4, 1953	a6.63	550
	Mar. 20, 1948	9.5	2,160		Mar. 15, 1953	5.55	580
	Mar. 31, 1948	5.60	600		May 1, 1953	7.24	1,190
1949	Jan. 19, 1949	a6.88	800		Aug. 8, 1953	5.65	612
	Feb. 15, 1949	6.50	910	1954	Feb. 16, 1954	a7.59	780
					Feb. 21, 1954	a10.48	1,150
					Mar. 19, 1954	5.30	505
					Mar. 25, 1954	9.83	2,340
					Apr. 27, 1954	7.03	1,150

a Backwater from ice, water from ice).

b Discharge exceeded base.

c Occurred Mar. 7, 1950 (back-

d Daily mean discharge.

1580. East Fork Sebewaing River (Columbia drain) near Sebewaing, Mich.

Location.--Lat 43°44', long 83°24', on line between secs. 10 and 11, T.15 N., R.9 E., on right bank 10 ft downstream from highway bridge on Gettel Road, 2¼ miles upstream from mouth, and 2½ miles southeast of Sebewaing.

Drainage area.--38 sq mi, approximately.

Gage.--Nonrecording prior to Apr. 1, 1941; recording thereafter. Datum of gage is 607.00 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs.

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

Peak stages and discharges of East Fork Sebewaing River (Columbia drain) near, Sebewaing, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 30, 1940	a7.07	670	1949	Feb. 15, 1949	4.22	525
	June 8, 1940	3.2	292		Feb. 19, 1949	(a)	(b)
					Feb. 25, 1949	3.62	343
1941	Jan. 3, 1941	2.44	110				
	Mar. 17, 1941	a4.93	-	1950	Jan. 26, 1950	3.70	300
					Mar. 8, 1950	a4.58	400
1942	Mar. 9, 1942	a8.47	(b)		Mar. 23, 1950	(a)	(b)
	Mar. 17, 1942	5.24	1,050		Mar. 27, 1950	4.22	488
	June 19, 1942	4.45	708		Apr. 4, 1950	4.13	452
					July 18, 1950	4.18	472
1943	Dec. 28, 1942	(a)	(b)		July 31, 1950	3.90	360
	Feb. 24, 1943	(a)	(b)				
	Mar. 16, 1943	a9.70	910	1951	Dec. 3, 1950	e5.34	450
	May 11, 1943	4.06	548		Dec. 7, 1950	e4.75	300
	June 1, 1943	4.12	565		Jan. 4, 1951	e4.16	300
	June 13, 1943	3.79	460		Feb. 20, 1951	e5.00	550
	June 28, 1943	3.37	323		Feb. 26, 1951	e5.92	600
					Mar. 3, 1951	4.04	416
1944	Feb. 27, 1944	4.48	730		Mar. 24, 1951	3.46	230
	Mar. 12, 1944	a4.96	418		Mar. 30, 1951	4.04	416
	Mar. 17, 1944	3.67	418		Apr. 1, 1951	3.46	230
	Mar. 23, 1944	3.00	216		Apr. 19, 1951	3.38	210
	Mar. 29, 1944	3.26	290		Apr. 22, 1951	4.29	516
					Apr. 25, 1951	5.28	1,100
1945	May 8, 1945	3.09	205				
	May 18, 1945	3.45	296	1952	Nov. 13, 1951	e3.79	261
	June 2, 1945	4.32	560		Jan. 1, 1952	a5.33	500
	June 28, 1945	3.86	410		Jan. 15, 1952	4.64	690
					Jan. 17, 1952	4.60	670
1946	Oct. 2, 1945	3.94	440		Feb. 2, 1952	4.79	774
	Jan. 5, 1946	(a)	(b)		Mar. 4, 1952	4.14	456
	Jan. 9, 1946	3.94	440		Mar. 11, 1952	6.12	1,720
	Mar. 7, 1946	c5.50	708		Mar. 19, 1952	4.31	525
					Apr. 7, 1952	5.33	1,140
1947	Jan. 26, 1947	a4.66	(b)		Apr. 13, 1952	4.91	840
	Mar. 24, 1947	(a)	(b)		July 21, 1952	4.01	404
	Apr. 5, 1947	(a)	d1,100				
	Apr. 11, 1947	3.20	231	1953	Mar. 4, 1953	a5.96	330
	May 21, 1947	3.18	226		Mar. 13, 1953	3.48	235
					Mar. 15, 1953	4.10	440
1948	Mar. 17, 1948	a6.80	(b)		May 2, 1953	4.71	726
	Mar. 20, 1948	4.87	805				
	Mar. 27, 1948	3.42	287	1954	Feb. 16, 1954	a4.95	500
	Apr. 1, 1948	3.61	340		Feb. 21, 1954	a7.19	700
					Mar. 20, 1954	a4.00	300
1949	Dec. 30, 1948	3.22	236		Mar. 25, 1954	a7.25	1,600
	Jan. 6, 1949	3.21	234		Apr. 27, 1954	3.85	345
	Jan. 19, 1949	(a)	(b)		June 22, 1954	3.76	318
	Feb. 13, 1949	a4.50	-				

a Backwater from ice.

b Discharge exceeds base.

c Occurred Mar. 6, 1946

(backwater from ice).

d Revised.

e Occurred at different time than peak discharge (backwater from ice).

1585. Pigeon River near Owendale, Mich.

Location.--Lat 43°45'35", long 83°14'45", in SE¹/₄ sec.36, T.16 N., R.10 E., on left bank 600 ft downstream from bridge on county road, 2 miles downstream from confluence of East and West Branches, and 2½ miles northeast of Owendale.

Drainage area.--55 sq mi, approximately.

Gage.--Nonrecording and, after Jan. 22, 1954, crest-stage gage prior to June 10, 1954; recording thereafter. At site 600 ft upstream prior to June 10, 1954. Altitude of gage is 645 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peak shown for 1953.

Peak stages and discharges of Pigeon River near Owendale, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	May 1, 1953	8.0	1,130	1956	May 13, 1956	5.81	579
1954	Feb. 16, 1954	a9.6	b600	1957	June 29, 1957	c6.62	468
	Feb. 21, 1954	a9.5	b800	1958	Mar. 6, 1958	d6.34	b320
	Mar. 25, 1954	10.75	2,550				
	June 17, 1954	8.81	1,460	1959	Apr. 2, 1959	e9.77	1,320
1955	Mar. 11, 1955	7.69	1,020	1960	Dec. 29, 1959	5.87	554
1956	Mar. 7, 1956	a6.65	600		Mar. 30, 1960	a10.25	2,000
	Mar. 23, 1956	6.40	655		Apr. 3, 1960	6.38	653
	Apr. 4, 1956	5.93	596	1961	Mar. 23, 1961	3.25	166
	Apr. 29, 1956	7.20	875				
	May 6, 1956	8.37	1,290	1962	Mar. 18, 1962	a9.45	750
	May 10, 1956	7.52	960				

a Backwater from ice. b Daily mean discharge; peak greater than base discharge.
 c Occurred Feb. 26, 1957 (backwater from ice). d Occurred Mar. 2, 1958 (backwater from ice). e Occurred Mar. 25, 1959 (backwater from ice).

1590. Pigeon River near Pigeon, Mich.

Location.--Lat 43°48'55", long 83°17'10", in NE $\frac{1}{4}$ sec.15, T.16 N., R.10 E., on upstream side of highway bridge, 0.1 mile downstream from West Branch Extension and 1 mile southwest of Pigeon.

Drainage area.--86 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 607 ft (from county map).

Stage-discharge relation.--Defined by current-meter measurements below 1,700 cfs.

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1947	Mar. 23, 1947	a12.66	2.7	-	1950	Mar. 28, 1950	13.95	-	3,700
	Apr. 5, 1947	-	-	b3,100	1951	Feb. 20, 1951	12.70	1.5	-
1948	Mar. 19, 1948	14.90	2.5	-		Feb. 27, 1951	-	-	1,760
	Mar. 20, 1948	-	-	b2,800	1952	Feb. 5, 1952	12.40	1.1	-
1949	Jan. 19, 1949	12.15	.8	-		Mar. 11, 1952	-	-	1,580
	Feb. 15, 1949	-	-	b1,000					

a Maximum observed; may have been greater during period of doubtful gage-height record Apr. 3-5, 1947.

b Maximum daily.

STREAMS TRIBUTARY TO ST. CLAIR RIVER

1595. Black River near Fargo, Mich.

Location.--Lat 43°06', long 82°37', in NW $\frac{1}{4}$ sec.32, T.8 N., R.16 E., on left bank 20 ft downstream from bridge on Norman Road, 2 $\frac{1}{2}$ miles southeast of Fargo, 4 $\frac{1}{2}$ miles upstream from Mill Creek, and 12 miles northwest of Port Huron.

Drainage area.--475 sq mi.

Gage.--Nonrecording prior to July 9, 1954; recording thereafter. Datum of gage is 613.75 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 9,500 cfs.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 3,500 cfs. Only annual peaks are shown prior to 1955.

Peak stages and discharges of Black River near Fargo, Mich.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	Feb. 27, 1944	12.2	3.6	3,900	1956	May 7, 1956	11.86	-	6,980
1945	May 18, 1945	10.90	-	6,050		May 10, 1956	11.33	-	6,170
						May 12, 1956	11.65	-	6,560
1946	Mar. 5, 1946	12.38	-	8,480	1957	Feb. 27, 1957	10.68	3.0	-
1947	Apr. 5, 1947	16.06	-	14,400		Apr. 6, 1957	-	-	3,500
1948	Mar. 16, 1948	14.97	3.2	-		Apr. 28, 1957	9.34	-	4,020
	Mar. 20, 1948	-	-	9,880	1958	Dec. 21, 1957	5.75	-	1,300
1949	Feb. 15, 1949	a11.95	2.0	-		Mar. 1, 1958	8.21	2.8	-
	Feb. 16, 1949	-	-	b5,500	1959	Mar. 21, 1959	-	-	5,000
1950	Mar. 28, 1950	13.2	-	9,720		Mar. 26, 1959	-	-	6,500
						Apr. 3, 1959	12.45	-	7,210
1951	Dec. 4, 1950	10.83	-	a6,210	1960	Dec. 13, 1959	9.2	-	3,680
	Feb. 20, 1951	a18.05	8.0	-		Dec. 29, 1959	-	-	5,500
1952	Feb. 5, 1952	a17.01	6.3	-		Mar. 31, 1960	14.24	-	10,100
	Mar. 13, 1952	-	-	b6,500	1961	Feb. 24, 1961	8.5C	3.0	-
1953	Aug. 5, 1953	9.0	-	4,150		Apr. 26, 1961	6.13	-	1,460
1954	Feb. 17, 1954	14.69	2.6	b7,500	1962	Mar. 13, 1962	13.94	1.9	6,700
						Mar. 19, 1962	10.56	-	4,870
1955	Oct. 16, 1954	10.24	-	5,460					
	Dec. 29, 1954	c9.38	-	4,200					
	Jan. 6, 1955	9.10	-	4,250					
	Feb. 22, 1955	12.24	-	(d)					
1956	Mar. 7, 1956	14.04	2.2	6,900					
	Apr. 30, 1956	9.87	-	4,580					

a Maximum observed. b Maximum daily. c Occurred Dec. 28, 1954 (backwater from ice). d Exceeds base discharge.

1600. Mill Creek near Abbotsford, Mich.

Location.--Lat 43°03', long 82°37', in NW $\frac{1}{4}$ sec.17, T.7 N., R.16 E., on downstream side of highway bridge, 1 mile upstream from mouth and 2 miles north-east of Abbotsford.

Drainage area.--208 sq mi.

Gage.--Nonrecording and, since Jan. 21, 1954, crest-stage gage. Datum of gage is 609.80 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Base for partial-duration series, 900 cfs. Only annual peaks are shown prior to 1954.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 20, 1948	a10.10	3,030	1956	May 13, 1956	7.7	2,000
1949	Feb. 15, 1949	7.26	1,650				
1950	Apr. 4, 1950	8.7	2,650	1957	May 20, 1957	6.2	1,120
1951	Feb. 27, 1951	b10.81	c1,700	1958	Dec. 20, 1957	e5.39	526
1952	Mar. 11, 1952	7.1	1,530				
1953	Mar. 16, 1953	5.65	890	1959	Mar. 15, 1959	6.01	1,080
					Mar. 21, 1959	6.37	1,260
1954	Feb. 16, 1954	d9.7	2,500		Mar. 26, 1959	7.17	1,700
	Mar. 25, 1954	6.33	1,260		Apr. 3, 1959	7.30	1,780
					June 2, 1959	6.03	1,100
1955	Oct. 16, 1954	6.39	1,280	1960	Dec. 13, 1959	5.79	945
	Jan. 2, 1955	5.67	905		Dec. 29, 1959	6.44	1,320
	Jan. 6, 1955	6.25	1,200		Mar. 31, 1960	9.18	3,070
	Mar. 4, 1955	6.63	1,400		Apr. 25, 1960	8.00	2,300
1956	Mar. 2, 1956	6.25	1,200				
	Mar. 7, 1956	7.74	2,020	1961	Apr. 25, 1961	5.05	558
	Apr. 29, 1956	6.45	1,300				
	May 6, 1956	7.3	1,780	1962	Mar. 13, 1962	8.98	2,940
	May 10, 1956	7.82	2,080		Mar. 19, 1962	7.03	1,680

a Observed Feb. 28, 1948 (backwater from ice). b Observed Jan. 3, 1951 (backwater from ice). c Maximum daily. d Backwater from ice. e Occurred Mar. 1, 1958 (backwater from ice).

1605. Black River near Port Huron, Mich.

Location.--Lat 42°59', long 82°32', in NW¹ sec.2, T.6 N., R.16 E., on downstream side of highway bridge, 6 miles west of Port Huron and 10 miles upstream from mouth.

Drainage area.--634 sq mi.

Gage.--Nonrecording. Datum of gage is 574.42 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs.

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)
1933	Apr. 2, 1933	19.4	7,040	1939	Feb. 19, 1939	12.2	2,950
1934	Apr. 4, 1934	16.0	5,000	1940	Mar. 31, 1940	c21.33	6,800
1935	Mar. 6, 1935	a19.24	b4,500				
1936	Mar. 16, 1936	13.6	3,740	1941	Jan. 3, 1941	d13.6f	e2,500
1937	Apr. 22, 1937	17.2	5,720	1942	Mar. 18, 1942	23.3	12,300
1938	Feb. 7, 1938	20.0	8,200	1943	May 12, 1943	24.2	13,600

a Maximum observed (backwater from ice).

b Maximum daily.

c Observed Mar. 30, 1940 (backwater from ice).

d Observed Dec. 30, 1940 (backwater from ice).

e Maximum observed.

STREAMS TRIBUTARY TO LAKE ST. CLAIR

1610. Clinton River at Auburn Heights, Mich.
(Published as "at Pontiac," 1935-40)

Location.--Lat 42°38'00", long 83°13'28", in NW¹ sec.36, T.3 N., R.10 E., on right bank 30 ft upstream from bridge on State Highway 59 at Auburn Heights and 2.8 miles upstream from Galloway Creek.

Drainage area.--119 sq mi; at site prior to October 1940, 123 sq mi.

Gage.--Nonrecording at site 3.3 miles upstream at datum 876.01 ft above mean sea level prior to October 1956; recording thereafter. Datum of gage is 846.50 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 150 cfs 1935-40; defined by current-meter measurements thereafter.

Bankfull stage.--Not subject to overflow.

Remarks.--Some regulation by many lakes upstream, some of which have dams at outlets for lake-level control. Base for partial-duration series, 300 cfs. Only annual peaks are shown 1936-40.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Feb. 6, 1936	a4.56	b300	1959	Apr. 8, 1959	2.71	335
1937	July 12, 1937	3.90	445		July 24, 1959	2.7f	318
1938	Feb. 12, 1938	5.10	716		July 29, 1959	3.0f	428
1939	Feb. 28, 1939	2.92	245		Aug. 28, 1959	2.6f	300
1940	Mar. 26, 1940	3.31	498				
1957	May 19, 1957	2.68	326	1960	Oct. 6, 1959	2.90	374
	June 14, 1957	2.67	323		Jan. 13, 1960	2.64	313
	July 8, 1957	3.24	503		Mar. 27, 1960	2.6f	307
1958	July 3, 1958	3.01	425		Apr. 17, 1960	2.6f	325
1959	Mar. 6, 1959	3.22	496		Apr. 25, 1960	2.7f	353
	Apr. 2, 1959	3.34	536	1961	Apr. 25, 1961	2.91	381
	Apr. 3, 1959	2.97	415		June 1, 1961	3.21	473
				1962	Mar. 12, 1962	3.27	512

a Backwater from ice.

b Maximum daily discharge.

1615. Paint Creek near Lake Orion, Mich.

Location.--Lat 42°46'03", long 83°13'12", in NE $\frac{1}{4}$ sec.13, T.4 N., R.10 E., on left bank 100 ft upstream from railroad bridge, 1.6 miles southeast of Lake Orion, and 2.8 miles upstream from Trout Creek.

Drainage area.--38.9 sq mi.

Gage.--Recording. Altitude of gage is 940 ft (from topographic map).

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

Bankfull stage.--Not subject to overflow.

Remarks.--Occasional regulation by Lake Orion. Base for partial-duration series, 90 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Mar. 6, 1956	3.60	340	1959	Apr. 5, 1959	2.83	149
	Mar. 8, 1956	3.10	212				
	May 1, 1956	3.10	212		Apr. 1, 1960	3.33	289
	May 13, 1956	3.23	244		Apr. 19, 1960	2.52	90
	June 20, 1956	2.54	93		Apr. 28, 1960	2.53	92
1957	Jan. 15, 1957	a2.92	-	1961	Apr. 4, 1961	a2.83	-
	May 22, 1957	2.75	130		Apr. 25, 1961	2.32	62
	July 13, 1957	2.56	91	1962	Mar. 3, 1962	a2.97	-
1958	Dec. 25, 1957	2.26	61		Mar. 14, 1962	2.62	109
	Feb. 17, 1958	a2.89	-		Mar. 23, 1962	2.49	90
1959	Apr. 1, 1959	2.65	112				

a Backwater from ice.

1620. Red Run near Royal Oak, Mich.

Location.--Lat 42°31'06", long 83°05'44", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.12, T.1 N., R.11 E., on right bank 600 ft upstream from bridge on Thirteen Mile Road, 1.5 miles east of Royal Oak city limits, and 10 miles upstream from mouth.

Drainage area.--36.5 sq mi.

Gage.--Recording. Datum of gage is 600.36 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 3,050 cfs and by slope-area measurement at 3,430 cfs.

Remarks.--This drain carries the storm runoff from a completely sewered urban area; open channel begins at Campbell Road receiving basin 2 miles upstream. 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)
1955	Oct. 4, 1954	11.62	2,360	1960	June 14, 1960	12.1	2,740
1956	June 18, 1956	14.68	4,600	1961	Sept. 25, 1961	10.77	1,980
1957	Apr. 25, 1957	12.54	3,000		June 12, 1962	10.95	2,080
1958	Aug. 6, 1958	8.80	1,160				
1959	Aug. 16 or 23, 1959	12.1	2,740				

1629. Big Beaver Creek near Warren, Mich.
(Published as "at Warren" prior to 1959)

Location.--Lat 42°32'31", long 83°02'52", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.2 N., R.12 E., on left bank at downstream side of bridge on Mound Road, 1.0 mile north of Warren and 2.0 miles upstream from mouth.

Drainage area.--23.5 sq mi.

Gage.--Nonrecording prior to Aug. 26, 1960; recording thereafter. At site 1 mile downstream at different datum prior to Oct. 1, 1958. Datum of gage is 598.80 ft above mean sea level, datum of 1929 (Macomb County bench mark).

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

Bankfull stage.--13 ft.

Remarks.--Base for partial-duration series, 170 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Feb. 16, 1954	10.03	230	1957	July 8, 1957	12.50	701
	Mar. 25, 1954	13.05	809		July 12, 1957	11.0	430
	Apr. 26, 1954	10.35	291	1958	Nov. 15, 1957	9.0	190
1955	Jan. 2, 1955	10.38	310		Dec. 17, 1957	8.9	178
	Jan. 6, 1955	10.44	316		Dec. 20, 1957	11.0	430
	Feb. 21, 1955	10.51	300		Dec. 26, 1957	8.9	178
	Mar. 1, 1955	10.0	260	1959	Mar. 6, 1959	12.52	500
	Mar. 4, 1955	9.5	200		Apr. 2, 1959	12.53	560
	Mar. 16, 1955	9.77	230		Apr. 28, 1959	9.80	230
1956	Feb. 25, 1956	11.45	480	1960	Oct. 7, 1959	11.0	353
	Mar. 2, 1956	10.82	381		Nov. 14, 1959	12.05	475
	Mar. 7, 1956	11.48	497		Dec. 12, 1959	10.89	341
	Mar. 30, 1956	9.94	270		Dec. 28, 1959	10.78	328
	Apr. 29, 1956	13.9	1,060		Jan. 13, 1960	10.61	310
	May 6, 1956	10.6	350		Feb. 6, 1960	9.40	193
	May 10, 1956	12.65	740		Mar. 28, 1960	12.2	494
	May 13, 1956	13.6	970		Apr. 17, 1960	10.08	254
	June 18, 1956	12.0	593		June 17, 1960	12.45	527
1957	Feb. 27, 1957	10.2	300	1961	Apr. 25, 1961	10.73	331
	Apr. 5, 1957	10.67	362	1962	Mar. 12, 1962	13.55	798
	Apr. 25, 1957	12.39	676				
	May 19, 1957	12.28	652				

a Occurred at different time than peak discharge (backwater from ice).

b Backwater from ice.

1635. Plum Brook near Utica, Mich.

Location--Lat 42°35'01", long 83°01'49", in SW $\frac{1}{4}$ sec.15, T.2 N., R. 12 E., on right bank at downstream side of bridge on State Highway 53, 3.0 miles south of Utica and 3.4 miles upstream from mouth.

Drainage area--22.9 sq mi.

Gage--Recording. Datum of gage is 602.49 ft above mean sea level, datum of 1929 (levels by Macomb County).

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

Bankfull stage--8 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)
1954	Feb. 16, 1954	7.36	362	1957	July 11, 1957	6.65	270
	Mar. 25, 1954	8.20	720	1958	Nov. 14, 1957	5.73	186
	Apr. 26, 1954	5.24	174		Dec. 20, 1957	6.92	301
1955	Jan. 2, 1955	5.61	180		Dec. 26, 1957	5.96	207
	Jan. 6, 1955	6.39	245	1959	Mar. 3, 1959	a6.58	170
	Feb. 21, 1955	a6.61	200		Mar. 6, 1959	a7.62	270
	Feb. 27, 1955	a6.98	-		Apr. 2, 1959	7.32	357
	Mar. 1, 1955	5.50	162		Apr. 8, 1959	5.43	170
	Mar. 4, 1955	6.10	210		Apr. 28, 1959	6.03	212
	Mar. 11, 1955	5.69	176	1960	Oct. 6, 1959	6.28	234
1956	Feb. 24, 1956	a7.98	(b)		Nov. 14, 1959	7.07	312
	Mar. 1, 1956	a7.87	(b)		Dec. 12, 1959	6.26	218
	Mar. 7, 1956	7.64	435		Dec. 28, 1959	6.40	232
	Apr. 29, 1956	8.60	980		Jan. 13, 1960	6.36	228
	May 6, 1956	6.51	255		Mar. 28, 1960	7.30	351
	May 10, 1956	8.15	720		Mar. 31, 1960	6.74	268
	May 13, 1956	7.60	420		Apr. 17, 1960	5.63	167
	May 17, 1956	5.46	170		June 14, 1960	6.14	208
	June 18, 1956	6.19	227		June 17, 1960	7.35	361
1957	Apr. 5, 1957	6.36	241	1961	Apr. 25, 1961	6.65	258
	Apr. 25, 1957	8.18	708		1962	a9.67	600
	May 20, 1957	8.13	678				
	July 8, 1957	7.19	337				

a Backwater from ice.

b Exceeds base.

1640. Clinton River near Fraser, Mich.

Location.--Lat 42°34'40", long 82°57'00", in NW $\frac{1}{4}$ sec.20, T.2 N., R.13 E., on left bank 800 ft downstream from bridge on Garfield Road, 2 $\frac{1}{2}$ mile^s north of Fraser, and 4 miles upstream from North Branch.

Drainage area.--445 sq mi.

Gage.--Nonrecording at site 800 ft upstream prior to Nov. 17, 1949; recording thereafter. Datum of gage is 577.71 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 4,000 cfs.

Bankfull stage.--15 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)
1947	Apr. 5, 1947	a20	9,000	1955	Jan. 6, 1955	12.18	1,620
1948	Feb. 20, 1948	b13.1	1,300		Feb. 21, 1955	b12.62	1,600
	Feb. 28, 1948	14.7	2,950		Mar. 1, 1955	12.04	1,700
	Mar. 16, 1948	13.7	2,180		Mar. 4, 1955	11.85	1,580
	Mar. 20, 1948	16.0	4,150		Mar. 11, 1955	10.86	1,280
	Mar. 28, 1948	11.0	1,180		Mar. 16, 1955	11.06	1,340
	Apr. 1, 1948	13.7	2,180	1956	Nov. 3, 1955	10.93	1,210
	May 11, 1948	19.5	8,000		Feb. 25, 1956	b13.47	d1,000
	June 24, 1948	12.8	1,720		Mar. 3, 1956	12.06	1,600
1949	Jan. 19, 1949	11.4	1,280		Mar. 8, 1956	14.84	3,230
	Feb. 15, 1949	15.7	3,850		Mar. 30, 1956	10.57	1,130
	Apr. 1, 1949	14.0	2,390		Apr. 29, 1956	16.52	5,160
1950	Dec. 23, 1949	13.3	2,140		May 7, 1956	12.51	1,760
	Jan. 4, 1950	-	c2,500		May 10, 1956	15.81	4,320
	Jan. 11, 1950	-	c1,500		May 13, 1956	15.35	3,880
	Jan. 14, 1950	12.1	1,540		June 18, 1956	15.24	3,660
	Jan. 26, 1950	13.5	2,260	1957	Aug. 5, 1956	11.33	1,330
	Feb. 15, 1950	15.6	4,430		Jan. 22, 1957	10.88	1,250
	Mar. 8, 1950	13.2	2,090		Feb. 27, 1957	12.02	1,570
	Mar. 28, 1950	15.0	3,650		Apr. 6, 1957	12.63	1,820
	Apr. 5, 1950	16.94	6,120		Apr. 25, 1957	-	2,800
	Apr. 26, 1950	12.5	1,740		May 20, 1957	14.68	3,110
1951	Dec. 3, 1950	13.02	1,990		June 17, 1957	10.61	1,180
	Dec. 8, 1950	14.80	3,430		July 8, 1957	15.35	3,870
	Jan. 4, 1951	12.88	1,940	1958	July 12, 1957	12.97	1,980
	Feb. 13, 1951	b14.27	c1,300		Oct. 24, 1957	11.44	1,390
	Feb. 20, 1951	13.34	2,140		Nov. 15, 1957	11.12	1,300
	Feb. 27, 1951	11.96	1,530		Dec. 20, 1957	13.00	2,000
	Mar. 4, 1951	11.88	1,500		Dec. 26, 1957	11.47	1,400
	Mar. 15, 1951	11.22	1,300	1959	Mar. 3, 1959	11.74	1,480
	Mar. 30, 1951	12.12	1,560		Mar. 6, 1959	13.55	2,290
	Apr. 9, 1951	11.11	1,280		Mar. 15, 1959	10.96	1,250
1952	Oct. 24, 1951	11.00	1,210		Apr. 3, 1959	14.07	2,610
	Dec. 5, 1951	10.78	1,160		Apr. 8, 1959	11.76	1,490
	Jan. 2, 1952	-	c1,700		Apr. 28, 1959	11.75	1,480
	Jan. 15, 1952	13.81	2,500	1960	May 21, 1959	11.67	1,460
	Jan. 20, 1952	12.75	1,890		Oct. 7, 1959	12.80	1,900
	Jan. 27, 1952	12.04	1,540		Nov. 14, 1959	13.13	2,060
	Feb. 4, 1952	13.58	2,360		Dec. 12, 1959	-	1,800
	Mar. 4, 1952	12.76	1,890		Dec. 29, 1959	12.10	1,600
	Mar. 11, 1952	14.66	3,340		Jan. 13, 1960	12.65	1,820
	Mar. 19, 1952	12.38	1,700		Feb. 6, 1960	10.45	1,100
	Mar. 23, 1952	12.36	1,700		Feb. 11, 1960	11.16	1,310
	Apr. 6, 1952	11.23	1,270		Mar. 31, 1960	13.28	2,140
	Apr. 14, 1952	13.67	2,430		Apr. 17, 1960	12.23	1,650
	Apr. 23, 1952	10.95	1,210		June 14, 1960	12.58	1,790
1953	Mar. 4, 1953	11.81	1,460		June 17, 1960	14.50	2,940
1954	Feb. 17, 1954	13.12	2,050	1961	Apr. 25, 1961	13.33	2,160
	Mar. 25, 1954	15.16	3,900		May 9, 1961	10.95	1,240
	Apr. 27, 1954	10.73	1,130	1962	Nov. 16, 1961	11.37	1,370
1955	Oct. 4, 1954	13.54	2,290		Feb. 26, 1962	10.61	1,140
	Oct. 16, 1954	10.70	1,130		Mar. 13, 1962	15.37	3,850
	Jan. 2, 1955	11.26	1,300		June 12, 1962	11.78	1,520

a Annual peak; from floodmark at present site. b Backwater from ice. c Daily mean discharge. d Daily mean, peak probably exceeded base.

1645. North Branch Clinton River near Mount Clemens, Mich.

Location.--Lat 42°37'45", long 82°53'25", in NW $\frac{1}{4}$ sec.2, T.2 N., R.13 E., on left bank 30 ft upstream from bridge on State Highway 59, 2 miles north of Mount Clemens, and 3 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--199 sq mi.

Gage.--Nonrecording prior to Nov. 15, 1949; recording thereafter. Datum of gage is 576.38 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 3,300 cfs.

Bankfull stage.--13 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)
1947	Apr. 5, 1947	a20.0	-	1954	Feb. 17, 1954	15.52	3,900
1948	Feb. 21, 1948	b12.8	c700	Mar. 21, 1954	8.92	665	
	Feb. 29, 1948	b14.3	c1,500	Mar. 26, 1954	13.85	2,150	
	Mar. 17, 1948	13.6	2,140	Apr. 21, 1954	10.04	875	
	Mar. 20, 1948	15.6	4,080	1955	Jan. 7, 1955	10.46	975
	Apr. 1, 1948	11.9	1,360		Feb. 23, 1955	10.54	975
	Apr. 12, 1948	9.4	776		Feb. 28, 1955	11.74	1,270
	May 8, 1948	9.1	716		Mar. 5, 1955	11.47	1,220
	May 11, 1948	d16.9	c4,000		Mar. 12, 1955	8.80	650
1949	Feb. 16, 1949	14.6	3,000	1956	Mar. 2, 1956	14.01	2,550
	Apr. 1, 1949	12.7	1,580		Mar. 7, 1956	15.77	4,510
1950	Dec. 23, 1949	11.72	1,270		Apr. 30, 1956	16.87	5,830
	Jan. 4, 1950	13.21	1,800		May 7, 1956	14.68	3,270
	Jan. 11, 1950	9.80	835	May 10, 1956	13.62	2,190	
	Jan. 15, 1950	10.01	875	May 13, 1956	16.72	5,590	
	Jan. 27, 1950	11.41	1,200	May 19, 1956	9.92	855	
	Feb. 15, 1950	14.38	2,640	1957	Feb. 27, 1957	b10.70	900
	Mar. 9, 1950	-	c1,000		Apr. 6, 1957	12.67	1,670
	Mar. 28, 1950	15.33	3,660		Apr. 26, 1957	12.44	1,580
	Apr. 4, 1950	d17.5	c4,500		May 20, 1957	14.65	3,220
	Apr. 26, 1950	9.53	775	1958	Nov. 16, 1957	9.09	666
1951	Oct. 13, 1950	9.07	695		Dec. 20, 1957	-	1,600
	Nov. 21, 1950	10.72	1,020		Dec. 27, 1957	11.14	1,080
	Dec. 4, 1950	14.73	2,960		1959	Mar. 3, 1959	e12.48
	Dec. 8, 1950	-	2,800	Mar. 7, 1959		b13.85	c700
	Jan. 4, 1951	13.13	1,750	Mar. 16, 1959		g11.44	800
	Feb. 13, 1951	-	c1,000	Mar. 20, 1959		-	(f)
	Feb. 20, 1951	-	c2,000	Apr. 3, 1959		13.01	1,820
	Feb. 27, 1951	-	c1,500	1960	Nov. 15, 1959	11.67	1,290
1952	Dec. 6, 1951	9.01	680		Dec. 13, 1959	11.5	1,240
	Jan. 18, 1952	c13.51	1,750		Dec. 29, 1959	11.3	1,180
	Feb. 5, 1952	13.37	1,900		Jan. 14, 1960	9.87	849
	Mar. 5, 1952	11.24	1,140		Feb. 12, 1960	9.18	711
	Mar. 12, 1952	14.25	2,460		Mar. 29, 1960	13.98	2,530
	Mar. 20, 1952	11.13	1,120		Apr. 17, 1960	11.47	1,230
	Mar. 24, 1952	10.73	1,020		Apr. 26, 1960	12.93	1,780
	Apr. 6, 1952	11.12	1,120	1961	Apr. 26, 1961	10.80	941
	Apr. 14, 1952	13.73	2,080		1962	Mar. 13, 1962	b17.20
1953	Mar. 5, 1953	11.1	1,120				
	Mar. 16, 1953	9.47	775				

a Annual peak, from floodmark.

b Backwater from ice.

c Daily mean discharge.

d Backwater from Clinton River.

e Occurred Mar. 4, 1959 (backwater from ice).

f Exceeded base.

g Occurred Mar. 17, 1959 (backwater from ice).

1655. Clinton River at Mount Clemens, Mich.

Location.--Lat 42°35'45", long 82°54'35", on left bank 20 ft downstream from bridge on Moravian Drive, a quarter of a mile downstream from North Branch, and half a mile west of Mount Clemens.

Drainage area.--734 sq mi.

Gage.--Nonrecording prior to Jan. 12, 1939; recording thereafter. Datum of gage is 570.43 ft above mean sea level, datum of 1929. Nonrecording auxiliary gage $1\frac{1}{2}$ miles downstream Mar. 15, 1938, to Jan. 3, 1952; recording gage 2 miles downstream thereafter.

Stage-discharge relation.--Defined by current-meter measurements. Substantial change in the high-water stage-discharge relation occurred in the fall of 1951 upon completion of the Clinton River cut-off canal.

Bankfull stage.--13 ft.

Remarks.--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)
1935	Mar. 12, 1935	11.2	3,320	1948	Mar. 17, 1948	12.10	3,850
1936	Mar. 12, 1936	10.6	2,960		Mar. 20, 1948	17.38	8,440
					Apr. 1, 1948	11.79	3,640
1937	Feb. 9, 1937	11.42	3,440		May 11, 1948	19.89	13,500
	Feb. 22, 1937	10.7	3,020	1949	Feb. 15, 1949	16.30	7,000
	Apr. 16, 1937	12.6	4,220		Apr. 1, 1949	13.04	4,650
	Apr. 22, 1937	14.8	5,760				
	Apr. 27, 1937	10.7	3,020	1950	Dec. 23, 1949	11.86	3,880
1938	Feb. 7, 1938	16.1	6,800		Jan. 5, 1950	13.98	5,450
	Feb. 14, 1938	20.7	13,900		Jan. 27, 1950	12.13	4,020
	Feb. 19, 1938	11.5	3,500		Feb. 15, 1950	16.82	7,500
	Mar. 24, 1938	14.7	5,690		Mar. 9, 1950	12.27	4,160
1939	Feb. 20, 1939	17.13	8,460		Mar. 28, 1950	17.13	7,820
	Apr. 12, 1939	11.0	3,200		Apr. 5, 1950	20.04	13,000
	Apr. 18, 1939	11.53	3,500	1951	Dec. 4, 1950	-	a3,900
1940	Mar. 30, 1940	13.24	4,940		Dec. 9, 1950	15.8	7,270
1941	Dec. 30, 1940	13.93	5,460		Jan. 4, 1951	12.93	4,410
	Apr. 20, 1941	12.6	4,220		Feb. 20, 1951	14.08	6,360
1942	Mar. 18, 1942	12.5	4,150		Feb. 28, 1951	11.26	4,290
1943	Dec. 29, 1942	15.21	6,450		Mar. 5, 1951	10.28	3,180
	Feb. 11, 1943	12.34	4,010		Mar. 30, 1951	10.68	3,810
	Feb. 24, 1943	12.97	4,550	1952	Jan. 18, 1952	11.88	4,740
	Mar. 12, 1943	12.3	4,010		Feb. 5, 1952	12.14	5,000
	Mar. 17, 1943	16.83	8,050		Mar. 5, 1952	9.94	3,000
	May 12, 1943	21.89	17,700		Mar. 12, 1952	13.85	7,040
	May 18, 1943	12.5	4,150		Mar. 20, 1952	9.9	3,000
	May 21, 1943	13.81	5,190		Apr. 14, 1952	12.9	5,850
	May 26, 1943	11.59	3,520	1953	Mar. 4, 1953	9.41	2,600
	June 3, 1943	12.35	4,080	1954	Feb. 17, 1954	13.73	6,890
1944	Feb. 28, 1944	11.00	3,130		Mar. 26, 1954	13.76	6,930
1945	May 18, 1945	19.28	12,200	1955	Feb. 22, 1955	b11.68	-
	June 3, 1945	11.4	3,370		Mar. 1, 1955	9.67	2,970
1946	Oct. 2, 1945	11.0	3,130	1956	Mar. 2, 1956	11.00	3,910
	Mar. 2, 1946	12.10	3,850		Mar. 7, 1956	14.84	8,360
	Mar. 9, 1946	12.03	3,780		Apr. 30, 1956	17.74	13,400
	June 18, 1946	19.43	12,400		May 7, 1956	12.33	5,700
1947	Mar. 25, 1947	11.74	3,570		May 10, 1956	14.62	8,210
	Apr. 3, 1947	15.13	5,950		May 13, 1956	16.54	11,000
	Apr. 6, 1947	23.55	21,200		June 18, 1956	-	4,000
	Apr. 20, 1947	13.1	4,550	1957	Apr. 6, 1957	10.00	3,670
	May 26, 1947	12.88	4,410		Apr. 26, 1957	11.34	4,800
	June 3, 1947	-	a4,000		May 20, 1957	13.27	6,570
1948	Feb. 29, 1948	14.77	5,740		July 9, 1957	10.77	4,290
				1958	Dec. 31, 1957	11.28	4,740
				1959	Mar. 6, 1959	b11.24	3,500

a Daily mean discharge.

b Backwater from ice.

Peak stages and discharges of Clinton River at Mount Clemens, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Apr. 3, 1959	11.71	5,130	1960	Apr. 18, 1960	9.66	3,420
1960	Nov. 15, 1959	9.75	3,480	1960	June 17, 1960	10.18	4,050
	Dec. 13, 1959	9.55	3,340				
	Dec. 29, 1959	9.35	3,200	1961	Apr. 26, 1961	9.70	3,000
	Jan. 13, 1960	9.07	3,010	1962	Mar. 13, 1962	16.07	10,300
	Mar. 31, 1960	11.8	5,210				

ST. LAWRENCE RIVER MAIN STEM

1656. Detroit River at Detroit, Mich.

Location.--Lat 42°18', long 83°05', at Detroit, Mich.Drainage area.--227,920 sq mi.Gage.--Several recording gages in St. Clair and Detroit Rivers and the lakes which they connect.Stage-discharge relation.--Fall used as a factor in computation of discharge.

Remarks.--Records furnished by U.S. Lake Survey, Corps of Engineers (May 1964). These records represent essentially the flow of the St. Clair-Detroit Rivers plus that of Huron River (Michigan) into Lake Erie. Records do not include water diverted from Lake Michigan by Illinois and Michigan Canal during period of its operation prior to 1910 and by Chicago Sanitary and Ship Canal, operation of which began in 1900. Records include water diverted into Lake Superior from Hudson Bay drainage by Long Lake and Ogoki projects, which began in 1939 and 1943 respectively. The diversions into Lake Superior have averaged about 5,000 cfs since 1943. Only annual maximum monthly discharges are shown.

Maximum monthly mean discharges

Calendar year	Date	Gage height (feet)	Discharge (cfs)	Calendar year	Date	Gage height (feet)	Discharge (cfs)
1860	August	-	234,000	1890	August	-	208,000
1861	August	-	240,000	1891	May	-	199,000
1862	October	-	233,000	1892	August, October	-	196,000
1863	June, July	-	223,000	1893	August	-	203,000
1864	May-July	-	215,000	1894	July	-	207,000
1865	August	-	220,000	1895	June, July	-	191,000
1866	August	-	210,000	1896	July, August	-	184,000
1867	August	-	220,000	1897	August	-	196,000
1868	July	-	207,000	1898	July	-	195,000
1869	August, September	-	214,000	1899	July, August	-	201,000
1870	September	-	227,000	1900	November	-	200,000
1871	July	-	231,000	1901	August	-	205,000
1872	July-September, November	-	206,000	1902	August	-	192,000
1873	August, October	-	218,000	1903	October	-	196,000
1874	September	-	219,000	1904	August	-	203,000
1875	September, October	-	221,000	1905	August, September	-	205,000
1876	August	-	239,000	1906	August	-	204,000
1877	July	-	228,000	1907	July	-	204,000
1878	October	-	219,000	1908	July	-	205,000
1879	January	-	209,000	1909	July, August	-	191,000
1880	July-September	-	216,000	1910	July	-	192,000
1881	November	-	225,000	1911	November	-	194,000
1882	September	-	222,000	1912	September-November	-	191,000
1883	November	-	232,000	1913	July	-	198,000
1884	July	-	231,000	1914	July	-	193,000
1885	August	-	236,000	1915	August	-	185,000
1886	June	-	242,000	1916	August, September	-	198,000
1887	August	-	226,000	1917	August	-	212,000
1888	August	-	222,000	1918	July	-	212,000
1889	August, September	-	211,000	1919	May, July	-	199,000
				1920	August	-	197,000

Maximum monthly mean discharges of Detroit River at Detroit, Mich.--Continued

Calendar year	Date	Gage height (feet)	Discharge (cfs)	Calendar year	Date	Gage height (feet)	Discharge (cfs)
1921	May	-	190,000	1943	August	-	213,000
1922	July, August	-	191,000	1944	July	-	201,000
1923	July	-	183,000	1945	July	-	202,000
1924	August, September	-	180,000	1946	April	-	201,000
1925	July	-	167,000	1947	August	-	204,000
1926	July	-	165,000	1948	May	-	202,000
1927	July, August	-	178,000	1949	January	-	181,000
1928	November	-	201,000	1950	September, October	-	189,000
1929	July, August	-	218,000	1951	November	-	218,000
1930	August	-	202,000	1952	August	-	231,000
1931	May-July	-	174,000	1953	August	-	223,000
1932	July, August	-	164,000	1954	October	-	222,000
1933	June	-	166,000	1955	June	-	212,000
1934	December	-	162,000	1956	August	-	198,000
1935	July	-	171,000	1957	July	-	192,000
1936	September	-	173,000	1958	May	-	180,000
1937	May, June	-	163,000	1959	December	-	178,000
1938	October	-	180,000	1960	August, September	-	204,000
1939	July, August	-	182,000	1961	August	-	190,000
1940	September	-	176,000	1962	June	-	194,000
1941	May, June	-	175,000	1963	August	-	177,000
1942	July	-	189,000				

STREAMS TRIBUTARY TO DETROIT RIVER

1660. River Rouge at Birmingham, Mich.

Location.--Lat 42°32'45", long 83°13'25", in NW $\frac{1}{4}$ sec.36, T.2 N., R.10 E., on left bank in Birmingham, 25 ft downstream from mouth of Quarton Lake Outlet and 100 ft upstream from bridge on West Maple Road.

Drainage area.--36.9 sq mi.

Gage.--Recording. Datum of gage is 715.94 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, 110 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Dec. 3, 1950	3.21	197	1955	Oct. 3, 1954	3.33	170
	Dec. 7, 1950	3.85	320		Feb. 27, 1955	3.29	164
	Jan. 4, 1951	2.95	148		May 22, 1955	2.97	122
	Feb. 13, 1951	3.04	164	1956	Feb. 25, 1956	3.62	216
	Feb. 19, 1951	3.57	282		Mar. 1, 1956	3.52	199
	Feb. 26, 1951	2.86	133		Mar. 5, 1956	2.92	116
	Mar. 30, 1951	2.85	131		Mar. 7, 1956	3.89	266
	July 6, 1951	3.38	228		Apr. 29, 1956	5.38	700
1952	Jan. 15, 1952	2.87	134		May 6, 1956	3.22	152
	Jan. 17, 1952	2.93	144		May 10, 1956	4.21	337
	Feb. 4, 1952	3.38	235		May 13, 1956	4.92	532
	Mar. 4, 1952	3.10	175		May 17, 1956	3.26	158
	Mar. 11, 1952	4.1	370		June 18, 1956	4.57	428
	Mar. 19, 1952	3.01	159		Aug. 4, 1956	2.95	114
	Mar. 23, 1952	2.83	128	1957	Apr. 5, 1957	-	(a)
	Apr. 13, 1952	3.24	203		Apr. 25, 1957	3.20	149
1953	Mar. 4, 1953	2.65	92		May 19, 1957	4.08	308
1954	Feb. 16, 1954	3.66	183		July 8, 1957	4.67	488
	Mar. 25, 1954	3.78	244		July 11, 1957	3.21	164

a Unknown; probably greater than 110 cfs.

Peak stages and discharges of River Rouge at Birmingham, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Oct. 24, 1957	3.08	144	1960	Nov. 14, 1959	3.12	153
	Nov. 14, 1957	2.87	117		Dec. 28, 1959	2.83	111
	Dec. 20, 1957	3.37	193		Jan. 12, 1960	3.03	140
	Dec. 26, 1957	2.97	131		Mar. 28, 1960	3.97	313
	July 3, 1958	2.82	110		Apr. 17, 1960	2.90	121
1959	Mar. 3, 1959	3.41	200	1961	June 14, 1960	3.73	261
	Mar. 6, 1959	4.46	446		June 16, 1960	3.85	286
	Mar. 15, 1959	2.90	127		Feb. 23, 1961	2.85	114
	Mar. 20, 1959	2.79	111	1962	Apr. 25, 1961	3.32	184
	Apr. 2, 1959	3.67	249		July 2, 1961	3.18	168
	Apr. 8, 1959	2.91	122		Nov. 16, 1961	2.98	152
	Apr. 28, 1959	2.89	120		Mar. 12, 1962	5.60	624
	Aug. 26, 1959	3.30	178		Mar. 17, 1962	2.94	147
1960	Oct. 6, 1959	3.35	190		Apr. 30, 1962	3.48	222

1665. River Rouge at Detroit, Mich.

Location.--Lat 42°22'20", long 83°15'20", in SW $\frac{1}{4}$ sec.27, T.1 S., R.10 E., on right bank 500 ft upstream from bridge on Plymouth Road in Detroit and 4 miles upstream from Middle River Rouge.

Drainage area.--185 sq mi.

Gage.--Nonrecording prior to Oct. 16, 1948, at site 1 mile downstream at datum 4.6 ft lower; recording thereafter. Datum of gage is 584.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,500 cfs prior to October 1948, and below 2,900 cfs thereafter.

Bankfull stage.--15 ft (Corps of Engineers flood stage).

Remarks.--Only annual peaks are shown prior to 1948. 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	Mar. 28, 1931	a6.46	b152	1948	Mar. 20, 1948	15.55	2,460
1932	May 27, 1932	b14.21	1,720		Apr. 1, 1948	11.48	997
1933	May 1, 1933	18.10	3,840		May 8, 1948	10.62	832
1934	Apr. 2, 1934	b13.60	1,650		May 10, 1948	19.5	6,130
1935	Mar. 11, 1935	c10.70	760	1949	Feb. 15, 1949	13.86	2,420
1936	Mar. 5, 1936	10.4	800		Mar. 31, 1949	13.28	2,120
1937	Apr. 22, 1937	12.82	1,440	1950	Dec. 22, 1949	10.09	1,120
1938	Feb. 14, 1938	16.24	2,680		Jan. 4, 1950	11.69	1,540
1939	Feb. 20, 1939	19.3	6,140		Jan. 11, 1950	9.39	955
1940	Mar. 30, 1940	c12.65	d850		Jan. 14, 1950	9.52	975
1941	Dec. 30, 1940	e14.15	b1,100		Jan. 26, 1950	11.27	1,420
1942	Mar. 17, 1942	b12.75	1,300		Feb. 15, 1950	13.83	2,420
1943	May 12, 1943	18.7	4,210		Mar. 6, 1950	8.75	815
1944	Mar. 16, 1944	10.8	920		Mar. 8, 1950	10.21	1,140
1945	May 18, 1945	17.65	4,000		Mar. 28, 1950	13.41	2,170
1946	June 18, 1946	f11.94	1,090		Apr. 2, 1950	9.06	895
1947	Apr. 5, 1947	g23.0	13,000		Apr. 4, 1950	15.60	3,640
1948	Feb. 20, 1948	c13.0	1,200		Apr. 26, 1950	10.38	1,170
	Feb. 25, 1948	c12.35	900	1951	Dec. 3, 1950	9.92	1,100
	Feb. 28, 1948	c14.9	1,800		Dec. 8, 1950	12.68	1,880
	Mar. 16, 1948	11.2	940		Jan. 4, 1951	10.04	1,120
					Feb. 13, 1951	11.26	1,420

a Observed Feb. 18, 1931 (backwater from ice).

b Maximum observed.

c Backwater from ice.

d Maximum daily.

e Observed Mar. 4, 1941 (backwater from ice).

f Observed Feb. 14, 1946 (backwater from ice).

g Occurred Apr. 6, 1947 (rate of change of stage used as a factor in discharge computation).

Peak stages and discharges of River Rouge at Detroit, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Feb. 20, 1951	10.75	1,300	1956	June 18, 1956	11.18	1,380
	Mar. 4, 1951	8.48	820		Aug. 4, 1956	9.23	907
	Mar. 30, 1951	10.04	1,120	1957	Jan. 23, 1957	c8.9 ^c	830
1952	Nov. 14, 1951	8.69	860		Feb. 10, 1957	c9.37	900
	Dec. 5, 1951	8.99	920		Feb. 27, 1957	10.04	1,100
	Jan. 16, 1952	11.13	1,370		Apr. 6, 1957	10.54	1,220
	Jan. 18, 1952	11.29	1,420		Apr. 26, 1957	11.02	1,340
	Jan. 20, 1952	10.39	1,200		May 20, 1957	12.71	1,850
	Jan. 27, 1952	9.09	940		July 9, 1957	16.07	4,030
	Feb. 4, 1952	11.0	1,340		July 12, 1957	13.35	2,110
	Mar. 5, 1952	8.63	840	1958	Oct. 24, 1957	9.17	881
	Mar. 11, 1952	13.11	2,040		Nov. 15, 1957	9.20	907
	Mar. 19, 1952	9.83	1,080		Dec. 20, 1957	11.20	1,380
	Mar. 23, 1952	8.54	820		Dec. 26, 1957	9.64	937
	Apr. 14, 1952	11.6	1,510		Aug. 6, 1958	10.34	1,120
	Apr. 23, 1952	8.57	840	1959	Mar. 3, 1959	c10.6 ^c	900
	May 25, 1952	8.42	800		Mar. 6, 1959	13.35	1,880
1953	Mar. 4, 1953	8.99	920		Mar. 16, 1959	9.35	819
	May 31, 1953	9.15	960		Apr. 2, 1959	12.65	1,660
1954	Feb. 17, 1954	12.73	1,880	1960	Oct. 7, 1959	9.82	1,020
	Mar. 26, 1954	14.91	3,080		Nov. 14, 1959	10.55	1,210
	Apr. 27, 1954	9.94	1,070		Dec. 12, 1959	9.65	989
1955	Oct. 4, 1954	11.64	1,510		Dec. 29, 1959	8.97	861
	Oct. 15, 1954	10.13	1,120		Jan. 13, 1960	11.29	1,410
	Jan. 2, 1955	8.79	835		Feb. 6, 1960	8.90	847
	Jan. 6, 1955	10.35	1,200		Feb. 11, 1960	9.11	889
	Feb. 21, 1955	9.26	935		Mar. 28, 1960	10.9	1,310
	Feb. 28, 1955	10.58	1,240		Apr. 18, 1960	9.27	921
	Mar. 4, 1955	9.02	875		June 15, 1960	11.29	1,410
					June 17, 1960	13.42	2,140
1956	Feb. 25, 1956	(c)	1,600	1961	Apr. 25, 1961	12.50	1,690
	Mar. 2, 1956	9.88	1,070	1962	Mar. 13, 1962	14.49	2,750
	Mar. 7, 1956	9.97	1,100		June 11, 1962	11.01	1,530
	Apr. 29, 1956	16.29	4,240		Sept. 14, 1962	10.26	1,140
	May 10, 1956	15.37	3,480				
	May 13, 1956	15.73	3,720				

c Backwater from ice.

1670. Middle River Rouge near Garden City, Mich.
(Published as "at Detroit," 1931-33)

Location.--Lat 42°20'55", long 83°18'45", in W $\frac{1}{2}$ sec.6, T.2 S., R.10 E. on right bank 200 ft downstream from bridge on Inkster Road, 1.8 miles north-east of Garden City, and 6.0 miles upstream from mouth.

Drainage area.--104 sq mi; 108 sq mi 1931-33.

Gage.--Nonrecording prior to Oct. 18, 1948; recording thereafter. At bridge on Outer Drive $4\frac{1}{2}$ miles downstream at datum 563.47 ft above mean sea level, unadjusted, 1931-33. Datum of gage is 600.95 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 570 cfs for 1931-33 and for complete range of discharge thereafter.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 500 cfs. Only annual peaks are shown 1931-33.

Peak stages and discharges of Middle River Rouge near Garden City, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Mar. 29, May 11 1931	2.83	76	1954	Feb. 16, 1954	8.84	1,120
1932	May 27, 1932	8.85	780	1954	Mar. 25, 1954	9.44	1,720
1933	May 1, 1933	11.55	1,420	1954	Apr. 27, 1954	7.82	680
1948	Feb. 20, 1948	a9.0	550	1955	Jan. 6, 1955	8.01	615
	Feb. 28, 1948	a9.7	1,100	1955	Feb. 21, 1955	7.36	515
	Mar. 16, 1948	7.16	561	1955	Feb. 28, 1955	7.98	615
	Mar. 20, 1948	9.4	1,200	1956	Feb. 25, 1956	8.12	760
	Apr. 1, 1948	7.1	548	1956	Mar. 2, 1956	7.24	560
	May 10, 1948	10.50	2,150	1956	Mar. 7, 1956	6.81	500
1949	Feb. 15, 1949	a9.38	1,200	1956	Apr. 29, 1956	9.46	1,840
	Apr. 1, 1949	8.81	1,090	1956	May 10, 1956	8.55	1,020
1950	Dec. 22, 1949	6.53	530	1956	May 13, 1956	9.00	1,360
	Jan. 5, 1950	7.85	720	1956	June 18, 1956	7.16	577
	Jan. 26, 1950	8.01	765	1956	Aug. 4, 1956	7.57	655
	Feb. 15, 1950	9.01	1,240	1957	Feb. 27, 1957	7.31	577
	Mar. 8, 1950	7.71	700	1957	Apr. 6, 1957	8.09	757
	Mar. 28, 1950	9.27	1,480	1957	Apr. 27, 1957	7.33	581
	Apr. 4, 1950	9.66	1,960	1957	May 20, 1957	7.35	585
	Apr. 26, 1950	-	800	1957	July 8, 1957	9.01	1,210
1951	Dec. 4, 1950	7.05	595	1957	July 12, 1957	9.13	1,170
	Dec. 8, 1950	8.75	1,060	1958	Oct. 24, 1957	6.98	512
	Jan. 4, 1951	6.77	569	1958	Dec. 20, 1957	8.26	814
	Feb. 13, 1951	-	900	1959	Mar. 7, 1959	8.80	1,090
	Feb. 20, 1951	8.22	820	1959	Apr. 2, 1959	8.08	820
	Mar. 29, 1951	6.63	543	1960	Jan. 13, 1960	7.24	668
1952	Nov. 14, 1951	6.46	530	1960	Mar. 29, 1960	6.74	578
	Jan. 16, 1952	8.12	790	1960	June 14, 1960	7.50	720
	Jan. 20, 1952	8.44	910	1960	June 17, 1960	8.66	1,040
	Jan. 27, 1952	6.37	517	1961	Apr. 25, 1961	8.96	1,020
	Feb. 4, 1952	7.76	720	1962	Nov. 16, 1961	6.35	512
	Mar. 11, 1952	8.76	1,060	1962	Mar. 12, 1962	9.20	1,500
	Mar. 19, 1952	7.00	595	1962	June 11, 1962	7.94	802
	Apr. 14, 1952	7.83	720				
	Apr. 23, 1952	7.00	595				
1953	Mar. 4, 1953	6.60	470				

a Backwater from ice.

1680. Lower River Rouge at Inkster, Mich.
(Published as "at Dearborn," 1931-33)

Location.--Lat 42°18'00", long 83°18'00", in S $\frac{1}{2}$ sec. 19, T.2 S., R.10 E., on right bank 10 ft downstream from bridge on John Daly Road, 0.6 mile northeast of Inkster, and 4 $\frac{3}{4}$ miles upstream from mouth.

Drainage area.--82.9 sq mi; 91.6 sq mi 1931-33.

Gage.--Nonrecording prior to Oct. 20, 1948; recording thereafter. At site 3 $\frac{1}{2}$ miles downstream at datum 576.875 ft above mean sea level, unadjusted, 1931-33. Datum of gage is 593.14 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 730 cfs 1931-33 and for complete range of discharge thereafter.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 600 cfs. Only annual peaks are shown for 1931-33.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	June 30, 1931	a4.00	178	1948	Feb. 28, 1948	10.9	1,780
1932	Feb. 12, 1932	a9.75	725	1948	Mar. 16, 1948	7.5	695
1933	May 1, 1933	12.16	1,400	1948	Mar. 20, 1948	11.2	1,900
				1948	Mar. 22, 1948	8.2	870
1948	Feb. 19, 1948	11.2	1,900	1948	Apr. 1, 1948	7.4	670

a Maximum observed.

Peak stages and discharges of Lower River Rouge at Inkster, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	May 11, 1948	12.16	2,920	1954	Feb. 17, 1954	10.41	1,340
1949	Feb. 15, 1949	11.37	1,980		Mar. 26, 1954	12.36	2,790
	Apr. 1, 1949	11.14	1,860		Apr. 27, 1954	8.08	725
1950	Dec. 23, 1949	8.36	880	1955	Jan. 6, 1955	9.34	1,020
	Jan. 5, 1950	9.2	1,110		Feb. 21, 1955	8.24	750
	Jan. 11, 1950	8.48	905		Feb. 28, 1955	8.88	925
	Jan. 14, 1950	8.04	780		Mar. 4, 1955	7.85	650
	Jan. 26, 1950	9.64	1,230	1956	Feb. 26, 1956	8.78	865
	Feb. 15, 1950	11.26	2,080		Mar. 6, 1956	7.77	620
	May 8, 1950	8.9	1,020		Apr. 30, 1956	11.90	2,460
	Mar. 27, 1950	11.70	2,430		May 10, 1956	8.80	865
	Apr. 4, 1950	12.42	3,120		May 13, 1956	7.99	865
	Apr. 25, 1950	10.16	1,450		June 18, 1956	8.86	890
1951	Dec. 3, 1950	8.27	855	1957	Feb. 27, 1957	8.75	862
	Dec. 8, 1950	9.84	1,290		Apr. 6, 1957	9.18	964
	Jan. 3, 1951	7.89	755		Apr. 27, 1957	8.56	805
	Feb. 13, 1951	9.67	1,260		May 20, 1957	8.24	725
	Feb. 20, 1951	9.05	1,050		July 8, 1957	8.11	692
	Mar. 3, 1951	7.47	655		July 11, 1957	9.07	932
	Mar. 15, 1951	8.03	780	1958	Dec. 21, 1957	9.13	949
	Mar. 30, 1951	8.05	780		Dec. 26, 1957	7.92	645
1952	Nov. 14, 1951	8.08	805	1959	Mar. 7, 1959	9.82	1,190
	Dec. 5, 1951	8.52	905		Apr. 3, 1959	10.05	1,280
	Jan. 2, 1952	8.20	650	1960	Nov. 15, 1959	7.74	635
	Jan. 16, 1952	10.09	1,410		Jan. 14, 1960	9.18	995
	Jan. 20, 1952	10.64	1,630		Feb. 11, 1960	7.72	630
	Jan. 27, 1952	7.91	755		June 14, 1960	8.71	878
	Feb. 4, 1952	8.82	990		June 18, 1960	9.24	1,010
	Mar. 12, 1952	9.79	1,290	1961	Apr. 26, 1961	11.59	2,330
	Mar. 19, 1952	8.86	1,020	1962	Nov. 17, 1961	7.37	622
	Apr. 5, 1952	7.53	655		Mar. 12, 1962	11.00	1,860
	Apr. 14, 1952	8.87	1,020				
	Apr. 23, 1952	8.19	830				
1953	Mar. 4, 1953	8.69	840				

b Occurred Jan. 1, 1952 (backwater from ice).

STREAMS TRIBUTARY TO LAKE ERIE

1690. Hayes Creek at Commerce, Mich.

Location.--Lat 42°35'25", long 83°28'45", on line between NW $\frac{1}{4}$ and SW $\frac{1}{4}$ sec. 11, T.2 N., R.8 E., at bridge 600 ft upstream from mouth and half a mile east of Commerce.

Drainage area.--8 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 909.99 ft above mean sea level, datum of 1929.

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

Remarks.--Regulation by dam at outlet of Union Lake operated for lake-level control. 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)
1947	Apr. 7, 1947	4.25	154	1950	Apr. 4, 1950	3.58	65
1948	May 12, 1948	3.86	99	1951	Mar. 7, 1951	2.84	26
1949	Feb. 17, 1949	3.20	46				

a Maximum observed; occurred Dec. 8, 1950.

1695. Huron River at Commerce, Mich.

Location.--Lat 42°35'25", long 83°29'05", on line between NE $\frac{1}{4}$ and SE $\frac{1}{4}$ sec.10, T.2 N., R.8 E., on downstream left abutment of bridge on Commerce Road, 10 ft upstream from Hayes Creek and 0.2 mile east of Commerce. Records include flow of Hayes Creek.

Drainage area.--51 sq mi, approximately, includes that of Hayes Creek.

Gage.--Nonrecording. Datum of gage is 910.00 ft above mean sea level, datum of 1929.

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

Bankfull stage.--Not subject to overflow.

Remarks.--Regulation by dams operated for lake-level control at outlets of Pontiac, Oxbow, and Union Lakes. 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)
1946	Mar. 7, 9, 1946	2.10	96	1956	May 13, 16, 1956	2.96	196
1947	Apr. 7, 1947	2.98	266	1957	July 14, 18, 20, 1957	1.96	102
1948	May 12, 1948	3.10	207				
1949	Feb. 17, 1949	2.56	156	1958	Nov. 9, 1957	1.68	64
1950	Apr. 5, 1950	2.88	181	1959	Apr. 4, 1959	2.53	160
				1960	Apr. 18, 1960	2.06	107
1951	Mar. 7, 1951	-	135				
1952	Apr. 14, 1952	2.26	121	1961	Apr. 26, 1961	2.04	99
1953	Mar. 16, 19, 1953	1.72	71	1962	Mar. 21, 1962	1.94	89
1954	Feb. 18, 1954	1.76	81				
1955	Mar. 11, 16, 1955	1.80	91				

1700. Huron River at Milford, Mich.

Location.--Lat 42°34'45", long 83°37'35", in SE $\frac{1}{4}$ sec.9, T.2 N., R.7 E., on right bank 200 ft upstream from bridge on General Motors Road, half a mile downstream from Sherwood Creek, and half a mile west of Milford.

Drainage area.--125 sq mi.

Gage.--Recording. Datum of gage is 880.00 ft above mean sea level, datum of 1929.

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

Bankfull stage.--8.0 ft.

Remarks.--Peak discharges could be affected somewhat by operation of dams at outlets of several lakes upstream for lake-level control. 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)
1949	Feb. 15, 1949	7.48	414	1956	May 14, 1956	8.13	545
1950	Apr. 5, 1950	8.25	645	1957	July 13, 1957	8.23	438
				1958	Dec. 21, 1957	6.18	217
1951	Feb. 20, 1951	7.25	395	1959	Apr. 6, 1959	7.01	335
1952	Apr. 15, 1952	7.13	358	1960	Mar. 31, 1960	6.82	301
1953	Mar. 4, 1953	6.42	248				
1954	Feb. 16, 1954	6.89	320	1961	Apr. 28, 1961	6.64	276
1955	Feb. 28, 1955	6.66	278	1962	Mar. 13, 1962	6.69	292

1705. Huron River near New Hudson, Mich.

Location.--Lat 42°30'45", long 83°40'35", in NE $\frac{1}{4}$ sec.1, T.1 N., R.6 E., on right bank 150 ft downstream from Kent Lake Dam, 2 miles upstream from Woodruff Creek, and 3 miles west of New Hudson.

Drainage area.--143 sq mi.

Gage.--Recording. Datum of gage is 868.00 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.

Bankfull stage.--Not subject to overflow.

Remarks.--Many peak discharges completely affected by seasonal regulation of Kent Lake level. 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)
1949	Feb. 16, 1949	3.61	432	1956	May 14, 1956	4.11	590
1950	Apr. 6, 1950	4.12	582	1957	July 14, 1957	4.08	488
				1958	Nov. 4, 1957	3.32	389
1951	Dec. 29, 1950	5.05	1,080	1959	Apr. 5, 1959	2.93	321
1952	Apr. 16, 1952	3.57	438	1960	Nov. 2, 1959	2.88	313
1953	Nov. 27, 1952	a2.98	280				
1954	Feb. 17, 1954	3.01	321	1961	Nov. 9, 1960	2.59	278
1955	Nov. 22, 1954	3.22	330	1962	Mar. 14, 1962	2.74	302

a Occurred Oct. 14, 1952.

1715. Ore Creek near Brighton, Mich.

Location.--Lat 42°29'40", long 83°48'05", in NW $\frac{1}{4}$ sec.12, T.1 N., R.5 E., on downstream side of bridge on Hamburg Road, half a mile upstream from Ore Lake and 2 $\frac{1}{2}$ miles southwest of Brighton.

Drainage area.--31 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 850.56 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--16 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)
1952	Apr. 16, 1952	15.60	86	1958	Dec. 26, 1957	a15.16	57
1953	Mar. 17, 1953	14.8	46	1959	Apr. 4, 1959	-	100
1954	Feb. 17, 1954	15.6	87	1960	Apr. 8, 1960	15.85	104
1955	Oct. 15, 1954	15.51	82				
				1961	Apr. 30, 1961	15.23	75
1956	May 13, 1956	16.50	193	1962	Mar. 17, 1962	15.1	81
1957	July 17, 1957	16.3	88				

a Occurred Jan. 3, 1958 (backwater from ice).

1720. Huron River near Hamburg, Mich.

Location.--Lat 42°27'55", long 83°48'00", in sec.24, T.1 N., R.5 E., on right bank at downstream side of bridge on Hamburg Road, 1.1 miles north of Hamburg and 3 miles upstream from Strawberry Lake.

Drainage area.--299 sq mi.

Gage.--Nonrecording prior to Aug. 12, 1953; recording thereafter. Datum of gage is 850.00 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--6 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)
1952	Apr. 17, 1952	6.26	735	1958	Dec. 26, 1957	5.48	478
1953	May 7, 1953	a4.90	368	1959	Apr. 6, 1959	6.41	742
1954	Feb. 19, 1954	5.98	660	1960	Apr. 1, 1960	6.32	716
1955	Mar. 6, 1955	b6.17	611				
				1961	Apr. 30, 1961	5.90	624
1956	May 15, 1956	8.35	1,560	1962	Mar. 15, 1962	6.57	808
1957	July 16, 1957	7.42	884				

a Occurred Nov. 28, 1952.

b Occurred Oct. 18, 1954.

1725. Portage Creek near Pinckney, Mich.

Location.--Lat 42°25'40", long 83°57'35", in SW $\frac{1}{4}$ sec.34, T.1 N., R.4 E., on right upstream abutment of bridge on Tiplady Road, 2 miles upstream from Little Portage Lake and 2 $\frac{1}{4}$ miles southwest of Pinckney.

Drainage area.--79 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 860.38 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--3 ft.

Remarks.--Some regulation caused by dam used to control level of Hiland Lake 2 $\frac{1}{2}$ miles upstream. 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	May 23, 1945	4.18	215	1954	Mar. 5, 1954	3.80	172
				1955	Oct. 17, 1954	3.76	128
1946	Mar. 11, 1946	3.85	176				
1947	Apr. 9, 1947	5.72	529	1956	May 16, 1956	4.80	310
1948	Mar. 24, 1948	4.51	264	1957	Apr. 7, 1957	3.3	100
1949	Feb. 21, 1949	4.10	211	1958	Dec. 28, 1957	3.28	98
1950	Apr. 5, 1950	5.20	400	1959	Mar. 10, 1959	4.10	205
				1960	Apr. 6, 1960	4.12	214
1951	Feb. 28, 1951	a4.18	230				
1952	Jan. 29, 1952	3.88	200	1961	Apr. 29, 1961	3.82	173
1953	Mar. 23, 1953	3.22	101	1962	Mar. 20, 1962	4.1	187

a Occurred Feb. 27, 1951.

1730. Huron River near Dexter, Mich.

Location.--Lat 42°23'10", long 83°54'40", in S $\frac{1}{2}$ sec.13, T.1 S., R.4 E., on right bank 20 ft downstream from highway bridge on North Territorial Road, half a mile east of Hudson Mills, 2 miles downstream from Portage Lake Outlet, and 4 miles north of Dexter.

Drainage area.--506 sq mi.

Gage.--Nonrecording prior to July 30, 1953; recording thereafter. Datum of gage is 837.11 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

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

Bankfull stage.--6 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)
1946	Mar. 12, 1946	5.14	1,140	1955	Mar. 6, 1955	4.95	894
1947	Apr. 9, 1947	8.17	3,120	1956	May 17, 1956	6.98	2,330
1948	Mar. 24, 1948	6.44	1,750	1957	July 18, 1957	4.97	880
1949	Feb. 20, 1949	5.89	1,450	1958	Dec. 28, 1957	4.64	704
1950	Apr. 8, 1950	7.25	2,340	1959	Apr. 9, 1959	5.32	1,130
1951	Feb. 25, 1951	-	1,550	1960	Apr. 4, 1960	5.29	1,110
1952	Apr. 17, 1952	5.40	1,070	1961	May 1, 1961	5.04	950
1953	Mar. 24, 1953	4.36	530	1962	Mar. 17, 1962	5.13	1,110
1954	Mar. 31, 1954	5.05	924				

a Occurred Oct. 17, 1954.

1735. Mill Creek near Dexter, Mich.

Location.--Lat 42°18'00", long 83°53'55", in SW $\frac{1}{4}$ sec.18, T.2 S., R.5 E., on left bank 12 ft downstream from bridge on Parker Road, 2 $\frac{1}{2}$ miles south of Dexter, and 4 miles upstream from mouth.

Drainage area.--134 sq mi.

Gage.--Nonrecording prior to May 23, 1958; recording thereafter. Altitude of gage is 850 ft (from topographic map).

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

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown prior to 1959. Base for partial-duration series, 390 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 11, 1952	10.3	790	1960	Jan. 13, 1960	9.47	661
1953	Mar. 4, 1953	8.3	510		Feb. 11, 1960	8.3	421
1954	Mar. 25, 1954	10.8	890		Mar. 28, 1960	10.03	804
1955	Oct. 15, 1954	9.82	690		June 17, 1960	8.77	507
1956	Apr. 29, 1956	12.2	1,300	1961	Mar. 14, 1961	8.75	504
1957	Apr. 6, 1957	7.95	368		Apr. 16, 1961	8.79	511
1958	Dec. 19, 1957	8.9	528		Apr. 26, 1961	10.60	859
1959	Mar. 6, 1959	10.50	939	1962	Mar. 12, 1962	11.73	1,240
	Mar. 15, 1959	8.41	441		Mar. 18, 1962	8.96	545
	Apr. 2, 1959	8.73	500				

1740. Huron River at Dexter, Mich.

Location.--Lat 42°20'30", long 83°52'45", in SW $\frac{1}{4}$ sec.32, T.1 S., R.5 E., at highway bridge in Dexter, a quarter of a mile downstream from Mill Creek.

Drainage area.--666 sq mi.

Gage.--Nonrecording. Altitude of gage is 830 ft (from topographic map).

Remarks.--Only annual peak stages are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1905	June 11, 1905	4.32	-	1911	Feb.17,18,1911	1.6	-
				1912	Apr.6-8, 1912	4.4	-
1906	Jan. 23, 1906	3.40	-	1913	Apr. 4, 1913	3.8	-
1907	Jan. 8,9,20, 1907	3.30	-	1914	May 13, 1914	4.2	-
				1915	Feb. 13, 1915	3.0	-
1908	Mar. 7, 1908	5.00	-				
1909	May 1, 1909	3.1	-	1916	Mar. 31, 1916	4.95	-
1910	Mar.6,7, 1910	2.7	-				

Note.--Gage heights listed are maximum dailies prior to 1914 and maximum observed thereafter.

1745. Huron River at Ann Arbor, Mich.

(Published as "at Geddes," 1904-14, and as "at Barton," 1914-40)

Location.--Lat 42°17'10", long 83°44'00", in NW $\frac{1}{4}$ sec.28, T.2 S., R.6 E., on left bank 100 ft upstream from bridge on Wall Street in Ann Arbor, three-quarters of a mile downstream from Argo Dam, and 4 miles upstream from Geddes Dam.

Drainage area.--711 sq mi; 702 sq mi prior to 1949.

Gage.--Recording after Aug. 6, 1948. Daily discharge determined by computation of flow over dam and through turbines at Geddes powerplant 4 miles downstream prior to 1914, and at Barton powerplant 3 miles upstream 1914-47. Datum of gage is 744.81 ft above mean sea level, datum of 1929 (levels by Michigan Department of Conservation).

Stage-discharge relation.--Defined by current-meter measurements below 3,600 cfs.

Bankfull stage.--15 ft.

Remarks.--Records for 1902 and 1904 furnished by L. E. Cooley, those for 1905-30 furnished by Gardner S. Williams, and those for 1931-47 furnished by Ayres, Lewis, Norris, and May. Because of the effect of powerplants, maximum daily discharges are believed to be more representative of natural flood peaks than momentary peaks. Only annual maximum daily discharges are shown.

Maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	July 7, 1902	-	a5,510	1918	Mar. 14, 1918	-	5,840
				1919	Apr. 16, 1919	-	3,087
1904	Mar. 29, 1904	-	a4,700	1920	Mar. 16, 1920	-	2,485
1906	Jan. 22, 1906	-	1,730	1921	Mar. 28, 1921	-	1,139
1907	Jan. 20, 1907	-	2,250	1922	Apr. 18, 1922	-	3,357
1908	Mar. 7, 1908	-	3,730	1923	Mar. 16, 1923	-	1,230
1909	Apr. 30, 1909	-	2,850	1924	Mar. 5, 1924	-	1,750
1910	May 3, 1910	-	2,030	1925	Feb. 24, 1925	-	1,040
1911	Apr. 20, 1911	-	1,320	1926	Apr. 9, 1926	-	2,950
1912	Apr. 7, 1912	-	2,980	1927	Jan. 30, 1927	-	927
1913	Apr. 4, 1913	-	3,690	1928	Dec. 16, 1927	-	942
1914	May 13, 1914	-	3,266	1929	Feb. 27, 1929	-	1,930
1915	Feb. 15, 1915	-	2,050	1930	Feb.26,27, 1930	-	1,820
1916	Mar. 27, 1916	-	3,951	1931	Mar. 29, 1931	-	467
1917	Apr. 6, 1917	-	1,669	1932	May 27, 1932	-	957

a Estimated peak discharge.

Note.--Figures for 1906-13 adjusted to represent flow at Barton Dam.

Maximum daily mean discharges of Huron River at Ann Arbor, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1933	May 1, 1933	-	1,300	1949	Feb. 15, 1949	-	3,050
1934	Apr. 4, 1934	-	2,590	1950	Apr. 5, 1950	-	4,170
1935	Mar. 11, 1935	-	1,160				
1936	Mar. 16, 1936	-	1,040	1951	Feb. 20, 1951	-	2,330
1937	June 21, 1937	-	1,960	1952	Apr. 14, 1952	-	2,090
1938	Feb. 18, 1938	-	2,140	1953	Mar. 4, 1953	-	928
1939	Apr. 19, 1939	-	1,920	1954	Mar. 26, 1954	-	1,740
1940	Apr. 4, 1940	-	1,280	1955	Oct. 15, 1954	-	1,820
				1956	May 12, 1956	-	2,690
1941	Apr. 20, 1941	-	922	1957	Apr. 6, 1957	-	1,030
1942	Mar. 17, 1942	-	2,090	1958	Dec. 21, 1957	-	1,090
1943	May 11, 1943	-	3,450	1959	Mar. 6, 1959	-	2,110
1944	Feb. 27, 1944	-	1,500	1960	Mar. 29, 1960	-	1,680
1945	May 18, 1945	-	2,890				
1946	Mar. 9, 1946	-	1,410	1961	Apr. 25, 1961	-	2,330
1947	Apr. 5, 1947	-	5,170	1962	Mar. 13, 1962	-	2,500

1755. Huron River at Flat Rock, Mich.

Location.--Lat 47°05'45", long 83°17'45", in SW $\frac{1}{4}$ sec.31, T.4 S., R.10 E., on left downstream abutment of highway bridge at Flat Rock, 2,000 ft downstream from Detroit, Toledo and Ironton Railway.

Drainage area.--851 sq mi.

Gage.--Nonrecording. Datum of gage is 578.5 ft above mean sea level, unadjusted (levels by G. S. Williams, consulting engineer).

Stage-discharge relation.--Defined by current-meter measurements below 1,800 cfs prior to 1913.

Remarks.--Flow regulated by powerplants above station. 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)
1905	June 8, 1905	8.3	2,540	1914	May 14, 1914	9.4	-
1906	Jan. 24, 1906	7.1	2,050	1915	Feb. 16, 1915	b9.0	-
1907	Jan. 21, 1907	7.4	2,240	1916	Mar. 28, 1916	10.4	-
1908	March 1908	(a)	4,600	1917	Apr. 7, 1917	7.6	-
1909	May 2, 1909	8.5	2,680	1918	Mar. 15, 1918	(c)	-
1910	May 4, 1910	7.6	2,320	1919	May 6, 1919	8.2	-
				1920	Mar. 14, 1920	9.8	-
1911	Feb. 19, 1911	6.4	1,870				
1912	Mar. 21, 1912	b9.6	-	1921	Mar. 29, 1921	5.2	-
1913	Mar. 26, 1913	8.5	-				

a Occurred during period Mar. 7-20, 1908, when water was over gage; discharge computed on basis of record for station at Geddes. b Backwater from ice. c Exceeded 11 ft (water over gage).

Note.--Maximum daily gage heights are shown for 1912 and 1913; maximum observed thereafter.

1757. River Raisin near Tecumseh, Mich.

Location.--Lat 41°56'35", long 83°56'45", in NE $\frac{1}{4}$ sec.21, T.6 S., R.4 E., on right bank 12 ft downstream from bridge on North Raisin Center Highway, 3.4 miles upstream from South Branch River Raisin, and 4.5 miles south of Tecumseh.

Drainage area.--266 sq mi.

Gage.--Recording. Datum of gage is 707.0 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, 500 cfs.

Peak stages and discharges of River Raisin near Tecumseh, Mich.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Feb. 28, 1957	8.19	544	1960	Feb. 6, 1960	8.58	649
	Apr. 7, 1957	8.44	609		Feb. 11, 1960	9.50	925
	Apr. 27, 1957	9.58	949		Mar. 29, 1960	8.80	715
1958	Dec. 21, 1957	9.02	781		Apr. 18, 1960	8.06	513
	Dec. 27, 1957	8.36	587		June 18, 1960	9.28	859
					July 5, 1960	8.03	507
1959	Mar. 7, 1959	10.33	1,200	1961	Mar. 14, 1961	9.27	874
	Mar. 15, 1959	8.95	760		Apr. 17, 1961	9.09	812
	Mar. 27, 1959	8.09	520		Apr. 26, 1961	10.02	1,160
	Apr. 2, 1959	8.97	766		May 10, 1961	8.58	649
	Apr. 8, 1959	8.16	536		Sept. 6, 1961	8.36	587
	Apr. 30, 1959	8.26	561				
1960	Nov. 15, 1959	8.35	584	1962	Mar. 13, 1962	10.66	1,430
	Jan. 14, 1960	9.60	955		Mar. 22, 1962	8.79	727

1760. River Raisin near Adrian, Mich.

Location.--Lat 41°54'15", long 83°58'50", in NW $\frac{1}{4}$ sec.5, T.7 S., R.4 E., on right bank 10 ft downstream from bridge on Academy Road, 1.7 miles east of Adrian, and 2.6 miles downstream from South Branch River Raisin.

Drainage area.--455 sq mi.

Gage.--Nonrecording at site $1\frac{1}{2}$ miles upstream at different datum prior to Oct. 3, 1953; recording thereafter. Datum of gage is 693.2 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs for 1931, 1933-38, and below 4,000 cfs at present site.

Banfkull stage.-- 11 ft.

Remarks.--Daily discharges for 1931, 1933-38 were found to be in error and were not compiled in WSP 1307; peak discharges, however, are reasonably accurate and are shown herein. Only annual observed peaks are shown for 1931, 1933-38. 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)
1931	June 8, 1931	8.37	447	1957	Apr. 28, 1957	11.42	2,250
1933	Apr. 2, 1933	14.50	2,010	1958	Dec. 21, 1957	(b)	1,900
1934	Apr. 5, 1934	14.35	2,010		Dec. 27, 1957	9.21	1,290
1935	Mar. 11, 1935	10.50	1,020		Feb. 26, 1958	9.0	1,230
1936	Mar. 5, 1936	14.36	1,800	1959	Mar. 7, 1959	11.59	2,330
1937	June 22, 1937	16.98	2,950		Mar. 16, 1959	9.69	1,440
1938	Feb. 7, 1938	13.60	1,740		Mar. 28, 1959	8.20	1,000
					Apr. 4, 1959	10.88	1,940
1954	Feb. 18, 1954	9.81	1,470		Apr. 30, 1959	9.50	1,380
	Mar. 26, 1954	12.43	2,570	1960	Nov. 16, 1959	9.5	1,320
	Apr. 4, 1954	8.59	1,110		Dec. 30, 1959	8.35	1,040
	Apr. 12, 1954	8.50	1,080		Jan. 14, 1960	12.36	2,870
					Feb. 8, 1960	8.95	1,220
1955	Oct. 16, 1954	9.00	1,230		Feb. 11, 1960	(b)	1,800
	Jan. 7, 1955	(b)	1,700		Mar. 31, 1960	(b)	1,700
	Feb. 22, 1955	(b)	1,300		Apr. 19, 1960	8.90	1,200
	Mar. 1, 1955	11.33	2,030		June 18, 1960	10.75	1,700
1956	Feb. 26, 1956	(b)	2,300		July 5, 1960	9.72	1,360
	Mar. 2, 1956	(b)	2,200	1961	Mar. 15, 1961	11.06	2,030
	Mar. 6, 1956	(b)	2,400		Apr. 18, 1961	10.85	1,920
	Mar. 31, 1956	8.52	1,080		Apr. 26, 1961	13.37	3,960
	Apr. 30, 1956	14.87	5,580		May 10, 1961	8.85	1,180
	May 12, 1956	10.75	1,900	1962	Mar. 13, 1962	13.3	3,880
1957	Feb. 28, 1957	8.8	1,170		Mar. 20, 1962	10.57	1,780
	Apr. 7, 1957	9.47	1,370				

a Maximum daily occurred Feb. 27, 1936 (backwater from ice).

b No gage-height record; discharge computed on basis of records for nearby stations.

1765. River Raisin near Monroe, Mich.
(Published as "Raisin River at Monroe," 1937-52 and
as "River Raisin at Monroe," 1952-53)

Location.--Lat 41°57'40", long 83°31'55", on left bank 0.8 mile downstream from
bridge on Ida Maybee Road, 5.0 miles downstream from Saline River, and
7.5 miles west of Monroe, Monroe County.

Drainage area.--1,034 sq mi.

Gage.--Recording. At site 9 miles downstream at datum 46.26 ft lower prior to
Oct. 1, 1953. Datum of gage is 616.26 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,500
cfs prior to 1954 and for complete range of discharge thereafter.

Bankfull stage.--8 ft at present site.

Remarks.--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)
1938	Jan. 25, 1938	7.46	2,500	1948	Dec. 8, 1947	7.24	2,280
	Feb. 7, 1938	7.83	3,320		Feb. 20, 1948	8.35	4,960
	Feb. 20, 1938	7.31	2,230		Feb. 28, 1948	9.14	7,700
	Mar. 17, 1938	7.90	3,430		Mar. 22, 1948	9.28	8,350
	Mar. 24, 1938	8.05	3,780		May 12, 1948	7.83	3,630
	Apr. 1, 1938	8.08	3,900				
	Apr. 10, 1938	8.15	4,020	1949	Jan. 8, 1949	7.22	2,240
1939	Feb. 20, 1939	8.87	6,520		Jan. 19, 1949	7.78	3,510
	Mar. 1, 1939	7.79	3,390		Jan. 28, 1949	7.32	2,440
	Mar. 14, 1939	8.12	4,260		Feb. 1, 1949	alo.7	-
	Apr. 18, 1939	7.98	4,000		Feb. 16, 1949	8.98	7,100
					Apr. 1, 1949	8.22	4,530
1940	Apr. 31, 1940	7.07	1,870	1950	Dec. 24, 1949	7.33	2,460
1941	Jan. 3, 1941	7.42	2,630		Jan. 5, 1950	8.12	4,260
1942	Feb. 7, 1942	7.26	2,340		Jan. 14, 1950	8.04	4,130
	Feb. 18, 1942	7.36	2,550		Jan. 27, 1950	8.62	5,700
	Mar. 9, 1942	8.63	5,700		Feb. 15, 1950	8.97	6,900
	Mar. 17, 1942	8.64	5,700		Mar. 8, 1950	8.25	4,670
	Apr. 11, 1942	8.10	4,250		Mar. 29, 1950	10.08	12,900
					Apr. 5, 1950	9.68	10,300
1943	Dec. 29, 1942	9.06	7,300		Apr. 27, 1950	9.24	8,120
	Feb. 11, 1943	8.24	4,670	1951	Dec. 8, 1950	8.44	5,100
	Mar. 17, 1943	8.43	5,250		Jan. 6, 1951	7.83	3,630
	Apr. 30, 1943	7.52	2,820		Feb. 22, 1951	9.31	8,350
	May 13, 1943	9.73	10,600		Mar. 16, 1951	7.52	2,820
	May 20, 1943	9.80	10,900		Apr. 2, 1951	7.49	2,800
	June 3, 1943	9.35	8,580		Apr. 30, 1951	7.34	2,450
	July 7, 1943	7.39	2,590		May 12, 1951	8.20	4,530
	July 13, 1943	7.23	2,260		May 21, 1951	7.49	2,800
					July 13, 1951	-	b2,500
1944	Feb. 27, 1944	8.15	4,400		July 24, 1951	-	b4,400
	Mar. 16, 1944	8.14	4,400	1952	Nov. 14, 1951	7.76	3,390
	Mar. 30, 1944	7.24	2,280		Dec. 5, 1951	7.48	2,780
	Apr. 13, 1944	8.26	4,670		Jan. 4, 1952	(a)	3,800
	Apr. 25, 1944	7.49	2,800		Jan. 5, 1952	alo.69	-
	May 18, 1944	7.33	2,460		Jan. 18, 1952	8.93	6,900
	June 24, 1944	8.42	5,100		Feb. 5, 1952	7.94	3,880
1945	Mar. 21, 1945	7.29	2,380		Mar. 13, 1952	8.06	4,130
	Apr. 3, 1945	8.24	4,670		Mar. 23, 1952	7.86	3,630
	May 19, 1945	10.1	12,900		Apr. 7, 1952	7.62	3,040
1946	Dec. 31, 1945	7.46	2,740		Apr. 16, 1952	7.82	3,510
	Feb. 17, 1946	7.22	2,240		May 27, 1952	7.28	2,360
	Mar. 7, 1946	7.79	3,510	1953	Mar. 7, 1953	7.40	2,610
	Mar. 20, 1946	7.24	2,280		Mar. 16, 1953	7.22	2,240
1947	Mar. 14, 1947	7.35	2,500	-1954	Feb. 18, 1954	5.32	2,290
	Mar. 25, 1947	7.77	3,390		Mar. 26, 1954	7.18	4,790
	Apr. 6, 1947	9.85	11,200		Apr. 3, 1954	5.91	3,010
	Apr. 23, 1947	9.12	7,500		Apr. 19, 1954	5.48	2,530
	May 2, 1947	7.93	3,880	1955	Jan. 6, 1955	6.47	3,790
	Mar. 22, 1947	8.08	4,260		Feb. 23, 1955	5.54	2,590
	May 26, 1947	8.18	4,530		Mar. 1, 1955	7.33	4,940
	June 3, 1947	7.72	3,270				

a Backwater from ice.

b About; gates in dam open.

Peak stages and discharges of River Raisin near Monroe, Mich.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 29, 1956	7.00	4,600	1959	Apr. 4, 1959	6.75	4,220
	Mar. 2, 1956	7.91	6,180		Apr. 30, 1959	5.71	2,800
	Mar. 6, 1956	7.61	5,640				
	Mar. 30, 1956	5.72	2,730	1960	Nov. 15, 1959	6.18	2,960
	May 2, 1956	9.30	8,870		Dec. 13, 1959	5.83	2,900
	May 14, 1956	7.21	4,920		Dec. 30, 1959	5.45	2,430
1957	Feb. 27, 1957	5.37	2,410		Jan. 16, 1960	7.57	5,590
	Apr. 6, 1957	6.00	3,160		Feb. 11, 1960	6.95	4,520
	Apr. 27, 1957	6.86	4,390		Mar. 31, 1960	6.46	3,790
1958	Oct. 25, 1957	6.64	3,600		June 17, 1960	6.68	3,670
	Nov. 15, 1957	5.44	2,300		July 6, 1960	5.60	2,260
	Dec. 21, 1957	7.15	4,400	1961	Mar. 15, 1961	6.63	4,040
	Mar. 1, 1958	5.79	2,900		Apr. 18, 1961	6.65	4,080
1959	Feb. 16, 1959	a9.58	-		Apr. 26, 1961	8.72	7,740
	Mar. 7, 1959	7.89	6,160		May 11, 1961	5.40	2,370
	Mar. 16, 1959	5.56	2,620	1962	Mar. 13, 1962	a9.59	-
	Mar. 29, 1959	5.18	2,200		Mar. 14, 1962	-	7,200

a Backwater from ice.

1769. Hill ditch near Richards, Ohio

Location.--Lat 41°39'50", long 83°40'05", at culvert on U.S. Highway 20, 3.4 miles north of intersection of U.S. Highway 20 and State Route 2, and 1.4 miles west of Richards, Lucas County.

Drainage area.--3.23 sq mi. Length of main stream, 3.80 miles; average slope, main stream, 15 ft per mile; average slope, main stream and tributaries, 15 ft per mile; slope at gage, 12 ft per mile; length divided by average width of basin, 4.47.

Gage.--Crest-stage gage. Altitude of gage is 600 ft above mean sea level (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)
1947	-	10.14	23	1956	-	13.40	165
1948	-	10.49	30	1957	-	10.69	34
1949	-	10.47	29	1958	-	12.16	86
1950	Feb. 14, 1950	13.50	172	1959	Jan. 21, 1959	13.43	166
				1960	July 1960	10.97	38
1951	-	11.54	60				
1952	-	12.72	117	1961	-	11.93	74
1953	-	10.41	28	1962	-	10.99	38
1954	-	11.56	61				
1955	-	11.76	68				

1770. Tenmile Creek at Toledo, Ohio

Location.--Lat 41°39'29", long 83°37'13", on line between secs. 31 and 32, T.9 S., R.7 E., at Secor Road bridge at Toledo, a quarter of a mile upstream from Toledo University and 4½ miles west of Lucas County courthouse.

Drainage area.--158 sq mi.

Gage.--Recording. Datum of gage is 580.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,930 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Tenmile Creek at Toledo, Ohio

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	June 1, 1943	11.4	3,400	1948	Feb. 29, 1948	9.48	1,680
1945	May 18, 1945	9.85	1,930	1950	Apr. 25, 1950	11.3	3,300
1946	Mar. 8, 1946	8.25	1,050	1959	Feb. 12, 1959	9.27	1,500
1947	June 3, 1947	9.14	1,420				

1774. Eagle Creek tributary near Montpelier, Ohio

Location.--Lat 41°35'10", long 84°40'50", at culvert on State Highway 107, 3.5 miles west of Montpelier, Williams County.

Drainage area.--1.56 sq mi.

Gage.--Crest-stage gage. Datum of gage is 896.06 ft above mean sea level (levels by Ohio Department of Highways).

Stage-discharge relation.--Defined by current-meter measurements below 28 cfs and by slope-area measurement at 131 cfs.

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)
1947	-	12.45	-	1955	-	10.52	70
1948	-	16.20	-				
1949	-	11.20	-	1956	May 4, 1956	12.54	195
1950	Apr. 24, 1950	11.43	131	1957	-	9.99	44
				1958	-	11.15	106
1951	-	10.41	75	1959	-	11.08	101
1952	-	-	<55	1960	Apr. 16, 1960	11.17	82
1953	-	9.7	43				
1954	-	9.86	50	1961	-	10.60	74

1775. St. Joseph River near Blakeslee, Ohio

Location.--Lat 41°31'05", long 84°41'50", in SE¹₄ sec.36, T.7 N., R.1 E., at highway bridge 1 mile upstream from Bear Creek, and 1¹/₄ miles east of Blakeslee, Williams County.

Drainage area.--369 sq mi.

Gage.--Nonrecording. Datum of gage is 819.94 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 3,300 cfs.

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)
1927	Feb. 8, 1927	10.64	2,230	1931	June 9, 1931	7.32	920
1928	Dec. 1, 1927	14.80	5,460	1932	Jan. 17, 1932	9.98	1,880
1929	Apr. 22, 1929	13.0	3,970				
1930	Jan. 4, 1930	12.32	3,420				

1780. St. Joseph River near Newville, Ind.

Location.--Lat 41°23'10", long 84°48'05", in Ohio, in SW $\frac{1}{4}$ sec.18, T.5 N., R.1 E., on left bank 20 ft downstream from bridge on State Highway 249 and $\frac{3}{2}$ miles northeast of Newville.

Drainage area.--614 sq mi.

Gage.--Nonrecording prior to Oct. 22, 1947; recording thereafter. Datum of gage is 795.40 ft above mean sea level, datum of 1929.

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

Historical data.--In the 10 years preceding the beginning of record, the highest stage reached was about 16.5 ft, according to information from local residents. Date of this peak is not known.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Mar. 26, 1947	11.66	2,640	1954	Mar. 29, 1954	12.97	3,950
	Apr. 9, 1947	12.87	3,650	1955	Oct. 16, 1954	11.50	2,830
	Apr. 23, 1947	15.32	6,050		Jan. 7, 1955	12.32	3,250
1948	Mar. 1, 1948	13.16	3,380		Mar. 4, 1955	11.72	2,900
	Mar. 24, 1948	12.76	3,560	1956	Mar. 2, 1956	13.0	3,480
1949	Jan. 28, 1949	-	2,700		Mar. 8, 1956	14.49	5,240
	Feb. 17, 1949	14.24	4,950		May 1, 1956	16.89	9,450
					May 14, 1956	15.32	6,170
1950	Jan. 6, 1950	12.96	3,750	1957	Apr. 12, 1957	11.49	2,700
	Jan. 16, 1950	12.44	3,200	1958	Dec. 23, 1957	11.91	2,960
	Jan. 28, 1950	13.93	4,650		Mar. 2, 1958	11.61	2,760
	Feb. 17, 1950	12.90	3,650		Sept. 20, 1958	11.45	2,640
	Mar. 12, 1950	12.37	3,200	1959	Feb. 15, 1959	14.15	4,910
	Mar. 29, 1950	14.90	5,670		Mar. 7, 1959	-	2,650
	Apr. 6, 1950	17.05	9,710		Apr. 5, 1959	12.42	3,320
	Apr. 26, 1950	15.69	6,790		May 2, 1959	11.48	2,700
1951	Dec. 8, 1950	13.36	3,500	1960	Jan. 16, 1960	12.88	3,720
	Jan. 7, 1951	-	3,000		Feb. 12, 1960	12.00	3,020
	Feb. 22, 1951	15.26	6,170		Apr. 1, 1960	12.03	3,020
	May 1, 1951	11.84	3,040		Apr. 19, 1960	12.27	3,250
	May 13, 1951	11.93	3,110		June 17, 1960	11.72	2,830
	July 13, 1951	13.58	4,430	1961	Apr. 27, 1961	-	3,700
1952	Jan. 3, 1952	-	3,000	1962	Mar. 22, 1962	13.76	4,390
	Jan. 18, 1952	13.74	4,510				
	Mar. 14, 1952	12.05	3,180				
	Apr. 17, 1952	11.47	2,830				
	May 28, 1952	11.98	3,180				
1953	Mar. 5, 1953	9.82	1,900				

a Backwater from ice.
 occurred Mar. 1, 1956.

b Daily mean discharge, estimated.
 d Daily mean discharge.

c Estimated; occurred Mar. 1, 1956.

1790. St. Joseph River at Cedarville, Ind.

Location.--Lat 41°12', long 85°01', in SE $\frac{1}{4}$ sec.28, T.32 N., R.13 E., on left bank 500 ft upstream from highway bridge, 2,700 ft downstream from Cedarville Dam, 0.4 mile south of Cedarville, and 0.5 mile upstream from mouth of Cedar Creek.

Drainage area.--783 sq mi.

Gage.--Nonrecording prior to Sept. 21, 1955, at site 500 ft downstream at datum approximately 20 ft lower; recording thereafter. Datum of gage is 757.94 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,700 cfs.

Remarks.--Only annual peaks are shown. Flow regulated by Cedarville Reservoir.

Peak stages and discharges of St. Joseph River at Cedarville, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Jan. 17, 1932	30.00	a3,720	1959	Feb. 16, 1959	c14.48	a4,950
1956	May 1, 1956	18.07	10,100	1960	Jan. 18, 1960	d12.55	a4,760
1957	Apr. 5, 1957	12.70	3,950	1961	Apr. 27, 1961	13.27	a5,400
1958	Dec. 26, 1957	b11.32	a3,220	1962	Mar. 24, 1962	-	a4,200

a Daily mean discharge.

b Occurred Dec. 20, 1957.

c Occurred Feb. 14, 1959.

d Occurred Feb. 10, 1960.

1795. Cedar Creek at Auburn, Ind.

Location.--Lat 41°21', long 85°03', in SW $\frac{1}{4}$ sec.29, T.34 N., R.13 E., near center of span on upstream side of Ninth Street Bridge in Auburn and 2 miles upstream from Peckhart ditch.

Drainage area.--93 sq mi, approximately.

Gage.--Nonrecording prior to Sept. 30, 1953; recording thereafter. Datum of gage is 847.14 ft above mean sea level (city of Auburn bench mark).

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

Bankfull stage.--8 ft.

Remarks.--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)
1943	May 1943	a9.8	b1,470	1951	Jan. 4, 1951	8.2	835
1944	Mar. 16, 1944	8.4	940		Feb. 22, 1951	8.65	940
	Apr. 12, 1944	9.30	1,230	1952	Jan. 15, 1952	7.3	732
	Apr. 23, 1944	7.2	716		Jan. 27, 1952	7.9	820
1945	Apr. 2, 1945	8.0	840		Mar. 11, 1952	8.45	900
	May 18, 1945	9.13	1,150	1953	Mar. 4, 1953	5.80	471
1946	Feb. 14, 1946	8.2	853	1954	Mar. 25, 1954	7.57	707
	June 13, 1946	8.58	916	1955	Jan. 6, 1955	7.61	707
1947	Jan. 31, 1947	8.0	823	1956	Apr. 30, 1956	8.85	1,050
	Mar. 25, 1947	7.3	721		May 12, 1956	8.26	915
	Apr. 21, 1947	9.02	983	1957	Apr. 9, 1957	6.89	651
1948	Feb. 28, 1948	8.58	905	1958	Dec. 20, 1957	6.01	540
1949	Feb. 16, 1949	9.21	995	1959	Feb. 14, 1959	8.19	890
1950	Jan. 4, 1950	8.8	920	1960	Jan. 13, 1960	7.51	780
	Jan. 10, 1950	8.1	779		Apr. 17, 1960	8.06	865
	Jan. 26, 1950	8.8	920		June 15, 1960	7.36	725
	Feb. 15, 1950	8.5	855	1961	Apr. 22, 1961	6.48	600
	Mar. 8, 1950	8.3	815	1962	Mar. 12, 1962	7.03	665
	Mar. 28, 1950	8.5	855				
	Apr. 5, 1950	9.90	1,520				
	Apr. 11, 1950	8.0	785				
1951	Dec. 8, 1950	8.0	785				

a Approximate, from information by local residents.

b Annual peak only.

1800. Cedar Creek near Cedarville, Ind.

Location.--Lat 41°13', long 85°05', in NW $\frac{1}{4}$ sec.19, T.32 N., R.13 E., on left bank at downstream side of bridge on State Highway 427, 2 $\frac{3}{4}$ miles northwest of Cedarville and 4 miles upstream from mouth.

Drainage area.--279 sq mi.

Gage.--Nonrecording prior to Nov. 4, 1947; recording thereafter. Datum of gage is 780.09 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)
1947	Jan. 31, 1947	8.10	2,550	1952	May 26, 1952	7.09	2,180
	Apr. 21, 1947	9.06	3,050	1953	Mar. 4, 1953	5.83	1,580
1948	Feb. 18, 1948	a8.46	b2,000	1954	Mar. 26, 1954	8.45	2,780
	Feb. 28, 1948	8.78	3,000	1955	Oct. 15, 1954	-	b2,800
1949	Jan. 6, 1949	7.45	2,300	1955	Jan. 6, 1955	7.20	2,200
	Jan. 20, 1949	8.11	2,630	1956	Mar. 7, 1956	6.99	2,120
	Feb. 16, 1949	10.75	3,980		Apr. 30, 1956	11.40	4,660
1950	Jan. 5, 1950	9.98	3,700		May 12, 1956	10.48	4,030
	Jan. 11, 1950	8.09	2,630	1957	Apr. 6, 1957	7.79	2,480
	Jan. 14, 1950	7.39	2,300		Apr. 11, 1957	6.96	2,120
	Jan. 16, 1950	7.23	2,200	1958	Dec. 20, 1957	7.01	2,120
	Jan. 26, 1950	9.17	3,220	1959	Feb. 10, 1959	10.65	4,100
	Feb. 15, 1950	8.49	2,830		Feb. 13, 1959	10.23	3,820
	Mar. 8, 1950	7.55	2,380		Feb. 24, 1959	6.80	2,020
	Mar. 28, 1950	8.44	2,780		Apr. 2, 1959	7.93	2,530
	Apr. 5, 1950	11.67	4,870	1960	Jan. 13, 1960	7.93	2,530
	Apr. 11, 1950	8.16	2,680		Feb. 11, 1960	7.28	2,250
1951	Dec. 8, 1950	7.27	2,320		Apr. 18, 1960	8.90	3,040
	Jan. 4, 1951	a8.56	c2,700		June 15, 1960	8.24	2,730
	Feb. 22, 1951	8.98	3,100	1961	May 10, 1961	6.35	1,840
	Apr. 30, 1951	7.40	2,370		Mar. 13, 1962	7.99	2,580
	May 12, 1951	6.57	2,010				
1952	July 10, 1951	7.95	2,640				
	Jan. 2, 1952	7.40	2,370				
	Jan. 27, 1952	8.55	2,910				
	Mar. 12, 1952	7.75	2,500				

a Backwater from ice.

b Daily mean discharge, estimated.

c Estimated.

1805. St. Joseph River near Fort Wayne, Ind.

Location.--Lat 41°10', long 85°04', in SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.4, T.31 N., R.13 E., on right bank at upstream side of bridge on Mayhew Road, 3 $\frac{1}{2}$ miles downstream from Cedar Creek and 8 miles northeast of Fort Wayne.

Drainage area.--1,060 sq mi.

Gage.--Recording. Datum of gage is 751.42 ft above mean sea level, datum of 1929. Since Sept. 15, 1944, auxiliary recording gage at St. Joe Dam 5 $\frac{1}{2}$ miles downstream from base gage. Datum of auxiliary gage is 741.42 ft above mean sea level (Fort Wayne Water Co. bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 12,000 cfs and extended to 16,500 cfs by logarithmic plotting.

Historical data.--River has been over the road to left of Ely Bridge only once in 50 years and this was in 1913, according to information collected in 1941 from local resident.

Remarks.--Flow regulated beginning Sept. 2, 1954, by dam at Cedarville 4 $\frac{1}{2}$ miles upstream; peak discharges may be materially affected. Base for partial-duration series, 6,000 cfs.

Peak stages and discharges of St. Joseph River near Fort Wayne, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	March 1913	a22	b16,500	1950	Jan. 5, 1950	13.66	8,000
					Jan. 11, 1950	12.25	6,500
1942	Mar. 18, 1942	12.81	6,650		Jan. 15, 1950	12.63	6,900
					Jan. 27, 1950	13.30	7,600
1943	Dec. 29, 1942	12.82	6,790		Feb. 15, 1950	12.84	7,100
	Mar. 17, 1943	13.92	7,830		Mar. 28, 1950	13.21	7,600
	May 13, 1943	16.59	10,500		Apr. 7, 1950	17.90	12,200
	May 18, 1943	16.70	10,600		Apr. 11, 1950	12.96	7,300
					Apr. 28, 1950	13.04	7,300
1944	Mar. 16, 1944	12.05	6,070				
	Apr. 12, 1944	16.18	10,100	1951	Dec. 8, 1950	12.14	6,400
	Apr. 24, 1944	11.95	6,070		Feb. 23, 1951	14.37	8,700
1945	Apr. 5, 1945	12.24	6,250	1952	Jan. 20, 1952	12.41	6,900
	May 20, 1945	16.07	10,000		Jan. 26, 1952	12.90	7,350
1946	June 14, 1946	12.05	6,070	1953	Mar. 4, 1953	9.55	4,400
1947	Apr. 24, 1947	13.01	6,970	1954	Mar. 26, 1954	11.89	6,210
1948	Feb. 19, 1948	c14.48	-	1955	Mar. 4, 1955	12.72	d6,930
	Feb. 29, 1948	12.37	6,750				
1949	Feb. 16, 1949	14.20	8,620				

a About, from information by local resident.

b Approximate; annual peak only.

c Backwater from ice.

d Annual peak only; affected by regulation.

1610. St. Marys River near Willshire, Ohio

Location.--Lat 40°44'05", long 84°44'10", in sec.34, T.3 S., R.1 E., at highway bridge three-quarters of a mile upstream from Black Creek and 3 miles south-east of Willshire, Van Wert County.

Drainage area.--355 sq mi.

Gage.--Nonrecording. Altitude of gage is 775 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs.

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)
1926	Apr. 9, 1926	14.0	2,930	1930	Jan. 15, 1930	16.65	4,260
1927	Mar. 22, 1927	16.1	3,960				
1928	Apr. 1, 1928	12.56	2,340	1931	Apr. 3, 1931	6.03	565
1929	Feb. 28, 1929	13.6	2,740	1932	Jan. 19, 1932	12.46	2,300

1815. St. Marys River at Decatur, Ind.

Location.--Lat 40°51', long 84°56', in SW¹ sec.27, T.28 N., R.14 E., on right bank 10 ft downstream from bridge on U.S. Highway 27, half a mile north of city limits of Decatur, and half a mile upstream from Holthouse ditch.

Drainage area.--615 sq mi.

Gage.--Nonrecording prior to July 27, 1948; recording thereafter. At site half a mile upstream at datum 2.42 ft higher prior to Nov. 1, 1946. Datum of gage is 760.44 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 8,100 cfs and extended above by logarithmic plotting.

Bankfull stage.--15 ft (U.S. Weather Bureau flood stage).

Remarks.--Gage heights prior to Nov. 1, 1946, furnished by U.S. Weather Bureau and converted to equivalent stages at present site and datum. Discharges in parentheses are approximate values considered accurate within 20 percent. Base for partial-duration series, 2,900 cfs.

STREAMS TRIBUTARY TO LAKE ERIE

Peak stages and discharges of St. Marys River at Decatur, Ind.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Feb. 12, 1932	11.9	(1,750)	1950	Jan. 5, 1950	22.19	5,510
1933	Dec. 31, 1932	17.7	(3,700)		Jan. 11, 1950	22.93	6,410
	Mar. 21, 1933	18.6	(4,240)		Jan. 16, 1950	22.30	5,620
	May 14, 1933	19.5	(4,860)		Jan. 27, 1950	22.91	6,410
					Feb. 15, 1950	23.60	12,500
1934	Mar. 31, 1934	15.9	(2,840)		Mar. 28, 1950	18.72	4,180
1935	May 7, 1935	18.1	(3,940)	1951	Nov. 21, 1950	17.40	3,540
1936	Feb. 28, 1936	-	a(5,200)		Dec. 7, 1950	22.61	5,990
	Mar. 28, 1936	16.1	(2,920)		Jan. 4, 1951	17.23	3,220
1937	Jan. 16, 1937	22.0	(8,580)		Feb. 23, 1951	22.16	5,510
1938	Feb. 19, 1938	16.1	(2,920)		May 11, 12, 1951	-	b3,000
	Mar. 18, 1938	19.2	(4,640)	1952	Jan. 1, 1952	-	b3,500
	Mar. 23, 1938	16.5	(3,090)		Jan. 21, 1952	17.43	4,180
	Apr. 1, 1938	19.7	(5,020)		Jan. 27, 1952	19.36	4,740
	Apr. 10, 1938	21.1	(6,740)		Feb. 5, 1952	16.70	2,940
					Mar. 13, 1952	22.40	5,740
1939	Mar. 14, 1939	22.1	(8,800)		Apr. 25, 1952	17.42	3,340
1940	Mar. 4, 1940	19.0	(4,500)	1953	Mar. 4, 1953	17.60	3,460
	Apr. 21, 1940	19.3	(4,710)	1954	Aug. 5, 1954	12.32	1,690
1941	June 12, 1941	14.2	(2,330)	1955	Oct. 15, 1954	15.81	2,910
1942	Apr. 12, 1942	19.5	(4,860)		Jan. 6, 1955	17.46	3,580
					Mar. 4, 1955	21.57	7,740
1943	Mar. 20, 1943	17.8	(3,760)	1956	Nov. 17, 1955	17.69	3,700
	May 12, 1943	21.0	(6,570)		Feb. 26, 1956	16.54	3,160
	May 18, 1943	23.4	(12,000)	1957	Apr. 8, 1957	21.49	7,700
	July 17, 1943	17.7	(3,700)		Apr. 21, 1957	19.02	4,500
1944	Apr. 12, 1944	22.0	(8,580)		May 14, 1957	15.87	3,010
					July 1, 1957	17.76	3,800
1945	Apr. 2, 1945	17.5	(3,600)	1958	Dec. 8, 1957	17.16	3,530
	June 21, 1945	18.5	(4,180)		Dec. 21, 1957	18.02	3,900
1946	Dec. 31, 1945	17.3	(3,480)		June 14, 1958	22.49	6,170
					July 16, 1958	17.48	3,650
1947	Jan. 31, 1947	17.8	3,910	1959	Nov. 18, 1958	16.90	3,410
	May 3, 1947	18.1	4,130		Jan. 23, 1959	18.85	4,410
	June 2, 1947	20.3	5,620		Feb. 10, 1959	21.22	16,300
	June 7, 1947	18.4	4,370		Apr. 29, 1959	21.98	8,400
1948	Jan. 2, 1948	16.5	3,140	1960	Feb. 11, 1960	18.49	4,200
	Feb. 19, 1948	17.1	3,400	1961	Mar. 14, 1961	16.98	3,450
	Mar. 22, 1948	20.43	5,740		Mar. 23, 1961	17.04	3,450
	Mar. 27, 1948	16.5	3,140		Apr. 19, 1961	17.51	3,650
	Apr. 15, 1948	19.0	4,900		Apr. 26, 1961	21.80	8,100
1949	Jan. 19, 1949	18.16	4,000	1962	Jan. 27, 1962	22.00	5,510
	Jan. 29, 1949	17.64	3,650		Feb. 27, 1962	17.64	3,700
	Feb. 15, 1949	18.29	4,060		Mar. 22, 1962	16.96	3,450
	May 22, 1949	17.81	3,760				

a Estimated.

b Daily mean discharge, estimated.

1820. St. Marys River near Fort Wayne, Ind.

Location.--Lat 41°00', long 85°07', NE $\frac{1}{4}$ sec. 12, T.29 N., R.12 E., on left bank 130 ft downstream from highway bridge, 4 miles south of Fort Wayne, and 12 miles upstream from mouth.

Drainage area.--753 sq mi.

Gage.--Nonrecording prior to Apr. 13, 1939; recording thereafter. Datum of gage is 748.61 ft above mean sea level, unadjusted.

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

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges of St. Marys River near Fort Wayne, Inc.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Apr. 4, 1931	7.49	2,000	1950	Jan. 5, 1950	15.18	7,090
1932	Jan. 17, 1932	11.54	4,440		Jan. 11, 1950	15.22	7,090
1933	Dec. 8, 1932	11.9	4,750		Jan. 28, 1950	14.97	6,870
	Dec. 25, 1932	11.1	4,160		Feb. 16, 1950	18.34	12,300
	Dec. 31, 1932	12.0	4,830		Mar. 29, 1950	12.30	4,660
	Mar. 21, 1933	13.0	5,630		Apr. 4, 1950	12.06	4,530
	May 14, 1933	14.08	6,620	1951	Oct. 10, 1950	12.82	5,010
1934	Mar. 31, 1934	10.41	3,670		Nov. 20, 1950	11.75	4,350
1935	May 8, 1935	12.0	4,830		Dec. 7, 1950	14.87	6,770
1936	Feb. 27, 1936	a16.90	b7,500		Jan. 4, 1951	11.75	4,350
1937	Jan. 17, 1937	16.83	9,430		Feb. 13, 1951	11.31	4,050
1938	Feb. 20, 1938	11.0	4,090	1952	Feb. 24, 1951	14.22	6,110
	Mar. 18, 1938	12.6	5,310		May 12, 1951	11.35	4,110
	Apr. 1, 1938	14.2	6,710		Jan. 1, 1952	12.78	5,010
	Apr. 11, 1938	14.92	7,400		Jan. 19, 1952	11.84	4,350
1939	Mar. 15, 1939	16.07	8,110		Jan. 28, 1952	13.43	5,450
1940	Mar. 4, 1940	a14.26	b4,800		Feb. 4, 1952	11.40	4,110
	Apr. 22, 1940	12.29	4,960		Mar. 14, 1952	14.65	6,570
1941	June 13, 1941	9.50	2,970	1953	Apr. 25, 1952	11.58	4,230
1942	Feb. 7, 1942	11.70	4,760		May 24, 1952	11.42	4,110
	Apr. 13, 1942	12.74	5,070	1954	Mar. 4, 1953	12.01	4,470
1943	Dec. 27, 1942	11.66	4,330		Apr. 12, 1954	7.37	1,950
	May 13, 1943	14.59	6,760		Aug. 5, 1954	7.85	-
	May 19, 1943	18.79	13,400	1955	Oct. 15, 1954	11.50	4,170
	July 17, 1943	12.09	4,620		Jan. 7, 1955	11.62	4,230
1944	Apr. 13, 1944	16.38	8,930		Mar. 1, 1955	11.98	4,470
1945	Apr. 2, 1945	12.79	5,150		Mar. 5, 1955	16.18	8,350
	June 22, 1945	11.36	4,120	1956	Nov. 18, 1955	11.35	4,110
1946	Jan. 1, 1946	a11.92	3,500		Feb. 25, 1956	13.05	5,150
1947	Jan. 31, 1947	11.38	4,140	1957	Jan. 23, 1957	11.31	4,020
	May 4, 1947	11.56	4,270		Apr. 8, 1957	16.57	8,990
	June 3, 1947	15.03	7,150		Apr. 21, 1957	12.75	5,010
	June 8, 1947	13.10	5,390		July 2, 1957	11.33	4,020
1948	Feb. 19, 1948	12.19	4,700	1958	Dec. 8, 1957	11.52	4,170
	Mar. 23, 1948	14.35	6,560		Dec. 20, 1957	12.71	4,940
	Mar. 27, 1948	11.66	4,340		June 14, 1958	15.06	6,980
	Apr. 16, 1948	12.41	4,840		July 17, 1958	11.32	4,050
1949	Jan. 19, 1949	12.60	5,000	1959	Jan. 22, 1959	-	4,870
	Jan. 28, 1949	12.30	4,770		Feb. 11, 1959	19.42	13,600
	Feb. 15, 1949	12.33	4,770		Apr. 30, 1959	16.66	10,000
	May 23, 1949	12.85	5,150	1960	Feb. 11, 1960	12.63	4,940
				1961	Mar. 23, 1961	11.26	4,050
					Apr. 28, 1961	15.54	8,120
				1962	Jan. 28, 1962	14.00	6,070
					Feb. 28, 1962	12.23	4,590

a Backwater from ice.

b Estimated.

1830. Maumee River at New Haven, Ind.

Location.--Lat 41°05', long 85°01', in SW $\frac{1}{4}$ sec.1, T.30 N., R.13 E., near left bank on downstream side of highway bridge, a quarter of a mile upstream from Wabash Railroad bridge, half a mile north of New Haven, and 6 miles downstream from confluence of St. Marys and St. Joseph Rivers.

Drainage area.--1,940 sq mi.

Gage.--Nonrecording prior to Sept. 7, 1956; recording thereafter. Datum of gage is 724.51 ft above mean sea level, datum of 1929.

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

Bankfull stage.--10 ft.

Historical data.--Flood of Mar. 8, 1908, reached a stage of 22.5 ft at the U.S. Weather Bureau gage at Fort Wayne, 5 miles upstream. Flood of Mar. 26, 1913, reached a stage of 26.1 ft at the U.S. Weather Bureau gage, and is the maximum stage recorded since knowledge began in 1907. Correlation of gage heights between the U.S. Weather Bureau gage and the U.S. Geological Survey gage at New Haven for overlapping period of record, 1947-53, indicates an approximate 1:1 ratio between gage heights at the two sites. A former observer remembered the 1913 high water to be about 3 ft higher than an early 1940 high water at the U.S. Geological Survey gage (probably 1943). Flood of May 1943 reached a stage of about 24 ft at the U.S. Geological Survey gage and was the highest since 1913, according to information obtained in September 1953 from a former observer.

Remarks.--Base for partial-duration series, 9,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Jan. 31, 1947	15.3	10,000	1952	May 25, 1952	16.90	11,400
	June 3, 1947	16.47	11,600	1953	Mar. 4, 1953	15.50	9,930
	June 7, 1947	15.1	9,780				
1948	Feb. 29, 1948	16.6	11,000	1954	Mar. 26, 1954	12.78	7,230
	Mar. 22, 1948	18.0	12,400	1955	Oct. 15, 1954	16.5	10,900
	Mar. 27, 1948	16.1	10,500		Jan. 7, 1955	15.8	10,200
1949	Jan. 19, 1949	16.8	11,200		Mar. 5, 1955	17.8	12,200
	Jan. 28, 1949	16.1	10,100	1956	Feb. 26, 1956	15.55	10,000
	Feb. 17, 1949	18.2	13,200		Mar. 8, 1956	15.65	10,000
	May 23, 1949	16.1	10,100		May 3, 1956	17.40	11,800
1950	Jan. 5, 1950	20.2	16,800	1957	Apr. 11, 1957	19.16	15,000
	Jan. 16, 1950	19.4	15,400				
	Jan. 27, 1950	18.6	14,100	1958	Dec. 21, 1957	16.28	10,800
	Feb. 16, 1950	21.4	19,100		June 14, 1958	15.08	9,530
	Mar. 29, 1950	17.3	12,000	1959	Feb. 12, 1959	21.3	18,900
	Apr. 6, 1950	18.9	14,500		Apr. 2, 1959	16.18	10,600
	Apr. 11, 1950	17.1	11,700		Apr. 29, 1959	18.77	14,400
1951	Dec. 8, 1950	-	a14,000	1960	Jan. 14, 1960	15.20	9,630
	Jan. 4, 1951	16.4	10,700		Feb. 11, 1960	17.05	11,700
	Feb. 24, 1951	19.10	14,900		June 15, 1960	15.66	10,100
1952	Jan. 1, 1952	16.36	10,700	1961	Apr. 29, 1961	18.42	13,700
	Jan. 17, 1952	16.36	11,500				
	Jan. 20, 1952	17.92	12,900	1962	Mar. 23, 1962	15.34	9,730
	Jan. 27, 1952	18.60	14,100				
	Mar. 13, 1952	16.98	11,500				

a Daily mean discharge, estimated.

1835. Maumee River at Antwerp, Ohio

Location.--Lat 41°11'56", long 84°44'40", in sec.22, T.3 N., R.1 E., on left bank 425 ft downstream from bridge on State Highway 49, 1 mile north of Antwerp, Paulding County, 7 miles downstream from Indiana State line, and 10 miles upstream from Marie DeLarme Creek.

Drainage area.--2,049 sq mi.

Gage.--Nonrecording prior to Sept. 13, 1925; recording thereafter except for period Nov. 24, 1936, to Apr. 11, 1939. U.S. Weather Bureau nonrecording gage at Fort Wayne, Ind., 32 miles upstream at datum 730.07 ft above mean sea level. Datum of present gage is 695.49 ft above mean sea level, adjustment of 1912.

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

Bankfull stage.--14 ft.

Remarks.--Only annual peaks are shown for period prior to 1922, and for 1937-38. Base for partial-duration series, 8,000 cfs. Discharges for period prior to 1922 and for period Mar. 24, 1936, to Apr. 11, 1939, computed from gage heights furnished by the U.S. Weather Bureau.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	Apr. 2, 1912	-	19,200	1930	Dec. 19, 1929	13.6 ^c	11,400
1913	Mar. 27, 1913	-	40,000		Jan. 4, 1930	16.22	15,700
1914	May 13, 1914	-	14,300		Jan. 9, 1930	17.04	17,100
1915	Feb. 13, 1915	-	10,600		Jan. 16, 1930	19.4	22,000
					Feb. 27, 1930	11.85	8,740
1916	Jan. 6, 1916	-	18,400		Apr. 18, 1930	11.61	8,480
1917	Apr. 6, 1917	-	14,300				
1918	Feb. 16, 1918	-	18,700	1931	Apr. 5, 1931	6.74	3,380
1919	Mar. 18, 1919	-	21,200				
1920	Apr. 23, 1920	-	20,600	1932	Jan. 18, 1932	13.26	11,000
1921	Mar. 29, 1921	-	11,600	1933	Dec. 8, 1932	13.31	11,000
					Dec. 25, 1932	13.22	10,800
1922	Mar. 12, 1922	11.8	8,480		Jan. 1, 1933	13.11	10,700
	Mar. 15, 1922	12.7	9,540		Mar. 16, 1933	13.02	10,500
	Apr. 2, 1922	16.8	14,700		Mar. 22, 1933	13.12	10,700
	Apr. 18, 1922	15.5	13,000		May 12, 1933	15.6	14,800
	May 21, 1922	12.5	9,300				
				1934	Apr. 1, 1934	11.02	7,780
1923	Mar. 14, 1923	14.0	11,100				
	Mar. 18, 1923	16.5	14,400	1935	May 7, 1935	12.07	9,260
	May 17, 1923	14.7	12,000				
				1936	Feb. 28, 1936	a20.54	21,200
1924	Dec. 15, 1923	12.7	9,540		May 4, 1936	11.93	8,490
	Jan. 31, 1924	11.4	8,040				
	Mar. 26, 1924	12.2	8,940	1937	Jan. 18, 1937	-	14,100
	Mar. 31, 1924	16.8	14,700	1938	Apr. 10, 1938	-	15,500
	June 11, 1924	13.8	10,900				
	June 26, 1924	11.6	8,260	1939	Mar. 15, 1939	17.2	17,700
					Apr. 19, 1939	13.50	11,300
1925	Dec. 20, 1924	12.6	9,420				
	Feb. 25, 1925	12.3	9,060	1940	Mar. 4, 1940	a15.87	11,000
	Mar. 16, 1925	17.3	15,400				
	Mar. 20, 1925	15.7	13,300	1941	June 14, 1941	7.32	3,720
1926	Feb. 27, 1926	13.0	9,900	1942	Feb. 7, 1942	14.2	11,300
	Apr. 10, 1926	17.5	15,600		Mar. 11, 1942	13.09	9,920
	Sept. 26, 1926	15.72	13,300		Mar. 19, 1942	13.16	10,000
					Apr. 11, 1942	13.57	10,500
1927	Oct. 4, 1926	12.25	8,940				
	Feb. 1, 1927	a18.1	12,000	1943	Dec. 29, 1942	15.18	12,800
	Mar. 24, 1927	15.15	12,700		Mar. 19, 1943	14.58	11,900
	Apr. 20, 1927	11.60	8,260		May 14, 1943	17.72	17,700
					May 20, 1943	20.29	26,200
					July 18, 1943	11.71	8,270
1928	Dec. 2, 1927	15.65	14,600				
	Dec. 8, 1927	12.82	10,100				
	Dec. 16, 1927	-	14,000	1944	Mar. 18, 1944	12.30	8,960
	Feb. 16, 1928	11.48	8,350		Apr. 13, 1944	18.83	20,700
					Apr. 24, 1944	14.42	11,600
					May 10, 1944	12.67	9,440
1929	Jan. 20, 1929	13.6	11,300				
	Feb. 28, 1929	12.90	10,200				
	Mar. 18, 1929	12.11	9,130	1945	Mar. 7, 1945	11.58	8,160
	Apr. 2, 1929	13.8	11,600		Apr. 3, 1945	15.32	12,900
	May 4, 1929	11.82	8,740		May 18, 1945	16.5	15,100

a Backwater from ice.

Peak stages and discharges of Maumee River at Antwerp, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Oct. 2, 1945	11.96	8,600	1952	May 6, 1952	15.50	12,900
	Dec. 31, 1945	13.71	8,600	1953	Mar. 5, 1953	13.88	10,800
	June 14, 1946	12.18	8,840				
1947	Jan. 31, 1947	13.28	10,200	1954	Mar. 26, 1954	11.02	7,500
	Apr. 22, 1947	12.51	9,200	1955	Oct. 16, 1954	14.60	11,700
	June 4, 1947	14.43	11,600		Jan. 7, 1955	13.59	10,400
	June 8, 1947	12.98	9,800		Mar. 6, 1955	15.59	13,000
1948	Feb. 19, 1948	15.70	9,500		Mar. 12, 1955	11.92	8,340
	Feb. 29, 1948	14.60	11,900	1956	Feb. 27, 1956	13.53	10,500
	Mar. 20, 1948	11.80	8,380		Mar. 4, 1956	12.57	9,320
	Mar. 23, 1948	15.56	13,400		Mar. 8, 1956	13.90	11,100
	Mar. 28, 1948	14.28	11,500		May 3, 1956	15.09	12,900
1949	Jan. 6, 1949	13.01	9,740		May 14, 1956	12.75	9,580
	Jan. 19, 1949	15.22	12,500	1957	Apr. 11, 1957	17.36	16,800
	Jan. 29, 1949	14.40	11,400		Apr. 19, 1957	12.11	8,590
	Feb. 17, 1949	16.00	13,700	1958	Dec. 21, 1957	14.48	12,000
	May 23, 1949	14.17	11,200		Dec. 26, 1957	12.52	9,110
1950	Jan. 5, 1950	17.89	17,600		June 15, 1958	12.89	9,410
	Jan. 16, 1950	17.43	16,400		July 12, 1958	12.19	8,530
	Jan. 27, 1950	16.61	14,700	1959	Jan. 23, 1959	-	8,000
	Feb. 17, 1950	18.70	20,000		Jan. 31, 1959	-	8,500
	Mar. 30, 1950	15.27	12,600		Feb. 13, 1959	120.22	20,000
	Apr. 7, 1950	16.78	15,100		Apr. 3, 1959	14.13	11,200
	Apr. 29, 1950	11.54	8,050		Apr. 30, 1959	16.62	15,400
	June 11, 1950	12.60	9,260	1960	Jan. 15, 1960	13.34	10,000
	Sept. 2, 1950	13.52	10,300		Feb. 12, 1960	14.81	12,300
1951	Nov. 21, 1950	12.03	8,600		Mar. 31, 1960	12.51	8,900
	Dec. 8, 1950	15.93	13,500		June 15, 1960	13.87	10,800
	Jan. 5, 1951	14.43	11,400	1961	Mar. 14, 1961	12.89	9,400
	Feb. 14, 1951	17.40	-		Apr. 29, 1961	16.16	14,600
	Feb. 22, 1951	16.78	15,100		May 10, 1961	12.84	9,330
	Mar. 30, 1951	11.69	8,270	1962	Jan. 27, 1962	-	8,800
	May 12, 1951	13.77	10,700		Feb. 27, 1962	17.08	9,100
	July 12, 1951	12.80	9,500		Mar. 13, 1962	12.95	9,480
1952	Jan. 1, 1952	17.17	12,500		Mar. 23, 1962	13.10	9,690
	Jan. 21, 1952	15.37	12,800				
	Jan. 28, 1952	16.15	14,000				
	Feb. 5, 1952	13.01	9,740				
	Mar. 14, 1952	14.81	12,000				

a Backwater from ice.

1845. Bean Creek at Powers, Ohio

Location.--Lat 41°40'40", long 84°13'50", in NE $\frac{1}{4}$ sec.24, T.9 S., R.1 E., at bridge on U.S. Highway 20, 1 mile east of Powers, Fulton County, and $2\frac{1}{4}$ miles upstream from Iron Creek.

Drainage area.--238 sq mi.

Gage.--Nonrecording prior to Jan. 18, 1941; recording thereafter. Datum of gage is 722.6 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 3,510 cfs.

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Dec. 30, 1940	6.55	860	1943	May 25, 1943	8.52	1,350
1942	Mar. 9, 1942	10.52	1,760	1944	June 2, 1943	9.60	1,720
	Mar. 17, 1942	10.06	1,630		June 7, 1943	8.53	1,350
1943	Mar. 16, 1943	10.71	2,210		July 5, 1943	10.46	2,110
	May 12, 1943	12.57	3,560	1944	Mar. 16, 1944	9.28	1,600
	May 20, 1943	11.95	3,050		Apr. 12, 1944	8.40	1,330

Peak stages and discharges of Bean Creek at Powers, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Apr. 3, 1945	8.25	1,270	1952	Jan. 2, 1952	8.72	1,380
	May 18, 1945	12.66	3,650		Jan. 17, 1952	10.50	1,900
1946	Feb. 14, 1946	9.04	1,390		Jan. 20, 1952	9.33	1,520
1947	Mar. 25, 1947	9.90	1,840		Mar. 11, 1952	10.27	1,820
	Apr. 6, 1947	12.33	3,290		Mar. 19, 1952	9.02	1,450
	Apr. 21, 1947	12.33	3,290		Apr. 14, 1952	9.72	1,640
1948	Feb. 20, 1948	11.39	2,260	1953	Mar. 4, 1953	7.17	1,040
	Feb. 22, 1948	8.44	1,330	1954	Mar. 25, 1954	10.37	1,860
	Feb. 28, 1948	11.71	2,430	1955	Jan. 6, 1955	8.99	1,450
	Mar. 20, 1948	9.20	1,570		Mar. 1, 1955	8.73	1,380
	Mar. 22, 1948	10.60	1,880	1956	Feb. 25, 1956	11.4	2,000
1949	Jan. 19, 1949	8.87	1,300		Mar. 6, 1956	9.6C	1,610
	Feb. 15, 1949	12.47	2,980		Apr. 29, 1956	13.82	4,250
1950	Jan. 4, 1950	10.17	1,820		May 12, 1956	9.63	1,660
	Jan. 10, 1950	9.12	1,480	1957	Apr. 27, 1957	8.44	1,320
	Jan. 26, 1950	11.23	2,180	1958	Dec. 21, 1957	8.84	1,420
	Feb. 15, 1950	12.18	2,790		July 15, 1958	10.27	1,900
	Mar. 8, 1950	9.57	1,630	1959	Feb. 15, 1959	-	1,700
	Mar. 23, 1950	8.10	1,210		Feb. 24, 1959	-	1,300
	Mar. 28, 1950	12.93	3,500		Mar. 6, 1959	8.91	1,450
	Apr. 5, 1950	13.30	3,980		Apr. 2, 1959	8.72	1,420
	Apr. 24, 1950	13.24	3,860	1960	Nov. 15, 1959	8.16	1,200
1951	Dec. 3, 1950	10.20	1,820		Jan. 13, 1960	11.94	2,600
	Dec. 8, 1950	11.29	2,220		Feb. 11, 1960	9.24	1,480
	Jan. 3, 1951	9.68	1,660		June 15, 1960	8.64	1,320
	Feb. 13, 1951	-	al, 500		July 4, 1960	9.65	1,610
	Feb. 21, 1951	12.35	2,900	1961	Apr. 26, 1961	12.63	2,640
	Mar. 30, 1951	8.73	1,370	1962	Mar. 13, 1962	al2.20	1,800
	May 12, 1951	8.85	1,390		Mar. 22, 1962	8.85	1,320
	July 10, 1951	12.02	2,610				
	July 23, 1951	12.79	3,240				
1952	Nov. 14, 1951	8.20	1,230				

a Backwater from ice.

1850. Tiffin River at Stryker, Ohio

Location.--Lat 41°30'15", long 84°25'50", in SW $\frac{1}{4}$ sec.5, T.6 N., R.4 E., at bridge on State Highway 191 at west edge of Stryker, Williams County, 0.6 mile upstream from New York Central Railway bridge and 1 $\frac{1}{2}$ miles downstream from Leatherwood Creek.

Drainage area.--441 sq mi. Prior to 1940, 450 sq mi; 1940 to 1953, 444 sq mi.

Gage.--Nonrecording prior to Jan. 18, 1941, recording thereafter. At site $3\frac{1}{2}$ miles downstream at different datum prior to Oct. 13, 1940. At site half a mile downstream at present datum Oct. 13, 1940, to Sept. 30, 1953. Datum of gage is 685.5 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 5,750 cfs.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 1,800 cfs. Only annual peaks are shown prior to 1941.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	March 1913	16.0	7,600	1926	Feb. 27, 1926	12.6	4,220
1922	Apr. 1, 1922	13.0	4,820	1927	Feb. 8, 1927	10.9	2,140
1923	Mar. 17, 1923	12.23	3,650	1928	Dec. 15, 1927	13.1	4,970
1924	Mar. 7, 1924	12.97	4,820	1937	-	al5.0	6,000
1925	Mar. 16, 1925	12.2	3,650				

a From local resident.

Peak stages and discharges of Tiffin River at Stryker, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	
1941	Jan. 1, 1941	9.24	1,140	1951	Dec. 9, 1950	12.62	2,660	
1942	Feb. 21, 1942	b12.78	-	Jan. 5, 1951	12.60	2,660		
	Mar. 10, 1942	12.5	3,280	Feb. 22, 1951	14.31	4,950		
	Mar. 18, 1942	12.5	3,280	Mar. 16, 1951	10.84	1,520		
	Apr. 12, 1942	10.41	1,530	Apr. 1, 1951	11.08	1,640		
				Apr. 29, 1951	11.65	1,880		
1943	Dec. 30, 1942	13.23	4,010	May 13, 1951	12.36	2,450		
	Feb. 11, 1943	10.94	1,760	July 12, 1951	11.79	2,000		
	Mar. 17, 1943	12.60	3,380	July 26, 1951	10.52	1,420		
	May 13, 1943	13.50	4,320	1952	Jan. 4, 1952	12.26	2,360	
	May 20, 1943	14.2	5,060		Jan. 17, 1952	13.06	3,460	
	June 2, 1943	12.75	3,590		Jan. 28, 1952	11.53	1,980	
	July 8, 1943	12.40	3,170		Feb. 6, 1952	11.08	1,710	
			Mar. 13, 1952		12.26	2,640		
1944	Feb. 26, 1944	10.20	1,450	Mar. 21, 1952	11.49	1,980		
	Mar. 17, 1944	12.16	2,540	Apr. 7, 1952	10.62	1,440		
	Apr. 12, 1944	13.5	3,800	Apr. 15, 1952	11.69	2,130		
	Apr. 25, 1944	10.94	1,710	1953	Mar. 6, 1953	10.96	1,650	
1945	Apr. 3, 1945	12.16	2,960	1954	Mar. 27, 1954	12.85	2,680	
	May 18, 1945	14.80	5,690					
1946	Apr. 3, 1945	12.16	2,960	1955	Jan. 8, 1955	12.51	2,360	
	May 18, 1945	14.80	5,690		Mar. 3, 1955	11.92	1,890	
1947	Feb. 17, 1946	10.21	1,450	1956	Feb. 28, 1956	-	2,600	
	Mar. 27, 1947	12.10	2,060		Mar. 8, 1956	13.80	3,290	
	Apr. 8, 1947	12.94	3,130		May 1, 1956	16.16	6,040	
	Apr. 22, 1947	14.43	5,160		May 13, 1956	15.68	4,680	
	May 20, 1947	11.22	1,580		1957	Apr. 13, 1957	11.48	1,670
	June 4, 1947	11.96	1,980					
	June 16, 1947	10.72	1,410					
1948	Feb. 21, 1948	12.57	2,570	1958	Dec. 22, 1957	12.66	2,410	
	Mar. 1, 1948	12.97	3,080		July 18, 1958	13.04	2,630	
	Mar. 23, 1948	12.50	2,510		1959	Feb. 15, 1959	b13.93	2,600
	Mar. 29, 1948	11.46	1,700	Feb. 26, 1959		b12.20	1,700	
	Apr. 3, 1948	10.69	1,410	Mar. 8, 1959		11.94	1,910	
	May 14, 1948	10.97	1,500	Apr. 4, 1959		12.33	2,150	
	1949	Jan. 8, 1949	10.88	1,550	1960	Jan. 15, 1960	13.68	3,180
Jan. 21, 1949		12.02	2,060	Feb. 13, 1960		-	2,500	
Feb. 16, 1949		13.81	4,240	Apr. 1, 1960		12.02	1,960	
1950	Dec. 24, 1949	11.37	1,750	June 17, 1960		12.35	2,160	
	Jan. 6, 1950	13.05	3,220	1961	Apr. 19, 1961	12.23	2,190	
	Jan. 12, 1950	12.18	2,220		Apr. 27, 1961	13.75	3,330	
	Jan. 27, 1950	13.45	3,680		1962	Mar. 14, 1962	13.54	3,160
	Feb. 16, 1950	14.46	5,250			Mar. 21, 1962	12.65	2,480
	Mar. 10, 1950	11.64	1,840					
	Mar. 28, 1950	14.55	5,400					
	Apr. 5, 1950	14.57	5,400					
	Apr. 25, 1950	15.45	6,640					
	July 22, 1950	10.82	1,580					

b Ice jam.

1855. Tiffin River near Brunersburg, Ohio

Location.--Lat 41°20'50", long 84°25'10", on line between secs. 32 and 33, T.5 N., R.4 E., three-eighths of a mile downstream from Mud Creek and 3 miles northwest of Brunersburg, Defiance County.

Drainage area.--766 sq mi.

Gage.--Nonrecording prior to Sept. 23, 1928; recording thereafter. Altitude of gage is 670 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 4,740 cfs.

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)
1929	Feb. 27, 1929	19.0	6,750	1933	Mar. 14, 1933	19.88	7,380
1930	Jan. 14, 1930	23.3	9,990	1934	Apr. 6, 1934	17.27	5,600
1931	Mar. 28, 1931	6.97	1,000	1935	May 15, 1935	11.24	2,320
1932	Jan. 18, 1932	15.31	4,420	1936	Feb. 27, 1936	a22.0	-

a May be affected by backwater from ice.

1865. Auglaize River near Fort Jennings, Ohio

Location.--Lat 40°56'55", long 84°15'56", in SE $\frac{1}{4}$ sec.15, T.1 S., R.5 E., 200 ft upstream from bridge on U.S. Highway 324, 3 $\frac{1}{2}$ miles northeast of Fort Jennings, Putnam County, and 6 miles upstream from Ottawa River.

Drainage area.--333 sq mi.

Gage.--Nonrecording prior to Oct. 6, 1930, recording thereafter. Datum of gage is 713.9 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 9,110 cfs.

Bankfull stage.--20 ft.

Remarks.--Base for partial-duration series, 2,700 cfs. Only annual peaks are shown prior to 1931.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Apr. 19, 1922	15.7	6,740	1948	Apr. 14, 1948	13.40	4,390
1923	Mar. 17, 1923	12.7	3,680				
1924	Mar. 30, 1924	14.4	5,180	1949	Dec. 18, 1948	11.72	2,980
1925	Dec. 20, 1924	12.8	3,730		Jan. 6, 1949	14.40	5,180
					Jan. 20, 1949	13.12	3,900
1926	Apr. 8, 1926	15.1	6,020		Jan. 29, 1949	12.70	3,590
1927	Mar. 21, 1927	17.0	8,430		Feb. 16, 1949	13.16	3,980
1928	Mar. 31, 1928	13.9	5,120		Mar. 28, 1949	11.35	2,830
1929	Feb. 27, 1929	15.2	6,280				
1930	Jan. 15, 1930	16.6	8,200	1950	Jan. 5, 1950	15.21	6,140
					Jan. 11, 1950	14.83	5,660
1931	Apr. 4, 1931	7.79	1,630		Jan. 17, 1950	13.28	4,070
					Jan. 27, 1950	14.08	4,850
1932	Jan. 18, 1932	12.00	3,130		Feb. 10, 1950	12.65	3,500
					Feb. 15, 1950	17.8	9,550
1933	Dec. 8, 1932	11.38	2,770		Mar. 28, 1950	12.13	3,260
	Dec. 25, 1932	12.30	3,310				
	Jan. 1, 1933	13.60	4,270	1951	Oct. 10, 1950	14.20	4,960
	Mar. 20, 1933	11.89	3,070		Nov. 21, 1950	12.86	3,740
	May 14, 1933	11.82	3,010		Dec. 4, 1950	15.88	7,000
	Sept. 29, 1933	13.48	4,190		Jan. 4, 1951	12.96	3,820
1934	Mar. 5, 1934	10.38	2,280		Feb. 14, 1951	12.34	3,320
1935	May 4, 1935	12.40	3,380		Feb. 22, 1951	14.64	5,420
	July 25, 1935	12.15	3,250		May 12, 1951	11.44	2,830
				1952	Jan. 1, 1952	13.85	4,540
1936	Feb. 27, 1936	15.83	6,640		Jan. 18, 1952	14.08	4,850
	Mar. 25, 1936	12.02	3,130		Jan. 27, 1952	14.65	5,420
					Feb. 5, 1952	12.29	3,320
1941	June 4, 1941	8.20	1,500		Mar. 12, 1952	15.23	6,140
					Apr. 25, 1952	13.20	3,980
1942	Mar. 9, 1942	11.45	2,750	1953	Mar. 5, 1953	11.80	3,030
	Mar. 18, 1942	11.05	2,550				
	Apr. 11, 1942	14.15	5,020	1954	Apr. 18, 1954	9.03	1,820
1943	Mar. 18, 1943	13.92	4,860				
	May 13, 1943	12.10	3,280	1955	Jan. 7, 1955	12.40	3,380
	May 18, 1943	16.4	7,920		Mar. 5, 1955	14.20	4,960
	June 16, 1943	13.75	4,770				
1944	Mar. 8, 1944	13.60	4,580	1956	Feb. 27, 1956	12.50	3,450
	Apr. 12, 1944	15.5	6,710				
1945	Feb. 24, 1945	11.60	2,910	1957	Feb. 28, 1957	11.51	2,880
	Mar. 4, 1945	11.92	3,120		Apr. 6, 1957	15.92	7,000
	Mar. 8, 1945	12.30	3,440		Apr. 20, 1957	12.99	3,820
	Mar. 21, 1945	11.70	2,980		June 30, 1957	15.63	6,620
	Apr. 1, 1945	11.92	3,120	1958	Dec. 8, 1957	12.32	3,320
	Apr. 3, 1945	12.20	3,360		Dec. 20, 1957	12.60	3,520
	May 19, 1945	11.33	2,710		June 12, 1958	13.05	3,590
	June 19, 1945	16.00	7,360		July 13, 1958	12.53	3,200
1946	June 28, 1946	13.12	3,840	1959	Nov. 18, 1958	11.83	3,040
					Jan. 23, 1959	a20.30	12,000
1947	Jan. 31, 1947	12.48	3,600		Feb. 11, 1959	a19.07	7,500
	June 4, 1947	12.37	3,520		Apr. 28, 1959	15.22	6,160
	June 8, 1947	11.20	2,730	1960	Feb. 11, 1960	11.59	2,920
1948	Jan. 3, 1948	12.32	3,440	1961	Apr. 26, 1961	14.36	5,140
	Feb. 16, 1948	13.14	4,100				
	Feb. 29, 1948	11.20	2,730	1962	Jan. 28, 1962	15.96	7,080
	Mar. 22, 1948	12.30	3,440		Feb. 28, 1962	14.31	5,080
	Mar. 28, 1948	11.26	2,780		Mar. 13, 1962	12.50	3,450

a Ice jam.

1875. Ottawa River at Allentown, Ohio

Location.--Lat 40°45'18", long 84°11'41", in NW $\frac{1}{4}$ sec.29, T.3 S., R.6 E., at bridge on State Highway 81 in Allentown, Allen County, 0.3 mile downstream from Kessler Run.

Drainage area.--168 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1925; recording thereafter. Datum of gage is 789.67 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 4,730 cfs.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 1,600 cfs. Only annual peaks 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)
1924	Mar. 29, 1924	8.6	3,750	1947	Jan. 30, 1947	6.74	2,010
1925	Dec. 19, 1924	7.3	2,200		June 2, 1947	6.79	2,080
					June 7, 1947	6.98	2,220
1926	Apr. 8, 1926	6.95	2,030				
	Sept. 5, 1926	7.6	2,360	1948	Jan. 2, 1948	6.85	2,000
	Sept. 26, 1926	7.25	2,140		Feb. 14, 1948	6.50	1,820
					Feb. 28, 1948	6.15	1,650
1927	Jan. 31, 1927	6.82	1,880		Apr. 6, 1948	6.77	2,000
	Mar. 20, 1927	9.0	4,490		Apr. 14, 1948	7.36	2,440
	May 19, 1927	8.35	3,390				
1928	Dec. 1, 1927	7.87	2,750	1949	Jan. 5, 1949	6.96	2,140
	Dec. 14, 1927	8.15	3,100		Jan. 19, 1949	7.15	2,280
	Feb. 15, 1928	6.64	1,780		Jan. 28, 1949	6.86	2,070
	Mar. 30, 1928	8.2	3,100		Feb. 15, 1949	7.30	2,380
	Apr. 22, 1928	6.25	1,600				
	July 21, 1928	6.17	1,600	1950	Jan. 10, 1950	7.34	2,410
1929	Jan. 19, 1929	8.0	2,850		Jan. 16, 1950	7.27	2,340
	Feb. 27, 1929	7.43	2,180		Jan. 24, 1950	6.64	1,950
					Jan. 26, 1950	6.83	2,070
1930	Oct. 23, 1929	6.72	1,830		Feb. 9, 1950	-	1,800
	Dec. 13, 1929	6.68	1,830		Feb. 14, 1950	9.17	4,760
	Dec. 18, 1929	7.89	2,750				
	Jan. 2, 1930	6.90	1,930	1951	Oct. 10, 1950	7.17	2,280
	Jan. 8, 1930	8.54	3,550		Nov. 20, 1950	7.35	2,410
	Jan. 13, 1930	8.49	3,550		Dec. 3, 1950	8.83	4,250
			920		Jan. 4, 1951	6.88	2,100
1931	Apr. 3, 1931	4.60			Feb. 13, 1951	6.17	1,700
					Feb. 21, 1951	8.23	3,370
1932	Jan. 17, 1932	6.40	1,690		May 11, 1951	6.85	2,070
	Apr. 26, 1932	7.09	2,030	1952	Jan. 1, 1952	-	2,300
					Jan. 17, 1952	6.48	1,870
1933	Dec. 24, 1932	7.34	2,060		Jan. 27, 1952	8.39	3,570
	Dec. 31, 1932	8.00	2,410		Feb. 4, 1952	6.14	1,700
	Mar. 14, 1933	7.40	2,110		Mar. 11, 1952	8.66	3,930
	Mar. 19, 1933	6.72	1,780		Apr. 24, 1952	7.92	2,950
	Sept. 27, 1933	8.55	2,680	1953	Mar. 4, 1953	6.32	1,770
1934	Mar. 2, 1934	6.50	-	1954	Apr. 17, 1954	5.38	1,340
	Mar. 3, 1934	5.70	1,240	1955	Jan. 6, 1955	6.82	2,040
1935	May 4, 1935	7.62	2,500		Mar. 4, 1955	7.76	2,780
1939	Mar. 15, 1939	10.1	6,160	1956	Feb. 25, 1956	7.10	2,230
					Mar. 8, 1956	6.28	1,770
1943	May 1943	10.0	6,000	1957	Feb. 27, 1957	6.76	2,010
					Apr. 5, 1957	8.28	3,430
1944	Mar. 7, 1944	7.40	2,590		Apr. 8, 1957	6.59	1,920
	Apr. 11, 1944	9.00	4,490		Apr. 11, 1957	6.08	1,680
1945	Mar. 3, 1945	6.35	1,870		Apr. 18, 1957	6.62	1,920
	Mar. 7, 1945	6.00	1,600		Apr. 23, 1957	6.19	1,720
	Mar. 31, 1945	6.10	1,670		May 20, 1957	6.65	1,950
	Apr. 2, 1945	6.48	1,940		June 29, 1957	9.45	5,300
	June 16, 1945	7.42	2,590				
1946	Dec. 30, 1945	6.35	1,870	1958	Dec. 7, 1957	6.25	1,670
	June 13, 1946	6.22	1,740		Dec. 19, 1957	6.30	1,720
	June 27, 1946	8.42	3,140		June 10, 1958	6.37	1,780
					July 16, 1958	6.46	1,840

a Ice jam.

Peak stages and discharges of Ottawa River at Allentown, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Nov. 17, 1958	6.19	1,660	1961	Apr. 23, 1961	7.15	2,260
	Jan. 22, 1959	10.88	7,740		Apr. 26, 1961	8.42	3,540
	Feb. 10, 1959	9.55	5,150	1962	Jan. 27, 1962	8.25	3,340
	Feb. 15, 1959	6.52	1,860		Feb. 27, 1962	7.35	2,410
	Apr. 28, 1959	7.30	2,380		Mar. 12, 1962	6.77	2,010
1960	Dec. 13, 1959	6.52	1,860		Mar. 21, 1962	6.61	1,910
	Feb. 10, 1960	6.23	1,690				

1880. Ottawa River at Kalida, Ohio

Location.--Lat 40°58'51", long 84°12'12", in SW $\frac{1}{4}$ sec.5, T.1 S., R.6 E., at highway bridge in Kalida, Putnam County, 1 mile upstream from Plum Creek and $\frac{3}{2}$ miles above mouth.

Drainage area.--315 sq mi.

Gage.--Nonrecording. Datum of gage is 707.41 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 3,490 cfs.

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)
1931	Apr. 4, 1931	8.9	1,270	1934	Mar. 30, 1934	12.07	2,230
1932	Jan. 18, 1932	13.72	3,830	1935	May 4, 1935	13.4	3,430
1933	Jan. 1, 1933	13.90	4,110				

1885. Eagle Creek near Findlay, Ohio

Location.--Lat 40°59'35", long 83°39'05", on line between sec.1, T.1 S., R.10 E., and sec.36, T.1 N., R.10 E., at county highway bridge (now destroyed) $\frac{3}{4}$ miles south of Findlay, Hancock County, and $4\frac{1}{2}$ miles upstream from mouth.

Drainage area.--46.5 sq mi.

Gage.--Nonrecording prior to Jan. 1, 1949; recording thereafter. Datum of gage is 780.02 ft above mean sea level (State Highway Department bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 2,530 cfs.

Bankfull stage.--10 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)
1947	June 7, 1947	13.38	a2,920	1949	Mar. 27, 1949	10.50	1,000
1948	Jan. 1, 1948	12.2	1,950		May 22, 1949	10.27	920
	Feb. 28, 1948	10.15	905	1950	Jan. 4, 1950	10.01	845
	Mar. 22, 1948	10.79	1,130		Jan. 10, 1950	11.84	1,680
	Mar. 27, 1948	10.5	1,000		Jan. 16, 1950	11.30	1,380
	Apr. 14, 1948	13.1	2,650		Jan. 24, 1950	11.28	1,380
					Jan. 26, 1950	11.10	1,280
					Feb. 9, 1950	11.28	1,350
1949	Jan. 5, 1949	10.73	1,110		Feb. 14, 1950	12.69	2,320
	Jan. 19, 1949	11.12	1,280		Apr. 30, 1950	10.65	1,060
	Jan. 28, 1949	10.97	1,200				
	Feb. 15, 1949	11.75	1,680				

a Annual peak only.

Peak stages and discharges of Eagle Creek near Findlay, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Oct. 10, 1950	10.44	988	1954	Apr. 17, 1954	10.13	730
	Nov. 20, 1950	12.68	2,320	1955	Jan. 6, 1955	11.25	1,110
	Dec. 3, 1950	11.87	1,740		Feb. 21, 1955	10.52	840
	Dec. 7, 1950	10.94	1,200		Mar. 4, 1955	12.35	1,870
	Jan. 3, 1951	11.45	1,470		Mar. 11, 1955	10.98	1,020
	Jan. 19, 1951	9.89	804		Mar. 22, 1955	10.38	810
	Feb. 13, 1951	10.84	1,160	1956	Nov. 16, 1955	10.52	840
	Feb. 21, 1951	12.07	1,880		Feb. 25, 1956	12.21	1,710
	Mar. 23, 1951	10.04	836		Mar. 8, 1956	11.07	1,060
	May 11, 1951	10.23	901		May 7, 1956	10.72	905
1952	Jan. 1, 1952	-	950	1957	Feb. 27, 1957	11.36	1,210
	Jan. 18, 1952	11.73	1,480		Apr. 4, 1957	12.25	1,710
	Jan. 27, 1952	13.03	2,520		Apr. 8, 1957	10.90	980
	Feb. 4, 1952	10.82	1,090		Apr. 11, 1957	10.44	810
	Mar. 11, 1952	13.14	2,570		Apr. 18, 1957	10.37	810
	Apr. 13, 1952	10.18	885		June 1, 1957	10.95	1,020
	Apr. 24, 1952	10.93	1,130		June 29, 1957	13.45	2,850
1953	Mar. 4, 1953	10.92	965	1959	Feb. 10, 1959	-	b6,300
	May 8, 1953	10.87	965				
	May 18, 1953	10.50	835				

b From contracted-opening measurement in Findlay (drainage area, 49.4 sq mi).

1890. Blanchard River near Findlay, Ohio

Location.--Lat 41°03'21", long 83°41'17", on east line of sec.10, T.1 N., R.10 E., at highway bridge, 2 miles west of Findlay, Hancock County, and 3 miles downstream from Eagle Creek.

Drainage area.--343 sq mi.

Gage.--Nonrecording prior to July 24, 1930; recording thereafter. Datum of gage is 754.55 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 10,000 cfs.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 2,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	March 1913	18.5	22,000	1928	June 7, 1928	9.9	3,800
1924	Dec. 23, 1923	8.4	3,070	1929	Jan. 19, 1929	12.1	6,010
	Jan. 11, 1924	10.0	3,840		Jan. 25, 1929	9.0	3,350
	Mar. 5, 1924	7.3	2,560		Feb. 26, 1929	11.9	5,760
	Mar. 30, 1924	10.92	4,280		July 5, 1929	10.3	4,000
	June 10, 1924	8.1	2,930	1930	Oct. 24, 1929	7.1	2,400
1925	Dec. 19, 1924	8.2	2,980		Dec. 13, 1929	7.7	2,700
	Feb. 23, 1925	7.7	2,740		Dec. 18, 1929	12.4	6,400
1926	Feb. 26, 1926	9.0	3,360		Jan. 3, 1930	10.6	4,290
	Mar. 23, 1926	8.1	2,930		Jan. 8, 1930	13.2	7,460
	Apr. 8, 1926	10.3	3,990		Jan. 15, 1930	14.0	8,580
	Sept. 5, 1926	11.1	4,380	1931	Apr. 3, 1931	4.72	1,290
	Sept. 26, 1926	9.0	3,360		Jan. 18, 1932	9.07	3,400
1927	Oct. 6, 1926	7.3	2,500	1933	Dec. 31, 1932	11.04	4,710
	Jan. 30, 1927	10.9	4,600		Mar. 14, 1933	11.89	5,760
	Feb. 6, 1927	8.3	3,000		Mar. 19, 1933	9.24	3,450
	Mar. 21, 1927	13.2	7,460		May 8, 1933	7.30	2,500
	May 19, 1927	8.2	2,950		May 13, 1933	9.67	3,700
	July 31, 1927	11.0	4,710	1934	Mar. 29, 1934	5.55	1,700
1928	Dec. 1, 1927	15.4	11,800	1935	May 4, 1935	8.16	2,900
	Dec. 15, 1927	11.3	5,040		May 7, 1935	7.38	2,550
	Feb. 15, 1928	7.5	2,600				
	Mar. 31, 1928	12.8	6,920				
	Apr. 22, 1928	7.8	2,750				

Peak stages and discharges of Blanchard River near Findlay, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Feb. 27, 1936	12.63	6,660	1951	Jan. 4, 1951	10.18	3,900
	Mar. 25, 1936	10.08	3,820		Jan. 19, 1951	7.74	2,420
1941	Jan. 2, 1941	4.05	958		Feb. 13, 1951	9.30	3,250
1942	Mar. 17, 1942	9.64	4,000		Feb. 21, 1951	10.26	3,980
	Apr. 10, 1942	11.8	5,760		Apr. 30, 1951	10.20	3,900
1943	Mar. 17, 1943	9.89	4,210	1952	Jan. 1, 1952	10.75	4,420
	May 18, 1943	10.3	4,520		Jan. 18, 1952	9.42	3,310
	May 22, 1943	8.81	3,440		Jan. 27, 1952	13.01	7,020
1944	Apr. 12, 1944	11.3	5,340		Feb. 4, 1952	8.40	2,770
1945	Feb. 22, 1945	8.87	3,090		Mar. 12, 1952	12.64	6,440
	Mar. 5, 1945	7.33	2,480	1953	May 18, 1953	7.63	2,370
	Mar. 21, 1945	8.50	3,230	1954	Apr. 17, 1954	7.75	2,470
	May 18, 1945	7.28	2,480	1955	Jan. 6, 1955	9.34	3,250
	June 20, 1945	12.20	6,140		Mar. 4, 1955	11.46	5,100
1946	June 13, 1946	10.40	4,090		Mar. 12, 1955	9.42	3,310
	June 18, 1946	12.40	6,400		Mar. 22, 1956	7.92	2,520
	June 28, 1946	7.90	2,520	1956	Feb. 26, 1956	11.10	4,700
1947	Jan. 31, 1947	9.65	3,440		Mar. 8, 1956	10.40	4,060
	May 26, 1947	8.70	2,920		May 12, 1956	8.16	2,670
	June 3, 1947	10.60	4,290	1957	Feb. 27, 1957	8.57	2,870
	June 8, 1947	13.73	8,160		Apr. 6, 1957	12.72	6,580
1948	Jan. 2, 1948	10.85	4,490		Apr. 11, 1957	9.85	3,580
	Feb. 14, 1948	8.17	2,670		June 29, 1957	12.30	6,040
	Feb. 17, 1948	8.38	2,770	1958	Dec. 7, 1957	7.76	2,470
	Mar. 22, 1948	10.65	4,930		Dec. 20, 1957	7.70	2,420
	Apr. 14, 1948	9.20	3,660	1959	Jan. 22, 1959	16.11	13,100
1949	Jan. 6, 1949	8.33	2,720		Feb. 11, 1959	16.76	15,000
	Jan. 19, 1949	9.24	3,190		Apr. 29, 1959	10.70	4,330
	Jan. 28, 1949	9.44	3,310	1960	Dec. 13, 1959	8.96	3,080
	Feb. 16, 1949	10.17	3,900		Jan. 13, 1960	9.12	3,160
	May 23, 1949	8.60	2,870		Jan. 15, 1960	8.63	2,940
1950	Jan. 11, 1950	9.56	3,440		Feb. 6, 1960	8.67	2,900
	Jan. 16, 1950	9.17	3,190		Feb. 11, 1960	9.49	3,370
	Jan. 26, 1950	10.11	3,820	1961	Apr. 19, 1961	9.21	3,210
	Feb. 9, 1950	8.32	2,720		Apr. 23, 1961	10.17	3,880
	Feb. 15, 1950	14.71	10,200		Apr. 26, 1961	11.95	5,620
1951	Oct. 10, 1950	8.36	2,770	1962	Jan. 27, 1962	10.76	4,380
	Nov. 21, 1950	11.28	4,900		Feb. 27, 1962	10.49	4,140
	Dec. 3, 1950	11.00	4,600		Mar. 12, 1962	7.63	2,440
	Dec. 8, 1950	8.72	2,920				

a Backwater from ice.

1891. Tiderishi Creek near Jenera, Ohio

Location.--Lat 40°55'50", long 83°43'40", at culvert on State Highway 698, 2.2 miles north of Jenera, Hancock County.

Drainage area.--4.65 sq mi. Length of main stream, 4.13 miles; average slope, main stream, 5.0 ft per mile; average slope, main stream and tributaries, 11.2 ft per mile; slope at gage, 5 ft per mile; length divided by average width of basin, 3.78.

Gage.--Crest-stage gage. Altitude of gage is 813 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 241 cfs and by indirect measurements at 334 and 529 cfs.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Tiderishi Creek near Jenera, Ohio

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	-	13.20	219	1956	Feb. 25, 1956	14.53	348
1948	-	14.03	298	1957	June 28, 1957	14.46	260
1949	-	12.81	184	1958	-	11.95	128
1950	Feb. 14, 1950	13.15	214	1959	Feb. 10, 1959	15.15	480
				1960	-	14.17	350
1951	-	12.97	196				
1952	-	13.18	219	1961	-	13.04	225
1953	-	10.72	47	1962	-	13.46	268
1954	-	11.74	106				
1955	-	13.45	243				

1895. Blanchard River at Glandorf, Ohio

Location.--Lat 41°02'40", long 84°04'55", in NE¹ sec.17, T.1 N., R.7 E., at highway bridge half a mile upstream from Pike Run and three-quarters of a mile north of Glandorf, Putnam County.

Drainage area.--643 sq mi.

Gage.--Nonrecording. Datum of gage is 697.02 ft above mean sea level (levels by Ohio Division of Water).

Stage-discharge relation.--Defined by current-meter measurements below 15,700 cfs.

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)
1922	Apr. 1, 1922	22.4	8,570	1947	June 9, 1947	23.8	11,300
1923	Mar. 17, 1923	19.1	4,500	1948	Mar. 22, 1948	23.0	9,710
1924	Mar. 31, 1924	20.8	5,910	1949	Feb. 17, 1949	20.2	5,310
1925	Dec. 20, 1924, Mar. 15, 1925	19.0	4,460	1950	Feb. 15, 1950	27.0	15,800
				1951	Dec. 4, 1950	22.2	6,790
1926	Apr. 7, 1926	23.6	10,900				
1927	Mar. 22, 1927	24.4	12,500	1959	Feb. 12, 1959	27.9	17,700
1928	Dec. 2, 1927	21.7	7,270				

1900. Blanchard River near Dupont, Ohio

Location.--Lat 41°02'28", long 84°13'37", on east line sec.13, T.1 N., R.5 E., at highway bridge 4 miles east of Dupont, Putnam County.

Drainage area.--749 sq mi.

Gage.--Recording. Datum of gage is 691.42 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 13,000 cfs.

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)
1929	Feb. 28, 1929	20.3	9,500	1932	Jan. 19, 1932	18.47	7,600
1930	Jan. 15, 1930	26.69	16,800	1933	May 15, 1933	19.60	8,430
				1934	Mar. 31, 1934	14.36	3,810
1931	Apr. 5, 1931	10.09	2,150	1935	May 8, 1935	15.33	4,400

1905. Roller Creek at Ohio City, Ohio

Location.--Lat 40°46'15", long 84°38'15", at highway bridge three-quarters of a mile west of Ohio City, Van Wert County, and 3 $\frac{1}{4}$ miles upstream from mouth.

Drainage area.--4.94 sq mi. Length of main stream, 3.10 miles; average slope, main stream, 3.7 ft per mile; average slope, main stream and tributaries, 7.7 ft per mile; slope at gage, 4 ft per mile; length divided by average width of basin, 1.95.

Gage.--Recording. Datum of gage is 805.71 ft above mean sea level, adjustment of 1929.

Stage-discharge relation.--Poorly defined by current-meter measurements below 198 cfs and by contracted-opening measurement at 890 cfs.

Bankfull stage.--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)
1947	Jan. 30, 1947	7.86	216	1956	Nov. 16, 1955	8.98	350
1948	Mar. 21, 1948	7.37	186	1957	June 28, 1957	7.78	150
1949	Feb. 15, 1949	8.05	222	1958	June 10, 1958	8.73	260
1950	Feb. 13, 1950	8.08	228	1959	Feb. 10, 1959	9.58	890
				1960	Mar. 27, 1960	6.00	123
1951	Feb. 21, 1951	8.23	234				
1952	Jan. 26, 1952	7.27	290	1961	Apr. 22, 1961	7.45	196
1953	Mar. 3, 1953	6.33	242	1962	Jan. 26, 1962	8.04	227
1954	Aug. 5, 1954	7.72	84				
1955	Mar. 4, 1955	8.65	351				

1910. Town Creek near Van Wert, Ohio

Location.--Lat 40°49'30", long 84°34'50", in sec.36, T.2 S., R.2 E., at highway bridge 3 miles south of Van Wert, Van Wert County, and 5 $\frac{1}{2}$ miles downstream from Roller Creek.

Drainage area.--20.4 sq mi. Length of main stream, 10.9 miles; average slope, main stream, 4.5 ft per mile; average slope, main stream and tributaries, 6.0 ft per mile; slope at gage, 3 ft per mile; length divided by average width of basin, 5.82.

Gage.--Recording. Datum of gage is 777.93 ft above mean sea level (levels by Ohio Department of Highways).

Stage-discharge relation.--Defined by current-meter measurements below 810 cfs.

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)
1946	June 27, 1946	9.0	860	1951	Feb. 21, 1951	9.16	696
1947	June 2, 1947	8.26	720	1952	Mar. 11, 1952	9.73	810
1948	Mar. 21, 1948	9.34	935	1953	Mar. 4, 1953	8.87	640
1949	Feb. 15, 1949	8.79	820				
1950	Feb. 14, 1950	9.65	785	1959	Feb. 10, 1959	all.77	b,2,350

a From floodmark.

b From contracted-opening measurement on 17.8 sq mi, adjusted for drainage area difference.

1915. Auglaize River near Defiance, Ohio

Location.--Lat 41°14'15", long 84°24'02", in NE $\frac{1}{4}$ sec.9, T.3 N., P.4 E., 125 ft downstream from dam and powerplant of Toledo Edison Co., a quarter of a mile upstream from Jackson ditch, and 3 miles south of Defiance, Defiance County.

Drainage area.--2,329 sq mi.

Gage.--Nonrecording prior to Dec. 7, 1933; recording thereafter except for period Nov. 23, 1936, to October 1940. Datum of gage is 660.00 ft above mean sea level, adjustment of 1912. Datum of headwater gage used prior to Dec. 7, 1933, and during period Nov. 23, 1936, to Oct. 1, 1940, is 666.00 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 51,000 cfs. Prior to Dec. 6, 1933, and from Nov. 23, 1936, to Oct. 1, 1940, theoretical rating of flow over dam and through gates and wheels was used.

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)
1913	March 1913	38.8	120,000	1939	Mar. 14, 1939	29.4	38,900
1916	Jan. 3, 1916	29.2	34,400	1940	Mar. 5, 1940	27.6	25,500
1917	Apr. 3, 1917	26.1	17,400	1941	June 6, 1941	9.87	5,250
1918	Feb. 14, 1918	29.7	27,500	1942	Apr. 12, 1942	18.9	26,700
1919	Mar. 18, 1919	29.6	37,100	1943	May 19, 1943	25.5	48,000
1920	Apr. 22, 1920	27.7	20,900	1944	Apr. 13, 1944	22.4	37,700
1921	Mar. 29, 1921	27.9	22,000	1945	Apr. 2, 1945	16.20	18,800
1922	Apr. 1, 1922	28.4	23,600	1946	June 14, 1946	14.85	15,100
1923	May 17, 1923	27.8	21,400	1947	June 9, 1947	18.30	25,100
1924	Mar. 31, 1924	28.0	22,300	1948	Mar. 23, 1948	20.30	31,000
1925	Mar. 15, 1925	26.9	20,500	1949	May 23, 1949	17.61	22,600
1926	Apr. 9, 1926	28.9	32,100	1950	Feb. 16, 1950	26.4	52,500
1927	Mar. 22, 1927	29.1	39,800	1951	Dec. 5, 1950	20.40	29,900
1928	Dec. 15, 1927	26.8	21,000	1952	Mar. 13, 1952	21.27	32,400
1929	Feb. 28, 1929	29.6	27,300	1953	Mar. 5, 1953	14.60	14,800
1930	Jan. 15, 1930	30.0	45,000	1954	Apr. 18, 1954	11.10	7,470
1931	Apr. 4, 1931	25.6	8,290	1955	Mar. 6, 1955	19.27	27,000
1932	Jan. 19, 1932	25.0	18,000	1956	Feb. 27, 1956	17.59	22,600
1933	May 15, 1933	27.13	22,500	1957	Apr. 6, 1957	21.75	33,900
1934	Mar. 30, 1934	13.48	13,000	1958	Dec. 20, 1957	15.91	18,100
1935	May 5, 1935	15.55	16,600	1959	Feb. 12, 1959	27.65	52,500
1936	Feb. 27, 1936	20.37	31,300	1960	Feb. 12, 1960	15.78	17,800
1937	Jan. 16, 1937	29.7	39,000	1961	Apr. 27, 1961	18.63	25,200
1938	Apr. 10, 1938	28.6	31,400	1962	Mar. 13, 1962	16.87	20,700

a Occurred Feb. 13, 1959; ice jam.

1925. Maumee River near Defiance, Ohio

Location.--Lat 41°17'30", long 84°16'50", in NW $\frac{1}{4}$ sec.22, T.4 N., R.5 E., 40 ft upstream from Independence Dam, 4 miles downstream from Auglaize River, and $4\frac{1}{2}$ miles east of Defiance, Defiance County.

Drainage area.--5,530 sq mi.

Gage.--Recording. Datum of gage is 659.12 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 86,600 cfs.

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Maumee River near Defiance, Ohio

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Mar. 15, 1925	8.5	47,100	1945	May 18, 1945	8.40	46,300
1926	Apr. 9, 1926	9.58	55,500	1946	June 14, 1946	6.60	30,100
1927	Mar. 22, 1927	9.23	52,400	1947	June 4, 1947	7.77	41,600
1928	Dec. 15, 1927	7.83	39,500	1948	Mar. 23, 1948	8.90	50,100
1929	Feb. 28, 1929	8.54	46,000	1949	Feb. 17, 1949	8.05	43,200
1930	Jan. 16, 1930	12.90	79,400	1950	Feb. 16, 1950	13.70	87,100
1931	Apr. 4, 1931	4.30	11,200	1951	Feb. 23, 1951	9.23	52,400
1932	Jan. 19, 1932	7.06	33,200	1952	Mar. 13, 1952	8.96	50,900
1933	May 13, 1933	8.04	41,300	1953	Mar. 5, 1953	6.89	33,200
1934	Mar. 31, 1934	5.93	23,700	1954	Mar. 26, 1954	5.25	18,600
1935	May 8, 1935	6.45	28,200	1955	Mar. 6, 1955	8.13	44,000
1936	Feb. 29, 1936	9.4	53,900	1956	Mar. 8, 1956	7.20	36,100
1939	Mar. 14, 1939	9.77	58,800	1957	Apr. 7, 1957	9.55	55,500
1940	Mar. 5, 1940	8.78	42,500	1958	Dec. 21, 1957	7.15	36,100
1941	Jan. 4, 1941	3.8	8,550	1959	Feb. 12, 1959	12.35	76,500
1942	Apr. 11, 1942	7.93	45,200	1960	Feb. 12, 1960	7.37	37,800
1943	May 19, 1943	13.10	80,800	1961	Apr. 27, 1961	8.18	44,600
1944	Apr. 13, 1944	11.05	65,900	1962	Mar. 13, 1962	7.90	42,400

1935. Maumee River at Waterville, Ohio

Location.--Lat 41°30'00", long 83°42'46", at bridge on State Highway 64 in Waterville, Lucas County, and 3 miles downstream from Tontogany Creek.

Drainage area.--6,314 sq mi.

Gage.--Nonrecording prior to Aug. 1, 1930; recording thereafter except for period Mar. 14, 1939, to Mar. 12, 1940. Datum of gage is 596.33 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 94,000 cfs.

Bankfull stage.--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)
1900	Mar. 11, 1900	11.8	a58,000	1942	Feb. 7, 1942	10.88	49,800
1901	Mar. 13, 1901	8.4	a27,600	1943	May 20, 1943	13.9	78,000
1913	March 1913	b19.9	c180,000	1944	Apr. 12, 1944	13.2	71,000
				1945	May 19, 1945	11.3	53,300
1922	Apr. 22, 1922	10.8	48,600	1946	June 14, 1946	9.43	37,400
1923	Mar. 18, 1923	10.4	45,100	1947	June 4, 1947	10.18	43,800
1924	Mar. 31, 1924	11.0	49,500	1948	Mar. 23, 1948	11.42	54,100
1925	Mar. 15, 1925	10.5	45,600	1949	Feb. 17, 1949	10.50	45,900
				1950	Feb. 16, 1950	14.52	94,000
1926	Apr. 9, 1926	11.8	55,900				
1927	Mar. 23, 1927	11.3	51,900	1951	Feb. 23, 1951	11.44	54,000
1928	Dec. 16, 1927	9.9	40,900	1952	Jan. 1, 1952	d11.81	-
1929	Feb. 28, 1929	11.40	53,100		Jan. 28, 1952	11.39	54,000
1930	Jan. 16, 1930	13.6	75,000	1953	Mar. 6, 1953	9.16	35,500
				1954	Mar. 26, 1954	7.61	24,100
1931	Apr. 5, 1931	5.60	12,300	1955	Mar. 6, 1955	10.56	46,800
1932	Jan. 18, 1932	9.27	35,600				
1933	May 14, 1933	10.48	45,900	1956	May 12, 1956	10.79	48,600
1934	Mar. 31, 1934	7.82	25,300	1957	Apr. 7, 1957	12.23	62,400
1935	May 8, 1935	d8.67	33,300	1958	Dec. 21, 1957	9.90	41,100
				1959	Feb. 12, 1959	d16.17	85,000
1936	Feb. 29, 1936	d15.0	57,800	1960	Feb. 11, 1960	10.30	46,800
1939	Mar. 14, 1939	12.0	59,500	1961	Apr. 26, 1961	11.15	53,800
1940	Mar. 5, 1940	12.6	65,200	1962	Mar. 14, 1962	11.49	56,800
1941	Jan. 3, 1941	5.72	12,700				

a Maximum daily discharge. b Information from local resident (1961). c Estimated.
d Ice jam.

STREAMS TRIBUTARY TO LAKE ERIE

1940. Swan Creek at Toledo, Ohio

Location.--Lat 41°37'37", long 83°35'40", in SE $\frac{1}{4}$ sec.9, T.3 of Twelve Mile Reservation, at Detroit Avenue Bridge, in Toledo, and 5.2 miles upstream from mouth.

Drainage area.--185 sq mi.

Gage.--Recording. Datum of gage is 570.00 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,200 cfs.

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	May 18, 1945	14.48	2,200	1948	May 13, 1948	14.17	1,850
1946	Dec. 31, 1945	10.72	1,090	1950	Apr. 25, 1950	27.2	7,140
1947	Apr. 22, 1947	14.27	1,880				

1945. South Branch Portage River near Pemberville, Ohio

Location.--Lat 41°22'45", long 83°28'35", in sec.21, T.5 N., R.12 E., at highway bridge $2\frac{1}{2}$ miles southwest of Pemberville, Wood County, and 3.2 miles upstream from North Branch.

Drainage area.--334 sq mi.

Gage.--Nonrecording. Altitude of gage is 645 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 6,250 cfs.

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)
1931	Apr. 4, 1931	6.20	1,660	1934	Apr. 17, 1934	9.6	3,840
1932	Jan. 18, 1932	9.85	4,020	1935	May 7, 1935	8.25	2,680
1933	Mar. 14, 1933	13.00	7,350				

1950. North Branch Portage River near Bowling Green, Ohio

Location.--Lat 41°23'20", long 83°33'40", in SE $\frac{1}{4}$ sec.14, T.5 N., R.11 E., at bridge half a mile downstream from Poe ditch, 5 miles northeast of Bowling Green, Wood County

Drainage area.--54.0 sq mi.

Gage.--Nonrecording. Altitude of gage is 655 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 625 cfs.

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)
1924	June 29, 1924	5.8	732	1929	Feb. 26, 1929	5.7	708
1925	Feb. 24, 1925	4.65	474	1930	Jan. 10, 1930	6.7	962
1926	Apr. 8, 1926	5.9	756	1931	Apr. 4, 1931	2.22	130
1927	July 23, 1927	5.5	642	1932	Jan. 18, 1932	4.03	371
1928	Dec. 14, 1927	4.9	534				

1955. Portage River at Woodville, Ohio

Location.--Lat 41°26'55", long 83°21'41", in sec.28, T.6 N., R.13 E., at bridge on U.S. Highway 20 in Woodville, Sandusky County.

Drainage area.--433 sq mi.

Gage.--Nonrecording prior to Oct. 9, 1933; recording thereafter. Datum of gage is 615.14 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 11,500 cfs.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 3,500 cfs. Only annual peaks are shown prior to 1934.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	March 1913	a17	17,000	1950	Jan. 27, 1950	10.44	5,460
1929	Feb. 27, 1929	11.80	7,450		Feb. 10, 1950	9.24	4,140
1930	Jan. 15, 1930	12.96	9,150		Feb. 15, 1950	14.51	11,500
1931	Apr. 4, 1931	6.61	2,040		Mar. 28, 1950	9.35	4,340
1932	Jan. 18, 1932	8.82	4,250		Apr. 5, 1950	8.63	3,540
1933	Mar. 15, 1933	12.52	8,220		May 1, 1950	9.44	4,340
					June 25, 1950	8.87	3,840
1934	Apr. 5, 1934	8.15	3,500	1951	Oct. 11, 1950	11.21	6,690
	Apr. 17, 1934	8.71	4,000		Nov. 21, 1950	11.20	6,690
1935	May 8, 1935	7.78	2,920		Dec. 4, 1950	11.50	7,090
					Dec. 8, 1950	9.10	4,140
1940	Mar. 5, 1940	9.10	4,160		Jan. 4, 1951	11.78	7,510
	Apr. 19, 1940	9.77	4,930		Feb. 13, 1951	9.76	4,940
	Apr. 21, 1940	8.58	3,650		Feb. 22, 1951	9.57	4,700
					June 14, 1951	11.66	7,370
1941	Dec. 30, 1940	7.46	2,600	1952	Jan. 2, 1952	11.60	7,200
1942	Feb. 18, 1942	8.50	3,550		Jan. 18, 1952	11.16	6,670
	Mar. 9, 1942	8.33	3,350		Jan. 20, 1952	9.16	4,250
	Apr. 8, 1942	8.58	3,650		Jan. 28, 1952	12.58	8,600
	Apr. 11, 1942	10.68	6,010		Feb. 5, 1952	9.33	4,360
1943	Dec. 28, 1942	9.95	5,170		Mar. 12, 1952	13.24	9,490
	Mar. 18, 1943	10.63	5,890	1953	Mar. 5, 1953	8.51	3,510
	May 13, 1943	9.56	4,710		May 24, 1953	9.06	4,140
	May 19, 1943	12.3	8,150	1954	Mar. 26, 1954	8.65	3,610
	June 1, 1943	10.27	5,530	1955	Jan. 7, 1955	9.69	4,810
	Sept. 6, 1943	8.98	4,050		Mar. 2, 1955	8.88	3,920
1944	Apr. 12, 1944	13.08	9,300		Mar. 5, 1955	10.78	6,150
					Mar. 12, 1955	9.24	4,250
1945	Apr. 1, 1945	9.02	4,050	1956	Feb. 26, 1956	9.60	4,690
	May 18, 1945	9.30	4,380		Mar. 8, 1956	10.71	6,020
	June 19, 1945	9.77	4,930		May 13, 1956	12.72	8,740
1946	Dec. 31, 1945	8.50	3,550	1957	Apr. 6, 1957	12.23	8,180
	June 14, 1946	10.90	6,250		Apr. 12, 1957	10.14	5,290
	June 18, 1946	11.50	7,040		June 30, 1957	9.54	4,580
1947	Jan. 31, 1947	10.67	6,010	1958	Dec. 9, 1957	9.78	4,930
	May 14, 1947	8.56	3,650		Feb. 25, 1958	9.87	4,930
	June 3, 1947	11.91	7,580		July 13, 1958	9.85	4,930
	June 8, 1947	8.75	3,650	1959	Jan. 23, 1959	10.03	5,240
1948	Jan. 3, 1948	10.25	5,340		Feb. 12, 1959	11.81	7,490
	Feb. 29, 1948	8.88	3,840		Feb. 15, 1959	8.95	3,980
	Mar. 23, 1948	13.98	10,600		Apr. 29, 1959	9.87	5,040
	May 8, 1948	9.14	4,040	1960	Dec. 14, 1959	8.47	3,500
	May 15, 1948	8.72	3,640		Jan. 14, 1960	10.03	5,270
1949	Jan. 19, 1949	9.00	3,940 ^a		Feb. 7, 1960	9.07	4,030
	Jan. 28, 1949	9.04	3,940		Feb. 11, 1960	9.56	4,650
	Feb. 16, 1949	10.99	6,180	1961	Apr. 24, 1961	9.60	4,690
	May 23, 1949	10.34	5,340		Apr. 27, 1961	10.95	6,340
1950	Jan. 5, 1950	8.94	3,840	1962	Feb. 28, 1962	9.02	4,050
	Jan. 11, 1950	10.42	5,460		Mar. 13, 1962	9.68	4,790
	Jan. 17, 1950	10.08	5,110				

^a From information by local residents.

1960. Sandusky River near Bucyrus, Ohio

Location.--Lat 40°48'13", long 83°00'21", in NE $\frac{1}{4}$ sec.10, T.3 S., R.16 E., at highway bridge $1\frac{1}{2}$ miles west of Bucyrus, Crawford County, and 12 miles downstream from Loss Creek.

Drainage area.--89.8 sq mi. Channel slope, principal stream, 9.34 ft per mile; channel slope, tributary, 23.4 ft per mile; longest watercourse, 28.1 miles; mean elevation of land, 1,089 ft above mean sea level; average land slope, 121 ft per mile.

Gage.--Nonrecording prior to May 11, 1940; recording thereafter. Datum of gage is 955.9 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 4,380 cfs.

Bankfull stage.--7 ft.

Historical data.--Flood of Mar. 23, 1913, reached a stage of 14.5 ft, from floodmarks.

Remarks.--Only annual peaks are shown prior to 1941. Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Apr. 9, 1926	6.6	1,780	1946	Feb. 14, 1946	5.91	1,220
1927	Mar. 21, 1927	7.95	3,460		Feb. 27, 1946	7.10	1,950
1928	Dec. 14, 1927	9.15	5,800		June 13, 1946	7.80	2,790
1929	Feb. 26, 1929	8.60	4,900		June 17, 1946	8.21	3,020
1930	Jan. 8, 1930	8.05	3,460	1947	Jan. 31, 1947	7.35	2,140
					Mar. 25, 1947	6.66	1,620
1931	Apr. 26, 1931	4.90	892		Apr. 2, 1947	7.43	2,220
1932	Jan. 18, 1932	6.4	1,640		June 3, 1947	8.16	2,960
1933	Dec. 31, 1932	8.46	4,600		June 7, 1947	8.22	3,030
1934	Mar. 3, 1934	5.3	1,070		June 14, 1947	8.13	2,960
1935	May 3, 1935	5.7	1,260		June 30, 1947	6.42	1,470
1939	Mar. 12, 1939	9.00	4,200	1948	Feb. 14, 1948	a8.36	3,190
1940	Mar. 3, 1940	7.90	2,660		Mar. 24, 1948	6.08	1,280
1941	Dec. 29, 1940	7.14	2,120		Apr. 14, 1948	6.15	1,310
1942	Feb. 5, 1942	6.13	1,330	1949	Feb. 15, 1949	6.59	1,580
	Feb. 17, 1942	6.43	1,520		Mar. 27, 1949	6.47	1,490
	Mar. 16, 1942	6.08	1,300	1950	Jan. 4, 1950	8.20	2,900
	Apr. 8, 1942	6.55	1,580		Jan. 7, 1950	6.50	1,310
	Apr. 10, 1942	7.04	2,010		Jan. 11, 1950	7.62	2,360
1943	Dec. 27, 1942	6.89	1,870		Jan. 16, 1950	9.27	4,610
	Dec. 30, 1942	6.48	1,600		Jan. 25, 1950	6.78	1,720
	Feb. 11, 1943	6.63	1,700		Feb. 9, 1950	5.95	1,200
	Mar. 17, 1943	6.92	1,870		Feb. 14, 1950	7.76	2,510
	Mar. 20, 1943	7.50	2,420		Apr. 5, 1950	6.58	1,580
	June 1, 1943	5.97	1,300	1951	Nov. 21, 1950	6.42	1,460
1944	Apr. 12, 1944	7.27	2,160		Dec. 3, 1950	7.49	2,270
1945	Feb. 22, 1945	7.60	2,500		Dec. 8, 1950	6.91	1,790
	Mar. 3, 1945	6.66	1,620		Jan. 4, 1951	7.51	2,270
	Mar. 7, 1945	6.90	1,790		Feb. 13, 1951	7.50	2,270
	Mar. 20, 1945	7.44	2,310	1959	Jan. 22, 1959	b11.9	c13,500
	May 18, 1945	7.79	2,790				

a Backwater from ice.

b From floodmarks.

c From contracted-opening measurement in Bucyrus (drainage area, 85.4 sq mi) adjusted to drainage area at gage; annual peak only.

1965. Sandusky River near Upper Sandusky, Ohio

Location.--Lat 40°51'02", long 83°15'23", in sec.21, T.2 S., R.14 E., at highway bridge three-quarters of a mile upstream from Rock Run and 2 miles northeast of Upper Sandusky, Wyandot County.

Drainage area.--299 sq mi. Channel slope, principal stream, 6.15 ft per mile; channel slope, tributary, 17.4 ft per mile; length of longest watercourse, 58.5 miles; mean elevation of land surface, 988 ft above mean sea level; average slope of land surface, 106 ft per mile.

Gage.--Nonrecording prior to Sept. 14, 1924; recording thereafter. Datum of gage is 792.8 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 7,700 cfs.

Bankfull stage.--11 ft.

Historical data.--The flood of Mar. 25, 1913, reached a stage of 19.0 ft on the U.S. Weather Bureau gage in Upper Sandusky, which corresponds approximately to a stage of 15.6 ft at the U.S. Geological Survey gage.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Nov. 19, 1921	6.2	2,540	1932	Jan. 23, 1932	6.15	2,540
	Mar. 31, 1922	7.3	3,440				
	Apr. 15, 1922	7.5	3,610	1933	Jan. 1, 1933	9.44	5,840
	Apr. 18, 1922	8.4	4,500		Mar. 15, 1933	9.98	7,370
	May 20, 1922	7.4	3,520		Mar. 21, 1933	6.66	2,930
	May 27, 1922	7.6	3,700		May 15, 1933	6.32	2,610
1923	Jan. 16, 1923	6.9	3,100	1934	Mar. 3, 1934	a8.70	-
1924	Dec. 14, 1923	6.4	2,690		Mar. 3, 1934	5.51	2,020
	Dec. 23, 1923	6.8	3,010	1935	May 4, 1935	5.96	2,380
	Jan. 12, 1924	8.3	4,330				
	Jan. 31, 1924	6.4	2,690	1936	Feb. 15, 1936	a8.50	-
	Mar. 30, 1924	8.5	4,600		Feb. 27, 1936	9.52	6,060
	June 12, 1924	7.4	3,520		Mar. 25, 1936	9.13	5,270
1925	Feb. 9, 1925	a10.25	-	1937	June 1937	b14.3	-
	Feb. 9, 1925	7.05	3,180				
	Feb. 24, 1925	7.4	3,520	1938	Jan. 31, 1938	a6.41	-
	Mar. 15, 1925	6.53	2,770		Feb. 20, 1938	6.90	3,100
1926	Feb. 26, 1926	7.00	3,180		Mar. 6, 1938	6.48	2,770
	Apr. 9, 1926	7.8	3,890		Mar. 15, 1938	8.00	4,080
	Sept. 5, 1926	6.22	2,540		Apr. 9, 1938	8.28	4,370
1927	Oct. 6, 1926	8.70	4,770	1939	Jan. 31, 1939	a9.18	5,120
	Jan. 22, 1927	8.90	4,990		Mar. 2, 1939	7.94	3,980
	Jan. 31, 1927	6.70	2,930		Mar. 13, 1939	10.2	7,970
	Mar. 21, 1927	10.3	8,280	1940	Feb. 13, 1940	a6.78	-
	May 20, 1927	6.96	3,180		Mar. 4, 1940	9.28	5,630
1928	Dec. 2, 1927	10.15	6,420		Apr. 21, 1940	7.36	3,520
	Dec. 15, 1927	10.5	8,900		June 29, 1940	6.29	2,610
	Jan. 1, 1928	7.26	3,440	1941	Dec. 30, 1940	7.00	3,180
	Feb. 6, 1928	6.33	2,610		Feb. 6, 1941	a9.00	-
	Mar. 31, 1928	6.15	2,540	1942	Feb. 18, 1942	6.90	3,100
	July 15, 1928	6.49	2,770		Mar. 17, 1942	6.88	3,100
1929	Jan. 19, 1929	9.14	5,210		Apr. 2, 1942	6.25	2,540
	Jan. 25, 1929	7.4	3,520		Apr. 11, 1942	8.64	4,670
	Feb. 26, 1929	a10.58	-	1943	Dec. 28, 1942	7.87	3,980
	Feb. 27, 1929	10.4	8,590		Jan. 25, 1943	a7.75	-
	Mar. 26, 1929	6.41	2,690		Jan. 25, 1943	7.25	3,350
1930	Oct. 24, 1929	6.92	3,100		Feb. 11, 1943	6.32	2,610
	Dec. 14, 1929	6.88	3,100		Mar. 12, 1943	a7.29	-
	Dec. 18, 1929	6.52	2,770		Mar. 17, 1942	7.60	3,700
	Jan. 3, 1930	8.40	4,470		Mar. 21, 1943	8.2	4,270
	Jan. 9, 1930	10.10	7,670	1944	Feb. 24, 1944	6.26	2,620
	Jan. 13, 1930	10.12	7,670		Apr. 12, 1944	8.2	4,300
	Mar. 26, 1930	6.15	2,540	1945	Feb. 18, 1945	6.23	2,550
1931	Apr. 27, 1931	4.84	1,580		Feb. 23, 1945	a9.42	4,020
1932	Jan. 16, 1932	6.50	2,770		Mar. 4, 1945	6.28	2,620
	Jan. 18, 1932	6.30	2,610		Mar. 7, 1945	7.31	3,460

a Ice jam.

b Annual peak only.

Peak stages and discharges of Sandusky River near Upper Sandusky, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 21, 1945	8.45	4,500	1952	Jan. 18, 1952	7.80	3,950
	May 19, 1945	7.73	3,830		Jan. 27, 1952	9.92	7,070
	June 18, 1945	7.16	3,370		Feb. 5, 1952	5.97	2,580
1946	Feb. 28, 1946	6.82	3,020		Mar. 12, 1952	8.54	4,620
	June 14, 1946	6.44	2,700		Apr. 14, 1952	5.92	2,510
	June 18, 1946	9.12	5,390	1953	May 23, 1953	5.30	2,090
1947	Jan. 31, 1947	7.78	3,900	1954	Apr. 18, 1954	6.74	3,070
	Apr. 3, 1947	7.45	3,540	1955	Feb. 22, 1955	7.08	3,390
	May 22, 1947	6.96	3,180		Mar. 5, 1955	7.38	3,630
	June 3, 1947	9.56	6,330		Mar. 12, 1955	6.44	2,860
	June 7, 1947	9.51	6,110		Mar. 23, 1955	6.20	2,720
	June 15, 1947	7.29	3,450	1956	Feb. 27, 1956	8.23	4,310
1948	Feb. 14, 1948	89.85	-		Mar. 9, 1956	7.54	3,710
	Feb. 14, 1948	-	3,700	1957	Feb. 27, 1957	6.14	2,650
	Mar. 20, 1948	6.17	2,550		Apr. 6, 1957	10.08	7,670
	Apr. 14, 1948	6.94	3,100		Apr. 9, 1957	6.90	3,230
	May 18, 1948	6.26	2,620		June 30, 1957	6.88	3,230
1949	Jan. 6, 1949	6.16	2,550	1958	Aug. 8, 1958	6.19	2,680
	Jan. 28, 1949	6.29	2,620	1959	Jan. 22, 1959	15.00	10,000
	Feb. 16, 1949	6.54	2,780		Feb. 11, 1959	9.65	6,440
1950	Jan. 5, 1950	7.69	3,810		Feb. 15, 1959	6.47	2,890
	Jan. 11, 1950	8.14	4,200		Apr. 29, 1959	8.34	4,450
	Jan. 17, 1950	9.46	6,110	1960	Feb. 11, 1960	5.58	2,250
	Jan. 25, 1950	7.10	3,270	1961	Feb. 27, 1961	6.96	3,280
	Feb. 15, 1950	9.79	6,800		Mar. 9, 1961	6.04	2,570
	Apr. 5, 1950	6.36	2,780		Apr. 23, 1961	6.90	3,230
	June 4, 1950	6.19	2,620		Apr. 27, 1961	7.95	4,080
1951	Dec. 4, 1950	8.36	4,510	1962	Jan. 27, 1962	-	2,600
	Dec. 8, 1950	6.59	2,940		Feb. 28, 1962	7.92	4,060
	Jan. 4, 1951	8.29	4,410		Mar. 12, 1962	6.93	3,250
	Feb. 14, 1951	7.80	3,950				
	Feb. 21, 1951	6.53	2,860				
1952	Jan. 1, 1952	7.83	3,950				

a Ice Jam.

1967. St. James River near Upper Sandusky, Ohio

Location.--Lat 40°46'55", long 83°18'10", at bridge on State Highway 67, 3.5 miles southwest of Upper Sandusky, Wyandot County.

Drainage area.--5.29 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 840 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 142 cfs and by slope-area measurement at 408 cfs.

Bankfull stage.--10 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)
1947	June 7, 1947	12.25	356	1956	-	10.67	179
1948	-	10.76	188	1957	-	11.10	225
1949	-	10.98	212	1958	-	10.26	139
1950	-	11.09	224	1959	Jan. 21, 1959	12.66	408
				1960	-	9.81	102
1951	-	10.80	192				
1952	-	10.97	211	1961	-	10.61	173
1953	-	9.3	65	1962	-	9.83	103
1954	-	8.61	28				
1955	-	10.22	136				

1970. Sandusky River near Mexico, Ohio

Location.--Lat 41°02'39", long 83°11'42", in sec.13, T.1 N., R.14 E., at highway bridge 3 miles upstream from Honey Creek and 4 $\frac{1}{4}$ miles north of Mexico, Seneca County.

Drainage area.--776 sq mi.

Gage.--Nonrecording prior to Aug. 15, 1929; recording thereafter. Datum of gage is 733.1 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 15,600 cfs.

Bankfull stage.--10 ft.

Remarks.--Only annual peaks are shown prior to 1930 and for 1937. Base for partial-duration series, 4,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1922	Apr. 19, 1922	16.6	9,860	1944	Apr. 14, 1944	13.76	7,020
1923	May 13, 1923	11.45	4,900				
1924	Mar. 31, 1924	15.0	8,200	1945	Feb. 23, 1945	12.58	5,860
1925	Feb. 25, 1925	11.6	5,000		Mar. 8, 1945	11.69	5,080
					Mar. 22, 1945	13.98	7,230
1926	Apr. 10, 1926	14.0	7,200		May 20, 1945	12.51	5,770
1927	Mar. 22, 1927	19.9	15,200		June 20, 1945	15.17	8,600
1928	Dec. 16, 1927	17.8	11,900				
1929	Feb. 28, 1929	19.5	14,300	1946	Mar. 1, 1946	10.82	4,360
					June 20, 1946	15.9	9,470
1930	Oct. 24, 1929	11.59	5,000				
	Dec. 15, 1929	11.61	5,000	1947	Feb. 1, 1947	12.94	6,130
	Dec. 18, 1929	11.93	5,240		Apr. 4, 1947	11.63	5,000
	Jan. 4, 1930	14.43	7,600		May 22, 1947	11.64	5,000
	Jan. 10, 1930	18.54	13,100		May 26, 1947	11.62	5,000
	Jan. 15, 1930	19.70	14,600		May 28, 1947	11.11	4,600
					June 5, 1947	16.33	9,990
1931	Apr. 4, 1931	9.45	3,300		June 8, 1947	16.68	10,500
1932	Jan. 18, 1932	12.09	5,410		June 16, 1947	10.83	4,360
1933	Jan. 2, 1933	14.52	7,780				
	Mar. 16, 1933	17.05	10,900	1948	Feb. 15, 1948	16.59	8,500
	Mar. 21, 1933	12.97	6,220		Mar. 22, 1948	12.40	5,680
	Apr. 19, 1933	10.63	4,200		Apr. 15, 1948	12.88	6,130
	May 10, 1933	10.85	4,360		May 18, 1948	10.60	4,200
	May 14, 1933	11.11	4,600				
1934	Mar. 5, 1934	11.38	4,840	1949	Dec. 17, 1948	10.57	4,250
1935	May 4, 1935	11.10	4,600		Jan. 7, 1949	11.17	4,730
					Jan. 19, 1949	11.11	4,650
1936	Feb. 27, 1936	18.10	10,800		Jan. 28, 1949	12.43	5,730
	Mar. 26, 1936	15.23	8,600		Feb. 16, 1949	11.89	5,290
1937	June 1937	122.5	19,000	1950	Jan. 7, 1950	12.52	5,820
					Jan. 12, 1950	13.08	6,360
1939	Mar. 2, 1939	12.74	5,950		Jan. 18, 1950	14.10	7,350
	Mar. 14, 1939	18.43	13,000		Jan. 27, 1950	14.34	7,560
					Feb. 16, 1950	18.37	12,800
1940	Mar. 5, 1940	17.1	11,100		Apr. 6, 1950	10.72	4,330
	Apr. 18, 1940	12.33	5,590	1951	Dec. 5, 1950	13.45	6,650
	Apr. 22, 1940	13.06	6,320		Dec. 8, 1950	11.48	4,970
1941	Dec. 31, 1940	10.73	4,280		Jan. 6, 1951	14.12	7,350
					Jan. 19, 1951	11.15	4,730
1942	Feb. 7, 1942	12.71	5,000		Feb. 15, 1951	13.56	6,850
	Feb. 18, 1942	11.75	5,160		Feb. 22, 1951	13.18	6,450
	Mar. 17, 1942	11.51	4,920	1952	Jan. 2, 1952	13.60	6,850
	Apr. 11, 1942	16.0	9,600		Jan. 20, 1952	14.07	7,350
1943	Dec. 30, 1942	13.51	6,720		Jan. 29, 1952	17.52	11,500
	Mar. 17, 1943	13.26	6,520		Feb. 5, 1952	11.72	5,130
	Mar. 22, 1943	13.6	6,820		Mar. 13, 1952	14.80	8,110
	May 19, 1943	12.38	5,680		Apr. 15, 1952	11.41	4,890
	May 21, 1943	11.48	4,920	1953	May 24, 1953	9.77	3,660
	June 1, 1943	11.10	4,600	1954	Apr. 17, 1954	11.54	4,970
				1955	Jan. 6, 1955	10.66	4,330

a Backwater from ice.

b From information from local residents.

c Occurred Feb. 16, 1948; backwater from ice.

STREAMS TRIBUTARY TO LAKE ERIE

Peak stages and discharges of Sandusky River near Mexico, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Feb. 23, 1955	12.12	5,460	1959	Feb. 11, 1959	16.77	10,600
	Mar. 5, 1955	13.01	6,270		Feb. 15, 1959	11.17	4,710
	Mar. 11, 1955	11.60	5,050		Apr. 30, 1959	15.67	9,130
	Mar. 24, 1955	11.25	4,730	1960	Jan. 16, 1960	10.84	4,440
1956	Feb. 26, 1956	13.76	7,050		Feb. 11, 1960	11.13	4,670
	Mar. 8, 1956	13.76	7,050	1961	Mar. 9, 1961	10.66	4,300
	May 12, 1956	10.94	4,490		Apr. 26, 1961	13.72	6,970
				1962	Jan. 29, 1962	-	5,800
1957	Feb. 27, 1957	10.88	4,490		Feb. 28, 1962	-	6,500
	Apr. 7, 1957	17.74	11,800		Mar. 1, 1962	14.50	-
	July 1, 1957	11.70	5,130		Mar. 13, 1962	11.92	5,310
1958	July 12, 1958	11.70	5,130				
1959	Jan. 23, 1959	22.43	18,900				

d Maximum gage height; ice jam.

1975. Havens Creek at Havens, Ohio

Location.--Lat 41°17'40", long 83°11'55", at bridge on State Highway 12, three-quarters of a mile southwest of Havens, Sandusky County, and $1\frac{3}{4}$ miles upstream from mouth.

Drainage area.--4.28 sq mi. Length of main stream, 3.7 miles; average slope, main stream, 7.3 ft per mile; average slope, main stream and tributaries, 9.35 ft per mile; slope at gage, 2 ft per mile; length divided by average width of basin, 2.74.

Gage.--Recording. Datum of gage is 663.69 ft above mean sea level, datum of 1929. At datum 2.00 ft higher prior to Apr. 8, 1954.

Stage-discharge relation.--Defined by current-meter measurements below 284 cfs.

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)
1947	June 2, 1947	4.55	150	1956	May 12, 1956	7.66	312
1948	Mar. 21, 1948	5.12	208	1957	June 28, 1957	5.30	207
1949	Feb. 15, 1949	3.89	98	1958	July 12, 1958	4.95	190
1950	Feb. 14, 1950	5.16	214	1959	Jan. 21, 1959	7.13	-
					Feb. 10, 1959	-	220
1951	Nov. 19, 1950	4.57	150	1960	Jan. 12, 1960	4.01	75
1952	Mar. 11, 1952	4.40	265				
1953	May 22, 1953	.46	41	1961	Apr. 25, 1961	5.16	142
1954	Mar. 25, 1954	1.46	96	1962	Feb. 26, 1962	5.75	180
1955	Mar. 3, 1955	4.72	163				

a Backwater from ice.

1980. Sandusky River near Fremont, Ohio

Location.--Lat 41°18'28", long 83°09'32", in sec.17, T.4 N., R.15 E., at highway bridge, 2.3 miles upstream from Ballville power dam, 2½ miles downstream from Wolf Creek, and 3½ miles southwest of Fremont, Sandusky County.

Drainage area.--1,248 sq mi. Channel slope, principal stream, 3.96 ft per mile; channel slope, tributary, 12.3 ft per mile; length of longest watercourse, 119.5 miles; mean elevation of land surface, 880 ft above mean sea level; average slope of land surface, 93 ft per mile.

Gage.--Nonrecording prior to Sept. 5, 1930; recording thereafter. Datum of gage is 626.3 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 20,800 cfs.

Bankfull stage.--7 ft.

Remarks.--Only annual peaks are shown prior to 1931. Base for partial-duration series, 7,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Jan. 11, 1924	-	14,800	1941	Feb. 20, 1941	a4.96	-
	Jan. 30, 1924	a9.8	-		Jan. 6, 1942	a5.04	-
1925	Feb. 7, 1925	a8.4	-	1942	Feb. 3, 1942	a5.69	-
	Feb. 24, 1925	-	10,800		Feb. 7, 1942	6.48	13,000
1926	Feb. 26, 1926	a7.4	-		Feb. 18, 1942	5.15	8,880
	Apr. 9, 1926	-	13,000		Mar. 17, 1942	5.57	9,750
1927	Mar. 22, 1927	9.1	20,000		Apr. 11, 1942	8.3	18,400
1928	Dec. 16, 1927	-	14,000				
	Feb. 6, 1928	a8.2	-	1943	Dec. 27, 1942	a7.35	-
1929	Feb. 26, 1929	a14.0	-		Dec. 31, 1942	5.96	10,600
	Feb. 28, 1929	-	17,000		Jan. 9, 1943	a5.56	-
1930	Jan. 15, 1930	11.1	27,000		Jan. 12, 1943	a5.44	-
					Jan. 20, 1943	a6.73	-
1931	Apr. 4, 1931	4.02	5,000		Jan. 25, 1943	a9.6	-
					Feb. 15, 1943	a6.20	-
1932	Jan. 18, 1932	5.56	10,000		Mar. 11, 1943	a5.27	-
					Mar. 17, 1943	6.93	13,600
1933	Dec. 25, 1932	4.29	7,000		May 19, 1943	6.93	13,600
	Dec. 31, 1932	6.36	22,000		June 1, 1943	6.69	12,900
	Feb. 10, 1933	a7.4	b15,000				
	Mar. 14, 1933	9.73	22,000	1944	Mar. 10, 1944	a5.51	-
	Mar. 21, 1933	5.40	9,000		Apr. 12, 1944	6.8	13,200
	Apr. 17, 1933	4.49	6,070				
	May 10, 1933	4.91	8,300	1945	Feb. 23, 1945	a8.38	-
	May 14, 1933	5.60	10,000		Mar. 8, 1945	4.96	7,370
1934	Mar. 4, 1934	a6.73	-		Mar. 21, 1945	5.96	10,600
	Mar. 5, 1934	5.13	8,000		May 18, 1945	5.55	9,370
					June 19, 1945	6.87	13,600
1935	Jan. 24, 1935	a6.31	-	1946	Dec. 27, 1945	a7.32	-
	Feb. 11, 1935	a4.42	-		Dec. 30, 1945	a6.24	-
	Feb. 15, 1935	a5.20	-		June 14, 1946	4.85	7,070
	Feb. 22, 1935	a4.27	-		June 18, 1946	7.21	14,600
	May 4, 1935	4.16	5,850				
1936	Jan. 11, 1936	a6.65	-	1947	Jan. 23, 1947	a7.88	-
	Feb. 26, 1936	a15.34	-		Jan. 31, 1947	6.44	11,400
	Feb. 29, 1936	a12.87	-		Apr. 2, 1947	5.22	7,820
	Mar. 25, 1936	6.29	12,000		May 22, 1947	5.37	8,400
					May 26, 1947	5.80	9,580
1939	Feb. 3, 1939	a7.37	-		June 3, 1947	8.30	17,500
	Feb. 20, 1939	4.99	8,070		June 8, 1947	8.08	16,800
	Mar. 1, 1939	6.42	12,000				
	Mar. 6, 1939	4.92	8,600	1948	Jan. 2, 1948	6.32	10,000
	Mar. 13, 1939	7.53	15,000		Jan. 15, 1948	a4.97	-
					Feb. 14, 1948	a10.84	-
1940	Feb. 13, 1940	a8.76	-		Mar. 16, 1948	5.00	7,250
	Feb. 20, 1940	a11.4	-		Mar. 22, 1948	8.38	17,800
	Mar. 3, 1940	a11.4	-		Apr. 14, 1948	5.61	8,980
	Mar. 4, 1940	a8.67	b18,000	1949	Dec. 16, 1948	5.36	8,440
	Apr. 18, 1940	7.15	14,000		Dec. 27, 1948	c5.33	-
	Apr. 21, 1940	6.15	11,000		Jan. 19, 1949	5.42	8,440
1941	Dec. 30, 1940	4.50	6,650		Jan. 28, 1949	6.02	10,200
	Feb. 9, 1941	a5.53	-		Feb. 16, 1949	6.32	11,100

a Backwater from ice.

b Estimated.

c Maximum gage height; ice jam.

Peak stages and discharges of Sandusky River near Fremont, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 7, 1950	5.11	7,600	1955	Mar. 22, 1955	5.36	8,540
	Jan. 11, 1950	6.08	10,500	1956	Feb. 9, 1956	a9.07	-
	Jan. 16, 1950	6.24	10,800		Feb. 26, 1956	6.94	12,900
	Jan. 27, 1950	6.93	12,900		Mar. 8, 1956	7.26	14,200
	Feb. 15, 1950	9.87	22,900		May 12, 1956	7.45	14,500
	Mar. 3, 1950	a4.86	-	1957	Feb. 27, 1957	5.92	9,940
	Mar. 28, 1950	4.93	7,040		Apr. 6, 1957	7.85	15,800
	May 1, 1950	5.79	9,600		Apr. 11, 1957	7.15	13,900
1951	Nov. 21, 1950	6.34	11,100		June 29, 1957	5.37	8,540
	Dec. 3, 1950	6.97	13,200	1958	Dec. 8, 1957	5.21	7,980
	Dec. 8, 1950	5.85	9,660		Jan. 5, 1958	a5.60	-
	Dec. 26, 1950	a5.21	-		Jan. 22, 1958	a7.77	-
	Jan. 3, 1951	a7.31	-		Feb. 24, 1958	a10.15	-
	Jan. 4, 1951	6.72	12,300	1959	Dec. 9, 1958	a6.50	-
	Jan. 19, 1951	5.39	8,540		Jan. 24, 1959	b14.7	b25,000
	Feb. 13, 1951	a9.37	-		Jan. 31, 1959	b9.91	-
	Feb. 22, 1951	6.32	11,100		Feb. 10, 1959	a15.20	b28,000
	Mar. 30, 1951	4.87	7,150		Feb. 15, 1959	5.65	9,240
1952	Dec. 24, 1951	a7.80	-		Apr. 29, 1959	7.35	14,400
	Dec. 30, 1951	a12.12	-	1960	Jan. 13, 1960	5.45	8,680
	Jan. 1, 1952	6.79	12,600		Jan. 16, 1960	5.46	8,710
	Jan. 18, 1952	6.85	12,600		Feb. 7, 1960	5.06	7,590
	Jan. 27, 1952	8.83	19,100		Feb. 11, 1960	5.71	9,410
	Feb. 4, 1952	5.80	9,660	1961	Mar. 9, 1961	4.87	7,070
	Mar. 12, 1952	8.65	18,400		Apr. 19, 1961	5.15	7,840
	Apr. 15, 1952	5.39	8,540		Apr. 23, 1961	6.67	12,200
1953	May 23, 1953	5.93	9,940		Apr. 26, 1961	8.58	18,300
1954	Apr. 17, 1954	6.04	10,200	1962	Jan. 26, 1962	c11.02	-
1955	Jan. 6, 1955	5.72	9,380		Jan. 28, 1962	-	(d)
	Feb. 13, 1955	a7.77	-		Feb. 28, 1962	-	e15,000
	Feb. 21, 1955	6.52	9,000		Mar. 13, 1962	-	(d)
	Mar. 5, 1955	7.07	13,600				
	Mar. 12, 1955	6.24	10,800				

a Backwater from ice known; exceeded base.

b Estimated.
c Maximum daily.

c Maximum gage height; ice jam.

d Un-

1981. Norwalk Creek near Norwalk, Ohio

Location--Lat 41°14'00", long 82°32'30", at county road bridge 300 ft south of junction of State Highways 601 and 18, 4 miles southeast of Norwalk, Huron County, and 6 miles upstream from mouth.

Drainage area--4.92 sq mi. Length of main stream, 3.66 miles; average slope, main stream, 16 ft per mile; average slope, main stream and tributaries, 20 ft per mile; slope at gage, 18 ft per mile; length divided by average width of basin, 3.20.

Gage--Crest-stage gage. Altitude of gage is 854 ft (from topographic map).

Stage-discharge relation--Defined by current-meter measurements below 122 cfs, and by indirect measurements at 461 and 1,060 cfs.

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)
1947	-	13.12	311	1956	May 12, 1956	14.37	1,060
1948	Mar. 21, 1948	13.60	470	1957	-	13.48	423
1949	-	12.44	163	1958	-	12.07	102
1950	-	13.09	302	1959	Jan. 21, 1959	13.96	646
1951	-	13.78	551	1960	-	12.74	223
1952	-	13.17	326	1961	-	14.35	1,030
1953	-	12.80	236	1962	-	13.58	461
1954	-	12.89	256				
1955	-	12.86	249				

1985. East Branch Huron River near Norwalk, Ohio

Location.--Lat 41°14'58", long 82°38'52", at highway bridge $1\frac{1}{4}$ miles northwest of Norwalk, Huron County, and $1\frac{1}{2}$ miles downstream from Cole Creek.

Drainage area.--84.9 sq mi.

Gage.--Nonrecording. Altitude of gage is 635 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,290 cfs.

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)
1924	Mar. 29, 1924	6.3	2,270	1931	Apr. 22, 1931	3.8	930
1925	Feb. 23, 1925	6.3	2,330	1932	Mar. 22, 1932	5.0	1,560
				1933	Mar. 14, 1933	9.4	4,610
1926	Feb. 25, 1926	7.1	2,860	1934	Apr. 4, 1934	8.2	3,650
1927	Oct. 5, 1926	8.6	3,970	1935	Aug. 7, 1935	4.2	1,130
1928	Mar. 30, 1928	7.00	2,790				
1929	Feb. 26, 1929	9.5	4,700	1959	Jan. 21, 1959	12.5	-
1930	Jan. 12, 1930	8.6	3,970				

1990. Huron River at Milan, Ohio

Location.--Lat 41°18'00", long 82°36'30", in SE $\frac{1}{4}$ sec. 4, T.5 N., R.22 W., at bridge on U.S. Highway 250, a quarter of a mile northwest of Milan, Erie County, and 2 miles downstream from confluence of East and West Branches.

Drainage area.--363 sq mi.

Gage.--Nonrecording prior to July 29, 1953; recording thereafter. Datum of gage is 573.43 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 18,100 cfs and by contracted-opening measurement at 25,800 cfs.

Bankfull stage.--14 ft.

Remarks.--Base for partial-duration series, 4,700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Apr. 24, 1950	17.1	7,640	1956	Feb. 25, 1956	17.11	7,740
	May 1, 1950	17.0	7,500		Mar. 8, 1956	17.20	7,910
					May 12, 1956	21.10	18,200
1951	Nov. 20, 1950	18.6	9,840				
	Dec. 3, 1950	18.9	10,300	1957	Feb. 27, 1957	16.46	6,810
	Dec. 7, 1950	17.0	7,500		Apr. 4, 1957	18.56	10,500
	Jan. 3, 1951	16.1	6,310		Apr. 11, 1957	16.15	6,590
	Feb. 12, 1951	17.2	7,780		June 29, 1957	16.20	6,390
	Feb. 21, 1951	15.5	5,610				
1952	Dec. 31, 1951	-	(a)	1958	Aug. 1, 1958	14.43	4,390
	Jan. 17, 1952	19.2	11,800				
	Jan. 27, 1952	19.5	12,500	1959	Nov. 17, 1958	15.95	6,060
	Mar. 11, 1952	19.8	13,200		Jan. 22, 1959	24.08	25,800
	Apr. 13, 1952	15.4	5,420		Feb. 10, 1959	21.54	18,500
					Feb. 15, 1959	15.33	5,330
1953	May 18, 1953	16.0	6,130		Apr. 28, 1959	16.53	6,840
	May 23, 1953	16.2	6,390	1960	Apr. 4, 1960	14.85	4,650
1954	Mar. 25, 1954	15.96	6,130	1961	Feb. 26, 1961	16.76	7,180
	Apr. 17, 1954	16.68	7,110		Mar. 9, 1961	15.11	4,910
	Apr. 27, 1954	15.04	4,970		Apr. 22, 1961	15.77	5,720
	June 17, 1954	15.95	6,130		Apr. 26, 1961	19.73	13,600
1955	Mar. 4, 1955	16.13	6,260	1962	Feb. 27, 1962	16.71	7,100
	Mar. 11, 1955	15.52	5,520		Mar. 12, 1962	15.45	5,300

a Unknown; exceeded base.

1995. Vermilion River near Vermilion, Ohio

Location.--Lat 41°22'55", long 82°19'00", in T.6 N., R.19 W., at bridge on North Ridge Road, in Lorain County, 3½ miles southeast of Vermilion, Erie County, and 4½ miles upstream from mouth.

Drainage area.--260 sq mi.

Gage.--Nonrecording prior to Aug. 3, 1953; recording thereafter. Datum of gage is 592.58 ft above mean sea level (Lorain County bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 9,600 cfs and by contracted-opening measurement at 20,500 cfs.

Bankfull stage.--10 ft.

Remarks.--Base for partial-duration series, 3,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Mar. 27, 1950	8.4	4,230	1955	Mar. 5, 1955	8.09	3,810
	Apr. 5, 1950	8.0	3,670		Mar. 12, 1955	8.16	3,950
	Apr. 24, 1950	10.7	8,100		Mar. 22, 1955	7.79	3,390
	May 1, 1950	8.9	4,940	1956	Feb. 26, 1956	9.05	5,060
1951	Nov. 21, 1950	8.5	4,370		Mar. 8, 1956	8.87	4,910
	Dec. 3, 1950	10.8	8,320		May 12, 1956	11.47	9,820
	Dec. 7, 1950	9.4	5,700	1957	Jan. 23, 1957	8.11	3,710
	Jan. 4, 1951	8.7	4,650		Feb. 27, 1957	8.02	3,560
	Jan. 18, 1951	7.7	3,260		Apr. 5, 1957	9.27	5,540
	Feb. 13, 1951	9.3	5,540		Apr. 12, 1957	8.68	4,610
	Feb. 21, 1951	8.7	4,650	1958	Feb. 25, 1958	a10.99	-
	Mar. 30, 1951	8.3	4,090		Aug. 1, 1958	7.0	2,170
	Apr. 30, 1951	8.4	4,230	1959	Nov. 17, 1958	8.03	3,600
	May 11, 1951	9.1	5,240		Jan. 21, 1959	13.80	20,500
1952	Dec. 9, 1951	9.0	5,090		Feb. 11, 1959	11.00	8,680
	Jan. 1, 1952	9.2	5,390		Apr. 29, 1959	8.73	4,660
	Jan. 18, 1952	10.4	7,440	1960	Dec. 13, 1959	7.43	3,130
	Jan. 26, 1952	11.5	9,820		Feb. 27, 1961	8.85	5,260
	Mar. 12, 1952	10.5	7,640	1961	Apr. 26, 1961	9.40	6,090
	Apr. 14, 1952	9.4	5,700	1962	Jan. 28, 1962	-	(b)
1953	May 24, 1953	7.9	3,530		Feb. 27, 1962	c12.70	d4,000
	Mar. 25, 1954	8.50	4,370		Mar. 13, 1962	-	(b)
1954	Apr. 17, 1954	8.38	4,230				
	June 17, 1954	7.73	3,260				
1955	Feb. 21, 1955	a9.44	-				

a Ice jam. b Unknown; greater than base.

c Maximum gage height; ice jam.

d Maximum daily.

2000. East Branch Black River at Elyria, Ohio

Location.--Lat 41°20'51", long 82°05'40", at Fuller Street Bridge, 1¼ miles southeast of center of Elyria, Lorain County, and 3 miles upstream from confluence with West Branch.

Drainage area.--211 sq mi.

Gage.--Nonrecording. Altitude of gage is 710 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 6,930 cfs.

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)
1923	Apr. 6, 1923	4.46	2,420	1931	Apr. 23, 1931	4.25	2,120
1924	Mar. 29, 1924	4.9	3,140	1932	Jan. 18, 1932	4.75	3,020
1925	Mar. 11, 1925	5.0	3,260	1933	Mar. 14, 1933	10.10	11,400
				1934	Apr. 5, 1934	4.65	2,780
1926	Feb. 26, 1926	6.7	5,670	1935	Aug. 7, 1935	10.00	11,200
1927	Mar. 21, 1927	6.7	5,670				
1928	Dec. 14, 1927	6.90	5,980	1959	Jan. '21, 1959	14.7	-
1929	Feb. 27, 1929	7.2	6,460				
1930	Jan. 9, 1930	7.23	6,460				

2001. Plum Creek at Oberlin, Ohio

Location.--Lat 41°17'15", long 82°13'10", at bridge on Professor Street in Oberlin, Lorain County.

Drainage area.--4.83 sq mi. Length of main stream, 3.80 miles; average slope, main stream, 11 ft per mile; average slope, main stream and tributaries, 12.2 ft per mile; slope at gage, 35 ft per mile; length divided by average width of basin, 2.96.

Gage.--Crest-stage gage. Altitude of gage is 782 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements belcw 156 cfs and by indirect measurements at 486, 574, and 990 cfs.

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)
1947	June 2, 1947	14.69	658	1956	May 12, 1956	13.48	469
1948	Mar. 22, 1948	13.88	530	1957	-	13.42	451
1949	-	10.84	100	1958	-	10.81	97
1950	Apr. 24, 1950	14.54	626	1959	Jan. 21, 1959	16.13	990
				1960	-	11.49	172
1951	-	12.54	326				
1952	-	12.40	304	1961	-	13.62	487
1953	-	10.62	77	1962	-	12.04	241
1954	-	12.89	379				
1955	-	11.95	240				

2005. Black River at Elyria, Ohio

Location.--Lat 41°22'50", long 82°06'15", in T.6 N., R.17 W., in Cascade Park in Elyria, Lorain County, three-quarters of a mile downstream from confluence of East and West Branches.

Drainage area.--392 sq mi.

Gage.--Recording. Datum of gage is 621.6 ft above mean sea level (city of Elyria bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 12,500 cfs.

Bankfull stage.--15 ft.

Remarks.--Base for partial-duration series, 3,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Feb. 23, 1945	11.14	5,580	1949	Jan. 28, 1949	8.83	3,610
	Mar. 7, 1945	9.43	4,090		Feb. 16, 1949	9.24	3,930
	Mar. 21, 1945	10.26	4,860				
	May 18, 1945	11.60	6,050	1950	Jan. 5, 1950	9.20	3,930
1946	Feb. 27, 1946	8.67	3,530		Jan. 7, 1950	9.07	3,850
	June 18, 1946	13.9	8,460		Jan. 11, 1950	10.54	5,040
					Jan. 15, 1950	14.28	8,930
1947	Jan. 31, 1947	12.53	6,950		Jan. 25, 1950	9.35	4,090
	Apr. 3, 1947	11.63	6,050		Feb. 14, 1950	14.96	9,770
	Apr. 21, 1947	10.58	5,130		Mar. 27, 1950	9.59	4,250
	May 29, 1947	9.74	4,330		Apr. 5, 1950	8.91	3,690
	June 3, 1947	14.29	8,930		Apr. 24, 1950	14.14	8,690
	June 9, 1947	10.52	5,040		May 1, 1950	10.05	4,590
1948	Jan. 2, 1948	8.38	3,290	1951	Dec. 3, 1950	12.78	7,470
	Feb. 15, 1948	12.00	6,200		Dec. 8, 1950	10.00	4,610
	Mar. 16, 1948	8.42	3,290		Jan. 4, 1951	11.88	6,460
	Mar. 22, 1948	14.30	8,930		Feb. 13, 1951	11.52	6,040
	Apr. 15, 1948	10.33	4,860		Mar. 30, 1951	9.45	4,090
1949	Dec. 16, 1948	9.91	4,500		May 12, 1951	9.43	4,090
				1952	Dec. 10, 1951	8.86	3,690

a Backwater from ice.

b Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

Peak stages and discharges of Black River at Elyria, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Jan. 1, 1952	-	5,700	1957	Apr. 8, 1957	8.53	3,370
	Jan. 18, 1952	13.92	8,820		Apr. 12, 1957	11.66	6,240
	Jan. 27, 1952	16.39	12,300		May 21, 1957	8.92	3,690
	Feb. 4, 1952	8.32	3,210		June 29, 1957	11.40	5,940
	Mar. 12, 1952	12.66	7,350		July 9, 1957	11.02	5,540
	Apr. 14, 1952	9.29	4,010		July 12, 1957	8.65	3,450
1953	May 18, 1953	8.44	3,290	1958	Aug. 1, 1958	8.60	3,450
1954	Mar. 25, 1954	11.67	6,240	1959	Nov. 18, 1958	10.16	4,750
	Apr. 17, 1954	10.56	5,150		Jan. 22, 1959	22.9	24,000
	Apr. 27, 1954	9.37	4,090		Feb. 11, 1959	17.74	14,400
1955	Jan. 6, 1955	8.92	3,210		Feb. 15, 1959	9.34	4,040
	Feb. 23, 1955	10.00	4,090		Mar. 15, 1959	9.77	4,400
	Mar. 4, 1955	10.92	4,970	1960	Dec. 13, 1959	10.03	4,640
	Mar. 12, 1955	9.93	3,930		Jan. 13, 1960	8.67	3,510
	Mar. 23, 1955	12.02	6,240		Mar. 29, 1960	11.15	5,690
1956	Feb. 19, 1956	8.31	3,210		Apr. 4, 1960	10.13	4,730
	Feb. 26, 1956	11.77	6,350	1961	Feb. 27, 1961	12.87	7,550
	Mar. 8, 1956	10.84	5,340		Apr. 18, 1961	8.77	3,590
	May 13, 1956	18.02	14,900		Apr. 22, 1961	8.98	3,750
1957	Jan. 23, 1957	9.83	4,430		Apr. 26, 1961	13.41	8,200
	Feb. 27, 1957	9.12	3,850	1962	Feb. 28, 1962	210.97	4,920
	Apr. 5, 1957	13.88	8,820				

a Backwater from ice.

b Estimated.

2015. Rocky River near Berea, Ohio

Location.--Lat 41°24'22", long 81°53'13", in T.6 N., R.15 W., at highway bridge just downstream from confluence of East and West Branches, 3 miles northwest of Berea, Cuyahoga County.

Drainage area.--269 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1935; recording thereafter. Datum of gage is 649.9 ft above mean sea level, datum of 1929 (Cuyahoga County bench mark)

Stage-discharge relation.--Defined by current-meter measurements below 10,600 cfs and by contracted-opening measurement at 21,400 cfs.

Bankfull stage.--15 ft.

Historical data.--Maximum stage known, 20.9 ft in March 1913.

Remarks.--Only annual peaks are shown prior to 1944. Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	March 1913	20.9	-	1944	Feb. 23, 1944	5.60	4,050
1924	Jan. 11, 1924	8.0	9,220		Mar. 7, 1944	6.27	5,480
	June 29, 1924	218.6	-		Apr. 12, 1944	7.24	7,480
1925	Sept. 15, 1925	8.1	9,420	1945	Feb. 22, 1945	7.50	8,200
1926	Feb. 25, 1926	9.7	13,200		Mar. 21, 1945	5.64	4,590
1927	Mar. 20, 1927	8.5	10,300		May 18, 1945	6.20	5,730
1928	Dec. 14, 1927	10.7	15,700	1946	Feb. 27, 1946	5.53	4,390
1929	Jan. 19, 1929	11.0	16,600		June 17, 1946	7.30	8,190
1930	Jan. 8, 1930	8.1	9,420	1947	Jan. 31, 1947	6.95	7,500
1931	Apr. 22, 1931	4.8	3,770		Apr. 2, 1947	6.93	7,270
1932	Mar. 22, 1932	5.7	5,300		Apr. 21, 1947	6.02	5,310
1933	Mar. 14, 1933	8.9	11,200		May 29, 1947	6.16	5,730
1934	Apr. 4, 1934	6.9	7,020		June 3, 1947	6.35	11,900
1935	Aug. 7, 1935	10.6	15,400		June 14, 1947	6.36	6,160

a Backwater from tornado.

Peak stages and discharges of Rocky River near Berea, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Feb. 14, 1948	b6.73	6,440	1955	Mar. 4, 1955	5.81	4,890
	Mar. 21, 1948	7.95	9,860		Mar. 22, 1955	6.04	5,270
	Apr. 14, 1948	5.60	4,710	1956	Feb. 26, 1956	6.64	6,610
	Apr. 28, 1948	5.62	4,710		Mar. 8, 1956	5.75	5,170
1949	Dec. 16, 1948	5.18	4,010		May 12, 1956	8.32	9,860
1950	Jan. 10, 1950	5.70	4,890	1957	Jan. 23, 1957	6.00	5,490
	Jan. 16, 1950	8.49	11,100		Apr. 4, 1957	6.50	6,440
	Feb. 14, 1950	7.31	8,190		Apr. 11, 1957	5.38	4,390
	Mar. 26, 1950	5.91	5,070		May 20, 1957	6.06	5,680
	Apr. 5, 1950	5.34	4,260		July 9, 1957	5.84	5,110
	Apr. 24, 1950	8.00	9,860	1958	Aug. 8, 1958	6.61	6,610
	Apr. 30, 1950	5.77	5,070	1959	Nov. 17, 1958	6.38	6,190
1951	Dec. 3, 1950	6.60	6,640		Jan. 22, 1959	14.10	21,400
	Dec. 8, 1950	6.20	5,810		Feb. 10, 1959	10.97	15,000
	Jan. 4, 1951	6.58	6,640		Feb. 15, 1959	6.24	5,730
	Feb. 13, 1951	5.86	5,210		Mar. 15, 1959	5.90	5,080
	Feb. 21, 1951	6.50	6,430		Apr. 28, 1959	6.66	6,520
1952	Dec. 9, 1951	5.30	4,070		June 2, 1959	7.22	7,590
	Jan. 1, 1952	5.50	4,280		July 6, 1959	7.63	8,370
	Jan. 18, 1952	7.64	8,570	1960	Dec. 13, 1959	6.03	5,330
	Jan. 27, 1952	9.05	11,700		Mar. 30, 1960	5.65	4,840
	Mar. 11, 1952	6.78	6,870		Apr. 4, 1960	5.80	5,110
	Apr. 14, 1952	5.40	4,080	1961	Feb. 26, 1961	6.48	6,400
1953	May 18, 1953	4.87	3,560		Apr. 26, 1961	8.36	9,950
1954	Mar. 25, 1954	7.48	8,280	1962	Feb. 27, 1962	b6.24	4,600
	Apr. 17, 1954	6.18	5,890				
1955	Oct. 16, 1954	8.24	9,660				

b Backwater from ice.

2020. Cuyahoga River at Hiram Rapids, Ohio

Location.--Lat 41°20'27", long 81°10'01", in T.5 N., R.7 W., at highway bridge at Hiram Rapids, Portage County, 0.6 mile downstream from Black Brook.

Drainage area.--147 sq mi; at site used 1928-35, 152 sq mi.

Gage.--Recording at site 2 $\frac{3}{4}$ miles downstream at different datum prior to Oct. 20, 1944; nonrecording Oct. 20, 1944, to Oct. 22, 1946; recording thereafter. Datum of gage is 1,087.46 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 2,550 cfs at present site and below 1,350 cfs at previous site.

Bankfull stage.--6 ft.

Remarks.--Slight regulation by East Branch Reservoir (4,140 acre-ft, 17.0 sq mi) since 1939; flood discharges not materially affected. 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)
1928	Dec. 15, 1927	6.8	1,630	1950	Feb. 15, 1950	6.03	2,170
1929	Jan. 20, 1929	8.23	2,260				
1930	Jan. 14, 1930	7.0	1,710	1951	Jan. 5, 1951	5.80	1,980
1931	Apr. 5, 1931	4.06	689	1952	Jan. 27, 1952	6.45	2,380
	Mar. 25, 1932	4.57	795	1953	Jan. 21, 1953	3.13	474
1933	Mar. 16, 1933	6.12	1,360	1954	Mar. 27, 1954	4.62	1,260
1934	Mar. 7, 1934	6.87	1,620	1955	Oct. 17, 1954	6.35	1,980
1935	Feb. 17, 1935	a6.66	b1,000	1956	Mar. 9, 1956	5.65	1,860
1945	Feb. 24, 1945	a5.30	1,480		Apr. 26, 1957	6.14	2,170
				1958	Mar. 1, 1958	4.70	1,320
1946	Jan. 8, 1946	4.38	1,060	1959	Jan. 23, 1959	8.11	3,670
1947	Apr. 3, 1947	5.36	1,690	1960	Mar. 31, 1960	6.56	2,490
1948	Mar. 23, 1948	7.00	2,760	1961	Apr. 26, 1961	5.83	1,950
1949	Jan. 29, 1949	3.74	790		Mar. 24, 1962	3.60	710

a Backwater from ice.

b Estimated.

2030. Breakneck Creek near Kent, Ohio
(Formerly published as Congress Lake Outlet)

Location.--Lat 41°09'21", long 81°19'10", at bridge on Kent-Ravenna highway, 1.8 miles upstream from mouth and 2.0 miles east of Kent, Portage County.

Drainage area.--76.9 sq mi.

Gage.--Recording. Datum of gage is 1,035.54 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 912 cfs.

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)
1928	Dec. 2, 1927	8.94	934	1932	Jan. 20, 1932	5.87	378
1929	Feb. 28, 1929	9.5	1,060	1933	Mar. 16, 1933	9.07	1,020
1930	Jan. 15, 1930	7.3	617	1934	Apr. 17, 1934	6.01	411
				1935	Aug. 7, 1935	6.02	395
1931	Apr. 5, 1931	4.72	212				

2040. Little Cuyahoga River at Mogadore, Ohio

Location.--Lat 41°03'45", long 81°23'40", in T.1 N., R.10 W., at bridge on State Highway 532, 500 ft downstream from Mogadore Reservoir, three-quarters of a mile upstream from Fritch Lake Outlet, and 0.8 mile north of Mogadore, Summit County.

Drainage area.--14.3 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 1,058.74 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 138 cfs.

Remarks.--Flow regulated by Mogadore Reservoir (capacity, 6,540 acre-ft, area, 12 sq mi). 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)
1946	June 17, 1946	1.79	87	1955	Mar. 11, 1955	2.87	132
1947	June 7, 1947	3.15	143				
1948	June 29, 1948	1.85	90	1956	Nov. 16, 1955	3.46	155
1949	July 20, 1949	1.99	97	1957	July 9, 1957	3.38	107
1950	June 26, 1950	2.41	113	1958	July 31, 1958	3.62	62
				1959	Jan. 21, 1959	4.30	97
1951	Nov. 30, 1950	1.84	91	1960	Dec. 12, 1959	2.44	115
1952	Jan. 26, 1952	2.98	136				
1953	May 22, 1953	1.70	84	1961	Feb. 26, 1961	2.36	111
1954	Mar. 25, 1954	1.14	21	1962	Mar. 12, 1962	2.82	130

2045. Little Cuyahoga River at Massillon Road, Akron, Ohio

Location.--Lat 41°03'35", long 81°27'45", in R.1 N., R.10 W., at Massillon Road in Akron, Summit County, 250 ft upstream from Springfield Lake Outlet.

Drainage area.--31.6 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 1,005.20 ft above mean sea level (city of Akron bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 874 cfs.

Bankfull stage.--2 ft.

Remarks.--Flow regulated by Wingfoot Lake and by Mogadore Reservoir (capacity, 6,540 acre-ft, area, 12 sq mi). Only annual peaks are shown.

Peak stages and discharges of Little Cuyahoga River at Massillon Road, Akron, Ohio

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Feb. 27, 1946	1.90	250	1955	Mar. 11, 1955	3.21	641
1947	Aug. 25, 1947	2.81	521	1956	May 12, 1956	3.42	706
1948	May 5, 1948	1.92	256	1957	July 9, 1957	-	680
1949	July 21, 1949	-	180	1958	July 31, 1958	3.74	808
1950	Jan. 10, 1950	2.07	303	1959	Jan. 21, 1959	3.99	891
1951	Jan. 4, 1951	1.85	236	1960	Dec. 12, 1959	1.93	252
1952	Jan. 26, 1952	3.18	632	1961	July 19, 1961	2.14	313
1953	May 22, 1953	2.07	303	1962	Feb. 26, 1962	1.98	266
1954	Apr. 27, 1954	1.62	163				

a Maximum daily.

2050. Springfield Lake Outlet at Akron, Ohio

Location.--Lat 41°03'20", long 81°27'50", in T.1 N., R.10 W., in Akron, Summit County, 0.3 mile upstream from mouth and 3 miles downstream from Springfield Lake.

Drainage area.--8.40 sq mi.

Gage.--Recording gage and concrete control. Datum of gage is 1,015.34 ft above mean sea level (city of Akron bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 95 cfs.

Remarks.--Flow regulated by Springfield Lake. Gate openings at outlet of Springfield Lake are seldom changed. 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)
1947	Aug. 17, 1947	2.40	139	1956	May 12, 1956	2.71	226
1948	May 5, 1948	2.25	107	1957	July 9, 1957	2.42	144
1949	July 30, 1949	2.12	82	1958	July 31, 1958	2.83	268
1950	June 25, 1950	2.36	130	1959	Jan. 21, 1959	3.42	519
				1960	Dec. 12, 1959	2.23	102
1951	Jan. 4, 1951	2.11	81	1961	July 19, 1961	2.93	306
1952	Jan. 27, 1952	2.53	172	1962	Feb. 26, 1962	2.34	126
1953	May 22, 1953	2.16	62				
1954	Apr. 27, 1954	2.13	82				
1955	Mar. 11, 1955	2.53	172				

2055. Little Cuyahoga River at Akron, Ohio

Location.--Lat 41°03'34", long 81°28'32", at Seiberling Street, Akron, half a mile downstream from Springfield Lake Outlet.

Drainage area.--42.0 sq mi.

Gage.--Recording gage and sharp-crested weir. Datum of gage is 997.41 ft above mean sea level.

Stage-discharge relation.--Defined by current-meter measurements below 243 cfs.

Remarks.--Flow regulated by Wingfoot Lake and Springfield Lake. 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)
1927	Mar. 22, 1927	-	400	1931	Aug. 26, 1931	0.93	106
1928	Dec. 1, 1927	3.25	743	1932	Apr. 26, 1932	1.90	312
1929	Feb. 26, 1929	3.75	938				
1930	Jan. 12, 1930	1.91	315	1934	Apr. 4, 1934	-	232

2060. Cuyahoga River at Old Portage, Ohio

Location.--Lat 41°08'04", long 81°32'49", at highway bridge at Old Portage, Summit County, 1½ miles downstream from Little Cuyahoga River and 4 miles northwest of Akron.

Drainage area.--405 sq mi.

Gage.--Nonrecording prior to Dec. 21, 1923; recording thereafter. Datum of gage is 740.11 ft above mean sea level, unadjusted.

Stage-discharge relation.--Defined by current-meter measurements below 3,800 cfs, and estimate based on contracted-opening measurement at site with 488 sq mi drainage area.

Bankfull stage.--9 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)
1922	Mar. 31, 1922	7.2	2,130	1943	Dec. 31, 1942	9.45	3,480
1923	Jan. 21, 1923	6.60	1,840	1944	Apr. 12, 1944	7.92	2,680
1924	June 28, 1924	10.8	4,450	1945	May 18, 1945	9.36	3,480
1925	Feb. 12, 1925	7.4	2,200	1946	Feb. 27, 1946	7.10	2,300
1926	Sept. 6, 1926	8.3	2,820	1947	June 7, 1947	8.74	3,100
1927	Mar. 21, 1927	8.8	3,100	1948	Mar. 24, 1948	8.20	2,810
1928	Dec. 16, 1927	9.40	3,430	1949	July 30, 1949	7.34	2,320
1929	Apr. 5, 1929	10.1	3,820	1950	Jan. 15, 1950	8.70	3,120
1930	Jan. 13, 1930	9.4	3,280	1951	Dec. 7, 1950	8.56	3,060
1931	Sept. 16, 1931	4.65	1,300	1952	Jan. 26, 1952	10.42	4,540
1932	Jan. 23, 1932	5.72	1,720	1953	May 22, 1953	6.84	2,050
1933	Mar. 14, 1933	9.40	3,560	1954	Apr. 27, 1954	6.68	2,000
1934	Apr. 4, 1934	6.39	2,030	1955	Mar. 11, 1955	8.35	2,940
1935	Aug. 4, 1935	7.92	2,750	1956	Nov. 16, 1955	10.39	4,540
1936	Feb. 29, 1936	8.80	3,220	1957	July 8, 1957	9.83	4,000
1939	Mar. 12, 1939	7.91	2,750	1958	July 31, 1958	8.48	3,000
1940	Apr. 20, 1940	8.37	2,940	1959	Jan. 21, 1959	11.54	6,500
1941	July 7, 1941	8.57	3,040	1960	Apr. 1, 1960	9.05	3,390
1942	Mar. 14, 1942	7.54	2,490	1961	July 19, 1961	8.90	3,280
				1962	Feb. 27, 1962	6.34	1,890

2080. Cuyahoga River at Independence, Ohio

Location.--Lat 41°23'44", long 81°37'54", in T.6 N., R.12 W., at highway bridge on Rockside Road, 1 mile northeast of Independence, Cuyahoga County, and 3 miles downstream from Tinkers Creek.

Drainage area.--709 sq mi.

Gage.--Nonrecording at datum 2.42 ft higher prior to Oct. 9, 1927; recording thereafter. Datum of gage is 584.14 ft above mean sea level (levels by city of Cleveland).

Stage-discharge relation.--Defined by current-meter measurements below 17,100 cfs and by contracted-opening measurement at 24,800 cfs.

Bankfull stage.--16 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)
1922	Apr. 15, 1922	11.5	6,910	1931	Apr. 26, 1931	10.50	3,810
1923	Jan. 21, 1923	11.3	6,810	1932	Mar. 22, 1932	13.65	5,860
				1933	Dec. 31, 1932	15.54	7,900
1928	Dec. 1, 1927	17.8	10,600	1934	Apr. 4, 1934	14.86	6,760
1929	Jan. 19, 1929	18.9	12,300	1935	Feb. 26, 1935	13.80	5,990
1930	Jan. 12, 1930	15.5	7,900				

Peak stages and discharges of Cuyahoga River at Independence, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1936	Feb. 27, 1936	16.51	8,600	1951	Dec. 8, 1950	15.87	7,990
1940	Apr. 20, 1940	18.8	12,200	1952	Jan. 27, 1952	18.47	11,300
1941	Dec. 29, 1940	14.2	6,620	1953	Jan. 18, 1953	11.44	4,480
1942	Mar. 16, 1942	16.9	8,970	1954	Mar. 25, 1954	16.75	9,360
1943	Dec. 30, 1942	16.5	8,600	1955	Oct. 16, 1954	20.04	14,300
1944	Apr. 11, 1944	15.5	7,750	1956	Feb. 25, May 12, 1956	16.35	8,890
1945	May 18, 1945	17.2	9,240	1957	May 20, 1957	16.53	9,000
1946	Feb. 27, 1946	12.72	5,430	1958	Aug. 8, 1958	15.48	6,750
1947	June 2, 1947	19.07	12,700	1959	Jan. 22, 1959	22.41	24,800
1948	Mar. 22, 1948	16.57	8,700	1960	Dec. 13, 1959	15.42	7,860
1949	Jan. 28, 1949	12.76	5,500	1961	Apr. 26, 1961	18.17	11,800
1950	Jan. 16, 1950	18.05	11,000	1962	Feb. 27, 1962	13.37	5,880

2090. Chagrin River at Willoughby, Ohio

Location--Lat 41°37'51", long 81°24'13", at city waterworks, 150 ft downstream from waterworks dam, 800 ft downstream from East Branch, 1 mile southeast of Willoughby, Lake County, and 5 miles upstream from mouth.

Drainage area--251 sq mi.

Gage--Nonrecording gage above dam at datum 7.0 ft higher prior to Dec. 20, 1939; recording thereafter. Datum of gage is 594.24 ft above mean sea level, datum of 1929.

Stage-discharge relation--Defined by current-meter measurements below 13,900 cfs and by a contracted-opening measurement at 28,000 cfs.

Bankfull stage--11 ft.

Remarks--Base for partial-duration series, 4,000 cfs. Only annual peaks are shown prior to 1940.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	Mar. 23, 1913	10.3	24,500	1944	Feb. 23, 1944	10.19	7,480
1926	Sept. 24, 1926	6.2	10,400		Mar. 7, 1944	7.58	4,260
1927	Jan. 22, 1927	5.7	8,900		Apr. 11, 1944	10.5	7,900
	Mar. 20, 1927			1945	Feb. 22, 1945	10.66	7,340
1928	Dec. 14, 1927	6.9	12,700		Mar. 21, 1945	7.70	4,370
1929	Jan. 19, 1929	9.4	22,000		May 18, 1945	11.12	8,740
1930	Jan. 12, 1930	6.3	10,700		June 18, 1945	9.94	7,070
1931	June 26, 1931	9.9	24,000	1946	Oct. 9, 1945	7.62	4,260
1932	Mar. 22, 1932	4.5	5,860		June 1, 1946	7.73	4,370
1933	Mar. 14, 1933	5.6	8,600	1947	Jan. 30, 1947	9.70	6,820
1934	Mar. 3, 1934	3.8	4,380		Apr. 2, 1947	9.00	5,900
1935	Aug. 3, 1935	4.8	6,540		Apr. 5, 1947	8.00	4,700
1940	Mar. 29, 1940	7.74	4,870		June 2, 1947	13.70	14,400
	Apr. 3, 1940	7.22	4,220		June 14, 1947	8.68	5,540
	Apr. 20, 1940	9.10	6,850		Aug. 31, 1947	7.79	4,480
	May 24, 1940	8.25	5,540	1948	Mar. 16, 1948	7.62	4,480
	June 9, 1940	8.50	5,960		Mar. 19, 1948	7.66	4,370
1941	Dec. 29, 1940	8.54	5,960		Mar. 22, 1948	17.95	28,000
1942	Feb. 7, 1942	7.98	5,260		Apr. 28, 1948	7.95	4,700
	Feb. 17, 1942	10.04	8,200	1949	Feb. 15, 1949	8.00	4,700
	Mar. 17, 1942	9.56	7,600		May 22, 1949	8.29	5,060
	Apr. 10, 1942	7.97	5,260	1950	Jan. 4, 1950	8.06	4,690
	May 16, 1942	11.9	10,000		Jan. 10, 1950	9.21	5,920
	June 30, 1942	10.94	9,750		Jan. 16, 1950	11.49	9,200
1943	Dec. 28, 1942	7.93	4,980		Feb. 14, 1950	11.60	9,400
	Dec. 30, 1942	8.91	6,310		Mar. 23, 1950	7.63	4,140
	Feb. 11, 1943	8.67	6,030		Mar. 26, 1950	10.88	8,170
	Mar. 11, 1943	7.83	4,850		Apr. 4, 1950	9.07	5,800
	Mar. 17, 1943	10.2	8,160		Apr. 24, 1950	10.23	7,160
	June 17, 1943	8.77	6,170		Apr. 30, 1950	7.57	4,140

Peak stages and discharges of Chagrin River at Willoughby, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Nov. 20, 1950	10.64	7,710	1956	Aug. 5, 1956	8.03	4,580
	Dec. 3, 1950	11.52	9,200				
	Dec. 7, 1950	9.48	6,280	1957	Jan. 22, 1957	11.75	9,480
	Jan. 4, 1951	11.39	9,020		Apr. 4, 1957	8.92	5,570
	Feb. 13, 1951	8.08	4,690		Apr. 11, 1957	8.19	4,800
	Feb. 21, 1951	8.84	5,460		Apr. 24, 1957	13.86	13,200
	Mar. 4, 1951	7.66	4,250		May 20, 1957	14.74	14,800
	Mar. 30, 1951	7.91	4,470		June 29, 1957	9.93	6,770
1952	July 4, 1951	8.17	4,800	1958	Dec. 7, 1957	8.15	4,800
	Nov. 23, 1951	8.04	4,580		July 15, 1958	9.22	5,920
	Jan. 1, 1952	8.98	5,680		Aug. 6, 1958	10.03	6,900
	Jan. 18, 1952	10.36	7,430		Aug. 7, 1958	9.66	6,520
	Jan. 26, 1952	12.06	10,400	1959	Aug. 12, 1958	7.63	4,140
1953	Mar. 11, 1952	8.77	5,460		Nov. 17, 1958	9.82	6,670
	Jan. 18, 1953	6.85	3,330		Jan. 21, 1959	16.73	22,000
1954	Jan. 27, 1954	7.91	4,470		Feb. 10, 1959	13.25	12,200
	Mar. 1, 1954	8.54	5,130		Feb. 14, 1959	8.70	5,350
	Mar. 25, 1954	12.53	11,300		Mar. 15, 1959	7.90	4,470
	Apr. 16, 1954	9.86	6,770		Apr. 28, 1959	9.79	6,630
	Apr. 27, 1954	8.72	5,350		June 1, 1959	13.83	13,400
1955	Oct. 15, 1954	15.22	18,600	1960	Dec. 13, 1959	9.40	6,160
	Feb. 22, 1955	7.75	4,360		Jan. 12, 1960	7.51	4,060
	Mar. 11, 1955	7.73	4,250		Mar. 29, 1960	10.14	7,080
	Apr. 26, 1955	7.59	4,140	1961	Feb. 18, 1961	8.07	4,660
1956	Feb. 25, 1956	10.59	7,700		Feb. 26, 1961	11.17	8,520
	Mar. 8, 1956	9.47	6,280		Apr. 25, 1961	11.84	9,560
	Apr. 3, 1956	10.59	7,700	1962	Jan. 27, 1962	10.97	8,220
	May 13, 1956	11.07	8,410		Feb. 26, 1962	13.24	12,200

2095. Grand River near North Bristol, Ohio

Location.--Lat 41°24'45", long 80°54'45", in T.6 N., R.5 W., at highway bridge an eighth of a mile downstream from Center Creek and 2½ miles west of North Bristol, Trumbull County.

Drainage area.--89.7 sq mi.

Gage.--Nonrecording prior to Aug. 29, 1942; recording thereafter. Altitude of gage is 812 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,930 cfs.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Apr. 10, 1942	12.36	2,150	1945	May 18, 1945	12.22	1,750
1943	Dec. 28, 1942	12.35	2,150	1946	Feb. 27, 1946	12.30	1,950
	Dec. 30, 1942	12.33	1,950		May 21, 1946	12.38	2,110
	Feb. 11, 1943	12.14	1,550	1947	Jan. 31, 1947	12.22	1,790
	Apr. 20, 1943	12.5	2,350		Apr. 2, 1947	12.1	1,500
	June 17, 1943	13.0	2,500		Apr. 21, 1947	12.08	1,530
1944	Apr. 12, 1944	12.35	2,150		June 3, 1947	12.80	2,950
1945	Feb. 23, 1945	12.80	2,950				

2100. Phelps Creek near Windsor, Ohio

Location.--Lat 41°30'55", long 80°56'05", in T.8 N., R.5 W., at bridge on State Highway 534, 1.4 miles south of Windsor, Ashtabula County, and 1½ miles upstream from mouth.

Drainage area.--26.4 sq mi. Length of main stream, 11.2 miles; average slope, main stream, 40 ft per mile; average slope, main stream and tributaries, 28.9 ft per mile; slope at gage, 36.5 ft per mile; length divided by average width of basin, 4.75.

Gage.--Nonrecording prior to June 12, 1942; recording thereafter. Datum of gage is 803.70 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,570 cfs and by contracted-opening measurement at 4,600 cfs.

Bankfull stage.--5 ft.

Remarks.--Base for partial-duration series, 900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Apr. 10, 1942	6.0	1,000	1950	Apr. 24, 1950	5.72	917
	May 16, 1942	5.7	922	1951	Nov. 20, 1950	6.46	1,140
	Aug. 2, 1942	7.6	1,800		Dec. 3, 1950	a8.05	1,450
	Aug. 10, 1942	6.8	1,400		Dec. 7, 1950	6.18	1,060
1943	Dec. 28, 1942	6.42	1,120		Jan. 3, 1951	a7.44	1,350
	Dec. 30, 1942	5.72	922	1952	Feb. 13, 1951	a7.82	b900
	Feb. 11, 1943	7.3	1,650		Mar. 4, 1951	6.63	1,180
	Mar. 17, 1943	5.82	948		Jan. 1, 1952	a6.72	b1,000
	Apr. 20, 1943	5.80	948		Jan. 17, 1952	7.50	1,860
	June 17, 1943	6.70	1,350	1953	Jan. 26, 1952	7.33	1,710
1944	Feb. 23, 1944	7.88	2,220		Mar. 11, 1952	6.34	1,090
	Apr. 11, 1944	6.97	1,500	1954	Jan. 18, 1953	4.82	709
	May 24, 1944	6.45	1,120		Mar. 1, 1954	6.38	1,120
1945	Feb. 22, 1945	8.27	2,680		Mar. 25, 1954	6.22	1,060
	May 17, 1945	5.78	942	1955	Apr. 27, 1954	5.93	979
	June 13, 1945	5.72	914		Oct. 15, 1954	8.29	2,680
1946	Feb. 14, 1946	a6.72	1,060		Feb. 22, 1955	6.16	1,110
	Mar. 15, 1946	6.40	1,120	1956	Dec. 24, 1955	5.69	929
	May 21, 1946	5.93	970		Feb. 25, 1956	7.88	2,220
1947	Jan. 30, 1947	6.36	1,120		Mar. 8, 1956	-	b1,000
	Apr. 2, 1947	5.98	998		Apr. 3, 1956	7.10	1,550
	May 25, 1947	6.20	1,060		Aug. 5, 1956	7.05	1,500
	June 2, 1947	7.63	1,800		Aug. 19, 1956	6.78	1,400
	Aug. 31, 1947	5.84	942	1957	Jan. 22, 1957	8.01	2,320
1948	Feb. 14, 1948	a6.90	-		Apr. 4, 1957	6.67	1,350
	Mar. 22, 1948	8.97	3,840		Apr. 24, 1957	6.19	1,100
	Apr. 28, 1948	5.93	970		June 29, 1957	7.11	1,550
1949	Feb. 15, 1949	4.46	635	1958	July 15, 1958	9.48	2,680
1950	Jan. 10, 1950	5.98	999		Nov. 17, 1958	6.81	909
	Jan. 15, 1950	7.92	2,220	1959	Jan. 21, 1959	9.34	4,600
	Feb. 14, 1950	7.27	1,650		Feb. 10, 1959	-	2,300
	Mar. 26, 1950	7.00	1,500				

a Backwater from ice.

b Estimated.

2101. Hoskins Creek at Hartsgrove, Ohio

Location.--Lat 41°36'20", long 80°58'00", at bridge on State Highway 6, 0.7 mile west of Hartsgrove, Ashtabula County.

Drainage area.--5.11 sq mi. Length of main stream, 6.15 miles; average slope, main stream, 15.6 ft per mile; average slope, main stream and tributaries, 55.3 ft per mile; slope at gage, 15 ft per mile; length divided by average width of basin, 5.45.

Gage.--Crest-stage gage. Altitude of gage is 1,037 ft above mean sea level (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 205 cfs and an indirect measurement at 543 cfs.

Bankfull stage.--13 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)
1947	-	13.87	212	1956	-	14.23	364
1948	Mar. 21, 1948	14.53	543	1957	-	13.72	176
1949	-	12.90	110	1958	-	13.82	200
1950	-	14.00	256	1959	Jan. 21, 1959	14.42	468
				1960	-	12.64	97
1951	-	14.24	376				
1952	-	14.00	256	1961	Feb. 26, 1961	12.59	106
1953	-	13.15	124	1962	-	11.73	77
1954	-	13.50	150				
1955	Oct. 16, 1954	13.86	208				

2105. Grand River near Rome, Ohio

Location.--Lat 41°36'20", long 80°53'40", in T.9 N., R.4 W., at bridge on U.S. Highway 6, 2 $\frac{1}{4}$ miles upstream from Mud Creek and 2 $\frac{1}{2}$ miles west of Rome, Ashtabula County.

Drainage area.--276 sq mi.

Gage.--Nonrecording prior to Aug. 10, 1942; recording thereafter. Altitude of gage is 770 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 4,300 cfs.

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)
1942	Apr. 11, 1942	17.02	3,150	1945	Feb. 24, 1945	-	3,150
1943	Dec. 21, 1942	20.0	4,530		Feb. 25, 1945	18.00	-
	Feb. 12, 1943	(a)	2,500		Mar. 23, 1945	14.68	2,290
	Mar. 17, 1943	14.50	2,300		May 18, 1945	14.60	2,100
	Apr. 20, 1943	13.94	2,090.	1946	May 21, 1946	14.32	2,020
	June 19, 1943	15.81	2,750				
1944	Feb. 26, 1944	14.4	2,180	1947	Apr. 2, 1947	16.92	2,990
	Apr. 13, 1944	17.5	3,550		June 4, 1947	17.25	3,120

a Backwater from ice.

2110. Rock Creek near Rock Creek, Ohio

Location.--Lat 41°39'05", long 80°50'10", in T.10 N., R.4 W., at highway bridge 0.4 mile downstream from Plum Creek, 1.4 miles southeast of village of Rock Creek, Ashtabula County, 1½ miles downstream from Sugar Creek, and 3 miles upstream from mouth.

Drainage area.--56.6 sq mi.

Gage.--Nonrecording prior to June 11, 1942; recording thereafter. Altitude of gage is 810 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,220 cfs.

Bankfull stage.--4 ft.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Apr. 10, 1942	5.1	1,630	1951	June 18, 1951	5.07	1,560
	May 16, 1942	6.60	2,930				
	May 22, 1942	4.8	1,420	1952	Nov. 23, 1951	4.80	1,260
	July 22, 1942	5.32	1,770		Jan. 1, 1952	5.74	2,080
	Aug. 2, 1942	5.10	1,630		Jan. 18, 1952	7.03	3,370
					Jan. 27, 1952	7.02	3,370
1943	Dec. 28, 1942	4.88	1,490		Feb. 4, 1952	4.83	1,340
	Dec. 30, 1942	5.20	1,700		Mar. 11, 1952	4.92	1,340
	Feb. 11, 1943	5.3	1,770		May 25, 1952	4.73	1,220
	Mar. 17, 1943	4.55	1,260	1953	Jan. 18, 1953	4.49	1,040
	Apr. 20, 1943	4.98	1,560				
	July 11, 1943	4.56	1,260	1954	Jan. 20, 1954	4.82	1,260
1944	Feb. 23, 1944	4.95	1,600		Mar. 1, 1954	6.83	3,260
	Apr. 12, 1944	5.90	2,250		Apr. 16, 1954	5.60	1,940
					Apr. 28, 1954	4.80	1,260
1945	Feb. 22, 1945	6.23	2,520	1955	Oct. 15, 1954	7.93	3,300
1946	June 1, 1946	4.43	1,170	1956	Dec. 4, 1955	5.87	1,600
1947	Jan. 30, 1947	4.85	1,420		Feb. 25, 1956	5.74	1,500
	Apr. 2, 1947	4.82	1,420		Mar. 8, 1956	5.73	1,550
	Apr. 5, 1947	4.60	1,240		Apr. 3, 1956	5.24	1,260
	May 21, 1947	4.70	1,310		May 12, 1956	6.11	1,710
	May 26, 1947	4.67	1,280		June 16, 1956	5.81	1,550
	June 3, 1947	6.80	3,150		Aug. 19, 1956	6.67	2,100
1948	Feb. 14, 1948	4.94	1,480	1957	Jan. 22, 1957	6.90	2,260
	Mar. 22, 1948	8.82	5,730		Apr. 4, 1957	6.34	1,830
	Apr. 28, 1948	4.55	1,210		Apr. 11, 1957	5.07	1,220
					Apr. 25, 1957	5.23	1,300
1949	May 23, 1949	5.71	2,070	1958	Feb. 28, 1958	5.16	1,260
1950	Jan. 10, 1950	4.60	1,240		July 15, 1958	5.19	1,260
	Jan. 16, 1950	7.41	3,830		Aug. 24, 1958	5.53	1,400
	Feb. 14, 1950	7.07	3,480	1959	Nov. 17, 1958	5.23	1,280
	Mar. 23, 1950	4.69	1,310		Jan. 21, 1959	10.83	8,000
	Mar. 26, 1950	6.29	2,630		Feb. 10, 1959	7.52	2,820
	Apr. 4, 1950	4.76	1,340		Apr. 28, 1959	6.23	1,750
	Apr. 24, 1950	4.57	1,210	1960	Oct. 7, 1959	6.72	2,100
1951	Nov. 20, 1950	5.84	2,200		Dec. 12, 1959	6.54	1,950
	Dec. 4, 1950	a7.01	3,000		Mar. 30, 1960	8.07	3,580
	Dec. 8, 1950	a5.60	1,850				
	Jan. 4, 1951	a6.96	3,200	1961	Feb. 18, 1961	5.50	1,340
	Feb. 13, 1951	a5.23	1,600		Feb. 26, 1961	5.32	1,250
	Feb. 21, 1951	4.80	1,380		Apr. 25, 1961	6.67	2,070
	Mar. 4, 1951	5.44	1,870				
	Mar. 30, 1951	4.62	1,240	1962	Nov. 24, 1961	4.55	892

a Backwater from ice.

2115. Mill Creek near Jefferson, Ohio

Location.--Lat 41°45'10", long 80°48'00", in T.11 N., R.3 W., at bridge on State Highway 307, $1\frac{3}{4}$ miles northwest of Jefferson, Ashtabula County, and $3\frac{1}{4}$ miles downstream from Griggs Creek.

Drainage area.--78.3 sq mi.

Gage.--Nonrecording prior to June 10, 1942; recording thereafter. Datum of gage is 822.59 ft above mean sea level (Ashtabula County bench mark).

Stage-discharge relation.--Defined by current-meter measurements below 5,570 cfs and by contracted-opening measurement at 9,810 cfs.

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1942	Apr. 10, 1942	7.1	2,090	1952	Jan. 1, 1952	7.92	2,500
	May 16, 1942	9.5	5,900		Jan. 18, 1952	7.79	2,580
	May 23, 1942	6.8	1,840		Jan. 27, 1952	8.61	3,290
	July 17, 1942	8.63	4,140		Mar. 11, 1952	7.23	1,640
	July 23, 1942	6.75	1,240				
1943	Dec. 28, 1942	7.9	3,000	1953	May 23, 1953	8.32	2,670
	Dec. 30, 1942	7.03	2,000				
	Feb. 11, 1943	7.70	2,740	1954	Jan. 21, 1954	8.46	2,630
	Mar. 17, 1943	7.10	2,090		Jan. 27, 1954	6.94	1,680
	Apr. 20, 1943	7.60	2,620		Mar. 1, 1954	9.30	3,480
	May 21, 1943	6.68	1,760		Mar. 25, 1954	6.99	1,740
					Apr. 17, 1954	8.13	2,360
1944	Feb. 23, 1944	7.50	2,510		Apr. 28, 1954	6.79	1,630
	Apr. 12, 1944	8.0	3,140	1955	Oct. 16, 1954	9.60	3,930
1945	Feb. 23, 1945	8.60	4,140		Dec. 18, 1954	7.24	1,650
	Mar. 3, 1945	6.95	1,920	1956	Nov. 16, 1955	7.23	1,650
	May 17, 1945	6.94	1,920		Dec. 5, 1955	7.77	2,030
1946	Oct. 9, 1945	7.72	2,730		Dec. 25, 1955	7.04	1,540
	Oct. 24, 1945	6.57	1,600		Feb. 25, 1956	8.49	2,600
	Feb. 14, 1946	7.43	2,420		Mar. 6, 1956	7.35	1,770
	Mar. 2, 1946	6.71	1,710		Mar. 8, 1956	7.63	1,890
	June 1, 1946	7.30	2,250		Apr. 4, 1956	7.28	1,710
1947	Jan. 31, 1947	7.30	2,170		May 10, 1956	7.01	1,540
	Apr. 2, 1947	7.26	2,120		May 13, 1956	8.58	2,690
	Apr. 5, 1947	8.10	3,260		Aug. 19, 1956	8.02	2,180
	May 26, 1947	7.00	1,860	1957	Jan. 22, 1957	9.45	3,620
	June 3, 1947	8.15	3,340		Apr. 5, 1957	7.97	2,180
	June 7, 1947	8.50	3,960		Apr. 12, 1957	7.53	1,830
1948	Feb. 14, 1948	6.43	1,510		Apr. 26, 1957	7.38	1,770
	Feb. 18, 1948	6.51	1,540		June 29, 1957	8.20	2,340
	Mar. 16, 1948	7.13	2,050	1958	Feb. 28, 1958	8.01	2,180
	Mar. 20, 1948	6.48	1,540		Aug. 7, 1958	7.73	1,770
	Mar. 22, 1948	9.95	7,010		Aug. 24, 1958	7.99	1,960
1949	Apr. 27, 1949	6.65	1,640		Sept. 5, 1958	7.22	1,540
	May 23, 1949	6.49	1,540	1959	Nov. 18, 1958	7.11	1,600
1950	Jan. 4, 1950	6.78	1,740		Jan. 22, 1959	12.50	9,810
	Jan. 11, 1950	6.61	1,600		Feb. 10, 1959	9.40	3,620
	Jan. 16, 1950	8.78	4,520		Mar. 16, 1959	7.67	1,940
	Feb. 14, 1950	9.20	5,290		Apr. 29, 1959	7.45	1,800
	Mar. 23, 1950	6.64	1,640	1960	Oct. 7, 1959	9.15	3,280
	Mar. 27, 1950	8.27	3,520		Dec. 13, 1959	9.13	3,250
	Apr. 5, 1950	6.71	1,670		Jan. 13, 1960	7.54	1,850
1951	Nov. 21, 1950	8.49	3,960		Mar. 30, 1960	9.71	4,110
	Dec. 4, 1950	10.28	5,900		May 9, 1960	6.91	1,660
	Dec. 8, 1950	6.66	1,640	1961	Feb. 19, 1961	9.03	3,150
	Jan. 4, 1951	9.30	4,400		Feb. 26, 1961	7.43	1,920
	Feb. 13, 1951	8.12	3,000		Apr. 25, 1961	8.23	2,430
	Feb. 21, 1951	6.92	1,820	1962	Mar. 13, 1962	7.93	2,220
	Mar. 4, 1951	6.76	1,700				

a Backwater from ice.

2120. Grand River near Madison, Ohio

Location.--Lat 41°44'26", long 81°02'48", at bridge on State Highway 528, half a mile upstream from Griswold Creek and 2 miles south of Madison, Lake County.

Drainage area.--587 sq mi.

Gage.--Nonrecording prior to Jan. 20, 1939; recording thereafter. Datum of gage is 674.47 ft above mean sea level, adjustment of 1912.

Stage-discharge relation.--Defined by current-meter measurements below 12,200 cfs and by estimate of flow over dam 8 miles upstream, adjusted for drainage area difference, for 1959 peak flow.

Bankfull stage.--7 ft.

Remarks.--Base for partial-duration series, 5,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Apr. 6, 1923	7.8	5,130	1940	Feb. 13, 1940	10.8	-
1924	Dec. 7, 1923	9.3	7,900		Mar. 30, 1940	9.2C	8,520
	Jan. 11, 1924	9.9	9,060		Apr. 4, 1940	8.41	6,720
	July 13, 1924	8.4	6,210		Apr. 21, 1940	8.76	7,590
	Sept. 30, 1924	8.3	6,030		May 31, 1940	8.07	6,100
1925	Dec. 19, 1924	8.2	5,850	1941	Dec. 13, 1940	7.75	5,500
	Feb. 10, 1925	8.1	5,670	1942	Feb. 7, 1942	9.05	8,050
	Feb. 23, 1925	8.4	6,210		Feb. 17, 1942	9.41	8,160
1926	Nov. 8, 1925	8.8	6,950		Mar. 9, 1942	10.5	11,200
	Feb. 26, 1926	9.2	7,710		Mar. 17, 1942	8.55	6,490
	Mar. 24, 1926	9.3	7,900		Apr. 10, 1942	8.76	6,880
	Apr. 8, 1926	9.3	7,900		May 16, 1942	9.31	7,920
	Sept. 25, 1926	11.1	11,500	1943	Dec. 28, 1942	9.61	8,650
1927	Oct. 25, 1926	9.2	7,710		Dec. 31, 1942	9.67	8,900
	Jan. 22, 1927	8.7	6,760		Feb. 11, 1943	8.87	7,080
	Jan. 30, 1927	8.6	6,570		Mar. 17, 1943	8.73	6,680
	Mar. 21, 1927	8.7	6,760		Apr. 20, 1943	8.8C	6,880
1928	Dec. 1, 1927	9.6	8,470	1944	Feb. 24, 1944	8.46	6,300
	Dec. 14, 1927	9.5	8,280		Apr. 12, 1944	10.2C	10,200
	Jan. 1, 1928	8.5	6,390	1945	Feb. 23, 1945	10.0C	9,650
	Feb. 9, 1928	8.4	6,210		May 17, 1945	9.0C	7,280
1929	Jan. 19, 1929	12.2	14,100	1946	Oct. 10, 1945	8.08	5,780
	Feb. 27, 1929	9.0	7,330		Dec. 30, 1945	11.2	-
	Apr. 6, 1929	8.7	6,760		Feb. 14, 1946	8.28	6,180
	Apr. 21, 1929	8.8	6,950		Mar. 3, 1946	8.15	5,980
	May 3, 1929	8.3	6,030		May 28, 1946	8.08	5,780
1930	Jan. 3, 1930	8.7	6,760		June 1, 1946	8.87	7,380
	Jan. 8, 1930	8.4	6,210	1947	Jan. 31, 1947	8.54	6,580
	Jan. 13, 1930	9.0	7,330		Apr. 3, 1947	9.08	7,800
	Apr. 17, 1930	8.1	5,670		Apr. 5, 1947	9.57	8,800
1931	Apr. 27, 1931	6.83	3,710		May 26, 1947	8.13	5,780
1932	May 8, 1932	8.4	6,210		June 3, 1947	9.60	8,900
1933	Dec. 31, 1932	9.2	7,710		June 8, 1947	9.00	7,590
	Mar. 14, 1933	9.4	8,090	1948	Feb. 19, 1948	8.22	5,980
	Apr. 12, 1933	8.0	5,670		Mar. 16, 1948	8.20	5,980
1934	Jan. 2, 1934	8.2	5,850		Mar. 20, 1948	8.04	5,610
	Mar. 5, 1934	10.36	-		Mar. 22, 1948	12.48	15,100
1935	Jan. 22, 1935	8.2	5,850	1949	May 23, 1949	7.66	5,070
1936	Feb. 27, 1936	9.5	8,280	1950	Jan. 4, 1950	8.25	5,960
1938	Feb. 10, 1938	8.4	6,210		Jan. 11, 1950	8.18	5,960
	Feb. 14, 1938	8.8	6,950		Jan. 16, 1950	10.25	9,860
	Feb. 19, 1938	8.4	6,210		Feb. 14, 1950	11.93	13,600
	Apr. 9, 1938	9.4	8,090		Mar. 8, 1950	8.29	6,150
1939	Feb. 11, 1939	8.34	6,460		Mar. 27, 1950	10.40	10,300
	Feb. 20, 1939	8.88	7,900	1951	Nov. 21, 1950	9.24	7,860
	Mar. 1, 1939	8.86	7,900		Dec. 4, 1950	11.64	12,900
	Mar. 13, 1939	8.55	7,180		Dec. 8, 1950	9.42	8,260
					Jan. 4, 1951	11.27	12,200
					Feb. 13, 1951	9.37	8,260
					Feb. 22, 1951	8.78	7,100
					Mar. 4, 1951	8.43	6,340

a Backwater from ice.

Peak stages and discharges of Grand River near Madison, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 31, 1951	8.18	5,960	1957	Apr. 5, 1957	9.55	8,660
1952	Jan. 1, 1952	10.06	9,660		Apr. 12, 1957	9.05	7,520
	Jan. 18, 1952	9.48	8,470		Apr. 26, 1957	9.25	7,900
	Jan. 27, 1952	10.28	10,100		June 30, 1957	8.13	5,850
	Feb. 5, 1952	8.23	6,080	1958	Feb. 28, 1958	9.09	7,710
	Mar. 12, 1952	8.28	6,250		Aug. 25, 1958	8.12	5,850
1953	May 23, 1953	8.62	6,760	1959	Nov. 18, 1958	7.91	5,510
1954	Jan. 21, 1954	8.45	6,390		Jan. 22, 1959	14.73	21,100
	Mar. 2, 1954	10.22	9,860		Feb. 11, 1959	10.73	10,900
	Mar. 26, 1954	8.16	6,030		Mar. 16, 1959	8.29	6,190
	Apr. 17, 1954	9.29	8,090		Apr. 28, 1959	9.67	8,800
1955	Oct. 16, 1954	10.98	10,100	1960	Oct. 7, 1959	9.12	7,400
	Feb. 22, 1955	8.36	6,390		Dec. 13, 1959	10.34	9,950
1956	Dec. 5, 1955	8.72	6,950		Jan. 14, 1960	8.30	5,840
	Feb. 26, 1956	9.43	8,280		Mar. 31, 1960	12.27	14,300
	Mar. 9, 1956	9.15	7,900	1961	Feb. 19, 1961	9.13	7,890
	Apr. 4, 1956	8.85	7,140		Feb. 26, 1961	8.54	6,730
	May 13, 1956	10.15	9,860		Apr. 26, 1961	9.77	9,220
	Aug. 20, 1956	8.24	6,030	1962	Feb. 27, 1962	-	(b)
1957	Jan. 23, 1957	11.18	12,000		Mar. 13, 1962	-	c5,600

b Unknown; exceeded base.

c Maximum daily.

2125. Ashtabula River near Ashtabula, Ohio

Location.--Lat 41°51'19", long 80°45'43", at highway bridge, 1 mile upstream from Hubbard Run, 1½ miles southeast of Ashtabula, Ashtabula County, and 5½ miles upstream from mouth.

Drainage area.--118 sq mi.

Gage.--Nonrecording prior to Aug. 27, 1924; recording thereafter. Altitude of gage is 605 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 7,500 cfs.

Bankfull stage.--Banks not subject to overflow.

Remarks.--Base for partial-duration series, 2,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Feb. 8, 1925	a9.0	-	1930	Feb. 13, 1930	a6.96	-
	Feb. 9, 1925	5.8	3,250	1931	Jan. 26, 1931	a6.94	-
1926	Feb. 26, 1926	a8.03	3,470		Apr. 2, 1931	4.23	2,010
	Mar. 24, 1926	5.31	2,710	1932	May 8, 1932	5.51	3,150
	Apr. 8, 1926	5.57	3,030	1933	Dec. 31, 1932	7.51	5,230
	Sept. 24, 1926	7.33	4,950		Feb. 20, 1933	a5.79	-
1927	Oct. 25, 1926	6.48	4,020		Mar. 14, 1933	6.05	3,470
	Nov. 16, 1926	5.61	3,030		Apr. 12, 1933	5.78	3,270
	Jan. 22, 1927	5.32	2,710	1934	Jan. 2, 1934	5.38	2,870
1928	Dec. 1, 1927	7.73	5,430		Mar. 4, 1934	a5.78	-
	Dec. 14, 1927	7.68	5,430		Aug. 9, 1934	5.72	3,170
	Dec. 29, 1927	5.47	2,950	1935	Feb. 15, 1935	4.98	2,500
	Jan. 1, 1928	5.80	3,250	1936	Feb. 27, 1936	a9.04	-
	Feb. 8, 1928	a6.23	-		Feb. 27, 1936	7.12	4,860
1929	Jan. 19, 1929	8.35	7,500		Mar. 24, 1936	8.36	7,500
	Feb. 27, 1929	6.52	4,020	1939	Mar. 1, 1939	6.18	3,690
	Apr. 5, 1929	5.45	2,850		Mar. 13, 1939	5.90	3,390
	Apr. 21, 1929	6.08	3,580		Apr. 15, 1939	5.17	2,780
	May 3, 1929	5.67	3,150				
1930	Jan. 12, 1930	5.58	3,050				

a Backwater from ice.

Peak stages and discharges of Ashtabula River near Ashtabula, Ohio--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1939	Apr. 18, 1939	4.95	2,620	1951	Jan. 4, 1951	6.95	5,430
	June 23, 1939	5.08	2,700		Feb. 12, 1951	a7.10	-
1940	Jan. 14, 1940	a5.11	-		Feb. 13, 1951	5.35	3,000
	Feb. 13, 1940	a9.16	-		Feb. 21, 1951	4.99	2,840
	Mar. 30, 1940	6.90	4,470	1952	Jan. 1, 1952	-	2,700
	Apr. 4, 1940	5.79	3,290		Jan. 27, 1952	6.30	4,450
	Apr. 20, 1940	5.42	2,940	1953	May 23, 1953	7.94	6,810
	May 24, 1940	6.59	4,130	1954	Jan. 21, 1954	6.50	4,940
	May 31, 1940	5.82	3,290		Jan. 27, 1954	4.62	2,760
1941	Dec. 13, 1940	5.12	2,700		Mar. 1, 1954	7.51	2,650
	Mar. 4, 1941	a6.20	-		Mar. 25, 1954	4.90	3,090
1942	Feb. 7, 1942	5.55	3,110		Apr. 17, 1954	6.33	4,700
	Feb. 17, 1942	7.40	5,320		May 2, 1954	6.23	4,580
	Mar. 9, 1942	8.27	7,250	1955	Oct. 16, 1954	9.32	8,880
	Apr. 10, 1942	5.39	2,940		Dec. 18, 1954	4.53	2,710
	May 16, 1942	9.67	10,800		Feb. 14, 1955	a5.37	-
	July 17, 1942	9.05	9,000	1956	Nov. 16, 1955	4.52	2,660
1943	Dec. 28, 1942	6.40	3,930		Feb. 25, 1956	5.96	4,350
	Dec. 30, 1942	5.63	3,090		Mar. 6, 1956	5.56	3,910
	Jan. 17, 1943	a6.92	-		Mar. 8, 1956	4.76	3,090
	Jan. 25, 1943	a8.6	-		May 12, 1956	6.55	5,070
	Feb. 11, 1943	6.10	3,590	1957	Dec. 4, 1956	a6.28	-
	Mar. 11, 1943	a6.46	-		Dec. 6, 1956	4.90	3,190
	Apr. 20, 1943	6.19	3,700		Jan. 23, 1957	7.38	6,110
1944	Jan. 28, 1944	a6.53	-		Apr. 5, 1957	5.20	3,440
	Jan. 28, 1944	5.80	3,280		June 29, 1957	7.30	5,980
	Feb. 23, 1944	a7.2	3,090	1958	Feb. 27, 1958	a5.56	-
	Apr. 12, 1944	6.15	3,700		Mar. 1, 1958	4.40	2,600
1945	Feb. 23, 1945	a9.60	5,010		Sept. 5, 1958	4.60	2,800
1946	Oct. 9, 1945	5.85	3,280	1959	Jan. 2, 1959	a6.65	-
	Dec. 27, 1945	a5.60	-		Jan. 22, 1959	11.03	11,600
	Feb. 14, 1946	5.42	2,910		Jan. 30, 1959	a5.47	-
	June 1, 1946	6.60	4,180		Feb. 10, 1959	6.73	4,420
1947	Jan. 31, 1947	5.80	3,280		Feb. 27, 1959	a5.70	-
	Mar. 13, 1947	a6.30	-		Apr. 29, 1959	5.64	3,020
	Apr. 2, 1947	5.12	2,640	1960	Oct. 7, 1959	6.89	4,650
	Apr. 5, 1947	7.64	5,670		Dec. 13, 1959	7.20	5,080
	May 26, 1947	5.57	3,090		Mar. 30, 1960	8.47	7,110
	June 3, 1947	6.02	3,480	1961	Feb. 19, 1961	6.37	4,020
	June 8, 1947	8.43	7,500		Apr. 25, 1961	5.11	2,610
1950	Apr. 5, 1950	5.02	2,840	1962	Mar. 13, 1962	3.73	1,430
1951	Nov. 20, 1950	6.10	4,190				
	Dec. 4, 1950	8.25	7,180				

a Backwater from ice.

STREAMS TRIBUTARY TO LAKE ERIE

2130. Conneaut Creek at Conneaut, Ohio
(Published as "at Amboy" prior to 1962)

Location.--Lat 41°55'34", long 80°36'18", at highway bridge at Conneaut, Ashtabula County, and 6½ miles upstream from mouth.

Drainage area.--178 sq mi.

Gage.--Nonrecording prior to Aug. 17, 1924; recording thereafter. Altitude of gage is 605 ft (from topographic map).

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

Remarks.--Base for partial-duration series, 2,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	Mar. 4, 1923	5.8	a3,190	1951	Dec. 4, 1950	9.00	8,830
1924	May 9, 1924	8.3	a7,320	Jan. 4, 1951	7.84	6,430	
1925	Feb. 9, 1925	b8.2	-	Jan. 15, 1951	b6.07	-	
	Feb. 9, 1925	5.9	3,900	Feb. 13, 1951	b9.22	-	
				Feb. 13, 1951	6.63	4,270	
				Feb. 22, 1951	5.96	3,200	
1926	Jan. 18, 1926	b6.5	-	1952	Dec. 22, 1951	b11.40	-
	Feb. 27, 1926	b12.3	-	Dec. 31, 1951	b12.25	-	
	Mar. 3, 1926	b8.0	-	Jan. 1, 1952	-	3,800	
	Mar. 20, 1926	b6.4	-	Jan. 27, 1952	7.07	5,140	
	Apr. 9, 1926	5.78	3,750	May 26, 1952	5.78	2,990	
	Sept. 25, 1926	8.1	7,700	1953	May 23, 1953	7.85	6,430
1927	Oct. 26, 1926	6.5	4,850	1954	Jan. 21, 1954	6.49	4,100
	Nov. 17, 1926	6.0	4,050	Jan. 28, 1954	5.99	3,280	
	Jan. 23, 1927	5.3	3,050	Mar. 1, 1954	7.97	6,810	
1928	Dec. 1, 1927	8.2	7,900	Apr. 17, 1954	6.93	4,780	
	Dec. 14, 1927	6.55	5,020	May 2, 1954	6.57	4,180	
	Dec. 30, 1927	5.9	3,900	1955	Oct. 16, 1954	10.74	12,900
	Jan. 8, 1928	b6.0	-	Dec. 19, 1954	6.14	3,520	
	Jan. 24, 1928	b7.8	-	Dec. 29, 1954	6.03	3,360	
	Feb. 5-8, 1928	b7.6	-	Feb. 12, 1955	b6.9	-	
	Feb. 9, 1928	5.5	3,330	1956	Nov. 17, 1955	6.07	3,360
1929	Jan. 19, 1929	8.2	7,900	Feb. 7, 1956	b9.50	-	
	Feb. 27, 1929	6.5	4,850	Feb. 26, 1956	b7.30	5,300	
	Apr. 21, 1929	5.6	3,470	Mar. 7, 1956	6.69	4,440	
	May 3, 1929	5.9	3,900	Mar. 9, 1956	6.15	3,520	
1930	Dec. 8, 1929	b6.0	-	May 13, 1956	7.98	6,810	
	Jan. 2, 1930	5.5	3,330	1957	Dec. 7, 1956	6.27	3,680
	Jan. 9, 1930	5.4	3,190	Jan. 22, 1957	b10.35	-	
	Jan. 13, 1930	5.7	3,610	Jan. 23, 1957	8.24	7,200	
1931	Apr. 2, 1931	4.52	2,050	Apr. 5, 1957	6.30	3,740	
1932	May 9, 1932	5.50	3,330	Apr. 26, 1957	6.00	3,260	
1933	Jan. 1, 1933	6.54	4,850	June 30, 1957	8.33	7,400	
	Feb. 10, 1933	b6.2	-	1958	Mar. 1, 1958	7.14	5,140
	Feb. 22, 1933	b7.0	-	Sept. 5, 1958	8.77	8,410	
	Mar. 15, 1933	5.80	3,750	1959	Jan. 22, 1959	11.70	17,000
	Apr. 12, 1933	5.2	2,910	Feb. 11, 1959	7.23	4,400	
1934	Jan. 2, 1934	b5.5	-	Mar. 16, 1959	6.54	3,310	
	Mar. 4, 1934	b12.94	3,900	Apr. 29, 1959	6.46	3,190	
	Mar. 15, 1934	b5.6	-	1960	Oct. 2, 1959	6.38	3,080
1935	Feb. 15, 1935	b10.4	-	Oct. 8, 1959	7.90	5,610	
	Feb. 16, 1935	5.79	3,750	Dec. 13, 1959	8.13	6,060	
1936	Jan. 5, 1936	b5.9	-	Feb. 11, 1960	6.27	2,930	
	Feb. 26, 1936	b7.9	-	Mar. 30, 1960	8.90	7,980	
	Mar. 25, 1936	8.9	9,400	May 9, 1960	6.10	3,090	
1950	Apr. 5, 1950	5.97	3,200	1961	Feb. 19, 1961	8.25	6,630
				Apr. 26, 1961	6.15	3,160	
1951	Nov. 21, 1950	6.83	4,610	1962	Jan. 8, 1962	5.60	2,440
	Nov. 26, 1950	b7.14	-	Mar. 13, 1962	b11.05	-	

a Annual peak only.
b Backwater from ice.

2135. Cattaraugus Creek at Gowanda, N.Y.

Location.--Lat 42°27'50", long 78°56'10", on right bank at Gowanda, Erie County, 380 ft downstream from highway bridge, and 4.2 miles downstream from South Branch.

Drainage area.--428 sq mi.

Gage.--Recording. Datum of gage is 738.74 ft above mean sea level (village of Gowanda bench mark).

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

Bankfull stage.--Both banks are high and not subject to overflow at gage.

Historical data.--From newspaper records and other sources, it is doubtful if any flood ever exceeded a stage of 20 ft, which corresponds to floor of present highway bridge or top of left bank opposite gage.

Remarks.--Diversion during extreme flood conditions, when Thatcher Brook may overflow into Cattaraugus Creek above control. Base for partial-duration series, 8,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Dec. 3, 1939	7.30	9,230	1948	Apr. 14, 1948	8.19	10,100
	Mar. 30, 1940	7.84	11,200		Jan. 5, 1949	7.75	8,820
	Mar. 31, 1940	8.59	14,200	1949	Feb. 2, 1949	as.77	-
	Apr. 4, 1940	8.80	15,300		Mar. 28, 1950	9.63	15,000
	Apr. 9, 1940	7.95	11,600	1950	Apr. 5, 1950	8.52	11,200
	Apr. 12, 1940	7.57	10,100		Nov. 25, 1950	10.33	17,600
	June 24, 1940	7.51	9,940	1951	Dec. 4, 1950	9.55	14,700
1941	Dec. 13, 1940	8.27	12,900		Jan. 4, 1951	9.21	13,500
	Mar. 4, 1941	7.20	8,890		Feb. 12, 1951	as.87	-
	Apr. 5, 1941	8.84	15,500		Feb. 13, 1951	8.24	10,500
1942	Mar. 9, 1942	10.66	24,600	1952	Mar. 30, 1951	7.63	8,840
	Mar. 17, 1942	13.73	35,900		Jan. 1, 1952	7.88	9,500
1943	Nov. 1, 1942	-	8,000	1953	Mar. 11, 1952	8.84	12,300
	Dec. 30, 1942	9.72	16,800		Mar. 24, 1953	6.75	6,730
	Feb. 24, 1943	7.40	8,640	1954	Apr. 28, 1954	8.45	11,100
	Mar. 17, 1943	7.28	8,280		Dec. 29, 1954	8.05	9,980
	Apr. 20, 1943	7.92	10,200	1955	Mar. 1, 1955	10.78	19,400
	Apr. 28, 1943	7.89	10,100		Feb. 25, 1956	8.12	10,200
	Apr. 30, 1943	7.44	8,760	1956	Mar. 7, 1956	14.14	34,600
1944	Mar. 16, 1944	7.68	9,480		Apr. 3, 1956	7.71	9,050
	Apr. 10, 1944	8.13	10,900		May 12, 1956	8.82	12,300
	Apr. 12, 1944	8.53	12,300		May 13, 1956	8.57	11,500
	June 24, 1944	10.35	19,400	1957	Dec. 7, 1956	10.47	18,100
1945	Feb. 22, 1945	as.54	-		Jan. 23, 1957	11.64	22,900
	Mar. 3, 1945	9.10	14,400		Apr. 6, 1957	10.40	17,900
	Mar. 6, 1945	8.54	12,300		July 5, 1957	7.52	8,530
	Mar. 16, 1945	8.27	11,400	1958	June 13, 1958	8.46	11,200
	Mar. 17, 1945	7.72	9,600		Jan. 22, 1959	12.55	27,000
	July 15, 1945	7.98	10,400	1959	Apr. 2, 1959	10.35	17,700
1946	Oct. 2, 1945	10.74	21,100	1960	Dec. 12, 1959	8.91	12,600
	Jan. 6, 1946	as.73	-		Jan. 13, 1960	8.75	12,000
	Feb. 14, 1946	as.35	-		Feb. 11, 1960	8.58	11,500
	Mar. 4, 1946	as.46	-		Mar. 30, 1960	10.86	19,700
	June 1, 1946	8.21	10,900	1961	Feb. 26, 1961	11.03	20,400
1947	Dec. 28, 1946	as.05	8,800		Apr. 25, 1961	10.23	17,200
	Jan. 30, 1947	9.65	16,500		June 2, 1961	8.30	10,700
	Mar. 25, 1947	9.29	15,100	1962	Jan. 7, 1962	7.66	8,900
	Apr. 5, 1947	12.05	24,700				
	Apr. 21, 1947	9.66	15,100				
	June 3, 1947	8.51	11,200				
1948	Feb. 20, 1948	8.74	11,900				
	Mar. 16, 1948	7.61	8,430				
	Mar. 20, 1948	8.37	10,700				
	Mar. 22, 1948	10.33	17,600				

a Backwater from ice.

2140. Cattaraugus Creek at Versailles, N.Y.

Location.--Lat 42°31'25", long 78°59'20", at upstream side in right span of steel highway bridge at Versailles, Cattaraugus County, 2½ miles upstream from Clear Creek, 6 miles downstream from Gowanda, and 8 miles upstream from mouth.

Drainage area.--464 sq mi.

Gage.--Nonrecording. Altitude of gage is 650 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)
1911	Feb. 17, 1911	8.9	9,340	1918	Mar. 14, 1918	11.0	21,300
1912	Apr. 1, 1912	9.4	11,300	1919	May 10, 1919	9.5	14,200
1913	Mar. 25, 1913	12.3	25,500	1920	Mar. 12, 1920	10.7	20,000
1914	Mar. 28, 1914	10.3	16,600				
1915	Jan. 7, 1915	8.6	9,050	1921	Feb. 16, 1921	8.7	10,500
				1922	Mar. 7, 1922	8.00	7,680
1916	Mar. 27, 1916	10.2	16,000	1923	Mar. 4, 1923	9.20	11,700
1917	Mar. 12, 1917	8.4	9,260				

2145. Buffalo Creek at Gardenville, N.Y.

Location.--Lat 42°51'15", long 78°45'30", on left bank in Gardenville, Erie County, 700 ft downstream from bridge on Union Road and 2 miles upstream from Cayuga Creek.

Drainage area.--145 sq mi.

Gage.--Recording. Datum of gage is 604.04 ft above mean sea level, unadjusted.

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

Remarks.--Base for partial-duration series, 4,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Jan. 5, 1939	a6.45	-	-	1944	Feb. 27, 1944	a6.15	-	-
	Feb. 11, 1939	a6.58	-	-		Mar. 16, 1944	5.55	-	4,520
	Feb. 20, 1939	7.62	-	9,100		Apr. 12, 1944	6.28	-	5,980
	Mar. 30, 1939	5.62	-	4,660		June 24, 1944	6.74	-	6,980
1940	Mar. 30, 1940	a8.98	-	-	1945	Feb. 23, 1945	a9.16	-	-
	Mar. 31, 1940	6.90	-	7,350		Mar. 4, 1945	6.58	-	6,630
	Apr. 4, 1940	5.63	-	4,680		Mar. 21, 1945	5.40	-	4,250
1941	Dec. 7, 1940	a6.08	-	-	1946	Oct. 2, 1945	7.39	-	8,520
	Dec. 13, 1940	5.38	-	4,210		Nov. 29, 1945	5.54	-	4,510
	Jan. 18, 1941	a6.44	-	-		Jan. 5, 1946	a5.77	-	-
	Feb. 15, 1941	a8.58	-	-		Mar. 4, 1946	5.46	-	4,360
	Mar. 4, 1941	a9.60	-	-					
	Mar. 24, 1941	a7.72	-	-	1947	Dec. 28, 1946	a6.37	-	-
	Apr. 5, 1941	7.13	-	7,870		Dec. 28, 1946	5.78	0.3	4,400
1942	Jan. 20, 1942	a6.22	-	-		Jan. 15, 1947	a6.67	-	-
	Feb. 8, 1942	a7.36	-	-		Jan. 15, 1947	5.60	-	4,620
	Feb. 17, 1942	a11.34	-	-		Jan. 31, 1947	6.22	-	5,850
	Mar. 9, 1942	11.90	6.0	5,200		Mar. 14, 1947	a6.04	-	-
	Mar. 17, 1942	8.80	.3	11,500		Mar. 24, 1947	a5.58	-	-
						Mar. 24, 1947	5.55	-	4,520
1943	Dec. 28, 1942	a6.92	-	-		Mar. 27, 1947	a7.16	-	-
	Dec. 30, 1942	6.17	-	5,750		Apr. 5, 1947	7.35	-	8,420
	Jan. 26, 1943	a7.84	-	-		May 2, 1947	5.63	-	4,680
	Feb. 7, 1943	a8.46	-	-		June 3, 1947	5.86	-	5,120
	Feb. 11, 1943	a9.91	-	-	1948	Feb. 17, 1948	a6.82	-	-
	Feb. 21, 1943	a11.58	-	-		Feb. 19, 1948	a6.70	-	-
	Apr. 28, 1943	6.58	-	6,630		Feb. 19, 1948	6.26	-	5,940

a Backwater from ice.

Peak stages and discharges of Buffalo Creek at Gardenville, N.Y.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1948	Mar. 20, 1948	5.73	-	4,870	1956	Mar. 7, 1956	9.42	-	13,000
	Mar. 22, 1948	5.92	-	5,240		Mar. 8, 1956	6.23	-	5,400
1949	Jan. 5, 1949	a5.68	-	-		Apr. 16, 1956	5.64	-	4,320
	Jan. 5, 1949	5.67	-	4,750		Apr. 29, 1956	6.19	-	5,320
1950	Jan. 10, 1950	5.52	-	4,470	1957	Jan. 23, 1957	8.84	-	11,400
	Mar. 8, 1950	a5.66	-	-		Feb. 27, 1957	5.84	-	4,670
	Mar. 28, 1950	7.21	-	8,080		Apr. 6, 1957	6.30	-	5,530
	Apr. 5, 1950	5.43	-	4,300		May 20, 1957	5.93	-	4,830
1951	Nov. 26, 1950	5.56	-	4,540	1958	Feb. 27, 1958	a7.65	-	-
	Dec. 3, 1950	7.66	-	8,400		June 13, 1958	5.52	-	4,110
	Jan. 3, 1951	a7.34	-	-	1959	Jan. 21, 1959	a9.60	-	-
	Jan. 4, 1951	6.91	-	6,760		Jan. 22, 1959	8.37	0.07	10,000
	Feb. 13, 1951	a7.62	-	-		Jan. 30, 1959	a11.08	-	-
	Mar. 31, 1951	6.24	-	5,420		Feb. 10, 1959	a10.11	-	-
1952	Jan. 1, 1952	a7.45	-	-		Mar. 6, 1959	a9.32	-	-
	Mar. 11, 1952	7.22	-	7,100		Mar. 15, 1959	a9.50	-	-
1953	May 26, 1953	7.88	-	8,940		Apr. 2, 1959	6.82	-	6,570
1954	Feb. 16, 1954	6.75	-	6,420	1960	Dec. 12, 1959	5.79	-	4,580
	Mar. 25, 1954	6.38	-	5,680		Jan. 13, 1960	a6.50	-	-
1955	Dec. 28, 1954	5.80	-	4,600		Feb. 11, 1960	6.01	-	4,980
	Feb. 11, 1955	a8.14	-	-		Mar. 30, 1960	7.43	.16	7,530
	Mar. 1, 1955	9.43	-	13,000		Mar. 30, 1960	a7.45	-	-
1956	Dec. 4, 1955	5.91	-	4,800	1961	Feb. 26, 1961	6.44	-	5,800
	Dec. 25, 1955	a6.77	-	-		Apr. 25, 1961	8.23	-	9,800
	Dec. 25, 1955	5.66	-	4,350	1962	Jan. 27, 1962	5.82	-	4,640
						Feb. 27, 1962	a6.29	-	-

a Backwater from ice.

2150. Cayuga Creek near Lancaster, N.Y.

Location.--Lat 42°53'20", long 78°38'40", on right bank just upstream from low flat-crested dam in Como Lake Park, 700 ft downstream from bridge on Bowen Road, 800 ft downstream from Little Buffalo Creek, and 2 miles southeast of Lancaster, Erie County.

Drainage area.--93.3 sq mi.

Gage.--Recording. Datum of gage is 672.80 ft above mean sea level, unadjusted.

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

Remarks.--Base for partial-duration series, 2,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1939	Jan. 5, 1939	a8.05	-	-	1942	Feb. 17, 1942	a9.42	2.8	3,100
	Jan. 6, 1939	6.79	-	3,360		Mar. 9, 1942	12.36	5.5	3,500
	Feb. 14, 1939	a6.74	-	-		Mar. 15, 1942	a9.58	-	-
	Feb. 20, 1939	a10.19	-	-		Mar. 17, 1942	9.3	-	7,480
	Feb. 20, 1939	8.60	-	6,720		Apr. 7, 1942	6.81	-	3,360
	Feb. 22, 1939	a6.65	-	-		Apr. 8, 1942	7.37	-	4,330
	Feb. 26, 1939	a10.78	-	-	1943	Nov. 21, 1942	7.10	-	3,670
	Mar. 3, 1939	a9.34	-	-		Dec. 28, 1942	a7.52	-	-
	Mar. 30, 1939	7.13	-	4,100		Dec. 30, 1942	7.22	-	3,900
	Apr. 10, 1939	7.14	-	4,120		Feb. 7, 1943	a6.96	-	-
1940	Mar. 31, 1940	a8.95	-	-		Feb. 11, 1943	a8.88	-	-
	Mar. 31, 1940	a8.61	1.3	4,800		Feb. 21, 1943	a9.69	-	-
	Apr. 4, 1940	7.21	-	4,260		Feb. 23, 1943	a9.28	-	-
	Apr. 12, 1940	6.59	-	2,860		Mar. 11, 1943	a8.18	-	-
1941	Dec. 8, 1940	a7.77	1.2	2,800	1944	Apr. 20, 1943	6.76	-	2,980
	Dec. 13, 1940	6.78	-	3,330		May 8, 1943	7.04	-	3,550
	Dec. 17, 1940	a6.41	-	-		Jan. 26, 1944	a6.96	-	-
	Jan. 23, 1941	a8.75	-	-		Feb. 27, 1944	a10.76	-	-
	Mar. 24, 1941	a12.00	-	-	1944	Mar. 2, 1944	a6.68	-	-
	Apr. 5, 1941	8.27	-	5,830		Mar. 7, 1944	a7.26	-	-

a Backwater from ice.

Peak stages and discharges of Cayuga Creek near Lancaster, N.Y.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1944	Mar. 12, 1944	a10.08	-	-	1954	Jan. 20, 1954	a7.05	0.2	2,800
	Mar. 16, 1944	10.08	3.4	2,800		Jan. 26, 1954	a7.38	-	-
	Apr. 10, 1944	6.87	-	3,210		Feb. 15, 1954	a10.89	-	-
	Apr. 12, 1944	7.51	-	4,440		Feb. 16, 1954	8.17	-	5,370
1945	Feb. 22, 1945	a6.95	-	-		Mar. 25, 1954	7.85	-	4,760
	Mar. 3, 1945	a11.01	-	-		Apr. 11, 1954	6.88	-	2,900
	Mar. 3, 1945	a10.70	3.6	3,700	1955	Dec. 20, 1954	a6.82	-	-
	Mar. 21, 1945	6.76	-	2,990		Dec. 28, 1954	a9.56	-	-
1946	Oct. 2, 1945	8.36	-	5,910		Dec. 28, 1954	6.95	-	3,030
	Nov. 28, 1945	6.96	-	3,230		Dec. 30, 1954	7.04	-	3,190
	Jan. 5, 1946	a11.44	-	-		Feb. 12, 1955	a7.37	-	-
	Jan. 6, 1946	a10.73	3.0	4,700		Feb. 22, 1955	a8.36	-	-
	Feb. 14, 1946	a7.45	-	-		Mar. 1, 1955	9.59	-	7,900
	Mar. 4, 1946	7.77	-	4,850	1956	Dec. 4, 1955	7.55	-	4,160
1947	Nov. 26, 1946	6.77	-	2,850		Dec. 25, 1955	a7.05	.1	3,000
	Dec. 28, 1946	a6.93	.2	2,800		Dec. 28, 1955	a6.90	-	-
	Jan. 3, 1947	a7.38	-	-		Feb. 26, 1956	a8.27	-	-
	Jan. 12, 1947	a6.91	-	-		Mar. 7, 1956	10.06	-	8,700
	Jan. 15, 1947	a8.98	-	-		Mar. 8, 1956	6.97	-	3,070
	Jan. 31, 1947	6.69	-	2,850		Apr. 16, 1956	7.00	-	3,120
	Mar. 14, 1947	a8.04	-	-		Apr. 28, 1956	7.07	-	3,250
	Mar. 24, 1947	6.89	-	3,250		May 12, 1956	7.72	-	4,500
	Mar. 26, 1947	a7.55	-	-		Aug. 7, 1956	6.87	-	2,890
	Apr. 5, 1947	8.23	-	5,690	1957	Jan. 22, 1957	9.33	-	7,460
	May 2, 1947	6.99	-	3,450		Feb. 9, 1957	a9.25	-	-
	June 3, 1947	7.21	-	3,880		Feb. 26, 1957	7.16	-	3,410
1948	Feb. 19, 1948	a11.65	5.0	2,800		Apr. 6, 1957	6.91	-	2,960
	Feb. 28, 1948	a10.34	-	-		May 20, 1957	7.31	-	3,690
	Mar. 16, 1948	a10.06	3.0	3,600	1958	Nov. 29, 1957	6.60	-	2,400
	Mar. 19, 1948	7.18	-	3,820		Feb. 28, 1958	a7.13	-	-
	Mar. 22, 1948	7.04	-	3,390	1959	Jan. 22, 1959	10.09	-	8,750
1949	Jan. 5, 1949	a10.39	-	-		Jan. 30, 1959	a8.74	-	-
	Jan. 5, 1949	7.40	-	4,140		Feb. 10, 1959	a7.04	-	-
	Feb. 13, 1949	a7.50	-	-		Feb. 15, 1959	a9.20	1.5	4,500
1950	Jan. 10, 1949	7.37	-	4,080		Mar. 6, 1959	a9.28	-	-
	Mar. 9, 1950	a8.15	-	-		Mar. 15, 1959	a9.60	1.36	5,500
	Mar. 23, 1950	a8.63	-	-		Mar. 20, 1959	a7.64	-	-
	Mar. 27, 1950	8.09	-	5,440		Apr. 2, 1959	7.75	-	4,560
	Apr. 5, 1950	6.77	-	2,850	1960	Dec. 12, 1959	7.47	-	4,000
1951	Dec. 3, 1950	8.52	-	6,180		Jan. 13, 1960	a10.68	3.6	3,300
	Jan. 4, 1951	7.85	-	4,750		Feb. 6, 1960	a10.20	-	-
	Feb. 12, 1951	a7.10	-	-		Feb. 10, 1960	a11.97	4.76	3,500
	Mar. 19, 1951	7.02	-	3,130		Mar. 30, 1960	a12.58	-	-
	Mar. 30, 1951	7.84	-	4,730			9.10	-	7,070
	Apr. 12, 1951	6.93	-	2,960	1961	Feb. 19, 1961	a6.75	-	-
	Apr. 26, 1951	6.93	-	2,960		Feb. 23, 1961	7.02	-	3,180
1952	Dec. 22, 1951	a7.11	-	-		Feb. 26, 1961	7.33	-	3,730
	Jan. 1, 1952	a11.09	-	-		Apr. 25, 1961	8.25	-	5,520
	Jan. 26, 1952	a8.89	-	-		May 7, 1961	6.89	-	2,920
	Feb. 2, 1952	a7.70	-	-	1962	Jan. 27, 1962	a10.6	3.6	3,000
	Mar. 11, 1952	8.29	-	5,600		Feb. 5, 1962	a10.1	-	-
1953	Feb. 1, 1953	a7.10	-	-		Feb. 23, 1962	a7.58	-	-
	Aug. 10, 1953	7.32	-	3,710		Feb. 27, 1962	a10.60	-	-
						Mar. 12, 1962	a11.24	-	-
						Mar. 18, 1962	a8.75	-	-

a Backwater from ice.

2155. Cazenovia Creek at Ebenezer, N.Y.

Location.--Lat 42°49'45", long 78°46'40", on right bank 30 ft upstream from highway bridge on Ridge Road in Ebenezer, Erie County, 4.4 miles upstream from mouth, and 5 miles southeast of Buffalo.

Drainage area.--136 sq mi.

Gage.--Recording. At datum 3 ft higher prior to Apr. 4, 1955. Datum of gage is 604.86 ft above mean sea level, unadjusted.

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

Remarks.--Base for partial-duration series, 4,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1941	Dec. 7, 1940	a8.81	-	1951	Jan. 4, 1951	9.58	7,330
	Dec. 13, 1940	7.71	4,400		Feb. 12, 1951	a8.97	-
	Dec. 16, 1940	7.38	4,070		Mar. 30, 1951	7.41	4,850
	Jan. 17, 1941	a8.92	-	1952	Jan. 1, 1952	a8.08	-
	Feb. 14, 1941	a8.16	-		Jan. 1, 1952	7.01	4,550
	Mar. 4, 1941	a9.03	-		Jan. 20, 1952	6.64	4,140
	Apr. 5, 1941	9.95	6,820		Mar. 11, 1952	8.64	6,510
1942	Jan. 19, 1942	a8.89	-		May 13, 1952	6.76	4,260
	Feb. 7, 1942	a7.86	-	1953	May 26, 1953	9.14	7,110
	Feb. 17, 1942	a9.90	-				
	Mar. 9, 1942	9.87	6,730	1954	Jan. 20, 1954	7.58	5,140
	Mar. 17, 1942	13.11	11,200		Jan. 27, 1954	6.88	4,400
1943	Dec. 23, 1942	a8.29	-		Feb. 15, 1954	a8.60	-
	Dec. 30, 1942	8.82	5,400		Feb. 16, 1954	8.00	5,550
	Jan. 25, 1943	a8.84	-		Mar. 25, 1954	8.02	5,570
	Feb. 5, 1943	a8.08	-	1955	Oct. 13, 1954	6.95	4,320
	Feb. 7, 1943	a7.98	-		Oct. 16, 1954	7.55	5,060
	Feb. 11, 1943	a8.41	-		Dec. 28, 1954	7.42	4,850
	Feb. 21, 1943	a7.65	-		Dec. 30, 1954	7.05	4,440
	Feb. 24, 1943	8.33	5,410		Feb. 11, 1955	a8.28	-
	Apr. 20, 1943	8.69	5,260		Feb. 21, 1955	a7.62	-
	Apr. 28, 1943	9.85	6,620		Feb. 27, 1955	a7.17	-
					Mar. 1, 1955	13.82	13,500
	Jan. 26, 1944	a8.59	-	1956	Mar. 7, 1956	14.65	13,000
	Feb. 24, 1944	a9.02	-		Mar. 8, 1956	9.66	6,070
1944	Mar. 16, 1944	7.57	4,100		Apr. 29, 1956	8.02	4,200
	Apr. 12, 1944	8.95	5,560		May 12, 1956	8.54	4,770
	June 24, 1944	11.28	8,490	1957	Dec. 7, 1956	8.94	5,210
1945	Feb. 22, 1945	a10.20	-		Jan. 22, 1957	14.08	12,100
	Mar. 3, 1945	8.51	5,070		Feb. 26, 1957	8.80	5,060
1946	Oct. 2, 1945	12.02	9,530		Apr. 6, 1957	9.54	5,900
	Jan. 5, 1946	a12.41	-		May 20, 1957	7.96	4,140
	Jan. 6, 1946	a11.87	4,400	1958	Dec. 16, 1957	a8.16	-
1947	Dec. 21, 1946	a7.59	-		June 13, 1958	8.72	4,610
	Jan. 15, 1947	a7.67	-	1959	Jan. 22, 1959	a14.46	12,500
	Jan. 15, 1947	6.72	4,130		Jan. 30, 1959	a12.66	-
	Jan. 25, 1947	a7.75	-		Feb. 10, 1959	a12.01	-
	Jan. 31, 1947	8.36	5,930		Mar. 1, 1959	a9.52	-
	Mar. 14, 1947	a7.54	-		Mar. 6, 1959	a11.22	-
	Mar. 24, 1947	6.78	4,190		Mar. 16, 1959	a14.07	-
	Apr. 5, 1947	11.02	9,210		Mar. 19, 1959	a10.95	-
	June 3, 1947	7.22	4,640		Apr. 2, 1959	11.42	7,980
				1960	Dec. 12, 1959	9.06	5,010
1948	Dec. 8, 1947	6.59	4,000		Jan. 13, 1960	a8.32	-
	Feb. 14, 1948	a7.65	-		Jan. 13, 1960	8.24	4,110
	Feb. 19, 1948	a8.20	-		Feb. 11, 1960	8.80	4,700
	Feb. 19, 1948	7.75	5,220		Mar. 28, 1960	a8.12	-
	Mar. 19, 1948	7.61	5,070		Mar. 30, 1960	10.82	7,160
	Mar. 22, 1948	7.75	5,220	1961	Feb. 19, 1961	8.61	4,490
1949	Jan. 5, 1949	a7.87	-		Feb. 26, 1961	9.78	5,830
	Jan. 5, 1949	7.34	4,770		Apr. 25, 1961	11.37	7,910
	Feb. 13, 1949	a7.07	-	1962	Jan. 27, 1962	a10.35	5,400
1950	Jan. 10, 1950	7.14	4,550		Feb. 5, 1962	9.22	5,230
	Mar. 8, 1950	a8.66	-		Feb. 27, 1962	a9.54	-
	Mar. 27, 1950	8.85	6,480		Mar. 12, 1962	a11.33	5,000
1951	Nov. 26, 1950	7.71	5,180				
	Dec. 3, 1950	8.98	6,640				

a Backwater from ice.

2160. Niagara River at Buffalo, N.Y.

Location.--Lat 42°52'40", long 78°53'25", at head of Niagara River at Buffalo.

Drainage area.--260,400 sq mi.

Gage.--Flow determined from records of several U.S. Lake Survey recording gages on river.

Remarks.--Records furnished by U.S. Lake Survey, Corps of Engineers (May 1964). Records do not include water diverted from Lake Michigan by Illinois and Michigan Canal during period of its operation prior to 1910 and by Chicago Sanitary and Ship Canal, operation of which began in 1900. Records include water diverted into Lake Superior from Hudson Bay drainage by the Long Lake and Ogoki projects, operation of which began in 1939 and 1943, respectively. The diversions into Lake Superior have averaged about 5,000 cfs since 1943. Only annual maximum monthly discharges are shown.

Maximum monthly mean discharges

Calendar year	Date	Gage height (feet)	Discharge (cfs)	Calendar year	Date	Gage height (feet)	Discharge (cfs)
1860	May	-	247,000	1912	June	-	208,000
1861	May, June	-	248,000	1913	April, May	-	233,000
1862	July	-	254,000	1914	June	-	214,000
1863	June	-	239,000	1915	August	-	200,000
1864	May	-	235,000	1916	June	-	220,000
1865	June, July	-	222,000	1917	July	-	234,000
1866	July	-	225,000	1918	July	-	207,000
1867	June	-	234,000	1919	June	-	225,000
1868	June	-	228,000	1920	July	-	206,000
1869	July	-	232,000	1921	May	-	214,000
1870	July, August	-	236,000	1922	July	-	209,000
1871	July	-	227,000	1923	June	-	197,000
1872	August	-	203,000	1924	July	-	206,000
1873	June, July, August	-	224,000	1925	May	-	182,000
1874	July	-	229,000	1926	November	-	193,000
1875	August	-	217,000	1927	July	-	198,000
1876	June	-	250,000	1928	July	-	209,000
1877	July	-	224,000	1929	June	-	242,000
1878	July	-	233,000	1930	May	-	234,000
1879	July	-	216,000	1931	July	-	188,000
1880	July	-	223,000	1932	February	-	194,000
1881	July	-	223,000	1933	June	-	193,000
1882	July	-	240,000	1934	May, June	-	160,000
1883	July, August	-	242,000	1935	July	-	170,000
1884	June	-	241,000	1936	May	-	177,000
1885	August	-	238,000	1937	July	-	208,000
1886	June, July	-	236,000	1938	July	-	200,000
1887	June	-	239,000	1939	June	-	200,000
1888	July	-	222,000	1940	June, July	-	198,000
1889	July	-	217,000	1941	June, July	-	185,000
1890	June	-	238,000	1942	July	-	205,000
1891	April	-	209,000	1943	June	-	235,000
1892	July	-	226,000	1944	June	-	221,000
1893	June	-	223,000	1945	July	-	226,000
1894	July	-	212,000	1946	July	-	221,000
1895	January	-	189,000	1947	June	-	238,000
1896	August	-	198,000	1948	May, June	-	230,000
1897	May, June	-	209,000	1949	June	-	202,000
1898	May, June	-	216,000	1950	May	-	216,000
1899	June	-	208,000	1951	July	-	229,000
1900	June	-	206,000	1952	April	-	243,000
1901	July	-	194,000	1953	June, July	-	229,000
1902	July	-	213,000	1954	May	-	224,000
1903	June	-	220,000	1955	May	-	231,000
1904	June	-	233,000	1956	June-August	-	218,000
1905	July	-	225,000	1957	July	-	211,000
1906	December	-	207,000	1958	January	-	187,000
1907	July	-	225,000	1959	May, June	-	197,000
1908	June	-	228,000	1960	June	-	213,000
1909	June	-	219,000	1961	May	-	226,000
1910	May	-	210,000	1962	May	-	195,000
1911	May-July, November	-	192,000				

2162. Scajaquada Creek at Buffalo, N.Y.

Location.--Lat 42°54'40", long 78°47'45", on right bank 58 ft upstream from point where stream goes underground in concrete-lined tunnel, 86 ft upstream from Pine Ridge Road, and 0.16 mile east of boundary line of city of Buffalo, Erie County.

Drainage area.--15.7 sq mi.

Gage.--Recording. Datum of gage is 626.26 ft above mean sea level (city of Buffalo bench mark).

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

Bankfull stage.--Banks are concrete walls 15 ft high and not subject to overflow.

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)
1958	Dec. 20, 1957	4.27	418	1961	Feb. 19, 1961	5.25	630
					Feb. 26, 1961	5.83	746
1959	Jan. 22, 1959	7.98	1,150		Apr. 25, 1961	5.21	622
					May 7, 1961	5.96	772
1960	Jan. 13, 1960	5.08	567	1962	Mar. 12, 1962	5.26	632
	Feb. 11, 1960	5.20	590		May 23, 1962	4.30	452
	Mar. 29, 1960	6.49	848				

2165. Little Tonawanda Creek at Linden, N.Y.

Location.--Lat 42°52'35", long 78°09'45", on right bank at upstream side of highway bridge in Linden, Genesee County, 7 miles upstream from mouth.

Drainage area.--22.0 sq mi.

Gage.--Nonrecording prior to Aug. 26, 1943; recording thereafter. Concrete control since Oct. 15, 1930. Datum of gage is 1,081.62 ft above mean sea level, datum of 1929.

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

Historical data.--Old residents claim that on at least one occasion flood waters covered the top of highway embankment, corresponding to a stage of approximately 22 ft, gage datum. This flood occurred before the present stone-arch bridge was built, when the bridge opening may have been smaller.

Remarks.--Only annual peaks are shown prior to 1944. Base for partial-duration series, 530 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	Mar. 25, 1913	8.08	1,300	1932	Feb. 11, 1932	7.3	830
1914	Mar. 26, 1914	7.97	1,000	1933	Mar. 14, 1933	9.4	1,300
1915	Feb. 24, 1915	5.0	452	1934	Jan. 1, 1934	6.4	655
				1935	Feb. 15, 1935	5.6	516
1916	Apr. 22, 1916	14.6	2,400	1936	Mar. 25, 1936	10.1	1,490
1917	June 27, 1917	9.5	-	1937	June 21, 1937	12.5	1,990
1918	Mar. 12, 1918	-	1,600	1938	Mar. 5, 1938	8.1	990
1919	May 10, 1919	-	2,300	1939	Feb. 20, 1939	10.0	1,450
				1940	Apr. 4, 1940	8.9	1,180
1921	Feb. 16, 1921	8.88	1,230	1941	Apr. 5, 1941	11.2	1,730
1922	Feb. 23, 1922	9.49	1,370	1942	Mar. 17, 1942	13.2	2,130
1923	Mar. 3, 1923	8.29	1,070	1943	Dec. 30, 1942	7.9	1,020
1924	May 12, 1924	5.31	502				
1925	Feb. 23, 1925	6.2	655	1944	Apr. 12, 1944	7.02	826
1926	Apr. 8, 1926	5.7	567				
1927	Nov. 16, 1926	4.9	436	1945	Mar. 3, 1945	8.17	1,080
1928	June 21, 1928	7.5	932		Mar. 16, 1945	6.51	719
1929	Jan. 18, 1929	7.6	930				
1930	Mar. 17, 1930	7.0	994	1946	Oct. 2, 1945	7.21	866
					Jan. 6, 1946	8.33	1,110
1931	Mar. 28, 1931	8.5	1,080				

Peak stages and discharges of Little Tonawanda Creek at Linden, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	May 20, 1946	8.66	1,190	1954	Apr. 6, 1954	6.42	701
1947	Mar. 24, 1947	6.79	778	1955	Dec. 28, 1954	6.17	651
	Apr. 5, 1947	9.48	1,370		Mar. 1, 1955	14.83	2,460
	June 3, 1947	7.26	877	1956	Mar. 7, 1956	16.04	2,700
1948	Feb. 19, 1948	7.11	845		Apr. 3, 1956	7.13	849
	Feb. 28, 1948	5.92	602		Apr. 16, 1956	6.80	780
	Mar. 16, 1948	6.41	699		Apr. 28, 1956	7.77	989
	Mar. 19, 1948	6.76	772		May 12, 1956	6.66	751
	Mar. 22, 1948	6.33	683	1957	Jan. 22, 1957	10.07	1,500
1949	Feb. 13, 1949	4.57	370		Feb. 26, 1957	6.47	711
1950	Jan. 10, 1950	5.60	541		Apr. 5, 1957	7.06	835
	Mar. 28, 1950	10.06	1,490		May 20, 1957	8.25	1,100
	Apr. 5, 1950	7.93	1,020	1958	Apr. 7, 1958	6.56	732
1951	Dec. 3, 1950	7.73	981	1959	Jan. 22, 1959	10.71	1,630
	Jan. 4, 1951	6.92	805		Apr. 2, 1959	8.15	1,070
	Feb. 21, 1951	5.71	562		Apr. 6, 1959	6.98	818
	Mar. 30, 1951	8.21	1,090	1960	Dec. 13, 1959	5.75	577
	Apr. 12, 1951	8.49	1,150		Feb. 11, 1960	6.72	764
	Apr. 26, 1951	6.29	675		Mar. 30, 1960	11.74	1,840
1952	Feb. 4, 1952	5.60	541		Apr. 2, 1960	5.99	620
	Mar. 11, 1952	9.30	1,330	1961	Feb. 26, 1961	7.11	845
1953	Mar. 24, 1953	5.18	467		Apr. 25, 1961	8.03	1,010
1954	Feb. 16, 1954	7.55	941		May 7, 1961	8.64	1,180
	Mar. 25, 1954	7.71	976	1962	Mar. 12, 1962	4.35	353

2170. Tonawanda Creek at Batavia, N.Y.

Location--Lat 42°59'55", long 78°11'20", on right bank 150 ft downstream from municipal dam, 500 ft upstream from Walnut Street Bridge in Batavia, Genesee County, and 3½ miles downstream from Little Tonawanda Creek.

Drainage area--172 sq mi.

Gage--Recording. Datum of gage is 876.01 ft above mean sea level (city of Batavia bench mark).

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

Bankfull stage--8 ft.

Historical data--Maximum stage known, 14.5 ft in March 1942, from records of city of Batavia.

Remarks--Only annual peaks are shown prior to 1948. Base for partial-duration series, 1,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 4, 1945	12.01	3,670	1951	Dec. 4, 1950	12.09	4,170
1946	Jan. 7, 1946	12.58	4,010		Jan. 4, 1951	12.17	4,230
1947	Apr. 6, 1947	13.85	4,840		Feb. 13, 1951	7.48	1,810
1948	Feb. 20, 1948	9.19	2,530		Feb. 22, 1951	8.15	2,080
	Feb. 29, 1948	7.75	1,920		Mar. 20, 1951	9.07	2,470
	Mar. 17, 1948	9.79	2,800		Mar. 31, 1951	10.86	3,370
	Mar. 20, 1948	9.51	2,670		Apr. 13, 1951	8.75	2,330
	Mar. 22, 1948	9.82	2,810	1952	Jan. 2, 1952	8.95	2,420
1949	Mar. 23, 1949	7.08	1,670		Feb. 4, 1952	7.63	1,870
1950	Mar. 29, 1950	13.73	5,530		Mar. 12, 1952	12.58	4,480
	Apr. 5, 1950	10.14	2,970	1953	Mar. 28, 1953	7.07	1,600
1951	Nov. 26, 1950	7.99	2,020	1954	Feb. 17, 1954	12.25	4,220
					Mar. 26, 1954	9.70	2,650
					Apr. 7, 1954	10.42	3,010

Peak stages and discharges of Tonawanda Creek at Batavia, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1955	Dec. 29, 1954	9.97	2,780	1959	Jan. 22, 1959	all.27	4,700
	Mar. 2, 1955	13.44	5,240		Jan. 22, 1959	10.87	5,230
	Mar. 12, 1955	7.99	1,930		Mar. 21, 1959	6.12	2,350
	Mar. 22, 1955	7.68	1,810		Apr. 3, 1959	9.40	4,150
1956					Apr. 6, 1959	6.60	2,620
	Dec. 5, 1955	5.24	1,870	1960	Dec. 13, 1959	6.94	2,800
	Mar. 7, 1956	12.07	6,480		Feb. 11, 1960	8.01	3,360
	Apr. 4, 1956	7.75	3,280		Mar. 31, 1960	12.70	7,200
	Apr. 17, 1956	6.26	2,430		Apr. 4, 1960	6.83	2,740
	Apr. 29, 1956	6.57	2,600	1961	Feb. 24, 1961	6.29	2,440
1957	May 12, 1956	5.59	2,060		Feb. 26, 1961	7.55	3,120
	Jan. 23, 1957	11.72	6,090		Apr. 25, 1961	9.56	4,250
	Feb. 27, 1957	7.28	2,980		May 8, 1961	5.28	1,890
	Mar. 13, 1957	5.52	2,020	1962	Mar. 13, 1962	6.04	2,310
	Apr. 6, 1957	7.35	3,020				
1958	May 20, 1957	8.57	3,660				
	Apr. 7, 1958	7.22	2,960				

a Backwater from ice, 1.0 ft.

2175. Tonawanda Creek near Alabama, N.Y.

Location.--Lat 43°05'25", long 78°27'15", near center of span on upstream side of highway bridge on Meadville Road, 0.4 mile downstream from canal feeder connecting Tonawanda and Oak Orchard Creeks, 1.1 miles upstream from small tributary, and 3.2 miles west of Alabama, Genesee County.

Drainage area.--230 sq mi.

Gage.--Nonrecording; and crest-stage gage after Sept. 5, 1956. Datum of gage is 605.93 ft above mean sea level, datum of 1929, adjustment of 1943.

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

Remarks.--Base for partial-duration series, 2,100 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Dec. 5, 1955	10.72	2,130	1959	Jan. 23, 1959	d15.95	9,000
	Feb. 27, 1956	a11.99	2,300		Feb. 17, 1959	13.24	5,080
	Mar. 8, 1956	13.92	6,860		Mar. 22, 1959	13.10	4,800
	Apr. 4, 1956	12.15	3,340		Apr. 3, 1959	14.05	7,250
	Apr. 17, 1956	11.47	2,680	1960	Dec. 14, 1959	11.89	3,050
	Apr. 30, 1956	11.64	2,810		Jan. 15, 1960	11.37	2,600
	May 13, 1956	11.18	2,450		Feb. 12, 1960	12.89	4,400
1957					Mar. 31, 1960	14.28	7,980
	Jan. 24, 1957	13.69	6,180	1961	Feb. 25, 1961	11.33	2,560
	Feb. 5, 1957	b10.75	-		Feb. 27, 1961	12.33	3,560
	Feb. 10, 1957	c11.32	-		Apr. 26, 1961	12.88	4,390
	Feb. 27, 1957	11.52	2,720	1962	Mar. 14, 1962	e13.25	3,000
	Mar. 13, 1957	10.94	2,280				
	Apr. 7, 1957	12.14	3,330				
1958	May 21, 1957	12.80	4,260				
	Apr. 7, 1958	12.33	3,560				

a Backwater from ice, 1.0 ft.

b Backwater from ice, 3.7 ft.

c Backwater from ice, 4.0 ft.

d Backwater from ice, 1.4 ft.

e Backwater from ice.

2180. Tonawanda Creek at Rapids, N.Y.

Location.--Lat 43°05'35", long 78°38'05", on right bank at downstream side of highway bridge at Rapids, Niagara County, $4\frac{1}{4}$ miles downstream from Beeman Creek, 4.7 miles east of Pendleton, and $5\frac{3}{4}$ miles upstream from Mud Creek.

Drainage area.--358 sq mi.

Gage.--Recording. Altitude of gage is 580 ft (from topographic map).

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

Bankfull stage.--11 ft.

Remarks.--Base for partial-duration series, 2,400 cfs. Overflow of left bank occurs upstream at extremely high stages; water returns to channel below station.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Feb. 29, 1956	8.52	2,500	1959	Feb. 18, 1959	88.53	1,500
	Mar. 10, 1956	15.20	5,090		Mar. 24, 1959	111.43	2,770
	Apr. 6, 1956	10.54	3,230		Apr. 4, 1959	13.70	4,450
	May 1, 1956	9.82	2,970		Apr. 8, 1959	9.55	2,830
	May 14, 1956	8.86	2,620	1960	Feb. 14, 1960	11.71	3,650
1957	Jan. 25, 1957	15.46	5,210		Apr. 1, 1960	16.96	6,280
	Mar. 1, 1957	10.91	3,350	1961	Feb. 28, 1961	10.01	3,000
	Apr. 8, 1957	9.43	2,780		Apr. 27, 1961	11.83	3,700
	May 22, 1957	11.25	3,480	1962	Mar. 15, 1962	111.58	3,100
	Apr. 9, 1958	9.89	2,960				
1959	Jan. 26, 1959	11.97	3,760				

a Backwater from ice, 2.82 ft.

b Backwater from ice, 2.03 ft.

c Backwater from ice.

2185. Ellicott Creek at Williamsville, N.Y.

Location.--Lat 42°57'10", long 78°44'15", on right bank at downstream side of bridge on Wehrle Drive, 0.4 mile upstream from small tributary and 0.8 mile south of Williamsville, Erie County.

Drainage area.--76.3 sq mi.

Gage.--Nonrecording prior to Dec. 17, 1958; recording thereafter. Auxiliary crest-stage gage installed Sept. 6, 1956. Datum of gage is 668.93 ft above mean sea level, datum of 1929.

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

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)
1956	Dec. 4, 1955	7.21	1,900	1959	Jan. 22, 1959	89.05	1,700
	Dec. 5, 1955	7.24	1,910		Apr. 1, 1959	5.27	1,080
	Dec. 26, 1955	5.96	1,270		Apr. 3, 1959	5.64	1,260
	Feb. 26, 1956	5.77	1,160	1960	Dec. 13, 1959	6.43	1,590
	Mar. 7, 1956	10.44	2,510		Feb. 11, 1960	6.50	1,620
1957	Dec. 7, 1956	-	1,710		Mar. 31, 1960	8.99	4,860
	Jan. 23, 1957	9.39	2,410	1961	Feb. 24, 1961	5.54	1,210
	Feb. 27, 1957	5.95	1,260		Apr. 26, 1961	6.30	1,540
	Mar. 13, 1957	-	1,630	1962	Mar. 13, 1962	5.42	1,170
	May 21, 1957	6.66	1,650				
1958	Mar. 25, 1958	4.16	496				

a Backwater from ice, 2.5 ft.

2202.5. West Creek near Hilton, N.Y.

Location--Lat 43°18'10", long 77°48'50", on right bank just downstream from bridge on Collamer Road, 0.5 mile north of Collamer and 1.5 miles northwest of Hilton, Monroe County.

Drainage area--31.0 sq mi.

Gage--Nonrecording prior to Oct. 1, 1957; recording thereafter. Datum of gage is 261.53 ft above mean sea level, datum of 1929, adjustment of 1943.

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

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

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Mar. 5, 1958	a7.70	-	1960	Jan. 4, 1960	6.70	350
	Mar. 23, 1958	6.50	308		Feb. 7, 1960	6.63	335
1959	Jan. 22, 1959	9.89	1,170		Feb. 11, 1960	9.16	973
	Feb. 15, 1959	a7.99	-		Mar. 30, 1960	10.67	1,480
	Mar. 3, 1959	a7.53	-		Apr. 4, 1960	6.29	314
	Mar. 7, 1959	a8.61	-		May 10, 1960	6.63	390
	Mar. 17, 1959	a7.60	-	1961	Feb. 26, 1961	7.03	489
	Mar. 21, 1959	a8.46	-		Mar. 16, 1961	6.96	471
	Apr. 1, 1959	a7.50	-		Apr. 14, 1961	6.82	436
	Apr. 2, 1959	7.05	430		Apr. 26, 1961	6.62	388
	Apr. 6, 1959	6.54	316	1962	Feb. 6, 1962	a7.09	450
1960	Dec. 13, 1959	7.02	423		Feb. 28, 1962	7.03	-
	Dec. 28, 1959	7.41	517		Mar. 13, 1962	8.74	945

a Backwater from ice.

2205. Dyke Creek at Wellsville, N.Y.

Location--Lat 42°07'14", long 77°56'13", near center of span on upstream side of Miller Street Bridge at Wellsville, Allegany County, 0.6 mile upstream from Genesee River and 1.2 miles downstream from Trapping Brook.

Drainage area--71.4 sq mi.

Gage--Nonrecording; and crest-stage gage since June 19, 1956. At site 0.2 mile downstream prior to Oct. 1, 1957. At datum 7.18 ft lower prior to Apr. 17, 1957, and 11.23 ft lower Apr. 17 to Sept. 30, 1957. Datum of gage is 1,492.18 ft above mean sea level, datum of 1929.

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

Remarks--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1956	Oct. 14, 1955	9.12	3,340	1958	June 13, 1958	13.40	1,500
	Nov. 16, 1955	8.58	2,900				
	Mar. 8, 1956	11.06	5,110	1959	Jan. 22, 1959	15.49	3,930
	Apr. 4, 1956	7.76	2,280		Feb. 10, 1959	14.42	2,560
	May 12, 1956	6.11	1,360		Mar. 6, 1959	13.25	1,420
1957	Jan. 23, 1957	-	(a)		Mar. 20, 1959	13.18	1,360
	Apr. 6, 1957	5.97	1,300		Apr. 2, 1959	14.54	2,710
	Apr. 25, 1957	6.48	1,500	1960	Feb. 11, 1960	13.07	1,280
1958	Apr. 6, 1958	13.98	2,080		Mar. 30, 1960	14.39	2,970
	Apr. 22, 1958	13.95	2,040		May 22, 1960	13.50	1,980
					June 15, 1960	16.10	5,230

a Unknown; exceeded base.

2215. Genesee River at Scio, N.Y.

Location.--Lat 42°09'50", long 77°58'50", on left bank 0.4 mile upstream from Vandermark Creek and three-quarters of a mile upstream from Scio, Allegany County.

Drainage area.--309 sq mi.

Gage.--Nonrecording prior to Aug. 11, 1938; recording thereafter. At datum 1.0 ft higher prior to October 1938. Datum of gage is 1,438.83 ft above mean sea level, datum of 1929.

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

Bankfull stage.--8 ft.

Remarks.--Base for partial-duration series, 3,800 cfs.

Peak stages and discharges							
Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1917	Feb. 27, 1917	a7.8	-	1933	Apr. 17, 1933	4.9	3,410
	Mar. 12, 1917	6.0	5,020		Jan. 1, 1934	5.40	4,110
	July 2, 1917	5.5	4,270		Mar. 4, 1934	5.70	4,560
1918	Oct. 28, 1917	5.8	4,720	1934	Mar. 27, 1934	5.80	4,710
	Feb. 20, 1918	8.5	10,000		July 8, 1935	8.1	8,560
	Feb. 26, 1918	6.9	6,460		Mar. 12, 1936	8.2	8,550
	Mar. 1, 1918	7.1	6,800	1936	Mar. 18, 1936	7.6	6,900
	Mar. 14, 1918	9.0	13,100		Mar. 25, 1936	7.4	6,500
1919	May 22, 1919	9.1	13,900		Jan. 15, 1937	6.85	5,640
1920	Mar. 12, 1920	8.16	9,810	1937	Jan. 25, 1937	7.5	6,640
1921	Feb. 17, 1921	5.1	3,810		Apr. 15, 1937	6.12	4,570
1922	Feb. 20, 1922	5.1	3,810		June 21, 1937	5.98	4,370
	June 12, 1922	5.4	4,250	1938	Jan. 25, 1938	6.0	4,400
1923	Mar. 4, 1923	6.5	6,010		Feb. 13, 1938	7.3	6,320
	Mar. 16, 1923	5.5	4,460		Mar. 6, 1938	7.8	7,120
	Apr. 5, 1923	5.6	4,610	1939	Feb. 20, 1939	8.54	7,180
1924	Jan. 11, 1924	7.7	8,070		Mar. 31, 1940	9.22	8,530
	Jan. 17, 1924	5.8	4,910	1940	Apr. 4, 1940	9.07	8,420
	Mar. 5, 1924	a6.0	-		Apr. 8, 1940	7.46	5,310
	Apr. 6, 1924	5.9	4,980		Apr. 12, 1940	8.65	7,400
	Apr. 18, 1924	5.2	3,950	1941	Apr. 5, 1941	8.55	7,200
	Sept. 30, 1924	7.9	8,320		Mar. 9, 1942	9.15	8,650
	Feb. 11, 1925	7.8	8,140		Mar. 12, 1942	7.55	5,560
1925	Feb. 11, 1925	7.8	8,140	1942	Mar. 14, 1942	6.66	4,240
	Feb. 26, 1926	a6.8	-		Mar. 17, 1942	7.98	6,270
1926	Mar. 23, 1926	4.9	3,530		May 22, 1942	8.57	7,320
1927	Mar. 14, 1927	5.2	3,950	1943	July 18, 1942	9.74	11,200
	Mar. 21, 1927	6.6	6,090		Dec. 30, 1942	9.07	8,290
	May 25, 1927	6.4	5,800		Feb. 24, 1943	6.50	4,030
1928	Nov. 18, 1927	5.7	4,680	1944	Mar. 16, 1943	6.35	3,840
	Nov. 27, 1927	6.3	5,610		Apr. 21, 1943	6.88	4,560
	Dec. 1, 1927	7.5	7,600		Apr. 28, 1943	6.79	4,430
	Dec. 14, 1927	6.0	5,130	1945	May 8, 1943	6.59	4,150
	Mar. 27, 1928	6.2	5,450		May 26, 1943	7.73	5,850
	Apr. 8, 1928	6.2	5,450		Mar. 17, 1944	7.06	4,810
1929	Jan. 19, 1929	6.0	5,130	1946	Mar. 3, 1945	9.00	8,150
	Mar. 15, 1929	6.0	5,010		Mar. 22, 1945	8.32	6,860
	Mar. 26, 1929	6.2	5,330		May 18, 1945	9.12	8,390
	Apr. 6, 1929	5.9	4,860	1947	Oct. 2, 1945	7.86	6,060
	Apr. 21, 1929	7.1	6,800		May 28, 1946	10.63	17,900
1930	Jan. 13, 1930	5.40	4,110		June 1, 1946	7.01	4,720
	Feb. 25, 1930	5.80	4,710	1948	July 2, 1946	8.31	6,840
1931	May 20, 1931	4.6	3,020		Apr. 5, 1947	9.65	10,600
	Feb. 11, 1932	5.30	3,970		June 3, 1947	9.46	9,550
1932	Mar. 31, 1932	5.30	3,970		Feb. 20, 1948	7.48	5,040
	May 8, 1932	5.20	3,830				

a Backwater from ice.

Peak stages and discharges of Genesee River at Scio, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)	
1948	Mar. 16, 1948	7.62	4,950	1956	Oct. 14, 1955	9.18	10,200	
	Mar. 20, 1948	8.70	6,910		Nov. 16, 1955	8.67	6,400	
	Mar. 22, 1948	10.04	13,300		Mar. 8, 1956	10.50	16,900	
	Apr. 14, 1948	8.08	5,620		Mar. 11, 1956	7.52	4,200	
1949	Jan. 6, 1949	5.81	2,690		Apr. 4, 1956	8.90	7,960	
					May 13, 1956	7.38	4,300	
1950	Mar. 28, 1950	10.13	13,900	1957	Jan. 23, 1957	8.98	8,240	
	Apr. 5, 1950	9.14	8,190		Apr. 6, 1957	8.06	5,640	
1951	Nov. 4, 1950	8.34	6,030		Apr. 25, 1957	8.48	6,700	
					1958	Apr. 7, 1958	9.03	7,950
	Nov. 25, 1950	11.22	23,300	Apr. 22, 1958		8.39	5,860	
	Dec. 4, 1950	7.86	4,530	1959	Jan. 22, 1959	10.83	19,500	
	Dec. 8, 1950	7.67	4,270		Feb. 10, 1959	8.17	5,400	
	Jan. 4, 1951	7.64	4,230		Mar. 6, 1959	7.92	4,960	
	Feb. 13, 1951	7.39	3,910		Apr. 2, 1959	8.19	5,440	
	Mar. 31, 1951	9.73	11,100		1960	Dec. 13, 1959	6.93	3,920
1952	Jan. 18, 1952	9.68	6,490	Feb. 11, 1960		7.15	4,180	
	Jan. 27, 1952	8.67	6,460	Mar. 31, 1960		9.44	9,450	
	Mar. 11, 1952	9.00	7,500	May 23, 1960		8.23	5,650	
	Mar. 22, 1952	7.67	4,270	June 15, 1960		9.97	12,800	
	Apr. 6, 1952	8.44	5,440	1961		Feb. 26, 1961	10.19	14,400
1953	Dec. 11, 1952	8.19	5,030		Apr. 25, 1961	9.66	10,700	
	Mar. 24, 1953	9.30	8,750		June 10, 1961	7.01	4,010	
1954	Mar. 2, 1954	8.30	5,360	1962	Apr. 7, 1962	6.59	3,590	
1955	Mar. 1, 1955	8.76	6,730					
	Mar. 5, 1955	7.49	4,320					
	Mar. 11, 1955	8.00	4,950					

2220. Caneadea Creek at Caneadea, N.Y.

Location.--Lat 43°23'10", long 78°09'45", on left bank at Caneadea, Allegany County, 800 ft upstream from unnamed tributary and 0.6 mile upstream from mouth.

Drainage area.--61.5 sq mi.

Gage.--Recording. Datum of gage is 1,240.42 ft above mean sea level, datum of 1929, adjustment of 1943.

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

Remarks.--Regulation by Rushford Lake 2 miles above station, substantially affects peak flow. 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)
1950	Apr. 5, 1950	4.98	1,570	1956	Aug. 10, 1956	4.68	844
					Aug. 29, 1956	4.69	850
1951	Nov. 22, 1950	4.22	862	1957	Jan. 4, 1957	4.99	904
	Mar. 31, 1951	4.17	823		May 20, 1957	5.14	1,090
	Sept. 25, 1951	5.00	1,590				
1952	Feb. 28, 1952	a5.73	880	1958	Sept. 15, 1958	4.94	971
	Feb. 29, 1952	4.66	1,110				
1953	Sept. 14, 1953	4.74	1,180	1959	Feb. 9, 1959	b5.32	900
1954	Apr. 28, 1954	5.17	1,600		Feb. 9, 1959	4.85	912
					Feb. 20, 1959	5.16	1,130
1955	Dec. 17, 1954	3.97	548	1960	Feb. 25, 1960	5.35	1,260
					June 15, 1960	10.74	9,600
1956	Oct. 15, 1955	5.87	1,700	1961	Apr. 16, 1961	4.72	1,250
	Dec. 17, 1955	4.74	879		Apr. 25, 1961	10.35	8,690
	Mar. 11, 1956	4.87	957		June 2, 1961	5.68	1,520
	Apr. 4, 1956	5.07	1,090		Sept. 20, 1961	5.98	1,790
	May 14, 1956	5.00	1,040				

a Backwater from ice, 1.5 ft.

b Backwater from ice, 0.5 ft.

2230. Genesee River at Portageville, N.Y.
(Published as "at St. Helena" prior to December 1945)

Location.--Lat 42°34'10", long 78°02'45", on left bank at Portageville, Wyoming County, 300 ft downstream from small tributary, 350 ft downstream from Pennsylvania Railroad bridge, and 0.7 mile upstream from Upper Falls.

Drainage area.--1,017 sq mi prior to Oct. 1, 1946; 982 sq mi thereafter.

Gage.--Nonrecording prior to Aug. 24, 1911; recording thereafter. At site 8 miles downstream at different datum prior to Oct. 1, 1946. Datum of gage is 1,082.60 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--Some seasonal regulation by Rushford Lake since July 1928. Only annual peaks are shown prior to 1912. Base for partial-duration series, 15,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1909	Apr. 30, 1909	10.4	-	26,300	1928	Nov. 18, 1927	10.60	-	25,200
1910	Feb. 28, 1910	11.0	-	30,200		Nov. 27, 1927	9.3f	-	17,600
						Dec. 1, 1927	12.8c	-	42,700
1911	Dec. 30, 1910	8.89	1.3	-	1929	Jan. 19, 1929	9.6f	-	19,100
	Aug. 28, 1911	-	-	12,600		Apr. 21, 1929	10.8	-	26,700
1912	Mar. 16, 1912	8.26	1.0	-	1930	Feb. 26, 1930	9.9	-	20,500
	Mar. 30, 1912	9.51	-	22,700					
	Apr. 1, 1912	9.26	-	21,200	1931	May 24, 1931	8.04	-	11,600
	Apr. 6, 1912	8.42	-	16,400					
1913	Jan. 8, 1913	8.80	-	{a}	1932	Feb. 11, 1932	8.6f	-	14,200
	Jan. 18, 1913	8.48	-	{a}					
	Mar. 26, 1913	12.5	-	42,800	1933	Mar. 14, 1933	9.2f	-	17,200
	Apr. 29, 1913	9.55	-	{a}					
1914	Mar. 28, 1914	10.0	-	23,200	1934	Jan. 1, 1934	9.3c	1.0	-
						Mar. 4, 1934	8.87	-	15,200
1915	Jan. 7, 1915	-	-	{a}	1935	Feb. 16, 1935	11.0f	6.0	-
	Feb. 15, 1915	9.7	-	21,400		Feb. 27, 1935	12.3f	6.0	-
						July 9, 1935	9.33	-	17,400
1916	Mar. 27, 1916	10.98	-	-	1936	Feb. 27, 1936	11.3	2.0	17,000
	Mar. 29, 1916	10.90	-	28,300		Mar. 12, 1936	9.30	-	17,000
	Apr. 14, 1916	9.38	-	18,700		Mar. 26, 1936	10.64	-	25,500
	Apr. 22, 1916	10.40	-	24,900		Mar. 27, 1936	9.72	-	19,400
	May 17, 1916	12.81	-	44,400					
1917	Feb. 27, 1917	9.06	-	-	1937	Jan. 25, 1937	9.5	-	18,100
	Mar. 12, 1917	9.30	-	20,100		June 22, 1937	9.12	-	16,100
1918	Feb. 13, 1918	11.58	-	-	1938	Feb. 14, 1938	9.17	-	16,400
	Mar. 14, 1918	11.40	0.2	29,500		Mar. 6, 1938	9.34	-	17,200
1919	May 11, 1919	9.77	-	19,700	1939	Feb. 20, 1939	11.01	-	28,400
	May 22, 1919	11.35	-	32,800					
1920	Mar. 13, 1920	12.3	-	39,700	1940	Mar. 20, 1940	10.65	2.0	-
	July 24, 1920	10.46	-	24,200		Mar. 30, 1940	9.42	-	-
1921	Feb. 17, 1921	9.46	-	18,100		Apr. 1, 1940	10.73	-	26,100
1922	Mar. 7, 1922	8.31	-	12,600		Apr. 5, 1940	10.78	-	26,500
1923	Mar. 5, 1923	10.13	-	21,900		Apr. 9, 1940	9.32	-	17,100
	Mar. 16, 1923	9.13	-	16,400		Apr. 12, 1940	9.52	-	18,200
1924	Sept. 30, 1924	9.35	-	17,600	1941	Dec. 13, 1940	9.00	-	15,500
1925	Feb. 10, 1925	9.07	-	-		Mar. 4, 1941	10.57	1.5	16,000
	Feb. 12, 1925	9.34	-	17,500		Apr. 6, 1941	11.14	-	29,400
1926	Feb. 26, 1926	9.17	1.1	-	1942	Mar. 9, 1942	10.97	-	19,000
	Mar. 19, 1926	15.30	7.0	-		Mar. 17, 1942	12.02	-	32,300
	Mar. 23, 1926	10.26	2.0	-		July 19, 1942	10.06	-	18,900
	Mar. 25, 1926	8.80	-	14,800	1943	Dec. 30, 1942	10.72	-	22,800
1927	Jan. 22, 1927	9.01	0.6	-		Jan. 25, 1943	10.19	3.5	5,900
	May 24, 1927	9.01	-	15,800		Feb. 21, 1943	14.15	7.0	7,100
						May 8, 1943	9.35	-	15,400
						May 26, 1943	11.38	-	27,400
					1944	Mar. 17, 1944	9.31	-	15,200
						May 7, 1944	9.21	-	14,700

a Unknown; exceeded base.

b Backwater from ice.

Peak stages and discharges of Genesee River at Portageville, N.Y.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1945	Feb. 23, 1945	16.3	11.0	-	1952	Mar. 12, 1952	15.08	-	23,200
	Mar. 4, 1945	10.99	-	24,600		Apr. 6, 1952	12.85	-	17,900
	Mar. 6, 1945	8.76	-	12,700	1953	Mar. 24, 1953	14.11	-	21,000
	Mar. 17, 1945	8.91	-	13,400		Apr. 28, 1954	11.88	-	15,400
	Mar. 18, 1945	8.73	-	12,600	1955	Mar. 1, 1955	13.99	-	20,700
1946	Mar. 22, 1945	10.11	-	19,200		Oct. 15, 1955	15.73	-	24,700
	Oct. 2, 1945	9.44	-	15,800	1956	Nov. 16, 1955	11.80	-	15,200
	Jan. 7, 1946	9.23	-	14,800		Mar. 7, 1956	21.70	-	36,100
	May 28, 1946	11.07	-	25,200		Apr. 4, 1956	13.65	-	19,900
	June 1, 1946	9.56	-	16,400	1957	Jan. 23, 1957	12.94	-	18,100
1947	Apr. 6, 1947	17.39	-	28,300		Apr. 6, 1957	13.58	-	19,700
	Feb. 15, 1948	10.38	4.0	-	1958	Apr. 6, 1958	13.42	-	19,300
1948	Feb. 19, 1948	12.51	4.5	-		June 13, 1958	12.48	-	16,900
	Feb. 20, 1948	12.03	-	15,800	1959	Jan. 22, 1959	19.85	-	33,300
	Mar. 16, 1948	12.03	-	15,800		Apr. 2, 1959	13.19	-	19,200
	Mar. 20, 1948	14.24	-	21,300	1960	Dec. 13, 1959	11.60	-	15,100
	Mar. 22, 1948	15.45	-	24,100		Mar. 31, 1960	17.03	-	27,800
	Apr. 14, 1948	13.00	-	18,200		June 15, 1960	14.12	-	21,500
	Jan. 6, 1949	9.55	-	9,660	1961	Feb. 26, 1961	18.08	-	29,900
1949	Mar. 29, 1950	19.28	-	31,900		Apr. 25, 1961	18.26	-	30,200
	Apr. 5, 1950	14.40	-	21,700	1962	Apr. 7, 1962	10.41	-	12,000
1950	Nov. 5, 1950	12.84	-	17,800					
	Nov. 26, 1950	19.26	-	31,900					
	Mar. 11, 1951	11.42	6.0	-					
	Mar. 31, 1951	14.77	-	22,500					

2250, Canaseraga Creek near Dansville, N.Y.

(Published as "at Cumminsville" October 1917 to September 1919)

Location.--Lat 42°33'40", long 77°42'55", on left bank just downstream from Ossian Street Bridge, half a mile downstream from Mill Creek and 1 mile west of Dansville, Livingston County.

Drainage area.--October 1917 to September 1919, October 1938 to September 1940, 155 sq mi. Other periods, 153 sq mi.

Gage.--Nonrecording prior to Oct. 19, 1920, at or within 1 mile of present site at various datums; recording thereafter. At site 0.9 mile downstream at datum 15.70 ft lower Oct. 1, 1938, to Oct. 8, 1940. Datum of gage is 640.00 ft above mean sea level (levels by New York State Conservation Commission).

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)
1911	Mar. 27, 1911	4.5	1,880	1918	Feb. 12, 1918	5.2	3,790
1912	Mar. 17, 1912	4.6	2,000		Feb. 20, 1918	5.0	3,490
	Mar. 29, 1912	6.0	4,180		Mar. 14, 1918	4.25	2,490
	Apr. 2, 1912	4.6	2,000	1919	Apr. 11, 1919	4.4	2,680
	July 9, 1912	6.4	4,900		May 10, 1919	4.5	2,810
					May 22, 1919	6.8	6,540
1916	Jan. 2, 1916	9.15	2,260	1920	Mar. 13, 1920	-	2,900
	Mar. 28, 1916	10.8	4,080		July 24, 1920	11.5	3,950
	Apr. 22, 1916	9.45	2,600	1921	Mar. 9, 1921	8.78	1,270
	May 16, 1916	13.0	6,600		Sept. 4, 1922	11.20	3,500
	June 17, 1916	12.0	5,350	1923	Mar. 4, 1923	11.2	3,570
	July 21, 1916	9.75	3,030		Mar. 12, 1923	9.9	2,190
					Mar. 16, 1923	10.3	2,580
1917	Feb. 26, 1917	9.1	2,190	1924	Sept. 30, 1924	9.5	1,830
	Mar. 11, 1917	9.2	2,280				
	June 7, 1917	9.1	2,190				
	June 11, 1917	9.3	2,380				
	June 19, 1917	9.1	2,190				
	June 24, 1917	9.1	2,190				
	July 29, 1917	10.1	3,180				

Peak stages and discharges of Canaseraga Creek near Dansville, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Feb. 11, 1925	10.9	3,240	1945	May 17, 1945	11.76	6,370
1926	Feb. 28, 1926	12.0	-	1946	Oct. 2, 1945	9.65	2,400
	Apr. 8, 1926	9.8	2,100		Jan. 6, 1946	a 9.84	-
1927	May 24, 1927	9.95	2,600		May 28, 1946	9.71	2,510
1928	Nov. 17, 1927	10.73	4,250		June 1, 1946	10.68	4,260
	Nov. 27, 1927	10.06	3,240	1947	Jan. 30, 1947	10.51	3,940
	Nov. 30, 1927	12.7	6,900		Apr. 2, 1947	10.45	3,820
	Mar. 27, 1928	8.82	2,370		Apr. 5, 1947	11.02	4,910
1929	Jan. 18, 1929	10.1	3,240		Apr. 22, 1947	9.35	2,020
	Apr. 5, 1929	10.19	3,360		June 3, 1947	10.31	3,580
	Apr. 21, 1929	11.70	6,150	1948	Feb. 20, 1948	9.66	2,490
1930	Mar. 17, 1930	9.00	1,850		Mar. 16, 1948	9.55	2,320
1931	Mar. 28, 1931	9.43	2,280		Mar. 19, 1948	11.75	6,350
	May 13, 1931	9.65	2,400		Mar. 22, 1948	9.86	2,810
	May 24, 1931	9.41	2,110		Apr. 14, 1948	10.09	2,470
1932	Mar. 31, 1932	9.61	2,250	1949	Feb. 15, 1949	9.09	1,680
	May 9, 1932	10.48	3,350	1950	Mar. 28, 1950	12.16	7,170
1933	Mar. 14, 1933	10.34	3,160		Apr. 5, 1950	10.06	3,270
1934	Jan. 1, 1934	9.72	2,360	1951	Nov. 4, 1950	10.26	3,600
	Mar. 4, 1934	(b)	(b)		Nov. 25, 1950	10.96	4,840
1935	July 8, 1935	13.71	8,390		Feb. 21, 1951	9.97	3,100
1936	Mar. 25, 1936	10.80	4,240		Mar. 30, 1951	11.65	6,150
1937	Apr. 15, 1937	9.48	2,490	1952	Jan. 18, 1952	9.51	2,300
	Apr. 22, 1937	9.16	2,110		Mar. 11, 1952	10.44	3,630
	June 21, 1937	9.77	2,830		Apr. 5, 1952	10.12	3,150
1938	Feb. 14, 1938	9.08	2,020	1953	Dec. 11, 1953	9.27	2,000
	Mar. 5, 1938	10.92	4,420		Mar. 24, 1953	10.54	3,790
1939	Feb. 20, 1939	6.35	4,860		May 26, 1953	9.53	2,330
1940	Mar. 31, 1940	6.49	4,870	1954	Apr. 27, 1954	11.37	5,240
	Apr. 4, 1940	4.82	2,900	1955	Mar. 1, 1955	a 11.46	-
	Apr. 12, 1940	5.12	3,290		Mar. 1, 1955	10.66	3,990
	June 11, 1940	4.24	2,280		Mar. 11, 1955	9.61	2,430
	July 23, 1940	9.93	9,110	1956	Oct. 14, 1955	10.61	3,910
1941	Dec. 13, 1940	9.01	2,280		Mar. 7, 1956	13.68	4,500
	Apr. 5, 1941	11.59	5,860		Apr. 3, 1956	9.63	2,570
1942	Mar. 9, 1942	10.26	4,000	1957	Jan. 23, 1957	9.32	2,180
	Mar. 14, 1942	8.90	2,080		Apr. 6, 1957	9.96	2,970
	Mar. 17, 1942	12.71	8,400	1958	Apr. 6, 1958	9.68	2,910
	May 22, 1942	8.93	2,120		June 13, 1958	9.25	2,400
	June 1, 1942	9.25	2,500	1959	Jan. 22, 1959	12.04	6,000
1943	Dec. 30, 1942	10.76	4,410		Apr. 2, 1959	9.81	2,940
	Apr. 28, 1943	9.95	2,880		Apr. 6, 1959	9.58	2,380
	Apr. 30, 1943	10.30	3,480	1960	Oct. 7, 1959	11.13	4,960
	May 8, 1943	10.16	3,230		Dec. 13, 1959	10.6	4,100
	May 26, 1943	12.35	7,560		Mar. 30, 1960	11.26	5,170
1944	Mar. 16, 1944	10.80	4,490		May 22, 1960	9.64	2,860
	Apr. 10, 1944	9.81	2,730		June 15, 1960	10.11	3,440
	May 7, 1944	9.98	3,020	1961	Feb. 25, 1961	12.65	7,840
1945	Mar. 3, 1945	11.28	5,410		Apr. 25, 1961	12.83	8,230
	Mar. 16, 1945	9.69	2,520		June 2, 1961	10.78	4,400
					June 23, 1961	9.27	2,420
				1962	Mar. 12, 1962	8.35	1,570

a Backwater from ice.

b Unknown; assumed to be maximum for the year.

2255. Canaseraga Creek at Groveland, N.Y.
(Published as "at Groveland Station" prior to October 1961)

Location.--Lat 42°39'45", long 77°46'10", on left bank at downstream side of highway bridge at Groveland, Livingston County, 0.2 mile downstream from small tributary.

Drainage area.--181 sq mi.

Gage.--Nonrecording prior to Oct. 1, 1955, at datum 5.42 ft lower; recording thereafter. Datum of gage is 565.42 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--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)
1917	July 29, 1917	16.5	a4,170	1959	Jan. 22, 1959	b14.05	2,350
1919	May 22, 1919	18.05	a4,380		Apr. 2, 1959	11.83	2,610
1956	Oct. 15, 1955	12.80	2,930	1960	Oct. 7, 1959	13.27	3,260
	Mar. 7, 1956	13.71	3,380		Dec. 13, 1959	12.51	2,730
	Apr. 4, 1956	11.28	2,240		Mar. 30, 1960	13.43	3,800
					June 15, 1960	12.70	2,830
1957	Jan. 23, 1957	12.05	2,580	1961	Feb. 26, 1961	13.44	3,250
	Apr. 6, 1957	12.39	2,810		Apr. 25, 1961	13.56	3,330
	May 20, 1957	11.84	2,590		June 2, 1961	11.83	2,400
1958	Apr. 6, 1958	12.49	2,880	1962	Mar. 12, 1962	c11.48	2,020
	June 13, 1958	11.26	2,340				

a Annual peak only.

b Backwater from ice, 2.70 ft.

c Backwater from ice.

2260. Keshequa Creek at Craig Colony, Sonyea, N.Y.

Location.--Lat 42°40'55", long 77°49'45", on right bank 200 ft downstream from private bridge on grounds of Craig Colony at Sonyea, Livingston County, 2 miles upstream from mouth.

Drainage area.--69.1 sq mi.

Gage.--Nonrecording. Altitude of gage is 600 ft (from topographic rap).

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)
1918	Mar. 14, 1918	5.9	5,940	1926	Apr. 8, 1926	3.30	2,160
1919	May 22, 1919	5.9	5,940	1927	May 9, 1927	3.2	1,990
1920	Mar. 12, 1920	4.5	3,310	1928	Nov. 17, 1927	5.9	5,640
1921	Feb. 16, 1921	3.10	1,410	1929	Apr. 21, 1929	3.4	2,200
1922	Mar. 7, 1922	3.10	1,840	1930	Jan. 14, 1930	3.5	2,330
1923	Mar. 3, 1923	3.06	1,780	1931	May 12, 1931	5.8	5,500
1924	May 12, 1924	3.50	2,500	1932	May 9, 1932	4.1	3,110
1925	Feb. 11, 1925	3.2	2,000				

2275. Genesee River at Jones Bridge, near Mount Morris, N.Y.

Location.--Lat 42°45'55", long 77°50'25", on right bank at Jones Bridge, 1½ miles downstream from Canaseraga Creek and 3½ miles northeast of Mount Morris, Livingston County.

Drainage area.--1,419 sq mi.

Gage.--Nonrecording prior to Sept. 11, 1915, at datum 2.73 ft lower; recording thereafter. Datum of gage is 540.00 ft above mean sea level (levels by New York State Conservation Commission).

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

Remarks.--Regulation at Rushford Lake since July 1928 and by Mount Morris Reservoir since November 1951 substantially affects peak flow. Base for partial-duration series, 12,000 cfs used prior to 1953. Only annual peaks are shown thereafter because of regulation by Mount Morris Reservoir.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1904	Jan. 24, 1904	a24.7	-	-	1919	Apr. 12, 1919	20.41	-	17,200
	Feb. 8, 1904	a28.62	-	12,000		May 11, 1919	23.54	-	22,100
	Mar. 8, 1904	a27.3	-	-		May 25, 1919	24.45	-	32,000
	Mar. 24, 1904	a27.3	-	-					
1905	Mar. 20, 1905	a27.2	-	15,000	1920	Mar. 13, 1920	25.80	8.0	14,000
						July 24, 1920	22.90	-	20,700
1906	Mar. 28, 1906	22.2	-	111,000	1921	Feb. 17, 1921	20.95	-	17,900
						Mar. 7, 1921	17.98	-	14,500
1909	Feb. 25, 1909	a25.3	-	15,500	1922	Feb. 24, 1922	22.53	7.4	12,000
	May 2, 1909	23.9	-	24,000		Mar. 8, 1922	20.43	3.6	13,000
1910	Jan. 22, 1910	a20.9	-	12,200		Apr. 1, 1922	18.5	-	14,600
	Mar. 1, 1910	a28.0	-	18,000		June 12, 1922	17.0	-	13,500
	Apr. 26, 1910	26.0	-	16,400					
	May 4, 1910	22.0	-	13,200	1923	Mar. 5, 1923	a24.97	-	-
						Apr. 5, 1923	19.47	-	12,200
1911	Jan. 3, 1911	a22.3	-	13,000	1924	Jan. 12, 1924	22.14	-	14,000
	Jan. 15, 1911	a22.6	-	13,500		Apr. 7, 1924	19.79	-	12,400
	Jan. 28, 1911	a23.1	-	14,000		Apr. 19, 1924	19.88	-	12,500
	Feb. 19, 1911	a22.8	-	13,500		Sept. 30, 1924	22.6	-	20,100
	Mar. 13, 1911	20.9	-	12,300					
1912	Mar. 19, 1912	a25.2	-	15,500	1925	Feb. 12, 1925	25.5	1.6	26,600
	Apr. 2, 1912	a26.12	-	16,500		Feb. 24, 1925	22.43	-	15,000
	Apr. 6, 1912	23.1	-	13,100					
1913	Jan. 9, 1913	23.3	-	15,000	1926	Mar. 24, 1926	a22.5	-	-
	Jan. 12, 1913	20.3	-	12,300		Apr. 9, 1926	21.7	-	14,500
	Jan. 18, 1913	24.2	-	15,900	1927	Nov. 17, 1926	17.80	-	12,000
	Mar. 10, 1913	20.1	-	12,100		Jan. 23, 1927	19.61	-	13,900
	Mar. 27, 1913	27.62	-	38,000		Jan. 31, 1927	18.81	-	13,000
	Apr. 29, 1913	26.0	-	17,700		Mar. 14, 1927	18.86	-	13,000
						Mar. 22, 1927	20.76	-	15,000
1914	Mar. 28, 1914	27.1	-	18,800		May 24, 1927	21.8	-	16,600
1916	Jan. 3, 1916	21.41	-	18,600	1928	Nov. 18, 1927	23.88	-	24,900
	Jan. 6, 1916	21.65	-	19,600		Nov. 28, 1927	22.19	-	19,400
	Mar. 28, 1916	25.44	1.2	40,000		Dec. 1, 1927	25.1	-	46,800
	Apr. 15, 1916	22.21	-	23,100		Dec. 14, 1927	21.05	-	15,600
	Apr. 22, 1916	23.37	-	32,000		Feb. 15, 1928	19.97	-	14,500
	May 17, 1916	25.44	-	55,100		Mar. 27, 1928	19.92	-	14,200
	June 18, 1916	19.61	-	16,100					
1917	Feb. 27, 1917	21.45	3.3	14,000	1929	Jan. 19, 1929	23.48	-	22,000
	Mar. 12, 1917	23.50	.16	31,800		Feb. 28, 1929	a19.80	-	-
	Mar. 24, 1917	17.13	-	13,000		Mar. 14, 1929	20.48	-	14,900
	June 7, 1917	17.31	-	13,200		Apr. 6, 1929	20.22	-	14,600
						Apr. 21, 1929	24.0	-	26,000
1918	Oct. 20, 1917	16.29	-	12,300	1930	Jan. 9, 1930	18.00	-	12,200
	Oct. 25, 1917	18.18	-	14,500		Jan. 15, 1930	20.83	-	15,600
	Oct. 28, 1917	20.68	-	17,600		Feb. 26, 1930	22.4	-	19,600
	Oct. 30, 1917	21.04	-	18,100		Mar. 18, 1930	17.02	-	12,300
	Feb. 13, 1918	a22.88	-	-					
	Feb. 15, 1918	a23.07	-	-	1931	Mar. 29, 1931	17.61	-	12,800
	Feb. 21, 1918	a25.5	-	-		May 24, 1931	18.27	-	13,000
	Feb. 26, 1918	a22.59	-	-					
	Mar. 6, 1918	a19.28	-	-	1932	Feb. 12, 1932	20.23	-	14,600
	Mar. 10, 1918	a17.87	-	-		Mar. 27, 1932	16.92	-	12,000
	Mar. 13, 1918	19.21	1.3	12,500		Apr. 1, 1932	19.45	-	15,000
	Mar. 15, 1918	24.36	.14	29,000		May 10, 1932	20.57	-	16,000

a Backwater from ice.

b Daily mean discharge.

Peak stages and discharges of Genesee River at Jones Bridge, near Mount Morris, N.Y.--Con.

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1933	Mar. 15, 1933	21.72	-	18,100	1944	May 7, 1944	19.44	-	15,000
	Mar. 22, 1933	17.77	-	12,900	1945	Feb. 23, 1945	a21.50	-	-
1934	Jan. 2, 1934	19.48	-	13,800		Feb. 27, 1945	22.65	-	20,200
	Mar. 5, 1934	21.50	-	14,300		Mar. 4, 1945	23.53	-	22,300
	Apr. 12, 1934	18.15	-	12,400		Mar. 18, 1945	19.54	-	15,200
1935	Jan. 9, 1935	a17.62	-	-		Mar. 22, 1945	22.81	-	20,500
	Jan. 9, 1935	17.04	-	12,200		May 19, 1945	17.85	-	13,000
	Mar. 12, 1935	17.25	-	12,400	1946	Oct. 3, 1945	21.41	-	18,000
	July 9, 1935	19.90	-	14,500		Jan. 7, 1946	22.18	-	19,200
1936	Feb. 28, 1936	a18.40	-	-		May 29, 1946	23.65	-	23,100
	Mar. 5, 1936	a18.38	-	-		June 2, 1946	21.60	-	18,300
	Mar. 12, 1936	a25.65	-	-	1947	Jan. 16, 1947	a17.57	-	-
	Mar. 12, 1936	25.22	-	21,600		Jan. 31, 1947	20.25	-	16,200
	Mar. 15, 1936	17.09	-	12,200		Mar. 25, 1947	19.39	-	14,600
	Mar. 18, 1936	19.09	-	14,500		Apr. 3, 1947	18.19	-	13,100
	Mar. 26, 1936	24.03	-	26,300		Apr. 6, 1947	24.40	-	30,600
1937	Jan. 15, 1937	19.17	-	14,700		Apr. 21, 1947	20.86	-	16,700
	Jan. 25, 1937	21.45	-	18,000		June 4, 1947	21.72	-	18,100
	Apr. 16, 1937	19.90	-	15,700	1948	Feb. 20, 1948	a23.28	-	-
	June 22, 1937	21.08	-	17,400		Feb. 29, 1948	19.20	-	14,400
1938	Feb. 7, 1938	18.11	-	13,300		Mar. 17, 1948	21.26	-	17,400
	Mar. 6, 1938	21.41	-	18,000		Mar. 20, 1948	23.17	-	20,400
1939	Feb. 21, 1939	25.58	1.7	25,500		Mar. 22, 1948	24.17	-	27,700
1940	Apr. 1, 1940	24.33	-	29,600	1949	Apr. 15, 1948	22.42	-	19,500
	Apr. 5, 1940	24.05	-	26,500		Jan. 6, 1949	20.04	2.1	12,800
	Apr. 9, 1940	21.37	-	17,900	1950	Mar. 29, 1950	25.05	-	45,400
	Apr. 13, 1940	21.51	-	18,100		Apr. 5, 1950	23.90	-	25,200
1941	Dec. 13, 1941	17.82	-	13,000	1951	Nov. 5, 1950	19.70	-	15,000
	Apr. 6, 1941	23.85	-	24,600		Nov. 27, 1950	23.99	-	26,000
1942	Mar. 10, 1942	24.08	3.4	17,000		Dec. 4, 1950	19.20	-	14,900
	Mar. 12, 1942	23.11	2.8	16,500		Jan. 5, 1951	17.89	-	13,500
	Mar. 15, 1942	20.86	-	17,100		Feb. 14, 1951	a18.73	-	-
	Mar. 18, 1942	24.51	-	32,400		Feb. 22, 1951	16.71	-	12,000
	July 19, 1942	21.24	-	17,700		Apr. 1, 1951	20.59	-	16,800
1943	Dec. 31, 1942	24.18	-	27,800	1952	Dec. 31, 1951	a14.30	-	-
	Feb. 24, 1943	22.98	.6	19,500		Apr. 6, 1952	13.67	-	9,500
	Mar. 17, 1943	19.92	-	15,700	1953	Mar. 27, 1953	15.21	-	b10,800
	Apr. 20, 1943	18.35	-	13,600	1954	Apr. 28, 1954	17.75	-	13,800
	Apr. 28, 1943	19.68	-	15,300	1955	Mar. 6, 1955	17.29	-	12,800
	May 1, 1943	19.12	-	14,600	1956	Mar. 17, 1956	17.45	-	11,900
	May 9, 1943	20.23	-	16,100	1957	Apr. 7, 1957	c17.47	-	11,600
	May 11, 1943	18.74	-	14,100	1958	Apr. 15, 1958	16.14	-	10,700
	May 22, 1943	16.94	-	12,100	1959	Jan. 22, 1959	16.98	-	d12,000
	May 27, 1943	23.62	-	23,300	1960	Apr. 20, 1960	15.18	-	d10,400
1944	Mar. 17, 1944	20.85	-	17,000	1961	Mar. 6, 1961	14.32	-	d 9,220
	Apr. 11, 1944	17.00	-	12,100	1962	Mar. 16, 1962	14.68	.05	9,800
	Apr. 13, 1944	18.64	-	14,000					

a Backwater from ice. b Daily mean discharge. c Occurred Jan. 25, 1957; ice jam.
d Result of regulation.

2280. Conesus Creek near Lakeville, N.Y.

Location.--Lat 42°51'20", long 77°43'00", on upstream side of right abutment of Millville Bridge, 1½ miles downstream from Lakeville, Livingston County.

Drainage area.--72.0 sq mi.

Gage.--Nonrecording. Altitude of gage is 810 ft (from topographic map).

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

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Conesus Creek near Lakeville, N.Y.--Con.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Mar. 17, 1920	2.10	159	1927	Mar. 21, 1927	2.1	188
1921	Feb. 16, 1921	2.10	157	1928	Dec. 1, 1927	3.6	625
1922	Apr. 1, 1922	2.24	173	1929	Apr. 22, 1929	3.1	400
1923	Mar. 20, 1923	1.89	202	1930	Mar. 22, 1930	2.61	278
1924	May 15, 1924	2.32	285	1931	Apr. 5, 1931	2.1	168
1925	Feb. 23, 1925	2.5	296	1932	May 11, 1932	2.6	275
1926	Apr. 10, 1926	2.6	308	1933	May 14, 1933	2.22	189
				1934	Apr. 12-17, 1934	1.58	86

2285. Genesee River at Avon, N.Y.

Location.--Lat 42°55'05", long 77°45'30", on left bank at downstream side of bridge on U.S. Highway 20 (State Highway 5), 0.3 mile west of Avon, Livingston County, and 0.8 mile downstream from Conesus Creek.

Drainage area.--1,666 sq mi.

Gage.--Recording for stages above 23.7 ft; nonrecording for stages below. Datum of gage is 500.00 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--Regulation by Rushford Lake and Mount Morris Reservoir substantially affects peak flow. Peak stages may occasionally be affected by backwater from Honeoye Creek. 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)
1956	Mar. 7, 1956	37.20	15,600	1960	Apr. 17, 1960	33.41	9,820
1957	Apr. 7, 1957	37.04	12,400				
1958	Apr. 16, 1958	32.81	10,800	1961	May 7, 1961	31.57	9,620
1959	Apr. 9, 1959	32.70	9,720	1962	Mar. 14, 1962	29.62	8,130

a Occurred Jan. 25, 1957; backwater from ice, 5.49 ft.

b Occurred Jan. 30, 1959; backwater from ice, 4.40 ft.

c Occurred Mar. 31, 1960; backwater from Honeoye Creek, 4.51 ft.

2295. Honeoye Creek at Honeoye Falls, N.Y.

Location.--Lat 42°57'25", long 77°35'20", on right bank 25 ft downstream from highway bridge at Honeoye Falls, Monroe County, and 13 miles upstream from mouth.

Drainage area.--197 sq mi.

Gage.--Recording. Datum of gage is 609.98 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 2,100 cfs and by extended above logarithmic plotting.

Remarks.--Base for partial-duration series, 1,200 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1946	Dec. 7, 1945	4.43	-	1,490	1951	Feb. 13, 1951	4.83	1.2	880
1947	Apr. 6, 1947	4.56	-	1,600		Feb. 22, 1951	4.78	-	1,980
	June 3, 1947	4.71	-	1,740		Mar. 31, 1951	4.37	-	1,530
						Apr. 13, 1951	4.05	-	1,230
1948	Mar. 16, 1948	4.45	0.6	1,040	1952	Mar. 11, 1952	4.45	-	1,610
	Mar. 16, 1948	3.90	-	1,080		Apr. 6, 1952	4.31	-	1,470
1949	Jan. 6, 1949	4.04	-	1,200	1953	June 22, 1953	4.87	-	2,080
1950	Mar. 28, 1950	6.42	-	4,630	1954	Apr. 6, 1954	4.10	-	1,280
1951	Dec. 4, 1950	4.31	1.2	1,470		May 2, 1954	4.71	-	1,890

Peak stages and discharges of Honeoye Creek at Honeoye Falls, N.Y.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1955	Dec. 29, 1954	4.10	0.5	880	1959	Dec. 10, 1958	4.07	2.2	106
	Mar. 1, 1955	5.99	-	3,790		Jan. 22, 1959	5.32	-	2,690
1956	Feb. 26, 1956	4.92	1.0	1,100		Apr. 2, 1959	4.43	-	1,580
	Mar. 7, 1956	6.02	.5	3,000	1960	Dec. 13, 1959	4.60	-	1,770
	Mar. 7, 1956	5.84	-	3,880		Mar. 30, 1960	5.94	-	3,700
	Apr. 3, 1956	4.40	-	1,770	1961	Feb. 26, 1961	4.92	.45	1,550
	Apr. 29, 1956	4.22	-	1,570		Apr. 25, 1961	4.50	-	1,570
1957	Jan. 23, 1957	4.17	1.0	580	1962	Apr. 30, 1962	a4.45	-	1,200
	May 20, 1957	4.44	-	1,700					
1958	Apr. 8, 1958	3.82	-	1,090					

a Occurred Feb. 27, 1962 (ice jam).

2305. Oatka Creek at Garbutt, N.Y.

Location.--Lat 43°00'30", long 77°47'25", on right bank 40 ft downstream from highway bridge at Garbutt, Monroe County, 2 miles southwest of Scottsville and 3½ miles upstream from mouth.

Drainage area.--208 sq mi.

Gage.--Recording. Datum of gage is 560.89 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1946	Oct. 3, 1945	5.79	2,040	1954	Feb. 17, 1954	6.08 ^a	2,280
	Jan. 7, 1946	6.63	2,830		Apr. 7, 1954	5.62	2,030
	Mar. 5, 1946	5.98	2,230	1955	Mar. 2, 1955	7.97	5,310
1947	Mar. 25, 1947	6.15	2,810		Mar. 23, 1955	5.12	1,650
	Apr. 6, 1947	6.80	3,680	1956	Mar. 8, 1956	8.38 ^a	5,880
	June 3, 1947	5.55	2,120		Apr. 4, 1956	5.97	2,630
	July 22, 1947	5.04	1,610		Apr. 30, 1956	5.65 ^a	2,250
1948	Feb. 20, 1948	5.32	1,880	1957	Jan. 24, 1957	6.85	3,500
	Mar. 17, 1948	5.41	1,850		Feb. 28, 1957	5.05	1,560
	Mar. 23, 1948	5.70	2,150		Apr. 7, 1957	5.64	2,240
1949	Feb. 15, 1949	4.42	1,030		May 20, 1957	5.41	1,970
1950	Mar. 29, 1950	8.52	6,080	1958	Apr. 8, 1958	5.71	2,320
	Apr. 6, 1950	5.45	2,040	1959	Jan. 23, 1959	a5.11	1,600
1951	Dec. 5, 1950	5.84	3,480		Mar. 21, 1959	5.24	1,780
	Jan. 5, 1951	5.56	2,160		Apr. 3, 1959	6.45	3,240
	Feb. 22, 1951	5.72	2,330		Apr. 7, 1959	5.34	1,890
	Mar. 5, 1951	4.99	1,560	1960	Feb. 11, 1960	5.17	1,710
	Apr. 1, 1951	5.45	2,040		Mar. 31, 1960	8.64	6,920
	Apr. 13, 1951	5.49	2,080		Apr. 4, 1960	5.45	2,020
1952	Feb. 5, 1952	5.03	1,600	1961	Feb. 27, 1961	5.07	1,600
	Mar. 12, 1952	6.24	2,960		Apr. 26, 1961	6.34	3,090
1953	Mar. 25, 1953	4.89	923	1962	Mar. 13, 1962	4.86	1,410
	Mar. 28, 1953	4.69	1,080				

a Backwater from ice, 0.06 ft.

2310. Black Creek at Churchville, N.Y.

Location.--Lat 43°06'00", long 77°53'00", on right bank at east end of Carrol Street in Churchville, Monroe County, 60 ft downstream from main-line tracks of New York Central Railroad and 1 mile upstream from unnamed tributary.

Drainage area.--123 sq mi.

Gage.--Recording. Datum of gage is 552.45 ft above mean sea level (levels by Corps of Engineers).

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

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)
1946	Oct. 3, 1945	5.79	1,460	1954	Apr. 7, 1954	5.35	1,240
	Jan. 7, 1946	5.35	1,240	1955	Mar. 2, 1955	6.19	1,780
	Mar. 5, 1946	6.37	1,740	1956	Mar. 8, 1956	7.49	2,960
1947	Jan. 16, 1947	a5.18	-		Apr. 30, 1956	5.17	1,130
	Jan. 22, 1947	a4.36	-	1957	Jan. 24, 1957	6.36	1,910
	Mar. 25, 1947	b6.35	1,550		Feb. 28, 1957	5.62	1,400
	Apr. 6, 1947	6.76	1,940		May 21, 1957	5.08	1,110
	June 4, 1947	5.70	1,410	1958	Apr. 8, 1958	4.50	835
1948	Feb. 20, 1948	5.95	1,540	1959	Jan. 23, 1959	5.49	1,190
	Mar. 1, 1948	5.06	1,100		Feb. 16, 1959	5.18	1,030
1949	Feb. 16, 1949	4.35	800		Mar. 22, 1959	c6.05	1,500
1950	Mar. 28, 1950	8.83	4,750		Apr. 3, 1959	6.29	1,700
1951	Feb. 21, 1951	5.66	1,430	1960	Feb. 13, 1960	5.47	1,310
	Mar. 31, 1951	5.53	1,350		Mar. 31, 1960	9.44	4,880
	Apr. 14, 1951	5.59	1,380	1961	Apr. 26, 1961	4.48	702
1952	Mar. 12, 1952	5.95	1,620	1962	Mar. 13, 1962	5.84	1,530
1953	Mar. 28, 1953	4.25	745				
1954	Feb. 18, 1954	6.02	1,660				

a Backwater from ice.

b Backwater from ice, 0.4 ft.

c Backwater from ice, 0.3 ft.

2315. Genesee River at Rochester, N.Y.

Location.--Lat 43°07'25", long 77°37'55", on right bank in pumphouse at downstream side of Elmwood Avenue Bridge, 3 miles upstream from Erie Canal aqueduct crossing, $3\frac{1}{4}$ miles downstream from Black Creek, $3\frac{1}{2}$ miles upstream from center of city of Rochester, Monroe County, and $7\frac{1}{2}$ miles upstream from mouth.

Drainage area.--2,450 sq mi.

Gage.--Nonrecording prior to December 1910; recording thereafter. Datum of gage is 506.848 ft above mean sea level, Barge Canal datum.

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

Remarks.--Only maximum daily discharges are shown prior to 1911; only annual peaks thereafter.

Peak stages and discharges of Genesee River at Rochester, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1906	Mar. 29, 1906	-	a15,500	1913	Mar. 28, 1913	15.02	42,000
1907	Jan. 9, 1907	-	a15,000	1914	Mar. 30, 1914	10.84	26,900
1908	Mar. 17, 1908	-	a21,800	1915	Feb. 26, 1915	8.85	20,000
1909	May 3, 1909	-	a21,400				
1910	Mar. 5, 1910	-	a29,000	1916	Mar. 30, 1916	15.30	48,300
				1917	Mar. 14, 1917	7.38	14,200
1911	Mar. 29, 1911	7.07	14,700	1918	Mar. 16, 1918	10.97	27,900
1912	Apr. 5, 1912	10.10	25,500				

a Daily mean discharge.

2320. Genesee River at Driving Park Avenue, Rochester, N.Y.

Location.--Lat 43°10'50", long 77°37'40", on right bank at Rochester, Monroe County, 40 ft downstream from plant 5 of Rochester Gas & Electric Corp. and 100 ft upstream from Driving Park Avenue Bridge.

Drainage area.--2,467 sq mi.

Gage.--Recording. At site 300 ft upstream prior to Apr. 4, 1927. At datum 3.00 ft higher prior to June 20, 1956. Datum of gage is 247 ft above mean sea level, Erie (Barge) Canal datum.

Stage-discharge relation.--Defined by current-meter measurements and not usually affected by ice because of proximity of powerplant.

Historical data.--Maximum discharge known, about 54,000 cfs Mar. 18, 1865.

Remarks.--Regulation by Rushford Lake and Mount Morris Reservoir substantially affect peak flow. Base for partial-duration series, 15,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1920	Mar. 17, 1920	-	a26,000	1930	Mar. 12, 1930	9.06	17,200
					Mar. 19, 1930	9.00	17,000
1921	Feb. 18, 1921	10.25	16,400				
	Mar. 9, 1921	10.50	16,500	1931	Mar. 30, 1931	9.11	17,300
					Apr. 6, 1931	8.80	16,600
1922	Apr. 2, 1922	10.02	15,700		May 25, 1931	8.50	15,800
1923	Mar. 7, 1923	10.83	18,100	1932	Feb. 13, 1932	9.55	18,500
	Mar. 13, 1923	11.20	19,300		Mar. 27, 1932	9.16	17,500
	Mar. 17, 1923	10.50	17,100		Apr. 2, 1932	9.16	17,500
	Apr. 7, 1923	10.46	b17,000		May 11, 1932	9.86	19,400
1924	Apr. 8, 1924	10.58	17,300	1933	Mar. 16, 1933	10.03	19,900
	Apr. 20, 1924	10.97	21,600		Mar. 22, 1933	9.34	18,000
	May 14, 1924	10.92	18,400		June 9, 1933	8.85	15,900
1925	Oct. 2, 1924	10.80	19,000	1934	Jan. 2, 1934	d 9.25	17,000
	Feb. 13, 1925	12.38	b24,700		Mar. 5, 1934	10.88	22,300
	Feb. 25, 1925	12.40	b24,800		Apr. 12, 1934	8.79	15,300
1926	Nov. 15, 1925	9.87	15,800	1935	Jan. 10, 1935	9.58	17,900
	Jan. 21, 1926	9.73	15,400		Jan. 23, 1935	11.04	22,700
	Mar. 26, 1926	11.43	20,900		Mar. 13, 1935	9.59	17,300
	Apr. 10, 1926	11.90	22,800		July 9, 1935	9.79	18,500
1927	Jan. 24, 1927	11.8	22,400	1936	Mar. 6, 1936	8.80	15,900
	May 25, 1927	9.53	18,500		Mar. 14, 1936	10.50	22,200
					Mar. 20, 1936	10.62	21,900
1928	Nov. 19, 1927	9.81	19,300		Mar. 28, 1936	12.50	27,700
	Dec. 2, 1927	13.5	29,600				
	Dec. 17, 1927	9.56	b18,600	1937	Jan. 27, 1937	8.86	16,100
	Feb. 17, 1928	9.00	b17,000		Apr. 16, 1937	8.74	15,400
	Mar. 28, 1928	9.32	17,900		Apr. 23, 1937	10.32	20,200
					June 23, 1937	9.27	17,900
1929	Jan. 20, 1929	9.32	17,900				
	Mar. 1, 1929	c 9.90	b18,800	1938	Feb. 15, 1938	9.48	17,600
	Mar. 17, 1929	c 9.99	b19,100		Mar. 7, 1938	9.32	19,000
	Apr. 7, 1929	c 9.13	16,700		Apr. 12, 1938	8.80	15,700
	Apr. 23, 1929	11.57	23,800		Apr. 14, 1938	8.89	16,200
1930	Jan. 3, 1930	8.39	15,300	1939	Jan. 7, 1939	9.08	16,500
	Jan. 9, 1930	8.89	16,700		Feb. 23, 1939	9.92	19,000
	Jan. 16, 1930	9.78	19,200		Mar. 27, 1939	8.93	16,100
	Feb. 27, 1930	8.99	17,000		Apr. 16, 1939	9.05	17,700

a Daily mean discharge. b Result of regulations. c Backwater from ice, 0.25 ft. d Backwater from ice, 0.3 ft.

STREAMS TRIBUTARY TO LAKE ONTARIO

Peak stages and discharges of Genesee River at Driving Park Avenue, Rochester, N.Y.--Con.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 21, 1940	9.31	17,200	1948	Mar. 18, 1948	8.28	18,400
	Apr. 2, 1940	14.08	33,500		Mar. 23, 1948	10.23	21,600
	Apr. 14, 1940	9.22	16,900		Apr. 16, 1948	9.00	17,200
1941	Apr. 7, 1941	10.74	22,700	1949	Jan. 7, 1949	8.41	15,800
1942	Mar. 10, 1942	9.21	18,000		Feb. 16, 1949	8.63	16,400
		9.72	19,800	1950	Mar. 30, 1950	13.59	33,100
	Mar. 15, 1942	10.05	20,900		Apr. 7, 1950	10.13	21,200
	Mar. 19, 1942	13.96	34,400	1951	Nov. 6, 1950	9.11	17,900
	July 19, 1942	8.37	15,600		Nov. 28, 1950	8.60	16,400
	July 20, 1942	8.69	16,500		Dec. 5, 1950	8.81	17,000
	Jan. 1, 1943	11.36	25,400		Jan. 5, 1951	8.77	16,900
		9.45	19,000		Feb. 22, 1951	9.84	20,200
1943	Mar. 15, 1943	8.57	16,300		Apr. 1, 1951	9.34	18,600
	Mar. 14, 1943	9.04	17,700	1952	Jan. 27, 1952	8.70	16,600
	Mar. 18, 1943	9.03	17,700		Mar. 12, 1952	9.03	17,700
	Apr. 21, 1943	8.84	17,100		Apr. 6, 1952	8.27	15,400
	Apr. 28, 1943	8.80	17,000	1953	Mar. 25, 1953	8.86	17,100
	May 2, 1943	9.31	18,500	1954	Feb. 17, 1954	8.97	17,500
	May 10, 1943	8.79	16,900		Apr. 6, 1954	8.81	17,000
	May 12, 1943	8.62	16,400		Apr. 29, 1954	8.66	16,500
	May 28, 1943	9.41	18,800	1955	Mar. 2, 1955	9.48	19,100
	Feb. 28, 1944	9.09	17,800		Mar. 12, 1955	8.56	16,200
		9.43	18,900	1956	Oct. 17, 1955	8.44	15,900
	Mar. 17, 1944	9.43	18,900		Dec. 26, 1955	9.65	17,500
1944	Apr. 11, 1944	8.87	17,200		Mar. 8, 1956	11.87	24,300
	Apr. 14, 1944	9.41	18,800		Apr. 4, 1956	9.04	15,800
	May 8, 1944	8.90	17,200		Apr. 17, 1956	8.91	15,500
	Mar. 18, 1945	8.99	17,500		Apr. 30, 1956	9.66	17,500
		8.67	16,600		June 5, 1956	9.76	17,800
1945	Mar. 21, 1945	8.67	16,600	1957	Feb. 28, 1957	12.16	16,500
	Mar. 24, 1945	10.55	22,600		Apr. 8, 1957	12.37	17,000
	May 19, 1945	8.46	15,900		May 21, 1957	12.15	16,400
	Oct. 2, 1945	9.53	19,200	1958	Apr. 7, 1958	11.59	14,900
		8.38	15,700		Apr. 12, 1958	11.66	-
	Dec. 8, 1945	8.38	15,700	1959	Apr. 2, 1959	12.47	17,700
	Jan. 7, 1946	9.44	18,900		Apr. 10, 1959	11.77	15,600
	Jan. 10, 1946	8.40	15,800	1960	Mar. 31, 1960	14.91	25,800
	Mar. 4, 1946	9.04	17,700		Apr. 18, 1960	12.63	18,200
	May 30, 1946	9.00	17,600	1961	Apr. 23, 1961	11.66	15,300
1946	June 3, 1946	8.60	16,400		Apr. 26, 1961	11.69	15,400
	Dec. 29, 1946	8.97	17,500	1962	Apr. 8, 1962	10.36	11,900
		8.86	17,100				
	Jan. 16, 1947	8.86	17,100				
	Jan. 31, 1947	8.51	16,100				
	Mar. 15, 1947	9.99	20,700				
	Mar. 25, 1947	10.36	21,600				
	Apr. 3, 1947	8.79	16,500				
	Apr. 8, 1947	11.03	23,800				
	Apr. 23, 1947	9.73	19,400				
1947	May 3, 1947	9.13	17,600				
	June 4, 1947	9.36	18,300				
1948	Feb. 22, 1948	10.09	21,100				
	Feb. 29, 1948	8.20	15,200				

2331. Sterling Creek at Sterling, N.Y.

Location.--Lat 43°19'30", long 76°38'50", on right bank at Sterling, Cayuga County, 25 ft downstream from bridge on State Highway 104A, 1.8 miles southwest of Sterling Valley, and 1.9 miles upstream from Sterling Valley Creek.

Drainage area.--44.4 sq mi.

Gage.--Recording. Datum of gage is 264.69 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 630 cfs.

Peak stages and discharges of Sterling Creek at Sterling, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Mar. 28, 1958	3.89	625	1960	Apr. 4, 1960	5.13	1,490
1959	Jan. 22, 1959	4.15	770	1961	Feb. 26, 1961	4.62	1,080
	Apr. 2, 1959	4.01	686	1962	Mar. 12, 1962	3.94	647
1960	Dec. 8, 1959	3.98	669				

2330. Cayuga Inlet near Ithaca, N.Y.

Location.--Lat 42°23'35", long 76°32'40", on left bank half a mile upstream from Enfield (formerly Butternut) Creek and 5 miles south of Ithaca, Tompkins County.

Drainage area.--36.7 sq mi.

Gage.--Recording and concrete control. Datum of gage is 437.16 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs.

Remarks.--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)
1937	Aug. 27, 1937	5.30	2,100	1949	Nov. 20, 1948	2.52	461
1938	Oct. 28, 1937	3.83	1,010	1950	Mar. 28, 1950	4.83	1,740
	Nov. 13, 1937	3.45	778		Sept. 1, 1950	3.13	752
	Mar. 6, 1938	4.61	1,550	1951	Nov. 25, 1950	4.30	1,380
1939	Feb. 20, 1939	4.50	1,330		Mar. 30, 1951	3.24	807
1940	Mar. 30, 1940	5.00	1,860	1952	Dec. 21, 1951	a3.31	-
	Mar. 31, 1940	5.31	2,110		Jan. 26, 1952	3.04	707
	Apr. 4, 1940	3.69	919		Mar. 11, 1952	3.59	988
	Apr. 8, 1940	3.41	756	1953	Dec. 11, 1952	4.33	1,400
	May 28, 1940	3.68	913		Mar. 24, 1953	3.71	1,050
1941	Apr. 5, 1941	3.84	1,020		Aug. 9, 1953	3.55	967
	June 30, 1941	3.98	1,110	1954	May 4, 1954	3.34	858
	July 30, 1941	3.33	716	1955	Mar. 1, 1955	3.09	732
1942	Mar. 9, 1942	4.52	1,350	1956	Oct. 15, 1955	5.81	2,460
	Mar. 17, 1942	6.31	2,720		Oct. 30, 1955	3.41	950
	Aug. 13, 1942	7.58	4,110		Mar. 7, 1956	5.82	2,470
	Aug. 16, 1942	5.50	2,030		Apr. 3, 1956	3.34	915
1943	Dec. 30, 1942	5.49	2,020		Apr. 4, 1956	3.16	834
	May 8, 1943	3.09	779	1957	Apr. 5, 1957	3.35	920
	May 12, 1943	2.99	733	1958	Apr. 6, 1958	4.02	990
1944	Nov. 8, 1943	3.55	970		Apr. 7, 1958	4.12	1,200
	Mar. 16, 1944	3.77	1,060	1959	Jan. 22, 1959	4.56	1,570
	Mar. 17, 1944	3.63	1,000	1960	Feb. 11, 1960	3.25	870
	Mar. 23, 1944	3.27	857		Mar. 30, 1960	3.93	1,240
1945	Dec. 1, 1944	a2.96	-		Mar. 31, 1960	3.63	1,060
	Mar. 3, 1945	3.58	1,050	1961	Feb. 25, 1961	4.81	1,730
	May 18, 1945	3.87	1,080		Apr. 15, 1961	3.22	855
1946	May 27, 1946	5.31	1,890		Apr. 16, 1961	3.92	1,210
1947	Apr. 5, 1947	3.60	955		Apr. 25, 1961	3.93	1,210
	May 22, 1947	4.99	1,660	1962	Jan. 15, 1962	3.01	740
	May 25, 1947	4.75	1,500		Mar. 12, 1962	3.05	755
	June 3, 1947	6.28	2,690				
1948	Mar. 16, 1948	3.17	760				
	Mar. 19, 1948	3.64	973				
	Mar. 22, 1948	4.39	1,320				

a Backwater from ice.

2340. Fall Creek near Ithaca, N.Y.

Location.--Lat 42°27'20", long 76°28'30", on left bank in Forest Home, half a mile upstream from Cornell University dam, 1½ miles northeast of Ithaca, Tompkins County, and 2 miles upstream from mouth.

Drainage area.--124 sq mi.

Gage.--Recording and concrete control. Datum of gage is 794.81 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

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

Bankfull stage.--Banks steep and not subject to overflow.

Remarks.--Base for partial-duration series 1,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1926	Jan. 19, 1926	a4.06	-	-	1942	Mar. 9, 1942	5.24	-	4,380
	Feb. 26, 1926	a3.88	-	-		Mar. 17, 1942	5.37	-	4,630
	Mar. 22, 1926	a4.2	-	-	1943	Dec. 30, 1942	5.86	-	5,660
	Mar. 23, 1926	a3.56	-	-		Mar. 16, 1943	3.90	-	2,210
	Mar. 25, 1926	3.6	-	2,240	1944	Oct. 28, 1943	4.15	-	2,550
1927	Nov. 16, 1926	5.6	-	5,320		Nov. 9, 1943	3.98	-	2,310
	Jan. 22, 1927	a4.54	-	-		Mar. 17, 1944	4.64	-	3,310
	Mar. 14, 1927	3.72	-	2,010	1945	Mar. 17, 1945	4.40	-	2,920
	May 24, 1927	3.90	-	2,260		Mar. 22, 1945	4.40	-	2,920
1928	Oct. 19, 1927	4.35	-	2,950		Sept. 19, 1945	4.29	-	2,760
	Nov. 18, 1927	3.68	-	1,950	1946	Mar. 2, 1946	8.20	6.3	-
	Nov. 27, 1927	4.34	-	2,930		Mar. 7, 1946	3.82	-	2,110
	Feb. 8, 1928	a4.06	-	-		Mar. 9, 1946	3.78	-	2,050
	Feb. 15, 1928	4.14	-	2,620		May 28, 1946	4.10	-	2,480
	Mar. 13, 1928	a3.80	-	-	1947	Mar. 14, 1947	6.00	3.8	-
	Mar. 25, 1928	4.08	-	2,530		Mar. 25, 1947	4.62	-	3,270
1929	Feb. 27, 1929	a7.64	-	-		Apr. 5, 1947	5.13	-	4,170
	Mar. 15, 1929	4.34	-	2,930		May 22, 1947	4.79	-	3,560
	Apr. 21, 1929	4.6	-	3,370		June 3, 1947	5.64	-	5,180
	May 3, 1929	3.80	-	2,120	1948	Feb. 19, 1948	5.34	3.0	-
1930	Feb. 20, 1930	a3.66	-	-		Mar. 17, 1948	4.76	-	3,510
	Mar. 8, 1930	3.9	-	2,260		Mar. 20, 1948	4.46	-	3,020
	June 18, 1930	3.71	-	1,990		Mar. 22, 1948	4.47	-	3,030
1931	Mar. 29, 1931	3.45	-	1,770	1949	Nov. 20, 1948	3.91	-	2,220
1932	Mar. 31, 1932	3.72	-	2,170		Jan. 6, 1949	3.71	-	1,960
1933	Aug. 24, 1933	3.34	-	1,700	1950	Mar. 28, 1950	5.61	-	5,120
1934	Mar. 4, 1934	a7.80	-	-		Apr. 5, 1950	4.12	-	2,510
	Mar. 27, 1934	4.37	-	3,480		June 24, 1950	4.53	-	3,130
	Apr. 1, 1934	4.24	-	3,210	1951	Nov. 26, 1950	3.97	-	2,300
1935	Jan. 9, 1935	4.28	-	3,290		Dec. 4, 1950	4.66	-	3,340
	Feb. 16, 1935	a6.94	-	-		Dec. 8, 1950	3.71	-	1,960
	Mar. 6, 1935	a4.32	-	-		Jan. 4, 1951	3.70	-	1,950
	May 7, 1935	3.63	-	2,130		Feb. 21, 1951	3.79	-	2,070
	July 8, 1935	9.52	-	15,500		Mar. 31, 1951	3.91	-	2,220
1936	Mar. 12, 1936	5.22	-	4,340	1952	Dec. 21, 1951	3.80	1.8	-
	Mar. 18, 1936	5.57	-	5,040		Mar. 11, 1952	4.44	-	2,980
	Mar. 21, 1936	4.02	-	2,370	1953	Dec. 11, 1952	4.44	.05	3,000
1937	Apr. 6, 1937	3.64	-	1,880		Mar. 24, 1953	3.85	-	2,140
1938	Oct. 29, 1937	4.17	-	2,580	1954	Feb. 17, 1954	3.75	-	2,020
	Jan. 25, 1938	4.05	-	2,410		May 4, 1954	4.71	-	3,430
	Sept. 22, 1938	4.15	-	2,550	1955	Dec. 30, 1954	3.69	-	1,950
1939	Feb. 20, 1939	5.25	-	4,400		Feb. 22, 1955	8.84	6.0	-
1940	Mar. 31, 1940	5.20	-	4,300		Mar. 1, 1955	4.41	-	2,940
	Apr. 5, 1940	4.97	-	3,860		Mar. 11, 1955	4.39	-	2,900
	Apr. 8, 1940	4.90	-	3,750	1956	Oct. 16, 1955	4.07	-	2,950
1941	Apr. 6, 1941	4.98	-	3,890		Oct. 31, 1955	3.59	-	2,050
						Mar. 7, 1956	4.92	-	5,030

a Backwater from ice.

Peak stages and discharges of Fall Creek near Ithaca, N.Y.--Continued

Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Ice effect (feet)	Discharge (cfs)
1956	Apr. 5, 1956	4.81	-	4,720	1960	Dec. 13, 1959	3.96	-	2,290
1957	Jan. 22, 1957	5.58	3.4	-		Dec. 29, 1959	3.82	-	2,110
	Jan. 23, 1957	3.32	-	1,650		Feb. 11, 1960	4.92	-	3,790
						Mar. 30, 1960	5.34	-	4,570
1958	Feb. 28, 1958	4.28	1.9	-		Apr. 4, 1960	3.84	-	2,340
	Apr. 6, 1958	4.46	-	3,020	1961	Feb. 26, 1961	5.06	-	4,040
	June 9, 1958	3.94	-	2,260		Apr. 16, 1961	3.80	-	2,080
1959	Jan. 21, 1959	8.76	6.3	-	1962	Jan. 6, 1962	a3.77	-	-
	Jan. 22, 1959	5.41	-	4,710		Jan. 31, 1962	a3.87	-	-
	Apr. 2, 1959	4.14	-	2,540		Feb. 11, 1962	a5.07	-	-
						Feb. 28, 1962	a6.24	-	-
1960	Nov. 28, 1959	3.77	-	2,040		Feb. 28, 1962	3.32	-	1,530

a Backwater from ice.

2350. Canandaigua Lake Outlet at Chapin, N.Y.

Location.--Lat 42°55'00", long 77°14'00", on left bank at Chapin, Ontario County, 500 ft upstream from highway bridge and 3 miles downstream from Canandaigua Lake.

Drainage area.--199 sq mi.

Gage.--Recording. Datum of gage is 673.6 ft above mean sea level (levels by Corps of Engineers).

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

Bankfull stage.--3 ft.

Remarks.--Regulation by Canandaigua Lake substantially affects peak flow. 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)
1940	Apr. 12, 1940	4.64	a b1,080	1951	Mar. 4, 1951	3.93	708
1941	Apr. 5, 1941	3.33	542		Mar. 30, 1951	4.25	827
1942	Mar. 17, 1942	4.64	1,100	1952	Apr. 5, 1952	4.13	782
	Apr. 12, 1942	4.06	864	1953	Mar. 28, 1953	3.74	639
1943	Dec. 30, 1942	3.63	699	1954	May 1, 1954	3.75	643
	Apr. 30, 1943	3.66	708		May 4, 1954	3.64	604
	May 8, 1943	3.99	816	1955	Mar. 1, 1955	4.10	820
	May 11, 1943	4.18	892		Mar. 11, 1955	3.85	720
	May 26, 1943	4.36	964		Mar. 21, 1955	3.83	712
	June 2, 1943	4.04	836				
1944	May 10, 1944	3.18	506	1956	Mar. 7, 1956	4.62	1,070
1945	Mar. 23, 1945	4.30	a940		Apr. 2, 1956	4.18	856
					Apr. 9, 1956	4.39	910
1946	Dec. 11, 1945	3.58	551		Apr. 16, 1956	4.20	825
	Dec. 18, 1945	c3.98	-		Apr. 28, 1956	4.14	801
1947	Apr. 5, 1947	3.67	688	1957	May 21, 1957	3.59	532
	May 7, 1947	3.56	646	1958	Apr. 16, 1958	3.86	640
	June 3, 1947	3.93	792	1959	Apr. 1, 1959	3.75	650
1948	Apr. 25, 1948	3.31	580		Apr. 11, 1959	3.79	664
1949	Feb. 15, 1949	2.62	335	1960	Dec. 28, 1959	3.62	602
1950	Mar. 27, 1950	4.62	1,090		Mar. 30, 1960	4.58	1,000
					May 24, 1960	3.91	710
1951	Dec. 3, 1950	d3.80	-	1961	Apr. 25, 1961	4.14	801
	Dec. 8, 1950	e3.92	-	1962	May 3, 1962	3.26	478
	Feb. 21, 1951	3.95	716				

a Annual peak only.

b Result of regulation.

c Backwater from ice, 0.6 ft.

d Backwater from ice, 0.5 ft.

e Backwater from ice, 0.4 ft.

2355. Owasco Lake Outlet near Auburn, N.Y.

Location.--Lat 42°56'45", long 76°36'05", on left bank 2½ miles downstream from center of Auburn, Cayuga County, and 4 miles downstream from State dam at outlet of Owasco Lake.

Drainage area.--208 sq mi.

Gage.--Recording and concrete control. Datum of gage is 533.92 ft above mean sea level, datum of 1929, adjustment of 1943.

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

Remarks.--Seasonal regulation at State dam and Auburn sewage outlet above station substantially affect peak flow. 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)
1914	Apr. 3, 1914	4.43	1,850	1939	Feb. 28, 1939	3.45	a1,060
1915	Feb. 26, 1915	3.63	1,260	1940	Apr. 9, 1940	4.88	a2,090
1916	Apr. 3, 1916	4.21	1,720	1941	Apr. 8, 1941	3.75	a1,300
1917	June 30, 1917	3.47	1,070	1942	Mar. 17, 1942	3.98	a1,510
1918	Mar. 17, 1918	3.50	1,100	1943	Dec. 31, 1942	4.02	a1,610
1919	Apr. 12, 1919	3.55	1,160	1944	Apr. 13, 1944	3.57	a1,210
1920	Mar. 29, 1920	3.84	1,460	1945	Mar. 22, 1945	4.61	a2,030
1921	Mar. 16, 1921	3.44	1,040	1946	Mar. 9, 1946	3.36	a1,000
1922	June 22, 1922	4.05	1,620	1947	June 7, 1947	3.80	a1,420
1923	Mar. 24, 1923	3.61	1,230	1948	Mar. 22, 1948	3.78	a1,400
1924	Jan. 28, 1924	3.74	1,390	1949	Feb. 16, 1949	3.04	a732
1925	Feb. 27, 1925	3.66	1,250	1950	Apr. 4, 1950	4.72	a2,090
1926	Apr. 12, 1926	3.56	1,140	1951	Dec. 11, 1950	3.63	1,270
1927	Mar. 23, 1927	3.53	a1,110	1952	Feb. 6, 1952	3.21	879
1928	Dec. 2, 1927	4.05	1,620	1953	May 15, 1953	2.87	596
1929	Apr. 22, 1929	4.35	a1,800	1954	May 5, 1954	3.51	1,160
1930	June 19, 1930	3.53	a1,110	1955	Mar. 12, 1955	4.31	1,830
1931	Apr. 4, 1931	3.67	a1,260	1956	Apr. 8, 1956	4.25	1,780
1932	Apr. 4, 1932	4.06	a1,620	1957	Apr. 25, 1957	3.10	800
1933	Apr. 8, 1933	3.32	920	1958	Apr. 8, 1958	4.42	1,900
1934	Apr. 5, 1934	3.07	696	1959	Apr. 9, 1959	3.64	1,280
1935	Apr. 20, 1935	3.50	1,080	1960	Apr. 5, 1960	4.51	1,970
1936	Mar. 19, 1936	4.88	a2,090	1961	Feb. 28, 1961	4.07	1,650
1937	Jan. 28, 1937	3.46	1,040	1962	Nov. 31, 1962	3.86	1,550
1938	May 29, 1938	3.72	a1,350				

a Result of regulation.

2375. Seneca River at Baldwinsville, N.Y.

Location.--Lat 43°09'25", long 76°19'55", on left bank 200 ft downstream from highway bridge in Baldwinsville, Onondaga County, and 400 ft downstream from navigation dam of New York State Erie (Barge) Canal system.

Drainage area.--3,130 sq mi.

Gage.--Recording. Datum of gage is 362.60 ft above mean sea level, New York State Erie (Barge) Canal datum. Auxiliary recording gage 1,500 ft downstream from base gage at same datum.

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

Remarks.--Discharge computed by using fall as determined by auxiliary gage as a factor, represents total flow at Baldwinsville and includes flow in Baldwin and Erie (Barge) Canals.

Instantaneous peak shown for 1950. Only maximum daily discharge and maximum instantaneous gage height shown thereafter due to extreme regulation and diversion.

A large amount of natural storage and some artificial regulation is afforded by many large lakes and the Erie (Barge) Canal system in river basin. Seneca River basin receives water from Erie (Barge) Canal through lock 32 near Pittsford. During part of year, entire flow from 45 sq mi of Mud Creek drainage basin may be diverted from Chemung River basin into Keuka Lake in Oswego River basin.

Peak gage height frequently occurs at different time than peak discharge. Base daily mean discharge, 10,000 cfs.

Peak stages and maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Apr. 1, 1950	8.50	15,700	1956	Apr. 7, 1956	-	13,100
1951	Dec. 11, 1950	-	11,200	1957	Jan. 24, 1957	4.73	7,430
	Feb. 24, 1951	66.73	11,800	1958	Apr. 24, 1958	5.92	10,700
	Mar. 8, 1951	-	10,700	1959	Mar. 22, 1959	-	10,300
	Apr. 2, 1951	-	11,600		Apr. 4, 1959	6.43	11,500
1952	Mar. 14, 1952	5.90	10,700	1960	Dec. 30, 1959	-	10,600
1953	Mar. 29, 30, 1953	5.25	8,800		Apr. 4, 1960	9.21	17,200
1954	May 6, 1954	5.27	9,090	1961	Mar. 1, 1961	-	10,400
1955	Mar. 18, 1955	-	11,900		Apr. 29, 1961	6.09	11,400
	Mar. 23, 1955	6.84	-	1962	Mar. 15, 1962	4.96	8,190
1956	Mar. 12, 1956	8.84	16,700				

a Maximum instantaneous discharge for river only; average daily bypass flow is 100 cfs.

b Occurred preceding day.

2390. Onondaga Creek at Dorwin Avenue, Syracuse, N.Y.

Location.--Lat 42°59'00", long 76°09'05", on left bank 550 ft upstream from Dorwin Avenue Bridge, at Syracuse, Onondaga County, and 4 miles downstream from Onondaga Reservoir.

Drainage area.--88.9 sq mi.

Gage.--Nonrecording prior to July 6, 1951; recording thereafter. Datum of gage is 413.59 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--Regulation by Onondaga Reservoir substantially affects peak flows. Base for partial-duration series, 1,000 cfs.

Peak stages and discharges of Onondaga Creek at Dorwin Avenue, Syracuse, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Mar. 11, 1952	4.64	1,170	1958	Apr. 7, 1958	4.04	1,030
1953	Dec. 12, 1952	3.94	581		June 2, 1958	4.55	1,350
1954	May 4, 1954	4.26	868	1959	Jan. 22, 1959	4.92	1,960
1955	Mar. 1, 1955	4.07	a1,050	1960	Feb. 11, 1960	4.35	1,320
					Mar. 31, 1960	5.06	2,130
1956	Mar. 8, 1956	4.46	1,440	1961	Feb. 25, 1961	5.11	1,980
	Apr. 4, 1956	4.24	1,210	1962	Mar. 12, 1962	3.88	833
1957	Jan. 23, 1957	4.15	1,120				
	Aug. 4, 1957	4.32	1,290				

a Result of regulation.

2395. Onondaga Creek at Syracuse, N.Y.

Location.--Lat 43°00'35", long 76°09'00", 75 ft upstream from end of channel improvement, 300 ft upstream from Ballantyne Road Bridge, and 2 miles south of center of Syracuse, Onondaga County.

Drainage area.--98.2 sq mi.

Gage.--Recording. Datum of gage is 401.25 ft above mean sea level, datum of 1929.

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

Remarks.--Only annual peaks are shown prior to 1944. 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)
1940	Apr. 1, 1940	7.45	2,320	1946	Oct. 2, 1945	6.95	1,830
1941	Apr. 6, 1941	7.25	2,150	1947	Mar. 25, 1947	6.52	1,600
1942	Mar. 9, 1942	8.58	2,860		Apr. 6, 1947	6.41	1,530
1943	Dec. 30, 1942	9.58	3,980		May 22, 1947	7.06	1,970
					June 3, 1947	7.81	2,540
1944	Mar. 17, 1944	5.88	1,160	1948	Mar. 20, 1948	a5.93	1,040
1945	Mar. 4, 1945	6.30	1,400	1949	Jan. 6, 1949	4.80	b670
	Mar. 22, 1945	7.16	1,990				

a Occurred Mar. 17, 1948; backwater from ice, 0.38 ft.

b Result of regulation.

2415. East Branch Fish Creek at Fish Creek, near Constableville, N.Y.

Location.--Lat 43°31'15", long 75°32'45", on right bank at downstream side of bridge half a mile west of Fish Creek, Lewis County, half a mile downstream from mouth of Alder Creek, and 6½ miles southwest of Constableville.

Drainage area.--75 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,540 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,200 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of East Branch Fish Creek at Fish Creek,
near Constableville, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Sept. 30, 1924	a6.3	4,000	1928	Apr. 8, 1928	e8.3	5,520
1925	Feb. 24, 1925	b6.9	2,760	1929	Apr. 6, 1929	f7.5	3,460
				1930	Jan. 8, 1930	b6.97	4,750
1926	Nov. 14, 1925	-	4,280				
	Apr. 25, 1926	c5.8	-	1931	Apr. 10, 1931	4.1	2,710
1927	Nov. 17, 1926	d6.0	2,560	1932	May 1, 1932	g4.3	1,920

a Occurred Apr. 7, 1924 (ice jam). b Backwater from ice. c Occurred Apr. 22,
 1926 (ice jam). d Occurred Mar. 19, 1927 (backwater from ice). e Occurred Apr. 6,
 1928 (ice jam). f Occurred Jan. 19, 1929 (backwater from ice). g Occurred Dec. 13,
 1931 (backwater from ice).

2425. East Branch Fish Creek at Taberg, N.Y.

Location.--Lat 43°18'05", long 75°37'10", on left bank at downstream side of bridge on State Highway 69 at Taberg, Oneida County, just downstream from Furnace Creek, 2½ miles upstream from confluence of East and West Branches near Blossvale.

Drainage area.--189 sq mi.

Gage.--Nonrecording prior to Oct. 6, 1923; recording thereafter. Datum of gage is 491.12 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 9,000 cfs and extended above on basis of slope-area measurement at 13,000 cfs.

Remarks.--Base for partial-duration series, 4,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Nov. 30, 1923	6.35	5,480	1938	Oct. 23, 1937	5.99	5,380
	Jan. 11, 1924	6.45	5,640		Mar. 24, 1938	e6.80	5,910
	Apr. 6, 1924	8.50	9,860				
	Sept. 30, 1924	6.92	7,260	1939	Apr. 26, 1939	5.31	4,280
1925	Feb. 24, 1925	a5.2	b4,060	1940	Apr. 18, 1940	6.63	6,470
1926	Mar. 14, 1926	7.12	7,580	1941	Dec. 30, 1940	7.52	7,780
	Apr. 25, 1926	7.6	8,190	1942	Dec. 25, 1941	7.58	7,730
1927	Nov. 16, 1926	6.15	5,800		Apr. 7, 1942	6.57	5,920
	Mar. 18, 1927	5.82	5,270	1943	Apr. 26, 1943	6.31	5,480
1928	Jan. 1, 1928	5.72	5,140		May 1, 1943	6.74	6,220
	Apr. 8, 1928	7.7	8,360	1944	Nov. 9, 1943	6.10	5,100
1929	Dec. 18, 1928	5.61	4,920		Apr. 10, 1944	6.46	5,720
	Jan. 19, 1929	5.76	5,160		Apr. 24, 1944	6.58	5,930
	Mar. 16, 1929	6.0	5,540	1945	Mar. 18, 1945	6.55	5,970
	Apr. 6, 1929	5.92	5,410		Mar. 22, 1945	7.18	7,100
	Aug. 15, 1929	5.92	5,410	1946	Oct. 2, 1945	10.90	13,600
1930	Jan. 8, 1930	8.1	9,040	1947	Apr. 7, 1947	5.82	5,510
	Apr. 7, 1930	6.33	6,070		Apr. 12, 1947	8.04	9,060
1931	Apr. 11, 1931	5.53	4,800		Apr. 27, 1947	5.66	5,260
1932	Jan. 18, 1932	5.48	4,550		May 2, 1947	6.76	7,020
1933	Oct. 6, 1932	9.18	10,700		May 22, 1947	6.86	7,180
					June 3, 1947	6.20	6,120
1934	Nov. 30, 1933	6.52	6,130	1948	Mar. 22, 1948	8.14	9,220
	Apr. 12, 1934	5.96	5,210		Mar. 27, 1948	6.85	7,160
1935	Jan. 10, 1935	6.41	5,760	1949	Nov. 20, 1948	5.40	4,950
					Mar. 28, 1949	5.66	5,340
1936	Mar. 18, 1936	6.35	6,050	1950	Apr. 5, 1950	5.80	5,550
	Mar. 27, 1936	6.31	5,990		Apr. 20, 1950	5.52	5,130
	Apr. 6, 1936	5.70	5,010	1951	Mar. 31, 1951	7.25	7,800
1937	Jan. 15, 1937	5.70	4,900				

a Backwater from ice, 0.45 ft. b Maximum discharge during year, 5,260 cfs at 12:01 a.m. Oct. 1, stage falling; peak occurred on previous day. c Backwater from ice, 0.5 ft.

Peak stages and discharges of East Branch Fish Creek at Taberg, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Apr. 2, 1951	6.22	6,180	1956	Apr. 16, 1956	5.93	5,510
	Apr. 13, 1951	6.54	6,660		Apr. 30, 1956	5.71	5,140
1952	Apr. 6, 1952	6.82	7,110	1957	Jan. 23, 1957	5.34	4,540
1953	Dec. 11, 1952	8.75	10,200	1958	Dec. 21, 1957	8.94	10,500
	Mar. 24, 1953	7.28	7,850		Apr. 20, 1959	5.20	4,600
1954	Feb. 17, 1954	66.24	5,590	1960	Apr. 4, 1960	5.48	5,020
	Feb. 22, 1954	5.89	5,620		Apr. 18, 1960	5.87	5,600
	Mar. 2, 1954	5.76	5,420		Apr. 24, 1960	7.48	8,170
	Apr. 8, 1954	5.63	5,210	1961	Apr. 24, 1961	5.45	4,980
	Apr. 11, 1954	5.52	5,030	1962	Apr. 8, 1962	5.82	5,530
	Apr. 17, 1954	7.87	8,790		Apr. 23, 1962	6.96	7,540
1955	Apr. 11, 1955	5.63	5,000				
	Apr. 15, 1955	6.57	6,600				
1956	Oct. 16, 1955	5.57	4,900				

d Backwater from ice.

2435. Oneida Creek at Oneida, N.Y.

Location.--Lat 43°05'50", long 75°38'20", on right bank 70 ft upstream from bridge on State Highway 365A at Oneida, Madison County, and 500 ft downstream from Sconondoa Creek.

Drainage area.--112 sq mi.

Gage.--Recording. Datum of gage is 409.33 ft above mean sea level (Corps of Engineers bench mark).

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

Remarks.--Base for partial-duration series, 1,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1950	Jan. 10, 1950	9.21	2,360	1955	Mar. 11, 1955	10.18	3,000
	Mar. 28, 1950	13.78	7,440		Oct. 31, 1955	8.36	1,930
	Apr. 20, 1950	8.49	1,960	1956	Mar. 7, 1956	9.80	2,730
1951	Dec. 4, 1950	8.90	2,170		Apr. 4, 1956	11.83	4,440
	Jan. 4, 1951	9.81	2,740	1957	Jan. 23, 1957	9.42	2,490
	Feb. 2, 1951	a9.45	-		Aug. 4, 1957	13.30	6,480
	Feb. 7, 1951	a9.66	-	1958	June 2, 1958	9.46	2,020
	Feb. 13, 1951	a9.46	-		Jan. 22, 1959	a14.30	6,500
	Feb. 21, 1951	10.25	3,040	1959	Apr. 2, 1959	8.42	1,960
	Mar. 31, 1951	8.86	2,150	1960	Nov. 28, 1959	9.58	2,590
	Apr. 13, 1951	9.56	2,570		Jan. 3, 1960	8.55	2,020
	July 18, 1951	12.53	5,270		Feb. 11, 1960	a11.45	3,800
					Mar. 30, 1960	12.71	5,130
1952	Jan. 1, 1952	a8.43	-		Apr. 4, 1960	9.24	2,300
	Mar. 11, 1952	10.22	3,020	1961	Feb. 26, 1961	12.38	5,080
1953	Dec. 11, 1952	8.26	1,880		Mar. 12, 1962	8.35	1,920
1954	Jan. 21, 1954	a8.04	-				
	Jan. 27, 1954	a8.35	-				
	Feb. 17, 1954	8.41	1,960				
	May 4, 1954	8.38	1,940				
1955	Mar. 1, 1955	9.61	2,610				

a Backwater from ice.

2440. Chittenango Creek near Chittenango, N.Y.

Location.--Lat 43°01'25", long 75°51'30", on right bank at upstream side of county highway bridge, 50 ft west of State Highway 13, 1.6 miles south of Chittenango, Madison County, 12 miles upstream from Butternut Creek, and 23 miles upstream from mouth.

Drainage area.--67.7 sq mi.

Gage.--Recording. Datum of gage is 489.54 ft above mean sea level, datum of 1929.

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

Remarks.--Flow regulated by Cazenovia Lake and Erieville Reservoir; peak discharges probably not materially affected. 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)
1950	Mar. 29, 1950	a6.8	b2,760	1956	Apr. 4, 1956	6.48	2,630
1951	Dec. 4, 1950	4.16	1,030	1957	Jan. 23, 1957	4.92	1,350
	Jan. 4, 1951	4.17	1,040		Aug. 3, 1957	6.24	2,400
	Feb. 21, 1951	4.85	1,560	1958	Apr. 6, 1958	5.01	1,410
	Mar. 31, 1951	5.08	1,760		June 1, 1958	5.92	2,110
	July 28, 1951	5.88	2,600	1959	Jan. 22, 1959	6.12	2,290
1952	Mar. 11, 1952	4.66	1,300		Apr. 2, 1959	5.00	1,400
1953	Feb. 21, 1953	4.32	1,070	1960	Feb. 11, 1960	6.54	2,690
1954	Feb. 17, 1954	4.67	1,200		Mar. 30, 1960	6.44	2,400
1955	Mar. 1, 1955	4.47	1,030	1961	Feb. 25, 1961	6.29	2,310
	Mar. 11, 1955	5.53	1,770	1962	Feb. 11, 1962	c5.16	-
1956	Oct. 30, 1955	5.06	1,420		Mar. 31, 1962	3.86	722
	Mar. 8, 1956	4.71	1,190				

a From floodmarks; backwater from debris.

b Annual peak only; result of slope-area measurement.

c Backwater from ice.

2445. Chittenango Creek at Chittenango, N.Y.

Location.--Lat 43°02'35", long 75°52'10", at upstream side of right abutment of Main Street Bridge at Chittenango, Madison County, half a mile upstream from State dam and 10½ miles upstream from Butternut Creek.

Drainage area.--76.0 sq mi.

Gage.--Nonrecording. Altitude of gage is 450 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs and extended above by logarithmic plotting.

Remarks.--Flow regulated by Cazenovia Lake and Erieville Reservoir; peak discharges probably not materially affected. 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)
1902	Dec. 15, 1901	7.0	4,700	1905	June 21, 1905	6.5	2,890
1903	Feb. 28, 1903	4.4	1,410				
1904	Mar. 26, 1904	5.0	1,970	1906	Mar. 27, 1906	4.2	1,240

2450. Limestone Creek at Fayetteville, N.Y.

Location.--Lat 43°01'45", long 76°00'50", on left bank 100 ft downstream from Genesee Street Bridge at Fayetteville, Onondaga County, and 8 miles upstream from mouth.

Drainage area.--85.7 sq mi, not including 15.7 sq mi of Middle Branch Tioughnioga Creek basin, flow from which may be completely diverted into Limestone Creek basin through DeRuyter Reservoir.

Gage.--Recording. Datum of gage is 427.62 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 3,500 cfs and extended above by logarithmic plotting.

Bankfull stage.--Both banks high and not subject to overflow.

Remarks.--Flow regulated by DeRuyter Reservoir. Base for partial-duration series, 1,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1940	Mar. 31, 1940	8.5	3,470	1950	Apr. 5, 1950	5.06	1,670
	Apr. 4, 1940	7.01	2,470				
	Apr. 9, 1940	6.53	2,070	1951	Dec. 8, 1950	4.93	1,550
1941	Dec. 28, 1940	4.29	1,630		Jan. 4, 1951	5.33	1,970
	Mar. 19, 1941	a4.48	-		Feb. 21, 1951	5.72	2,460
	Apr. 6, 1941	5.54	2,360		Mar. 31, 1951	5.22	1,940
1942	Mar. 9, 1942	6.34	4,150	1952	Mar. 11, 1952	5.87	2,670
	Mar. 17, 1942	5.55	2,720	1953	Feb. 21, 1953	4.48	1,180
1943	Dec. 30, 1942	7.18	6,260		Feb. 17, 1954	5.37	2,010
	Feb. 24, 1943	5.62	2,800		May 4, 1954	4.94	1,560
	Mar. 12, 1943	4.69	1,500	1955	Dec. 30, 1954	4.91	1,530
	Mar. 16, 1943	5.71	2,960		Mar. 1, 1955	5.89	2,190
1944	Mar. 17, 1944	4.93	1,780		Mar. 11, 1955	5.69	1,960
1945	Mar. 3, 1945	4.92	1,770	1956	Mar. 7, 1956	6.13	2,520
	Mar. 17, 1945	4.78	1,600		Mar. 8, 1956	5.83	2,120
	Mar. 22, 1945	6.05	3,580		Apr. 4, 1956	6.95	3,990
	Sept. 26, 1945	5.45	2,520	1957	Jan. 23, 1957	6.27	2,720
1946	Oct. 2, 1945	6.30	4,070		Aug. 4, 1957	6.86	3,800
	Mar. 25, 1947	5.40	2,410	1958	June 1, 1958	5.95	2,260
	Apr. 5, 1947	5.36	2,360		Jan. 22, 1959	6.97	4,030
	May 22, 1947	5.94	3,130	1960	Feb. 11, 1960	6.68	3,430
1948	June 3, 1947	7.00	5,170		Mar. 30, 1960	7.60	6,060
	Mar. 16, 1948	a5.92	-	1961	Feb. 26, 1961	6.87	4,110
	Mar. 17, 1948	5.77	2,880		Mar. 12, 1962	4.35	1,280
	Mar. 20, 1948	5.18	2,090				
1949	Jan. 6, 1949	4.53	1,420				
	Mar. 28, 1950	7.78	7,010				

a Backwater from ice.

2465. Oneida River at Caughdenoy, N.Y.
(Published as "near Euclid," 1902-9)

Location.--Lat 43°14'45", long 76°10'15", on left bank at point of diversion to New York State Erie (Barge) Canal, 1.6 miles downstream from Oneida Lake and 2.6 miles upstream from Caughdenoy, Oswego County.

Drainage area.--1,433 sq mi 1902-9; 1,377 sq mi thereafter.

Gage.--Nonrecording prior to Oct. 9, 1947; recording thereafter. Prior to June 5, 1907, head-water readings and June 5, 1907, to Dec. 31, 1909, staff-gage readings at Oak Orchard State Dam at different datum. At site 2.5 miles downstream at different datum Jan. 1, 1910, to Dec. 31, 1912, and Oct. 9, 1947, to Nov. 7, 1951; since Nov. 7, 1951, recorder at this site used as auxiliary gage. Since Nov. 7, 1951, at datum 362.00 ft above mean sea level, New York State Erie (Barge) Canal bench mark, with additional auxiliary gage 2.6 miles downstream, and 180 ft downstream from navigation dam of New York State Erie (Barge) Canal.

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

Remarks.--Records for period 1907-12 furnished by New York State engineer and surveyor. Records of gate openings, lockages, and elevations of water surface in Erie (Barge) Canal above and below lock 23, 1947-61, furnished by New York State Department of Public Works.

Jan. 1, 1910, to Dec. 31, 1912, flow over dam computed on basis of coefficient determined for model of dam of same general type; flow through gate and diversion through lock culverts estimated by theoretical calculations. Subsequent to 1947, discharges represent total discharge at Caughdenoy, including flow in Oneida and Erie (Barge) Canals. Only annual maximum daily discharges are shown because of extreme regulation and diversion. Considerable seasonal regulation by operation of gates in Oneida and Erie (Barge) Canals. A large amount of natural storage and occasional large diurnal fluctuations in Oneida Lake. Water may be diverted into or received from Mohawk River basin. Nearly all of flow from 16 sq mi of the Tioughnioga River basin may be diverted into DeRuyter Reservoir, in Oswego River basin.

Maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1903	Mar. 25, 1903	-	13,760	1950	Apr. 7, 1950	-	9,160
1904	Apr. 1, 1904	-	11,710	1951	Apr. 5, 1951	-	8,730
1905	Apr. 8, 1905	-	13,200	1952	Apr. 13, 1952	-	6,490
1906	Apr. 10, 17, 1906	-	6,970	1953	May 5, 1953	-	6,710
1907	Apr. 2, 1907	-	7,360	1954	Apr. 19, 1954	-	6,750
1908	Mar. 30 to	-		1955	Mar. 26, 1955	-	7,800
	Apr. 3, 1908	-	7,570	1956	Apr. 18, 1956	-	8,120
1909	Apr. 15, 1909	-	9,300	1957	Dec. 5, 1956	-	4,900
1910	Mar. 9-13, 1910	-	10,860	1958	Apr. 11, 1958	-	5,640
1911	Apr. 12, 13, 1911	-	7,337	1959	Apr. 11, 1959	-	8,360
1912	Apr. 20, 1912	-	10,308	1960	Apr. 7, 1960	-	8,580
1948	Mar. 29, 31, 1948	-	7,740	1961	May 1, 1961	-	5,850
1949	Jan. 21, 1949	-	5,760	1962	May 2, 1962	-	6,730

2490. Oswego River at lock 7, Oswego, N.Y.
(Published as "above Minetto" or "near Minetto" prior to January 1904,
and as "at Battle Island" for January 1904 to April 1906)

Location.--Lat 43°27'00", long 76°30'25", on right bank at lock 7 in Oswego,
Oswego County, three-quarters of a mile upstream from mouth.

Drainage area.--5,121 sq mi; 5,111 sq mi prior to 1933.

Gage.--Nonrecording prior to 1933 at site 6 miles upstream at different datum;
recording thereafter. Datum of gage is 246.00 ft above mean sea level, New
York State Oswego (Barge) Canal datum.

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

Bankfull stage.--Banks not subject to overflow.

Remarks.--Peaks represent total discharge at Oswego and include flow in Hydraulic
and Oswego (Barge) Canals. Prior to 1933, flow in Oswego (Barge) Canals not
included. Natural storage and some artificial regulation afforded by many
large lakes and Erie (Barge) and Oswego (Barge) Canal systems, along with
large diurnal fluctuations by powerplants upstream substantially affect peak
flows. Water may be diverted into or received from Mohawk River basin.
During part of year entire flow from 45 sq mi of Mud Creek drainage basin
may be diverted into Oswego River basin. Nearly all of flow from 16 sq mi of
Toughnioga River basin may be diverted into DeRuyter Reservoir, in Oswego
River basin. Only annual peaks are shown prior to 1951. Base for partial-
duration series, 15,000 cfs.

Records of lockages at lock 7 furnished by New York State Department of
Public Works, record of elevations of Lake Ontario by Corps of Engineers,
daily discharge records for High Dam by Niagara Mohawk Power Corp., and
those at Fulton by Oswego River Watershed Corp.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1901	Apr. 21, 1901	-	20,200	1952	Feb. 14, 1952	8.02	15,400
1902	Mar. 13, 1902	-	22,500		Mar. 12, 1952	a9.00	18,700
1903	Mar. 25, 1903	-	20,300		Mar. 25, 1952	8.36	16,600
1904	Apr. 2, 1904	-	22,200		Apr. 9, 1952	8.26	16,200
1905	Mar. 28, 1905	-	21,300		Apr. 11, 1952	a8.28	16,300
1906	Apr. 10, 1906	-	14,900		May 27, 1952	f8.21	15,200
1934	Apr. 15, 1934	8.22	a16,400	1953	Mar. 28, 1953	8.78	a18,000
1935	July 14, 1935	8.32	a16,900	1954	Apr. 28, 1954	8.00	15,400
1936	Mar. 28, 1936	13.10	a37,500		Apr. 30, 1954	8.29	a16,300
1937	Apr. 24, 1937	9.10	21,200		May 9, 1954	9.49	a20,000
1938	Mar. 1, 1938	8.55	18,000		May 13, 1954	8.28	15,900
1939	Mar. 8, 1939	9.87	23,200	1955	Dec. 31, 1954	8.18	15,500
1940	Apr. 10, 1940	13.46	35,000		Mar. 23, 1955	10.55	a23,600
1941	Apr. 7, 1941	9.19	19,900		Apr. 16, 1955	8.29	a15,800
1942	Mar. 18, 1942	11.09	25,900	1956	Feb. 29, 1956	f.11	a15,700
1943	May 15, 1943	10.92	a25,400		Mar. 12, 1956	11.14	a26,800
1944	Apr. 14, 1944	8.15	a16,000		Apr. 13, 1956	11.18	a26,800
1945	Mar. 26, 1945	10.34	23,400		May 17, 1956	f.10	a15,700
1946	Oct. 4, 1945	9.94	22,000	1957	Mar. 15, 1957	7.97	a15,200
1947	Apr. 8, 1947	11.07	a25,100	1958	Apr. 23, 1958	9.08	19,100
1948	Mar. 26, 1948	9.05	a18,400	1959	Apr. 6, 1959	10.16	23,100
1949	Feb. 17, 1949	8.42	a16,300	1960	Dec. 14, 1959	9.29	a19,900
1950	Mar. 30, 1950	12.17	a29,400		Dec. 30, 1959	8.86	18,400
1951	Dec. 8, 1950	9.59	20,200		Jan. 17, 1960	8.32	a16,500
	Jan. 10, 1951	9.07	a19,000		Feb. 12, 1960	8.72	a17,800
	Jan. 21, 1951	8.19	16,000		Apr. 4, 1960	12.26	31,200
	Jan. 23, 1951	9.02	a18,800	1961	Feb. 26, 1961	10.07	22,700
	Feb. 22, 1951	10.38	a23,500		Apr. 30, 1961	9.02	a19,000
	Apr. 4, 1951	10.30	a23,300	1962	Mar. 16, 1962	7.91	15,200
	Apr. 16, 1951	9.18	a19,300				
1952	Dec. 6, 1951	b7.97	-				
	Dec. 16, 1951	c8.55	-				
	Jan. 3, 1952	d10.32	-				
	Jan. 19, 1952	e9.81	-				

a Result of regulation. b Backwater from ice, 1.33 ft. c Backwater from ice, 1.63 ft.
d Backwater from ice, 2.74 ft. e Backwater from ice, 2.0 ft.
f Backwater from ice, 0.25 ft.

2500. Orwell Brook near Altmar, N.Y.

Location.--Lat 43°31'35", long 76°01'00", at downstream side of highway bridge, $1\frac{1}{2}$ miles by road northwest of Altmar, Oswego County, and one-eighth of a mile upstream from Salmon River.

Drainage area.--22.3 sq mi.

Gage.--Nonrecording. Altitude of gage is 520 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 300 cfs and extended above on basis of logarithmic plotting.

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)
1912	Apr. 7, 1912	5.5	610	1915	Feb. 25, 1915	a5.7	400
1913	Mar. 14, 1913	5.15	530				
1914	Mar. 28, 1914	4.9	475	1916	May 17, 1916	b5.35	497

a Occurred Jan. 7, 1915 (ice jam).

b Occurred Feb. 28, 1916 (ice jam).

2507.5. Sandy Creek near Adams, N.Y.

Location.--Lat 43°48'48", long 76°04'30", on left bank 250 ft upstream from highway bridge, a quarter of a mile downstream from unnamed tributary, $2\frac{1}{2}$ miles downstream from Adams, Jefferson County, and 10 miles upstream from mouth.

Drainage area.--128 sq mi.

Gage.--Recording. Datum of gage is 523.71 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 3000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1958	Dec. 21, 1957	7.57	4,350	1960	Mar. 31, 1960	8.83	6,040
	July 28, 1958	6.60	3,480		Apr. 4, 1960	6.91	3,760
1959	Jan. 22, 1959	7.47	4,260	1961	Feb. 25, 1961	9.35	6,050
	Apr. 2, 1959	9.40	6,100				
	Apr. 6, 1959	8.12	4,850	1962	Mar. 30, 1962	6.37	3,270
1960	Feb. 11, 1960	7.71	4,480		Apr. 7, 1962	6.86	3,760

2525. Black River near Boonville, N.Y.

Location.--Lat 43°30'35", long 75°18'25", on left bank at downstream side of county highway bridge, three-quarters of a mile upstream from Sugar River and 2 miles northeast of Boonville, Oneida County.

Drainage area.--295 sq mi.

Gage.--Nonrecording prior to Sept. 27, 1933; recording thereafter. Datum of gage is 935.50 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 3,900 cfs. Only annual peaks are shown prior to 1934.

Peak stages and discharges of Black River near Boonville, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1911	May 2, 1911	9.10	4,380	1945	Mar. 22, 1945	9.68	5,870
1912	Apr. 17, 1912	10.40	6,800		Mar. 30, 1945	8.65	4,080
1913	Mar. 28, 1913	12.5	12,400		Apr. 6, 1945	9.01	4,670
1914	Apr. 20, 1914	10.03	6,040	1946	Oct. 3, 1945	11.25	10,400
1915	Apr. 12, 1915	8.96	4,090		Jan. 10, 1946	b8.87	-
1916	May 18, 1916	9.45	4,750		Feb. 16, 1946	b8.70	-
1917	June 12, 1917	9.8	5,600		Mar. 9, 1946	c9.38	4,980
1918	Oct. 31, 1917	9.6	5,230	1947	Feb. 1, 1947	8.68	4,300
1919	Apr. 13, 1919	10.2	6,380		Apr. 7, 1947	8.83	4,580
1920	Apr. 21, 1920	8.60	3,620		Apr. 13, 1947	9.66	6,280
1921	Dec. 15, 1920	9.20	4,410		May 3, 1947	8.55	4,080
1922	Apr. 12, 1922	a10.40	5,790		May 22, 1947	10.46	8,230
1923	Apr. 8, 1923	8.88	3,980		June 3, 1947	10.62	8,650
1924	Jan. 12, 1924	10.30	6,590	1948	Feb. 20, 1948	b8.69	-
1925	Oct. 1, 1924	9.5	4,820		Mar. 20, 1948	b9.00	-
1926	Apr. 25, 1926	10.6	7,240		Mar. 23, 1948	8.85	6,440
1927	Mar. 19, 1927	8.8	3,880		Mar. 28, 1948	9.14	7,240
1928	Apr. 8, 1928	10.5	7,020		Apr. 2, 1948	8.95	6,710
1929	Apr. 7, 1929	9.4	4,680	1949	Nov. 21, 1948	8.48	3,960
	May 4, 1929	-	-		Dec. 31, 1948	9.19	5,090
1930	Jan. 9, 1930	10.0	5,980		Mar. 28, 1949	9.29	5,290
1931	Apr. 12, 1931	8.8	3,880	1950	Mar. 11, 1950	b9.64	-
1932	Apr. 11, 1932	8.7	3,750		Apr. 5, 1950	8.74	4,240
1933	Oct. 7, 1932	10.5	7,020		Apr. 21, 1950	9.25	5,400
1934	Mar. 27, 1934	b11.30	-	1951	Mar. 31, 1951	10.05	7,190
	Apr. 17, 1934	9.04	5,200		Apr. 14, 1951	9.11	5,120
1935	June 18, 1935	8.12	3,350	1952	Apr. 6, 1952	9.69	5,870
1936	Mar. 18, 1936	c11.64	6,300	1953	Dec. 12, 1952	9.46	5,320
	Mar. 28, 1936	9.12	5,390		Mar. 25, 1953	9.86	6,740
	Apr. 7, 1936	9.32	5,900	1954	Jan. 29, 1954	b9.97	-
1937	Jan. 1, 1937	8.30	3,660		Feb. 18, 1954	b11.07	4,160
1938	Jan. 27, 1938	b9.03	-		Feb. 22, 1954	8.54	4,060
	Feb. 8, 1938	c11.49	3,950		Mar. 2, 1954	8.72	4,380
	Mar. 25, 1938	9.45	6,240		Apr. 8, 1954	8.66	4,270
	Sept. 22, 1938	9.39	6,080		Apr. 18, 1954	9.16	5,220
1939	Feb. 22, 1939	b9.01	4,270	1955	Mar. 12, 1955	9.01	4,920
	Apr. 26, 1939	8.62	4,270		Apr. 12, 1955	8.78	4,410
1940	Apr. 19, 1940	8.90	4,870		Apr. 16, 1955	9.62	5,940
1941	Dec. 30, 1940	9.88	7,460	1956	Apr. 17, 1956	8.96	4,710
	Apr. 15, 1941	8.47	4,310		Apr. 30, 1956	9.22	5,160
	Aug. 2, 1941	8.44	4,250		May 31, 1956	9.45	5,600
1942	Dec. 25, 1941	8.77	4,480	1957	Jan. 25, 1957	e11.29	3,100
	Mar. 9, 1942	b9.87	-	1958	Dec. 21, 1957	10.46	8,900
	Apr. 8, 1942	9.27	5,410	1959	Jan. 22, 1959	b10.62	-
	Sept. 28, 1942	9.93	6,840		Apr. 20, 1959	8.54	4,110
1943	Jan. 1, 1943	b8.85	d4,000	1960	Nov. 7, 1959	9.79	6,370
	Feb. 26, 1943	b9.42	-		Apr. 5, 1960	9.37	5,210
	Mar. 15, 1943	b8.73	-		Apr. 18, 1960	9.05	4,510
	May 1, 1943	9.25	4,920	1961	Feb. 27, 1961	c10.51	4,320
	May 13, 1943	8.77	4,160	1962	Apr. 8, 1962	9.28	5,000
1944	Apr. 11, 1944	8.77	4,270				
	Apr. 25, 1944	9.22	5,030				
1945	Mar. 6, 1945	b8.71	-				
	Mar. 19, 1945	8.59	3,980				

a Occurred Mar. 10, 1922 (ice jam).
preceding day, result of ice jam.

b Backwater from ice.
d Daily mean discharge.

c Occurred on
e Occurred Jan. 23, 1957 (ice jam).

2530. Sugar River at Talcottville, N.Y.

Location.--Lat 43°32'05", long 75°22'05", on left bank 150 ft upstream from falls, 250 ft downstream from steel highway bridge at Talcottville, Lewis County, and 4 miles northwest of Boonville.

Drainage area.--42 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,110 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 900 cfs and extended above on basis of logarithmic plotting.

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)
1927	Nov. 16, 1926	4.5	1,840	1931	Apr. 10, 1931	3.6	1,120
1928	Apr. 7, 1928	5.2	2,440	1932	Jan. 15, 1932	3.3	1,030
1929	Jan. 19, 1929	4.0	1,550				
1930	Jan. 8, 1930	5.3	2,800				

2535. Middle Branch Moose River at Old Forge, N.Y.

Location.--Lat 43°42'50", long 74°58'10", on left bank in Old Forge, Herkimer County, 300 ft downstream from bridge on State Highway 28, 400 ft downstream from State dam, and 1½ miles upstream from North Branch Moose River.

Drainage area.--52.1 sq mi.

Gage.--Nonrecording. Datum of gage is 1,690.63 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.--Many discharge figures shown are maximum daily discharges and most are result of regulation at dam 400 ft upstream. Many peak stages affected by backwater from logs on control, or from high stages on North Branch Moose River and are observed stages. Flow regulated by Fulton Chain of Lakes since about 1880. Only annual floods are shown.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1909	May 11, 1909	-	420	1926	May 5, 1926	4.7	758
1910	Apr. 3, 1910	-	320	1927	Sept. 22, 1927	3.1	350
				1928	Nov. 29, 1927	3.4	426
1911	May 2, 3, 1911	-	260	1929	May 5, 1929	4.15	635
1912	Apr. 24, 1912	4.8	626	1930	Jan. 10, 1930	f4.07	433
1913	Mar. 28, 1913	6.5	800				
1914	Mar. 14, 1914	a3.35	310	1931	July 23, 1931	3.1	330
1915	Oct. 9, 10, 1914	2.9	274	1932	July 13, 14, 1932	3.3	379
				1933	Apr. 22, 1933	3.3	379
1916	May 18, 1916	b4.8	387	1934	Apr. 23, 1934	3.1	330
1917	June 12-17, 1917	c3.9	405	1935	May 6, 1935	g3.7	432
1918	May 14, 1918	4.0	530				
1919	Mar. 31, 1919	d4.1	378	1936	Apr. 15, 16, 1936	3.4	405
1920	Apr. 25, 26, 1920	3.1	311	1937	May 1, 1937	3.3	365
				1938	Apr. 28, 29, 1938	h3.8	389
1921	Mar. 23, 1921	5.10	862	1939	May 4, 1939	3.4	416
1922	June 23, 24, 1922	e4.75	500	1940	Sept. 24, 1940	3.0	314
1923	Apr. 25, 26, 1923	2.58	221				
1924	Apr. 21-23, 1924	3.10	350	1941	Oct. 8, 16, 1940	13.3	291
1925	Apr. 28, 29, 1925	3.2	375	1942	Apr. 22, 1942	3.6	333

a Occurred Apr. 1-5, 1914.

b Occurred May 19, 1916.

c Occurred June 16,

1917. d Occurred Apr. 13, 1919.

e Occurred Apr. 13, 1922.

f Occurred

Jan. 11, 1930. g Occurred May 2, 1935.

h Occurred Mar. 26, 1939.

i Occurred Sept. 28-30, 1941.

Peak stages and discharges of Middle Branch Moose River at Old Forge, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 13, 14, 1943	4.6	741	1953	May 3, 1953	4.20	540
1944	Oct. 1, 2, 1943	3.5	332	1954	Apr. 24, 25, 1954	m4.40	350
1945	July 15, 16, 1945	4.2	583	1955	June 2, 1955	n3.74	403
1946	Oct. 3, 1945	5.96	610	1956	June 3, 1956	3.77	356
1947	May 23, 1947	5.04	600	1957	May 21, 1957	p3.32	294
1948	Apr. 6, 1948	j4.26	340	1958	June 12-15, 1958	3.5	q360
1949	Aug. 23, 30, 1949	3.28	282	1959	Sept. 30, 1959	r3.50	320
1950	Oct. 19-21, 1949	3.22	k255	1960	Nov. 7, 1959	s3.76	417
1951	Apr. 17, 1951	4.18	520	1961	June 27, 1961	t3.38	325
1952	May 14, 1952	3.35	300	1962	Aug. 8, 1962	3.92	414

j Occurred Mar. 24, 1948. k Also occurred Sept. 13-15, 22-30, 1950. m Occurred Feb. 22, 1954. n Occurred Apr. 17, 1955. p Occurred July 6, 1957. q Also Sept. 19, 20, 1958. r Occurred Dec. 7, 8, 1958. s Also observed Nov. 8, 1959. t Also observed June 26, 1961.

Note.--Many discharge figures shown are maximum daily mean discharges.

2540. Middle Branch Moose River near McKeever, N.Y.

Location.--Lat 43°37'45", long 75°04'55", on right bank half a mile upstream from confluence with South Branch and 1½ miles northeast of McKeever, Herkimer County.

Drainage area.--148 sq mi.

Gage.--Recording. Datum of gage is 1,530.29 ft above mean sea level, datum of 1929.

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

Remarks.--Some regulation by Fulton Chain of Lakes since about 1880; peak discharges probably not materially affected. 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)
1926	Apr. 27, 1926	6.6	2,100	1946	Feb. 5, 1946	a7.00	-
1927	Mar. 22, 1927	5.35	1,200	1947	May 22, 1947	6.28	1,860
1928	Apr. 10, 1928	6.45	1,980	1948	Mar. 24, 1948	8.04	1,690
1929	Feb. 24, 25, 1929	a6.1	-	1949	Jan. 3, 1949	a5.46	-
	May 6, 1929	-	1,550		Mar. 30, 1949	-	1,270
1930	Jan. 11, 1930	6.2	1,780	1950	Mar. 7, 1950	a6.07	-
	Feb. 1, 1930	a7.0	-		Apr. 23, 1950	-	956
1931	Apr. 11, 1931	5.7	1,400	1951	Feb. 10, 1951	a7.09	-
1932	Jan. 21, 1932	5.59	1,330		Apr. 18, 1951	-	1,420
1933	Apr. 20, 1933	5.96	1,590	1952	Dec. 28, 1951	a5.77	-
1934	Apr. 17, 1934	5.14	1,050		Apr. 9, 1952	-	1,030
1935	Dec. 15, 1934	a5.86	-	1953	Mar. 28, 1953	5.64	1,350
	May 2, 1935	-	1,450	1954	Feb. 20, 1954	a6.30	-
1936	Mar. 29, 1936	5.24	1,110		Feb. 23, 1954	-	1,380
1937	May 2, 1937	4.94	942	1955	Jan. 25, 1955	a7.35	-
1938	Jan. 18, 1938	a7.15	-		Apr. 17, 1955	-	1,520
	Mar. 26, 1938	-	1,630	1956	Dec. 20, 1955	a5.94	-
1939	Jan. 26, 1939	a6.31	-		May 2, 1956	-	1,360
	Apr. 29, 1939	-	1,470	1957	Jan. 23, 1957	a9.69	-
1940	May 4, 1940	5.21	1,130		May 24, 1957	-	929
1941	Apr. 17, 1941	5.37	1,240	1958	January 1958	b5.69	-
1942	Jan. 16, 1942	a6.80	-		Sept. 21, 1958	-	892
	Apr. 3, 1942	-	1,260	1959	Dec. 22, 1958	a7.51	-
1943	May 14, 1943	6.30	1,870		Apr. 19, 1959	-	1,340
1944	Apr. 27, 1944	5.41	1,260	1960	Apr. 18, 1960	5.85	1,560
1945	Mar. 22, 1945	5.62	1,520	1961	Apr. 26, 1961	4.93	933
1946	Oct. 4, 1945	-	2,070	1962	Jan. 5, 1962	5.67	-
					Apr. 26, 1962	-	957

a Backwater from ice.

b Peak occurred during period Jan. 13-16, 1958 (backwater from ice).

2545. Moose River at McKeever, N.Y.
(Published as "at Moose River" prior to 1922)

Location.--Lat 43°36'40", long 75°06'35", on left bank half a mile west of McKeever, Herkimer County, and 2 miles downstream from confluence of Middle and South Branches.

Drainage area.--365 sq mi.

Gage.--Nonrecording prior to Nov. 3, 1922; recording thereafter. At site $2\frac{1}{2}$ miles downstream at various datums prior to May 28, 1922. At datum 1 ft higher May 28 to Nov. 2, 1922. Datum of gage is 1,479.92 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,000 cfs at former site; defined by current-meter measurements at present site below 11,000 cfs and extended above on basis of area-velocity study.

Historical data.--Following the flood of Mar. 27, 1913, the observer reported that it was "highest water here in 30 years."

Remarks.--Slight regulation by Fulton Chain of Lakes since about 1880: peak discharges not materially affected. Base for partial-duration series, 5,500 cfs. Only annual peaks are shown prior to 1923.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1902	Dec. 16, 1901	-	a14,500	1932	May 1, 1932	8.65	5,180
1905	Apr. 22, 1905	7.5	6,300	1933	Oct. 7, 1932	12.77	10,600
1906	Jan. 24, 1906	7.92	7,000		Apr. 19, 1933	9.46	6,150
1907	May 1, 1907	6.25	4,740	1934	Apr. 17, 1934	8.78	5,340
1908	Apr. 27, 1908	7.3	6,380	1935	Jan. 10, 1935	c9.42	-
1909	Apr. 14, 1909	8.35	8,060		Apr. 30, 1935	9.06	5,670
1910	Mar. 27, 1910	6.5	5,050	1936	Mar. 19, 1936	c12.26	7,340
1911	May 2, 1911	9.1	9,660	1937	Jan. 1, 1937	8.89	5,470
1912	Apr. 23, 1912	8.2	9,920	1938	Mar. 24, 1938	12.65	10,400
1913	Mar. 27, 1913	b16.3	15,500		Sept. 22, 1938	11.95	10,800
1914	Apr. 20, 1914	14.4	10,200	1939	Apr. 28, 1939	9.32	5,980
1915	Apr. 12, 1915	12.1	5,470	1940	May 2, 1940	10.31	7,120
1916	May 18, 1916	14.0	9,250	1941	Dec. 30, 1940	9.95	6,660
1917	June 12, 1917	13.2	7,460		Apr. 16, 1941	10.15	6,920
1918	Oct. 31, 1917	12.8	6,680	1942	Apr. 8, 1942	10.45	7,310
1919	Apr. 12, 1919	14.5	10,400		Sept. 28, 1942	12.59	10,300
1920	Apr. 21, 1920	-	a5,000	1943	May 8, 1943	9.45	d6,000
1921	Dec. 15, 1920	b13.0	7,060		May 12, 1943	10.21	6,990
1922	June 22, 1922	15.0	11,600	1944	Apr. 25, 1944	9.01	5,460
1923	Apr. 6, 1923	9.00	5,500	1945	Mar. 22, 1945	10.17	6,940
	Apr. 22, 1923	9.50	6,050	1946	Oct. 2, 1945	13.37	11,400
1924	Jan. 12, 1924	12.00	8,900		Mar. 10, 1946	c9.89	-
	May 4, 1924	9.77	6,350	1947	Jan. 31, 1947	c9.17	-
1925	Oct. 1, 1924	11.53	8,340		Apr. 12, 1947	11.30	8,030
1926	Apr. 24, 1926	9.47	6,160		May 22, 1947	11.13	7,790
	Apr. 25, 1926	12.1	9,620		June 3, 1947	b17.45	e18,700
	May 4, 1926	10.57	7,570	1948	Mar. 23, 1948	f15.63	8,440
1927	Nov. 17, 1926	8.7	5,240		Mar. 28, 1948	11.39	8,330
1928	Dec. 8, 1927	a10.0	6,830		Apr. 2, 1948	10.30	6,910
	Apr. 8, 1928	13.14	11,100	1949	Dec. 31, 1948	f10.60	6,600
1929	Jan. 20, 1929	c10.73	-		Mar. 28, 1949	c10.25	-
	Mar. 24, 1929	8.94	5,530	1950	Apr. 20, 1950	9.65	6,130
	Apr. 6, 1929	10.0	6,830				
	May 4, 1929	9.2	5,840				
1930	Jan. 9, 1930	12.7	10,500				
	Apr. 8, 1930	8.90	5,480				
1931	Apr. 11, 1931	9.34	6,010				

a Estimated. b From floodmarks. c Backwater from ice. d Evident regulation at Old Forge. e Result of dam failure half a mile upstream. f Occurred at preceding day; result of ice jam.

Peak stages and discharges of Moose River at McKeever, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1951	Mar. 31, 1951	10.70	7,420	1957	Jan. 23, 1957	c10.51	-
	Apr. 13, 1951	10.46	7,110		May 21, 1957	7.65	3,940
	Apr. 26, 1951	9.37	5,800	1958	Dec. 21, 1957	11.98	9,150
1952	Apr. 6, 1952	9.33	5,750		Apr. 22, 1958	10.35	6,970
1953	Dec. 12, 1952	11.97	9,140	1959	Apr. 20, 1959	9.22	5,630
	Mar. 25, 1953	10.68	7,390		Nov. 7, 1959	10.51	7,170
1954	Feb. 17, 1954	12.05	g9,250	1960	Apr. 1, 1960	c10.76	-
	Apr. 6, 1954	9.51	5,960		Apr. 16, 1960	9.78	6,290
	Apr. 17, 1954	11.11	7,950		Apr. 18, 1960	10.62	7,320
1955	Mar. 12, 1955	c9.32	-	1961	Apr. 24, 1961	8.75	5,120
	Apr. 15, 1955	10.47	7,120	1962	Apr. 8, 1962	9.87	6,390
1956	Apr. 30, 1956	10.02	6,570		Apr. 23, 1962	10.59	7,280

c Backwater from ice.

g Result of release from upstream ice jam.

2550. Otter Creek near Glenfield, N.Y.

Location.--Lat 43°43'20", long 75°21'05", on left bank a quarter of a mile upstream from dam of Otter Creek Power Corporation, 1 $\frac{1}{4}$ miles upstream from mouth, and 2 $\frac{1}{2}$ miles east of Glenfield, Lewis County.

Drainage area.--64.3 sq mi.

Gage.--Nonrecording prior to Aug. 22, 1924; recording thereafter. Altitude of gage is 955 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 800 cfs and extended above on basis of computation of flow over wingwalls.

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)
1925	Mar. 28, 1925	4.6	700	1929	May 4, 1929	5.1	920
1926	Apr. 25, 1926	6.8	1,920		Jan. 9, 1930	6.20	1,470
	May 4, 1926	5.1	960	1930	Apr. 7, 1930	5.64	1,160
1927	Mar. 19, 1927	4.8	810		Apr. 11, 1931	5.35	1,020
1928	Dec. 1, 1927	4.88	838	1932	Apr. 12, 1932	4.63	755
	Apr. 8, 1928	7.1	2,130		Oct. 6, 1932	6.23	1,490
1929	Mar. 17, 1929	4.90	845				

2555. Independence River at Sperryville, N.Y.

Location.--Lat 43°46'30", long 75°18'05", on right bank half a mile upstream from highway bridge at Sperryville, Lewis County, and 9 $\frac{1}{2}$ miles east of Lowville.

Drainage area.--85 sq mi, approximately.

Gage.--Nonrecording. Altitude of gage is 1,190 ft (from topographic map).

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

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Independence River at Sperryville, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Apr. 8, 1928	8.1	3,700	1936	Mar. 19, 1936	6.3	2,150
1929	Mar. 16, 1929	5.55	1,480	1937	Dec. 28, 1936,	4.7	1,090
1930	Jan. 9, 1930	7.2	2,860		Jan. 1, 1937		
				1938	Mar. 24, 1938	6.8	2,540
1931	Apr. 11, 1931	6.3	2,150	1939	Apr. 26, 1939	5.5	1,450
1932	Apr. 11, 1932	4.9	1,210	1940	Apr. 19, 1940	5.6	1,660
1933	Oct. 6, 1932	9.2	4,700				
1934	Apr. 12, 1934	a4.9	975	1941	Sept. 1, 1941	6.9	2,550
1935	June 18, 1935	6.4	2,220	1942	Apr. 7, 1942	6.9	2,550

a Occurred Dec. 1, 1933 (backwater from ice).

2560. Independence River at Donnattsburg, N.Y.

Location.--Lat 43°44'50", long 75°20'05", on right bank at downstream side of highway bridge at Donnattsburg, Lewis County, 1½ miles downstream from Chase Lake Outlet, 4¼ miles northeast of Glenfield, and 5 miles upstream from mouth.

Drainage area.--91.7 sq mi.

Gage.--Nonrecording prior to Sept. 16, 1949; recording thereafter. Datum of gage is 972.84 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 2,000 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 1,200 cfs. Only annual peaks are shown prior to 1950.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	Jan. 2, 1943	a8.05	-	1954	Apr. 17, 1954	6.78	1,710
	Apr. 25, 1943	-	1,580		May 4, 1954	6.56	1,540
1944	Apr. 11, 1944	7.3	1,970				
1945	Mar. 22, 1945	7.2	1,890	1955	Apr. 7, 1955	6.19	1,270
					Apr. 12, 1955	6.33	1,370
1946	Oct. 2, 1945	8.8	3,410		Apr. 15, 1955	6.72	1,670
1947	Apr. 12, 1947	8.7	3,290				
1948	Mar. 23, 1948	7.92	2,500	1956	Apr. 17, 1956	6.57	1,590
1949	Mar. 29, 1949	7.6	2,210		Apr. 30, 1956	6.94	1,880
1950	Apr. 15, 1950	6.77	1,710	1957	Jan. 24, 1957	a7.92	-
	Apr. 20, 1950	6.86	1,780		May 21, 1957	6.15	1,300
1951	Nov. 5, 1950	6.21	1,290	1958	Dec. 21, 1957	6.74	1,720
	Mar. 31, 1951	7.87	2,720				
	Apr. 13, 1951	6.67	1,630	1959	Jan. 25, 1959	a7.33	-
					Apr. 4, 1959	6.02	1,200
1952	Apr. 6, 1952	7.18	2,060		Apr. 18, 1959	6.08	1,250
	July 11, 1952	6.42	1,430				
				1960	Nov. 7, 1959	6.20	1,330
1953	Dec. 12, 1952	7.54	2,390		Apr. 4, 1960	6.73	1,710
	Mar. 25, 1953	7.19	2,070		Apr. 16, 1960	6.44	1,500
1954	Feb. 18, 1954	a6.84	1,200	1961	Apr. 24, 1961	5.92	1,130
	Feb. 22, 1954	6.82	1,750				
	Mar. 2, 1954	6.46	1,460	1962	Apr. 8, 1962	6.39	1,460
	Apr. 9, 1954	6.70	1,650		Apr. 24, 1962	6.27	1,380

a Backwater from ice.

2570. Beaver River below Stillwater Dam, near Beaver River, N.Y.
(Published as "at State Dam, near Beaver River" prior to 1924)

Location.--Lat 43°53'50", long 75°03'05", in gatehouse at Stillwater Dam, 2½ miles upstream from Moshier Creek and 7½ miles west of Beaver River Post Office, Herkimer County.

Drainage area.--172 sq mi.

Gage.--Nonrecording gage read once daily and after reservoir gate changes. Datum of gage is at mean sea level, adjustment of 1912. At site 1,000 ft downstream June 1, 1924, to Nov. 14, 1929.

Stage-discharge relation.--Defined by current-meter measurements for the 1924-29 period of operation at the downstream site. Sluice gates rated by current-meter measurements. Spillway and logway ratings based on model studies.

Remarks.--Flow completely regulated by Stillwater Reservoir. Since 1924, reservoir has had a usable capacity of 4,623,000,000 cu ft. It is used to regulate flow of Beaver and Black Rivers for flood control, power development, and general welfare. Records furnished by Board of Hudson River-Black River Regulating District. Only annual maximum daily discharges are shown.

Maximum daily mean discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1908	May 14, 1908	-	1,010	1936	May 4, 1936	-	1,100
1909	Apr. 17, 1909	-	2,680	1937	May 15, 17, 1937	-	1,140
1910	Apr. 1, 1910	-	2,020	1938	Apr. 23, 1938	-	1,040
				1939	Oct. 24, 1939	-	684
1911	May 2, 1911	-	3,300	1940	Aug. 15, 16, 1940	-	644
1912	Apr. 20, 1912	-	2,670				
1913	Mar. 29, 1913	-	3,060	1941	Oct. 14, 1940	-	615
1914	Apr. 20, 1914	-	3,160	1942	Apr. 25, 1942	-	1,310
1915	Apr. 12, 1915	-	1,750	1943	May 12, 1943	-	1,990
				1944	May 10, 1944	-	1,390
1916	May 19, 1916	-	2,210	1945	May 19, 1945	-	1,470
1917	Apr. 23, 1917	-	1,960				
1918	Apr. 5, 1918	-	1,900	1946	Nov. 22-25, 1945	-	683
1919	Apr. 12, 1919	-	2,700	1947	May 2, 1947	-	2,260
1920	Apr. 4, 1920	-	1,640	1948	May 16, 1948	-	1,060
				1949	Apr. 24, 1949	-	976
1921	Mar. 22, 1921	-	2,600	1950	Apr. 21, 1950	-	1,410
1922	Apr. 12, 1922	-	3,380				
1923	Apr. 23, 24, 1923	-	2,400	1951	Apr. 27, 1951	-	1,760
1924	Jan. 14, 1924	-	1,680	1952	May 26, 1952	-	918
1925	Aug. 31, 1925	-	1,680	1953	May 2, 1953	-	1,770
				1954	Apr. 18, 1954	-	3,020
1926	May 4, 1926	-	3,590	1955	June 26, 1955	-	766
1927	Nov. 19, 20, 1926	-	1,140				
1928	Dec. 2, 1927	-	1,490	1956	May 31, 1956	-	1,780
1929	May 4-6, 1929	-	1,860	1957	Feb. 12, 1957	-	737
1930	Apr. 20, 1930, May 4, 1930	-	1,020	1958	Feb. 25, 1958	-	728
				1959	Jan. 29, 1959	-	810
				1960	Apr. 28, 1960	-	1,610
1931	Oct. 14-16, 1930	-	620				
1932	May 1, 2, 1932	-	1,520	1961	Oct. 8, 1960	-	680
1933	Apr. 20, 1933	-	2,040	1962	May 19, 1962	-	730
1934	Oct. 20, 1933	-	700				
1935	June 19, 1935	-	1,020				

2580. Beaver River at Croghan, N.Y.

Location.--Lat 43°53'50", long 75°24'15", on left bank 1,000 ft upstream from Black Creek and half a mile west of Croghan, Lewis County.

Drainage area.--294 sq mi.

Gage.--Recording. Datum of gage is 806.20 ft above mean sea level, datum of 1929.

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

Remarks.--Considerable regulation by Stillwater Reservoir (usable capacity, 4,623,000,000 cu ft) about 21 miles upstream. Only annual peaks are shown.

Peak stages and discharges of Beaver River at Croghan, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1931	Apr. 13, 1931	4.31	1,630	1947	May 2, 1947	6.12	3,820
1932	May 2, 1932	5.27	2,700	1948	Mar. 23, 1948	4.86	2,260
1933	Apr. 19, 1933	5.80	3,390	1949	Mar. 30, 1949	4.58	1,950
1934	Apr. 13, 1934	4.00	1,460	1950	Apr. 22, 1950	4.61	1,980
1935	Jan. 10, 1935	4.62	2,040				
				1951	Mar. 31, 1951	5.09	2,510
1936	Mar. 20, 1936	4.79	2,230	1952	May 28, 1952	4.15	1,540
1937	Apr. 6, 1937	5.12	2,590	1953	May 3, 1953	4.74	2,120
1938	Mar. 25, 1938	4.57	1,950	1954	Apr. 20, 1954	5.73	3,300
1939	Apr. 29, 1939	4.04	1,460	1955	Mar. 11, 1955	4.17	1,550
1940	Apr. 20, 1940	4.44	1,820				
				1956	June 1, 1956	4.50	1,870
1941	Dec. 31, 1940	4.49	1,870	1957	Jan. 23, 1957	3.93	1,340
1942	Apr. 22, 1942	4.43	1,810	1958	July 29, 1958	4.15	1,540
1943	May 13, 1943	6.47	4,310	1959	Apr. 2, 1959	4.50	1,870
1944	Apr. 26, 1944	4.60	1,980	1960	Apr. 19, 1960	4.53	1,900
1945	Apr. 28, 1945	4.64	2,010				
				1961	Feb. 27, 1961	4.20	1,580
1946	Oct. 3, 1945	5.07	2,490	1962	Jan. 11, 1962	3.68	1,150

2585. Deer River at Copenhagen, N.Y.

Location.--Lat 43°53'55", long 75°39'40", on left bank at powerplant half a mile northeast of Copenhagen, Lewis County, 3½ miles downstream from Ccbb Creek, and 7 miles upstream from mouth.

Drainage area.--89 sq mi, approximately.

Gage.--Recording. Datum of gage is 963.41 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,900 cfs and extended above on basis of flow-over-dam measurement.

Historical data.--In January 1929, an ice jam below gage site backed water to about 16 ft gage height, according to powerplant operators.

Remarks.--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	Jan. 8, 1930	9.3	5,600	1940	Apr. 12, 1940	6.09	2,720
					Apr. 18, 1940	6.90	3,720
1931	Apr. 10, 1931	7.3	3,330				
1932	Apr. 8, 1932	6.06	2,230	1941	Dec. 28, 1940	7.11	3,990
					Apr. 11, 1941	5.97	2,630
1933	Oct. 6, 1932	7.15	3,180		Apr. 14, 1941	6.24	2,920
	Apr. 2, 1933	a6.96	-		Sept. 1, 1941	12.08	14,400
1934	Jan. 1, 1934	a9.27	3,600	1942	Dec. 24, 1941	a9.07	-
					Mar. 17, 1942	a6.35	-
1935	Jan. 10, 1935	5.88	2,270		Apr. 7, 1942	6.34	3,190
1936	Mar. 12, 1936	a8.42	2,800	1943	Mar. 27, 1943	b8.54	2,600
	Mar. 27, 1936	6.20	2,550		Apr. 1, 1943	6.20	3,040
					Apr. 25, 1943	5.91	2,720
1937	Jan. 15, 1937	5.85	2,500		May 1, 1943	6.22	3,060
	Jan. 18, 1937	5.99	2,650	1944	Apr. 10, 1944	6.53	3,420
	Jan. 25, 1937	5.99	2,650		Apr. 24, 1944	5.69	2,500
	Apr. 6, 1937	7.55	4,560				
	Apr. 14, 1937	5.87	2,520	1945	Mar. 16, 1945	7.01	4,010
1938	Feb. 7, 1938	a7.52	-	1946	Oct. 2, 1945	7.29	4,400
	Mar. 24, 1938	6.84	3,640		Jan. 6, 1946	a7.26	-
	Sept. 22, 1938	6.46	3,160		Mar. 7, 1946	a5.99	-
1939	Jan. 10, 1939	6.43	3,150		Mar. 9, 1946	6.04	2,860
	Mar. 27, 1939	7.70	4,760		Mar. 14, 1946	5.78	2,590
	Apr. 19, 1939	6.30	2,970	1947	Dec. 10, 1946	5.99	2,810
					Jan. 31, 1947	a13.18	-
1940	Apr. 9, 1940	6.07	2,700		Mar. 25, 1947	5.70	2,510

a Backwater from ice.

b Backwater from landslide.

STREAMS TRIBUTARY TO LAKE ONTARIO

Peak stages and discharges of Deer River at Copenhagen, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	Apr. 6, 1947	7.19	4,260	1952	Apr. 6, 1952	5.70	2,700
	Apr. 12, 1947	7.28	4,380				
	May 22, 1947	5.98	2,800	1953	Dec. 11, 1952	6.92	4,390
	June 3, 1947	6.24	3,080		Jan. 16, 1953	a5.64	-
1948	Mar. 19, 1948	a8.44	-		Feb. 21, 1953	a6.25	-
	Mar. 20, 1948	6.80	3,740		Mar. 24, 1953	6.14	3,350
	Mar. 22, 1948	6.56	3,450	1954	Feb. 16, 1954	a11.13	3,600
	Mar. 27, 1948	6.24	3,080		Feb. 21, 1954	6.46	3,540
1949	Feb. 15, 1949	6.22	3,060		Mar. 2, 1954	6.23	3,270
	Mar. 23, 1949	5.91	2,720		Apr. 6, 1954	6.40	3,470
	Sept. 20, 1949	c6.88	-		Apr. 17, 1954	5.90	2,780
1950	Mar. 28, 1950	6.82	3,990		Apr. 20, 1954	5.86	2,740
	Apr. 4, 1950	6.54	3,640		May 4, 1954	5.97	2,860
1951	Dec. 4, 1950	5.58	2,580	1955	Dec. 28, 1954	6.81	3,850
	Jan. 4, 1951	7.05	4,280		Mar. 11, 1955	8.26	5,980
	Mar. 30, 1951	6.39	3,460		Apr. 6, 1955	5.85	2,740
	Apr. 2, 1951	5.69	2,690		Apr. 10, 1955	5.74	2,630
	Apr. 13, 1951	5.76	2,760		Apr. 14, 1955	d6.67	-
1952	Jan. 1, 1952	a5.61	-	1956	Oct. 31, 1955	5.63	2,520
	Apr. 2, 1952	5.52	2,520		Apr. 5, 1956	9.67	8,590
					Apr. 16, 1956	7.32	4,130
					May 31, 1956	8.47	5,760

a Backwater from ice.

c Backwater from silt flushed from reservoir.

d Backwater from debris.

2587. Deer River at Deer River, N.Y.

Location--Lat 43°55'49", long 75°35'31", on left bank 350 ft upstream from bridge on State Highway 26 at Deer River, Lewis County, and 2 miles upstream from mouth.

Drainage area--98.1 sq mi.

Gage--Recording. Datum of gage is 762.36 ft above mean sea level, datum of 1929.

Stage-discharge relation--Defined by current-meter measurements below 4,500 cfs and extended above on basis of flow-over-dam measurement for flood of Apr. 6, 1959, at former station at Copenhagen, adjusted to present site.

Historical data--Discharge for flood of Sept. 1, 1941, 14,400 cfs at site 4.8 miles upstream.

Remarks--Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1957	Dec. 7, 1956	4.71	4,380	1960	Jan. 3, 1960	a3.86	-
	Jan. 23, 1957	a9.20	7,170		Feb. 11, 1960	a8.06	-
	Feb. 27, 1957	4.31	3,610		Mar. 31, 1960	3.79	2,680
	Mar. 15, 1957	3.95	2,960		Apr. 4, 1960	5.74	6,800
1958	Dec. 21, 1957	6.10	7,460		June 3, 1960	3.74	2,600
1959	Jan. 22, 1959	a6.23	3,170	1961	Feb. 26, 1961	4.77	4,500
	Apr. 2, 1959	5.47	5,980		Mar. 28, 1961	3.85	2,780
	Apr. 6, 1959	5.82	6,790		Apr. 16, 1961	3.94	2,940
	Apr. 8, 1959	4.16	3,320		Apr. 23, 1961	4.66	4,280
	Apr. 16, 1959	3.83	2,720	1962	Mar. 30, 1962	4.39	3,760
1960	Dec. 7, 1959	4.19	3,390		Apr. 7, 1962	4.85	4,680
					Apr. 23, 1962	4.02	3,090

a Backwater from ice.

2595. Black River at Black River, N.Y.
(Published as "at Huntingtonville Dam, near Watertown," 1897-1901,
and as "at Felt Mills," 1902-13)

Location.--Lat 44°00'05", long 75°48'35", on left bank a quarter of a mile downstream from concrete-arch highway bridge and powerplant of Northern New York Utilities Co., three-quarters of a mile downstream from village of Black River, Jefferson County, and 4 miles upstream from Watertown, N.Y.

Drainage area.--1,858 sq mi. March 1897 to November 1901, 1,870 sq mi; September 1902 to December 1913, 1,851 sq mi.

Gage.--Nonrecording. Altitude of gage is 510 ft (from topographic map). At site 2 miles upstream from Watertown prior to September 1902, and at site 9 miles upstream from Watertown from September 1902 to December 1913, both at different datums.

Stage-discharge relation.--Discharge computed from weir formula prior to 1917 and from stage-discharge relation defined by current-meter measurements thereafter.

Historical data.--As reported by G. W. Rafter in New York State Museum Bulletin 85: "Heavy floods have occurred in Black River in 1807, 1833, 1850, 1857, 1862, 1866, 1869 and 1896. The flood of April 20-24, 1869, was especially heavy, there being a heavy snowfall over nearly the entire catchment area, which melted rapidly that year..... On Apr. 21, 1869, the banks of North Lake Reservoir (some 90 miles upstream from Watertown), a structure maintained by the State for the purpose of storing water for the Black River and Erie Canals, gave way, precipitating into the heavily swollen stream about 350,000,000 cubic feet of water." In the subsequent damage claim trial, L. L. Nichols in *Black River Water Claims*, vol. 1, presented the following estimated flood discharge of Black River in April 1869:

Location	Estimated discharge (cfs)	Drainage area (sq mi)
At Carthage.....	39,529	1,806
Four miles below Carthage.....	39,009	1,814
Below Black River.....	39,137	1,858
At Watertown.....	39,696	1,876
Ontario Paper Mill.....	28,337	about 1,890

Remarks.--Records for September 1902 to December 1905 and May 1907 to December 1913 furnished by State engineer. Appreciable regulation by Stillwater Reservoir, Fulton Chain of Lakes, and other 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)
1869	April 1869	-	a39,200	1907	Apr. 1, 1907	-	16,800
				1908	Mar. 30, 1908	-	15,500
1897	Mar. 24, 1897	-	b16,500	1909	Apr. 16, 1909	-	23,100
1898	Mar. 15, 1898	-	b27,900	1910	Mar. 7, 1910	-	14,800
1899	Apr. 24, 1899	-	b25,000				
1900	Apr. 21, 1900	-	30,200	1911	May 4, 1911	-	19,100
				1912	Apr. 18, 1912	-	28,000
1901	Apr. 24, 1901	-	24,800	1913	Mar. 28, 1913	-	32,500
1902	Dec. 15, 1901	-	c37,000				
1903	Mar. 25, 1903	-	d24,000	1917	Apr. 4, 1917	13.4	19,300
1904	Apr. 12, 1904	-	19,200	1918	Apr. 4, 1918	12.4	16,600
1905	Apr. 7, 1905	-	18,200	1919	Apr. 14, 1919	12.8	17,600
				1920	Mar. 28, 1920	12.8	18,400
1906	Jan. 26, 1906	-	19,000				

a Estimated.

b Maximum daily mean discharge.

c May be unreliable due to failure of dam on previous day.

d Estimated maximum daily mean discharge.

2605. Black River at Watertown, N.Y.

Location.--Lat 43°59'05", long 75°55'30", on downstream side of right abutment of Vanduzee Street Bridge at Watertown, Jefferson County, $3\frac{1}{2}$ miles upstream from Philomel Creek.

Drainage area.--1,876 sq mi.

Gage.--Nonrecording prior to Sept. 3, 1921; recording thereafter. Datum of gage is 374.88 ft above mean sea level, datum of 1929.

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

Historical data.--Maximum discharge known, about 39,700 cfs in April 1869, from New York State Museum Bulletin 85. (See Black River at Black River.)

Remarks.--Appreciable regulation by Stillwater Reservoir, Fulton Chain of Lakes, and other reservoirs. Base for partial-duration series, 17,000 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Mar. 11, 1921	8.78	23,100	1944	Apr. 13, 1944	7.57	19,400
	Mar. 22, 1921	8.10	20,400		Apr. 26, 1944	7.67	20,000
1922	Apr. 13, 1922	9.45	26,200	1945	Mar. 23, 1945	8.67	25,200
1923	Apr. 9, 1923	8.50	22,000	1946	Oct. 4, 1945	9.43	29,500
1924	Jan. 14, 1924	8.50	22,000		Mar. 11, 1946	7.50	19,100
	Apr. 8, 1924	9.08	24,400	1947	Apr. 8, 1947	8.48	24,200
1925	Oct. 3, 1924	6.63	15,300		Apr. 13, 1947	9.88	32,200
					May 4, 1947	7.49	19,000
1926	Apr. 26, 1926	10.30	31,900		May 24, 1947	8.30	23,200
	May 5, 1926	8.00	21,300		June 5, 1947	8.66	25,200
1927	Mar. 21, 1927	7.2	16,600	1948	Mar. 24, 1948	10.09	33,400
					Apr. 4, 1948	7.53	19,200
1928	Apr. 9, 1928	10.6	33,900	1949	Mar. 30, 1949	7.99	20,800
1929	May 6, 1929	7.5	17,500	1950	Apr. 7, 1950	7.97	20,800
1930	Jan. 11, 1930	8.20	22,300	1951	Apr. 2, 1951	9.34	28,000
1931	Apr. 13, 1931	6.87	15,900		Apr. 15, 1951	7.90	20,400
				1952	Apr. 7, 1952	8.26	21,700
1932	Apr. 12, 1932	7.62	19,400	1953	Dec. 13, 1952	8.19	21,400
1933	Oct. 8, 1932	8.90	26,000		Mar. 27, 1953	8.71	24,400
	Apr. 20, 1933	7.25	17,600	1954	Feb. 23, 1954	8.72	24,500
1934	Apr. 3, 1934	7.01	16,500		Apr. 10, 1954	7.81	20,000
					Apr. 19, 1954	7.77	19,800
1935	Jan. 12, 1935	7.12	17,000		Apr. 20, 1954	7.76	18,000
1936	Mar. 20, 1936	9.24	28,000	1955	Mar. 16, 1955	7.61	17,400
					Apr. 17, 1955	8.55	21,500
1937	Apr. 7, 1937	7.17	17,700	1956	Apr. 7, 1956	7.89	18,600
1938	Mar. 25, 1938	8.54	23,800		Apr. 18, 1956	7.81	18,200
					May 2, 1956	7.63	17,500
1939	Apr. 29, 1939	6.84	16,000	1957	Jan. 23, 1957	6.00	11,500
1940	Apr. 12, 1940	7.85	19,300		Dec. 23, 1957	9.14	22,300
	Apr. 28, 1940	7.54	18,000	1959	Apr. 6, 1959	9.17	24,400
1941	Dec. 31, 1940	7.97	19,900		Apr. 5, 1960	9.53	26,200
	Apr. 16, 1941	7.40	18,500	1960	Apr. 20, 1960	7.94	18,800
1942	Apr. 9, 1942	7.79	20,400				
				1961	Apr. 26, 1961	7.06	15,200
1943	Mar. 20, 1943	7.58	19,000		Apr. 10, 1962	8.41	20,900
	Mar. 27, 1943	7.33	18,000				
	May 2, 1943	8.13	19,400				
	May 14, 1943	7.91	18,600				

2610. Oswegatchie River at Cranberry Lake, N.Y.
(Published as "East Branch Oswegatchie River" prior to October 1958)

Location.--Lat 44°13'15", long 74°51'00", on right bank 900 ft downstream from dam at outlet of Cranberry Lake, at village of Cranberry Lake, St. Lawrence County.

Drainage area.--144 sq mi.

Gage.--Nonrecording prior to Oct. 9, 1938; recording thereafter. Datum of gage is 1,458.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Records computed largely on basis of lake stages, gate operation records, and gate ratings prior to 1939; stage-discharge relation defined by current-meter measurements thereafter.

Remarks.--Flow almost completely regulated by Cranberry Lake (total capacity, 2,530,000,000 cu ft). Only annual maximum daily discharges are shown prior to 1939; only annual peaks thereafter.

Peak stages and discharges a/

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1923	June 11, 1923	6.6	1,010	1943	May 13, 1943	7.70	1,940
1924	May 15-21, 1924	7.5	1,590	1944	May 9, 1944	6.47	995
1925	Apr. 19-28, 1925	6.7	990	1945	Apr. 4, 1945	6.48	1,020
1926	May 6-8, 1926	-	1,170	1946	Nov. 4, 1945	5.83	657
1927	Mar. 26-30, 1927	-	680	1947	May 7, 1947	7.59	1,850
1928	Apr. 10-12, 1928	-	1,100	1948	May 16, 1948	6.94	1,340
1929	May 5-8, 1929	-	1,340	1949	Apr. 27, 1949	5.88	681
1930	Apr. 15, 16, 1930	-	1,320	1950	Apr. 25, 1950	6.16	828
1931	Oct. 1, 1930	-	270	1951	Apr. 15, 1951	7.05	1,430
1932	Apr. 12-15, 1932	-	1,390	1952	May 26, 1952	6.21	856
1933	Apr. 17-20, 1933	-	1,620	1953	May 4, 1953	6.71	1,170
1934	(b)	-	325	1954	Apr. 19, 1954	7.13	1,490
1935	June 21-23, 1935	-	930	1955	Apr. 21, 1955	6.88	1,300
1936	Apr. 9-15, 1936	6.3	800	1956	June 2, 1956	6.27	891
1937	(c)	7.0	1,200	1957	Sept. 18, 1957	6.59	962
1938	(d)	6.8	1,080	1958	Oct. 1, 1957	5.98	730
1939	Dec. 16, 1938	5.49	499	1959	Apr. 22, 1959	6.66	1,130
1940	May 7, 1940	6.05	742	1960	Apr. 27, 1960	6.37	942
1941	Mar. 7, 1941	5.18	365	1961	May 9, 1961	5.83	625
1942	Apr. 20, 1942	7.05	1,280	1962	Apr. 30, 1962	6.07	754

a Only annual maximum daily discharges are shown prior to 1939.

b Occurred Apr. 30, to May 4, 1934.

c Occurred Jan. 18-20, May 15-19, 1937.

d Occurred Mar. 27, 28,

Apr. 1-6, 1938.

e Occurred Apr. 2, 3, 1938.

2615. Oswegatchie River at Newton Falls, N.Y.
(Previously published as "East Branch Oswegatchie River")

Location.--Lat 44°12'45", long 74°59'40", on left bank 600 ft downstream from lower dam of Newton Falls Paper Co. in Newton Falls, St. Lawrence County, 4 miles upstream from Little River, and 10 miles downstream from outlet of Cranberry Lake.

Drainage area.--171 sq mi.

Gage.--Nonrecording. At datum 1.0 ft higher prior to July 28, 1920. Altitude of gage is 1,370 ft (from topographic map).

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

Remarks.--Flow almost completely regulated by Cranberry Lake (total capacity, 2,530,000,000 cu ft). Only annual peaks are shown.

Peak stages and discharges of Oswegatchie River at Newton Falls, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	Mar. 28, 1913	6.1	2,100	1918	May 15, 1918	4.9	1,440
1914	Apr. 20, 1914	4.5	1,150	1919	Apr. 13, 1919	5.3	1,680
1915	Apr. 12, 1915	4.1	980	1920	Apr. 30, 1920	5.5	1,800
1916	May 18, 1916	5.7	1,930	1921	Mar. 24, 1921	6.8	2,000
1917	June 12, 1917	3.9	938	1922	Apr. 18, 1922	6.8	2,000

2620. Oswegatchie River near Oswegatchie, N.Y.

(Published as "East Branch Oswegatchie River" prior to October 1958)

Location.--Lat 44°13'25", long 75°04'35", on left bank 300 ft downstream from Flat Rock hydroelectric plant of Niagara Mohawk Power Corp., and 2 $\frac{3}{4}$ miles north of Oswegatchie, St. Lawrence County.

Drainage area.--263 sq mi.

Gage.--Recording. Datum of gage is 1,016.52 ft above mean sea level, datum of 1929.

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

Remarks.--Flow seasonally regulated by Cranberry Lake (total capacity, 2,530,000,000 cu ft). 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)
1925	Apr. 23, 1925	6.00	2,320	1944	Apr. 25, 1944	5.51	2,160
1926	Apr. 26, 1926	7.3	3,730	1945	Mar. 29, 1945	5.98	2,740
1927	Mar. 15, 1927	5.9	2,270	1946	Mar. 9, 1946	5.80	2,520
1928	Apr. 6, 1928	7.1	4,010	1947	Apr. 12, 1947	6.98	4,090
1929	Apr. 1, 1929	6.95	3,780	1948	Mar. 22, 1948	6.43	3,310
1930	Jan. 8, 1930	7.0	3,910	1949	Mar. 28, 1949	5.76	2,500
1931	Apr. 11, 1931	-	2,200	1950	Apr. 5, 1950	5.61	2,320
1932	Apr. 12, 1932	7.03	3,960	1951	Mar. 31, 1951	5.96	2,720
1933	Apr. 19, 1933	6.93	3,800	1952	May 23, 1952	4.95	1,670
1934	Apr. 15, 1934	5.43	1,940	1953	May 4, 1953	5.37	2,060
1935	May 12, 1935	5.60	2,290	1954	Feb. 17, 1954	5.62	2,330
1936	Mar. 18, 1936	5.91	2,650	1955	Apr. 20, 1955	5.74	2,460
1937	May 18, 1937	5.42	2,090	1956	May 31, 1956	5.28	1,980
1938	Mar. 24, 1938	6.34	3,190	1957	Jan. 23, 1957	5.72	2,440
1939	Feb. 22, 1939	4.95	1,600	1958	Dec. 21, 1957	5.51	2,200
1940	Apr. 19, 1940	5.86	2,590	1959	Apr. 9, 1958	5.96	2,720
1941	Dec. 30, 1940	5.50	2,180	1960	June 1, 1960	5.84	2,580
1942	Apr. 7, 1942	5.40	2,070	1961	Dec. 7, 1960	5.30	1,980
1943	May 13, 1943	6.27	3,100	1962	Apr. 23, 1962	5.48	2,170

2625. West Branch Oswegatchie River near Harrisville, N.Y.

Location.--Lat 44°11'10", long 75°19'55", on right bank just downstream from highway bridge, half a mile northeast of Geers Corners, 1 $\frac{1}{2}$ miles downstream from Jenny Creek, and 4 miles downstream from Harrisville, Lewis County.

Drainage area.--258 sq mi.

Gage.--Nonrecording prior to Nov. 30, 1933; recording thereafter. Datum of gage is 738.51 ft above mean sea level, datum of 1929.

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

Remarks.--Only annual peaks are shown prior to 1934. Base for partial-duration series, 3,300 cfs.

Peak stages and discharges of West Branch Oswegatchie River near Harrisville, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1917	Mar. 28, 1917	8.1	4,880	1946	Mar. 10, 1946	6.93	3,690
1918	Apr. 3, 1918	7.4	3,980				
1919	Apr. 13, 1919	6.85	3,360	1947	Feb. 1, 1947	7.20	3,990
1920	Mar. 27, 1920	6.9	3,410		Apr. 7, 1947	7.73	4,670
					Apr. 13, 1947	9.03	6,180
1921	Mar. 22, 1921	7.9	4,580		June 4, 1947	7.53	4,390
1922	June 23, 1922	7.6	4,220				
1923	Apr. 7, 1923	7.2	3,740	1948	Mar. 23, 1948	8.85	5,940
1924	Jan. 12, 1924	6.80	3,360		Mar. 28, 1948	7.73	4,680
1925	Oct. 2, 1924	7.9	4,640				
				1949	Mar. 29, 1949	7.23	4,070
1926	Apr. 26, 1926	8.8	5,760				
1927	Mar. 15, 1927	7.0	3,600	1950	Mar. 29, 1950	6.59	3,400
1928	Apr. 8, 1928	8.0	4,780		Apr. 6, 1950	6.73	3,550
1929	Jan. 20, 1929	7.3	3,940				
1930	Jan. 9, 1930	9.6	6,920	1951	Apr. 1, 1951	7.66	4,550
1931	Apr. 12, 1931	6.8	3,500	1952	Apr. 7, 1952	5.75	2,580
1932	Apr. 10-12, 1932	7.0	3,720				
1933	Oct. 8, 1932	7.6	4,380	1953	Dec. 13, 1952	5.88	2,700
1934	Apr. 2, 1934	5.95	2,820	1954	Feb. 18, 1954	7.74	4,630
1935	Jan. 11, 1935	7.11	4,140		Feb. 22, 1954	8.22	5,420
					Mar. 3, 1954	6.35	3,340
1936	Mar. 19, 1936	7.33	4,180		Apr. 9, 1954	6.59	3,600
1937	Apr. 7, 1937	7.17	4,210	1955	Mar. 12, 1955	7.37	4,460
					Apr. 7, 1955	6.34	3,320
1938	Mar. 25, 1938	8.22	4,970	1956	Apr. 7, 1956	6.84	3,980
1939	Mar. 28, 1939	5.99	2,620		May 1, 1956	6.87	3,690
1940	Apr. 13, 1940	6.92	3,550	1957	Jan. 25, 1957	5.88	2,560
	Apr. 19, 1940	7.58	4,050	1958	Dec. 22, 1957	7.19	4,260
1941	Dec. 31, 1940	6.83	3,580	1959	Apr. 3, 1959	7.07	4,130
1942	Apr. 8, 1942	5.97	2,700		Apr. 7, 1959	7.25	4,140
1943	Mar. 18, 1943	6.60	3,330	1960	Apr. 5, 1960	8.34	5,640
1944	Apr. 26, 1944	6.55	3,280	1961	Feb. 27, 1961	6.70	3,300
1945	Mar. 19, 1945	7.22	4,010	1962	Apr. 9, 1962	6.71	3,530

a Backwater from ice.

2630. Oswegatchie River near Heuvelton, N.Y.

Location.--Lat 44°36'00", long 75°22'45", on right bank $1\frac{1}{2}$ miles downstream from Beaver Creek and $2\frac{1}{2}$ miles upstream from Heuvelton, St. Lawrence County.

Drainage area.--973 sq mi.

Gage.--Recording. Datum of gage is 288.85 ft above mean sea level, datum of 1929.

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

Bankfull stage.--9 ft.

Remarks.--Slight seasonal regulation by Cranberry Lake (total capacity, 2,530,000,000 cu ft). During high stages on Grass River, part of flow of that stream may pass through Upper Lake, Indian Creek, and Lower Lake, and enter Oswegatchie River at Rensselaer Falls, $4\frac{1}{2}$ miles above station. Only annual peaks are shown.

Peak stages and discharges of Oswegatchie River near Heuvelton, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1917	Mar. 30, 1917	7.6	11,700	1941	Jan. 1, 1941	5.71	6,990
1918	Apr. 4, 1918	6.6	9,220	1942	Mar. 19, 1942	6.19	8,030
1919	Mar. 21, 1919	5.94	7,760	1943	May 14, 1943	6.62	9,010
1920	Mar. 29, 1920	6.03	7,950	1944	Apr. 28, 1944	5.59	6,740
				1945	Mar. 23, 1945	6.36	8,410
1921	Dec. 16, 1920	6.80	9,700				
1922	Apr. 14, 1922	6.67	9,390	1946	Mar. 15, 1946	6.43	8,340
1923	Apr. 10, 1923	6.89	9,920	1947	Apr. 9, 1947	6.33	15,800
1924	Apr. 9, 1924	6.33	8,600	1948	Mar. 24, 1948	8.83	14,400
1925	Feb. 13, 1925	6.29	8,520	1949	Mar. 31, 1949	6.71	8,950
				1950	Mar. 31, 1950	8.34	13,000
1926	Apr. 15, 1926	7.9	12,400				
1927	Mar. 17, 1927	7.2	10,700	1951	Apr. 3, 1951	6.68	8,890
1928	Nov. 20, 1927	7.9	12,400	1952	Mar. 13, 1952	5.57	6,540
1929	Mar. 27, 1929	6.15	8,220	1953	May 4, 1953	5.72	6,840
1930	Jan. 11, 1930	9.1	15,600	1954	Feb. 23, 1954	9.11	15,300
				1955	Mar. 13, 1955	7.44	10,700
1931	Mar. 28, 1931	5.17	6,140				
1932	Apr. 14, 1932	7.57	11,600	1956	Apr. 8, 1956	8.52	13,500
1933	Apr. 3, 1933	5.95	7,780	1957	Mar. 17, 1957	4.59	4,710
1934	Apr. 5, 1934	6.39	8,770	1958	Mar. 28, 1958	5.46	6,320
1935	Jan. 11, 1935	6.55	6,690	1959	Apr. 6, 1959	8.49	13,700
				1960	Apr. 6, 1960	10.36	19,600
1936	Mar. 23, 1936	6.91	9,980				
1937	Apr. 7, 1937	8.57	14,200	1961	Mar. 1, 1961	6.14	5,850
1938	Mar. 25, 1938	7.47	11,100	1962	Apr. 10, 1962	6.51	8,650
1939	Apr. 3, 1939	6.01	7,630				
1940	Apr. 10, 1940	7.38	10,800				

a Occurred on following day; backwater from ice.

b Backwater from ice.

c Occurred on preceding day; backwater from ice.

2635. Oswegatchie River near Ogdensburg, N.Y.

Location.--Lat 44°38'00", long 75°28'30", on upstream side of Eel Weir Bridge, 1 mile downstream from mouth of Black Lake and 5½ miles upstream from Ogdensburg, St. Lawrence County, and mouth of river.

Drainage area.--1,580 sq mi.

Gage.--Nonrecording. Altitude of gage is 270 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 11,000 cfs and extended above by logarithmic plotting.

Remarks.--Slight seasonal regulation by Cranberry Lake (total capacity, 2,530,000,000 cu ft) and by natural storage in Black Lake. 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	Mar. 29, 1904	10.0	15,500	1911	Apr. 8, 1911	6.5	14,000
1905	Mar. 31, 1905	10.15	15,800	1912	Apr. 10, 1912	10.0	15,500
				1913	Mar. 31, 1913	10.0	14,800
1906	Jan. 27, 1906	8.15	9,800	1914	Apr. 4, 1914	8.95	11,600
1907	Mar. 30, 1907	8.55	11,000	1915	Mar. 1, 1915	7.5	6,650
1908	Apr. 2, 1908	9.25	13,200				
1909	Apr. 10, 1909	8.85	11,900	1916	Apr. 4, 1916	9.95	15,100
1910	Mar. 9, 1910	9.15	12,900				

2640. St. Lawrence River at Ogdensburg, N.Y.

Location.--Lat 44°42'05", long 75°29'40", at Ogdensburg.Drainage area.--295,200 sq mi, including that of Oswegatchie River.Gage.--Discharge determined from ratings of several outflow structures of Lake St. Lawrence.Remarks.--Records furnished by U.S. Lake Survey, Corps of Engineers (May 1964).

Records do not include water diverted from Lake Michigan by Illinois and Michigan Canal during period of its operation prior to 1910 and by Chicago Sanitary and Ship Canal, operation of which began in 1900. Records include water diverted into Lake Superior from Hudson Bay drainage by the Long Lake and Ogoki projects, operation of which began in 1939 and 1943, respectively. The diversions into Lake Superior have averaged about 5,000 cfs since 1943. Only annual maximum monthly discharges are shown.

Maximum monthly mean discharges

Calendar year	Date	Gage height (feet)	Discharge (cfs)	Calendar year	Date	Gage height (feet)	Discharge (cfs)
1860	July	-	279,000	1912	June	-	268,000
1861	July	-	304,000	1915	May, June	-	280,000
1862	May	-	311,000	1914	May, June	-	257,000
1863	June	-	296,000	1915	September	-	229,000
1864	June	-	297,000	1916	July	-	277,000
1865	May, June	-	285,000	1917	July	-	268,000
1866	December	-	270,000	1918	May	-	260,000
1867	June	-	303,000	1919	June	-	277,000
1868	June	-	262,000	1920	July	-	252,000
1869	July	-	283,000	1921	May	-	251,000
1870	May	-	314,000	1922	July	-	257,000
1871	May, June	-	274,000	1923	June	-	236,000
1872	July	-	239,000	1924	June	-	243,000
1873	June	-	272,000	1925	May	-	230,000
1874	June	-	281,000	1926	November, December	-	227,000
1875	July	-	251,000	1927	June	-	242,000
1876	July	-	302,000	1928	July	-	254,000
1877	July	-	263,000	1929	June	-	287,000
1878	December	-	272,000	1930	June	-	281,000
1879	May	-	268,000	1931	June	-	224,000
1880	June	-	261,000	1932	June	-	237,000
1881	July	-	254,000	1933	June	-	224,000
1882	June, July	-	282,000	1934	May	-	206,000
1883	July	-	288,000	1935	July	-	202,000
1884	May	-	296,000	1936	May	-	223,000
1885	July	-	278,000	1937	July	-	237,000
1886	May	-	302,000	1938	May	-	235,000
1887	May, June	-	292,000	1939	May	-	239,000
1888	June	-	256,000	1940	June, July	-	234,000
1889	July	-	269,000	1941	April	-	228,000
1890	July	-	292,000	1942	June	-	237,000
1891	April	-	278,000	1943	June	-	292,000
1892	July	-	258,000	1944	July	-	260,000
1893	June	-	279,000	1945	June	-	273,000
1894	June	-	266,000	1946	April	-	263,000
1895	May	-	228,000	1947	July	-	296,000
1896	May	-	238,000	1948	June	-	284,000
1897	June	-	243,000	1949	May	-	255,000
1898	June	-	243,000	1950	June	-	263,000
1899	June	-	249,000	1951	May	-	294,000
1900	June	-	246,000	1952	June	-	305,000
1901	June	-	248,000	1953	June	-	283,000
1902	August	-	250,000	1954	May	-	282,000
1903	July	-	260,000	1955	May	-	294,000
1904	July	-	278,000	1956	June	-	282,000
1905	July	-	259,000	1957	July	-	248,000
1906	July	-	250,000	1958	April, June	-	230,000
1907	July	-	263,000	1959	May, June	-	263,000
1908	June	-	294,000	1960	June	-	290,000
1909	June	-	266,000	1961	June	-	279,000
1910	June	-	249,000	1962	August	-	217,000
1911	May, June	-	232,000				

2645. North Branch Grass River near South Colton, N.Y.

Location.--Lat 44°27'30", long 74°56'50", on right bank at Gleason's Mill, 4 $\frac{1}{4}$ miles southwest of South Colton, St. Lawrence County, and 9 miles upstream from Grass River.

Drainage area.--25.8 sq mi.

Gage.--Nonrecording. Altitude of gage is 980 ft (from topographic map).

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

Bankfull stage.--4 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)
1925	Oct. 1, 1924	3.9	561	1929	Mar. 24, 1929	b3.5	323
				1930	Jan. 9, 1930	3.55	522
1926	Apr. 25, 1926	4.3	700				
1927	Mar. 19, 1927	a3.25	350	1931	Apr. 14, 1931	3.0	385
1928	Nov. 18, 1927	4.1	670	1932	Apr. 9, 1932	4.15	685

a Occurred Mar. 15, 1927 (backwater from ice).

b Occurred Mar. 16, 1929 (backwater from ice).

2650. Grass River at Pyrites, N.Y.

Location.--Lat 44°31'30", long 75°11'50", on left bank 1,000 ft downstream from lower bridge in Pyrites, St. Lawrence County, and half a mile upstream from Harrison Creek.

Drainage area.--335 sq mi.

Gage.--Recording. Datum of gage is 350.61 ft above mean sea level, datum of 1929.

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

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)
1925	Oct. 2, 1924	8.65	4,150	1936	Mar. 21, 1936	7.50	3,510
	Feb. 12, 1925	8.53	4,070				
1926	Apr. 14, 1926	8.72	4,320	1937	Apr. 6, 1937	11.99	7,390
	Apr. 26, 1926	11.50	6,790		Apr. 23, 1937	9.29	5,030
	May 4, 1926	8.08	3,800	1938	Feb. 7, 1938	c10.22	-
1927	Mar. 19, 1927	7.8	3,740		Mar. 25, 1938	c10.09	4,950
1928	Nov. 18, 1927	13.0	8,300	1939	Apr. 2, 1939	c7.98	-
	Mar. 27, 1928	9.22	4,800		Apr. 20, 1939	7.16	3,330
	Apr. 8, 1928	10.15	5,600	1940	Apr. 1, 1940	c7.58	-
1929	Mar. 24, 1929	9.6	4,960		Apr. 4, 1940	c7.65	-
1930	Jan. 9, 1930	a10.7	b5,000		Apr. 9, 1940	c8.43	-
					Apr. 12, 1940	7.84	3,870
1931	Apr. 12, 1931	7.81	3,590		Apr. 19, 1940	9.00	4,800
1932	Mar. 31, 1932	7.83	3,600	1941	Dec. 30, 31, 1940	8.95	4,760
	Apr. 12, 1932	9.44	4,940	1942	Mar. 10, 1942	d10.89	b3,800
1933	Oct. 7, 1932	8.65	4,420		Mar. 12, 1942	c8.44	-
1934	Apr. 1, 1934	8.65	4,420		Mar. 18, 1942	8.40	4,200
					Apr. 17, 1942	7.67	3,620
1935	Jan. 11, 1935	c9.48	-	1943	Feb. 25, 1943	c7.84	-
	Mar. 18, 1935	c7.76	-		Mar. 18, 1943	c7.90	-
	May 1, 1935	7.24	3,310		May 13, 1943	e8.79	3,860
				1944	Apr. 26, 1944	9.28	5,000

a From floodmarks.

b Daily mean, estimated.

c Backwater from ice.

d Occurred Mar. 9, 1942 (backwater from ice).

e Backwater from Harrison Creek, 0.82 ft.

Peak stages and discharges of Grass River at Pyrites, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 19, 1945	8.54	4,410	1954	Feb. 18, 1954	acl2.4	-
1946	Jan. 7, 1946	c7.69	-	Mar. 2, 1954	c8.11	-	-
	Mar. 10, 1946	c10.06	3,800	Apr. 9, 1954	9.32	4,840	4,840
				Apr. 18, 1954	8.91	4,510	4,510
1947	Jan. 27, 1947	c8.64	-	1955	Mar. 11, 1955	11.58	6,860
	Mar. 25, 1947	8.68	4,520		Apr. 7, 1955	7.99	3,920
	Apr. 7, 1947	11.09	6,580		Apr. 16, 1955	7.86	3,820
	Apr. 13, 1947	11.50	6,780				
	June 4, 1947	10.63	5,980	1956	Apr. 5, 1956	c10.65	4,000
1948	Mar. 17, 1948	9.14	4,690	Apr. 30, 1956	10.61	5,960	
	Mar. 21, 1948	c10.90	4,700	1957	Feb. 28, 1957	c6.84	-
	Mar. 23, 1948	10.65	6,000		Mar. 16, 1957	5.91	2,390
	Mar. 28, 1948	9.15	4,700				
1949	Feb. 15, 1949	c10.29	-	1958	Dec. 22, 1957	c7.10	-
	Mar. 29, 1949	9.74	5,060	May 13, 1958	5.87	2,420	
1950	Jan. 26, 1950	c8.05	-	1959	Apr. 3, 1959	c10.35	-
	Mar. 28, 1950	11.84	6,950		Apr. 7, 1959	9.79	5,270
	Apr. 6, 1950	8.18	3,790	1960	Apr. 4, 1960	c12.58	4,800
1951	Jan. 4, 1951	c8.68	-	June 2, 1960	7.76	3,700	
	Apr. 1, 1951	9.73	5,170	1961	Feb. 27, 1961	c10.51	-
					Apr. 24, 1961	6.26	2,690
1952	Mar. 12, 1952	c8.31	-	1962	Apr. 8, 1962	9.78	4,940
	Apr. 7, 1952	7.28	3,270		Apr. 24, 1962	7.78	3,760
1953	May 3, 1953	7.53	3,440				

a From floodmarks.

c Backwater from ice.

2665. Raquette River at Piercefield, N.Y.

Location.--Lat 44°14'05", long 74°34'20", on left bank half a mile downstream from dam of International Paper Co. at Piercefield, St. Lawrence County, and $\frac{1}{2}$ miles upstream from Dead Creek.

Drainage area.--722 sq mi.

Gage.--Nonrecording prior to Oct. 22, 1912; recording thereafter. At datum 2 ft higher prior to Jan. 1, 1911. Datum of gage is 1,502.12 ft above mean sea level, datum of 1929.

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

Remarks.--Seasonal distribution of flow appreciably modified by natural storage in lakes and ponds above station and by regulation at the Bog River Dam. 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)
1909	May 14, 1909	8.15	5,560	1928	Apr. 14, 1928	11.1	6,750
1910	Apr. 6, 1910	7.6	4,900	1929	Apr. 12, 1929	10.05	5,220
				1930	Apr. 21, 1930	9.7	4,760
1911	May 1, 1911	10.5	6,000	1931	Apr. 22, 1931	8.75	3,620
1912	Apr. 30, 1912	11.45	7,120	1932	May 4, 1932	9.80	4,890
1913	Apr. 1, 1913	11.68	7,100	1933	Apr. 23, 1933	11.01	6,620
1914	Apr. 26, 1914	11.23	6,590	1934	Apr. 21, 1934	9.81	4,900
1915	Apr. 21, 1915	8.73	3,760	1935	May 8, 1935	9.47	4,460
1916	May 22, 1916	9.63	4,780	1936	Mar. 30, 1936	10.13	5,330
1917	Apr. 30, 1917	9.75	4,950	1937	May 22, 1937	9.58	4,600
1918	Apr. 2, 1918	10.6	5,990	1938	Mar. 29, 1938	9.29	4,250
1919	Apr. 16, 1919	9.93	5,170	1939	May 2, 1939	10.47	5,810
1920	Apr. 29, 1920	-	5,300	1940	May 7, 1940	10.80	6,300
1921	Mar. 30, 1921	11.49	7,150	1941	Apr. 23, 1941	9.06	3,970
1922	Apr. 17, 1922	11.82	7,580	1942	Apr. 22, 1942	9.97	5,110
1923	Apr. 30, 1923	9.63	4,600	1943	May 16, 1943	12.09	8,240
1924	May 5, 1924	10.70	5,930	1944	May 9, 1944	11.13	6,640
1925	Apr. 6, 1925	9.4	4,380	1945	Apr. 5, 1945	11.36	6,970
1926	May 7, 1926	11.2	6,920				
1927	May 23, 1927	8.3	3,150	1946	Oct. 10, 1945	9.25	4,230

Peak stages and discharges of Raquette River at Piercefield, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1947	May 8, 1947	11.60	7,300	1956	May 7, 1956	10.66	5,890
1948	Apr. 5, 1948	10.73	5,990	1957	Apr. 27, 1957	7.44	2,350
1949	Apr. 3, 1949	9.36	4,220	1958	Apr. 28, 1958	9.81	4,760
1950	Apr. 26, 1950	8.79	3,580	1959	Apr. 23, 1959	10.93	6,280
				1960	Apr. 26, 1960	11.30	6,830
1951	Apr. 16, 1951	10.85	6,160				
1952	Apr. 24, 1952	9.48	4,380	1961	May 1, 1961	8.86	3,700
1953	Apr. 3, 1953	10.09	5,130	1962	May 2, 1962	9.51	4,410
1954	Apr. 25, 1954	11.32	6,830				
1955	Apr. 21, 1955	11.56	7,240				

2675. Raquette River at South Colton, N.Y.

Location.--Lat 44°30'40", long 74°53'00", on left bank 300 ft upstream from bridge on State Highway 56 at South Colton, St. Lawrence County, 500 ft downstream from South Colton powerplant, and three-quarters of a mile upstream from Cold Brook.

Drainage area.--939 sq mi.

Gage.--Recording. Datum of gage is 882.05 ft above mean sea level, datum of 1929.

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

Remarks.--Flow regulated since 1953 by Carry Falls Reservoir (usable capacity, 5,011,000,000 cu ft) about 14 miles upstream; considerable natural storage in large lakes above Piercefield. 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)
1953	May 2, 1953	8.21	6,760	1958	June 18, 1958	6.55	4,020
1954	Apr. 22, 1954	9.07	8,330	1959	Apr. 29, 1959	8.30	6,920
1955	Apr. 27, 1955	8.92	8,050	1960	May 2, 1960	8.40	7,100
1956	Apr. 25, 1956	7.88	6,170	1961	July 13, 1961	6.81	4,480
1957	June 5, Aug. 22, 1957	6.26	3,610	1962	Aug. 3, 1962	7.21	4,960

2680. Raquette River at Raymondville, N.Y.

Location.--Lat 44°50'20", long 74°58'45", on right bank 250 ft upstream from old highway bridge at Raymondville, St. Lawrence County, 0.3 mile downstream from Trout Brook, 0.4 mile downstream from powerplant of Niagara Mohawk Power Corp., and 18 miles upstream from mouth.

Drainage area.--1,131 sq mi.

Gage.--Recording. Datum of gage is 183.33 ft above mean sea level, datum of 1929.

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

Remarks.--Flow regulated since 1953 by Carry Falls Reservoir (usable capacity, 5,011,000,000 cu ft) about 46 miles upstream; considerable natural storage in large lakes above Pierceland. 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	Apr. 26, 1944	7.08	9,090	1955	Mar. 11, 1955	a7.71	-
1945	Apr. 2, 1945	7.37	9,860		May 1, 1955	-	7,760
1946	Mar. 10, 1946	6.14	7,060	1956	Apr. 30, 1956	6.64	8,560
1947	June 8, 1947	7.57	10,300	1957	January 1957	a6.4	-
1948	Mar. 16, 1948	a7.13	-		June 4, 1957	-	4,190
	Mar. 29, 1948	-	8,500	1958	Jan. 6, 1958	a5.19	-
1949	Feb. 16, 1949	a6.56	-		May 16, 1958	-	4,210
	Mar. 30, 1949	-	7,590	1959	Dec. 26, 1958	a6.43	-
1950	Mar. 29, 1950	a7.75	10,200		Apr. 29, 1959	-	7,100
				1960	Apr. 4, 1960	6.71	8,720
1951	Apr. 15, 1951	6.55	7,980				
1952	Apr. 15, 1952	5.43	5,500	1961	Jan. 31, 1961	a6.07	-
1953	May 3, 1953	6.96	8,900		May 20, 1961	-	4,230
1954	Feb. 22, 1954	a9.24	-	1962	Feb. 3, 1962	a6.36	-
	Apr. 17, 1954	-	11,000		May 7, 1962	-	6,430

a Backwater from ice.

2685. Raquette River at Massena Springs, N.Y.

Location.--Lat 44°55'05", long 74°53'20", near center of left span on upstream side of concrete highway bridge in Massena Springs, St. Lawrence County, 2 $\frac{3}{4}$ miles downstream from Plum Brook, 8 miles downstream from Raymondville, and 10 miles upstream from mouth.

Drainage area.--1,197 sq mi.

Gage.--Nonrecording. At site near center of right span on upstream side of old highway bridge, 50 ft upstream, at datum 1.0 ft higher prior to Feb. 2, 1912. Altitude of gage is 160 ft (from topographic map).

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

Remarks.--Seasonal distribution of flow affected by controlled storage in numerous upstream lakes. 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)
1909	May 11, 1909	11.2	11,500	1912	May 31, 1912	-	10,700
1910	Mar. 7, 1910	a11.5	-	1913	Mar. 31, 1913	b14.2	16,500
	Mar. 14, 1910	-	6,450	1914	Apr. 29, 1914	9.9	9,430
				1915	Dec. 26, 1914	a8.7	-
1911	Apr. 8, 1911	a10.5	-		Apr. 13, 1915	-	5,400
	May 3, 1911	-	8,960				
1912	Apr. 7, 1912	a13.6	-	1916	Apr. 1, 1916	13.0	14,700

a Backwater from ice.

b From floodmarks.

2690. St. Regis River at Brasher Center, N.Y.

Location.--Lat 44°51'50", long 74°46'45", on left bank 600 ft upstream from highway bridge at Brasher Center, St. Lawrence County, and 6½ miles downstream from West Branch.

Drainage area.--616 sq mi.

Gage.--Nonrecording prior to Aug. 13, 1920; recording thereafter. At site 600 ft downstream at different datum prior to June 24, 1916. Datum of gage is 217.23 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,500 cfs at site used prior to June 24, 1916; below 9,000 cfs thereafter. Relation at both sites extended by logarithmic plotting.

Remarks.--Base for partial-duration series, 5,600 cfs. Only annual peaks are shown prior to 1921.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1911	Apr. 7, 1911	a10.1	16,240	1935	May 1, 1935	9.31	5,640
1912	Apr. 6, 1912	9.0	15,750				
1913	Mar. 27, 1913	b9.7	7,880	1936	Mar. 20, 1936	9.90	7,080
1914	Mar. 27, 1914	a9.1	12,400				
1915	Apr. 12, 1915	6.8	6,650	1937	Apr. 6, 1937	12.82	16,800
					Apr. 6, 1937	a15.3	-
1916	Apr. 2, 1916	c10.2	14,700		Apr. 23, 1937	10.19	7,880
1917	Apr. 3, 1917	9.6	6,310				
1919	Mar. 18, 1919	9.5	5,850	1938	Feb. 7, 1938	a9.64	-
1920	Mar. 18, 1920	10.58	8,700		Mar. 22, 1938	a9.67	-
					Mar. 24, 1938	11.38	11,600
1921	Dec. 15, 1920	a9.56	5,600	1939	Mar. 27, 1939	a9.44	-
	Dec. 27, 1920	a10.17	-		Apr. 28, 1939	9.12	5,220
	Jan. 2, 1921	10.12	-	1940	Mar. 31, 1940	a10.36	-
	Mar. 10, 1921	10.17	7,640		Apr. 19, 1940	9.60	6,310
1922	Apr. 12, 1922	d10.2	7,530	1941	Apr. 15, 1941	9.27	5,550
	June 23, 1922	9.79	6,530				
1923	Apr. 9, 1923	9.75	6,430	1942	Mar. 10, 1942	9.70	6,560
	June 9, 1923	9.45	5,740		Apr. 16, 1942	9.89	7,050
1924	Jan. 12, 1924	a9.68	-	1943	Apr. 26, 1943	9.39	5,820
	Apr. 7, 1924	9.37	5,670		May 1, 1943	9.44	5,930
1925	Feb. 12, 1925	e9.64	5,880		May 12, 1943	10.67	9,310
				1944	Apr. 25, 1944	10.54	9,040
1926	Apr. 15, 1926	9.33	5,650				
	Apr. 22, 1926	10.18	7,850	1945	Mar. 21, 1945	9.28	5,650
	Apr. 26, 1926	11.4	11,800		Apr. 1, 1945	9.38	5,890
	May 4, 1926	9.87	7,000				
	June 15, 1926	9.80	6,820	1946	Mar. 9, 1946	a9.39	-
1927	Mar. 19, 1927	9.2	5,350		Mar. 15, 1946	9.81	6,990
				1947	Mar. 26, 1947	a9.91	d6,000
1928	Nov. 18, 1927	11.1	10,700		Apr. 7, 1947	a12.5	d9,200
	Mar. 14, 1928	a9.71	-		Apr. 13, 1947	10.71	9,540
	Mar. 25, 1928	a10.08	-		May 3, 1947	9.27	5,630
	Mar. 27, 1928	(f)	g8,000		June 3, 1947	10.01	7,530
	Apr. 8, 1928	10.90	10,100		June 7, 1947	9.37	5,870
1929	Jan. 19, 1929	a9.52	5,500	1948	Mar. 17, 1948	a10.35	-
	Mar. 15, 1929	9.4	5,820		Mar. 23, 1948	10.08	7,720
	Mar. 20, 1929	a10.22	-		Mar. 28, 1948	10.03	7,580
1930	Jan. 8, 1930	10.29	8,170	1949	Mar. 23, 1949	a11.51	-
	Apr. 2, 1930	10.3	8,200		Mar. 28, 1949	10.10	7,780
1931	Apr. 11, 1931	9.23	5,420	1950	Mar. 28, 1950	11.25	11,200
					Apr. 5, 1950	9.85	7,100
1933	Oct. 7, 1932	9.98	7,300				
	Apr. 8, 1933	9.67	6,480	1951	Apr. 1, 1951	10.58	9,150
	Apr. 18, 1933	9.74	6,660				
1934	Apr. 2, 1934	9.5	6,060	1952	Mar. 12, 1952	a9.22	-
					Apr. 6, 1952	9.06	5,140
1935	Mar. 17, 1935	a10.24	-	1953	Mar. 27, 1953	9.31	5,720

a Backwater from ice. b Occurred Jan. 18, 1913; backwater from ice. c Also occurred Mar. 31, 1916; backwater from ice. d Estimated. e Occurred Feb. 10, 1925; backwater from ice. f Maximum stage not determined, but estimated to be more than 11 ft and affected by backwater from ice. g Estimated maximum daily discharge.

Peak stages and discharges of St. Regis River at Brasher Center, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1954	Feb. 22, 1954	a9.99	-	1956	Apr. 17, 1956	9.43	6,120
	Feb. 22, 1954	9.61	6,590		Apr. 30, 1956	10.7 ^f	9,810
	Apr. 9, 1954	10.76	9,840	1957	Mar. 16, 1957	8.28	3,510
	Apr. 12, 1954	9.64	6,660		Apr. 18, 1958	9.27	5,720
	Apr. 17, 1954	10.30	8,480	1959	Apr. 6, 1959	9.54	6,400
1955	Dec. 30, 1954	a9.61	-		Apr. 4, 1960	10.59	9,330
	Mar. 11, 1955	a12.31	-	1960	Apr. 15, 1960	9.82	7,140
	Mar. 12, 1955	12.00	13,900		Apr. 24, 1961	8.82	4,660
	Mar. 16, 1955	10.16	8,080	1962	Apr. 9, 1962	9.33	5,880
	Mar. 23, 1955	a9.32	-				
	Apr. 4, 1955	a9.24	-				
	Apr. 7, 1955	9.29	5,780				
	Apr. 15, 1955	9.96	7,520				
	Apr. 20, 1955	9.29	5,780				

a Backwater from ice.

2695. Deer River at Brasher Iron Works, N.Y.
(Published as "at Ironton" prior to 1913)

Location.--Lat 44°53'32", long 74°41'28", on left bank 400 ft upstream from highway bridge, at Brasher Iron Works, St. Lawrence County, 2.6 miles south-east of Helena, 3.6 miles upstream from mouth, and 3.8 miles downstream from Lawrence Brook.

Drainage area.--189 sq mi.

Gage.--Nonrecording prior to 1959 at site 1,400 ft downstream at different datum; recording thereafter. Datum of gage is 211.97 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,000 cfs prior to 1959 and below 2,500 cfs thereafter; extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 1,700 cfs. Only annual peaks are shown prior to 1959.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1913	Jan. 17, 1913	9.3	9,700	1959	Apr. 7, 1959	(b)	c2,000
1914	Mar. 26, 1914	a9.0	(b)		Apr. 4, 1960	7.33	5,090
1915	Apr. 13, 1915	4.0	1,050	1960	Apr. 15, 1960	5.13	1,880
1916	Apr. 1, 1916	6.8	4,220		Mar. 29, 1961	7.54	5,350
1959	Mar. 21, 1959	a5.32	-	1962	Apr. 8, 1962	6.34	3,430

a Backwater from ice.

b Not determined.

c Estimated.

2700. Salmon River at Chasm Falls, N.Y.

Location.--Lat 44°45'20", long 74°13'10", on right bank a quarter of a mile downstream from powerplant of Niagara Mohawk Power Corp. at Chasm Falls, Franklin County, and 3 miles downstream from Duane Stream.

Drainage area.--132 sq mi.

Gage.--Recording. Datum of gage is 1,011.52 ft above mean sea level, datum of 1929.

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

Remarks.--Seasonal regulation of flow by upstream reservoirs. Only annual peaks are shown.

Peak stages and discharges of Salmon River at Chasm Falls, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1926	Apr. 25, 1926	5.0	2,890	1945	Mar. 18, 1945	3.54	1,370
1927	Mar. 19, 1927	3.5	1,300				
1928	Apr. 8, 1928	4.95	2,820	1946	Mar. 15, 1946	3.29	1,150
1929	Apr. 7, 1929	3.35	1,180	1947	Apr. 12, 1947	4.75	2,620
1930	Apr. 7, 1930	3.5	1,300	1948	Mar. 23, 1948	4.18	1,970
				1949	Mar. 28, 1949	4.00	1,790
1931	Apr. 11, 1931	3.57	1,360	1950	Apr. 5, 1950	3.41	1,250
1932	Apr. 13, 1932	3.65	1,440				
1933	Apr. 18, 1933	4.52	2,300	1951	Mar. 31, 1951	3.90	1,690
1934	Apr. 12, 1934	3.61	1,460	1952	Apr. 11, 1952	3.16	995
1935	May 1, 1935	2.84	858	1953	Mar. 27, 1953	3.57	1,310
				1954	Apr. 17, 1954	4.39	2,100
1936	Mar. 20, 1936	-	al,750	1955	Apr. 16, 1955	4.57	2,300
1937	Apr. 6, 1937	4.23	2,050				
1938	Mar. 24, 1938	4.42	2,240	1956	Apr. 30, 1956	4.69	2,440
1939	Apr. 28, 1939	3.45	1,320	1957	May 21, 1957	2.68	685
1940	May 2, 1940	3.58	1,430	1958	Apr. 22, 1958	3.85	1,560
				1959	Apr. 7, 1959	3.14	981
1941	Apr. 16, 1941	4.12	1,940	1960	Apr. 18, 1960	4.39	2,100
1942	Apr. 16, 1942	4.08	1,900				
1943	May 12, 1943	4.13	1,950	1961	Apr. 24, 1961	3.42	1,220
1944	Apr. 26, 1944	4.04	1,830	1962	Apr. 9, 1962	3.38	1,150

a Estimated maximum daily discharge.

2705. Chateaugay River near Chateaugay, N.Y.

Location.--Lat 44°54'35", long 74°05'10", on right bank 150 ft downstream from dam of International Hydroelectric Corp., 1 mile south of Chateaugay, Franklin County, and 5 miles upstream from Marble River.

Drainage area.--112 sq mi.

Gage.--Recording. Datum of gage is 847.04 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 1,300 cfs and extended above by logarithmic plotting.

Remarks.--Flow regulated by Upper and Lower Chateaugay Lakes. 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)
1927	May 20, 1927	4.15	595	1946	Mar. 9, 1946	4.49	494
1928	Apr. 8, 1928	7.3	2,060	1947	Apr. 14, 1947	5.03	1,060
1929	Mar. 22, 1929	5.0	870	1948	Mar. 16, 1948	4.53	842
1930	Apr. 7, 1930	5.1	910	1949	Feb. 15, 1949	4.42	794
				1950	Mar. 28, 1950	4.79	950
1931	Apr. 21, 1931	3.90	500				
1932	Apr. 12, 1932	5.19	1,060	1951	Apr. 15, 1951	4.21	719
1933	Apr. 18, 1933	6.46	1,700	1952	Mar. 11, 1952	3.71	545
1934	Apr. 12, 1934	4.51	779	1953	Jan. 8, 1953	5.56	1,330
1935	Mar. 16, 1935	5.22	1,080	1954	Apr. 18, 1954	5.20	1,180
				1955	Apr. 15, 1955	5.47	1,220
1936	Mar. 25, 1936	as,19	1,080				
1937	Apr. 6, 1937	6.21	1,740	1956	May 1, 1956	5.09	1,050
1938	Mar. 25, 1938	4.85	998	1957	May 22, 1957	cs,33	407
1939	Apr. 29, 1939	4.96	1,050	1958	Apr. 22, 1958	5.80	1,390
1940	May 3, 1940	4.84	993	1959	Apr. 20, 1959	4.26	748
				1960	Apr. 18, 1960	5.84	1,450
1941	Apr. 17, 1941	4.53	857				
1942	Apr. 19, 1942	5.24	1,190	1961	Apr. 26, 1961	4.56	914
1943	May 12, 1943	5.07	1,100	1962	Aug. 7, 1962	4.42	805
1944	Apr. 26, 1944	4.98	1,040				
1945	Apr. 2, 1945	4.83	968				

a Backwater from ice.

b Occurred Dec. 22, 1945 (backwater from ice).

c Occurred Jan. 23, 1957 (backwater from ice).

2715. Great Chazy River at Perry Mills, N.Y.

Location.--Lat 45°00'00", long 73°30'05", on left bank 500 ft upstream from highway bridge at Perry Mills, Clinton County, and 7½ miles upstream from Corbeau Creek.

Drainage area.--247 sq mi.

Gage.--Recording. Datum of gage is 164.93 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 3,200 cfs and extended above by logarithmic plotting.

Remarks.--Slight regulation by Chazy Lake. Base for partial-duration series, 2,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Jan. 19, 1929	a8.06	-	1946	Jan. 7, 1946	a7.90	-
	Mar. 15, 1929	a11.20	-		Mar. 9, 1946	a11.5	-
	Mar. 16, 1929	10.1	5,810		Mar. 10, 1946	-	b2,100
	Mar. 20, 1929	7.00	2,740		Mar. 14, 1946	a7.65	-
1930	Jan. 9, 1930	8.8	4,450	1947	Mar. 26, 1947	a6.77	-
	Jan. 12, 1930	a6.86	-		Apr. 7, 1947	8.86	4,840
	Jan. 15, 1930	a7.81	-		Apr. 12, 1947	7.32	3,090
	Feb. 24, 1930	a7.70	-		May 1, 1947	6.73	2,530
	Apr. 8, 1930	8.57	4,220		May 5, 1947	7.03	2,800
1931	Apr. 11, 1931	6.54	2,340		June 3, 1947	8.59	4,520
					July 8, 1947	7.14	2,910
1932	Apr. 1, 1932	a8.18	-	1948	Mar. 17, 1948	a10.97	-
	Apr. 9, 1932	a7.83	-		Mar. 21, 1948	8.99	5,010
	Apr. 13, 1932	7.77	3,430	1949	Feb. 16, 1949	a8.22	-
1933	Apr. 8, 1933	a7.89	-		Mar. 27, 1949	a8.17	-
	Apr. 12, 1933	6.79	2,550		Mar. 28, 1949	7.08	2,850
	Apr. 18, 1933	7.22	2,940	1950	Jan. 26, 1950	a7.25	-
1934	Apr. 3, 1934	a10.64	3,000		Mar. 29, 1950	a9.08	-
	Apr. 13, 1934	8.11	3,760		Apr. 5, 1950	a8.06	b2,100
1935	Mar. 17, 1935	a7.28	-	1951	Jan. 5, 1951	a6.76	-
	June 18, 1935	6.63	2,410		Mar. 30, 1951	a9.03	-
					Mar. 31, 1951	8.78	4,750
1936	Mar. 13, 1936	a10.40	-	1952	Apr. 6, 1952	7.22	2,990
	Mar. 19, 1936	a10.57	4,700				
	Mar. 25, 1936	6.77	2,680	1953	Mar. 31, 1953	6.73	2,530
1937	Feb. 22, 1937	a7.97	-	1954	Mar. 3, 1954	a9.14	-
	Apr. 7, 1937	a9.96	-		Apr. 9, 1954	8.60	4,380
	Apr. 7, 1937	9.74	6,000		Apr. 17, 1954	6.99	2,680
	May 16, 1937	8.03	4,000	1955	Oct. 13, 1954	6.84	2,550
	May 21, 1937	6.63	2,540		Mar. 12, 1955	a7.41	-
1938	Mar. 21, 1938	a9.93	-		Mar. 12, 1955	a7.41	-
	Mar. 22, 1938	9.48	5,690		Mar. 16, 1955	a6.79	-
1939	Apr. 20, 1939	7.36	3,270		Apr. 3, 1955	a8.02	-
					Apr. 6, 1955	8.00	3,700
1940	Apr. 1, 1940	a6.96	-	1956	Apr. 6, 1956	a10.79	-
	Apr. 10, 1940	a8.71	-		Apr. 30, 1956	7.52	3,280
	Apr. 19, 1940	6.63	2,540	1957	Mar. 16, 1957	a9.09	-
1941	Dec. 30, 1940	a8.32	-		May 21, 1957	6.02	1,920
	Apr. 14, 1941	6.60	2,510	1958	Apr. 19, 1958	8.81	4,750
1942	Mar. 10, 1942	a6.65	-	1959	Apr. 3, 1959	a9.24	-
	Mar. 18, 1942	a6.85	-		Apr. 3, 1959	8.83	4,780
	Apr. 12, 1942	8.13	3,970	1960	Apr. 4, 1960	9.23	5,300
1943	Mar. 27, 1943	a8.79	-		Apr. 15, 1960	7.11	2,840
	May 12, 1943	7.81	3,610	1961	Mar. 29, 1961	a7.32	2,250
1944	Mar. 26, 1944	a7.27	-	1962	Mar. 30, 1962	a8.40	-
	Apr. 25, 1944	7.22	2,990		Apr. 8, 1962	7.32	3,310
1945	Mar. 17, 1945	a7.77	-				
	Mar. 18, 1945	7.43	3,200				
	Apr. 28, 1945	6.79	2,570				

a Backwater from ice.

b Estimated maximum daily discharge.

2730. Saranac River at Saranac, N.Y.

Location.--Lat 44°38'45", long 73°44'40", on right bank 500 ft upstream from highway bridge at Saranac, Clinton County.

Drainage area.--521 sq mi.

Gage.--Recording. Altitude of gage is 750 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 4,200 cfs and extended above by logarithmic plotting.

Remarks.--Flow partly regulated by storage in Lower Saranac Lake. 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)
1931	Apr. 11, 1931	a5.14	2,740	1939	February 1939	e11.0	-
1932	Apr. 12, 1932	a6.57	4,250		Apr. 27, 1939	-	3,960
1933	Apr. 17, 1933	a7.68	5,780	1940	Dec. 23, 1939	b8.21	-
1934	Apr. 3, 1934	b8.24	-		May 3, 1940	-	2,910
	Apr. 18, 1934	-	3,070				
1935	Jan. 10, 1935	b5.78	-	1941	Mar. 20, 1941	t10.75	-
	June 17, 1935	-	2,670		Apr. 16, 1941	-	3,960
1936	Mar. 19, 1936	c10.78	d4,200	1942	Apr. 16, 1942	6.27	4,380
1937	Dec. 2, 1936	b12.74	-	1943	Dec. 20, 1942	b9.69	-
	Apr. 6, 1937	-	5,080		May 12, 1943	-	7,060
1938	Dec. 16, 1937	b10.53	-				
	Mar. 24, 1938	-	4,890	1947	July 13, 1947	9.15	9,000

a Maximum stage not determined, occurred during period of backwater from ice.
 b Backwater from ice. c Ice jam, occurred on previous day. d Estimated maximum daily discharge (backwater from ice). e At least this high (ice jam).

2735. Saranac River at Plattsburgh, N.Y.

Location.--Lat 44°40'50", long 73°38'20", on right bank at Plattsburgh, Clinton County, 600 ft downstream from Imperial Paper & Color Corp. dam, 3 miles upstream from mouth, and 5½ miles downstream from Mead Brook.

Drainage area.--608 sq mi.

Gage.--Recording. Datum of gage is 155.74 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 7,000 cfs and extended above by logarithmic plotting.

Historical data.--Flood of April 1928 was highest known to local residents and is the maximum since at least 1903.

Remarks.--Slight regulation by storage in Lower Saranac Lake and elsewhere. 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)
1928	Apr. 8, 1928	a12.8	b11,500	1952	Apr. 6, 1952	7.48	4,510
1943	May 12, 1943	c9.5	-	1953	Mar. 28, 1953	6.85	3,560
1944	Apr. 25, 1944	8.33	6,540	1954	Apr. 17, 1954	8.72	6,760
1945	Apr. 1, 1945	7.36	4,800	1955	Apr. 15, 1955	8.43	6,190
1946	Mar. 15, 1946	7.53	5,000	1956	Apr. 30, 1956	8.77	7,200
1947	June 3, 1947	9.57	9,250	1957	May 21, 1957	6.14	2,780
1948	Mar. 28, 1948	7.28	4,730	1958	Apr. 22, 1958	7.99	5,370
1949	Mar. 28, 1949	8.58	7,090	1959	Apr. 18, 1959	7.34	4,540
1950	Apr. 20, 1950	7.33	4,270	1960	Apr. 15, 1960	8.96	7,600
1951	Mar. 31, 1951	8.14	5,640	1961	Apr. 24, 1961	6.63	3,440
				1962	Apr. 8, 1962	6.76	3,630

a By levels to floodmark 560 ft upstream in generator room below dam.

b Computation of flow over dam and through waste gates and powerplant.

c From floodmarks at gage; about 10.9 ft at tailwater staff gage 550 ft upstream.

2740. West Branch Ausable River near Lake Placid, N.Y.
(Published as "near Newman" prior to 1957)

Location.--Lat 44°18'40", long 73°55'00", on right bank 4 miles northeast of Lake Placid, Essex County, and 4 miles downstream from Lake Placid Outlet.

Drainage area.--116 sq mi.

Gage.--Nonrecording prior to July 14, 1927; recording thereafter. Datum of gage is 1,620.76 ft above mean sea level, datum of 1929.

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

Remarks.--Base for partial-duration series, 2,000 cfs. Only annual peaks are shown prior to 1927.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1921	Mar. 21, 1921	8.4	4,380	1944	June 24, 1944	6.49	2,180
1922	Apr. 12, 1922	8.4	4,380				
1923	Apr. 21, 1923	7.0	2,760	1945	Mar. 18, 1945	7.37	3,090
1924	May 4, 1924	8.0	3,900		Mar. 29, 1945	6.32	2,030
1925	Oct. 1, 1924	9.4	5,670		May 18, 1945	7.44	3,160
					July 15, 1945	8.15	4,040
1926	Apr. 25, 1926	7.6	3,430		Sept. 13, 1945	7.32	3,030
1927	Nov. 17, 1926	7.4	3,210	1946	Oct. 2, 1945	7.60	3,350
1928	Nov. 18, 1927	7.9	3,810				
	Dec. 1, 1927	7.04	2,820	1947	Apr. 12, 1947	8.03	3,880
	Apr. 7, 1928	7.71	3,580		Apr. 27, 1947	6.43	2,130
1929	Jan. 19, 1929	b7.15	-		May 1, 1947	6.47	2,160
	Mar. 17, 1929	b6.33	-		May 6, 1947	6.55	2,250
	Mar. 23, 1927	b7.65	-		May 22, 1947	8.53	4,550
	May 24, 1929	7.15	2,940		June 3, 1947	7.69	3,450
	Apr. 6, 1929	6.46	2,230		July 8, 1947	6.32	2,030
	May 3, 1929	6.72	2,490	1948	Mar. 22, 1948	7.47	3,200
1930	Jan. 8, 1930	8.20	4,190		Mar. 28, 1948	7.24	2,940
	Apr. 7, 1930	7.20	3,000		Apr. 1, 1948	6.60	2,290
	May 3, 1930	6.80	2,570	1949	Nov. 20, 1948	7.02	2,710
1931	Apr. 11, 1931	6.03	1,840		Dec. 31, 1948	10.13	7,020
1932	Jan. 15, 1932	6.31	2,090		Mar. 28, 1949	6.62	2,310
1933	Oct. 6, 1932	9.61	6,200	1950	Apr. 5, 1950	b6.31	-
	Apr. 18, 1933	7.48	3,310		Apr. 20, 1950	6.64	2,330
	May 4, 1933	6.87	2,640	1951	Nov. 26, 1950	8.23	4,070
1934	Mar. 28, 1934	6.14	1,940		Mar. 31, 1951	b9.37	-
1935	Apr. 30, 1935	5.93	1,750		Mar. 31, 1951	7.99	3,760
1936	Mar. 18, 1936	8.39	4,440		Apr. 26, 1951	6.65	2,270
	Apr. 6, 1936	6.29	2,070	1952	Apr. 6, 1952	6.63	2,250
1937	Apr. 6, 1937	b7.69	-	1953	Dec. 11, 1952	7.04	2,660
	Apr. 6, 1937	7.46	3,290		Mar. 25, 1953	7.77	3,490
	May 15, 1937	7.10	2,890		Mar. 27, 1953	8.44	4,340
1938	Feb. 7, 1938	b6.29	-		Apr. 27, 1953	6.95	2,570
	Mar. 24, 1938	b8.14	-	1954	Feb. 22, 1954	6.40	2,040
	Mar. 24, 1938	7.72	3,590		Apr. 8, 1954	7.19	2,830
	Sept. 22, 1938	12.20	10,800		Apr. 17, 1954	8.41	4,300
1939	Dec. 6, 1938	6.62	2,390		Apr. 20, 1954	6.46	2,090
	Apr. 27, 1939	6.44	2,210		Apr. 23, 1954	6.71	2,330
1940	May 2, 1940	6.96	2,740	1955	Apr. 15, 1955	7.65	3,350
1941	Apr. 16, 1941	7.18	2,970		Apr. 19, 1955	6.62	2,240
1942	Apr. 16, 1942	7.35	3,160	1956	Apr. 30, 1956	8.02	3,800
	June 15, 1942	6.69	2,440	1957	Jan. 23, 1957	8.36	4,240
	Sept. 27, 1942	9.05	5,360	1958	Dec. 21, 1957	9.39	5,700
1943	May 12, 1943	7.08	2,820		Apr. 19, 1958	6.65	2,270
					Apr. 22, 1958	8.60	4,560
1944	May 5, 1944	6.80	2,490	1959	Apr. 3, 1959	b6.13	-
					Apr. 3, 1959	5.84	1,570
				1960	Oct. 25, 1959	7.24	2,880
					Nov. 6, 1959	6.62	2,240

a Maximum discharge during year, 5,540 cfs at 2400 hours Sept. 30, stage rising; peak occurred on following day.
b Backwater from ice.

Peak stages and discharges of West Branch Ausable River near Lake Placid, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Apr. 4, 1960	7.54	3,220	1962	Apr. 8, 1962	b7.66	-
	Apr. 18, 1960	7.16	2,800		Apr. 8, 1962	6.90	2,520
	Apr. 25, 1960	7.04	2,660		Apr. 23, 1962	6.62	2,240
1961	Apr. 23, 1961	6.32	1,970		Apr. 29, 1962	6.56	2,180

b Backwater from ice.

2745. Black Brook at Black Brook, N.Y.

Location.--Lat 44°26'50", long 73°44'45", on right bank three-quarters of a mile south of hamlet of Black Brook, Clinton County, and 1½ miles upstream from mouth.

Drainage area.--49.4 sq mi.

Gage.--Nonrecording prior to Oct. 24, 1936; recording thereafter. Datum of gage is 888.48 ft above mean sea level, datum of 1929.

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

Remarks.--Flow regulated by Fern Lake and Taylor Pond. 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)
1925	Mar. 28, 1925	6.6	885	1944	Apr. 25, 1944	5.32	590
1926	Apr. 25, 1926	5.6	720	1945	Mar. 19, 1945	4.59	424
1927	Mar. 19, 1927	3.6	277	1946	Mar. 15, 1946	4.94	498
1928	Apr. 8, 1928	5.4	670	1947	July 13, 1947	6.47	961
1929	Apr. 7, 1929	3.7	297	1948	Mar. 22, 1948	4.86	505
1930	Apr. 7, 1930	4.55	475	1949	Mar. 28, 1949	5.35	628
1931	Apr. 11, 1931	4.1	380	1950	Apr. 21, 1950	4.82	495
1932	Apr. 23, 1932	4.0	359	1951	Mar. 31, 1951	5.01	542
1933	Apr. 18, 1933	4.9	533	1952	Apr. 6, 1952	4.67	459
1934	Apr. 3, 1934	4.3	402	1953	Mar. 27, 1953	3.64	241
1935	June 18, 1935	4.17	375	1954	Apr. 8, 1954	4.96	530
1936	Mar. 19, 1936	6.0	800	1955	Apr. 7, 1955	44.97	505
1937	Apr. 6, 1937	6.95	1,050	1956	Apr. 30, 1956	4.97	532
1938	Sept. 22, 1938	5.60	694	1957	May 21, 1957	3.24	175
1939	Apr. 20, 1939	4.29	373	1958	Apr. 18, 1958	4.75	478
1940	Apr. 19, 1940	3.86	287	1959	Apr. 3, 1959	b4.90	330
1941	Apr. 14, 1941	4.64	453	1960	Apr. 15, 1960	4.70	466
1942	June 15, 1942	5.38	605	1961	Apr. 24, 1961	c4.43	202
1943	May 12, 1943	4.54	413				

a Occurred Feb. 8, 1955 (backwater from ice).

b Occurred Mar. 23, 1959 (backwater from ice).

c Occurred Dec. 23, 1960 (backwater from ice).

2750. East Branch Ausable River at Au Sable Forks, N.Y.

Location.--Lat 44°26'20", long 73°40'55", on left bank 700 ft upstream from upper highway bridge in Au Sable Forks, Essex County, and half a mile upstream from confluence with West Branch.

Drainage area.--198 sq mi.

Gage.--Nonrecording prior to Sept. 21, 1938; recording thereafter. At lower highway bridge in Au Sable Forks, 400 ft upstream from confluence with West Branch and at datum 3.54 ft lower prior to Sept. 21, 1938. Datum of gage is 545.37 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,800 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 3,700 cfs. Only annual peaks are shown prior to 1939.

Peak stages and discharges of East Branch Ausable River at Au Sable Forks, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1925	Oct. 1, 1924	7.35	11,000	1949	Mar. 28, 1949	6.38	4,310
	Mar. 28, 1925	all.4	-	1950	Mar. 28, 1950	d6.13	-
1926	Apr. 25, 1926	5.8	6,730		Apr. 5, 1950	6.07	3,820
1927	Nov. 17, 1926	5.6	6,310		Apr. 20, 1950	7.03	5,420
1928	Nov. 18, 1927	6.0	7,170	1951	Nov. 26, 1950	7.09	5,530
1929	May 3, 1929	5.2	5,500		Mar. 31, 1951	8.19	7,770
1930	Apr. 7, 1930	6.8	9,030		Apr. 26, 1951	6.29	4,160
1931	Apr. 11, 1931	4.0	3,340	1952	Apr. 6, 1952	7.28	5,890
1932	Apr. 12, 1932	3.4	2,470		May 12, 1952	6.19	4,000
1933	Oct. 6, 1932	6.6	8,550	1953	Dec. 11, 1952	7.62	6,560
1934	Mar. 27, 1934	5.3	5,700		Jan. 24, 1953	d6.48	-
1935	July 9, 1935	b4.6	3,040		Mar. 24, 1953	7.58	6,480
1936	Mar. 18, 1936	7.5	10,800		Mar. 27, 1953	8.05	7,460
1937	May 15, 1937	6.2	7,610		Apr. 27, 1953	6.13	3,920
1938	Sept. 22, 1938	c12.91	20,100	1954	Feb. 21, 1954	d7.35	-
1939	Mar. 27, 1939	9.24	10,600		Feb. 22, 1954	6.83	5,070
1940	May 1, 1940	6.19	4,200		Mar. 2, 1954	6.00	3,750
	May 29, 1940	6.60	4,920		Apr. 8, 1954	6.85	5,100
1941	Dec. 29, 1940	d7.92	-		Apr. 17, 1954	7.92	7,180
	Apr. 15, 1941	6.34	4,460		Apr. 23, 1954	6.18	4,020
1942	Dec. 24, 1941	d8.82	-		May 22, 1954	6.30	4,300
	Apr. 16, 1942	6.98	5,660		Aug. 31, 1954	6.19	4,040
	Sept. 27, 1942	8.07	7,900	1955	Nov. 21, 1954	6.12	3,930
1943	May 12, 1943	6.47	4,650		Mar. 11, 1955	d8.26	-
1944	May 4, 1944	6.09	3,970		Mar. 12, 1955	6.95	5,240
	June 24, 1944	8.75	9,420		Apr. 15, 1955	6.51	4,540
1945	Mar. 18, 1945	6.34	4,240		Apr. 19, 1955	6.12	3,930
	May 18, 1945	7.81	6,950		June 1, 1955	5.97	3,710
	July 15, 1945	7.63	6,580	1956	Apr. 5, 1956	7.48	6,280
1946	Oct. 2, 1945	6.42	4,370		Apr. 30, 1956	7.12	5,590
	Jan. 7, 1946	d7.56	-	1957	Jan. 23, 1957	d8.08	-
	Mar. 9, 1946	d6.98	-		Feb. 27, 1957	5.66	3,280
1947	Jan. 31, 1947	d10.37	-	1958	Dec. 21, 1957	9.60	11,100
	Apr. 12, 1947	7.51	6,340		Apr. 18, 1958	6.78	4,990
	May 6, 1947	6.98	5,330		Apr. 22, 1958	8.22	7,830
	May 22, 1947	7.79	6,910	1959	Jan. 22, 1959	d10.32	-
	June 3, 1947	8.11	7,590		Apr. 3, 1959	6.44	4,420
	July 8, 1947	7.05	5,460	1960	Oct. 24, 1959	8.03	7,420
1948	Mar. 22, 1948	6.54	4,570		Feb. 11, 1960	7.58	6,480
	Mar. 28, 1948	6.64	4,740		Apr. 4, 1960	6.94	5,260
	Apr. 1, 1948	6.10	3,870		Apr. 17, 1960	6.27	4,160
1949	Nov. 20, 1948	6.57	4,520		Apr. 25, 1960	6.55	4,600
	Dec. 31, 1948	11.60	16,500	1961	Apr. 23, 1961	5.86	3,550
	Feb. 15, 1949	6.73	4,890	1962	Apr. 8, 1962	6.75	4,940
					Apr. 23, 1962	6.04	3,810

a From floodmarks (backwater from West Branch Ausable River). b Occurred Jan. 9, 1935 (backwater from ice). c From floodmarks; 11.2 ft at former site and datum. d Backwater from ice.

2755. Ausable River near Au Sable Forks, N.Y.)
(Published as "at Au Sable Forks" prior to 1925)

Location.--Lat 44°27'05", long 73°38'35", on left bank $1\frac{3}{4}$ miles downstream from confluence of East and West Branches at Au Sable Forks, Clinton County.

Drainage area.--448 sq mi.

Gage.--Nonrecording prior to October 1924 at site $1\frac{1}{2}$ miles upstream at different datum; recording thereafter. Datum of gage is 505.65 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 9,100 cfs and extended above by logarithmic plotting for former site and on basis of slope-area measurement at 22,400 cfs at present site.

Remarks.--Base for partial-duration series, 6,200 cfs. Only annual peaks are shown prior to 1925.

Peak stages and discharges of Ausable River near Au Sable Forks, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1911	May 2, 1911	7.35	10,100	1943	May 12, 1943	7.18	8,570
1912	Apr. 7, 1912	7.9	12,200				
1913	Mar. 27, 1913	10.2	21,500	1944	Apr. 26, 1944	6.34	6,490
1914	Apr. 20, 1914	9.4	16,500		May 5, 1944	6.63	7,160
1915	Apr. 11, 1915	6.8	6,800		June 24, 1944	8.15	11,400
1916	May 17, 1916	7.5	9,430	1945	Mar. 18, 1945	6.62	7,190
1917	Apr. 2, 1917	7.3	8,740		May 18, 1945	7.90	10,600
1918	Apr. 1, 1918	6.9	7,420		July 15, 1945	8.01	10,900
1919	Oct. 6, 1918	9.2	16,600		Sept. 19, 1945	6.62	7,140
1920	Apr. 13, 1920	6.85	7,260				
1921	Mar. 21, 1921	8.6	13,800	1946	Oct. 2, 1945	6.97	8,010
1922	Apr. 12, 1922	8.1	11,800		Jan. 7, 1946	b9.54	-
1923	Apr. 29, 1923	6.6	7,110		Mar. 9, 1946	b9.04	-
1924	May 4, 1924	7.8	10,500		Mar. 9, 1946	6.35	6,500
1925	Oct. 1, 1924	11.15	21,200	1947	Jan. 31, 1947	b12.29	-
	Nov. 23, 1924	6.43	6,980		Apr. 12, 1947	8.39	12,100
	Mar. 3, 1925	b6.50	-		May 1, 1947	6.21	6,050
	Mar. 28, 1925	9.29	15,100		May 6, 1947	7.18	8,460
					May 22, 1947	7.32	10,700
1926	Apr. 23, 1926	6.48	7,100		June 3, 1947	8.66	12,900
	Apr. 25, 1926	8.0	11,200		July 8, 1947	7.21	8,550
	May 3, 1926	6.5	7,160	1948	Mar. 22, 1948	7.44	9,220
	June 15, 1926	7.20	8,960		Mar. 28, 1948	7.03	8,040
1927	Nov. 17, 1926	8.7	13,300	1949	Nov. 20, 1948	6.69	7,170
	Mar. 14, 1927	b6.09	-		Dec. 31, 1948	11.39	23,200
					Mar. 28, 1949	7.00	7,960
1928	Nov. 4, 1927	6.73	7,720				
	Nov. 18, 1927	8.1	11,500	1950	Apr. 5, 1950	6.44	6,570
	Dec. 1, 1927	7.53	9,880		Apr. 20, 1950	7.25	8,660
	Mar. 27, 1928	b6.50	-				
	Apr. 8, 1928	7.52	9,860	1951	Nov. 26, 1950	7.25	8,660
					Mar. 31, 1951	8.60	12,700
1929	Jan. 19, 1929	b6.93	-		Apr. 26, 1951	6.66	7,090
	Mar. 24, 1929	6.86	8,060	1952	Apr. 6, 1952	7.14	8,350
	Apr. 6, 1929	6.47	7,080				
	May 3, 1929	7.1	8,690	1953	Dec. 12, 1952	7.48	9,340
					Mar. 25, 1953	7.53	9,490
1930	Dec. 20, 1929	b7.85	-		Mar. 27, 1953	8.43	12,200
	Jan. 9, 1930	7.45	9,660		Apr. 27, 1953	6.65	7,070
	Apr. 7, 1930	8.3	12,100	1954	Feb. 16, 1954	b9.68	-
	May 3, 1930	6.80	7,900		Feb. 22, 1954	b9.70	-
					Apr. 8, 1954	7.56	9,580
1931	Apr. 11, 1931	6.19	6,420		Apr. 17, 1954	8.40	12,100
					Apr. 20, 1954	6.32	6,300
1932	Jan. 15, 1932	5.82	5,580		Apr. 23, 1954	6.73	7,260
					May 22, 1954	6.45	6,600
1933	Oct. 7, 1932	9.20	14,800	1955	Apr. 15, 1955	7.33	8,890
	Apr. 7, 1933	6.53	7,220		Apr. 19, 1955	6.57	6,880
	Apr. 18, 1933	7.87	10,800	1956	Apr. 5, 1956	6.35	6,360
	May 4, 1933	6.79	7,880		Apr. 30, 1956	7.92	10,700
1934	Mar. 27, 1934	b14.0	-	1957	Jan. 23, 1957	b10.72	-
	Apr. 17, 1934	6.05	6,110		Jan. 23, 1957	7.12	8,300
1935	Jan. 9, 1935	b11.90	-	1958	Dec. 21, 1957	9.35	15,000
	June 18, 1935	5.78	5,500		Apr. 19, 1958	7.18	8,460
					Apr. 22, 1958	9.04	14,000
1936	Mar. 12, 1936	b7.35	-				
	Mar. 18, 1936	9.77	16,700	1959	Jan. 22, 1959	b11.35	-
					Apr. 3, 1959	6.08	5,670
1937	Apr. 6, 1937	7.56	9,610	1960	Oct. 24, 1959	7.38	8,870
	May 15, 1937	8.46	12,300		Apr. 4, 1960	7.35	8,790
					Apr. 15, 1960	6.58	6,800
1938	Jan. 25, 1938	b7.47	-		Apr. 18, 1960	7.05	7,980
	Mar. 24, 1938	7.44	9,270		Apr. 25, 1960	7.18	8,330
	Sept. 22, 1938	11.65	24,200	1961	Feb. 26, 1961	b9.95	-
					Apr. 23, 1961	6.19	5,910
1939	Mar. 27, 1939	6.66	7,230				
	Apr. 27, 1939	6.32	6,440	1962	Apr. 8, 1962	6.95	7,720
					Apr. 23, 1962	6.53	6,680
1940	May 2, 1940	6.70	7,330				
	May 29, 1940	6.36	6,530				
1941	Apr. 15, 1941	6.97	8,010				
1942	Dec. 24, 1941	b7.12	-				
	Apr. 16, 1942	7.52	9,500				
	Sept. 28, 1942	7.91	10,600				

a Maximum discharge during year, 17,100 cfs at 2400 hours Sept. 30, stage rising; peak occurred on following day.

b Backwater from ice.

2762. Bouquet River at New Russia, N.Y.

Location.--Lat 44°09'51", long 73°36'30", at bridge on county road, 0.2 mile east of U.S. Highway 9 at New Russia, Essex County.

Drainage area.--37.6 sq mi.

Gage.--Crest-stage gage. Altitude of gage is 580 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 650 cfs and extended above on basis of contracted-opening measurements at 2,480, 3,780, and 4,480 cfs.

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)
1949	Dec. 31, 1948	12.29	3,780	1957	Jan. 23, 1957	7.92	1,070
				1958	Dec. 21, 1957	13.5	4,480
1951	Mar. 31, 1951	9.78	1,600	1959	Apr. 3, 1959	8.38	1,180
				1960	Apr. 4, 1960	10.38	1,830
1953	Mar. 25, 1953	11.60	2,480	1961	-	4.57	312
1956	Apr. 5, 1956	8.21	1,150	1962	Apr. 8, 1962	10.20	1,780

2765. Bouquet River at Willsboro, N.Y.

Location.--Lat 44°21'30", long 73°23'50", on right bank at Willsboro, Essex County, half a mile upstream from bridge on State Highway 22, 2½ miles downstream from North Branch Bouquet River, and 3 miles upstream from mouth.

Drainage area.--275 sq mi.

Gage.--Recording. Datum of gage is 150.88 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 5,700 cfs and extended above by logarithmic plotting.

Remarks.--Base for partial-duration series, 2,800 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1924	Jan. 12, 1924	a6.54	3,200	1930	Jan. 7, 1930	a6.50	-
	Apr. 19, 1924	5.58	2,660		Feb. 24, 1930	a7.44	-
	May 1, 1924	6.53	3,950		Apr. 7, 1930	7.8	5,940
	May 5, 1924	6.55	b3,980	1931	Apr. 11, 1931	6.02	3,230
1925	Oct. 1, 1924	10.85	11,800	1932	Apr. 1, 1932	6.04	-
	Feb. 11, 1925	a9.75	-		Apr. 13, 1932	6.45	3,830
	Feb. 12, 1925	7.47	5,390	1933	Oct. 7, 1932	7.50	5,440
	Mar. 29, 1925	9.23	8,500		Apr. 1, 1933	a7.88	-
1926	Jan. 19, 1926	a6.73	-		Apr. 7, 1933	6.69	4,180
	Apr. 23, 1926	6.58	3,740		Apr. 18, 1933	7.53	5,490
	Apr. 25, 1926	7.6	5,600	1934	Mar. 27, 1934	a8.25	-
	June 16, 1926	6.02	3,240		Apr. 3, 1934	a6.68	-
1927	Nov. 17, 1926	8.8	7,690		Apr. 12, 1934	6.80	4,350
	Mar. 13, 1927	a7.09	-		Apr. 17, 1934	5.89	3,050
1928	Nov. 4, 1927	6.82	4,380	1935	Jan. 9, 1935	a5.80	-
	Nov. 18, 1927	7.00	4,650		Mar. 18, 1935	a5.65	-
	Dec. 1, 1927	6.87	4,460		Mar. 25, 1935	a6.23	-
	Dec. 9, 1927	6.83	4,400		May 8, 1935	5.22	2,170
	Mar. 14, 1928	a5.70	-	1936	Mar. 13, 1936	a7.36	-
	Mar. 27, 1928	6.46	3,840		Mar. 19, 1936	9.13	8,310
	Apr. 8, 1928	6.66	4,140		Mar. 22, 1936	6.08	3,310
1929	Jan. 19, 1929	6.2	3,480	1937	Apr. 6, 1937	7.99	6,260
	Mar. 16, 1929	a6.18	-		May 15, 1937	7.21	4,980
	Apr. 6, 1929	5.74	2,840				
	May 4, 1929	5.84	2,980				

a Backwater from ice. b Maximum discharge during year 4,540 cfs at 2400 hours Sept. 30, stage rising; peak occurred on following day.

Peak stages and discharges of Bouquet River at Willsboro, N.Y.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Jan. 26, 1938	a6.50	-	1950	Mar. 28, 1950	a7.89	-
	Mar. 24, 1938	6.75	4,280		Apr. 5, 1950	6.15	3,340
	Sept. 22, 1938	8.77	7,640		Apr. 21, 1950	6.43	3,730
1939	Apr. 2, 1939	a8.97	-	1951	Mar. 20, 1951	a6.26	-
	Apr. 6, 1939	a7.06	-		Mar. 31, 1951	7.73	5,740
	Apr. 20, 1939	6.15	3,410	1952	Apr. 6, 1952	7.94	6,100
	Apr. 23, 1939	6.40	3,760		May 13, 1952	5.75	2,800
	Apr. 27, 1939	5.79	2,910	1953	Dec. 12, 1952	6.41	3,690
1940	Mar. 31, 1940	a8.26	-		Jan. 25, 1953	a5.84	-
	May 29, 1940	6.01	3,210		Mar. 25, 1953	7.88	6,010
1941	Dec. 29, 1940	a7.73	-		Apr. 27, 1953	5.70	2,830
	Apr. 15, 1941	5.67	2,750	1954	Feb. 22, 1954	a8.44	-
1942	Mar. 10, 1942	5.91	3,070		Mar. 2, 1954	6.46	3,850
	Mar. 11, 1942	a6.75	-		Apr. 9, 1954	6.44	3,830
	Apr. 16, 1942	6.13	3,380		Apr. 17, 1954	7.17	4,900
1943	Mar. 18, 1943	a5.88	-	1955	Mar. 1, 1955	a5.79	-
	May 12, 1943	5.58	2,630		Mar. 11, 1955	a8.04	-
1944	Mar. 25, 1944	a6.66	-		Apr. 7, 1955	5.86	2,840
	Apr. 25, 1944	6.17	3,240		Apr. 11, 1955	5.98	2,990
	June 25, 1944	6.32	3,450		Apr. 15, 1955	6.50	3,650
1945	Mar. 18, 1945	6.75	4,080	1956	Apr. 5, 1956	a8.26	-
	May 5, 1945	6.12	3,170		Apr. 5, 1956	6.86	4,430
	May 19, 1945	7.47	5,230		Apr. 30, 1956	6.12	3,380
1946	Mar. 9, 1946	a8.72	-	1957	Jan. 24, 1957	a6.59	-
	Mar. 15, 1946	5.97	2,970		Feb. 28, 1957	a7.43	-
1947	Feb. 1, 1947	a7.59	-		May 21, 1957	4.20	1,200
	Feb. 6, 1947	a6.91	-	1958	Dec. 21, 1957	8.75	7,460
	Mar. 15, 1947	a6.95	-		Apr. 19, 1958	6.50	3,910
	Mar. 25, 1947	a6.28	-		Apr. 22, 1958	7.75	5,800
	Apr. 7, 1947	6.08	3,120	1959	Apr. 2, 1959	a7.41	-
	Apr. 13, 1947	7.58	5,420		Apr. 3, 1959	7.30	4,930
	June 3, 1947	6.97	4,410		Apr. 5, 1959	6.05	3,180
	July 1, 1947	6.09	3,140	1960	Oct. 25, 1959	6.47	3,730
	Mar. 19, 1948	a6.52	-		Feb. 12, 1960	a8.78	-
1948	Mar. 23, 1948	6.52	3,730		Apr. 1, 1960	a7.16	c 4,600
	Mar. 28, 1948	6.08	3,120		Apr. 5, 1960	7.34	4,990
	Apr. 2, 1948	6.07	3,110	1961	Feb. 26, 1961	a7.22	-
1949	Dec. 31, 1948	8.86	7,790		Apr. 23, 1961	5.67	2,700
	Feb. 16, 1949	a6.18	-	1962	Apr. 8, 1962	7.36	5,030
	Mar. 28, 1949	5.96	2,970				
1950	Mar. 9, 1950	a5.94	-				

a Backwater from ice.

c Estimated.

2790. Lake George Outlet at Ticonderoga, N.Y.

Location--Lat 43°50'35", long 73°26'00", at Ticonderoga, Essex County; on right bank 250 ft downstream from "C" milldam of International Paper Co., 250 ft upstream from Trout Brook, and half a mile downstream from upper dam ("A" milldam) of International Paper Co.

Drainage area--234 sq mi.

Gage--Recording gage and concrete control on river channel. Datum of gage is 190.41 ft above mean sea level, datum of 1929. Turbine gate-opening recorder in powerhouse at "C" milldam.

Stage-discharge relation--Defined by current-meter measurements for the river channel. Discharge in tailrace determined from rating for turbine gates developed from current-meter measurements. Records represent total discharge for Lake George and include flow in river channel and in tailrace.

Remarks--Appreciable regulation by powerplant and floodgates on Lake George half a mile upstream. Only annual maximum daily discharges are shown.

Maximum daily mean discharges of Lake George Outlet at Ticonderoga, N.Y.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1943	May 13, 14, 1943	-	1,100	1953	May 4, 1953	-	1,150
1944	May 1, 1944	-	1,070	1954	May 11, 1954	-	988
1945	Apr. 7, 1945	-	1,100	1955	Apr. 18, 1955	-	952
	May 23, 1945	-	1,100				
1946	Nov. 24, 1945	-	1,030	1956	May 2, 3, 1956	-	941
1947	June 5, 6, 1947	-	1,290	1957	May 28, 1957	-	237
1948	June 13, 1948	-	881	1958	Apr. 24, 1958	-	1,060
1949	Jan. 12, 1949	-	1,060	1959	Apr. 13, 14, 1959	-	901
1950	Apr. 6, 7, 1950	-	1,090	1960	Apr. 26, 1960	-	1,010
				1961	Apr. 14, 17, 1961	-	922
1951	Apr. 15, 1951	-	1,250	1962	Apr. 15, 1962	-	1,080
1952	Apr. 16, 17, 1952	-	1,160				

2800. Poultney River below Fair Haven, Vt.

Location.--Lat 43°37'40", long 73°18'50", on right bank a third of a mile downstream from Carver Falls, 1.9 miles upstream from Hubbardton River, and 3½ miles northwest of Fair Haven, Rutland County.

Drainage area.--187 sq mi.

Gage.--Recording. Altitude of gage is 105 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,400 cfs and extended above on basis of flow-over-dam measurements at 6,190 cfs, 10,300 cfs, and 15,000 cfs.

Remarks.--Flow regulated by powerplant above station and by Lake Bomoseen. Base for partial-duration series, 2,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Mar. 16, 1929	13.48	3,900	1943	Aug. 5, 1943	11.40	3,000
1930	Feb. 24, 1930	-	2,500	1944	Mar. 26, 1944	a16.13	-
1931	July 22, 1931	10.60	2,140		Apr. 10, 1944	15.40	5,370
1932	Apr. 1, 1932	15.49	5,390	1945	Apr. 26, 1945	12.61	3,370
	Mar. 13, 1932	11.89	2,880		July 20, 1945	24.36	14,800
1933	Nov. 20, 1932	16.26	6,030	1946	Mar. 9, 1946	a17.55	4,500
	Apr. 8, 1933	11.46	2,660	1947	June 3, 1947	16.89	6,190
1934	Mar. 28, 1934	a16.64	-	1948	Mar. 20, 1948	a20.22	-
	Apr. 3, 1934	11.51	2,660		Mar. 22, 1948	14.71	4,530
1935	Jan. 9, 1935	a17.96	-	1949	Dec. 31, 1948	17.71	6,920
	July 8, 1935	14.00	4,250	1950	Mar. 28, 1950	15.88	5,380
1936	Mar. 12, 1936	22.9	5,500	1951	Nov. 26, 1950	10.60	2,240
	Mar. 18, 1936	16.50	6,190	1952	Apr. 2, 1952	11.94	2,850
1937	Apr. 6, 1937	16.10	5,870		Apr. 6, 1952	13.15	3,520
	May 15, 1937	15.70	5,550		June 2, 1952	14.52	4,390
1938	Sept. 22, 1938	21.40	10,300	1953	Jan. 25, 1953	a15.32	4,950
1939	Dec. 7, 1938	12.43	3,540	1954	Feb. 17, 1954	a15.40	-
	Mar. 27, 1939	11.95	3,300		Feb. 22, 1954	-	b2,000
	Apr. 20, 1939	15.82	5,760	1955	Mar. 2, 1955	a13.43	-
	Apr. 22, 1939	11.55	3,100		Mar. 12, 1955	12.40	3,080
1940	Mar. 31, 1940	a21.8	-	1956	Apr. 7, 1956	13.01	3,440
	Apr. 13, 1940	12.78	3,600		Apr. 17, 1956	11.56	2,660
	May 21, 1940	19.75	8,840	1957	Jan. 23, 1957	a16.70	b3,000
1941	Dec. 29, 1940	13.76	4,380	1958	Dec. 21, 1957	(a)	4,700
	July 8, 1941	12.33	3,480	1959	Jan. 22, 1959	a16.20	-
1942	Mar. 10, 1942	a14.42	3,800				
1943	Feb. 25, 1943	a12.29	-				

a Backwater from ice.
b Estimated.

Peak stages and discharges of Poultney River below Fair Haven, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1959	Apr. 3, 1959	15.99	5,060	1960	Apr. 4, 1960	14.13	4,120
1960	Nov. 28, 1959	19.26	8,360	1961	Feb. 26, 1961	16.51	2,400
	Dec. 13, 1959	11.71	2,740				
	Jan. 4, 1960	-	5,000		Apr. 1, 1962	15.88	5,380
	Mar. 31, 1960	16.44	5,830		Apr. 8, 1962	11.52	2,640

a Backwater from ice.

b Estimated.

2815. East Creek at Rutland, Vt.

Location.--Lat 43°37'40", long 72°59'20", on left bank on grounds of Rutland Country Club, at Rutland, Rutland County, 280 ft downstream from Grove Street Bridge and 2 miles upstream from mouth.

Drainage area.--51.1 sq mi.

Gage.--Recording. Altitude of gage is 570 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 940 cfs and extended above on basis of indirect measurements at 3,450 and 36,500 cfs.

Remarks.--Flow regulated by powerplants and, prior to June 3, 1947, by Chittenden and East Pittsford Reservoirs; after June 3, 1947, by Chittenden Reservoir. 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)
1941	July 8, 1941	3.75	1,160	1952	June 1, 1952	4.75	1,800
1942	Apr. 8, 1942	3.13	758	1953	Mar. 27, 1953	4.54	1,650
1943	Aug. 4, 1943	3.46	975	1954	Feb. 22, 1954	3.08	699
1944	Apr. 10, 1944	3.52	1,020	1955	Aug. 13, 1955	3.97	1,250
1945	June 25, 1945	7.10	3,450				
1946	Mar. 9, 1946	3.84	1,220	1956	Apr. 29, 1956	3.94	1,230
1947	June 3, 1947	a20.3	36,500	1957	Jan. 23, 1957	b3.55	894
1948	Mar. 22, 1948	b3.80	(c)	1958	Apr. 21, 1958	3.77	1,110
1949	Dec. 31, 1948	4.26	1,450	1959	Apr. 2, 1959	4.01	1,280
1950	Apr. 5, 1950	3.78	1,120	1960	Nov. 28, 1959	4.34	1,510
				1961	May 10, 1961	3.24	787
1951	Nov. 26, 1950	5.32	2,190	1962	Mar. 31, 1962	3.36	851

a From floodmark; caused by dam failure 5.8 miles upstream.

b Backwater from ice.

c Annual peak discharge not determined.

2820. Otter Creek at Center Rutland, Vt.

Location.--Lat 43°36'15", long 73°00'50", on right bank 500 ft upstream from bridge on U.S. Highway 4 at Center Rutland, Rutland County, 200 ft downstream from dam, 1.2 miles downstream from East Creek, and 1½ miles west of Rutland.

Drainage area.--307 sq mi.

Gage.--Nonrecording prior to July 22, 1929; recording thereafter. Datum of gage is 475.80 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 7,400 cfs and extended above on basis of flow-over-dam measurements at 8,630, 10,100, and 13,700 cfs.

Remarks.--Prior to June 3, 1947, flow regulated by Chittenden and East Pittsford Reservoirs on East Creek; after June 3, 1947, by Chittenden Reservoir. Base for partial-duration series, 3,400 cfs.

Peak stages and discharges of Otter Creek at Center Rutland, Vt.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1929	Apr. 26, 1929	8.45	5,630	1946	Mar. 9, 1946	8.17	4,920
1930	Mar. 8, 1930	5.73	2,700	1947	Mar. 15, 1947	7.19	4,050
1931	Apr. 12, 1931	7.25	3,790		Apr. 12-13, 1947	8.44	5,980
	July 23, 1931	7.96	4,520		June 3, 1947	11.51	10,100
1932	Apr. 13, 1932	6.71	3,350	1948	Mar. 22, 1948	9.72	7,590
1933	Nov. 20, 1932	6.53	3,490	1949	Dec. 31, 1948	11.45	10,000
	Apr. 8, 1933	6.50	3,490	1950	Apr. 5, 1950	8.28	5,790
	Apr. 18, 1933	9.08	6,470	1951	Nov. 27, 1950	8.07	5,530
1934	Mar. 6, 1934	7.11	4,140		Mar. 31, 1951	7.13	4,490
	Apr. 13, 1934	8.66	5,990		Apr. 12, 1951	7.67	5,090
1935	Jan. 10, 1935	9.02	6,350	1952	Apr. 6, 1952	8.17	5,650
1936	Mar. 12, 1936	9.72	7,190		June 2, 1952	9.79	7,680
	Mar. 18-19, 1936	10.84	8,580	1953	Jan. 25, 1953	8.26	5,760
	Apr. 7, 1936	7.10	4,140		Mar. 27, 1953	9.83	7,730
1937	Feb. 22, 1937	6.88	3,920		Apr. 27, 1953	-	{a}
	May 15, 1937	7.72	4,800		May 1, 1953	-	{a}
1938	Sept. 22, 1938	12.45	13,700	1954	June 24, 1954	5.39	2,790
1939	Dec. 6, 1938	7.13	4,320	1955	Apr. 16, 1955	7.04	4,390
	Apr. 20, 1939	8.51	6,250	1956	Apr. 6, 1956	6.08	3,400
	Apr. 26, 1939	7.24	4,440		Apr. 17, 1956	7.48	4,880
1940	Apr. 1, 1940	6.55	3,820		Apr. 30, 1956	9.68	7,530
	Apr. 13, 1940	7.29	4,660	1957	Jan. 23, 1957	6.05	3,370
	May 3, 1940	8.76	6,760	1958	Dec. 21, 1957	7.95	5,000
	May 21, 1940	8.68	6,610		Apr. 22, 1958	9.99	7,280
	Sept. 2, 1940	6.35	3,820	1959	Jan. 22, 1959	6.77	3,560
1941	July 8, 1941	6.73	4,220		Apr. 3, 1959	8.34	5,030
1942	Apr. 8, 1942	7.78	5,620	1960	Nov. 28, 1959	9.35	6,350
1943	Apr. 29, 1943	6.04	3,400		Apr. 1, 1960	9.97	7,260
1944	Apr. 11, 1944	7.52	4,250		Apr. 5, 1960	10.26	7,690
1945	Jan. 1, 1945	7.18	3,950		Apr. 16, 1960	7.17	3,880
	Mar. 19, 1945	6.80	3,610		Apr. 19, 1960	7.31	3,990
	Mar. 22, 1945	6.77	3,580	1961	Feb. 26, 1961	5.85	2,920
	Apr. 26, 1945	6.80	3,610	1962	Apr. 1, 1962	8.73	5,520
	July 20, 1945	9.21	6,030		Apr. 8, 1962	8.28	4,960

a Unknown; exceeded base discharge.

2825. Otter Creek at Middlebury, Vt.

Location.--Lat 44°00'45", long 73°10'05", on right bank 150 ft upstream from highway bridge in Middlebury, Addison County, and 3½ miles downstream from Middlebury River.

Drainage area.--628 sq mi.

Gage.--Nonrecording prior to Oct. 18, 1933; recording thereafter. At datum 10 ft lower prior to Feb. 1, 1920. At site 1,800 ft upstream prior to Oct. 18, 1933. Datum of gage is 335.75 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 9,000 cfs and extended above by logarithmic plotting.

Remarks.--Only annual peaks are shown.

Peak stages and discharges of Otter Creek at Middlebury, Vt.

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1904	Mar. 31, 1904	16.35	4,260	1939	Apr. 26, 1939	6.98	5,860
1905	Apr. 3, 1905	17.4	5,750	1940	May 7, 1940	6.91	5,730
1906	Apr. 22, 1906	16.5	4,670	1941	Dec. 31, 1940	4.55	2,840
1911	Apr. 9, 1911	15.75	3,160	1942	Apr. 14, 1942	4.74	3,020
1912	Apr. 11, 1912	17.75	4,950	1943	May 13, 1943	4.91	3,290
1913	Mar. 30, 1913	21.07	9,950	1944	Apr. 17, 1944	5.41	3,830
1914	Apr. 24, 1914	18.4	5,540	1945	Mar. 25, 1945	6.04	4,660
1915	Mar. 3, 1915	16.00	3,410	1946	Mar. 13, 1946	6.12	4,750
1916	Apr. 5, 1916	17.55	4,850	1947	June 8, 1947	6.13	4,770
1917	Apr. 2, 1917	16.3	3,680	1948	Mar. 25, 1948	7.59	6,690
1918	Mar. 30, 1918	16.1	3,500	1949	Jan. 4, 1949	7.26	6,220
1919	Apr. 12, 1919	15.6	3,050	1950	Apr. 10, 1950	5.56	4,080
1928	Nov. 4, 1927	13.3	13,600	1951	Apr. 16, 1951	5.99	4,550
1929	May 3, 1929	7.22	4,700	1952	Apr. 11, 1952	6.18	4,830
1930	Apr. 8, 1930	5.66	3,080	1953	Apr. 1, 1953	6.32	4,950
1931	Apr. 18, 1931	6.02	3,410	1954	Feb. 27, 1954	5.35	3,750
1932	Apr. 16, 1932	6.80	4,210	1955	Apr. 21, 1955	5.62	4,150
1933	Apr. 21, 1933	8.73	6,450	1956	May 5, 1956	6.18	4,830
1934	Apr. 18, 1934	5.81	4,300	1957	Mar. 16, 1957	3.95	2,220
1935	Jan. 15, 1935	5.08	3,520	1958	Apr. 25, 1958	8.17	6,880
1936	Mar. 21, 1926	10.3	11,000	1959	Apr. 9, 1959	6.39	4,990
1937	May 21, 1937	5.77	4,370	1960	Apr. 7-8, 1960	8.62	8,200
1938	Sept. 25, 1938	7.55	6,630	1961	May 1, 1961	4.44	2,550
				1962	Apr. 13, 1962	6.16	4,800

2840. Jail Branch at East Barre, Vt.

Location.--Lat 44°09'40", long 72°27'00", on right bank 75 ft downstream from highway bridge, at East Barre, Washington County, 0.6 mile downstream from East Barre Detention Reservoir, and 3.9 miles upstream from mouth.

Drainage area.--40.4 sq mi.

Gage.--Nonrecording prior to Jan. 26, 1935; recording thereafter. At site a quarter of a mile upstream at different datum Aug. 14, 1920, to Sept. 30, 1923. Datum of gage is 1,071.59 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--Discharge affected by East Barre Detention Reservoir since 1935. 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)
1921	Oct. 1, 1920	9.50	1,820	1943	Feb. 25, 1943	a2.96	-
1922	Apr. 11, 1922	9.15	1,530		Sept. 28, 1943	1.53	299
1923	Apr. 28, 1923	8.40	1,250	1945	Jan. 3, 1945	a3.00	-
1934	Apr. 12, 1934	4.00	1,260		May 1945	1.60	415
1935	Jan. 10, 1935	3.00	821	1946	Mar. 4, 1946	a2.78	(b)
1936	Mar. 12, 1936	a2.68	-	1947	Mar. 14, 1947	a2.59	-
	Mar. 18, 1936	2.15	461		Apr. 12, 1947	1.54	394
1937	Apr. 6, 1937	a2.71	-	1948	Feb. 16, 1948	a2.26	-
	Apr. 7, 1937	1.79	317		Apr. 23, 1948	1.43	338
1938	Dec. 28, 1937	a3.50	-	1949	Dec. 31, 1948	1.36	309
	Sept. 21, 1938	1.90	455		Jan. 1, 1949		
1939	Feb. 17, 1939	a4.35	-		Mar. 28, 1949		
	Apr. 28, 1939	1.84	417	1950	Mar. 23, 1949	a2.08	-
1940	Apr. 1, 1940	a3.03	-		Feb. 20, 1950	a3.11	-
	May 3, 1940	1.79	418		Mar. 5, 1950	1.42	348
1941	Feb. 9, 10, 1941	a2.26	-	1951	Feb. 14, 1951	a3.34	-
	Apr. 16, 1941	1.60	295		Apr. 12, 1951	1.49	394
1942	Mar. 9, 1942	a3.92	-	1952	Jan. 30, 1952	a3.91	-
	Apr. 17-20, 1942	1.56	319		June 1, 1952	1.64	529

a Backwater from ice.

b Annual peak discharge not determined.

Peak stages and discharges of Jail Branch at East Barre, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Mar. 9, 1953	a2.30	-	1958	Jan. 23, 1958	a2.20	-
	Mar. 30, 1953	1.46	400		Apr. 23, 1958	1.34	479
1954	Feb. 22, 1954	a2.64	-	1959	Feb. 2, 1959	a2.10	-
	Apr. 7, 1954	1.28	340		Apr. 3, 1959	1.52	590
1955	Mar. 2, 1955	a2.29	-	1960	Feb. 11, 1960	a2.93	-
	Apr. 16, 1955	1.27	363		Mar. 31, 1960	1.25	432
1956	Apr. 5, 1956	a1.79	-	1961	Apr. 24, 1961	-	470
	Apr. 17, 1956	1.14	277	1962	Apr. 8-11, 1962	1.40	515
1957	Jan. 23, 1957	-	-				

a Backwater from ice.

2855. North Branch Winooski River at Wrightsville, Vt.

Location.--Lat 44°18'00", long 72°34'45", on right bank at Wrightsville, Washington County, three-quarters of a mile downstream from Wrightsville Detention Reservoir and $3\frac{1}{2}$ miles upstream from mouth.

Drainage area.--69.2 sq mi.

Gage.--Nonrecording prior to Nov. 21, 1934; recording thereafter. Datum of gage is 550.53 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,100 cfs and extended above.

Remarks.--Discharge affected since 1935 by Wrightsville Detention Reservoir. 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)
1928	Nov. 3, 1927	-	a17,200	1947	Apr. 13, 1947	3.66	833
				1948	Apr. 2, 3, 1948	3.48	696
1934	Apr. 12, 1934	6.53	2,170	1949	Mar. 30, 1949	3.47	663
1935	Jan. 10, 1935	5.22	1,470	1950	Apr. 22, 1950	3.41	669
1936	Mar. 21, 1936	4.32	1,040	1951	Apr. 15, 1951	3.58	703
1937	Apr. 20-22, 1937	3.56	710	1952	Apr. 20-21, 1952	3.57	700
	May 16, 1937			1953	Mar. 30-31, 1953	3.67	785
1938	Sept. 21, 1938	3.75	790	1954	Apr. 23-24, 1954	3.80	850
1939	Apr. 28-30, 1939	3.89	890	1955	Apr. 20, 1955	3.75	825
1940	May 4, 1940	3.84	875				
1941	Apr. 17, 1941	3.64	775	1956	May 4, 1956	3.49	641
1942	Apr. 19, 1942	3.69	795	1957	Jan. 23, 1957	b4.85	-
1943	Apr. 28-May 2, 1943	3.62	745	1958	Apr. 22, 1957	3.17	580
1944	May 2, 1944	3.46	677	1959	Apr. 23, 1958	3.76	870
1945	Mar. 30, 1945	3.64	780	1960	Apr. 3, 1959	3.58	780
					Apr. 18-19, 1960	3.59	785
1946	Mar. 16, 1946	3.44	700	1961	Apr. 27, 1961	3.62	800
				1962	Apr. 9-10, 1962	3.70	840

a Flow-over-dam measurement.

b Backwater from ice.

2860. Winooski River at Montpelier, Vt.

Location.--Lat 44°15'25", long 72°35'35", on right bank 0.4 mile upstream from Dog River and 1 mile downstream from depot at Montpelier, Washington County.

Drainage area.--397 sq mi.

Gage.--Nonrecording prior to July 4, 1914; recording thereafter. At site 0.9 mile upstream at different datum prior to June 16, 1914. Datum of gage is 499.99 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 6,900 cfs and extended above by logarithmic plotting.

Remarks.--Flow regulated by Peacham Pond and since 1926 by Mollys Falls Reservoir (combined usable capacity, 492,000,000 cu ft), which regulate runoff from 24 sq mi, and since 1935 by East Barre and Wrightsville Detention Reservoirs (combined usable capacity, 1,379,500,000 cu ft). Base for partial-duration series, 3,900 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	Apr. 7, 1912	a17.31	17,200	1929	Apr. 6, 1929	8.82	5,010
1913	Mar. 27, 1913	14.6	11,500		Apr. 26, 1929	8.06	4,060
1914	Apr. 20, 1914	14.0	10,600	1930	Feb. 24, 1930	b11.99	-
1915	Feb. 25, 1915	b16.6	6,500		Mar. 26, 1930	9.13	5,360
	Apr. 12, 1915	9.75	6,100		June 7, 1930	9.85	6,500
1916	Jan. 28, 1916	b12.20	5,000	1931	Apr. 11, 1931	10.18	6,650
	Mar. 31, 1916	b12.76	-		May 23, 1931	8.16	4,180
	Apr. 2, 1916	b9.97	4,500		June 9, 1931	8.02	4,010
	May 17, 1916	10.31	6,770	1932	Apr. 8, 1932	10.07	6,480
1917	Mar. 28, 1917	b12.57	8,200		Apr. 12, 1932	12.81	10,100
	Apr. 2, 1917	8.61	4,720	1933	Nov. 19, 1932	13.18	10,300
	Apr. 22, 1917	8.42	4,480		Apr. 7, 1933	10.79	7,350
	June 12, 1917	11.15	7,780		Apr. 10, 1933	8.52	4,610
1918	Oct. 30, 1917	11.43	8,120		Apr. 18, 1933	14.24	11,700
	Apr. 2, 1918	10.65	7,180	1934	Apr. 2, 1934	9.64	5,970
	Aug. 9, 1918	9.03	5,240		Apr. 12, 1934	13.93	11,300
1919	Oct. 6, 1918	11.65	8,380		Apr. 17, 1934	10.32	6,780
	Oct. 31, 1918	11.30	7,960		Apr. 25, 1934	8.01	4,090
	Nov. 19, 1918	9.19	5,430	1935	Jan. 10, 1935	b14.89	13,500
	Mar. 28, 1919	14.63	12,300	1936	Mar. 12, 1936	b13.8	7,000
	Apr. 7, 1919	7.96	3,900		Mar. 18, 1936	16.57	15,600
	Apr. 12, 1919	11.20	7,840		Apr. 6, 1936	-	5,500
	May 23, 1919	11.31	7,970	1937	Apr. 6, 1937	10.66	7,190
1920	Mar. 26, 1920	b14.20	-		Apr. 16, 1937	8.69	4,850
	Mar. 27, 1920	b11.19	7,600		May 15, 1937	11.64	8,370
	Apr. 5, 1920	8.93	5,120	1938	Mar. 24, 1938	10.03	6,490
	Apr. 13, 1920	12.94	10,000		Sept. 22, 1938	14.11	11,500
	Apr. 16, 1920	8.54	4,630	1939	Dec. 6, 1938	b8.83	4,500
	Apr. 24, 1920	9.16	5,390		Dec. 10, 1938	8.65	4,800
	Apr. 28, 1920	8.58	4,680		Apr. 20, 1939	10.52	7,020
1921	Oct. 1, 1920	13.9	11,300		Apr. 22, 1939	10.61	7,340
	Dec. 15, 1920	10.00	6,400	1940	Apr. 12, 1940	8.69	4,850
	Mar. 10, 1921	b11.16	5,000		Apr. 19, 1940	8.00	4,090
	Mar. 16, 1921	10.27	6,720		May 3, 1940	9.96	6,490
	Mar. 21, 1921	11.17	7,800		May 21, 1940	8.00	4,090
	Mar. 25, 1921	8.33	4,360		May 28, 1940	8.52	4,660
1922	Mar. 8, 1922	b10.81	-	1941	Dec. 29, 1940	b9.14	-
	Mar. 29, 1922	10.86	7,430		Apr. 16, 1941	6.93	2,800
	Apr. 12, 1922	14.77	12,500	1942	Apr. 16, 1942	9.83	6,440
1923	Apr. 6, 1923	b12.77	7,000	1943	May 12, 1943	8.05	4,160
	Apr. 21, 1923	8.50	4,580	1944	Nov. 9, 1943	8.67	4,970
	Apr. 30, 1923	11.43	8,120		Apr. 10, 1944	9.66	6,260
1928	Nov. 3, 1927	27.1	57,000	1945	Jan. 2, 1945	b11.15	-
1929	Jan. 19, 1929	b12.50	-				
	Mar. 16, 1929	b11.73	6,100				
	Mar. 24, 1929	8.15	4,180				

a From floodmark, present datum.

b Backwater from ice.

Peak stages and discharges of Winooski River at Montpelier, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1945	Mar. 18, 1945	b8.76	4,600	1954	Mar. 2, 1954	b9.17	-
	Mar. 28, 1945	7.80	3,920		Apr. 8, 1954	8.21	3,970
	Apr. 26, 1945	8.07	4,240				
	May 18, 1945	9.92	6,600	1955	Apr. 6, 1955	9.36	5,130
1946	Oct. 2, 1945	8.56	4,740		Apr. 11, 1955	8.39	4,140
	Oct. 9, 1945	8.02	4,140		Apr. 16, 1955	8.87	4,560
	Mar. 9, 1946	b14.10	9,000		Apr. 19, 1955	8.82	4,580
	Mar. 14, 1946	b8.38	4,300	1956	Apr. 17, 1956	8.81	4,570
1947	Mar. 25, 1947	8.27	4,430		May 27, 1956	8.54	4,300
	Apr. 6, 1947	8.03	4,150	1957	Jan. 23, 1957	7.72	3,550
	Apr. 12, 1947	9.64	5,970		Jan. 23, 1957	b10.71	-
	June 3, 1947	13.90	11,300	1958	Dec. 21, 1957	9.52	5,300
1948	Mar. 22, 1948	8.25	4,400		Apr. 18, 1958	10.07	5,930
1949	Dec. 31, 1948	10.46	6,950		Apr. 22, 1958	10.51	6,390
1950	Apr. 5, 1950	8.93	5,120	1959	Apr. 3, 1959	9.76	5,480
	Apr. 21, 1950	8.98	5,180		Apr. 6, 1959	9.23	4,960
1951	Dec. 5, 1950	9.60	5,920		Apr. 8, 1959	8.54	4,170
	Feb. 7, 1951	b10.90	-	1960	Nov. 28, 1959	12.02	6,600
	Mar. 31, 1951	8.97	5,080		Mar. 31, 1960	10.04	4,810
1952	Apr. 6, 1952	9.84	5,650		Apr. 5, 1960	10.78	5,470
	Apr. 10, 1952	8.63	4,390	1961	Feb. 26, 1961	b10.59	-
	June 1, 1952	14.16	10,900		Apr. 23, 1961	8.54	4,170
1953	Mar. 25, 1953	9.83	5,640	1962	Apr. 1, 1962	9.77	5,490
	Mar. 27, 1953	9.84	5,650		Apr. 8, 1962	10.59	6,440

b Backwater from ice.

2865. Dog River at Northfield, Vt.

Location.--Lat 44°08'20", long 72°40'00", on left bank at downstream side of highway bridge at Norwich University, Northfield, Washington County, 1 mile upstream from Union Brook.

Drainage area.--52 sq mi, approximately.

Gage.--Nonrecording prior to Oct. 8, 1914; recording, Oct. 8, 1914, to Sept. 21, 1918; nonrecording, Sept. 22, 1918, to Oct. 31, 1920; recording thereafter.

Altitude of gage is 730 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,600 cfs and extended above on basis of flow-over-dam measurement at 8,000 cfs.

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)
1912	Apr. 7, 1912	7.5	2,550	1928	Nov. 3, 1927	10.9	8,000
1913	Mar. 25, 1913	8.5	3,690				
1914	Apr. 19, 1914	7.8	2,880	1929	Mar. 24, 1929	5.66	1,100
1915	Apr. 11, 1915	6.02	1,270	1930	Apr. 7, 1930	5.93	1,220
1916	May 17, 1916	5.83	1,160	1931	Apr. 11, 1931	6.48	1,590
1917	Mar. 28, 1917	5.78	1,140	1932	Apr. 12, 1932	6.86	1,910
1918	Oct. 30, 1917	5.77	1,140	1933	Apr. 18, 1933	7.17	2,220
1919	Mar. 28, 1919	8.0	3,100	1934	Apr. 12, 1934	7.66	2,730
1920	Apr. 13, 1920	8.6	3,820				

2870. Dog River at Northfield Falls, Vt.

Location.--Lat 44°10'55", long 72°38'30", on right bank 1 mile downstream from Northfield Falls, Washington County, and $1\frac{1}{4}$ miles downstream from Cox Branch.

Drainage area.--76.1 sq mi.

Gage.--Recording. Datum of gage is 303.00 ft above mean sea level (levels by Corps of Engineers).

Stage-discharge relation.--Defined by current-meter measurements below 1,600 cfs and extended above on basis of indirect measurements at 5,700, 6,800 and 9,750 cfs.

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)
1935	Jan. 10, 1935	6.78	3,800	1947	June 3, 1947	8.96	6,450
1936	Mar. 12, 1936	5.41	2,380	1948	Mar. 22, 1948	5.86	2,660
	Mar. 18, 1936	8.49	5,700		Mar. 27, 1948	4.70	1,670
	Mar. 21, 1936	6.66	3,690	1949	Dec. 31, 1948	8.73	6,150
1937	Apr. 16, 1937	4.83	1,880		Apr. 5, 1950	5.10	1,980
	May 15, 1937	7.39	4,460	1950	Apr. 20, 1950	4.82	1,760
1938	Nov. 14, 1937	4.70	1,750		Nov. 26, 1950	4.83	1,760
	Mar. 24, 1938	5.43	2,400	1951	Dec. 4, 1950	6.85	3,770
	Sept. 21, 1938	11.53	9,750	1952	Apr. 6, 1952	5.87	2,670
1939	Dec. 6, 1938	5.15	2,040		Apr. 10, 1952	4.75	1,700
	Dec. 10, 1938	5.02	1,920		June 1, 1952	9.46	7,140
	Apr. 20, 1939	5.62	2,450		Dec. 12, 1952	6.12	2,930
	Apr. 22, 1939	5.86	2,740		Mar. 24, 1953	6.70	3,590
	Apr. 25, 1939	5.14	2,040	1953	Mar. 27, 1953	5.71	2,510
1940	Apr. 12, 1940	4.82	1,760		Apr. 8, 1954	5.36	2,190
	Apr. 19, 1940	4.67	1,640	1954	Apr. 10, 1955	5.03	1,920
	May 3, 1940	6.70	3,600		Apr. 15, 1955	4.85	1,780
	May 21, 1940	4.76	1,720	1955	Apr. 17, 1956	4.64	1,630
	May 28, 1940	5.89	2,740		Jan. 23, 1957	5.16	2,030
1941	Dec. 29, 1940	4.02	1,210	1956	Dec. 21, 1957	7.99	5,190
1942	Apr. 15, 1942	6.67	3,620		Apr. 22, 1958	6.44	3,280
	May 12, 1943	4.49	1,560	1957	Apr. 3, 1959	5.00	1,900
1943	Nov. 9, 1943	6.35	3,220		Oct. 24, 1959	4.83	1,760
	Apr. 10, 1944	6.42	3,290	1958	Nov. 28, 1959	7.81	4,950
1944	Mar. 18, 1945	4.97	1,730		Apr. 5, 1960	5.06	1,950
	Oct. 2, 1945	5.28	2,090	1959	Apr. 23, 1961	5.18	2,040
1945	Oct. 9, 1945	4.93	1,810		Mar. 31, 1962	4.80	1,740
	Mar. 9, 1946	5.35	2,150	1960	Apr. 7, 1962	6.36	3,200
	Mar. 14, 1946	4.65	1,620				
	Mar. 25, 1947	4.72	1,680				
1946	Apr. 6, 1947	4.78	1,730				
	Apr. 12, 1947	6.01	2,810				

2880. Mad River near Moretown, Vt.

Location.--Lat 44°16'40", long 72°44'35", on left bank at downstream side of highway bridge, 2.4 miles downstream from Moretown, Washington County, and 3.8 miles upstream from mouth.

Drainage area.--139 sq mi.

Gage.--Nonrecording prior to Sept. 28, 1930; recording thereafter. Altitude of gage is 545 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 2,700 cfs and extended above on basis of flow-over-dam measurements at 7,470, 9,900, 18,400, and 23,000 cfs.

Remarks.--Base for partial-duration series, 3,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Nov. 3, 1927	19.4	23,000	1947	Apr. 12, 1947	8.60	5,620
1929	Mar. 15, 1929	a8.08	-	May 30, 1947	8.66	5,710	10,100
	Apr. 6, 1929	6.50	3,200	June 3, 1947	11.51		
1930	June 19, 1930	6.66	3,390	1948	Mar. 16, 1948	a11.28	-
1931	Apr. 11, 1931	9.18	7,030	Mar. 22, 1948	8.13	4,640	4,240
				Mar. 27, 1948	7.84		
1932	Apr. 12, 1932	7.06	3,940	1949	Dec. 31, 1948	10.75	8,780
1933	Nov. 19, 1932	7.96	5,170	1950	Apr. 5, 1950	7.94	4,380
	Apr. 18, 1933	9.45	7,360	1951	Nov. 26, 1950	8.28	4,850
1934	Apr. 12, 1934	10.20	8,120	Dec. 4, 1950	9.23	6,270	-
				Feb. 2, 1951	a10.04		
1935	Jan. 9, 1935	(a)	4,500	Apr. 26, 1951	7.95	4,390	-
	Mar. 17, 1935	a11.20	-	1952	Apr. 6, 1952	-	
1936	Mar. 12, 1936	a10.73	5,950	June 1, 1952	9.88	7,310	-
	Mar. 18, 1936	9.98	7,770	1953	Dec. 12, 1952	8.70	
1937	Mar. 21, 1936	7.50	4,100	Mar. 24, 1953	8.72	5,500	5,290
	Apr. 6, 1937	7.36	3,900	Mar. 27, 1953	8.58		
1938	May 15, 1937	8.88	6,070	1954	Apr. 8, 1954	8.36	4,960
	Nov. 14, 1937	7.37	3,920	Apr. 11, 1954	7.35	3,580	-
1939	Mar. 24, 1938	8.26	5,160	1955	Mar. 11, 1955	a13.01	
	Sept. 22, 1938	16.34	18,400	Apr. 15, 1955	7.97	4,420	3,980
1939	Dec. 6, 1938	7.77	4,520	1956	Apr. 19, 1955	7.65	-
	Mar. 27, 1939	a9.80	-	Apr. 5, 1956	a8.18		
1940	Apr. 19, 1939	7.06	3,560	Apr. 30, 1956	-	3,500	4,400
	Apr. 22, 1939	7.05	3,560	May 27, 1956	7.96		
1940	May 3, 1940	9.35	6,850	1957	Jan. 23, 1957	8.75	5,540
	May 28, 1940	7.95	4,800	1958	Dec. 21, 1957	9.78	7,150
1941	Dec. 29, 1940	a8.22	-	Apr. 18, 1958	8.57	5,280	5,940
	Apr. 15, 1941	7.47	3,780	Apr. 22, 1958	9.01		
1942	Mar. 9, 1942	a12.60	-	1959	Jan. 22, 1959	a10.93	-
	Apr. 16, 1942	9.08	6,070	Apr. 3, 1959	9.16	6,160	4,340
1943	Feb. 24, 1943	a10.84	-	1960	Oct. 24, 1959	7.79	
	May 12, 1943	6.76	2,830	Nov. 28, 1959	10.15		-
1944	Nov. 9, 1943	8.85	5,700	Mar. 31, 1960	a12.67	-	4,500
	Apr. 10, 1944	8.53	5,220	Apr. 5, 1960	-	3,570	4,080
1945	Sept. 19, 1945	9.23	6,270	Sept. 12, 1960	7.18		
1946	Oct. 2, 1945	8.79	5,600	1961	Apr. 23, 1961	7.59	
	Mar. 7, 1946	a13.35	-	May 10, 1961	8.19		
1947	Mar. 9, 1946	9.10	6,070	1962	Mar. 30, 1962	a9.47	-
	Apr. 6, 1947	7.76	4,120	Mar. 31, 1962	-	4,100	4,520
				Apr. 7, 1962	7.93	3,590	
				July 31, 1962	7.20		

a Backwater from ice.

2890. Little River near Waterbury, Vt.
(Formerly published as Waterbury River near Waterbury, Vt.)

Location.--Lat 44°22'10", long 72°46'10", on right bank 1 mile downstream from Waterbury Reservoir, 1 2/3 miles upstream from mouth, and 2 1/2 miles north of Waterbury, Washington County.

Drainage area.--111 sq mi.

Gage.--Recording. Datum of gage is 428.00 ft above mean sea level (levels by Corps of Engineers).

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

Remarks.--Flow completely regulated by Waterbury Reservoir. 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. 18, 1936	19.38	6,520	1950	Dec. 23, 1949	9.25	1,380
1937	May 15, 1937	14.18	3,740				
1938	Dec. 9, 1937	14.88	4,080	1951	Apr. 26, 1951	9.35	1,420
1939	May 5, 1939	10.56	2,010	1952	June 1, 1952	9.49	1,500
1940	May 3, 1940	9.50	1,500	1953	Mar. 25, 1953	10.23	1,840
				1954	Apr. 23, 1954	10.40	1,920
1941	Apr. 4, 1941	8.38	880	1955	Apr. 26, 1955	8.34	847
1942	June 14, 1942	9.55	1,550				
1943	May 3, 1943	9.46	1,500	1956	May 28, 1956	9.16	1,330
1944	May 1, 1944	9.36	1,430	1957	July 22, 1957	7.79	570
1945	Apr. 5, 1945	9.33	1,420	1958	Apr. 24, 1958	11.34	2,340
				1959	Oct. 29, 1958	8.01	670
1946	Oct. 2, 1945	9.43	1,460	1960	Nov. 30, 1959	9.78	1,640
1947	May 1, 1947	9.66	1,580				
1948	Aug. 14, 1948	9.56	1,530	1961	June 22, 1961	8.76	1,090
1949	Jan. 1, 1949	9.29	1,400	1962	July 31, 1962	11.83	2,560

2905. Winooski River near Essex Junction, Vt.

Location.--Lat 44°28'40", long 73°08'20", on right bank half a mile downstream from Muddy Brook and 2 miles southwest of Essex Junction, Chittenden County.

Drainage area.--1,044 sq mi.

Gage.--Recording. Altitude of gage is 185 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 27,000 cfs and extended above on basis of indirect measurements at 32,600, 45,300, and 113,000 cfs.

Remarks.--Flow regulated by powerplants above station, by Peachar Pond and Mollys Falls Reservoir, by Waterbury Reservoir since 1937, and by East Barre and Wrightsville Detention Reservoirs since 1935. Base for partial-duration series, 12,500 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1928	Nov. 4, 1927	50.4	113,000	1933	Apr. 19, 1933	18.60	34,600
1929	Mar. 17, 1929	11.64	19,300		May 4, 1933	8.40	12,900
	Mar. 23, 1929	9.90	15,500	1934	Mar. 28, 1934	11.65	14,000
	Apr. 6, 1929	9.80	15,300		Apr. 3, 1934	11.70	19,400
	Apr. 27, 1929	8.84	12,700		Apr. 13, 1934	17.32	31,600
1930	Jan. 9, 1930	12.60	21,300		Apr. 17, 1934	11.00	18,000
	Mar. 27, 1930	8.78	12,700	1935	Jan. 10, 1935	16.96	30,900
	Apr. 8, 1930	10.52	17,200		May 1, 1935	8.38	12,900
1931	Apr. 11, 1931	13.22	22,600	1936	Mar. 13, 1936	16.10	28,500
1932	Apr. 9, 1932	10.49	16,900		Mar. 19, 1936	23.54	45,300
	Apr. 13, 1932	13.68	23,600		Mar. 22, 1936	12.57	21,200
					Apr. 7, 1936	9.32	14,600
1933	Oct. 7, 1932	8.83	13,600	1937	Apr. 7, 1937	11.10	18,200
	Nov. 20, 1932	13.42	22,900		May 16, 1937	15.07	26,400
	Apr. 8, 1933	11.97	20,000				

a Backwater from ice.

Peak stages and discharges of Winooski River near Essex Junction, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1938	Mar. 24, 1938	a12.53	20,000	1951	Mar. 31, 1951	8.86	13,800
	Sept. 22, 1938	18.72	34,300		Apr. 26, 1951	9.36	14,700
1939	Dec. 7, 1938	10.06	16,200	1952	Apr. 6, 1952	11.43	19,500
	Apr. 20, 1939	11.07	18,200		June 2, 1952	14.16	24,900
	Apr. 23, 1939	11.00	18,000	1953	Dec. 12, 1952	8.71	14,000
	Apr. 27, 1939	8.79	13,600		Jan. 25, 1953	-	(b)
1940	Apr. 13, 1940	8.30	12,700		Mar. 25, 1953	11.80	19,600
	May 3, 1940	13.38	22,800		Mar. 27, 1953	11.58	19,200
	May 29, 1940	8.31	12,700		Apr. 27, 1953	8.65	13,900
1941	Dec. 30, 1940	a11.82	-	1954	Feb. 22, 1954	(c)	-
	Apr. 14, 1941	7.90	11,900		Apr. 9, 1954	9.09	14,600
1942	Apr. 16, 1942	13.15	22,400		Apr. 12, 1954	8.02	13,000
	June 15, 1942	8.50	13,100	1955	Apr. 7, 1955	8.75	14,100
1943	May 12, 1943	8.35	12,900		Apr. 12, 1955	7.89	12,800
1944	Nov. 9, 1943	11.00	18,000		Apr. 15, 1955	9.36	15,100
	Apr. 11, 1944	10.78	17,600		Apr. 20, 1955	9.01	14,500
1945	Mar. 18, 1945	a9.50	13,500	1956	Apr. 17, 1956	8.03	13,000
	May 14, 1945	8.22	12,500		Apr. 30, 1956	8.29	13,400
1946	Oct. 2, 1945	11.11	18,200		May 28, 1956	9.85	15,900
	Mar. 10, 1946	12.80	21,600	1957	Jan. 23, 1957	a10.60	11,400
	Mar. 15, 1946	a12.30	18,600	1958	Dec. 21, 1957	12.08	20,200
1947	Mar. 28, 1947	8.59	13,200		Apr. 19, 1958	11.33	18,700
	Apr. 7, 1947	8.75	13,500		Apr. 22, 1958	13.03	22,100
	Apr. 12, 1947	12.44	20,900	1959	Apr. 3, 1959	a12.98	19,000
	May 30, 1947	10.50	17,000		Apr. 7, 1959	8.06	13,000
	June 4, 1947	16.27	28,900	1960	Nov. 28, 1959	14.00	24,100
1948	Mar. 22, 1948	10.08	16,200		Apr. 1, 1960	11.71	19,400
	Mar. 28, 1948	8.30	12,700		Apr. 5, 1960	10.98	18,000
1949	Dec. 31, 1948	16.09	28,500	1961	Feb. 26-27, 1961	a12.00	-
1950	Apr. 5, 1950	10.28	16,600		Apr. 23, 1961	8.52	12,800
	Apr. 21, 1950	8.40	12,900		May 10, 1961	8.39	12,600
1951	Dec. 5, 1950	11.17	18,300	1962	Mar. 31, 1962	10.66	16,800
					Apr. 8, 1962	11.83	19,200

a Backwater from Ice.
 occurred on this date.

b Unknown.

c Annual peak stage not determined; oc-

2910. Green River at Garfield, Vt.

Location.--Lat 44°36'10", long 72°32'10", on left bank in pool of dam at Garfield, Lamoille County.

Drainage area.--18 sq mi, approximately.

Gage.--Nonrecording. Datum of gage is 1,100.43 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter measurements below 450 cfs and extended above.

Remarks.--Gage heights Jan. 3, 1915, to Sept. 30, 1918, furnished by C. T. Middlebrook. 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)
1915	Apr. 12, 1915	3.6	435	1925	Mar. 29, 1925	3.7	485
1916	Apr. 18, 1916	2.64	236	1926	Apr. 25, 1926	3.7	498
1917	Apr. 22, 1917	3.12	325	1927	Mar. 19, 1927	2.8	290
1918	Oct. 31, 1917	3.4	385	1928	Nov. 3, 1927	7.6	2,000
1919	Apr. 12, 1919	4.63	710	1929	June 24, 1929	3.3	428
1920	Apr. 24, 1920	3.1	320	1930	Apr. 14, 1930	2.9	352
1923	Apr. 22, 1923	4.3	655	1931	Apr. 11, 1931	3.6	490
1924	May 2, 1924	3.7	485	1932	Apr. 12, 1932	3.0	361

2915. Lamoille River at Cadys Falls, Vt.

Location.--Lat 44°34'35", long 72°37'00", on right bank a quarter of a mile downstream from powerplant of Morrisville Electric Light & Power Co. at Cadys Falls, Lamoille County, a third of a mile upstream from Kenfield Brook, and 1½ miles northwest of Morrisville.

Drainage area.--268 sq mi.

Gage.--Recording. Altitude of gage is 535 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 4,400 cfs and extended above by logarithmic plotting.

Remarks.--Some regulation by reservoirs above station. 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)
1914	Apr. 20, 1914	10.53	7,250	1919	Apr. 12, 1919	10.77	7,530
1915	Apr. 11, 1915	8.9	5,140	1920	Mar. 26, 1920	8.90	5,140
1916	Apr. 2, 1916	7.25	3,370	1921	Oct. 1, 1920	11.63	8,730
1917	June 12, 1917	8.58	4,520	1922	Apr. 12, 1922	10.65	7,360
1918	Oct. 30, 1917	10.66	7,430	1923	Apr. 30, 1923	9.46	5,820

2920. Lamoille River at Johnson, Vt.

Location.--Lat 44°37'20", long 72°40'50", on right bank above falls, 0.7 mile upstream from bridge in Johnson, Lamoille County, and 0.8 mile upstream from Gihon River.

Drainage area.--310 sq mi.

Gage.--Nonrecording prior to Jan. 1, 1914; recording since Sept. 1, 1928. At bridge 0.7 mile downstream at different datum prior to Jan. 1, 1914. Altitude of gage is 495 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 8,500 cfs and extended above on basis of flow-over-dam measurement at 13,000 cfs.

Remarks.--Base for partial-duration series, 5,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1912	Apr. 8, 1912	16.4	12,200	1938	Mar. 24, 1938	12.23	7,410
1913	Mar. 27, 1913	13.0	8,500		Sept. 22, 1938	13.58	9,120
1929	Jan. 19, 1929	all 0.68	-	1939	Dec. 6, 1938	10.99	5,980
	Apr. 6, 1929	9.72	4,640		Apr. 20, 1939	11.14	6,090
1930	Jan. 8, 1930	all 1.27	5,800		Apr. 22, 1939	12.32	7,490
	Apr. 8, 1930	11.23	6,220		Apr. 27, 1939	10.92	5,870
1931	Apr. 11, 1931	11.92	6,880	1940	May 3, 1940	15.28	11,400
1932	Apr. 9, 1932	11.16	5,960	1941	Dec. 30, 1940	all 1.25	-
	Apr. 12, 1932	11.92	6,770		Apr. 14, 1941	10.63	5,540
1933	Oct. 7, 1932	12.38	7,280	1942	Apr. 16, 1942	13.60	8,630
	Nov. 20, 1932	12.98	8,000		June 15, 1942	15.12	10,600
	Apr. 18, 1933	13.78	8,990	1943	May 12, 1943	-	6,700
1934	Apr. 13, 1934	13.22	8,280	1944	Nov. 9, 1943	-	6,000
	Apr. 17, 1934	11.17	5,970	1945	Mar. 19, 1945	11.04	5,840
1935	May 1, 1935	10.72	5,240		Sept. 19, 1945	11.34	6,140
1936	Mar. 13, 1936	-	7,490	1946	Mar. 15, 1946	10.56	5,360
	Mar. 18, 1936	16.48	13,000	1947	Apr. 12, 1947	13.77	8,980
	Apr. 7, 1936	11.38	6,420		May 30, 1947	11.43	6,230
1937	May 15, 1937	12.54	7,730		June 3, 1947	11.95	6,800

a Backwater from ice.

Peak stages and discharges of Lamoille River at Johnson, Vt.--Continued^a

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1948	Mar. 23, 1948	11.33	6,130	1955	Aug. 17, 1955	11.21	6,010
1949	Dec. 31, 1948	13.32	8,400	1956	May 29, 1956	11.49	6,300
	Mar. 28, 1949	11.05	5,850		Jan. 23, 1957	9.97	4,820
1950	Apr. 5, 1950	11.69	6,520	1958	Dec. 21, 1957	13.35	8,440
	Apr. 21, 1950	12.23	7,110		Apr. 19, 1958	11.56	6,380
1951	Mar. 31, 1951	12.93	7,940		Apr. 22, 1958	12.55	7,480
1952	June 2, 1952	13.83	9,060	1959	Apr. 3, 1959	(a)	4,800
	June 26, 1952	12.67	7,620		Apr. 3, 1959	a9.98	-
1953	Dec. 12, 1952	11.07	5,870	1960	Nov. 28, 1959	13.63	8,800
	Mar. 25, 1953	12.04	6,900		Apr. 1, 1960	11.17	5,970
	Mar. 27, 1953	10.66	5,460		Apr. 5, 1960	10.87	5,670
1954	Apr. 23, 1954	11.99	6,850	1961	Apr. 26, 1961	b10.17	5,000
1955	Apr. 16, 1955	11.23	6,030	1962	Mar. 31, 1962	-	6,800
	Apr. 19, 1955	10.89	5,690		Apr. 8, 1962	-	7,300

a Backwater from ice.

b Annual peak stage not determined; occurred during period of no gage-height record.

2925. Lamoille River at East Georgia, Vt.

Location.--Lat 44°40'45", long 73°04'20", on right bank at East Georgia, Franklin County, 0.5 mile upstream from railroad bridge, and 1 mile downstream from Beaver Meadow Brook.

Drainage area.--686 sq mi.

Gage.--Recording. At site $3\frac{1}{2}$ miles downstream at different datum prior to Dec. 4, 1937. Altitude of gage is 285 ft (from topographic map).

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

Remarks.--Base for partial-duration series, 10,400 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1930	May 27, 1930	8.04	10,400	1942	Apr. 16, 1942	11.10	17,200
1931	Apr. 12, 1931	8.86	12,800		June 15, 1942	11.57	19,400
1932	Apr. 8, 1932	8.60	12,000	1943	Mar. 27, 1943	a12.55	-
	Apr. 13, 1932	8.32	11,200		May 13, 1943	9.94	12,600
1933	Oct. 7, 1932	9.47	14,400	1944	Nov. 10, 1943	9.53	11,300
	Apr. 8, 1933	8.40	11,400		Mar. 26, 1944	a12.66	-
	Apr. 19, 1933	10.18	16,300	1945	Mar. 17, 1945	a13.05	-
					Mar. 19, 1945	9.21	10,300
1934	Apr. 13, 1934	10.27	16,600	1946	Oct. 3, 1945	9.72	11,900
	Apr. 18, 1934	8.22	10,900		Mar. 11, 1946	a15.86	-
1935	Jan. 11, 1935	a9.38	12,700	1947	Jan. 31, 1947	a14.22	-
1935	Mar. 14, 1936	10.20	16,300		Apr. 13, 1947	10.82	16,100
	Mar. 19, 1936	12.52	23,200	1948	Mar. 20, 1948	a12.77	-
1937	May 16, 1937	9.22	13,500		Mar. 22, 1948	8.85	9,300
1938	Mar. 24, 1938	-	b20,000	1949	Dec. 31, 1948	11.10	17,200
	Apr. 16, 1938	-	b11,000		Mar. 23, 1949	a12.69	-
	Sept. 22, 1938	11.76	20,200		Mar. 28, 1949	9.60	11,500
1939	Apr. 23, 1939	10.50	14,800	1950	Mar. 28, 1950	a10.79	-
1940	May 3, 1940	12.25	22,300		Apr. 6, 1950	9.29	10,600
1941	Dec. 29, 1940	a13.38	-	1951	Apr. 1, 1951	9.41	10,900
	Apr. 15, 1941	9.30	10,600		June 2, 1952	10.00	12,900

a Backwater from ice.

b Estimated.

Peak stages and discharges of Lamoille River at East Georgia, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1953	Jan. 25, 1953	a12.35	-	1958	Apr. 19, 1958	9.42	11,200
	Mar. 25, 1953	9.43	11,300		Apr. 22, 1958	10.56	15,100
1954	Feb. 22, 1954	a11.78	-	1959	Apr. 3, 1959	a18.81	10,000
	Apr. 23, 1954	9.83	12,500				
1955	Dec. 19, 1954	a10.24	-	1960	Nov. 29, 1959	10.33	14,300
	Apr. 16, 1955	-	13,000		Mar. 31, 1960	a16.65	12,000
1956	Apr. 5, 1956	a16.59	-		Apr. 5, 1960	9.59	11,800
	Apr. 30, 1956	9.35	11,000	1961	Feb. 26, 1961	a11.88	-
1957	Jan. 23, 1957	a16.45	8,500		Apr. 27, 1961	8.75	9,230
1958	Dec. 21, 1957	10.27	14,000	1962	Mar. 30, 1962	a13.05	-
					Mar. 31, 1962	-	b12,000
					Apr. 8, 1962	9.95	13,000

a Backwater from ice.

b Estimated.

2930. Missisquoi River near North Troy, Vt.

Location.--Lat 44°58'20", long 72°23'15", on right bank 200 ft upstream from Big Falls, 1½ miles downstream from Jay Branch, and 2¼ miles upstream from North Troy, Troy County.

Drainage area.--131 sq mi.

Gage.--Recording. Altitude of gage is 580 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 3,600 cfs and extended above by logarithmic plotting, verified by flow-over-dam measurement at 6,540 cfs.

Remarks.--Base for partial-duration series, 3,300 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1932	Apr. 8, 1932	8.27	3,520	1947	Apr. 12, 1947	10.05	4,900
	Apr. 13, 1932	8.18	3,440		June 3, 1947	9.27	4,190
1933	Oct. 7, 1932	12.26	7,240	1948	Mar. 20, 1948	a9.22	-
	Apr. 18, 1933	9.30	4,380		Mar. 22, 1948	8.67	3,670
1934	Apr. 17, 1934	8.20	3,400		Mar. 28, 1948	8.56	3,580
1935	Apr. 30, 1935	8.70	3,830	1949	Dec. 31, 1948	9.23	4,160
1936	Mar. 13, 1936	9.73	4,610		Mar. 28, 1949	10.72	5,570
	Mar. 18, 1936	11.40	6,290	1950	Apr. 5, 1950	a10.00	4,160
1937	Jan. 9, 1937	8.30	3,360		Apr. 21, 1950	8.51	3,530
	May 15, 1937	8.33	3,380	1951	Dec. 5, 1950	9.11	4,050
1938	Oct. 21, 1937	8.95	3,910		Apr. 26, 1951	8.57	3,580
	Mar. 24, 1938	a9.90	4,500	1952	June 2, 1952	10.21	5,060
1939	Apr. 22, 1939	9.17	4,100	1953	Mar. 25, 1953	8.08	3,170
1940	May 3, 1940	12.87	7,980	1954	Apr. 8, 1954	9.48	4,380
1941	Apr. 14, 1941	9.50	4,400		Apr. 23, 1954	8.90	3,860
1942	Nov. 2, 1941	8.40	3,440	1955	Oct. 4, 1954	8.68	3,680
	Apr. 16, 1942	11.03	5,850		Apr. 15, 1955	8.92	3,880
	June 15, 1942	11.70	6,620	1956	Apr. 30, 1956	8.28	3,340
1943	May 12, 1943	10.77	5,650	1957	Jan. 23, 1957	9.88	4,740
1944	Nov. 9, 1943	8.52	3,540	1958	Dec. 21, 1957	10.26	5,110
1945	Mar. 18, 1945	9.53	4,430		Apr. 19, 1958	9.34	4,260
	Sept. 19, 1945	9.35	4,260		Apr. 22, 1958	9.90	4,760
1946	Apr. 14, 1946	8.00	3,100	1959	Apr. 3, 1959	a8.89	-
					Apr. 3, 1959	8.74	3,730

a Backwater from ice.

Peak stages and discharges of Missisquoi River near North Troy, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1960	Nov. 28, 1959	10.33	5,180	1962	Mar. 31, 1962	-	3,400
	Apr. 4, 1960	8.27	3,350		Apr. 8, 1962	9.33	4,250
	Apr. 18, 1960	8.29	3,350		May 21, 1962	8.78	3,760
	Sept. 13, 1960	8.71	3,700				
1961	Apr. 26, 1961	7.86	2,990				

2935. Missisquoi River near Richford, Vt.

Location.--Lat 44°57'30", long 72°41'55", on left bank 1 2/3 miles upstream from Trout River, 3 miles south of Richford, Franklin County, and 3 1/4 miles downstream from North Branch.

Drainage area.--479 sq mi.

Gage.--Nonrecording prior to Aug. 1, 1915; recording Aug. 1, 1915, to Sept. 30, 1923; nonrecording Oct. 1, 1928, to Sept. 30, 1929; recording thereafter. At datum 4.35 ft lower prior to Aug. 1, 1915. At datum 4.6 ft lower and at site a quarter of a mile downstream Oct. 1, 1928, to Sept. 30, 1929. Altitude of gage is 410 ft (from topographic map).

Stage-discharge relation.--Defined by current-meter measurements below 9,300 cfs and extended above on basis of flow-over-dam measurement at 14,000 cfs, slope-area measurement at 13,500 cfs, and study of discharge per foot of width at measuring section.

Remarks.--Base for partial-duration series, 7,600 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)		
1912	Apr. 17, 1912	15.0	9,250	1931	July 29, 1931	10.85	8,420		
1913	Mar. 26, 1913	17.0	12,200	1932	Apr. 8, 1932	11.94	9,460		
1914	Apr. 20, 1914	16.2	11,000		Apr. 12, 1932	11.63	9,040		
					Apr. 7, 1932	a14.35	-		
1915	Apr. 13, 1915	12.0	5,550	1933	Oct. 7, 1932	12.63	9,840		
1916	Apr. 1, 1916	a13.27	7,600		Apr. 3, 1933	a13.61	-		
					Apr. 8, 1933	11.72	8,610		
1917	Apr. 3, 1917	11.53	8,690		Apr. 18, 1933	12.90	10,300		
				1934	Apr. 2, 1934	a14.20	-		
1918	Oct. 30, 1917 Apr. 1, 1918	11.44 a17.5	8,570 (b)		Apr. 12, 1934	11.30	8,090		
				1935	Jan. 9, 1935	a15.20	-		
1919	Oct. 6, 1918 Oct. 31, 1918 Apr. 12, 1919	12.01 11.34 12.06	9,310 8,440 9,380		May 1, 1935	10.65	7,180		
					1936	Mar. 14, 1936	a14.90	c10,000	
				Mar. 19-20, 1936		14.70	16,000		
1920	Oct. 31, 1919 March or April	11.16 -	8,210 (b)	1937	Apr. 6, 1937	a14.78	-		
					May 20, 1937	9.96	6,640		
1921	Oct. 1, 1920	11.13	8,170	1938	Mar. 23, 1938	a14.72	c11,000		
1922	Apr. 12, 1922 June 18, 1922	12.30 11.70	9,700 8,910		Sept. 21, 1938	12.90	12,200		
				1939	Apr. 22, 1939	13.77	14,100		
1923	Apr. 7, 1923 Apr. 22, 1923 Apr. 30, 1923	a14.38 11.47 11.90	-		8,610 9,170	1940	Apr. 12, 1940	10.57	8,110
							Apr. 19, 1940	11.75	10,100
				May 4, 1940			15.15	17,200	
1928	November 1927	23.1	45,000	1941	Dec. 29, 1940	a13.58	-		
1929	Apr. 8, 1929	11.1	7,080		Dec. 30, 1940	10.55	8,110		
					Apr. 15, 1941	12.38	11,300		
1930	Jan. 8, 1930	a13.33	-	1942	Apr. 16, 1942	12.97	11,600		
	Jan. 9, 1930	-	c9,000		June 16, 1942	11.65	9,270		
	Feb. 25, 1930	a14.20	-		1943	Apr. 26, 1943	10.64	7,750	
	May 27, 1930	11.92	10,400	May 13, 1943		10.69	7,900		
	June 21, 1930	13.88	14,300	June 16, 1943		11.37	8,950		
1931	Apr. 11, 1931	12.11	10,800						

a Backwater from ice.

b Annual peak discharge not determined.

c Estimated.

Peak stages and discharges of Missisquoi River near Richford, Vt.--Continued

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1944	Nov. 9, 1943	10.62	7,780	1954	Apr. 8, 1954	11.66	9,370
	Mar. 26, 1944	a11.50	-				
1945	Mar. 17, 1945	a14.69	-	1955	Oct. 3, 1954	10.66	7,840
	Mar. 19, 1945	13.09	11,700		Oct. 13, 1954	12.48	10,700
	Sept. 19, 1945	10.60	7,750		Mar. 12, 1955	a12.64	-
					Apr. 15, 1955	12.31	10,400
1946	Mar. 15, 1946	a18.92	c11,000	1956	Apr. 5, 1956	a13.31	-
					Apr. 30, 1956	12.16	10,200
1947	Dec. 11, 1946	11.02	8,380				
	Apr. 6, 1947	11.04	8,410	1957	Jan. 23, 1957	10.81	8,060
	Apr. 13, 1947	12.52	10,700		Feb. 27, 1957	14.54	-
	May 22, 1947	11.67	9,380				
	June 3, 1947	12.58	10,800	1958	Dec. 22, 1957	11.84	9,650
1948	Mar. 17, 1948	a15.41	-		Apr. 18, 1958	12.42	10,600
	Mar. 22, 1948	12.37	10,500		Apr. 22, 1958	12.29	10,400
	Mar. 27, 1948	10.63	7,800	1959	Apr. 4, 1959	a16.63	11,500
1949	Jan. 1, 1949	11.24	8,710				
	Mar. 23, 1949	a13.93	-	1960	Nov. 28, 1959	11.80	9,590
	Mar. 29, 1949	12.30	10,400		Apr. 1 or 2, 1960	-	a9,000
1950	Apr. 4, 1950	a12.71	-		Apr. 2, 1960	a17.67	-
	Apr. 5, 1950	10.75	7,980		Apr. 5, 1960	12.21	10,200
					Apr. 18, 1960	11.12	8,530
1951	Mar. 31, 1951	11.42	8,980	1961	Feb. 26, 1961	a16.12	-
					Apr. 24, 1961	9.62	6,370
1952	June 2, 1952	10.87	8,160	1962	Mar. 30, 1962	a13.13	-
1953	Mar. 26, 1953	10.46	7,540		Mar. 31, 1962	11.65	9,350
					Apr. 8, 1962	12.19	10,200
1954	Feb. 22, 1954	a12.98	-				

a Backwater from ice.

c Estimated.

2960. Black River at Coventry, Vt.

Location--Lat 44°52'08", long 72°16'14", on right bank 15 ft downstream from highway bridge, 800 ft upstream from Stony Brook, and 0.35 miles northwest of Coventry, Orleans County.

Drainage area--122 sq mi.

Gage--Recording. Altitude of gage is 725 ft (from topographic map).

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

Remarks--Base for partial-duration series, 1,700 cfs.

Peak stages and discharges

Water year	Date	Gage height (feet)	Discharge (cfs)	Water year	Date	Gage height (feet)	Discharge (cfs)
1952	Apr. 11, 1952	6.11	1,770	1958	Dec. 21, 1957	6.31	1,980
	June 1, 1952	6.33	2,010		Apr. 19, 1958	6.79	2,620
					Apr. 22, 1958	6.76	2,570
1953	Mar. 24, 1953	a6.28	-	1959	Apr. 6, 1959	6.26	1,930
	Mar. 26, 27, 1953	6.20	1,860				
1954	Apr. 8, 1954	6.50	2,220	1960	Nov. 28, 1959	7.20	3,010
	Apr. 23, 1954	6.45	2,160		Apr. 5, 1960	6.94	2,680
1955	Apr. 16, 1955	6.73	2,530		Apr. 18, 1960	6.02	1,710
					May 15, 1960	6.02	1,710
1956	Apr. 5, 1956	a6.18	-	1961	Apr. 26, 1961	5.85	1,570
	Apr. 30, 1956	6.09	1,750				
1957	Jan. 23, 1957	a6.08	-	1963	Apr. 8, 1962	6.66	2,360
	Jan. 23, 1957	5.83	1,530				

a Backwater from ice.

2965. Clyde River at Newport, Vt.

Location.--Lat 44°56'20", long 72°11'25", on right bank in Newport, Orleans County, just downstream from small tributary entering from north, 1 mile upstream from mouth.

Drainage area.--142 sq mi.

Gage.--Nonrecording prior to Sept. 21, 1915; recording thereafter. At site 0.65 mile upstream at different datum prior to May 5, 1936. Datum of gage is 682.36 ft above mean sea level, datum of 1929.

Stage-discharge relation.--Defined by current-meter and indirect measurements. Large change in relation Sept. 10, 1938, due to change in location of gage.

Remarks.--Flow regulated by powerplant and reservoirs above station. On Mar. 7, 1957, a hydroelectric plant, powered by water diverted around the gage, was put into operation. Subsequent to that date, published discharges are the sum of the concurrent flows through the powerplant and past the gage. The publication of peak discharges was discontinued in the 1961-62 water year because the accuracy of the computed peak discharges was questionable. 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)
1910	Apr. 8, 1910	3.87	1,410	1940	May 3, 1940	8.65	2,740
1911	May 3, 1911	4.05	1,680	1941	Apr. 18, 1941	6.41	1,420
1912	Apr. 18, 1912	4.3	2,080	1942	Apr. 18, 1942	7.04	1,700
1913	Mar. 27, 1913	4.8	3,110	1943	May 14, 1943	6.98	1,720
1914	Apr. 22, 1914	4.35	2,170	1944	May 8, 1944	6.38	1,350
1915	Apr. 14, 1915	3.40	875	1945	Mar. 31, 1945	6.78	1,590
1916	Apr. 24, 1916	3.45	928	1946	Oct. 11, 1945	5.47	876
1917	Apr. 25, 1917	3.90	1,370		Mar. 17, 1946	5.47	876
1918	Apr. 3, 1918	3.70	1,280	1947	Apr. 14, 1947	6.64	1,510
1919	Nov. 2, 1918	3.77	1,360	1948	Apr. 4, 1948	5.81	1,070
1921	Mar. 30, 1921	3.67	1,250	1949	Mar. 30, 1949	6.15	1,220
1922	Apr. 13, 1922	4.62	2,350	1950	Apr. 22, 1950	6.81	1,610
1923	May 1, 1923	4.58	2,310	1951	Apr. 15, 1951	6.25	1,290
1924	May 3, 1924	4.12	1,750	1952	Apr. 23, 1952	6.34	1,340
1929	Apr. 10, 1929	4.10	1,330	1953	Mar. 28, 1953	6.67	1,520
1930	Apr. 16, 1930	3.70	964	1954	Apr. 24, 1954	8.4C	2,620
1931	Apr. 13, 1931	3.75	982	1955	Apr. 17, 1955	7.66	2,140
1932	Apr. 12, 1932	4.19	1,660	1956	May 5, 1956	5.82	1,080
1933	Apr. 19, 1933	5.19	2,780	1957	Apr. 24, 1957	-	al,000
1934	Apr. 19, 1934	4.27	1,500	1958	Apr. 24, 1958	-	a2,800
1935	May 1, 1935	4.25	1,480	1959	Apr. 7, 1959	-	1,810
1936	Mar. 20, 1936	5.76	3,900	1960	Apr. 18, 1960	-	1,900
1939	Apr. 23, 1939	7.31	2,110	1961	Apr. 28, 1961	-	al,500

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Base from River Basin Maps, IACWR,
Subcommittee on Hydrology

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1965—W65090

MAP OF ST. LAWRENCE RIVER BASIN SHOWING HYDROLOGIC AREAS, FLOOD-FREQUENCY REGIONS, AND LOCATION OF GAGING STATIONS

